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The Reflexes of the Proto-Indo-European Laryngeals in Latin

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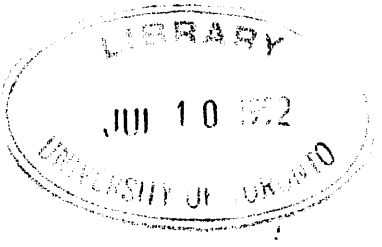

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VOOR MIJN OUDERS

PREFACE

Still blissfully ignorant of what lies before him, the reader must be informed that this book contains little pretending to alter our knowledge of the Indo-European protolanguage. The canonical picture of the Proto-Indo-European phonemic system, including its three "laryngeals" which are the subject of this study, is not challenged on the following pages. Rather, my most positive hope is that the reader is left with the impression that, as far as Latin is concerned, there is no reason to revise the laryngeal theory as we know it.

At the beginning of a sizeable book as this, such a notice is not intended as a display of arrogance on my part, but it rather serves to indicate that - with hindsight - this book has as its subject not the physiognomy of the Proto-Indo-European mother but rather the embryology of the Latin daughter.

The study of Latin historical grammar for a period of four years has given me the pleasure of watching the fascinating machine of linguistic change in operation from very near. The best I can hope for is that some of this fascination has managed to trickle through the austere columns which follow.

CONTENTS

ABBREVIATIONS AND SYMBOLS

Abbreviations

A.	accusative	imf.	imperfect
Abl.	ablative	imp.	imperative
Aeol.	Aeolic	Ir.	Irish
AP	accentual paradigm	It.	Italic
Arab.	Arabic	It-C.	Italo-Celtic
Arm.	Armenian	L.	locative
Att.	Attic	Lat.	Latin
Av.	Avestan	Latv.	Latvian
AV	Atharvaveda	Lith.	Lithuanian
Balt.	Baltic	Luw.	Luwian
Brahm.	Brāhmaṇas	Lyc.	Lycian
Bret.	Breton	M-	Middle
Brit.	British	MLF.	Middle Low Franconian
BSl.	Balto-Slavic		
Bulg.	Bulgarian	MLG.	Middle Low German
C.	Celtic		
Co.	Cornish	Mo-	Modern
Corc.	Corcyraean	N.	nominative
CS.	Church Slavonic	O-	Old
Cz.	Czech	O.	Oscan
D.	dative	OCS.	Old Church Slavonic
Dor.	Doric		
du.	dual	OE.	Old English
EM.	Ernout-Meillet	OFri.	Old Frisian
Eng.	English	OHG.	Old High German
Falisc.	Faliscan	OIc.	Old Icelandic
G.	genitive	OPers.	Old Persian
Gaul.	Gaulish	OPruss.	Old Prussian
Germ.	German	OS.	Old Saxon
Gm.	Germanic	P-	Proto-
Goth.	Gothic	PD.	proterodynamic
Gr.	Greek	Pers.	Persian
HD	hysterodynamic	pf.	perfect
Hes.	Hesychius	P.F.	Paulus ex Festo
HG.	High German	Phryg.	Phrygian
Hitt.	Hittite	PIE.	Proto-Indo-European
Hom.	Homer		
I.	instrumental	pl.	plural

Pol.	Polish	Slk.	Slovak
ppp.	perfect past participle	Sln.	Slovene
		Sorb.	Sorbian
Prim.	Primitive	Swed.	Swedish
prs.	present	Toch.	Tocharian
prt.	preterite	U.	Umbrian
PSab.	Proto-Sabellian	Ukr.	Ukrainian
Russ.	Russian	V.	vocative
RV	Ṛgveda	Ved.	Vedic
Sab.	Sabellian	Venet.	Venetic
SCr.	Serbo-Croat	Volsc.	Volscan
sg.	singular	W.	Welsh
Skt.	Sanskrit	WH.	Walde-Hofmann
Sl.	Slavic		

Symbols

C: consonant (i.e. a stop, *s* or a post- or antevocalic resonant)
T: stop
H: laryngeal (h_1, h_2, h_3).
R: resonant (*r*, *l*, *m*, *n*) which is not post- or antevocalic
L: liquid (*r*, *l*)
N: nasal (*n*, *m*)
I: glide (*i*, *u*)
V: vowel (*e*, *o*, $\bar{e}$, $\bar{o}$)
#: word-boundary
>: developed into
<: developed from
>>:replaced analogically by
<<:analogically replacing

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I. INTRODUCTION

A. FRAME, SCOPE AND AIM

In the 1977 edition of his *Lateinische Laut- und Formenlehre*, Manu Leumann remarks: "Für eine Darstellung der lateinischen Grammatik sind diese Theorien um das vokalische und die konsonantischen Schwā (die Laryngale) an sich entbehrlich; doch mußten sie erwähnt werden, da manche Forscher (z.B. Juret) auch bei Etymologisierung von lat. Wörtern sich dieser Symbole zu bedienen für angemessen halten." (p. 40). A similar radical dismissal of the relevance of laryngeals can be found in Pfister's edition of the same year of Sommer's *Handbuch der lateinischen Laut- und Formenlehre*, where he discusses the laryngeal theory in nine lines of small print and does not present the mainstream and by that time already widely accepted variety of the laryngeal theory. In the rest of the book, laryngeals do not appear.

One may well ask if there is reason to deviate from Leumann's and Pfister's attitude towards laryngeals and the laryngeal theory. Needless to say I think there is. Nowadays it is generally agreed among Indo-Europeanists that in PIE. there were three phonemes commonly referred to as laryngeals (although opinions differ as to their exact phonetic nature). One could hold that since these phonemes existed in PIE. (which is not contested, at least not by Leumann), their subsequent development must of necessity be accounted for in a historical grammar of any Indo-European language, including Latin. To claim e.g. that the laryngeals should not be discussed because they do not have an independent, unique reflex in Latin would be tantamount to saying that **dh*, **bh*, **$g^{w}h$* should not be discussed because each of them does not have an independent, unique reflex. As **dh*, **bh* and **$g^{w}h$* are discussed extensively by both Leumann and Pfister, so should the laryngeals. One may object to the parallel with the mediae aspiratae that the latter underwent specific Italic and Latin developments, whereas the laryngeals were lost at a remote period. I suspect that the reasons for assuming this early loss are impressionistic rather than based on hard evidence. Thus, Meiser, in his valuable book on Umbrian historical phonology (1986, 36-7), invariably places all laryngeal developments and the loss of the laryngeals as independent phonemes in the earliest post-PIE. period ("Frühe nachgrundsprachliche Verän-

derungen"), preceding the "uritalische" period, without any argumentation. It is one of the contentions of this book that the laryngeals were retained as three separate phonemes up to the Proto-Italic period, and that they played a role in various Proto-Italic developments (cf. especially the development of *#HNC-*, chapter II.D; also IV.D.2, VI.C.1.4, VI.C.2.3.2.3). This retention of the laryngeals as separate phonemes until after PIE. necessarily follows from the observation that in every branch of PIE. the laryngeals have specific reflexes. Accordingly, there is every reason to discuss the laryngeals as independent phonemes in their own right in a historical grammar of Latin.

It is remarkable that eight years before Leumann and Sommer-Pfister 1977 were published, Beekes' study of the development of the laryngeals in Greek appeared, which gave an account of all laryngeal developments in that language. In 1976 there appeared a historical grammar of Greek that treated the laryngeals as any other PIE. phonemes, and described their developments in the same way as it described the developments of e.g. PIE. *i*, *u* (Rix 1976). Thus, it seems, the handbooks show that there is a conspicuous difference between the advance of Greek and Latin scholarship as far as the incorporation of the laryngeals is concerned. The most recent discussion of laryngeal theory and Latin is Mayrhofer's article in *KZ* 100 (1987), which, with the well-known thoroughness of the author, presents rather than solves the problems, and underlines the amount of work that has to be done in order to be able to write the history of the laryngeals in Latin. It is the aim of this book to fulfill at least part of this task, and to draw the laryngeals into their proper place in the historical grammar of Latin.

This book deals with the practical application of the laryngeal theory to Latin, and not with the laryngeal theory itself. Nevertheless I must state my position concerning the latter. I essentially follow the views of what can nowadays be considered orthodox laryngeal theory (see e.g. Mayrhofer 1985, Beekes 1988a). I shall not discuss the rich variety of alternative proposals, e.g. Adrados' palatalized and labialized laryngeals, Puhvel's nine laryngeals and Szemerényi's one laryngeal. None of these finds any support in Latin.

There were three PIE. "laryngeals", no less (in view of i.a. the Greek "prothetic vowels", Beekes 1969; pace e.g. Szemerényi), no more (pace Hamp, Puhvel et al.). For a convincing invective against "Monolaryngalismus" see Eichner 1988. These laryngeals are written here as h_1, h_2 and h_3 (cover-symbol H).

Their exact phonetic nature is unknown and is in fact irrelevant to their existence, but Indo-Europeanists agree that they were consonants (probably obstruents according to Mayrhofer 1985). There are indications that h_1 was a glottal stop (ʔ), h_2 a pharyngeal (ʕ) and h_3 a labialized pharyngeal (ʕ^{o}) (and therefore not obstruents); see Beekes 1989c. There is no evidence for a phonemic difference between vocalic ($\underset{\cdot}{H}$) and consonantal ($\underset{\cdot}{H}$) laryngeals in PIE. (One might wish to conceive of $\underset{\cdot}{H}$ as H_{∂} vel. sim. rather than a true vocalic laryngeal, which is irrelevant for the present issue.) Whether a laryngeal was syllabified in a particular language depends on that language and on the specific phonetic context in which it is found (Beekes 1988a, 59-60 and 68 note 2).

Since there is a vast literature dealing with the history of the laryngeal theory and its founding father Ferdinand de Saussure, it suffices to refer to some basic articles on the subject: Polomé 1965, 9-78; Beekes 1969, 1-11; Lindeman 1970, 9-31; Mayrhofer 1985 and (on Latin) 1987; Eichner 1988 (on Anatolian); R. Schmitt 1988.

Since the laryngeal theory in the version outlined above now has a well-established place in Indo-European studies, it is unnecessary to give its background and legitimation every time laryngeals are reconstructed. In this sense the laryngeals have reached a position similar to that of the nasalis sonans: every Indo-Europeanist gladly reconstructs the latter wherever appropriate without even mentioning the name of Brugmann.

A few remarks must be made concerning the PIE. phonemic system.

As is now common practice (except in works on Latin!), I assume that PIE. did not have a "reduced vowel" phoneme. Latin offers no support for such a phoneme. For my views on the history of non-laryngeal *a* in Latin I refer to chapter VI.

I follow the view expressed by Beekes 1981, 107 and Lubotsky 1989 that PIE. did not have a phoneme **a*. Evidence for the existence of **a* is extremely slight. As Eichner 1988, 132 note 31 points out: "Den verdienstvollen Plädoyers von Oswald Szemerényi und Jerzy Kuryłowicz zugunsten des Ansatzes eines laryngalunabhängigen uridg. *ă* haftet der methodische Mangel an, daß in den angeführten Wortlisten nicht zwischen Fällen mit immerhin möglichem Laryngalansatz (z.B. **ǵʰ$h_2$ans-* 'Gans', wie unwahrscheinlich die Anwesenheit von h_2 hier auch sein mag) und nach den Lautregeln auszuschließendem Laryngal unterschieden wird". Eichner goes on to mention five etyma which in

his view must contain PIE. *a*. However, for all five alternative analyses are possible:
1. **nă̆s-* 'Nase': OHG. *nasa* may reflect **nh₂s-* (IV.D.1.2: *#n̥h₂s-*) or **nh₂es-* (IV.D.2.2: *#n̥h₂es-*; Kortlandt 1985, 119).
2. **kă̆rh-* 'verkünden': Skt. *kārú-* 'singer' may reflect **keh₂rú-*, *kīrtí-* 'fame' may reflect **krh₂-tí-*, with metathesis of *CHRC* to *CRHC*, as in *CHIC* > *CIHC*; see IV.B.3.
3. **hiaǵ-* 'verehren': Gr. ἁγνός, ἅγιος 'holy' probably reflect **ih₂ǵ-* (see Beekes 1988b: *#i̯h₂ǵ-*), Skt. *yajñá-* may reflect **ieh₂ǵnó-*, with loss of the laryngeal before media + consonant (Lubotsky 1981, 135).
4. **h₂uap-* 'schädigen': Hitt. *huu̯apzi* 'schädigt', *huu̯appa-* 'böse' vs. PGm. **ubilaz* 'übel' may reflect **Huobh-* vs. **Hubh-*, if the etymology is correct.
5. **kuas-* 'küssen': Hitt. *kuu̯aszi*, Gr. κυνέω, ἔκυσσα; **kuos-*, **kus-* is phonetically possible; one may object that *o*-grade is morphologically unmotivated, but so is *a*-grade.

Many instances of non-laryngeal *a* are found in Latin. These instances are discussed extensively in chapter VI, where it is contended that Latin *a* arose at a post-PIE. stage (mostly PIt.) from PIE. **e*, **o* or a syllabic resonant.

As was said above, this book deals with laryngeal practice rather than laryngeal theory. It discusses the developments of the PIE. laryngeals in the same way as traditional historical grammar discusses the development of e.g. the PIE. stops. Since the laryngeals have left numerous different traces, each depending on the exact phonetic context, and since their development in certain of these contexts is not yet fully understood, a detailed discussion of the relevant material is imperative. This partly explains why this book has become so bulky. Another reason is that I have attempted to discuss, or at least to mention, all Latin words and morphemes that formerly contained a laryngeal. The laryngeals are thus integrated into Latin etymology in a way not yet provided by Ernout-Meillet's and Walde-Hofmann's etymological dictionaries, and in this sense this book is a supplement to those works.

In order to collect a corpus of material which is as complete as possible, I checked the etymologies of all Latin words on the basis of Ernout-Meillet and Walde-Hofmann and I singled out all words that could have contained a PIE. laryngeal. The procedure was different for each constellation, and I refer to each section in chapters II-IV for further information.

The presentation of the material according to the phonetic

context of the laryngeal owes much to Beekes 1969.

Although the focus of this study was primarily on Latin, material from Sabellian is often touched upon in order to establish the regular development of the laryngeals, but I have not systematically searched for material other than that which has Latin cognates. Thus, the treatment of Sabellian is not exhaustive.

The establishment of the regular developments of the laryngeals in every phonetic context in Latin accounts for chapters II-IV. More general problems concerning laryngeal developments are discussed in chapter V: loss of laryngeals, Dybo's rule, nominal and verbal stems in a laryngeal, vocalization and relative chronology.

The origin of non-laryngeal *a* in Latin constitutes a subject of its own (chapter VI).

B. THE EVIDENCE OF BALTO-SLAVIC ACCENTUATION

1. Introduction

In order to ascertain whether a certain etymon contained a laryngeal in PIE. a basic knowledge of the rules of accentuation of Baltic and Slavic is imperative. It therefore seems useful to give a brief outline of the accentual systems of Baltic and Slavic as far as this is relevant in the framework of this book. Many vital points will necessarily be omitted since the whole domain is so vast, and so packed with relevant, even crucial details coming from a variety of languages, dialects and diachronical strata, that an adequate description would have doubled the size of this book.

I can refer to the following books and articles, which in their turn refer to the extremely rich literature on the subject: Chr. S. Stang 1957; V.M. Illič-Svityč 1963 (English translation 1979); F.H.H. Kortlandt 1975, 1977, 1978a, 1985; W.R. Vermeer forthcoming.

The earliest Balto-Slavic accentual system had two accentual paradigms (AP), viz. a barytone and an oxytone paradigm, both with columnal stress. Basically, Balto-Slavic barytona correspond to Greek, Sanskrit and Germanic barytona, and Balto-Slavic oxytona to Greek, Sanskrit and Germanic oxytona (Illič-Svityč 1963). This primeval pattern has, however, been modified considerably. The barytona are reflected in the Lith. APs (1) and

(2) and in the Slavic APs (a) and (b); (1) corresponds with (a), (2) with (b). The oxytona are reflected in the Lith. APs (3) and (4) and in the Slavic AP (c). The split of the barytona and oxytona in two APs each in Lith. is conditioned by the phonological structure of the root: Lith. (1) and (3) had an acute (= laryngealized, see below) root, (2) and (4) a non-acute (= non-laryngealized) root. In Slavic the opposition between oxytona with acute (Lith. (3)) and non-acute (Lith. (4)) root was eliminated by the operation of Meillet's law (see section 2 no. 4).

We may now turn to the question of what is to be understood by acute, or laryngealized. Both vowels and diphthongs (i.e. **eu*, *ei* etc., but also **er*, *en* etc., Bait. *ir* < **r̥* etc.) can be acute. The acute tone (if this is not due to Winter's law, see below) reflects an original IE. laryngeal in the following constellations:
1. *VH* (including *VHI*, not *VHV*);
2. *R̥H*, *I̯H* (not *R̥HV*, *I̯HV*);
3. *VRH*, *VIH* (not *VRHV*, *VIHV*).

2. Laws

There are a number of important accent-laws, which will figure occasionally in the text of this book.

1. In both Baltic and Slavic, originally oxytone paradigms have become barytone if the root contained *VH* or *R̥H* (i.e. they have merged with Lith. (1) and Slavic (a)). This is the result of the stress-retraction known as Hirt's law. For a somewhat more detailed treatment of a number of exceptions see IV.E.2.1.3. (See Kortlandt 1975, 2, following Illič-Svityč.)

2. A laryngealized vowel or diphthong which is not the reflex of a laryngeal goes back to the operation of Winter's law (Balto-Slavic): a vowel becomes acute before a PIE. glottalized stop (= media).

3. Saussure's law (only Lithuanian!): a non-acute vowel loses the ictus to an acute vowel in the following syllable.

4. Meillet's law (Slavic): an acute vowel in a paradigm that has remained mobile (i.e. has not become a barytone AP (a)) after Hirt's law becomes non-acute. In this way, the difference between oxytona with acute and non-acute root-vowel, which is maintained in Baltic, is eliminated (see esp. Kortlandt 1975, 10 ff.).

5. Dybo's law (post 4., PSlav.): the stress shifts to the next syl-

lable unless the stressed vowel was either falling (AP (c)) or laryngealized (AP (a)). Thus, Dybo's law affected only AP (b), which it turned into an oxytone paradigm. Not to be confused with Saussure's law!

6. Stang's law (post 5., PSlav.): retraction of the ictus from final syllables (not counting final jers) containing long falling vowels (which were long vowels that received the ictus as a result of Dybo's law) to the preceding syllable.

7. Neo-Štokavian stress-retraction: in a number of SCr. dialects, among which is the dialect on which the standard language is based, the ictus was retracted to the preceding syllable, which resulted in a rising tone (´ on long vowels, ` on short ones) on the syllable that received the stress; if retraction was not possible because the stressed syllable was the initial syllable of the word, the stress became falling (ˆ on long vowels, ˝ on short ones). Thus, the tone in Neo-Štokavian dialects bears no relation to the PSlav. tones.

3. Baltic

In Lithuanian, the position of the stress is not fixed, and there is a tonal opposition on long vowels and diphthongs (in stressed position, but in certain dialects also in unstressed position). In Latvian the stress always falls on the first syllable, and there is a tonal opposition on long vowels and diphthongs, both stressed and unstressed. We are here mainly concerned with the accent of the root on long vowels and diphthongs, which, as has been said, can be either acute (i.e. containing a laryngeal: Lith. AP (1) and (3)) or circumflex (i.e. not containing a laryngeal: Lith. AP (2) and (4)).

AP	root-vowel Lithuanian	Latvian
(1) Retained barytone stress on the acute root-vowel.	é, áu, ìr	ē, aũ, iȓ
(2) Orig. barytone, now mobile stress (due to Saussure's law), non-acute root-vowel.	ȇ, aũ, iȓ	è, àu, ìr
(3) Orig. oxytone, now mobile stress (due to various early retractions), acute root-vowel.	ế, áu, ìr	ê, aû, iȓ

		Lithuanian	Latvian
(4)	Orig. oxytone, now mobile stress (due to various early retractions and Saussure's law), non-acute root-vowel.	*ẽ, aũ, iř*	*è, àu, ìr*

For clarity's sake it may be pointed out that Latvian vowels which have an accent mark are always long. The only constellation in which there is a relevant opposition between an accented long and short vowel is *CVRC*: Latv. *CV̀RC* reflects **CV̀RC* and **CVRVC* (syncope) and Latv. *CV̀RC* reflects **CV̀RVC* (Prof. F.H.H. Kortlandt, p.c.).

Thus, in Lithuanian, the stressed root vowel of (1) has the same intonation as the stressed root vowel of (3), and the stressed root vowel of (2) has the same intonation as the stressed root vowel of (4); in Latvian, the root vowels of (2) and (4) have the same intonation, but the intonation of the root vowel of (1) differs from that of (3). The latter is called the "broken tone", Germ. "Stoßton", which is described by Endzelin 1922, 3: "Beim Stoßton zerfällt die Länge in zwei Teile, indem nach dem stärker schallenden Anfang inmitten der Silbe ein momentaner Glottisverschluß eintritt (der aber oft durch bloße Stimmschwachung ersetzt wird), worauf der zweite Teil hervorgestoßen wird." There are many important dialectal differences and instances of metatony (change of tone and of stress placement).

4. Slavic

As for Slavic, only a very brief account of the Proto-Slavic system can be given. This system is maintained as such in no Slavic language, and the relevant information comes from various languages. Among these, Serbo-Croat is important in that it has maintained the PSlav. quantities in a rather faithful manner, and these are relevant for our present purpose.

AP (a) is characterized by columnal stress on the root and an acute (rising tone, maintained in Slovenian and in the accent of the Russian polnoglasie *oró, oló*) root vowel, which is <u>short</u>: thus PIE. **oH* yields SCr. *ȁ*, where ˝ denotes a falling (< PSlav. rising) tone on a <u>short</u> vowel. The short quantity is a very important means of establishing the former presence of a laryngeal.

AP (b) is characterized by stress which alternates between the final syllable of the stem and the first syllable of the ending. A

PSlav. **a* (or **ě*, **or*) is never short in stem-stressed forms and reflects a PIE. lengthened grade in the case of **a* and **ě* and a non-laryngealized diphthong in the case of e.g. **or* (e.g. SCr. â, denoting a falling tone on a long vowel). This so-called oxytone paradigm reflects a barytone paradigm which was affected by the progressive accent shift known as Dybo's law.
AP (c) has stress alternating between the initial syllable of the stem and the final syllable of the ending and a falling tone on the root syllable (reflected in Slovenian by a progressive accent-shift from falling (initial) vowels to the following syllable, and in the Russian polnoglasie *óro*, *ólo*). A PSlav. **a* (or **ě*, **or*) in the root of a word belonging to (c) is long in root-stressed forms (i.e. SCr. e.g. â), but in the later languages the long vowel was often shortened (but not in SCr. in the case of disyllabic words (including jers); SCr. â is an example of an unshortened vowel; in words of a different structure, â became à (shortening), which coincides with à in AP (a)). Whether the root was originally acute or non-acute can no longer be detected because of the operation of Meillet's law.

Only if a Slavic word reflects AP (a) is there evidence for a laryngealized root. The problem is that it is often very difficult for a non-specialist to find out what the original AP of a word is. Fortunately, Kortlandt 1975, 52-71 has provided us with a fairly complete list of laryngealized vowels in Slavic roots. If one cannot determine the original AP, one may find the remarks about quantity useful for detecting laryngeals.

C. SYLLABIFICATION

Before embarking on a discussion of the material, it may be useful to define what is meant by the notations *CHC, VHV* etc. which will be employed throughout this book. As to the former, it denotes a laryngeal which is flanked on both sides by a non-syllabic phone, i.e. a stop, the sibilant *s* or a consonantal resonant; and the latter designates a laryngeal flanked by two vowels (i.e. **e* and **o*, not **i*, **u*, which are labeled *I*).

Problems might occur in the definition of a non-syllabic and a syllabic resonant. Since PIE. did not have a phonemic contrast between non-syllabic and syllabic resonants, the question of defining syllabic resonants is irrelevant for PIE. One can try to define under which precise conditions a later IE. language vocalized PIE. resonants, and then conclude that in PIE. the syllabic

allophones occurred under the conditions established in this way. This procedure, however, does not lead to the desired results because IE. languages differ among themselves in the conditions they set for the vocalization of resonants. A clear example is the group *-*uH*- before consonants, which develops into *-ū- in all languages (i.e. with a syllabic *u*) except Tocharian, where the result is -*wā*-, with non-syllabic *u̯*, e.g. in Toch. A *kāc* 'skin' < **kwāc* < **kuHti*-. A further example is word-final -*Cih*$_2$, which becomes *-*i̯α* in Greek (φέρουσα < **bheront-ih*$_2$; but cf. Ruijgh fthc., who assumes that *-*ont-ih*$_2$ regularly became *-*ont-iya* (cf. πότνια), logically via *-*ont-iyh*$_2$; I cannot however accept that as a result of Siever's law *-*ih*$_2$ became *-*iyh*$_2$), but -*ī* in e.g. Skt. *bhárantī*. Thus, the conditions for the distribution of the syllabic and non-syllabic allophones are language-specific. This means that these conditions must be determined for Latin on the basis of Latin material alone. In general, this is a simple task if resonants (*r,l,m,n*) are not in direct contact with other resonants or with laryngeals. A resonant which is not adjacent to a vowel is vocalized: **dekm* > *decem*; **ndhero-* > *īnferus*; **kmtom* > *centum*. And, conversely, a resonant which is adjacent to a vowel (*CRV, VRC*) is not vocalized: *prex* < **prek-*, *sulcus* < **solko-*. An exception to this rule seems to be formed by the superlatives, which have *-*isemo-* < *-*isṃo-*, *-*temo-* < *-*tṃo-* (see Cowgill 1970, esp. note 11). The question of whether *i* and *u* (symbol *I*) are syllabic or non-syllabic if they are adjacent to a vowel is more complex.

When we apply this generalization to resonants which are adjacent to laryngeals, we expect that the resonant is non-syllabic if there is an adjacent vowel (*VRH, HRV*). This is indeed what the Latin material bears out, as is well known: *temerē* < **temas-* < **temHs-*, *rēmus* < **h*$_1$*reh*$_1$*smo-*.

However, such generalizations are not self-evident if a resonant is adjacent to a laryngeal but, on the other side, *not* to a vowel: one does not know whether the resonant or the laryngeal will be syllabified (or, if one prefers, provided with a "voyelle d'appui") in constellations such as *CRHC, CHRC, CHRHC, #RHC-, #HRHC-*. Nor does the material allow a straightforward conclusion in all instances. Therefore, we cannot mechanically write *R̥* or *Ṛ* in these constellations. For every individual phonetic context the relevant material must bring the decision.

These considerations must lead to a dichotomy in the treat-

ment of material involving a resonant with an adjacent laryngeal: in a sequence *VRH* or *HRV* the *R* is a consonant, and in these constellations we may consider *R* as *C*, which will be done throughout this book. *R* in this environment will be labelled *R̥* where necessary. In a sequence *XRH* or *HRX* (where *X* is not *V*) we cannot predict whether the *R* is syllabic or non-syllabic and therefore we cannot automatically replace the symbol *R* by *R̥* or *R̩*.

So far we have only met with sequences involving *R*, which served as an illustration of the difficulties that one is faced with if one automatically writes *R̥* or *R̩* without further thought. Apart from *R*, *C* and *H* we must distinguish *I* (=*i*, *u*), which differs from *R* in that an adjacent vowel does not automatically make it non-syllabic, as the material will bear out (cf. e.g. *audĭunt*, *mortŭus*, with vocalic *-i-* and *-u-*). *R*, *I* and *H* have in common that they may or may not be syllabified.

Thus, the following symbols will be applied:

C : a stop (*T*), *s*; and a resonant (*r*, *l*, *m*, *n*) which is adjacent to a *V*;

V : a vowel (*e*, *o*, *ē*, *ō*, not *r̥*, *n̥*, *i*, *u*);

R : a resonant (*r*, *l*, *m*, *n*) which is not adjacent to a *V*; one may distinguish *N* (*n*, *m*) and *L* (*r*, *l*);

I : a glide (*i*/*i̯*, *u*/*u̯*);

H : a laryngeal (h_1, h_2, h_3).

R, *H* and *I* may be vocalic depending on the phonetic context. It must be stressed again that the notation *R* in this book excludes *RV* and *VR*; in the latter two constellations, the resonant falls under the symbol *C*. To give an example of the consequences, *CHR* comprises *CHRC*, *CHRR*, *CHRI*, *CHRH* but not *CHRV*; *CHRC* comprises *CHRT*, *CHRs*, *CHRRV*, but not *CHRRC*, *CHRRI*, *CHRRH*, *CHRI*, *CHRH*, *CRHV*. In practice, not all constellations are reflected in the material.

D. OUTLINE

Bearing in mind the preceding remarks, I have arranged the Latin material according to the PIE. constellations. The development of the laryngeals is discussed with reference to the preceding and the following sounds in the order *C*, *V*, *R*, *I*. Thus *CHC* is discussed before *CHV*, which in its turn is discussed before *CHR* (chapter IV.B); word-initial *HV-* is discussed before *HR-* (II.C and D, resp.), and *HIC-* before *HIV-* (II.E.1 and II.E.2); word-final *-CH* is discussed before *-VH* and before *-IH*

(III.1, 2 and 3, resp.).

Chapters II - IV deal with the development of the PIE. laryngeals in all phonetic contexts that are reflected in Latin. The inner structure is:

Chapter II: laryngeal at the beginning of the word (*#H-*);
Chapter III: laryngeal at the end of the word (*-H#*);
Chapter IV: laryngeal in the middle of the word (*-H-*).

Each of these chapters is subdivided according to the phonetic context of the laryngeal, as was outlined above:

Chapter II: *#HC-* (B); *#HV-* (C); *#HR-* (D); *#HI-* (E).
#HH- falls outside the standard order, and is discussed at the end (F).

Chapter III: *-CH#* (2); *-VH#* (3); *-IH#* (4).
Evidence for *-RH#* is lacking.

Chapter IV: *-CH-* (B); *-VH-* (C); *-RH-* (D); *-IH-* and *-HI-* (E).
HRH falls outside the standard order, and is discussed at the end (F). The few constellations that were not systematically investigated in B - F are discussed in G.

Chapter V deals with various problems in which laryngeals play an important role: loss of laryngeals (A); Dybo's rule of pretonic shortening of long vowels (B); nominal stems in a laryngeal (C); verbal stems in a laryngeal (D); Italo-Celtic and the laryngeals (E).

Chapter VI discusses the possible origins of non-laryngeal *a* in Latin: *a* after pure velars (B); delabialization of **o* to *a* (C); *a* between resonant and media (D); *a* in *CaCCC* (E); Conclusion (F).

Chapter VII offers a summary of the results following the order of presentation in this book.

In the Appendix, the development of PIE. *CHIC* in Greek and Celtic is discussed.

For further subdivisions I refer to the introduction of each chapter.

II. LARYNGEAL AT THE BEGINNING OF THE WORD

A. REMARKS ON PIE. ROOT STRUCTURE

Of central importance for this study is the theory that the minimal structure of the PIE. root is *CeC*, in which *C* comprises all consonants, including the laryngeals, resonants and *i* and *u*. The implication is that a word appearing as e.g. **eḱu-* must actually be reconstructed as PIE. **h₁eḱu-*. Although there is some debate about the "Ausnahmslosigkeit" of this basic constraint on roots, it is generally agreed that almost all roots minimally point to a structure *CeC*. It seems that the few instances that resist the straight-jacket of *CeC*, e.g. Gr. ὄρυμι, ἔρυμι < **(e)rs-ēn* (but see below) may in due course be explained.

A discussion of all instances that point to *eC* rather than *HeC* would lead us too far astray from the actual subject of this book. (The material is given by Beekes 1969, 90, Ruijgh 1971; note also Rix 1970, 102). I shall therefore only refer to the relevant literature cited by Mayrhofer 1986, 123-124 note 108-109 (where the author does not take sides) and Mayrhofer 1987, 95, 97-98 (where he seems to be convinced of the correctness of the constraint).

Since I am inclined for structural reasons to accept the basic minimal structure and since the number of counterexamples is very small, I shall reconstruct every word-initial **e-*, **o-* as **h₁e-* and **Ho-* or **h₃e-*. In the case of word-initial *a-*, the reconstruction of a preceding laryngeal (**h₂-*) is supported by the fact that in PIE. a phoneme */a/* does not seem to have existed, and that every apparent *a-* reflects an **e* coloured by preceding **h₂-* (a complication is formed by alleged *a-* < **h₂o-* in e.g. Greek, but this does not affect the argument). The impact of the reconstruction of laryngeals on structural rather than on etymological grounds will, however, turn out to have little effect on the conclusions in this book.

Lehmann (1951) has attempted to demonstrate that a PIE. root could not begin with *r-* either. Where this seems to be the case, e.g. in Lat. *ruber* 'red' etc., a laryngeal must be reconstructed before *r-*, in this case **h₁-*. The correctness of Lehmann's observation is to a large degree confirmed by Greek, which has a "prothetic vowel" in the cognate of *ruber*, viz. ἐρυθρός < **h₁rudh-ro-*. Similarly, Hittite has no words begin-

ning with *r-*. In Greek, initial ῥ- always reflects **sr-* or **u̯r-*. Counterexamples are rare (see Beekes 1969, 74 and 91). Gr. ἐρι- 'good, very' and ἀρι- 'high, very' do not have a reliable etymology, and cannot be used; moreover, the explanation of these forms on the basis of initial *r-* is just as impossible as on the basis of *Hr-*. The Cypriote cognate of the particle Gr. ἄρα is ἔρ (Hes.); even if the form is reliable, it cannot be used to prove anything because the constraints on the structure of particles were different from those on other roots (cf. e.g. δέ, γέ, **k*^{w}*e* etc.). More important is Gr. ἔρσην (Ion., Lesb., Cret. etc.) beside ἄρσην (ep.), ἄρρην (Att.), ἄρσης (Lac.), which seem to point to **ers-*, **r̥s-*, respectively (Beekes 1969, 91). But ἄρσ- may reflect **u̯r̥s-* (cf. Lat. *verrēs* 'boar', Skt. *vṛ́ṣan-* 'bull'), while ἔρσ- reflects **h*$_1$*(e)rs-* (Skt. *ṛṣabhá-* 'bull'; see Peters 1980, 9, who discusses the instances in Homer which lack a "Digammawirkung"). If so, **u̯r̥s-* cannot be cognate with the root of Skt. *várṣati* 'to rain' because the latter reflects **h*$_1$*uers-*, cf. Gr. ἑέρση 'dew, raindrop'. Note that ἔρσ-/ἄρσ- would also violate the rule that every root should begin with a consonant. Gr. ῥυκάνη 'Hobel' does not have a reliable etymology, and cannot be used. Gr. ῥέζω 'to dye' is cognate with Skt. *rájyati* 'id.', which seems to point to PIE. **reǵ-*. However, the root may have been **(s)Hreǵ-*, in which case the Greek form may have dropped the laryngeal after *s*-mobile (cf. Beekes 1969, 85-87).

It is remarkable that pre-Hellenic loans in Greek which have initial ῥ- treat this as a geminate (i.e. as if from **sr-* or **u̯r-*), e.g. in ῥητίνη, Ῥαδαμάνθυς, which points to the conclusion that single ῥ- < PIE. **r-* did not exist in Greek (Prof. C.J. Ruijgh per litt.).

Despite the fact that a few problems remain, Lehmann's theory is in my opinion correct. It will be applied throughout this book (notably in chapters II.B and IV.F), but instances in which a laryngeal is reconstructed on systematic grounds will very rarely play a role in the discussions. It must be noted that there is no reason to assume PIE. word-initial *r-* rather than *Hr-* on account of Latin.

B. LARYNGEAL BEFORE CONSONANT (*#HC-*)

1. Introduction

It has generally been assumed that a PIE. initial laryngeal before a consonant was dropped without a trace in Latin (see e.g. Mayrhofer 1987, 99-100). Leaving aside the "Trümmersprachen", this loss occurred in every Indo-European language except Greek, Armenian and Anatolian (where the development is in dispute, see esp. Oettinger 1979, 546 ff., Melchert 1984, Eichner 1988, 124, Beekes 1988a, 80). In Greek, $*h_1$- yielded ἐ-, $*h_2$- yielded ἀ- and $*h_3$- yielded ὀ- before any consonant except $*i$ (Beekes 1969, 18-126). In Armenian, the same development as in Greek occurred, but one must bear in mind the subsequent changes in the vocalism (notably the change of $*o$ to $*a$ under certain circumstances, cf. *atamn* 'tooth' < $*h_3d$- (Kortlandt 1987b, 61); but see Greppin 1988, 182 ff. on evidence for the development of $*h_3$- to $*o$-).

Consequently, the evidence for the presence of an initial laryngeal in PIE. largely depends on data from these three languages. Especially the Greek evidence will be used fully because here the development is best attested, and the extensive material is easily accessible on the basis of Beekes' study (1969). If there is a prothetic vowel in Greek or Armenian (or *a-* or *ha-* in Anatolian) and zero in Latin, one may assume that a laryngeal was lost in the latter language.

If Greek, Armenian or Anatolian cognates of a Latin word happen to be absent, there are several ways to establish whether or not an initial laryngeal was ever present.

1. Since every IE. root probably started with a consonant, ablaut of the type *VC-* : *C-* must be reconstructed as PIE. **HVC-* : **HC-*. Therefore, if the Latin member of a given etymon has *C-* whereas some other language has *VC-*, it must be assumed that in Latin an initial laryngeal was lost. Since this reasoning depends on the thesis that every IE. word started with a consonant, which is likely but cannot be proven for every individual instance, the evidence acquired in this way is less strong than in cases where this initial laryngeal can actually be demonstrated. A special case is presented by words with ablaut *C-* : *aC-*. Since PIE. lacked a phoneme $*a$, the presence of Latin *a* (in this case *#a-*) must be attributed to a laryngeal (in this case $*\#h_2e$-).

2. Furthermore, no PIE. root seems to have had initial $*r$-

because no Greek word (except perhaps one, ῥέζω) has initial ῥ- other than from **wr-* or **sr-* (see Lehmann 1951, cf. II.A). Thus, if a Latin word has initial *r-* (not reflecting **wr-* or **sr-*), we may reconstruct PIE. **Hr-*. I have decided not to discuss instances for which there is no independent evidence for an initial laryngeal in the present chapter because nothing seems to be gained from this, the instances can easily be gathered from the dictionaries, and all instances happen to be discussed elsewhere in this book, where they are more relevant: *rabere* (IV.F.1.2.1 no. 1), *rādere* (IV.F.1.2.2 no. 8), *rāpum* (IV.F. 1.2.2 no. 10), *ratis* (IV.F.1.2.1 no. 1), *raudus*, *rōdus* (IV.E. 6.1.6 no. 2), *rēpere* (IV.C.1.5.1 no. 16), *rērī* (IV.F.1.2.1 no. 5), *rēs* (IV.C.1.5.1 no. 18), *rōdere* (IV.F.1.2.2 no. 8), *rudere* (cf. Skt. *róditi*, Lith. *ráudmi*), *rupex*, *ruptiō* (IV.E.2.3.3 no. 7).

3. The development of **i̯-* into Greek ζ- instead of ῾ (*h-*) has been ascribed to the influence of a preceding laryngeal (see Beekes 1969, 95 for a discussion, and Rix 1976, 70, Forssman 1987, 118). Conversely, it has been assumed that **Hi̯-* yielded Gr. ῾. Since the evidence is conflicting, this criterion can (and will) not be used in this book.

4. Lengthening of the augment or of the final vowel of the first member of a compound in Sanskrit indicates that the verbal root or the second member of the compound started with a laryngeal. An example is *ā́sat* 'not being' < **n̥-h₁s-nt*.

Despite the consensus about the loss of an initial ante-consonantal laryngeal in Latin, several scholars have suggested that under certain circumstances a laryngeal yielded Lat. *a-*. This idea will be discussed in section 3.

2. Material

All words with PIE. **#HC-* > Lat. *#C-* will be discussed except those instances of **Hr-* for which there is no independent evidence for **H-*. I have used the material in EM., WH. and Beekes 1969 where Greek, Armenian or Hittite evidence for **HC-* is available, using the criteria outlined above. Furthermore, the few cases with Lat. *C-* corresponding to *VC-* < **HVC-* will also be discussed. The material will be divided according to the quality of the laryngeal which was present: **h₁C-* (section 2.1); **h₂C-* (section 2.2); **h₃C-* (2.3); laryngeal of unknown quality + *C-* (2.4); Conclusion (2.5).

2.1. *h_1C-.

1. *līber* 'free', cf. OLat. *loebertatem* (P.F. 121), Fal. *loifirtato*, reflects *h_1leudh-ero-* in view of Gr. ἐλεύθερος 'free'.

2. A, Ablsg. *mē* 'me' < **mēd* are built on an old Asg. **mĕ*. Cf. *mihi* < **meǵhei*, *meus* < **meios*. These forms reflect PIE. **$h_1$me-*, cf. Gr. ἐμέ, Arm. *im* < **$h_1$me*, Hitt. *amm-uk* < **h_1m-* (Beekes 1987b, 7-12).

3. *novem* 'nine', *nōnus* 'ninth' etc. < **$h_1$neun* must be compared with Gr. **ἐννέϝα*, **ἐνϝα-*, ἐνεν̄η-, Arm. *inn*, which go back to a basic form **$h_1$neun*, **$h_1$nun-* (Beekes 1969, 45).

4. The etymology of *răpĕre* 'to rob, snatch, grab' is not so straightforward as it may seem. Gr. ἁρέπυια, ἅρπυια 'harpy' reflects **$h_2$rep-*, **$h_2$rp-*, cf. ἀν-αρεψαμένη 'grabbed' (v.ll. -αρειψ-, -ερεψ-), see Rix 1970, 86. This root can also be found in Alb. *rjep-* 'to rob' and in Lith. *rẽplės*, OPruss. *raples* (f. pl.) 'pliers', but not in Lith. *ap-rẽpti* 'to take by force', which has acute intonation, and must therefore reflect **Hreh$_1$p-*. Lat. *răpĕre* has *-a-*, which points to a laryngeal. Gr. ἐρέπτομαι 'fressen' probably belongs to the same root, and goes back to **h_1rh_1p-* (thus hesitatingly Beekes 1988a, 92). Consequently, we may reconstruct *răpĕre* as **h_1rh_1p-i-*. It does not belong in the present section. See IV.F.1.2.1 no. 3.

5. WH. combine both *rārus* 'with wide interstices, far apart, rare' and *rēte* 'net' with Gr. ἐρῆμος 'lonely, desolate'. Frisk does not mention the etymology, and Beekes 1969, 36 labels it "very unreliable". EM. s.v. *rārus* adduce Lith. *ìrti* 'to dissolve, fall into ruin' < **(H)rH-*, OCS. *oriti* 'to dissolve, destroy' < **Ho/erH-*; *rēte* is said to lack an etymology.

In any case, *rārus* cannot be compared with ἐρῆμος < **h_1reh_1mo-* because there is no way in which we can explain Lat. *rā-* in view of the fact that **HrHC-* yielded Lat. *RăC-* (see IV.F.1.3). A connection with the Baltic and Slavic forms is no more than a possibility and requires the assumption of Schwebeablaut. If this is correct, *rārus* can be reconstructed as **Hreh$_2$ro-*. On the other hand, the BSl. forms may be cognate with ἐρῆμος, which is semantically possible, and in that case the connection of *rārus* with the BSl. forms cannot be maintained. Evidence for the initial laryngeal in *rārus* is in this case based on theoretical considerations.

The connection of *rēte* and *rārus* must be given up on

formal grounds, and that of *rēte* and ἐρῆμος on semantic grounds. It is doubtful whether Goth. *arms* 'poor' fits in semantically and formally (**h₁orH-mo-*?).

6. Lat. *rēmus* 'oar' is cognate with Gr. ἐρέτης, Skt. *aritár-* 'rower' < **h₁erh₁-*. Since the root can neither start with *r-* nor with a vowel, *rēmus* must go back to **h₁reh₁smo-* (cf. OLat. *triresmom*). If Gr. ἐρετμόν 'oar' reflects zero grade **h₁rh₁-tmó-*, cf. the zero grade in Lith. *ìr-klas* 'id.', there is independent proof for the initial laryngeal.

7. *rīpa* 'bank, shore' has generally been connected with Gr. ἐρείπω 'to throw down, fall down', -ερήριπε (< **h₁re-h₁rip-*, Beekes 1969, 116 ff.), OIc. *rífa* 'to demolish, tear down'. Gr. ἐρίπνη 'slope' offers a good semantic parallel for *rīpa*. Frisk accepts this etymology, but EM. hesitate. It seems a good possibility that *rīpa* reflects **h₁reip-*.

8. *rŭber* 'red' (with *-ŭ-*, not *-ū-*, see *Oxford Latin Dictionary* s.v.!) is cognate with Gr. ἐρυθρός 'red' < **h₁rudh-ró-*, Lith. *raũdas* 'red' etc. The full grade root is attested in (dial.) *rūfus* < **h₁roudh-o-*, cf. Lith. *raũdas*, OIc. *rauðr*. The root must be reconstructed as **h₁reudh-*.

9. *rūgīre* 'to roar' belongs to an onomatopoetic root also found in Gr. ἐρεύγομαι 'id.' < **h₁reuǵ-* (palatal **-ǵ-* because of the presumed connection with 10.; Beekes 1969, 36). A root in **-k* is found in OHG. *rohon* < **ruhōn*, OE. *ryn* < **ruhjan* 'id.' < **h₁ruk-*.

10. *ē-rūgō* 'to belch out' < **Hreuǵ-*, cf. no. 9. Arm. has *orcam* < **orucam*, which probably reflects **erucam* < **h₁ruǵ*; both **h₂ruǵ-* and **h₃ruǵ-* would probably have yielded Arm. *arc-*, the latter via **oruc-* > **aruc* (see Kortlandt 1983b, 10 and 1987a, 61 for **o* > **a* in open syllables).

11. OLat. *siem*, later *sim*, *sīs*, *sit* etc., pres. *sum*, *sumus*, *sunt*: these forms reflect the zero grade of the root **h₁s-* 'to be'. The initial laryngeal is reflected in Skt. *ásat* 'not being' < **n-h₁s-nt* (Mayrhofer 1987, 98), Gr. εἶην < **h₁s-ieh₁-m*, Myc. *e-e-si*, ἔhενσι < **h₁s-énti*, Hitt. *ašanzi* < **h₁sonti* << **h₁senti*.

2.2. **h₂C-*.

12. The connection of *gerĕre*, *gessī*, *gestum* with the root **h₂eǵ-* 'to drive' goes back to Osthoff (*BB*. 19, 321). EM. do

not even mention it, and WH. have reservations regarding its correctness. The pair *$h_2eǵ$-, *$h_2ǵ$-*es*- is probably paralleled by *h_2euh_1-, *h_2uh_1-*es*- in Gr. αὐλή vs. Hitt. *ḫuiš-zi* 'lives' (see Barton 1988, esp. 54-55). *gerere* is a possible case of **HC*-.

13. The connection of Lat. *grex* 'herd' with Gr. ἀγείρω 'to gather' cannot be dismissed altogether because in Mycenean ἀγέρω and ἀγορᾱ́ 'market-place' are used in connection with herds (Prof. C.J. Ruijgh per litt.). However, the assumption that *h_2ger- lies at the basis of *grex* does not explain the root-final *-g-* of the latter and only has the value of a root-etymology. ἀγείρω is said to have no cognates outside Greek (Frisk s.v., Beekes 1969, 49). For both formal and semantic reasons, *grex* must rather be compared with Gr. γάργαρα 'group of people', γέργερα· πολλά (Hes.), which do not have a reflex of an initial laryngeal. The alternation in the vocalism may give reason to assume a non-IE. origin for the Greek forms. However, Lith. *gurgulỹs* 'Wirrwarr von Fäden, dichter Schwarm' and *gùrguolė* 'Menge, Masse' < *$g^{(w)}rg^{(w)}$- point to a stem-formation similar to the one found in Latin and Greek, which would mean that the etymon goes back to PIE. These forms do not point to a laryngeal, however. MIr. *graig* 'herd of horses' may be a loan from Latin (**gregem*).

14. It is not easy to decide to which IE. root Lat. *līnĕre, lēvī, lītum* 'to besmear, rub' belongs. Semantically and formally closest is Gr. ἀλῑ́νω (Hes.) 'to besmear' < *h_2li-*n*-$i\bar{o}$, Epid. ἀλινοις, Cypr. ἰν-αλᾱλισμένα (thus Frisk and EM. ad locc.). On the basis of the short vowel of Lat. *lītum* we must assume that the root did not have a final laryngeal. Thus, *līnere* reflects a root *h_2li-.

The group of Skt. *linā́ti* (Gramm.), *lā́yate, līyate* 'to bend down, duck, cower, cling to', Gr. λιάζομαι 'weiche aus, sinke hin', λίναμαι· τρέπομαι (Hes.), Goth. *af-linnan*, OHG. *bi-linnan* 'weichen' must be kept apart, as these forms point to *lih_2-. The Germanic forms probably have *-*nn*- < *-*nH*- according to the rule formulated by Rosemarie Lühr 1976, at least if this is correct (see Beekes 1988a, 97, Polomé 1988, 404 note 13). The distinction between these two roots is supported by the semantics. Actually, a third root must be distinguished on formal grounds, in words meaning 'smooth' (Lat. *lēvis*, Gr. λεῖος, λῑτός, λῑ́ς < *leh_1i-, see IV.E.7.3.1.1 no. 2).

Difficulties arise if one wishes to classify OIr. *lenaid* (Sg.

54a 8) 'to continue, follow, stay attached to', *as-lenaimm* 'besmear, defile', which are the exact formal parallels of Skt. *liṇāti* but semantically rather belong to Lat. *lĭnĕre* (unless the Skt. meaning 'cling to' and the Irish meaning 'stay attached to' are original, which is doubtful in view of the meaning of the Greek cognates; cf. Pedersen 1913, 566, who connects all forms). This does not affect the interpretation of Lat. *lĭnĕre*.

15. According to EM. and WH., Lat. *mergae* 'a two-pronged pitchfork, with which corn, when cut, was made into heaps', *merges*, *-itis* 'sheaf' can be connected with Gr. ἀμέργω 'to pluck, pull, harvest, squeeze out'. Frisk thinks that this is uncertain (if the original meaning of the Greek verb is 'to squeeze', his reservation is certainly justified), and Beekes 1969, 43 notes that ἀμέργω has no cognates outside Greek. EM. assure that the forms are not of IE. origin. Thus, a reconstruction **h₂merǵ-* is uncertain.

16. Lat. *merus* 'pure' has been connected with Gr. ἀμαρύσσω, μαρμαίρω 'to shine'. Beekes 1969, 72 considers a non-IE. origin for the Greek words. In any case, there is no certain evidence for an initial laryngeal.

17. *metĕre*, *messuī*, *messum* 'to mow, harvest' is identical with Bret. *mediñ* 'id.' < **met-*. This root may perhaps be connected with **h₂meh₁-* in OHG. *māen*, OE. *māwan* 'to mow'. The initial laryngeal is shown by Gr. ἀμάω (most likely a denominative of ἄμη 'shovel' < **h₂m(h₁)-eh₂-*) 'to mow', ἄμητος 'harvest-time'. In any case an analysis **h₂m-et-* (thus EM., who label the suffix a present marker), **h₂m-eh₁-* only has the value of a "Wurzeletymologie" and is therefore unreliable.

18. *meāre* 'to go, pass' < **mei-*, *mūnis* 'ready to be of service', *mūnus* 'service, office, work' < **moi-n-*, *mūtāre* 'to move away, change' (probably based on a substantive **moi-to-*) and *migrāre* 'to depart, migrate' (based on **mig-ro-*, with a Wurzelerweiterung) are forms of the root **mei-* 'change' (see Pokorny IEW. 710 for further cognates). Gr. ἀμείβω probably belongs to the same root, although several scholars have expressed some reservation (e.g. Frisk s.v., Beekes 1969, 43). If so, the root had initial **h₂-*. Note that *migrāre* probably contains the same root form **h₂migʷ-* as ἀμείβω.

19. *mollis* 'soft' < **mldu-i-* must be compared with Skt. *mṛdú-* and with Arm. *meɫk* 'id.' < **meld-u-*, which lacks a prothetic vowel. The root was therefore **meld-*, not **h₂meld-*

as could be reconstructed on the basis of Gr. ἀμαλδύνω 'to soften' (derived from *ἀμαλδύς; cf. ἀμαλός 'weak', Chantraine s.v.). Compare esp. Gr. βλαδύς and also Gr. βλαδαρός and μαλθακός (with enigmatic -θ-), which, if all forms ultimately belong together, reflect a root that lacks an initial laryngeal. ἀμαλδύνω remains unexplained.

20. *movēre, mōvī, mōtum* 'to move' may be compared with Gr. (aor.) ἀμεύσασθαι 'to pass, move oneself', which points to initial *h_2-. See further VI.C.1.2.3 no. 7.

21. *mucrō* 'point of a sword' has usually been compared with Gr. ἀμυκάλαι· αἱ ἀκίδες τῶν βελῶν (Hes.). The latter has been connected with Gr. ἀμύσσειν 'to tear apart', ἀμυχή 'cut, wound', ἄμυγμα 'tearing apart' (with *-*ǵh*-, palatal quality uncertain), Lith. *mùšti* 'to hit' (with *-*k*-), which is uncertain (Frisk s.v.; note that the velars do not match). Some connection between the Greek and Latin forms seems inevitable, but it is doubtful whether one is justified to claim an IE. origin for these words. Note also that the formation of *mucrō* is obscure.

22. *mulgēre, mulsī, mulctum* 'to milk' may be compared with Gr. ἀμέλγω, OE. *melcan* 'to milk' < *h_2*melǵ*-.

23. *nepōs* 'grandson', *neptis* 'granddaughter' reflect *h_2*nep-t*- in view of Gr. ἀνεψιός < *h_2*nep-t-io*-. Less likely Benveniste 1969, I 234, who reconstructs **sm-nept*- in view of the obscure gloss νεοπτραι· υἱῶν θυγατέρες (Hes.; read as νεπο-).

24. *Nerō, neriōsus* 'strong' must in view of Gr. ἀνήρ and Arm. *ayr* 'man' go back to *h_2*ner*-.

25. *pirus* 'pear-tree', *pirum* 'pear' < **piso*- is cognate with Gr. ἄπιος 'pear-tree', ἄπιον 'pear' < **apiso*-. It is generally agreed that this etymon goes back to a substratum, the only reason for which seems to be the limited distribution of the words. As Steinbauer pointed out (1989, 68-69), a reconstruction *h_2*piso*- is perfectly possible, and there is no a priori reason other than the limited distribution why the word cannot be of PIE. origin.

26. *po*- < *h_2*po*-, cf. Gr. ἀπό.

27. Rix (1970, 86-87) has unearthed the connection of Lat. *neg-legere* 'to neglect, heed not', *intel-legere* 'to understand', *dī-ligere* 'to esteem highly', *rē-ligiō* 'religious

scruples, reverence' with Gr. ἀλέγω 'to heed, care'. According to Frisk this is very uncertain. EM. connect the Latin forms with *legere* 'to gather', except *rē-ligiō*, which could be cognate with *ligāre* 'to bind'. Rix' connection seems superior to that of EM. as far as *neglegere* and *dīligere* are concerned, but two objections must be made: (1) *intel-legere* and *neg-legere* have *-e-* instead of *-i-* in the root-syllable, which means that they are recent compounds, or compounds in which the vocalism was restored after the simplex. Given the absence of the simplex in Latin, these forms are difficult to account for. (2) In view of Gr. ἄλγος 'pain, grief', ἀλεγεινός 'painful', ἄλγιστος 'with utmost difficulty', the original meaning of ἀλέγω might rather be 'to feel pain, trouble' than 'to heed' (thus Frisk s.v.). As to the semantics, cf. Engl. 'to trouble oneself, take pains'. In that case, the semantic link with the Latin forms does not impose itself.

I conclude that the connection of Lat. *-legere*, *-ligere* with Gr. ἀλεγ- < *h_2leg- is far from certain.

28. *rītus* 'rite' has generally been connected with Gr. ἀριθμός 'number' < *h_2ri-*dhmo*-, νήριτος 'countless' < *n-h_2ri-*to*- (Beekes 1969, 108). OHG. *rīm* 'number, series', Olr. *rím* 'counting, number', OBret. *eirimotor* 'is counted' etc. seem to point to *h_2riH-, with a final laryngeal which cannot be accounted for on the basis of Greek. If the Celtic form is a loan from Germanic, we may reconstruct *h_2rei-. If so, *rītus* reflects *h_2rei-*tu*-. In any case, the initial laryngeal is certain.

29. *spernere*, *sprēvī*, *sprētum* 'to despise, sever' is probably cognate with Gr. ἀσπαίρω (Hom.), ἀσπαρίζω (Arist.) 'to flounder'. But one also finds σπαίρω (Arist.). The verb cannot be a substratum word because its morphology is thoroughly Indo-European, and there are more cognates: Lith. *spìrti*, Skt. *sphuráti* 'to push, kick away' < *$sprh_1$-. The original meaning may be 'to kick away'. The evidence for an initial *h_2- is doubtful. Prof. Ruijgh informs me that ἀσπαίρω may reflect reduplicated *σα-σπαρ- (with psilosis), cf. the expressive reduplication in καχλάζω, παφλάζω.

30. The connection of *spolium* 'spoil, hide, stripped off armour' with Gr. σπάλαξ, ἀσπάλαξ 'mole' (also (ἀ)σφ-) cannot be taken seriously. There is no evidence for an initial laryngeal. The Greek words probably are not of IE. origin (Beekes 1969, 72).

31. *stēlla* 'star' clearly reflects *$*h_2stēr$-*, cf. Gr. ἀστήρ, Arm. *astł*, Hitt. *ḫašterza-*.

32. *sturnus* 'starling' can be connected with OE. *stær*, OHG. *star*, OIc. *stari* 'id.' < **stor-*. If Gr. Thess. ἀοτραλός 'starling' (Hes.) is cognate (in which case it reflects *$*h_2str$-n-lo-*, with the same *n*-suffix as in Latin (see Frisk s.v.), or *$*h_2str̥$-lo-*), we may reconstruct a PIE. stem *$*h_2ster$-*. However, the formation of the Greek form does not look particularly Indo-European in view of the sequence of resonants.

2.3. *$*h_3C$-*.

33. *dēns*, Gsg. *dentis* 'tooth' reflects *$*h_3dnt$-*, cf. Gr. ὀδών, Arm. *atamn* 'tooth' < *$*h_3d$-*. Aeolic ἔδοντες is due to the influence of ἐδ- 'to eat' (Beekes 1969, 55, also with reference to Gr. νωδός 'toothless' and Gr. αἰμ-ωδέω 'to have stump teeth').

34. *lĭber*, Asg. *lĭbrum* 'bark, book' is considered to reflect **lubros* (cf. the unrounding of **ou* in *līber* < **leib-* < **loib-* < **loub-* < **$h_1$leudh-*), but this form is not attested. If the reconstruction is correct, it must be combined with other words for 'bark': Alb. *labë* < **loub(h)-*, OHG. *louba* 'Schutzdach aus Rinde' < **loubh-*, Lith. *lúoba* (< **loub-*, with acute as a result of Winter's law?), *lubà* 'Brett der Zimmerdecke' (< **lubh-*), Russ. *lub* < **loub(h)-o-*. Gm. **lup-* (< **lub-*?) means 'wooden cask, basket' (e.g. OIc. *laupr*), and is semantically remote. Cf also Lith. *lùpti* 'to peel', which points to **lup-*; **lubh-* meaning 'herb, leaf' is found in Celtic (e.g. OIr. *luib*) and Germanic (e.g. OE. *lēaf*, which if one does not consider the semantics may alternatively reflect **lup-*), and may for semantic reasons be considered a different etymon.

All these forms have been connected by Pokorny IEW. 690, despite the formal and semantic differences. Gr. ὀλούφω 'to peel, take off' has been connected with the root for 'bark'. Frisk calls this "sehr erwägenswert". Any connection of ὀλούφω with Gr. ὀλόπτω and λέπω, which have approximately the same meaning, is difficult on formal grounds (thus also Frisk s.v.). According to Beekes 1971, the whole etymon is not of Indo-European origin, mainly on the basis of the formal problems which arise if we connect all forms adduced by Pokorny. Especially the rich variety displayed by the Baltic forms renders a connection of difference in form with difference in meaning

difficult. The possibility of a substratum origin cannot be dismissed. Thus, the reconstruction of *liber* as **h₃lubh-ro-* is doubtful.

35. *mingere, meiere* (< **meiǵh-iō*) 'to piss' has been connected with Gr. ὀμείχω 'id.', which probably reflects **h₃meiǵh-* (Beekes 1969, 43, 74, Mayrhofer 1987, 100). As both authors note, the gloss Gr. ὄμῖξαι· σὐρῆσαι presents a problem as far as the quality of the initial laryngeal is concerned. Arm. *mēz* 'piss', *mizem* 'to piss' is probably a loan from Persian in view of the lack of a prothetic vowel and the formation of *mēz*, which is only attested in Aryan (R. Schmitt 1983, 108-109 following Benveniste).

36. *nōmen* 'name' must in view of Gr. ὄνομα < **h₃nh₃mn* reflect **h₃neh₃mn*. For a discussion of these and other forms I refer to Beekes 1987b, 1-6.

37. *regĕre* 'to keep straight, guide, rule', *rēx* 'king' etc. have of old been connected with Gr. ὀρέγω 'to reach after', Skt. *ŕjyati* < **h₃r(e)ǵ-* (Beekes 1969, 37).

38. *ir-rītāre* 'to incite, stimulate, irritate' has been compared with Gr. ὀρίνω 'to incite' < **h₃ri-*, which may be an enlargement of the root **h₃r-* 'to move' (WH.). This connection is not accepted by EM. Nevertheless, it seems a good possibility, even though *irrītāre* has no formal parallels in other languages. If it can be upheld, *-rītāre* goes back to **h₃rei-*.

39. With the same root is connected Lat. *rīvus* 'brook, stream' < **h₃riH-* or **h₃reiH-*, cf. Skt. *riṇáti* 'let stream, run', OCS. *rinǫti* 'to precipitate' and OIr. *ríathor*, W. *rhaeadr* 'torrent' < **h₃riH-etro-*. The evidence for *h₃-* is based on the root etymology (cf. Beekes 1969, 38).

40. *rūga* 'wrinkle' has been connected with Gr. ὀρύσσω 'to dig', which has a stem ὀρυχ-. Semantically, the etymology is not self-evident, but it is accepted by Beekes 1969, 39. EM. do not even mention the possibility. Lith. *raũkas* 'wrinkle' has **-k-*. Uncertain.

41. *ruĕre, ruī, rŭtum* 'to rush down, tumble, go to ruin, hasten' is a clear cognate of Gr. ὀρούω 'sich schnell erheben, losstürzen' < **h₃rou-* (Beekes 1969, 38). This root must not be confused with **(H)ruH-*, which has a basic meaning 'to dig', e.g. in Lat. *rūta caesa*, OCS. *ryti* (see IV.E.2.3.2 no. 22).

2.4. Larygeal of unknown quality + *C-*.

42. *merula* 'blackbird' < **mesol-* is cognate with W. *mwyalch* 'id.' < **mesalkā*. OHG. *amsla*, OE. *ōsle* (f., *n*) 'id.' reflect **ams-l-n-* (for OHG. see Lloyd-Springer 1988, 212). If they are cognate, the Germanic forms reflect **Hems-* or **Homs-* because an IE. word could not begin with a vowel. If so, the Latin and British words have **Hmes-*. Very uncertain. One may think of non-IE. origin.

2.5. Conclusion.

A word-initial anteconsonantal laryngeal has disappeared without a trace in the following instances.

probable	possible	doubtful
1 *līber* <**h₁leudh-*	5 *rārus* <**Hreh₂-*	5 *rēte*
2 *mē* etc. <**h₁me*	7 *rīpa* <**h₁reip-*	13 *grex*
3 *novem* <**h₁neun*	10 *ē-rūgō* <**h₁reuǵ-*	16 *merus*
6 *rēmus* <**h₁reh₁s-*	12 *gerō* <**h₂ǵes-*	19 *mollis*
8 *ruber* <**h₁rudh-*	14 *linō* <**h₂li-*	21 *mucrō*
9 *rūgiō* <**h₁reuǵ-*	15 *mergae* <**h₂merǵ-*	29 *spernō*
11 *sum* etc <**h₁s-*	17 *metō* <**h₂met-*?	30 *spolium*
22 *mulgeō* <**h₂molǵ-*	18 *meō* <**h₂mei-*	32 *sturnus*
23 *nepōs* <**h₂nepōt-*	20 *moveō* <**h₂meu-*	34 *līber*
24 *ner-* <**h₂ner-*	25 *pirus* <**h₂piso-*	40 *rūga*
26 *po-* <**h₂po-*	27 *-legō* <**h₂leǵ-*	42 *merula*
28 *rītus* <**h₂rei-*	38 *ir-rītō* <**h₃rei-*	
31 *stēlla* <**h₂stēr-*	39 *rīvus* <**h₃r(e)iH-*	
33 *dēns* <**h₃dnt-*		
35 *mingō* <**h₃mi-n-ǵh-*		
36 *nōmen* <**h₃neh₃mn*		
37 *regō* <**h₃reǵ-*		
41 *ruō* <**h₃ru-*		

3. Supposed vocalization of the laryngeal in *#HC-*

3.1. Introduction

According to Meiser 1986, 36 and 91, 105, *#HC-* could yield Italic **aC-* under certain circumstances. Allegedly, it seems possible that the laryngeal was vocalized before a morpheme boundary. Peters suggested (1980, 42, followed by Steinbauer 1989, 132) that an initial laryngeal was vocalized in a monosyllabic form (not counting the laryngeal as a syllable).

It may be stated forthwith that by formulating a rule on

the basis of morphological criteria, as Meiser seems to conceive of, one withholds from this rule the status of a phonetic development. In other words, the development of *HC-* to *aC-* before a morpheme boundary cannot be considered a permissible formulation of a sound law. On the other hand, this formulation can be descriptively adequate in that it covers all instances involved. If this seems to be the case, one must search for a morphological reason, in other words, for a reformulation in terms of analogy.

Monteil 1973, 65 considers the possibility that **HT-* (*T* = a stop) yielded *aT-*. His only example is *āctus*, the ppp. of *agĕre*.

We now turn to the material.

3.2. Material.

All forms with initial *a-* in Latin which were claimed to belong to roots with initial **h₁-* or **h₃-* will be considered. Moreover, forms with initial *aC-* which we have sound reason to believe reflects zero grade **h₂C-* may be considered as well, but often the possibility that a full grade is introduced here (e.g. in *āctus* after *agere* < **h₂eǵ-*) suffices to discard these instances as evidence for the vocalization of **h₂-*.

1. According to Monteil 1973, 65, *āctus* < **ăgtos* could go back to **h₂ǵ-to-* because the *to*-participle originally had a zero grade root. However, as he himself admits, full grade *ag-* < **h₂eǵ-* could easily have been introduced from the present. Analogical full grade is often encountered in the participle, cf. *nōtus*, *sprētus*, *crētus*, *-plētus*, *mōtus*.

2. *āiō* 'I say' (=*ăiiō*) < **ăg-i̯ō*, *ad-ĭgō*, subj. *ad-āxim*, *ad-agiō* 'saying' (*-ā-*?) points to Proto-Italic **ăg-*; cf. U. Npl. *AIU* /ayå/ 'Spruch' < **ag-i̯o-* (Meiser 1986, 205). The long vowel of *ad-āxim* may be explained by Lachmann's law (see IV.C.1.4.2). That of *ad-agiō* (if it is long at all) may be analogical, after the type *com-pāgēs*, *con-tāgēs*, cf. analogical *amb-āgēs* of the root **h₂eǵ-* 'to drive' (see esp. IV.C.1.3.6.3).

The Italic verbs **ag-iō*, **-ag-ō* must undoubtedly be compared with the Greek athematic imperfect ἦ 'he said' < **ēgt* < **h₁e-h₁eǵ-t* (in which **h₁e-* is the augment). As to **h₁*, cf. Gr. Dor. ἠτί 'says' (which is based on the 3 sg. imf.). The Gr. perfect ἄν-ωγα reflects reduplicated **-h₁e-h₁oǵ-* (Rix 1976, 204). Whether Arm. *asem* 'say' is cognate is less clear, as it presupposes **-ḱ-*. Arm. *aṙ-ac* 'proverb' may reflect **-h₁oǵ-*.

Since Greek points to a PIE. root *$h_1ǵ$-, we are faced with the problem of how Italic *ag- can be explained. Since $i\bar{o}$-presents generally have a zero grade root, *$ăg$-$i\bar{o}$ most likely reflects *$h_1ǵ$-ioH, in which the initial *h_1- seems to have been vocalized. However, we should consider the possibility that the root was actually *$h_1eh_1ǵ$- (> Gr. *ἠγ-), and that $\bar{a}i\bar{o}$ reflects the zero grade *$h_1h_1ǵ$-. This reconstruction faces two problems. Roots containing the same phoneme twice in adjacent position (type $C_1C_1(C_2)$) are very rare (*ses- 'sleep'); this would point to the idea that $h_1eh_1ǵ$- in fact reflects reduplicated *h_1e-$h_1ǵ$-, which implies that the verb reflects an old perfect, which is unattractive for semantic reasons (but compare Skt. perf. $\acute{a}ha$ 'he said' < *h_1e-$h_1(o)dh$-e). The second problem is that it seems phonetically unlikely that *$h_1h_1ǵ$- (i.e. a sequence of two glottal stops) was maintained over a longer period of time (this problem also concerns $apīscor$, no. 3. below). If, as could be expected, *$h_1h_1ǵ$- would have yielded *$h_1ǵ$-, we are faced with the same problem as we were at the outset: how did *$h_1ǵ$- yield $\bar{a}i\bar{o}$?

According to Lindeman 1972, 155-157, $\bar{a}i\bar{o}$ < *$ag\underline{i}\bar{o}$, beside which he posits a perfect stem *$\bar{e}g$-, replaces *$eg\underline{i}\bar{o}$ after $faci\bar{o}$, $f\bar{e}c\bar{i}$, $iaci\bar{o}$, $i\bar{e}c\bar{i}$, $capi\bar{o}$, $c\bar{e}p\bar{i}$. This seems most improbable. There is no compelling reason to replace an *$eg\underline{i}\bar{o}$, *$\bar{e}g$-ai: cf. $em\bar{o}$, $\bar{e}m\bar{i}$, $sedeō$, $s\bar{e}d\bar{i}$, $veni\bar{o}$, $v\bar{e}n\bar{i}$, $leg\bar{o}$, $l\bar{e}g\bar{i}$, $fodi\bar{o}$, $f\bar{o}d\bar{i}$. Also, the perfect *$\bar{e}g$-ai is entirely hypothetical. Note that in $capi\bar{o}$, $c\bar{e}p\bar{i}$ (root *kh_2p-, cf. Gr. κάπτω) and $ag\bar{o}$, $\bar{e}g\bar{i}$ (root *$h_2eǵ$-) it is the perfect, not the present, which has been replaced; these forms are therefore not parallel. Benveniste's proposal (1949, 16ff.) that $api\bar{o}$, $(co\text{-})\bar{e}p\bar{i}$ replaces *$epi\bar{o}$, *$\bar{e}pai$ is equally hypothetical and cannot be adduced as corroborative evidence (on these forms see no. 3. below). As was said above, one expects a zero grade root in the $i\bar{o}$-present.

Alternatively, one might assume that *$ag\underline{i}\bar{o}$ replaces regular *g-$i\bar{o}$ < *$h_1ǵ$-$\underline{i}\bar{o}$ after $faci\bar{o}$, $iaci\bar{o}$. This presupposes that the paradigms of $faci\bar{o}$, $iaci\bar{o}$ and *g-$i\bar{o}$ contained morphologically identical forms, which brings us back to Lindeman's hypothetical perfect *$\bar{e}g$-ai. Since the latter has not left any trace in Italic, the whole construction is hypothetical, but possible.

Another possibility is that the a- of $\bar{a}i\bar{o}$ arose in compounds with a preverb ending in a consonant, i.e. h_2et-$h_1ǵ$- > ad-$ĭg\bar{o}$, in other words that $ai\bar{o}$ is a decompound. It must be noted, however, that $ai\bar{o}$ belongs to the $capi\bar{o}$-subgroup of the

third declension (cf. 2 sg. *aĭs*), and that *adĭgō* is an *e/o*-verb. Compounds of *aiō* do not exist.

In VI.D.3 it will be proposed that **ag-i̯ō* regularly arose from **h₁ǵ-i̯oH*, where the glottalic consonant **ǵ* played the decisive role (cf. *magnus* < **mǵ-no-*). Since all instances of the *magnus*-type involve (vocalic) resonants and *aiō* does not, an exact parallel for the development of the latter is lacking. This may not be decisive, however.

The other possibilities which were mentioned in the introduction to this section are discussed in section 3.3 below.

3. *apīscor* 'to obtain, reach', perf. *coepī* (< **co-ēpī*) 'begin'. These forms have generally been connected with *apiō* 'to connect, join together', *aptus* 'connected, fitting', Hitt. *ēpmi*, 3pl. *appanzi* 'to take, grab' and Skt. *āpnóti* 'to reach, overtake'. Oettinger 1976, 124 separated *aptus* from *apīscor* and *apiō*, and connected the former with Hitt. *ḫapp-* 'to join, match' and the latter two with *ēpmi*. The connection of *aptus* with *ḫapp-* is indeed irreproachable, but it is in my opinion semantically unattractive to separate *apiō* from *aptus*, and I would therefore propose to connect both *aptus* and *apiō* with *ḫapp-* < **h₂ep-* 'to attach, join'. The question arises whether *apīscor* and *coepī* belong to this same root (thus Puhvel 1984, 282, who suggests that **ēpī* in *coepī* is secondary, like *ēgī* of *agō* < **h₂eǵ-*). This will not do for semantic reasons because the meaning of *apīscor* differs sufficiently from that of *apiō*, Hitt. *ḫapp-*, and *coepī* hardly goes back to 'I have joined, fitted'. As far as I can see, the interpretation of *coepī* as 'I have obtained > I begin' is undoubtedly preferable. I see no semantic reasons, as Puhvel does, to separate *apīscor*, *coepī* and Skt. *āpnóti* from Hitt. *ēpmi*.

According to Oettinger 1979, 88, Hitt. *ēpmi*, *appanzi* goes back to a static paradigm of the Narten type, **h₁ēp-ti*, **h₁ep-nti*. The lengthened grade is presumably also attested in Skt. *āpnóti*, Av. *āpana-* 'Gewinn'. Arm. *unim* 'I have' is said to be based on a noun **h₁ōp-no-*. Two objections must be made.

a. The scanty remains of the static inflection are mostly found in Indo-Iranian (e.g. Skt. *tā́ṣṭi*, 3pl. *tákṣati*), where they soon dwindled, giving way to a thematic inflection with full grade of the root (3sg. *tákṣati*). For *āpnóti*, there is no trace of a static inflection in Indo-Iranian. Moreover, *āp-* is found in all verbal forms and all derived nouns, leaving aside

the few forms in *īp-*, and there is no trace of *ăp-* in Sanskrit (on *ăp-* < **h₁ep-* in Avestan see Mayrhofer EWaia 167). This is contrary to what one would expect on the basis of the type *tákṣati*. The original locus of *āp-* in Skt. is the perfect, not the present (Mayrhofer EWaia. s.v.)
b. Av. *āpana-* is a nominal form, and Arm. *unim* may perhaps be derived from a nominal form. It is unlikely that the lengthened grade of the singular of the paradigm of a verb that is not attested in these languages has been introduced into the nominal forms, especially in view of the general tendency that traces of the lengthened grade forms of Narten presents are lost.

Thus, the assumption of static **h₁ēp-* has little to recommend itself. It may alternatively be supposed that the long vowel originated from vowel + laryngeal, in other words, that IIr. *āp-*, Hitt. *ēp-* and Lat. *-ēp-* reflect **h₁eh₁p-*. The idea immediately comes to mind that this may originally be a reduplicated form, i.e. an old perfect **h₁e-h₁p-*. It must be noted that the oldest verbal form in Sanskrit is the perfect stem *āp-*, which reflects reduplicated **h₁e-h₁(o)p-* (thus Mayrhofer, EWaia 167). The present *āpnóti* (AV) was evidently based on non-present *āp-*. Perhaps Av. *āpana-* and Arm. *unim* are also based on the perfect stem **h₁e-h₁op-*.

Turning now to *apīscor*, this may reflect (originally reduplicated) **h₁ḫ₁p-* (see II.F.1). As in the case of *āiō* (< **h₁h₁ǵ-*), one might object that it is phonetically unlikely that a cluster **h₁h₁-* would have arisen in the first place. I would therefore prefer to regard *ap-* as an analogical form, based on **ēp-* according to the equation **ēp-* : x = *fēc-* : *fac-*, x = *ap-* (in which *ap-* replaces **p-* < **h₁p-*).

4. *asser*, *aser*, *assyr* 'blood', *assarātum* 'drink of blood and wine' is probably cognate with Gr. ἔαρ, Hitt. *ešḫar*, Toch. A *ysār*, B *yasar* < PToch. **yəsar* < **h₁esHr*, Skt. *ásṛ-k* < **h₁esHr*. However, in view of the vacillating vocalism of the second syllable and the intervocalic *-s(s)-*, *asser* etc. is probably not of Latin origin. It cannot therefore be used to show that *ass-* originated from **h₁s-* in Latin (moreover, one expects full grade **h₁es-* in the basic form).

5. *aper*, Gsg. *aprī* 'boar; kind of fish' (cf. U. Apl. *abrof* etc.) is cognate with OHG. *ebur* etc. < PGm. **eƀuro-* and probably also with Thrac. ἔβρος 'buck' and OCS. *veprъ* 'boar' (with obscure *v-*). That Gr. ἔπερος 'woolly (of sheep); ram' belongs here is less obvious (see Frisk s.v.).

The Germanic form points to an *r*-stem $*h_1epr̥ > *eƀur$. One might assume that *aper* resulted from $*h_1pr-o-$, with vocalization of $*h_1$. If so, the vocalization is reminiscent of the early (i.e. Italo-Celtic) vocalization of a laryngeal before stop + consonant in a constellation *CRHTC-* which is discussed in chapter IV.D.1.3.4. But since exact parallels which would legitimate a sound law are lacking, this suggestion is highly hypothetical.

It has been assumed that the *a-* of the Italic forms was taken from *caper* 'buck' (see IV.B.1.4.2.1 no. 5; WH. s.v.). This assumption, though a shot in the dark, cannot be ruled out altogether.

6. According to Peters 1980, 42, the paradigm of the word for 'bird' contains a stem of the shape $*h_2uei-$, $*h_2uoi-$, $*h_2ui-$, cf. Skt. Nsg. *véḥ*, Gsg. *véḥ* 'bird' (< $*h_2uoi-s$, $*h_2uei-s$, Schindler 1969), *váyas-* 'poultry', and not $*h_2eui-$. He follows Schindler 1969 in reconstructing Arm. *haw* as $*h_2ueis$ or $*h_2uois$ (with h_2- in view of Gr. αἰετός). Consequently, Lat. *avis*, U. Apl. *AVIF* must then be reconstructed as $*h_2ui-$, with vocalization of anteconsonantal $*h_2$-, apparently in monosyllabic forms (i.e. not counting the laryngeal as a syllable). I am inclined to consider the Skt. paradigm as secondary, the result of the replacement of $*h_2eui-s$, Gsg. $*h_2uois$ > Ilr. $*avis$, $*vais$ for two reasons. First, the word for 'egg', Lat. *ōvum*, reflects $*h_2ōuiom$, with full grade I; in view of the rarity of the prefix *ō-* and the unmotivated assumption that this prefix is present in *ōvum* etc., I cannot accept Schindler's $*ō-h_2uiom$; thus, $*h_2eui-$ is not an anomalous full grade. Second, a Nsg. $*h_2eui-$ is supported by the presence of *h-* in Armenian (cf. Kortlandt 1984b: *h-* < $*h_2-$, $*h_3-$ before **-e-*, zero in all other environments). Thus, it is likely that *avis* simply reflects $*h_2eui-$.

7. Meiser 1986, 91 suggests that O. *AFTÍIM* be interpreted as $*h_3k^w-ti-$ 'Sehvermögen, Gesicht'. The word, found in a curse (Vetter no. 3) in an enumeration of organs, life functions and activities of the accursed, has an unknown meaning. 'Sight' would fit in well, but so would several other meanings. It should be noted that Meiser presents the etymology as a mere possibility. If the etymology is correct, one would again find a laryngeal which was vocalized before *-TC-* (as in no. 1, 2, 3 and 5?). Nothing can be based on this form, however.

3.3. Discussion.

We may now turn to the possibilities suggested in the introduction in order to account for the unexpected vocalization of a word-initial laryngeal.

1. The theory that *HC-* became *aC-* before a morpheme boundary may be supported by *āctus*, *āiō*, *apīscor*, *aper* and *AFTÍIM*. However, it may be refuted on the basis of *dens* < **h₃d-nt-*, *gerō* < **h₂ǵ-es-* and *siem*, *sum* < **h₁s-*. What is more, the "rule" must be reformulated in terms of analogical change, as was indicated in the introduction, which requires that there is a model for every individual case in which *a-* appears. This model is conspicuously absent in the case of *āiō*, *aper* and *AFTÍIM* (only for *āiō* may we perhaps posit a perfect **ēg-* on which the present could have been modelled). As to *āctus* and *apīscor*, the former may have been remodelled on *agō*, which has full grade **h₂eǵ-*, and the latter on *faciō*, *fēcī*, as was indicated above. I conclude that the idea that the morpheme boundary had anything to do with the vocalization of word-initial laryngeals cannot be maintained.

2. The theory that *HC-* yielded *aC-* in monosyllables is unnecessary for *avis*, does not account for any of the other forms except perhaps O. *AFTÍIM*, and is improbable because of *dens* < **h₃dnt-*, *sum* etc. < **h₁som*, *siet* < **h₁sɟēt*.

3. The theory that *HT-* became *aT-* may be refuted on the basis of *dēns* < **h₃dnt-* and *gerō* < **h₃ges-*.

The assumption that a word-initial laryngeal was vocalized before *-TC-* may be supported by *āctus*, *āiō*, *apīscor* (if based on **apɟō*), *aper* and *AFTÍIM*, though for *āctus*, *apīscor* and perhaps for *āiō* and *aper* plausible explanations on the basis of analogy can be suggested (O. *AFTÍIM* is unreliable).

Although especially *āiō* remains a problem, I conclude that there is not enough reliable evidence to show that a word-initial laryngeal could have been vocalized under certain circumstances.

C. LARYNGEAL BEFORE VOWEL (*#HV-*)

1. Introduction

Broadly speaking, the development of PIE. *#HV-* in Latin has not given rise to controversy. The vowel *-e-* was coloured by a preceding $*h_2$ ($*h_2e- > a-$) and $*h_3$ ($h_3e- > o-$), and taking into account the subsequent qualitative changes of the vowel system, the distinction between *e-*, *a-* and *o-* which had thus arisen was faithfully preserved.

Nevertheless, there are three issues that require some discussion:

a. The development of $*h_2o-$ (to *a-* or to *o-*; section 4.5);
b. The development of $*H\bar{e}-$, $*H\bar{o}-$: was the lengthened grade coloured by the laryngeal? (section 5);
c. Instances of *HVHC-* reflected in Latin (section 6).

It may be remarked that according to Kortlandt 1984b, 41-43, $*h_2e-$ and $*h_3e-$ yielded *ha-* and *ho-* (> *ha-* under certain circumstances, Kortlandt 1987b, 61) respectively in Armenian, whereas **Ho-* yielded Arm. *o-* (> *a-*). Although there is only little evidence, Kortlandt's suggestion is attractive, as it accounts for a number of forms in a simple way. For a brief discussion see section 4.3. A similar explanation of the presence or absence of *h-* was made for Hittite and Albanian, but a detailed discussion of the material of these languages (and for that matter also of Armenian) remains a task for the future (see also Lubotsky 1990, Beekes 1988a). If the solution is correct, we are able to distinguish whether an attested *o-* reflects h_3e- or *Ho-*, which is important for an assessment of the Latin material. However, even if the idea is correct (I remain somewhat sceptical), its use for the present purpose is limited. Armenian, Hittite and Albanian cognates of Latin words are relatively scarce; moreover, unless the formation of a Latin word is exactly matched by a word in the languages with *h*-prothesis, PIE. ablaut plays havoc: an Armenian form reflecting $*h_3e-$ may have a Latin cognate reflecting $*h_3o-$, and vice versa.

Since a PIE. root could not begin with a vowel, all Latin words which start with a vowel that has not developed from vocalized resonant or **i-* and **u-*, had an initial laryngeal. Consequently, all these words will be discussed in this chapter. Considerations of space have caused me to give only a brief account of every form, listing the Latin form, meaning and re-

construction together with a few relevant cognates.

2. Outline

First all words with an initial vowel which will not be discussed in the present chapter are listed (section 3). The material will be presented in an order based on the PIE. constellation. All remaining Latin words starting with the vowels *e-*, *a-* or *o-*, with *i-* or *u-* < **e-*, **o-* and with *ī-* or *ū-* for which we have reason to assume that they reflect **ei-* and **eu-* or **ou-*, respectively, will be discussed in section 4: **h_1e-* (4.1), **h_2e-* (4.2), **h_3e-* (4.3), **h_1o-* (4.4), **h_2o-* (4.5), **h_3o-* (4.6), laryngeal of unknown quality + *-o-* (4.7). Section 5 deals with PIE. **HV̄-*, and section 6 with **HVHC-*.

3. Words which are not discussed

3.1. Words without a reliable etymology

a-: *abies* (cf. Gr. ἄβιν), *ablinda*, *abolla*, *acceia (accia)*, *acerra*, *acervus*, *acinus*, *acina*, *acipēnser*, *aclassis*, *acnua*, *acrēdula*, *acrisiola*, *adasia*, *adōria*, *aequus*, *aestumāre*, *afer*, *africia*, *agaga*, *agger*, *agō* (cf. *agĕre*?), *ala* (?), *alabrum (alibrum)*, *alapa*, *alaternus*, *alcana*, *alcēs* (*alcē*, loan from Germanic via Greek?), *ālea*, *alica*, *alicula* (cf. Gr. ἄλλιξ), *aloxinum*, *altellus*, *alucita*, *alutiae*, *alveus*, *ambicus*, *ambricēs*, *amellus*, *amentum*, *ames*, *amoenus*, *amulētum* (*amolētum*), *amulus*, *amussis*, *ancentus*, *ancīle* (< **ambi-caid-sli-*?), *ancorāgō*, *ancunulentus*, *ānsārius*, *antemna*, *antura*, *ape*, *apex*, *apexabō*, *apinae* (*afanae*), *apis* (*apiāgō*, *apium* etc.), *aplūda* (*adplūda*), *apocalama*, *apocūlāre*, *apopores* (*apoperes*), *aprīcus*, *aprīlis*, *aptra*, *aquila*, *aquilō*, *aquilus*, *arāneus* (cf. Gr. ἀράχνη), *arbutus*, *arcessere* (*ad-*, *ac-*), *arcisum*, *ariēna*, *arillātor*, *arista*, *armilausa* (< Germ.?), *armillum*, *armita*, *armoracea*, *arrugia*, *aruiga* (*haruiga*, *hariuga*, *hariga*, *haruga*, *ariuga*), *arvīna* (*arbīna*), *ās*, *asia* (=*sasia*), *asifolium* (*asse-*, *assi-*), *asignae*, *asīlus*, *asinus* (loan, orig. from Sumerian?), *asinusca*, *asper*, *assis* (*axis*), *ast*, *astercum*, *astus*, *attillō*, *atalla*, *attena*, *attilus*, *attinae*, *avē*, *āverruncō* (cf. *verruncō*), *averta*, *avia*, *aurīga*, *autumnus*, *autumāre*, *axiō*, *axitia* (*axicia*, *acicia*).

e-: *ecōnes* (*egōnes*), *eglecopala*, *egula*, *ēlūcus*, *erneum*, *ērūca* (*ūrūca*), *elementum* (< Gr.?).

o-: *obba*, *obbonis*, *oclope(c)ta*, *ocrea*, *offa*, *ōmen* (Hitt. *ḫa-*?), *omnis*, *opicus*, *opīmus*, *opiter*, *opulus*, *opunculō*, *ōrāre* (O. *URUST*; cf. Gr. ὀρνέομαι), *orcibeta*, *Orcus*, *ōrdīrī*, *oscen*, *ōtium*, *ovaloida*, *ūtī* (O. *ÚITTIUF*).

3.2. Onomatopoetic and expressive words.
abbāre, *amita*, *amma*, *anna*, *attat*, *Acca*, *ēn*.

3.3. Loans.
3.3.1. From Greek.
**ababalsamum* (*opobalsamum*), *abacus*, *abax*, *abantes*, *abrotonum* (*-us*), *absinthium*, *abyssus*, *acēdia*, *aclys*, *acridium*, *acroama*, *adamās*, *adarca*, *adeps* (?), *āēr*, *aera*, *aerō* (*ērō*, *hērō*), *aerumna* (?), *aethēr*, *afannae*, *afrūtum*, *agasō* (?), *agēā*, *agōnia*, *alabaster*, *alapiciōsus*, *(h)alica* (?), *alogiāre*, *alu-cinor*, *ama*, *amāracus*, *amiddula* (*amygdala*), *amilium*, *amphora*, *amurca* (*amurga*), *anclāre*, *anclābris*, *ancora*, *andrāgō*, *angarius*, *angelus*, *angina*, *angistrum*, *anōcatum*, *anquila*, *anquīna*, *antefana* (*antifona*), *antrum*, *apage*, *apalus*, *aphorus*, *apica* (?), *aplustr(i)a*, *apologāre*, *aporia*, *apostata*, *apostolus*, *apostōma*, *apothēca*, *apua*, *archi-*, *ardaliō*, *argemōnia* (*agrimōnia* etc.), *argilla*, *arithmēticus*, *armenius*, *armeniācum*, *arra* (from Semitic), *artemisia*, *artemō* (?), *artopta*, *āruncus*, *asarum*, *ascalōnia*, *ascarii* (?), *ascopa*, *(a)sparagus* (*aspargus*), *aspis*, *astacus*, *asthma*, *astrum*, *astrutium* (?), *atriplex*, *attagēna*, *atticissō*, *aula*, *aulaeum*, *auliō*, *aura*, *aurichalcum*, *austērus*, *authepsa*, *azaniae*, *azymus*.

ebenus (from Egyptian), *ecclēsia*, *ēlēctārium* (?), *eleēmosyna*, *elleborus*, *ellychnium*, *ēlogium*, *emplastrum*, *encaustum*, *enthēca*, *episcopus*, *epistula*, *erēmus*, *ergastulum*, *ērīcē*, *erysīpelas*, *eugīum*, *excetra*.

ōla (?), *oleum*, *olīva*, *oncāre*, *opalus* (eventually from Skt. *úpala-* 'stone'), *opifera*, *opobalsamum*, *opsōnium*, *orca*, *organum*, *orīganum*, *ostracum*, *ostreum*, *ostriāgō*, *ostria*, *oxalis*, *oxus*, *ozīnosus*.

3.3.2. From Celtic.
acaunumarga (*acauno-*), *adarca* (*adarcē*, via Greek), *alauda*, *alausa* (?), *ambactus*, *arepennis*, *arinca* (?), *arinca*, *atīnia*.

ebucalium, epiraedium, essedum, exacum.

odocus, olca, omāsum.

3.3.3. From Germanic.
alcē(s) (*alx*, via Greek), *anaphus, annepum, (h)aringus.*

3.3.4. From other languages.
abaddir, abba(s), addax, ambar, ambūbāia, arrabō, agga, ealē, ebur.

3.4. ***#HRC-, #HHC-***

For these constellations see section II.D and F respectively.

4. Material

4.1. **h_1e-*

1. *ebulus* (f.), *-um* (n.) 'dwarf-elder'. Contamination with Gaul. *odocos* led to *educu, ebucone* etc. (Gloss.). The word has been compared with the Balto-Slavic word for 'pine': CS. *jela*, OCz. *jedla*, OPruss. *addle*, Lith. *ẽglė*, Latv. *egle* (< **edlē*), which point to **$h_1$edh-l-*. *Ebulus* consequently reflects **$h_1$edh-lo-*. As to OIr. *aidlen*, see Vendryes A-27.

2. *ec-ce, ec-quis* may be compared with the pronominal stems **ek-* (Osc.) and **ek-s-* (Osc., Umbr.) 'this' in e.g. O. Nsg. ntr. *EKÍK*, Asg. fem. *EKAK*; Ablsg. masc. *EKSUK*, fem. *exac* etc. and in U. Ablsg. masc., ntr. *esu, essu*, Nsg. fem. *eso* < **ek-s-* (see Buck 1905, 89-90). The interpretation of *ec-* as **ed* 'that' + a velar (WH., Pokorny IEW. 282, 284) must be rejected. The neuter of the anaphoric pronoun was **id*, not **ed*: cf. Skt. *id-ám*, Lat. *id*, O. *ÍDÍK* (thus also EM.). The history of Italic **ek-* is obscure, but most likely some PIE. deictic element lies at its base (**h_1e-* in e.g. ἐκεῖνος). See no. 7.

3. *edō, ēdī, ēsum, ēsse* 'to eat', *ēsca* 'food, bait', *ellum* 'spoon', O. *EDUM* reflect **$h_1$ed-* (except the perfect, which goes back to **$h_1$eh$_1$(e)d-*), cf. Skt. *ád-mi*, Hitt. *ed-mi*, Gr. fut. ἔδομαι, inf. (Hom.-Lesb.) ἔδμεναι, OIr. *esse* 'eaten' (< **$h_1$ed-tio-*).

4. *egēre* 'to be without sth., miss', *egēnus* < **egesnos* 'missing', cf. OIc. *ekla* 'lack, want', OHG. *eko-rōdo* 'only' <

*$h_1eǵ$-.

5. *egō* 'I', cf. Falisc. *eko*, *eqo*, Gr. ἐγώ(ν), Goth. *ik* < *$h_1eǵ$-.

6. *emĕre*, *ēmī*, *ēmptum* 'to take, buy' (cf. also *ex-emplum*, *prōmptus*), U. *EMANTU(R)* 'accipiantur', *emps* 'emptus' reflect *h_1em-, cf. OIr. *ar-fóemat* 'they take' (*ar-fo-em-*), *do-eim* 'protects' < *h_1em-. Zero grade *$h_1m̥$- is reflected in Lith. *imti*, OPruss. *īmt*, OCS. *imǫ*, *jęti* (< *bm-) 'to take'.

7. Lat. deictic *e-* in *e-nim*, *e-quidem*, O. *e-tanto*, Gr. ἐ-κεῖνος reflects PIE. *h_1e-. As to the vocalism of O. *INIM*, *inim*, ειν ειμ 'and', U. *eine*, *enem* etc. 'and', see Meiser 1986, 110-111.

8. *eō*, *īre* 'to go' < *h_1ei-, cf. Gr. εἶμι, Skt. *émi* < *h_1ei-.

9. *epulum* '(sacrificial) meal' can according to EM. be connected with *opus*, Skt. *ápas-* 'work'. However, *o*-vocalism in the root of an *s*-stem is improbable, and the root of *opus* never has ablaut, which points to *h_3e- (see Lubotsky 1990). This precludes the connection of *epulum*, which is, moreover, semantically remote.

10. *equus* 'horse' < *$h_1ek^{\mu}o$-, cf. OIr. *ech*, OE. *eoh*, Toch. A *yuk*, B *yakwe* < PToch. **yäkwe* etc.

11. *errāre*, *error*, *errō* etc. 'to roam' < *h_1ers-, cf. Arm. *eram* 'be restless, seethe', Goth. *aírzeis* 'irre', *aírzjan*, OHG. *irren* < *h_1ers-.

12. *erus*, *era* 'master, mistress', OLat. *esa* may be cognate with Hitt. *ešḫa-* 'lord' < *h_1esHo-.

13. *ervum* 'Ervum ervilia' is cognate with Gr. ἐρέβινθος 'chick-pea', ὄροβος 'vetch' (-β- < *-g^w-?) and OHG. *araweiz* 'pea'. A common form cannot be reconstructed. The word is most likely of non-IE. origin and does not belong here.

14. *esox*, *-ŏcis* 'salmon' is cognate with OIr. *éo*, Gsg. *íach*, MW. *ehawc*, MBret. *eheuc*, *ehoc* < *esōk-. However, the Latin form may be a loan from Celtic, where the forms may reflect **peis-ōk-* (cf. *piscis*, Goth. *fisks*; see Pijnenburg 1983).

15. *esse*, *es*, *est*, *estis*, *erō* etc. < *h_1es-, cf. Gr. εἰμί, Skt. *ásmi*, Hitt. *ešmi*. Evidence for the presence of the initial

laryngeal is provided by Skt. *ásat* < **n̥-h₁sn̥t* (Mayrhofer 1986, 124, also note 110).

16. *et* 'and, also', Paelign. *et*, U. *et* 'et', Gr. ἔτι 'yet, further', Goth. *iþ* 'but' < **h₁et i*.

17. *ex*, *ē-* 'from, out of', cf. O. *ee-*, U. *e-*, *ehe-*, Gaul. *ex-*, OIr. *ess-*, Gr. ἐξ < **h₁eḱs*.

18. *īcĕre*, *īcī*, *ictum* 'to hit' perhaps reflects **h₁eiḱ-*, if it is cognate with Gr. ἰκτέα· ἀκόντιον (Hes.), Cypr. ἰγμαμενος 'wounded' (with Cypr. *-γ-* written for either κ, γ or χ). However, the Greek forms may rather be cognate with Gr. αἰχμή 'point of a lance', OPruss. *aysmis*, Lith. *(j)iẽšmas*, Latv. *ìesms* 'spit, broach' < **h₂eiḱ-*. Therefore, apparently, Peters 1980, 108 note 54 proposes that *īcō* reflects **h₂i-h₂iḱ*. Uncertain (see EM.).

19. *in* 'in(to)' < OLat. *en*, O., U. *en*, Gr. ἐν, OIr. *in-*, *en-*, *i*^{n}, Goth. *in* 'in' < **h₁en*.

20. *īra* 'wrath, anger' possibly reflects **h₁eis-*, cf. Gr. οἶμα 'attack, anger', Av. *aēšma-* 'wrath' < **h₁ois-*.

21. *olor*, Gsg. *-ōris* 'swan' < **el-ōr* (*-r* in view of the Welsh form), cf. OIr. *elae* (f.), W. *alarch*, pl. *eleirch* 'swan' (with secondary *a-* in the singular, cf. *adar*, singulative *ederyn* 'bird' < **peter-*). If the word goes back to PIE., which, given the limited distribution, is uncertain (note also that the formations differ), the Latin form reflects a root **h₁el-*.

22. *ovāre* 'to jubilate' can be reconstructed as **h₁eu-*, cf. Gr. εὐάζω 'id.', εὐοῖ 'hurray'. In accordance with section VI.C.I, **h₁ou-* would have yielded Lat. *av-*.

23. *ulcus*, Gsg. *ulceris* 'ulcer, wound, plague' < **h₁elḱ-os*, cf. Gr. ἕλκος 'wound, ulcer' (spiritus asper taken from ἕλκω, Frisk s.v.), Skt. *árśas-* 'piles'.

4.2. **h₂e-*

1. *ab*, *abs*, *ā-* < **h₂ep(o)*, U. *AP-EHTRE* 'ab, extra, extrinsecus', cf. Gr. ἀπό 'from', ὄπ 'further, back'. Cf. *po-* < **h₂po-* (II.B.2.2 no. 26).

2. *acer*, G. *aceris* 'maple tree' < **h₂eḱ-er-*, cf. Gr. ἄκαρνα· δάφνη (Hes.) < **h₂eḱ-r-neh₂-* (note the semantic difference), OHG. *ahorn* 'maple' < **h₂eḱ-r-no-*, Dan. *ær* 'maple' < PGm. **ahira-* < **h₂eḱ-er-*. The root may be iden-

tical to that of the following etymon (Pokorny IEW. 20).

3. *acerbus* 'bitter', *ācēre* 'to be sharp', *ācus* 'needle' etc. reflect *$*h_2eḱ$-*, cf. Gr. ὄκρος, OIr. *acher* 'pointed' (see IV.C. 1.3.6.3).

4. *ad*, Sabellian *ad*, OIr. *ad-*, Phryg. *ad-*, Goth. etc. *at* 'to' < *$*h_2ed$.

5. *ador*, G. *adŏris* 'spelt' < *$*h_2ed$-*$ō$*s* (or **-or*?), cf. Goth. *atisk* 'Saatfeld', OHG. *ezzisc* < *$*h_2ed$-*es-* (rejected by Lehmann 1986, A 215 without argumentation). Watkins 1973 and 1975 has connected *ador* with Hitt. *ḫat-* 'to dry out', which is uncertain for semantic reasons.

6. *aedēs*, *aedis* 'hearth, temple, house' < *$*h_2eidh$-*, cf. OIr. *áed* 'fire', OE. *ād*, OHG. *eit* 'pyre', Gr. αἴθω 'to burn' < *$*h_2eidh$-*. For the formation of the Latin word see V.C.2.3.1 no. 1. Lat. *aestus* 'heat' and *aestās* 'summer' probably reflect *$*h_2eidh$- + *-tu-*, *-tāt-* (Sommer-Pfister 1977, 181).

7. *aeger*, Gsg. *aegrī* 'ill' may reflect PIE. *$*h_2eig$-* if it is cognate with Latv. *îgstu*, *îgt* 'to pine away, lament' < *$*h_2ig$-* (broken tone and lengthened vowel in accordance with Winter's law). Toch. A *ekär*, B *aik(a)re* 'empty' are semantically remote.

8. *aemidus* 'swollen' probably reflects *$*h_2eid$-*(*s*)*m-*, cf. Gr. οἰδέω 'to swell', οἶδος 'a swelling' < *$*h_2oid$-*, Arm. *aytnum* 'to swell', *aytumn* 'swelling', OHG. *eiz* 'Eiterbeule' < *$*h_2eid$-* or *$*h_2oid$-*.

9. *aemulus* 'rival' probably reflects *$*h_2ei$-*mo-*, cf. Hitt. *ḫimma-* (c.) 'Nachahmung, Substitut' (thus G. Neumann in N. Oettinger, *Die militärischen Eide der Hethiter*, Wiesbaden 1976, p. 64). Lat. *imitārī* 'to imitate' < *$*h_2i$-*m-*.

10. *aeruscāre* 'to ask for, beg'. The formation is obscure. It cannot be compared with GAv. 1sg. pres. *išasā* (WH.), which is to be read */iš-saHa/* (Beekes 1988c, 208) and belongs to *iždi-* 'to beg'. The inflection of *aeruscāre* points to a denominative origin (WH.: **aisos-ko-*). The root *$*h_2eis$-* is found in OHG. *eiscon* 'investigate, demand', OE. *ǽsce* 'investigation' < *$*h_2eis$-*(*s*)*k-* or *$*h_2ois$-*(*s*)*k-* (probably also of denominative origin) and in Skt. *icchắti*, Av. *isaiti* 'to ask' < *$*h_2is$-*ske-*, Arm. *aycᶜ* 'investigation' < *$*h_2ois$-*(*s*)*k-*, Arm. *haycᶜem* 'to beg' < *$*h_2eis$-*(*s*)*k-* (Kortlandt 1984b, 42).

For U. 3pl. fut. ex. *eiscurent* see Meiser 1986, 129.

11. *aes* 'bronze' cannot reflect **aịs* < **aịos* by syncope, as is claimed by Niedermann and EM. s.v. There is no evidence for this type of syncope (for *iūs*, *rūs* see IV.E.7.2.1). The expected development of **aịos* is to **aos* (Proto-Italic loss of the intervocalic *-i̯-*) > Lat. ***ās*. According to Meillet- Vendryes 1927, 76 and WH. s.v., *aes* owes its *-e-* to the oblique cases, which have **aịes-* > **aes-*. However, in the oblique cases one would also expect contraction of **a-e-* to *ā-*, cf. *laudās* < **-ā-ĕsi* < **-ā-i̯esi*. It might perhaps be assumed that contraction of a back and a front vowel did not occur if the first vowel was in a word-initial (i.e. originally stressed) syllable. This would also explain *ahēnus* 'bronze' (adj.), cf. U. Dpi. *AHESNES*, < **aịesnos*. But in that case *stāre* < **stă-ē-* becomes inexplicable (unless the latter reflects old **sth₂-eh₁-* rather than (post-PIE.) **stă-ē-*, see V.D.2.2.1 no. 12). It may alternatively be suggested that a sequence of two unidentical short vowels (2 morae) was not contracted, whereas a sequence of two unidentical vowels of which one or both were long (3 or 4 morae) was.

The PIE. form of *aes* was **h₂ei-(e)s-*, cf. Goth. *aiz* 'bronze', Skt. *áyas-*, Av. *ayah-* 'metal, iron'. The evidence for **h₂-* is derived from Latin *a-*.

12. *aesculus* 'kind of oak' < **h₂eiǵ-s-tlo-* (?), cf. OHG. *eih*, OIc. *eik* 'oak' < **h₂eiǵ-* or **h₂oiǵ-* and perhaps Gr. αἰγίλωψ 'oak with sweet fruits', which has an obscure formation. EM. think of a Mediterranean, non-IE. origin.

13. *aevus*, *aevum* 'time, age', *aetās* < **aiu̯otāt-* (with loss of *-u̯-* before *-o-*, subsequently syncope of *-o-*) 'lifetime, age' < **h₂eiu̯o-*, cf. Gr. αἰών < **h₂eiu̯-ōn*, Skt. *áyu*, Av. Nsg. *āyu* < **h₂oi-u*, Gsg. *yaoš* < **h₂i-eu-s* 'life'.

14. *ager* 'field' < **h₂eǵro-*, cf. U. *ager*, Skt. *ájra-*, Gr. ἀγρός, Goth. *akrs*.

15. *agĕre*, *āctum* 'to drive' < **h₂eǵ-*, cf. Gr. ἄγω, Olr. *agaid*, Skt. *ájati*, OIc. *aka*.

16. *agnus* 'lamb', Gr. ἀμνός 'id.' point to **agʷno-* < **h₂egʷno-* (for the labiovelar cf. Lat. *avillus* 'young lamb' < **agʷnelo-*). Olr. *úan* and W. *oen*, pi. *wyn* 'lamb' < **ogʷno-* show *o*-vocalism (after **ou̯is* 'sheep'? cf. Pedersen 1909, 32, 109, Vendryes U-8). OCS. *agnę*, *jagnę*, Russ. *jágnja*, SCr.

jàgnje, Sln. *jágnje* point to PSlav. **àg-n-*, with acute intonation caused by Winter's law, which confirms the reconstruction **h₂eg^{w}no-* of the Greek and Latin forms as far as the media **-g^{w}-* is concerned. On the other hand, OE. *ēanian*, Du. *oonen* 'to lamb' reflect a PGm. noun **auna-*, which may point to **ag^{w}h-no-* or **og^{w}h-no-*, with an aspirated stop, or to **ak^{w}-no-*, **ok^{w}-no-* (with stress on the second syllable). It may perhaps be assumed that they contain **ou-i-* 'sheep'.

17. *āla* 'joint of a wing, arm; wing' < **akslā-* (cf. the diminutive *axilla*) < **h₂eks-*, cf. OIc. *ǫxl*, OE. *eaxl*, OS. *ahsla* 'joint of the shoulder'. Cf. *axis* (no. 65 below).

18. *alacer* 'brisk, sprightly' is possibly cognate with *amb-ulāre* 'to walk', cf. U. *amb-oltu* 'ambulato' < **-ol-*, although this is far from compelling semantically. In the Umbrian form, the stem-final vowel was syncopated, which presupposes that it was short. It may thus be assumed that *ambulāre* is not an old first-declension verb in **-āie/o-* but rather belongs to the small class of verbs of the type *arāre*, which reflect an old athematic **-ă-*conjugation and go back to roots of the type **CeRH-* (see V.D.2.1.2). The root **h₂elH-* may be connected with Gr. ἀλάομαι 'to roam' < **h₂elh₂-*, Latv. *aluôt* 'id.' The connection of *alacer* is, however, doubtful.

19. *albus* 'white' < **h₂(e)lbho-*, cf. Gr. ἀλφός 'dull white leprosy', OHG. etc. *albiz* 'swan' < **h₂elbh-*.

20. *algēre* 'to be cold, freeze', *algor* 'cold', *algus* (*u*) 'cold' < **h₂(e)lǵ-*, cf. perhaps OIc. Gsg. *elgiar* 'frozen snow' < **h₂elǵ-* (see II.D.2.2.4 no. 22).

21. *alius* 'other' < **h₂el-io-*, cf. O. ἀλλο (Nsg. f.), U. *arsir* (Nsg. m.), OIr. *aile*, Gr. ἄλλος. Full grade of the root is proven by Goth. *aljis*. Cf. also *alter* < **ali-teros*, *ali-quis* etc.

22. The etymology of *alnus* 'alder' < **alsnos* (see IV.D.1.34.1 no. 4) suffers from two problems.
a. A number of forms point to a root **el-* beside more general **al-*:

i. OIc. *jǫlstr* 'alder' < **elustru* < **elastrō*, *ilstri* 'willow' < **elistrio-* < **elastrio-*; but cf. PGm. **al-* in OIc. *ǫlr*, OE. *alor* 'alder', Spanish *aliso* 'id.' < Goth. **alisa*. OHG. *elira*, Du. *els* 'id.' reflect **alisā*, with umlaut.

ii. Lith. *alksnis* beside *elksnis*, Latv. *alksnà* 'Erlenhain', Eastern-Latv. *èlksnis*. (The forms with *e-* are not mentioned by Fraenkel, but see *Lietuvių Kalbos Žodynas* II, 1125 and *Latviešu valodas vārdnīca* (Mühlenbach-Endzelins) I, 567). South Slavic **jel-* < **el-* in e.g. OCS. *jelъxa*, SCr. *jèlša* beside West and East-Slavic **ol-* < **al-* in e.g. Pol. *olcha*, Russ. *ol'xá*.

The alternation *e-/a-* in Lithuanian points to older **e-* (cf. e.g. OLith. *ašvà*, *ešva* 'horse'; Lith. *ērelis*, not **ar-* (Gr. ὄρνις < **h₃er-*), is an unexplained exception). In East Slavic **e-* became *o-*, e.g. Russ. *ózero*, but Pol. *jezioro*, SCr. *jèzero* 'lake'; OCS. *azъ* < **ězъ* < **h₁eǵHom* is one of the rare exceptions (Prof. Kortlandt, p.c.). Kortlandt's reasoning is as follows. The fact that West Slavic has **ol-* and not **el-* shows that there must have been an old root PSlav. **ol-*. Russ. dial. *ëlxa* beside *ol'cha* points to influence of *ëlka* 'spruce' < **el-* < **edl-* < PIE. **h₁edh-l-* (see 4.1 no. 1). This influence of **el-* may also explain *jelъxa*, SCr. *jèlša*. Note that the influence of the word for 'spruce' did not extend to West Slavic, where PSlav. **edl-* became *jedl*, not ***jel*.

In view of PSlav. **ol-*, the Baltic forms with *al-* are probably original. The forms with *e-* may have arisen in the same (as yet obscure) way as that of *ērelis*.

This leaves us with the Icelandic forms. It may perhaps be assumed that **elastr-* owes its vocalism to the root **el-* in e.g. OHG. *ëlm-boum*, OE. *elm* 'elm'.

b. The second problem is that some forms point to suffixal **-is-*, others to **-es-*, *-s-*. According to Szemerényi 1959-1960, 225 ff., *-is-* is primary and explains all forms. I maintain that this is not so. Lat. *alnus* cannot reflect **alisino-* because the latter would have yielded **alernus* (see IV.D. 1.3.4.1 no. 4), nor **alisno-*, which would have yielded **alēnus* or **alīnus* (Huld 1981); it must reflect **alsno-*, which is confirmed by Alb. *halë* 'black pine' < **h₂elsno-* (Huld 1981). Besides, Germanic seems to point to PGm. **aliz-* (e.g. OHG. *elira*) and **aluz-* (OE. *alor*, OIc. *ǫlr*; see Pokorny IEW. 302). The former may be explained from **ales-* (by raising of *-e-* in an unstressed syllable), and the latter perhaps from **alas-* (Campbell 1959, 258 note 1; cf. Fulk 1988, 156). A Germanic alternation **-is-/-us-* is the typical reflex of the PIE. *s*-stems, which originally had ablaut **-es-*, **-os*, **-s-* (in fact, as D. Boutkan kindly informs me, the West Gm. suffix **ur* reflects **ṛ* < **er* < **ez* < PIE. **es*). The PIE. *s*-stem

paradigm must form the foundation for any explanation of the details of the Germanic paradigm. Conversely, PGm. *aluz- cannot be explained on the basis of Szemerényi's PIE. *alis-.

If we turn to the evidence for a suffix *-is-, we find that it is very weak indeed (see Pokorny IEW. 302). Macedonian ἄλιζα 'Weisspappel' cannot be used because hardly anything is known about the Macedonian language. The same holds true for the Western European placename element *alisā, allegedly 'elder'. Its occurrence in originally not Indo-European locations such as Corsica casts grave doubts on its Indo-European origin, and whether it means 'alder' is a mere guess. Thus, its identification with the IE. word for 'alder' is very doubtful. Even if the word were Indo-European, we know nothing about the historical phonology of the IE. language that deposited the placenames and it consequently cannot be used to prove a PIE. suffix -is-. Eastern Lithuanian has a form *alìksnis*, which properly speaking does not contain a suffix *-is-, but the normal Baltic form is found in Lith. *alksnis*, Latv. *àlksnis*. Szemerényi's assertion that the latter underwent syncope must be rejected because syncope did not occur in Lithuanian. Thus, Baltic rather seems to favour PIE. *als-. The only evidence for *-is- derives from Slavic: OCS. *jelьxa*, Russ. *ol'xá* etc. point to *alis-, *elis-. -is- may be an ancient secondary ablaut (cf. OCS. *bьrati* for *br- < PIE. *bher-?).

Although the evidence does not allow a firm conclusion, it may be surmised that since Latin, Germanic and Baltic point to *al(e)s- and only Slavic to *alis-, the latter has innovated.

A final conclusion may now be drawn. Since the forms with *e-* can be explained as innovations, the root of *alnus* was probably PIE. *$h_2$el-, the quality of the laryngeal being based on Latin. The Germanic forms, notably OE. *alor* and OIc. *ǫlr*, and the formation of Lat. *al-s-no- and Baltic *al-s-ni- point to a PIE. *s*-stem *$h_2$el-ŏs.

23. *alĕre*, *aluī*, *alitum* 'to feed', *almus* 'feeding', cf. *ad-olēscĕre* 'to grow up' and numerous nominal forms such as *in-olēs*, *sub-olēs*, *prōlēs* (with *-ol- < unstressed *-al-?), reflects a root *$h_2$el-, cf. OIr. *-ail*, OIc. *ala* 'to feed', Goth., OE. *alan* 'to grow up' < *$h_2$el-, Gr. ἄναλτος 'insatiate' < *-h_2l-to-.

24. *alūmen* 'bitteres Tonerdesalz, Alaun', *alūta* (?) 'Alaunleder' may be cognate with PGm. *alu(þ)- 'beer' in e.g. OIc. *ǫl(n)*, OE. *ealo* < *$h_2$elu- and perhaps with Gr. ἀλύδ(ο)ιμον·

πικρὸν παρὰ Σώφρονι (Hes.). Very uncertain, perhaps not of IE. origin.

25. *alvus* 'belly, curve', *alveus* 'cavity' probably reflect **alu̯-* < **aul-* < **h₂eul-*, cf. Lith. *aulỹs*, *avilỹs* 'hollow tree, beehive', Russ. *úlica* 'hollow road', Gr. αὐλός 'reed, flute', if they are cognate. Gr. ἀ- confirms **h₂-*.

26. *amnis* 'stream, river' < **h₂eb(h)-n-i-*, cf. Olr. *ab*, *aub*, Gsg. *abae*, W. *afon* 'river' < **h₂eb(h)-n-*; perhaps Hitt. *ḫap-*.

27. *amāre* 'to love', *amor* 'love', *amīcus* 'friend' < **h₂emH-* (see V.D.2.1.2 no. 9).

28. *amārus* 'bitter' may be cognate with Skt. *amlá-*, MDu. *amper* 'sour'. If so, the root was **h₂em-*. For the suffix *-ārus* cf. *avārus*. See also II.F.1 no. 2.

29. *ambō*, f. *ambae* 'both' < **h₂(e)nt-bhoH*, cf. Gr. ἄμφω 'both' (see II.D.2.1.2 no. 5).

30. *an* 'whether, or' < **h₂en*, cf. Goth. *an* 'denn?, nun?'. Gr. ἄν probably arose as a result of the historically incorrect analysis of οὐ κάν, cf. Arcadian εἰ κάν.

31. *anas* 'duck' probably reflects **h₂enh₂-t-* (see IV.B.1.4.2.1 and IV.F.1.3).

32. *ancus* 'with crooked arms', *ancrae* 'convalles vel arborum intervalla' are cognate with Gr. ἄγκος 'valley, fissure', ἀγκών 'bend (of the arm)' and OIc. *angr* 'Bucht', which point to **h₂enḱ-*. *ancus* may perhaps reflect zero grade **h₂nḱo-* (see II.D.2.1.2 no. 6). Cf. *uncus* (II.C.4.5 no. 3).

33. *angĕre* 'to oppress', cf. *anxius*, *angustus*, *angor*, reflects **h₂(e)nǵh-*, cf. Gr. ἄγχειν 'to squeeze', Skt. *aṃhú-*, Arm. *anjuk* 'narrow'. *o*-grade is found in Olr. *cum-ung*, W. *cyf-yng* 'narrow'. See II.D.2.1.2 no. 7.

34. *angulus* 'corner, angle', cf. Arm. *ankiwn* 'corner', OCS. *ǫgъlъ*, SCr. *ùgao* 'corner' (< PSlav. **ǫglъ*), OIc. *ekkja*, OHG. *anchal* etc. 'ankle'. The Germanic and Slavic forms point to full grade **h₂eng-*. For Latin, zero grade **h₂ng-* is possible, but unverifiable (see II.D.2.1.2 no. 8). Cf. *ungulus* (II.C.4.5 no. 4)

35. *anguis* 'snake', *anguilla* 'eel' < **h₂(e)ngʷh-*, cf. Olr. *esc-ong* 'eel' (lit. 'water-snake'). OHG. *unc* 'snake' reflects zero grade **h₂ngʷh-*, Lith. *angìs*, Asg. *añgį*, OPruss. *angis* 'snake'

on the other hand point to full grade (*h_2eng^wh- or *h_2ong^wh-). There are many look-alikes which have the same meaning but point to a different proto-form, e.g. Gr. ὄφις, ἔχις, ἔγχελυς, ἴμβηρις.

36. *anhēlāre* 'to pant, be breathless' is arguably cognate with *hālāre* 'to exhale', but a preverb *an-* is not attested in Latin (Untermann 1973, 390 note 12). The verb is undoubtedly of denominative origin, as most first conjugation verbs are, because the stem seems to reflect the nominal suffix *-*slo*- or *-*slā*- (see e.g. WH.). The basic root is generally considered to be *h_2enh_1- 'to blow'. Hamp 1980 has argued that *hālā*- is to be explained from *anslā < *anaslā- (by syncope) < *h_2enh_1sl-, and that a different ablaut form, *h_2neh_1-*sl*-, developed into *nēslā-. Under the influence of *anaslā-, the latter was replaced by *anēsla-. The *h*- may have arisen as an expressive feature, or under the influence of *hiāre* 'to yawn'.

Hamp's reconstruction is unlikely for several reasons. a) a full grade *h_2neh_1- is not attested; b) it is difficult to see how a paradigm *anslā- / *nēslā- could result in *anēslā-; one would rather expect one of the alternants to have been generalized; and, most important, c) it is extremely unlikely that a derivative in *-*slo*- or *-*slā*- had ablaut in the root, let alone Schwebeablaut.

Thus, Hamp's proposal cannot be maintained.

Nyman (1984) also rejected Hamp's proposal and suggested that *anaslo- > *aneslo- yielded *anēlo- (in *anhēlāre*) as a lento-form, and *anslo- (by syncope) > *ālo- (in *hālāre*) as an allegro-form. This proposal has the advantage of explaining both verbs on the basis of recent differentiation, but since more examples of the influence of lento- vs. allegro-forms are lacking, I doubt whether Nyman's solution is correct.

I would therefore like to propose a somewhat different scenario. According to EM. and WH., the adjective *anhēlus* 'out of breath' is postverbal. This is in my opinion unconvincing because the adjective is attested from Lucretius onwards, which renders it respectably old, and because the denominatives *hālāre* and *anhēlāre* presuppose a basic noun (and not vice versa). It may therefore be maintained that *anhēlus* is the basic form. It reflects *aneslo- < *anaslo- < *h_2enh_1-s-lo- (without syncope, which is regular in trisyllabic words with a short vowel in the final syllable; see Nyman op. cit. for important remarks on the formation). It is known that denominative ā-verbs were productive in Latin and could be created at

any stage of the language (Steinbauer 1989). This being the case, *hālāre* may be an early derivative of **anaslo-*, in which syncope took place: **anaslā- > *anslā- > hālā-re*. On the other hand, *anhēlāre* is probably a recent, post-syncope derivative of *anhēlus*. This chronological stratification is indicated by the semantics: *anhēlus* 'out of breath' is closer to *anhēlāre* 'to pant, be breathless' than to *hālāre* 'to exhale'.

37. *animus* 'mind', *anima* 'soul' probably do not belong here because they most likely reflect **h₂nh₁-em-* (see IV.F.2.2).

38. *annus* 'year' (cf. *per-ennis* etc.), O. Dsg. *AKENEÍ* 'in anno', U. Apl. *acnu* 'annos' < **h₂et-no-*, cf. Goth. Dpl. *aþnam* 'year' < **h₂et-no-*.

39. *ānsa* 'handle, grip' probably reflects full grade **h₂ens-*, cf. Lith. *ąsà*, Latv. *ùosa* 'handle of a pot', OPruss. *ansis* 'Kesselhaken' and OIc. *æs* (*iā*-stem) 'Loch im Schuhleder zum Durchziehen der Riemen' < **h₂ens-*.

40. *ante*, *anti* 'before', O. *ANT* reflect **h₂nti* or **h₂enti*, cf. full grade in Skt. *ánti* 'nearby, opposite' and full or zero grade in Gr. ἀντί 'against'. Cf. Hitt. *ḫantezzi-* 'first', *ḫant-* 'front, face' < **h₂ent-*, of which the forms mentioned represent the locative.

41. *anus* (*u*) 'old woman'. EM. s.v.: "mot du vocabulaire familier." Cognates comprise OHG. *ana* 'grandmother', *ano* 'grandfather', OPruss. *ane* 'old mother', Lith. *anýta* 'mother-in-law'. Hitt. *ḫannaš* and Arm. *han* 'grandmother' probably point to **h₂en-*.

42. *apĕre*, *apiō*, *aptus* 'to fix' are probably cognate with Hitt. *ḫap-* 'to fix' < **h₂ep-* (see II.B.3.2 no. 3).

43. *apud* 'at' is possibly cognate with *apĕre* and may in that case reflect an old perfect participle **ap-uot* (EM.).

44. *aqua* 'water' must be compared with Goth. *aƕa* 'river' < **akʷo-*. OIc. *ægir* 'sea, seagod' is probably a vṛddhi-derivative **h₂ēkʷ-io-*, in which the lengthened grade was apparently not coloured by **h₂-* (see Darms 1978, 25ff., 29f.) Hitt. *ēkuzi* and Toch. AB *yok-* < **ēkʷ-* 'to drink' are semantically remote, and rather point to reduplicated **h₁e-h₁kʷ-* (or **-gʷ-*, **-gʷh-*). See II.C.6 no. 7. *ēbrius*.

45. *arāre* 'to plough' < **h₂erh₃-*, cf. Gr. ἀρόω, Goth. *arjan*, Lith. *árti*. As to *arvum*, see IV.E.3.3 no. 1.

46. *arbōs, arbŏris* 'tree'. EM.: "aucun rapprochement net". WH. compare Kurd. *ār-zang* 'Baumrost', presumably from **ard(h)-*. If the word belongs to *arduus*, it reflects zero grade **h₃rdh-* (see II.D.2.2.3 no. 16), but the connection is doubtful.

47. *arcēre* 'to hold off, shut in' < **h₂(e)rk-* (see II.D.2.2.2 no. 9). If *arx* is not a loanword (like *urbs*, cf. EM.), it may be related to *arcēre* (WH.).

48. *arcus* (*u-* and *o*-stem forms) 'arch, bow' may be compared with OIc. *ǫr*, Gsg. *ǫrvar*, OE. *earh*, Goth. (deriv.) *arhvazna* 'bow' < **h₂erkᵂ-* or **h₂erḱu-*. The limited distribution may suggest non-Indo-European origin.

49. *armentum* 'cattle' may according to EM., WH. and Pokorny IEW. 55 ff. be connected with the root **h₂er-* 'to fix' in e.g. Gr. ἁραρίσκω. This presupposes an approximate original meaning 'group of animals joined together', which seems possible but cannot be proven. The connection with PGerm. **ermana-* found e.g. in OIc. *jǫrmuni* 'ox, horse', Goth. *Aírmana-reiks* cannot be maintained (Pokorny IEW. 58).

50. *ascia, ascea* 'axe'. If the connection with Gr. ἀξίνη, Goth. *aqizi* 'axe' < **h₂egᵂ-(e)s-* is accepted, one must assume metathesis of **-ks-* to **-sk-* in Latin (cf. *viscus*, Gr. ἰξός, but *axis, auxilium* etc.).

51. *at* 'but' < **h₂eti*, cf. Gr. ἀτ-ἀρ, Goth. *aþ-þan* 'but'. Original final *-i*, which is reflected in Olr. *aith-* 'again', is required in order to explain final *-t*, not *-d*, in Latin (EM., cf. *aut, et*).

52. *atta* 'grandfather', with hypocoristic doubling of *-t-* as in Gr. ἄττα, Goth. *atta*. Cf. OCS. *otьcь* < **h₂et-iko-*.

53. *au-* 'away'. In Latin, *au-* replaces *ab-* before verbs starting with *f-* (*auferō* etc.), which avoided confusion between *ab-* and *ad-* (EM. s.v.). Cf. Skt. Av. OPers. *ava* 'down, to', Olr. *ó, úa* 'away, from', Gr. αὐχάττειν· ἀναχωρεῖν (Hes.) < **h₂eu(e/o)*.

54. *audīre* 'to hear' < **au(s)dh-* may be compared with Gr. αἰσθάνομαι 'perceive', which points to initial **h₂eu(s)-*. See Meier-Brügger 1980.

55. *avēna* 'oats, stalk'. Lith. *avižà*, Latv. *àuza*, OPruss. *wyse* 'oats' and OCS. *ovьsъ* 'oats' are probably cognate, but it seems impossible to establish a common Balto-Slavic form (Slav. *-s-* <

Nsg. *-ǵh-s?). The Latin form may reflect *aui(gh)-snā- < *$h_2$eui(ǵh)-. EM. hold that the word is probably of non-Indo-European origin.

56. *avēre* 'to desire', *avidus* 'desirous' (denom. *audēre*), *avārus* 'covetous' point to a root *$h_2$eu- 'desire'. Semantically and formally close are W. *ewyllys*, Co. *awell* 'will' < *awi-sl- < *$h_2$eu-i-. OIr. *con-ói* 'to preserve', MW. *ry-m-awyr* 'may protect me' contain the same root (Pedersen 1913, 586 ff.). If Skt. *ávati* 'furthers, promotes, protects' is cognate (rejected by EM., accepted by WH., Mayrhofer KEWA, but Mayrhofer EWaia is more cautious; see also Puhvel 1984 s.v. *iyawa-*), the root is disyllabic: Skt. *ūtí-* 'help' reflects *h_2uH-ti-.

57. *augēre* 'to augment, let grow', *augustus* 'lofty', *auxilium* 'help' etc. < *$h_2$eug-, cf. OIc. *auka*, OHG. *ouhhōn*, Lith. *áugu*, Skt. *ójas-* < *$h_2$eug-.

58. *avis* 'bird', U. Apl. *AVIF*, cf. Arm. *haw* 'id.', Gr. αἰετός < *$h_2$eui- (see II.B.3.2 no. 6).

59. *aulla*, *aula* 'cooking pot, kettle' < *auk-slā- (cf. the diminutive *auxilla*) may be compared with Goth. *aúhns*, OSwed. *ugn* 'oven' < *uk-no-. Skt. has *ukhā*, *ukká-* 'pot', with obscure alternation of the velars. If the word is of Indo-European origin, we may reconstruct *$h_2$euk-, *$h_2$uk-.

60. *auris* 'ear', *aus-cultāre* 'to hear' must be compared with OIr. *áu*, Gsg. *aue* (*s*-stem) < *$h_2$eus-. Gr. οὖς, Gsg. οὔατος, Dor. ὦς 'ear' have probably taken the vowel *o- from 'eye', PIE. *$h_3$ek^w- > *ok^w-; the original anlaut is probably maintained in ἄτα < *ἄϝατα (Tarentinian gloss).

61. *aurum* 'gold' < *$h_2$eus-om, cf. Sab. *ausom*, Lith. *áuksa* (with secondary *-k-*), OPruss. *ausis*. It has been assumed that Toch. A *wäs*, B *yasa* 'gold' < PToch. *ẃəsa < *wesa reflects *$h_2$ues-, but it seems more likely that the word is a loan from Samoyed, which has *wesä (cf. Janhunen 1977, 175).

62. *aurōra* 'dawn' must be compared with Gr. Att. ἕως, Ion. ἠώς, Dor. ἀϝώς < *auh- < *aus-ōs < *$h_2$eus- (Beekes 1969, 65), Skt. *uṣ́ās* < *$h_2$us-. The Latin form most likely reflects full grade *$h_2$eus-ōs (see II.E.1.2).

Whether *auster* 'south wind' belongs here (cf. OHG. *ōstar* 'east-' etc.?) is uncertain (see EM. s.v.).

63. *aut* 'or', *aut-em* 'on the other hand' < *$h_2$eut(i)*, cf. O. *auti* 'or', *AUT* 'on the other hand', U. *UTE*, *ote* 'or' < *$h_2$eut(i)*, which are probably augmented forms of the particle *$h_2$eu* (cf. Gr. αὖ, αὖ-τε, αὖ-τις 'again' etc.).

64. *avus* 'grandfather' < *$h_2$euHo-*, cf. Arm. *haw* 'grandfather', OIc. *ǽ* 'great-grandfather', Goth. *awo* 'grandmother', OPruss. *awis*, Lith. *avýnas*, OCS. *ujь* 'uncle on mother's side', OIr. *aue* 'grandson'. The second laryngeal is based on Hitt. *ḫuḫḫaš* 'grandfather' < *$h_2$euH-o-* and on the accentuation of SCr. *ùjāk*.

65. *axis* 'axle' < *h_2eḱsi-*, cf. Lith. *ašìs*, OCS. *osь* 'id.', Gr. ἀξών 'chariot'.

4.3. *h_3e-*.

It is often difficult to decide whether Latin *o-* reflects PIE. *h_3e-* or *Ho-*. There are three criteria which can be used.

1. If in the reflexes of an etymon one always finds the ablaut vowel *o-*, also where one would expect *e*-vocalism on morphological grounds, the root probably started with *h_3-*. This does not guarantee that Lat. *o-* reflects *h_3e-*; in principle *h_3o-* is possible, and morphology must then decide which of the two is more likely.

2. According to Kortlandt 1984b, 41-43, *h_3e-* and *Ho-* can be distinguished on the basis of Armenian, where the former yielded *ho-* (which could become *ha-* under certain circumstances, according to Kortlandt in open syllables), and the latter *o-* (> *a-* under the same circumstances), cf. Arm. *hot* 'odour' < *$h_3$ed-os*, *hoviw* 'shepherd' < *$h_3$eu̯i-* (note that *$h_2$oui-* would have yielded *a-* according to the rule that **o* became **a* in open syllables (Kortlandt 1987b, 61)), but *orb* 'orphan' < *$h_3$orbho-* (Kortlandt also claimed that *h_2e-* yielded *ha-*, but this need not concern us here). Greppin (1988, 181) objected that it is difficult to believe that *h_3e-* and *Ho-* yielded a different reflex because the intermediate stage between *h_3e-* and *ho-* can hardly have been anything else than *h_3o-*, so that *h_3e-* and *h_3o-* would have merged anyway. In my opinion, the problem is only apparent and can easily be resolved in terms of phonological analysis. PIE. *h_3e-* is phonologically */h_3e/-*; *h_3-* (as opposed to *h_2-*, *h_1-*) rounds the following *-e-* (the rounding of which is phonetic because it is conditioned by preceding *h_3*) and *h_3-* remains as a separate segment; we cannot analyse it as */He/-* because this would not account for the

rounding effect of the laryngeal on the *-e-*. On the other hand, **Ho-* is phonologically */o/-*, not */Ho/-* because the laryngeal did not colour the vowel and because there was no opposition between word-initial *o-* and *Ho-* in view of the fact that every initial vowel predictably had a laryngeal before it, just like in English, where nobody would analyse *at* as phonemic */ʔæt/*. Thus, PIE. bisegmental **h₃e-* is reflected as Arm. bisegmental *ho-* (*ha-*), and PIE. monosegmental **o-* (< **Ho-*) is reflected as Arm. monosegmental *o-* (*a-*). Kortlandt's solution is therefore very simple and thus attractive, but since it is difficult to obtain enough copperbottomed evidence that in every individual case in which we can determine the PIE. ablaut, Arm. *ho-* reflects **h₃e-* rather than **h₃o-*, I remain somewhat sceptical. Kortlandt claimed that the same distinction is maintained in Hittite (*a-* < *Ho-*, *ḫa-* < **h₃e-*, *h₂e-*), and also in Albanian (see Lubotsky 1990, 135, Beekes 1988a, 80-81 and 101).

3. In Sanskrit, the **o* < **h₃e* probably did not merge with PIE. apophonic **o*. This is demonstrated by the fact that **o* < **h₃e* was not subject to lengthening according to Brugmann's law, e.g. Skt. *ápas-* 'work' < **h₃ep-es-*, cf. Lat. *opus* (Lubotsky 1990).

Since neither 2. nor 3. has been proven beyond doubt, and since PIE. ablaut usually makes an identification of an Armenian (2.) or a Sanskrit (3.) form with a Latin one an awkward matter, there often remain doubts about the reconstruction of Latin *o-*.

1. *octō* 'eight' may reflect **h₃e-* because all numerals from 'three' to 'ten' have *e*-grade of the root, whereas all IE. languages that have kept **a* and **o* apart point to **o-* in this word (Gr. ὀκτώ, Olr. *ocht*, Arm. *owtᶜ*). However, the Armenian form lacks *h-*, which would point to **Hokt-* or **Hkt-*. Arm. *owtᶜ* may have introduced the anlaut of the ordinal **h₃kth₃uó-*. Uncertain.

2. *oculus* 'eye' < **okʷ-(e)lo-*. Languages that allow to distinguish between **o-* and **a-* always have **o-* in this etymon: Gr. du. ὄσσε, Toch. B *ek*, A *ak* < PToch. **ekʷ-* < **okʷ-*. Thus, the root most likely started with **h₃-*. Whether *oculus* reflects *e-* or *o*-grade cannot be decided.

3. *odium* 'hate' reflects a root **h₃ed-* in view of pervasive *o*-vocalism, cf. Gr. ὀδύσσαοθαι 'to be angry' < **h₃ed-*, Lat. *ōdī* 'I hate' < **h₃e-h₃(o)d-*. Hitt. *ḫatukiš* 'terrible' may

point to *e*-vocalism. Whether *odium* reflects **h₃ed-io-* or **h₃od-io-* cannot be ascertained (see Pokorny IEW. 773).

4. *odor*, *-ōris* 'smell', *olēre* 'to smell' reflect a root **h₃ed-*, cf. Gr. ὄζω 'id.', perf. ὀδώδα < **h₃de-h₃d-*, Arm. *hot* 'smell' < **h₃ed-os*. *odor* may perhaps be identified with Arm. *hot*, in which case *odor* too reflects **h₃ed-ōs* (cf. *aurōr-a* < *h₂eus-ōs-*; a zero grade root is also very common in stems in *-ōs*, but this option is impossible for *odor*).

5. *onus*, *-eris* 'load, burden'. Since neuter *s*-stems generally have an *e*-grade root, *onus* probably reflects **h₃enos*. This reconstruction is confirmed by Skt. *ánas-* 'cart', where Brugmann's law did not operate (Lubotsky 1990, 132).

6. *opus*, *-eris* 'labour, work' (cf. *opera*, *ops*) probably reflects **h₃epos*, for the same reason as in no. 5. Cf. Skt. *ápas-* 'work', with short *a-*, and Hitt. *ḫappina-* 'riches' < **h₃ep-ino-* (Lubotsky 1990, 131).

7. *os* 'bone' < **osts* < **ost* < **HostH* (see III.2 and IV.B.2). In view of the pervasive *o*-vocalism, one might reconstruct **h₃estH-* (cf. Gr. ὀστέον 'bone', Arm. *oskr* 'id.'; note the *ḫ-* in Hittite *ḫaštāi-* 'bone', which points to **h₃e-* or **h₂e-*. Whether W. *asgwrn*, Bret. *askorn* 'bone' is cognate must be doubted, as it is the only form displaying *a-*. As to *os*, **h₃-* is probable, *e*-vocalism is uncertain.

8. *ovis* 'sheep', U. *UVEM* 'ovem', *UVEF* 'ovīs' probably reflect **h₃eui-* in view of Arm. *hoviw* 'shepherd' < **h₃eui-pā-* (Beekes 1969, 139, Kortlandt 1984b, 41-43). In view of Armenian and pervasive *o*-vocalism in the other languages (Gr. ὄις, Olr. *ó*, Toch. B *ewe*), Luw. *ḫawi-* probably reflects **h₃eui-*, not **h₂oui-* (pace Mayrhofer 1986, 135 with lit.).

9. *unguĕre*, cf. U. *UMTU* < **ombetōd* 'unguito', probably goes back to **h₃engʷ-*. **h₃-* is proven by *unguen*, from either **h₃ngʷ-n* or **h₃engʷ-n* (see II.D.2.1.3 no. 13). In view of Skt. *añj-* 'to anoint' < full grade **h₃engʷ-* and the general observation that verbal forms have *e-* or zero rather than *o*-grade, *unguere* may be reconstructed as **h₃engʷ-*.

4.4. **h₁o-*

The only reliable instance is *ob* 'to, against, by reason of', O. *ÚP*, *op* 'apud', cf. Gr. ὄπι-(ο)θεν '(from) behind', Gr. Myc. *opi*, Lith. *ap(i)* 'around' < **h₁opi*. **h₁-* is based on

the vocalism of Gr. ἐπί 'at, on', Arm. *ew* 'and, also' < **h₁epi*.

4.5. **h₂o-*

It has been claimed that **h₂o-* yielded *a-* instead of *o-* in a number of IE. languages (the relevant literature is cited by Mayrhofer 1986, 135, note 156). That this development obtained in Latin must, however, be rejected on the basis of the following words.

1. OLat. *ocris* 'rocky hill', U. *ocar*, Gr. ὄκρις (also ἄκρις) '(mountain) top' reflect **h₂okri-*, cf. Gr. ἄκρις, ἄκρος, Lat. *acer-bus* 'sharp', *acēre* 'to be sharp' etc. (see II.B.4.2 no. 3).

2. *ollus* 'ille', *uls* 'beyond', *ultrā* 'on the other side of, beyond', *ulter* 'being on the other side', *ultimus* 'furthest' (O. *ÚLTIUMAM* 'ultimam', *ÚLLEIS* 'illius'), cf. OIr. *ol* 'beyond', contains the root **h₂el-* 'other' of Lat. *alius*, *alter*, OIr. *aile*, Gr. ἄλλος. *ollus* etc. clearly reflect **h₂ol-*. The possibility of **h₂l-* must be rejected (see II.D.2.2.2 no. 14, 2.2.5).

3. *umerus* 'shoulder' < **Homes-*, cf. U. *UZE*, *onse* = */ontse/* 'shoulder' < **Homes-ei* (Meiser 1986, 63). Skt. *áṃsa-*, Arm. *us*, Goth. Apl. *amsans* 'shoulder' point to PIE. **Hom-s-o-*. Toch. A *es*, B *āntse* < **anse* < PIE. **h₂emso-* points to **h₂om(e)s-* for the other languages. The long vowel of Gr. ὦμος is probably due to compensatory lengthening (< **ŏmso-*; Haye van den Oever, p.c.).

4. *uncus* 'hook', 'curved' is cognate with Gr. ὄγκος 'hook', ὀγκή· γωνία (Hes.). The root is **h₂enk-*, cf. Lat. *ancus* 'with crooked arms', Gr. ἀγκύλος 'crooked', ἄγκος 'valley, fissure'.

5. *ungulus* 'ring (on the finger)' < **h₂ong-* (according to Festus 514 an Oscan word), *ungustus* 'crooked stick' are cognate with Lat. *angulus* 'corner, angle', Arm. *ankiwn* 'id.' < **h₂eng-*. The same root is found in OHG. *anchal*, OIc. *ǫkla* etc. 'ankle' < **ang-* or **ong-* (see Pokorny IEW. 47).

In none of these cases was there an apparent motivation to restore *o*-vocalism, and we may therefore conclude that **h₂o-* regularly became Lat. *o-*. There is no evidence for the assumption that **h₂o-* yielded *a-* in other words. It may be noted that there is no evidence for **-oh₂-* > *-ā-* either (see IV.C.1.3.6.3 and 1.5.5).

4.6. *h_3o-*

The only instance which stands a good chance to reflect PIE. **h_3o-* is Lat. *orbus* 'deprived of, orphan'. Initial *h_3-* is indicated by the pervasive *o*-vocalism of its cognates, e.g. Olr. *orbae* 'inheritance', Gr. ὀρφανός 'orphan', Arm. *orb* 'id.'. Since the Armenian form lacks *h-*, it probably reflects **h_3orbho-*, which is the exact formal correspondent of Lat. *orbus* (cf. also the *o*-stem reflected in Gr. ὀρφο-βόται· ἐπίτροποι ὀρφανῶν (Hes.)). Hitt. *ḫarp-zi* 'to separate' points to **h_3erbh-* (Kortlandt 1984b, 42).

4.7. Laryngeal of unknown quality + *-o-*.

1. *occa* 'harrow, drag', cf. W. Bret. *oged*, OHG. *egida*, OE. *egeðe* 'id.' < **okitā-*. The Latin form would then have gone through the following development: **okitā-* > **oktā-* (syncope) > **otkā-* (metathesis) > *occa*. This cannot have been the regular development: **-kt-* does not develop into *-tk-* in e.g. *octō*. This "Kulturwort" is perhaps a loan.

2. *opīnor* 'to suspect, surmise' is possibly cognate with *optiō* 'free choice', *optāre* 'to choose' (see no. 3) < **Hop-*, but both formally and semantically the connection is remote. EM. rejects the etymology. Possibly OCS. *za-(j)apъ* 'suspicion', *ne-vъz-apьnъ* 'unsuspected' < **Hōp-* are cognate. See however Steinbauer 1989, 188-9, who more convincingly argues for a basic noun **eino-*.

3. *optiō* free choice', *optāre* 'to choose, select' < **Hop-ti-*, **Hop-to-*, cf. O. Gsg. *UFTEIS*, Npl. *UHFTIS* 'voluntas', U. *UPETU* 'optato', *opeter* 'lecti'. According to EM. s.v., a connection with *apiō* is conceivable ("l'*a*...serait un *a* ajouté à l'initiale et n'indiquerait pas un ancien vocalisme"), which probably reflects **h_2ep-* (cf. Hitt. *ḫapp-*, see II.B.3.2 no. 3 above). If so, *op-* reflects **h_2op-*, but the connection is far from evident.

4. *orbis* 'circle', *orbita* 'wheel-track, track' etc., cf. U. Asg. *URFETA* 'orbitam, circular, round object (?)'. The connection with Gr. ἐρέφω 'to cover with a roof' < **h_1rebh-* is rightly dismissed by EM. The connection with OHG. *rippa*, *rippi* 'rib' and OCS. *rebro* 'id.' < **Hrebh-* has little to commend itself (see II.D.3.4 no. 24).

5. *ūnus* 'one' < **oinos*, cf. Olr. *óen*, W. Co. Bret. *un*, Goth. *áins* < **Hoino-*, cf. Gr. οἴνη 'one (of dice)'. OCS.

inokъ 'monk' points to **ъn-* < zero grade **Hin-*.

5. Word-initial laryngeal + lengthened grade

There are three instances that most likely reflect PIE. *#HV̄-*:

1. *ācer* < **h₂ēḱri-* (see IV.C.1.3.6.3);

2. *ōlim* < **h₂ōl-*, cf. *alius* etc. < **h₂el-* (see IV.C.1.3.5.2 no. 6);

3. *ōvum* 'egg' probably < **h₂ōuiom*, a vṛddhi-formation based on **h₂eui-* 'bird' (see IV.E.13.2.3.4).

See also the next section.

6. Word-initial *HVHC-*

It is not always easy to decide whether a word-initial long vowel in Latin reflects PIE. *HV̄-* or *HVH-*. On the one hand, the distribution of the PIE. lengthened grade cannot be predicted for every individual case in which it occurs (see IV.C.1.3, esp. 1.3.5.2), and on the other hand, independent evidence for the second laryngeal is often lacking. Consequently, some instances that are discussed in this section may not belong here, but rather in section 5. Since in general lengthened grade occurs rather rarely in comparison with *-V̄-* < *-VH-*, I have decided to discuss all instances of word-initial long vowels (*ā-*, *ē-*, *ō-*) in Latin in the present section, unless there was good reason to reconstruct a lengthened grade.

There are ten instances.

1. *ānus* 'ring', cf. OIr. *áinne* 'id.' and Arm. *anur* 'necklace, ring' < **HeHno-*. Since Arm. *anur* lacks an initial *h-*, one might reconstruct **h₁eh₂no-*.

2. *ārēre* 'to be dry', *āridus* (*ārdor*, *ārdēre*), *āssus* 'roasted', *āra* 'altar' (cf. O. *AASAÍ*) and probably *ārea* 'free place' reflect a root **ās-*. All cognates point to a short vowel in the root: a *d*-present is reflected in Gr. ὄζω 'to dry', ὀζαλεός 'dry' < **azd-* and in Cz. *ozditi* 'to dry malt'; Lat. *āssus* may reflect **asd-to-*. Toch. AB *ās-* 'to be dry' points to **h₂es-*. Hitt. *ḫaššā-* 'hearth, fire-place', OIc. (Runic) *aRina*, OHG. *essa* reflect **h₂es-*. Skt. *áśa-* 'ashes' may reflect **h₂os-o-*, and does not necessarily point to an old long vowel.

In order to explain the long vowel of the Italic forms, Lubotsky 1985, 6-7 persuasively argued that **ās-* reflects a redu-

plicated perfect stem *h_2e-h_2s-. He adduced two arguments to support the claim of an old perfect:
a. The Tocharian class IV present A *asatär*, B *osotär* 'to be dry' most likely reflects PToch. **oswo-tr* (by labial umlaut) < **eswe-tr*. From the PIE. *o*-vocalism of the root and the formative *-w-* Kortlandt ap. Lubotsky 1985, 7 concluded that the Tocharian present was based on the perfect participle PToch. **esu* < **$h_2$os-wōs*.
b. The adjective 'dry', Gr. αὖος, Lat. *sūdus* < **sŭsdos*, Lith. *saũsas*, OE. *sēar* etc. reflects **$h_2$sus-* (cf. disyll. anlaut in Hom. ἀυοταλέος < **asus-*), which must probably be interpreted as the perfect participle of the verbal root **$h_2$es-*.

If the argument is accepted, the long vowel of *āra*, *ārea* has been taken from the verb.

3. *āter*, f. *ātra* 'black, sombre (i.e. blackened by fire, scorched)', U. *ATRU*, *adro* 'atra' and probably also *ātrium* 'main hall of a house, where the fire is' are most likely cognate with Olr. *áith*, W. *odyn* 'furnace, oven' < **āti-* and with Av. *ātarš*, G. *āθrō* 'fire' < **āt-er-*. Since it is unlikely that all these forms contain an unmotivated lengthened grade root **h_2ēt-*, a reconstruction **HeHt-* is attractive. As to Lat. *ătrōx* 'black, terrible' < **HHtr-* see below, II.F.

4. *ēbrius* 'drunk', cf. *sōbrius* (with obscure alternation *ē*/*ō*) is perhaps cognate with Hitt. *ekuzi*, 3pl. *akuanzi* 'to drink', which according to Oettinger 1979, 87, 88 is a reduplicated formation **h_1e-h_1eK^w-*, and with Toch. AB *yok-* 'to drink' < PToch. **yek^w-* < **ēK^w-* < **$h_1eh_1K^w$-*. If so, the Hittite and Tocharian velars reflect **-g^w-* or **-g^{w}h-*. The formation of *ēbrius* and the origin of *-ō-* in *sōbrius* would, however, still remain opaque. Gr. νήφω 'to be sober', Arm. *nawt^c-i* 'sober' cannot be compared because Dor. νᾴφω points to **-h_2-*. Uncertain.

5. *ēdī*, the perfect of *ĕdĕre* 'to eat', reflects reduplicated **h_1e-h_1d-* (thus also Leumann 1977, 590).

6. *ēmī*, the perfect of *ĕmĕre* 'to buy', reflects reduplicated **h_1e-h_1m-* (thus also Leumann 1977, 590).

7. *coepī* 'I begin' probably goes back to **h_1eh_1p-*, which may be the original perfect stem of a root **h_1ep-*. See II.B.3.2 no. 3.

8. *ōcior* 'quicker', *ōximē* 'quickest' (P.F.) reflect a root

**HeHk̑-*, cf. MW. *di-awc* 'lazy', Gr. ὠκύς, Skt. *āśú-* 'quick'. Although there is no independent evidence for the second laryngeal, it must be preferred over the assumption of a lengthened grade vowel because the occurrence of the latter in an *u*-stem adjective is unmotivated. Cf. II.F.1 no. 1 for *acu-pedius*.

9. *ōdī*, *ōsus* 'I hate' reflects reduplicated **h_3e-h_3(o)d-*; see II.C.4.3 no. 3 for the root.

10. *ōs*, Gsg. *ōris*, OIr. *á*, Skt. *ā́s-*, Av. *āh-* 'mouth' point to **ōs-*. Hittite *aiš*, G. *išša*š 'mouth' has been explained by Eichner 1973, 84, note 5, who reconstructed a paradigm NAsg. **$h_3$óh$_1$-es* (= **$h_3$éh$_1$-es-*?), Oblique **h_3h_1-és-*. The suffix *-es* in the Nsg. was probably introduced from the oblique cases, as is normal in Hittite. Thus, the word for 'mouth' was probably a PIE. *s*-stem. That the internal laryngeal was **h_1* is shown by Hitt. *-i-* < **-e-* (unless the latter is analogical after other *s*-stems). The initial laryngeal must have been **h_3-* in view of the pervasive *o*-vocalism of the root. Thus, Lat. *ōs* most likely reflects **h_3eh_1-(o)s-*, obi. **h_3eh_1-(e)s-*.

D. WORD-INITIAL LARYNGEAL BEFORE *R* (*#HR-*)

1. Introduction

In an article published in 1970, Helmut Rix, pursuing the line of thought of Beekes 1969, 132, demonstrated that a word-initial sequence **HRC-* in Greek yielded a triple reflex: **h₁RC-*, **h₂RC-*, **h₃RC-* yielded *ἐRC-*, *ὀRC-*, *ὁRC-*, respectively (e.g. ἔρχομαι < **h₁r-sko-* (if the etymology is correct), ἄρκτος < **h₂rtḱo-*, ὀμφαλός < **h₃nbh-*). In the same article, Rix expressed his suspicion that **h₂NC-* yielded Latin *aNC-* in view of Lat. *amb-*, Gr. ἀμφί, Skt. *abhí* < **h₂mbhí*. He further mentioned *umbilīcus* < **h₃nbh-*, cf. Gr. ὀμφαλός, and *unguis* < **h₃nghu-*, cf. Gr. ὄνυξ as examples of the treatment of **h₃NC-*.

Greppin (1973) presented a short list of five Latin words which were meant to demonstrate that in Latin the resonant was vocalized in the normal way (**n̥*, **m̥* > **en*, **em*; **r̥*, **l̥* > **or*, **ol*) and that the resulting vowel *-e-* was coloured by a preceding **h₂-* or **h₃-* according to the expected rules:

1. *umbilīcus* 'navel' < **h₃embh-* < **h₃nbh-*;
2. *unguis* 'nail' < **h₃enghu-* < **h₃nghu-*;
3. *amb-* 'around' < **h₂embhi* < **h₂mbhi*.

The laryngeal did not colour the *-o-* that was the result of vocalization of a vocalic liquid. Greppin adduces two instances:

4. *ursus* 'bear' < **orsos* < **h₂ortḱo-* < **h₂rtḱo-*;
5. a very uncertain example is *ulcīscor* < **h₃ol-k-* < **h₃l-k-*, cf. Gr. ὀλέκω (which rather reflects **h₃lh₁-*).

Greppin reconstructed *arcēre* 'to hold off' as full grade **h₂erk-*.

In 1976 Eric Hamp reacted to Greppin's article (1976a). He claimed that Lat. *amb-* did not have a clearcut etymology because in his view two prepositions, **h₂mbhi* 'around' (Gr. ἀμφί, Skt. *abhí*) and **h₁(e)mbhi* 'against' (W. *ym-*, Alb. *mbë*), have merged and it is not clear whether *amb-* reflects **h₂mbhi* or **h₁mbhi* or even full grade **h₂embhi*. Hamp further stated that, as the exact meaning of Hitt. *ḫartagga-* 'kind of wild animal, perh. bear or wolf' is unknown, its relation to Lat. *ursus*, Gr. ἄρκτος is obscure. One perhaps is not therefore justified in reconstructing **h₂-* for *ursus*. Moreover, it remains to be proven whether Lat. *ignis*, *indi-* < *endo-*, *ensis* and *inguen* indeed contained **h₁-*, which, according to Hamp, would be required in Greppin's theory. Finally, Hamp stressed the possibility

that some of the forms adduced by Greppin actually reflect a full grade root.

In an article published in 1978, Greppin reacted to Hamp's remarks. He pointed out that it is unnecessary to posit an initial laryngeal for either Lat. *ignis* or *indi-*, *ensis* and *inguen* because these roots may simply have had a word-initial (vocalic) nasal. In the case of *indi-*, Greppin argued that Hitt. *anda* (no *ḫ-*) shows the absence of a laryngeal in this root in PIE. Greppin does not seem to have been impressed by any of the objections which Hamp had raised.

Greppin was certainly correct in dismissing a part of Hamp's criticism, notably concerning *ensis* and *inguen*, but not concerning *ignis* and *indi-*, which are, however, immaterial to Greppin's conclusions; see the discussion of the material below. But Hamp's most important objection, the possibility of a full grade root, has not yet been dealt with in an adequate way (cf. Rix 1970, 91, Mayrhofer 1987, 105). This problem will occupy an important place in the following sections.

On theoretical grounds and with disregard to Greppin's article, one may conceive of four possible developments of *HRC-* in Latin.

1. *HRC-* yields *aRC-*, as in Celtic (thus Beekes 1988a, 90-91).
2. *HRC-* develops in the same way as *RC-*, viz. to *enC-*, *emC-*, *orC-*, *olC-*;
3. In *HRC-* the resonant is vocalized according to the normal rules of the language, i.e. **HenC-*, **HemC-*, **HorC-*, **HolC-*, and subsequently the vowel *-e-* is coloured by preceding **h_2-* and **h_3-* (Greppin).
4. That **HrC-*, **HlC-* yielded *erC-*, *arC-*, *orC-*, *elC-*, *alC-*, *olC-* depending on the quality of the laryngeal may be considered unlikely, but perhaps not altogether impossible. This development is only found in Greek and Armenian, where the laryngeal was vocalized, not the resonant. If in Latin the laryngeal had been vocalized, the result would have been *arC-*, *alC-* irrespective of the quality of the laryngeal because vocalized laryngeals always yield *a* in Latin. Alternatively, a triple reflex in Latin could be considered to be the result of colouring of subphonemic schwa that arose before the vocalic resonant: **HLC- > *H$_ə$LC- > *e/a/oLC*. However, as is shown by the development of *CLHV > CaLV* (IV.D.2), a vocalic liquid in a laryngeal environment yielded *aL*, and **h_1LC- > *h_1aLC-* could never have yielded Lat. *eLC-*. The question arises what would have happened to **h_3LC- > *h_3aLC-*, for which a de-

velopment to *h_3oLC- > oLC- seems conceivable. *h_2LC- > *h_2aLC- would certainly have yielded Lat. aLC-. In conclusion: it is conceivable that *h_1LC- and *h_2LC- yielded *aLC-, and that *h_3LC- yielded *oLC- (a "double reflex").

Since it is possible that the development of *HNC- differed from that of *HLC- (cf. IV.D.2.3 on CRHV-), any combination of 1., 2., 3. and 4. is conceivable:

5. aNC- (1) : oLC- (2/3);
6. eNC- (2) : aLC- (1);
7. e/a/oNC- (3) : aLC- (1);
8. aNC- (1) : a/oLC- (4);
9. eNC- (2) : a/oLC- (4);
10. e/a/oNC- (3) : a/oLC (4).

These considerations can be used to delimit the Latin material which may be relevant for the determination of the development of HRC-. Accordingly, all Latin words which have the following properties will be discussed:

- All instances of aNC-, eNC-, oNC-, including those in which eNC- and oNC- have yielded Lat. iNC-, uNC-, but excluding those in which oNC- belongs to an etymon starting with *h_1- or *h_2- (where oNC- reflects *h_1oNC-, *h_2oNC-).
- All instances of aLC- and oLC- (not eLC-), including those in which oLC- has yielded Lat. uLC-.

2. Material

The outline of section 2 is the following: *HNC- (section 2.1): *h_1NC- (2.1.1), *h_2NC- (2.1.2), *h_3NC- (2.1.3), Conclusion (2.1.4); *HLC- (section 2.2): *h_1LC- (2.2.1), *h_2LC- (2.2.2), *h_3LC- (2.2.3), Conclusion (2.2.4); General conclusion (2.3).

2.1. *HNC-

2.1.1. *h_1NC-.

1. OLat. endo- > indi- 'in' may be compared with Gaul. ande- < (H)ndi-, Olr. and 'in it', probably < *(H)nd-om (McCone fthc.), Gr. ἔνδον 'within' and Hittite anda(n) 'in'. Skt. ádhi is most likely not cognate, see Mayrhofer, KEWA. s.v. The root is identical to that of Lat. in, Gr. ἐν, Goth. in etc. 'in' < *en, which must reflect *$h_1$en because IE. roots could not begin with a vowel. Contrary to what Greppin thinks, the absence of $\underline{h}$- in Hitt. andan does not point to the absence of a laryngeal because *h_1- is never reflected as Hitt. $\underline{h}$- (cf. ešzi, aššanzi 'to be' < *h_1(e)s-; *h_1- is proven by Skt.

ásat 'not being' < **n-h₁s-nt*). The Celtic and Hittite forms point to zero grade **h₁n-di-*, **h₁n-do-*, which is a possible reconstruction for both Greek and Latin. It is conceivable, however, that Lat. *endo-*, *indi-* contains the full grade **h₁en-*, which in that case would have been taken from the preposition. Thus, *endo-*, *indi-* is a possible case of **h₁NC-*.

2. *inter* 'between' is cognate with OIr. *eter*, OW. *ithr*, Co. *ynter*, *yntre*, Bret. *etre* 'between' < PCelt. **enter*, Skt. *antár* < **enter*. The root must have started with **h₁-* because a word-initial vowel was not tolerated in PIE. O. *ANTER*, U. *ander* 'between' point to zero grade **h₁nter* (Meiser 1986, 69), which is confirmed by OHG. *untar* 'between' (also 'under' < **ndhero-*!), Goth. Asg. *undaurni-mat* 'midday meal' (< 'Zwischen-mahl'?). However, Sommer 1926, 43-45 claimed that Sabellian **anter* was remodelled on **amfer* (cf. lat. *amb-*) and replaces **enter*; OHG. *untar*, Goth. *undaur-* may simply reflect **ndhero-* and may not be cognate. In view of the full grade forms in Celtic and Indo-Iranian and the absence of a motivation for ablaut **h₁nter*, **h₁enter*, the suggested alternative explanations of the Sabellian and Germanic forms must be seriously considered, although for Sabellian the proposal is gratuitous. Thus, *inter* is at best a possible example of **h₁NC-*.

3. *inguen* 'groin, swelling in the groin, abdomen' is obviously cognate with OIc. *økkr* 'tumor, swelling', *økkvinn* 'swollen' < **engʷ-*. Gr. ἀδήν (f.) 'gland' would allegedly reflects **n̥gʷ-ēn* and shows that the root did not have an initial laryngeal (**h₁ngʷ-* would have yielded Gr. ***ἐνδ-*). In that case, the OIc. form demonstrates that a root could begin with a vowel (thus Rix 1970, 102). It is, however, not certain that the Greek form is cognate with *inguen* and *økkr* because its meaning differs. Anyhow, since it cannot be decided whether *inguen* reflects **(h₁)engʷ-* or **(h₁)ngʷ-*, the word is irrelevant to the present discussion.

2.1.2. **h₂NC-*

4. *amb-*, *am-*, *an-* < **h₂mbhí*, cf. O. *AM*, U. *am-*, *AN-*. According to Rix 1970, 91, Lat. *amb-* most likely reflects zero grade **h₂mbhí*, cf. OIr. *imb-* < **ambi-*, Gr. ἀμφί, Skt. *abhí*, OHG. *umbi* 'around', but if it was derived from another case form than the locative, *amb-* conceivably reflects full grade **h₂embh-*. Since in Latin there is no trace of the locative en-

ding *-i*, this alternative cannot be dismissed altogether. Rix states: "doch ist die Voraussetzung, daß lat. *amb-* nicht auf eine Form auf *-i* zurückgeht, nicht zu beweisen." I would add that there is no evidence whatsoever for another form than **$h_2$mbhi*. In view of the incontestable zero grade root in a number of forms, the analysis of **$h_2$mbhi* as a locative is unlikely. The form rather contains the suffix **-bhi*, which is regularly combined with a zero grade root. Thus, the reconstruction **$h_2$nt-bhi* which is discussed in 5. in connection with *ambō* seems likely (Jasanoff 1976, 123-131). What matters here is that *amb-* reflects a zero grade root.

Hamp's suggestion (1976a, 262) that PIE. **$h_1$mbh-* 'against' and **$h_2$mbh-* 'around' may have been mixed up is unwarranted: there is no semantic reason whatsoever to suppose that *amb-* goes back to a form other than **$h_2$mbh-*. Note that Sabellian points to the same development to **amb-* as has occurred in Latin.

5. *ambō* 'both', fem. *ambae*, cf. Gr. ὄμφω 'both', Toch. A *āmpi*, B *āntpi*, *antapi* 'both'. The Tocharian forms point to **ant-bh-* (Jasanoff 1976, 123-131). As to **ant-*, see no. 11 below. There is no means to decide whether *ambō* reflects zero or full grade **h_2(e)nt-*, but if the forms contain the case suffix **-bhoh$_1$*, **-bhi* a zero grade root is probable.

6. *ancus* 'with crooked arms' may be compared with OIc. *angr* 'Bucht', which has a full grade root and reflects **$h_2$enko-*. The latter may also be reconstructed for Latin. There is at least no evidence to assume that *ancus* reflects a zero grade root. See II.C.4.2 no. 32 and II.C.4.5 no. 3.

7. *angĕre* 'to squeeze, oppress', cf. *angor*, *angustus*, which reflect an *s*-stem. If the latter is old, it probably reflects full grade **$h_2$engh-* (for the root cf. II.C.4.2 no. 33). There is no indication that the verb reflects zero rather than full grade **h_2(e)ngh-*.

8. *angulus* 'corner, angle' probably reflects full grade **$h_2$eng-* in view of OIc. *ekkja*, OHG. *anchal* etc. 'ankle' < PGm. **ank-* and OCS. *ǫgъlъ* 'corner' (see II.C.4.2 no. 34).

9. *anguis* 'snake' < **h_2(e)ng^{w}hi-*. OHG. *unc* 'snake' points to a zero grade root (PGm. **ung-* < PIE. **$h_2$ng^{w}h-*), Lith. *angìs*, Asg. *añgį* to full grade **$h_2$eng^{w}h-*. *anguis* cannot be used (see II.C.4.2 no. 35).

10. *ānsa* 'handle, grip' < **h₂(e)ns-*. Lith. *ąsà*, Asg. *ąsą*, Latv. *ùosa* 'handle of a pot', OPruss. *ansis* 'hook of a kettle' and OIc. *ás* 'Loch im Schuhleder zum Durchziehen der Riemen' < **ansjā-* point to full grade **h₂ens-*. *ānsa*, which reflects the same formation as the Baltic forms, most likely reflects full grade **h₂ens-* as well.

11. *ante* 'opposite, against' < **h₂(e)nti*. Cf. Gr. ἀντί 'id.', Skt. *ánti* 'in front of, opposite', which in view of Skt. reflects full grade **h₂ent-i*, the locative sg. of the root noun that is reflected in Hitt. *ḫant-* 'front, face', Gr. adv. ἄντα 'opposite'. Lat. *ante* most likely reflects full grade **h₂ent-i* as well.

2.1.3. **h₃NC-*

12. *umbilīcus* 'navel' must in the first place be compared with Gr. ὀμφαλός 'id.' which, according to Rix 1970, 94-95, reflects **h₃nbh-l̥*, OHG. *nabulo*, *napulo*, *napilo*, OE. *nabula*, *nafela* (Campbell 1959, 158-159), OIc. *nafli* 'navel' < PGerm. **nabulōn* < **h₃nobh-l̥*, OIr. *imbliu* 'navel' < **ambhelōn* < **h₃nbhĕl-*. The *l*-stem obviously goes back to PIE. and displays an ablaut **h₃nobh-* (Germ.), **h₃nbh-* (Greek, Celtic), with a suffix **-l̥-* (Greek, Germ.), **-ĕl-* (Celtic). **h₃-* is proven by Greek. As to the possibility that the Greek form reflects **h₃enbh-*, Szemerényi 1964, 239, 245 f. and Rix 1970, 95 have noted that, while one must admit the possibility of Schwebeablaut in a given etymon, its occurrence within one and the same paradigm must be denied. Thus, there is no room for **h₃enbh-* beside **h₃nbh-* and **h₃nobh-*. Consequently, Lat. *umbilīcus*, which originally belonged to the same *l*-stem paradigm, most likely reflects **h₃nbh-*, not **h₃enbh-*. Pokorny's reconstruction **embh-* for OIr. *imbliu* (IEW. 315) is unwarranted.

Outside the *l*-stem paradigm the root **h₃nbh-* generally has a full grade **h₃nobh-*: Skt. *nā́bhi-*, OPruss. *nabis*; Av. *nabā-nazdišta-* 'closest relative', Latv. *naba* 'navel, nave'. Only OS. Apl. *ambon* (*n*-stem), OHG. *amban* (secondary *o*-stem based on an *n*-stem) 'belly', with which one may compare Lat. *umbō* 'boss of a shield', point to **h₃enbh-*, if at least they are cognate. As Rix 1970, 107 note 71 pointed out, these full grade I forms are a derivative of **h₃nbh-* 'navel', as is indicated by the semantics, and they cannot therefore be used to prove the possibility that **h₃enbh-* occurred in the *l*-stem.

The essential point is that **Henbh-* is only certain for *amban*, *ambon*.

If one prefers to reconstruct *umbilīcus* as *$*h_3enbh$-* rather than as *$*h_3nbh$-*, one implies, in view of the argument concerning Schwebeablaut above, that this full grade was taken from *umbō* (if *umbō* < *$*h_3enbhōn$*), which is unlikely in view of the semantic gap between the two (which may admittedly be recent) and moreover ad hoc and unmotivated.

According to Szemerényi 1964, 75, *umbilīcus* developed from **ombol-* < **embol-*, but this type of vowel-assimilation over two consonants is not regular (Rix 1970, 108 note 75).

Thus, one may agree with Rix that *umbilīcus* regularly reflects *$*h_3nbh$-*.

13. *unguĕre, unctus* 'to anoint', cf. U. *UMTU* < *$*h_3(e)ng^w$-e-tōd* (see Meiser 1986, 87), is cognate with Skt. *anákti*, 3pl. *añjánti* 'to anoint' (the Skt. *n*-present inflection may reflect *$*h_3n̥$-n-ég^w-ti*, *$*h_3n̥$-n-g^w-énti*, Dr. A. Lubotsky p.c.), *áñjas-* 'ointment'. Since *o*-grade in the present tense of a verb is unlikely, Lat. *unguō* probably reflects *$*h_3eng^w$-* or *$*h_3ng^w$-*, or, if the Latin verb reflects a nasal present, *$*h_3n$-n-g^w-*.

The neuter *n*-stem *unguen* 'grease, oil', U. *UMEN /ommen/* < **omben* < *$*ong^wn$* may reflect a zero grade root *$*h_3ng^w$-* in view of OIr. *imb* 'butter', Bret. *amann* 'id.' < **amban-* < *$*h_3ng^w$-n*. However, as OHG. *ancho, anco* (masc., *n*) 'butter' < *$*h_3eng^w$-ōn* shows and the relation of Lat. *nōmen* < *$*h_3neh_3mn$* to OIr. *ainm* < *$*h_3nh_3mn$* indicates, it is equally possible that the Italic forms reflect a full grade root. Besides, the full grade may at any time have been introduced from the verb. *unguen, UMEN* is therefore at best a possible instance of **HNC-*.

14. *unguis* 'nail' reflects an *u*-stem of the root *$*h_3ngh$-*, cf. Gr. ὄνυξ 'nail, claw' < *$*h_3nogh$-*, Beekes 1969, 47. The same stem is reflected in OIr. *ingen* (f.), MW. *ewin*, Bret. *ivin* 'nail' < **angh-u̯-īnā-* < *$*h_3ngh$-u-* (Rix 1970, 96; full grade *$*h_3engh$-* would have been possible for British, but not for Irish); OCS. *nogъ-tъ*, Lith. *nagù-tis* 'fingernail' < *$*h_3nogh$-u-*; and in Toch. A *maku*, B *mekwa* (pl., with assimilation *n...w* > *m...w*, Krause-Thomas I § 44, 3c) < PToch. **mek-u-* < PIE. *$*h_3nogh$-u-*. Since Lat. *unguis* belongs to the *u*-stem *$*h_3nogh$-u-*, *$*h_3ngh$-u-*, it must reflect one of the two, not *$*h_3engh$-u-* (for the same reason as given s.v. *umbilīcus*; thus Rix 1970, 96).

Lat. *ungula* < **ongh-lā-* 'claw' may be compared with

OHG. *nagal* 'nail', Goth. *ga-nagl-jan* 'to nail on' < **h₃nogh-lo-*.

All other cognates but one point to **h₃nogh-*, e.g. Gr. ὄνυξ, Arm. *eł-ungn* < **onogh-* < **h₃nogh-* (see Rix 1970, 108 note 79), Lith. *nagà* 'hoof', OCS. *noga* 'leg', Skt. *nakhá-* 'nail' (with *-kh-* for **-gh-*). The exception is Skt. *áṅghri-*, *aṁhri-* 'foot', which probably does not belong to this root (Kuiper, *Vāk* 2, 96, pace Mayrhofer EWaia. s.v.; cf. *aṅgúri-* 'finger, toe', which definitely belongs to a different, probably pre-IE. root) and therefore cannot be used to prove **h₃engh-* (even if it did, it would not influence the reconstruction of *unguis* because within the *u*-stem paradigm Schwebeablaut is impossible).

We may conclude, with Rix, that *unguis* and probably also *ungula* (unless *áṅgri-* is cognate) reflect **h₃ngh-*.

2.1.4. Laryngeal of unknown quality + *-NC-*

15. *ēnsis* 'sword' is most likely cognate with Skt. *así-* (m.) 'sword, sacrificial knife'. The assumption of a word-initial laryngeal is based on Palaic *ḫašira-* 'dagger', which according to Eichner 1980, 127 note 30 reflects **h₂nsi-ro-*. However, Oettinger 1986, 34 note 108 doubts the etymology (compare also Ruijgh 1985, 152, who departs from **ns-*, **nes-*, e.g. ὄορ 'sword' < **ns-r*).

Since words denoting material objects are easily borrowed, the resemblance may be fortuitous (on the face of it, only *-s-* corresponds) and if **h₂NC-* yielded Lat. *aNC-* (cf. *amb-*), the connection of *ēnsis* with *ḫašira-* is impossible.

16. *ignis* 'fire'. Kortlandt 1979b, 61 reconstructed PIE. **ngʷni-* > BSl. **ungni-* with subsequent dissimilation of the first nasal in order to account for the vocalism of Lith. *ugnìs*, OCS. *ognь* 'fire'. If so, Skt. *agní-* and Lat. *ignis* must also reflect **ngʷni-*, and in Latin a dissimilation similar to the one in Balto-Slavic must have occurred.

In this way, a connection between the word for 'fire' and for 'coal', which was posited a long time before the solution of the BSl. problem was found, can be justified: Skt. *áṅgāra-* (Mayrhofer, KEWA. I, 21: "unsicher, aber nicht unmöglich"; Mayrhofer EWaia is more positive), Lith. *anglìs*, OCS. *ǫglь* would then reflect a full grade **ongʷ-(o/ō)l-*. Since no IE. root started with a vowel, the latter must be reconstructed as **Hongʷ-*. This would lead us to reconstruct *ignis* as **engni-* < **Hngni-* (zero grade being indicated by the Balto-Slavic and

Sanskrit cognates).

In view of the expected colouring by *h_2- (*amb-*) and *h_3- (*umbilīcus*, *unguis*), the initial laryngeal was probably *h_1-. But since the connection between the word for 'fire' and for 'coal' is not absolutely certain, *ignis* must be ranked among the possible cases of **HNC-* (see also VI.D.2.3 no. 3).

17. *imber*, G. *imbris* 'shower' is most likely cognate with the Oscan Dpi. *ANAFRÍSS* 'Regengottheiten' (?) < **anfri-fos* < **n̥bhri-* (Meiser 1986, 70). Gr. ὄμβρος 'shower' has -β- and cannot be cognate (Beekes 1969, 74). Further connections are uncertain. If the Italic forms are cognate with Skt. *ámbhas-* 'water' < **Hembh-* rather than with Gr. νέφος 'cloud' < **nebh-*, one must reconstruct an initial laryngeal. However, the full grade reflected in *ámbhas-* is completely isolated and it has been suggested that *ámbhas-* is due to the influence of non-IE. Skt. *ambu-* 'water' on the PIE. root **nbh-*, **nebh-* (Szemerényi 1964, 249, Rix 1970, 108 note 76). The observation that a word for 'water' need not be cognate with a word for 'cloud' does not necessarily imply that one must posit two different etyma, **Hembh-* 'water' and **nebh-* 'cloud', as the formal similarity of the two is remarkable, and Skt. *abhrá-* 'cloud, rainy weather', Av. *aβra-* 'cloud, rain' < **nbhro-* show that both concepts may be expressed by **nebh-*.

I conclude that it is unlikely that *imber* reflects a constellation **HNC-*.

2.1.5. Conclusion.

The following words constitute the evidence for the development of *HNC-*.

probable	possible	unlikely
4 *amb-* <*$h_2$mbhí	1 *indi-* <*h_1(e)ndo-	3 *inguen*
12 *umbil-* <*$h_3$mbh-	2 *inter* <*h_1(e)nter-	6 *ancus*
14 *unguis* <*$h_3$ngh-	5 *ambō* <*h_2(e)nt-	7 *angĕre*
	13 *unguen* <*h_3(e)ng^w-	8 *angulus*
	16 *ignis* <*$h_1$ng^{w}ni-	9 *anguis*
		10 *ānsa*
		11 *ante*
		13 *unguĕre*
		15 *ēnsis*
		17 *imber*

Although the amount of reliable material is small, it is not conflicting. All the material, including the possible cases, points to a "triple reflex": *h_2ṆC- > *h_2eNC- > *aNC-*; *h_3ṆC- > *h_3eNC- > *oNC- (> *uNC-*); and probably, by extension of this conclusion and on the basis of *indi-*, *inter*: *h_1ṆC- > *h_1eNC- > *eNC- (> *iNC-*). It may be noted that the development in Latin, on the face of it exactly matching that of Greek, is actually fundamentally different. In Greek the initial laryngeal was vocalized (*$h_3$nbh- > ἀμφ-, not **ἀφ-), whereas in Latin, where word-initial laryngeals were never vocalized (not even before consonants, see II.B.2.5, but see 3.3 for a possible exception before *TC-*, which is irrelevant here), the nasal was vocalized and the resulting vowel was subsequently coloured.

2.2. **HLC-*

2.2.1. **h_1LC-*

1. *ardea* 'heron' is probably cognate with Gr. ἐρωδιός, ἐρῳδιός (Hom. etc.) 'heron', beside which ἀρωδιός (late (Septuagint) and therefore unreliable) and ῥωδιός (with secondary loss of ἐ-, see Chantraine s.v.) are attested. Greek points to *h_1rōd-*. If so, *ardea* can only reflect *h_1rd-*.

Other cognates are less reliable (see Pokorny IEW. 68). SCr. *róda* 'stork' < PSlav. **rodà* (AP. b) cannot be an old cognate: PSlav. **rod-* and **ord-* would have yielded SCr. ***ràda* (AP. a), the accentuation and vowel quantity reflecting an acute in accordance with Winter's law. It is perhaps a loan from Latin: "Romance" **árda* vel. sim. > Slav. **ròda* > **rodà* (Dybo's law) > *róda* (Neo-Štokavian retraction). OIc. *arta* (f.) 'kind of teal, garganey', *ertla* 'wagtail' point to PGm. **art-* < **ard-*, **ord-* (i.e. PIE. *$h_1$ord-*?), but they are semantically remote.

Thus, we are left with the Latin and Greek forms. In view of the limited distribution, the etymon need not go back to PIE. The Greek and Latin form cannot reflect the same substratum form because they diverge too widely. One must therefore either accept a PIE. origin, or consider it an independent borrowing from two related but diverging languages (cf. e.g. Lat. *plumbum*, Gr. μόλυβδος 'lead').

ardea is at best a possible case of **h_1LC-*.

2. *aries*, G. *-etis* 'ram' is cognate with U. Asg. *ERIETU* 'arietem', Arm. *or-oǰ* < **er-oǰ* 'lamb', *erinǰ* 'cow', Gr. ἔριφος 'young goat' and OIr. *heirp* 'deer', *erb* 'cow' (<

*erbh-), which point to a root *$h_1(e)r$-. It might be supposed that *aries* reflects *h_1riet-, in which case the Umbrian form would probably display a (partial) assimilation *a-* > *e-* to the following syllable. As the latter is completely ad hoc, we may prefer to regard *aries* as one of the many instances of unexplained *a-* in Latin.

3. *ulcus* 'ulcer, wound', being a neuter *s*-stem, reflects full grade *h_1elk-os*, cf. Gr. ἕλκος, Skt. *árśas-* (see II.C.4.1 no. 23).

4. *ulmus* 'elm-tree' may be compared with OHG. *ëlm-boum* < *h_1elmo-, OIc. *almr* 'id.' < *h_1olmo-. MoHG. *ulm*, Du. *olm* are probably borrowed from Latin and do not point to *h_1lmo- > Germ. **ulma*-. It is doubtful whether *ulmus* reflects a zero grade root, *h_1elmo- and *h_1olmo- being equally possible.

2.2.2. *h_2LC-

5. *albus* 'white', U. *ALFU* 'alba', cf. Gr. ἀλφός 'white rash' < *$h_2(e)lbh$-. OHG. *albiz*, OE. *ælbitu*, *ielfetu*, OIc. *elptr*, *ǫlpt* 'swan' < **alb*- point to full grade *h_2elbh-, but the formation is different. *albus* cannot be used as evidence.

6. *alius* < *h_2elio-, cf. full grade in Goth. *aljis* 'other'. See II.C.4.2 no. 21.

7. *almus* 'feeding' < *$h_2(e)lmo$- belongs to the root of *alĕre*, OIr. *ailid* 'to feed' (see II.C.4.2 no. 23). Whether it reflects a full or zero grade root cannot be ascertained. If *altus* 'high' originally meant 'grown up, elevated' and was the ppp. of *alĕre* (which is attested as *alītus*), it may reflect zero grade *h_2l-to-*. But cf. full grade in OS. *ald* etc. 'old' < *h_2el-to-*. Besides, the connection with *alere* is not compelling (cf. perhaps rather OIr. *alt*, W. *allt* 'cliff').

8. *alnus* 'alder' probably reflects full grade *h_2el-s-no-* (see II.C.4.2 no. 22).

9. *arcēre* 'to shut off, enclose, hold off', *arca* 'case' and perhaps *arx* 'citadel' (if not pre-Italic, cf. *urbs*, EM.) reflect a root *$h_2(e)rk$- which is found also in Gr. ἀρκέω 'to ward off, protect', ἄρκος (ntr.) 'protection' (< full grade *h_2erk-os*; the *s*-stem is probably old in view of the compounds in -ης, αὐτ-άρκης 'self-sufficient', ποδ-άρκης 'having swift feet'); Arm. *argel* 'barrier'; and probably also Hitt. *ḫark-* 'to hold, have'. That OHG. *rigil* 'bolt' and Lith. *rakìnti* 'to lock' are

cognate is less evident.

Whether ἀρκέω is derived from the full-grade *s*-stem (WH.) is doubtful (see Frisk and Chantraine s.v.). **arkes-i̯ō* would have yielded *αρκείω (cf. πενθείω < **penthes-i̯ō*). ἀρκέω must rather be interpreted as a causative **h₂(o)rk-ei̯ō* (Prof. C.J. Ruijgh, p.c.).

If *arcēre* is a stative in **-eh₁-* and consequently means 'to be in the state of closing off', it most likely reflects a zero grade **h₂rk-*. This interpretation is not compelling, and a denominative or *e*-grade causative (*augēre*, *suādēre*, *merēre*) origin may be argued. Thus, *arcēre* is at best a possible case of **HLC-*. Nothing definite can be said about the ablaut in *arca* and *arx*.

10. *arcus* (with *o*- and *u*-stem forms, e.g. Gsg. *arquī*) 'bow'. In view of OIc. *qr*, G. *qrvar*, OE. *earh*, Goth. (deriv.) *arhazna* 'bow' < **arχ^{w}-* < **h₂erk^{w}-*, the Latin form most likely reflects a full grade.

11. *argentum* 'silver'. Two types of formation are of PIE. age (see Rix 1970, 84-85).

a. A form in **-nto-*, Av. *ərəzata-*, OPers. *ardata-* 'silver', Olr. *argat*, W. *arian*, Bret. *arc'hant* < **h₂rǵ-nto-*. Skt. *rajatá-* (ntr.) 'silver' (and as an adjective, 'shining') seems to point to **h₂reǵnto-*, which would presuppose PIE. ablauting **h₂reǵ-nt-*, **h₂rǵ-nt-*. See, however, Mayrhofer KEWA. s.v. and Mallory/Huld 1984, 4-5 for an alternative explanation. Arm. *arcat^{c}* may have received *-at^{c}* from *erkat^{c}* 'iron' (Schmitt 1981, 75).

b. Forms in the Caland-suffixes: **h₂rǵ-ró-* (Gr. ἀργός < *ἀργρός 'shining, quick', Skt. *ṛjrá-* 'id.', Av. *ərəzrāspa-* 'having swift horses'); **h₂rǵ-i-* (Gr. ἀργι- in e.g. ἀργι-κέραυνος 'with shining quick lightning', Skt. *ṛji-* in e.g. *ṛjí-śvan-* 'having quick dogs', Arm. *arciw* 'eagle' and Hitt. *ḫarki-* 'white'); **h₂érǵ-u-* (Skt. *árjuna-* 'white, light', Gr. ἄργυρος 'silver', ἄργυφος 'shining white' and probably also Lat. *arguĕre* 'to indicate, point out', which is based on **argus* (EM. s.v.), and Toch. A *ārki*, B *ārkwi*).

Since a full grade root **h₂erǵ-* does not necessarily occur in any of the words of the same formation in other languages, *argentum* most likely reflects zero grade **h₂rǵ-*. The only formation in which **h₂erǵ-* is regular is the *u*-stem, which is reflected in *arguĕre*. The assumption that *arg-* in *argentum* was taken from **argu-* is not only ad hoc, but also highly impro-

bable in view of the semantics of *arguĕre*.

12. *armentum* < *$h_2(e)r$-? (see II.C.4.2 no. 49). As a derivative of a neuter in *-*mn* the word probably contains a full grade root.

13. *ars*, Gsg. *artis* 'art, manner' probably belongs to the root *h_2er- 'to fix' (cf. Gr. ἀραρίσκω; Beekes 1969, 235, Pokorny IEW. 55-61 (sic!)). It cannot be equated with Skt. *ṛtí-* because the latter means 'Angriff' (Mayrhofer EWaia.). Nevertheless, *ars* probably reflects *h_2rti-, as derivatives in *-ti-* generally have a zero grade root (Meillet 1937[8], 273).

artus (*o*) 'strait, narrow, strict' may be compared with Skt. *ṛtá-* 'correct, fitting' < *$h_2ṛ$-*tó*-.

If *artus* (*u*) 'limb' can be equated with Skt. *ṛtú-* 'correct time, rule, order', it probably reflects a zero grade root as well.

MHG. *art* (f.) 'origin, kind, nature', which seems to point to full grade *h_2er- (Pokorny, IEW. 57), must rather be connected with OS. *ardon*, OE. *eardian* 'bewohnen' etc., which ultimately belong to the root *h_2erh_3- 'to plough' (see Franck - Van Wijk 1912, 5-6 s.v. *aard*). Lith. *artì* 'near' is semantically too remote and also too isolated in Baltic itself to prove a PIE. full grade *h_2er-*ti*-.

All other forms in *-*to*-, *-*tu*- and *-*ti*- cited by Pokorny IEW. 56-57 do not contradict the assumption of general zero grade of the root (e.g. Arm. *ard*, Gr. ἀρτι-, ἀρτύς, ἁμ-αρτ-ή).

We may conclude that *ars*, *artus* (*o*) and *artus* (*u*) most likely reflect PIE. zero grade *h_2r-.

14. *ollus* 'ille', *uls* 'on the other side', *ultrā* 'beyond' belong to the root *h_2el- 'other' in *alius* etc. (Pokorny IEW. 24-25). *ollus* probably reflects *h_2ol-*no*-, cf. OCS. *lani*, Cz. *loni* 'last year' < **olnī* < *h_2ol- or *h_2el-. *uls* and *ultrā* probably reflect *h_2ol- as well in view of Olr. *ol* 'beyond'. There is no evidence for a zero grade root *h_2l- in any of the forms mentioned by Pokorny.

15. *ursus* 'bear' most likely reflects **ortḱos*, although it is not really clear why *o*- became *u*- (a dialectal development?) and whether *-*tḱ*- became Lat. *-s-* (cf. *situs* < **tḱitos*, cf. Skt. *kṣitá-*). For a discussion of these problems see Leumann 1977, 48, 57 and 177, Sommer-Pfister 1977, 47, 145, Mayrhofer 1986, 150ff. and especially Schindler 1967.

Skt. *ṛ́kṣa-* 'bear' clearly points to a zero grade root, which

is not contradicted by Av. *arəša-*, Arm. *arǰ*, Gr. ἄρκτος and OIr. *art*, W. *arth* 'bear'.

There are three reasons to suppose that the root had an initial laryngeal.

a. A PIE. root could not begin with an *r-* (see 11.A).

b. Hitt. *ḫartagga-*, which denotes an animal of prey, perhaps a bear (or a wolf?) points to initial $*h_2$- (or $*h_3$-). The connection is open to some doubt because the exact meaning of the Hittite word is not known.

c. It has not yet, as far as I am aware, been noted that OIr. *art*, W. *arth* 'bear' point to a laryngeal: PIE. **ṛkto-* (**ṛtko-*) would have yielded PCelt. **rikto-* > **rixto-*. The development of **ṛ* to *ar* took place only before continuants (*s*, *i̯*, *u̯*, *p* > φ, *H* and possibly *n*; see Pedersen 1909, 44). Pedersen's proposal that the development of *ṛ* to *ar* may have been conditioned by the spirant **-x-* < PIE. **-k-* in **ṛxto-* < **ṛkto-* is probably incorrect in view of OIr. *mlicht* 'milk' < **mlixti-* < **mlg-ti-* and *dlecht* 'lawful' < **dhlgh-to-*. Thus, Celtic probably presupposes **Hrkto-*.

The initial laryngeal must in view of Gr. ἄρκτος and Arm. *arǰ* have been $*h_2$-. It seems likely that *ursus* reflects $*h_2$*rkto-*, despite the problems of detail.

2.2.3. $*h_3$*LC-*

16. If *arbor* 'tree' < **arbōs* is cognate with $*h_3$*rdh-* 'high' (see no. 17), it must reflect a zero grade root $*h_3$*rdh-ōs*. The connection is, however, doubtful. It cannot be used.

17. *arduus* 'high'. All forms except Skt. *ūrdhvá-* (which perhaps displays a late development of Aryan) and OIc. *ǫrðugr* < **ardh-/ordh-* (which is a different formation altogether) presuppose $*h_3$*rdhuo-* (see IV.F.1.2.4 no. 16 and 1.3). In view of the numerous problems involved in this etymon, however, *arduus* can only be ranked among the possible cases of **HLC-*.

18. *orbus* < $*h_3$*orbho-*, but $*h_3$*rbho-* seems possible as well (see II.C.4.6).

19. *orīrī*, *ortus* 'to arise, come into existence' is cognate with Gr. ὄρνῡμι 'to cause to rise up', Skt. *ṛṇóti* 'moves', Hitt. *arnuzi* 'moves forth', Arm. *y-aṙnem* 'arise', which point to a root $*h_3$*r-*. The laryngeal is reflected in the long augment of Skt. *ā́rta* < $*h_1$*e-h*$_3$*r-to* and in the reduplication of Skt. *íyarti* < **Hi-Her-ti* (Rix 1970, 92-93).

The ablaut-grade of the root in *orior* cannot be

ascertained (cf. full grade in *sāgīre*, *haurīre*, *mētīrī*, *sepelīre*). The u-stem *ortus* 'rise' probably reflects full grade *$*h_3er$-tu-* because derivatives in *-*tu*- usually have a full grade root (Meillet 1937[8], 274; but cf. zero grade in Skt. *ṛtú*-, no. 13 above). In the ppp., a zero grade root *$*h_3r$- is expected, but since full grade is so commonly introduced in this form from the present, perfect and/or the supinum/nomen actionis in *-*tu*- (*nōtus*, *-plētus*, *sprētus*, *molitus*, *vomitus*, *scrīptus*, *trītus*), there is a serious chance that *ortus* reflects the full grade vocalism of the present or the supinum (cf. the u-stem *ortus*).

Thus, the ppp. *ortus* is at best a possible example of **HLC*-.

20. *ulcīscor*, *ultus* 'to avenge, punish', cf. *ullō* 'ultus fuero' < *$*ulsō$. The etymology is obscure. EM., WH. and Pokorny IEW. 310 hesitatingly connect the verb with *ulcus* 'wound, ulcer' < *$*h_1elkos$ (see no. 3 above). The connection with Gr. ὀλέκω 'to destroy' < *$*h_3lh_1$- (Rozwadowski ap. Pedersen 1909, 126) has little to commend itself; if it is correct, *ulcīscor* does not reflect *HLC*-. The etymon cannot be used.

2.2.4. Laryngeal of unknown quality + *-LC*-

21. If *alga* 'sea-weed' is cognate with Skt. *ṛjīṣá*-, which is an epithet of Indra with unclear meaning and formation (the meaning 'slippery, sticky' is late), and Norse (dial.) *ulka* 'eitern, ekeln, anfangen zu faulen' etc. (see Pokorny IEW. 305 for other North Germanic forms), the root may be reconstructed as **Hlǵ*-, which is no more than a possibility.

22. *algēre* 'to be cold, freeze', cf. *algor*, *algidus* and *algus* (u) 'cold', may be compared with OIc. Gsg. *elgiar*, MoIc. *elgur* 'Schneegestöber mit starkem Frost, halbgeschmolzener Schnee'. If the Germanic form reflects an *s*-stem (which is uncertain) and can be identified with Lat. *algor* (which may be an innovation of Latin), one may reconstruct the latter as *$*h_2elgh$-ōs* (see Pokorny IEW. 32). If *algēre* is primary, it reflects a zero grade root **Hlgh*-, like most stative verbs in *-*eh_1*-. Unreliable.

23. *altāre* 'altar on which a victim was burnt' is a formation in *-āli*- (EM.), obviously derived from the *to*-participle **altos* 'burnt', which most likely may be connected with *ad-olēre* 'to cause to burn'. In view of the vocalism of U. *U̇RETU* 'adoletum', we may reconstruct a Proto-Italic causative

*olē- < PIE. *Hol-eie-. Despite the fact that correspondences outside Latin are lacking, the thoroughly Indo-European morphology of *oleie-, *altos in my opinion points to an IE. origin. Since altāre is derived from the ppp., it reflects zero grade *Hl-tó-. There is no reason to assume the analogical introduction of the full grade root *Hel- because no paradigmatically related forms of this structure are attested. Thus, altāre probably reflects *HLC-.

24. If orbis 'circle', orbita 'wheel-track', U. Asg. URFETA 'orbitam', 'a circular object?' is cognate with OHG. rippa, rippi, OCS. rebro 'rib' (thus WH.), it may reflect *Hrbh-. However, the etymology is very doubtful. It cannot be used (cf. II.C.4.6 no. 4).

2.2.5. Conclusion

The following words constitute the evidence for the development of *HLC-*.

probable		possible		unlikely
11 *argentum* <*h_2rǵ-	1	*ardea* <*h_1rd-?	2	*aries*
13 *ars* <*h_2r-tí-	5	*albus* <*h_2(e)lbho-	3	*ulcus*
artus <*h_2r-tó-	7	*almus* <*h_2(e)lmo-	4	*ulmus*
artus <*h_2r-tú-	9	*arcēre* <*h_2(e)rk-	6	*alius*
15 *ursus* <*$h_2$rtḱo-	17	*arduus* <*$h_3$rduo-	7	*altus*
23 *altāre* <*Hl-tó-	19	*ortus* <*$h_3$rto-?	8	*alnus*
		orīrī <*h_3(e)r-	10	*arcus*
	21	*alga* <*Hlǵ-?	12	*armentum*
	22	*algēre* <*H(e)lgh-	14	*ollus, uls*
			16	*arbor*
			18	*orbus*
			20	*ulcīscor*
			22	*algor*
			24	*orbis*

The evidence is conflicting. Given the fact that only one probable instance points to *HLC- > *oLC- against five pointing to *HLC- > *aLC-, and considering that all but one of the possible cases support the latter, I think it is legitimate to make a decision: since the vocalism of *ursus* is unexpected

even if **HLC-* yielded **oLC-* (one would expect ***orsus*), it may be cast aside. This does not mean that *ursus* is not cognate with ἄρκτος etc., but rather that it has not developed from **h₂rtḱos* regularly. Kortlandt (1983b, 12) has suggested that *ursus* owes its *u-* to *urcāre* 'to roar' (of a lynx), cf. *uncāre* 'to roar' (of a bear), which seems to me a reasonable explanation. Considering the fact that the bear is a fierce, huge predator, which man has reason to fear and often to revere, its name may be more prone to tabuistic reshapings than the average word. Compare also the PIE. word for 'wolf', the reflexes of which point to both **ulkʷos* and **lukʷos*.

It may strike the reader that all reliable instances in which **HLC-* yielded **aLC-* have **h₂-*. One might wish to consider the following development: **h₂LC-* > **h₂oLC-* > **h₂aLC-* > *aLC-*, with **-L̥-* primarily developing into **-oL-* just as **-N̥-* primarily developed into **-eN-*. However, because **h₂o-* did not become Lat. *a-*, such a development is impossible. See further the next section.

2.3. General conclusion

We have seen that in **HNC-* the vocalic nasal developed (via **-ə́N-*?) into **-eN-* (in the same way as in other environments), and the vowel **-e-* was subsequently coloured by the preceding laryngeal:

**h₁ndo-* > *indi-*(?)
**h₂mbhi* > *amb-*
**h₃nbh-* > *umb-ilīcus*.

It is unlikely that the nasal was consonantal and the laryngeal was vocalized (as in Greek) because a word-initial laryngeal is not vocalized in Latin under any other circumstances (**h₃dnt-* > *dens*; the only exception is perhaps *#HTC-* > *aTC-*, see II. B.3). Besides, vocalization of initial *H-* would most likely have led to *aNC-* irrespective of the quality of the laryngeal.

**HLC-* most likely did not develop into **HoLC-* but yielded **aLC-*:

**h₂rǵnto-* > *argentum*.

It is unlikely that the intermediate stage was **h₂org-* because *-o-* was not coloured to *-a-* by **h₂-* (see II.C.4.5). The material does not demonstrate that **h₁LC-* and **h₃LC-* yielded **eLC-* and **oLC-*, respectively. It is most unlikely that the laryngeal was vocalized in the same way as in Greek, i.e. **H̥LC-* > *eLC-*, *aLC-*, *oLC-* (see above). Moreover, vocalization of the laryngeal would lead to Latin *aLC-*. The assumption of a de-

velopment of **HLC-* to **HeLC-* or **HəLC-* (whichever one prefers to write) and an ensuing triple reflex (**h₁eLC-* > *eLC-*, **h₂eLC-* > *aLC-*, **h₃eLC-* > *oLC-*) also fails partly on the ground that a development **h₁LC-* > **eLC-* is inconceivable (see the Introduction, section 1. above); one would expect **h₁LC-* > **h₁aLC-* > *aLC-* (*ardea*?) because a vocalic liquid yields *aL* in a laryngeal environment, as is shown by the development of **CRHV-* (IV.D.3): **CNHV-* yielded **CeNHV-* (*similis* < **semalos* < **smh₂elo-*), but **CLHV-* yielded **CaLHV-* (*calēre* < **ḱlH-eh₁-*). I refer to section IV.D.2.3.4 for an explanation of the developments in terms of relative chronology. The question of whether **h₃LC-* > **h₃aLC-* yielded *oLC-* cannot be settled, but perhaps *orior*, *ortus* show that it does.

As to Sabellian, there is very little material that can elucidate the development of **HRC-*. O. *AM-*, U. *am-*, *AN-* 'amb-' points to **h₂mbhi* > **ambi*, as in Latin. U. *UMEN* perhaps reflects **h₃ngʷ-n*, but a full grade root is equally possible. O. *ANTER*, U. *ander* 'between' most likely show a secondary development of **en-* to **an-* in a closed accented syllable (see IV.D.2.3.4) rather than a development **h₁nter* > **anter*, which would diverge from Latin. The etymon probably reflects PIE. full grade **h₁enter* rather than zero grade. O. *ARAGETUD* 'argento' indicates that **HLC-* became **aLC-*, as in Latin. Consequently, there is no indication that the development of PIE. **HRC-* in Sabellian differed from that in Latin.

We may conclude that **HNC-* yielded **HeNC-* > *eNC-* (> *iNT-*), *aNC*, *oNC-* (> *uNT*) and that **HLC-* yielded **HaLC-* > *aLC-*; whether or not **h₃LC-* > **h₃aLC-* yielded **oLC-*, is uncertain (*orior*, *ortus*). Reverting to the possibilities suggested in the Introduction (section 1 above), we may conclude that **HRC-* in Latin developed according to no. 7 or no. 10.

E. WORD-INITIAL LARYNGEAL BEFORE *I* (*#HI-*)

It may be useful to devote some attention to the development of a laryngeal before *i* and *u* (=*I*) because it has been assumed that a laryngeal could be vocalized in this position, esp. before *u* (*aurōra*).

This section is organized as follows: *#HIC-* (1), *#HIV-* (2), *#HIR-* (3). Since the development of the laryngeal before *i* may conceivably differ from that before *u*, the two sounds must

be distinguished: 1.1, 2.1 and 3.1 treat *#Hi-*, 1.2, 2.2 and 3.2 treat *#Hu-*.

1. *HIC-*

1.1. *HiC-*

There are three instances, which all point to the loss of the laryngeal.

1. *ictum* 'wounded', the ppp. of *īcĕre* < **h_2i-$h_2i\acute{k}$-*, probably reflects **$h_2i\acute{k}$-to-* (see II.C.4.1 no. 18).

2. *imāgō* 'image' and *imitārī* 'to imitate' reflect a **h_2i-mo-*, cf. Lat. *aemulus* 'rival' < **h_2eim-elo-*, Hitt. *ḫimma-* (see II.C.4.2 no. 9).

3. *ĭtus, ĭtum* 'gone; going', *ĭter* 'road' reflect **h_1i-to-, -tu-, -tr̥*, cf. *īre*, Gr. εἶμι (see II.C.4.1 no. 8).

1.2. *HuC-*

I have found only one reliable instance, viz. *ūrĕre, ŭssī, ŭstum* 'to burn' (short *-ŭ-* is implied by the double *-ss-* of the perfect: **ūssī* would have yielded **ūsī*), which belongs to the root **h_1eus-* in Gr. εὕω 'to burn', Skt. *óṣati* < **h_1eus-*, ppp. *uṣṭá-* 'burnt', OIc. *ysia* 'fire' < **h_1us-*. The presence of an initial laryngeal may be assumed on the basis of root structure: **eus-*, with a word-initial vowel, was not tolerated in PIE.

Some scholars have assumed that **HuC-* yielded Lat. *auC-*, usually on the basis of *aurōra* 'dawn' (e.g. Forssman 1982-3, 291, Ringe 1988, 432-3, hesitating). This seems most improbable for two reasons. First, *aurōra* may simply reflect **h_2eus-ōs-* (as Gr. ἠώς < **ausōs-*, Beekes 1969, 65), with an ablauting root **h_2eus-*, **h_2us-* (cf. Skt. *uṣás-*); that the full grade of this root was indeed **h_2eus-* and not **h_2ues-* is shown by OHG. *ōstar-* 'east-'. In the second place, the vocalization is unlikely for theoretical reasons. If a laryngeal was lost before a stop (*h_3dnt-* > *dēns*) and also before a consonantal **u̯* (**h_2ueh_1nto-* > *ventus*), where one would expect the laryngeal to be relatively more syllabic, it most certainly was lost before **uC-*, where *-u-* was the syllabic nucleus and the laryngeal would consequently be expected to remain unvocalized (**ustus*). The situation in Latin is in this respect very different from that in Greek, where the development of **HuC-* has been a much-disputed issue because in Greek word-initial laryngeals are in general much more prone to vocalization than in Latin.

With regard to syllabification there is perhaps one somewhat exceptional case of **HuC-*, in which *-C-* is antevocalic *-l-*:

lōrum 'thong, rein' < **u̯lōr-* < **h₁ulōr-* (see IV.C.1.3 no. 5). However, the etymology is not altogether reliable in view of problems in the interpretation of the Greek cognates.

2. *HIV-*

2.1. *HiV-*

The only possible instances are the participle *iens* 'going' < **h₁i-ent-*, but see Beekes 1985, 67-8, who reconstructs **eiens* > **ēns* >> *iēns*; and *iēcī* < **(h₁)ieh₁-k-* (see IV.D.1.2.2 no. 1). There are two instances of **Hiu-* (one very uncertain) which may be discussed here.

1. The connection of *iūbilāre* 'to cry out, rejoice', which is formed in the same way as *sī-bilāre* 'to whistle', with Gr. αὔω, ἀῦσαι 'to cry', ἀύτη 'cry' cannot be maintained because the Greek forms, although they are opaque, cannot reflect **h₂iu-*: a laryngeal is never vocalized before **i-* in Greek. One might alternatively think of **h₂eiu-*. Lat. *iū-* is best compared with the onomatopoetic root in Gr. ἰΰγή 'Jubel- oder Wehschrei', ἰύ 'Ausruf des Erstaunens', MHG. *iū*, *iūch*, which cannot in a regular way be connected with αὔω etc. There is therefore no basis for the assumption of an initial laryngeal in Latin.

2. The root of *iuvenis* 'young man', *iuvencus* 'calf' (cf. Olr. *oäc*, W. *ieuanc* 'young' < **iu̯ankо-*) is the same as that of Lat. *aevus*, Skt. *áyu-*, Av. *āyu*, Gsg. *yaoš* 'age' < **h₂oi-u*, **h₂i-eu-*. The Latin forms reflect **h₂iu-Hn-* (see IV.G.2.1.3.3).

2.2. *HuV-*

1. The connection of Lat. *vas*, Gsg. *vadis* 'bail' etc. < **u̯odh-* (see VI.C.2.2.2) with Gr. ἄεθλος 'struggle, competition', ἆεθλον 'prize' is very uncertain. It is not mentioned by EM. and Frisk and rejected by WH. Beekes 1969, 56 adduces Du. *wed-strijd* 'contest' as a semantic and formal parallel, which is not altogether convincing because the notion 'struggle' is not part of Du. *wed-*, unlike Gr. ἄεθ-λο-. The reconstruction of a root **h₂u̯odh-* for *vas* is therefore unreliable.

2. *vegēre* 'to be strong, thrive' probably reflects **h₂ueg-*, cf. Gr. ἀέξω, Goth. *wahsjan* 'to grow'.

3. *ventus* 'wind' reflects a root **h₂ueh₁-*, cf. Gr. ἄησι 'blows', Hitt. *ḫūu̯anteš* 'winds'. See IV.C.3.

4. *vergĕre* 'incline' is probably cognate with Skt. *vṛṇákti*

'turns'. In view of the long augment of *ávr̥ṇak* and the initial *ḫ-* of Hitt. *ḫurki-* 'wheel', *vergĕre* probably reflects **h₂uerǵ-*.

5. The connection of *vīverra* 'ferret' with Gr. ὀϝείρω 'to lift' < **h₂uer-*, αἰώρα 'Schwebe, Hängebed, Schaukel' < **wai-wōr-ā* (??) is extremely doubtful. Gr. ὀϝείρω lacks a convincing etymology (perhaps to Lat. *sērius*, Lith. *svarùs* 'heavy' etc.).

6. *vovēre* 'to pledge' has generally been connected with Skt. *vāghát-* 'pledging an oath, sacrificing' and Gr. εὔχομαι 'to pray'. Since no IE. word started with a vowel, εὔχομαι reflects **h₁eugʷh-*. If this is accepted, *vovēre* must reflect **h₁uogʷh-ei-*.

7. For *avis* < **h₂eui-* rather than **h₂ui-*, see II.B.3.2 no. 6.

3. *HIR-*

3.1. *HiR-*

No material.

3.2. *HuR-*

lāna 'wool' reflects **u̯lānā* < **HulHn-* (with syllabification **Hu̯l̥Hn-*) in view of Hitt. *ḫulana-*, *ḫuliia-*, Gr. λῆνος etc. See IV.D.1.3.2.1 no. 19.

Other instances are unreliable. *urgēre* 'to press, push, force' etc. is for semantic reasons probably cognate with Lith. *veržti* 'einengen, schnüren, pressen' (with circumflex intonation, pointing to **-ǵh-*), OCS. *-vrъzǫ*, *-vrĕsti* 'to bind', OHG. *wurgen* 'to strangle', OS. *wurgill*, OIc. *virgill* 'Strick' < **uerǵh-* and not with Gr. εἴργω 'to close in' < **h₁uerǵ-* (Beekes 1969, 62-63, 66). Lat. *ur-* is probably the regular development of **u̯r̥-*, cf. *urvus* 'circuitus civitatis', *urvāre* 'mit einer Grenzfurche umziehen' < **u̯r̥u̯o-*, cf. Myc. *wo-wo* /FóρFoς/.

4. Conclusion

There seems to be no good reason for supposing that a laryngeal could be vocalized before *i* and *u* in Latin under any circumstances. We may conclude that a word-initial laryngeal was regularly lost.

F. WORD-INITIAL LARYNGEAL BEFORE LARYNGEAL (*#HH-*)

1. *HHC-*

There are five instances, of which two (nos. 2. and 3.) are doubtful.

1. *acu-pedius* 'quick-footed', *acci-piter* 'hawk, falcon' (lit. 'quick-flier' < **acu-petri-*), cf. Skt. *āśu-pátvan-*, Gr. ὠκύ-πτερος. Since it is likely that Lat. *ōcior*, Skt. *āśú-*, Gr. ὠκύς etc. reflect **HoHḱ-* (**h₃eHḱ-* or **Heh₃ḱ*) rather than **Hōḱ-*, Lat. *acu-*, *acci-* probably reflect **HHḱu-* (thus Beekes 1972, 126).

2. *āiō* 'I say' < **h₁h₁ǵ-*?? See II.B.3.

3. According to Kortlandt 1980b, *amārus* 'bitter' reflects **HHm-*, the zero grade of the root found in Gr. ὠμός, Arm. *hum* 'raw' < **HoHmo-* (prob. **h₃eHmo-* in view of Arm. *h-*). The connection is, however, neither semantically nor formally compelling.

4. *apīscor* 'to obtain, reach' may reflect the (originally reduplicated) root **h₁h₁p-*, of which the full grade is found in the perfect *coepī* < **-ēp-* < **h₁eh₁p-*. See II.B.3.2 and .3.

5. *ătrōx* 'black, terrible' contains the zero grade of the root **HeHt-* found in *āter* 'black', Av. *ātarš* 'fire' (see II.C.6 no. 3).

We may conclude on the basis of the probable instances 1. and 5. that **HHC-* yielded **HH̥C-* > **HaC-* > Lat. *aC-*.

2. *HHV-*

Two words may be relevant.

1. *ornus* 'mountain-ash' < **ŏsĕno-* is cognate with W. *onn* etc. 'ashes', Olr. *uinnius* 'ash' < **ŏsno-*. Balto-Slavic points to a root **HoHs-*: Lith. *úosis*, Latv. *uôsis* (with acute intonation), SCr. *jȁsēn* (with Slavic short *-a-*), Russ. *jásen'*, Sin. *jásen* (AP. a) 'ash'. The *j-* of the Slavic forms is probably secondary because PSlav. **a-* was often replaced by **ja-* (OCS. *(j)agnъcь* 'lamb' < **ag-*, OCS. *(j)ablъko* 'apple' < **abl-*). In view of these forms, *ornus* and the Celtic forms most likely reflect **HHos-* (or **Hh₃es-*). The same protoform is reflected in Alb. *ah* 'beech' < **oskā* < **HHos-k-*. Arm. *hacᶜi* 'ash' and OE. *æsc*, OHG. *asc*, OIce. *askr* 'ash' may reflect **HHos-k-* as

well (**HHs-k-* is perhaps possible for Germanic).

In order to account for the ablaut **HoHs-*, **HHos-* (or **Hh₃es-*) and the variety in suffixes, we may reconstruct a PIE. *s*-stem NAsg. **HeH-s*, obl. **HH-es-*.

2. *ulna* 'elbow' < **ŏlĕnā-* belongs to a complicated etymon. The reflexes point to an *n*-stem **ŏl-en-*, but the same root is also attested in conjunction with other suffixes. The views presented here are to a large degree based on Lubotsky 1990, 131-132.

The *n*-stem is reflected in the following forms: Gr. ὠλήν, ὠλένη 'elbow' < **ōl-ĕn-*, ὠλλόν 'elbow, ell' < **ōl-n-*; Arm. *uln*, *uł n* 'spine, shoulder'. A root with a short vowel, **ol-*, is found in Lat. *ulna*, Olr. *uilen* 'angle', W. *elin*, Bret. *ilin* < **ol-ēn-*, OIc. *alin* (also *eln*, *ǫln*), OE. *elin*, *eln*, OHG. *elina* 'ell' < PGm. **alin-* < **ol-en-*. The *-ei-* of Goth. *aleina* (1x) is obscure; it may be due to a scribal mistake (thus Feist s.v.). Gr. ὀλέκρᾶνος (beside ὠλέ-) 'point of the elbow' (according to Brugmann from **ŏleno-krāno-*, see Frisk, Chantraine ad locc.) probably also contains old **ŏl-*, if it is reliable. Gr. λέκρανα 'elbows' is obscure (perhaps ὀ- > *ø-*, as in MoGr. λίγος < ὀλίγος, Chantraine s.v. ὠλένη; Prof. C.J. Ruijgh suggested that ὀ- was lost after the article in crasis at a time when the quantitative oppositions of the vowels were lost: τὸ ὀλέκρανον > τὸλέκρανον). Arm. *oł n* 'spine, backbone' points to **ŏl-* as well.

A suffix **-k-* is contained in the Balto-Slavic forms: **ŏl-k-u-* is found in Lith. *alkūnė*, OPruss. *alkunis* 'elbow' (the *e*-vocalism in Lith. *elkūnė* and a number of Latvian forms is secondary) and in OCS. *lakъtь* 'id.' OPruss. *woaltis*, *woltis* and Lith. *uolektìs*, Latv. *uôlekts* 'elbow' point to **ŏl-(e)k-ti-*. The broken tone of Latvian points to PIE. **HoHl-* (Lubotsky 1990, 132).

Three other forms are of importance. Hitt. *ḫaḫḫal-*, which may mean 'palm of the hand' (Laroche 1951, 188), points to **HoHl-* (or **h₂eh₃l-* or **h₃eh₂l-*), which would confirm the Baltic reconstruction; but since its meaning is not certain, it may not belong to the present etymon. Toch. A *āle*, B. (obl.sg.) *āl(y)i* 'palm of the hand', which despite the semantic difference probably belong to this etymon, point to PToch. **ale(n)* (cf. Hilmarsson 1986, 231 f., Lubotsky 1990, 133). Skt. *aratní-* 'elbow' may belong here, too.

Thus, Balto-Slavic **ōl-*, **al-* reflects **HoHl-*, *HHol-* (*Hh₃el-*?). The ablaut points to a PIE. *l*-stem (cf. *ḫaḫḫal-*).

Tocharian would then point to *HHl- (or *Hh_2el-).

Since the *n*-stem is found over extensive parts of the IE. territory, it probably goes back to PIE. The Greek and Armenian forms with *$\check{o}l$- reflect *$HoHl$-$\bar{e}n/\check{e}n/n$- (*Heh_3l-?). It is tempting to explain the Italic, Celtic, Germanic, Armenian and (perhaps, if reliable) Greek forms with *$\check{o}l$- as *$HHol$-, which might then be equated with the form of the root in Balto-Slavic *al-ku-. However, normal ablaut of an *n*-stem would create an alternation *$HoHl$-, *HHl- in the root, not *$HoHl$-, *$HHol$-. Although a full grade I beside a full grade II could occur in PIE. etyma in general, it could not occur within the same paradigm (cf. Rix 1970, 95). Thus, either the forms with *$\check{o}l$- < *$HoHl$- or those with *$\bar{o}l$- < *$HHol$- did not belong to the PIE. *n*-stem paradigm.

If *$HHol$-n- is old, $\bar{o}l$- in Greek and Armenian may have been introduced from the root noun. If *$HoHl$-n- is old, the explanation of the *n*-stem forms outside Greco-Armenian is more complex. Armenian and Greek *$\check{o}l$- may be explained from the zero grade *HHl-n- (if one of the two laryngeals was *h_3), which is perhaps confirmed by PToch. *$ale(n)$ < *HHl-, if this originally belonged to the *n*-stem paradigm. The Italic, Celtic and Germanic forms, however, cannot reflect *HHl- because the latter would have yielded *al- (see section 1. above). It is therefore most likely that *$\check{o}l$- in these languages was either introduced from the root noun or shortened from *$\bar{o}l$- < *$HoHl$- in accordance with Dybo's rule of pretonic shortening: see V.B.

III. LARYNGEAL AT THE END OF THE WORD

1. Introduction

The Latin material of words reflecting a word-final laryngeal is not extensive. Nevertheless, there are but few PIE. constellations for which the Latin result is in dispute. The main question is whether PIE. *-CiH# yielded Lat. -Cī# or -Ciă# (see section 4).

In the following sections, all Latin words that reflect or possibly reflect a word-final laryngeal are discussed. The order of presentation is: -CH# (2); -VH# (3); -IH# (4). No reflexes of PIE. word-final -RH# were found.

2. Word-final laryngeal after consonant (-CH#)

Three instances point to the vocalization of *-H to -ă.

1. *ita* 'thus' may be identified with Skt. *íti* 'thus' < **itH* (thus EM., Mayrhofer KEWA. s.v., but EWaia is more cautious, Rix 1976, 188 (**ith*$_2$)). According to WH., *ită* rather reflects **itā*, which was shortened in accordance with the "Iambenkürzungsgesetz". **itā* might allegedly be identified with Av. *iθă* 'thus', which does not explain Av. -θ-. The suggestion that *ita* reflects **itā* has therefore little to commend itself.

2. The NApl. of neuter nouns in -ă must be identified with Gr. -ᾰ, Skt. -*i* < *-*h*$_2$ (Beekes 1985, 28 ff.).

3. The Nsg. of the ā-stems, ending in Lat. -ă most likely reflects *-*h*$_2$. The assumption that *-*eh*$_2$ > *-ā resulted in Lat. -ă must be rejected (cf. 1sg. pres. -ō < *-*oH*). See V.C.1.1.2.

In Lat. *os*, G. *ossis* 'bone' < **HostH* (cf. Skt. *ásthi*, Hamp 1953; Beekes 1987c, 53), the final laryngeal does not seem to have been vocalized. In view of 1. - 3. above, this loss creates a problem. There are, however, reasons to suppose that **HostH* > **osta* was replaced by **ost*. First, the laryngeal was regularly lost before an ending beginning with a vowel, e.g. G. **HostH-es*, D. **HostH-ei* > **ostes*, **ostei*, which created the model for a new NAsg. **ost*. In the second place and perhaps more importantly, the NAsg. **HostH* > **ostă* would probably have been homonymous with the NApl. **HostH-h*$_2$ > **ostă*, which created pressure to replace the NAsg. (-ă being the marker of the NApl. neuter, and alien to

the NAsg; note, however, that there is no other evidence for the development of *-*HH#*). Mutatis mutandis, this proposal could also explain the Avestan cognate *as-ča*.

3. Word-final laryngeal after vowel (*-VH#*)

Since the treatment of word-final *-VH* does not differ from that of word-internal *-VH-* before a consonant, the instances may simply be listed.

1. *dē* 'from', Olr. *dí*, W. *di-* 'from' is probably an instrumental of the root **de* found in *unde*, *inde*, Gr. οἰκόν-δε < οἶκον δέ, Myc. *wo-i-ko-de* (WH.). In that case *dē* reflects **de-h*$_1$. An *o*-grade instrumental may probably be reconstructed for *dō-nec* until, as long as', *quan-dō* 'when', cf. OE. *tō* 'to'.

2. *octō* 'eight' probably reflects **Hokteh*$_3$ (**h*$_3$*e-*?) rather than **HoktoH* in view of the delabialization in *octāvus* 'eighth' (see IV.E.13.2.3). Cf. Gr. ὀκτώ.

3. *prō* 'before' most likely reflects an old instrumental of **prŏ* (Meillet, 1937^8, 350, Beekes 1973, 216). Accordingly, it goes back to **pro-h*$_1$.

4. *quā* 'where(to)' is according to WH. s.v. an instrumental, in which case it would reflect **k*^{w}*eh*$_2$*-h*$_1$. If, on the other hand, EM. are correct, *quā* (like *quō*) is in origin an ablative **quād*, and the word does not belong here.

5. The long final *-ā* of *trīgintā* 'thirty' etc. has not yet received a satisfactory explanation (contrast the short final in Gr. τριάκοντᾰ). In any case, *-ā* cannot reflect the neuter plural ending of the *o*-stems (Sommer 1914, 468) because the latter was **-h*$_2$ > *-ă* (Beekes 1985, 28 ff.; cf. Leumann 1977, 468, who also rejects Sommer's explanation). *-ā* probably points to **-eh*$_2$, whatever its origin.

6. The 1sg. present *-ō* reflects **-oH*, cf. the acute intonation of Lith. *-ù* < **-úo* < **-oH*.

4. Word-final laryngeal after *I* (*-IH#*)

There are no examples to illustrate the treatment of *-VIH* and *-RIH*. The evidence for the development of *-CIH* comprises eight instances.

1. *quiă* 'why, because' is in origin identical with the NApl. neuter *quiă* 'which' (cf. *nisi quia* 'except that'; Leumann 1977, 473). The form reflects **k*^{w}*i-h*$_2$ and may be compared with Gr. Boeotian τά, Megaran σά 'why?', Att. ἅ-ττα 'that

which' < *$k^{w}i\check{a}$ < *$k^{w}ih_2$.

2. According to Monteil 1973, 206, the Nsg. in *-ia* of the type *māteriēs*, *māteriă* reflects *-ih_1 and the Nsg. in *-ia* of the type *superbiă*, *avaritiă* reflects *-ih_2.

3. The neuter plural of the *i*- and *u*-stems ends in *-iă* (e.g. *maria*), *-uă* (e.g. *cornua*). The PIE. ending was *-ih_2, *-uh_2.

4. *quī* 'how, why', cf. *quī-cum* 'with whom'. EM. and WH. label *quī* an instrumental-ablative and WH. claim that *quī* may have resulted from a merger of an ablative *quī* < **quīd* and an instrumental *quī* < *$k^{w}i$-h_1 (cf. OE. OS. *hwī*, OIc. *hví* 'how'; Monteil 1973, 230 gives an unconvincing account of the origin of the instrumental by assuming analogical lengthening of **quĭ* after the type *arātrō*). Sommer 1914, 437, Meillet-Vendryes 1927, 462 and Ernout 1953, 87 claim that *quī* arose from an ablative **quīd* only. Leumann 1977, 472 simply states that *quī* is an instrumental (thus also Beekes 1985, 38, who reconstructs *$k^{w}i$-h_1).

The interpretation of *quī* as an instrumental *$k^{w}ih_1$ in my opinion seems preferable. Its meaning does not suggest a different origin. Instances like *quī-cum*, where the later language would use an ablative, are not indicative because originally the preposition *cum* < **ḱom* undoubtedly governed the instrumental (unfortunately **kom* has not survived in languages that have maintained the instrumental as a separate case-form; we may, however, compare the use of **su* 'with' with the instrumental in Slavic (OCS. *sъ*, which, viewed in isolation, might reflect **ḱom*) and Baltic (Lith. *sù*)). Moreover, the ablative sg. of *quĭs* and *quī* is (masc. ntr.) *quō*. If *quī* reflected **quīd*, it would be an innovation of Italic (in PIE. only *o*-stems formed an ablative on *-d*). This fact would force us to assume that the relatively late innovation **quīd* was itself replaced by **quōd* > Lat. *quō*, i.e. the motivation to create **quīd* made way for the motivation to abolish it again in a relatively brief time-span, without us being able to find out why. If, on the other hand, *quī* was an instrumental dating back to PIE., its lexicalization in the meaning 'how, why' and its loss as a relative, which maintained a final foothold in conjunction with the preposition *cum*, are understandable without any special pleading. I conclude that *quī* is a strong case of *-CIH#*.

5. *tū* 'you' reflects **tuH*, cf. OCS. *ty*, Skt. *tuvám* (< **tuH-am*).

6. *vīgintī* 'twenty' is a NA dual ntr. form (thus EM., WH.) reflecting **dui-dḱmt-ih₁*. For the explanation of the loss of the *d*'s, the origin of Lat. *-g-* and the length in *vī-* see Kortlandt 1983a. The Latin form must be compared with Skt. *viṃśatíḥ*, Av. *vīšaiti*, Gr. Fίκατι, εἴκοσι < *ἐFίκοσι, which have short final *-i*, which, as Kortlandt fthc. b argues convincingly, is the original ending of the Ndu. neuter. Lat. *-ī* reflects **-i* to which the ntr. pl. ending **h₂* or the Ndu. ending **h₁* was added at a later stage. The same innovation is found in British, cf. MW. *ugeint*, Bret. *ugent* < PBrit. **ugantī*. The idea that Lat. *-ī* is due to attraction to *vī-* (Sommer 1914, 468, with hesitation) is highly improbable.

7. Etruscan *uni* < Lat. **iūnī* and the derivation of *nūtrīre*, which presupposes a noun **nūtrī* (see V.C.I.6), reflect the Nsg. of the *devī́*-type, i.e. PIE. **-ih₂*.

8. The Gsg. ending of the *o*-stems in *-ī* probably reflects **-iH* and may be identical to the Nsg. ending of the Vedic type *devī́* (see V.C.1.1.3).

The NAsg. neuter of the *u*-stems in *-ū* (e.g. *cornū*) cannot be used, as its quantity is unreliable. (Attested *-ū* may be artificial, see Leumann 1977, 441; in the case of *genū*, *cornū* one might think of original duals which were reinterpreted as singulars.)

At first sight, the evidence seems to be conflicting. However, it is impossible that *quī*, *tū*, *vīgintī*, **iūnī*, **nūtrī* and Gsg. *-ī* replace **quia*, **tua*, **vīgintia*, **iūnia*, **nūtria* and **-ia* because of the conspicuous lack of a model and a motivation for such a development. The forms which point to *-CIH* > **-CIă* may be secondary. The Nsg. *māteriă* can hardly be used to prove anything because the origin of this type of inflection is a hot issue. In section V.C.2.4.3 it is held that the type reflects a PIE. stem in **-ih₂* of the *vr̥kī́ḥ*-type, which had a Nsg. in **-ih₂-s*; the Nsg. in *-iă* may have been a late form, based on the oblique cases, e.g. the Gsg. *-iāī*. The abstracts in *-iă* (*superbia* etc.) may have replaced an original Nsg. in **-ī* < **-ih₂* on the model of the simple *ā*-stems according to the proportion N. **-ă* : A. **-ām* = N. x : A. **-iām*, x = *-iă*. The neuter plural in *-iă*, *-uă* may have introduced the normal neuter plural ending *-ă*. The only problem is *quiă* 'why, because' because it is lexicalized and therefore exempt from paradigmatic reshufflings that could have affected

the normal paradigm of *quī*, *quis*. However, the obvious way out is that this lexicalization may have been recent, posterior to the reshuffling, in which case *quiă* replaced **quī* < **$k^{w}i$-h_2* in the same way as *mariă* replaced **marī*. The weight of the evidence pointing to the development **-IH#* > *-ī*, *-ū* indicates that this is indeed the explanation of *quiă*.

We may thus conclude that the Latin evidence points to **-IH#* > *-ī*, *-ū*.

IV. LARYNGEAL IN THE MIDDLE OF THE WORD

A. INTRODUCTION

In accordance with the preliminary remarks made in chapter I.C, the material will be presented in the alphabetical order *C,V,R,I* of the sounds which precede and follow the laryngeal.

In section B are discussed *CHC*, *CHV* and *CHR*, in section C are discussed *VHC*, *VHV* and *VHR* and in section D are discussed *RHC*, *RHV* and *RHR*. Section E deals with *HI* and *IH*, and here too the surrounding sounds dictate the order of presentation (see E.1). Section F treats the constellations *HRH* and *HIH*. The remaining, most complicated and correspondingly rare constellations (e.g. *CIHIV*, *HIRHC*, *IRHC*) are discussed in section G. More elaborate outlines of the contents of large sections can be found at the beginning of sections B.1, C.1, D.1 and 2, E.1 and F.1.

B. LARYNGEAL AFTER CONSONANT (*CH*)

1. Laryngeal between consonants (*CHC*)

1.1. Introduction

It has never been controversial that the three PIE. laryngeals yielded Lat. *a* between consonants (cf. recently Mayrhofer 1987, 100). Nevertheless, beside the general acceptance of this fact, two minor problems have occupied the minds of scholars:
(1) The alleged loss of the laryngeal without any reflex in certain positions (type *collis* < **kolH-ni-*);
(2) The alleged vocalization of $*h_3$ to *o* in *nota*.

It is the aim of this chapter to provide a discussion of all relevant Latin forms. The investigation of the first problem mentioned will be undertaken in chapter V.A.2. The second will be treated in section IV.D.1.3.6.1, (section D deals with laryngeals after vocalic resonants).

As regards the reconstruction of laryngeals, it will be clear that the presence of a laryngeal in a given word depends on the comparison with other languages. If Latin *a* corresponds with *e/o/Ø*-ablaut in other languages, its *a* must be of non-laryngeal origin and will be treated in chapter VI.

On the other hand, one must reconstruct a laryngeal in the

following cases:
(1) if Lat. *a* appears to be a zero grade of **ē*, **ā* or **ō*;
(2) if Lat. *a* corresponds with IIr. *i*;
(3) if the intonation of Balto-Slavic cognates is acute (except if this intonation is the result of Winter's law);
(4) if a Hittite cognate has *ḫ*.
Apart from these obvious distinctions of laryngeal and non-laryngeal *a*, there remain some cases which cannot clearly be assigned to either category. These are the words that are generally adduced as evidence for PIE. **a* and which are collected by Kuryłowicz 1956, 190 ff. and 194 ff. Kuryłowicz distinguishes two groups:
(1) Southern IE. (Greek, Arm., Lat., Celt.) *a* = IIr. *a* (p. 190 ff.);
(2) "European" (i.e. IE. excluding IIr.) *a* (p. 194 ff.).
I think that another classification is necessary:
(1) IIr. *a* and/or BSl. *a* (i.e. those languages in which *H* could not become *a*) = *a* in other languages;
(2) **a* in forms without cognates in IIr. and BSl.
The first category will not be treated here because IIr. and BSl. *a* cannot reflect a vocalized laryngeal. However, this is not absolutely copperbottomed because it just might happen to be so that BSl. or IIr. **a* reflects **h_2e*, while Latin *a* reflects **h_2* (or **h_2e*, which in general cannot be decided), see e.g. Lat. *cānus* < **kasnos*, cf. Skt. *śáśa-*, see 4.1.1 no. 2. Every item of Kuryłowicz's list must therefore be separately screened: if the outcome is that an interconsonantal laryngeal is indeed or probably involved, the word will be treated here (e.g. *cadere*, *cānus*). Only if the reconstruction of a laryngeal is impossible and the Latin cognate has *a*, the latter belongs to the numerous cases of non-laryngeal *a* in Latin. These words are discussed in chapter VI.

Words belonging to category (2) will be treated in this section for the simple reason that it cannot be demonstrated that in these cases the root did not contain a laryngeal. Of course, the latter alone is not decisive, but in general the assumption of a laryngeal offers the simplest explanation for the attested forms, e.g. in the case of Lat. *caper*, Gr. κάπρος, OIc. *hafr*, OIr. *cáera*. If one assumes, as I do, that Indo-European did not have a phoneme *a* (i.e. distinct from *e* and *o*), the reconstruction of a laryngeal in these cases gains strength. Forms like *caper* etc. cannot by definition be used as proof for PIE. **a*, even though the assumed laryngeal cannot be independently

proved.

1.2. Outline

In the present chapter, all Latin words containing short *-a-* are investigated. Research was conducted on the basis of the complete material in EM.

The plan of this chapter is as follows:
1.3 Words which are not discussed in this chapter. 1.3.1 Words without a reliable etymology. 1.3.2 Onomatopoetic and expressive words. 1.3.3. Loans. 1.3.4 Non-laryngeal *a*. 1.3.5 *CRHC* > *CRăC* and *#RHC-* > *#RăC-*. 1.4 The material. 1.4.1 $*h_1$. 1.4.2 $*h_2$. 1.4.3 $*h_3$. 1.4.4 **H* of unknown quality. 1.5 *farnus* and related forms.

1.3. Words which are not discussed

1.3.1. Words without a reliable etymology

The following words containing *CaC*, collected from EM., have no clear etymology:
bacalūsiae, *bacca* (*bāca*), *baccib a llum*, *baccīnum*, *badō* (*battō*), *bataclō*, *bafer*, *balatrō* (Etr.?), *bancus*, *barinula*, *bassus*, *basterna*, *blandonia* (*blandon(n)a*), *blatta*, *blatta* (*blatteia*), *brassica*, *brattea*, *caccītus*, *cacula* (*cacus*), *cada* (*cadula*), *caliandrum*, *caliga*, *calius*, *calva* (cf. *calvus*?), *cama* (Iber.?), *campus*, *camur*(*-us*, cf. Gr. καμάρα?), *canābula*, *canicae*, *canicum*, *caperrō*, *capis* (< Gr.?), *capistrum*, *cappa*, *capsa* (cf. *capiō*?), *carcer*, *carduus* (cf. *carrō*?), *carissa*, *casa*, *cassis*, *catēna*, *catīnus* (cf. OE. *heden*?), *cavea*, *caviae*, *cavidārius*, *cavilla* (cf. *calvor*?), *clacendix* (*clax-*), *crassus* (but cf. WH., very uncertain), *fallere*, *falx*, *famulus*, *familia*, *fatica*, *fatigāre* (*fessus*, *affatim*), *fatuus*, *favus*, *gabata*, *galla*, *gantula*, **garbula*, **gargala*, *grandis*, *gratilla*, *hallus* (*-x*), *hamiō*, *harēna*, **labarum*, *labrusca*, *laburnum*, *lacca*, *laccānium*, *laccar*, *lacerna*, *lacerta*, *lacertus*, *laciō* (=*lax* infra), *lacūnar*, *lammina* (*lāmina*, *lamna*), *lampadiō*, *lampāgō*, **langa*, **lapit*, *lappa*, *laquear*, *laqueus*, *lar(s)*, *latēna*, *later*, *latiārius*, *laver*, *lax* (*lacere*), *macus*, *maccus* (< Gr. ?), *mactus* (*macte*), *macula*, **magulum*, *mamphur* (< Osc.), *marisca* (*-us*), *marruvium* (*-bium*), *martīsia*, *marūca*, *matta* (Semit.?), **mattia*, *matula*, *pabō*, *palagga*, *p(a)lasea*, *palātium*, *palea*, *palla* (*-ium* < Gr.?), *palūdātus* (*-amentum*), *pampinus*, *pancra* (cf. *impancrō*),

panna, *pantex*, **paparium*, *paparus*, *papāver*, *papula*, *parcō* (cf. *compescō*), *passer*, *pastinum*, *pastināca*, *patera* (cf. *pateō* ?), **paveri*, *platalea*, *plates(s)a*, *rabula*, *rabulana*, *rabuscula*, *raia*, *rallus*, *rasis*, *(a)ravicelus*, *sabīna*, *saburra*, *sagīna*, *sagitta*, *salāmen*, *salapūt(t)ium*, *salar*, *salgama*, *salīva*, *salmō*, *salpūga* (*-punga*), *saltem*, *samartia*, *sambūcus*, *samosa*, *sampsa*, *santerna*, *sappus*, *sardō*, *sariō*, *satelles*, *satureia*, *saxum* (cf. OIc. *sax* 'knife'??), *scandala*, *scandula*, *scandulāca*, *scapulae*, *scarda*, *scardia*, *scarpinat*, *sclareia*, *scrattae* (*scraptae*), *spacus*, *stagnum*, **stlatta* (cf. *lātus* 'breed' ?), *tabānus*, *taberna* (cf. *trabs* ?), *tabula*, **talabarriō*, *talpa*, *tama*, *tamarīx*, *taminia*, *tamnus*, **tanacita*, *tarāx*, *tardus*, *tarmes* (=*termes*), *taxa* (*taxus*), *tranquillus* (but see WH.), *vaccīnium*, *vacerra*, *vacillō*, *vafer*, *valeria*, *valgus* (but see WH.), *valles*, **vallesit*, *varius*, *varix*, *vaspix*, *vascus*, *vatius*, *vavatō*.

1.3.2. Onomatopoetic and expressive words

balbus (cf. Cz. *blblati*, Gr. βαρβαρός), *babit*, *babiger* (cf. OCS. *baba*, Engl. *baby*), *bambilium*, *bamborium*, *blaterō*, *blatiō* (cf. MLG. *pladderen*, OHG. *blabizōn*, cf. *balbus*), *cacabō*, *cacillō* (< Gr.?), *cacāre* (cf. Gr. κακκάω, Russ. *kákat'*), *cachinnō* (cf. Skt. *kákhati*, Gr. καχάζω etc.), *garrīre*, *glattiō*, *lallāre* (cf. Gr. λάλος, Lith. *lalúoti*), *mamma* (cf. Lith. *momà*, Alb. *mεmε*, OIr. *muimme*), *pappa* (cf. Engl. *pappa*), *pappa*, *pax*, *quaxō*, *raccō*, *ragiō*, *ranciō*, *răvus*, *taratantara*, *tat* (*tatae*), *tata* (cf. W.B. *tad*), *vae*, *vah*.

1.3.3. Loans

1.3.3.1. From Greek:

ardaliō, *asarum*, *ascariō* (?), *(a)spar(a)gus*, *astacus*, *attagena*, *aurichalcum*, *azaniae*, *bastum* (?), *babae* (*papae*), *baccar*, *baceolus*, *bal(i)neum*, *ballaena* (*ballō*), *ballista*, *ballō*, *basēlus* (*phasēlus*), *bastum* (?), *baxea*, *blaesus*, *blasphēmō*, *bracchium*, *cac(c)abus*, *cadus*, *calamus*, *calathus*, *c(h)alāre*, *calopeta* (?), *calpar* (?), *calx* (?), *camēlus*, *camera*, *camīnus*, *cammarus*, *camomilla*, *campsō*, *canaba*, *canistrum*, *canna*, *cannabis*, *canōn*, *cantharis*, *cantharus*, *canua*, *capisterium*, *capitum*, *carbās* (*-asus*), *carbasus*, *carchēsium*, *caristia*, *carōta*,

caryon, caryophylla, cas(s)ia, cassiterum, castanea, castor, cata, catachanna, catampo, cataphractēs, cataplasma (and others in *cata-*), *cathedra, catōmum, dactylus, damaliō, damascēna, danus* (?), *dapinō, dapsilus, dracō, facellatiō, famfaluca, gagātēs, galbanum, galea, galium, gamba, gangraena, gargarizō, garum, *gastra, grabātum, graphicus, graphium, *labarum, lacca, laccus, lachanizō, lagalōpēx, laganum, lagōïs, lagōna, lamia, lampas, la(n)terna, *laparis* (?), *lapathum, lasanum, latex* (?), *macellum, magdalia, magida, magīra, magnīs, magus, malacus, malandria* (?), *maltha, mantiscinor, margarīta, marmor, marruria, marsuppium, martyr, massa, masticō, mastic(h)ē, mastix, mastīgō, mataxa, mattea, nardus, p(h)ager, palaestra, panaricium, panax, -aces, panaceia, papȳrus, parabola, parabolānus, paradīsus, paragraphus, paralysis, parasītus, paratragoedō, pardus, parochia, paropsis, pasceolus, pascha, pasta, patagium, patagus, pataracina* (?), *patena, patēta, patina, pelagus, pelecanus, pha-, phiala, placenta, plagium, plagūsia* (?), *planētae, planus, plasmō, platanus, platea, platō* (?), **plattus, psallō, psalmus, ramnus, raphanus, sabanum, sabbatum, saccharum, saccus, sagēna, sagma, salamandra, salapitta, salisātor (-ātiō), salpa, salum* (?), *sambūca, sandalium, sanna, saplūtus, sappīrus, sarcophagus, sarda, sargus, scalmus, scandalium, scapha, scara, scarabaeus, scarizō, scaraficō, scarus, smaragdus, spadō, spartum, sparus, spasmus, spatha, squarrōsus* (differently WH.), *stadium, statēr, strabus, strangulō, strangūria, talentum, tangomenās, tapēte, tarandrus, tarpezita,* all words with *tha-, tragant(h)um, tragēma, tragoedia, tragum, trapētum.*

1.3.3.2. From Celtic:

baditis, bagaudae, bardala, bardocucullus, bardus, bascauda, battuō (?), *bracis, branca* (?), *calliomarcus, calocatanos, cambiō* (?), *candetum, candosoccus, cant(h)us, caracalla, carpentum, carracutium, carrus, catanus* (?), *cateia* (?), *cavannus, -a, craxantus, damma* (?), *dannus, drappus* (?), *dravoca, gabalus, galba, gladius, glastum, malina* (?), *mannus* (?), *marcus, marga, mataris, -a, padus, petasō, ratis, sagum, samauca, samera, samolus, sappīnus* (?), *taxea.*

1.3.3.3. From Germanic:
(h)aringus, *bandum*, *barō*, *canna*, *carpa*, *fladō*, *framea*, *ganta*, *grana* (*-us*), *harpa*, **marisca*, **mariscalcus*, *saiō*, *scala*, **scaptos* (?), *scarfia*, *spanna*, *straua* (*-b-*), *taxō*, *vanga*, *vargus*.

1.3.3.4. From other languages:
balatrō, *balteus*, *balūx*, *bal(l)ūca*, *barca*, *bardus*, *barriō*, *barrus*, *blatea*, *bratus*, *calamaucus*, *calautica*, *caltha*, *camela*, *camelaucum*, *camillus*, *camīna*, *camox*, *campagus*, *camum*, *cant(h)ērius*, *capys*, *caragius*, *fala*, *gabalium*, *galena*, *gammus*, **gandeia*, *gangadia*, *laniō*, *madeia*, *maforte*, *mamphūla*, *manna*, *mantīsa*, *mapālia*, *mappa*, **marisopa*, *marō*, *marra*, *massaris*, *mastrūca*, *nablium*, *naphtha(s)*, *palacurna*, *palacrana*, *palaga*, *palatum*, *panaca*, *parada*, *paragauda*, *paramus* (?), *passernicēs*, **radia*, *sabaia*, *salar*, *salmo*, *samardacus*, *sandapila*, *sappa*, *sarracum* (?), *tarum*, *tautanus*, **tasconium*.

1.3.4. Non-laryngeal *a*

The words with non-laryngeal *a* will be enumerated and discussed in chapter VI. The following culture terms probably do not reflect a root containing a laryngeal: *faba* (cf. Russ. *bob*, OPruss. *babo*), *far*, *caballus*, *cabō* (cf. Gr. καβάλλης, MoHG. *kob*, OCS. *kobyla*). See also chapter VI.F.

1.3.5. *CRHC* > *CRăC* and *#RHC-* > *#RăC-*

See IV.D.1.3.4 and IV.D.1.2 respectively.

1.4. Material

In this section all words will be treated which on the evidence of cognates in other languages have short *a* going back to a vocalized laryngeal. The view that the laryngeal became *a* is generally accepted, and this will be taken as the starting-point. The main purpose of this section is the presentation and discussion of the relevant material, as complete as possible. The material will be presented in alphabetical order in the following sections: 1.4.1 $*h_1$. 1.4.2 $*h_2$. 1.4.3 $*h_3$. 1.4.4 $*H$ of unknown quality.

1.4.1. *h_1.

1.4.1.1. Material.

1. *animus* 'mind, spirit' and Osc. *anamum* belong to the root *h_2enh_1- 'to blow'. Its exact counterpart is Gr. ἄνεμος 'wind'. Lat. *animus* may reflect *h_2enh_1-*mo*-, or, more likely, *h_2nh_1--*emo*- (thus Kortlandt 1980b, 127-8; see section IV.F.2.2). In the latter case *animus* does not belong here.

2. *cānus* 'white (with age)' reflects **kasnos* in view of Lat. *cascus* 'old', Paelign. *casnar* 'senex'. It is evidently cognate with Germanic words for 'grey': OIc. *hǫss*, OHG. *haso* < **kasu̯o*-, and with the word for 'hare': OHG. *haso*, OE. *hara*, OIc. *heri* < **kas*-. In view of OPruss. *sasins* 'hare' and Skt. *śáśa*- 'id.' < **śása*-, this word has generally been considered to contain PIE. *a*. However, as Lubotsky 1989 proposed, it is possible that the hare-word reflects an original *s*-stem of a root *$ḱh_1$- attested in OCS. *sěrъ*, OCz. *šěrý*, OIc. *hárr*, OE. *hār* 'grey' < **ḱH-oi-ro*-. His evidence for the laryngeal in the latter words is based on the Slavic forms, which presumably reflect **xoiro*- < **ḱHoi-ro*-. That it is *h_1 is perhaps shown by Ir. *cíar* 'dark brown' < **$ḱh_1$ei-ro*-. Skt. *śáśa*- would reflect **$ḱh_1$-es*-. Given the extreme scarcity of evidence for the existence of a PIE. phoneme **a* and given the Slavic forms, Lubotsky's proposal is attractive. The evidence for *h_1 is based only on Ir. *cíar* and must therefore be viewed with some scepticism. If it is accepted, Italic **kas*- must be reconstructed as PIE. **$ḱh_1$s*-. If not, one is free to reconstruct **$ḱh_2$s*- or **$ḱh_2$es*-, which makes it doubtful whether these words belong in this chapter at all.

3. *catus* 'sharp, pointed' has an exact counterpart in OIr. *cath* 'wise, able' and in Ved. *śitá*- 'sharp' < **ḱH-tó*-. It is a *to*-participle of a verbal root attested in Skt. pres. *śiśāti* 'to whet' < **ḱi-ḱeH-ti*. Probably MHG. *hār* 'small whetstone', Du. *haren* 'to whet' < **ḱeh$_1$-s*- are cognate as well (WH., Lindeman, *NTS* 22, 114) although this connection is not mentioned by Franck - Van Wijk - Van Haeringen. If it is accepted, Lat. *catus* must originally have contained *h_1.

On root forms pointing to PIE. **ḱeh$_1$-i*-, e.g. Av. *saēni*-'pointed', OE. *hān* 'whetstone', see Mayrhofer KEWA s.v. *śiśāti*, Lindeman op. cit. 114. A Latin cognate of *catus* is probably *cōs*, *cōtis* 'whetstone', which has no exact counterpart in other languages (see IV.C.1.5.4). Finally, it must be noted that according to Varro *LL* 7, 46, *catus* is a Sabinian word.

This does not affect the interpretation because the development of interconsonantal laryngeals into *a* in all likelihood antedates Proto-Italic, so that one may assume that the PIE. laryngeals developed in Sabinian in the same way as in Latin.

4. *facere, fēcī, factum* 'to make' must be compared with O. *FAKIIAD*, U. *FAČIA* '*faciat*' etc. and with Gr. τίθημι, τίθεμεν < **dh(e)h₁-*. The presence of **h₁* is proven by the Greek forms and by the Latin perfect.

5. *fānum* < **fasnom* 'hallowed place' belongs to the root **dheh₁-* (not evidently identical to the preceding root) and must reflect **dhh₁s-no-*. Its closest cognates are O. *FÍÍSNÚ* 'templum', U. *FESNAF-E* 'in templum' < **fēsnā*. Given the fact that the Umbrian form is a plurale tantum, the form **dhéh₁s-n-(e)h₂* was originally probably the plural (collective) form of the singular **dhh₁s-nó-* attested in Latin. Other derivatives of the original *s*-stem are Lat. *fēriae* < OLat. *fesiae* 'festival days', *fēstus* 'festive', Arm. *dikᶜ* 'gods' < **dheh₁s-*, Gr. θεός 'god', θέοφατος etc. < **dhh₁s-*.

6. *genitor* 'procreator' reflects **genator* < **ǵenh₁-tōr*, cf. Gr. γενέτωρ, Skt. *jánitar-*. The ppp. *genitus* is a recent formation in view of *(g)nātus* < **ǵnh₁-tó-*, cf. Skt. *jātá-*. On the loss of the laryngeal in *gens, germen* see V.A.3.

7. *habēre* 'to have', U. *HABETU* '*habeto*' < **ghabh-eh₁-* must be compared with the **i̯e*-present Ir. *gaibid* 'to take' < **ghabh-i̯e-*, U. *HA(H)TU* '*capito*', *habiest* 'wird ergreifen' < **ghabh-i-* (Meiser 1986, 126). Compare also W. *gafael* 'id.', which shows that the *-a-* of Irish must be old. The paradigm with a static **-eh₁*-form and a non-static **-i̯e*-form is reminiscent of Balto-Slavic *-ē*-verbs with *-i*-presents.

Osc. *hipid* (3 sg. conj. perf.), *hipust* (3 sg. fut. ex.) < **ghēp-* probably points to full grade **gheh₁bh-*. This reconstruction is supported by the Lith. dialect pret. *at-gėbau* 'habe hergebracht', where the acute intonation points to a root with a laryngeal. *p* in the Oscan forms can be explained either from an athematic conjugation (a root aorist? See EM.) or from the influence of *capiō, cēpī* (WH., Pokorny IEW. 408).

Lith. *gabėnti* 'to take away' has no trace of a laryngeal and would therefore point to a root **ghobh-*, **ghebh-*, as does Goth. *giban* etc. 'to give'.

Since there is evidence for **h₁* from two sources (Oscan and Lithuanian) and since Germanic points to a different root,

without a laryngeal, it is impossible to reconstruct a root **ghabh-* that comprises all forms (against WH., Pokorny IEW. 407-408), and it is unlikely that a morphological zero grade of a *CeC*-root may be posited for Italo-Celtic (Kuryłowicz 1956, 177). *habēre* must therefore be reconstructed as **ghh₁bh-*.

8. *patior, passus* 'to suffer' possibly reflects **ph₁-t-* if the connection with Gr. πῆμα 'suffering', suggested by both EM. and WH. but not mentioned by Frisk and not preferred by Chantraine, is accepted. πῆμα has panhellenic η.

9. As EM. have pointed out, the antique etymology that *prosper* 'prosperous, favourable' reflects *prō spēre* cannot be correct because the old ablative of *spēs* 'hope' is *spē* and because one would expect long *-ē-* in *prospera, prosperum* etc. The form rather belongs to the root **speh₁-* found in Skt. *sphā́yate* 'grows fat', RV. *sphātí-* 'act of fattening'. Zero grade **sph₁-* is reflected in RV. *sphirá-* 'fat'. The aspirate *-ph-* must have arisen in contact with the laryngeal. OCS. *spěti* 'to thrive', Latv. *spēt* 'vermögen' show that the root contains **h₁*. OCS *sporъ* 'rich, fat' cannot be reconciled with this root (see Kortlandt 1980c, 352, who reconstructs **sъ-por-*). *prosper* reflects **prō-spăro-* < **-sph₁-ro-* and is the exact counterpart of RV. *sphirá-*.

10. *sapiō, sapere* 'to have taste, know' is cognate with O. *sipus*, Volsc. abl. *sepu* '*sciens*' < **sēp-uŏs*, a perfect participle. It is cognate with Germanic forms, e.g. OS. *an-sebbian* 'to remark, notice', OHG. *int-seffen* 'to remark, taste', OIc. *sefi* 'thought' < PGm. **saf-i-* < PIE. **sHp-*. Its alternative etymology, with Lat. *sapa* 'sap' is semantically less likely. The evidence for **h₁* is based on the Oscan forms. However, it should be borne in mind that the **ē* can be analogical, as it is in *agere, ēgī*. Given the scanty remains of Oscan, the absence of a finite verb does not indicate that **sēpuos* is an isolated form which was not liable to analogical remodelling. Evidence for **h₁* is therefore present but uncertain.

Kuryłowicz includes *sapere* in his list of 'European' *a* (1956, 195), apparently ignoring the Oscan forms. In his view, there is no evidence at all for PIE. **a* in this form because it could be a loan on European territory. I agree that there is no evidence for PIE. **a* because of the Oscan form and because **sap-* can reflect **sHp-*. But I do not think it likely that *sapere* is a loan from a non-Indo-European language because it is a verb of non-technical meaning and because its morphology

is thoroughly Indo-European: zero grade of the root and *i*-inflection (cf. *capere*, *facere*), the antiquity of which is confirmed by Germanic, and the Oscan perfect participle.

11. *satus* 'sown' goes back to $*sh_1$-*tó*- in view of *sēmen* 'seed' < $*seh_1$-*mn*, *sēvī* < $*seh_1$-, and Lith. *sėti*, OCS. *sěti*, SCr. *sȅjati*, Goth. *saian*, OHG. *sāmo* 'seed', Ir. *síl* < $*seh_1$-.

12. The etymology of *spatium* 'space' is unclear (EM). According to WH., it must be connected with the root $*speh_1$- 'fat, thrive, grow' (see 9. above). The semantic development would be approximately 'fattening' > 'extension'. This is conceivable but not compelling.

13. *geminus* 'twin' < $*ǵemh_1$-*no*-, cf. Gr. γαμέω 'marry' < $*ǵmh_1$- (Steinbauer 1989).

1.4.1.2. Conclusion

The following words attest the development of inter-consonantal $*h_1$:

probable	possible
3 *catus* <$*ḱh_1$-*to*-	1 *animus* <$*h_2enh_1mo$-
4 *facere* <$*dhh_1$-*k*-	2 *cānus* <$*ḱh_1s$-*no*-
5 *fānum* <$*dhh_1s$-*no*-	8 *patior* <$*ph_1t$-
6 *genitor* <$*ǵenh_1$-*tōr*	12 *spatium* <$*sph_1$-*tio*-
7 *habēre* <$*ghh_1bh$-	
9 *prosper* <*-sph_1-*ro*-	
10 *sapere* <$*sh_1p$-	
11 *satus* <$*sh_1$-*to*-	
13 *geminus* <$*ǵemh_1$-*no*-	

It goes without saying that the development of $*h_1$ to Lat. *a* cannot be illustrated by *animus*, *genitor*, *prosper* and *geminus*.

1.4.2. $*h_2$

1.4.2.1. Material

1. *anas*, *anatis* (also *anit*-) is cognate with Lith. *ántis*, OCS. *qty*, SCr. *ǜtva* 'duck' < $*h_2enh_2$-*t*-, (probably) Skt. *ātí*- 'duck' < $*h_2nh_2$-*t*-. The interpretation of the other cognates is problematic: OIc. *qnd*, OE. *ened*, OHG. *anut* reflect PGm. *anuþ*-, of which the -u- has not yet received a

satisfactory explanation (see e.g. Hollifield 1984, Fulk 1988, 153-154). Gr. νῆοσα, Boeot. νᾶοσα 'duck' may reflect **nāt ja*, but this cannot reflect **HnHt-* because the latter became Gr. VνV, cf. ὄνομα < **h₃nh₃mn*, ἐρέπτω < **h₁rh₁p-jō* (see Beekes 1988a, 75-76; but cf., less convincingly, Peters 1980, 26). νᾶοσα might alternatively reflect **νᾱχ-yα*, of νάχω (Prof. C.J. Ruijgh, p.c.). On the PIE. reconstruction, see Beekes 1985, 63-64. The second laryngeal is reflected by the acute intonation of the Baltic and Slavic forms. That it is **h₂* is based on the Greek form.

It is not clear whether *anas* reflects **h₂enh₂-t-*, **h₂nh₂-et-* (see IV.F.2) or **h₂nh₂-t-* (IV.F.1.2.3). For the second possibility there is no parallel in any other language, the third must probably be rejected because **HrH-C-* yields Lat. *ra-C-*. Therefore, the first is the most probable reconstruction.

It is uncertain whether the second *a* in *anas* reflects the original timbre of the vocalized laryngeal or is due to a secondary assimilation of Prim. Lat. unaccented **ə* to the root vowel (see Leumann 1977, 100, Sommer-Pfister 1977, 89, Meillet-Vendryes 1927, 118). Lat. *anit-* has regular vowel weakening.

2. On *calidus* see VI.B.2 no. 4.

3. *calvor* 'to quibble, deceive', *calumnia* 'false accusation' reflects **kh₂l-u-* in view of Gr. κηλέω 'to cast a spell' (if Pindarus' κηλέω is an atticism) and Goth. *holon* 'to slander' < **ḱeh₂l-*, if these are cognate.

4. *canere*, *cecinī*, *cantum* 'to sing', U. *KANETU* '*canitō*' and Olr. *canid*, W. *canu* etc. belong to a verbal root **kh₂n-*, which is also found in Goth. *hana* etc. 'cock' and Gr. ἠι-κανός 'cock' (Hes.), lit. 'which sings early'. The laryngeal cannot be independently proved, but MW. *g(w)o-gawn* 'famous', *go-goniant* 'famous' < **kān-* and Olc. *høna* 'hen', OHG. *huon* 'Huhn' < **kān-* may be explained on the basis of **keh₂n-* rather than by the unlikely assumption of a lengthened grade. Gr. κόναβος 'Gerassel, Geklirr' must rather be compared with κόμπος (see Frisk s.v.).

One might doubt the existence of roots of the type *CHR*. However, the type does seem to exist. A clear example is Lat. *cārus*, Goth. *hors* < **keh₂r-*, Olr. *caraid* < **kh₂r-*. It it clear from Toch. A *krant*, B. *krent* 'good' < **krh₂-ont-* that *-r-* belongs to the root. Compare also (of a different root) Gr. κήρῡξ, Skt. *kārú-* < **keh₂r-*, *kīrtí-* < **krh₂-ti-* (see IV.B.3).

5. *caper*, G. *caprī* 'he-goat, billy' (also 'castrated billy', perhaps under the influence of *capō* 'capon'), cf. U. *KAPRUM*, *KABRU* '*caprum*' and OIc. *hafr* 'id.' < **kapro-*. Gr. κάπρος 'wild boar' shows that the root probably contained a laryngeal, although this cannot be independently demonstrated.

If W. *caer~iwrch* 'roebuck', Ir. *caera* (*k*-stem) 'sheep' < **kapero-* (Pedersen 1909, 92) are cognate, they probably point to ablaut **kaper-*, **kapr-*, i.e. an *r*-stem. These were very rare indeed in Indo-European, so that one might suspect that apart from the well-known kinship terms they were non-existent. But it is striking that in the word for 'boar', which belongs to the same semantic sphere as 'billy', Germ. **eƀuro-* points to a Nsg. **$h_1$ep-ṛ*, i.e. an *r*-stem. See II.B.3.2 no. 5. Even more important because it most certainly reflects a PIE. etymon is the word for 'wild animal', PIE. **ǵhu̯eh_1-r* (see V.B.3.1.1).

6. *capere*, *cēpī*, *captum* 'to seize'. If it is cognate with Gr. κάπτω 'to seize eagerly' < **kh$_2$p-*, κωπή 'grip' < **koh$_2$p-* (Frisk), the root contains **h$_2$*. In that case *cēpī* is analogical after *fēcī*, *iēcī* (cf. *agō*, *ēgī*).

7. *cerebrum* 'brain' reflects **ḱerasrom*, which stems from **ḱerh$_2$-s-ro-*, a form derived from the *s*-stem found in Skt. *śíras* 'head', Gr. κέρας 'horn'. The same reconstruction is made by Nussbaum 1986, chapter IV, who gives a complicated account of its derivation from the *s*-stem which is not convincing on all points (see Beekes' review, 1989b, 58). Closely parallel to *cerebrum* is OHG. *hirni* etc. < **kerh$_2$snio-*.

8. According to EM., it cannot be demonstrated that *daps* is cognate with *damnum* 'expense, loss'. Nevertheless, WH. and Frisk s.v. δάπτω accept the connection. Its basic meaning is 'sacrificial meal'. Note that a similar semantic shift has occurred in Engl. *sacrifice* and German *Opfer*. I therefore see no reason to doubt the connection. *damnum* < **dap-no-* (cf. *somnus* < **suepno-*) has its closest parallel in OIc. *tafn* 'sacrificial animal' < **dap-no-* and in Arm. *tawn* 'feast' < **dapni-*. That the root contained **a* and therefore that **h$_2$* is likely, is shown by Gr. δάπτω 'zerreissen, zerfleischen, verzehren', δαπάνη 'expense', δαψιλής 'generous' < **dh$_2$p-*. Toch. B *tāp-* 'eat' must be cognate as well (Van Windekens 1976, 497).

9. *fāteor* 'to admit' reflects **bhh$_2$-t-* and is probably based on the *to*-participle of the root found in *fārī*, Gr. φημί 'to say'

(see IV.C.1.5.2 no. 6).

10. *ianitrīcēs* is discussed extensively in IV.B.1.5.1. The combined evidence of Gr. ἐνάτηρ < **ienh₂-tēr* and the intonation of Latv. *iētala* < **ienH-t-* shows that the vowel of the second syllable reflects **h₂*.

11. In view of Skt. *pitár-* and Gr. πατήρ, Lat. *pater* 'father' reflects **ph₂tēr*.

12. *pangō*, *pepigī*, *pāctus* 'to fix', *pāgina* 'page, leaf', *com-pāgēs* 'connection, joint', *pāgus* 'borderstone fixed in the earth' belong to a root **peh₂ǵ-* also found in Gr. πήγνυμι, ἐπάγη 'to fix, fasten' and OS. *fac*, Dutch *vak* 'enclosure'. On Skt. *pajrá-* see Lubotsky 1981, 133 ff. The nasal present *pangō* is probably an innovation of Latin, as is the case with *frangō* (see VI.D.2.1 no. 2). The root of *pangō*, *pepigī*, *pāctus* goes back to zero grade **ph₂ǵ-*. The long vowel of *pāctus* is due to Lachmann's law (see IV.C.1.4.2).

13. It does not seem possible for semantic reasons to separate no. 12 from **ph₂k-* found in *pacīscor*, OLat. *pacit*, *pacunt*, and *pactus* 'to make a treaty'. The latter also has **h₂* in view of Lat. *pāx*, *pācis* 'peace, treaty', U. *pase* 'pace' < **peh₂ḱ-*. It has therefore been suggested that it is a variant of **ph₂ǵ-* (EM., WH.). Cognates outside Latin are OS. *fōgian* 'fügen' < **peh₂k-* and Goth. *fāhan* etc. 'to catch' < **ph₂-n-ḱ-*.

14. *sacer*, Gsg. *sacrī* < **sakro-* 'holy', *sancīre* 'to make holy, inviolable', U. Apl. f. *sacra* '*sacrēs*' must be compared with Hitt. *šaklai-* 'custom, rite'. There is no direct evidence for a laryngeal, but the different ablaut grade in **sākri-*, cf. Lat. *sācrēs porcī*, O. *SAKRIM* '*hostiam*', U. *SAKRE* '*sacrum*' points to PIE. **sh₂k-*, **seh₂k-* (see also IV.C.1.3.6.3).

15. *sagāx* goes back to **sh₂ǵ-* in view of *sāgus* 'wise', *sāgīre* 'to have a good nose' < **seh₂ǵ-*. Outside Latin one finds Gr. ἡγέομαι 'to direct, lead', Goth. *sokjan* etc. 'to search' < **seh₂ǵ-*, Olr. *saigid* 'try to reach' < **sh₂ǵ-* and possibly Hitt. *šagaiš* 'omen'.

Since forms in *-āx* usually have zero grade of the root, e.g. *dicāx*, *fugāx*, *sagāx* must be reconstructed as **sh₂ǵ-*. The explanation of *ă* by pretonic shortening is therefore unnecessary (see V.B.3.1 no. 7).

16. As Kortlandt has indicated (1985a, 119), the PIE. word for 'salt' had hysterodynamic inflection. OCS. *solь* 'salt' and OHG. *salz* (contrast OHG. *sulza* 'salt water' < **sh₂l-d-*) can be explained on the basis of the accusative **sh₂el-m.* Lat. *săl-is*, Olr. *salann*, Bret. *halen*, Gr. Asg. ἅλα, Arm. *aɫ*, Toch. B *sālyi* are based on either the accusative or the other oblique cases, which had zero grade **sh₂l-*. On Lat. *sāl* see IV.C.1.3.6.1.

17. The only clear cognate of Lat. *salīre*, *saluī*, *saltum* 'to jump', *saltus* 'pass' < **sh₂l-* is Gr. ἅλλομαι 'to jump' < **sh₂l-i̯-*, aor. ἆλτο. Note that the Greek forms can be explained from a root **sl̥-* as well, so that there seems to be no clear proof for the presence of a laryngeal apart from *salīre*.

Probably Ir. *saltraid*, W. *sathru* 'fouler au pieds' belong here (Vendryes S-19), offering a stronger indication for **sh₂l-* because Celtic *al* cannot be explained from **l̥*.

18. *satis*, *sat* 'enough', *satur* 'satisfied, satiated' (< **saturos*) goes back to a root **sh₂-* attested in Gr. ἄδην 'enough', Arm. *at-ok*^{c} 'voll, ausgewachsen' (Frisk) < **sh₂-d-*, Gr. ἆμεναι, ἆσαι (aor. infin.) 'to satisfy, saturate' < **s(e)h₂-*, Ir. *sáith* 'satisfaction' < **seh₂-ti/ā-*, Goth. *saþs* < **sh₂-to-* and Lith. *sótis* 'act of satisfying' < **seh₂-ti-*. The Lithuanian intonation proves the presence of a laryngeal.

19. *statum*, *stabilis*, *stabulum*, *status* (*u*), *statim*, *statiō*, *status* (*o*), *statuō*, *-stes* reflect the zero grade of the root **sth₂-* 'to stand'. The presence and nature of the laryngeal appear from e.g. Skt. *sthí-ti-* = Gr. στάσις < **sth₂-ti-* and the intonation of Lith. *stóti* < **steh₂-*.

20. *tangĕre*, *tetigī*, *tāctus* 'to touch', *tăgāx* 'apt to touch, light-fingered', *in-teger* 'untouched' < **th₂g-*, cf. Gr. τεταγών 'having seized', OE. *þaccian* 'to touch softly'.

21. *lacrima* 'tear' is probably an old compound and reflects **drk-h₂(e)kru-* > **dlakru-* > *lacri-ma*. See Kortlandt 1985b.

1.4.2.2. Conclusion.

The following words attest the development of interconsonantal **h₂*:

probable	possible
1 *anas* <*h_2enh_2-t-	3 *calumnia* <*kh_2l-
6 *capiō* <*kh_2p-	4 *canō* <*kh_2n-
7 *cerebrum* <*$\hat{k}erh_2sro$-	5 *caper* <*kh_2pro-
9 *fateor* <*bhh_2-t-	8 *damnum, daps* <*dh_2p-
10 *ianitrīcēs* <*inh_2tr-	16 *salis* <*$sh_2(e)l$-
11 *pater* <*$ph_2tēr$	17 *saliō* <*sh_2l-
12 *pangō, pepigī, pāctus* <*$ph_2ǵ$-	21 *lacrima* < *drk-$h_2(e)kru$-
13 *pacīscor, pactus* <*ph_2k-	
14 *sacer* <*sh_2k-ro-	
15 *sagāx* <*$sh_2ǵ$-	
17 *satis* <*sh_2-t-	
19 *statum* <*sth_2-to-	
20 *tagāx* <*th_2g-	

Of course, the development of *h_2 to Lat. *a* cannot be independently demonstrated for *cerebrum* and *ianitrīcēs*. For the sake of clarity, I give a list of those words which have **a* in all languages and which can in theory be adduced as evidence for PIE. *a*: *canō* (4.), *caper* (5.), *damnum, daps* (7.), *saliō* (15.). Since we lack Indo-Iranian evidence and Balto-Slavic (accentological) evidence in these cases, the presence of a laryngeal in the PIE. word can be neither proved nor disproved. Nevertheless, I have treated these words as instances of a laryngeal because of the questionable status of a phoneme **a* in PIE.

1.4.3. *h_3*

1.4.3.1. Material

1. *dare, datum* 'to give' must be compared with *dōnum* 'gift' < *de/oh_3-no-*. *h_3* is proved by Gr. δίδωμι, ἔ-δωκα, δόμεναι etc. < *$d(e)h_3$-* and the acute intonation of SCr. *dȁti*, Lith. *dúoti* 'to give'.

2. On *nota* see IV.D.1.3.6.1.

1.4.3.2. Conclusion

On the basis of *dare, datum* < *dh_3-* one must conclude that interconsonantal *h_3* yielded Lat. *a*.

1.4.4. Laryngeal of unknown quality

1.4.4.1. Material

1. *baculum* 'stick' < **bak-(k)elo-* (**-kk-* in view of Romance **baccillus* and Lat. *im-beccillus*, *-bēcillus*) is obviously cognate with Gr. βάκτρον, βακτήριον, βάκτρευμα etc. 'stick, staff' < **bak-t(ē)r-*, Ir. *bacc* 'hook, crooked staff' = W. *bach* < **bakko-* and MEngl. *pegge* 'peg' < **bak-i̯ōn*, Dutch *pegel* < **pagila-* < **bak-elo-*. Since the distribution of this word is geographically limited and since it has initial **b*, which was rare in PIE., the word may not be of IE. origin. The reconstruction of a laryngeal therefore probably is not justified.

2. The same problem applies to *bāiulus*, also *baiiu-* 'porter, carrier'. If it stems from **bagielo-*, and if it is cognate with MEngl. *packe*, MoHG. *Pack* < **bag-* (thus WH.), the etymon nevertheless most likely is not of IE. origin. EM. say that *bāiulus* has no etymology.

3. *cadere* 'to fall', *cāsus* 'fall, case' (cf. Germ. *Fall*) has a clear cognate in Skt. *śad-* (AV. fut. *śatsyati*, Brahm. perf. *śaśāda*) 'to fall off, out'. According to Lubotsky (1981, 133-8) *śad-* can reflect **ḱeHd-*, where the laryngeal was lost before a voiced (i.e. glottalic) stop that stood before a consonant in athematic verb forms. If this is accepted, *cadere* reflects **kHd-*. Gr. κεκάδοντο etc. are not cognate (Frisk s.v.). On *cāsus* see C.1.4.2.

4. *callum* < **kal-no-* or **kal-so-* 'callous' is probably cognate with Ir. *calath*, W. *caled* 'hard' < **kal-eto-* and, though this is very uncertain, with Skt. *kiṇa-* 'corn, callous, scar' < **kHl-no-* (? thus Hamp 1985, 59). Hamp assumes that *callis* 'animal path', i.e. '(earth) beaten hard (by passing animals)' also belongs here. But the latter is at least doubtful, and it would mean that the connection of *callis* with Lith. *kẽlias* 'road' and with SCr. *klánac* 'narrow pass, ravine', Sln. *klánəc* 'hollow road, alley' < PSlav. **kolnъcь*, which is semantically attractive, must be given up. I therefore prefer to reconstruct *callis* as **kel-ni-* (see VI.B). I do not agree with EM. that formally *callis* is too distant from SCr. *klánac* etc.

5. *caput* 'head' and OIc. *hofuð*, OE. *hafud* reflect **kap-ut-*. It is unclear if and how Goth. *haubiþ* 'head' etc. must be connected with this form. Skt. *kapucchalam* 'tuft of hair on the hind part of the head', *kapuṣṇikā* 'tuft of hair on each side of the head' are probably of Austro-Asiatic origin and must not be

compared (Mayrhofer KEWA s.v.). Mayrhofer (EWaia s.v.) has given up the connection of Skt. *kapā́lam* 'Schale, Kelle des Opferlöffels' (oldest meaning, ŚBrahm., later also 'skull') with OE. *hafola* 'head' and with *caput*, which he accepted in KEWA. Since 'cup' is the older meaning of *kapā́lam*, the connection is unlikely because Lat. and Germ. point to 'head'. Note that it is not uncommon that words for pottery come to denote the head (cf. Germ. *Kopf*, French *tête*), whereas I know no instances of the reverse development. Thus, it is likely that 'cup' is indeed the oldest meaning of *kapā́lam*. In any case, it is not clear whether *caput* contains the reflex of a laryngeal: if *kapā́lam* is not cognate, the etymon has a very limited distribution and need not be of Indo-European origin; if it is cognate, the Sanskrit form proves that the etymon did not contain a laryngeal. But, as has been said, this is unlikely. A reconstruction **kHp-* is possible but cannot be proved.

6. According to EM., *castus* 'pure, without smth.' must be separated from *castus* 'conforming to rules, rites'. The former would be cognate with *carēre* 'to miss, be without' and has no further cognates: its connection with Skt. *śasati* 'cuts' (WH.) is too uncertain and does not explain Lat. *-a-*. The etymology is not mentioned by Mayrhofer, KEWA. On the other hand, the latter *castus* would be cognate with Skt. *śiṣṭá-* 'befohlen, angewiesen', *śā́sti* 'instructs, punishes, controls', *śā́s-* 'commandment', Av. *sāh-* 'lehren, heissen', Alb. *thom* 'say' < **ḱ(e)h_1s-*. In my opinion, neither the separation of the two meanings of *castus* nor the connection of one of them with the Indo-Iranian forms is semantically convincing. The connection is not mentioned by Mayrhofer KEWA at all, nor by WH. I am therefore inclined to connect the two meanings of *castus* because 'pure' and 'conforming to rites' obviously belong to the same semantic sphere. The connection with *carēre* seems clear. Consequently, there is no independent evidence that the etymon goes back to PIE., although this is possible in view of the fact that a reconstruction **kHs-eh_1-* would perfectly conform to Indo-European morphology. In general, verbs are not easily borrowed as far as they do not have a technical meaning.

7. According to Isidorus, Or. 8.14.1, *cassis, -idis* 'metal helmet' has an Etruscan origin. This testimony is in my opinion decisive, and the connection with OE. *hod*, 'hood' < **kadh-* or **kodh-* (?), OHG. *huot*, OE. *hōd* 'hat, helmet' < **kādh-* or **kōdh-* must be rejected. One could add that a root structure

k-dh is inadmissible in PIE. A common non-IE. origin of *cassis* and the Germanic words cannot be ruled out.

8. The etymology of *catāx* 'limping, lame' is not clear. Ir. *scathaid* 'cuts off, lops, shears, mutilates' cannot be adduced because it has original *o*-vocalism (see Vendryes s.v. *scoth-*). Goth. *skaþjan* 'to damage' may be cognate but there are semantic problems. Alternatively, some popular deformation of Gr. κατωγείς 'lamed' has been suggested, which is very unlikely. Nothing is certain.

9. *catulus* 'young of an animal', U. *KATEL* '*catulus*' is possibly cognate with MIr. *cadla* 'goat' and OIc. *haðna* 'young goat', MHG. *hatele* 'goat' < **kat-*. If SCr. *kòtiti* 'to bear, bring forth' is cognate (it may rather belong to the etymon 'cat'), one cannot reconstruct a laryngeal. But neither this connection, nor any other is certain (thus EM.).

10. *faber* 'worker on hard materials (wood or metal), smith', is probably cognate with Arm. *darbin* 'smith' < **dhabhr-* (Meillet 1894b, 165). Goth. *ga-daban*, pret. *ga-dob* 'happen, be suitable' might be compared as well (Lehmann s.v.) but the connection is not evident semantically. Lith *dabà* 'nature, character', SCr. *dȍba* 'time', OCS. *po-dobiti* 'to adapt, make suitable', *dobrъ* 'good' cannot have contained a laryngeal in the root. Kuryłowicz 1956, 194, considers *faber* c.s. to be a case of "European *a*" (see also Pokorny, IEW. 233) and therefore suspects it of being a loanword. Here I follow EM. in their scepticism concerning the connection with the Balto-Slavic forms, on which the thesis of "European *a*" rests. The most reliable connection seems to be that of Latin with the Armenian form, which may reflect PIE. **dhH̥bh-r-*.

11. The only credible cognate of *fascinus* 'curse, sort of amulet' is Gr. βάσκανος 'who bewitches'. Since Lat. *f-* does not match Gr. β- etymologically and since the distribution of the word is so limited, it is doubtlessly a loan from a non-Indo-European language (see also WH.).

12. *fascis* 'branches bound with a rope, faggot, load', *fascia* 'bandage' is cognate with Ir. *basc* 'necklace' and possibly also with W. *beich*, Bret. *bec'h* 'load' < **bhask-io-*. A connection with Gr. φάκελος 'bundle', φάσκωλος 'Ränzel' is apparently rejected by Frisk and EM. φάκελος cannot be Indo-European in view of the alternative forms listed by Furnée (φάσκωλος, φάκελος, βάσκιοι, cf. Romance **baga* 'Schlauch',

MDutch *pac* 'bundle'). Furnée 1972, 173 decides upon a pre-IE. "Wanderwort", which is uncertain because it implies the correctness of the connection of φάκελος with *fascis*.

Again, the reconstruction of a laryngeal in this root is unwarranted because the etymon does not occur outside Italic and Celtic and is therefore probably not Indo-European.

13. According to Watkins 1965, 185 ff., *molere* 'to grind', *sonere* 'to sound', *vomere* 'to vomit', *tonere* 'to resound' reflect full grade disyllabic presents in a vocalized laryngeal: **melă-*, **sụenă-*, **ụemă-*, **tenă-* < **melh$_1$-* (Myc. *me-re-ti-ri-ja* μελέτριαι 'women who grind'), **sụenH-*, **ụemh$_1$-* (Gr. ἐμέω), **tenH-*. Evidence for the presence of a laryngeal is based on the following comparisons: Skt. *mṛṇáti* 'to crush' < **ml-n-eH-*, Lith. *málti* 'to grind' < **molH-*; Skt. *á-svanī-t* 'cried' < **-sụenH-t*; Skt. *vámiti*, Lith. *vémti* 'to vomit' < **ụemH-ti*; Skt. *stani-hi* 'resound (imp.)' < **stenH-*. On *sonāre* and *tonāre*, beside *sonere* and *tonere*, see Steinbauer 1989, 124-125, who, with Eichner, reconstructs these as causative forms: **tonh$_2$-eie-*, **sụonh$_2$-eie-*. For a discussion see V.D.2.1.

Note that there is no independent evidence that *-e-* in *molere*, *vomere* reflects **a*.

14. *parvus* 'small', *parum* < **parvom* '(too) little' reflect older **pauros*, **paurom* and cannot be used here. See E.6.

15. *sabulum* 'sand, gravel' < **sadhlo-* (or **-b(h)l-*), Gr. (ψ)όμμος, Aeol. ψόμμος and (ψ)όμαθος, OIc. *sandr* 'sand' reflect a substratum word **(p)sam-*, **sab(h)-*. See Kuiper 1956, 218 and note 34, Furnée 1972, 209. Another possible cognate is Lat. *saburra* 'Schiffsand, Ballast'.

16. Lat. *salix*, Gsg. *-icis* 'willow' has cognates in Celtic, Germanic and Greek: OIr. *sail*, Gsg. *sailech*, W. *helyg* < **salik-*; OHG. *salaha* and OIc. *selja* < **sal-k-iōn*, OE. *sealh* < **sal-ko-*; Myc. *e-ri-ka* ἐλίκᾱ < **sel-ik-* may point to **sh$_1$l-*. The suffix of the Germanic forms cannot be reconciled with that of the Italo-Celtic and Greek forms. One may suspect that **sHl-k-* and **wel-ik-* 'willow' (found in OE. *welig*, and perhaps in Boeot. Fελικων), which had approximately the same meaning, influenced one another, so that various hybrids arose. If so, Myc. *e-ri-ka* cannot be used to prove **sh$_1$l-*.

I do not agree with Friedrich 1970, 53 ff., who

reconstructs PIE. *s/welyk-, because this reconstruction does not explain the -a- of salix, sail, nor the Germanic suffix *-k- (not *-ik-), apart from the impossibility of the alternation s/w. His reference to reflexes of the word for 'six' (Lat. sex, Arm. vec^{c} etc.) will not do because in the latter word complications are due to the original initial cluster *ksw- (cf. Skt. ṣáṣ, with ṣ- < *ksw-; Hamp 1978).

The root vowel *a can reflect PIE. *H, but since the word has a very limited distribution it may be non-Indo-European.

17. sapa 'wine reduced to a third by boiling', Romance 'sap', can be compared with OIc. safe, OHG. saf etc. 'sap' < *sap- beside OE. sæp, Dutch sap (in view of initial s-, not z-, in the latter, sap is most likely a loan from Latin). The connection with Av. vīšapa- 'dessen Säfte Gift sind', allegedly from *vīš-sapa-, is too uncertain.

EM. suggest that the Germanic words in -p might be loans from Latin, which is probable, as Dutch indicates. One may think of a substratum word, also in view of the technical meaning of Lat. sapa. I see no reason to claim the etymon for PIE., and therefore the reconstruction of a laryngeal is unwarranted.

18. tacēre 'to be silent', U. TAČEZ, tases 'tacitus', tasetur 'taciti' must be compared with Goth. þahan (weak verb, class 3) 'to keep secret', OIc. þegja, OS. thagian, OHG. thagēn 'be silent' < PGerm. *þah-ǣ-. Since static verbs in *-eh$_1$- normally have a zero grade root, -a- in this verb most likely reflects a zero grade as well, viz. PIE. *tHk-. The exact formal correspondence and the thoroughly IE. morphology point to PIE. origin of this verb, in spite of its limited distribution.

19. tenebrae 'darkness', dissimilated from older *temebrae, cf. the adverb temere 'dark', is the exact counterpart of Skt. támiṣrās (pi.) 'dark night' < *témH-s-r-eh$_2$-. It must therefore reflect *temasrā- < *temHs-. Further evidence for the presence of a laryngeal in the second syllable is offered by the intonation of Lith. témsta 'darkness falls' < *temH- and by MoBret. teñval 'sombre, dark' < *temH-lo-.

20. volnus, Gsg. volneris 'wound' must have lost a vowel between -l- and -n- in order to account for the absence of assimilation of the cluster. Most likely this was *-a- < *-H-. Hitt. walḫ- 'to hit, fight' would confirm that.

1.4.4.2. Conclusion

The following words contain the reflex of an interconsonantal laryngeal of unknown quality. Areal words, which have a limited distribution and are therefore possibly not IE., are listed under "possible".

The following words have not been included because their etymology outside Italic is very doubtful or because they clearly are substratum words: *cassis* (7), *catāx* (8), *catulus* (9), *fascinus* (11), *sabulum* (15).

probable		possible	
3	*cadere* <*ḱHd-	1	*baculum* <*bHk- (IE.?)
4	*callum* <*kHl-	5	*caput* <*kHp-ut?
13	*molere* <*melH-	6	*castus, carēre* <*kHs-?
	sonere <*sụenH-	10	*faber* <*dhHbhro-
	tonere <*tenH-	12	*fascis* <*bhHsk- (IE.?)
	vomere <*ụemH-	16	*salix* <*sHl-ik- (IE.?)
18	*tacēre* <*tHkeh$_1$-	20	*volnus* <*ụelH-n-os?
19	*tenebrae* <*temH-s-		
	temere <*temH-ro-		

1.5. *farnus* and related forms

1.5.1. Latin

As will be examined in IV.D.1.3.4, it appears that a laryngeal in a cluster **RH* before *TC* was subject to a development different from that of **RH* before other phones. There are slight indications that in a non-initial syllable **-CH-* before *-TC-* developed differently from **-CH-* before other phones. In what follows, I have collected all instances of **-CHTC-* in the second syllable in Italic.

1. Osc. *FUTÍR*, Dsg. *FUTREÍ*, *FUUTREÍ* 'daughter' has lost the laryngeal, which may perhaps be explained on the basis of the oblique cases, where the laryngeal stood before *TC*: PIE. oblique **dhuǵh$_2$-tr-* > **dhugtr-* > **fuktr-* > **fuχtr-* > Osc. */fūtr-/*. See also Steinbauer 1989, 242 note 20, who claims that the laryngeal was lost in this word, although he does not specify the conditions under which the loss took place. Note that syncopated **fugatēr* would yield Osc. **fuktír*, cf. **agetōd* > Osc. *AKTÚD*. On Gaulish *duxtir* (Larzac) see 1.5.2. For an alternative explanation see V.A.4 (**H* > *ø* between stops in a non-initial syllable).

2. *farnus* 'kind of tree' (the meaning 'ash' is a guess, despite EM.) is attested only twice in Latin, in almost the same sentence. Its meaning is unknown. From the context one assumes that it denotes a tree: Vitr. 7,1,2 "*de cerro aut fago seu farno*", Pall. 1,9,3 "*de cerro aut fago aut farno*". In Apicius' cookbook, there is mention of *fungi farnei*, and Italian (dial.) *fargna* 'kind of oak' reflects Lat. **farnea*, which makes it likely that *farnus* must indeed be interpreted as a tree-name. It seems at least a possibility (and no more than that) that *farnus* is cognate with *fraxinus* 'ash' < **bhrHǵ-s-*, which is discussed below (IV.D.1.3.4.1 no. 3).

According to Brugmann I^2 421 f., 478 f., PIE. *$\bar{r}$ (read **ṚH*) may be reflected as Lat. **Rā* and as **aR*: the type *palma*. The latter cannot be maintained because the type *palma* reflects antevocalic **-RH-* (see IV.D.2.3.2). *farnus* cannot therefore reflect PIE. **bhrHǵ-*.

Kortlandt 1985a, 120 reconstructs **farag-* < **bhrHeǵ-* (with the stem of the PIE. Asg.). However, this is not possible: Kortlandt's reconstruction implies a form **bhrHeg-* > **farag-(s)no-*, in which the second **-a-* was syncopated. As syncope only affected vowels in <u>open</u> syllables (Pedersen 1922), there can have been no syncope here. (A reconstruction with an open second syllable does not work either: **farag-ino-* vel sim. would yield **farginus*.) It is unlikely that the suffix **-(s)no-* was added after *farag-* had become **farg-* by syncope because, since syncope is a rather recent phenomenon in Latin (i.e. after the oldest inscriptions), one would expect to find the original form to be attested, not the **-(s)no-*form. *farnus* can therefore not reflect **farag-* (< **bhrHeǵ-*).

Szemerényi 1959/60, 231 reconstructed **frāginos* > **frāgnos* (by syncope) > **frānus* (cf. *frūniscor* < *frūgniscor*) > *farnus* by a late metathesis. The last step is ad hoc and also inherently unlikely (*rā* is very common in Latin), which makes his proposal unconvincing. Szemerényi already suggested that **bheraǵ-* could yield **ferg-* > **farg-*. He assumed that in Latin **-erC-* yielded **-arC-*. In view of *mergae*, *tergum*, *quercus*, *nervus*, *serpere*, *vergere*, *verrere* this must be rejected. It seems more likely that the development of **e* to **a* must be identified with the *a* found in constellations of the type *CaCCC* (see VI.E.3), which presupposes **bhrg(s)no-*. However, the PIE. stem was **bhrH-ǵ-* (cf. *fraxinus*), and in order to get rid of this laryngeal it may tentatively be suggested that the PIE. Nsg. **bherHǵ-s* lost its

*-*H*- before *TC* in the second syllable and that this form caused the analogical loss of the laryngeal in oblique **bhrHǵ*-. Perhaps *farnus* was based on the "new" oblique form **bhrg*-. For further details and problems, see VI.E.3..2 no. 3.

Apart from the ad hoc remodelling, the weak spot in the etymology is of course that we do not know whether *farnus* is really cognate with *fraxinus* because its exact meaning is unknown. However, we do know that *farnus* denotes a tree, and therefore the proposed etymology seems possible.

3. *ianitrīcēs* 'wives of brothers' is cognate with Gr. ἐνάτηρ 'wife of husband's brother' (psilotic), OLith. *jentė*, SCr. *jȅtrva* 'id.' < **ǐenh₂-ter-*, Skt. *yā́tar-* 'id.' < **ǐn̥h₂-ter-*.

According to Szemerényi (1977, 92, note 366), Lat. *iani-* < **iane-* reflects **iena-* < **ienh₂-* by some sort of metathesis. This was accepted by Hamp 1982-1983, 102 and Mayrhofer 1987, 100, 101, apparently for want of a better explanation.

In view of *iecur*, it is unlikely that **ie-* regularly became **ia-* in *ianitrīcēs*. One may adduce the verb *ientāre*, *iantāre*, which however does not offer an apt parallel: it is apparently cognate with *iēiūnus*, *iāiūnus* 'hunger, fast', which has a long vowel. Moreover, *iāiūnus* (Plaut.) seems to be older than *iēiūnus*, in the same way as *iānua*, *iānus*, *iānuārius* is older than Vulg. Lat. *iēnuārius*, Proto-Romance **iēnua*, which would be the reverse of the alleged development **ien-* > **ian-* in *ianitrīcēs*.

One may wonder what would have become of PIE. **inh₂tr-* (cf. Brugmann I.1.422). If *i-* was vocalic (which is unlikely, see IV.D.1.2), one would expect Lat. **inatr-*; if **i-* was consonantal (as in *iac-* < **ǐHk-*), one would expect **ǐn̥Htr-* > **ǐnəHtr-*, which could not survive in this form. It may have yielded *iənəHtr-*. If this is acceptable and if we assume that the *-H-* before *TC* in the second syllable was lost, and with it the preceding automatic vowel **ə*, **iənətr-* would have become **iəntr-* > **iantr-* according to VI.E.3 (*CCCC* > *CaCCC*); cf. *pānus* below. Subsequently, the paradigm Nsg. **ienatēr* (or **-tōr*), Gsg. **iantres* was remodelled to **ianater* (**-tōr*), **ianatres* after **genatōr*. Then **ianiter* was replaced by **ianitrīc-* (see Leumann 1977, 365).

Since this interpretation depends on the interpretation of *farnus*, *ianitrīcēs* cannot be used as independent evidence. Moreover, the replacement of **iantr-* by **ianatr-* is speculative, though not impossible.

If a laryngeal was indeed lost in a non-initial syllable before *-*TC*-, *genetrīx* cannot regularly reflect **ǵenh₁-tr-*. It is easy to see that *gene-* in this case may be analogical after *genitor*.

4. *pānus* < **panksno-* < **pəŋksno-* < **pəŋnəHksno-* < **pŋHksno-* may be explained in the same way as *ianitrīcēs* (see VI.E.3.2 no. 9).

Thus, Osc. *FUTÍR* may point to the regular loss of **H* before *-*TC*- in a non-initial syllable. If this is correct, one can perhaps also explain *-a-* in *farnus*, *ianitrīcēs* and *pānus*. Except for *genetrīx* (which can easily have analogical *gene-*) I have found no counterexamples (i.e. forms with **HTC* > **aTC* in a non-initial syllable).

That a laryngeal was not lost before any two consonants appears from the following etymologies:
1. *tenebrae* < **temasrā-* < **temHs-reh₂-*, cf. Skt. *támiṣrās*, Lith. *témsta* < **temH-* (see IV.B.1.4.4.1 no. 19);
2. *cerebrum* < **ḱerh₂s-ro-*, cf. Gr. κέρας, Skt. *śiras*, OIc. *hjarni* (see IV.B.1.4.2.1 no. 6).

Again, it must be stressed that the proposed rule is only tentative at best because of the scarcity of material.

1.5.2. Celtic **HTC* in non-initial syllables

Because of the possibly identical treatment of **RHTR* to **RăTR* in Latin and Celtic (see IV.D.1.3.4.3), one might attempt to find traces of the possibly related *farnus*-type development in Celtic.

The only case of loss of a laryngeal in this environment is: Gaul. *duxtir* 'daughter' (Larzac). For the development see 1.5.1 no. 3 above (also V.A.4).

However, there is counterevidence: W. *anadl* 'breath' and *aradr* 'plough' and cognates must reflect **h₂enh₁-tlo-* and **h₂erh₃-tro-* respectively. Apparently, the laryngeal was vocalized here. On the other hand, these two cases are not particularly strong: *-a-* in the second syllable could have been taken from the verb, cf. OIr. *anaid*, *araid* < **ana-ti*, **ara-ti*. Cf. the same process in Lat. *arātrum* 'plough', which is based on the verb *arāre*. In any case, the Celtic material does not bear out the tentative conclusion reached for the Latin material: *duxtir* may be explained in another way (see V.A.2) and *anadl* and *aradr* may represent the regular development in Celtic.

2. Laryngeal between consonant and vowel (*CHV*)

2.1. Introduction

As was said in the Introduction (chapter I.C), *CHV* denotes a constellation in which an antevocalic laryngeal (before *e*, *o*) is preceded by either an obstruent (*THV*) or a postvocalic resonant (*VRHV*), where there can be no question about the consonantal (i.e. unvocalizable) nature of *R*. I have added 1. *cavus*, which strictly belongs in chapter IV.E.9.

Consequently, the only reflexes of the laryngeal that one may hope to find are an effect upon the preceding consonant (e.g. aspiration of stops), which does not seem to be the case in Latin, and the colouring of the vowel which followed the laryngeal (*h_2e > *a*, *h_3e > *o*). In non-initial syllables, the effects of this colouring are usually obfuscated because of the reduction of non-initial (i.e. historically unstressed) vowels in Latin. As a constellation *HV* seems to be confined to morpheme boundaries (a root structure *CHeC* cannot be shown to have existed in PIE.) and the initial morpheme of a word usually contains a syllabic nucleus, it does not come as a surprise that, as far as can be ascertained, almost all instances of PIE. *CHV* that are reflected in Latin are found in a non-initial syllable.

As to root morphemes, only if *CaC* < *CHC* exists beside *CeC* or *CoC* can one suspect **CHeC* or **CHoC*; in Latin, however, where there are many instances of non-laryngeal *a* (see VI), the mere existence of *CaC* beside *CeC*, *CoC* does not suffice to claim **CHeC*, **CHoC*.

For a discussion of verbal forms reflecting a root ending in a laryngeal, which will only be mentioned here, I refer to chapter V.D. For *cānus* 'grey', *cascus* 'old' < **kas-* < **kh_1-s-* or perhaps **kh_2-(e)s-* see IV.B.1.4.1.1 no. 2; for *ānser* 'goose' < **ǵheh$_2$-ns-*, **ǵhh$_2$-ens-* or **ǵhh$_2$ns-* see IV.B.3.2 no. 1.

What follows is intended to constitute the complete Latin material.

2.2. Material

1. *avus* < **$h_2$euH-o-*, cf. Hitt. *ḫuḫḫaš*, SCr. *ùjāk* (see II.C.4.2 no. 64).

2. *cavus* 'hollow' < **kou̯o-* (see IV.E.9 and VI.C.1), cf. Olr. *cúa* 'hollow', Bret. *keo* 'cave' < **kou̯io-* and Gr. κόοι· κοιλώματα and κόοι· τὰ χάσματα τῆς γῆς (Hes.) < **kou̯o-*. If it belongs to the same etymon as Av. *sūra-* 'hollow', Skt.

śū́na- 'emptiness', Gr. κύαρ 'hole, eye of a needle' (< **ḱuH-ṛ*), **kou̯o-* reflects **kou̯H-o-*.

3. *erus* 'master' < **h₁esH-o-*, cf. Hitt. *ešḫa-* 'lord' (see II.C.4.1 no. 12).

4. *genus* 'sex, gender, kind' < **ǵenh₁-os*, cf. Gr. γένος, Skt. *jánas-*.

5. *holus*, Gsg. *holeris* 'green vegetable, cabbage' reflects OLat. *helus* and belongs to the root **ǵhel-* (Lith. *žel̃vas* 'green, yellowish', Lat. *helvus* 'yellow (of honey)', OHG. *gelo* 'yellow', cf. also Gr. χλόος 'green' < **ǵhlou̯o-*), which has a set-form **ǵhelH-* in Lith. *žélti*, Latv. *zelt* 'grünend wachsen', Gr. χλωρός 'green' < **ghlh₃-ró-* (Mayrhofer 1986, 144). It is not clear which of the two forms is reflected in Lat. *holus* < **ǵhel(H)-os*.

6. *mora* 'pause' contains a root **merH-*. The laryngeal is indirectly reflected in the root vocalism of OIr. 3sg. abs. *maraid* 'remains', conj. *-mair* < **mareti* < **mrH-eti*. Further cognates are lacking. The formation of *mora* may be compared with *mola* 'what has been ground; millstone' (root **melh₁-* 'to grind'), which appears to be a verbal noun of the type τομή. If so, *mora* reflects **morH-eh₂-* and *mola* reflects **molh₁-eh₂-*. In theory, *mora* and *mola* may reflect root nouns: Nsg. **morH*, **molh₁*. In view of VI.C.2.3.3 (**mo-* > *ma-* in open syllables), one would then expect **morH* > **mora* > ***mara*; the assumption of a root noun consequently is less likely.

7. Whether *forāre* 'to make holes' and *vorāre* 'swallow' are likewise based on a noun of the type τομή (cf. Gr. βορά́) is uncertain. They are both denominatives, but *vorāre* may be based on the adjective found in *carni-vorus*, Gr. δημο-βόρος < **-gʷorh₃-o-* (see IV.D.2.3.2.2 for a more detailed discussion).

8. The 2sg. perfect ending *-istī* < **-es-ta-i* contains the PIE. perfect ending **-th₂e*, cf. Gr. οἶσθα, Skt. *-tha*.

9. In chapter III.2, it was maintained that in the NAsg. PIE. **HostH* 'bone' the final laryngeal or its expected reflex **-a* was removed for two reasons. In the first place, the NAsg. **HostH* > **osta* was homonymous with the NApl. **HostH-h₂* > **osta*, which created pressure to replace the NAsg. (*-a* being the marker of the NApl. ntr., and alien to the NAsg.). Secondly, the laryngeal was regularly lost before an ending

beginning with a vowel, e.g. G. **HostH-es*, D. *HostH-ei* > **ostes*, **ostei*, which created the model for a new Nsg. **ost*.

Following Steinbauer 1989, 236-237 note 14, one may assume that this new Nsg. **ost* became **osts* > **oss* (cf. the ptc. ntr. *ferens* < **ferent*). The attested oblique cases were based on the Nsg. *oss*.

10. In order to account for the forms **sāl-*, **săl-* under which the word for 'salt' appears in various languages, Kortlandt 1985a, 119 reconstructed a hysterodynamic paradigm **sĕh$_2$-l* (> Lat. *sāl* (m/n), cf. Lith. *sólymas* 'brine'), Asg. **sh$_2$-el-m* (> Lat. *săl-em*, OCS. *solь* (f.)), Gsg. **sh$_2$-l-os* (Lat. *săl-is*, Gr. Gsg. ἁλός). Lat. *sălem* accordingly reflects **sh$_2$-el-*. For *sāl*, see IV.C.1.3.6.1.

11. The 2pl. primary ending **-th$_1$e* (cf. Skt. *-tha*, Gr. -τε) is reflected in Lat. *-tis* < **-tes* < **-th$_1$e+s*.

12. The inflectional type *vātēs*, Gsg. *vātis* will be discussed in chapter V.C (notably section 2.3.1). The G. and D. sg. of this type (Lat. *-is*, *-ī*) reflect PIE. **-h$_1$-es/os*, **-h$_1$-ei*.

13. *venus* '(physical) love' reflects **uenH-os*. As to the laryngeal, cf. Skt. *vánas-* 'love', *vánati* < **uenH-*, ppp. *-vāta-*, desid. *vívāsati* 'wishes, likes' < **-u̯n̥H-*.

14. Verbal forms that contain a reflex of PIE. *CHV* are: *sonāre* < **su̯onh$_2$-eie-* (?), *tonāre* < **(s)tonh$_2$-eie-*, *dolāre* < **dolh$_2$-eie-* (??), *domāre* < **domh$_2$-eie-* (?), *vetāre* < **ueth$_2$-eie-* (?), *tetulit* < **te-tolh$_2$-e-*, *condunt*, *crēdunt*, *perdunt* < **-dh-onti* replacing **-dhh$_1$-enti*; *bibō* < **pibh$_3$-oH*, *serō* < **sisH-oH* (?), *sistō* < **s(t)isth$_2$-oH* (?), *cavēre* < **kouH-eie-*. See chapter V.D passim.

15. The following words may reflect **CHei-* or **CHeu-*, but it is equally possible that they contain **CeHi-* or **CeHu-*: *caecus*, *caedere*, *caelebs*, *haedus*, *parvus*, *paucus*, *saeculum*, *saevus*, *scaevus*, *spūma*. For a discussion I refer to section IV.E.6.

3. Laryngeal between consonant and resonant (*CHR*)

3.1. Introduction

In Latin, there are but few instances that reflect a constellation *CHR*. The lack of extensive material, not only in

Latin but also in other Indo-European languages, seems to indicate that in PIE. there was a constraint on roots of the structure **CHR(C)*. A few instances do occur and among these two are particularly illuminating because they may indicate that a sequence *CHRC* was metathesized to *CRHC*:

1. Skt. *kārú-* 'singer, poet', Gr. κήρῡξ 'herald' point to **keh₂ru-*. On the other hand, *kīrtí-* (f.) 'glory' < **krh₂-tí-* and OIc. *hrōðr* (m.) 'glory, praise' < **kreh₂-to-*, OE. *hrēð* 'glory' < **kreh₂-tí-* reflect **kr(e)h₂-*. Skt. *carkarti* 'erwähnt rühmend', *carkṛtí-* 'praise' contain the same root, but here the laryngeal was lost after reduplication.

According to Eichner 1988, 132 and 133 note 33, this root reflects **kărH-*, with PIE. **-a-*. Since **-a-* probably did not belong to the PIE. inventory of phonemes (see Lubotsky 1989), this reconstruction must be seriously doubted.

2. Lat. *cārus* 'dear', Goth. *hors* 'adulterer', Latv. *kārs* 'lustful' reflect **keh₂ro-*. On the other hand, Toch. obl. A *krant*, B *krent* 'good' point to PToch. **krent-* < **kr-ont-* < **krh₂-ont-*, with loss of the laryngeal before the vowel (**kh₂r-ont-* would have yielded Toch. **kārent-*). The denominative Olr. *caraid*, W. *caru* 'to like, love' < **kar-* probably reflects **kh₂r-* (or **keh₂r-* with pretonic shortening, see V.B.4.1 s.v. Ir. *caraid*).

Both instances may be explained by assuming that under certain circumstances (which cannot be defined in view of the scantiness of the material) **-HR-* yielded **-RH-*, a process that may be compared with the metathesis of **-HI-* to **-IH-* described in IV.E.2 and in the Appendix. (Since metathesis of **HI* to **IH* occurred only before consonants, it seems likely that metathesis of **HR* took place in the same position.) The direc- tion of the metathesis, which cannot be gleaned from the two instances given, must have been from **-HR-* to **-RH-* rather than the reverse, given the fact that **-HR-* is a very rare and **-RH-* a very common constellation in PIE. Since there is so little material, the proposed metathesis cannot, of course, be considered proven.

We may hope to find traces of *CHR* especially in words where a morpheme boundary lay between *CH-* and *-R-*. In this type, *CHR* was as a rule probably restored (for *CRHC* < *CHRC*, if there was such a metathesis), or the sequence arose at a later date, when *CHR* had already yielded *CRH*. Unfortunately, Latin words reflecting *CH-R-* are not attested. A category which *has* left traces in Latin are the nasal presents of

roots of the structure *CHC-* (*pangō*, *tangō*).

A problem of special interest is whether in *CHR-* the resonant or the laryngeal was vocalized. The former apparently occurred in Germanic (cf. OHG. *sulza* 'salt water' < **sh₂ul-d-* < **sh₂l-d-*, *stunta* 'hour' < **sth₂unt-* < **sth₂nt-*) and Indo-Iranian (e.g. *ásṛk* 'blood' < **h₁esHr-k*, cf. Hitt. *eshar*), the latter in Tocharian (A *ysār*, B *yasar* 'blood' < PToch. **yäsar* < **h₁esHr*). For other languages there is insufficient evidence (see Beekes 1988a; Kortlandt 1988c on Greek).

3.2. Material

The material was taken from EM.

1. *ānser* 'goose' may reflect **ǵhh₂ns-*, but **ǵhh₂ens-* (> Lith. *žąsìs*, Russ.-CS. *gusь*, OHG. *gans* etc., Gr. χήν?) or **ǵhĕh₂ns-* (Gr. χήν?) are equally possible. As to the ablaut, see Kortlandt 1985a, 119.

2. *callum* < **kal-no-* (or **kal-so-*?) 'callous' < **kHl-no-*, cf. OIr. *calath*, W. *caled* 'hard' < **kHl-eto-*.

3. *calvor*, *-eris* 'to quibble, deceive' < **kal-u-e/o-*, cf. Gr. κηλέω, Goth. *holon*, which reflect a root **keh₂l-* (IV.B.1.4.2.1 no. 3). The Latin forms may reflect metathesized **klh₂-u-* as well as **kh₂l-u-* (see IV.E.13.2.3.6). It is not certain that *calvor* belongs in this section, as *-v-* may not have been a consonant.

4. *cantus* 'sung' < **kh₂n-to-*, *carmen* 'song' < **kan-men* < **kh₂n-mn*, cf. OIr. pret. pass. *·cét* 'sung' < **kh₂n-to-* (see IV.B.1.4.2.1 no. 4, D.2.3.3.2 no. 6). Since the full grade of this root was **keh₂n-*, a reconstruction *can-* < **kh₂en-* is unlikely.

5. *far*, *farris* 'flour' must be compared with U. *far* 'flour', *farsio* 'farreum'. The latter shows that *far*, *farris* reflects **fars-*, not **farVs-*, as a secondary cluster *-rs-* would have yielded U. *-rf-* (Meiser 1986, 174). Italic **fars-* may be compared with Goth. *barizeins* '(prepared of) barley', OIc. *barr* 'grain' < **bhar-es-* and OIr. *bairgen* 'bread, loaf', W. Co. Bret. *bara* 'bread'. The Slavic cognates point to PSlav. **borsьno-* 'flour, meal' (AP. c): SCr. *brȁšno*, with short *-a-*, does not reflect **-orH-* but has a short vowel which arose from a long vowel in the trisyllabic form **bȏršьno* (c). Slovene has *brášno*, which points to (a), but also *brašnǫ̑* (c). Russ. *bórošno* and Bulg. *brašnó-to* belong to (c). A reconstruction

*bhorHs-ino- is possible if we assume that the laryngeal was lost by the operation of Meillet's law, but there is no indication whatsoever that the etymon indeed contained a laryngeal. If we insist on reconstructing *bhorHs-, Western IE. *bhar-(e)s- < *bhHr-(e)s- may be explained by assuming a PIE. s-stem *bhHr-s-, which under certain circumstances yielded *bhrH-s- and could be revocalized to *bhorH-s-. o-vocalism is unlikely in an s-stem, but the Slavic form is a derivative, for which other rules concerning the vocalism may have obtained. As to this new full grade of the metathesized root, compare OE. *hrēđ* < *$kreh_2$-ti- of the PIE. root *kh_2r- and the parallel situation in *CHI*-roots (E.2.1.1). However, the assumption of *bhrHs-, *bhHrs- is much more complicated than the assumption that all forms simply reflect *bhar(e)s-, with original -a-. Since *a* was not an independent phoneme in the PIE. protolanguage, the word is most likely a borrowing. As *bhars- is an agricultural term, such an interpretation is semantically plausible. Thus, there is no reason to reconstruct *bhHrs-.

6. *pangĕre* < *ph_2-n-ǵ- (IV.B.1.4.2.1 no. 12).

7. If *sallō*, *salsus* 'to salt' reflects an old formation in *-d-, which may be compared with the Germanic strong verb OE. *sealtan*, OHG. *salzan* and with OHG. *sulza*, OE. *sultia* 'salt water', it may reflect *sh_2l-d-; but *seh_2l-d- or *sh_2el-d-, either of which may lay at the basis of the Germanic verb, may be considered for Latin as well.

8. *saltus* (u) 'jump', *saltus* 'jumped' probably reflect *sh_2l-tu-, -to- (see IV.B.1.4.2.1 no. 17); the u-stem perhaps reflects full grade *seh_2l-tu- > *sāltu- > *sāltus*.

9. *tangere* < *th_2-n-ǵ- (IV.B.1.4.2.1 no. 20; C.1.5.2 no. 40).

3.3. Conclusion

One may conclude from *callum* < *kHl-no-, *cantus* < *kh_2n-to-, *pangō* < *ph_2-n-g-, *tangō* < *th_2-n-g- and perhaps also from *calvor* < *kHl-u̯-, *sallō* and *saltus* that *CHR* yielded *CaR*. It is not clear whether the laryngeal or the resonant was vocalized. Vocalization of the laryngeal would lead us to reconstruct *kh_2nto- > *kanto- > *cantus*; *kH_2lno- > *kalno- > *callum*. Judging from the development of word-initial *HRC-* (II.D), vocalization of the resonant would have yielded *kh_2nto- > *kh_2ento- > *cantus*; *kH_2lno- > *kHalno- > *callum*. We lack evidence for the development of

Ch_1N and *Ch_3N*. If the laryngeal was syllabic, the result would have been Lat. *CaN*, irrespective of the quality of the laryngeal; if the resonant was vocalic, *Ch_1N* and *Ch_3N* would have yielded *CeN* and *CoN*, respectively.

C. LARYNGEAL AFTER VOWEL (*VH*)

1. Laryngeal between vowel and consonant (*VHC*)

1.1. Introduction

The aim of the present chapter is to provide a list of all Latin words and morphemes that reflect a PIE. constellation *-VHC-* and to discuss a number of problems concerning the development of this constellation. In accordance with what was said in section C of the Introduction, *VHC* denotes a constellation consisting of a PIE. vowel (*e,o*) + a laryngeal + an obstruent or an antevocalic resonant. The types *VHR* and *VHI* will be discussed in C.3 and E.6, 8, 10, respectively.

It is generally agreed that the result of *VHC* in Latin (and in most other languages except Anatolian and, to a certain degree, Slavic, see Vermeer forthc.) is $\bar{V}C$, with colouring of the vowel **-e-* by **-h_2-* and **-h_3-* (**eh_2* > *ā*, **eh_3* > *ō*). In view of this consensus, I shall refrain from an elaborate discussion of the Latin material except in cases where I think that the etymological dictionaries may be supplemented, and I shall simply list the etyma together with a reconstruction and a limited number of relevant cognates.

As far as I can see, there are four issues on which scholarly opinions differ:

1. the fate of PIE. **-$\bar{e}h_2$-* and **-$h_2\bar{e}$-* (> *-ā-* or *-ē-*); see section 1.3.6;
2. the fate of PIE. **-oh_2-* (> *-ō-* or *-ā-*); see section 1.5.5 and 1.3.6.3;
3. Martinet's proposal that **-VHs* yielded Lat. *-Vx* (type *senex*, *genetrīx*); see section 1.6;
4. Dybo's rule for Italo-Celtic and Germanic, according to which long vowels (also those arisen from **eH*, **oH*) were shortened in pretonic position; see section V.B.

In order to obtain the complete material, all Latin instances of long *ō*, *ā* and *ē* were collected. Latin long vowels stem from the following sources:

1. PIE. **VHC*;
2. PIE. **CRHC* (> *CRāC*);
3. PIE. lengthened grade;
4. Lachmann's law: a short vowel is lengthened before a PIE. media (=glottalic obstruent) followed by an obstruent, e.g. *rēctus*;

5. contraction of an original disyllable, e.g. **eie* > *ee* > *ē* (**treies* > *trēs*); **oul* > *ō* (see E.7.2);
6. *āiō* < **ăiiō* < **ăgiō*; also probably the perfect type *cāvī* < **kaṷṷī* < **kaṷaṷai*;
7. lengthening of a short vowel before *ns* and *nf* (*cōnsul*, *cōnferō*); before *nc* + consonant (*sānctus*); and perhaps before *gn* and *r* + consonant (*SEIGNUM*, CIL I^2 42, *FÓRTUNATA*, CIL VI 7527);
8. compensatory lengthening for the loss of **s* before certain voiced consonants, e.g. *cānus* < **kasnos*.

Instances of 5-8 have not been included in this chapter. Instances of 3 and 4 will be listed in sections 1.3 and 1.4, respectively. I have thought it useful to include the instances of lengthened grade and of Lachmann's law, the former because a complete list of them is as yet lacking (section 1.3.1-1.3.5) and because of the development of a laryngeal adjacent to a lengthened grade (section 1.3.6), the latter in order to distinguish instances of Lachmann's law from lengthened grades and because in a number of instances laryngeals seem to interfere with the operation of Lachmann's law.

It may be remembered that in a number of cases a PIE. lengthened grade or PIE. *VH* is reflected as a short vowel:
a. *V̄RC* was shortened to *VRC* (Sommer-Pfister 1977, 102; see IV.C.3 as this concerns cases of *VHRC* rather than *VHC*).
b. In a closed unstressed word-final syllable a long vowel was shortened except before *-s*, e.g. *aquăm* < **-ām* < **-eh$_2$m*, *patĕr* < **-ēr*.
c. A long vowel is shortened before a vowel: *fleō* < **flēō* < **bhleh$_1$-ioH*.

Thus, all instances of Latin long vowels which do not belong to categories 5-8 and of short vowels for which there is reason to believe that they have been shortened according to the rules a-c will be listed in the following sections. Section 1.2 treats words which lack a reliable etymology (1.2.1), onomatopoetic words (1.2.2), loans (1.2.3) and words that reflect *CRHC* (1.2.4). The lengthened grades are discussed in section 1.3 and the instances of Lachmann's law in section 1.4. Section 1.5 lists the instances of *VHC*: **eh$_1$* (1.5.1), **eh$_2$* (1.5.2), **eh$_3$* (1.5.3), **oh$_1$* (1.5.4), **oh$_2$* (1.5.5), **oh$_3$* (1.5.6), vowel + laryngeal of unknown quality (1.5.7). The question of *senex* is discussed in section 1.6.

1.2. Words which are not discussed

1.2.1. Words without a reliable etymology

Latin *ā*: *ālea* (< Gr.?), *ambubāia* (Aram.?), *bāca* (=*bacca*), *bifāriam* (cf. Gr. δι-φάσιος?), *cālō*, *cārex*, *cicāda*, *crās* (Skt. *śvás*?), *effafillātō* (in *eff. bracchiō*), *gāius*, *gāneum*, *glārea* (cf. *grānum*?), *hāmus*, *hāmiō*, *iāiūnus* (=*iē-*), *inānis*, *laccānium*, *lāmina* (also *lammina*, *lamma*), *lampāgō*, *lāridum*, *lārva* (cf. *Lārēs*?), *lăser*, *māni a* (*-iōla*), *năr* (Sabinian), *opācus*, *pālārī* (< **pandslā-*?), *palātum*, *paludātus*, *-āmentum*, *pānus* (< **penksno-*?), *papāver*, *păr* G. *păris* (Gr. πέρνημι??), *pastināca* (cf. *pāla*?), *prāvus*, *prōsāpia*, *rāca*, *rāna* (< **rāksna*, cf. *raccō*?), *sānus* (U. Dpi. ***SANES***), *squālus*, *squāma*, *stāgnum*, *tabānus*, *tālea*, *-iāre*, *trā(n)senna*, *vārus* (but see WH.), *vās*, *vāsum* (cf. U. *vasor*), *vēlābrum*, *vēlātūra*.

Latin *ē*: *acrēdula*, *alcēdō* (< Gr.?), *amulētum*, *bēta*, *bolētus*, *ēlūcus*, *ēr* (< **ǵhērs*, cf. *horrēre*?), *ērūca* (also *ūrūca*), *exprētus*, *fēnum* (also *-ae-*, *-oe-*), *fēnus* (also *-ae-*) (both: cf. *fēlīx*?), *harēna*, *lēna*, *-ō* (< Gr.?), *mēlēs*, *rēdō* (< Gaul.?), *rēn*, *resēda*, *sēbum*, *sēcale*, *sēgnis* (Gr. ἥκα?), *sēria*, *sevērus*, *tēlum*, *vēlābrum* (< Etr.?), *vēlātūra*, *vēles* (cf. *vēlōx*?), *vēna*, *vērātrum* (cf. *vērus*?).

Latin *ō*: *adōria* (cf. *adōrāre*?), *bōlētus*, *(ci-)cōnia*, *cōleus*, *cōnārī*, *cotōneum*, *glōria* (cf. Olr. *glár*? Hamp 1982b), *lōdīx*, *lōra*, *-ea* (< **louera*?), *lōrīca* (cf. Gr. θώραξ, loan), *ōtium*, *plōdere* (*-au-*), *plōrāre*, *plōtus* (*-au-*), *scrōfa* (< Gr.?), *sōlus*, *sōpiō* (cf. *prōsāpia*?), *sōrix* (cf. *sōrex*?), *sōrtus*, *tōfus*, *tōlēs*, *tōmentum* (< **toue-*?), *tōrta*, *vōmis* and *vōmer* (< **uogʷhsmi-*?).

1.2.2. Onomatopoetic and expressive words

ā(h), *bālāre* (cf. Gr. βληχάομαι), *bēbāre*, *crōcīre* (cf. Lith. *krōkti*, Russ. *krákat'*), *ē-castor* etc., *ēn* (cf. Gr. ἦν), *glōcīre* (cf. OE. *cloccian*).

1.2.3. Loans

1.2.3.1. From Greek

āēr, *agēā*, *agōnia*, *amāracus*, *anōcatum*, *apostōma*, *apothēca*, *argemōnia* (*agrimōnia* etc.), *āruncus*, *attagēna*, *basēlus*, *blasphēmō*, *cādūceum*, *cāla*, *camēlus*, *cāmus*, *cant(h)ērius*, *cārabus*, *carbās* (*-us*), *carchēsium*, *carōta*, *catōmum*, *cēpa*, *-e*, *cēra*, *cērussa*?, *clātrī*, *cnāsonas*,

cocētum, cōnōpium, corēdulus, corōna, crāpula, crātera, crēterra, dāmia, ecclēsia, ēlēctārium, eleēmosyna, ēlogium, enthēca, erēmus, ērīcē, flēmina, gargātēs, gōbius, grabātus, grōma, hōra, lāicus, lebēs, lēnis, mālobathrum, mēlō, mōmar, nānus, nāpus?, nārita, ōla, opsōnium, pānus, patēta, pēra, words beginning with *phā-, pīrāta, planētae, platĕa, poēta, prātūra, prophēta, prōpōla, rēsīna, rhētor, sagēna, sāperda, scarāficō (-fiō), scēna, scōria, sēpia, sināpi, sōna, spādīx, splēn, stāminātus?, tapēte,* words beginning with *thē-* and *thō-, tolōneum, tomācina, tomāculum?, zōna.*

1.2.3.2. From Celtic
omāsum, rēda, rēnō (or Germ.?).

1.2.3.3. From Germanic
brāca, brācēs, brādō, frētum, rēnō (or Celt.?).

1.2.3.4. From other languages
abbās, ambubāia, ariēna, ealē, māgālia, mapālia, pāvō.

1.2.4. Long vowels reflecting *CRHC*
See chapter V.D.1.3.2.1.
clāmāre, clārus, crābrō, crātis, flāgitāre, flāre, frāgum?, gnārus, grāculus, grānum, grātus, lāna, lātus, nāscor, nātus, plācāre, plānus, prātum?, strātus, strāgēs and other cognates beginning with *strā-, (*st)lātum.*

1.3. Lengthened grade

The origin of the PIE. lengthened grade was largely clarified by Wackernagel 1896, 66-68 and Kortlandt 1975, 84ff. and 1987, according to whom early PIE. **e* and **o* were lengthened in the following circumstances:
1. in monosyllables (e.g. the Nsg. of certain root nouns, the 2nd and 3rd person sg. of certain root presents (the origin of the so-called Narten presents) and the *s*-aorist). When the long vowel was phonemicized, it could spread beyond its original reach, e.g. to the Asg. **diēum* from the Nsg. **diēus* (the Asg. was originally probably disyllabic **dieu̯m̥*, cf. the structure of **$h_1$neu̯n̥* 'nine'); and from there it may have spread to other nouns with a similar structure, e.g. **g^{w}ēh$_3$us* (> Skt. *gáuḥ*), **g^{w}ēh$_3$um* (> Skt. *gā́m*, Gr. βῶν, see below). In the verb, its spread led to the pervasive lengthened grade vocalism in the

indic. act. of the *s*-aorist and the singular act. of the Narten presents.
2. Before word-final resonants (thus Kortlandt), e.g. **ph₂tēr*, Lsg. **-ēi*, **-ēu*, 3pl. perfect **-ēr*, which could spread after phonemicization: PIE. **h₂nepōt* after **deh₃tōr*.

For the details and for a discussion of the numerous problems which remain, I refer to the works cited and to Beekes fthc.

The aim of this section is twofold. First, a complete list is provided of instances of lengthened grade in Latin (which must be distinguished from long vowels which arose from *VH*); the etyma are divided according to the possible origin of the lengthened grade: root nouns (1.3.1), monosyllabic verbal forms (1.3.2), other monosyllables (1.3.3); before word-final resonant, and the type **h₂nepōt* (1.3.4), remaining forms (1.3.5). In the second place, the Latin instances of lengthened grade adjacent to a laryngeal are discussed (1.3.6).

1.3.1. Lengthened grade in original root nouns
1. *diēs* 'day' is based on an Asg. **diēm* (Skt. *dyắm*, Gr. Ζήν) < **diēum*, which may in turn have received its lengthened grade from the Nsg. **diēus* (> Skt. *dyáus*, Gr. Ζεύς; thus Kortlandt 1985a, 118).

2. If *fūr* 'thief' is not a loan from Greek (φώρ 'id.'), it reflects the same root noun as the latter, viz. **bhōr* of the root **bher-* 'to carry'. For PIE. **-ōr* > *-ūr* (after a labial consonant?), cf. OLat. *quōr* > *cūr* (see WH.).

3. If *lēx* 'law' belongs to *legere* 'to collect' (the connection is semantically obscure), it reflects a PIE. root noun. Cf. O. *ligud* 'lege'. The connection with Skt. *rājáni* 'by the law of', Av. *rāzarə*, *rāzan-* 'religious law' (thus EM.) is doubtful, as the latter rather belongs together with *rắjan-*, Lat. *rēx* 'king' (WH., Mayrhofer, KEWA).

4. *mōlēs* 'mass (of stone etc.)', *mōlīrī* 'to make an effort' may be cognate with Gr. μῶλος 'toil of war, struggle' and μόλις 'only just'. If OHG. *muoan* 'to tire' is cognate, considerations of root structure point to **meh₃-*, but as the connection is uncertain, one may reconstruct a root noun **mōl-*, with lengthened grade. Note especially the *ē*-stem *mōlēs* because *ē*-stems are known to have replaced root nouns in a number of instances (V.C.3). Also, the short vowel of *mōlestus* cannot be explained on the basis of **mHl-* (see, however, V.B), but requires **mol-*

or **mel-*. The usual assumption that *mŏlestus* was formed after *mŏdestus* (Pedersen 1926, 62) is implausible.

5. *pēs*, G. *pĕdis* 'foot' < **pĕd-* (see below, 1.4.1).

6. *rēx*, cf. OIr. *rí*, Skt. *rā́jan-* 'king' < **h₃rēǵ-*, cf. *regere* 'to keep straight, guide', Gr. ὀρέγω 'to reach after' (?).

7. *sēdēs*, Gsg. *sēdis* 'seat' is probably based on a root noun **sēd-s*, from which is derived *sēdāre* 'to appease' (see V.D. 3.1 no. 12).

8. *stēlla* 'star' < **h₂stēr-*, cf. Gr. ἀστήρ, Ved. Npl. *tā́ras*, Ipl. *stṛ́bhiṣ* 'stars' etc. < **h₂st(ē)r-*. The lengthened grade may actually reflect the Nsg. in *-ēr* (category 1.3.4).

9. *vōx*, G. *vōcis* 'voice', cf. Skt. *vā́k*, Av. *vāxš*, Gr. Asg. ὄπα < **uŏkʷ-*.

1.3.2. Lengthened grade in originally monosyllabic verbal forms

The long vowel of *sēdī*, *vēnī*, *lēgī*, *fōdī* etc. probably arose after the model *emere*, *ēmī* < **h₁e-h₁m-*, *edere*, *ēdī* < **h₁e-h₁d-*, *ōdī* < **h₃e-h₃d-* (Leumann 1977, 590f.). It seems at least possible that *lēvī* (of *līnere*, ppp. *lĭtus*, root **h₂lei-*, see E.7.3.1.1 no. 2 and II.B.2.2 no. 14) arose in like manner. **lēi-ai* etc. would then have been replaced by **lēi-u-ai*, as *-u-* was added to the perfect stem of all roots in a vowel (e.g. *monuī* < **moni-u-ai*, *flāvī* < **flā-u-ai*). If long *-ē-* did not arise analogically, it may stem from a root aorist **lēi-s*, **lēi-t* but since a lengthened grade of this origin never seems to have survived in Latin, this solution is less probable. As nothing is known of the history of this verb, both reconstructions are purely hypothetical.

vēxī, the ppp. of *vĕhere*, continues an old *s*-aorist with a lengthened grade root, cf. Skt. *ávāṭ* (RV), OCS. *vĕsъ* < **uēǵh-s-*. *rēxī* (*rĕgere*) and *tēxī* (*tĕgere*) may have the same origin, but they may also be explained by the operation of Lachmann's law.

1.3.3. Lengthened grade in other monosyllables

1. *cūr* < **kʷōr* (see 1.3.4 no. 1).

2. The negative *nē* in *nē...quidem* 'not even', *nēquam*, *nēve* and *nē* 'that not' (beside *nĕ* in *nefās*, *nesciō* etc.), cf. Osc. *ni* < **nē*, OIr. *ní*, Goth. *nē* (beside *ni*). If the long vowel reflects a lengthened grade, it probably arose in the stressed

form, whereas short *-e* remained in the clitic (e.g. Skt. *ná*). Alternatively, the long vowel could have been taken from the negative **meh₁*.

3. *nōs* 'we, us', cf. Av. Apl. encl. *nå* < **nōs*, OCS. Gpl. *nasъ* < **nōs-om*; cf. Skt. encl. *nas*, Lat. *nŏs-ter* < **nos-*, Goth *uns*, Gr. ἡμεῖς < **ns(-)*.
vōs 'you' (pl.), cf. Av. Apl. encl. *vå* < **uōs*, OCS. Gpl. *vasъ* < **uōs-om*; cf. Skt. encl. *vas*, Lat. *vōs-ter* < **uos-*, Gr. ὑμεῖς < **us-* (or **ius-*?).
The long vowel probably arose in stressed position in PIE., the short one in unstressed monosyllables (but cf. the long vowel in the Avestan enclitics).

4. *sē-*, *sēd-* 'without', *sĕd* 'but' (probably originally an Abl.sg.), cf. *soluō*, *sŏcors*, which point to **suĕ-*, beside OCS. *svěnъ*, *svěne*, *svěnъje* 'outside' < **suē-n-* (or rather **sue-h₁n-*?). PIE. **s(u)ĕ-* must probably be connected with the reflexive pronoun (see EM. and WH. on the semantics). Cf. *suēscō* below (1.5.1 no. 24), where the evidence favours **sue-* beside **sueh₁-* without an appreciable difference in meaning. It is uncertain whether *sē(d)-* reflects a lengthened grade or **sueh₁-*.

5. The exact origin of Lat. *vē-* 'untrennbare Partikel zur Bezeichnung eines fehlerhaften Zuviel oder Zuwenig' (WH.), e.g. in *vēcors*, *vēpallidus*, *Vēiovis*, is uncertain. A connection with PIE. **h₂eu-* in Lat. *au-*, Olr. *úa-*, Skt. *áva*, OCS. u is usually considered possible (see especially WH.).

1.3.4. Lengthened grade before a final resonant and the type **h₂nepōt*

1. *cūr* 'why' < OLat. *quōr*, cf. Skt. *kár-hi* 'when?', Goth. *hwar*, OIc. *hvar* < **kʷor*, OE. *hwǣr*, OS., OHG. *hwār* 'where?' < **kʷēr*. The forms with a short vowel may have arisen in enclitic position or before particles (cf. Skt. *kár-hi*).

2. *glōs* < **glh₂-ōu-s* (see C.1.3.6.2).

3. On *hērēs*, *-ēdis* 'heir' < **ǵheh₁ro-h₁ēd-*, cf. Gr. χηρωσταί, see Dunkel 1987.

4. *liēn* 'spleen' (< **lihēn*?), cf. Skt. *plīhắ*, Av. *spərəzan-*, Gr. σπλήν, despite formal problems concerning the root.

5. *lōrum* 'strap of leather, rein, belt' < **(h₁)ulōr*, cf. Gr. εὐλῆρα 'reins' < **h₁ulēr* (?), Arm. *lar* 'cord' (see Beekes

1988a, 78). The presence of a laryngeal in the root cannot be ruled out, and might explain the Armenian form: *h_1ulh_1-ro- > *$h_1$ularo- > *ularo- > *ularo- > lar (?). Therefore, the etymon may not belong here.

6. *nepōs* 'grandson' < *$h_2$nep-ōt-, cf. Skt. *nápāt-*, Av. OPers. *napāt-*, W. *nei* < *$h_2$nepōt- 'grandson' (see II.B.2.2).

7. *verrēs* 'boar', replacing **verrē* < **uersēn* (see V.C.2.3.1 no. 17).

There are a number of grammatical suffixes which are not limited to a single word.

8. Nsg. *-ō* < **-ōn* of the *n*-stems (also in the derivatives, e.g. *-mōnium*).

9. In the *r*-stems: the Nsg. of the kinship names *pater, māter, frāter* < **-ēr*, *soror* < **-ōr*. Agent nouns in *-tor* < **-tōr* and their derivatives (e.g. *-tōrius*).

10. Masculine *s*-stems in *-ōs* (> *-ōr-*), e.g. *sopor, odor* etc. The adjective *pūbēs*, G. *pūberis* 'grown up, of ripe age'.

11. 3rd pl. perfect *-ēr-unt, -ēre* replacing **-ēr* (see Beekes fthc. § 12).

1.3.5. Remaining forms

1.3.5.1. Words with a doubtful etymology

1. *dōlium* 'pot, drinking vessel (of stone)' is usually connected with the root **del(H)-* (Pokorny IEW. 194) 'to fashion, work wood' (cf. *dolāre*, see V.D.2.1.2. no. 12), which, as EM. point out, is perhaps semantically unsatisfactory because **del(H)-* generally denotes woodwork, not earthenware. Cf. MBulg. *dьli* < PSlav. **dьly* 'earthen pot' (?). IE. origin is uncertain, as is the case for most designations of earthenware.

2. The only known cognate of *fēlēs* 'wild cat, marten' is W. *bele* 'marten', which may reflect **bhelego-* (thus WH., but there is no evidence for the suffix). If the word is of PIE. origin (which is unlikely given the limited distribution), it may reflect a root noun. Some root nouns are known to have entered the inflectional type *fēlēs*, G. *-is* (see V.C.3.1 no. 6 and compare *volpēs*).

3. *mōrus* 'mulberry tree', *mōrum* 'mulberry, blackberry' definitely reflects a substratum word, cf. Gr. μόρον 'mulberry, blackberry, μῶρα· ουκάμινα, Arm. *mor, mori* 'blackberry' < **mor-*,

*mōr-, W. *mer-wydden* 'mulberry, blackberry' < **mor-* + *gwydd-en* 'tree' and, especially, OIr. *smér*, W. *mwyar*, Bret. (Vann.) *muiar* < **smiar-*, Romanian *zmeură* 'raspberry' < **smior-*. See especially Hamp 1973.

4. OLat. *pēlŭis* > *pēlvis* 'cauldron'. The connection with Indian forms such as *pālāvī* 'kind of vase' is doubtful because the latter are attested at a very late stage and a Dravidian origin may be considered (see Mayrhofer, KEWA s.v.). Gr. πελίκη 'cup', πέλλα 'milk bucket' < **pel-* and OIc. *full* 'cup' < **pl-* may be cognate, but other connections are unreliable (e.g. with *pellis* 'skin' and numerous other forms with similar meaning; see Pokorny IEW. 804).

5. *prōcērus* 'tall', originally allegedly 'growing upwards', is usually compared with *crēscō* 'to grow', *crēber* 'full, frequent' < **kreh₁-*, which do not have a reliable etymology (but their formation seems perfectly in order for an IE. word). Lith. *šérti* 'to feed', Gr. (aor.) ἐκόρεσα 'satiated' rather reflect **ḱerh₃-* (Beekes 1969, 231-233; but cf. Ruijgh 1986, who reconstructs **ḱerh₁-* for the Greek forms and explains *o*-vocalism in ἐκόρεσα as taken from pres. κορέω < **ḱorh₁-eie-*). They are semantically distant and may rather be compared with O. *KARANTER* 'vescuntur', *caria* 'bread', Lat. *Cerēs*, O. Dsg. *KERRÍ*, U. Gsg. *ČERFE* < **kerĕs-*. The connection with Arm. *serem* 'to beget' is no better.

6. *sōrex* 'shrew' < **suōrak-* is cognate with Gr. ὕραξ 'id.' < **surak-*. Pokorny IEW. 1049 connects the word with Skt. *svárati* 'to sound', OIc. *svarra* 'brausen', Lat. *susurrō* 'to hum', which is no more than a possibility.

1.3.5.2. Unexplained lengthened grades

1. *ācer* (see below, 1.3.6.3).

2. *cēlāre* 'to hide' is a denominative, which may be based on a Nsg. with lengthened grade, cf. *sēdāre* 'to calm' (Steinbauer 1989, 142; see above 1.3.1 s.v. *sēdēs*). The root is **ḱel-* (OIr. *celid* 'to hide', *clithe* 'hidden', *clithar* 'protection' < **ḱ(e)l-*, cf. Lat. *oc-culĕre*, OHG. *helan* (not *hell-*, cf. Lühr 1976), Skt. *śárman-* 'shelter, cover'), possibly beside **ḱelH-* (in Gr. καλύπτω < **ḱlH-ubh-*? and Lat. *clam*). The root noun from which *cēlāre* is derived may be reflected in the Latin adverb *clam* 'stealthily' if from **ḱlHm* and possibly (though this is very uncertain for semantic reasons) in Skt. *śā́lā*

'building, house, room' if from *ḱēl- rather than *ḱol-. It is impossible to determine whether Lat. *cella* stands for *cēla (thus WH., Pokorny IEW. 553).

3. *glēba* (also *-ae-*) 'lump, clod of earth' may first be compared with *globus* 'ball, clod'. The connection of these forms with e.g. Lith. *glėbti* 'to embrace', Latv. *glêbt* 'to protect' (probably from *ghleb-, Winter's law), OHG. *klāftra* (f.) 'measure of streched out arms' (< *g(h)lēb(h)-) is speculative. The form with *-ae-* may be the older. On these and further connections see Pokorny IEW. 359-360.

4. *lēnis* 'soft (to the touch)' is usually compared with a Balto-Slavic adjective meaning 'lazy, slow': OCS. *lěnъ*, SCr. *lîjen*, Sin. *lên*, Lith. *lėnas*, Latv. *lèns*. The intonation of these forms points to non-acute *lēno- (thus Kortlandt 1975, 73). *lēno- cannot be analysed as *lē- + -no-, as this type of root did not exist in PIE. We must therefore reconstruct PIE. lengthened grade *lēn-o-. As an alternative, one may suggest that the BSl. forms reflect *lēh$_1$-no-, in which the laryngeal was dropped after a lengthened grade at an early stage (see Kortlandt 1985a). *leh$_1$-en- is another possibility. Since the Latin adjective is not an *o*-stem, the original inflection may be an *n*-stem (*lh$_1$-ēn?). However, the connection of *lēnis* with the BSl. forms is semantically doubtful.

5. *nōdus* 'knot, bond, knob' may be compared with Lat. *nassa* 'a wicker-basket with a narrow neck for catching fish, a weel' < *nad-tā-, OIr. *nascid*, Bret. *naskañ* 'to bind', OIr. *naidm* 'bond' < *nad-, Goth. *nati*, OHG. *nezzi*, OE., OIc. *net* < PGerm. *natia-. The root cannot have contained a laryngeal in view of OIc. *nist* 'brooch, pin', OHG. *nestilo* 'string', OHG. *nusta* 'bond' < *ned-st-, *nd-st-, unless one separates *nest- from *nad/nōd- < *n(e)Hd-. In section VI.D.2.1 s.v. *nassa*, it will be proposed that It.-C. *nad- stems from pre-consonantal *nd-. Then *nōdus* must reflect a lengthened grade, which may be compared with that of OIc. *nót* (f.) 'large net'. *Nōdus* and *nót* may reflect a root noun, but this cannot be demonstrated. Since it cannot be ruled out altogether that the root of *nōdus* was *neHd-, it is uncertain whether *nōdus* reflects a lengthened grade vowel.

6. *ōlim* 'at that time, some time ago' and 'at a future time' is an adverb which probably belongs to the root *h$_2$el- 'other' (in *alius*, *ulter-ior* etc.; a semantic parallel is offered by French

autrefois). Adverbs in *-im* with locative (e.g. *inter-im*) and ablative meaning (e.g. *illim*, *istim*, *exim* 'from there') were to some degree productive in early Latin, cf. also *utrimque*, *altrimsecus*, *deinde*, *subinde* (< **-im-de*). It seems possible that *-im* was added to an old endingless locative **ōl* < **h_2ōl*. However, adverbial locatives appear not to have been subject to the normal rules for lengthening in PIE. (see Beekes fthc. § 13.2).

7. *ōvum* 'egg' < **h_2ōuiom* (E.13.2.3.4), probably a vṛddhi-formation derived from **$h_2$eui-* 'bird' (cf. Gr. ὠιόν, SCr. *jáje* with PSlavic circumflex intonation). But cf. Schindler 1969, who reconstructs **ō-$h_2$uiom*, with a prefix *ō-* 'bei' (unlikely).

8. *sēmi-* 'half', cf. Gr. ἡμί-, Skt. *sāmí-*, OHG. *sāmi-* < PIE. **sēmi-*. The root is probably identical with **sem-* 'one'.

9. *sērius* 'serious' (the loss of *-u̯-* has not yet been explained), cf. Goth. *swērs* 'honoured', OHG. *swār*, OIc. *svárr* 'heavy' < **swēr-*, Lith. *sveřti*, Latv. *svèrt* 'to weigh' < **suer-*, Lith. *svarùs* 'heavy', *svāras* 'scales'; perhaps Gr. ἀείρω 'to lift' < **$h_2$uer-* (see Beekes 1969, 83ff.). Lith. *svìrti* 'nach einer Seite hin das Übergewicht bekommen' may point to **suerH-*, but in view of the correspondence of Lith. *sveřti* with Latv. *svèrt* the acute is probably secondary.

10. *sōlārī*, *-ātus* 'to console' is probably cognate with Gr. ἱλάσκομαι 'to appease, make favourable', ἵληθι 'be favourable' < **si-slă-*. The Greek forms are not clear in every detail (see Frisk, Chantraine), but it seems pretty clear that the root was **selh$_2$-*. Other cognates are uncertain (e.g. OIr. *slán* 'healthy, complete', which rather belongs to the root of *salvus*; Goth *sels* 'good', OHG. *sālig* etc. are semantically distant). *sōlārī* is most likely a denominative and may therefore reflect a root noun **sōlh$_2$-*.

11. *sōpīre* 'to cause to fall asleep, doze off', OIc. *sǿfa* 'to kill' < **suōp-ie/o-*, OIc. *sværfa* 'to cause to fall asleep' < **suēp-*, cf. *somnus* < **suopno-*, Gr. ὕπνός < **sup-* etc. For the claim that *sōpīre* c.s. reflects a PIE. type of causative, see Klingenschmitt 1978, 1-13, and note Bammesberger 1980, who expresses serious doubts about the evidence for this type and considers the possibility that *sōpīre* is based on a root noun **suōp-s*.

12. *tēgula* 'roof-tile' (cf. *tĕgere* 'to cover') and *rēgula* 'straight piece of wood' (cf. *rĕgere* 'to direct') and perhaps Campanian *sēcula* 'scythe' (cf. *sĕcāre* 'to cut') are nomina instrumenti in **-lo-/-lā-* (see Leumann 1977, 311). The long vowel of *tēgula* is said to point to a PIE. root noun (EM. s.v. *tegō*, Leumann 1977, 274). This explanation does not seem to explain *rēgula* (despite EM. s.v. *regō*) because the root noun **Hrēǵ-s* meant 'king' in PIE. already.

13. *tēmētum* 'intoxicating drink' (as to the formation cf. *ac-ētum* 'vinegar'), *tēmulentus* 'drunk', *abs-tēmius* 'sober' contain the root **tēm-* 'intoxicate'. There are several possible connections, all doubted by EM. Germ. *dämisch*, *dämlich* 'geistig betäubt' (with *-ä-* < **-ā-* with *i*-umlaut < PGerm. **-æ-* < PIE. **-ē-*) and Arm. *tᶜmrim* 'become stunned' (based on **tēmiro-*?) may contain the same root. There is probably a connection with **temH-* 'be dark' in e.g. Lat. *temerē*.

Skt. *tắm-* 'chokes, is stunned, fades away, is exhausted' is attested in post-Vedic texts, except for the injunctive *tamat* (RV). The present *tắmyati*, ppp. *tāntá-*, caus. *tamáyati* may as to its structure be compared with *dắmyati*, *dāntá-*, *damáyati* 'is tamed, tames, conquers' of the root **demh₂-* (Gr. δάμνημι). This exact correspondence leads to a reconstruction **temH-*. Skt. *tām-*, *dām-* apparently replace an original zero grade **tā-*, **dā-* < **tmH-*, **dmh₂-*.

14. The formation of *vēnārī* 'to hunt, track down a prey' may be compared with *cēlāre*, *sōlārī*. According to EM. s.v., these verbs represent a "sorte d'itératif à voyelle longue radicale..". EM. add: "elle indique un procès qui se poursuit sans terme défini", a description too vague to shed any light on the exact origin of the formation, although it may perhaps indicate a denominative origin. Denominatives were originally not fully inflected according to the complete aspectual system of primary verbs (Leumann 1977, 585), a situation that persisted in Italic (which lacks a common perfect formation for denominatives, Steinbauer 1989, 102). This being so, it is only natural that denominatives denote a process "sans terme défini", which in a sense is a tautology.

Despite the semantic difference *vēnārī* may be compared with Skt. *vánati* 'wishes, likes', ppp. *-vāta-* < **-u̯n̥H-to-*, desid. *vívāsati* < **u̯i-u̯n̥H-s-*, *vánas-* 'lust' (= *Venus*), Goth. *winnan* 'to suffer', OIc. *vinna* 'arbeiten, ausrichten, überwinden' < **uenH-*. Apart from *vēnārī*, long *-ē-* is found

in Goth. *wens (i)* 'hope', OIc. *ván*, OS. *wān* 'supposition, opinion'. A root noun **uenH-* (with Nsg. **uēnH*?) from which the Latin verb may have been derived is not attested.

15. *vēr*, G. *vēris* (ntr.) 'spring' < **uēsr*, cf. OIc. *vár* 'id.' < **uĕsr*, Gr. ἔαρ < **uĕsr*, Skt. *vásri*, Av. *vaŋri* 'in spring' < **ues-r-*, OCS. *vesna* < **ues-n-*.

1.3.5.3. Long vowels in roots of the structure **CeRH-*

It is remarkable (but perhaps no more than accidental) that *cēlāre*, *sōlārī*, *tēmētum*, *vēnārī* and, if the etymology is correct, *dōlium* (root **delH-*), *prō-cērus* (root **kerh$_1$-*) and *sōrex* (root **surh$_2$-* if ὗραξ reflects **surh$_2$-ek-*) reflect a root ending in a laryngeal. One might wonder whether in some of these words the root **CRH-* reflects earlier **CHR-*. In view of the almost total absence of the root structure *CHR* in PIE. and the - slight - evidence which there is for metathesis of *CHR-* to *CRH-* in zero grade forms (cf. κήρῡξ < **keh$_2$ru-* vs. Skt. *kīrtí-* < **krh$_2$-tí-*; see section IV.C), it may be conjectured that an original root **teh$_1$m-* : **th$_1$m-* became **teh$_1$m-* : **tmh$_1$-*. Subsequently, the existence of the metathesized root **tmh$_1$-* may have given rise to a new full grade **temh$_1$-* in some languages (in this case Sanskrit). For the mechanism, compare the fate of PIE. *CHI* (see IV.E.2.1 and the Appendix).

In order to put this hypothesis to the test, one may try to find basic roots of the structure **ḱeh$_1$-*, **soH-*, **teh$_1$-*, **ueh$_1$-* (and **doH-*, **keh$_1$-*, **suoH-*). A search for candidates in Pokorny's IEW. has not been very successful. *cēlāre* has a basic root **ḱel-*, *dōlium* may have a basic root **del-* (Pokorny IEW. 194). If *tēmētum* is cognate with *temerē* etc., whose basic root is **temh$_1$-*, we cannot decide whether **temh$_1$-* or **teh$_1$m-* is the older root. For *sōlārī*, *prōcērus* and *sōrex* no basic roots could be found, neither **soH-*, **keh$_1$-*, **suoH-*, nor for that matter a semantically satisfying basic **sel-*, **ker-* or **suer-*. Only for *vēnārī* may one consider a basic **ueh$_1$-* if Skt. *véti* 'verfolgt, strebt, führt (die Waffen), treibt, lenkt', *vītá-* 'beloved' < **ueiH-*, Lith. *výti* 'to hunt for' < **uiH-* reflect basic **uh$_1$i-* (but there is no evidence for either the position or the quality of the laryngeal). Thus, there is insufficient evidence to show that the long vowel in roots of the type **CeRH-* may go back to **CeHR-*.

1.3.6. Laryngeals adjacent to lengthened grades

1.3.6.1. *V̄HC*

It is in general difficult to determine whether in a given morpheme which in PIE. contained a laryngeal, an attested long vowel reflects a lengthened grade rather than a short vowel lengthened by the laryngeal. The material which is relevant to this issue has given rise to much controversy. Since the relevance of this issue to Latin is only limited, I shall state my position without the thorough discussion that the problem actually deserves. In my opinion, a long vowel which arose from *V + H* probably reflects a lengthened grade in three cases (I essentially follow Kortlandt 1985a):

1. If the Nsg. of a noun with the root structure *CeHu-* (or *CeHi-*) appears as *Cau-s* (*Cai-s*) in Indo-Iranian, e.g. *náuḥ* 'ship' < **nēh₂us*, *gáuḥ* 'cow' < **gʷēh₃uś*. In most other languages, the diphthong would have been shortened in accordance with Osthoff's law.
2. If the Asg. of a noun with the root structure *CeHu-* (or *CeHi-*) has lost its *-u-* (*-i-*) before the ending **-m* (in PIE., because there is evidence in Indo-Iranian and Greek), e.g. Skt. *gấm*, Gr. βῶν < **gʷēh₃um*, Gr. νᾶν < **nēh₂u-m* (assuming that the latter is not analogical after βῶν, Ζῆν).
3. If the intonation of the long vowel in Balto-Slavic is circumflex, which points to the early loss of the laryngeal after lengthened grades, e.g. Latv. *gùovs* 'cow' (= Ved. *gáuḥ*), Latv. *sàls* < **sēh₂l-s* (thus Kortlandt 1985a).

In conjunction with no. 3., we may briefly turn to the development of Skt. *gấm*, Gr. βῶν < **gʷēh₃um*. As the non-acute intonation of Latv. *gùovs* points to the early loss of a laryngeal after a lengthened grade, we may perhaps ascribe this loss to PIE. This supposition has the advantage that it puts **gʷēh₃um* > PIE. **gʷōum* on a par with PIE. **diēum*, so that the loss of *-u-* in both can be identified. The implicit relative chronology would in that case be:

1. loss of **H* after a lengthened grade vowel;
2. loss of **-u-* after lengthened grade and before *m* (**gʷōm*, **diēm*).

Both developments would then belong to the PIE. period.

It has been suggested that PIE. lengthened grade **ē* was not coloured to *ā* by an adjacent **h₂* (Eichner 1973, 71 ff., Mayrhofer 1986, 132, 1987, 96). This may be correct for some languages (notably Hittite), but the idea that this is a PIE. sound law must be rejected in view of the examples given in 1.,

2. and 3. and the Latin evidence which is to be presented below.

It may be noted that a lengthened grade in forms of the structure *CeHR-* and *CeHT-* can only be detected on the basis of the Balto-Slavic intonation and, perhaps, by the absence of colouring of *ē* to *ā* by h_2 in some languages. As to Latin, the reconstruction of a long vowel as *V̄H* can, as far as I see, in no instance rest upon Latin evidence alone. Thus, *nāvis* 'ship' may reflect **nēh₂u-* in view of Ved. *náuḥ* and Gr. νᾶν.

The circumflex intonation of Latv. *sàls* 'salt' and *zùoss* 'goose' < **sēh₂ls*, **ǵhēh₂ns* (Kortlandt op. cit. 119) may indicate that Lat. *sāl* and *ānser* reflect a lengthened grade root (**-ēh₂-* > **-ā-*), but there is no (nor can there be, as far as I see) comparative evidence to indicate that the introduction of the lengthened grade in these forms was of PIE. date. As to *sāl*, EM.'s claim that the long vowel arose in Latin monosyllables, cf. *pār*, *păris*, *mās*, *măris*, does not seem to be supported by the material. In *sāl* and *mās*, the length may be explained by ablaut (for the latter see IV.C.1.5.2 no. 20, D.2.2 no. 13), whereas the etymology of *pār* is unclear, so that it cannot be used as an argument. Lat. *fās* 'the dictates of divine law, right, proper' probably does not reflect **dhh₁-s*, cf. *fānum*, *fēriae*, as EM. state, but, as WH. point out, rather **bheh₂-s* (of **bheh₂-* 'to say'; since *fās* is not inflected, we are even free to reconstruct it as **bheh₂-t-s*). The long vowel of *ānser* may be secondary (any vowel before *-ns-* is lengthened in Latin), in which case it reflects **ǵhănsˉ* < **ǵhh₂(e)ns-* (see Kortlandt op. cit. 119).

For other monosyllabic nouns (*cōs*, *dōs*, *spēs*, perhaps *rēs* (see V.C.2.4.1 no. 1)), there is no evidence for lengthened grade.

Kortlandt 1985a, 119-120, explained the circumflex intonation of the Nsg. of the *ē*-stems in Lithuanian on the basis of a lengthened grade vocalism **-ēh₁*, which originated in the root noun **dheh₁-*, cf. *arklì-dė* 'stable', *avì-dė* 'sheepfold', *alù-dė* 'pub' etc., cf. Ved. *-dhā́* (e.g. *śrad-dhā́*). If this is correct (as I believe it is), the Nsg. *fidēs*, which probably took over the inflection of its synonym **ḱred-dheh₁-* (cf. *crēdĕre*) may reflect **-ēh₁-s* (see V.C.2.4.1 no. 3).

As to the Nsg. type *māteriēs*, allegedly from **-iēh₂-s*, I refer to the discussion in V.D.2.1.1.

It may be concluded from *nāvis* and probably also from *sāl* that PIE. **-ēh₂-* yielded Lat. *-ā-*, not *-ē-* (despite Mayr-

hofer 1986, 132 ff., 1987, 96).

1.3.6.2. *HV̄C*

Two words may shed an interesting light on the development of *HV̄C* in Latin: *glōs* 'sister-in-law' and *flōs* 'flower'.

glōs must be compared with Gr. γάλως < *γάλαFo- < *$ǵlh_2$-eu-o- (Beekes 1976, 14-15), CS. *zъlъva*, Russ. *zolóvka*, SCr. *zȁova* < PSlav. (acute) *zъ̀lъvā- < *$ǵlh_2$-uh_2- (the original Slavic Nsg. may have been *zъ̀ly < *$ǵlh_2$-uh_2, cf. *svekry*), Skt. *giri-* 'sister-in-law' < *glh_2-*i*-. Beekes op. cit. reconstructed a PIE. u-stem N. *$ǵelh_2$-ōu-*s*, A. *$ǵlh_2$-eu-*m* (in Gr. *γαλαFo-), G. *$ǵlh_2$-u-os* (in Slav. *zъ̀lv-). The reconstruction of the Nsg. *-ōu-s* is based on *ō* in Lat. *glōs* (see C.1.3.4 no. 2 above; the rest of the Lat. paradigm, e.g. Gsg. *glōris*, was evidently based on this Nsg.). The problem that may concern us here is the root vocalism of *glōs*: PIE. *$ǵelh_2$ōus* would have yielded Lat. **gelōs*, and *$ǵlh_2$ōus* (with the root vocalism of the oblique cases) would in accordance with chapter IV.D.2.3.2 be expected to have yielded Lat. **galōs*. Anttila's suggestion (1969, 83) that a vowel was syncopated in Latin has little to commend itself, as this type of syncope is completely ad hoc and runs counter to the normal rules of Latin syncope, which leave the vowel of a word-initial syllable intact.

As Flobert 1973, 567-569 has demonstrated, *flōs* 'flower' is a masculine *s*-stem in *-ōs*. As the oldest layer of this type seems to have a zero grade root (cf. *lăbor*, *līquor* beside the verbs *lābī*, *līquī*) and as the root was *$bhlh_3$- (Beekes 1991; cf. Olr. *bláth*, OS. *blōma* 'flower' < *$bhleh_3$-), *flōs* probably reflects *$bhlh_3$-ōs*. Like *glōs*, *flōs* lacks the expected vowel which should have arisen in antevocalic *$bhlh_3$- (**falōs*). One may solve this problem by positing a full grade root in order to explain *flōs*, cf. *aurōra* < *$h_2$eus-ōs-* (cf. II.E.1.2): *$bhleh_3$-ōs > *floōs > *flōs*.

If the original locus of the Latin *v*-perfect were verbal roots of the structure *(C)CeH-* (Leumann 1977, 597) and if the *v*-perfect reflects a locative in *-ēu* derived from the verbal root (see IV.C.2.2.2.2), *gnōvī*, *plēvī*, *strāvī*, *flāvī*, *nēvī* etc. reflect *$ǵnh_3$-ēu-, *plh_1-ēu-, *$strh_3$-ēu-, *$bhlh_1$-ēu-, *snh_1-ēu-. Here, too, the laryngeal was apparently lost at an early stage, so that the resonants were not vocalized.

In order to explain *glōs*, (perhaps) *flōs* and the stem of the *v*-perfects, it may be surmised that the laryngeal was lost

before a PIE. lengthened grade at an early stage, i.e. before antevocalic **ClH-* yielded **Cal-*. But strictly speaking this supposition is based solely on *glōs*, as *flōs* may be explained differently, and the origin of the *v*-perfect is a much-debated issue. The proposed rule is therefore no more than a hypothesis.

Flobert op. cit. is probably correct in reconstructing Lat. *mōs* 'manner, way, custom, behaviour' as **mh₁-ōs*. This form cannot be used in favour of the proposed rule as the development of *mh₁ōs* to *mōs* may be regular irrespective of the early loss of a laryngeal in this position: word-initial resonants are consonantal wherever possible (see IV.D.1.2).

ōlim < **h₂ōl-* and *ōvum* < **h₂ōuiom* (pace Schindler 1969: **ō-h₂uiom*) show that **h₂ō* was not coloured to **ā*.

1.3.6.3. *ācer*

Lat. *ācer* 'sharp' < **ākri-* belongs to the root **h₂eḱ-* in *ācēre* 'to be sharp', *ācidus*, *ācerbus*, *ācīēs*, *ācus* < **h₂eḱ-*, Gr. ὄκρος 'sharp', Lith. *aš(t)rùs*, OLith. *aštras*, OCS. *ostrъ* 'sharp' < **h₂eḱ-ro-*; OLat. *ocris*, U. *ocar*, *UKAR*, G. *ocrer* 'mountain fortress', MIr. *ochair* 'side, edge', Ved. *°áśri-* 'edge', Gr. ὄκρις 'top, summit, point, side', ὄκρις 'mountain top' < **h₂oḱri-*, *h₂eḱri-*.

It seems impossible to identify *ācer* with **h₂eḱro-* (in view of the inflection and the long vowel) or with **h₂e/oḱri-* (in view of the meaning and the long vowel). Schindler (1980, 390 note 15) suggested that *ācri-* is a vṛddhi-formation derived from the substantivized adjective **h₂eḱro-* (ntr.), cf. Av. *xšaodri-* 'alcoholic', *xšudra-* 'alcohol' (subst.), 'liquid' (adj.). At the same time he objected: "Beide Formen sind aber nicht ohne weiteres als Zugehörigkeitsadjektiva verständlich". Thus, *ācer* lacks a convincing explanation.

In an article that appeared in 1988 in *Die Laryngaltheorie* (pp. 195-197), Hamp tried to demonstrate that the long vowel of *ācer* had arisen in compounds with a first member in **-o-*. In his view, **-o-h₂oḱri-* became **-ăakri-* > **-ākri-*, which subsequently came to be used outside compounds. For the *i*-stem inflection cf. *terra*, *ex-torris*, *arma*, *in-ermis*. He compared *indāgō* < **endo-h₂(a)g-ōn-* (cf. Gr. στρατηγός < **strto-h₂(a)gos*). In the same way as the long vowel that had regularly arisen in *indāgō* spread to *ambāgēs* (< **amb(i)-ag-*) and thence to the type *contāgēs*, *compāgēs* and *contāgium*, *adāgium*, so too the length arisen in **ākri-* (beside **h₂eḱro-* > **ăkros* in Gr. ὄκρος, Lat. *ăcer-bus*) spread to **sākri-*

'sacrificial' (beside **săkro-* in *săcer*).

This explanation appears to be attractive. The process has a clear parallel in Greek, where the long vowel that had regularly arisen in e.g. ἱππᾱμολγός < **-o-h₂molǵo-* and στρατηγός < **-o-h₂(o)ǵo-* spread to e.g. ἑπτημοιβός (beside regular ἑπτάμοιβός). The Greek decompound ἠκές· ὀξύ (Hes.), cf. ταχυ-ηκής, shows that the long vowel form may secondarily become a simplex form. Both the long vowel and the *i*-stem inflection are accounted for, and the explanation is economic in that it does not shift the formation back to PIE.

Yet there are a number of objections which may be important.

1. It is improbable that **-oh₂o-* yielded Lat. **-ah₂a-*. Word-initial **h₂o-* most certainly yielded Lat. *o-* (see II.C.4.5). One might hold, however, that **-oh₂-* yielded *-ā-* in view of *fāma* < **bhoh₂-meh₂-* (see IV.C.1.5.5 below), and that **-oh₂o-* became **-ah₂o-* > *-ā-*. Conclusive counterevidence against this assumption is in my opinion provided by *mediocris*, a compound of the same root as *ācer* (for the second member, cf. Lat. *ocris* 'top' < **h₂oḱri-*). For the semantics see EM. s.v. *medius*: "qui se trouve à mi-hauteur", "qui se tient dans un juste milieu, moyen", "médiocre". The archaic superlative *medioxumus* attests to the archaism of the compound. *mediocris* reflects **medio-h₂oḱri-* (thus Havet, apart from the laryngeal; EM.'s objections to the formation are unfounded, cf. the formation of Gr. στρατηγός, ἱππᾱμολγός).

2. Compounds with *ācri-* as their second member are not attested. Moreover, it is extremely difficult to think of a compound that would have contained a basic adjective, in this case **h₂eḱro-*, as Hamp proposes, as its *second* member (this objection does not hold if Frisk is correct in assuming that **h₂éḱro-* > ἄκρος was originally a substantive 'point'). Gr. ταχυ-ηκής 'with a long blade, point', is no apt parallel because -ηκής is obviously based on a substantive **ἄκος meaning 'point' rather than an adjective 'sharp'. The same holds for *mediocris* discussed above, which contains a basic substantive, Lat. *ocris*. Put differently, a compound consisting of the members 'thin' and 'point', together meaning 'thin-point-having', is a common IE. type (bahuvrihi), and altogether different from a compound consisting of the members 'thin' and 'sharp' (or 'spear' and 'sharp', the first member being the variable), which is not found in IE. The only compounds with a basic adjective as a second member are of the type 'un-sharp' or 'very-sharp' (*perācer*) but these

do not yield the required model for the creation of the long vowel. In view of the (near) absence of suitable compounds, it is highly unlikely that the original adjective *h_2ekro- 'sharp' was replaced by a decompound adjective.

I conclude that the counterevidence forces me to abandon Hamp's explanation of *ācer*.

It is perhaps possible to reverse a part of Hamp's explanation and to assume that the pair *sācri- : săcro-*, which may reflect *seh_2kri- : *sh_2kro-*, gave rise to *ācri- : *ăcro-* (in *ăcer-bus*?), but the reason for this creation and for the ousting of **ăcro-* would then remain obscure.

Thus, *ācer* probably reflects lengthened grade *$h_2ēḱ$-*, although its exact origin is unknown.

As to the type *indāgō*, its origin may be sought in the type *contāgēs*, *compāgēs* < *-$teh_2ǵ$-*, *-$peh_2ǵ$-* rather than the other way round (for the roots of the latter forms see IV.B.1.3.2.1 no. 20 and 12 respectively). On the other hand, the third declension type *amb-āgēs* may reflect an old root noun *$h_2ēǵ$-; *canēs*, *trabēs*, *sēdēs*, *facēs* show that old root nouns have joined the third declension type Nsg. *-ēs*, Gsg. *-is* (see V.C.2.3).

1.4. Long ē, ā, ō according to Lachmann's law

According to Lachmann's law, a short vowel (*e,o,a,i,u*) is lengthened before a PIE. media (= a glottalized obstruent) which is followed by an obstruent (the stops, e.g. *āctus* < **agtos*, and *s*, e.g. *adāxim* < **-ag-s-*); thus Kortlandt 1989b, 103-105. For a discussion of alleged exceptions and references to earlier works I refer to Kortlandt's article.

Instances of lengthening of *i* and *u* will not be discussed because these fall outside the scope of the present chapter. Instances of lengthening of *-o-* have not been found.

1.4.1. Lengthening of **e*

1. *crēdĕre* 'to believe' < **ḱred-dhh$_1$-*, cf. Skt. *śrád-dadhāti* 'to trust', Olr. *creitid*, W. *credu*, Bret. *krediñ* 'to believe' < **ḱred-dh(e)h$_1$-*. One might doubt whether *crēdere* is an instance of Lachmann's law (it is usually not adduced as such) because *crēd-* might have arisen from an intermediate **kresdh-* (thus Meier-Brügger 1980, 291, who compares it with *audīre* < **auis-dh-*). In my opinion, the latter interpretation cannot be correct because, as is generally assumed, **-sdh-* yielded Lat. *-st-*, cf. *hasta* 'spear' < **ghasdh-*, Olr. *gat* 'osier, withe',

Goth. *gazds* (masc.), OIc. *gaddr*, OHG. *gart* 'Stachel'. Thus, if **ḱreddh-* had yielded **kresdh-*, the result would have been Lat. **crest-*. As an alternative to assuming a regular development **-sdh-* > Lat. *-d-*, Meier-Brügger considers the possibility that in *crēdere* and *audīre* **-st-* was restored to **-sdh-* after other compounds in **-dheh₁-*. This seems unlikely, as the semantic pressure towards restoration would have been slight (the compounds were probably lexicalized at an early stage), other compounds in **-dheh₁-* were rare in Latin (probably only *condĕre* 'to hide, stack', *abdĕre* 'put away', perhaps also *perdĕre* 'destroy', *reddĕre* 'turn smth. into') and because it is uncertain whether *audīre* reflects **auis-dh-* rather than **aui-dh-* (Meier-Brügger himself writes **aui(z)dh-*). I would prefer to attribute the *-ē-* to the operation of Lachmann's law.

2. *ēsus* 'eaten' < **h₁ed-to-*, *ēsca* 'food' < **h₁ed-sk-*, cf. *edere* 'to eat', Lith. *ėskà* 'food' (with long vowel in accordance with Winter's law), Gr. νῆστις < **n-h₁d-ti-*.

3. *lēctus* 'collected' < **leǵ-to-*, cf. *legere* 'to collect', Gr. λέγω 'to say'.

4. As far as I am aware, it has not yet been remarked that the long *-ē-* of *pēs* < **ped-s* may have originated from the operation of Lachmann's law. The PIE. Nsg. was not **pēd-s* but **pōd-s*, cf. Gr. πούς, Goth. *fotus*. The *e*-vocalism of the Latin Nsg. was introduced from the Asg. **ped-m*. This *-e-* was either lengthened analogically, on the model of nouns in which the pattern Nsg. with a long vowel vs. oblique cases with a short vowel was regular (e.g. *sāl*, *sălis*, *mās*, *măris*), or, as is suggested here, by the operation of Lachmann's law.

5. *rēctus* 'right, straight, erect', cf. *regere* 'to make straight, direct', Gr. ὀρέγω 'to reach after', OIr. *recht* 'rule'.

6. *tēctus* 'covered', cf. *tegere*, Gr. στέγω 'to cover'.

For an attempt to explain the short vowel of *sĕssus* (replacing **sdtos*) and *pĕssum* (< **ped-tu-*, short *-e-* in order to avoid embarrassing homonymy with *pēsum* of *pēdō* 'to break wind'(?)), I refer to Kortlandt op cit. p. 104.

1.4.2. Lengthening of **a*: Lachmann's law and laryngeals

Whereas **e* is invariably lengthened to *ē* by the operation of Lachmann's law, **a* may or may not be lengthened. There are eight instances, which may be arranged according to the

origin of the *a. The term 'early Italic' in the following diagram is defined as the stage immediately before the operation of Lachmann's law.

	PIE.	early Italic	Latin
1 *h_2e	*$h_2e\acute{g}$-	*agtos	āctus 'driven'
2 *H	*$\acute{k}Hd$-to-	*kadstos	cāsus 'fallen'
	*$ph_2\acute{g}$-to-	*pagtos	pāctus 'fastened'
	*$th_2\acute{g}$-to-	*tagtos	tāctus 'touched'
	*lh_1d-to-	*ladstos	lassus 'tired'
	*$(s)lh_2g$-so-	*lagsos	laxus 'loose'
3 non-laryn.	*$h_1\acute{g}$-s-	*ags-	ad-āxim (adigere)
	*$bhr\acute{g}$-to-	*fragtos	frāctus 'broken'

Maximus is probably irrelevant, as it reflects *magisemo- (not *mags-, see Cowgill 1970, 125) and as the "alleged form māximus is based on a single apex (CIL VI 2080, 17), which is too weak a basis for any conclusions" (Kortlandt op. cit. 10).

The full grade root on which the Italic ppp. *agtos is based was probably taken from the present stem or the supine (cf. ēsus). However, if one accepts the explanation of aiō 'I say' < *agiō < *$h_1\acute{g}$-ioH suggested in VI.D (viz. antecons. *$h_1{}^?g$- > *ag-, cf. *$m\acute{g}$-no- > magnus), a development of *$h_2\acute{g}$tos to *agtos is conceivable.

Two points must be commented on before an evaluation of the rest of the material may be attempted.

(1) According to Maniet 1956, 233, the root vocalism of cāsus is that of the full grade supinum/nomen actionis *$\acute{k}eh_2d$-tu- > cāsum, the original vocalism of the ppp. being reflected in cassāre, which is allegedly based on *cassos < *$\acute{k}h_2dtos$.

Taking a closer look at cassāre, one finds that there are two verbs. One means 'to bring to naught, destroy, annul', is first attested in the Imperial period and is clearly a derivative of the adjective cassus 'empty, vain', which for obvious semantic reasons has nothing to do with cădĕre 'to fall'. The other cassāre is attested only in Plautus, where it means 'to waver, falter, shake', cf. cassābundus (Naevius) 'faltering, wavering (in drunkenness)'. As WH. point out, the connection with cadere is semantically unsatisfactory, and cassāre is more likely to be identified with quassāre 'to waver'. But even if one prefers to connect cassāre with cadere, the former does not prove that a form *cassos existed beside or before cāsus in early Latin, as the writing cass- may very well stand for *cāss-. As stated

by Leumann 1977, 181, double *-ss-* was simplified to *-s-* after a long vowel at about 100 BC in speech, and the orthography was only slow to follow (cf. e.g. Cicero's *cassus* 'cāsūs' (sic!), *divissiones* 'dīvīsiōnēs', *caussae* 'causae'). Since *cassāre* and *cassābundus* are attested only in texts of well before 100 BC, there is no reason to suppose that they contained short *-ă-*. Thus, there is no evidence for **căssos*.
(2) The *-a-* in **ags-* and **fragtos* does not stem from a laryngeal. The former reflects a root **h₁eǵ-* (cf. Gr. ἦγ < **h₁e-h₁(e)ǵ-t*), the latter **bhreǵ-* (cf. Goth. *brikan*). In section VI.D, it will be held that in zero grade forms an *a* developed before a PIE. media (= glottalized obstruent) followed by a consonant in Italo-Celtic. In all instances but one, the glottalized stop is preceded by a resonant (e.g. **mg-no-* > *magnus*). In the remaining form, *aiō* 'I say', it is preceded by a laryngeal. If the rule is accepted, we may take it that **h₁ǵ-s-* and **bhrǵ-to-* became **ags-* and **bhragtos* before the operation of the purely Italic (or Latin?) law of Lachmann. **-a-* arose as a result of the influence of a tautosyllabic glottalic stop. It is likely that the glottalic element did not survive the rise of this *-a-* because it was the cause of this rise. Hence, the glottalic element could hardly have been present when somewhat later Lachmann's law operated in Italic, that is, the lengthening in *frāctus* and *adāxim* cannot be regular. I shall return to this issue below.

Returning now to the diagram, we may observe that *-ā-* in *cāsus*, *pāctus* and *tāctus* is opposed to *-ă-* in *lăssus* and *lăxus*: either *-ā-* or *-ă-* must be analogical. As Kortlandt op. cit. 104 concluded, in my opinion correctly, the regular development is to *-ă-* because *lăssus*, originally the ppp. of the verbal root **leh₁d-* (cf. Gr. λῆδεῖν, Goth. *lētan*), is isolated in Latin and its *-ă-* cannot therefore be due to some kind of restoration. As Kortlandt put it: "...the glottalic feature of the (tautosyllabic, P.S.) glottalic obstruent was lost after a laryngeal in the Indo-European dialect from which Latin evolved,...".

According to Kortlandt, following a suggestion by Maniet 1956, 232, *-ā-* in *cāsus*, *pāctus*, *tāctus* was introduced from the supinum or nomen actionis **ḱeh₂d-tu-* etc. As far as I can see, there are three objections to this view:
1. There is no direct evidence that at some stage in the history of Latin a full grade supinum existed beside a zero grade ppp. and caused the remodelling of the latter. The instances adduced by Maniet are not convincing: there is no evidence for **căssos*

(see above), and the explanation of *cognitus* from **cogenatos*, replacing **cognātos* on the basis of the supinum **cogenatum*, is unsatisfactory (see IV.D.1.3.6.2). In such instances as *ēsus* 'eaten', *sprētus* 'scorned', the full grade vocalism may have been introduced from the present (*ed-ere*) and perfect (*sprēvī*), respectively, rather than from the supinum.
2. It was seen that *frāctus* and *-āxim* probably do not regularly reflect **frăgtos* and **ăgs-*. As *-ā-* in *frāctus* and *-āxim* cannot be based on a supinum or nomen actionis (since these would have contained **-e-* rather than **-ā-*), Kortlandt's proposal leaves these forms unexplained. (It must be noted that Kortlandt in his article offers a different explanation for the *-a-* in *frăctus* and does not offer one for the *-a-* in **-ag-s-*; he therefore does not share my problem).
3. No reason is given why **căssos*, **tăctos* and **păctos* were replaced by the full grade forms *cāsus*, *tāctus* and *pāctus*, which is especially problematic because the replacement involves a complication rather than a simplification of the paradigm (present, perfect and ppp. with short **-ă-* being replaced by present and perfect with short **-ă-* and ppp. with long **-ā-*).

All three problems can be avoided if we assume that in the proto-forms of *cāsus*, *pāctus* and *tāctus* the glottalic feature of the glottalic obstruent was restored on the basis of *cadere*, *cecidī*, *pangere*, *pepigī* and *tangere*; *tetigī*. In *frāctus* and *-āxim* the glottalic feature may have been introduced from full grade and/or antevocalic forms of the root (in which *-a-* had not arisen), but old forms of this type cannot be pinpointed. Compare, however, the full grade in *frēgī* and the possible full grade in *ad-igō* < **-h₁eǵ-* (in view of the fact that *e/o*-verbs commonly have a full grade root, see the material given by Leumann 1977, 532, par. 405). If *āctus* reflects a full grade root, its *ā-* is regular; if it reflects a zero grade root, the same explanation as is given here for *-āxim* and *frāctus* may hold.

1.5. *VHC*

Instances are listed in alphabetical order. Suffixes are discussed at the end of each section.

1.5.1. **eh₁C*

1. *cēpī* (perfect of *capiō*, *captum*) probably does not reflect **keh₁p-* in view of Gr. κάπτω 'to seize' < **kh₂p-ioH*, but rather represents an analogical perfect based on the model

făcere, *fēcī*, *iăcere*, *iēcī* (thus also *ēgī* of *agere*).

2. *ēbrius* 'drunk' may reflect a root $*h_1eh_1g^wh$-, cf. Hitt. *ēkuzi* 'to drink', *akkanzi* < $*h_1eh_1g^wh$-, $*h_1h_1g^wh$-, Toch. AB. *yok*- 'to drink' < PToch. $*yek^w$- < PIE. $*h_1eh_1g^wh$-, Gr. νήφω 'to be sober' < $*n$-$h_1(e)h_1g^wh$-? Dor. νᾶφω, Arm. *nawt^{c}i* and OHG. *nuohturn*, *nuohtarnīn* 'sober' point to $*h_2$-, however; cf. Winter 1955, 161 ff., who dismisses the Dorian and Armenian forms (see II.C.6; unconvincing). Thus, the etymology cannot be considered certain. The proposed connection of the Hittite and Tocharian words with Lat. *aqua* is semantically less plausible and formally unlikely (*aqua* probably reflects $*h_2ek^w$-, see II.C.4.2 no. 44).

3. *ēmī*, *ēmptum* (of *ĕmere* 'to buy') probably reflects a reduplicated perfect $*h_1e$-h_1m-. For the root see II.C.4.1 no. 6.

4. *fēcī* (*facere*) < $*dheh_1$-*k*-, cf. Gr. ἔθηκα < $*dheh_1$-*k*-.

5. *fēcundus* 'fertile', *fēlīx* 'fertile, happy', *fēlāre* 'to suck', cf. U. *FELIUF*, *filiu* 'lactantes' < $*dheh_1$-, cf. Gr. θῆλυς, θήοατο, τιθήνη, OHG. *tā-an* 'to suckle', Latv. *dẽls* 'son' < $*dheh_1$- (see E.2.4.3 no. 1 on $*dhh_1$-*i*-).

6. *fēriae* 'festival days', *fēstus* 'festive', O. *FÍÍSNÚ* 'templum', U. *FESNAF-E* 'in templum' < $*dheh_1s$-. Cf. *fānum* < $*dhh_1s$-*no*- (see IV.B.1.4.1.1 no. 5).

7. *flēre* < $*bhleh_1$-? (see V.D.2.2.1 no. 5).

8. *hērēs* 'legal heir', G. *-ēdis* < $*ǵheh_1r(o)$-$h_1ēd$-, cf. Gr. χηρωσταί 'relatives who divide the property of somebody who died without sons' (Dunkel 1987).

9. *iēcī* (*iăcere*) < $*(H)ieh_1$-*k*-, cf. Gr. ἧκα (see IV.D.1.2.2 no. 1).

10. *mētīrī* 'to measure' < $*meh_1$-*t*-, cf. Gr. μῆτις 'prudence', OE. *mæð* 'measure' < $*meh_1$-*ti*-. For the laryngeal cf. Skt. *mitá*- 'measured' and the Slavic acute in Russ. *méra*, SCr. *mjȅra*, Sln. *mę́ra* (Kortlandt 1975, 61).

11. *nēre* 'to spin, weave' < $*(s)neh_1$- (see V.D.2.2.1 no. 9).

12. *plēbēs* 'common people' < $*pleh_1dhueh_1$- (see V.C.2.4.1 no. 4).

13. *plē*- 'full, fill' in *plēre*, *plēnus*, *plērus*, *plērumque*, *locu-plēs* < $*pleh_1$-. For the laryngeal compare Gr. aor.

5. *fāgus* 'beech' < **bheh₂ǵos*, cf. Gr. φηγός (Dor. φᾱγός) 'kind of oak', OIc. *bók*, OHG. *buohha* 'beech'.

6. *fāma* 'reputation' < **bheh₂-meh₂-* (on the vocalism see 1.5.5 below), *fārī*, *fābula*, *fātum*, *fās* 'divine law' < **bheh₂-*, cf. Gr. φημί, φᾰτός < **bh(e)h₂-*.

7. *flāmen* 'kind of priest' < **bhleh₂-mn*? (see IV.D.1.3.2.1 no. 8).

8. *frāter* 'brother' < **bhreh₂tēr*, cf. Gr. φρᾰτήρ, Goth. *broþar*.

9. *hiāre* 'to yawn' < **ǵhieh₂-* (?) (see E.2.4.3 no. 4 s.v. *hīscō*).

10. *iānus* (u-stem) 'door, entrance' (cf. *iānua*, *iānitor*) is perhaps cognate with OIr. *áth* 'ford, passage' < **ieh₂-to-*, Lith. *jóti*, Latv. *jât*, Russ. *éxat'*, SCr. *jàhati* 'to go' < **ieh₂-* (despite EM.'s objections).

11. *lābēs* 'stain; fall', *lābī* 'to slip (away), make a mistake' < **(s)leh₂b-* (see IV.D.1.2.2 no. 2 s.v. *lăbāre*).

12. The similarity of *lāma* 'marsh, muddy pool' to Lith. *lomà*, Asg. *lõmą* (with circumflex intonation!) 'low place, val- ley', Latv. *lãma* 'pit, well' (acute!) may be fortuitous (EM.). The Lith. form is probably cognate with *lémti*, *lìmti* 'to split' (root **lemH-*) and therefore not with Lat. *lāma*. The acute of Latv. *lãma* cannot be reconciled with **lemH-*. If the Latvian form is cognate with Lat. *lāma*, both may reflect **leh₂-m-* (thus e.g. Oettinger 1979, 424, who con- nects *lāma* with Hitt. *laḫḫ(u)-* 'spühlen').

13. *lāmentum* < **leh₂-mnto-*, **lh₂s-mnto-* or **lh₁s-mnto-* (see IV.D.1.2.3).

14. *lātrāre* 'to bark' < **leh₂-*, cf. Lith. *lóti*, Skt. *rā́yati* 'id.' (see IV.D.1.2.3).

15. *mācerāre* 'to soften by soaking', *māceria* 'wall (of soft clay)' < **meh₂k-*, cf. Gr. μάσσω 'to knead' < **makiō* < **mh₂k-ioH*.

16. *mālus* 'apple-tree', cf. Gr. μᾶλον, μῆλον 'id.', perhaps Hitt. *maḫlan* (Asg.) 'vine'. Since the word occurs in the mediterranian area only, it is generally assumed that it is not of Indo-European origin.

17. *mānus* 'good', *im-mānis* 'terrible', *mātūrus* 'ripe' < **mā-* is cognate with OIr. *maith*, W. Bret. *mad* 'good' < **măti-*. These forms may reflect **m(e)h₂-* (if the etymon is of IE origin). Cf. Eichner 1973 on Hitt. *meḫur* < **mēh₂-ur*.

18. If *māiālis* 'gelded boar, barrow hog' is cognate with OIr. *mát*, *máta* (f.) 'pig', the former reflects **māsdi-āli-* (both EM. and WH. have doubts). The Irish form then reflects **māsd-*, which points to **meh₂sd-*. A connection with OE. *mæst*, OHG. *mast* 'fodder, esp. for pigs' seems possible, in which case one may reconstruct **mh₂sd-o-*. It is not clear how Skt. *médas-* 'fat, marrow' < **mazdas-* fits in, if at all (**meh₂sd-* > **ma?s?d* > **mas?d-*, by Lubotsky's rule??). The suggested connection with *mādēre* 'to be moist' (Pokorny IEW. 694) is even less certain.

19. The denominative *mānāre* 'to flow in drops, drip, trickle' is probably cognate with OIr. *móin* (*i*), W. *mawn* 'peat-moss, bog', Bret. (Vann.) *man* 'moss' (see Jackson 1967, 130) < **māni-*. If these forms go back to PIE., one may reconstruct **meh₂-ni-* (or, for Latin, **-no-*).

In view of its *-ó-* instead of expected *-á-*, OIr. *móin* is usually considered to be a loan from British **mōni-* < **māni-* (Pokorny IEW. 699, Vendryes s.v.), which seems unlikely because the word is firmly rooted in ancient Irish topography. I would therefore like to suggest that *móin* reflects an earlier **máin*. The development of the *-ó-* may be compared with the early development of *már* 'great' to *mór* (already in the Würzburg glosses). The fact that *már* still occurs beside *mór*, whereas a **máin* does not occur beside *móin*, may not be a decisive counterargument. *már*/*mór* is a good deal commoner than *móin* in early texts, so that the absence of *máin* may be fortuitous. Moreover, it seems likely that a form **máin* is reflected in the Gsg. *mana* in LU 5114 (in *commor mana ⁊ aba* 'a confluence of a bog and a river').

20. *mās* 'male' < **meh₂-s* or **meh₂-os* (see D.I.2.2 no. 11).

21. *nāre*, *nāvī* 'to float, swim' < **(s)neh₂-* (see IV.D.1.2.2 no. 14; V.D.2.2.1 no. 8).

22. *nārēs* 'nostrils, nose', *nāsus* 'nose' < **neh₂s-*, cf. Lith. *nósis*, Latv. *nãss* < **neh₂s-*. The intonation of Baltic proves the laryngeal (OCS. *nosъ*, Ved. Gdu. *nasóḥ* reflect **nh₂-es-*; see Kortlandt 1985a, 119).

23. *com-pāgēs* 'connection, joint' < **-peh₂ǵ-* (see IV.B.1.4.2.1 no. 12).

24. *pānis* 'bread' < **pāstni-*, cf. dimin. *pāstillus, -um* 'small loaf of bread', may contain the root **peh₂s-* 'to graze' (EM., WH.). Cf. Arm. *hac^{c}* 'bread' < **pă̆s-ki-*? Very uncertain.

25. *pāpiliō* 'butterfly' must be compared with OIc. *fīfrildi* < **pīpeldhrio-* (with metathesis), OE. *fīfealde*, OHG. *fīfaltra*, OS. *fīfoldara* < **pīpoldhrōn*. The forms must be cognate but the exact PIE. form cannot be reconstructed. One might think of a root **h₂pel-* with intensive reduplication. *pāpiliō* might then reflect **h₂pe-h₂pel-* and the Germanic forms **h₂pi-h₂pe/ol-*. Very uncertain.

26. *pārēre, -uī, -itum* 'to appear, to appear at somebody's request, to obey' has been compared with the Greek reduplicated aorist πεπαρεῖν 'to show'. The exact relation of the forms (**peh₂r-/ph₂r-*?) is obscure (EM.). It may be relevant to note that Latin has a form *parr-* (e.g. P.F. 247, 15: *parret significat apparebit*, which points to a verb **parrēre*).

27. *pāscere, pāvī, pāstum* 'to graze', cf. *pāstor, pābulum* < **peh₂(s)-*. The laryngeal is proven by Hitt. *paḫs-* 'to protect' and by the accent of SCr. *pȁsti*, Sln. *pásti*, Cz. *pásti* (Kortlandt 1975, 67).

28. *pāx, pācis* 'peace' < **peh₂ḱ-* (see IV.B.1.4.2.1 no. 13).

29. *rādīx* 'root, base' < **ur(e)h₂d-*, *rāmus* 'branch', *rāmes* 'stick' < **ur(e)h₂d-sm-*? (see IV.D.1.3.2.1 no. 26).

30. *rāpum* 'turnip, rape' is probably of non-IE. origin (see IV.F. 1.2.2 no. 10).

31. *rārus* 'with intervals, interstices' < **Hreh₂-ro-*? (IV.F.1.2.2 no. 11).

32. **sācri-* in *sācrēs porcī* 'sacrificial pigs' may reflect **seh₂kri-*, cf. O. *SAKRIM*, U. *SAKRE* 'sacrificial animal' (there is no independent evidence for *ā* in Sabellian), and contrast the short vowel of *săcer* (and probably O. σακορο, U. *SAKRA*) < **săkro-* < **sh₂kro-* (see IV.B.1.4.2.1 no. 14; also 1.3.6.3 above).

33. *sāgus* 'wise', *sāgīre* 'to have a good nose, search' < **seh₂ǵ-* (see IV.B.1.4.2.1 no. 15).

34. *sāl* 'salt' < **seh₂ls* or, more likely, **sēh₂ls* in view of the circumflex intonation of Latv. *sàls*. See 1.3.6.1 above.

35. *stătum*, *stātūrus*, *stāmen* etc. < **steh₂-* (see V.D.2.2.1 no. 12 on *stāre* < **stă-ē-*).

36. *suādēre*, *suāsī*, *suāsum* 'to advise', *suāvis* < **suāduis* 'sweet, pleasant', cf. Gr. ἡδύς, Skt. *svādú-*, OS. *swōti* 'sweet' < **sueh₂d-u-*. The short vowel of Skt. *svad-* is explained by Lubotsky's rule (Lubotsky 1981, 133 ff.).

37. *tābēre* 'to melt, become liquid' < **teh₂-b(h)-*, cf. W. *tawdd* 'melting', OCS. *tajati*, SCr. *tȁjati*, Sin. *tájati* 'to melt' < **teh₂-*, Gr. τήκω, τᾶκω 'id.' < **teh₂-k-*.

38. *tāliō* 'Wiedervergeltung eines am Körper erlittenen Schadens' (WH.), cf. W. *talu* 'to pay'. An Irish form *taile* 'payment' does not seem to exist (there is no such entry in the *Dictionary of the Irish Language*). There are no further cognates. If *tāliō* is cognate with W. *talu* and if the etymon reflects a PIE. root (both of which are doubtful), one may reconstruct **teh₂l-*, **th₂l-* (with suffixal or radical *-l-*). Doubtful.

39. *tālis*, *quālis*, cf. also *aequ-ālis*, < **teh₂-*, **kʷeh₂-li-*. Cf. W. *sawl* 'how much' < **seh₂-li-* and probably Gr. τηλίκος 'so old', ἡλίκος 'how old'.

40. Lat. *tālus* 'ankle(-bone), heel' may be cognate with Ir. *sál*, W. *sawdl* 'heel' < **stātlā* (Pedersen 1909, 78). In view of the diminutive *taxillus*, *tālus* reflects **(s)tākslo-*. However, according to EM. *taxillus* may be secondary, after *āla axilla*, *māla maxilla*, which is not accepted by WH. The absence of initial *s-* is embarrassing (WH. suggest dissimilation in **stāslos*, which is not very convincing). *tālitrum* 'flick of the fingers' may be cognate, which would make the connection with the Celtic forms doubtful.

41. *con-tāgēs*, *-tāgium* 'touch' < **teh₂ǵ-*, cf. *tangĕre*, *tetigī*, *tāctus* (IV.A.3.2.1 no. 19). Hamp (1988, 195-197) attributes the long vowel to the compound type **-o-h₂o-* > *-ā-* (see C.1.3.6.3 above).

42. *trāxī* (of *trăhere*, *tractum* 'to pull'), *trāgula* 'dragnet', *trāgum* 'id.' may reflect **treh₂ǵh-* (see IV.D.3.4.1 no. 9).

43. *vādere*, *vāsī*, *vāsum* 'to go', cf. W. *go-di-wawd* 'overtook' < **u̯ād-* < **ueh₂dh-* (see IV.D.1.2.2 no. 17).

44. *vāgīna* (*-ā-*?) 'sheath' may be cognate with Lith. *vóžiu* 'to cover (with a glass bell)' < **ueh₂ǵ-*. The similarity of these forms may simply be accidental (EM.).

45. *vāgīre* 'to cry, weep, resound' < **ueh₂ǵ-* is possibly cognate with Skt. *vagnú-* 'sound, call', *vagvaná-* 'talkative', in which the laryngeal may have been lost before a tautosyllabic glottalized obstruent (Lubotsky 1981, 134 no. 6; but see Mayrhofer, KEWA, who connects the Skt. words with *vā́k* 'voice'). Cf. Lith. *vógrauti* 'wimmern, schreien'. Other forms point to **(s)ueh₂ǵh-*: Gr. ἠχώ, ἄχά, Goth. *ga-swogjan* 'to sigh', OIc. *søgr* 'noise'. Perhaps *vāgīre* has an entirely different origin (EM.: "faire *wā*").

46. That *vāpulāre* 'to be flogged' is cognate with Goth. *wopjan* 'to cry' (with **-b-*!) is too uncertain a basis for any reconstruction.

47. *vātēs* 'soothsayer' < **ueh₂t-eh₁-* (see V.C.2.3.1 no. 16).

48. *vāstus* 'desolate', *vānus* < **uā̆snos*, *vascus* 'empty', cf. OIr. *fás* 'empty', OS. *wōsti* 'empty, deserted' < **(H)ueh₂s-* (see IV.F.1.2.1 no. 6 s.v. *vacuus*).

49. The formans **-ā-* of a number of case forms of the **h₂*-stems reflects **-eh₂-*, e.g. Asg. **-eh₂-m* > **-ām* > *-ăm*. The laryngeal is proven by the Baltic accent (Lith. *dienà* < **-á* < **-eh₂*) and the ablaut (Beekes 1985, 15 ff. and passim).

50. The formans of the *ā*-subjunctive probably reflects **-eh₂-* (see Oettinger 1984, 187-201).

51. The exact origin of the imperfect suffix *-bā-* is obscure. Leumann 1977, 579 prefers to reconstruct **-bhw-* 'to be' + **-ā-* (< **-eh₂-*). This *-ā-* may be identical to the subjunctive morpheme **-ā-* in Ir. **agā-* (of *aigid* 'to drive'), its original meaning being that of an injunctive, which would bring us back to the *ā*-subjunctive (for the relevant literature see Leumann loc. cit.).

For the verbal type *aspernārī*, *consternāre* see V.D.3.3.

1.5.3. **eh₃C*

It is in general difficult to decide whether *ō* appearing in an etymon that contained **h₃* in PIE. reflects **eh₃* or **oh₃*. The rules of PIE. word formation offer some foothold but hardly ever allow one to draw firm conclusions. If whatever evidence there is favours a reconstruction **eh₃*, or if there is no indi-

cation for *oh_3, the etymon is listed in this section. If the evidence is somewhat in favour of *oh_3, the relevant word can be found in 1.5.6.

1. *dōs*, G. *dōtis* 'gift' is probably a consonant stem *$dōt$- rather than a *ti*-derivative (cf. Abl. *-e*, Gpl. *-um*, late *-ium* and Gr. δώς 'gift', see EM. s.v. *dō*). *$dōt$- reflects *deh_3-*t*-, *doh_3-*t*- or *$dēh_3$-*t*-, *$dōh_3$-*t*-. For *h_3 cf. δίδωμι, δίδομεν < *$did(e)h_3$-.

2. *flōrus* 'yellow, blond' < *$bhleh_3$-*ro*- or *$bhloh_3$-*ro*-, cf. *flāvus*, OHG. *blāo* < *$bhleh_3uo$- (see no. 8).

3. *(g)nōscō*, *(g)nōvī*, *(g)nōtum* 'to get to know'. As presents in *-*sk*- and the ppp. generally have a zero grade root, *-ō-* < *-*o*/*eh*$_3$- must have been introduced from elsewhere. The best candidate seems the perfect, which may have been based on the root-aorist reflected in Gr. ἔγνω, Skt. *ájñāt* < *$ǵneh_3$-*t* (but see IV.C.1.3.6.2), or the supinum *$ǵneh_3$-*tu*- > *nōtum* (if this had full grade). The reconstruction of *h_3 is proven by Greek (γνωτός, γιγνώσκω < *$ǵnh_3$-).

4. *nōmen* < *h_3neh_3mn. For *h_3 cf. Gr. ὄνομα < *h_3nh_3mn (Beekes 1987b, 1-6).

5. *octō* 'eight' probably reflects *$h_3ek̑teh_3$, not *-*oH*, in view of *octāvus* 'eigth' < *Hok̑teh*$_3$*uo*- (see no. 8. below; *-*oHuo*- would probably have yielded Lat. *-ōv-*).

6. *pōtāre* 'to drink', *pōtus* (*o*) 'drunk', *pōtus* (*u*) 'drink', *pōsca* 'kind of drink' < *peh_3- (or *poh_3-). For *h_3 cf. Gr. πέποται, πότος; πῶμα < *peh_3-*mn*; πόοις < *ph_3-*ti*-.

7. *rōdere*, *rōsī*, *rōsum* 'to gnaw' < *$Hreh_3d$-, see IV.F.1.2.2 no. 8.

8. In the following instances, *-eh_3- seems to have yielded Lat. *-ā-* because *h_3 was delabialized before *-u̯- and merged with *h_2 (the forms actually belong in chapter IV.E, which deals with *IH* and *HI*; see on this particular problem section IV.E.13.2.3).
- *flāvus* < *$bhleh_3$-*uo*-, cf. *flōrus*;
- *(g)nāvus* < *$ǵneh_3$-*uo*-, cf. *(g)nōscō*;
- *octāvus* < *$h_3ek̑teh_3$-*uo*-, cf. *octō*;
- *rāvus* < *$ǵhreh_3$-*uo*-, cf. OHG. *grāo*.

1.5.4. *oh_1C

1. If *abdōmen* 'fat lower part of the belly, paunch' is cognate

with *abdĕre* 'to conceal' (WH.: 'pars abdita'), it reflects the root *$*dheh_1$-* 'to put'. Cf. OHG. *intuoma* 'exta' < *$*-dhoh_1$-m-*.

2. *sacerdōs* 'priest' < *$*sakro-dhōt-$ < *$*sh_2kro-dhoh_1$-t-*.

3. *lōrum* < *$*h_1uloh_1$ro-?? (see IV.C.1.3.4 no. 4).

1.5.5. *$*oh_2C$*

There are, as far as I can see, no clear instances of *$*oh_2$* reflected in Latin. It cannot therefore be checked whether *$*oh_2$* became *ā* or *ō*. The only possible instances of the former development are *fāma*, Gr. φήμη (which allegedly shows the same development, Ruijgh 1971, 181-198, Kortlandt 1980b, 126-128) and the causative *suādēre* < *$*suoh_2d$-eie-*. Derivatives in *$*-mo-$* or *$*-mā-$* generally have a zero or *o*-grade root. For a criticism of too strict an application of this rule I refer to Beekes 1972. *suādēre* may have introduced *$*suād-$* from *suāvis* < *$*sueh_2du-$*. *mediōcris* < *$*medhio-h_2okri-$* (see C.1.3.6.3) and the development of *$*h_2o-$* to Lat. *o-* (*u-*), not *a-* (see II.C.4.5) show that *$*o$* was not affected by *$*h_2$*. I therefore seriously doubt that either *fāma* or *suādēre* reflect *$*oh_2$*.

1.5.6. *$*oh_3C$*

One may prefer to reconstruct *dōnum* 'gift' as *$*doh_3$-no-*, as *o*-vocalism in the root of *no*-derivatives is common. Compare, however, Gr. τέκνον, ἔδνον.

1.5.7. Vowel + laryngeal of unknown quality

The only instance I have come across is the 1sg. present ending *-ō* < *$*-oH$*, cf. Lith. acute *-ù* < *$*-oH$*, which strictly speaking belongs in section III.3.

1.6. The development of *H* before *s* and the problem of *senex*

In a number of articles (i.a. 1955, 42-56, 1956, 1-7), Martinet has proposed the idea that a laryngeal, notably *$*h_2$* (in his view a velar fricative), yielded *$*k$* before an *$*s$* in PIE. (*$*-eh_2s$* > *$*-ăks$*). In most of his examples, the *$*k$* had arisen in the Nsg. of the PIE. masculine stems in *$*h_2$*, which were allegedly of old provided with an ending *$*-s$*. In this way, Martinet attempted to explain a number of forms in different languages.

1. Latin deverbal adjectives in *$*-āk-$*, e.g. *audāx*, *fugāx*, *tagāx*, which may be compared with Gr. νέōξ 'young man', OCS. *novakъ* 'novice, recruit'. Martinet assumes a Nsg. masc. *$*-eh_2$-s*, Asg. *$*-eh_2$-m* > *$*-āk-s$*, *$*-ām$*, which was levelled to

*-āk-s, *-āk-m. More isolated instances are *fornāx* 'oven', SCr. *grnac*, cf. Skt. *ghṛṇá* 'warmth'; Gr. μεῖραξ 'young man', Skt. *maryaká-* 'id.'; the type φύλαξ < *-ăk-. According to Prosdocimi 1985, one may add Lat. *forfex* 'scissors', cf. the Umbrian verbal stem *furfa-* 'to cut'.

2. Latin feminine nomina agentis in *-trīx* < *-*tr-ih₂-s*, again with levelling of Nsg. *-*īks*, Asg. *-*īm* to *-*īk-s*, *-*īk-m*. More isolated instances are *rādīx*, *cornīx*. Note especially Lat. *natrīx* 'snake', OIr. *nathir*, G. *nathrach* < **nătrīk-* (based on the Nsg. **nătrīks* < *-*ih₂-s*) versus W. *neidr* 'id.' < **nătrī* (based on the Asg. **nătrīm* < *-*ih₂-m*).

3. The interchange of the suffixes *-*eh₂-* and *-*ieh₂-* (cf. Skt. *kṛṣṇā́* = *kṛṣṇī́ḥ* 'night') combined with the proposed rule explains e.g. Lat. *fornāx*, *fornīx*; Gr. θηλή, Lat. *fēlīx*; Gr. μύρμηξ, Lat. *formīca*; U. *curnaco*, It. *cornacchia* < **cornacula* vs. Lat. *cornīx*.

4. OPruss. *insuwis* (based on the Asg. *-uwim* < *-*uh₂-m̥*) vs. OCS. *językъ* (with *-k-* from the Nsg. *-*ŭk-s* < *-*uh₂-s*, but *-y-* < *-*uh₂-* from the Asg. *-*uh₂-m̥*) reflect PIE. **(d)nǵh-uh₂-* (vel sim.) 'tongue'. In the same way, Lith. *žùk-mistras* 'maître de pêche', OPruss. Apl. *suckans* vs. Lith. *žuvìs* 'fish', the former two based on the Nsg. **dhǵhuH-s*, the latter on the other cases (cf. Gr. ἰχθύς 'fish').

5. Gr. κόραξ < *-*°h₃-s* (sic, with a reduced vowel) vs. κορώνη. (See Cowgill 1965, 177-178 for a decisive refutation).

6. Most importantly: Lat. *senex* < *-*ăks* < *-*eh₂-s*, G. *senis* < *-*h₂-es*, cf. *senā-tus*, *senā-culum* and Goth. *sineigs* (< *-*ih₂-s*), Skt. *sanaká-*. The Asg. *senem* replaces *-*ām* < *-*eh₂-m*.

Warren Cowgill 1965, 176-178 presented serious criticism of Martinet's view. His objections may be summarized as follows.

1. In order to demonstrate the correctness of the development of **h₂* to **k* before **s*, one would have to find instances in which *k* before *s* alternated with established laryngeal reflexes in other positions. The only example adduced by Martinet is *senex* 'old man', *senātus* 'old men as a political unit'. But *senātus* may have been modelled on words like *comitātus*, *equitātus*, which are ordinary *tu*-derivatives of *comitā-rī*, *equitā-rī*. For a supposed **senāre*, *-rī* see Birt 1927, Steinbauer 1989, 253 note 14. As to Szemerényi's **seno-tāt-u-* > *senātus* (1962=1977), see Cowgill 1965, 176 note 70. Cowgill follows Brugmann's interpretation of *senex*: a PIE. adjective **seno-*

was replaced by the *n*-stem **sen-* after **HiuH-en-* 'young man'. The old Nsg. of **HiuH-en-* was **HiuH-ō* (Skt. *yúvā*), which would lead to **sō*. The latter was understandably avoided, and in its place a new Nsg. based on the stem *senec-* was formed (which was already present in Latin, cf. *senicēs* (Plaut.), *seneca*, *Seneciō*). I think that Brugmann's suggestion is unlikely; one would rather expect **senōn*; moreover, I do not see why an analogical *n*-stem was created which led to an unacceptable Nsg. **sō*. The essential point is that Brugmann has plausibly argued for a stem **sen-ek-* with suffixal **-ek-*. Needless to say, the latter is not in dispute, even if, as I do, one does not accept Brugmann's explanation of *senex*, *senis* in every detail.

2. Cowgill opposed the idea that masculine stems in **-eh₂* received an *-s* already in PIE.: cf. OCS. *vojevoda*, *sluga*, Lat. *agricola*, *scrība*. The *-ς* in the Greek type ἱππότης is probably a Greek innovation because there are dialect forms which lack *-ς* (Schwyzer 1.560). As to **-ih₂*, it is remarkable that the Skt. type *vṛkī́ḥ*, *śvaśrū́ḥ*, *naptī́ḥ* (with **-s*) corresponds with Lat. *socrŭs*, *neptīs*, which lack **-k-*, whereas the type *jánitrī* (without **-s*) corresponds with Lat. *genetrīx*, with **-k-*. This situation rather favours positing an Italic **-k-*suffix.

3. Cowgill objected to the "(to my mind) chaotic rearrangement of allomorphs" (i.e. *-ăks*, *-ām* replaced by *-āks*, *-ākm*, or *-ăks*, *-ăkm*, or *-ā*, *-ām*) and preferred the assumption of a "series of secondary noun suffixes whose principal phoneme was a **k*... and which was subject in the daughter languages to a normal amount of reevaluation, reshaping and gains and losses in productivity."

Martinet's views were subsequently vindicated by Watkins, who attempted to deal with Cowgill's criticism (1965, 186-188). He accepted Martinet's proposal as a "viable working hypothesis" and attempted to offer some corrections or refinements. While discussing these, I shall add some comments of my own.

1. In the preliminary edition of *Evidence for Laryngeals* p. 198 (which was not available to me), Cowgill derived the type *audāx* from *ā*-stem nouns (*fugā* + *-k-*) rather than from verbal root nouns with the addition of **-eh₂-s* (*capāx*, cf. *-ceps*, *efficāx*, cf. *-fex*). Watkins preferred the latter, pointing to the fact that the basic *ā*-stems cannot be traced; even *fuga* reflects a root noun, cf. Gr. φύγα-δε. While Watkins may be correct in preferring root nouns as a basis because these are attested while *ā*-stems are not, I do not see how this affects the

basic point that the type *audāx* may be explained by assuming a suffix **-eh₂-* followed by a suffix **-k-*. Martinet's general point (1955, 42-43) that in a concatenation of suffixes only the last may contain a full grade vowel (e.g. compar. *-iōs*, superl. *-istos*) may hold for PIE. but certainly not for all later formations in the individual languages (cf. *mod-es-tus*, *potes-tā-ti-* etc.).

2. As to Watkins' reflection that *senātus* and *senāculum* must be old forms because the words are archaic in Latin and because the institution of a council of elders dates back to PIE., one may remark that words which are archaic in attested Latin do not ipso facto date back to PIE.; and that if an institution is old, the word(s) used to denote it are not necessarily equally old. Thus, *senātus*, *senāculum* may reflect relatively recent formations, which may have been modelled on *equitātus* etc. rather than vice versa. Watkins' claim that *senātus* was derived from an *ā*-stem **senā-* was refuted by Cardona 1961, 420 note 16, who noted that the suffix *-tu-* is used to form *deverbal* abstracts.

3. Instead of the levelling of *-ăk-/-ā-* to *-āk-* and of *-ĭk-/-ī-* to *-īk-*, which he agreed to consider questionable, Watkins proposed that levelled *-ăk-s*, Asg. *-ăk-m* was replaced by *-āk-s*, *-āk-m* because of "the inherited lengthened grade of the nominative singular.... The subsequent generalization of the lengthened grade throughout the paradigm is paralleled in numerous Latin forms, both radical and suffixal." Watkins compared *vōx*, *vōcem*, **-tōr*, *-tōrem* etc. Nobody would want to challenge these examples, but their starting point is completely different from the one in *-āks*, *-ākm*, where a lengthened grade which was absent in every case form of the paradigm was introduced for no particular reason, and subsequently generalized. There are, moreover, numerous exceptions to Watkins' inherited lengthened grade in the Nsg. (e.g. *-ĭs*, *-ŭs*, *natrĭx*, *miles*).

4. In order to explain such forms as *neptĭs*, *socrŭs* vs. *genetrīx* and the archaic forms *hosticapas*, *par(r)icidas*, Watkins assumed that an original paradigm **-iks*, **-īm*, **-āks*, **-ām* was skewed and yielded four types: (1) *-īk-s*, *-īk-m* etc. (*genetrīx*, based on the Nsg.); (2) *-īs*, *-īm* etc. (*neptĭs*, *socrŭs*, with *ĭ*, *ŭ* based on the Asg. *-ĭm*, *-ŭm* < **-īm*, **-ūm*; but see V.C.1.2); *-āks*, *-ākm* etc. (*vorāx*, *audāx*, based on the Nsg.); (4) *-ās*, *-ām* etc. (*hosticapas*, *par(r)icidas*, based on the Asg; but see V.C.1.1.2). The forms belonging to (4) show that an *ā*-stem Nsg. in *-ās* was not unknown to Latin.

It may be remarked that skewing is in itself possible, and rather commonplace in the history of language, but Cowgill's criticism is, in my opinion, criticism of the evidence: the fact remains that *neptis*, *socrus* do not have *-k-* where one would expect it on comparative grounds, and that *genetrīx* etc. do have *-k-* where one would not expect it on the same grounds (if Martinet's theory were correct). According to Watkins, the originally distinct types **ǵenh₁trih₂* and **h₂neptiH-s* were first subject to a merger and subsequently to skewing, which, we are asked to believe, accidentally restored the original distinction. It seems far more probable that Latin simply never lost the original distinction between the two types. This situation perhaps may not prove that Martinet is wrong, but the essential point is that there is no evidence that he is right, in other words, his theory is a shot in the dark.

An interesting observation which may be added to the preceding discussion was made by Rix 1981, 107ff. Etr. *uni* < Lat. **iūnī* points to the fact that at some point in the period from 1100 to 700 BC. the **-k-* of Lat. *iūnīx* 'young cow' was not yet present. Steinbauer 1989, 76-77 adds that the derivation of the verb *nūtrīre* 'to feed' can be understood only if we start from **nūtrī*, which likewise had not yet received the **-k-* found later in *nūtrīx* (see also Leumann 1977, 376). This observation may help to settle our problem: **nūtrī* shows that at an early stage **-k-* was not yet present throughout the paradigm. One might object that **-k-* was present only in the Nsg., its presumed original locus, and that the basis for *nūtrīre* was the oblique stem. This alternative can be rejected in view of *uni* < **iūnī*, which must probably be interpreted as a Latin Nsg. Whereas **iūnī* and **nūtrī* are at variance with what Martinet's theory would predict, they are compatible with Cowgill's (traditional) idea that **-k-* represents a suffix which was added at a certain date.

The counterarguments against Martinet's theory can now be summarized:

1. Direct, hard evidence that a laryngeal before **s* yielded **k* while it yielded the expected reflex(es) in other environments is lacking. *Senex*, *senātus* may be explained in another way. All adduced instances may reflect suffixal **k*.
2. The incidental addition of **-s* to some masculine **-eh₂*-stems probably does not date back to PIE., otherwise this clear characteristic would have been more widespread than it is. ἱππότης

and *hosticapas*, *paricidas* are most likely independent formations (cf. Nsg. *paricida*). Thus, the claimed original locus of *-k-* is denied.
3. The lack of **-k-* in Lat. *neptis*, *socrus* (and in *hosticapas*, ἱππότης) and the presence of **-k-* in *genetrīx* is embarrassing.
4. A paradigm **-īks*, **-īm*, **-āks*, **-ām* does not explain forms in **-īk-* and **-āk-*.
5. Etr. *uni* and Lat. *nūtrīre* show that the paradigms of *iūnīx* and *nūtrīx* formerly did not contain **-k-*.

To these I add two objections.
6. **-Vh$_2$s-* did not yield **-V̆ks-* in: *pāscere*, *pāvī*, *pāstum*, *pāstor*, Toch. A *pās-*, B *pāsk-*, OCS. *pasǫ* < PIE. **peh$_2$-sk-*; *vāstus*, OS. *wōsti* < **ueh$_2$s-to-*; and probably neither in *ārēre*, *āra*, *āridum* < **Heh$_2$s-* (?), root **h$_2$es-* (see II.C.6). **-Vh$_1$s-* did not yield **-V̆ks-* in *fēriae*, *fēstus* < **dheh$_1$s-*.
7. The Nsg. of the *h$_2$*-stems was probably PIE. **-h$_2$*, not **-eh$_2$* (see V.C.I.1.2). This ending regularly developed into Lat. *-ă* (see Beekes 1985, 21-25 and chapter V.C, also on *hosticapas*, *par(r)icidas*). Neither in PIE. nor at any subsequent stage on the way to Latin can the addition of an **-s* to this ending have yielded the required **-eh$_2$s*.
8. *h$_2$* probably was not a velar fricative but a pharyngeal, which would make Martinet's assumptions less plausible (see Beekes 1989c).

I conclude that Martinet's theory raises more problems than it solves. Its starting point **-eh$_2$-s* is probably incorrect because this originally did not exist in the Nsg. of the *h$_2$*-stems and because the constellation **-eh$_2$s-* did not yield *-ăks-* in a number of roots. A starting point **-ih$_2$-s*, where **-k-* could have arisen, is not supported by the material (*neptis*, *socrus* do not have *-k-*, while *genetrīx* does) and is probably disproved by **iūnī* and **nūtrī*.

The only form which would clearly support Martinet's theory is not the pair *senex* - *senātus*, but Lat., Ir. **nătr-īk-*, W. **nătr-ī* (f.), but this cannot outweigh the counterevidence. It may therefore be concluded that the material discussed by Martinet is explained in a more convincing way by assuming suffixal **-k-*, as was claimed by Cowgill. The suffix **-k-* certainly poses a number of problems which have not yet been solved (for instance, why was it added to so many feminine stems?), but these cannot be solved in the way proposed by

Martinet. See esp. Ernout 1940-1941.

2. Laryngeal between vowels (*VHV*)

There are but few forms in Latin which arguably reflect a constellation *VHV*. Since the laryngeal was lost in this position and the vowels were subsequently contracted, the result in Latin is a long vowel which on the surface does not differ from the reflex of PIE. **VHC*. The decision that a word reflects a constellation *VHV* is usually based on considerations of morphology. Thus, the Npl. of the h_2- and h_1-stems must be reconstructed as *-*eh*$_2$-*es*, *-*eh*$_1$-*es*, cf. the Npl. of the *i*- and *u*-stems in *-*ei-es*, *-*eu-es*. The material, which is partly discussed elsewhere, is listed in 2.1.

It has been assumed that intervocalic *h_3 is reflected as -u̯- in Latin (Martinet), and also that intervocalic *h_1 is reflected as *-*i̯*- (Diver). These proposals are discussed in 2.2 and 2.3, respectively.

2.1. Material

1. *flōs* if from **bhleh*$_3$-*ōs* (see IV.C.1.3.6.2);
2. *lēnis* if from **leh*$_1$-*en*- (see IV.C.1.3.5.2 no. 4);
3. *mās* if from **meh*$_2$-*ōs* (see IV.D.1.2.2 no. 11);
4. In the inflection of the *-*eh*$_2$-stems:
   the Gsg. in *-ās* (e.g. *familiās*) may reflect *-*eh*$_2$-*es* (or *-*eh*$_2$-*s*);
   the obsolete Npl. in *-ās* < *-*eh*$_2$-*es* (Leumann 1977, 420);
   the Dsg. *-ae*, if from *-*āi* < *-*eh*$_2$-*ei*.
5. In the inflection of the *-*eh*$_1$-stems of the fifth declension:
   the OLat. Dsg. *-ei* (> *-ī*) may reflect *-*eh*$_1$-*ei*;
   the Npl. *-ēs* reflects *-*eh*$_1$-*es*.

2.2. Intervocalic **h*$_3$

2.2.1. Introduction

In a number of articles, notably 1953, 253-267 and 1956, 1-7, Martinet proposed that the alternation of a long vowel with a long vowel + *-u̯- (e.g. *dō-, OCS. *davati*) may in numerous instances be explained by assuming that an intervocalic *h_3 (which he claimed to be labialized) "exuded" a *-u̯-. The development is dated to Proto-Indo-European times. Accordingly, Martinet claims that *-*eh*$_3$-*t*-, *-*eh*$_3$-*o*- yielded *-*ōt*- and *-*āu̯o*-, respectively. He convincingly dismisses the idea that *-*eh*$_3$*o*- might have yielded *-*ōu̯o*- (1953, 257). Whenever one finds -ō- alternating with -ōu̯- (< *-*eh*$_3$-), the latter must have

replaced *-āu̯- on the basis of paradigmatically related forms with regular (anteconsonantal) -ō-.

As Cowgill observed (1965, 179), Martinet leaned heavily on Latin data which show an alternation -ō-/-āv-, and the claim that the rise of *-u- is of PIE. date (and not a Latin innovation) makes the evidence provided by other languages, notably (but not exclusively) Greek, rather important. As it turns out, Martinet's Greek evidence cannot be maintained (see Cowgill op. cit. 179; for Dor. πρᾶτος see Beekes 1969, 214-215), which shifts the emphasis almost entirely to Latin.

In the following section, I shall discuss the Latin material adduced by Martinet.

2.2.2. Latin

Basically, the Latin evidence falls into two categories, viz. four words in which *-āvo- is said to reflect *-eh_3-o- on the one hand and the Latin v-perfect on the other. As to the OLat. subjunctive *duim*, *duis* etc. see Meiser 1986, 186-191. (Less convincingly Godel 1979, 230-236, who departs from *d^oh_3-ih_1-; reduced vowels did not exist).

2.2.2.1. Latin *-āvus < *-eh_3o-

The material consists of four etyma, which will be discussed at some length in section IV.E.13:

1. *octāvus*, cf. *octō*, Gr. ὀκτώ etc.;
2. *flāvus*, cf. *flōrus*, root *$bhleh_3$-;
3. *gnāvus*, cf. *gnōscō*, Gr. γνωτός, root *$ǵnh_3$-;
4. *rāvus*, root *$ghrh_3$-.

In section IV.E.13, all four are reconstructed as containing a sequence *-eh_3-u̯o-, in which *h_3 was delabialized before *-u̯-. As to *flāvus*, *gnāvus* and *rāvus*, it is impossible to prove that -v- arose from *-h_3- rather than from a banal suffix *-u̯o-. *octāvus* reflects a thematic derivative of the cardinal *okt̂ō (Gr. ὀκτώ, Ved. aṣṭā́), *okt̂ōu (or *-āu?; Ved. aṣṭáu, Goth. *ahtau*) and perhaps does not reflect a suffix *-u̯o-. Thus, the question arises where -u in *okt̂ōu came from. Here it would indeed seem to be possible that Martinet's proposal offers the correct solution: *Hokt̂eh_3, as an isolated word or before a word beginning with a consonant, yielded *okt̂ō, while *Hokt̂eh_3 in antevocalic position (i.e. in the ordinal and before a word beginning with a vowel) yielded *okt̂āu̯(-). However, Ved. aṣṭā́, aṣṭáu is strongly reminiscent of dvā́, dváu 'two' and the NAdu. suffix of the *o-stems -ā, -au, where the forms

in *-ā* reflect **-o-h_1*, not **-oh_3* (**h_1* being the normal dual marker, cf. Gr. ὄσσε < **Hok^{w}-ih_1*), and *-au* cannot consequently be explained on the basis of a **h_3*. Conversely, if a **h_3* cannot explain the interchange *-ā, -au* in 'two' and the dual and another solution must be sought for these forms, there is no reason to suppose that *aṣṭā́, aṣṭáu* must be explained on the basis of **h_3*. These forms, to my mind, remain a mystery.

I conclude that none of the four Latin forms offer evidence in favour of Martinet's rule. The assumption of a suffix *-u̯o-* offers a simpler solution.

2.2.2.2. The Latin *v*-perfect

According to Martinet, the original locus of the *v*-perfect are the verbal roots **ǵneh$_3$-* 'to know' (cf. Gr. γνωτός), **streh$_3$-/sterh$_3$-* 'to spread' (cf. Gr. στρωτός), and **bhleh$_3$-* 'to blow' (but cf. Goth. *blesan* 'to blow', which points to **bhleh$_1$-*!), which in conjunction with certain perfect endings (starting with a vowel) yielded Lat. **gnāv-* (replaced by *gnōv-* after *gnōscō*, *gnōtus*), *strāv-*, and *flāv-*, respectively. From these roots, the **-u̯-* allegedly spread to the perfect of other roots of the structure *(C)CeH-* (e.g. *sprēvī*, *nēvī*, *nāvī*) and, finally, to all stems ending in a vowel (e.g. *monuī* < **moni-u-*, *amāvī*, *moluī* < **mela-u-* etc.), thus becoming one of the most successful perfect stem markers in the language. It may be added that the antiquity of **strāv-* is perhaps proven by the isolated OIr. 3sg. preterite *sraí* in *sraíthi*, *sraíthius* 'he hurled it' < **strāw-e*, discussed by Watkins 1958, 92 ff.

As a first point of criticism, it may be noted that the starting point for this perfect in Martinet's theory is extremely narrow, viz. the 3sg. perfect, which was the only form in which a full grade root was coupled with an ending that started with a vowel, of the roots **ǵneh$_3$-* and **streh$_3$-* (*flāre* probably contains **-h$_1$-*). However, we might concede that the frequently used 3sg. could serve as the basis for a new inflection (cf. e.g. the OIr. *t*-preterit, which is based on the 3sg. *-t* < **-s-t*).

Without going too deeply into the various theories concerning the *v*-perfect, we must briefly turn to one important comparison. As Martinet admits (1953, 259; he is, of course, not the first, see Leumann 1977, 597), the *v*-perfect must be compared with the Vedic 1 and 3 sg. perfect type *jajñáu*, *papráu*, *dadháu* etc., which is formed by roots of the structure **(C)CeH-*, the same category to which the origin of the Latin

v-perfect has been traced. Martinet attempts to explain the type *jajñáu* by assuming the same 'exuding' of *-u-* by **-h_3-* as in Latin. However, in that case one would expect to find Skt. **jajñāva* < **ǵe-ǵnoh$_3$-e*. In order to explain why we find *jajñáu*, Martinet proposes that **jajñāva* was replaced by *jajñáu* on the model of **dadhā* < **dadhaa* (< **dhe-dhoh$_1$-e*) and **tasthā* < **tasthaa*, which were interpreted as endingless forms (1953, 259 note 25). In my opinion, this is untenable. **jajñāva* beside **dadhā* would rather have led to **jajñāva*, **dadhāva* because longer forms seem in general to be preferred. Even if we concede that the model of **dadhā*, **tasthā* would have been strong enough to cause remodelling of **jajñāva*, the result would most likely have been **jajñā* rather than *jajñáu*; in **jajñāva*, the *-v-* would have been interpreted as the irregular bit, not the perfectly normal ending *-a*. Moreover, the form in *-u* should not, in Martinet's theory, have been present in the 1sg. perfect, where the ending **-h_2e* started with a consonant: **ǵeǵnoh$_3$-h_2e* should have yielded **jajñāHa* > **jajñā*. Thus, I conclude that Martinet's theory cannot account for the form *-au*, nor for the presence of **-u* in the 1sg. This is of considerable momentum for the assessment of the origin of the Latin v-perfect: since some connection between the type *jajñáu* (which can hardly be accounted for as an innovation because it is so irregular) and the v-perfect is likely, and since the former cannot be explained on the basis of Martinet's rule, it is highly uncertain that the latter can.

If we stick to a more traditional approach, the type *jajñau* may be explained from **ǵe-ǵnh$_3$-ēu*, which was originally the locative singular of a deverbal *u*-stem (Charpentier 1913, *IF.* 32, 98, 101, Hirt 1913, *IF.* 32, 315 note 1, Kortlandt 1989a, 111). If so, *gnōvī*, *strāvī*, *plēvī* etc. reflect **ǵnh$_3$-ēu*, **strh$_3$-ēu* (> **strōu*, **-ō-* replaced by *-ā-* after *strātus*; OIr. *sraí* may reflect either **strā-* or **strō-*), **plh$_1$-ēu*, to which the normal IE. perfect endings were added in Latin. As to the early loss of the laryngeal before a lengthened grade, which accounts for the consonantal resonants, see IV.C.1.3.6.2.

2.2.3. Conclusion.

Neither *flāvus*, *gnāvus*, *rāvus*, *octāvus* nor the v-perfect provide clear evidence that antevocalic **-eh$_3$-* yielded **-āu-*. Thus, the Latin evidence for Martinet's rule cannot be upheld.

2.3. Intervocalic *-h_1-

Wiliiam Diver has claimed that *h_1 had a palatal quality, which resulted in its "exuding" a *-i- in intervocalic position (1959, 110-122).

In this way, he proposes to explain the denominative suffix *-ie/o-. His legitimation is the following:
(1) the length of the vowel before *-ie/o- in e.g. Skt. *aśvāyáti* 'desire horses' (*áśva-* 'horse'), *sakhīyáti* 'to seek friendship' (*sákhi-* 'friend');
(2) the long vowel in Gr. ἐφίλησα, δηλώσω, ἱδρύω;
(3) the long vowel of the Latin ppp.'s *fīnītus* (*fīnīre*), *metūtus* (*metuĕre*).

The second type of forms which Diver tries to explain by assuming a development of *-eh_1-V- to *-$ēy$-V- is the type Ved. *gā́yati* 'sings' of the root *gā-* and numerous other verbs of the same structure. The reason for Diver to assume that -*y*- does not simply belong to the present suffix -*ya*- is the disproportionally large number of roots in -*ā* which have a present in -*āya*-. In general, Diver (and also Martinet) touched upon the problem of the long-diphthong bases, where preconsonantal *ē* and *ō* alternate with prevocalic *ēy* and *ōw* (e.g. pres. *syáti*, perf. *siṣāya*, aor. *asāt* 'to bind'). The clearest indication that Diver (and Martinet) have not found the correct explanation has been put forward by Cowgill 1965, 178, who writes: "One obvious difficulty that Martinet and Diver will have to face when they test their theories is the existence of long-diphthong bases of shapes other than *-$ēi$ and *-$ōu$; thus the word for 'drink' has alternants *$pī$, *$pō$ and *$pōy$ (Skt. caus. *pāyáyati*)...". *$pōy$- cannot be explained in Diver's or Martinet's theories.

A discussion of the Sanskrit and Greek material falls outside the scope of this book. For a convincing refutation of Diver's explanation of the long vowel in Gr. ἐφίλησα etc. I refer to Cowgill 1965, 178-179.

We may briefly turn to the long vowel of *fīnītus* and *metūtus*. These forms cannot be isolated from the perfects *fīnīvī* and *metuī* < *-*ūvī* (see Leumann 1977, 595), which also contain a long final stem-vowel. Since the denominatives originally had only present-stem forms and the perfect and ppp. of these verbs are relatively late formations (Leumann 1977, 509, Steinbauer 1989, 102 and 238 note 19), it is unthinkable that they reflect an archaic formation, which Diver's *$fīni$-H-tom (in his own theory) must be. In the same way as *cūrā-vī*, *cūrā-tum* were based on the present stem *cūrā-*,

thus *fīnī-vī*, *fīnī-tum* were based on the present stem *fīnī-* (Leumann, loc. cit.). The situation is slightly different for *metuĕre*, *metuī*, *metūtum*, where the present stem does not display a long *-u-*. But in this category *-ŭī* < **-ūvī* and *-ūtum* were probably based on non-denominative stems in *-ŭere*, e.g. *sŭere*, *suī*, *sūtum* (root **suH-*), *spŭere*, *spuī*, *spūtum* (root **spuH-*) and compounds of the type *ind-ŭere*, *-uī*, *-ūtum* < **-ou-e/o-*, **-ou-u̯ai*, **-ou-to-*, *ab-lŭere*, *-luī*, *-lūtum* < **-lauă-*, **-lauă-u̯ai*, *-lauă-to-* (VI.C.1.2.1 and V.D.2.1.1). In conclusion, there is no support whatsoever in Latin for Diver's theory.

3. Laryngeal between vowel and resonant (*VHR*)

As far as I can see, there are only two reliable instances of this constellation, and in both the resonant is PIE. **n*. Other possible instances more likely reflect *CRHR* (*clangĕre*, *glāns*, *grandō*, *plangĕre*, *trāns*, see IV.D.3.2) or zero grade *CHR* (e.g. *pangĕre*, *tangĕre*, *saltus*, see IV.B.3). As to *ānser* 'goose', this may reflect **ǵheh₂ns-* or **ǵhh₂ens-* or **ǵhh₂ns-* (see IV.B.3.2 no. 1).

In general, the quantity of a vowel before *RC* in Latin is not indicative of its old quantity because every vowel is predictably short as a result of the operation of the Latin version of Osthoff's law, except before *-ns-*, *-nf-* and *-nc-* + consonant, where it is predictably long (see IV.C.1.1).

1. *mēnsis* 'month', cf. U. *MENZNE* 'mense' (< **mens-en-*, cf. Sabinian (?) *mesene*) < **meh₁ns-*. Compare Olr. *mí*, Gsg. *mís* < **meh₁ns-*, Goth. *mena* 'moon', *menoþs* 'month', Lith. *ménuo* (acute!), Gr. μήν, Gsg. μηνός (Lesbian μῆννος) < **mēns-*. Skt. *mā́s*, Av. *må* (to be read *maHah* in Gathic) reflects **meh₁n̥s-*, with vocalization of the nasal (see Beekes 1982, 53-64 for the reconstruction of the PIE. paradigm).

2. *vĕntus* 'wind' < **h₂ueh₁-nt-o-*, cf. W. *gwynt*, Goth. *winds* (< **uēnt-*, with shortening in accordance with the analogon of Osthoff's law). Skt. *vā́tas*, Av. *vātō* (to be read *vaHatah* in Gathic, see Beekes 1988c, 89) has vocalized the **-n-*, as in the word for 'month'. Toch. B *yente*, A *want* < PToch. **ẃēnte* < **wēntos* < **h₂ueh₁nto-* contains the reflex of a long vowel. The Tocharian and Indo-Iranian forms show that one must reconstruct **h₂ueh₁-nt-o-*, not **h₂uh₁-ent-*. Hitt. *ḫuwant-* 'wind' probably reflects **h₂uh₁nt-* or *h₂uh₁-ent-* (Eichner 1973, 54); if **h₂uh₁nt-* had been the basic form of

Latin, one would expect to find Lat. **vant-*, cf. *vannus* < **h_2uh_1nt-no-*. **h_2uh_1-ent-* would most likely have yielded Lat. *vĕnt-*, but in view of **h_2ueh_1-nt-* in the *o*-stem in Tocharian and Indo-Iranian, a reconstruction **h_2uh_1ent-* for *ventus* is less likely. The root is **h_2ueh_1-*, cf. Gr. ἄημι 'blows' < **h_2ueh_1-t i*.

The interpretation of these Latin forms is obscured by two facts. In the first place, the original vowel length is obscured, as indicated above. Secondly, we cannot find out whether in Latin the development of *-VHRC-* was identical to that of Greek (and Gothic, Celtic and Tocharian) or that of Indo-Iranian. In the former, the laryngeal was lost with lengthening of the preceding vowel, and **-n-* was not vocalized (**meh_1ns-* > **mēns-* > Aeol. μῆνν-). In the latter, the vocalic nasal was vocalized to **a*, and the intermediate laryngeal was lost at a later stage (**meh_1ns-* > *maHas-*). The result of the "Greek" and the "Indo-Iranian" types would have been identical in Latin. According to the former, **meh_1ns-* would have become **mēns-* > **mēns-i s*, and according to the latter type, **meh_1ns-* would have become **meh_1ens-* > *mēns-i s*.

D. LARYNGEAL AFTER RESONANT (*RH*)

1. Laryngeal between resonant and consonant (*RHC*)

1.1. Outline

For the preliminaries see section I.C. In section IV.D.1 the following constellations will be treated:
1.2 Word-initial *RHC*, 1.2.1 Introduction, 1.2.2 The material, 1.2.3 Counterevidence, 1.2.4 Conclusion. 1.3 *CRHC*, 1.3.1 Introduction, 1.3.2 Lat. *CRāC* from PIE. *CRHC*, 1.3.3 Alleged triple reflex, 1.3.4 Lat. *CRăC* from PIE. *CRHC*, 1.3.5 Alleged **CaRaC* < **CRHC*, 1.3.6 *nŏta*, *co-gnītus*.

The type **HRHC-* will be discussed in chapter F.

1.2. Word-initial *RHC-*

1.2.1. Introduction

One of the most recent developments in laryngeal theory is the recognition that in a word-initial constellation *RHC* it was not the resonant (*R̥HC*) but the laryngeal (*RḤC*) which was vocalized, at least in several Indo-European languages (Beekes 1988b). As Beekes observed (p. 40), the evidence for Greek is conclusive: e.g. μακρός 'long' < **mh₂ḱró-*, λαθεῖν 'be hidden' (aor.) < **lh₂-dh-*. He also concluded that "As to the other languages, there seems enough evidence for Latin and Germanic [i.e. to assume that **#RHC-* yielded *RăC-*, PS.], though a more detailed study is necessary". This study will now be undertaken for Latin.

The material is taken from EM. and WH. All instances of initial *Ră-* (i.e. *la-*, *na-*, *ma-*; I have included *ia-*, *va-*) which have cognates pointing to a PIE. laryngeal will be discussed. Cases with initial Latin *ra-* will not be discussed here because there is reason to believe that these words had initial **Hr-*, initial **r-* being absent from PIE. (Lehmann 1951; see also II.A). Latin *ra-* will therefore be treated in the section on *HRHC-* (IV.F.1 below).

I have found hardly any material that was not already discussed by Beekes. All instances that are new appear to offer doubtful evidence at best. There are two reasons why I have nevertheless decided to discuss the material anew. Firstly, this is what one would expect to find in a handbook on laryngeal developments in Latin. In the second place, Beekes has not confronted every individual word with the only serious alternative

theory, that of Kuryłowicz's morphological zero grades (1956, pp. 174 ff.).

The latter theory is not based on a phonetic rule but on a morphological tendency. It states that an original ablaut *(C)ReH / (C)RH* was obliterated in Italic, Celtic and Greek in the case of $*h_2$ (both forms yielding *Rā*) and, as far as quantitative ablaut is concerned, also in the case of the other laryngeals (original full grade becoming *CRē* or *CRō*, and original zero grade becoming *CRā* in Italic and Celtic, and *CRē*, *CRō* in Greek). In this situation, the quantitative ablaut could be restored, in Italic and Celtic by replacing *CRā* < **CRH* by *CRă* after the model of e.g. **dhē- : *dhă-*, **dō- : *dă-*, **stā- : *stă-*; and in Greek by replacing *CRē*, *CRā*, *CRō* < $*CRh_1$, $*CRh_2$, $*CRh_3$ by *CRĕ*, *CRă*, *CRŏ* after the model of e.g. **dhē- : *dhĕ-*, **dō- : *dŏ-* and **stā- : *stă-* (Kuryłowicz op. cit. 175). The clearest and most convincing examples come from Greek: τέτληκα : τέτλᾰθι, τέθνηκα : τέθνᾰμεν. Here there is a clear model, viz. ἔοτηκα : ἐοτᾰμεν, and a clear motivation, viz. the regularization of the ablaut in a verbal paradigm. Precisely because Kuryłowicz's morphological zero grades are conditioned by morphological factors, that is, by the operation of analogy, which interferes with regular phonetic processes, one must find both a model and a motivation for every individual instance. This is where, in my opinion, Kuryłowicz has gone astray sometimes, e.g. in the case of Lat. *glăber* 'smooth' < **ghlHdhro-*, where he assumes a morphological zero grade (op. cit. 175). Since *glaber* is an *o*-stem, the root was not subject to ablaut and there is no motivation for introducing a morphological zero grade; and since **ro*-adjectives do not generally dictate the introduction of a morphological zero grade, cf. *gnārus* (not **gnărus*) < $*ǵnh_3$*-ro-*, there does not appear to be a model either. We therefore have to look for a different explanation of *glaber*. It does not suffice to claim that in general *CRH-* yielded *CRă-* if the full grade was *CReH-*, firstly because there are counterexamples, e.g. *gnārus* (cf. *nōscō*, *nōvī*); secondly because this would turn a morphological tendency into a phonetic rule, which is impossible.

Kuryłowicz claimed (op. cit. 201) that after a word-initial sonant Latin *-ă-* < **-H-* is a morphological zero grade of **-ā-* (e.g. *lăssus*, not **lāsus*, < $*lh_1d$*-to-*). He could make this assumption because all cases happen to fall within his category of original zero grade **(C)RH-* : full grade **(C)ReH-*, where the morphological zero grade is supposed to be original. That all

instances of word-initial Latin *Ră-* fall into this category is true, but I think that this is a mere coincidence, and not a significant fact: roots of the shape *#RH(C)* always have a full grade *#ReH(C)*, simply because the alternatives *#eRH(C)* and *#RHe(C)* are impossible in Indo-European.

1.2.2. Material

After these preliminary remarks, we can proceed to the material. It must be noted that *IHC-* is primarily discussed here, and not in section E.13.1 (where the instances are simply listed) because this constellation is particularly relevant to the problem. The forms are presented in alphabetical order.

1. *iaciō*, *iēcī*, *iactum*, *iacere* 'to throw' and stative (in this case resultative) *iacēre* 'to lie' has generally been connected with Gr. ἵημι, ἵεμεν, aor. pl. ἕμεν < *i̯i-i̯eh$_1$-mi, *i̯i-i̯h$_1$-, aor. *i̯h$_1$- 'to make go, move'. In that case, *iacere* would reflect *i̯h$_1$-k-. But if, as Peters proposed (1976, 160), the root was *Hieh$_1$-, one would perhaps expect *Hih$_1$- > ī- in both Greek and Latin. However, as appears from the etymology of Lat. *vannus* and *vacuus* (see F.1.2.1), the Latin evidence even then favours a development to *ia-*.

One could assume that *iaciō* is analogical: *iaciō*, *iēcī* after *faciō*, *fēcī*, i.e., *iaciō* is a morphological zero grade: there is a model (*faciō*, *fēcī*) and there is a motivation (viz. productive ablaut, cf. *agō* with analogical *ēgī*). But it will be noted that *agō*, *ēgī* is not an exact parallel because here the perfect is analogical, not the present. The most likely assumption therefore is that *iaciō* is a regular form, although it is difficult to use it as proof. Moreover, if it reflects *Hih$_1$-, it does not belong here.

2. *lăbāre* 'to slip, to fall, to trip, to subside' is cognate with *lābī* 'to slip away, make a mistake', *lābēs* 'stain, fall' < *(s)leh$_2$b-. Cognates are discussed in section D.1.3.2.1 no. 18. SCr. *slȁb* points to *sleh$_2$b- as well. OHG. *slaf*, Dutch *slap* 'weak' reflect *slh$_2$b-o- (I hope to return to *RH > Germ. *Ră* in a separate article).

It has been assumed that verbs in *-āre* trigger morphological zero grade: compare *nătāre* (cf. *nāre*), *vădāre* (cf. *vādere*). But it must be observed that *natāre* and *vadāre* belong to the category under review (initial *RHC-*) and cannot therefore be used as evidence at this stage. What is more, *plăcāre* does not have morphological zero grade, in contrast to

the *ē*-stative *plăcēre* (see D.1.3.2.1 no. 19). Consequently, there is neither a motivation nor a model for replacing a form **lābā-* by *lăbā-*.

It has also been suggested that *lăbāre* is the result of pretonic shortening of **lābā-* < **(s)leh₂b-eh₂-* (Kortlandt 1981, 7). But there is really not enough evidence to prove pretonic shortening in other positions than before a resonant (see chapter V.B).

I think that the simplest solution is that the intensive *ā*-verbs, which originally had zero grade of the root (see Leumann 1977, 549), regularly developed into the attested Latin forms, and that no analogical remodelling intervened: **(s)lh₂b-eh₂-*, **uh₂dh-eh₂-*, **plh₂k-eh₂-* became *lăbā-*, *vădā-*, *plācā-*, like *dīcāre*, *-dŭcāre* beside *dīcere* < **deik-*, *dūcere* < **deuk-*. *plācāre* and such cases as *com-plĭcāre* < **-plek-* show that zero grade was not productive in this category. On *nātāre* see below, no. 14.

In the case of *lăbāre*, a complication arises from the fact that cognates in other languages have initial *s-*, so that one would expect **slh₂b-* > *lāb-*. But the *s-* could be a mobile *s-*, and therefore possibly absent in the predecessor of the Latin form. Alternatively, as Beekes suggested (1988b, 42), **s-* possibly did not hinder the development *RH-* > *Ră-*. For Greek at least there are good examples (λαγαίνω, λαμβάνω, ἀδεῖν, Beekes 1988b, 33).

3. *lacer, -a, -um* 'torn, tearing', from which is derived *lacerāre* 'to tear' and *lancinăre* 'to tear apart', a derivative in *-ināre* (Leumann 1977, 551). It reflects an adjective **lakero-*, which exists beside a verbal stem with nasal infix **lank-*. This is strongly reminiscent of *sacer*, *sancīre*. Its only cognates are found in Greek: the root aorist ἀπέληκα· ἀπέρρωγα. Κύπριοι (Hes.) < **-leh₂k-m* may be old. (Note that the ms. has ἀπέλυκα! Since the root has **h₂* (cf. λακίς), one should read Cypr. απέλᾱκα; Prof. C.J. Ruijgh p.c.). Further, there are λακίς, -ίδος 'rag, tatter, strip', λακίζω 'tear apart' and the gloss λάκη· ῥάκη. Κρῆτες (Hes.), apparently an *s*-stem, which point to **lh₂k-* (Beekes 1988b, 27). Russ. *laxón*, Pol. *łach* 'rag, tatter' would confirm the laryngeal if they are cognate and reflect **leh₂k-s-*.

It is not easy to interpret the *-ă-* of *lacer*, *lancinare* as a morphological zero grade. Although there is no trace of full grade **lāk-* < **leh₂k-* in Italic, it is perhaps conceivable that an ablauting aorist paradigm **leh₂k-* : **lh₂k-* became

lāk- : lăk-, the latter as a morphological zero grade, in Proto-Italic; and that *lanc-ināre* was based on this **lăk-*. But even if this highly hypothetical scheme is accepted, it is difficult to explain the nominal form *lăcer*. It is unlikely that this is based on the remodelled verbal stem **lăc-*. I conclude that it is likely that *lacer* is the result of a regular phonetic development from **lh₂k-* rather than the result of a complicated and unlikely chain of hypothetical morphological developments.

4. *languēre* 'to languish, waste away' and *laxus* 'loose' have generally been derived from a root **(s)lh₂g-* found in Gr. aor. λαγάοοαι (on which pres. λαγαίω 'to slacken' is based, Chantraine 611), λάγνος 'wohllüstig' < **(s)lh₂g-no-*, and in the nasalized forms λαγγ-άζω 'to become weak', λάγγων 'weakling' < **(s)lh₂-n-g-* (Beekes 1988b, 27), and probably also in λωγάνιον 'dewlap' < **(s)loh₂g-*. λήγω 'to cease' cannot be cognate because it apparently has **ē* (Chantraine 636). Note that the reconstruction of a laryngeal is necessary in order to explain λαγγ- (**(s)lng-* would certainly have given *λαγ-) and λωγάνιον. The form λογγάζω has a different meaning, viz. 'zögern, zaudern, verweilen', and is probably not cognate. It may perhaps be connected with **sleng-* found in OIc. *sløkkva* 'to extinguish, quench' < **sleng-w-*, Dutch *slinken* 'to become less, smaller' < **sleng-*. If so, λογγάζω must have *o*-grade of the root, which is surprising in a verb, unless it is a recent denominative (cf. Dutch *slank*, Germ. *schlank* < **slong-*). As to *languēre* etc., outside Greek there is evidence for a laryngeal in Toch. A *slākkär*, B *slakkare* 'weak, sad' < **slh₂g-*. OIc. *slakr*, OS. *slac*, OE. *slæc* 'weak, soft' probably also reflect **slh₂g-* in view of OWNorse *slōkr* 'Herumschleuderer, heruntergekommener Mensch' < **sleh₂g-*. Skt. *ślakṣṇá-* 'slippery, smooth, soft' (from **slakṣṇá-* with assimilation) can be explained from **sleh₂gsno-* by Lubotsky's rule (1981, 133-138).

languēre can reflect either **lang-u-* or **lāng-u-*, the latter by shortening before *RC*. It cannot therefore be used here. *laxus* < **lh₂g-so-* can alternatively be explained in the same way as *glăber* < **ghlHdhro-*, in which **RH* apparently yielded *Ră* before stop + consonant (see section D.1.3.4 below). This etymon does not therefore offer independent evidence for *#RHC- > #RăC-*. Note that it has initial **s-*.

5. *lascīvus* 'playful, frolicsome' looks like a derivative in *-īvus* (cf. *nocīvus*, *vacīvus*) of a *ko*-adjective (cf. *vascus*, *cascus*) formed from the root *las-* < **lh₂s-*. The same root

is found in Olr. *lainn* 'eager' < **lh₂s-ni-*, Gr. λιλαίομαι 'to desire vividly' < **li-lh₂s-io-*, λάοτη· πόρνη (Hes.) < **lh₂s-*, and probably also ληνίς, -ίδος 'a Bacchante' < **lh₂s-n-id-* (Beekes 1988b, 28). Full grade **leh₂s-* is reflected in OCS. *laska*, SCr. *làska* 'flattery' (reflecting PSlav. acute intonation, Kortlandt 1975, 61), Lith. *lokšnùs* 'gefühlvoll, zärtlich'. Skt. *lā́ṣati* 'desires, longs for' is completely unclear and cannot be connected (see Mayrhofer KEWA s.v.).

Since *lascīvus* is completely isolated in Latin, it is unlikely to be the product of analogy in the form of a morphological zero grade. The assumption that short *-ă-* was introduced as a morphological zero grade at a time when the language contained more cognates, on the basis of which *lascīvus* was remodelled, is speculative. Moreover, secondary ablaut seems to have affected verbs rather than nouns.

6. *lassus* 'weary' is a *to*-participle of the root **lh₁d-* found in Gr. ληδεῖν· κοπιᾶν, κεκμηκέναι (Hes.), Alb. *loth* 'to tire', *lodhem* 'to be tired' < **leh₁d-*, and also in Goth. *letan* etc. 'to let' < **leh₁d-*, *lats* 'slow' < **lh₁d-* (Beekes 1988b, 36).

Theoretically, *lassus* can be explained as a morphological zero grade if we assume that it belonged to a verbal paradigm **leh₁d- : *lh₁d-*, which was remodelled to **lēd- :*lad-*. But the presence of this paradigm in Proto-Italic is hypothetical.

Alternatively, *lassus* can be explained in the same way as *glaber* (see no. 4 above, and section D.1.3.4, if that explanation is correct). Thus, *lassus* does not offer independent proof for the proposed rule. On *lassus* and Lachmann's law, see IV.C.1.4.2.

7. *latēre* 'to be hidden' < **lh₂-t-* must be compared with Gr. λήθω (Dor. λᾱ́θω) 'to be hidden' < **leh₂-dh-*, aor. λαθεῖν, λαθρός 'hidden' < **lh₂-dh-ró-*. λανθάνω is probably a recent formation after μανθάνω (Frisk and Chantraine s.v.). The gloss λῆτο, λήιτο· ἐπελάθετο (Hes.) would demonstrate that Gr. θ and Lat. *t* originally were not part of the root. Unfortunately, the formation of this form, especially the diphthong, is unclear.

Thus, *latēre* reflects **lh₂-t-eh₁-*. In view of the morphological zero grade in *plăcēre* (replacing **plāk-* < **plHk-*, contrast *plācāre*), it is possible to assume that *lătēre* represents a morphological zero grade as well, motivated by the fact that zero grade roots were the norm in **eh₁*-verbs. Thus,

latēre does not offer independent evidence for *#RHC- > #RăC-*.

8. *macer, -cra, -crum* 'lean, meager' has convincingly been compared with OIc. *magr*, OHG. *magar*, Gr. μακρός 'long' < **mh₂ḱ-ró-*, Gr. μῆκος 'length' < **meh₂ḱ-os* and Hitt. *maklant-* 'thin, slender'. Beekes 1988b, 25 argued convincingly that μακρός regularly developed from **mh₂ḱró-*. The same must be true for the Latin form. Morphological zero grade is unlikely because there is no evidence that *ro*-adjectives triggered it: cf. *gnārus* < **ǵnh₃-ro-*. Furthermore, *macer* is isolated in Latin.

Nevertheless, *macer* does not offer independent proof for the proposed rule because it may be explained as the regular reflex of **RH* before stop + consonant.

9. *madēre* 'to be humid, imbued with' is generally connected with Ir. *maidid* 'breaks, bursts, gushes', but semantically this does not seem very convincing. Better is the connection with Gr. μαδάω 'to be humid, sodden; to fall off (of hair)' < **mh₂d-* (Beekes 1988b, 29). Skt. *mádati* 'to be drunk' was explained from **meh₂d-* by Lubotsky (1981, 133-138).

Again, as in the case of *latēre*, there is the possibility, albeit remote, that *mādēre* has a morphological zero grade, which replaced **mād-* < **mh₂d-*.

10. *mālus* 'mast, pole' reflects **măsdo-* or **māsdo-*. It must be compared with MIr. *maide* 'stick' < **masdio-*, OIc. *mastr*, OHG. *mast* 'mast' < **masd-* (see e.g. Vendryes s.v.). All forms may reflect PIE. **mh₂s-d-*. Ir. *mátán* 'club, stick?' could reflect full grade **meh₂s-d-*, if it belongs here at all. In view of the adduced cognates, it is more likely that *mālus* reflects **măsdo-* than **māsdo-*.

It is possible that this technical Western IE. word is originally a loan, and that it does not form part of the PIE. inheritance. In that case the reconstruction of a laryngeal is unwarranted. However, if the attractive connection with Lat. *mās, măris* 'man' is accepted (see 11 below), the root must certainly be Indo-European because of the archaic inflection of *mās* in Latin. I therefore tend towards a reconstruction **mh₂sdo-* for Lat. *mālus*. Morphological zero grade must be ruled out because of the lack of both a model and a motivation.

11. The inflection of *mās, măris* 'man' makes an archaic impression. Compare *sāl, sălis* < **sĕh₂l, *sh₂l-es* (see IV.B.1.4.2.1 and IV.C.1.3.6.1). Adams 1985 reconstructed an

s-stem **mh₂-es-*. The Nsg. *mās* can reflect a variety of forms: **mh₂-ēs* seems possible in view of *pūbēs*, *pūberem*, but must be considered less likely because this reconstruction implies that *mās* was originally an adjective, for which there is no evidence; further **meh₂-s* or **meh₂-os* are possible, as Adams suggests, and also **meh₂-ōs*. The Asg. *mărem* probably reflects **mh₂-es-m*, and the Gsg. *măris* stems from **mh₂-s-es*. If **mh₂s-* would regularly have given **mās-*, one would expect a Gsg. **māris*. It is unlikely that the latter form, which was supported by an identical Nsg. and D. and Isg. and several plural cases (see Beekes 1985, 196-207), would have been replaced by **măs-*, which is originally found only in the Asg.

It is unlikely that *măris* contains a morphological zero grade: the model *sāl*, *sălis* will hardly have been strong enough, especially in view of *mōs*, *mōrem*, *mōris*, *flōs*, *flōrem*, *flōris*.

The etymology of *mās* is not straightforward. If we accept, with Adams, the etymology of *masturbārī* (< **mās* + *turbāre*, cf. *mas-carpiō*, a hapax in Petronius, possibly meaning 'hitting the penis'), the original meaning of *mās* was probably 'penis'. Adams thinks of some connection with *mālus* 'mast, pole' etc. < **masd-*, which may indeed be considered (see no. 10 above). In any case, the morphology of *mās* is so archaic and so thoroughly Indo-European that one need not hesitate to consider it to be of PIE. origin.

I conclude, then, that Gsg. *măris* is a probable case of *#RHC- > #RăC-*.

12. *nacca* (also *nacta*) 'a fuller' is probably a loan from Greek. WH. and EM. postulate Gr. **νάκτης*, cf. νάκος (ntr.) 'woollen fleece'. It cannot be used.

13. *napurae* (with *-ā-* or *-ă-*?) 'straw ropes' (hapax, only Festus 168, 26) has been connected with OHG. *snuaba* 'bandelette' < PGerm. **snōƀ-*, OCS. *snopъ* 'δεσμή' < **snop-*. But the formation in *-ura* is unclear: *figūra* is not an apt parallel because it is an innovation itself, Leumann 1977, 316. A root **(s)nHp-*, necessary to explain *napurae*, does not explain OCS. *snopъ* because an interconsonantal laryngeal is dropped in Balto-Slavic. WH. believes that *napurae* is a loan from Etruscan. This was also suggested by EM. Consequently, the word cannot be used.

14. *nātāre* 'to float, swim' is an iterative-intensive derivative of the participle **nă-to-* of *nāre* 'to float, swim' (Leumann 1977,

540, 548). It is cognate with Ved. *snắti* < **sneh₂-ti* 'bathes', Gr. νήχω 'to swim', Dor. νᾶχω < **(s)neh₂-gh-*. Toch. B *nāsk-* 'to bathe' < **nh₂-sk-* proves mobile *s-*.

It is possible to assume that the participle **nătos* replaced **nātos* < **(s)nh₂-to-* by analogy with *status*, *datus*. This, however, is unlikely because there is hardly any evidence for the productivity of morphological zero grade in the *to*-participle (on *cognĭtus* see D.1.3.6.2; the only possible example is *hiĕtāre* < **ghiăto-* based on **ghiā-* < **ǵhieh₂-* in *hiāre* 'to yawn').

I conclude that *nătāre* can best be explained as a regular development of **(s)nh₂-to-*, although it is possible that it reflects a morphological zero grade.

15. *natis* (f.), Gpl. *natium* 'buttock' has been compared with Gr. νῶτον 'back'. Chantraine s.v. claims that the morphological difficulties are insurmountable, but in my opinion it is possible that *natis* and νῶτον are based on an old stem (or root) **neh₃t-*. The transfer of root nouns to the Latin *i*-inflection has good parallels: *nox*, *dens*, *mensis* (Leumann 1977, 343). That root nouns often became *o*-stems in Greek is well known (Schwyzer 1977, 457). But the transfer of a feminine root noun to a neuter *o*-stem probably is not an automatic process. More likely, νῶτον is a derived form, exactly comparable to πέδον, Hitt. *pedan*, derived from **pōd-*. Since this parallel exists, I cannot agree with Szemerényi (1965, 17-24) that the connection of *natis* with νῶτον must be given up. It is possible that νόσφι 'far away' is cognate (< **nh₃t-s-*), see Frisk s.v., Beekes 1988b, 31.

I conclude that it is possible that *natis* reflects **nh₃t-*. Morphological zero grade must be ruled out because *natis* is completely isolated. The assumption that *nătis* may have been remodelled after forms which were lost is speculative.

16. *nătrix*, *-icis* (f.) 'snake' must be compared with Olr. *nathir* (f.), Gsg. *nathrach* < **nh₁tr-ik-* or *-ek-*, W. *neidr*, pi. *nadredd* (Morris-Jones 1913, 210) < **nh₁tr-ih₂-*, and OIc. *naðr* (*o*, masc.), *naðra* (*n*, fem.) < **nh₁tr-*. Full grade of the root is found in OS. *nādra*, OHG. *nātra* < **neh₁tr-*.

The word is possibly a nomen agentis in **-ter-* of the root **(s)neh₁-* 'to spin, weave' of Lat. *nēre*, Gr. νήθω etc. (Pokorny, IEW. 973; WH. s.v.: 'die sich windende'), and therefore very Indo-European. It is unlikely that *nătrix* is a mor-

phological zero grade because both a model and a motivation are lacking. Nevertheless, *nātrix* cannot be used as independent evidence here because a development **RH* > *Rā* would have obtained before stop + consonant anyhow (type *glāber*).

17. *vādāre* 'to wade through, ford', *vādum* 'ford' is cognate with *vādere*, *vāsī*, *vāsum* 'to go, walk, rush', cf. W. *go-di-wawd* 'overtook' < **u̯eh₂dh-*, OIc. *vaða*, OHG. *watan* 'to advance, wade' < **u̯h₂dh-*. The type *vādāre* was discussed under *lābāre* (no. 2 above), where it was concluded that *vād-* probably does not represent a morphological zero grade because the latter was not productive in this category. Moreover, this would not explain *vādum*. I conclude that *vādāre*, *vādum* < **u̯h₂dh-* can be used as evidence (Beekes 1988b, 36).

18. *vallus* 'stake, pale', *vallum* 'fence, line of palisades' have been connected with Gr. ἦλος, Dor. ἄλος 'nail', cf. Aeol. γάλλοι· ἦλοι (Hes.), < **u̯alsno-*? If this is correct, which is likely, the common form must be reconstructed as **u̯h₂lso-*.

There are other words with *Rā-*, which will not be discussed here because they do not reflect *RHC-*: *vannus* (see IV.F.1.2.1 no. 7), *vapor* (see IV.E.4 no. 4), *vagus* (see VI.C. 2.2.2), *vacillō* (no et.), *lacus* (see VI.C.2.4), *lavō* (see VI.C.1.2.1).

1.2.3. Counterevidence.

There are but few forms that could be regarded as counterevidence.

nātus, *nāscōr* are of course irrelevant because they reflect **ǵnh₁-* (IV.D.1.3.2.1 no. 14); *lāna* 'wool' reflects **Hulh₂n-eh₂-* (see ibid. no. 19); *nārus* = *gnārus* reflects **ǵnh₃-ro-* (ibid. no. 13).

There remains one somewhat stronger case:

19. *lāmentum* 'lament' has been connected with OIr. *liid* 'to accuse, reproach' < **leh₁-*. The other clear cognates do not contradict **h₁*: Goth. pret. *laí-lo-un* 'ἔλοιδόρησαν' < **loH-*; Arm. *lam* 'I weep, cry' < **lH-*? Only Greek λαίειν, λαήμεναι· φθέγγεσθαι (Hes.) could point to **lh₂-*, but this form is possibly secondary (see Leumann ap. Chantraine s.v. λάω). But the connection of *lāmentum* with *liid* is not necessary: one could prefer the connection with the root **leh₂-* found in Lat. *lātrāre*, Skt. *rā́yati*, Lith. *lóti* 'to bark' and Gr. λάσκω, aor. ἔλακον, perf. λέληκα 'to shout, howl' <

*leh_2-k-, and possibly also in λαίειν, λαήμεναι. Alternatively, one could assume that the Irish hiatus verb reflects *leh_1s-, in which case *lāmentum*, if cognate, would reflect *las-mn-to- < *lh_1s-. I conclude that *lāmentum* does not offer strong counterevidence.

1.2.4. Conclusion

The material can be arranged in the following diagram:

	probable	possible	unreliable
i-		1 *iaciō* <*ih_1k-	
l-	3 *lacer* <*lh_2k-	6 *lassus* <*lh_1dto-	19 *lāmentum*
	5 *lasc-* <*lh_2s-	7 *lateō* <*lh_2teh_1-	
m-	11 *maris* <*mh_2s-	8 *macer* <*mh_2ḱro-	
		9 *madeō* <*mh_2deh_1-	
		10 *mālus* <*mh_2sdo-	
n-		15 *natis* <*nh_3ti-	12 *nacca*
			13 *napurae*
u̯-	17 *vad-* <*$u̯h_2dh$-	18 *vallus* <*$u̯h_2$lso-	
sR-	2 *lab-* <*slh_2b-	4 *laxus* <*slh_2gso-	
		14 *natāre* <*(s)nh_2-	
		16 *natrix* <*(s)nh_1tr-	

Although the number of probable cases is relatively small, I think that it suffices to show that PIE. *#RHC-* indeed became Latin *RăC-*. The lack of counterevidence (only *lāmentum*, which is weak) is significant. Half of the possible cases may be correct as well. If one prefers to assume that *Ră-* is the result of a secondary zero grade, one must assume that in a number of words the model for the secondary zero grade is completely lost, which turns the whole idea into mere speculation. Moreover, one is then faced with the problem that there are no examples of the regular reflex *#Rā-* except perhaps *lāmentum*. Both considerations, and the fact that the development of word-initial *RHC-* to *RăC-* is phonetically motivated (see below), strongly indicate that PIE. *#RHC-* regularly became Lat. *#RăC-*.

There appear to be two strong cases of the same development after *s-*. Of these, *natāre* had PIE. mobile *s-* (cf. Ved. *snáti* vs. Toch. B *näsk-*) and therefore *s-* need not have been present in *natāre*. As far as can be judged, the root of *labāre* had fixed **s-* (Pokorny's lemma, IEW. 655, is highly unsatisfactory, as the other etymological dictionaries bear out). Beekes (1988b, 33, 40, 42) collected some examples of **sRHC-*

> *RăC-* from Greek: perhaps the presence of this *s-* did not matter for the development, although this is difficult to motivate phonetically.

We may now turn to the phonetic motivation of the development of word-initial *RHC-*. Since every syllable in IE. had a non-syllabic onset (words could not begin with vowels), it is likely that in a sequence of two "vocalizable" sounds at the beginning of a syllable, in this case *RH*, the first sound tended to become the onset of the syllable. As a result, its sonority dropped somewhat below the level of the sonority of *H*, which led to a syllabification *#RḤC-*. The situation that *R* in *RH* tended to become the onset only occurred in word-initial position (the present problem) and word-internally after a vowel (e.g. **temHs-o-* > **temas-o-* in Lat. *temerē*).

1.3. Post-consonantal *RHC* (*CRHC*)

1.3.1. Introduction

There seems to be general agreement about the normal development of **CRHC* in Latin: it yields *CRāC* (see Mayrhofer 1987, 103; Beekes 1988a, 92). In section 1.3.2, the Latin material which attests this development will be discussed. Section 1.3.3 deals with the cases that seem to reflect the same "triple reflex" as is found in Greek. In 1.3.4, we shall dwell upon the cases that seem to have Lat. *CRăC* < **CRHC*. In 1.3.5, the evidence for a development of *CRHC* to Lat. *CaRaC* will be screened. The history of Lat. *nota* and *co-*, *a-gnĭtus* will be discussed in 1.3.6.

1.3.2. Lat. *CRāC* from PIE. **CRHC*

In this section, I aim at providing a complete survey of the material which attests this development. All cases of Lat. *CRāC* will be discussed. If there is comparative evidence that a form contained a laryngeal and if it is probable that there was no intermediate vowel between **R* and **H*, this form must be considered to represent evidence for the development **CRHC* > **CRāC*.

Note that word-initial *Rā-*, if this did not develop from **ṷRā-*, **sRā-*, **ghRā-* or **gnā-*, must always reflect full grade **Reh₂-*, for we have seen that PIE. **RHC-* developed into Lat. *RăC-* (see D.1.2 above). These cases will not therefore be mentioned below. On *frāctum*, which does not reflect a laryngeal, see VI.D.2.1 no. 2.

1.3.2.1. Material

The material is presented in alphabetical order.

1. *clādēs* 'destruction, disaster, defeat' has generally been considered to belong to the group of *calamitās* 'disaster' (root **klh₂-*, see IV.D.2.3.2.1 no. 1) and *-cellō*, *-culī*, *-culsum* 'to beat'. It is said to reflect a root **klad(h)-* (read **klh₂d(h)-*; thus WH., Brugmann I² 749, II² 3 377, Pokorny IEW. 546, Sommer-Pfister 1977, 51, Leumann 1977, 59). The relation between *clādēs* and *-cellō* is said to be identical to that between *caedēs* and *caedō*, *lābēs* and *lābī*, i.e. *clādēs* is a deverbative in *-ē-* < **-eh₁-*.

According to Meillet-Vendryes 1927, 265, **klad(h)-* must be analyzed as the root **kla-* plus a present tense suffix **d(h)* (but this is very rare in Latin, one only finds *tendō*, *tetinī*). However, Sommer 1914, 502 compares Gr. κλαδάοαι 'erschüttern', and sees in **klad-* a root **kla-* with an enlargement **d*.

Before embarking on the connections outside Latin, I must profess my doubts about the correctness of the analyses given above: they imply that the present tense *-cellō* reflects **kelh₂d(h)-ō*, which is a very unusual ablaut. One would rather expect **kleh₂d(h)-*. If *-d(h)-* is not a root-enlargement, but rather a present tense suffix, the problem probably disappears: **kelh₂-d(h)-* is not impossible, but, as said, this suffix is very rare in Latin. It therefore seems more satisfactory to reconstruct *-cellō* as **-kel-n-h₂-*, a nasal present of the verbal root **kelh₂-* found in Lith. *kálti* 'schmieden, schlagen' (thus Pokorny IEW. 546). Then *-culī* regularly reflects **kolh₂-*. And *-culsum* is a reformation introduced from verbs that have *-ll-* < **-ld-*, which in the present were indistinguishable from the nasal presents in *-ll-* < **-ln-* (e.g. *fallō*, *fefellī*, *falsum* and *vellō*, *vellī*, *volsum*, see no. 19 below). It appears from *pulsum*, older **pultum* in view of the intensive *pultāre*, that this ppp. in *-ls-* was indeed productive in Latin. The full grade root in the nasal present **kel-n-h₂-* must be compared with *sternō*, *spernō* (where full grade is either old or recent, which does not affect the argument here).

However, these speculations remain tentative as long as the Indo-European cognates are not investigated. We must now look for comparative evidence for a root form **klh₂d(h)-*. I have taken the material offered by Pokorny loc cit. as a basis.

Gr. κλαδαρός 'fragile, invalid' and κλαδάοαι 'erschüttern' do not reflect **klad-*, but **kl̥d-*. The aorist κλάο(ο)αι 'to

break' must reflect *$k\underline{l}d$-*s*-. Its present κλάω was probably formed on the basis of the aorist (thus Chantraine 1948, 354). The passive κλαοθῆναι can reflect a root *$k\underline{l}d$- as well. The participle (pres. or aor.?) -κλᾰ́ς (Anacreon 17) could be based on κλάοοαι as well, on the model of φθάοαι - φθᾰ́ς (thus Frisk s.v. κλάω). Perhaps it is easier to assume that it reflects *$klants$ < *$kleh_2$-nt-*s* (cf. οτᾰ́ς < *$steh_2$-nt-*s*), from the root *klh_2-. καλαδία· ῥυκάνη (Hes.) is unreliable, and cannot be used to support *klh_2d- (see Frisk s.v.). Thus, Greek points to *$k\underline{l}d$-, and possibly to *klh_2-, but not to *klh_2d-.

OCS. *klada* 'Balken, Block', SCr. *klàda*, Russ. *kolóda* 'block of wood, trunk' probably reflect *$kold$-, with acute intonation due to Winter's law, and not *$kolh_2d(h)$-. Lith. *káldinti*, Latv. *kaldît* 'schmieden (lassen)' are causatives in *-dinti*, *-dît* of the root reflecting *$kolh_2$-: *d* does not belong to the root (cf. Lith. *áusti* 'to weave', *áusdinti* 'to make weave'). Thus, Balto-Slavic does not point to *$klh_2d(h)$-.

The connection of OIr. *claidid*, W. *claddu*, Bret. *klazhañ* 'to dig' < *$klad$-, W. *clawdd*, Bret. *kleuz* 'ditch, pit, mine' < *$klād$- with *clādēs* etc. is too uncertain to be relied upon: the Celtic forms are a semantic unity, clearly distinct from 'to beat, split' (thus Vendryes C-109). Semantically, the connection of PBrit. *$kladimo$- 'sword' in W. *cleddyf*, C. *clethe*, MBret. *clezeff*, Vann. *kleañ* with *clādēs* is less problematic, but the evidence for **a* is based on OIr. *claideb* alone, which is a loan from Welsh (Kelly 1972, 192f., McManus 1983, 34) and therefore less reliable. Moreover, it is a well-known Irish phenomenon that **e* before a palatal consonant may become *a* (cf. 3sg. *saidid*, 3pl. *sedait*, Thurneysen 1946, 53-54). Thus, one could assume PBrit. *$kledimo$- as well as *$kladimo$-. If nevertheless *cleddyf* etc. reflects *$kladimo$-, which is very uncertain, it is not easy to explain this from a root *$klh_2d(h)$-: one would expect *$klād$-. I conclude that Celtic does not provide evidence for *$klh_2d(h)$- either.

A few words remain: on OIr. *coll* 'loss' etc. see Vendryes s.v. OIc. *hildr* (f.) etc. 'fight' may reflect *kel-*dh*-, without a laryngeal; the same holds for Goth. *halts* etc. 'lame', OIc. OE. *holt* etc. 'wood' (cf. OIr. *caill* 'wood': if it belongs here at all, it cannot be explained from *$klh_2d(h)$-).

Thus, *$klh_2d(h)$- cannot be found in any IE. language. This means that it is improbable that *-cellō* must be reconstructed as *$kelh_2d(h)$-*ō*, which was unlikely from the start anyway because of its structure.

There are two important consequences for *clādēs*: firstly, the relation between *clādēs* and *-cellō* must not be equated with that between *caedēs* and *caedō*, *lābēs* and *lābī*. Secondly, *clādēs* does not reflect **klh₂d(h) + eh₁-*, but rather **klh₂ + dheh₁-*. The latter must then be compared with Skt. *śraddhā́* 'belief' < **ḱred-dheh₁-*, *medhā́* 'wisdom' < **mns-dheh₁-*.

Since the normal full grade of the root **klh₂-* is **kelh₂-* (e.g. Lith. *kálti*), *clādēs* probably reflects zero grade **klh₂-*.

2. *clăm* 'stealthily' probably reflects **klām* < **klh₂-m* (cf. *rĕm* < **rēm*), an adverbialized accusative. It belongs to the root **ḱel-*, **kelh₂-*, cf. Lat. *oc-culĕre*, *cēlāre*, Olr. *ceilid*, Gr. καλύπτω (see IV.C.1.3.5.2 and 3).

3. *clāmāre* 'to call' and probably also *clārus* 'bright' (orig. of sounds) belong to the root **klh₁-* attested in Lat. *calāre* 'to call' (see IV.D.2.3.2.1 no. 2), Gr. καλέω 'id.', κληδήν 'by name'. They consequently reflect zero grade **klh₁-m-* and **klh₁-ro-*.

4. *clāvis* 'key, bar' and *clāvus* 'peg, pin' are cognate with *claudere* 'to close, lock'. This verb may reflect **klāud-* < **klāu̯-Vd-* or **klau-d-* < **kleh₂u-d-* (thus EM.). In section IV.E.13.2.3 it will be argued that a sequence **CRHuV-*, like **CRHiV-*, probably developed into Lat. *CaRvV-*, not into *CRāvV-* (cf. *calvus*, *valvae*). If this is accepted, *clāvis* and *clāvus* must reflect full grade **kleh₂u̯-*. Doric κλᾱ́ς, Ionic κλῆς '(rowing) pen, key' < **kl(e)h₂u̯-īd-* demonstrate that the root contains **h₂*. According to Frisk s.v., this form in *-īδ-* was derived from a noun **klāw(o)-* found in Lat. *clāvus*, just as κνημῖδ- was derived from κνήμη, and χειρῖδ- from χείρ. According to EM., *clāvis* resulted from a contamination of *clāvus* with Gr. **κλᾱ́Fις*. WH. rightly think that this is unlikely.

Since the root was **kleh₂u-*, SCr. *ključka* 'key, hook' < PSlav. **klěuk-* (with acute intonation) probably goes back to a form with metathesis of **-h₂u-* to **-uh₂-* in the zero grade and with secondary *e*-grade.

Olr. *cló* and W. *clau* 'key' are probably loans from Lat. *clāvus* (Vendryes C-121).

I conclude that in view of *calvus* and *valvae*, *clāvus* and *clāvis* probably reflect full grade **kleh₂u̯-*. *claudō* may reflect **kleh₂u-d-* or **kleh₂uVd-*.

5. *crābrō* 'hornet' reflects **krāsrōn*. The cognates in other languages all point to a common zero grade base **ḱrHs-*, but they differ in the form of the suffix. Latv. *sirsuonis*, *sirsnis* 'hornet', Lith. *širšuõ*, old Npl. *širšuones*, *širšuonas* 'hornet' reflect an *n*-stem **ḱrHs-ōn*, as does Russ-CS. *sьršenь* 'id.' and OHG. *hornuz*, Eng. *hornet* < **ḱrHs-n-*. A suffix *-l-*, which probably is a dissimilated *-r-* (cf. *crābrō*), is attested in MoDutch *horzel* 'hornet' and SCr. *sȓšljēn* 'id.' < **ḱrHs-l-*. This suffixal *-r-* was possibly lost by dissimilation in the Baltic, Germanic and Russ-CS. forms mentioned above. Alternatively, *crābrō* reflects an *r/n*-stem.

However this may be, all languages have zero grade in the root and consequently Lat. *crābrō* reflects **ḱrHs-*. See also Nussbaum 1986.

6. *crātis* 'any plaited object, lattice' could be compared with OHG. *hurt* 'wicker-work of willow', Goth. *haúrds* 'door', OIc. *hurð* 'id.', OS. *hurth* 'Geflecht'. These Germanic forms do not point to the presence of a laryngeal, and one may reconstruct a PGerm. **krt-*. It is possible to connect Skt. *cṛtáti* 'to bind, attach' and *kṛṇátti* 'to twist' < **k(e)rt-* with the Germanic forms (thus Pokorny IEW. 584). If this is accepted, one must conclude that the root did not contain a laryngeal, and thus that *crātis* is not cognate. But this is a mere possibility, the best connection so far being that of *crātis* with the Germanic forms. Since there are no cognates of *crātis* that point to a laryngeal, it is difficult to use it as evidence for the development **CRHC* > *CRāC*.

7. On *flāgitāre* < **bhl(e)Hg-* see IV.D.1.3.4.1 no. 2.

8. *flāmen* 'kind of priest'. Leumann 1977, 371 compares *flāmōnium* 'the position of a *flāmen*' and concludes from it that *flāmen* replaces **flāmō* or **flāmē*. I fail to understand his line of reasoning: one cannot see why **flāmō*, a perfectly normal Nsg. of an *n*-stem, would have been replaced by the unique masc. Nsg. *flāmen*. Nor can one see how to conclude from *flāmōnium* that the Nsg. was **flāmē*, or why the uncommon Nsg. type **flāmē* was replaced by the equally uncommon Nsg. masc. *flāmen*. If *verrēs* reflects an *n*-stem **verrē* (cf. Gr. ὄρσην (?), Skt. *vṛ́ṣan-*), one would rather expect **flāmēs*. In my opinion, one must conclude that there is every reason to consider *flāmen* to be the original form, exactly because its form is uncommon. On *flāmōnium* (< **flāmimōnium* ?) see EM. s.v. *flāmen*.

According to EM., there is some probability in connecting *flāmen* with Skt. *bráhman-* (ntr.) 'prayer', *brahmán-* (masc.) 'priest'. According to Leumann 1977, 199 and WH. s.v., this is uncertain. The Skt. forms point to PIE. **bhreǵh-* (or **bhleǵh-*), which could never yield Lat. *flā-*. If we abstract from the latter point, the etymology presupposes the presence of **-ǵh-* in the protoform of *flāmen*. From PIt. **bhlāgh-mn* one would expect either **flāgmen* (cf. *agmen*, *fragmentum*) or **flāmmen* (cf. *flamma* < **bhlagmā-*) > *flāmen* (cf. **kadtos* > **cāssus* > *cāsus*). If the latter is correct, one cannot use the development of **ghm* as a counterargument for the etymology. In view of the fact that the connection of *flāmen* with *bráhman-* leaves Lat. *-ā-* unaccounted for, the etymology must be given up. Mayrhofer (KEWA, with an extensive discussion) prefers to connect *bráhman-* with OIc. *bragr* 'poetry' < **bhrogh-*.

More probable is the connection of *flāmen* with OIc. *blóta* 'to sacrifice', *blót* 'sacrifice', Goth. *blotan* 'to honour' < **bhleh₂-d-* or **bhleh₃-d-*. If the form *flāmen* is old, it could be a personified neuter (like *augur*, see EM.), in which case *e*-grade of the root is most probable: *flāmen* < **bhleh₂-mn*. Thus, it does not provide reliable evidence for the development under review.

9. *flāre* 'to blow' must be compared with OHG. *blāen*, OE. *blāwan* 'to blow' < **bhleh₁-ie/o-*, OHG. *blāsan* 'id.' < **bhléh₁-s-*. **flā-* must reflect zero grade **bhlh₁-C-*. The ppp. *flātus* regularly developed from **bhlh₁-to-*.

follis 'leather bag filled with air, ball' clearly diverges from the semantics of *flāre* and must not be compared, despite EM. s.v.

10. *flāvus* 'yellow, blond' must be compared with *flōrus* 'id.' < **bhleh₃-ro-*. In view of OHG. *blāo* 'blue, yellow' < **bhleh₁uo-* < **bhleh₃uo-*, *flāvus* itself probably reflects full grade **bhleh₂uo-* < **bhleh₃uo-*, in accordance with what will be said in section IV.E.13.2.3. It cannot therefore be used here.

11. *frāgum* 'strawberry' resembles Gr. ῥάξ, ῥᾶγός 'grape'. Both could reflect **srāg-*. But in Greek one also finds ῥώξ 'id.' According to EM. the word is not Indo-European, but a loan from a Mediterranean language (see also Furnée 1972, 126). Frisk s.v. ῥάξ does not mention *frāgum*. WH. consider the connection with *fragrāre* extremely doubtful. Consequently, a reconstruction cannot be attempted. See also IV.F.1.2.2 no. 2.

12. *frāter* 'brother'. Goth. *broþar*, Toch. A *prācar*, B *procer*, and Skt. *bhrā́tar-* 'id.' must continue full grade **bhreh₂-ter-*. Theoretically, one could assume that Lat. *frāter*, O. *FRATRÚM* (Gpl.), U. *FRATER* (Npl.), OIr. *bráthir*, W. *brawd* and Gr. φρᾰ́τωρ continue a zero grade root because of PIE. ablaut, but this assumption cannot be substantiated by any form and must be rejected.

13. *(g)nārus* 'who knows, known' belongs to the root **ǵneh₃-* found e.g. in Gr. γιγνώσκω < **ǵi-ǵnh₃-sk-*, γνωτός < **ǵnh₃-tó-*. Both **ǵneh₃-* and **ǵnoh₃-* would yield Lat. *(g)nō-*, e.g. in *nōscō*, *nōvī*, *nōtus* (see 1.3.3 below). Thus, *gnārus* must reflect zero grade **ǵnh₃-ro-*. On *(g)nāvus* < **ǵneh₃-u̯o-* see IV.E.13.2.3.2.2. On *cognitus*, *agnitus* and *nota* see 1.3.6 below.

14. *(g)nātus* 'born' is the ppp. of the root **ǵenh₁-* found e.g. in Gr. γενέτωρ, Lat. *genitor* < **ǵenh₁tōr*, Gr. κασί-γνητος 'brother', Skt. *jātá-* < **(-)ǵnh₁-to-*. Consequently, Lat. *(g)nātus* doubtlessly reflects **ǵnh₁-to-* as well. Since verbs in *-sk-* generally have zero grade in the root, *nāscor* 'to be born' must reflect **ǵnh₁-ske/o-*.

15. *grāculus* 'jay' can possibly be compared with OIc. *krāka* 'crow', *krākr* 'raven' < **greh₁-g-*, and Russ.-CSl. *grakati* 'to crow', *grajati* 'id.' < **groh₁-*, OHG. *krāen* 'to crow' < **greh₁-*. However, it is doubtful whether regular correspondences exist between these words, which are suspect of being onomatopoetic and expressive. Thus, it is not clear whether *grāculus* may be traced back to **grh₁ke/o-*, although this is a good possibility. WH. and EM. compare Lat. *gracillō* 'gackern (von Hühnern)' and *garrīre* 'to babble'. The latter possibly stems from **grh₁-ie/o-*, with expressive gemination of **r*. Given the nature of these terms, no firm conclusion can be based on them.

16. *grānum* 'grain' corresponds exactly with OIr. *grán*, W. *grawn* 'grain' < **ǵrānom*. Since Goth. *kaúrn*, SCr. *zr̀no* 'id.' and Lith. *žìrnis* 'pea' have a zero grade root and continue **ǵrH-n-*, the Italic and Celtic words most likely continue this zero grade as well.

17. The nearest cognate of Lat. *grātus* 'welcome, pleasant', *grātiae* 'thanks' can be found in O. *brateis* 'gratiae' and Paelignian *bratom* 'munus'. The Proto-Italic form was **gʷrāto-*. The root **gʷrH-* is attested in Skt. *gṛṇā́ti* 'sings, praises' <

*$g^{w}r$-n-eH-ti, gūrtí- 'praise' < *$g^{w}rH$-ti- and Lith. gìrti 'to praise' < *$g^{w}rH$-. Since the to-participle generally triggers zero grade in the root, grātus doubtlessly reflects *$g^{w}rH$-to-.

18. lābēs, Gsg. -is 'stain, fall', lābī 'to slip (away), make a mistake' must reflect full grade *(s)leh$_2$b- because one also finds lăbāre 'to slip, to fall, trip, subside', evidently from PIE. *(s)lh$_2$b- (see D.1.2 above). lăbāre cannot reflect a secondary, morphological zero grade because verbs in -āre never triggered this: cf. plācāre (no. 21 below). In view of dīcāre, -dŭcāre etc., a zero grade root was normal in old denominative verbs of this type, which justifies my reconstruction of lăbāre.

In view of the Latin words, OCS. slabъ, SCr. slȁb 'weak' reflect *sleh$_2$b-: intonation and vowel quality cannot be ascribed to Winter's law. Lith. slõbti 'to have a weakness', which replaces *slóbti (thus Būga 1924, 288) can also reflect *sleh$_2$b-.

Evidently, Goth. slepan 'to sleep', OIc. slápr 'drunken person' cannot be cognate because they point to a root *sleh$_1$b-. As far as can be relied on the semantics, OHG. slaf, Dutch slap belong to *sleh$_2$b-: they probably show the same unexpected reflex of *CRHC as OHG. glatt, Dutch glad < *ghlh$_2$dh-.

Skt. lámbate 'hangs' is not cognate because there is no reflex of a laryngeal. Mayrhofer KEWA s.v. connects it with Lat. limbus, MHG. limpfen 'to limp'.

In conclusion, lābēs, lābī reflect full grade roots. lăbāre belongs in the category discussed in D.1.2.

19. lāna 'wool' reflects *HulHneh$_2$- (i.e. PIE. *HulHneh$_2$- > *ulHneh$_2$- > *u̯l̥Hneh$_2$-, in order to account for the vocalization of Latin; prob. *Hulh$_1$neh$_2$-, Peters 1987), with zero grade of the root, as is shown by its cognates Skt. ū́rṇā, Av. varənā, Lith. vìlna, OCS. vlъna, SCr. vũna and Goth. wulla < *Hulh$_1$neh$_2$-. Short -ă- of Olr. olann, W. gwlan has not received a satisfactory explanation yet, but it seems clear that the words continue a zero grade root as well (see IV.D.2.3.2.1 no. 20). Gr. λῆνος 'wool' is an s-stem, which is either young and formed after εἶρος, πέκος (Frisk, with reservation) or old and equated with Lat. vellus 'wool shorn off, fleece', if the latter reflects *Huelh$_1$nos (see below). Hitt. ḫulana- and Luw. ḫulaniš allegedly mean 'wool' and show that the root had an initial laryngeal. One also finds Hitt. ḫuliia- 'wool', which has a different formation. Arm geɫmn

'wool' continues **Huel(H)mn*, if it is cognate (see esp. Beekes 1988a, 93-94 note 9 and below).

As it stands, there is no reason to doubt that Lat. *lāna* reflects **u̯lāna* < **Hulh₁neh₂-*. Apparently, the **u* was consonantal at some stage, so that following **-lh₁-* was **-l̥h₁-*, which became *-lā-*. Compare the development of **HRHC-*, which became Lat. *RăC-*, probably via **HR̥HC-* > **R̥HC-* (see IV.F.1).

In this context, it may be useful to discuss whether Lat. *vellus*, Gsg. *velleris* and *vellō*, *vellī*, *volsum* 'to pluck, pull (hair, feathers)' belong to the same root as *lāna*. Note that EM., WH. and Frisk agree in accepting this connection, although EM. admit: "Le caractère de la racine rend malaisé le rapprochement".

It seems to be clear that *vellus* cannot have contained a laryngeal: **u̯elHnes-* would undoubtedly have yielded **u̯elanes-* > **u̯elnes-* (by syncope) > **volner-*, cf. *ulna* < **olenā-*, and *volnus* 'wound', probably from **u̯elanes-* < **u̯elH-* (see B.1.4.4.1 no. 20). *vellus* must reflect **u̯elnos*, **u̯eld(h)os* or **u̯elsos*. This means that *vellus* cannot be considered to reflect the same formation as Gr. λῆνος and Lat. *lāna*.

According to WH., *vellō* reflects **u̯el-s-*. Unless the *-s-* is some sort of root enlargement, this hypothesis is unlikely because formative *-s-* is used in Latin only to make desiderative verbs of the type *vīsō* < **u̯eid-s-ō*, *quaesō* < **kʷais-s-ō*. Note also that if *-s-* is a root enlargement (type ὀάξω < **h₂u̯eg-s-*), it lacks a parallel in other languages. Thus, **u̯els-* is unlikely.

That *vellō* can go back to **u̯elu̯ō*, cf. Goth. *wilwan* 'to rob' (thus e.g. Sommer 1914, 502), is improbable because there is no evidence for a development **-lu̯-* > *-ll-* in Latin (see IV.E.13.2.3.1 and Solmsen 1905, 437-450).

Further, one may assume that *vellō* reflects a nasal present of the disyllabic root **HuelH-* found in *lāna*. This would imply that the ppp. *volsum* was introduced from verbs in *-ll-* < **-ld-*, like *fallō*, *fefellī*, *falsum*, which is plausible in view of the known productivity of **-ls-* in the ppp.: cf. *pulsum* (from *pellō*), which replaced earlier **pultum* (in *pultāre*). However, if *vellō* originally was a nasal present, one would not expect *-ll-* to have pervaded the perfect *vellī* as well because there are no parallels for this development: *pellō*, *pepulī*; *tollō*, *tetulī*; *-cellō*, *-culī* (see no. 1

above). It is therefore unlikely that in origin *vellō* was a nasal present.

One may therefore conclude that *vellō* reflects **u̯eld-*. Perhaps **u̯elH-d(h)* is possible. This would yield **u̯elad-* > **u̯eld-* by syncope. But it is doubtful whether this late cluster *-ld-* was assimilated to *-ll-* (cf. *valdē* < *validē*, where, however, *-ld-* could have been restored after *validus*). The idea that it was assimilated seems to depend on *Pollūx* < **Poldouk-* < Πολυδεύκης, which is weak because the name may have been transmitted via Etruscan (see recently Steinbauer 1989, 124, who favours this reconstruction). Etymological comparanda do not shed light on the formation.

Arm. *goł anam* 'to steal' proves nothing because *-anam* was productive in Armenian and because it has a different meaning. Goth. *wilwan* 'to rob' reflects **u̯elu-*, which is not found in Latin. Again, the meaning differs. Frisk seems to accept a connection with Gr. ἁλίσκομαι, aor. ἁλῶναι 'to get caught', which is improbable if one considers its meaning. The Greek verb must reflect a root **u̯lh₃-* (see Rix 1976, 74, Lubotsky apud Beekes 1988a, 74).

vellō and *vellus* are likely to be cognate as they are semantically closely akin and as there are no formal problems. This points to a root **u̯eld-*. If Arm. *geł mn* belongs to this root, it reflects **u̯eld-mn̥*.

20. *lātus* 'brought, carried'. In view of Gr. τελαμών 'supporting band, base of a stele' < **telh₂-mōn*, *lātus* reflects **tlh₂-to-* (cf. Gr. τλᾱτός), zero grade of the root being dictated by the morphology of the *to*-participle.

21. *plācāre* 'to appease, calm' can best be compared with Toch. A, B *plāk-* 'einverstanden sein' < **plHk-*, cf. Toch. A *plākäm* 'Erlaubnis', B *plāki* 'Einverständnis'. Thus, the root contains a laryngeal. Lat. *plăcēre* 'to please' probably has a short *-ă-* by analogy with other *ē*-verbs, where a zero grade root and often *-a-* are found regularly, e.g. in *manēre*, *patēre*. This seems to be one of the two instances of morphological zero grade in Latin (see the discussion in IV.D.1.2.1 above; the other possible instance is *hietāre*, based on a ppp. **hiătos*, of the root **ǵhieh₂-* (?); see IV.E.2.4.3 no. 4).

plācāre probably reflects a zero grade root, which is regular in old *ā*-verbs (cf. *labāre*, no. 16 above, *dīcāre*, *-dŭcare*). Note that the Tocharian forms have a zero grade root: **pleh₂k-V-* would yield Toch. B **plok-* (thus according

to Kortlandt ap. Beekes 1985, 20, 208).

The Latin verbs are generally connected with words denoting 'flat, even', e.g. Gr. πλάξ, -κός 'Fläche, Platte' < *plk- etc. Not only do these words have an entirely different meaning, they also reflect a root that did not contain a laryngeal. The connection must therefore be given up.

22. On *plāga* < **pl(e)h₂ǵ-* see IV.D.3.2 no. 5.

23. *plānus* 'flat, smooth' reflects **pl(e)h₂-no-*, cf. Lith. *plónas*, Latv. *plāns* 'thin, flat', Lith. *plóti*, Latv. *plāt* 'to flatten' < **pleh₂-*. Mayrhofer 1987, 103 and note 73a rightly states that one would expect a zero grade root in a *no*-adjective. He therefore assumes that *plānus* reflects **plh₂-nó-*, and that the Baltic forms introduced full grade from the verbal forms, in order to avoid homonymy with Lith. *pìlnas*, Latv. *pìlns* 'full' < **plh₁-no-*. Compare the opposite development in Lat. *plēnus* 'full' (see IV.D.1.3.3 below).

24. *prātum* 'prairy, field' has been connected with Olr. *ráith*, *ráth* 'earthen wall' < **(p)rāt-* (Vendryes s.v., with reservation). EM. rightly point out that neither the meaning nor the form fits well. If one nevertheless accepts the connection, it may be doubted whether the etymon goes back to PIE., and, if so, whether it reflects a zero grade **prHt-*. Steinbauer's suggestion (1989, 252 note 14) that *prātum* reflects **prh₃-to-* 'Zugeteiltes' is possible but cannot be verified.

25. *quadrāgintā* 'forty' reflects **kʷtr-Hgnt-h₂*. **Hgnt-* itself reflects **dḱmt-* = **'tḱmt-*, with *'t*, a glottalized *t* according to the theory of glottalized consonants. The **'t* was responsible for the lenition of the following **k* to **g*, and the glottal element of **'t* itself merged with the laryngeals, probably with **h₁*, which was a glottal stop, while the alveolar was lost. Compare *vīgintī* 'twenty' < **(d)wi-Hǵmt-iH* < **'twi-'tḱmt-iH*, and the etymology of Gr. ἑκατόν 'hundred' < **h₁ḱmtom* < *'tḱmtom*. Thus according to Kortlandt 1983a, 97-104.

Strictly speaking, *quadrāgintā* does not belong in the category under review.

26. *rādīx* 'root, base' is cognate with Gr. ῥᾰ́δῐξ 'branch' and OIc. *rót* < **u̯r(e)h₂d-*. Lat. *rāmus* 'branch' and *rāmes*, *-itis* 'stick' may, but need not reflect a form with **d*. Lat. *rădius* 'staff, beam' is semantically and formally aberrant, and it is doubtful whether it belongs here. W. *gwraidd*, OCo. *grueiten*, MBret. *gruizgenn* 'root' reflect **gwreið-* <

*uradio- < *urh$_2$dio- (compare the equally problematic forms W. *gwlad*, Olr. *flaith* < *ulHti- and the 'wool'-word (no. 19 above); see IV.D.2.3.2.1 no. 20). Goth. *waúrts*, OE. *wyrt*, MHG. *wurz* 'root, herb' reflect *urh$_2$d-i-.

The root *urh$_2$d- must be distinguished from *u̯rid- in Gr. ῥίζα, Lesb. βρίσδα and in W. *gwrysg* 'branch' < *u̯rid-sko-, Olr. *frén* 'root' < *u̯rid-no-. In view of the alternative forms (ὁρόδαμνος, ῥόδαμνος, ῥάδαμον) and the suffix *-amn-*, Gr. ῥόδαμνος is probably non-Indo-European (see Furnée 1972, 344). In view of the Celtic cognates, ῥίζα is probably of PIE. origin.

Since OIc. *rót* reflects a full grade root, and the Germanic and most likely the Celtic forms reflect a zero grade root, one cannot decide whether *rādīx* reflects *u̯rh$_2$d- or *u̯reh$_2$d-.

27. *rāvus*. In section IV.E.13.2.3 it will be held that *rāvus* probably reflects *ǵhreh$_2$-u̯o- < *ǵhreh$_3$-uo- in view of OHG. *grāo*.

28. *strātum* 'spread', *strāmen* 'straw', *strāgēs* 'sinking, defeat, destruction' etc. belong to the root *strh$_3$- found in the Gr. perf. ἔστρωμαι 'I have spread', στρωτός 'spread' < *strh$_3$-, Skt. *stīrṇá-* 'spread' < *strh$_3$-no- (Beekes 1969, 211, 213). Since the root was *strh$_3$- and since the *to*-participle triggers zero grade in the root, *strātum* reflects *strh$_3$-tó-. See IV.C.2.2.2.2 for *strāvī*.

29. On *trāgula* see D.1.3.4.1 no. 9 below.

1.3.2.2. Conclusion.

The development of PIE. *CRHC to Lat. *CRāC is supported by the following words:

probable	possible	uncertain
2 *clāmare, clārus* <*klh$_1$-	1 *clādēs* <*klh$_2$dheh$_1$-	4 *clāvus*
	2 *clam* <*ḱlh$_2$m	6 *crātis*
5 *crābrō* <*krHs-	15 *grāculus* <*grh$_1$-?	7 *flāgitāre*
10 *flāre* <*bhlh$_1$-	21 *plācāre* <*plHk-	8 *flāmen*
13 *nāscō* <*ǵnh$_1$-	26 *rādīx* <*ur(e)h$_2$d-	9 *flāvus*
14 *gnārus* <*ǵnh$_3$ro-		11 *frāgum*
16 *grānum* <*ǵrHno-		12 *frāter*
17 *grātus* <*g^{w}rHto-		18 *lābēs*
19 *lāna* <*HulHneh$_2$-		22 *plāga*

probable	uncertain
20 *lātum* <**tlh₂to-*	24 *prātum*
23 *plānus* <**plh₂no-*	27 *rāvus*
28 *strātus* <**strh₃-*	29 *trāgula*, *trāxī*

There appears to be sufficient evidence to show that the correctness of **CRHC* > *CRāC* cannot be doubted.

1.3.3. Alleged triple reflex

In view of the conclusion reached above, the following forms must receive an explanation:

1. *(g)nōtus* cannot reflect **ǵnh₃-to-*, cf. *(g)nārus* < **ǵnh₃-ro-*. *nōtus* must therefore have analogical full grade. The same obtains for *nōscō*, where one expects PIE. zero grade. The full grade may have been introduced from the perfect and/or from the old root aorist. This development was probably stimulated by the unpleasant homonymy of **gnātos* 'known', **gnāskō* 'to know' with **gnātos* 'born', **gnāskō* 'to be born' < **ǵnh₁-* (thus Mayrhofer 1987, 103).

2. *plēnus* 'full' cannot reflect **plh₁-no-*, despite Skt. *pūrṇá-*, Lith. *pìlnas* etc. < **plh₁-no-*. *plē-* reflects full grade **pleh₁-*, which was introduced from the verb *plēre*. This procedure avoided homonymy with *plānus* < **plh₂-no-* (see 1.3.2.1 no 23; thus Mayrhofer 1987, 103).

3. For *sprētus* 'despised' one would expect **srātus* < **sprh₁-to-*. Apparently, the latter was replaced by *sprētum* after the perfect *sprēvī*, in order to obtain a more regular paradigm. Mayrhofer 1987 note 73a regards *sprētum* as a problem. In my opinion this is not necessary: the replacement of **srātus* can be compared with the replacement of *crēvī*, *certus* by *crēvī*, *crētus*; its purpose was not to avoid homonymy but rather to obtain a regular paradigm. One may also reckon with influence of the supinum or nomen actionis *sprētu-* < **spreh₁-tu-*. On further cognates of *spernō* see V.D.3.2 no. 5.

1.3.4. Lat. *CLăC* from PIE. **CLHC*

A small body of Latin words has an unexpected reflex of PIE. **CRHC*, viz. *CRăC*. In all instances, the resonant is a liquida. In general, it appears to be difficult to explain this reflex by assuming some sort of analogy (e.g. morphological zero grade, see D.1.2.1 above).

The material will be presented in alphabetical order.

1.3.4.1. Material

1. *classis* 'military summons', whence 'troop' and 'fleet' could, following the ancient tradition (Quint. 1,6,33), be cognate with *calāre* 'to call' < **klh₁-V-* (see D.2.3.2.1 no. 2). Then *classis* would reflect something like **klh₁-d(h)-ti-*. However, this formation has no parallels in other languages. WH. suggest that Gr. κέλαδος 'Getöse, Lärm' < **kelad-* could be a formal parallel, but since **kelh₁d-* would yield Gr. *κελεδ-, this connection must be abandoned, unless one separates *classis* from **klh₁-*. For semantic reasons, the connection of κέλαδος with *classis* is unsatisfactory. Uncertain.

2. *flāgitāre* 'to demand fiercely', deverb. *flāgitium* 'disgraceful act, shame', older 'Ausprügelung' (see WH. on the semantics), is derived from a basic verb **flāgō*. It must, in view of the oldest meaning, be connected with *flăgrum* 'whip'. If the root is of PIE origin (which seems likely if we consider the primary verb), we must reconstruct **bhl(e)Hg-oH* for **flāgō* and **bhlHg-ro-* for *flăgrum*. However, since an adequate Indo-European etymology is lacking, *flăgrum* is at best a possible case of *CRăC* < **CRHC*.

3. *frăgrāre* 'to emit a scent' is probably cognate with Skt. *ghrā́ti*, (AV.) *jíghrati*, ppp. *ghrātá-* 'to smell', *ghrā́ṇam* 'Geruchssinn' < **g(w)hreH-*, and possibly with Gr. ὀσ-φραίνομαι, fut. ὀσ-φρήσομαι 'to smell', ὄσφρησις 'smell' (with ὀσ- < **h₃ds-*?). Frisk notes that it is not clear which Greek forms are old and which are recent. If Skt. *ghrā-* is indeed cognate (Mayrhofer KEWA s.v.), the root of the Greek forms was **gʷhreh₁-* or **gʷhreh₂-*.

Leumann 1977, 166 reconstructs *frăgrāre* as a fully reduplicated form **gʷhrā-gʷhrā-*, thereby neglecting that one finds *frā-* (Catull. 6, 18). If *frăgrāre* belongs to **gʷhreH-*, this reduplicated form may reflect **gʷhrH-gʷhr(e)H-* (not **gʷhrHe-gʷhrH-* because this would yield **faragr-*; and not **gʷhreH-gʷhrH-* because this would yield **frāgr-*; in view of *glăber*, the reduplication syllable may rather reflect a zero grade). But there are no morphological parallels for this reduplication in Latin. Moreover, it is unclear whether initial **gʷh* could develop into Lat. *f-* before *-r-*. As *frendō* 'to grind, gnash' probably continues **gʷhrend(h)-*, cf. OE. *grindan* 'to grind' < **gʷhrendh-* and Lith. *gréndžiu*, *grę́sti* 'schaben, scheuern, kratzen' < **gʷhrend-* (with acute intonation caused

by Winter's law), it seems fair to assume that it could (but see WH., who reconstruct **ghrend-*). However, it seems clear that word-internally **-$g^{w}hr$-* did not develop into Lat. *-gr-* but into *-br-*, cf. *febris* 'fever' < **dheg^{w}hri-*, cf. *foveō* 'to heat' < **dhog^{w}h-ei-*, Gr. τέφρα 'ashes' < **dheg^{w}hreh$_2$-* (Leumann 1977, 166). Could one assume that the root was **ghreH-*, and that initial **ghr-* developed into *fr-* by a dialectal development (Sommer-Pfister 1977, 149)? Or was **g^{w}h-g^{w}h-* dissimilated to **g^{w}h-gh-* (or even **γ-γ* to **f-γ*, in which *γ* is the Italic fricative)? It appears that there are many problems that incriminate Leumann's proposal, and I therefore tend to reject it.

An alternative and in my opinion better etymology is presented by EM. and preferred by WH., who adduce OHG. *braccho*, MLG., MDutch *bracke* 'hound'. This must be compared with MHG. *brāhen* < **brēhian* 'to smell' which probably reflects **bhreh$_1$g-*. *braccho* etc. must therefore be reconstructed as **bhrh$_1$g-* (with **RH* > Germ. *Rā*). The geminate **-kk-* may possibly be explained from **brak-n-* (the word is an *n*-stem, see Franck-Van Wijk-Van Haeringen s.v. I *brak*; for the development see R. Lühr 1980). If this connection is accepted, *frāgrāre* may be interpreted as a denominative of **fragrom* < **bhrh$_1$g-ro-*.

Whichever of the two etymologies one prefers to accept, *-rā-* must reflect **-rH-*, unless both etymologies are incorrect (which is possible).

4. The quantity of the *-a-* in *fraxinus* 'ash' is unknown. It is generally supposed to be long (EM., WH., Sommer-Pfister 1977, 192), probably because it is thought to represent a long vocalic resonant **r̥̄* (= PIE. **r̥H*). That *-a-* is in fact short is probably borne out by the fact that syncope did not occur, whereas it did in words of the structure ¯ ˘ ˘ ; cf. *ūllus* 'any' < **oinelos*; one would expect **frāxnos* > **frānus*. It is improbable that *-ino-* was restored for syncopated *-no-* because the suffix *-no-* is common in tree-names, e.g. *alnus* < **alsnos*, *quernus* < **quercnos*.

The closest comparandum of *fraxinus* < **bhrags-eno-* or *-ino-* is probably *farnus* 'kind of tree' (not necessarily 'ash' despite EM.), which according to the argument in B.1.5.1 may reflect **bhrǵ(s)no-* (if it is cognate at all). Both words are generally compared with words for 'birch' in other languages. Kortlandt (1985a, 120) reconstructed a PIE. hysterodynamic pardigm of a stem **bherHǵ-* in order to account for the attested forms: On the Nsg. **bherHǵ-s* were based Lith. *béržas*, Latv.

beřzs, Russ. *berëza*, OIc. *bjǫrk*, OHG. *birihha*. No form that could be the reflex of the Asg. **bhrHeǵ-m* is attested (on *farnus*, according to Kortlandt from **bharagsno-*, see B.1.5.1). The reflex of the Gsg. **bhrHǵ-os* can be found in Skt. *bhūrjá-* and in Lat. *fraxinus*.

Szemerényi (1959/60, 225-232) reconstructs *fraxinus* as **frāg-osinos*, a compound of **frāg-* 'ash' and **osino-* 'mountain-ash'. He compares OHG. *fereh-eih* 'oak' < **perkʷu-* + **aik-*, both meaning 'oak'. I think that this must be rejected on purely phonetic grounds: **frāgosino-* would yield **frāgernus*, cf. **uetesino-* > *veternus*, **Falesino-* > *Falernus* (cf. *Faliscī*, *Faleriī*; probably with **-esi-* > **-eri-* > **-ri-* > *-er-*). One may claim that ˘ ˘ ˘ ˘ was treated differently than ¯ ˘ ˘ ˘ , but I cannot see how this can be interpreted in a meaningful way: in both constellations one expects syncope of the short vowel in the second syllable. In order to explain *-s-* in **fragsinos*, one must then assume that syncope obtained earlier (i.e. before rhotacism) in ¯ ˘ ˘ ˘ than in ˘ ¯ ˘ ˘ ˘ . Since this assumption is based on *fraxinus* alone, the argument is circular and must be rejected. I am also forced to reject his reconstruction **alisino-* for *alnus* 'ash': since **alisino-*, like *uetesino-*, *Falesino-*, has the structure ˘ ˘ ˘ ˘ , one would certainly expect **alernus*. Thus, *fraxinus* must reflect **fragsino-*, *-eno-*.

As Szemerényi (op. cit.) pointed out, the **-s-* in *fraxinus* demands an explanation: one would expect **fragino-*, **-eno-*, **-no-*, cf. *ornus* < **os-eno-*, *-ino-*, *carpinus* < **kerp-ino-*, *-eno-* (see VI.B), *alnus* < **als-no-* (see II.C.4.2 no. 22), *quernus* 'oaken' < **perkʷ-no-*. As an alternative for his suggestion discussed above, Szemerényi proposes that **fragino-* was replaced by **fragsino-* after **osino-* and **alisino-* (as stated above, I do not agree with the latter reconstruction). In my opinion, it is likely that one must reconstruct an *s*-stem **bhrag-s-* intermediate between the PIE. root noun and the attested Latin form because of the following considerations.

The PIE. word for 'ash' was an *s*-stem: Lith. *úosis*, Latv. *uôsis*, SCr. *jȁsēn* etc. reflect **Hehᵢ-s-*; W. *onn*, Lat. *ornus* and Alb. *ah* reflect **os-* < **Hhᵢ-es-* (see II.F.2, also on other forms). Lat. *alnus* probably also reflects an *s*-stem (see II.C.4.2 no. 22). The PIE. stem **bherHǵ-* acquired the meaning 'ash' in Latin. Since 'ash' was an *s*-stem in PIE. and since *s*-stem inflection was not uncommon in PIE. tree-names, it is

conceivable that **bhrHǵ-* came to be inflected as an *s*-stem when it acquired its new meaning 'ash'. This would yield Nsg. **bherHǵ-(ō)s*, Gsg. **bhrHǵ-s-os* (in *fraxinus*).

Note that we cannot be absolutely sure that *-a-* in *fraxinus* is short. In any case it reflects **bhrHǵ-s-*, if it is cognate with 'birch'.

5. *glăber, -bra, -brum* 'smooth, without hair' reflects Prim. Lat. **ghlădhro-* in view of its cognates in Balto-Slavic and Germanic: Lith. *glodùs* 'tool for smoothening', OCS. *gladъkъ*, Russ. *gládkij*, SCr. *glȁdak* 'smooth' < **ghleh₂dh-u-*. Lith. *glósti* 'to smoothen', Latv. *glãs(t)ît* 'streicheln' have acute intonation, and therefore reflect **ghleh₂dh-*. OHG. *glat* 'smooth, shining', MoDutch *glad* 'smooth', OIc. *glaðr* 'shining' reflect **ghladh-o-*, which seems to reflect **ghlh₂dh-o-*. It would then show the same unexpected reflex of **-R̥H-* as OHG. *slaf* < **slh₂b-o-* and some other Germanic words.

I cannot see how *glăber* can reflect a morphological zero grade (for **glā-*): there is neither a model nor a motivation (see D.1.2.1 above).

One might assume that *glaber* and OHG. *glat* etc. reflect **ghlodh-*. This is unattractive because it implies that *glaber, glat* cannot be connected with **ghleh₂dh-*, despite the striking semantic and formal resemblances. Moreover, it is not impossible to explain OHG. *glat* from a root with a laryngeal (cf. *slaf, lābī*), and it is impossible to explain *glaber* from **ghlodhro-*.

It is therefore most likely that *glăber* regularly reflects **ghlh₂dh-ro-*.

6. Following Fischer 1982, one must reconstruct for *grăvis* 'heavy' an *u*-stem **gʷreh₂-u-* which was remodelled into an *i*-stem at a relatively late stage (see IV.E.6.2 no. 7; for *mollis* see VI.D.2.3). It does not belong here.

7. On *lac*, G. *lactis* (ntr.) 'milk' see VI.D.2.1.

8. *plăceō* stands a good chance of being a morphological zero grade: cf. *plācāre* < **plHk-* (see D.1.3.2.1 no. 21).

9. The exact etymology of *trăhō, trāxī, tractum* 'to pull, drag, bring' is difficult to ascertain because different roots of similar form seem to have been confused. In Latin one finds *trāgula* 'a kind of dragnet', *trāgum* 'id.'. According to WH., *-g-* instead of *-h-* < **-ǵh-* arose in *trāgula* < **trāglā-* < **trāghlā-* (cf. *figulus, ligulus* < **-ghl-*). This implies

that *trāgum* is a "Rückbildung" (thus WH.). Further, we find Lat. *traha*, *trahea* 'drag, sledge'. In view of *trāgula* and *trāxī*, we must conclude that the Latin forms continue a root with a laryngeal: there may be many short *a*'s in Latin of non-laryngeal origin, but *ā* always arose from PIE. **eh₂* or **ṚH*, except if *ā* is the product of secondary lengthening of non-laryngeal *a* (e.g. *frāctum* < **bhrăg-to-* by Lachmann's law, which cannot have applied in *trāgula*, *trāxī*). The length in *trāgula*, *trāxī* cannot be secondary and must therefore be old, reflecting a laryngeal. Note that **tre(H)gh-* violates the PIE. root structure rules.

WH. and Pokorny IEW. 257 suggest that Lat. **tragh-* reflects **dragh-* (cf. *taeter* < **taedro-* in view of *taedet*, Thurneysen 1893, 562 ff.). **dragh-* in turn would reflect dissimilated **dhragh-* (cf. *gradior* < **gradh-* < **ghradh-*, but *rāvus* < **hrāu̯os* < **ghrāu̯os*). Both steps are disputable, but if one accepts them, one may avoid positing a root **trHgh-*, which violates the PIE. root structure rules, and one can connect *trahō* with Goth. *dragan*, pret. *drog* etc. 'to carry' < **dhr(e)Hgh-*, which is attractive for semantic reasons. But nothing is certain.

If *trăhō* reflects a root with PIE. initial **t-*, it can be connected with OE. *þrăgan* 'to walk', *þrāg* 'time' < **treh₁gh-* (and Goth. *þragjan* 'to walk' < **trh₁gh-*; on OIr. *traig* 'foot' see D.1.3.4.3 below) but this is not attractive semantically. Not much better in this respect seems the connection with OIr. *tráig* 'ebb', *tráigid*, W. *treio* 'to ebb' < **trāgh-* or **trōgh-* (see Vendryes T-123-124) < **treHgh-*, **troHgh-*.

Despite all the difficulties it seems clear that *trahō* must reflect a root with a laryngeal because of the evidence in Latin itself. *-ră-* in *trăhō* therefore most likely reflects **-rH-*. *trāgula* may reflect **tr(e)h₂gh-lā-*. *trāxī* probably reflects **treh₂gh-s-* because full grade in the root is regular in the *s*-aorist.

1.3.4.2. Discussion

From the previous section we can draw up a list of words in which *CRăC* reflects **CRHC*. I have excluded *plăcēre*, which stands a good chance of being a morphological zero grade and therefore is not a regular reflex of **CRHC*.

probable	possible	unreliable
5 *glăber* <*$ghlh_2dh$-*-ro-*	2 *flăgrum* <*$bhlHg$-*ro-*	1 *clăssis*
	3 *frăgrāre* <*$bhrh_1g$-? (or *g^whrHg^wh-)	4 *frăxinus*
	9 *trăhere* <*$trHgh$- or *$dhrHgh$-	7 *lac*

Since it is clear that the normal development of **CRHC* in Latin is to *CRāC*, we may try to explain every individual case by assuming that regular **-ā-* was replaced by *-ă-* for some (morphological) reason. The model of *măcer* < **mHkro-* etc. will hardly have been influential (see IV.D.1.2). Of course, Kuryłowicz's morphological zero grades come to mind (see IV.D.1.2.1 above).

glăber can hardly replace an earlier **ghlādhro-* because there is neiter a motivation nor a model for this development. The same holds for *flăgrum*.

In Latin, *frăgrāre* is isolated as well. One may assume that it is an old *ā*-verb, which normally has a zero grade root (cf. *dĭcāre*, *-dŭcāre*). However, it is not only doubtful whether *frăgrāre* is a verb of the type *dĭcāre* (if it must be connected with OHG. *braccho*, it is rather a denominative based on **frăg-ro-*); but also, we know that the old *ā*-verb *plācāre* was not replaced by **plăcāre* (but cf. *plăcēre*; *vădāre*, *lăbāre*, *nătāre* are regularly from **#RHC-* (see D.1.2), not secondary zero grades). Of course, a morphological analogy cannot be expected to apply to every single case to which it might apply: it is not a sound law. But if one cannot find more than one single case on the basis of which the analogy is assumed, this analogy is an ad hoc assumption and therefore unconvincing. One must conclude that *-ă-* in *frăgrāre* probably is not the result of analogy, and thus that it does not replace **-ā-*.

The same argument applies to *fraxinus*, except that it is not entirely isolated if *farnus* is cognate (see B.1.5.1): it does not belong to a productive morphological category, nor do I see any paradigmatic pressure which could lead to the replacement of **-ā-* by *-ă-*. It must be noted that *-ă-* is not absolutely certain.

Since third conjugation verbs generally do not have a zero grade root (*dīcō*, *dūcō* etc.), I do not see how *trāhō* could have received a morphological zero grade on this account. **trāhō* would be perfectly acceptable.

One may be tempted to assume that in general *CRăC* is in origin limited to roots that have full grade *CReHC*, whereas *CRāC* is found in roots with a full grade *CeRHC* (This seems to be the distribution of Germanic *CRăC* and *CuRC*, respectively). But *gnārus* (**ǵneh₃-*), *flātus* (**bhleh₁-*) and *frăxinus* (**bherHǵ-*) contradict this and the idea must therefore be rejected.

I conclude that no satisfactory way to explain *-ă-* from **-ā-* analogically has been found, except perhaps in the case of *plăcēre*. It is therefore logical to look for a phonetic explanation, i.e. a sound law, although we have precious little material on which to base it.

If we exclude *plăcēre*, which may reflect a morphological zero grade, it strikes one that in *glăber*, *flăgrum*, *frăgrāre* and *fraxinus*, *-Ră-* is found before two consonants. One may therefore propose a rule **CRHCC* > *CRăCC*. In view of *crābrō* and *nāscō*, this must be narrowed down to **CRHTC* > *CRăTC*. This condition does not seem to apply to *trăhō*, but *trăhō* may continue an older athematic verb. Although the proposed rule is based on four forms only, of which only one is certain, there are two things that recommend it:

(1) There are no counterexamples.

(2) The rule closely resembles a different rule, viz. that **R^{H}TC* develops into **RăTC* in Italic and Celtic (type *magnus*, *flagrāre*, W. *mael*, see VI.D; **^{H}T* denotes a PIE. glottalized stop, i.e. traditionally an unaspirated voiced stop):

(a) **CRHTC* > Lat. *CRăTC* (type *glăber*)

(b) **CR^{H}TC* > Lat., Celt. *CRăTC* (type *măgnus*, W. *mael*).

It is likely that both developments are a consequence of one and the same process. Rule (b) is supported by somewhat more material than rule (a). The two rules may confirm each other. On the possible evidence deriving from Celtic for rule (a) see the next section.

It must be stressed that all instances of *CRHTC* > *CRăTC* contain a liquid. For traces of a different development of *CNHTC* I refer to section 1.3.4.4.

1.3.4.3. Celtic

As is well known, the usual development of PIE. **CRHC* in Celtic is to *CRāC*. There are a number of exceptions to this, among which is the type Olr. *mrath* 'treason' < **mrH-to-*, cf. *marnaid*, which was recently explained as a morphological zero

grade. There remain problems, however. See especially Joseph 1982.

It was noted above (1.3.4.2) that the development of **R^{H}TC* to **RăTC* occurred not only in Latin (type *magnus*) but also in Celtic (type W. *mael*, Olr. *mál* 'prince' < **maglo-*, see VI.D). It was also noted that it is probable that this development must be identified with that of **RHTC* to **RăTC* in Latin (ibid.). Consequently, one may try to find traces of the latter development in Celtic.

I have been able to find only one possible instance:
The Celtic word for 'foot' is generally connected with the words mentioned under *trăhō* (see 1.3.4.1 no. 9 above). The most convincing connection is that with the Germanic forms meaning 'to walk, run; time', PGm. **þrēg-*, **þrăg-* < **treh$_1$gh-*, **trh$_1$gh-* (OE. *þrǣgan*, *þrāg*, Goth. *þragjan*, see Vendryes s.v. *traig*).

The forms are: Olr. *traig* < **traget-*, W. sg. *troëd* < **troget-*, pi. *traëd* < **traget-*, Co. sg. *troys* = */trōs/*, pl. *treys* = */trēs/*, Bret. sg. *troad*, pi. *treid* < **troget-* and **traget-ī* respectively (see e.g. Jackson 1953, 445, 1969, 160, 187). Hamp 1982a argued that British **-ag-* in the plural form reflects **-og-*, in accordance with his convincing argument that unaccented (i.e. according to the British penultimate accent) **-og-* became **-ag-* in British (cf. *Cymro* < **Kombrógos*, but *Cymraeg* < **Kombrogíkos*). According to Hamp, *-o-* in the singular form arose in the old Nsg. **trógets*. This leads to a Proto-British form **troget-* throughout the paradigm. However, Hamp did not succeed in reconstructing a common origin for Brit. **troget-* and Olr. *traig* < **traget-*. His **treget-* > Ir. *traig*, though phonetically possible (cf. **tegesi* > *taig* 'house'), still presupposes two forms, **treg-* and **trog-*.

I would therefore like to suggest the following development. If the Celtic forms indeed reflect a root **trHgh-*, one may assume that before a full grade suffix **-et-* (original Nsg.) **trHgh-* yielded **trāgh-*, whereas before a zero grade suffix **-t-* (original oblique cases) **trHgh-* became **trăgh-*.

Olr. *traig* would then reflect **trăg-et-*, with generalized **trăg-*. For British, one can assume that **trāg-*, original in the Nsg., was generalized throughout the paradigm: **trāget-* > **trɔ̄yed-* would yield **troyed-* (with pretonic **-ɔ̄-* becoming **-ŏ-*, see Jackson 1953, 287-288). If we assume that this stem was introduced in the Nsg. (i.e. **trɔ́get-s* replaced by **tróget-s* by the pressure of all other forms of the paradigm),

we arrive at Hamp's **trógets*, **trogétes* and at the attested British forms.

1.3.4.4. *CNHTC*

There are two instances which might illustrate the development of *CNHTC* in Latin. These show a very different development than *CLHTC*.

1. If *pānus* 'tumor' is cognate with Russ. *púčit'* 'to be inflated' < **ponHk-*, it probably reflects **panksno-* < **pn̥Hksno-* (see IV.B.1.5.1 no. 4 and VI.E.3.2 no. 9).

2. The *-a-* in *ianitrīcēs* may perhaps be explained on the basis of an oblique case form **iantr-* < **in̥Htr-* (see IV.B.1.5.1 no. 3 and VI.E.3.2 no. 5).

For the assumed developments I refer to the sections cited.

1.3.5. Alleged **CaRaC* < **CRHC*

1.3.5.1. Introduction

It has been claimed that under certain circumstances PIE. **CRHC* yielded Lat. *CaRaC* (e.g. Mayrhofer 1987, 101 note 64 and 1989, 8; Steinbauer 1989, 254 note 14). This reflex is said to have resulted from PIE. stressed **CŔHC*, which lays bare the possible weakness of the idea: in the first place, we know nothing for sure about the history of the PIE. mobile accent in the period between PIE. and Italic. Accent-shifts may have occurred, of which we know nothing. Secondly, if we abstract from that problem, any assumption made about the place of this post-PIE. accent in a given word is based on the place of the accent in a Sanskrit, Greek, Balto-Slavic or Proto-Germanic (Verner's law) cognate that has the same formation (and therefore a comparable accentuation) as the Latin word. Such exact correspondences are rare, so that, given the paucity of alleged cases of Lat. *CaRaC* < **CŔHC*, the Latin material that may substantiate the accent rule may be expected to be very hard to find, if not altogether absent.

Beside this "phonetic" rule, it has been claimed that *CaRaC* may be a morphological zero grade which replaced *CRāC* by analogy with the full grade *CeRaC* < *CeRHC* (thus Kuryłowicz 1956; one may perhaps envisage the process as the replacement of **CR$_a$HC* by **C$_a$RHC* after **CeRHC*). As to morphological zero grade in general, see IV.D.1.2.1 and VI.A. In itself the process does not seem impossible, but for every individual case one must ask whether there existed a sufficiently powerful model of the type *CeRaC*. This model often cannot be pinpointed.

An important point in the discussion is that there are alternatives for positing a rule *CRHC* > *CaRaC*: Lat. *CaRaC* may reflect **CRHeC* (see chapter IV.D.2.3.2), and, what is more, Lat. *#aRaC-* must reflect **h₂eRHC-* (see IV.F.1.2.3) or **h₂Rh₂eC-* (see IV.F.2.2) because **HRHC-* most likely yielded Lat. *RăC-* (see IV.F.1 but note that evidence for **HNHC-* > *NăC-* is lacking; one may theoretically suppose that this yielded **aNaC-*). If one wishes to defend that PIE. *CRHC* could become Lat. *CaRaC*, one must find a form *CaRaC* that cannot be explained in these alternative ways.

We shall set out to attempt an answer to the following questions: Is it necessary to posit a rule **CRHC* > *CaRaC*; and, if so, is there any evidence that *CaRaC* developed under the PIE. accent, or analogically, after the model of a full grade *CeRaC*?

1.3.5.2. Material

The material covers all cases of Prim. Lat. *(C)aRVC* with evidence for a PIE. laryngeal after the *R*. Prim. Lat. **CaRVC* could develop into Lat. *CaRC* by syncope, or into *CaReC*, *CaRiC*, *CaRuC* by vowel weakening.

1. *anas* 'duck' may reflect **h₂enh₂t-*. See IV.F.1.2.3.

2. According to Peters 1980, 2 note 1, *animus* reflects **h₂nh₁mo-*. It is however more likely that it reflects **h₂nh₁emo-*, or perhaps **h₂enh₁mo-* (IV.F.2).

3. *anta*, like OIc. *qnd*, may reflect full grade **h₂enHt-* (see IV.F.1.2.3).

4. On *arduus* see IV.F.1.2.4.

5. *armus* may reflect **h₂erHmo-* or **h₂rHemo-* (see IV.F.2.2). **h₂rHmo-* is impossible because **HrHC-* probably yielded Lat. *răC-* (see IV.F.1).

6. *calamitās* probably reflects **klh₂-em-* or **kelh₂-m-*, cf. no. 8 and no. 9, and the formation of *hiems* < **ǵhi-em-*. See IV.D.2.3.2.1 no. 1.

7. According to Mayrhofer 1989, 8, Lat. *calvus* 'bald' reflects **kalaṷos* < **kl̥Hṷo-*, cf. Skt. *-kūlva-* 'bald'. However, it is probable that *calvus* reflects **kalṷo-* < **klHuo-*, in which **-l̥H-* developed into *-al-* before vocalic *-u-*. See IV.E.13.2.3.

8. *carbō* 'charcoal' does not have a strong etymology. It may

reflect **kerH-bhōn* (see VI.B.), with *e* > *a* after a pure velar (cf. Lith. *kùrti* 'to kindle') or **krH-V-* (see IV.D.2.3.2.1 no. 6).

9. On *palam* 'overtly' see IV.D.2.3.2.1 no. 11.

10. *palma* 'hand' probably reflects **plh₂-em-*, cf. Gr. παλάμη and the formation of *hiems*. For a discussion, see IV.D.2.3.2.1 no. 13.

11. *pars, partis* (*i*-stem, fem.) 'part', also 'lot, portion, fate' is usually considered to be cognate with *pariō, parere* 'to bring forth, to procure, acquire', Gr. ἔπορον 'procured' of the root **prh₃-*. This is not evident for semantic reasons but it seems possible (see below). Skt. *pūrtá-, pūrtí-* 'gift, granting, reward' allegedly belong to the same root. *pars* and *pūrtí-* are generally equated and reconstructed as PIE. **prh₃-tí-* (e.g. Mayrhofer KEWA s.v.). In this view, *pars* is said to reflect **partati-* < **prh₃-ti-*. Apart from the semantic problems there are formal objections: if stressed **-ŔH-* became Prim.Lat. **-aRa-*, which is often held, one must reconstruct **parti-* as **pŕHti-*, which flies in the face of the factual information we have of the final accentuation of Skt. *pūrtí-*. On the other hand, if we assume that PIE. unstressed **-RH-* yielded Prim. Lat. **-aRa-*, we cannot explain *nātus* < **ǵnh₁-tó-, grātus* < **gʷrH-tó-, plānus* < **plh₂-nó-*. I conclude that there is no indication that the accent had anything to do with the development of **-ŕH-* to **-ara-*. One could alternatively invoke a morphological zero grade *-ara-*, which requires a full grade **pera-* < **perh₃-* as a model. This model is not reflected in Latin, but it may have been present in PIE. However, since a clear model cannot be indicated and since there are no other instances that turn the assumed morphological zero grade *-ara-* into an established fact, the assumption that **parti-* contains a morphological zero grade has little to commend itself. As no other satisfactory conditions have been set for the occurrence of Lat. **-ara-* from PIE. **-RH-*, the equation of *pars* with *pūrtí-* is formally doubtful.

OIr. *rann*, Bret. *rann* 'division, portion, part' is a good semantic counterpart of *pars*. According to Pedersen 1909, 52 and 300, *rann* reflects **pr̥snā*, i.e. **prHsneh₂-*. The Celtic form has a clear semantic relation to OIr. *ernaid* 'to bestow' < **per-n-H-*, *rath* 'grace, prosperity, power, good fortune' < **prHto-* (see Vendryes ad locc.). But the exact interpretation of *-nn* in *rann* is problematic and its formation differs from that

of *pars*, so that it is difficult to use it in explaining the latter.

One might try to explain *pars* on the basis of an ablaut form other than zero grade **prh₃-*. From **perH-ti-* one expects **perati-* > **perti-*. Assimilation of **pera-* to **para-* is unlikely in view of *cerebrum* < **ḱerasrom* < **ḱerh₂s-rom*. From **porHti-* one would expect **porti-*, with loss of **-H-* after **oR*, as in *collis* < **kolH-ni-*, cf. Lith. *kálnas* (see V.A.2). If the laryngeal was not lost regularly, or restored after cognate forms with other ablaut grades, one would expect **pora-*. It is unlikely that **pora-* became **para-* because *-ora-* is common in Latin: *-forāre*, *vorāre*, *mora*. **parati-* < **prh₃eti-* is impossible, as the **-e-* cannot be explained.

I would like to suggest that *pars* is a post-PIE. formation. We know that the ppp. *partus* (*o*-stem) and the substantive *partus* (*u*-stem) 'young, offspring' were modelled on the root **par-* of the present *pariō* < **prh₃-i-* (see IV.D.2.3.2.1 no. 15). We may assume that *pars* is a **ti-* derivative of this same verbal root **par-*, and thus that *pars* was not created already in PIE. but at some later stage. This assumption may meet with semantic problems, but these need not be decisive: *pars* means 'part, share, party' but also 'lot, portion, fate' (Plaut. Rud. 1,3,4), which is likely to be old (cf. esp. Gr. πεπρωμένη 'fate', of the same root). *parere* means 'to bring forth, produce, create' but also 'procure, acquire', cf. *parta* 'acquisitions, possessions'. In view of Gr. ἔπορον 'procured', πέπρωται 'it is destined', the approximate meaning 'apportion, procure' is probably old. One may assume that this original meaning prevailed when *pars* was created, which consequently meant 'apportioning, portion' and from there 'part, share'.

Verbal abstracts in **-ti-* were at some stage in Prim.Lat. replaced by the productive **-tiōn-*stems. That this replacement did not take place in *pars* means that, when **-tiōn-*stems became productive, the meaning of *pars* was already sufficiently different from that of its verb *parere*, so that **parti-* was not replaced by **partiōn-*. The derivation of *pars* cannot therefore have been very recent. I claimed above that its creation cannot have been very early either (say, PIE. or early post-PIE.) because it was based on the verbal stem **par-*. In my opinion, there is a parallel example of a relatively old but post-PIE. *-ti-*abstract, viz. *salūs*, *salūtis* 'hail'. This is derived from a lost verbal stem **salue/o-*, which itself was probably based on a *u*-stem **salu-* < **slHu-* (see Leumann 1977, 349 and E.13.

2.3.2.1 no. 2).

As to *portiō*, see EM. and WH. s.v.

1.3.5.3. Evaluation

It has turned out that the forms adduced as evidence for a rule **CRHC* > Lat. **CaRaC* can be interpreted in alternative ways: *anas*, *anta* and *armus* (?) may reflect **HeRHC*; *animus* may reflect **h_2nh_1emo-*; *calamitas*, *palam*, *palma* may reflect **CRHeC*; *calvus* probably reflects **kalu̯o-* < **klHuo-*; *carbō* may reflect **kerH-*. In none of the cases cited does a reconstructed **CRHC* appear to be decidedly more plausible than the suggested alternative.

What remains is *pars*, which, one may argue, reflects **prHtí-*. In view of the accentuation of Skt. *pūrtí-*, the suggested reconstruction **pŕHtí-* cannot be maintained. No other meaningful conditioning of the reflex **CaRaC* imposes itself. I therefore tend to regard the alleged development of PIE. *CRHC* to Prim. Lat. **CaRaC* as unproven. *pars* may be a relatively late derivative of the verbal stem **par-*, which arose from **prh_3-* in antevocalic position.

1.3.6. *nŏta* and *-gnĭtus*

We have seen that **CRHC* normally yielded *CRāC* in Latin. Cases with *CRăC* must probably be explained as well-defined exceptions: firstly, *CRăC* resulted from **CRāC* by shortening before *RC* (these instances will be discussed in IV.D.3.2); secondly, *CRă* was possibly the regular reflex of **CRH* before *TC* (IV.D.1.3.4).

However, these rules do not explain the vocalism of *nŏta* and of *co-* and *a-gnĭtus*. Several attempts have been made to explain them, most of which separate *nŏta* from *-gnitus*.

1.3.6.1. *nŏta*.

In 1913, W. Schulze derived *nota* 'mark' from a zero grade **ǵnə-* of the root **ǵenə-* in e.g. Lith. *žénklas*. He compared *-o-* of Gr. ἀγνοέω 'fail to perceive'. This interpretation was followed by WH. s.v. As Szemerényi pointed out (1959/60, 239-240), the development of **ə* (read: **H*, in this case **h_3*) to Lat. **-o-* has no parallel (cf. *dătus* < **dh_3-*). The comparison with Gr. ἀγνοέω will not do because this form is itself unclear (for an interpretation and a synopsis of different views see Lindeman, 1963).

Leumann 1950, 228 note 23 revived the old hypothesis that *nŏta* must be connected with Gr. ὄνοθαι 'to reproach' (see

Persson, *Beiträge* 1910-2, 669, Ruipérez 1950, 388, 395). Szemerényi op. cit. noted that this is semantically unlikely because the basic meaning of *nota* did not originally include the element of reproach that characterizes the Greek verb. The etymology of ὄνοοθαι is unclear. If ὄνοοθαι reflects a PIE. root, this was probably **h₃nh₃-*. Compare Ruijgh ap. Kortlandt 1981, 3, note 3, who connects *nota* with Gr. ὄνομα, which also reflects **h₃nh₃-* (identity of both roots is possible, cf. Eng. *to call names*). If we neglect for the moment the semantic problems concerning the connection of *nŏta* with either ὄνοσθαι or ὄνομα, we may wonder if these connections are formally tenable. We must ask ourselves whether *nŏta* may reflect **h₃nh₃-et-eh₂-*. For the suffixed part one may compare Skt. *vratá-* < **u̯rh₁-eto-* (Beekes 1969, 238, 1976, 18). As will appear from section F.2, we are not abundantly informed about the fate of **HNHV-* in Latin. The only possible piece of evidence that I have come across is *animus*, which, like Gr. ἄνεμος, probably reflects **h₂nh₁-em-o-*. It is therefore improbable for formal reasons and not compelling for semantic reasons that *nŏta* reflects **h₃nh₃-et-eh₂-*.

Szemerényi (op.cit.) compared *nŏta* with the type *tŏga*, i.e. he assumes an *o*-grade root *not-* and a suffix *-ā-*. He reconstructs the root as **gnot-*, which he identifies with that of OHG. *knetan*, OE. *cnedan* 'to knead' and OCS. *gnetǫ* 'to press, urge', Russ. *gnetú*, *gnestí* 'to press, squeeze'. According to Szemerényi, the original meaning of *nota* is 'impress, imprint', which developed into 'mark, note'. Attractive though this might seem, the combined evidence of Germanic and Slavic points to an original meaning 'to knead, put pressure on', which is not the same as 'to make an impression'.

According to Dybo 1961, 13, *nŏta* is a case of pretonic shortening of **gnōtā* (< **ǵneh₃-teh₂-*). As there is no evidence for this shortening in other positions than before a resonant (see V.B) and since we do not know for sure where the accent was on pre-Latin **gnōtā-*, this proposal has little to commend itself.

Finally, Beekes 1976, 18-19 suggested that *nŏta* reflects **ǵnh₃-et-eh₂-* > **gnŏtā-*. The remarkable point is that **n* apparently was not vocalized, as would be expected. As parallels for this Beekes adduces Skt. *vratá-* < **u̯rh₁-eto-*, *glōs* < **ǵlh₂-ōu-s* and *grăvis*. On the latter see Fischer 1982, 33 f.; Skt. *vratá-* cannot be adduced because we are dealing with a Latin, not a PIE. or Skt. development. Only *glōs* 'sister-in-law'

remains. This must certainly reflect *$\acute{g}lh_2$-ōu-s, as Beekes op. cit. has demonstrated (cf. Gr. γάλως). Anttila 1969, 83 suggests that a vowel may have been syncopated, which is unattractive. It is more likely that the laryngeal was lost at an early stage before the lengthened grade vowel (IV.C.1.3.6.2). Thus, *glōs* probably disappears as reliable evidence for non-vocalization of **R* in **CRHV*.

One may object that, if an *ad hoc* syncope is allowed for *glōs* (where it is doubtful, to say the least), it may be invoked for *nŏta* < **gnōta* < *?genota* as well. I think that the latter cannot be upheld because there is an essential difference between *glōs* and *nŏta*: in the paradigm Nsg. **galōs*, obi. **galōs-* the historical Latin accent would in every case except the Nsg. fall on the second syllable. This would favour the syncope of **a*. But if *nŏta* reflected **genota* < **$\acute{g}n̥h_3$-et-eh_2*, the historical Latin accent would in every case, except the Gpl. (which is hardly influential), fall on the **e*, so that it is impossible that **e* was lost by syncope.

Thus, non-vocalic **n* in **$\acute{g}nh_3$-et-* would be isolated, and *nota* cannot be explained from **genota* either.

I conclude that there is no form of the root **$\acute{g}neh_3$-* which explains *nŏta* (thus EM.); and that it probably cannot be explained from a root **h_3nh_3-* either (in Gr. ὄνοοθαι (?) and ὄνομα). Since nothing indicates an old initial **g-* (thus EM.), not even the relatively early compound verbs *dēnotāre* (Cic.), *ēnotāre* (Quint.), and since there are certain semantic problems, Szemerényi's **gnet-* has little to commend itself.

A new proposal is perhaps legitimate. I wonder whether *nota* is a deverbal noun of *sentiō*, *sēnsī*, *sēnsus* 'to notice, sense' < **sn̥t-iō*. In that case, *nota* reflects **snot-ā*. As to the semantics, cf. Dutch *merk* 'nota', *merken* 'to notice' and, of course, Eng. *notice* (subst.), *to notice*.

1.3.6.2. *-gnĭtus*

According to Schulze 1913, 23, followed by WH., *-gnĭtus* reflects **-gnŏtos*, which he explains from **gnə-* in the same way as in *nota*. This must be rejected for the same reason as given s.v. *nota*.

Beekes 1976, 18 also reconstructs **-gnōtos*, but this is said to reflect **-$\acute{g}nh_3$-eto-*, with non-vocalized *n*. I think that this cannot be upheld because the Latin evidence points to vocalic **R̥* in this position (see above).

An explanation that has enjoyed a certain popularity up to the present day was suggested by Sommer 1914, 605, developed

by Kuryłowicz 1956, 172 and followed by Szemerényi 1959/60, 240 and Mayrhofer 1987, 102, note 68. Sommer suggested that *cognitus* reflects **-gnătos* < PIE. **-ǵnə-to-*, with a special development of **CRə* (read **CRH*) in compounds. Kuryłowicz gives an account of what exactly could have happened to **CRH* in composition. According to him, PIE. **-TR̥əC-* became PIE. **-TR̥əC-* in compounds: "Ceci équivaut à la perte du caractère syllabique de *R̥* et par conséquent à la perte d'une syllabe." (In fact Kuryłowicz claims that the same development took place after reduplication and after a prefix). For a brief criticism see Lindeman 1963, 70. Subsequently, *Rə* became *R̥* in Indo-Iranian (e.g. *ástr̥ta-*, *ániṣṭr̥ta-*, *āhuti-* (*-u-* < **-uə-*)) but *Ră* in southern Indo-European, which comprises Latin (example: *cognĭtus*).

In my opinion, Kuryłowicz forces the evidence beyond permissible limits. The Indo-Iranian evidence points to **-R̥H-* > *-R̥-*, not to intermediate **-Rə-* = **-R̥H-*. It seems evident that this development must be identified with the loss of **-H-* in e.g. *devá-tta-* < **-dh₃-to-*. On the other hand, *cognĭtus* does *not* point to a very early loss of **-H-*, as Beekes 1969, 204 pointed out: from **-ǵnh₃to-* > **-ǵn̥to-* one would expect Lat. *-gentus*, not *-gnĭtus*. Beekes ibid., following J.P. Smit, assumed "loss of *H* in (Lat.) **gnaHtos* (< **ǵn̥h₁tos*), which gave **gnătus* > *-gnitus*." Since the laryngeal must have been lost after the clearly post-PIE. stage **gnaHto-* was reached, it is impossible to attribute the loss of *H* to PIE. If one does not follow Smit's proposal, one may assume with Kuryłowicz that in compounds **-ǵnh₃to-* became **-ǵn̥h₃to-* > **-gnăto-*. This is a development different from that in Ilr. because the laryngeal was not lost but vocalized in Latin. One may conclude that, since the alleged development of **-CRHC-* in compounds in Indo-Iranian is fundamentally different from the one in Latin *cognĭtus*, they cannot be reduced to one single PIE. rule: the developments under review must have occurred separately, if at all, in the separate branches of Indo-European.

Thus, the problem of the relation between Lat. *-gnĭtus* and reduction in compounds is no problem of PIE. but of a later stage: Italic or, perhaps, Italo-Celtic. We must ask ourselves whether the assumption of **CRHC* > **CRăC* in the second member of compounds in Italic (or Italo-Celtic) finds any support in Italic (or Italo-Celtic) in other forms than *-gnĭtus*. For Latin, one can safely say that there is no such support, which should make one feel less confident in accepting the pro-

posed rule. In Celtic, we find MW. *yngnad* 'magistrate' < **en-ǵnh₃-tos* and *dirnad* 'to comprehend' < **dē-pro-ǵnh₃-to-* (Lindeman 1963, 72) beside Olr. *gnáth* 'known' < **ǵnh₃-to-*, which would clearly support Kuryłowicz's explanation of *cognĭtus*. However, it is difficult to use these words for our present purpose because Celtic is particularly rich in non-compounded forms with *CRăC* < **CRHC*, which have not yet received a satisfactory explanation (e.g. *mrath*, *-grath*, *srath*, *gwlan* etc., see Joseph 1982). In any case, these forms cannot be explained as decompounds. Thus, it is possible to assume that *CRHC* became *CRăC* in compounds but the evidence is very slight.

Lindeman 1963, 69-75 assumed that *-gnitus* < **-gnătus* is a case of morphological zero grade, i.e. **ǵnh₃tos* > **gnātos* was replaced by **gnătos* after **dō-*, **datos*, **dhē-*, **dhatos* etc. (see D.1.2.1 above). However, almost all Latin forms that were adduced by Kuryłowicz 1956 as examples of morphological zero grade reflect the regular development of word-initial **(s)RHC-* (section D.1.2 above) and **HRHC-* (IV.F.1). Of the cases that remain, *glăber* most likely regularly reflects **ghlHdhro-* (section D.1.3.4) and *grăvis* reflects an earlier u-stem **grau-s* (see E.6.2 no. 7). Only *plăcēre* has a good chance of reflecting a morphological zero grade, in view of *plācāre* (see D.1.3.4.1 and 2 above). This is a very narrow basis for explaining *-gnitus*. Moreover, one would expect to find the morphological zero grade not only in the compound but also in the simplex. I conclude that Lindeman's proposal is unconvincing.

Finally, Maniet 1956, 230-237 and, following him, Kortlandt 1989b, 104 interestingly proposed that *cognitus* < **cogenatos* replaced **cognātus* < **-ǵnh₃tos* on the basis of the supinum or the nomen actionis **cogenatum* < **-ǵenh₃-tu-*. In itself, this seems to be a valid proposition. However, there is one considerable problem: the full grade of the root **ǵnh₃-* is generally **ǵneh₃-*, not **ǵenh₃-*. Only Lith. *žénklas* 'sign' seems to reflect **ǵenh₃-*, but in view of Skt. *jñātra-* < **ǵneh₃-tlo-* this form is probably a recent formation, based on the zero grades *pa-žìntas*, *pa-žintìs* < **ǵnh₃-*. The Germanic pret.-pres. Goth. *kann* etc. and the causative Goth. *kannjan* etc. are clearly Germanic innovations (thus EM. s.v. *nōscō*). Thus, **genatum* cannot in all probability be old. In view of the full grade reflected in *nōscō*, *nōvī*, *nōtus*, it is also difficult to conceive of a model for the late appearance of **-genatum* as

the supinum or nomen actionis. Moreover, I do not see the motivation for introducing the form of the supinum/nomen actionis in the compound *cognitus*, and not in the simplex. Note also that **genatos* would yield an unpleasant homonymy with **genatos* < **ǵenh₁tos* 'born', which would inhibit its further spread. I therefore think that Maniet's proposal is unconvincing.

We may conclude that so far no convincing explanation of *-gnĭtus* has been suggested; the best so far, in that it cannot be dismissed, is the assumption of a special treatment of **RH* in compounds. I would like to propose another solution.

The regular Latin reflex of PIE. **ǵnh₃tó-* would have been **(g)nātus*. Cf. Olr. *gnáth*, Gr. γνωτός etc. **gnātus* was replaced by *nōtus* because of paradigmatic pressure and under the pressure of homonymous **gnātus* 'born'. This replacement did not take place in *cognitus*. In my opinion, this leaves us just one reasonable option: that *-gnitus* does not reflect a form of the perfect participle (otherwise it would have been replaced by **-gnōtus*).

What, then, does it reflect? I think that the answer may lie in the comparison drawn by EM. s.v. *nōscō*, of *co-gnitus* with Greek compounds in -γνώς, viz. ἀγνώς (Hom. etc.), ἀριγνώς (Pind. N. 5, 12), ἀλλογνώς (late). The latter reflect a PIE. *t*-stem with a Nsg. **-ǵneh₃-t-s*. The PIE. Asg. would be expected to be **-ǵnh₃-et-m*. It seems possible that Lat. *-gnĭtus* reflects the thematized Asg. stem **-ǵnh₃et-o-*, which yielded PItal. **-genoto-*. The latter yielded Lat. *-gnitus* by regular syncope of unaccented **-e-*. Note that this reconstruction is almost identical to Beekes' reconstruction (1976, 118). It has the advantage of not only explaining the shape of the Latin form but also its occurrence in compounds.

Alternatively, one may wish to refrain from positing this accusative form and conceive of a substantive **ǵnh₃-eto-* which may be compared with the Greek type νιφ-ετός. These substantives are often used as the second member of compounds, e.g. Gr. ἄσχετος 'impossible to hold', ἀθάνατος 'immortal', which as a whole functioned as an adjective. Since *cognitus* is adjectival and compounded, this possibility may be considered.

As I see it, there remain two possible explanations of *-gnĭtus*:

1. *-gnĭtus* < **-gnăto-* < **-gn̥h₃-to-* or **-gnah₃-to-* with a special development in composition;
2. *-gnĭtus* < **-genoto-* < **-gnh₃-et-*, cf. Gr. ἀγνώς or ἄσχετος.

2. Laryngeal between resonant and vowel (*RHV*)

2.1. Introduction

In the notation *RHV*, the *R* denotes a resonant (*r*, *l*, *m*, *n*) which was not preceded by a vowel (i.e. *e*, *o*) and may therefore be liable to vocalization (which sets it apart from *CHV* discussed in IV.B.2). That this vocalization indeed occurred cannot be accepted a priori. In order to find out if, when and how *R* was vocalized, a division of *RHV* in three more specific constellations is called for: *#RHV* (section 2.2); *CRHV* (section 2.3); *HRHV* (section IV.F.2). Of other constellations, viz. *IRHV* and *RRHV*, no Latin reflexes were found (but compare Lat. *tollunt*, which ultimately reflects **tlnh₂-enti* and seems to point to a vocalization *R̥RHV*; see chapter V.D.3.3). Strictly speaking, instances of *RHIC*, with vocalic *I*, belong in chapter IV.E.11, but they will be discussed here because of their relevance to the present problems.

2.2. Word-initial *RHV*

I have found only two reliable instances, which point to the conclusion that the initial resonant was consonantal and that the laryngeal was lost without a trace apart from the colouring of a following **-e-*.

1. *laevus* 'left' (*laevi* (sc. *boves*) *quorum cornua ad terram spectant* (Servius G. 3,55) probably contains the same word) may be compared with Gr. λαι(F)ός 'left', OCS. *lěvъ* 'id.' The non-acute intonation which is reflected in SCr. *lêvī*, *lȉjevī* 'left' forbids a reconstruction **leh₂iuo-* (which would have yielded **lèvī*, **ljèvī*). *laevus*, Gr. λαιός must therefore reflect **lh₂ei-uo-*.

2. *mōs* 'manner, way, custom, behaviour' probably reflects **mh₁-ōs* (Flobert 1973, 567-569), although **meh₁-ōs* cannot be altogether ruled out (cf. *aurōra* < **h₂eus-ōs-*). The root would then be identical to the one found in e.g. *mētīrī* 'to measure' (see IV.C.1.5.1 no. 10). As there are slight indications that a laryngeal was lost before a lengthened grade at a very early stage (see IV.C.1.3.6.2), *mōs* does not necessarily prove that in *#RHV-* the initial resonant was always consonantal.

2.3. Post-consonantal *RHV* (*CRHV*)

2.3.1. Introduction

Before the laryngeals were introduced in everyday PIE. reconstruction and thereby obtained their rightful status as in-

dependent phonemes, a cluster of the type *CRHV* was generally treated as containing an antevocalic vocalic resonant, and written *CR̥V*, *CR̥RV* (e.g. Sommer 1914, 44), *C$_e$RV* (e.g. Leumann 1977, 59), *C$_ə$RV*, or *C°RV* (e.g. Meillet 1937[8], 117-118). These notations generally blurred the primeval difference between PIE. *CRHV*, with a laryngeal, on the one hand, and alleged instances of reduced vowels (*C$_e$RV*), "Sprossvokale" (e.g. in *manēre* < *m$_e$n-ē- = *m°n-ē-), and Sievers-Lindeman forms of the type *CRe-/CR̥e-* (cf. Ved. *Dyáus*, *Dyàus*) on the other, which may be regarded as an important reason why there was, and as yet is, no consensus about the development of *CRHV* in Latin.

According to Sommer (1914, 44-45), **R̥R* yielded Lat. *ar*, *al*, *em*, *en*. Pfister, in his 1977 edition of Sommer's phonology (p. 45), is more cautious and provides Sommer's *em*, *en* with a question mark, without giving a reason for doing so apart from stating that Sommer's proposition has not won great acclaim. On the strength of *manēre*, Hirt claimed that there is reason to assume a development **N̥N* > *aN* (1907, 167); Meillet (1937, 117-118) assumed a development to *ar*, *al*, *am*, *an*, but *im*, *in* before following **i* (as in *sine*). Leumann (1977, 58-59) accepts that *r̥r* and *l̥l* yielded *ar* and *al* but is rather agnostic about the fate of *n̥n* and *m̥m*: he claims that there is evidence for a development to *aN* (*manēre*, *canis*, *ianitrīcēs*), *eN* (*tenuis*, *semel*) and *uN* (*humī*, *humus*, cf. Gr. χαμαί). Szemerényi (1980, 44-45) adheres to the idea that antevocalic *r̥*, *l̥*, *m̥*, *n̥* yielded Lat. *ar*, *al*, *am*, *an*, respectively (he does not give examples).

One would expect that the introduction of laryngeals and the ensuing possibility to separate instances reflecting *CRHV* from the "reduced vowels" (if such existed) led to a clearer insight in the history of the former, but the problem is seldom touched upon by modern works in the laryngealist framework, at least as far as Latin is concerned (e.g. Lindeman 1970, Mayrhofer 1986, Mayrhofer 1987). Beekes (1988a, 92) claimed that *CRHV* developed into Lat. *orV*, *olV*, *enV*, *emV* but only gives examples for the nasals.

What follows here is intended to be a complete list of the forms for which a sequence *CRHV* can be reconstructed for Latin. All instances of *CVRV* (and *CVRC-*, if a vowel was syncopated between *R* and *C*) in Ernout-Meillet's dictionary were checked for the presence of an original sequence *CRHV*. The material was selected on the basis of the following criteria:

1. There must be evidence that the root contained a resonant

followed by a laryngeal.
2. It must be probable that the sequence *-*RH*- was indeed followed by a vowel, either because this vowel is still present in the attested Latin form, or because it can be reconstructed for a prehistoric stage (preceding the syncope of internal syllables).
3. It must be probable, either on morphological grounds or because other languages point to it, that the resonant was not preceded by the vowel **e* or **o* in PIE., in other words, that the root had zero grade.

The reader may be reminded that in my view PIE. **CRHC* regularly yielded Lat. *CRāC* and that there seems to be some evidence for a development of *CRHTC* to *CRăTC* (see IV.D. 1.3.4), but none at all for a development *CRHC* > *CaRaC* (IV.D.1.3.5). Consequently, a case like *calamitas* cannot reflect **klHm*-.

As emerges not only from previous investigations but also from the material that is to be discussed, it is of crucial importance to distinguish between liquids (section 2.3.2) and nasals (section 2.3.3).

2.3.2. *CLHV*

It is possible to reconstruct a sequence *CLHV* for the following words.

2.3.2.1. Latin *-al(V)-*, *-ar(V)-*

1. *calamitās* 'disaster' belongs to the root **kelH*- 'to beat'. That this root contained a laryngeal is shown by Balto-Slavic cognates: SCr. *klàti* 'to slaughter', Russ. *kolót'*, Lith. *kálti*, Latv. *kalt* 'to beat (with a hammer)' reflect BSl. **kãl*-, with acute intonation pointing to PIE. **kolH*-. If Gr. κλᾶρος 'lot, allotment' (perhaps rather cognate with κλάω), Olr. *clár* 'plank' < **k*l(*e*)*h*$_2$*ro*- are cognate, the laryngeal was **h*$_2$.

Calamitās is derived from an adjective, cf. *novitās*, *novus*, which probably appears in *in-columis* 'unharmed, safe'. The second *-a-* in *calamitās* must be compared with *alacer*, *anas*, *salaputtium* etc., where the vocalism of the first syllable has obviously influenced that of the second (see Meillet-Vendryes 1927, 117-118, Leumann 1977, 100, Sommer-Pfister 1977, 89). This assimilation may also account for the rounded vowel *-u-* in *in-columis* instead of expected **in-colimis*. **-ol-* developed from **-al-* as a result of vowel weakening and subsequent colouring by velar *-l-*. It is true that before a labial consonant unstressed *-i-* and *-u-* alternate (e.g. *manubiae*,

manibiae, *mancupium*, *mancipium*), but the point is that *incolumis* has *-u-* without exception. *Incolumis* itself is derived from the same adjective as *calamitās*. Whether this was **calamis* or **calamus* is not clear (Leumann 1977, 374 prefers **calamis*). The second syllable in *calamitas*, which one would expect to have been syncopated, was probably restored by analogy with the adjective from which it was derived.

Thus, I arrive at a pre-Latin form **calami-* (or **-mo-*) 'harmed, beaten', which, belonging to the root **kelh₂-*, may reflect **klh₂-em-*. Morphologically this reconstruction presumes the existence of an *m*-stem. No *m*-stem adjectives are known to me, but among substantives such formations can be found (e.g. Gr. παλάμη 'hand', κάλαμος 'reed', κνήμη 'shin', OIr. *cnáim*). There is, however, an alternative explanation for *calam-* because it may reflect **kela-* < **kelh₂-*, with Lat. *-a-* < **-e-* after a pure velar (see VI.B). For the ablaut of the hypothetical adjective **kelh₂-mo-* cf. **gʷher-mo-* 'warm' > Gr. θερμός.

For *clādēs* and *-cellō* see IV.D.1.3.2.1 no. 1.

2. *calāre* 'to call, proclaim, summon' belongs to the root **kelh₁-* 'to call' attested in Greek καλέω, καλήτωρ, κικλήσκω, κλητός, κληδόν (Beekes 1969, 235) and perhaps (late) Skt. *uṣā-kala-* 'cock'. U. *KAŘETU, KARITU*, *carsitu* 'calato' are exact parallels of *calāre* except for the inflection: the Umbrian forms belong to the ē-conjugation (Meiser 1986, 209; for a possible explanation of this difference see V.D.2.1.2 no. 11). Lat. *calendae* 'first day of the Roman month', which is in origin a substantivized gerund of this verb, reflects **calandae*. The assumption that this in its turn reflects **calāndae* (thus Leumann 1977, 107 and Steinbauer 1989, 175) is unnecessary because the verb probably had an *-ă-*inflection (with *-a-* < **-h₁-*; see V.D loc. cit.). As *calāre* reflects an athematic verb and originally belonged to the type *molere*, *vomere* < **mela-*, **ɥema-*, it is likely that it reflects **kela-* < **kelh₁-* (with **-e-* > *-a-* after a pure velar), but it is conceivable that *cal-* arose from antevocalic **klh₁-*, viz. in the 3pl. pres. **klh₁-enti*. *Con-cilium* 'meeting' may reflect **-kelh₁-io-*, **-kolh₁-io-* or **-klh₁-io-*.

For *clāmāre*, *clārus* see IV.D.1.3.2.1 no. 2.

3. *calēre*, *-uī*, *-itūrus* 'to be warm', with its derivatives *calor* and *calidus*, originally belongs to the root **ḱlh₁-*, which is also found in Lith. *šìlti* 'to warm oneself' < **ḱlH-*, OIc. *hlær*, OHG. *lāo* 'tepid' < **ḱleh₁uo-*, OIc. *hlána* 'to become mild', *hláka* 'Tauwetter' < **kleh₁-*. One form, how-

ever, which is clearly cognate, has a root **ḱl-*, without a laryngeal: Lith. *šiltas* 'warmed up' < **ḱl-to-*. OIc. *hlý* 'warmth', *hlýr* 'mild' < **ḱleu-io-* and W. *claear*, Bret. *klouar* 'tepid' < **kliaro-* are more remote.

W. *clyd* 'sheltered, warm', which Pokorny IEW. 551 connects with the root **ḱl(h₁)-*, may rather be connected with Ir. *clithe* < **ḱl-tio-* 'concealed, sheltered', which is the pret. pass. ptc. of *celid* 'to hide' (Lewis and Pedersen, *Concise Comparative Celtic Grammar*, 1937, 311).

calēre belongs to the stative ē-verbs, which normally have a zero grade root. In view of this, *calēre* probably reflects **ḱlh₁-eh₁-*.

4. *calix* 'cup, drinking vessel' may be of PIE. origin (thus EM. s.v., Pokorny IEW. 550). U. *SKALŚE-TA*, *scalse-to* 'ex patera' is the nearest comparandum. One could reconstruct Proto-It. **(s)kaliḱ-*. If Gr. κύλιξ 'cup' reflects **kʷlH-iḱ-*, with colouring of the vowel which arose before **-l-* by the preceding labiovelar (cf. γυνή), the Italic form might reflect the same PIE. form, with mobile *s-*, at least if we assume that PIE. **skʷ-* yielded **sḱ-*, and **k-* spread to the form without *s-* (see Steensland 1973, Schrijver fthc.b). According to Mayrhofer (KEWA s.v.), Skt. *kaláśa-* 'cup, pot' is cognate as well. This form, however, points to a suffix **-eḱ-*, not **-iḱ-*, and full grade of the root, which renders the connection questionable. It is more likely, however, that the Italic and Greek words belong to a common substratum language. One may conclude that the reconstruction of a PIE. form **(s)kʷlH-ik-* is uncertain.

5. *calx* 'heel', *calcāre* 'spur (on the heel)'. Lat. *calceus* 'kind of shoe' is reputedly of Etruscan origin, and in view of this it is possible that *calx* (and, ultimately, its derivative *calcāre*) has the same origin. EM. s.v. compare *falx*, *merx*, *arx*, all lacking a clear etymology. Perhaps Lith. *kulnìs*, *kulnas* 'heel', Bulg. *kǫ́lka*, SCr. *kȕk* 'hip, hind quarters' are cognate, which could go back to **klk-*. **ḱlH-ek-* would have yielded Lat. **calex*, **calicem* etc., so this cannot have been the origin of *calx*. It may reflect **kel-k-*, with **e* > *a* after a pure velar, but more likely *calx* does not continue an IE. etymon.

6. If *carbō* 'charcoal' reflects a pre-syncope form **carab(h)ō* or **caradhō*, this can go back to **krH-eb(h)* or **-edh-*, cf. Lith. *kùrti* 'to kindle' < **krH-*, Goth. *haúri* 'coal' <

*kr(H)-iom. The reconstruction of the laryngeal seems certain in view of the Lithuanian acute, but cf. Lat. *cremāre* 'to burn, incinerate' < *kr-em- (if cognate). However, *carbō* may reflect *ker(H)-. Given its specific meaning, an Indo-European origin is uncertain.

7. *carīna* 'half shell of a nut, keel of a ship', cf. W. *ceri* 'stone of a fruit' < *karī-, *kerī- or *korī-, Gr. κάρυον 'nut' (derived from an *u*-stem, cf. Myc. *ka-ru-pi*, Ipl.). The formation of the Celtic form is unclear, which may point to a non-IE. origin. The root reminds one of *kr- 'hard' (see VI.B.2 s.v. *cancer*). There is no evidence for a laryngeal, and *carīna* may reflect *ker- (with *e > a after a pure velar).

8. *carō*, G. *carnis* 'meat' probably belongs to the root *(s)ker-, *(s)kerH- 'to cut' in U. Nsg. *KARU*, O. Gsg. *carneis* 'piece, portion', Gr. κείρω, καρτός, Skt. *cárman-* 'skin, leather' < *k(e)r-, Olr. *scaraid* 'to separate', W. *ysgar* 'separation' < *skrH-V- etc. (see Pokorny IEW. 938 ff., also Mayrhofer EWaia I 311). *Carō* and U. *KARU* may reflect either *(s)krH-ōn or *(s)ker(H)-ōn (with *e > a after pure velar *k, see VI.B).

9. *gallus* 'cock' < *glH-o-? (with expressive gemination?). Cf. W. *galw* 'to call' < *glH-, but Russ. *gólos*, OCS. *glas*, SCr. *glâs* 'voice' point to *gol-so-, without a laryngeal (which may have been lost after *-oR-?). Alternatively, it is possible that *gallus* originally meant 'the Gaul', cf. Gr. μῆδος, περσικὸς ὄρνις.

10. *(h)aru-spex* 'person who examines the entrails of sacrificed animals', *hariolus*, *-a* 'soothsayer' go back to a root *ǵhrH- 'entrails, bowels'. It is unlikely that *hernia* 'hernia' belongs to this root in view of the semantic difference. *hīra* 'empty gut' cannot be connected with *ǵhrH- on formal grounds (Pokorny IEW. 443 claims that -ī- is Sabinian for -ē-).

A reflex of the laryngeal is found in the acute intonation of Lith. Npl. *žárnos* 'bowels' < *ǵhorH- and in the -*i*- of Skt. *hirā́* 'vein', *híra-* 'band, strip' < *ǵhrH-V-. OIc. *gǫrn*, OHG. *garn* < *ǵhor(H)- provide no evidence against the assumption of a laryngeal. Gr. χορδή 'bowel, sausage' must from a formal point of view be compared with Hitt. *karat-* 'entrails'. Frisk s.v. remarks that the suffix *-d-* was probably taken from the word for 'heart', Gr. κραδία, Hitt. *kard-*. The laryngeal may have been lost in Greek because of the preceding *-oR-

(see V.A.2).

Lat. *haru-* and *hari-* may be derived from **ǵhrH-u-*, *-i-*.

11. *palam* 'overt, publicly' probably belongs to the root **pelh₂-* (Pokorny IEW. 805), which indicates something flat, wide, stretched out (Hitt. *palḫi-* 'wide', Lat. *plānus* 'flat, wide'). The history of *palam* cannot be separated from that of *clam* 'hidden' (+ acc. 'for') and *cōram* 'in the presence' (+ abl. 'of'), of which the formation is equally unclear. WH. II 237 s.v. *palam* state that *-am* was taken from *cōram*, which is labelled an "adverbialisierter Akkusativ" and which is itself formed on the basis of *clam*. WH. I 272 s.v. *cōram* note that *cōram* is "nicht... Akkusativ von einem alten *ā-* Stamm (*ōra*), sondern Nachbildung von *clam*, *palam*", which puts *clam* in the centre of this formation. Leumann 1977, 119 states that *cōram* (< **co-ōs* 'mouth') is formed after *palam*, without in any way defining how *palam* is formed. EM. s.v. *cōram* seem to accept that it is built up out of **co-* and *ōs*, "mais la façon dont *cōram* est formé n'est pas claire. Aucune préposition latine n'en rend compte." If this etymology is correct, *-am* must be analogical after *palam* and *clam*.

It is generally accepted that *clam* belongs to the root **kel-*, **kelH-* in Olr. *celid*, ppp. *clithe* < **k(e)l-*, Gr. καλύπτω < **klH-ubh-* (?), Lat. *oc-culĕre* < **-kel(H)-*, *cēlāre* 'to hide' < **kĕl(H)-*. The most plausible interpretation is in my opinion that *clam* reflects an adverbialized accusative of a root noun, viz. **klām* < **klh₂-m* (with zero grade, cf. Gr. κάρτα < **krt-n*, see Ruijgh 1980). For *palam*, there seem to be three possibilities:

a. to a root **pal-*, from antevocalic **plh₂-*, an adverb in *-am* was made by analogy to *clam*. Since one must explain why *palam* is not used as a preposition in Republican Latin whereas *clam* is, I suppose that the two forms arose independently, which would preclude this possibility.

b. *palam* is a locative of the *m*-stem found in *palma* 'hand': **plh₂-em-i* > *palam* (for the apocope cf. **animāli* > *animal*). In that case, *palam* would originally have meant 'in the open hand'. However, original short **-ăm(-)* would probably yield *-em*, cf. *corni-cen*, *tībī-cen* < **-kan*, cf. *canĕre*. In **pălăm*, the second **-ă-* may however have been maintained because of the preceding **a* (cf. *anas*, *calamitās*) One might alternatively consider a locative **plh₂-ēm*, but whether this would yield **palām* and not **plām* is uncertain

(see IV.C.1.3.6.2).
c. *palam* is an adverbialized accusative of a *h_2*-stem of the root *plh_2-: *plh_2-eh_2-m > *$pal\bar{a}m$ > *palam*.

If the argument, which, to be sure, is not compelling, is accepted, *palam* reflects antevocalic *plh_2- (according to b. or c.).

12. *palea* 'chaff' probably reflects antevocalic *plH- (see E.3.3 no. 8), cf. OCS. *plěvy*, SCr. *plȅva*, Russ. dial. *polóva* 'chaff' < *$pelH$-u-. The suffix *-ea* may reflect *-$ei\bar{a}$-, a substantivized feminine of a material adjective in *-$eios$.

13. *palma* 'hand, palm', *palmus* 'length of the palm' must be compared with Gr. παλάμη < *plh_2-em-, OHG. *folma*, OIr. *lám*, W. *llaw* 'hand' < *plh_2-m-. In view of the ablaut in the *m*-suffix, we must reconstruct an *m*-stem (Beekes 1975, 12). Skt. *pāṇí-* (m.) 'hand' and Av. *pərənā* 'hohle Hand' do not have the *m*-suffix and are therefore at best distant cognates.

Palma and *palmus* probably reflect the pre-syncope forms *$palam\bar{a}$ and *$palamos$, although there is no independent evidence for these forms. The reason for this reconstruction is that *$pala$- can be explained from Indo-European whereas an old *pal- cannot. However, opinions differ concerning the history of *$pala$-.

According to Mayrhofer 1987, 101 note 64, it is possible that *palma* reflects *$pelama$, cf. *ianitrīcēs* < *$iena$-. It may be objected that as a rule *-eRa- did not become *-aRa- in Latin, cf. *terebra* < *$terasr\bar{a}$- < *$terh_1$-; *cerebrum* < *$kerasro$- < *$\acute{k}erh_2$-; *temerē* < *$tema$- < *$temH$-; *molit* < *$melati$ < *$melh_1$-ti etc. *ianitrīcēs* is itself a problem and cannot be used to explain *palma* (see IV.B.1.5.2). It has also been suggested that *palma* is a loan from Greek, which cannot be correct because that would not explain Lat. *palmus* and (if cognate) *palmes*, G. *-itis* 'vine'. *Palmus* and *palmes* were obviously derived from the same *m*-stem as *palma*. Nor is it possible that *palma* reflects *plh_2m- because the latter would yield *$pl\bar{a}m$-.

The remaining solution is that *palma*, *palmus*, *palmes* reflect *plh_2-em-, which is supported by Gr. παλάμη.

14. *palūs*, *-ūdis* 'marsh' is perhaps cognate with Lith. *pélkė* 'Moorbruch', Latv. *pelĩce* 'puddle' < *$pelHk$-. Lat. *palūs* may reflect an antevocalic root *plH- > *pal- (*plH- + *ud- 'water', with lengthening of *-u-* by Lachmann's law?). However, Schulze ap. Fraenkel s.v. connects the Baltic forms with words

for 'grey' (cf. Russ. *bélyj* 'white', *bolóto* 'marsh'). Mayrhofer (KEWA) connects Skt. *palvalá-* and *palvalyà-* 'marshy' with *palūs* and suggests that these words ultimately reflect a root meaning 'blaß' vel sim. Since the Skt. forms point to an aniṭ-root, they are probably not cognate with the seṭ-root found in Baltic and (probably) Latin. The connection of these words with a type of colour is possible but semantically not compelling. A root meaning 'pond, marsh' may perhaps be extracted from the words mentioned but it is uncertain whether they are of PIE. origin. Topographical terms are easily borrowed. Thus, *palūs* is at best a possible instance of *CRHV*.

15. *pariō*, *peperī*, *partum*, *parĕre*, which strictly speaking belongs in section IV.E.11.2, is a member of the *capiō*-subgroup of the third conjugation. Possibly *parentēs* 'parents' points to an (earlier?) *e/o*- or athematic inflection (EM. s.v.). *parāre* 'to prepare, make an effort to procure smth.' is denominative (cf. Steinbauer 1989, 211, who, with doubt, assumes original essive meaning 'to be a procurer') and may be derived from the noun reflected in *puer-pera* 'woman in labour' < *-*parā-* < **prH-eh₂-*. Other Latin cognates are *partus*, G. *-ūs* 'young, offspring, foetus' and *pars*, G. *partis* 'part, lot, portion' (on which see IV.D.1.3.5.2).

The closest cognate of *parĕre* seems to be Gr. ἔπορον 'procured', πέπρωται 'is destined', which reflect a root **prh₃-*. The inflectional type *pariō*, *parĕre* probably reflects an athematic *i*-inflection (thus Streitberg 1896, 152, recently Kortlandt 1989a, 109). It normally has a zero grade root (cf. *cupere*, *facere*, *rapere* etc.). Moreover, *par-* cannot be explained on the basis of **per(H)-* or **por(H)-*. Thus, *parĕre* most likely reflects **prh₃-i-*. The ppp., supinum and nomen actionis in *-tu-* are based on the present tense root *par-*.

A group of words denoting young animals reflect a root **pr-*, usually **pr-t-* or **pr-s-*, which may be a more distant relative of *parĕre*: Gr. πόρις, πόρτις, πόρταξ 'calf' < **por(-t)-*, W. *erthyl* 'young animal prematurely born' < **porti-* (or **per-*).

16. *parra* 'bird of ill omen'(?). Although there are many, though uncertain, cognates, the proto-form is not clear (possibly **(s)por(H)-*, or **(s)pHr-*, which is, however, a very rare type of root in PIE., with various suffixes and problems of detail): **spr-g-* in Gr. σποργίλος 'sparrow', σπέργουλος· ὀρνιθάριον ἄγριον (Hes.; see Frisk s.v. on the formations),

OPruss. *spurglis* 'sparrow' (< **sprg-*), MHG. *sperke* 'id.' (< **sperg-*); **spr-u-* in Goth. *sparwa* 'sparrow', OE. *spearwa*, OHG. *sparo* < **sporu̯-en-*, OIc. *spǫrr* < **sporu̯o-*; Gr. σπαράοιον· ὄρνεον ἐμφερὲς στρουθῷ (Hes.) < **σπαρF-* (?) may reflect **spr-u̯-*. Co. *frau*, Bret. *frao* 'crow' < **sprau-* do not necessarily reflect a form with a laryngeal (**spreh₂-u-* ?) as they may also reflect **spreu-* (cf. **neu̯n̥* > W. *naw*, Bret. *nav*) under as yet unspecified circumstances. Whether *parra* belongs here may be doubted: it does not have *s-* or *-u̯-* or *-g-*. The closest cognate of *parra* is U. *parfa, PARFAM* 'parram' < **parVzā-* (Meiser 1986, 174), which may point to PIE. **(s)prH-es-*, but the laryngeal is not supported by other languages. *parra* cannot therefore be used as evidence for the development of antevocalic *CRH*.

When speaking of *parra* one is reminded of *passer*, Gsg. *-eris* 'sparrow', also 'Blaudrossel' (see WH. s.v.) and *pārus* 'tit'. The etymological dictionaries do not offer an etymology for either. *passer* cannot reflect **par-* and cannot therefore be cognate with *parra*. I wonder whether *passer* and *pārus*, despite the different inflection, originated in the same paradigm **passro-* < **pat-tro-*. The Nsg. **passro-* would yield *passer* and in the oblique cases, e.g. the Gsg. **passrī*, **-ss-* before *-r-* would disappear with lengthening of the preceding vowel: **passrī-* > **pārī*. This paradigm was subsequently skewed, and *passer* adopted a new, consonant stem inflection, while oblique *pār-* gave rise to a new Nsg. *pārus*. **pat-tro-* probably contains the root **pet(h₁)-* 'to fly'. This etymology closely resembles the one proposed by Szemerényi 1985, 271, who, himself following Goidànich, reconstructs **pat-ter-* (comparing W. *adar* 'birds'). For the masculine form of the suffix **-tro-* cf. *culter* 'knife' < **col-tros* (Leumann 1977, 313). The development of *-a-* before *CCC* would be in accordance with chapter VI.E.3.

17. Lat. *salīva* 'spit', *salebra* 'dirt' < **sales-rā*?. W. *haliw*, Ir. *saile* 'spit' < **salīvā-* are generally considered to be loans from Latin (Pedersen I 211, 216, Pokorny IEW. 879), which given the exact formal and semantic correspondence is likely. However, Vendryes (S-14) pointed out that the Celtic forms may be native in view of the fact that the etymon is present in Ir. *sal* (f, ā) 'dirt', *salach* 'dirty', W. *halawg* 'id.' < **salāko-*, which cannot be explained as loans. It seems safest to regard *haliw* and *saile* as loans, for the reason given, and to assume a native **sal-* 'dirt', which is probably cognate with

salīva, *salebra*. This **sal-* is usually considered cognate with OHG. *salo*, G. *salwes* 'dirt', OIc. *sǫlr* 'dirty yellow' and with Russ. *solovój* 'isabellfarben', *solóvyj* 'light bay (horse)', Russ.-CS. *slavoj-očije* 'state of having greenish eyes, glaucitas' (thus WH., Pokorny IEW. 879), which seems to point to "European *a*" (Kuryłowicz 1956, 195). EM. remark that the etymology is not all that clear for semantic reasons, which seems to me only partly justified: the semantic gap between Celtic and Slavic is bridged by Germanic 'dirt, dirty yellow'; there is no semantic problem in connecting *salebra* with this root, but one may doubt the connection with *salīva*. The fact remains that 'dirty yellow' is a sufficiently adequate description of what *salīva* denotes. The formation of *salīva* is admittedly opaque.

If all words are cognate, the etymon probably goes back to Indo-European: it is unlikely that a word belonging to this semantic sphere was borrowed independently by a number of languages. The assumption of "European *a*" is not compelling: Italic and Celtic *a* and the accentuation of Russ. *solóvyj* may be explained from a laryngeal. In that case *salebra*, *salīva*, Ir. *sal* reflect antevocalic **slH-* and *solóvyj*, *slavoj-*, *salo*, *sǫlr* reflect **solH-uo-*. I conclude that *salebra* and *salīva* are possible cases of antevocalic **slH-*.

18. *spargere*, *sparsī*, *sparsum* 'to strew, sprinkle, scatter' probably reflects a root **sperg-* (see VI.E.3.2 s.v. *spargĕre*).

19. *sparus* 'spear' vel sim. has been compared with OHG. *sper*, OIc. *spjǫrr* 'spear' and further with OHG. *sparro* 'Balken, Stange', OWN. *sparri* 'Sparren, Balken'. Alb. *shparr* 'kind of oak' may also be cognate. If one wishes to combine these forms and if one accepts Rosemarie Lühr's explanation of Germ. *-rr-* < **-rH-* (1976, 86 note 19), a root **sperH-*, **sporH-* may be reconstructed. If so, Lat. *sparus* may reflect **sprH-o-*. Because of the limited distribution of the etymon, it is perhaps not of Indo-European origin. It may be a loan from Germanic. *sparus* is therefore at best a possible case of antevocalic **sprH-*.

20. *valēre* 'to be strong, well' belongs to a root of which forms with a laryngeal are well represented. Toch. A *wäl*, Gsg. *lānt*, B *walo*, Gsg. *lānte* 'king' reflect PToch. **wəlō(nts)*, Gsg. **wlant-os* < PIE. **u̯lh₂-ōnt-s*, **u̯lh₂-nt-os* (Kortlandt 1988b, Lubotsky fthc.).

One Celtic form, which must be cognate and which reflects a laryngeal, requires somewhat more discussion because of a

hitherto unsolved problem of historical phonology. W. *gwaladr* 'ruler' probably reflects **u̯lh₂-etro-* (for the formation cf. Ir. *scél*, W. *chwedl* < **skᵂ-etlo-*), with antevocalic **-lH-* developing into *-al-*, which is the normal development in Celtic. On the other hand, OIr. *flaith* 'rule', W. *gwlad* 'country' reflect PCelt. **wlăti-*, with short *-ă-* instead of expected long *-ā-* (**u̯l̥h₂-ti-* > **u̯lāti-*). What has apparently happened is that in Proto-Celtic the initial **u-* was a vowel rather than a consonant (similarly Lubotsky fthc. note 2), and consequently **-l-* was a consonant: **ulh₂ti-* > **ulăti-* > **u̯lăti-* > *flaith*, W. *gwlad*. This interpretation is supported by OIr. *flann* 'red (as blood)', which is probably cognate with Hittite *u̯alḫ-* 'schlagen', Lat. *volnus* 'wound' < **u̯elHnos* (Pokorny IEW. 1145). *flann* may be reconstructed as **u̯lasno-* < **ulasno-* < **ulHsno-*. Another instance is W. *gwraidd* 'roots' < *u̯rădio-* < **urh₂d-io-* (cf. *rādīx* etc., see IV.D.1.3.2.1 no. 26). An originally identical vocalization of word-initial **ul-* is found in the Ir. personal name *Olc* < **ulkwo-*, which McCone 1985 plausibly connected with PIE. **ulkᵂo-* 'wolf' (which in most languages was **u̯l̥kᵂo-*). OIr. *olann*, W. *gwlan* 'wool' < **ulanā-* also have short *-ă-* but *olann* differs from *flaith* and *flann* in that it has maintained the vocalic quality of **u-*, which may perhaps be explained by the fact that PIE. 'wool' had an initial laryngeal that was maintained until after **ul-* in later *flaith*, *flann* and *gwraidd* had become **u̯l-*; cf. Hitt. *ḫulana-*, *hulii̯a-* 'wool'. I conclude that word-initial **uRH-* did not become **u̯Ṛ̥H-* in Celtic, but had vocalic **u-* and consonantal **R* until after the vocalization of the laryngeals. Thus, *flaith*, W. *gwlad* reflect **ulati-* < **ulh₂-ti-*.

The Germanic forms, e.g. OHG. *walten* 'to dominate' < **uol(H)-t/dh-*, do not give information about the presence of a laryngeal. The BSl. material, however, points to the absence of a laryngeal: Lith. *valdaũ*, *valdýti* 'to govern', Latv. *vàldît* 'to rule' < **u̯oldh-*; SCr. *vládati* 'to rule', *vláda* 'rule', *vlâst* 'power', Sin. *vlâst* 'property' < **u̯oldh-* (since the latter is an *i*-stem, the non-acute root may theoretically be the result of Meillet's law). However, Lith. *veldù*, *véldi*, *veldėti* 'to take possession of' has an acute root, which points to **u̯elHdh-* or **u̯eld-* (Winter's law). WH. s.v. assume that since the final dental was *-t-* in Celtic and **-t-* or **-dh-* in Germanic, and **-d-* or **-dh-* in Balto-Slavic, the PIE. root ended in **-t-*, and that the Balto-Slavic words were loans from Germanic. In my opinion, this is very doubtful. First, the Celtic

forms are best interpreted as containing the suffixes *-*ti*- and *-*etro*- rather than radical *-*t*-. In the second place, the root (**ueldh*-) is well represented in all BSl. languages, with many derivatives. It is hardly likely that a Germanic word, having passed Grimm's law, was borrowed by Balto-Slavic at a time when it was still a unity. Finally, it escapes me why all forms should reflect one proto-form, in view of the fact that PIE. was very versatile in the use of different root enlargements and suffixes.

We arrive at the following conclusion: Celtic and Tocharian have a root **ulh*$_2$-; Balto-Slavic and probably also Germanic have **uldh*-; Lith. *veldėti* reflects **u̯elh*$_2$*dh*- or **u̯eld*-; *-*h*$_2$- and *-*dh*- are probably root-enlargements. There is no evidence for a root **ul*-. Lat. *valēre*, an *-*eh*$_1$-stative with zero grade of the root, must therefore reflect **u̯lh*$_2$*-eh*$_1$- (with restoration of *-*ē*- for regular *-*ā*- < *-*h*$_2$*-eh*$_1$-).

21. *varus* (short *a*?) 'pimple' < **u̯rHo*-, cf. Lith. *vìras*, 'pimple in pork' < **u̯rHo*- (Pokorny IEW. 1151). Since no further cognates are found, one could doubt that *varus* goes back to a PIE. etymon.

2.3.2.2. Latin *-ol(V)-*, *-or(V)-*

22. *dolāre* 'to hew, cut square, to work wood' possibly reflects **dolh*$_2$*-eie*- (see V.D.2.1.2 no. 12). According to Meillet-Vendryes 1927, 271, *dolāre* (and no. 23 *forāre*, no. 29 *vorāre*) belongs to a group of iterative verbs with suffix *-ā-* and zero grade of the root (they are labelled intensives by Leumann 1977, 549-550). This interpretation would cause us to reconstruct **dlH-V*-, with an alleged development of antevocalic *-*l̥H*- to *-ol*-. However, some objections must be made. In the first place, this so-called intensive or iterative type, which I, following Steinbauer 1989, will label the type *occupāre*, is semantically very diverse to the extent that one cannot speak of a type (see Steinbauer 1989, 136 ff. for criticism and a much more satisfactory classification of (denominative) *ā*-verbs in general, including *occupāre*). What matters here is that if *dolāre* belongs to the denominative *ā*-verbs (which is denied by Steinbauer 1989, 126) it belongs to a productive category of denominative verbs. One therefore is not justified in reconstructing a PIE. primary type **dlH-eh*$_2$-. Secondly, and again under the unnecessary assumption that *dolāre* is a denominative verb, it need not reflect a zero grade root. Like *forāre* (no. 23), *morārī* (no. 26) and *vorāre* (no. 29), *dolāre* may be derived from an *o*-grade noun. The zero grade root which one

often encounters in denominative ā-verbs is not a consequence of an original rule for their formation but rather a side-effect due to the fact that the nouns from which the denominatives were formed had a zero grade root (cf. *ē-dŭcāre*, *dĭcāre* derived from *dux*, *(iū)-dex*, respectively).

One may conclude that there is no reason to insist on reconstructing *dolāre* as antevocalic **dlH-*.

23. *forāre* 'to perforate', which may be cognate with *ferīre* 'to hit', reflects a root **bhrH-*, cf. OHG. *borōn* 'to perforate, drill', Gr. φαρόωοι 'they plough', φάρος 'plough?' < **bhrH-V-*. Russ. *borót'* 'bezwingen' < **bhorH-* may belong here (Kortlandt 1975, 64, Pokorny IEW. 134), but this is uncertain for semantic reasons (see EM.). It seems to be generally accepted that *forāre* is based on an *o*-grade noun (thus Pokorny IEW. 134, Frisk s.v., Steinbauer 1989, 206), see no. 22. There is no reason to reconstruct antevocalic **bhrH-*.

24. *holus*, G. *-eris* 'cabbage' < *helus* (P.F. 89,3) < **ǵhel(H)-os* (see IV.B.2.2).

25. *molĕre* 'to grind' < **mela-* < **melh$_1$-* reflects an athematic paradigm. Cf. OIr. *melid*, W. *malu* 'to grind' (see V.D. 2.1.1 no. 2). *Mola* 'millstone, coarsely ground grains' is probably an *o*-grade noun, cf. *mora* (no. 26). There is no indication that Lat. *mol-* reflects antevocalic **mlH-*.

26. *mora* 'stop, pause'. The only cognate is OIr. *maraid* 'to stay' < **mrH-eti*. Lat. *mora* may be an *o*-grade noun of the type τομή and need not reflect antevocalic **mrH-*.

27. The subj. *at-tulās* of *tollere* belongs to the root **telh$_2$-*. According to Oettinger 1984, 200, the roots **tlh$_2$-* and **bhuh$_2$-* could have been the starting point for the development of an ā-subjunctive in Latin when the injunctive of the root aorist **tleh$_2$-* was reanalyzed as a root **tl-* with a suffix **-eh$_2$-*, which had the modal function of the injunctive. On the other hand, in Oettinger's theory Lat. *-tulās* cannot be an old form because of the root vocalism. As regards the present issue, it is unnecessary to regard *-tulās* as a very archaic form reflecting **tlh$_2$-eh$_2$-* because the ā-subjunctive was, of course, a productive category and could be formed from almost all verbs. *-tulās* may therefore reflect a relatively late ā-subjunctive based on the non-present stem **tol-* (in *tetulī*) or **tel-* (of which there seem to be no other reflexes in the Latin verb). (See also Oettinger op. cit. 194.) The original quality of the *-u-*

cannot be ascertained: it may reflect unstressed *-a-*, *-e-* or *-o-*.

28. *volnus*, G. *-eris* 'wound' < **u̯olanos* < **u̯elHnos* (see IV.B.1.4.4.1 no. 20; for Olr. *flann* < **ulHsno-* see no. 20 above). **ulH-en-os* is less likely, and even impossible if the *s*-stem is old.

29. *vorāre* 'to swallow' is a denominative (Steinbauer 1989, 216), probably derived from an *o*-grade noun (cf. *carni-vorus* and *dolāre*, *forāre*, *mola*, *mora*, *morārī*). It contains the root **gʷerh₃-*, cf. Gr. βιβρώσκω, Lith. *gérti* 'to swallow', Skt. *giráti*, *gṛṇáti* 'id.' There is no reason to reconstruct antevocalic **gʷrh₃-*.

2.3.2.3. Conclusion

The results of 2.3.2.1 and 2.3.2.2 are presented in the diagram. The following words contain the reflex of PIE. *CLHV*.

probable		possible		doubtful	
3	*calēre* <**ḱlh₁eh₁-*	1	*calami-* <**k(e)lh₂-*	4	*calix*
10	*haruspex* <**ǵhrHu-*	2	*calāre* <**k(e)lh₁-*	5	*calx*
	hariolus <**ǵhrHi-*	8	*carō* <**k(e)r(H)-*	6	*carbō*
12	*palea* <**plHeio-*	11	*palam* <**plh₂-eh₂-*	7	*carīna*
13	*palma* <**plh₂em-*	14	*palūs* <**plH-(e)u-*	9	*gallus*
15	*parēre* <**prh₃i-*	17	*salīva* <**slH-*	16	*parra*
20	*valēre* <**ulh₂eh₁-*	21	*varus* <**urHo-*	18	*spargĕre*
		23	*forāre* <**bhrH-*?	19	*sparus*
		27	*-tulās* <**-tlh₂-*?	22	*dolāre*
		29	*vorāre* <**gʷrh₃-*?	25	*molĕre*
				26	*mora*
				28	*volnus*

The evidence is clearly in favour of a development of *CLHV* to Lat. *CaL(V)*. Every instance of alleged *CLHV* > *CoL(V)* is unreliable. The evidence may be supplemented by *calvus* 'bald' < **klHuo-*, *salvus*, *salūs* < **slH-u-* (?) and *cariēs* < **krH-ieh₁-* (or, if it is a late formation, *car-* < **ḱrH-V-*), where *CLH* was followed by obviously syllabic *-u-* and *-i-* (see IV.E.13.2.2.1 and 13.2.3.2.1).

There is no convincing evidence that *CLHV* yielded *CaL(V)* in Sabellian, but U. *KAŘETU*, *KAŘITU*, *carsitu* 'calato' (cf. *calāre*) and U. Nsg. *KARU* 'piece', O. Gsg. *carneis* 'id.' (cf. *carō*) appear to point in the same direction as Latin.

2.3.3. *CNHV*

2.3.3.1. Latin *-en(V)-*, *-em(V)-*

Nos. 3., 4. and 5. were taken from Beekes 1983, 228-9.

1. *gener*, Gsg. *-erī* 'son in law' may reflect **ǵnH-ero-* or **ǵenH-(e)ro-*. Cf. Skt. *jā́mātar-*, Av. *zāmātar-*, Gr. γαμβρός, which may, however, reflect **ǵmH-(e)r-* (Beekes 1988a, 104 note 13). Full grade is found in Lith. *žéntas* (despite Fraenkel s.v.), SCr. *zȅt* < **ǵenH-to-*.

2. *lemurēs* 'ghosts'. Cf. Gr. λάμιαι 'ghosts', λαμυρός 'greedy, voracious', λάμια 'man-eating monster', which may reflect ante-vocalic **lmH-* if the etymon is Indo-European (which is, however, not admitted by EM. s.v.). Full grade is found in the possible cognates Lith. *lemóti* 'lechzen', W. *llef*, Bret. *leñv* 'voice, cry' < **lem(H)-*. The etymology is too insecure for any assumptions.

3. *similis* < **semilis* < **semalis* 'alike', cf. *semol*, *simul* 'at the same time'. OIr. *samail*, W. *hafal* 'similar, like' < **smh$_2$-el-i-* probably reflects the same protoform as Latin. Gr. ὁμαλός 'similar' probably owes its *o*-grade to ὁμός, ὅμοιος (Beekes 1983, 228-9). **semH-* may also be found in Skt. *samá-*, Gr. ὁμός < **somHo-*. The basic root is **sem-* 'one'. Goth. *simle* 'once', OE. *simbel*, OS. *sim(b)la*, OHG. *simble* 'always' and probably also Lat. *semel* reflect full grade **sem(H)-l-*, but they are semantically somewhat distant. In view of the Celtic forms, which are semantically identical to Latin *similis*, the latter most likely reflects zero grade **smh$_2$-el-i-* > **semali-*.

For the development **sema-* > **semi-* > *simi-* cf. **seni* > **sini* > *sine* below, and see Sommer-Pfister 1977, 94, Leumann 1977, 101. For a discussion of Meillet's **-°ni-* > *-ini-* see Beekes loc. cit.

4. *sine* 'without' < **seni* < **snH-i*. Cf. OIr. *sain* 'different, special' < **snh$_1$-i-*, Toch. A *sne*, B *snai* 'without' < PToch. **snai* < **snh$_1$-i*. The assumption that the laryngeal was **h$_1$* is based on Gr. ἄνευ 'without' < **snh$_1$-eu* (but cf. Pinault 1989, 40-44, who assumes a Sievers-Lindeman form). OHG. *suntar* etc. 'without' points to zero grade as well. Skt. *sanútar* 'away, off, aside', though having an entirely different formation, may also reflect **snh$_1$-(i/u-)*.

As there is no evidence for a full grade root anywhere and as the closest cognates have a zero grade root, Lat. *sine* <

**seni* reflects **snh₁-i*.

5. *tenuis* 'delicate, fine' reflects a PIE. *u*-stem **tnh₂-u-*, cf. Skt. *tanú-* 'thin, slender', OCS. *tьnъ-kъ* 'fine', Gr. ταν*ύ*- 'id.'. OIr. *tanae*, W. *teneu*, C. *tanow* and Bret. *tanao* 'slender, thin' < **tanu̯io-* and Gr. τανα*ό*ς 'long' < **tanu̯o-* reflect a form with full grade of the suffix, **tnh₂-eu-*. The full grade root in Lith. *tę́vas* and Latv. *tiêvs* < **tenh₂-u-o-* is clearly secondary in view of OCS. *tьnъkъ*. Thus, *tenuis* must reflect a zero grade root. It may reflect the form with full grade suffix found in Celtic, in which case one must reconstruct **tnh₂-eu-i-* > **tenaui-* > *tenuis*.

2.3.3.2. Latin *-an(V)-*, *-am(V)-*

There are two possible examples in which **CNHV* seems to yield *CaNV*.

6. *canere* 'to sing'. All cognate forms can be explained by a root which is either **knh₂-* or **kh₂n-*: U. *KANETU* 'canito', OIr. *canaid* 'to sing', W. *canu* 'to play an instrument', Goth. *hana* 'cock' (**kon(H)-* or **kHn-*) Gr. ἠϊ-κανός 'which sings early, cock'.

Gr. καναχή 'noise' < **knh₂-egh-* (?) seems to point to **knh₂-*, but it may have been formed after οτενάζω, οτοναχή, ταροχή. Pleading for a root **kh₂n-* are Lat. *cantus* and *carmen*, which cannot represent syncopated **cana-* because syncope did not occur in trisyllabic words with only short vowels. But cf. *parĕre*, *partus*, *pars*, the latter two of which were based on the present tense root *par-* < **prh₃-V-* (see IV.D. 1.3.5.2). W. *g(w)o-gawn*, *gogoniant* 'famous' < **kān-/kōn-* and OIc. *høna* 'hen', OHG. *huon* 'Huhn' < **kān-/kōn-* point to **keh₂n-* rather than to **kōnh₂-*. A root structure **kh₂n-* is admittedly very rare in PIE. but does exist: cf. Gr. κήρῡξ < **keh₂r-*, Skt. *kī́rti-* < **krh₂-ti-*, Lat. *cārus*, OIr. *caraid* < **k(e)h₂ro-*, Toch. A *krant*, B *krent* 'good' < **krh₂-ont-* (see chapter IV.B.3 on *CHR*).

A third possibility, which does not seem impossible in view of the fact that all languages have *a*-vocalism, is that the etymon contains "European *a*" (Kuryłowicz 1956, see IV.B.1.1). In any case, *canere* cannot be used as evidence for the development of antevocalic **CNH*.

7. *ianitrīcēs* 'wives of brothers', cf. Gr. ἐνάτηρ 'wife of one's husband's brother', OLith. *jentė*, SCr. *jȅtrva* < **ienh₂-ter-*, Skt. *yā́tar-* 'id.' < **inh₂-ter-*. The *a* of Latin

is a problem (see IV.B.1.5.1). For the present issue, it will suffice to note that *ianitr-* cannot reflect **inh₂-etr-* because the latter is morphologically impossible.

2.3.3.3. Conclusion

The following words reflect PIE. **CNHV*.

probable	possible	doubtful
3 *similis* <**smh₂li-*	1 *gener* <**ǵ(e)nh₁-*	2 *lemurēs*
4 *sine* <**snh₁i*		6 *canĕre*
5 *tenuis* <**tnh₂eu-*		7 *ianitrīcēs*

The material indicates that **CNHV* developed into **CeNV*. The raising to *-iN-* in *similis* and *sine* can be explained only on the basis of earlier **-eN-* (**-eN-* > **-iN-* before *-i-*), not on the basis of **-aN-* or **-°N-* (Beekes 1983, 228-9). *semol* and *tenuis* show that this basis is correct.

Sabellian does not provide us with a reflex of **CNHV*.

2.3.4. General conclusions, relative chronology

We have seen that PIE. *CRHV* yielded Lat. *Car(V), Cal(V), Cen(V), Cem(V)*, exactly as Sommer claimed many decades ago. As far as *CLHV* is concerned, the development is identical to that of *CLHI* (> *CaLI*, see IV.E.11.2 and 13.2.2), in which *I* was apparently vocalic, whether it was followed by a vowel or not. Apart from *sine*, there is no evidence for the development of **CNHI*.

The development of the vocalic nasals before **-HV-* turns out to be identical to that in other environments (e.g. **ḱm̥tom* > *centum*), whereas the development of the vocalic liquids differs from that in other environments (e.g. **mr̥ti-* > *morti-*). This discrepancy must probably be explained on the basis of the relative chronology: the development of the vocalic liquids to **-or-*, **-ol-* must have postdated the development to **-ar-*, **-al-* before **-HV-* because otherwise *CLHV* would have yielded **CoLHV* > *CoL(V)*. On the other hand, the development of the vocalic nasals to **-em-*, **-en-* must be dated before the loss of the laryngeal in PIE. **CRHV* (which led to **-ar-*, **-al-*) because this explains why **CNHV* did not yield **-am-*, **-an-*. As will be noted below, the vocalization of the nasals must have been early in view of the development of word-initial *HRC-*. The scenario may be clarified in a diagram. Forms in brackets indicate that nothing happened at a particular

stage. At stage (2) the colouring of *-e-* to *-a-* is phonemicized, as well as the subphonemic vowel before **-l-*, as a result of the loss of the laryngeal (thus, */plh₂em/-* = appr. *[pₐlh₂am]-* > */palam/-*).

	**plh₂-em-*	**snh₁-i*	**km̥tom*	**mr̥ti-*
1 *N̥* > *eN*	(**plh₂em-*)	**senh₁i*	**kentom*	(**mr̥ti-*)
2 loss of *H*	**palam-*	**seni*	(**kentom*)	(**mr̥ti-*)
3 *L̥* > *oL*	(**palam-*)	(**seni*)	(**kentom*)	**morti-*
4	*palm-a*	*sine*	*centum*	*mors*

This chronology corresponds strikingly to the behaviour of the resonants in clusters of the type *#HRC-* which was discussed in chapter II.C. Word-initial **HNC-* yielded **HeNC-* (in accordance with the normal vocalization of **N̥*) with subsequent colouring of **e* to **a*, **o* if the preceding laryngeal was **h₂* or **h₃*, respectively. In view of this colouring, which presupposes the presence of the distinct laryngeals until after the vocalization of the vocalic nasals, the vocalization of the nasals must be dated very early. We have seen that there is reason to believe that *#HLC-* yielded *aLC-* rather than *oLC-*. In order to explain this behaviour, the same chronology as given for *RHV* is required (see II.D).

We may now turn to the consequences which this chronology has for Proto-Italic. As regards Sabellian, there is too little evidence to show exactly how *CRHV* and *#HRC-* have developed. What evidence there is, does not point to a development different from Latin. The vocalic liquids in non-laryngeal context yielded **-or-*, **-ol-*, as in Latin, and the vocalic nasals emerged as **-am-*, **-an-* in an initial syllable and **-em-*, **-en-* elsewhere, that is, with an appreciable difference compared to Latin (see Meiser 1986, 69).

As we have found on the basis of Latin that the development of **N̥* to **eN* antedated the development of **L̥* to **oL*, which was evidently a shared development of Latin and Sabellian, i.e. Proto-Italic, the development of the vocalic nasals must of necessity be of Proto-Italic date, too. The difference between *an* in Osc. *FANGVAM*, *ANTER* and **en* > *in* in Lat. *lingua*, *inter* must have arisen at a late stage. Because of the fact that the presumably early development of **HNC-* into Lat. **eNC-*, **aNC-*, **oNC-* presupposes an intermediate stage **HeNC-*, or **HəNC-* > **HeNC-*, I assume that **eN* (or **əN* but not **aN*) was the original outcome of **N̥*, and that Sabel-

lian **aN* is the result of a later development, possibly lowering as a result of nasalization in stressed syllables (cf. French *gens*, appr. [žã]).

In Celtic, **CRHV-* always yielded **CaRV-*: Olr. *cailech*, W. *ceiliog* 'cock' < **klh₁-i-*, W. *mal-u* 'to grind' < **mlh₁-*, Olr. *samail*, W. *hafal* < **smh₂eli-*, Olr. *sain* < **snh₁i-*, Olr. *tanae*, Co. *tanow*, Bret. *tanao* < **tnh₂-eu-io-*. If there was an Italo-Celtic unity, the development of **CRHV*, like that of **#HRC-* (see chapter II.D), must have postdated that unity. See further chapter V.E.

3. Laryngeal between resonants (*RHR*)

In the present chapter, constellations of the type *RHR* will be discussed. In theory, also *#HRHR*, *CHRHR* belong in this section but no reflexes of these two constellations were found. As for *#RHR-*, this is discussed in section 3.1.

3.1. Word-initial *RHR*

In accordance with the conclusion of IV.D.I.2, the initial resonant in a constellation *#RHR-* was consonantal, and the laryngeal was vocalized to **-ă-*. The following forms cannot be used to prove this development, however, as *V̄RC* would have become *V̆RC* by the operation of the Latin version of Osthoff's law (Sommer-Pfister 1977, 102).

1. *lambere*, *lambī*, *lambitus* 'to lick' belongs to a group of expressive words, of which OE. *lapian*, OIc. *lepia*, OHG. *laffa* 'to lick' < PGm. **lap-* are closest to the Latin form. *lamb-* and PGm. **lap-* can be combined as **lHb-*, but PIE. probably did not have a phoneme *b*. Gr. λαφύσσω, and probably also λάπτω 'to lick', and Arm. *lapᶜem*, Alb. *lap-* 'schlürfen' have a different labial stop but agree in their *a*-vocalism. It is hazardous, but not impossible, to reconstruct **h₂* in an expressive root of this kind.

2. *languēre* < **lh₂ng-u̯-* (See D.1.2.2 no. 4).

3. *mandere*, *mandī*, *mānsum* 'to devour, chew, eat', *māsūcius* gl. *edāx* (P.F. 123,1) < **mans-ūcius* are generally connected with Gr. μαοάομαι 'to chew', an iterative-intensive based on **madh-i̯-* (Frisk s.v.), μάθυιαι· γνάθοι (Hes.), μάοταξ 'mouth' < **madh-*. Beekes reconstructs **mh₂dh-* (1988b, 29).

3.2. Post-consonantal *RHR (CRHR)*

In accordance with the conclusion of section D.1.3.2, the expected outcome is *CRāRC-*, which would have been shortened to *CRăRC* in accordance with the Latin version of Osthoff's law.

1. If *blandus* 'flattering, sweet' reflects **blad-no-*, it may be cognate with Gr. μαλακός 'soft' < **mlh₂-ek-*, Ir. *mláith* 'soft' < **mlh₂-ti-* etc. In that case **blăd-* reflects **mlh₂-d-*. For this etymology, which is very uncertain, see WH. EM. connect *blandus* with *balbus*, *blatiō* etc., which lack a sound etymology. Uncertain. In any case, there is no reason to think that *blandus* reflects **mlHnd-*, and therefore it does not belong here.

2. *clangō* 'to cry, resound' appears to be cognate with Gr. κλάζω 'to shout' < **klangi̯ō*. The latter may be interpreted as a denominative of κλαγγή (cf. Dsg. κλαγγί) or as a primary nasal present that was remodelled after the type ὀλολύζω etc. (thus both Frisk and Chantraine). The perfect κεκλήγως, κέκλᾱγα (Alkm.) and the primary Latin verb favour the latter. As to Gr. κλαγγ-, this may reflect **klāng-* < **klh₂-n-g-*, with shortening according to Osthoff's law. In any case, Greek reflects a root with **h₂* and *clangō* must reflect **klh₂ng-*. However, expressive roots are often unreliable.

3. *glāns*, Gsg. *glandis* 'acorn' reflects a root **gʷlh₂-*, cf. Lith. *gìle* 'id.' < **gʷlh₂-V-*, OCS. *želǫdь*, SCr. *žȅlūd* 'id.' < **gʷelh₂-on-d(h)-*, Gr. βάλανος 'id.' < **gʷlh₂-en-*. On the inflection see Kortlandt 1985a, 120.

gland- must reflect **glānd-* < **gʷlh₂-n-d-* (for the shortening see e.g. Sommer-Pfister 1977, 102). **gʷleh₂nd-* is unlikely, as this would involve an otherwise unattested Schwebeablaut. The *-ā-* in Nsg. *glāns* is not indicative of the old quantity because every vowel before *-ns(-)* is long in Latin (Sommer-Pfister 1977, 100).

4. *grandō* 'hail' is probably a form of the root **groHd-* with a nasal infix. Cf. Russ. *grad*, SCr. *grȁd*, Cz. *hrád* 'hail', Lith. *grúodas* 'hartgefrorener Strassenkot, Steinfrost' and possibly Arm. *karkut* (< **kakrut*? < **ga-grōd-* ?), which point to **groHd-* or **greh₃d-*. *grandō* may reflect **grH-n-d-*, but **greh₂-n-d-* (> **grānd-*) cannot be ruled out.

5. *plangō*, *plānxī*, *plānctum* 'to hit (oneself), mourn', cf. *plāga* 'stroke, plague' < **pl(e)h₂g-*, must be connected with Gr. πλάζω 'to drive off course' < **plang-i̯ō*, aor. (Hom.)

ἐπλήγην and Goth. pret. *faí-flokun* 'to hit, flog'. Greek points to a root **pleh₂g-*. There are also forms which point to **plh₂k-*: Gr. πλήσσω < **pl(e)h₂k-ǰō* (which is probably secondary), Lith. *plókis* 'stroke' < **pleh₂k-*.

plangō apparently reflects **plh₂-n-g-*, with a nasal infix. The length of *-ā-* in *plānxī*, *plānctum* may be secondary (cf. *quīnctus*, Sommer-Pfister 1977, 100).

6. *trāns* 'past, over' reflects a root **trH-*, cf. Skt. *tirás* 'over' < **trH-os*, OIr. *tar* < **trH-os* (Beekes 1985, 183-184). It cannot reflect **trH-ent* because the latter would yield **tarans*. Since there is no evidence for a full grade **treh₂-* in any IE. language, the normal full grade being **terH-* (cf. Goth. *þaírh*), Lat. *trāns* most likely reflects **trHnt* (on **-nt#* > Proto-It. *-ns* see Steinbauer 1989, 236-7 note 14).

3.3. Conclusion

mandō, *lambō* and *langueō*, which reflect word-initial **RHRC-*, do not conflict with the conclusion of IV.D.1.2 that initial resonants before a laryngeal were consonantal.

It has appeared that **CRHRC* yielded **CRāRC* > *CRăRC*. Short *-ă-* is caused by the well-known phenomenon of shortening of long vowels before *RC* (see Sommer-Pfister 1977, 102). *glāns*, *trāns* and *plānxī*, *plānctum* represent automatic lengthenings. Thus, we may assume that **CRHRC* developed in the same way as **CRHC*, viz. to **CRāC*.

As to the relative chronology, we may conclude that in e.g. **trHns* the cluster *-rH-* had already yielded *-raH-* (> *-rā-*) before the development of the vocalic nasals to **-en-*, **-em-*. Otherwise the result of **trHns* would have been **trHens* > **tarens*.

E. *HI* AND *IH*

1. Introduction

The development of constellations containing PIE. *HI* and *IH* poses certain problems which set them apart from other constellations. In some constellations, the treatment of *I* does not differ from that of the vowels *e* and *o*, in others *I* is treated as a resonant (*r*, *l*, *m*, *n*). Because of this a priori unpredictable behaviour, it seems appropriate to devote a separate section to *HI* and *IH*. In a number of cases, the policy of distinguishing as many phonetic contexts as seems to be aprioristically necessary entails a number of redundancies. For instance, there is no reason to distinguish the material reflecting word-initial *IHC-* from that reflecting word-initial *RHC-*, as in both the laryngeal yielded **a* (see IV.D.1.2). If *IHC-* was not discussed in the same section as *RHC-*, whereas in retrospect separation of the two is unjustified, material relevant to the development of both is withheld, which is especially embarrassing if the material is scarce. By making use of numerous cross-references these problems are, I hope, avoided. In other instances, e.g. *RHIC* (section 12 below), part of the material is relevant for the development of *RHV* discussed in D.2.3 above (*haru-spex*, *parĕre*); but the discussion of these instances in the present section has the decided advantage of enabling us to contrast them with words in which *RHIC* was metathesized to *RIHC* (e.g. *grūs*), an issue that might otherwise have escaped our attention.

The material will be discussed in the same order *C*, *V*, *R* of the surrounding sounds as in the rest of this book, but a section on *XHIX* is always followed directly by a section on *IH* in the same environment; sometimes *XHIX* and *XIHX* are discussed in the same section because there are special problems involved in distinguishing between the two (section 2 on *CHIC* and *CIHC*) or because the material is extremely sparse (section 5 on *CHIRC* and *CIHRC*). Accordingly, the order of presentation is the following:

CHIC, *CIHC* (2); *CHIV* (3), *CIHV* (4); *CHIR*, *CIHR* (5); *VHIC* (6), *VIHC* (7); *VHIV* (8), *VIHV* (9); *VHIR*, *VIHR* (10); *RHIC* (11), *RIHC* (12); *RHIV* (13), *RIHV* (14); *RHIR*, *RIHR* (15).

Word-initial *IHC-* was discussed in section D.1.2: it yields Lat. *iaC-*, *uaC-*. The material is recapitulated in section 16.1. There is no material to shed any light on the development of

word-initial *IHV-* (see 16.2).

Word-final *-HI* is discussed in 17. Note that word-final *-IH* was discussed in chapter III.4.

HIHC- will be discussed in section F.4, the remaining attested constellations in section G.

HI, IH AFTER CONSONANT (CHI, CIH)

2. *CHIC* and *CIHC*

2.1. Introduction

It has of old been claimed that PIE. **CHIC* could under certain circumstances develop into *CīC*, *CūC* in several branches of Indo-European (see e.g. Beekes 1969, 174 ff.). The intermediate stage is assumed to be **CIHC* (e.g. Eichner 1988, 134), that is, **CHIC* became **CIHC* by metathesis. PIE. **CHIC* thus merged with PIE. **CIHC*, at least under certain circumstances.

The reflex *CīC*, *CūC* of PIE. **CHIC* is most often found in Indo-Iranian. Skt. *pītí-* < **píH-tí-* reflects a root **ph₃-* 'to drink' (cf. Lat. *pōculum* < **peh₃-tlom*) plus an enlargement **-i-*.

If a full grade form which shows the original position of the laryngeal happens to be missing, the distinction between the PIE. types **CHIC* and **CIHC* is obliterated, and cannot as a rule be recovered on the basis of Indo-Iranian (except in one particular instance, see 2.1.5). But things may be more complicated: it occurs more than once that a "new" full grade **CeIH-* is formed on the basis of metathesized **CIH* < **CHI*, e.g. Skt. *bhavītu* < **bheuH-tu*, based on **bhuH-* < **bhHu-* in e.g. *bhūtí-* < **bhuH-tí-* < **bhHu-tí-*. That the original shape of the root was **bhHu-* appears not only from Balto-Slavic accentological evidence (see 2.1.3) but also from the Skt. imperative *bodhí* < **bheh₂u-dhí* (Lubotsky fthc.a). Compare also **ǵhHu-* in Av. *zaozaomi* (which, if considered in isolation, may reflect **ǵheuH-* as well as **ǵheHu-*), probably also in Gr. κουχάομαι, Olr. *guth* < **ǵhHu-tó-* and Skt. inj. *hóma* < **ǵheh₂u-*, with the new full grade of the metathesized root in *hávīman-* 'invocation' < **ǵheuH-* (see Appendix 2.2 no. 4).

Both the frequent occurrence of metathesis in **CHIC* and the rise of "new" full grades based on the metathesized root make Indo-Iranian particularly unsuitable for distinguishing between PIE. **CHIC* and **CIHC* (but see 2.1.5).

Things are better in this respect outside Indo-Iranian. It has been claimed that Balto-Slavic, Greek and Italo-Celtic have to a

large extent preserved distinct reflexes of **CHIC* and **CIHC*. Before embarking on the Latin material we may attempt to make an inventory of the evidence that can be used to reconstruct PIE. **-HI-* (as opposed to **-IH-*). This requires some discussion (2.1.1 - 2.1.6). For a more detailed treatment of the Greek and Celtic evidence I refer to the Appendix.

2.1.1. Evidence for **HI* from full grade forms

This can best be illustrated by an example. Skt. *lūna-* 'cut off' reflects **luH-nó-*. **luH-* actually reflects earlier **lHu-*, as appears from Gr. λαῖον 'part of a plough, sock or blade' < **λαυϳον* < **leh₂uϳom*, if it belongs here. On the other hand, a number of forms were based on the metathesized root **luH-*, e.g. *lunāti* 'to cut' < **lu-n-eH-*, *laví-*, *lavítra-* 'sickle' < **leu̯H-*, so that it is impossible to use a full grade form as evidence for the PIE. root shape without a careful examination of all attested forms of the etymon.

Forms displaying the original shape **CHI* may be so rare as to be absent in most languages, compare e.g. **keuh₂-* in OIc. *hǫggva* 'to hew' < **hawwanan* (with "Verschärfung"), Latv. *kaût* 'to fight, slaughter' < **kouh₂-*, Gr. κεάζω 'to hew' < **keuh₂-*. In view of Toch. A *ko-*, B *kau-* 'to kill', B *kāwälñe* the original root form was probably **kh₂u-* (see E. 7.3.2.1 no.1). The metathesized form apparently became productive, so that all **kh₂u-*forms were ousted, except in Tocharian. In view of this productivity of **CIH*-forms, the absence of **CHI*-forms of a root is not necessarily indicative of its PIE. shape. Conversely, if there are but few forms of a root which point to PIE. **CHI*, as opposed to a majority of forms pointing to **CIH*, one is allowed to conclude that the PIE. root was indeed **CHI*, not **CIH*.

It must be noted that because of the nature of this type of evidence (viz. zero grade **CIH* vs. full grade **CeHI*, **CeIH*), the assumption that **CHI* yielded **CIH* is as valid as the assumption that **CIH* yielded **CHI*, in as far as this type of evidence is concerned: we cannot see why **CHI*-forms are older than **CIH*-forms. That **CIH*-forms are the older ones must however be rejected on the basis of the criteria that follow.

2.1.2. Evidence for **HI* from the root structure

Sometimes a root **CH-* is attested beside synonymous **CHI-*, **CIH-*. It is in this case likely that **-I-* is a root enlargement, and that the original form is **CHI-*. Compare e.g.

Skt. *dhārú-* 'sucking', Gr. θῆλυς 'feminine' < **dheh₁-lu-* beside Skt. *dhā́yase* 'quenching' < **dheh₁i-es-*, in view of which Skt. *dhītá-* 'sucked' < **dhih₁tó-* must reflect PIE. **dhh₁i-tó-*. Compare also **ph₃-* + **-i-* in *pītá-*, *pītí-*.

2.1.3. Evidence for **HI* from Balto-Slavic accentuation

Kortlandt (1975, 3 and 81) showed that in Balto-Slavic **CIHC* and **CHIC* did not merge. The evidence is twofold.

1. The difference in accentuation between the Russ. fem. pret. *pilá* 'drank', *bylá* 'was' and *bíla* 'hit', *šíla* 'sewed' is caused by the fact that the final accent was retracted by Hirt's law in *bíla* < **bhiHláH* and *šíla* < **siuHláH*, but not in *pilá* and *bylá*. This can be explained as follows. We know that Russ. *pi-* and *by-* ultimately go back to **ph₃i-* (see 2.1.2) and **bhh₂u-* (cf. Skt. *bodhí*, the Greek (2.1.4) and the Vedic accent (2.1.5)). The cause for the absence of stress-retraction by Hirt's law may therefore be sought in the shape of the root: at the time when Hirt's law operated, *pilá* and *bylá* were not **piHláH* and **bhuHláH*, but **pHiláH*, **bhHuláH*.

2. That Hirt's law operated in **CIH* but not in **CHI* is confirmed by the intonational difference between Latvian *šũts* < **siuHtó-* (with retraction according to Hirt's law, cf. Russ. *šíla*) and *bûts* < **bhHutó-* (no retraction according to Hirt's law, cf. Russ. *bylá*). The Latvian acute tone (˜) reflects a Baltic barytone paradigm with columnal stress on the first syllable: AP. (1). The barytonesis was caused by Hirt's law. The Latvian broken tone on a root-vowel (û) reflects an earlier oxytone paradigm in words with a postvocalic laryngeal phone (a PIE. laryngeal or a glottalic stop (Winter's law)) in the first syllable. Hirt's law apparently did not work here, for which there are three possible reasons:

(1) The glottalic phone in the first syllable was not a laryngeal, but a glottalic stop (*'t*, *'k*, *'p*, traditionally PIE. *d*, *g*, *b*);

(2) The paradigm contained polysyllabic end-stressed forms, in which the intermediate syllable(s) prevented the retraction of the ictus from the ending onto the laryngeal root: **suHnumì* developed not into **súHnumi* (by Hirt's law), but remained as such, so that a mobile paradigm is maintained. In the disyllabic Nsg. (and other cases) retraction of the ictus would be expected. The attested oxytonesis of this form (Lith. *sūnùs*) is due to a later remodelling into a regularly oxytone paradigm in all cases;

(3) The root contains a reflex of PIE. **-HI-*, not **-IH-*: thus Latv. *bûts* < **bhHu-tós*.

In the cases (1)-(3) we find a Baltic accentual paradigm (3), which corresponds to a Slavic accentual paradigm (c).

We can state that Balto-Slavic accentuation may help to decide between PIE. **CHI* and **CIH* in the following way. If:
(a) a root contains the reflex of PIE. **HI* or **IH*, and
(b) it belongs to the mobile paradigm (3) in Baltic and the corresponding accentual paradigm (c) in Slavic, and
(c) the mobile accent is not due to the fact that the inflectional paradigm contained a majority of end-stressed polysyllabic forms (the type Lith. *sūnùs*, Isg. *sūnumì*, see chapter I.B),
then this root must reflect PIE. **CHI*, not **CIH* (see Kortlandt 1981, 14-15).

The long reflex of PIE. **-HI-* in Baltic points to the fact that metathesis *did* occur, but only after the operation of Hirt's law.

2.1.4. Evidence for **HI* from Greek

In the Appendix (section 1), it will be held that it is likely that PIE. pretonic **-HI-* yielded Gr. -ῐ-, -ῠ-, and that PIE. stressed **-HI-* yielded Gr. -ī-, -ū-: cf. φῦμα, φῦλον with long -ū- vs. φῠτός with short -ῠ-. The numerous apparent exceptions (i.e. stressed short -ι-, -υ- and unstressed long -ι-, -υ-) may be accounted for by metatony. For the details I refer to the Appendix.

Apart from this source, there are two other sources of the alternation ῐ - ī, ῠ - ū, which must not be confused with the type φῦμα - φῠτός:
(1) Productive verbal ablaut of the type φρῠ́γω - ἐφρῠ́γην etc. (see Ruijgh 1976, 337-347), which is apparently not connected with laryngeal roots. One may compare the alternation of the suffix -νῡ-, -νῠ-;
(2) Full grades of the type **CeHI-* which alternated with zero grades **CHI-* were replaced by **Cī-/ū* at a certain stage after the loss of the laryngeals. This explains the anomalous zero grade of the root aorist ἔφῡν (see Appendix 1.3).

2.1.5. Evidence for **HI* from Indo-Iranian

Lubotsky 1988, § 2.30, noted that Vedic *i*-and *u*-stems derived from set-roots are predominantly oxytone: e.g. *girí-*, *sātí-*, *āpí*, *kārú-*. He convincingly argued that the accent shifted to *-i-*, *-u-* if the root vowel was *followed* by a laryngeal (In the case of *girí-* the root vowel was **-r̥-*). As this

"laryngeal accent shift" did not affect *bhū́mi-* and *bhū́ri-*, these forms must still have had **bhHu-* when the accent shift operated.

Thus, there is evidence for a root with PIE. **-HI-* if a cognate Vedic *i-* or *u*-stem has barytone accentuation.

2.1.6. Evidence for **HI* from Celtic

In Celtic one finds that PIE. **-HI-* is reflected as short **-ĭ-*, **-ŭ-* and as long **-ī-*, **-ū-*: cf. OIr. *biu*, W. *byw*, Bret. *bev* 'alive' < **bi̯uo-* < **gʷHi̯ó-*, cf. Skt. *jīváḥ*, Latv. *dzîvs*; OIr. *-both* < **bŭto-* < **bhHutó-*, cf. Skt. *bhūtáḥ*, Latv. *bûts*; Ir. *mín* 'soft' < **mh₁ini-*, cf. Lith. *mielas*, SCr. *mȉo* 'dear' < **meh₁ilo-* (see 2.4.3 no. 9). The material will be discussed at some length in the Appendix (section 2).

Although there is only very little material that can be used to prove anything, it seems that the distribution of the short and long reflexes of **-HI-* is governed by the same principle as in Greek: PIE. pretonic **-HI-* yielded Celtic **-ĭ-*, **-ŭ-*, and PIE. stressed **-HI-* yielded Celtic **-ī-*, **-ū-*.

2.2. Outline

I have collected all possible instances of PIE. **-HI-* and **-IH-* reflected in Latin. I have tried to distinguish between **-IH-* and **-HI-* on the basis of the criteria discussed in 2.1.1 to 2.1.6.

The outline is the following: 2.3. PIE. **-IH-*, 2.3.1. Latin *-ī-*, 2.3.2. Latin *-ū-*, 2.3.3. Latin *-ĭ-* and *-ŭ-*, 2.3.4. Evaluation; 2.4. PIE. **-HI-*, 2.4.1. Latin *-ī-*, 2.4.2. Latin *-ŭ-*, 2.4.3. Latin *-ī-*, 2.4.4. Latin *-ū-*, 2.4.5. Evaluation.

2.3. PIE. **-IH-*

In view of the frequent occurrence of the metathesized form of PIE. **-HI-*, it cannot in every individual instance be decided whether a given form continues PIE. **-IH-* or **-HI-*, especially if Balto-Slavic accentological evidence is lacking. In this section have been collected all instances of Latin *-ī-*, *-ū-*, *-ĭ-*, *-ŭ-* for which there is no evidence that they reflect PIE. **-HI-*. Therefore it may be that some words discussed here in fact contain the reflex of PIE. **-HI-*.

2.3.1. Latin *-ī-* < PIE. **-iH-*

1. *flīgere*, *flīctum* 'to hit', *flīctus* 'shock', probably have a close counterpart in Latv. *bliêzt*, *blaîzît* 'to hit' (despite

Fraenkel s.v. Lith. *bláĩžyti*), Russ. *blízok*, SCr. *blìzak* 'close, near'. The accent of these forms may be explained by Winter's law, under the assumption of a root **bhleiǵ-*. On the other hand, Gr. φλῑ́βω (with ῑ/ῐ, the type described by Ruijgh 1976) reflects **bhligʷ-*, the root supposedly also underlying *flīgō*.

If we enter the field of root-etymologies, one may conclude on the basis of Goth. *bliggwan*, OHG. *bliuwan* 'to hit' < **bhliH-u̯-* that *flīgere*, Latv. *bliêzt* and Gr. φλῑ́βω reflect **bhliH-* plus **-ǵ-* or **-gʷ-*. However, this is uncertain because one may also start from a basic root **bhli-*, which has parallel enlargements **-H-*, **-ǵ-* and **-gʷ-*. I conclude that it is uncertain whether *flīgō*, *flīctum* contained a laryngeal.

2. *frīgus* (ntr.), Gsg. *-oris* 'cold, frost', denom. (EM.) *frīgēre* 'to be stiff, cold, frozen' has an exact counterpart in Gr. ῥῖγος (ntr.) < **sriHǵos*. One would expect a full grade root in an *s*-stem, but the Greek form has zero grade. It is therefore doubtful whether one can reconstruct full grade for Latin. It is possible that *frīgus* and ῥῖγος are independent formations (thus Frisk s.v.). In that case, *frīgus* could be derived from *frīgēre* (cf. *calor*, *calēre* etc.), where zero grade in the root is regular.

3. *in-vītus* 'unwilling, reluctant' can be compared with Skt. *vītá-* 'beloved, pleasing' < **u̯iH-tó-*. From this participle but with the preverb **en-* (not with the negation **n̥-*) is derived *in-vītāre* 'to invite'. Since zero grade in the root is the rule in a *to*-participle, neither *invītus* nor *invītāre* may be expected to reflect full grade **u̯eiH-*.

4. *līvēre* 'be livid, bluish', *līvidus*, *līvor* and Olr. *lí* 'colour', W. *lliw* 'id.' < **(s)liH-u̯-* may be cognate with Russ. *slíva*, SCr. *šljìva*, Cz. *slíva* 'plum' < **sliH-u̯-* and with OHG. *slēha*, OE. *slāh* < **slaihōn* < **sloiH-kó-* 'sloe' (because of the colour of its berries). The Slavic forms point to PIE. **sliH-*.

5. Whether *pīnus* 'pine tree', *pītuīta* 'mucus, gum from trees' reflect PIE. **piH-* (or **pHi-*) in view of Skt. *pī́tu-dāru-* 'kind of tree' is very uncertain: in Skt. one also finds *pūtu-*, *pautu-* and some other forms, so that one may conclude that this word is not of IE. origin, and that it has no relation to *pīnus* (see Mayrhofer KEWA). *pīnus* must have some connection with πίτυς 'pine', with short -ι-. The word may be non-Indo-

European.

6. On *rītus* < **h₂riHtu-* see II.B.2.2 no. 28.

7. On *ir-rītāre* and *rīvus* < **h₃r(e)iH-* see II.B.2.3 nos. 38 and 39.

8. The zero grade of the optative suffix **-ih₁-* is found in *sīmus*, *sītis*, *sint*, later Lat. *sīs*, *sit*, also in *edim*, *velim*, *duim*.

9. *vīnum* probably reflects zero grade **u̯iHnom* (see Beekes 1987d, 21-26).

10. *vīrus* (*o*-stem ntr.) 'juice of plants, animals, poison' must reflect zero grade **u̯iHso-* in view of Olr. *fí*, Gr. ἰός 'venom' < **u̯īso-* < **u̯iHso-*. Skt. *viṣám* 'poison' has (unexplained) short *-i-*. Toch. A *wäs*, B *wase* 'poison' is probably a loan from Skt. (Kortlandt fthc. b).

11. *vīs* 'force', cf. Gr. Isg. ἶφι 'by force' < **u̯iH-s* (see Appendix 2.6 no. 2).

2.3.2. Latin *-ū-* < PIE. **-uH-*

12. *crūdus* 'bloody, raw, cruel' belongs to the root **kreuh₂-* in Gr. κρέας, Skt. *kraviṣ* < **kreuh₂-s*. It is unlikely that *crūdus* reflects **kro̯ido-* < **kro̯ado-* < **kreuh₂do-* because in accordance with what will be said in 7.2.3 below, **kro̯ido-* would have yielded Lat. **crōdus*. It is not possible to decide whether *crūdus* reflects **kruh₂-do-* or **kre/ouh₂-do-* (In the latter case with loss of the laryngeal without any reflex; Mezger 1935, 22 suggested **kruh₂-ido-* (laryngeal mine)).

13. *cūlus* 'arse' probably reflects zero grade **kuHlo-* in view of Olr. *cúl*, W. *cil* 'back', Prakrit *kūla* 'in the rear-guard'.

14. *dūdum* 'a long time' and *dūrāre* 'to last' reflect the root **duh₂-*, which is also found in Gr. δηρός '(too) long' < **δFᾱρος* < **dueh₂-ro-*, Arm. *tew* 'duration' < **deuh₂-*, OCS. *davě*, Russ. *davnó*, SCr. *dâvno*, Sin. *dávno* 'long' < **dōuh₂-* (lengthened grade according to Kortlandt 1975, 73), Skt. *dūrá-* 'far'. There is no evidence that the Latin forms reflect full grade **deuh₂-*. They may therefore be used as evidence for the development of **uH*.

15. *fruor*, *fruī*, *frūctus* (late: *fruitus*) 'to enjoy, use' reflects a root **bhruHǵ-* in view of Goth. *brukjan*, OHG.

brūhhan, OS. *brūkan* < **bhruHg-* (Pokorny IEW. 173). There are no further cognates. The loss of *-g-* in Latin is difficult to explain. To assume PIE. **-g^{w}-* (> Lat. *-u-*) is impossible because of Germanic and because **-ug^{w}-* had become **-ug-* in PIE. already (though perhaps **-uHg^{w}-* remained). I tend to reconstruct a *ie/io*-present **bhruHg-iōr* (cf. Germanic) > **frūgi̯ōr* > **frūiōr* > **frūu̯ōr*. The last step is not supported by more material but seems phonetically possible. *pius* < **pūios* and *fiō* < **bhŭiō* are inexact comparanda and cannot be used as counterevidence; *cuius* reflects *qu̯oios*, not **qu̯ui-* vel sim., and cannot be compared either.

There is no evidence for a full grade root. If *fruō* was indeed a *-ie/io*-present, one expects an original zero grade root (cf. *capiō*, *faciō*, *pariō*, *rapiō*). *Frūctus*, *frūnīscor* (< **frūgn-*), *frūmentum* (< **frūgm-*) are all derived from *fruō* and therefore probably reflect a zero grade root as well. *Frūx*, Gsg. *frūgis* 'fruit' must reflect zero grade because of U. Apl. *fri(f)* 'frūgēs', with *-i-* < **-ū-* < **-uH-*. Consequently, the entire etymon can be used here.

16. *fūmus* 'smoke' reflects an originally oxytone form (cf. Gr. θῡμός, Skt. *dhūmá-* < **dhuHmó-*). Its *-ū-* goes back to PIE. **-uH-*, not **-Hu-*, in view of the intonation of Lith. (pi.) *dū́mai*, Latv. *dūmi*, Russ. *dym*, SCr. *dȉm*, Sln. *dìm*, Cz. *dým* (cf. Kortlandt 1975, 52). The attested *-ū-* in Latin should have been short in accordance with Dybo's rule; see V.B.3.4.2, 3.5 and 6.

The same root is probably found in *fūlīgō* 'soot, carbon', cf. Ir. *dúil* 'wish' (cf. the semantics of Gr. θῡμός), Lith. *dū́lis* 'Nebel, Dunst, Baummoder zum Räuchern der Bienen', Latv. *dūlis*, *dūle* 'Räuchermasse zum Forttreiben der Bienen' < **dhuH-l-*. Compare also Hitt. *tuḫḫima-* 'panting, gasping'. Lat. *suffiō* 'to smoke' reflects **-dhuH-i̯ō* (see IV.G.3.1).

17. *iūbilāre* is probably derived from an onomatopoetic root **iū*. Because of its nature, a laryngeal cannot be reconstructed with any degree of certainty.

18. *iūs* 'broth' (ntr.) may reflect **iuH-s*, like Skt. *yū́ṣ-* (ntr.) 'broth', Lith. *jū́šė* 'fish soup'. One could also think of **ieuH-s*, which can be supported by OCS. *juxa*, SCr. *júha*, Russ. *uxá* 'soup' (AP b or c, cf. the type Gr. κρέας, Skt. *kravíṣ-* < **kreuh$_2$-s*). Since the latter reconstruction is no more likely than the former, *iūs* may reflect either a full or a zero grade root.

19. *mūs*, Gsg. *mūris* 'mouse, rat' < **muHs-*, cf. Skt. *múṣ*, Gr. μῦς, OCS. *myšь* etc. The laryngeal is demonstrated by the accentuation of SCr. *mìš*, Sln. *mìš* (AP (a)), which have a short vowel, pointing to PIE. **-uH-*.

20. *pūrus* 'pure' probably reflects **pHu-ro-* (see 2.4.4 no. 21 below).

21. The root **puH-* 'foul' will be discussed in Appendix 2.6 no. 4 s.v. OIr. *othar*. See also 2.3.3 no. 6 below s.v. *pŭter*. Lat. *pūs*, Gsg. *pūris*, *pūteō*, *pūtidus* must reflect **puH-s-*, **puH-t-*.

22. **rūtus* in *rūta caesa* 'alles, was auf einem Grundstück ausgegraben und gefällt ist' reflects **HruH-*, cf. OCS. *ryti* 'to dig', Russ. *za-ryt'* 'to bury', pret. fem. *-rýla*, Latv. *raût* 'ausreissen'. It must be distinguished from **h₃ru-* in Lat. *ruere*, *rŭtum* 'aufreissen, wühlen, scharren', Gr. ὀρούω 'to stir, move quickly', ὀρύσσω, ὀρώρυκται 'to dig' (< **h₃ru-gh-*), and Skt. *rutá-* 'zerschlagen, zerschmettert'.

There is independent (i.e. non-Latin) evidence for both **HruH-* and **Hru-*, the latter of which may explain short *-ŭ-* in the ppp. *rŭtus* (of *ruere*; see II.B.2.3 no. 41, and cf. 2.3.3 no. 8 below).

23. *sūgere*, *sūxī*, *sūctum* 'to suck' probably reflects **seug-* rather than **suHg-* despite OIr. *súigid* which is probably a loan from Latin (see Vendryes s.v.). OE. *sūcan* 'to suck' has an ablaut PGm. **ū : *au : *ŭ*, which probably reflects a remodelling of **iu : *au : *ŭ* after **ī : *ai : *ĭ* < **ei : *oi : *i*; it cannot be used to prove **suHg-*. Compare Latv. *sùkt*, OCS. *sъsati* 'to suck' < **suḱ-* and OIc. *súga*, MoHG. *saugen*, which point to PIE. **seuk-*, with **-k-*.

24. Lat. *sūs* 'swine', U. Asg. *sim*, Apl. *sif* reflects **suH-s*. See Appendix 2.6 no. 3.

25. *tū* 'you' < **tuH*, cf. OCS. *ty*, Gr. (Hom.) τύ-νη, Av. *tū* < **tuH* and Ved. *tuvám* < **tuHóm*. Gr. σύ, τύ reflect a form without a laryngeal.

26. If *tūtus* 'safe' is cognate with Skt. *tavīti* 'to be strong', it reflects **tuH-tó-*, but the connection is semantically weak.

27. For *ūber* < **HouHdh-* see E.7.3.2.2 and E.7.3.2.3.

2.3.3. Latin *-ĭ-* and *-ŭ-* < PIE. **-IH-*

1. On *cĭtum* (*cīēre*) < **ḱi-tu-*, not **kiH-tu-*, see E.2.4.1 no. 1.

2. Pokorny IEW. 669 compares Lat. *lĭcēre* 'to be offered for sale' with Latv. *līkt* 'dingen, sich vereinbaren', apparently from **liHk-*. However, beside *līkt* one finds *līgt* 'id.', which is cognate with Lith. *lýgstu* 'become equal' and with Goth. *ga-leiks* 'gleich' < *-liHg-*. Latv. *līk-* obviously arose from *līg-* before voiceless obstruents (thus Fraenkel s.v.). There is thus no reason to reconstruct a laryngeal for *lĭcēre*.

3. *vir* 'man' < **u̯iHró-* will be discussed in section V.B.3.2 and in the Appendix, 2.6 no. 2. U. *veiro* 'id' reflects short, not long **-i-* (Meiser 1986, 46). As to Volsc. *covehriu* 'cūriā?', *-eh-* cannot reflect either short or long **-i-* and therefore it cannot be cognate with *vĭr*. We must reconstruct PIt. **u̯ĭro-*. Short *-ĭ-* can probably be explained by Dybo's rule.

4. If *cŭmulus* 'heap, pile' belongs to the rather heterogeneous group of words which may be combined in the shape of PIE. **kuH-* 'to swell' (cf. e.g. Gr. κῦμα 'wave; foetus', κυέω 'to become pregnant', ἔγκυαρ 'pregnant', Skt. *śávīra-* 'strong' etc., see Pokorny IEW. 593), it is difficult to explain its short *-ŭ-*. However, the connection is far from evident and may be given up.

5. *dŭ-* 'two' in *dŭcentī*, *dŭcēnī*, *duplex*, *dŭbius*, cf. U. *TUPLER* 'binis', *dupla* 'binas' probably is not the zero grade of **duoH* 'two', but rather the zero grade of PIE. **duo*. Alternatively, *dŭ-* may have arisen by analogy with *trĭ-*, where forms like the Gpl. *dŭom*, *trĭom* may have exerted a strong influence (see WH.).

6. *pŭter* 'rotten' reflects **puHtri-* (see 2.3.2 no. 21 and Appendix 2.6 no. 4), not **pHutri-*, in view of the intonation of Lith. *pū́ti*, Latv. *pūt* 'to rot' < **puHtí-*, with retraction of the ictus in accordance with Hirt's law. For other cognates, which teach us nothing about the original position of the laryngeal, I refer to the Appendix. Compare Olr. *othar* < **putro-* < **puHtro-*, which also has an unexpected short vowel. We may note that in It-C. **puHtr-* the laryngeal stood before a constellation **-TC-*. In the case of **-RHTC-*, we have seen (IV.D.1.3.4) that the group **-RH-* seems to have undergone a special treatment in Italic, and perhaps in Italo-Celtic (type

glăber < **ghlHdhro-*). May we assume that a similar treatment also occurred in It.-C. **-IHTR-*, which resulted in the loss of the laryngeal? If on the other hand the Baltic forms reflect PIE. root-stressed **pHú-t i-*, in which case early metathesis to **-uH-* and the attested tones would result, *pŭter* and OIr. *othar* may reflect **pHu-tr-*. Very uncertain.

7. *rŭpex* 'block of stone, clumsy person', *rŭptiō* 'rupture', *rumpere*, *ruptus* 'to break' may be compared with Skt. *rúpyati* 'Reißen im Leibe haben' < **Hrup-* and Lat. *rūpēs* 'rock', OIc. *rjúfa*, OE. *rēofan* 'to break, tear' < **Hreup-*. Dybo 1961, 21 considered *rŭpex* etc. to be cases of shortened **-ū-*. However, all forms may be explained by an ablauting root **Hreup-*, **Hrup-*, and for Skt. *rúpyati* PIE. **Hrup-* (not **HruHp-*) is unavoidable.

It is possible that **Hrup-* and **HruHp-* are enlarged forms of the roots **Hru-* and **HruH-* discussed in E.2.3.2 no. 22 above.

8. *ruō*, *rŭtus* reflects **Hru-*, not **HruH-* (see 2.3.2 no. 22 above and especially II.B.2.3 no. 41).

9. On *sŭbulcus* 'swineherd' and *sŭcula* 'piglet' see Appendix 2.6 no. 3.

2.3.4. Evaluation

The result of the previous section is presented in the following diagrams. In the following words, PIE. **IH* is reflected as Lat. *-ī-*, *-ū-* (numbers refer to sections 2.3.1. and 2.3.2):

probable	possible	unreliable
2 *frīgus* <**sriHg-*	1 *flīgō* <**bhli(H)g$^{(w)}$-*	5 *pīnus*
3 *invītus* <**u̯iH-*	7 *irrītāre* <**h$_3$riHt-*?	17 *iūbilāre*
4 *līvēre* <**sliHu̯-*	*rīvus* <**h$_3$r(e)iHu̯o-*	26 *tūtus*
6 *rītus* <**h$_2$riH-*	9 *vīnum* <**u̯iHno-*	27 *ūber*
8 opt. *ī* <**-ih$_1$-*	10 *vīrus* <**u̯iHso-*?	
11 *vīs* <**u̯iH-s*	12 *crūdus* <**ḱruh$_2$do-*?	
14 *dūdum*,	13 *cūlus* <**ḱuHlo-*	
dūrāre <**duh$_2$-*	15 *frūctus* <**bhruHg-*	
16 *fūmus* <**dhuHmó-*	18 *iūs* <**i(e)uH(o)s*	
19 *mūs* <**muHs-*		
21 *pūs* <**puH-*		
22 **rūtus* <**HruHtó-*		
24 *sūs* <**suH-s*		
25 *tū* <**tuH*		

It appears from 3. *invītus*, 21. *pūtēre* (if this is derived from the *to*-participle **puHtó*-) and 22. **rūtus* that pretonic PIE. **-uH-* yielded *-ū-* in Latin. The vowel-length in *fūmus* is probably secondary (see V.B.3.4.2 and 3.5).

In the following words PIE. **-IH-* is reflected as Lat. *-ĭ-*, *-ŭ-* (Numbers refer to section E.2.3.3)

probable	possible	unlikely
3 *vĭr* <**u̯iHró-*	9 *sŭbulcus*,	1 *cĭtum*
6 *pŭter* <**puHtri-*	*sūcula* <**suH-*?	2 *līcēre*
		4 *cŭmulus*
		5 *dŭ-*
		7 *rŭpex* etc.
		8 *rŭtus*

The short vowel of 2. *vĭr* and 5. *pŭter* corresponds with the short vowel of Olr. *fer*, W. *gwr* and of Olr. *othar*, respectively. In view of this, it is reasonable to look for a common explanation. *vĭr* may be explained by the early Italo-Celto-Germanic pretonic shortening according to Dybo's rule (I refer to chapter V.B for a full discussion); *puter* reminds one of the distinct, and possibly Italo-Celtic, development of **RH* to **Ră* (not **Rā*) before *TR*, where the laryngeal was apparently lost at an early stage (see IV.D.1.3.4); alternatively, it contains a root **pHu-*.

2.4. PIE. **-HI-*

2.4.1. Latin *-ĭ-* < PIE. **-Hi-*

1. *cĭēre*, *cīvī*, *cĭtum* 'cause to move', *cĭtāre* 'to put into quick motion', *cĭtus* 'fast' are said to reflect a root **keh₁i-* (Pokorny, IEW. 538). The form *cītum* is secondary and late (see WH., EM.). That the root was **keh₁i-* depends on the validity of the connection with OPruss. *kylo*, Lith. *kíelė*, Latv. *cīelawa* 'wagtail' < **keh₁il-*, which is not very strong. At any rate, there is no trace of a laryngeal in Skt. *cyávate* 'starts to move', *cyutá-* and Gr. οεύω < **ki(e)u-*, which are more likely to be cognate with *cĭtum*. It is therefore probable that *cĭtum*, *cĭtus* reflect PIE. **ki-tó-*, not **kh₁i-tó-*.

It has been claimed that there is evidence for a root **kih₂-* in Gr. κίατο· ἐκινεῖτο (Hes.), Hom. ἐκίαθον and in κῑνέω, κίνυμαι 'to move', but this is not so strong as it might seem. Chantraine noticed that in Hesychius one may read ἔκειντο instead of ἐκινεῖτο, which would make it completely

worthless for our purpose. However, Chantraine's proposal has no more than the value of a conjecture. He remarked that ἐκίαθον may be analyzed as κι- + -αθ-, but it is unclear where -αθ- could have come from. Beekes 1969, 248 reconstructs *kih_2-, and assumes that -ῑ- in κῑνέω, κίνυμαι was analogically introduced from forms that regularly had *κῑ- < *kih_2-. It may however be possible to derive the length from the thematized plural *κιvF- > κῑν-, as Beekes notes, referring to Heubeck, but this solution does not work for most dialects, including Attic, where *κιvF- yielded κῖν-; in Ionian, the long vowel would be regular. One may conclude that the Greek evidence slightly favours PIE. *kih_2- (if one accepts Chantraine's considerations). As Prof. Ruijgh pointed out to me, *$kieu$-/*$kieh_2$- resembles *$dreu$-/*$dreh_2$- in Skt. *drávati*, Gr. ἔ-δρᾱ-ν, which is semantically related. In view of the limited evidence for *kih_2- and of the regular development of PIE. *-iH- to Latin -ī-, it is unlikely that Lat. *cītum*, *-us* reflects PIE. *kih_2to-.

2. *līnere*, *lēvī*, *lītum* 'to besmear' probably reflects PIE. *h_2li-, not *$(H)liH$- or *$(H)lHi$-. See II.B.2.2 no. 14 and 7.3.1.1 no. 2 below.

3. *vĭrēre* 'to be green, fresh', *viridis* 'green' does not have a good etymology (EM.). Dybo 1961, 11 connects it with Skt. *jīrá-* 'lebhaft, rasch', which seems possible, and with SCr. *žȋr* 'acorn', which is less evident. The root would be identical with *$g^{w}Hi$- 'to live' (Mayrhofer KEWA). If *vīrēre* contains this same root, it may reflect *$g^{w}Hi$-r-, with loss of *H.

However, Pokorny IEW. 1133 and WH. prefer to connect *vīrēre* with the root *$ueis$- in OIc. *vísir* 'sprout', OE. *wīse* 'sprout, stem', OHG. *wīsa*, MLG. *wese* 'Wiese' and Lith. *veīsti* 'to multiply', *vaīsus* 'fruit', which is indeed more satisfactory than the connecton with *$g^{w}Hi$-. In that case, *vīrēre* does not reflect a root with a laryngeal. It is clear that *vīrēre* cannot be used here.

2.4.2. Latin -ŭ- < PIE. *-Hu-

4. The first member of *bŭbulcus* 'cowherd' reflects the PIE. stem *$g^{w}h_3u$- 'cow' (see Kortlandt 1985a, 118-119, Lubotsky 1990, 133). Its short -ŭ- cannot be explained in the same way as that in Skt. *śataguḥ* 'having hundred cows', which probably lost the laryngeal in the second part of a compound (the type *ástṛta-*, *devátta-*, see WH.).

One might assume that Lat. *bŭ-* reflects PIE. **g^{w}h$_{3}$u-*, which would mean that the compound is very old in comparison with the numerous forms with *bū-*, for which, however, there is no indication. In view of the forms with *bū-* < **bou(o)-*, it seems best to assume that *bŭbulcus* replaces **būbulcus* < **boų(o)-* after *sŭbulcus* 'swineherd' (thus WH.). For *sŭbulcus* see Appendix 2.6 no. 3.

5. *cūlex* 'gnat' and Ir. *cuil*, W. *cylion-en* 'gnat' reflect **kŭl-*. It may reflect PIE. **ḱHul-* (see Appendix 2.2 no. 3).

6. *cŭtis*. It is rather difficult to decide which forms are cognate with Lat. *cŭtis* 'skin'. It seems best to distinguish three groups.
a. Gr. σκῦτος (ntr.) 'leather, hide, skin', MW. *eskit*, Co. *eskit*, *esgis* (fem.) 'shoe' < **ped-skūt-*, OIc. *húð*, OE. *hȳd*, OHG. *hūt* (fem., *i*) and Toch. A *kāc* 'skin' < **kwāc* < **kuHti-* (Hilmarsson 1985, 162-163). These forms point to PIE. **(s)kuHt-* 'hide, skin'. Lith. *kiáutas* (AP 3) 'cover', OPruss. *keuto* 'skin' < **keuH-to-* seem to belong here as well.
b. Lat. *cŭtis* 'skin', Gr. ἐγκυτί 'bis auf den Leib, die Haut' point to **kut-* 'skin'.
c. W. *cwd* 'bag, scrotum', Lat. *cunnus* 'pudendum muliebre', OHG. *hodo*, OFri. *hotha* 'Hode', Lith. *kutỹs* 'Beutel, Geldkatze' point to **kut-* 'bag' vel sim.

Gr. κύτος (ntr.) 'Rundung, Wölbung eines Schildes, eines Harnisches, eines Gefässes: Rumpf, Leib' (Frisk) does not have a meaning 'Hülle, Haut' and consequently does not belong to b. but rather, if anywhere, to c.

One may want to integrate b. into c. for formal reasons, but in view of the semantics this is unsatisfactory. On the other hand, the combination of b. with a. is semantically attractive. According to EM., *cutis* reflects an earlier root noun **kut-* in view of the Abl. sg. *cute*. I think that this is unlikely because the Asg. *cutim* points to **kuti-* and because it is easy to explain *cute* as an innovation, in view of the fact that the Abl. sg. in *-e* was generalized. Moreover, OE. *hȳd* etc. and Toch. A *kāc* point to a PIE. *i*-stem **kuHtí-*. Thus, we have (Lat.) **kuti-* 'skin' and (Toch., Germ.) **kuHtí-* 'skin'. It is hardly possible to assume that they are not connected. If ἐγκυτί belongs to this root, we have evidence for PIE. **-Hu-*, and the Germanic forms point to oxytonesis. We may therefore conclude that it is likely that *cŭtis* reflects PIE. **(s)kHutí-*.

Note that in σκῦτος PIE. stressed *-Hu-* yielded *-ū-*, while

in ἐγκυτί unstressed *-*Hu*- yielded -ŭ-, as expected (see Appendix 1, esp. 1.2 no. 5). One cannot separate οκῦτος from **kHutí*- on the ground that it has **s*-: mobile *s* must have been present in **kHutí*- in order to account for the "pure" velar in Lith. *kiáutas*, OPruss. *keuto*. The Baltic forms apparently reflect a new full grade based on the metathesized root.

7. The root **bhHu*- is reflected as PIt. **fŭ*- in Lat. *fŭtūrum*, *fore* and probably also in the frequentative *futāre* (P.F.: *futare Cato pro saepius fuisse posuit*). The latter has nothing to do with *cōn*-, *re-fūtāre* (see EM. s.v.). **fŭ*- is richly represented in Oscan (3 pi. imf. *FUFANS*, conj. imf. *FUSÍD*, fut. *FUST*, 3 pi. perf. *FUFENS* etc., but some of these forms may actually be **fū*-) and Umbrian (fut. *fust*, *FURENT*, fut. ex. *FEFURE*, imp. *FUTU*, pl. *fututo*, see WH. 558; here we certainly have **fŭ*- because **fū*- would have yielded U. *fi*-).

PIt. **fū*- is reflected with certainty only in the Latin perfect *fūimus* (Enn. Ann. 377), *fūērunt* (Plaut. Bacch. 1087). *fū*- was regularly shortened before a vowel at a somewhat later stage. It is usually explained as the remodelled root aorist **bhūt* (Gr. ἐφῡ, Skt. *ábhūt*; Sommer 1914, 559, Leumann 1977, 524), which implies that PIE. **bheHut* > **bhaut* was replaced by **bhūt*, as in Greek and Sanskrit. Since this replacement requires a model, we may assume that when **bhaut* was replaced by **bhūt* there existed a **bhū*- < PIE. **bhHu*- (beside **bhŭ*- reflected in *futūrum* etc.; see the Appendix 1. for the argumentation). There is no independent evidence for the accentuation of the forms on which *fŭtūrus* and *fore* are based. If *fūtūrus* is based on a ppp. **fūtos* < **bhHutó*- (which is uncertain), Lat. -*ŭ*- may have arisen in pretonic position. *Futāre* was certainly derived from the oxytone ppp. **bhHutó*-, but unfortunately the quantity of -*u*- is unknown.

8. *lūcrum* 'gain, profit' reflects a root **lh₂u*-, cf. Gr. ἀπο-λαύω 'to profit from' < **lh₂u̯*- (or athematic **leh₂u̯*- > *λαυ-), Att. λεία, Dor. λᾱία 'loot, profit' < **leh₂u̯ieh₂*-, ληίζομαι 'to plunder' < **leh₂u̯i*-.

Lŭcrum is said to reflect **lu-tlom*. In Germanic, forms with the suffix **-þla*- show pervasive barytonesis (Lubotsky 1988, § 4.9). The latter is probably an innovation in view of the accentuation of the Vedic suffix *-tra*-: according to *AIGr.* II,2, 701ff, nomina instrumenti and loci are barytone (e.g. *kṣétra*- 'real estate', *vástra*- 'dress'), whereas nomina ab-

stracta are oxytone (e.g. *deṣṭrá-* 'indication', *stotrá-* 'praise'). If the Vedic distribution goes back to PIE., we may assume that *lūcrum* reflects **lh₂u-tlóm* (see also section E.11.1 on *#RHIC-* and section D.2.2 on *#RHV-*).

9. *lŭtum* 'mud', *lŭstrum* 'slough, bog, morass', *polluō*, *pollūtum* 'to defile' is cognate with Ir. *loth* 'mud' < **lŭtā*. In view of the Greek alternation ῡ : ῠ in λῦμα 'dirt, defilement', λύμη 'ill-treatment', λῦθρον 'stain, defilement, blood and dust', one may perhaps reconstruct PIE. **lHu-*. However, Lith. *liutýnas* 'Lehmpfütze' has short *-u-* (palatal *li-* must have been introduced from a (disappeared) full grade **liau-* < **leu-*), and *liū̃nas* 'swamp' = *liū̃gnas* 'pit' (see Fraenkel) has long circumflex *-u-*, neither of which can reflect PIE. **lHu-*. Lith. *liū́nas*, Latv. *ļùns* 'moorige, sich bewegende Stel- le' (the accents do not match) are perhaps not cognate (thus Fraenkel). Perhaps *liū́nas* is based on a dialect form **liúns* < **liū̃ns* < *liū̃(g)nas* (Prof. Kortlandt, p.c.). Alternatively, it is conceivable, but far from evident, that *liū́nas* reflects the laryngeal needed to account for the Greek forms.

If, despite the Baltic problem, the PIE. root was **lHu-*, Lat. *lŭtum* may reflect **lHutó-*. *pollūtum* does not necessarily reflect **-lūtom* < **luH-tó-* < **lHu-tó-* because its *-ū-* may be secondary, as in *ind-uō*, *indūtus* of the root **h₂eu-*. In that case, *-ū-* reflects the vocalism introduced from the present (cf. *nōscō*, *nōvī*, *nōtum* etc.), **-lauō* (< **-lHu̯-*), **-lautom*. See also *solūtus* (E.2.4.4 no. 19).

In view of the Baltic forms and the absence of clear evidence for a laryngeal in Greek, *lŭtum* and *lŭstrum* are at best possible cases of Lat. *-ŭ-* < **-Hu-*.

10. *pŭtus* 'clean'(?) is usually connected with *pūrus* 'pure, unsoiled', Skt. *punā́ti* 'purifies' etc. EM. s.v. *pŭtus* signal the fact that *pŭtus* is usually found together with *pūrus*, often in connection with *argentum*. EM. translate 'sans mélange'. They question its connection with *pūrus*. In view of the oldest meaning of *pŭtāre*, viz. 'to prune trees', i.e. 'to cut off infertile branches', which is derived from *putus*, the latter must originally have meant 'cut', from there 'clean, the unwanted material cut off'. I agree with EM. that the connection with *pūrus* is questionable. It is more likely that *pŭtus* is cognate with Lith. *piáuti*, Latv. *pļaũt* 'to cut' < **peh₁u-* and with OHG. *ar-fūrian*, OE. *ā-fȳran* 'verschneiden' < **puh₁-* < **ph₁u-* (Melchert 1977, 123). *Pŭtus* reflects **ph₁utó-*.

2.4.3. Latin -ī- < PIE. *-*Hi*-

1. *fīlius* 'son', *fīlia* 'daughter' is cognate with Skt. *dhītá-* 'sucked' < **dhh₁i-tó-*, *dhā́yase* 'quenching' < **dhéh₁i-es-*. The root **dheh₁i-* is an enlarged form of **dheh₁-* in Lat. *fēlāre* 'to suckle', *fēmina* 'woman', *fēlīx* 'fertile, happy', Gr. θῆλυς 'female', Skt. *dhārú-* 'sucking', Latv. *dẽle* 'leech' (see Pokorny, IEW. 241ff.). On OE. *delu* etc. < **dhīl-* or **dhēl-* see V.B.5.1 no. 2; on Ir. *deil*, *delech*, *denait* etc. see V.B. 4.1 no. 2.

Fīlius may reflect either **dhh₁ilio-* or **dheh₁ilio-*. Nothing can be said about the original accentuation.

The old explanation of *fīlius* from **fēlios* (Sommer 1914, 61, following Skutsch), cf. U. Apl. *feliuf* 'lactentes', must probably be abandoned, firstly because the assumed rule **ē* > *ī* before *li* is ad hoc and contradicted by *fēlīx*, and secondly because derivatives with *-l-* of both **dheh₁-* and **dhh₁i-* are known to exist in Baltic: cf. Latv. *dẽļs* 'son' < **dheh₁-li-*, *dîle* 'sucking calf' < **dhh₁i-l-eh₁*.

2. *fīlum* 'line, thread' may be compared with Lith. *gýsla* (AP 1), OPruss. *-gislo* 'vein, tendon', OCS. *žila*, Russ. *žíla*, SCr. *žȉla* 'vein, sinew' < **gʷhiH-*. The broken intonation of Latvian *dzîsla* either points to PIE. **gʷhHi-* or, more likely in view of Slavic, is secondary compared to Lith. and Slavic. The Slavic forms, with acute intonation, point to **gʷhiH-*. However, the connection of the BSl. forms with *fīlum* is uncertain because they are often connected with Skt. *jiyā́*, Gr. βιός 'tendon, string of a bow'. Arm *ǰil* 'sinew' reflects **gʷhiH-l-*. In view of its doubtful etymology and the absence of evidence for **-Hi-* in the root, *fīlum* cannot be used as evidence for the development of **-Hi-*.

Possibly *fūnis* 'rope' is cognate (thus EM.). Hesitatingly, WH. connect *fūnis* not with *fīlum*, but with Gr. θῶμιγξ 'rope, snare', assuming an ablaut **ō(u)* : **ū*, which cannot be maintained. WH. give no reason for rejecting the connection of *fūnis* with *fīlum*. If one maintains the etymology, *fūnis* may reflect **gʷhoi(H)-ni-* or **gʷho(H)i-ni-*.

3. If *glīs*, Gsg. *glīris* (but cf. Romance **glere* < **glĭris*?) 'dormouse' is cognate with Skt. *giri-*, *girikā* 'mouse', one may reconstruct PIE. **gʷlHi-*. *glīs* would then reflect **gʷlHi-s-* with metathesis to **-iH-* > *-ī-*, or **gʷleh₁i-s-*. However, Skt. *giri-*, *girikā* 'mouse' does not exist outside dictionaries, and is probably not "sprachwirklich"

(Mayrhofer KEWA). What remains is a comparison with Gr. γαλέη 'ferret, weasle', which may reflect *glH-V-. γαλιδεύς and γαλιάγων cannot be used as evidence for an *i*-stem in Greek (see Frisk s.v.). As it stands, the comparison is neither formally nor semantically compelling. *glīs* cannot be used as evidence. The *s*-stem reminds one of *mūs*, *mūris*.

4. *hīscō* 'yawn', *hiāre* 'be wide open, yawn', freq. *hietāre* probably reflect a root *$ǵhih_2$-, which is also found in Lith. *žióti* < *$ǵhieh_2$-. If Gr. χάοκω 'to be wide open' and/or aor. χανεῖν, perf. κέχηνα, χάος 'empty space' and χήμη 'yawning, kind of shellfish' (cf. Dutch *gaper*) reflect *$ǵhh_2$-, the original form of the Latin root may have been *$ǵhh_2i$-. The interpretation of the Greek forms is difficult, however (Frisk s.v.). Moreover, OCS. *zějǫ* 'to be open' reflects *$ǵheh_1$- and Toch. B *kakāyau* 'opened' probably reflects *$ǵhḥ_1$-. Germanic has a wide range of root forms (see Pokorny IEW. 420). All this points to expressive formations.

If one looks only at the Latin forms, one finds a remodelled root present in *hiāre* < *$ǵhieh_2$-. *hietāre* presupposes a ppp. **hietus* < **hiătos* instead of expected **hītus* < *$ǵih_2tó$-. **hiătos* is probably analogical after *stāre*, *stătus*, *nāre*, **nătus* (in *nătāre*; thus apparently Steinbauer 1989, 127). *hīscō* reflects *$ǵhih_2$-*sk*-, or perhaps *$ǵhHi$-*sk*-. It will be clear that the word cannot be used here.

5. *līmax* 'snail, slug' may reflect *$sl(e)h_1i$-*m*- in view of the intonation of Latv. *sliẽnas* 'saliva' and Russ. *slína*, SCr. *slîna*, Cz. *slína* 'id.' < *$sleh_1i$-*n*- (see also E.11.2 no. 2).

6. *līnum* 'linnen', Ir. *lín*, Goth. *lein* etc. < **līno*- is generally assumed to be a non-IE. culture word in view of the short vowel of Gr. λίνον, Russ. *lën* < **lьnъ*, Lith. *linaĩ*: a common PIE. form cannot be reconstructed. If the Germanic and Celtic forms are loans from Latin, one might reconstruct

PIE. **lei-n-* /**li-n-*. However, this is unreliable. There is no rea- son to reconstruct a laryngeal.

8. *ob-līvīscor* < **-leh₁iu̯-* will be discussed in E.7.3.1.1 no. 2.

9. If *mītis* 'soft (of taste)' is cognate with Lith. *míelas* (AP 1 and 3, 1 must be old in view of the productive mobility in Lith. *o*-stem adjectives), SCr. *mȉo*, Sin. *mîl* 'dear' < **meh₁ilo-*, Latv. *mīļš* (AP 1), Lith. *mylùs* (AP 3) < **mih₁lu-* < **mh₁ilu-*, it reflects either **meh₁iti-* or **mh₁iti-* > **mih₁ti-*. The former is more probable in view of W. *mwydion* 'soft parts' < **meh₁iti-*. It cannot be used here because the zero grade **mh₁i-* is uncertain. OIr. *mín* 'soft' must reflect **mih₁ni-* < **mh₁íni-*, with metathesis.

10. The closest cognates of *scrībere*, *scrīpsī*, *scrīptum* are O. *scriftas* 'scriptas' and U. *screhto* 'scriptum'. U. *screhto* must reflect **skrīptom* (Meiser 1986, 46 and fn. 1), in view of which *scrīptum* must be an innovation on the basis of the vocalism of the present and the perfect. The Italic forms can be compared with Lith. *skriẽbti* 'Kreise machen, Striche ziehen, zeichnen' < **skreibh-* and Gr. σκαρῑφᾶσθαι· ξύειν, σκάπτειν, γράφειν (Hes.), σκάρῑφος (-ον) 'Umriss, Skizze, Griffel'. In view of the Italic and Baltic verb, the Greek form presents us with two difficulties. In the first place its -α-, which is usually attributed to anaptyxis (Schwyzer 1977, Chantraine s.v.) and secondly the long -ῑ-. One might be tempted to reconstruct **skrHibh-* in order to account for both phenomena, but this must be rejected: Lith. *skriẽbti* cannot have contained a laryngeal, nor can the Italic verb, in view of U. *screhto*: PIE. **skrHibh-* would have yielded PIt. **skarif-* (D.2.3.2), and **skriHbh-* would have yielded **skrīf-* (see E.12). One may conclude that there seems to be some connection between the Greek and the Italic and Lithuanian verbs but that the Greek form cannot be explained from **skreibh-*. May one assume an IE. substratum in Greek, or a popular form?

Latv. *skrīpât* 'kratzen', OIc. *hrífa* 'kratzen, reissen' must be cognate but reflect PIE. **-p-*. For Ir. *scríp-* see Vendryes S-55.

11. *trīvī*, the perfect of *terere* 'to rub' reflects a root **terH-* with an enlargement **-i-* (see V.D.2.1.1 no. 5). The laryngeal must accordingly have preceded **-i-*. *trīvī* probably

reflects *$treh_1i$- > *trei-. One expects the ppp. *trītus* to reflect *$trh_1itó$-, with metathesis. However, it is more likely that *trītus* contains the full grade perfect stem (cf. *scrīptus*, no. 10, and the type *nōtus*, *crētus*, *sprētus*). One would expect *$trh_1itó$- to remain unmetathesized and to have developed into **taritos*, and it is easy to see why this form would have been eliminated.

12. *viēre* 'to wind, bend', *vītis* 'vine', *vīmen* 'a pliant twig, osier' belong to the root *u̯Hi-. The original position of the laryngeal appears from Latv. *vîte* 'tendril', *vîtuõls* 'willow' and from the final accentuation of Russ. *vilá* < **u̯Hi-laH* (where the accent was not retracted to the root in accordance with Hirt's law because at that stage it was still **u̯Hi-*, not **u̯iH-*). If Gr. ἴτυς, Aeol. Ϝίτυς 'wheelrim, rim of a shield' is cognate, it could reflect **u̯Hi-tu-* (cf. φῦοις < **bhHu-ti-*, see Appendix 1, esp. 1.2 no. 8). However, more often one finds **u̯iH-*, with metathesis: Ir. *ar-fen-* 'to close off', *im-fen-* 'enclose' < **u̯ina-* < **u̯i-n-H-*, Goth. *waddjus* 'wall' (i.e. wickerwork) < **u̯oiH-u-* (with "Verschärfung"), Lith. *vejù*, *výti* < **u̯(e)iH-*. If Gr. ἰτέα 'willow' is cognate, it must also reflect **u̯iH-*. As will be suggested in Appendix 2.2 no. 11, long *-ī-* in OIr. *fíthe* may be analogical after *crenaid* - *críthe*, *benaid* - *bíthe*, where *-í-* is regular.

On *viēre* see IV.G.3.2. Lat. *vītis* probably reflects a zero grade root, as is usual in *ti*-derivatives: cf. Lith. *výtis* 'willow branch'. If *vīmen* is old and not based on *vītis*, *viēre*, it probably reflects full grade but since the root was **u̯Hi-*, we must then reconstruct **u̯eHi-mn̥*.

13. The root *g^wh_3i- 'live' in *vīvere*, *vīxī*, *vīctum*, *vīta*, *vīvus* will be discussed in the Appendix (2.2 no. 1). *vīvus* reflects a proto-form *$g^wh_3iu̯ó$-, cf. Osc. Npl. *BIVUS* < *$g^wīu̯o$-. The development runs counter to what one would expect if pretonic **-Hi-* yielded It. **-ī-* as in Celtic. Note however that *vīvere* reflects barytone *$g^wh_3í$-u̯-, cf. Skt. *jī́vati* 'lives', where long *-ī-* would be regular.

2.4.4. Latin *-ū-* < PIE. **-Hu-*

14. *cūdere* probably reflects **keuHdh-* (see E.7.3.2.1 no. 1).

15. *cūpa* 'barrel, hogshead, wooden vat' may reflect **kHup-* if Gr. κύπη· τρώγλη (Hes.), κῦπελλον 'drinking-glass' is evidence for PIE. **kHup-* (cf. the long vowel in OIc. *húfr* 'hull of a vessel, boot', Skt. *kū́pa-* 'pit, hole'). But since the Greek forms

have stressed short -ŭ- and one would expect -ū- < *-*Hú*-, there is nothing to justify PIE. **kHup-*. **kŭp-* is most likely a culture word (see Furnée 1972, 121). Compare the parallel distribution of long and short -*i*- in Lat. *līnum* etc. (2.4.3 no. 7).

16. *dūmus* 'brambles, thicket' is probably cognate with Ir. *dos* (*o*) 'bushy tree' < **dŭs-*. If so, *dūmus* reflects **dŭs-mo-*. One may be tempted to reconstruct a root with a laryngeal, probably **dHus-* in view of Ir. *dos*, on account of MHG. *zūsach* 'brambles, thicket', OHG. *zir-zūsōn* 'to clear of undergrowth, "zausen", rupfen' < **duHs-* (?). One also finds Germ. **tais-* in OHG. *zeisan* 'zupfen', OE. *tǣsan* 'to tease' and **tas-* in MHG. *zasen* 'zerfasern', which may have nothing to do with *zūs-* originally. Since the Germanic forms may be expressive formations (see Pfeifer 1990 s.v. *zausen*), it is not certain that *zūsach* etc. reflects a root with a PIE. laryngeal.

17. On **fūī* < **bhuH-* < **bhHu-* see 2.4.2 no. 7.

18. *grūs*, Gg. *gruis* 'crane' must be closely cognate with Lith. *gérvė*, OPruss. *gerwe* 'id.' < **ǵerh$_2$-u̯-* (**h$_2$* in view of Gr. γέρανος < **ǵerh$_2$-no-*) and ORuss. *žeravь*, SCr. *žȅrāv* 'id.' < **ǵerh$_2$-ōu* (see Kortlandt 1985a, 120). Lat. *grūs* is based on **ǵrh$_2$-u-*. Metathesis to **ǵruh$_2$-* must obviously have occurred, for **ǵrh$_2$u-* (or **ǵrh$_2$ou-*) would have yielded Lat. **garŭ-* (see E.11.2).

19. *luō*, *lūī* 'to pay, acquit oneself' and the compound *so-luō*, *solvī*, *solūtus* 'to loosen' reflect PIE. **lHu-*, cf. Gr. λύω, λῡτός, λῡσι- etc. (see Appendix 1.2 no. 2), and, perhaps, Gr. λαῖον 'ploughshear' < **leh$_2$u̯iom*. *luō* cannot reflect **lHu̯-* because the latter would probably yield **lavō*, cf. *caurus* < **ḱh$_1$u̯ero-*. Like the perfect *lūī*, *luō* probably represents the remodelled root-aorist found in Gr. λῦτο etc. < **lHu-*. *lūī* is the exact counterpart of **fūī*, both of which were based on a root aorist with the metathesized root. It is difficult to base any conclusions on the long vowel of *solūtus*: if it is old, it must reflect **lHutó-*; but whether this is actually so must be seriously doubted: we know that the ppp. in *-ūtus* became productive in Latin, cf *induō*, *indūtus* and *pollūtum* which were discussed above (2.4.2 no. 9). In *solūtus*, -ū- may have been introduced from the perfect *lūī*, cf. *nōvī*, *nōtus*, *scrīpsī*, *scrīptus*, *crēvī*, *crētus*.

20. If *obscūrus* 'dark' is cognate with OHG. *skūr* 'Schauer,

bedeckter Ort, Obdach' and with Arm. *cᶜiw* 'roof, cover' < **skēu̯o-* < **skeh₁u̯o-*, it reflects **skuh₁ro-* < **skh₁uro-*. OHG. *skūr*, with long *-ū-*, would point to original barytonesis. But the etymology is uncertain and a different analysis is possible (*obs-cūrus*, cf. OIr. *-cí* 'sees', v. VI.C.2.2.2 s.v. *quaerĕre*).

21. *pūrus* 'pure, unsoiled', *pūrgāre* < **pūrigāre* may be equated with Ir. *úr*, W. *ir* 'green, fresh' < **puHro-*. Skt. *pavitár-* 'purifier', *pavítram* 'instrument of purification' reflect **peuH-*. Skt. *pūtá-* probably cannot be equated with Lat. *pŭtus* (see E.2.4.2 no. 10). Ved. *pāvaká-* 'pure, clean' cannot be used as evidence for **peHu-* because in the RV it must be read **pavāká-*, which is confirmed by MPers. *pavāg* 'pure' (Mayrhofer, KEWA s.v.).

If 'pure' is cognate with Gr. πῦρ, Hitt. *paḫḫur* 'fire', which is likely, the root must originally have been **ph₂u-*. In that case, *pūrus*, Ir. *úr* and W. *ir* reflect **puh₂ro-* < **ph₂uro-*. If the long vowel of Ir. *úr* < **pHuro-* can really be attributed to PIE. barytonesis (which is not copperfast, see Appendix 2.4), we have independent evidence that Lat. *pūrus* reflects a barytone form.

22. *spuō*, *spuī*, *spūtum* 'to spit', cf. also *spūtāre*, may reflect PIE. **spiHu-*, but there is no trace of *-i-* (cf. *suō*, Skt. *sī́vyati*). Lith. *spiáuti*, Latv. *spļaũt* and SCr. *pljȕvati* point to **(s)pieh₁u-*; Goth. *speiwan* and OIc. *spýja* reflect **spīw-* < **spiHu̯-*. Skt. *ṣṭhī́vati*, *ṣṭhyūtá-* 'id.' and Gr. πτύω, aor. ἔπτυσεν (πτ < **pi̯* or **pt* ?) are formally different, and point to expressive deformations (cf. Arm. *tᶜkᶜanem*). It seems that *spūtus* reflects **sp(i)Hu-tó-*, apparently with pretonic **-Hu-* > **-uH-* > *-ū-*. But in view of both the expressive character of this root and the productivity of *-ūtus*, *-ūtum* (see no. 19 above) this assumption is unreliable.

23. *suō*, *suī*, *sūtum* 'to sew' might be considered to reflect a root **s(i)Hu-* in view of Skt. *sī́vyati* 'id.' < **siHu̯-*. However, the intonation of Lith. *siūti*, Latv. *šūt*, SCr. *šȉti*, Sln. *šíti* and the barytonesis of the Russ. pret. *šíla* point to PIE. **siuH-*. Eichner assumed that PIE. **-iuH-* regularly became **-iHu-* and that the attested reflex of **-iuH-* goes back either to the full grade form **-ieuH-* or to the subsequent progressive shift of the laryngeal: **-iuH-* > **-iHu-* > **-iuH-* (Eichner 1988, 135). The latter, with its regressive and progressive shift, is especially unsatisfactory. Since the laryngeal

arguably had the tendency to shift to the right, not to the left, Eichner's proposal has little to commend itself. *sḯvyati* may reflect **siuHi̯e/o-*, with *-īv-* < **-iuv-* (Prof. Kortlandt, p.c.).

sūtus undoubtedly reflects **s(i)uH-tó-*, not **sHu-tó-*, in view of the BSl. forms.

2.4.5. Evaluation

We have seen that PIE. **-Hi-* and **-Hu-* yielded Lat. *-ĭ-*, *-ŭ-* in the following words (numbers refer to 2.4.1 and 2.4.2):

probable	possible	unlikely
6 *cŭtis* <**kHutí-*	5 *cŭlex* <**kHul-*?	3 *vīrēre*
7 *fŭtūrum*, *fore* <**bhHu-*	9 *lŭtum* < **lHu-*?	4 *bŭbulcus*
8 *lŭcrum* <**lh₂utlom*		
10 *pŭtus* <**ph₁utó-*		

The Sabellian evidence is limited to **bhHu-* > **fŭ-* (see no. 7).

PIE. **-Hi-* and **-Hu-* yielded Lat. **-ī-*, **-ū-* in the following words (numbers refer to 2.4.3. and 2.4.4):

probable	possible	unlikely
13 *vīvō* <**gʷhₓíu̯-*	1 *fīlius* <**dh(e)h₁i-*	3 *glīs*
vīvus <**gʷhₓiu̯ó-*	2 *fīlum* <**gʷhHi(s)-*	4 *hīscō*
17 *fūīmus* <**bhHu-*	6 *līmax* <**sl(e)h₁im-*	8 *oblīvīsc-*
18 *grūs* <**grh₂u-s*	9 *mītis* <**m(e)h₁iti-*	14 *cūdō*
19 *lūī* <**lHu-*	11 *trītus* <**tr(e)h₁i-*	16 *dūmus*
	12 *vītis*, *vīmen* <**u̯(e)Hi-*	
	20 *obscūrus* <**-skh₁úro-*	
	21 *pūrus* <**ph₂uro-*	
	22 *spūtus* <**sp(i)Hutó-*	

It appears that PIE. **-Hi-* and **-Hu-* developed into Latin *-ĭ-*, *-ŭ-*, or *-ī-*, *-ū-*. The hypothesis that PIE. unstressed **-Hi-*, **-Hu-* yielded Lat. **-ĭ-*, **-ŭ-* can be supported by a very limited number of etyma. Among the four probable cases of Lat. *ī*, *ŭ* < **HI*, only *futūrum* and *lucrum* seem copper-fast, but original oxytonesis can only be argued for *cutis* and *putus*. Slightly disturbing is the long vowel in *vīvus* < **gʷhₓiu̯ó-*, cf. Olr. *biu*, W. *byw* etc., but we have seen that *-ī-* was regular in *vīvere* according to the accent rule, and it

seems possible that *vīvus* took the long vowel from *vīvere*.

We have found a few clear instances of Lat. *ī*, *ū* < **HI*, but whether these reflect stressed **HI* is unclear. Only for *pūrus* may we perhaps assume barytone **pHuro-*, on whatever strength there is in Ir. *úr*, W. *ir* < **puHro-* < **pHuro-*.

One may conclude with some reservation that there are indications that the Latin material supports the hypothesis that PIE. **HI* yielded *ĭ*, *ŭ* if pretonic, and that it does not contradict the hypothesis that PIE. **HI* yielded *ī*, *ū* if stressed. The development of **HI* in Greek (as a typological parallel) and in Celtic (perhaps as a shared development) can be used to support these conclusions (See Appendix 2).

3. *CHIV*

3.1. Introduction

It is not evident beforehand whether in a constellation *CHIV* the *I* was consonantal and the laryngeal was vocalized (> **a*), or the *I* was vocalic and the laryngeal yielded no reflex.

It appears sensible to separate *CHiV* (section 3.2) from *CHuV* (section 3.3), as a different treatment is conceivable, and also because it was held that *CHiV* yielded Lat. *CiV* (Peters 1980, 81 note 38, Mayrhofer 1987, 100, note 54a), whereas no such claim was made for *CHuV*.

The selection of the material was based on evidence outside Latin: if cognates of a Latin form point to the reconstruction of **CHI*, this will be reconstructed for Latin.

3.2. *CHiV*

I have found only one possible case of **CHiV*, viz.

1. *socius* 'companion, ally, friend' could reflect **sok^{w}-H-io-* (Peters 1980, 81 note 38). The reconstruction of the laryngeal is based on the aspirate in Skt. *sákhā*, Av. *haxa* 'friend, companion' < **sok^{w}-H-ōi* (on the hysterodynamic *i*-stem inflection see Beekes 1985, 92 ff.). Lat. *socius* is probably based on this stem **sok^{w}Hi-*, although it is not impossible that it is a *io*-derivative of the primary root **sek^{w}-*, **sok^{w}-*. Possibly **H* was lost in PIt. **sok^{w}Hi-C-* or **sok^{w}H-ŏi-* before the *o*-stem was created, but in view of OIc. *seggr*, OE. *secg* 'man, warrior' < **sok^{w}Hio-* this is less likely.

The root is **sek^{w}-* 'to follow' in *sequor* etc.

socius may point to loss of the laryngeal without reflex in **CHiV*. If **H* had been vocalized, **sok^{w}aios* would have yielded Lat. **soceus*.

3.3. *CHuV*

There are more possible instances of ***CHuV***.

1. *arvum* 'Acker' is the substantivized neuter of the adj. *arvos* found in Plautus (*ager arvos*, lit. 'ploughing land', see EM. s.v.). It belongs to the root *$*h_2erh_3$-* 'to plough' (cf. Gr. ἀρόω). It cannot be decided on the basis of Latin whether *arvum* reflects *$*arə̯o$-* or *$*arə̯o$-* because both would have become *arvum* (Sommer-Pfister 1977, 107, Leumann 1977, 132 infra). However, as Meiser (1986, 193) has shown, we can probably infer from Umbrian *ARVAM* (Asg.), *ARVEN* (Lsg.) 'field' that for Proto-Italic we must reconstruct *$*araə̯o$-*: an old cluster *$*-rə̯-$* would have yielded Umbr. *-rr-*, written *-r-* (cf. *seritu* < *$*serə̯itōd$*, *caterahamo* < *$*caterə̯āmo$*). Thus, the question arises how *$*araə̯o$-* originated. It is possible that it reflects *$*h_2erh_3ə̯o$-*, with vocalization of the laryngeal. We must look at the cognates in order to see whether this reconstruction can be supported.

W. *erw* (f.) 'acre' may reflect *$*arwī$* or *$*arwjā$* (if it belongs here, see Pokorny IEW. 63). Olr. *arbor*, Gsg. *arbae* 'grain' reflects *$*arw-r̥$, *$*arw-en-s$*. Joseph reconstucts the latter as *$*h_2rh_3$-wr̥$, *$*h_2rh_3$-wen-s* (1982, 42, 50, 51; also Ringe 1988, 421), for which he assumes dissimilatory loss of *$*-h_3$-* as in *ainm* < *$*h_3nh_3mn$*. A zero grade root is also found in Skt. *urvárā* < *$*h_2rh_3$-ə̯er-*. Note that *$*h_2rh_3uo$-* cannot explain the Italic forms: if *-u-* is consonantal, one would expect Lat. *$*ravum$* (see IV.F.1.2.1); if *-u-* is vocalic, one would perhaps expect *$*aruo$-* > Umbr. *arr-* (IV.F.2.3).

Gr. ἄρουρα 'Acker' is a derivative of the *r/n*-stem also found in Irish (see Frisk s.v.). Beekes 1969, 231 reconstructs it as *$*h_2erh_3$-ə̯-r̥$ (for the vocalization *$*-ə̯r̥$* cf. φρέᾶρ < *$*φρήFαρ$* < *$*bhreh_1ə̯r̥$*) or *$*h_2reh_3$-u-r-*. The latter is unattractive because it involves Schwebeablaut, which is not supported by other forms. A reconstruction *$*h_2rh_3$-eu-r* would not have this disadvantage, but is morphologically implausible and must be rejected. This leaves us with *$*h_2erh_3$-ə̯-r̥$*, which incidentally is supported by Arm. *harawunk^c* < *$*h_2erh_3$-ə̯n-*. One might perhaps expect *$*ἀροFαρ$-* from this (cf. φρέᾶρ < *$*φρήFαρ$* < *$*bhreh_1ə̯r̥$*), but remodelling into an *ia*-stem might have antedated the vocalization of *$*r̥$*: *$*h_2erh_3ə̯r̥$* > *$*arəu̯r̥$*, remodelled to *$*arəu̯ia$* > ἄρουρα. The *r/n*-stem attested in Olr. and reflected in Greek may not be directly compared with *arvum* because its formation is different.

In view of *animus* < *$*h_2nh_1emo$-* (see IV.F.2.3 no. 1), it

is phonetically possible to derive *arvum* from **arou̯o-* < **h₂rh₃-eu-o-*. If this derivation is correct, *arvum* does not belong in the present section. Since this reconstruction is a serious alternative for **h₂erh₃u̯o-* suggested above, it is difficult to use *arvum* as evidence for the development of **CHuV* in Latin.

2. The connection of Lat. *bellum* 'war' < *duellum* with Gr. δαΐ 'im Kampf', δαίφρων etc. is very uncertain, and even impossible if Myc. *da-i-qo-ta* (> *Δαhι-φόντης) contains δαΐ. The etymology is accepted by WH. but not even mentioned by EM., Frisk and Chantraine. A reconstruction **dh₂uel-* > **du̯el-* > *bellum* is therefore unreliable.

3. *cāseus* 'a cheese', *cāseum* '(a quantity of) cheese' has of old been connected with OCS. *kvasъ* 'leaven' = Russ. *kvas*, SCr. Sin. *kvâs*, Cz. Slk. *kvas* and with OCS. *kysnǫti* 'to turn sour', *kyselъ* 'sour'. Semantically, the connection of 'sour' with 'cheese' presents no difficulties: the most important aspect of making cheese is to increase the acidity of the milk in order to promote curdling and to expel the whey. According to EM., it is unlikely that *cāseum* (as opposed to *cāseus*) is a collective, as has been suggested, because the attested plural is always *cāseī* (masc.). This argument is unclear to me. If *cāseum* is a collective 'cheese' (i.e. the matter, not the individual cheese; one could actually better call it a mass word than a collective), one does not expect it to have a plural because it is unclear what the latter would mean. On the other hand, if *cāseus* means 'a (single) cheese', one does expect it to have a plural *cāseī*, 'single cheeses'. Thus, if *cāseum*, as distinct from *cāseus*, is a collective, we find that the expected forms are attested while the unexpected form (**cāsea*) is not, which strips EM.'s objection of its base. Since the variation in gender of *cāseus*, *cāseum* appears to be semantically motivated, it does not point to a loanword (against EM. s.v.). Concerning the formation in *-eum*, *-eus*, I see no problem in considering it identical to the material adjectives in **-e̯o-*, cf. *aureus* (for the type see Leumann 1977, 286).

The precise formal background of the comparison between the Slavic and Latin forms is obscure because there is no reflex of **-u̯-* in *cāseus*, which the Slavic forms lead us to expect (on *canis* see VI.C.2.2.2 no. 1). The intonation of the Slavic forms is non-acute, which may be explained if we reconstruct **kwaHsú-* in which the laryngeal was lost in accordance with

Meillet's law.

-y- in *kysnǫti* and *kyselъ* points to the presence of a laryngeal in the root **kuHs-* (or **ḱHus-*). If Latv. *kûsât* 'to boil over, run over' is cognate, which is likely (Pokorny IEW. 627-628, WH., Pedersen 1895, 38 on the semantics), the broken intonation indicates a root **kHus-*, which would imply that OCS. **kys-* reflects **kuHs-* < **kHus-*. *kvasъ* might in that case reflect a secondary full grade **kuaHs-*.

I believe that if the root (or stem) indeed was **kHus-*, we could explain *cāseus*. If we reconstruct **ḱHus-* as being basically an *s*-stem **kHu-s-* and allow for vocalization of **H* in *CHuV-*, the following development may have led to *cāseus*: a collective **kHu̯-ōs* yielded **kau̯-ōs-* > **kaōs-* (with loss of **-u̯-* before **-o-*, cf. **deiu̯os* > *deus*) > *cās-* (on the contraction see Cowgill 1973, 290 ff.). The form *cās-* served as a basis for the material adjective *cāseus*. Since however the reconstruction **kHus-* rather than **kuHs-* is uncertain and since there are no direct traces of the *s*-stem, this explanation of *cāseus* is hypothetical.

Pokorny 627-628 reconstructs a root **ku̯at-* 'to boil, seethe', and explains Latin and Slavic *-s-* from **-ts-* (see also WH., Mayrhofer KEWA s.v. *kváthati*, Pedersen 1895, 37-38). As far as Latin is concerned, this is not necessary: one may explain Lat. *-s-* (not *-r-*) by assuming that *cāseus* is a rural word, cf. *asinus*, *bōs* from the same semantic sphere. *-s-* in *kvasъ* is regular. *Kyselъ* and *kysnǫti*, in which one would expect *-x-* in stead of *-s-* (after *-y-*, before a vowel or a resonant, see Pedersen op. cit.), may perhaps be analogical. Since the connection of *ku̯at-* with *cāseus*, *kvasъ* is semantically not compelling, it may be concluded that *cāseus*, *kvasъ* need not be compared with Skt. *kváth-* etc.

Cāseus is at best a possible case of **CHuV* > **Cau̯V*, but it cannot be used as independent evidence.

4. *caurus* 'norhtwestern wind' is cognate with OCS. *sěverъ*, SCr. *sjèvēr* 'north' < **ḱeh₁u̯er-o-* and Lith. *šiáurė* (AP. 1) 'north' < **ḱeh₁ur-*. Lith. *šiū́ras*, *šiūrùs* 'cold, northern' replace **šūr-* (Fraenkel s.v.) < **ḱuh₁r-* < **ḱh₁ur-*.

It is probable that Lat. *-a-* arose from vocalized **-h₁-*, which leads to a reconstruction **ḱh₁uer-o-* > **kauero-* > *caurus*.

5. At first sight, it is not easy to decide whether one must reconstruct a laryngeal in *fervĕre*, *-ēre* 'to steam, burn, glow,

be heated, ferment'. These and many other similar forms are considered to belong to the prolific root **bher-*, which has a number of root extensions (see Pokorny IEW. 132-133 2. *bher-*, 137 6. *bher-*, 143-144 **bh(e)reu-*, **bh(e)rŭ-*). For the present purpose, I shall first consider the forms with an extension **-u-*. Some forms continue **bhrh$_1$u-*, others **bhru-*.

The following words reflect **bhrh$_1$u-*:

1. Firstly, the word for 'well, spring' must be reconstructed as **bhreh$_1$u-r/n-* in view of Gr. φρέᾶρ < **φρηFαρ*, Gsg. φρέᾶτος and Arm. *ałbiwr*, *ałbewr* < **bhreh$_1$u̯r̥*. Goth. *brunna*, OHG. OS. *brunno*, OE. OFri. *burno* may reflect **brun-* < **bhrūn-* < **bhruh$_1$n-* < **bhrh$_1$un-* (with metathesis and pretonic shortening according to Dybo's rule, see chapter V.B). Germ. *-nn-* is generally attributed to a remodelling of the *r/n*-stem into a stem **brun-* with *n*-stem endings (see Lehmann 1986, Franck- van Wijk- van Haeringen 1980-84 s.v. *bron*).

Ir. *tipra* (*nt*, f.) 'well, fountain' probably belongs to the same etymon and reflects **to-ess-brunt-* (*-unt-* would account for the raising of the root vowel to *-i-* (thus Pedersen 1913, 478)). *tipra* cannot reflect **to-ess-brēu-* < **-bhreh$_1$u̯-* because this would not explain why Ir. *-pr-* is non-palatal. I think that the most satisfactory explanation of **-brunt-* is to assume that it reflects **-brūnt-*, with shortening before *-RC-* (cf. W. *gwynt* 'wind' < **u̯ēnto-* < **h$_2$ueh$_1$nto-*). **-brūnt-* in turn would then reflect **bhruh$_1$-n-t-*.

2. OHG. *wintes prūt* 'storm' probably reflects **bhruh$_1$-tó-*. If the root is identical to that of 'well', **bhruh$_1$-tó-* reflects **bhrh$_1$u-tó-* (metathesis appears to be general in Germanic, independent of the position of the stress, unlike in Italic and Celtic; see Appendix section 3).

3. MHG. *brūsen*, Dutch *bruisen* 'to bubble' reflects **bhruh$_1$-s-*, again probably from **bhrh$_1$u-s-*.

4. In view of the Verschärfung, which is usually attributed to the influence of a laryngeal, OS. *breuwan*, OHG. *briuwan*, OE. *brēowan* 'to brew' < **breww-*, cf. OIc. ptc. *brugginn*, probably reflect **bhreuh$_1$-*, which may be a secondary full grade of a root with metathesis. If this verb originally denoted the process of yeasting, fermenting, which is likely, the word 'bread', OHG. *brōt*, OS. *brōd*, OIc. *brauð*, is probably its closest cognate. If so, the latter can be reconstructed as **bhrouh$_1$-tóm* (or **bhroh$_1$u-tóm*).

5. Skt. *bhurváṇi-* 'restless, excited' reflects **bhrh$_1$-u-*, and

must be connected with *bhurátⁱ* 'moves rapidly, quivers, struggles', Av. *barəntⁱ...ayąn* 'an einem stürmenden Tage' (Mayrhofer KEWA s.v.) < **bhrh₁-*.
6. Lith. *br(i)áutis* 'sich mit roher Gewalt vordrängen' reflects **bhreuh₁-*, if at least it is cognate with this root. Russ. *brujá* 'stream', *bruít'* 'dahinfliessen' reflect **bhreuh₁-*.

From this survey one may conclude that **bhrh₁u-* / **bhruh₁-* originally meant 'to whirl, seethe', and that it is an enlarged form of **bhrh₁-* found in Skt. *bhurátⁱ*, Av. *barəntⁱ* (see 5. above), and finally that its full grade form was **bhreh₁u-*. In retrospect, the words belonging to this root constitute a formally and semantically coherent group.

It is possible to assume that the same root **bhrh₁-* can be found in OHG. *brātan*, OE. *brǣdan* etc. 'to fry'. However, in view of OIc. *bráð* (ntr.) 'pitch', *bráðr* 'sudden, hasty, hot-tempered, OE. *brǣð* (fem.) 'vapour, smell, breath', OHG. *brādam* (masc.) 'breath, vapour, heat' it is doubtful whether the basic meaning of these forms is 'to fry'. I rather think of 'steam, heat', cf. OE. *brōd*, MLG. *brōt*, MHG. *bruot* 'brood' and MHG. *brüejen*, MLG. *brōjen* 'to scorch'. The connection with **bhreh₁-* is possible but not compelling.

The following words must be separated from the ones discussed so far because they point to a root **bhru-* without a laryngeal. They are invariably associated with the concept 'to boil':

OHG. *prod*, OE. *brođ*, OIc. *broð* (ntr.) 'broth' reflect **bhru-to-*. This must be compared with W. *brwd*, fem. *brod*, Bret. *brout* 'warm, fervent' < **bhru-to-*, and with OIr. *bruth* (*u*-stem, ntr.) < **bhru-tu-*, *bruithe* 'boiled, broth' < **bhru-tio-*. The last two are deverbatives of *berbaid* 'to boil', so that one may conclude that the latter reflects **bheru-*, not **bherHu-*. **bheru-* must also be reconstructed for W. *berw*, Bret. *berv* 'broth, boiling', and for Lat. *fervēre*, *-ĕre*, because both semantically and formally they belong to the same form as the Irish and Germanic forms. This might help to solve Lat. *dēfrutum* 'must boiled down'. It is attested once with *-ū-* (Plaut., Pseud. 741) and several times with *-ŭ-* (Verg. (Georg.), Stat., Mart.). According to WH., *-ŭ-* is due to influence of *frŭtex* 'shrub', *frŭticāre* 'to sprout out, put forth shoots'. This is semantically unconvincing. Nor is it likely that both the forms with short and with long *-u-* are old (Schmidt, Hirt and Leumann ap. WH.). If one considers the etymology, *dēfrutum* is most likely the original past participle of *fervere*. Since the

latter probably lacked a laryngeal, the short vowel form *dēfrŭtum* < **bhrŭ-to-* must be original. Note that *dēfrūtum* is a hapax; and that if the short vowel form is original, it may help to explain *defritum*, which appears instead of *defrūtum* in the quotation by Nonius (551.7, 15) of the Plautinian passage mentioned above; *defritum* would then be the regular result of vowel weakening in an internal open syllable.

We can now conclude that **bhru-* originally meant 'boil', and that its full grade form was **bheru-* (not **bhreu-*). Thus, there are sufficient reasons to separate **bhrh₁u-* from **bhru-*.

It is not possible to find a semantically satisfying basic root **bher-* of which **bheru-* could be an enlarged form. However, one finds a root (or roots) **bher-* that comes close (see WH., Pokorny IEW. 132, 137, 143):

1. Olr. *topor* (*o*) 'well, pit' < **to-od/oss-bhVr-o-*; MIr. *fobar*, W. *gofer* 'brook' < **upo-bher-*; and Olr. *combor* (*o*), W. *cymer* 'confluence' < **kom-bher-o-*. These forms reflect a root **bher-* 'to flow', which must be compared with Av. *ava-bar-* 'herabströmen', *uz-bar-* 'hervorströmen'. Semantically, it rather belongs to **bhreh₁u-*. The root of the Celtic and Avestan forms could be **bherH-*, although there is no evidence for a laryngeal.

2. Semantically closely related to this root **bher-*, but less so to **bheru-* 'boil', is Lat. *frĕtum* 'strait, channel, raging, swelling' < **bhr-eto-* (also *fretus* (u), with u-stem inflection after *aestus* 'tide' (WH.)). Its formation must be compared with that of Gr. νιφετός 'falling snow, snowstorm', ἄοχετος 'unrestrainable' (WH.). *fretāle* 'frying pan' is probably derived from *fretum*, on which there is general agreement. For the semantics, compare OIc. *bráðr* 'hasty, hot-tempered', OHG. *brātan* 'to fry'. *fretum* cannot reflect a root in a laryngeal: **bhrH-eto-* would have become Lat. **faritum*.

3. Lat. *fermentum* 'yeast, leaven, ferment' reflects **bher-mn-*, cf. OE. *beorma* 'barm' < **bher-m-n-*. It is equally possible phonetically, however, that *fermentum* reflects **feramentom* < **bherH-*.

4. If *fer(c)tum* 'flat sacrificial bread' is cognate with Skt. *bhṛjjáti* 'roasts', it reflects a root **bher-g-* (see VI.E.3.4 no. 4).

5. The following forms are more distant:

- Ir. *bruinnid* 'springs forth, flows, darts, rushes' has fixed *-n-*, and reflects **bhrond-eie-*;
- Goth. *brinnan* etc. 'to burn (intrans.)' < **brenn-*,

ga-brannjan 'to burn (trans.)' < **bronn-eie-* cannot be separated from OE. *bryne* (masc., *i*), OIc. *bruni* (masc., *n*) 'fire'. An attractive solution for these forms is to assume that *bryne*, *bruni* reflect **bhrnH-*, while *brinnan*, *-brannjan* reflect **bhrenH-*, **bhronH-*, with gemination of intervocalic **-nH-* in accordance with the rule discussed recently by Rosemarie Lühr (1976, 73-92, but cf. the criticism by Beekes 1988a, 97, 98; she connects *brinnan* with Skt. *bhrīṇanti* (RV II 28,7) 'sie verletzen', which points to a root **bhreiH-*. This does not explain Germ. *-brannjan* however, nor OE. *brand* 'sword', i.e. 'wounder', which point to PGm. **brenn-/*brann-*, not **brinn-*, as was pointed out by Polomé 1988, 404 note). The connection with **bher-* is neither semantically nor formally compelling;
- Gr. φρῦγω 'to roast' and Lat. *frīgō* 'id.', which cannot be combined (Frisk s.v.). For *i*-forms possibly cognate with *frīgō* see Pokorny, IEW. 133, 137.
- Gr. βρῦτος 'Gerstenbier' cannot be evaluated because it is Thracian in origin, of which very little is known.

I conclude that there is evidence for a basic root **bher-* (or **bherH-*). However, this root fits **bhreh$_1$u-* 'seethe' semantically better than **bheru-* 'boil'. Since 'seethe' and 'boil' are closely related semantically, it is likely that ultimately the whole complex belongs together.

For the present purpose it suffices to note that *fervere* most likely belongs to **bheru-*. It did not contain a laryngeal and therefore is irrelevant to the development of **CHuV*.

6. *pavēre* 'to fear' probably reflects **pou-*, not **pHu-*, see VI.C.1.2.1 no. 15. *pavīre* 'to smoothen the earth by beating' must be separated from *pavēre* for semantic reasons. It must rather be compared with Gr. παίω 'to hit' < **ph$_2$u-ie/o-*, which has the same formation as the Latin verb. *pavīre* reflects **ph$_2$u̯-*.

7. *pulvis* (masc, fem.), Gsg. *-eris* 'dust, powder' is generally considered to reflect an old *u*-stem which was remodelled on the inflection of *cinis*, *-eris* 'ashes' (EM., WH.). The *u*-stem is commonly connected with words for 'chaff': Russ. *polóva*, SCr. *pljẽva*, Cz. *plíva*, OCS. plur. *plěvy* < **pelHuaH-* (see Kortlandt 1975, 62 on the acute intonation of Proto-Slavic), Lith. plur. *pẽlūs*, Latv. plur. *pelus*, also *pelavas*, OPruss. *pelwo* < **pelH-u-*. Skt. *palā́va-* 'chaff, husk' probably reflects an old Nsg. **pelH-ōu* (Pokorny's **pelŏus*, IEW. 802), or an Asg. **palHāvam* < **pelHoṷm̥* (cf. Av. *nasāum* < **-āvam* < **-oṷm̥*,

Beekes 1985, 88-89). The identification of a word for 'dust, powder' with 'chaff' is not exactly copperfast. A more probable Latin cognate of the chaff-word is *palea* 'chaff' < **plHeieh₂-*, which lacks the *u*-suffix. The latter suggests that the *u*-stem is a (common?) innovation of Balto-Slavic and Indo-Iranian (if the equation is correct).

In view of these considerations, it is perhaps preferable to connect *pulvis* with *pollen*, *-inis* = *pollis* (masc., fem.) 'flour, fine powder', *pollenta* 'barley flour' (see the discussion in WH., which is a reaction to EM.). For the semantics, compare Gr. πάλη 'feines Mehl, feines Staub'. *pollen*, *pollis* probably reflect a remodelled **polen* (*-ēn*?), Gsg. **polnes* (WH.) > **polen*, **pollis*. There is no trace of a laryngeal here (**-lHn-* would become **-lan-*, and with syncope Lat. *-ln-*, not *-ll-*), nor in Gr. πόλτος 'thick pap of flour'. *pollen*, πόλτος and therefore also *pulvis* would point to a root **pel-*, not **pelH-*. However, it is perhaps possible to assume PIE. **pelH-* if we accept the rule that in **oRH* the laryngeal was lost at an early stage (on the Latin evidence see V.A.2). But the reconstruction of the laryngeal only rests on a somewhat far-fetched root etymology, and *pulvis* cannot therefore be used as evidence for the normal development of **CHuV* in Latin.

A few words must be spent on other alleged cognates: Lith. *plėnys* 'Flockasche', Latv. *plẽne* 'weisse Asche auf Kohlen' < **pleh₁n-* have a different meaning and may not be cognate (see Fraenkel; but cf. Lat. *cinis* 'ashes', which is cognate with Gr. κόνις 'dust').

Ir. *littiu* 'porridge' reflects older *lichtiu*, which also explains W. *llith* < **llijth* < **llĭxt-* (thus O'Brien 1952-54, 353). It cannot be cognate with *pollen* etc.

Leumann 1950, 239 connects Gr. πάλη 'feines Mehl, feiner Staub', παιπάλη 'id.' and παλύνω 'Mehl usw. streuen' with Gr. πάλλω 'schütteln' (which is not very strong semantically). This would point to πάλη < **plH-eh₂-*, πάλλω < **plH-iō* (?). Whether all these words ultimately have the same origin (Pokorny IEW. 802) cannot be ascertained.

I conclude that *pulvis* cannot be used in the present discussion.

8. *răvus* 'hoarse', *răvis* 'hoarseness' and *raucus* < **ravicos* (WH.) 'hoarse' are often connected with the root **(H)reh₁-* found in Skt. *rā́yati* 'barks' (if this does not belong with *lātrāre*, Lith. *lóti* 'to bark'), OCS. *rarъ* 'shout', Russ.

rájat' 'to sound' < **Hroh$_1$-*, OIc. *rámr* 'hoarse' < **Hreh$_1$-mo-*, *rómr* 'voice, shouting' < **Hroh$_1$-mo-* (WH.).

Lat. *rāvīre* (with long *-ā-*) cannot be taken seriously: it occurs only once, in a corrupt passage (Plaut., Poen. 778; see EM.). Furthermore, Lat. *rā-* cannot be explained from a root **Hrh$_1$-* (see section F.1.3).

On the other hand, Pokorny IEW. 867 connects *ravus* with Skt. *ráuti*, *ruvátí* 'roars', OE. *rēon* 'wehklagen', OCS. *ruti* 'to roar', which point to **Hreu-*. The latter root should not be reconstructed as an enlarged form of **Hreh$_1$-* (thus apparently WH.), as is clear from Gr. ἐρῠγόντα 'den brüllenden' < **h$_1$ru-g-* and OHG. *rohōn* 'to roar' < **Hru-k-*. Thus, there are two different roots, **Hreh$_1$-* and **h$_1$reu-*. If *ravus* belongs to **h$_1$reu-*, it may reflect **Hrou̯o-* (on **ou̯* > *av* see VI.C.1). If it belongs to **Hrh$_1$-*, *ravus* may reflect **Hrh$_1$u̯o-*. Since both reconstructions are possible, *ravus* cannot be used here. It must be kept in mind that *ravus* belongs to an expressive etymon, with strong inclination to reformation (thus EM., WH.).

9. As Hamp (1975, 97-102) has shown, Lat. *sōl* (ntr.) 'sun' cannot reflect a collective form in *-ōl* because a collective is semantically unlikely in the case of 'sun'. Nor is it likely that *sōl* reflects a (non-collective) neuter in **-ōl* because neuters do not as a rule have a long vowel in the suffix (ὕδωρ being a collective; thus Beekes 1984, 5-8, and despite Bammesberger 1985, 111f., who reconstructs **suəōl*). Beekes op. cit. convincingly argued that Hamp's reconstruction **sāu̯ol* < **seh$_2$u̯ol* does not account for *sōl*, as one would expect **sāl*. The most likely reconstruction, as Beekes suggests, is to assume **seh$_2$ul* > **saul* > *sōl*. *sōl* cannot therefore be used here.

3.4. Conclusion

As we have seen, there is one possible case of **CHiV*, viz. *socius*, which would show that the laryngeal was lost in this environment (but it may be explained differently).

For **CHuV* there is more evidence. It was observed that when this constellation was not word-initial, there is no means to conclude from Latin itself whether **H* was either lost or vocalized because of the vowel reduction: unstressed (non-initial) **-CVu̯-* and **-Cu̯-* merged in Latin (see 13.2.3.1 below). It is only in the case of *arvum* that we can reconstruct **arVu̯o-* in view of the Umbrian cognates. Apart from *arvum*, therefore, only cases of word-initial **CHuV* are included in the diagram. *fervere* and *pulvis* probably do not reflect roots with a

laryngeal.

The following words constitute the evidence for the development of **CHuV* in Latin:

probable	possible	unreliable
4 *caurus* <**ḱh₁uero-*	1 *arvum* <**h₂(e)rh₃u̯o-*?	2 *bellum*
6 *pavīre* <**ph₂u-ie-*	8 *rāvus* <**Hrh₁u̯o-*?	3 *cāseus*
		5 *fervere*
		6 *pavēre*
		7 *pulvis*
		9 *sōl*

The evidence is sparse but not conflicting. It points to vocalization of **H* to Lat. *ă*. This conclusion need not conflict with the apparent loss of **H* before *-i-* in *socius*. In the first place, the treatment of **CHuV* need not be the same as that of **CHiV*; secondly, the best evidence concerning **CHuV* is limited to the first syllable, whereas the evidence concerning **CHiV* is limited to the second syllable, where the laryngeal might conceivably have developed differently because of a different syllabification.

The conclusion cannot be considered more than tentative in view of the scarcity of material.

4. *CIHV*

There are but few words which can be demonstrated to reflect this constellation. As far as can be ascertained, the only observable reflex of the laryngeal is colouring of the adjacent vowel.

1. The PIE. adjectival suffix **-iHo-* 'belonging to' cannot be distinguished from **-io-* on the basis of Latin. Yet, among the numerous Latin adjectives in *-ius* some must reflect **-iHo-*. A possible example is *patrius*, lit. 'belonging to father'.

2. The transition of *neptĭs* 'granddaughter' and *socrŭs* 'mother-in-law' from the PIE. *vr̥kíḥ*-inflection to the Latin short *ĭ*- and *ŭ*-stems may have arisen as a result of the loss of the laryngeal in the Dsg. **-iH-ei* (**-uH-ei*), Gsg. **-iH-os/es* (**-uH-os/es*), so that the forms came to be identical to certain hysterodynamic *i*- and *u*-stem forms (see V.C.I.2 no. 2).

3. The oblique case forms of *sūs*, e.g. Gsg. *sŭĭs*, D. *sŭī*, Npl. *sūēs* reflect **suH-es*, **-ei* etc. (see Appendix 2.6 no. 3).

4. *vapor*, OLat. *vapōs* (m.) 'steam, heat', *vapidus* 'that has lost steam or vapour, spoiled, flat, vapid', *vappa* 'wine that has lost its spirit and flavour' (with an obscure geminate) has often been connected with Lith. *kvãpas* 'breath, smell, spirit' (and numerous other Baltic forms to be discussed below) and with Gr. καπνός 'smoke', on the assumption that the root was **ku̯ap-* and **k-* was lost in Latin. The latter point has cast doubt on the correctness of the etymology (see EM., WH.), despite the semantic plausibility.

The only other word for which loss of **k-* has been assumed is *in-vītāre*, cf. Lith. *kviẽsti*, *kviečiù* 'to invite'. There is, however, a plausible alternative etymology (with Skt. *vītá-* 'beloved, pleasing' etc., see EM., WH. and E.2.3.1 no. 3 above). For *vapor* there is no such alternative. WH., following Persson, suggest that *vapor* may be connected with Skt. *vắti* 'weht' and its causative *vāpayati*. However, a direct comparison of *-p-* in *vapor* and *vāpayati* is unlikely because the Skt. causative suffix *-páya-* is found in connection with all roots ending in *-ā* and also beyond this category; it is not limited to *vā-*. In view also of the semantic problems, the connection of *vapor* with *vāpayati* has nothing to commend itself.

It has been assumed that the pure velar *k* + *u̯* yielded Lat. *v-*, whereas palatal *ḱ* + *u̯* yielded Lat. *qu-*, cf. *queror* 'to complain', Skt. *śvasiti* 'to breathe, sigh' < **kues-*. This must probably be rejected because of the material counterevidence: *quatiō* < **kuot-*, cf. OS. *scuddian*, Lith. *kutėti*. Sommer 1914, 222 claimed: "Am besten kommt man theoretisch aus, wenn man nicht von *q* + *u̯* sondern von *q*$^{u̯}$ + *u̯* ausgeht: lat. Schwund von *q*$^{u̯}$- vor *-u̯-* wie vor *-u-*" (cf. *ubi* < **k*^{w}*u-dhei*). As **ḱu̯-* and **ku̯-* do not yield Lat. *v-*, the only possibility that may be considered is that **k*^{w}*u̯-* yielded *v-*.

I shall now attempt to revive the connection of *vapor* with καπνός and *kvãpas*, starting from the reconstruction of the Baltic forms. The material (apart from the Baltic forms, for which a more extensive search was made) is taken from Pokorny, IEW. 596-597.

We may leave aside Skt. *kúpyati* 'gerät in Wallung, zürnt' etc., Lat. *cupiō* 'to desire' etc., Olr. *ad·cobra* 'wants', which semantically and formally constitute a separate unity (PIE. **kup-*). Likewise Latv. *kupināties* 'aufgehen (vom Teig)', *kupt* 'gären', OCS. *kypljǫ* 'wallen, überlaufen' seem to form a separate unity. OCS. *kyprъ* 'locker, porös', Cz. *kyprý* 'strebsam, emsig, frisch' Ukr. *kvápyty śa* 'sich sputen, eilen', OCS.

koprъ 'Dill' are semantically too remote. Goth. *afhvapjan* 'ersticken, auslöschen', *afhvapnan* 'erlöschen', MHG. *verwepfen*, Ic. *hvap* have PGerm. **-p-* < **-b-* and must therefore be set apart.

In Baltic, a number of verbal forms are attested which are instructive because they shed an interesting light on the original form of the root. A zero grade is reflected in Latv. *kûpt* 'to smoke', *kûpêt* 'to smoke, steam', Lith. *kūpúoti* 'to breathe heavily'. The intonation of Latvian points to PIE. **k(w)Hup-* (see IV.E.2.1.3). The broken tone of Latv. *kvêpt* 'to smoke, steam', cannot be identified with the circumflex intonation of Lith. *kvẽpti*, pres. *kvẽpiù*, pret. *kvėpiaũ* 'to cough, breathe'. The latter points to a lengthened grade circumflex vowel *-ē-*, which is common in the preterite stem and (usually) in the infinitive of a whole class of verbs (Stang 1966, 389) and whose origin may be traced back to the PIE. *s*-aorist (Kortlandt 1985a, 114). The Lithuanian evidence points to the conclusion that the broken tone of Latvian *kvêpt* must be secondary in this form. It may be suggested that the broken tone was taken from the zero grade root in *kûpt*, *kûpêt*. The assumption that the broken tone is secondary in both *kvêp-* and *kûp-* must be rejected because in that case it is a mystery why we find a broken tone at all. As the Baltic zero grade reflects **k(w)Hup-*, the attested full grades must reflect **k(w)Huĕp-*. Lith. *kvãpas* reflects **k(w)Huop-*. It may now be attempted to explain the cognates on the basis of a root **k(w)Hup-*.

Russ. *kópot'* (f.) 'feiner Russ, Staub', *koptít'* 'mit Rauch schwarz machen, räuchern' are probably cognate, although they lack the **-u-*. (One might consider **k(w)Huop* > **kʷHop-* > *kop-* or **kʷHuop-* > **kʷuop-* > **kʷop-* > *kop-*, which are, of course, ad hoc).

Gr. καπνός 'smoke' probably reflects **κFαπνός* (with loss of F by dissimilation to *-π-*? Schwyzer I, 302, Frisk and Chantraine s.v.). An *u*-stem is reflected in κάπυς· πνεῦμα (Hes.), ἐκάπυσσεν (Hom.) 'breathed out'. κάπος· ψυχή, πνεῦμα (Hes.) may reflect an *o*-stem. The *-α-* must reflect the effect of the laryngeal, which can therefore be reconstructed as **h₂*. Gr. **κFαπ-* probably reflects **k(w)uh₂ep-*, the metathesized root (see Appendix section 1). The position of the vowel before the fourth consonant, enigmatic though it is in view of PIE. root structure, corresponds with that of Baltic. We may perhaps compare the structure with that of certain forms in the paradigm of 'goose', which reflect (unanalysable) **ǵhh₂ens-* (e.g. OCS. *gǫsь*, OHG.

gans, see Kortlandt 1985a, 119).

It may be objected that one would expect *$k^{(w)}uh_2ep$- to have yielded Gr. *κυαπ-, cf. Gr. κύαρ 'hole, eye of a needle' < *$\acute{k}uH$-*r*, cf. Av. *sūra*- 'hole' < *$\acute{k}uHro$-. I acknowledge the problem, but do not regard it as a decisive counterargument because the behaviour of the semivowels *u and *i in Greek is extremely complicated and numerous details remain to be clarified. It may be important to note that κύαρ has stressed -ύ-, in contradistinction to *κFαπνός, *κFάπυ-. Compare retained stressed -ύ- in κύανος, κύαμος, κύαθος, which lack a reliable etymology and are probably non-IE. loanwords. As to the development *κFαπ- > καπ-, not *παπ, see Schwyzer I, 302. If one does not accept the dissimilatory loss of *-F-, one might alternatively assume that *k^wuh_2ep- yielded *k^wh_2ep- in order to resolve the complicated initial sequence, which offers a phonetically attractive solution. The loss of *-*u*- in Russ. *kópot'* may be explained similarly. As to the evidence for initial *k^w rather than *k, I refer to the discussion of Lat. *vapor* below.

Thus, Baltic points to *$k^{(w)}h_2uep$-, and Greek (in view of Baltic) probably to *$k^{(w)}uh_2ep$-, with metathesis in the root. In view of these forms, and of Lat. -*a*-, *vapor* probably reflects *$k^{(w)}uh_2ep$- > *$k^{(w)}uap$-. We may now turn to the fate of the initial stop in Italic.

I propose to revive Sommer's contention that *k^wu- yielded *u*-. It may be objected that *k^w had yielded *k before or after *u already in PIE. (thus e.g. Pisani). Short of denying this, I think it is irrelevant because the PIE. root was not *k^wuh_2p- but *k^wh_2up-: *k^w must have survived here, and was eliminated only at a later stage, i.e. in the separate languages. As to Latin, it seems likely that *k^wuap- regularly yielded *uap-, with loss of *k^w. The treatment is identical to that observed in e.g. *ubi* < *k^wu-*dhei*, *unde* < *k^wu-, *uter* < *$k^wuteros$. Scholarly opinions vary as to the explanation of the absence of *k- in these forms. According to Leumann 1977, 149-150 the loss of *k- is due to analogy, considering the possibility that in instances like *alicubi*, *alicunde*, *necubi* the morpheme boundary was incorrectly placed between *alic-*, *nec-* and -*ubi*, -*unde*; the existence of *nec* (*neque*) would have been of special importance. This explanation seems improbable to me, as the compounds would rather have favoured the maintenance of *k- in the simplicia. Meillet-Vendryes 1927, 69 and Sommer-Pfister 1977, 143 claim that the loss of *k^w- in *ubi*, *uter* and *unde* is the result of a sound law. This can be a phonetically

motivated sound law. One can imagine that before *-*u*- a word-initial *k^w was retracted to the uvular region (as in the New York English pronunciation of *quiet* etc.); it may easily have been lost subsequently, via [ʔ].

The reconstruction of *k^w- and immediately following *h_2 is possibly confirmed by the presence of a root (or stem) *k^weh_2-*s*- 'to cough' (see Pokorny IEW. 649; as to the semantics one may compare Lith. *kvẽpti* 'to cough, breathe'), which may ultimately contain the same basic root as *k^wh_2up-: Skt. *kā́sate* 'coughs', Lith. *kósėti*, Latv. *kāsêt* 'to cough', SCr. *kàšalj*, OE. *hwōsta* 'coughing' < *k^weh_2s-, MIr. *cossacht*, W. *pas* 'coughing' < *k^wh_2s-*t*-.

5. *CHIR* and *CIHR*

I have not been able to find any reliable Latin forms reflecting PIE. *CHIRC*. Perhaps *fīlius* < *$dhih_1lio$- < *dhh_1ilio- belongs here. We know that *-*io*- was *-*i̯o*- in prehistoric Latin (cf. the lack of syncope in *sepeliō* < *$sepeli̯ō$ because the second syllable was prehistorically closed), but the formation does not necessarily go back a long time.

CIHRC is reflected in the 3pl. subjunctive (originally optative) of the verb 'to be', Lat. *sīnt* < *$sīnt$ < *h_1s-ih_1-*nt*, cf. U. *sins*, *SIS*. It shows that *-iH*- developed to *-ī*- and that *-*n*- was not vocalized (which should have given *h_1sih_1nt > *h_1sih_1ent > *$sient$). It is in my opinion difficult to explain *sint* as analogical, under the assumption that it replaces *$sient$. *$sient$ would probably have remained in Sabellian, where *-ent* is a common 3pl. ending. In Latin it would probably have been replaced by *$siunt$ rather than *sint*, cf. *sunt* replacing *$sent$ (O. *SENT*, U. *sent*). Thus, I conclude that there is reason to believe that Lat. *sint*, U. *sins*, *SIS* regularly reflect *h_1sih_1nt.

HI, IH AFTER VOWEL (VHI, VIH)

6. *VHIC*: Latin *ae* and *au*

6.1. Introduction

In this section belong the majority of Latin words that contain the diphthongs *ae* and *au*, in as far as they have an etymology. The words that will not be discussed here comprise six types: words that do not have a reliable etymology (6.1.1), onomatopoetic and expressive words (6.1.2), loans (6.1.3), instances of *au* reflecting *auV (6.1.4), instances in which Lat.

ae, *au* reflect *$*h_2ei$*, *$*h_2eu$* (6.1.5), and four remaining words in which *ae*, *au* do not reflect *VHIC* (6.1.6). In all other words, Lat. *ae* and *au* probably or possibly reflect *$*eh_2i$*, *$*eh_2u$*. There is reason to believe that in some words *ū* < *$*ou$*, *$*eu$*, *$*oi$* reflects a constellation *VHIC*. These will be discussed in section 6.2.

6.1.1. *ae*, *au* in words without a reliable etymology
caesius (cf. *caerulus*?), *caespes* (cf. *caedere*?), *caestus* (cf. *caedere*?), *cauda* (cf. *cūdere*? or *cavēre* (Hamp 1987, 694)), *caulae* (< *$*kăgh$*-??), *caupō*, *caupulus*, *causa*, *claudus*, *dautia*, *faex*, *Faunus*, *faux*, *glaucō*, *haud* (cf. Olr. *gáu*??), *laedere*, *laetus*, *laurus*, *maerēre* (cf. *miser*), *maurella* (*-ō-*), *naevus*, *naucum*, *naupreda*, *nauscit*, *paedor*, *paeminōsus* (< *$*-ē-$*?), *paene*, *paenūria*, *paenitet* (but see WH.), *paetus*, *paušea* (*-ū-*, *-ō-*), *plaudere*, *plaustrum*, *plautus*, *rauca*, *saepe*, *saucius*, *in-*, *rē-staurāre* (root *$*steh_2$*-?), *taedēre*, *taeter*.

6.1.2. Onomatopoetic and expressive words
ai (cf. Lith. *aĩ*, Gr. αἴ), *caurīre*, *paupulāre*, *tatae*, *vae* (cf. Latv. *wai*, Av. *vay-ōi*).

6.1.3. Loans
- From Greek: *ballaena*, *caerefolium*, *caucum*, *cauma*, *daedalus*, *daemōn*, *gangraena*, *gaulus*, *gaunacum*, *gausapa*, *glaucus*, *laena*(?), *lautia*, *lautumiae*, *moena*, *nauchus*, *nauclārius*, *nauta*, *paedagogus*, *paedicāre*, *paegniārius*, *paenula*, *palaestra*, *pausa*, *petaurum*, *scaena*, *scauria*(?), *scaurus*, *sphaera*, *taeda* (*daeda*), *taenia*.
- From Celtic: *acaunomarga* (*acaunu-*), *alauda*, *alausa*, *bagaudae*, *bascauda*, *epiraedium*, *gaesum*, *gaitanum*(?), *lausiae*(?), *raeda*(?), *samauca*(?).
- From Germanic: *glaesum*, *laetus*, *raubāre*.
- From other languages: *caelia*, *caerimonia*, *caetra*, *calamaucus*, *calautia*, *camelaucum*, *faex*, *gaeum*, *laurex*, *paelex* (Wanderwort), *paragauda*, *plaumorātum* = *plauromātum*, *tautanus*.

6.1.4. *au* reflecting *$*auV$*
1. With "old" *a*: *caurus* (E.3.3 no. 5), *claudere* (< *$*klāu̯-$*, see D.1.3.2.1 no. 2), *raucus* (E.3.3 no. 9);
2. With *au* < *$*ou$* (see VI.C.1.2): *caudex*, *cautus*, *fautus*,

fraus(?), *laus*(??), *lautus*.

6.1.5. *ae*, *au* < *h_2ei*, *h_2eu*

This alternative for *eh_2i*, *eh_2u* is possible for many instances that are discussed below. It can be proven only in the case of *laevus* (see D.2.2).

6.1.6. Remaining forms which do not reflect *VHI*

1. *caenum* 'mud, slime' is usually compared with *cūnīre* 'to shit' < *k^woinie/o-, *in-*, *con-quĭnāre* 'to soil' < *$-k^wināie/o$-. According to Sommer 1914, 77, *caenum* is a hyperurbanism for **cēnum*, which itself reflects a "dialectal" development of **koinom*. This is sheer speculation. *-ae-* in *caenum* is probably original (see EM.). That *caenum* is cognate with *cūnīre*, *-quĭnāre* is therefore unlikely. The etymology of the verbs is no less problematic (cf. Swed. dial. *hven*, OIc. **hvein* (in placenames) 'low, marshy field'?).

2. *raudus*, *rōdus*, *rūdus*, G. *-eris* 'rude mass, piece of brass used as a coin' displays an unexplained vacillation of the root vocalism. It is commonly compared with OCS *ruda*, Russ. *rudá*, SCr. *rúda* < PSlav. **rudà* (AP. b) 'ore' and with OIc. *rauðr* 'red ore'. Even if the comparison is correct, a common protoform cannot be reconstructed: **Hroudh-* would have yielded Lat. **rūb-*; **Hreh$_2$udh-* would have resulted in Lat. **raub-* and in PSlav. **rũda* (AP. a); **Hroud-* does not explain OIc. *rauðr*, nor the Slavic accentuation (PSlav. **rudà* (b) reflects earlier **rúda* as a result of the progressive accent shift known as Dybo's law; the latter would not have operated if the root was laryngealized as a result of Winter's law); **Hreh$_2$ud-* does not explain *rauðr* nor the Slavic accentuation; **HrouHd(h)-* would have resulted in a Slavic AP. a, not b, for the same reason as why **Hroud-* would have. Thus, it is likely that at least one language, most likely Latin in view of its vocalism, has borrowed the word (thus Pokorny IEW. 873). Possibly Skt. *lohá-* 'reddish, copper-, iron; red metal, copper' is cognate, in which case one may reconstruct **Hroudh-*, which may ultimately be identical to the word for 'red' (thus WH., Mayrhofer KEWA s.v. *lohá-*, Pokorny IEW. 873). Compare also Sumerian *urud* 'copper'.

3. *scrautum* 'quiver', *scrōtum* 'scrotum', *scrūta* 'old or broken stuff, trash', *scrūtillus* 'pork-sausage' (if these belong together, which is doubtful in view of the semantics and the vocalism) are usually considered to have been derived from

*skreu-, *skrou- 'to cut' (WH., Pokorny IEW. 947), which is extremely doubtful for both *scrautum* and *scrōtum*, cf. OHG. *scrōtan* 'to cut', *scrot* 'cut', *scrutōn*, *scrodōn* 'erforschen' (cf. Lat. *scrūtināre*), OE. *scrēadian* 'schälen, abschneiden'.

4. *taurus* 'bull', Osc. ταυρομ 'taurum', U. *toru*, *TURUF* 'tauros', W. *tarw*, Olr. *tarb* < **tarus* (which probably replaces **tauros* after **carus* 'deer', as is generally agreed), Gr. ταῦρος, OCS. *turъ*, SCr. *tûr* 'aurochs', Lith. *taũras* 'bison' cannot reflect **teh₂uro-* because the latter would have yielded an acute in Baltic and AP. a in Slavic, with a short falling, not a long falling accent in SCr. One may reconstruct **th₂eu-ro-*, which does not conflict with any language, but the structure is remarkable. The possibility that this word is an early loan from Semitic, cf. Arab. *twr* cannot be ruled out. (The word could already have been borrowed in PIE., and in that case it may have been fitted in as **th₂euro-* because PIE. did not have a phoneme **a*.)

6.2. *VHIC*: material

1. *caecus* 'blind, dark, invisible', cf. Olr. *cáech* 'one-eyed', W. *coeg* 'empty', *coeg-ddal* 'one-eyed', Goth. *haihs* 'one-eyed', reflects **kaiko-*. If the etymon dates back to PIE, one may reconstruct **keh₂i-ko-* (or **kh₂ei-ko-*?), which is probably ultimately cognate with **kai-* 'alone' (see no. 3). Skt. *kekara-* 'squinting' is attested at a late date. In view of the alternative forms *ṭeraka-*, *ṭerākṣa-*, *kedara-*, the word probably does not date back to PIE. (thus Mayrhofer, KEWA).

2. The connection of *caedĕre*, *cecīdī*, *caesum* 'to cut, hew, lop, fell' with Skt. *(s)khidáti* 'tears, presses' must be given up in view of the perfect *cakhāda* and the aorist *ud-a-khātsuḥ*, which point to a root **(s)keHd-*. Skt. *khédā* (RV) 'pressing, heavy burden' is probably based on the zero grade *khid-* (thus Mayrhofer, KEWA s.v.). Even if Burrow (1957, 135) is correct in separating *khid-* from *khād-* (which seems unfounded), and if *khid-* contains old **-i-*, the latter cannot be cognate with *caedere* < **keh₂id-* (or **kh₂eid-*) because **(s)kh₂id-* would have yielded Skt. **(s)kiHd-* > **(s)kīd-* (see E.2.1).

Other presumed cognates are Arm. *xaytᶜem* 'to stab' < **kh₂ei-t-* (on **kH-* > Arm. *x-* see Kortlandt 1976, 91) and MHG. *heie*, *hei* (f.) 'Rammblock', MDu. *heien* 'schlagen, rammen' < **haii-* (with Verschärfung) < **keh₂i-* or **kh₂ei-*. EM. reject the comparison, for no good reason it seems,

because the connection with both *xaytᶜem* and *heie* is semantically and formally defensible. In any case, EM. admit, the archaic conjugation and the existence of the (archaic) verbal noun *caedēs* point to an old verb.

3. *caelebs* 'bachelor' is usually reconstructed as **kaiuelo-libh-s* (see WH., Mayrhofer KEWA s.v. *kévala-*), the second member of which is cognate with Goth. *liban* 'to live' etc. The first member is considered to be identical to Skt. *kévala-* 'exclusively one's own, alone, whole'. It is however doubtful whether **kaiuelolibhs* could have yielded *caelebs*. The loss of *-o-* between the two *l*'s has been attributed to haplology (WH.), which seems possible. Yet syncopated **kaiuelibs* would be expected to yield **caeulebs*, with loss of **-e-* and syllabicization of **-u-* (cf. *quatiō*, *con-cutiō*). Perhaps the complicated vowel constellation **-aeu-* was simplified to *-ae-*, but this is uncertain. Thus, I think that *caelebs* probably does not reflect **kaiuelo-libhs*, but rather **kailo-libhs*, which would only contain the same radical as Skt. *kévala-*, viz. **kai-* < **keh₂i-*. This **keh₂i-* may be identical to the root of **kai-ko-* 'one-eyed' (1. above; thus Pokorny IEW. 519). Whether Latv. *kaîls* 'bare, nude' belongs here is doubtful, not only for semantic but also for formal reasons: it points to **koiH-lo-* (**koHilo-* would have yielded ***kaīls*).

EM.'s contention that the etymology of *caelebs* is "en l'air" cannot be disregarded, but I maintain that the etymology which is presented by the other dictionaries is a good possibility. EM.'s remark that it is a non-Indo-European word is unjustified. EM. are in general reluctant to admit an etymology for words containing *-ae-* without offering cogent argumentation.

4. *caelum* 'sky' does not have a reliable etymology. EM. suggest a connection with *caedĕre*, which is speculative to say the least. (On the other hand, *caelum* 'chisel' < **kaid-slom* does belong to *caedĕre*.) WH. tend to follow Solmsen and Schrader, who reconstruct **caid-* or **cait-(s)lom*, which they connect with OIc. *heið* 'clear sky', *heiðr*, OHG. *heitar* 'clear' < **kait-* and Lith. *skaidrùs*, Latv. *skaīdrs* 'clear', Lith. *skáistas*, *skaistùs* 'clear'. The Baltic forms have an acute root, which points to **skeHid(h)-* or perhaps **skoid-* (the latter according to Winter's law). Note that the dentals of Germanic and Baltic cannot be reconciled, which would mean that the basic root was **ske(H)i-* and that the dentals are enlargements. It seems likely that these forms must be connected

with Skt. *keta-* (m.) 'sign', *ketú-* 'Lichterscheinung, Bild' (e.g. Pokorny IEW. 916). The latter cannot have contained a laryngeal in view of the short vowel in *citrá-*, Av. *čiθra-* 'clear, conspicuous'. Since neither the Germanic nor the Baltic forms necessarily presuppose a laryngeal, the basic root was probably **(s)kei-*. If *caelum* is cognate, it cannot reflect a laryngeal. In accordance with section VI.B, **(s)kei-*, with a pure velar stop, may have yielded Lat. *cae-*.

However, it seems unlikely that *caelum* reflects **kaid-(s)lom* vel sim. because the suffix **-(s)lo-* generally denotes nomina instrumenti, which *caelum* obviously is not (see the examples in Leumann 1977, 311-313). Moreover, the adjective *caerulus* 'blue, green', which is probably cognate with *caelum* and reflects **caelolos*, points to **kailo-*, not **kaid(s)lo-* (**kaid(s)lelo-* would probably have yielded **caedillus* or **caesillus*, cf. **smakslelā-* > *maxilla*, **smakslā-* > *māla*). Thus, *caelum* most likely reflects **kai-lo-*.

I would like to suggest a different etymology for *caelum*, viz. a connection with W. *coel* (f.) 'presage, omen' < **kai-lo-* or **-lā-* (the latter is usually connected with Goth. *hails* etc. (e.g. Pokorny IEW. 520), which is semantically unattractive). Since watching the flight of birds in a demarcated area of the sky is a well-known form of divination, the connection of *caelum* and *coel*, which is formally impeccable, may be justified semantically. Both words may reflect **keh₂i-lo-* (or **kh₂ei-lo-*). This etymology is, of course, no more than a possibility.

5. *caesariēs* 'long hair' may be compared with Skt. *késara-* (n.) 'hair, mane'. The latter is probably a Prakrit form reflecting a Skt. **kesra-* (which would explain why *-s-* is not retroflex; see Wackernagel I, 232, EM. and Mayrhofer, KEWA, more cautious EWaia). If the comparison is correct, the root may be reconstructed as **keh₂is-* (**kh₂eis-* would have yielded Skt. **khes-*).

6. *caulis* 'stem (of a plant), plant, cabbage' reflects **keh₂ul-*, cf. Olr. *cúal* (ā) 'faggot, bundle of sticks' < **kaulā*, Gr. καυλός 'stem, pole'. Latv. *kaũls* 'stem, bone', Lith. *káulas* 'bone' must reflect **kéh₂ulo-* < **keh₂uló-* (with retraction of the accent according to Hirt's law).

Skt. *kulyam* 'receptacle for bones left from a burnt corpse' (Mahābh.) is semantically remote. A *kulyam* meaning 'bone' is only attested in lexical works, and therefore unreliable (Mayr-

hofer KEWA s.v.). Skt. *kulyá* (RV+) 'Bach, Kanal' (see Mayrhofer, EWaia s.v.), OIc., OHG., OE. *hol* 'hollow' are equally remote.

In view of the Baltic acute, *caulis* must reflect **keh₂ul-*.

7. As Fischer 1982 demonstrated, *grăvis* 'heavy' reflects an earlier *u*-stem **graus* < **gʷreh₂u-s*, which may be compared with Gr. βαρύς, Skt. *gurú-*, Goth. *kaúrus* 'heavy' < **gʷrh₂-u-*.

8. The only cognate of *haedus* 'kid', Sab. *fedus*, is found in Germanic: Goth. *gaits*, OHG. *geiz* < PGerm. **gaiti-*. OIc. *geit*, OS. *gēt*, OE. *gāt* (f.) 'goat' reflect a consonant stem (see Pokorny IEW. 409). If these forms go back to PIE., which given the limited distribution is uncertain, one may reconstruct **gheh₂id-* (or **ghh₂eid-*).

9. *lēvir*, *laevir* 'brother of husband' (*-ĭ-* after *vĭr*, Sommer 1914, 71, 176) reflects **daiuēr* < **deh₂iuēr*, cf. Skt. *devár-*, Arm. *taygr*, Gr. δᾶήρ, SCr. *djèvēr*, Latv. *diĕveris* < **deh₂iuer-*. The laryngeal and its position are proved by Gr. and Arm. *-a-* and by the accentuation of Baltic and Slavic.

10. *nāvis* 'ship' reflects an old *u*-stem. The root possibly contained a lengthened grade vowel: **nēh₂-u-s* (see IV.C.1.3.6.1).

11. *nervus* 'sinew, tendon' < **sneuros* (cf. *parvus* < **pauros*) and Gr. νεῦρον reflect an old *r/n*-stem, cf. Skt. *snā́van-*, A. *snāvarə* 'id.' < **sneh₁u̯r̥*, *-u̯en-*. **sneh₁u-* is probably an enlarged form of **sneh₁-* 'to spin' (Lat. *nēre*, see Pokorny IEW. 977).

12. *parvus* < **pauros* 'small', *parum* '(too) little' < **paru̯om*, *paucus* 'little, pi. few', *paullus* 'small, little', *pauper* < **pau(o)-paros* 'poor', lit. 'acquiring little' must be compared with Gr. παῦρος 'little, in small number' < **peh₂u-ro-* (or **ph₂eu-*), Goth. Npl. *fawai* 'few', OIc. *fár* 'little, taciturn', OE. *fēa* etc. < **fawas* < **ph₂u̯o-* or **ph₂eu̯o-* (cf. *pau-per*). The Latin forms reflect **peh₂u-* or **ph₂eu-*.

13. *saeculum* 'age' < **sai-tlom* reflects exactly the same proto-form as W. *hoedl* 'lifespan' < **sai-tlom*. If the etymon goes back to PIE. (which the formation gives reason to suppose), the root reflects **seh₂i-* (or **sh₂ei-*). See Hamp 1982-1983, 95.

14. *saepēs*, Gsg. *-is* 'hedge, fence' is sometimes compared with Gr. αἰμός· δρυμοί. Αἰσχύλος Αἰτναίαις (Hes.), αἰμαοιᾶ 'hedge of thornbushes, wall of dried stones' (see WH., who reconstruct the Greek forms as **saip-m-*). As EM. and Chantraine note, agricultural terms such as this commonly lack an etymology (for the interchange **p/m* in Greek substratum words see Furnée 1972, 222 ff.), and the actual likeness of the Greek and Latin forms is small. The reconstruction of a PIE. etymon **seh₂ip-* or **sh₂eip-* is therefore doubtful.

15. The connection of *saeta* 'horsehair, bristle, hair, line of a rod' with the root **seh₂i-* 'to bind' (see Appendix 1.2 no. 6; cf. WH. s.v.) is extremely doubtful for semantic reasons.

16. If *saevus* 'wild, furious, ferocious' is cognate with the first member of the opaque Greek compound αἰ-ᾱνής 'cruel' < *σαιF- (thus Wackernagel, see Frisk and Chantraine s.v.) and with Goth. *sair*, OHG. *sēr* etc. 'pain' < **sai-ro-*, it reflects PIE. **seh₂i-uo-* (or **sh₂ei-uo-*), see Pokorny IEW. s.v. *sāi-*. The connection is uncertain. For doubts of a different nature see EM.

17. The only clear cognate of *scaevus* 'left' is Gr. σκαιός. If the former is not a loan from the latter, one may reconstruct PIE. **skeh₂i-uo-* (or **skh₂ei-uo-*).

18. *sōl* 'sun' probably reflects **saul* < **seh₂ul* (see IV.E.3.3 no. 10).

19. *spūma* 'foam' < **spoima* is cognate with Skt. *phéna-* 'foam, froth' < **(s)pHei-no-* (or **(s)pHoi-*), OCS. *pěny*, SCr. *pjȅna*, *spjȅna*, Sin. *pẹ́na*, Russ. *péna* 'foam', Lith. *spáinė* 'id.' < **(s)poHi-n-*, **(s)póiHn-* or **(s)peHi-n-*, OHG. *feim*, OE. *fām* < **(s)poHi-m-* (or **peHi-m-* or **pHoi-m-*, or **pHei-m-*). The laryngeal is proven by the Skt. aspirate, the Baltic acute, the Slavic AP. a, and the short quantity of PSlav. **ě*. *spūma* reflects **spoHi-*, **spoiH-* or **spHoi-* (or **speh₃i-*, **sph₃ei-*).

6.3. Conclusion

The following words reflect a PIE. constellation *VHIC*.

probable	possible	doubtful
6 *caulis* <*keh_2uli-	1 *caecus* <*keh_2iko-?	14 *saepēs*
7 *grăvis* <*g^wreh_2u-	2 *caedere* <*keh_2idh-?	15 *saeta*
9 *laevir* <*$deh_2iuēr$	3 *caelebs* <*keh_2i-?	16 *saevus*
10 *nāvis* <*$nĕh_2u$-	4 *caelum* <*keh_2i-*lo*-?	
11 *nervus* <*$sneh_1ur$-	5 *caesariēs* <*keh_2is-	
18 *sōl* <*seh_2ul	8 *haedus* <*$gheh_2id$-?	
	12 *paucus* etc. <*peh_2u-?	
	13 *saeculum* <*seh_2itlom?	
	17 *scaevus* <*$skeh_2iuo$-?	
	19 *spūma* <*$spoHim$-?	

7. *VIHC*

7.1. Introduction

In this section, we shall consider the development of laryngeals after diphthongs in *i* or *u*. *i*- and *u*-diphthongs will be treated separately. As logical options, one may think that in the constellation **VIHC* the laryngeal was either vocalized (to **a*), or lost. Theoretically, one could also investigate whether the laryngeal had some other reflex, but no such reflex was found.

In order to find the relevant word-material and to evaluate this material correctly, we must see what the reflexes of **Via* and **Vua* in Latin were.

In **Via*, the intervocalic **i* was lost, probably already in Proto-Italic (cf. e.g. Meiser 1986, 38). Subsequently, the vowels were contracted to a long monophthong, of which the quality was probably determined by the original first vowel (see Sommer-Pfister 1977, 96 and especially Cowgill 1973, 290 ff.). Cf. *laudās* < *-*āi̯esi*, *trēs* < **trei̯es*. Accordingly, **ei̯a* yields *ē*, **ai̯a* yields *ā*, **oi̯a* yields *ō*.

The development of an *u*-diphthong + *a* is more complicated and requires a detailed discussion before we can embark on the laryngeal forms. We may distinguish Prim.Lat. *-*au̯a*- and *-*ou̯a*-, the latter of which absorbed earlier *-*eu̯a*-. It seems clear that *-*auV*- yielded Lat. -*au*- (*cavēre*, *cautus* < **kau̯i-to*-, cf. *monēre*, *monitus* < **mon-i-to*-). It is unclear in detail what happened to *-*ou̯V*-. This will be discussed in the next section.

7.2. The development of **ouV* in Latin

What seems to be evident is that the disyllable became a monosyllable. Uncontracted Lat. *-avV-*, *-ovV-* (e.g. in *lavō*, *novus*), which in a non-initial syllable became *-uV-* (e.g. *ab-luō*, *dē-nuō*), are easily accounted for: there invariably was a strong morpheme boundary between *-av-/-ov-* and the following vowel, so that the uncontracted form could be restored. The only exception is *novem* 'nine', where restoration of the disyllabic form in *-em* was probably due to *dec-em*, *sept-em*. Since these uncontracted forms are always due to restoration, they are not the result of a sound law. And since they do not present a problem, they will not be treated here.

The subject of this paragraph is to establish what form was taken by the monosyllable that developed from **-ou̯V-*. The material is discussed anew, and I hope to present a new solution.

Prim.Lat. **-ou̯V-* appears to yield two reflexes, viz. *-ū-* and *-ō-*. The distribution of these reflexes has been the subject of much scholarly debate (see Sommer-Pfister 1977, 126-7). The various proposals can be reduced to two theories.

According to Solmsen 1894, 82 ff., *-ū-* reflects syncopated **-ou̯e-*, **-ou̯i-*, whereas *-ō-* reflects unsyncopated **-ou̯e-*, **-ou̯i-*. The other theory (e.g. Leumann 1977, 134) also assumes that *-ū-* reflects syncopated **-ou̯e-*, **-ou̯i-*, but *-ō-* instead of *-ū-* would be due to the influence of cognate forms in *-ŏ-*, e.g. *mōtus* after *mŏveō*, *nōnus* after *nŏvem*. Thus, the two theories agree about the origin of *-ū-*, but whether this consensus is real in every detail is uncertain because the exact conditions of Latin syncope are still in dispute, and opinions differ; to say that a given form was liable to syncope is possible only if one has explained what exactly one means by that. This requirement is seldom fulfilled. It has e.g. been claimed that *rūs* developed from syncopated **rous* < *rou̯os* (see below), which only few people would consider to be a regular syncope.

In an important article, Rix denies that either *-ū-* or *-ō-* reflects syncopated **-ou̯V-* (1966, 157): "Man kann ohne weiteres mit zwei nach Zeit und Resultat verschiedenen Assimilationen, mit jeweils anschliessendem Verlust des *-u̯-* und Kontraktion rechnen... einer der beiden Ausgangspunkte muss bei jeder Erklärung als analogisch wiederhergestellt angenommen werden." But Rix does not give a model or an explanation for this analogy, nor a compelling reason why syncope should not be considered in assessing the history of **-ou̯V-*, which weakens his suppositions.

As regards syncope, I propose to combine the theories presented by Pedersen (1922, 1-12), Rix (1966, 156-165), and Cowgill (1970) into the following picture: short vowels in a non-initial syllable (i.e. prehistorically unstressed) are syncopated in open syllables and before *-sT-* (thus Pedersen, Rix); syncope affected second syllables of quadrisyllablc words and second and fourth syllables of longer words (thus Cowgill), regardless of the quantity of the vowel in the final syllable, and it affected medial syllables of trisyllabic words with a long vowel in the final syllable (Pedersen). It is important to note that syncope did not occur in trisyllabic words whose final syllable contains a short vowel (pace Rix et al.). I hope to return to syncope in Latin in a separate article.

On the basis of this starting point I shall review the material.

7.2.1. Instances of *ū*

1. *cūria* 'division of the Roman people, senate' probably reflects **ko-u̯ir-iā-* 'assembly of men' (thus EM., WH.). In this quadrisyllabic form one expects syncope of **-i-*: **kou̯iriā-* > **kouriā-* > *cūria*.

2. *iūglāns* 'walnut' is a compound of **dieu-* 'god' and *glāns* 'acorn'. It is considered to be a calque of Gr. Διὸς βάλανος 'chestnut' (Varro, Ling. lat. 5, 102). Formally it could be a "Zusammenrückung" of **dioues glands* > **iou(z)glāns* > *iūglāns* (WH., Leumann 1977, 134), or it could be formed after *Iūpiter* < **diou-* (WH.). The latter form would be normal for an u-stem as the first member of a compound: cf. *corni-ger*, *angi-portus*, *acu-pedius* < **kornu-*, **angu-*, **aku-* (not **kornuo-*, **anguo-*, **akuo-*).

Since the exact protoform cannot be established with certainty, *iūglāns* cannot be used here.

3. *iūs*, OLat. *ious* (ntr.) 'law' could reflect PIE. **ieu-s* in view of Skt. *yóḥ* 'hail!', Av. *yaož-daδāiti* 'makes holy'. In my opinion, however, **ieu̯os* is more likely because of *IOVESTOD* '*iūstō*'? (Forum) and *iouiste* '*iūstē*' (Paul. Fest.), which point to a normal *s*-stem in **-os/es-*. Nsg. **-s* alternating with Obl. **-es-* would certainly be unique in Latin, though perhaps not impossible as an archaism (which would also have implications for *rūs* < **rou̯(o)s*). But the interpretation of *IOVESTOD* is uncertain (EM.), and *iouiste* could be artificial (if it was old, one would expect *ioueste*).

According to Sommer-Pfister 1977, 127, the last *-o- in *ioues was syncopated. This is unlikely because syncope does not operate in disyllabic forms. According to Leumann 1977, 134, iūs is a "Rückbildung" from the oblique cases, which had *ioues-, in which *-e- was syncopated. Syncope in the trisyllabic oblique cases, however, is only regular before an ending with a long vowel, as indicated above, i.e. only in the Dsg. iūrī, and in the quadrisyllabic DAblpl. I find it difficult to assume that the Dsg. and DAblpl. caused remodelling of the entire paradigm. Furthermore, Leumann starts from the hypothesis that iūs cannot regularly reflect *ioues, which has not been proven.

If iūstus indeed reflects *iouestos, which is likely, one must assume that -e- was syncopated (Leumann 1977, 134) in the forms with endings in a long vowel, of which especially iūstō and iūstē were frequent: *iouest- > *ioust- > *iūst-. In other cases, *iouest- remained unsyncopated. We cannot decide at the moment whether iūst- reflects syncopated *ioust- < *iouest- or unsyncopated *iouest- or both as both forms were present in the paradigm.

The verb iūrāre 'to swear' is a denominative of iūs, and reflects *ioues-ā-i̯e/o-, cf. *IOVESAT* in the Duenos-inscription, if it is reliable (see e.g. EM.). Here -e- would regularly have been syncopated before the long vowel in the third syllable: *iouesā- > *iousā- > iūrā-.

4. nūdus 'naked' reflects a root *nou̯- < *nog^{w}-. There is no consensus about the analysis of the rest of the word. EM. reconstruct *nog^{w}-edo-, Leumann 1977, 134 and Sommer-Pfister 1977, 126 reconstruct *nog^{w}-odh-o-, while WH. hesitate between *nog^{w}-edh-o- and *nog^{w}-odh-o-. Supporting evidence for the form of the suffix is found in Germanic: Goth. naqad-, OHG. nackot, OE. nacod 'naked' reflect *nog^{w}odho-. But OIc. nøkkviðr 'naked' seems to reflect *nakwiða- < *nog^{w}edho- (thus e.g. Lehmann 1986 s.v. *naqaþs). However, it is very unattractive to assume suffix-ablaut existing until after Proto-Germanic, especially because the adjective is an *o-stem (the antiquity of which is supported by Lat. nūdus), which does not ablaut. It may therefore be suggested that nøkkviðr is the regular past participle of the weak verb nøkkva 'to strip, denude' < *nakwjan. It would then reflect *nakwiða- < *-i-to-. It is likely that this recent deverbative replaced the regular reflex of PGerm. *nakwaða-. As is well known, Icelandic has yet another word for 'naked', viz. nakinn < PGerm.

*nakwena- (cf. OFri. *naken*), which also looks like being deverbal. The Runic Asg. *nAkdan* (Eggja) does not necessarily reflect **nakwiðanō* (Krause 1966, I, 227-235): **nakwaðanō* is also possible.

I conclude that the Germanic evidence points only to **nakwaða- < *nog^{w}odho-*. Therefore, *nūdus* is best reconstructed as **noụodos < *nog^{w}odhos*. It is unlikely that its internal **-o-* was syncopated. Firstly, because in the theory of syncope followed here syncope did not operate in trisyllables with a short vowel in the final syllable; secondly, because syncopated **nog^{w}odos* would probably yield **nogdos* vel sim.: it may be possible to conclude from *avillus* 'little lamb' < **ag^{w}enlo- < *ag^{w}n̥lo- < *ag^{w}n-elo-* (syncope was generalized in diminutives) versus *agnus < *ag^{w}no-* that PIE. **g^{w}* had not yet become *v* at the time of syncope (because we would otherwise find **ag(u)illus*). *nūdus* was not therefore affected by syncope and must reflect **noụodo- < *nog^{w}odho-* directly. The forms in which syncope would regularly have occurred (the GDAbl.sg. and most of the plural cases), and which would have yielded **nogd-*, were obviously replaced by the unsyncopated form.

5. *nūndinus* 'which takes place every ninth day', *nūndinae* 'market day, ninth day' is a compound of 'nine', PIE. **h$_1$neun-*, and 'day', PIE. **di-n-*, cf. OCS. *dьnь* 'day' < **di-n-*, Lith. *dienà* 'day' < **dei-n-*. Generally, *nūndinus* is reconstructed as **novendino-* (WH., EM., Leumann 1977, 134). Here **-e-* could not have been syncopated because it was in a closed syllable. The reconstruction **novendino-* presupposes that **-oụe-* directly became *-ū-*.

Leaving aside for the moment the evidence for **-oụe- > -ū-*, I want to stress that semantically a reconstruction **noụendino-* 'of nine days' is less satisfactory than **noụenodino-* 'of the ninth day'. There is no formal problem in assuming a development **noụenodino- >* (by syncope) **nounodino- > *noundino-* (syncope again) > *nūndinus*. For the double syncope, compare **semalisamo- > *semlisamo- > *sem̥samo- > simillimus*.

Thus, *nūndinus* probably reflects **noụenodino-*, with double syncope.

6. For *nuntius* 'proclaiming, messenger' one finds older forms with *-ou-* (Gramm.) and *-o-* (CIL^{2} 586). These probably reflect closed *-ọ̄-*, the intermediate stage between **-ou-* and *-ū-* (on

this matter see Blümel 1972, 37). It is highly uncertain whether **nountios* reflects **nouentios*. The latter is assumed on the basis of the verse *quamvis moventium duonum negumate* (Carmen C. Maria vatis, Festus 162,6), where Bücheler read *noventium*. As EM. note, *noventium* "n'a que la valeur d'une conjecture". It cannot therefore be used here.

The etymology of *nuntius* is not clear: the root has been connected with *novus* 'new' (*nuntius* < **nou̯ontio-*?), or, alternatively, with **neu-* 'cries, sounds' vel sim. in Skt. *návate* 'roars, shouts', Latv. *ņauju* 'to mew'. Both proposals are uncertain (see EM. s.v., Mayrhofer KEWA s.v. 1. *návate*). I conclude that *nuntius* cannot be used as evidence.

7. It is uncertain whether *nūper* 'recently' reflects **nou̯oparos* or **nū + per* (see EM.). It cannot therefore be used.

8. *prūdens* 'foreseeing, wise' reflects **prŏ-u̯idēns*. In all case forms, syncope of **i* would be regular: in the Nsg. because the vowel in the final syllable is long, in the other cases because the forms were quadrisyllablc. It is therefore likely that *prūdent-* reflects **proudent-* < **prou̯ident-* (thus e.g. EM.).

9. *rūrsus* 'again, back' reflects **rou̯orsos* < **re-u̯orsos* < **re-u̯r̥t-to-*, cf. *vertō* 'to turn'. The second **-o-* in *rou̯orsos* cannot have been syncopated because it is in a closed syllable. It is therefore most likely that *rūrsus* directly reflects **rou̯orsos*.

10. *rūs* (ntr.) 'country(side)' reflects a Nsg. **rou̯os* < **reu̯os*, cf. Av. *ravah-* 'open space' < **reu̯os* and OIr. *róe* < **rou̯esiā* < **reu̯es-iā* (Vendryes R-39).

Sommer-Pfister 1977, 127 and Leumann 1977, 134 make the same assumptions for *rūs* as they did for *iūs* above. These must be rejected for the same reason. Thus, I will for the moment adopt the simplest assumption, viz. that *rūs* reflects **rou̯os* < **reu̯os*. The Dsg. **rouesei* would become **rourei* by syncope, which yielded *rūrī*. In the quadrisyllabic DAblpl. **rouesibos*, **-e-* would have been syncopated regularly. In the other cases **-oue-* would not be syncopated.

The adjective *rūsticus* reflects **rou̯estikos*, after which *domesticus* was formed (Leumann 1977, 134). In this quadrisyllabic form, syncope (before *-sT-*) of the second syllable would be regular: **rou̯estiko-* > **roustiko-* > *rūsticus*.

11. The Gpl. of the *u*-stems ends in *-uom*. Beside *-uom* one finds *-um*, which cannot have developed from *-uom* regularly

(see Leumann 1977, 443). I think that *-um* is the regular form, which was replaced by *-uom* by the introduction of the stem-suffix *u*, after *-ium* < *-iom* in the *i*-stems. That *-um* is indeed the older form is borne out by the archaic syntagm *mīlle passum* (Plaut. Men. 178, Truc. 334, Cato orig. 26, Mart. 2,5,3). As Leumann loc. cit. states, *-um* in *passum* cannot be the result of contraction of *-uom* at a stage as early as Plautus. His explanation of *-um* by analogy after *o*-stem words denoting measurement like *modium* is unconvincing.

In view of Goth. *sun-iw-e*, the Gpl. that is reflected in Lat. *-um* probably was **-eu-om*. This **-eu-om* yielded PItal. **-ouom*, which gave Lat. **-ūm* > *-ŭm*.

The *u*-stem Npl. *-ūs* is probably the original Apl. (Lejeune 1943, 87 ff.). The assumption of a development **-eues* (> **-oues*) > *-ūs* is therefore unnecessary.

12. *ūpiliō* 'shepherd' reflects **ou̯i-pel-iōn-*, lit. 'sheep-driver'. One expects syncope of **-i-* in this polysyllable: **ou̯ipelio-* > **oupelio-* > *ūpiliō*. Beside *ūpiliō* (Verg. Ecl. 10, 19 in M, R and Servius and later) one also finds *ōpiliō* (e.g. Plaut. Asin. 540 and CIL III 1330, VI, 23499, XIV, 3183 (Praeneste); see Solmsen 1894, 94 on the attestations). The distribution of the oldest attestations could point to dialectal origin of *ōpiliō* (thus Ernout 1909, 209). This is supported by the fact that the diphthong **-ou-* became *-ō-* in Faliscan and in the Oscan dialect of Praeneste (Blümel 1972, 34). Note also that several rural terms have a dialectal origin: *bōs*, *asinus*.

7.2.2. Instances of *ō*

1. *contiō* 'meeting, assembly' reflects **co-ventiō*, cf. SCBacch. *coventionid*. The loss of *-e-* in *-ove-* cannot be attributed to syncope because *-e-* was in a closed syllable. Therefore *contiō* points to a development **ou̯e* > *ō*, without the intervention of syncope.

2. *fōtus* (*u*) 'heating', (*o*) 'heated', *fōmes*, *-itis* 'kindling wood', *fōmentum* 'a warm application', *fōculum* 'fire-pan' are deverbatives of *fovēre* 'to warm' < **dhogʷh-ei-ō*, cf. Skt. *dāháyati* 'to burn', Lith. *dègti* 'to burn' (see VI.C.1.2.3 no. 5). The nominal forms are probably based on **fovi-*, cf. *monēre*, *monitus*, *monimentum*. In **fovitus*, *-um* and **fovitos*, *-om* one does not expect syncope, but syncope must have operated in all other case forms except the old *o*-stem

Gpl. in *-*om*. One expects syncope in **fovimentum*, but, as can be seen in *monimentum*, *alimentum* etc., the vowel was normally restored. In *fōmes* < **fovimet-* one expects syncope in the oblique cases, but the unsyncopated form **fovi-* could have spread from the Nsg. *fōculum* reflects **foviclom*, where syncope of *-*i*- would have been prevented by the closed syllable. I conclude that *fō*- can be the result of either syncopated or unsyncopated *-*ou̯i*-, or both: a decision cannot be forced on the basis of this etymon. However, as it is possible that unsyncopated **fovi*- was restored because there is a model for this (the NAsg. in *fōtus* and the type *monimentum*), one may tend to the conclusion that it was unsyncopated **fovi*- rather than syncopated **fov*- that yielded *fō*-.

3. Similarly, *mōtus* (*u*) 'motion', (*o*) 'moved', *mōmentum* etc. reflect a stem **movi*-, which is based on the verb *movēre* < **meu̯*-. On the etymology see VI.C.1.2.3 no. 7. *mōtus* therefore reflects **mou̯i-tu*-, *-*to*-, and *mōmentum* reflects **mou̯imentom*, as is generally agreed. *mōmen* reflects **mou̯imen*. Again, *-*i*- was not syncopated in *mōtus*, *-um*, *-om* and *mōmen*, but it was in the oblique cases. Unsyncopated **movi*- may have been restored in *mōmentum* (cf. *fōmentum* above, which implies a development **movi*- > *mō*- without the intervention of syncope). *mōtiō* and *mōtor* are clearly based on *mōtus* and therefore have the same root form **movi*-. One would expect syncope of *-*i*- in **movitiō*, **movitōr*-, but again there is a good possibility that *-*i*- was restored after *mōtus* < **movito*-, *-*tu*- (as in *monitiō*, *monitor*).

Again, we cannot decide whether *mō*- is the result of syncopated or unsyncopated **movi*- because both occurred. The conclusion is identical to the one reached for *fōtus* etc. above.

4. *nōlō* 'I do not want' reflects **nou̯olō* < **nou̯elō* < **ne-u̯el-ō*. Theoretically, one would expect syncope of *-*e*- because of the long ending *-*ō* (cf. also *nōlimus*, where one expects syncope because it is a quadrisyllabic word). However, there is a serious possibility that *-e*- was restored after *volō*, *ne vult* etc. The stage **nou̯elō* is probably Proto-Italic (according to the dating of **eu̯* > **ou̯* by Meiser 1986, 37). The stage **nou̯olō* must be later because the development of *eɨ* to *oɨ* was not shared by Sabellian, and must therefore be posterior to Proto-Italic.

5. *nōnus* 'ninth' reflects **nou̯enos* < **neu̯enos*. A form

nounas is attested once in an inscription (CIL X 2381). In **noy̯enos, -om* one does not expect syncope of *e*, but one does in all other cases (except the old Gpl. in **-om*), which have a long vowel in the ending.

6. *ōpiliō* was discussed above (7.2.1 no. 12). It is probably of dialectal origin.

7. *vōtum* 'vow', *vōtus* 'vowed' and its derivatives *vōtīvus, vōtifer* etc. are deverbatives based on the causative verb *voveō* 'to vow, pledge' < **uog^{w}h-ei-ō*, cf. Skt. *vāghát-* 'sacrificer' (see VI.C.1.2.3 s.v. *voveō*). *vōtus, -um* reflect **vovi-to-*, where one does not expect syncope. One does in all other case forms. The derivatives may have restored the *-i-* (in as far as this would have been syncopated), but this cannot be demonstrated independently.

Other cases of *ō* and *ū* have a very weak etymology and cannot therefore be used here. They are discussed by Solmsen 1894, 82 ff.

7.2.3. Conclusion

1. *-ū-* < unsyncopated **-oy̯o-* (< **-ey̯o-*) in *rūrsus* < **roy̯orsos*, *nūdus* < **noy̯odos* (< **nog^{w}odhos*), Gpl. of *u*-stems *-um* < **-oy̯om* and in *rūs* < **roy̯os* (but **roy̯es-* in the oblique cases), *iūs* < **ioy̯os* (but **ioy̯es-* in the oblique cases);

2. *-ū-* < **-ou-* < **-ouV-*, where *-V-* was lost as a result of syncope: *rūsticus* < **roy̯estiko-*, *prūdens* < **prŏ-y̯ident-*, *nūndinus* < **noy̯eno-dino-* (probably), *ūpiliō* < **oy̯i-peliō*, *cūria* < **coy̯iria*. Syncope would also have occurred in some case forms of *rūs* and *iūs*.

The following cases could not be used as evidence: *iūglāns, nuntius, nūper* and the Npl. of the *u*-stems *-ūs*.

3. *-ō-* < unsyncopated **-oy̯e-* in *contiō* < **coy̯entiō*. Most other cases with *-ō-* must reflect unsyncopated **-oy̯i-*, **-oy̯e-*: *nōnus* < **noy̯enos*, *fōtus* < **foy̯ito-*, **-tu-*, *mōtus* < **moy̯ito-*, **-tu-*, *vōtus* < **y̯oy̯ito-*, but syncope must have occurred in a number of forms in the paradigm. The cases in which one would expect syncope may all reflect restored **oy̯i*, **oy̯e* because it has turned out that in all cases there was a good model for this restoration (e.g. *fōmentum* after *fōtus*, *mōmentum, mōtor, mōtiō* after *mōtus*, *vōtīvus* after *vōtum*, *nōlō* after *volō*, *ne vult* and *mōtī, mōtōs, mōtō* etc. after *mōtus, -um*).

If one allows for the analogical regularization of paradigms in which syncope caused irregularities, the distribution seems to be clear: unsyncopated *-oụe-, *-oụi- became Lat. -ō-, which is demonstrated most clearly by *contiō* < **coventiō*; syncopated *-oụe-, *-oụi- became Lat. -ū- (thus far the conclusion confirms Solmsen's ideas); Proto-Italic *-oụo- (and *-og^{w}o- > *oụo-) became Lat. -ū-.

We may now turn to the assumed analogies in some detail. In the case of the type **noụenos*, syncope must have occurred in a number of cases, but was analogically removed:

N	**nouenos*	pi **nouenī* >	**nouenos*	**nounī*
A	**nouenom*	**nouenōs*	**nouenom*	**nounōs*
G	**nouenī*	**nouenom*	**nounī*	**nouenom*
D	**nouenō*	**noueneis*	**nounō*	**nounīs*
Ab	**nouenōd*	**noueneis*	**nounōd*	**nounīs*

Subsequently, *-oue- was restored on the basis of the NAsg. and the Gpl., in order to regularize the paradigm. This process is exactly parallel to (and therefore supported by) what happened to the paradigm of the the adjective *super*, where N. **superos*, A. **superom*, G. **superī* etc. became **super*, **superum*, **suprī* etc. by syncope, but later **suprī* was replaced by unsyncopated *superī* etc., apparently introduced from the NAsg. Compare especially the adjectival Absg. fem. *superā*, with restored *-e-*, with the isolated preposition *suprā* < **superād*, where *-e- was not restored for lack of a model.

In the type *rūs*, there was a similar analogy (-ǭ- is the immediate predecessor of Lat. -ū- < PIE. **eu*, **ou* (Blümel 1972, 37); see below):

N	**rouos*	pi **rouesă* >	**rǭs*	**rouera*
A	**rouos*	**rouesa*	**rǭs*	**rouera*
G	**roueses*	**rouesom*	**roueres*	**rouerom*
D	**rouesei*	**rouesibos*	**rǭrī*	**rǭribos*
Ab	**rouesed*	**rouesibos*	**rouere*	**rǭribos*

Subsequently, -ǭ- was introduced into all case forms on the basis of the NADsg. and the DAblpl. In both the type *nōnus* and the type *rūs*, the NAsg. played a decisive role in the remodelling of the paradigm, which is not surprising in view of the expected frequency of these forms.

The development of *-oụo- to -ū- must probably be connected with the well-known loss of -ụ- before -o- in e.g. *deorsum* < **dē-ụorsom*, *deus* < **dẹ̄os* < **deiụos*, *oleum* < **olẹ̄om* < **elaiụom* (see e.g. Sommer-Pfister 1977, 125-

126). This *-*oo*- < *-*oy̯o*- apparently merged with *-*ō̥*-, the result of monophthongization of the diphthong *-*ou*-, not with PIE. *-*ō*-, and eventually yielded -*ū*-. This development is identical to the one observed in Greek: The contraction of *-*oo*- yielded -*ου*- = [*ō̥*], and did not merge with PIE. *-*ō*- > *ω* = [*ɔ̄*]. This yields the following chronology:

1. loss of *-*y̯*- before *-*o*-: *-*oy̯o*- > *-*oo*-;
2. contraction of *-*oo*- to *-*ō̥*-;
3. *-*ō̥*- > -*ū*-.

The chronology can be extended. In view of *nūdus* < **nogʷodhos*, the development of intervocalic *-*gʷ*- to *-*y̯*- must antedate stage 1. The development of intervocalic *-*gʷ*- to *-*y̯*- must itself postdate the syncope in view of *avillus* < **ay̯enlo*- < **agʷenlo*- < **agʷn̥lo*- < **agʷnelo*- (see VI.1. 2.1 no. 1), otherwise one would expect **ag(u)illus*. In view of **ieuos* > **iouos* > *iūs* and **reuos* > **rouos* > *rūs*, the development of *-*ey̯*- to *-*oy̯*- must also antedate stage 1. This squares well with the assumption that *-*ey̯*- > *-*oy̯*- is of Proto-Italic date (see Meiser 1986, 37), which puts it before the syncope. In view of *nōlō* (not **nūlō*) < **noy̯olō* < **noy̯elō*, the development of *-*e*- to *-*o*- before velar -*l*- postdates stage 1. Thus, we arrive at the following chronology:

1. *-*ey̯*- > *-*oy̯*- (Proto-Italic);
2. syncope (Prim. Lat.);
3. intervocalic *-*gʷ*- > *-*y̯*-;
4. loss of *-*y̯*- before -*o*-: *-*oy̯o*- > *-*oo*-;
5. **oo* > **ō̥*; **e* > **o* before velar *l*; **ō̥* > *ū*.

It is tempting to connect the development of unsyncopated *-*oy̯e*-, *-*oy̯i*- to -*ō*- with that of *-*ay̯e*-, *-*ay̯i*- to -*au*- in *lautus*, *cautus*, *caurus*. One may think of Rix's *-*oy̯u*- > *-*ou*- as an intermediate stage. The latter could be supported by *nounas* (CIL X 2381). One would then have to suppose that this "new" *-*ou*- (> -*ō*-) did not merge with the diphthong *-*ou*- > *-*ō̥*- > -*ū*-, for example because the latter had already become -*ū*- when the former was monophthongized. This is rather complicated, though not impossible. Alternatively, one might think of Solmsen's proposal (1894, 82 ff.) that *-*oy̯e*-, *-*oy̯i*- yielded *-*oy̯o*- > *-*oo*- (thus also Rix 1966, 91). The latter step can be identified with the late loss of *-*y̯*- between identical vowels, as in *lātrīna* < **lavātrīna*, *fībula* < **fivibula* (Sommer-Pfister 1977, 127).

It must finally be noted that the proposed distribution of -*ū*- and -*ō*- closely resembles the one established by Solmsen.

The only difference is that in my opinion there is evidence to support that *-ou̯o- yielded Lat. -ū-.

The original aim of this investigation was to establish the development of Prim.Lat. *-oua-. Since unaccented *-a- yields -e- and -i- (via a reduced vowel, written -I-) in closed and open syllables, respectively, *-oua- must be expected to develop like *-oue-, *-oui-, that is, to -ū- if *e/i was syncopated, to -ō- in other instances.

This means that if Lat. -ū- appears in an environment that normally conditions the development of *-oua- into -ū-, this -ū- is indistinguishable from the -ū- < PIE. *-eu-, *-ou-. The following conclusions must be drawn:

(1) If PIE. *-eu̯H-, *-ou̯H- developed into Proto-Italic *-oua-, this can only be recognized when *-oua- is reflected as -ō- in Latin, i.e. in words where syncope did not occur. An exception is cūdō (see below).

(2) If PIE. *-eu̯H-, *-ou̯H- developed into Proto-Italic *-ou-, this can only be recognized in so far as *-ou- is reflected as *-ū- in words that cannot have been subject to syncope.

Lat. au may reflect *au and *auV. As a rule, we have no means of deciding between the two. Lat. au cannot therefore be used to shed light on the question whether an IE. laryngeal was vocalized after it.

We may now turn to the material in order to see whether treatment (1) or (2) occurred in Italic.

7.3. Material (*VIHC*)

7.3.1. Laryngeal after *i*-diphthongs

In order to recognize the development of a laryngeal after *i*-diphthongs and before consonants (*ViHC*), we shall look for instances where *H became a vowel and instances in which *H was lost without a trace.

7.3.1.1. Evidence for *H > V

Lat. ē may reflect *eia, ā may reflect *aia and ō may reflect *oia, with *a < *H. I have looked for words with Lat. ē, ā, ō belonging to roots that etymologically contain *i and a following laryngeal.

These cases would show that the laryngeal was vocalized after an *i*-diphthong.

1. crēta 'white clay, chalk' does not have a clear etymology. The connection with OIr. cré, Gsg. criad, W. pridd, Co.

pry, Bret. *pri* 'mud, clay' < PKelt. **k^{w}rīi̯at-s* seems likely (Pedersen 1909, 68). The latter may reflect **k^{w}reh$_1$i̯et-* (with **i̯e* > **i̯a*, Pedersen 1909, 40, 65). If this is correct, *crēta* may reflect **k^{w}reh$_1$i̯et-eh$_2$-*. A reconstruction **k^{w}reiHt-* > **kreiat-* > *crēt-* can be maintained for Irish and Latin but must be rejected in view of the British forms (which have *-i-* < **-ē-* < PIE. **-eh$_1$-*). *crēta* cannot therefore be used.

2. *lēvis* 'smooth' must be connected with Gr. λεῖος 'smooth', λῑτός id., λίς, λῖτα 'smooth cloth'. It must probably be separated from **h$_2$li-* 'to besmear' on formal grounds, and from **lih$_2$-* 'to cower, give way' on semantic grounds (see II.B.2.2 no. 14). The Greek forms point to **leh$_1$i-* or **leiH-* (**leh$_1$i-u̯o-* or **leiH-u̯o-*, **lh$_1$i-tó-* or **liH-tó-*, **lh$_1$i-t-* or **liH-t-*).

lēvis is generally said to reflect **leiu̯i-*, but opinions differ as to how exactly this must be interpreted. According to Leumann 1977, 64, **-eiu̯-* yielded Lat. *-ēv-* "in nicht genau zu umschreibenden Fällen". One finds *lēvis* < **leiu̯i-*, *lēvī* (the perfect of *linō*) < **leiu̯ai*, *crēvī* < **kreiu̯ai*. The expected development of **ei* to *ī* is found in the other cases: *sīvī* (perf. of *sinō*) < **seiu̯ai*, *dīvus* < **deiu̯os*, *cīvis* < **keiu̯is* etc.

According to Sommer 1914, 74, **eiu̯* became *ēu̯* after initial *l* (not after word-internal *l*, cf. *olīva* < **oleiu̯a* < **elaiu̯a* (which strictly speaking had *-ai-*, not *-ei-*) and *oblīvīscor* (see below)). He assumes that *crēvī* was formed after *spernere*, *sprēvī*. In my opinion, Sommer proposes an ad hoc rule and gets into difficulties in order to explain the type *olīva* and *crēvī*. Phonetically it makes no good sense either. I therefore tend to reject a phonetic explanation of *ē* from **ei* and would like to suggest that *lēvī* originated from a long vowel preterite stem **h$_2$lēi-* (cf. *scabere* - *scābī*, *fodere* - *fōdī* etc; see Schulze KZ 28, 266) which was remodelled to a *v*-perfect in Latin, which happened to most roots in a vowel (Leumann 1977, 594). *crēvī* could have the same origin if one does not accept Sommer's proposal and if it does not reflect **kreh$_1$-*, cf. *ex-crē-mentum* (see V.D.3.2 no. 10). This implies that the long diphthong **ēi* yielded Lat. *ē*. Compare the development of **ōu* to *ō* in *glōs* < **glōus* (see Beekes 1976, 14).

If we apply this rule to *lēvis*, we may reconstruct **lēiu̯i-*. The comparison with Gr. λεῖος points to a PIE. *u*-stem adjective. This adjective was remodelled to an *i*-stem

adjective, like *mollis* < **mldu-i-* and *grăvis* < **g^{w}rau-* < **g^{w}reh$_2$u-*. Taking the *u*-stem as a basis, we can reconstruct *lēvis* as **lēi̯u-* < **leh$_1$i̯-u-*. Gr. λεῖος reflects **leh$_1$i̯uo-*, with vocalic *-i-*. Alternatively, **leh$_1$i̯u-* > **lēi̯u-* became thematic **lēi̯uo-* before the operation of Osthoff's law, so that it took part in the latter and became **leiu̯o-*.

ob-līvīscor 'forgets' is generally connected with *lēvis*. Sommer 1914, 602 stated that *-līvīscor* was based on **ob-līvītos* > *oblītus*, the ppp. of a lost **oblīvēre*, which was derived from the protoform of *lēvis*. In a laryngealist reconstruction, **-līvēre* must reflect **lĕivē-* < **leh$_1$iu̯-eh$_1$-*. Thus, *oblīvīscor* confirms that *lēvis* was derived from an *u*-stem.

If it is accepted that *lēvis* reflects **leh$_1$iu-*, the word does not belong in this chapter. As an alternative, one might prefer to derive *lēvis* from **lei̯au̯i-* (with loss of intervocalic *-i̯-* in Proto-Italic) < **lei̯Hu̯i-*. In my opinion, this must be rejected for two reasons:

(1) One must then postulate that remodelling of **leiHu-* into an *i*-stem antedated the loss of the laryngeal, which is unlikely in view of *grăvis*, not **grāvis*.

(2) The derivation of *oblīvīscor* would become problematic: from **leiHu̯-eh$_1$-* one would expect **lei̯au̯-ē-* > **lēv-*. A reconstruction **liHu̯-eh$_1$-*, with zero grade in the root, must probably be ruled out because the derivation of the verb from the adjective can hardly be so old as to trigger zero grade in the verbal stem.

I conclude that *lēvis* cannot be used to clarify the development of **ViHC*.

7.3.1.2. Evidence for **H* > *ø*

The evidence consists of words with Lat. *ī* (< *ei*), *ū* (< *oi*), *ae* that belong to roots that etymologically contain **i* and a following laryngeal. Here *ī* may reflect **eiH*, *ū* may reflect **oiH*, and *ai* may reflect **h$_2$eiH* (vel sim.). These cases would show that the laryngeal was lost after an *i*-diphthong. Note, however, that Lat. *ī* may also reflect **iH*. This alternative must be implausible for every word under discussion in order to obtain material that can be used as evidence.

For a discussion of the relevant forms I refer to section E.2.3.1. *frīgus*, *in-vītare*, *in-vītus*, *līvēre*, *rītus*, *irrītāre*, *rīvus*, *sīmus* etc., *vīnum*, *vīrus* and *vīs* reflect a root with **-III-*. For none of these forms can it be made

probable that they reflect full grade *-eiH-.

7.3.1.3. Conclusion

It has turned out that there is not a shred of evidence for the development of *H in this position. Every piece of material is either unreliable or irrelevant to the issue.

7.3.2. Laryngeal after u-diphthongs

In order to recognize the development of a laryngeal after an u-diphthong and before a consonant (*VuHC), Latin words with specific characteristics were looked for (see 7.2.3).

7.3.2.1. Evidence for *H > *V

I have looked for words with Lat. ō that belong to roots which etymologically contain *u and a following laryngeal. Here ō may reflect *oua < *euH, *ouH, in which *H was vocalized (see 7.2.3). I have not been able to find any evidence for this development. As was noted above (7.2.3. end), words with Lat. -au- cannot be used.

However, there may be evidence for the vocalization of the laryngeal in cūdō.

1. The exact interpretation of cūdere, cūdī, cūs(s)um 'to beat (grain), pound, hammer, forge' is rather complicated. According to WH. and Pokorny IEW. 535 cūdere replaces *caudere after the compound verbs excūdō 'to hammer out, forge', prōcūdō 'to fashion, forge' and accūdō 'to coin'. However, accūdō is a hapax (Plautus), and excūdō (Cicero, Vergil) and prōcūdō (1x Plautus; Lucretius) are rather uncommon, so that one may doubt that these compounds were strong enough to expel *caudō altogether. The simplex cūdō is attested in archaic documents (Plautus, Most. 4,2,11, Ep. 3,4,40; Terentius, Eun. 2,3,90, Heaut. 4,4,18), where there is no trace of a form *caudō. Note also that beside luō 'to wash', which is a clear decompound of abluō etc., one finds lavō, which still is the normal form. I conclude that it is unlikely that cūdō is a decompound because this is not what the material bears out. cūdō therefore probably does not reflect *caudō.

The assumption that the original form was *caudō is based on caudex, cōdex 'trunk of a tree, block of wood split or sawn into planks, leaves or tablets and fastened together, book'. As to the form of this word, the inscriptions, usually the source for a more developed stage of the language, have -ō-, the manuscripts usually have -au- for the (older) meaning 'treetrunk'

but *-ō-* for (younger) 'book' (see EM. s.v.). In my opinion, this suggests that *caudex* is original, and not an improper archaization (Eugraph. Hau. 877 rec. a), and that *cōdex* is a late form, restricted to the late meaning 'book'. However this may be, the connection of *caudex* with *cūdō* is semantically possible but not compelling, despite the parallel adduced by WH., which is rather inexact: *truncus* "verstümmelt, der Äste, den Gliedern beraubt", becoming 'trunk of a tree', cf. Lith. *treñkti* 'heftig, dröhnend stossen'. EM. do not mention that *cōdex* might be cognate with *cūdere*. I shall return to this point below.

All cognates of *cūdō* seem to reflect PIE. **keuh₂-*, except Tocharian, which has **keh₂u-*:

OHG. *houwan*, OS. *hauwan*, OIc. *hǫggva* 'to hew, beat', reflect a root with "Verschärfung" and therefore probably reflect **kouH-*.

It is very doubtful that OIr. *cúad* 'fighting' and *coach*, *cuach* 'fight' exist at all: see DIL ad locc., and Vendryes C-134 s.v. *coach*.

Latv. *kaût* 'to slaughter, fight', Lith. *káuti* 'to hit' reflect **kouH-*. The Lith. preterite *kóvė* does not reflect **keHu-*, but rather **kōuH-* (Kortlandt 1985a, 114-115). Latv. *kūja* 'stick' and Lith. *kūjis* 'hammer' reflect **kuH-*. As Professor Kortlandt informs me, the intonation of Latv. *kaût* (AP. c, which points to **kouH-*) is matched by SCr. *kòvati* 'to forge', Slov. pret. *kovâl*, *-ála*, *-âlo* < PSlav. **kòvālъ*, **kovālà*, **kòvālo* (c). SCr. 1sg. pres. *kȕjēm* (with short falling intonation on the first syllable, indicating PSlav. short initial accent) is most likely recent in view of Sin. *kújem*, Čakavian *kūjén* (Novi), Russ. *kujú*, *kujëš*, which have final accentuation. All this points to PSlav. **kauH-* (AP. c) < PIE. **kouH-*.

Toch. A *ko-*, B *kau-* 'to kill', B verbal substantive *kāwälñe* reflect PToch. **kau-C-*, **kāw-V-* < **keh₂u-*. A *kot-*, B *kaut-* 'to split' reflects **keh₂u-T-*. Van Windekens (1976, 227, 231) claims that Toch. *kaut-* must be identified with *cūdō*, which is formally and semantically likely.

In view of the Tocharian form, Germanic and Balto-Slavic **kouH-* must go back to a root **kuh₂-* < **kh₂u-*.

In my opinion (after Persson et al.), this root can be found in the Greek aorist κεάσσαι 'to cleave wood, pound, crush' < *κεϝα- < **keuh₂-*. The present κεάζω is most likely based on this aorist (Frisk s.v.). The original present is reflected in the hapax κεΐων 'cleaving' (Ξ 425, at the end of the verse). After Schulze the latter is generally interpreted as metrical lengthening

of *κεῶν < *κεάων. However, I am more inclined to follow Persson's suggestion (Stud. 134) that it reflects *κεϝω. The latter may then reflect *ḱeuh$_2$-i̯ōn, with loss of the laryngeal before *i̯ (as in κείρω < *κέριω < *ḱerH-i̯ō, cf. Lith. *skìrti* 'separate').

The ground on which Persson's suggestion seems generally to have been rejected is that κεάσσαι supposedly belongs to the root *ḱesH- 'cut' in Skt. *śasiṣyati* 'will cut'. However, the latter must certainly be interpreted as containing the productive *-iṣya-* future suffix in view of *śástram* 'knife', RV *śasta* 'cut' (cf. Lat. *castrāre*, see VI.E.3.2), which cannot have contained a root-final laryngeal. The root of the Sanskrit forms is therefore *ḱes-, not *ḱesH-, which leaves Gr. κεάσσαι unexplained. Moreover, the connection of the Greek forms with *ḱesH- 'cut' is semantically less satisfactory than the connection with *keu̯h$_2$- 'split, crush'. I conclude that κεάσσαι belongs to *keu̯h$_2$-. Conversely, the Greek form confirms that this root contained *h$_2$.

How can one explain *cūdō*? In the first place, the verb most likely reflects full grade *keuh$_2$d(h)-ō because a zero grade root in *e/o*-presents is very rare in Latin (cf. however *cadō*, *canō*, see Leumann 1977, 532). Secondly, if *cūdō* has the same formation as Toch. B *kaut-*, *-d-* must probably reflect PIE. *-dh-, not *-d- because the latter would probably yield Toch. *-ts-* (cf. *tsāk-* 'to bite', Gr. δάκνω etc.). Since we find *cūdō*, not *cūbō, the reflex of *dh cannot have been directly adjacent to PrimLat. *u (Leumann 1977, 167-168). I therefore tend to reconstruct *koudō < *ko̯u̯adhō (with syncope of *-a-* as in *posinō > pōnō) < *keuh$_2$dhō, with the implication that *h$_2$ was vocalized in *VuHC.

If *caudex* is indeed more original than *cōdex*, there is neither a semantic nor a formal reason to reject the connection with *cūdō*. It may reflect *ka̯u̯adek- (with syncope of *-a-*) < *ko̯u̯h$_2$dh-ek- (with *-o̯u̯- > *-a̯u̯-, see VI.C.1.2.1).

7.3.2.2. Evidence for *H > ø

I have tried to find words with Lat. ū belonging to roots that etymologically contain *u and a following laryngeal. Here ū may reflect *ou* < *euH, *ouH, in which *H was lost. However, ū may also reflect *ou < syncopated *oua < *ouH, as was pointed out above. In that case this ū cannot be used as evidence here. Note that ū may also reflect *uH.

Words with *au* cannot be used at all: *au and *aua (>

aue/i) merged in Lat. *au*. Note, however, the argumentation s.v. *cūdō*, *caudex*.

The relevant material was discussed in section E.2.3.2. *crūdus*, *cūlus*, *dūdum*, *dūrāre*, *frūctus*, *fūmus*, *iūbilāre*, *iūs*, *mūs*, *pūs*, *pūtēre*, *rūtus*, *sūgere* (?), *sūs* and *tū* reflect a root that contained **-IH-*. For none of these forms can it be demonstrated that they reflect a full grade **-euH-* or **-ouH-*.

We can probably extract more evidence from *ūber* (ntr.) 'udder': it most likely reflects **HouHdh-*, like Gr. οὖθαρ. A reconstruction **HuHdh-*, cf. Skt. *ūdhar*, OE. OS. *ūder*, OHG. *ūtar*, is probably not possible for Latin because **HuHC-* yielded Lat. *vaC-* (see IV.F.4.1). Since **-dh-* yielded Lat. **-b-*, it was directly adjacent to **-u-*. This would require a development **HouHdh-* > **oudh-* > **oub-* > *ūb-er*, with loss of the laryngeal in **VuHC* (see the conclusion).

7.3.2.3. Conclusion

It has turned out that only two forms can be used as evidence for the development of **VHuC*, viz. *cūdō*, which points to vocalization of the laryngeal, and *ūber*, which points to loss of the laryngeal. As the interpretation of neither form is absolutely certain, a decision cannot be forced: the evidence of *cūdō* depends on its identity with Toch. B *kaut-*, which is not certain; the evidence of *ūber* depends on the correctness of the development **HuHC* > *vaC*, which rests solely on *vannus* and *vacuus*.

It is not impossible that both the development of **HouHdh-er* to *ūber* and that of **keuHdh-* to *cūd-* are regular: there is some evidence that in **oRH* the laryngeal was lost in Latin (cf. *collis* < **kolnis* < **kolh₃ni-*, cf. Lith. *kálnas* < **kolh₃no-*. See section V.A.2). If this is correct, one may assume that in **HouHdh-* the laryngeal was lost after *o*-grade, whereas in **keuHdh-* it was regularly vocalized. However, PIE. *o*-grade in **HouHdh-* is not certain because the root may have been **h₃euHdh-*. No definitive conclusion can be drawn.

8. *VHIV*

The following words probably reflect a constellation *VHIV*.
1. *cēvēre*, *cēvī* 'clunes movere' is probably cognate with OCS. *po-kyvati* 'to move, shake', Cz. *kývati* 'winken, zucken, wedeln', SCr. *kȉmati (glavom)* 'to nod (one's head)' < **kuH-*. If

the latter reflects earlier *kh_1u-, *cēvēre* may reflect a full grade *keh_1u-.

2. *clāvis* 'key, bar', *clāvus* 'peg, pin' < *$kleh_2u$-*i*-, -*o*- (see IV.D.1.3.2.1 no. 4).

3. *crēta* 'clay' may reflect *k^wreh_1i-*et*- (IV.E.7.3.1.1 no. 1).

4. *gaudēre, gāvīsus sum* 'to enjoy, be merry' < *$ǵeh_2ui$-*d(h)*-, cf. Gr. (Dor.) γᾶθέω, Ion-Att. γηθέω, γαίων 'rejoicing' < *gauiōn*, γάνυμαι 'to rejoice' < *ga-n-u-*, root *$ǵeh_2u$-.

5. *lēvis* 'smooth', replacing earlier *$lēius$ < *leh_1iu- (see E.7.3.1.1 no. 2).

6. *flāvus, gnāvus, octāvus* and *rāvus* probably reflect *$bhleh_3$-uo-, *$ǵneh_3$-uo-, *$Hokteh_3uo$- and *$ghreh_3$-uo- (see IV.E.13.2.3).

7. The denominative verbs of the first conjugation reflect *-*āie/o*- < PIE. *-eh_2-*ie/o*- (see esp. Steinbauer 1989, 87 ff., 100 ff.). The fact that the denominatives of the Hittite type *newaḫ*- 'renews' belong to the *ḫi*-conjugation in OHitt. indicates that this type was originally thematic as well (see Kortlandt 1983c, 115).

8. The suffix of the stative verbs of the second conjugation probably reflects *-eh_1-*ie/o*-.

We may conclude that *VHIV* regularly yielded *V̄IV*, in other words, that *I* was consonantal and that *VHIV* developed like *VHCV*.

9. *VIHV*

The constellation *VIHV* may be reconstructed for the following words.

1. *cavēre* 'to beware' < *kouH-eie*- (VI.C.1.2.1 no. 3);
2. *cavus* 'hollow' < *kouH-o*-? (IV.B.2.2.1 and VI.C.1.2.1 no. 5);
3. *movēre* 'to move' < *meuH-eh_1*- (VI.C.1.2.3 no. 7).

10. *VHIR* and *VIHR*

I have not been able to find any material that might shed light on the development of these constellations.

HI, IH AFTER RESONANT (RHI, RIH)

11. *RHIC*

11.1. Word-initial *RHIC*

There are Latin forms that reflect both metathesized and unmetathesized **HI*.

Unmetathesized *#RHIC-* can be found in the following words:

1. *lŭcrum* 'gain' < **lŭt lom* < **lh₂u-t lom* (see 2.4.2 no. 8);
2. *lŭtum* 'mud' < **lHu-tom*: very uncertain (see 2.4.2 no. 9).

Only *lŭcrum* seems reliable. It may be noted that in **lh₂u-* the initial *l-* was not vocalized (to **al-*, see section IV.F.2). This behaviour agrees with the development of *#RHC-* (IV.D.1.2), where word-initial **R-* was consonantal, and points to the general tendency for word-initial resonants to resist vocalization.

Metathesized **#RIHC-* < **#RHIC-* can be found in:

1. *mītis* 'soft' < **mh₁iti-*? In view of W. *mwydion* 'soft parts' < **meit-* < **meh₁i-t-* one may prefer to reconstruct *mītis* as **meh₁iti-* (see 2.4.3 no. 9).
2. If the perfect *lūī* 'has acquitted' of *luō* reflects a root-aorist **lū-m* etc., its long *-ū-* may have arisen there: **lHu-m* > **luH-m* > **lū-m* (see 2.4.4 no. 19).

It will be observed in 11.2 below that metathesis of *HI* to *IH* ocurred before the vocalization to *aL* of the resonant in **CLHV-*. This chronology cannot be supported or refuted by *mītis* and *lūī* (in as far as they are reliable) because the reverse chronology would also yield *lū-* (not **alū-*) and *mī-* (not **emī-*) in view of the tendency for word-initial *R-* to be consonantal.

11.2. Post-consonantal *RHIC* (*CRHIC*)

Latin words that reflect PIE. **CRHIC* were partly included in section E.2 on *CHIC* and *CIHC* because they were relevant for the development of **HI* to either Lat. *ī*, *ū* or *ĭ*, *ŭ*, and partly in IV.D.2.3, where the fate of antevocalic *CRH-* was discussed. The question of metathesis to *IH* was dealt with extensively in E.2. The material is recapitulated here; it consists of the following Latin instances:

1. Lat. *CRīC*, *CRūC* in which *ī* and *ū* do not reflect a diphthong, but *Hi*, *Hu* (IV.E.2.4.3 and 4);
2. Lat. *CaLIC*, *CeNIC* in which *-a-*, *-e-* are the result of vocalization of the resonant before a laryngeal (IV.D.2.3).

In the present section, we may concentrate on a point that concerns the type **CRHIC* alone, that is, the vocalization of **R*.

Two possible developments of **CRHIC* may be expected: if **I* was stressed, metathesis to **CRIHC* occurred; if **I* was unstressed, **CRHIC* remained (see E.2.4).

There appears to be a small number of Latin words of the type *CRīC, CRūC* that may reflect **CRIHC* < **CRHIC*. These were discussed above (E.2.4.3 and 4).

1. *glīs*, Gsg. *glīris* 'dormouse' may perhaps reflect **gliH-s-* < **glHi-s-*, which depends on the validity of the connection with Skt. *giri-* 'mouse' and Gr. γαλέη 'ferret'. Very uncertain (see 2.4.3 no. 3);
2. *līmax* 'snail, slug' may perhaps reflect **slh₁i-m-*, but **sleh₁i-m-* is also possible; cf. Latv. *sliẽnas* 'saliva' < **sleh₁i-n-*. See 2.4.3 no. 6;
3. *trītum* 'rubbed' may reflect **trh₁i-tó-*, but *trī-* is most likely taken from the perfect *trīvī* < **treh₁i-* (2.4.3 no. 11);
4. *grūs* 'crane' < **ǵrh₂-u-s* appears to be a likely example of metathesis of original **CRHuC* (see 2.4.4 no. 18).

Only *grūs* < **gruh₂-s* < **ǵrh₂u-s* seems reliable. The metathesis of **HI* to **IH* must have occurred before **CLHV-* yielded **CaLHV-* because otherwise we would get **ǵrh₂us* > **garh₂us* > *garuh₂s* > **garūs*. Thus:

1. Metathesis of stressed *HI* to *IH*;
2. **CLHV-* > **CaLHV-*.

In the following words, PIE. *CRHIC* was not metathesized but yielded *CaLIC, CeNIC*, in accordance with the normal development of antevocalic *CRH-*:

1. *haru-spex* < **ǵhrHu-spek̑-* (IV.D.2.3.2.1 no. 10);
2. *parere*, if this reflects athematic **prh₃-i-* (ibid. no. 15);
3. *sine* < **seni* < **snh₁-i* (IV.D.2.3.3.1 no. 4).

There is no independent evidence for unstressed PIE. **HI* in these cases. If *parere* reflects an athematic *i*-present, which originally had an alternation **-éi-mi* etc. in the sg., **-i-més* in the pl. (Kortlandt 1989a, 109), Latin apparently generalized the zero grade plural suffix, which was unstressed; thus, the absence of metathesis in **prh₃-i-* would be regular. As to *sine*, the original accent may have been on the **-n̥-*, or word-final **-i* was not subject to metathesis with a preceding laryngeal, or the word was unstressed.

12. *RIHC*

12.1. Word-initial *RIHC*

The only instance I have found is *mūs* 'mouse' < **muHs*, which was already discussed in section IV.E.2.3.2 no. 19.

12.2. Post-consonantal *RIHC* (*CRIHC*)

The four possible instances have been discussed in IV.E. 2.3.1 and 2.

1. *flīgere* < **bhli(H)g$^{(w)}$-*? (IV.E.2.3.1 no. 1);
2. *frīgus* < **sriHǵ-os* (IV.E.2.3.1 no. 2);
3. *crūdus* < **ḱruh$_2$-do-*? (IV.E.2.3.2 no. 12);
4. *frūctus* < **bhruHg-tu-* (IV.E.2.3.2 no. 15).

The development of *RIHC* does not differ from that of *CIHC*, its syllabification being *R̥IHC*.

13. *RHIV*

13.1. Word-initial *RHIV*

No material was found.

13.2. Post-consonantal *RHIV* (*CRHIV*)

13.2.1. Introduction

Since the constellation which will be investigated is highly specific, we cannot hope to find an abundance of words that can clarify the development of *CRHIV* in Latin. Moreover, we cannot be absolutely sure from the start that *CRHiV* developed in the same way as *CRHuV*. These constellations must therefore be kept separate, which further limits down the material.

The problem which we are faced with seems clear: did *I* in *CRHIV* behave like a vowel (*V*), in which case *CRHIV* would develop into Lat. *CaLIV*, *CeNIV*; or did *I* behave like a consonant, in which case one expects the outcome to be Lat. **CRāIV*?

13.2.2. *CRHiV*

13.2.2.1. Material

Only two forms were found.

1. *cariēs* 'rotting (of wood)' is an isolated verbal abstract in *-iēs* < **-ieh$_1$-s* (Leumann 1977, 285) of the verbal root **ḱerH-* found in OIr. *ara-chrin* 'perishes', Skt. *śr̥ṇáti* 'breaks', aor. *a-śarīt*, Gr. κεραΐζω 'to destroy'. There seem to be two roots: **ḱerh$_2$-* in Greek (Beekes 1969, 197) and **ḱerh$_1$-* in OIr. *ara-chrin* < **-krinīti* < **kr̥-n-eh$_1$-ti*,

OIr. *crín* 'decrepit' < **ḱreh$_1$-no-* (McCone 1986, 227). For Latin, this is irrelevant. Apparently, *cariēs* reflects **ḱrH-ieh$_1$-*. Note however the possibility that *cariēs* is itself based on a verbal stem **ḱar-* that arose from antevocalic **ḱrH-*. Since *cariēs* is isolated in Latin, the latter solution does not seem preferable.

2. *pariēs, -iētis* 'wall of a house' is probably cognate with OIc. *sparri* (masc.) 'Speiler, Sparren, Balken', OHG. *sparro* '(Dach-)balken, Stange' < **sporH-en/on-* (with *-rr-* < **-rH-*, see Rosemarie Lühr 1976, especially 86 note 19 on this etymon), Russ. *u-perét'* 'to support, prop', OCS. *prěti* 'id.' < **perH-*. If the etymology is accepted, *paries* may reflect **(s)prH-iet-* (but the asumption of a laryngeal is based only on Germ. *-rr-*; cf. also EM.: "aucun rapprochement net").

13.2.2.2. Conclusion

Both *cariēs* and *pariēs* show that in **CRHiV* the *-i-* was vocalic. Evidence for **CNHiV* is lacking. **CLHiV* yielded *CaLiV*, as **CLHV* yielded *CaLV*. However, it is impossible to base a firm conclusion on these two words, one of which (*pariēs*) has an uncertain etymology.

13.2.3. *CRHuV*

13.2.3.1. Introduction

We have seen that there is some evidence that **CLHiV* developed into Lat. *CaLiV*, with vocalic *L* and *i*. In theory, one would expect **CRHuV* to develop in the same way. However, the interpretation of the material that allegedly reflects this constellation is far less straightforward.

Before embarking on a discussion of the material, we must discuss two important issues that enable us to recognize the possible reflex **CaLuV*.

It is held by some (e.g. Leumann 1977, 214; Sommer-Pfister 1977, 168: "vielleicht") that **-lu̯-* yielded Lat. *-ll-*, and that Lat. *-lv-* consequently reflects **-lVu̯-*. The strongest example for the assimilation is Lat. **sollo-* in *soll-ers, soll-emnis*, which is compared with Gr. ὅλος, Hom. οὖλος, Skt. *sárva-* 'complete, all' < **solu̯o-*. However, Solmsen 1905 rightly pointed out that Osc. *sullus* and W. *holl* 'all, complete' reflect **sol-no-*, which could have been the protoform of *soll-*. All other alleged cases of **-lu̯-* > *-ll-* are even more uncertain, which is admitted by Leumann and Sommer-Pfister (loc. cit.). For an apt discussion of these forms I refer to

Solmsen's article. We must conclude that the assumption of a development *-*lu̯*- > -*ll*- lacks a basis. If **ClHuV* developed into **CaluV*, we have no reason to expect that this is reflected by anything other than Lat. -*alvV*-.

In the second place, we cannot decide on the basis of Latin alone whether attested -*lv*-, -*rv*- reflects *-*lu̯*-, *-*ru̯*- or *-*lVu̯*-, *-*rVu̯*- because the opposition was lost in Latin: in Classical Latin one finds -*lv*-, -*rv*- as the reflex of either. We may probably assume for archaic Latin that after a long root vowel -*u*- (< *-*u̯*- or *-*Vu̯*-) was vocalic: *lārŭa*, *mīlŭos*, *pēlŭim*; whereas it probably was -*v*- after a short root vowel (see Sommer-Pfister 1977, 107, Leumann 1977, 132 infra). Thus, there is no observable difference between original *-*u̯*- and *-*Vu̯*- after *r*, *l* (or after other consonants, which do not concern us here). Thus, in a case like *salvus* we must ask ourselves whether this reflects **salau̯os* or **salu̯os*. If *salvus* reflects **salau̯os*, the latter probably reflects **slH-euo*-, in which case it does not belong in the present chapter. If one can demonstrate with some plausibility that *salvus* reflects **salu̯o*- and that **salu̯o*- may reflect **slHu̯o*-, it does belong here. This demonstration must be undertaken on the basis of other languages than Latin.

13.2.3.2. Material

There is evidence for two different reflexes of **CRHuV*-, viz. Lat. *CaLvV*- (13.2.3.2.1; there is no evidence for **CNHuV*-; one would expect a development to **CeNuV*-) and *CRāvV*- (13.2.3.2.2).

13.2.3.2.1. Lat. *CaLvV*-

1. *calvus* 'bald' must be compared with the Oscan personal names *KALÚVIEIS* (Gsg.), *KALAVIIS* (Nsg.) 'Calvius'. On the basis of Oscan, Solmsen (1905, 447) reconstructs **calou̯os*. The Oscan forms cannot be used to prove such a reconstruction, however: a basic **kalou̯io*- would undergo syncope to **kalu̯io*-, in which an anaptyctic vowel would arise (see Buck 1905, 35), in this case -*a*-/-*ú*-, which points to an [*ə*]. According to Mayrhofer 1989, 8, it is possible that *KALÚVIEIS* underwent remodelling after other names in *-*ovios*. In my opinion, this does not solve anything because in all *-*ovios*-forms the vowel would be syncopated. Thus, the Proto-Italic form of *calvus* might have been **kalu̯o*- or **kalVu̯o*-.

Ved. *áti-kūlva*- 'very bald' reflects *-*klHu̯o*- (thus Mayr-

hofer loc. cit., who also discusses *-kŭlva-*, which he regards as secondary). In view of this form, it is likely that *calvus* reflects **klHu̯o-* as well. According to Mayrhofer, *calvus* reflects **calau̯os*, where **-ala-* would be the regular reflex of PIE. **-l̥H-*. Since there is no supporting evidence for the latter development (see IV.D.I.3.5), this reconstruction cannot be maintained. The identification with *-kūlva-* implies that PIE. **klHuo-* yielded PIt. **kalu̯o-*. The result is the same as that of antevocalic **CLH-*, which implies that at the time of vocalization **-u-* in **klHuo-* was vocalic.

Alternatively, one may assume a different protoform for Latin, which cannot be identified with the protoform of *-kūlva-*, viz. **klHeuo-* > **kalau̯o-* > *calvus*. This implies ablaut in the suffix, i.e. a PIE. *u*-stem (since *o*-stems have no ablaut). However, in view of the correspondence between Latin and Sanskrit, the *o*-stem inflection most likely dates from Indo-European, and therefore **klHeuo-* is less probable.

2. *salvus* 'complete, intact' is the exact counterpart of Osc. *SALAVS*, οαλαϜς 'id.', U. *saluuom*, *saluom* etc. 'id.' It has been claimed that the Sabellian forms show that *salvus* reflects **salVu̯os*. This is very difficult to prove. As to Osc. *SALAVS* (cf. also *SALAVIIS* 'Salvius'), Buck 1905, 35 noted that *-a-* in the second syllable is an anaptyctic vowel that arose in the oblique cases of *SALAVS* (**salvo-* > *salavo-*; see also Leumann 1977, 58). The Nsg. *SALAVS* would according to Buck have replaced **salus* < **salu̯os*. In my opinion, one cannot deny this possibility, considering the scale of anaptyxis in Oscan. Note that "old" **salau̯os* would regularly yield O. *salavs*, which is an alternative to the anaptyctic origin of *-a-*.

U. *saluuom* is generally taken as an indication for PIt. **salVu̯os*. However, this interpretation is not so straightforward as it might seem. Meiser 1986, 196 notes that there is an alternation between *-v-* and *-uv-* in internal syllables (*ARVIA* beside *ARUVIA*; *FELSVA* beside *MERSUVA*), of which *-uv-* is remarkable because one would expect *-u-* to have been syncopated. He considers the possibility that after long initial syllables (*CVCC, CV̄C*) *-uv-* was not syncopated, so that suffix-doublets arose, which could then spread to positions where they were not original (i.e. *FELSVA* in stead of **felsuva*, *VATUVA* instead of **vatva*). There are cases in which *-uv-* does not reflect PIt. **-Vu̯-*, viz. the NApl. ntr. of *u*-stems *KASTRUVU(F), castruo*; *VATUVA/U, vatuo* < **-Cua*. In my opinion, *ARVIA* beside *ARUVIA* rather points to the conclusion that there was

no opposition between -uv- and -v- in Umbrian. *saluuom* therefore is not indicative of PIt. **salVu̯o-*.

Lat. *salūbris* and *salūs*, *-ūtis* presuppose a (denominative) verb **saluere*, **salūtus* (Leumann 1977, 349). *salū-* need not point to **salVu-* because in denominatives *-ū-* is regular (Leumann 1977, 543), cf. *statūtus*, *statuere*, based on *status*, which does not reflect **stateu-* but **statu-*. **saluere* reflects a nominal stem **salu-*.

It is difficult to explain the root vocalism of *salvus*: it is generally considered to represent a (secondary or primary) zero grade: Pokorny IEW. 980, Chantraine 794, EM. s.v. However, from PIE. **sl̥u̯o-* one would expect **solu̯o-*. The assumption of a secondary zero grade (= reduced grade) amounts to saying that one does not know the origin of *-a-* because conditions for the occurrence of this zero grade have not been formulated in a satisfactory way. This does not mean that *salvus* cannot belong to the numerous cases of Latin non-laryngeal *-a-*.

Thurneysen (1951, 13) proposed to distinguish two root forms: **sl-* in Skt. *sárva-*, Gr. ὅλος, Toch. A *salu* < **sol-u̯o-*; W. *holl*, Lat. *soll-*, Osc. *sullus* 'omnes' < **sol-no-*; Toch. B *solme* 'entire, whole', Khotan-Saka *harma-* 'all, any' < **sol-mo-* (on the vocalism of *solme* see Hilmarsson 1986, 19, 32, 137). And **slə-* (read **slH-*) in Olr. *slán* 'complete, sane' < **slH-no-*, cf. perhaps Gr. ἰλάσκω. Meillet's suggestion that *slán* is formed by contamination with the root of *sānus* 'sane' is improbable because **solno-* would hardly have been replaced by **slāno-* and because the root of *sānus* does not occur in Celtic. For a discussion of *slán*, I refer to Vendryes S-127.

It is unlikely that *salvus* reflects PIE. **slH-u̯-* or **slH-eu̯-* because the cognate forms in other languages clearly point to **solu̯o-*. More specifically, the semantic and formal correspondence between Gr. οὖλε (Od.) and *salvē* 'hello' (which replaced **salvĕ* because it was reinterpreted as an imperative of *salvēre*, Pokorny IEW. 979) shows that *salvus* must indeed be connected with the **solu̯o*-forms. It is therefore likely that **solu̯o-* is the predecessor of *salvus*. Thurneysen 1887, 154 ff. suggested that **solu̯o-* regularly became *salvus*. This is an extension of his rule **ou̯* > **au̯* (see section VI. C.1), which seems possible but cannot be checked because of the absence of more material: cases like *pulvis*, *volvō*, *vulva* etc. may reflect **Celu̯-*. Thurneysen's suggestion seems a good possibility.

As an alternative, I would like to suggest that **solu̯o-* was replaced by **salu̯o-* at some stage under the influence of an *u*-stem **salu-*. This *u*-stem must have existed for two reasons. Firstly, it is implied by the denominative verb **saluere*, **salūtus*, on which *salūbris* and *salūs* were based. In the second place, Gr. ὁλοός· φρόνιμος καὶ ἀγαθός (Suid., Hes.; if it is reliable), reflecting **solouo-*, has a full grade suffix **-ou-* which cannot be explained from the original non-ablauting *o*-stem **sólu̯o-*. ὁλοός presupposes an (ablauting) *u*-stem. In view of its *-a-* Lat. **salu-* most likely reflects **slH-u-*, *-eu-*. **slH-u-* beside **slH-no-* in OIr. *slán* reminds one of **plh₁-u-* 'much' beside **plh₁-no-* 'full'. It was noted by EM. s.v. *salvus* and Chantraine s.v. ὅλος that ὁλοός owes its root-vocalism to ὅλος. I suggest that the reverse process obtained in Italic: **solu̯o-* was replaced by **salu̯o-* because of **salu-*.

It must finally be noted that **sl-* and **slH-* may ultimately reflect the same root **slH-*. The evidence for **sl-* is limited to forms with *o*-vocalism in the root. In view of the alleged development of **oRH* to **oR*, **solu̯o-*, **solno-* etc. may perhaps reflect PIE. **solHuo-*, **solHno-*.

In view of the preceding discussion it is unlikely that *salvus* reflects PIE. **slHuo-*. It cannot therefore be used here.

3. *valva* 'the leaf of a door, a folding-door' (usually plural) may belong to the same root as *volvō* 'to roll, turn round', Gr. εἰλύω 'to wrap around, cover, turn'. This root is **uelHu-*: cf. Gr. ἕλυσις 'chain, necklace', originally 'Windung', cf. Fέλυτρον 'Umwindung' (Frisk s.v.), which reflects **Félu-τις* < **ulHu-ti-*; Skt. *ūrṇóti* 'covers, wraps around' < **ulH-n-eu-*; Gr. εἴλῡμαι, εἰλῡμένος < **ueluH-* < **uelHu-*. The original meaning of **uelHu-* may have been 'to wind, wrap' (Pokorny IEW. 1140); then 'wind' developed into 'roll' in Latin *volvō*; and 'wrap' developed into 'wrap up, in' and further to 'cover' in Indic. For the semantics one may compare MoHG. *winden* 'to wind, wrap', *Windel* 'Wickeltuch für Säuglinge', OHG. *wantilōn* 'to roll'. I have found no semantic parallel that explains the meaning of *valva*. This connection must therefore remain doubtful.

In forms like ἐλυσθείς 'turned' etc., which have a short *-ŭ-*, the laryngeal was probably lost, as in φῡτόν < **bhHu-* (see Appendix 1.2 no. 2 and 1.3). Indo-Iranian forms in which a reflex of the laryngeal seems to be absent, e.g. Skt. *varútra-* 'Überwurf', belong to the root **u̯er-* 'to cover', see Mayrhofer, KEWA s.v.

**uelHu-* is probably the enlarged form of **uelH-*, which is reflected in Latv. *velt* 'to roll, turn round'.

valva may reflect **u̯lHueh₂-*, with the same development of *CRHuV* as in *calvus*. However, in view of the following alternative explanation, *valva* cannot be used as evidence for this development.

It is possible that *valva* does not reflect **ulHu-* but rather **u̯oluā-* < **u̯olHueh₂-*, according to the rule that **u̯o-* became **u̯a-* in Latin (see VI.C.2). Since the latter development probably only occurred in open syllables, it would imply that *valva* reflects **u̯olau̯ā-* < **u̯olHu̯eh₂-*, with a vocalized laryngeal (see 3.3 above).

13.2.3.2.2. Lat. *CRāvV-*

1. *clāvis*, *clāvus* were discussed in D.1.3.2.1 above. They may reflect full grade **kleh₂ui-*, **kleh₂uo-*.

2. In view of OHG. *blāo* 'blue, yellow', OE. *blāw*, OIc. *blár* < **blē-u̯o-*, one may assume that Lat. *flāvus* 'goldgelb, rotgelb, blond' reflects **bhlh₁-uo-*, whereas PGm. **blē-u̯o-* points to full grade **bhleh₁-u̯o-*. In that case, Lat. *flōrus* 'flavus' reflects **bhloh₁-ro-*, with yet another ablaut grade. On EM.'s *flāvus* < **flōvus* see 13.2.3.4.

Since *o*-stems have no ablaut, one is forced to assume that **bhleh₁uo-*, **bhlh₁uo-* reflect a PIE. u-stem. However, such a stem is not reflected anywhere.

3. *(g)nāvus* 'busy, diligent, assiduous, active' must be compared with OIc. *knár* 'hardy, vigorous, having strength and energy' < **knēwaz*. According to EM. s.v., WH. II (Nachtrag) and Pokorny IEW. 378 this etymon belongs to the root **ǵneh₃-* 'to know (how to do sth.)'. On the semantic development of *gnāvus* and *knár*, see EM.

gnāvus may reflect **ǵnh₃-u̯o-*, with **RHuV* > *RāvV*. OIc. *knár* < **gnēu̯os* evidently reflects a full grade root (on **-eh₃u̯-* > **-ēu̯-* see the discussion below (13.2.3.3 and 13.2.3.5)). Again we must assume ablaut, which presupposes a PIE. u-stem that is not attested.

4. *rāvus* 'grey, greyish yellow' is usually connected with OHG. *grāo*, OIc. *grár* 'grey' < **ghrēu̯o-*, although it is not exactly clear under which circumstances PIE. **ghr-* appears as Lat. *r-* instead of *gr-* (see F.1.2.2 s.v. *rāvus*, and Leumann 1977, 166).

An alternative etymology connects *rāvus* with Skt. *rāmá-*

'dunkelfarbig, schwarz', OHG. *rāmac* 'schmutzig, russig' < **Hreh$_1$-*. This must be rejected because the formation of *rāvus* is different (which is not in itself decisive) and because Lat. *rā-* cannot be explained from a root **Hreh$_1$-*: **Hreh$_1$u̯o-* would yield **rēvus* and **Hrh$_1$uo-* would probably yield **răvus* (see F.1.3). Furthermore, the connection is semantically less satisfactory than that with *grāo* etc.

rāvus may reflect a zero grade **ǵhrh$_1$uo-*, implying that **CRHuV-* yielded **CRāvV-*. The Germanic forms would reflect full grade **ǵhreh$_1$u̯o-*. Again, there is ablaut in the root, which presupposes a PIE. ablauting *u*-stem that is not attested anywhere.

13.2.3.3. Discussion

If we exhaust the phonetic possibilities suggested above, we obtain the following picture: in view of OHG. *blāo*, *grāo* and OIc. *knár*, Lat. *flāvus*, *rāvus* and *gnāvus* reflect zero grade **bhlh$_1$uo-*, **ǵhrh$_1$uo-* and **ǵnh$_3$uo-*. This means that **CRHuV-* yielded Lat. *CRāvV-*, not *CaRvV-*, which implies that *calvus* does not reflect **klHuo-* but rather **klHeuo-*.

However, in order to obtain this result we had to make a number of important assumptions. We must reconstruct a PIE. form in **-u̯o-* for all words. But for all Latin words we were forced to assume an ablaut form different from the one attested in the cognate forms in other languages. This ablaut may imply that in all words the **u̯o*-form replaced an earlier *u*-stem, for which there is no direct evidence. There admittedly are ablauting *o*-stems which may indeed point to a different PIE. inflection, e.g. **supnos*, **su̯opnos*, **su̯epnos* 'sleep', but the decisive point in the present issue is that it is unlikely that both *calvus* and *flāvus*, *gnāvus* and *rāvus*, i.e. all relevant forms, all of which are *o*-stems, reflect unattested *u*-stems. Alternatively, the zero or full grade may be considered analogical (cf. *plēnus* in view of *pūrṇá-*, *fulls* etc.). However, this possibility cannot be considered for all four forms. In my view, the objections render the conclusion in the first alinea very doubtful. In order to find a more satisfactory solution for *calvus* vs. *flāvus*, *gnāvus*, *rāvus*, we may discuss a long-existing theory.

13.2.3.4. The development **ōu̯* > **āu̯* in Latin

According to e.g. Meillet-Vendryes 1927, 107, PIE. **-ōu̯-* yielded Lat. *-āv-*. This rule was accepted, and discussed extensively, by Szemerényi 1952, 51 ff. It explains *octāvus* 'eighth'

< *oktōu̯os, cf. octō, strāvī < *strōu̯- of the root *strh₃-, and gnāvus < *gnōu̯os of the root *ǵneh₃-. Szemerényi also tried to explain caveō - cāvī, faveō - fāvī, lavō - lāvī by applying this rule, but in my opinion this was unconvincing (see the discussion in chapter VI.C.1)

There are three exceptions to the proposed rule. fōvī, the perfect of fōvēre, does not reflect PIE. *-ōu̯-, but rather *-ōgʷh- (see VI.C.1.2.3); thus it cannot be used as counter-evidence (thus Szemerényi). In nōvī, -ō- could have been restored after nōscō; therefore, it does not offer strong counter-evidence. Lastly, there is ōvum 'egg'. According to Szemerényi, PIE. *ōiom developed into Italic *ōom, which, since there was no contraction with the inflectional endings, developed into ōvom. Thus, it would not have contained PIE. ōu̯. However, as is generally accepted, the original form must have been *ōuiom, derived from *h₂eu̯i- 'bird' (see Schindler 1969, 167, who reconstructs *ō-h₂uiom, with an unlikely prefix *ō- 'bei'), and therefore ōu̯- in ōvum must be old. There seems to be one point that distinguishes ōvum from the instances of -āv- < *-ōu̯-: ōvum reflects PIE. lengthened grade *-ōu̯- (cf. the circumflex intonation of Slavic: Russ. jajcó, SCr. jáje, Kortlandt 1975, 74); whereas octāvus, strāvī and gnāvus reflect PIE. *-eh₃u̯-. Since *h₃ was a labialized sound, I propose to regard the development of *-ōu̯- to *-āu̯- as a delabialization of *h₃ before *-u̯-, which explains why *-ōu̯- was maintained in ōvum. The fact that PIE. *-eh₃u̯- was still distinct from PIE. *-ōu̯- at the time of delabialization points to a relatively high antiquity of this delabialization.

Phonetically, the loss of the labial feature of *h₃ before *u̯ can be identified with the loss of the labial feature of the labio-velars after u (type Gr. βουκόλος, W. bugail < *gʷou-kolo- < *gʷou-kʷolo-). In Latin, delabialized *h₃ apparently merged with the pharyngeal *h₂.

Thus, we may reconstruct *ǵneh₃u̯o- for gnāvus. OIc. knár must reflect full grade *ǵneh₃u̯o-. In Germanic, *h₃ was apparently delabialized as in Latin, but the resulting sound did not merge with *h₂ but with *h₁. See 13.2.3.5 below.

The argument can be summarized as follows:
1. It is possible that Lat. gnāvus reflects *ǵneh₃u̯o- (cf. octāvus, strāvī);
2. *h₃ is confirmed by Greek γνωτός, γιγνώσκω;
3. full grade of the root is confirmed by OIc. knár.
I conclude that gnāvus does indeed reflect *ǵneh₃u̯o-.

In my opinion, the same explanation may hold for *flāvus* and *rāvus*. For *flāvus* < **bhleh$_3$u̯o-* (thus EM., apart from the laryngeal), the reconstrution of **h$_3$* is perhaps confirmed by *flōrus* < **bhleh$_3$-ro-* (cf. *vērus* < **u̯eh$_1$-ro-*). In the case of *rāvus*, there is no independent indication for **h$_3$*, unless one considers Gr. χαροπός 'bluish grey ??' < **ghrh$_3$-ep-* (?) to have any value. On the other hand, the full grade root is confirmed by OHG. *blāo*, *grāo*.

On Martinet's **VhaV* > *V̄vV* see IV.C.2.2.

13.2.3.5. Delabialization of **h$_3$* in Germanic

That there actually was delabialization of **h$_3$* before **u̯* in Germanic is shown by OIc. *knár*, and possibly also by OE. *cnēow*, OHG. *knāu* 'knew'. There are alternative explanations for the latter, e.g. Rix 1969, 184; Kortlandt 1989a, 111; Jasanoff 1988. If the above argument is accepted, OHG. *blāo* and *grāo* would also represent cases of delabialization.

In order to explain why the result of delabialization in Germanic differs from the result in Latin, one might assume that in Germanic **h$_1$*, **h$_2$*, **h$_3$* yielded glottal stops and that the labial feature of **h$_3$* was lost afterwards (see Lubotsky 1988, 94, note 22 on the laryngeals in Skt.). This is, of course, no more than a suggestion.

13.2.3.6. Conclusion

Thus, we can reconstruct both *flāvus* and OHG. *blāo* as **bhleh$_3$u̯o-*, both *rāvus* and OHG. *grāo* as **ǵhreh$_3$u̯o-*, and both *gnāvus* and OIc. *knár* as **ǵneh$_3$u̯o-*. If this is accepted, *flāvus*, *rāvus* and *gnāvus* cannot be used as evidence for the development of **CRHuV*. Consequently, Lat. *calvus* may be identified with Skt. *-kūlva-* < **klHuo-*, without the necessity to assume a different ablaut grade. *calvus* would be the only form that sheds light on the development of **CRHuV-*. It points to the conclusion that **CRHuV-* developed in the same way as **CRHiV-* and **CRHV-*.

14. *RIHV*

14.1. Word-initial *RIHV*

No instances were found.

14.2. Post-consonantal *RIHV* (*CRIHV*)

cruor 'blood' most likely reflects **kruh$_2$-ōs*, cf. *cruentus* 'bloody' < **kruh$_2$-ent-* (for the root, see IV.E.2.3.2 no. 12).

Apparently, the *-*u*-, not the *-*r*-, was syllabic.

15. *RHIR* and *RIHR*

I have not found any reflexes of either constellation.

IH- IN WORD-INITIAL AND -HI IN WORD-FINAL POSITION (#IH-, -HI#)

16. Word-initial *IH-*

16.1. *#IHC-*

There are only two examples of word-initial *IHC-*, which behave like *#RHC-* and were discussed at some length in IV.D. 1.2.2 In these instances, *#IHC-* yielded *#IăC-*.

1. *iăcĕre, iăcēre* < *ih_1-k-* (or *Hih_1k-*? See D.1.2.2 no. 1);

2. *vădāre* < *uh_2dh-* (ibid. no. 17).

16.2. *#IHV-*

No examples.

16.3. *#IHR-*

There is only one possible example, viz. *vallus* < *uh_2lso-* (?), see IV.D.1.2.2 no. 18. *vallus* points to a syllabification *$u̯h_2lso$-*. It behaves like *CHRC* (see IV.B.3: *callum* < *$kHlno$-*).

17. Word-final *-HI*

17.1. *-CHI#*

No examples.

17.2. *-VHI#*

There is one example, viz. *prae*, U. *pre* < *$prai$*, which reflects *$preh_2$-i*, a locative sg. A Dsg. *prh_2-ei* would have yielded *$parai$* (Beekes 1973, 215).

17.3. *-RHI#*

Again there is only one example, viz. *sine* 'without' < *$seni$* < *$senh_1$-i* < *snh_1-i* (see IV.D.2.3.3.1 no. 4).

17.4. Conclusion

In *-CRHI#* the word-final *I* was vocalic. Had it been consonantal, *snh_1i* would have yielded *$snāi$* > *$snăi$*. Since the difference between *-*ā*i* and *-*ai* was lost in Latin (both yield-

ded *-ae*, cf. the Dsg. of the *ā*-stems in *-ae* < **-āi*), one cannot decide on the basis of **preh₂i* whether **-i* was vocalic or consonantal. In view of *sine*, one may decide upon the former.

F. *HRH* AND *HIH*

1. Word-initial *HRHC-*

1.1. Introduction

Theoretically, one can think of four different results of the sequence **HRHC-* in anlaut in Latin:
1. *RăC-* (e.g. Beekes 1988a, 92)
i.e: the initial laryngeal was dropped and the remaining *#RHC-* regularly developed into *RăC-* (see section IV.D.1.2);
2. *RāC-*
i.e.: the initial laryngeal remained as a consonant and *HRHC-* developed as *CRHC*, viz. into *RāC-* (see section IV.D.1.3.2);
3. *aLaC-* / *e,a,oNaC-* (*e,a,o*, depending on the preceding laryngeal).
Initial *HR-* developed into *VR-* in the same way as *HṚ-* did and subsequently the internal laryngeal, which was post-consonantal, became *a* (see chapter II.D);
4. *aLC-* / *e,a,oNC-* (*e,a,o*, depending on the preceding laryngeal).
This development would be similar to the Celtic one, where the second laryngeal disappeared, and resulting *HRC-* yielded *aRC-*, e.g. in OIr. *ainm* 'name' < $*h_3nh_3m$-*n* (Joseph 1982).

Material can be found and has been found earlier to vindicate all these possibilities. Although the material is scanty, I think certain conclusions can be drawn.

Before embarking on a discussion of the relevant forms, it may be useful to point out some general problems. The problem mostly lies in determining whether the relevant cases indeed had an *initial* laryngeal. This cannot be proven independently for each and every adduced form. But Lehmann has made the observation that any Indo-European root apparently starting with an *r-* actually reflects *Hr-* (1951). As this is plausible (see II.A), every Latin form in *r-*, unless it reflects **wr-*, **sr-* or **ghr-*, with evidence for a laryngeal after **r*, must be reconstructed as **HRHC-*.

In order to obtain a correct interpretation of the material, the following must be noted. Given a PIE. root *HRH(-)C-*:
1. Latin *RăC-* can only reflect **HRHC-*;
2. Latin *RāC-* can also reflect $*HReh_2C$-;
3. Latin *VRăC-* can also reflect **HeRHC-* (or possibly **HRHeC-*);

4. Latin *VRC-* can perhaps also reflect **HeRHTC-* (see section IV.B.1.5).
The difference between 3. and 4. can have been obliterated by syncope.
I have added instances of **HIHC-*, which strictly speaking belong in section 2. The reason for doing so is that the development of this sequence may be identical to that of **HRHC-*.

1.2. Material

The material was collected from EM., complemented by WH. It will be presented in four sections, which correspond to the four theoretically possible developments of *HRHC-*. Because of their importance, instances with *I* will be discussed here, too, though strictly speaking they should be considered separately (see F.4). The criteria for selecting the material differ for each section:
section 1: all instances of Latin *RăC-* with evidence for an initial laryngeal. That is, all instances of *răC-*, and those cases of *lăC-*, *năC-*, *măC-*, *iăC-* and *uăC-* for which there is independent evidence for an initial laryngeal.
section 2: all instances of Latin *RāC-* for which there is evidence for an initial laryngeal.
section 3: all instances of *VRVC-* for which there is evidence for a laryngeal after *R* (*V-* always being **H(V)-*).
section 4: all instances of *VRC-* for which there is evidence for a laryngeal after *R* (*V-* always being **H(V)-*).

1.2.1. Lat. *RăC- < HRHC-*

1. *rabere* 'to be enraged', *rabiēs* 'rage (of a dog)', *rabidus* 'raging' has of old been connected with Skt. *rábhas-* 'impetuousness', *rabhasá-* 'impetuous', which seems possible semantically. This means that the connection of *rábhas-* with Skt. *rábhate*, *la(m)bhate* 'to grasp' must be given up (thus Mayrhofer KEWA s.v.) because the latter contains PIE. **l-*. It is possible that Toch. A *rapurñe* 'desire' belongs here (Lubotsky 1989). In any case, Gr. λάβρος 'impetuous' cannot belong with *rabere*, *rábhas-*, even if one allows for dissimilation of **r-* to *l-*: it has **-b-*, not **-bh-*; and there is no reflex of an initial laryngeal, which would certainly have subsisted even if *r-* were dissimilated to *l-* (thus already EM. s.v.). However, there *is* something we can learn from the Greek form semantically: λάβρος has of old been connected with λαμβάνω, λάζω 'to take, grasp' < **lh$_2$g^w-*. This would offer a perfect semantic

parallel for the connection of Skt. *rábhas-* with *rábhate*, *la(m)bhate*. Thus, *rábhas-* could very well reflect **lebh-*. This would automatically resolve the problematic correspondence of Latin *a* with Skt. *a* because *rabiēs* simply is not cognate.

Since the connection of *rabiēs* with *rábhas-* is semantically unnecessary and formally problematic and since a good alternative etymology is present for *rábhas-*, I conclude that it must be given up.

For the present purpose it suffices to state that it is possible that *rabere* reflects *HrHbh-*: if it is cognate with *rábhas-*, it did not contain two laryngeals. If it is not, which is more likely, *rabere* may be cognate with Toch. A *rapurñe* < *(H)rHbh-*. If Lubotsky is correct in connecting these forms with Gr. ἔραμαι 'I desire, love' (1989), we may reconstruct **h_1rh_2-bh-*. Thus, *rabĕre* is a possible instance of **HrHC-*.

2. *racēmus* 'bunch (of grapes), grape' cannot be separated from Gr. ῥᾶξ, ῥᾶγός, and also ῥώξ. The alternation of Lat. *c* with Gr. *γ*, the vocalism of the Greek forms, the semantics, and the limited distribution of the etymon all point to a substratum word (thus EM., Frisk, Chantraine, Furnée 1972, 126). The formation of the Latin form is unclear. It cannot therefore be used for the present problem.

3. The etymology of *rapere* 'to snatch, grab, rob' was discussed in II.B.2.1 no. 4. One must distinguish between a root **$h_2$rep-* (in Gr. ἁρέπυια, Alb. *rjep-*, Lith. *rẽplės*) and a root **h_1rh_1p-* (in ἐρέπτομαι, Lith. *rẽpti*), which have approximately the same meaning. In view of the *a* in *rapere*, this word belongs to **h_1rh_1p-*. Consequently, *rapere* reflects **h_1rh_1p-*.

4. The etymology of *ratis* 'raft' is unclear (EM.). It has been connected with OHG. *ruota*, OIc. *róða* 'Stange', OE. *rōd*, OS. *rōda* '(Pfahl)kreuz' and OCS. *ratište*, *ratovište* 'Lanzenschaft' (Pokorny IEW. 866; but the OCS. forms may rather be compared with Russ. *rat'*, SCr. *rȁt* 'war'). These forms could reflect **HreHt-*, **HroHt-*. It is possible, but far from compelling, to see a connection with Lat. *rētae* 'trees standing on the bank or in the bed of a stream', *rētāre* 'to clear, free from obstructions' (e.g. in *flumina retanda*). In that case, the root is **Hreh$_1$t-* and *ratis* would reflect **Hrh$_1$ti-*. *ratis* cannot be connected with Lith. *rẽti* 'Holz schichten' because the latter does not exist (see Būga ap. Fraenkel 729). Nor can it be connected with Russ. *rél'* 'Querbalken, Bock, Gerüst, Pfosten,

Galgen' because the latter cannot reflect PSlav. *ě (cf. Ukr. *rél'a*, Vasmer s.v.). I conclude that *ratis* is an uncertain instance of **HrHC-*.

5. *Ratus*, the ppp. of *rērī*, 'to count, reckon, estimate', *ratiō* are cognate with Goth. *raþjo* 'λόγος', OS. *rethia*, OHG. *radja*, *redea* 'Rechenschaft'. The alternation Lat. *ra- : rē-* points to PIE. **Hrh$_1$- : *Hreh$_1$-*. The Germanic forms reflect **Hrh$_1$-t-* (Beekes 1988b, 39). Other possible cognates, which are more distant semantically and formally, comprise Skt. *rādhnóti* 'achieves, prepares' < **Hreh$_1$-dh-*, Olr. *ráidid*, Goth. *rodjan* 'to speak' < **Hroh$_1$-dh-eie-*, Goth. *garedan* 'to make preparations' < **Hreh$_1$-dh-*. If all these forms indeed belong to the root **h$_2$r-* 'to fix' in Gr. ἀραρίσκω etc. (Pokorny IEW. 59), there is independent evidence for the initial laryngeal, but semantically and formally this is a pure guess.

Kuryłowicz 1956, 201 suggested that *ratus* is analogical, a morphological zero grade. It would have been formed after *fēcī*, *factum*, *iēcī*, *iactum*. I think that in principle this cannot be refuted because the model *faciō*, *fēcī* is known to be productive elsewhere: *agō*, *ēgī*, *āctum*. However, it is relevant here to determine what, if at all, *ratus* could have replaced. It is unlikely that it replaced **rātus* because there is no model for such a replacement: a long vowel in the ppp. is always maintained, cf. *flāre*, *flātum*, *strāvī*, *strātum*. If **rātus* had been replaced at all, it should be replaced by **rētus*, cf. *spernere*, *sprēvī*, *sprētum*, *de-lēre*, *de-lētum*, *nōvī*, *nōtum* (on *cognitus* see IV.D.1.3.6.2). *nātāre*, based on **nătus*, has regular *ă* (see D.1.2.2 no. 16). It is conceivable that *rătus* replaced **ar-tos*, or **ara-tos* because in comparison with *rē-* in the rest of the paradigm these forms would be highly aberrant. But again one would expect a new form **rētus* rather than *ratus*. Note also that the productivity of the type *faciō*, *fēcī*, *factum* concerns the perfect, not the ppp. (see above).

If we assume that *ratus* was the regular outcome of **Hrh$_1$to-*, we can understand that it was not replaced, precisely because of the model *fēcī*, *factus*, *iēcī*, *iactus*. I conclude that it is likely that *ratus* regularly reflects **Hrh$_1$-to-*.

6. *vacāre* 'to be empty', *vacuus* 'empty', *vacīvus* 'id.' have been connected with U. *VAČETUM*, *vasetom* 'vitiatum'. Semantically, the connection is not compelling. U. *ANTERVAKAZE*, *andervacose* 'intermissio' is clearly cognate. In view of the

Umbrian forms, the vocalism of OLat. *vocuus*, *vocīvus* 'empty' must be secondary (thus Leumann 1977, 50). The formation of *vacāre* is unclear. It looks like a denominative of a lost **uako-*, of which there is no trace in any Indo-European language.

This etymon has been connected with a root **ueh₂-* 'empty, desolate' found in Lat. *vāstus* (cf. *vascus* 'inanis') 'empty, desolate', Olr. *fás* 'id.', OS. *wōsti*, OHG. *wuosti*, all from **ueh₂-s-to-*. If Hamp's reconstruction **wasiliio-* for W. *gweilydd* 'id.' is correct (1976b), this would reflect **uh₂-s-*. Skt. *ūná-* and Goth. *wans* 'empty' probably reflect **uh₂-nó-*. It is unclear whether Lat. *vānus* 'id.' reflects **ueh₂-no-* (like *plēnus* vs. Skt. *pūrṇá-*, Mayrhofer KEWA) or **u(e)h₂-s-no-* (**wasno-* > *vānus*, cf. **wasko-* > *vascus* like **kasno-* > *cānus*, **kasko-* > *cascus*, Hamp op. cit.). Sanskrit has a present *vāyati* 'vanishes, becomes exhausted, is extinguished, deprived of', ppp. *-vāta-* < **ueh₂-* (see Hoffmann 1967a, p. 34 f., note 3).

It is possible that all these forms must be connected with Gr. εὖνις 'empty' (Pokorny IEW. 345, Frisk, Chantraine). The latter would then reflect **h₁euh₂-ni-*. It is doubtful, however, whether in Greek a laryngeal was lost after *-eu-*. That it was lost after *-ou-*, which appears from οὖθαρ 'udder' < **HouHdh-r̥*, does not imply that the laryngeal was dropped after *-eu-* as well: there are indications for a special treatment of laryngeals after *o*-grade (**oRH* > *oR*; for Latin see V.A.2). Arm. *ownayn* 'empty' can reflect either **eun-* < **h₁euh₂-n-* (if one accepts loss of the laryngeal after **-eu-*) or **ūn-* < **(h₁)uh₂-n-*. If εὖνις is cognate with *vāstus* and with *vacāre*, the latter must reflect **h₁uh₂-k-*. But this is no more than a possibility because the material evidence that the equation is correct is small (viz. *u*). Semantically, the combination seems attractive, and formally at least it does not present difficulties.

In conclusion, *vacāre* is a possible case of **HRHC-*. Note that if *gweilydd* is reliable, the same development (to *Ră-*) would obtain for Celtic.

7. *vannus* 'a fan, van for winnowing grain' is derived from **wat-no-*, according to WH., in view of the diminutive *vatillum* 'shovel or vase for transporting embers'. In this view, the diminutive *vallus* 'a little winnowing van for grain or provender' would be a later, analogical formation. I think that this is untenable. Firstly, as EM. pointed out, the connection of *vannus* with *vatillum* is semantically very weak. In the second

place, it is hard to believe that *vallus* is a late formation: one would then rather expect *vannulus*, which is indeed attested. I therefore think that there is no ground for a reconstruction **wat-no-*.

vannus has traditionally been connected with Gr. ἀνέω, αἴνω aor. ἦναι (Aeol. γᾶναι (Hes.)), the meaning of which is not very clear. Probably it means something like 'to thrash (κόπτω), to winnow (πτίσσω)' (see Cowgill 1965, 161, Chantraine s.v.). αἴνω may reflect **Fαν-yω*, and ἦναι **Fαν-σαι*. But ἀνέω is entirely unclear. The Latin and Greek forms have further been connected with the root **h₂ueh₁-* 'to blow' in view of the Germanic forms: OHG. *wintōn*, OE. *windwian* (> *winnow*), OIc. *vinza* (< **winþisōn*) 'to winnow' are clearly derived from Proto-Germanic **winþaz* 'wind' < **h₂ueh₁-nto-* (cf. Gr. ἄηται). Of course, if the Greek forms originally meant 'to thrash', their connection with **h₂ueh₁-* is impossible. For decisive formal problems, see Cowgill, op. cit.

We might indeed try to connect *vannus* with the 'wind'-root (thus WH.) because semantically this is plausible. If *vannus* reflects **want-no-*, this could be a derivative in **-nó-*, with zero grade in the root, of **h₂ueh₁-nt-* (Hitt. *ḫuuant-*) 'wind'; in that case we may reconstruct **h₂uḫ₁ntno-* > **(h₂)uantno-* > *vannus*. *vallus* probably reflects **u̯anlo-* < **u̯ann-lo-* < **u̯antn-*.

See also VI.E.3, according to which a development **h₂uh₁n̥tno-* > **h₂uh₁əntno-* > **u̯antno-* > *vannus* is possible.

For *rādere* < **răsd-* see no. 8 below.
For the results see the table in section 1.3.

1.2.2. Lat. *RāC-* < *HRHC-*.

8. *rādere* 'to scrape, shave, smooth' has generally been considered to be cognate with *rōdere* 'to gnaw'. The latter is evidently cognate with Skt. *rádati* 'bites, gnaws, cuts, makes way, opens', which, as Lubotsky 1981, 136 has pointed out, reflects **(H)reHd-*, with loss of the laryngeal before voiced (= glottalic) stop plus consonant (cf. RV. athem. imperat. *rátsi*). MHG. *rāzi* 'sharp (of taste, sound), wild, biting' reflects **Hreh₁d-*. If this belongs to *rōdere*, the latter reflects **Hroh₁d-*. But as *o*-grade in a verb is improbable, *rōdere* rather reflects **Hreh₃d-* (thus Beekes 1988b, 39). In that case MHG. *rāzi* is not cognate. Note that in the OHG. glosses *rāzi* means 'wütend, wild', which may be the original meaning.

Beekes op. cit. has given an account of the semantic difficulties of connecting *rādere* with *rōdere*. I may add that the meaning 'to scrape, smooth' of Skt. *rádati* is not attested in the RV (Grassmann s.v.), and is apparently secondary. In view of this, MPers. *randitan*, *randiðan* 'to scrape, smooth' may also be derived from 'to gnaw'. It is not impossible that 'to scrape' and 'to gnaw' ultimately belong together, but if the formal problems become insurmountable, the connection must be abandoned. I think that this is the case.

My view centers round W. *rathu* 'to scrape, smooth, file', Bret. *razhañ* 'raser, râcler'. The British forms are semantically identical with Lat. *rādere*, but the interpretation of the British dental is a serious problem. Pokorny IEW. 854 reconstructs **răzdō* < **radᶻd(h)ō* for both *rādō* and *rathu*. This will not do for the British forms because PIE. **-dd(h)-* yields Brit. *-d-*, not *-th-*, cf. W. *credu*, Bret. *krediñ*, OIr. *creitid* (with [*d*]) 'believe' < **kred-dhh₁-*, cf. Skt. *śraddhā́* 'belief', Lat. *crēdō* 'believe' (see Jackson 1953, 427). However, if one reconstructs **rasdō*, no such problems are met with: In Latin this yields *rādō*, cf. *nīdus* < **nisdo-*, and in British it yields W. *rath-*, B. *razh-*, cf. W. *nyth*, B. *neizh*, Ir. *net* 'nest' < **nisdo-*, W. *peth*, B. *pezh*, Ir. *cuit* 'part, thing' < **kʷesdi-* (see Thurneysen 1946, 134, Vendryes s.v.).

The conclusion is that *rādō* cannot be cognate with *rōdō* because the former is cognate with W. *rathu* etc., which points to **rasd-*, and the latter with Skt. *rádati*, which points to **Hreh₃d-*. **rasd-* has no etymology outside Italo-Celtic. If it is Indo-European, it reflects **HrHsd-*.

9. *rādīx* reflects **u̯rād-*. See IV.D.1.3.2.1 no. 26.

10. *rāpum*, *rāpa* 'turnip, rape' belongs to an etymon which is generally agreed to be a 'Wanderwort' of non-Indo-European origin. The reasons for this are the following:
a. Ablaut *ā/ē/ă*, which cannot stem from IE.: *rāpum*, Lith. *rópė*, OHG. *ruoba* < **raHp-* vs. OCS. *rĕpa*, SCr. *rȅpa* < **reHp-* vs. Gr. ῥάπυς, ῥάφος < **rap-*, *rabh-*.
b. The absence of a prothetic vowel in Greek (Frisk s.v.).
c. The interchange of π/φ in Greek, cf. also ῥάφανος, ῥαφάνη 'radish, cabbage' (see esp. Furnée 1972, 163 and 328, who also compares λάψα, λαψάνη, λαμφάνη).

rāpum cannot therefore be used here.

11. *rārus* 'with wide interstices, far apart' was discussed in section II.B.2.1 no. 5, where it was held that it is possibly

cognate with Lith. *ìrti* 'to dissolve, fall into ruin', OCS. *oriti* 'to dissolve, destroy'. These forms reflect a root **HrH-*. *rārus* may reflect **Hreh$_2$-ro-*, or **HrH-ro-*. In view of OCS. *oriti* < **He/orH-* one could decide upon **HrH-ro-* in order to avoid positing Schwebeablaut, but all this is very weak.

12. *rāvus* 'grey' probably reflects **ghr-*, cf. OHG. *grāo* 'grey' (see IV.E.13.2.3.2.2). The scholarly discussion about the loss of **gh-* before *r* and *l* has a long tradition (see Leumann 1977, 166, Sommer-Pfister 1977, 136). My view is based on the material offered by Leumann. *gradior* cannot be used to prove that **ghr-* became **gr-* because there is no evidence for initial **gh-* (see VI.D.2.1 no. 3). *glaber* clearly reflects **ghl-* in view of OHG. *glat* (see IV.D.1.3.4.1 no 1). The other etymologies are unreliable. On this basis, and in view of the lack of any further material, I tentatively assume that **ghr-* became Latin *r-* in view of *rāvus* and that **ghl-* became *gl-* in view of *glaber*.

The alternative etymology, which connects *rāvus* with OHG. *rāmac* etc., would imply **Hrh$_1$u̯o-* > **rāvus*, but it is less reliable semantically (see IV.E.13 loc. cit.).

Consequently, *rāvus* can probably not be used here.

1.2.3. Lat. *VRVC-* < *HRHC-*

13. *anas* 'duck' can reflect either **h$_2$enh$_2$-t-* (like Lith. *ántis*, SCr. *ùtva* and possibly Germ. **anuþ-*) or **h$_2$nh$_2$-t-* (like Skt. *āti-*). It can therefore not be used here.

14. *animus* (cf. O. *anamum*) was reconstructed as **h$_2$nh$_1$-mo-* by Peters 1980, 2 note 1. However, this is not necessary. It can also reflect **h$_2$enh$_1$-mo-*, or, more likely, **h$_2$nh$_1$-emo-* (see section F.2), on the assumption that it is based on an *m*-stem (Kortlandt 1980b, 127, cf. κόλαμος < **ḱlh$_2$emo-*, Lat. *palma* < **plh$_2$-em-*). It cannot therefore be used.

1.2.4. Lat. *VRC-* < *HRHC-*

15. *anta* 'doorpost' must be compared with Skt. plur. *ā́tās* 'frame of a door' < **HnHt-*, Av. *ąiθyå* 'Türrahmen' < **HenHt-*. Arm. *dr-and* 'threshold', lit. 'door-post', probably reflects **HenHt-* as well (see Beekes 1988a, 77, 78). But in view of Goth. *namo* < **HnHm-*, *raþjo* < **HrHt-* (Beekes 1988a, 100), OIc. *ǫnd* (f. *ā*) 'porch' must reflect full grade **HenHt-*. It is also possible that Lat. *anta* reflects **anatā-* < **h$_2$enHt-*. It cannot be used as strong evidence.

16. The etymology of *arduus* 'high, elevated, lofty, steep' is beset with problems. Leaving aside for the moment the Indo-Iranian and Greek forms, which allegedly point to initial **w-*, *arduus* is clearly cognate with OIr. *ard* 'high' < **ardhu̯o-* and OIc. *ǫrðugr* 'steep' < PGerm. **arðuga-*. The latter form reflects PIE. full grade **Her(H)dhu-* (Hilmarsson 1984, 20 note 4). Furthermore, it shows that the etymon contained PIE. **dh*, not **d* (L.S. Joseph, 1982, 50). This raises a problem for *arduus*, viz. that from **ardhuo-* one would expect **arbuus* (cf. *verbum*, Goth. *waurd* and *lumbus* < **londhuo-*, cf. OHG. *lentin* 'loins'). Forms like **aradhuu̯o-* and **aradheu̯o-* were therefore reconstructed. Phonetically, *arduus* could reflect such a form, but we must see whether these pre-forms are understandable, especially the second **a*. The assumption of a root **HerHdh-* is possible for OIc. *ǫrðugr* < **HerHdh-u-*. OIr. *ard* may continue **HrHdh-uo-* (cf. *ainm* < **HnHmn*, Joseph, op. cit. 51). However, this is not possible for Avestan *ərəðβa-* 'high' because **HrHdhuo-* would yield **arəðβa-* (cf. Av. *arəmō* 'arm', Skt. *īrmá-*). Joseph op. cit. 50 assumes that the second laryngeal was lost, as in *ka-mərəða-*, the Daevic word for 'head' (cf. Skt. *mūrdhán-* 'head' < **mlHdh-*), and *pərəna-* 'full' (cf. Skt. *pūrṇá-* < **plHnó-*). But in the former word the laryngeal could have been lost because it was in a compound, as Joseph himself admits. The latter word is indeed a serious problem, but it differs in one, in my opinion significant, aspect from *ərəðβa-*: *pərəna-* reflects a form that lacks a laryngeal at the *end* of the root, before the suffix, which can be accounted for by assuming a root **pl-* without enlargement **h_1*, to which the word for 'full' may have become attracted. This root **pl-* is not attested, however (On Vedic *píparti*, *piparmás* see Narten 1969, 139 ff., 152 ff.). A similar explanation cannot hold for *ərəðβa-* because this word contains a root-internal laryngeal. Thus, I think that *ərəðβa-* points to **Hrdhuo-*.

Gr. ὀρθός 'straight, upright, in line' is generally claimed to have contained an initial **F*. But Ruijgh 1967, 158, note 135 has shown the weakness of this assumption, and I follow him in rejecting it. "Since a laryngeal would have been lost in the environment **oRHC-* in Greek, ὀρθός tells us nothing about the presence or absence of a laryngeal in this word in Indo-European." (Joseph op. cit. 50; on the Latin evidence for this loss, see V.A.2).

Skt. *ūrdhvá-* 'high' is the only form that seems to support

a reconstruction **HrHdhuo-* (that is, apart from *arduus*). Lubotsky 1988 § 2.69 has claimed that there are cases where **h₃rC-* yielded Skt. *ūrC-*, viz. *ūrj-*, *ūrjā́* 'nourishment, power', if this is cognate with Gr. ὀργή 'seelischer Trieb', and *ūrṇóti* 'to cover, hide', if cognate with *ṛṇóti*. But these examples are not particularly strong. And one would especially want to know why *ūr-* did not develop in *ṛṣvá-* 'high' < **h₃rsu̯ó-* and in *ṛṇóti* < **h₃r-*. Alternatively, one could think of some influence of the root *vardh-* 'make grow', but the details are unclear to me. It may be of interest to note that **-urC-* does not exist in Sanskrit. Would it automatically have become *-ūrC-*?

Thus, we end up with Av. *ərəðβa-*, which cannot continue **HrHdhuo-*, Skt. *ūrdhvá-*, which probably must continue **HrHdhuo-*, and Lat. *arduus*, which, if it reflects **aradhu̯o-*, also points to a root **HrHdh-*. As to *d* in *arduus*, I may mention Dr. Lubotsky's suggestion (p.c.) that *dh* > *b* could have been blocked because *both* preceding *r and* following *u̯* were in direct contact with it, so that a protoform **ardhu̯o-* would be possible after all. This would at least free us from the very awkward assumption of a full grade suffix **eu* and of the internal laryngeal.

One might want to assume that *arduus* etc. reflects an ablauting *u*-stem, in which **HorHdhu- / *HrHdhu-* developed into **Hordhu- / *HrHdhu-*, with loss of the laryngeal after **oR*. But Av. *ərəðβa-* does not reflect full grade **Hordhu-*. One would then have to assume that **Hordhu- /*HrHdhu-* became mixed up and led to the rise of **Hrdhu-* > *ərəðβa-*. The latter implication, which is completely hypothetical, and the implication that the *o*-stem, which is general, is a later post-PIE. innovation, seriously militate against the idea.

Under these circumstances, it is impossible to know for sure whether *arduus* and Olr. *ard* reflect **HrHdh-u̯o-* or **Hrdh-u̯o-*. Here I must be even more agnostic than Joseph op. cit. 51. For the present discussion it may suffice to note that *arduus* is not in a position to contribute to the establishment of the development of *HRHC-* in Latin.

17. *armus* 'arm, shoulder' is cognate with Skt. *īrmá-*, Av. *arəmō* 'arm', OPruss. *irmo* 'arm', Lith. *ìrm-ėdė* 'gout' (lit. 'arm-eating'), which reflect **h₂rH-mo-* (though Avestan may reflect **HerH-*). Full grade **h₂erHmo-* or **h₂orHmo-* (Hamp 1981a, 187-189) is found in SCr. *rȁme*, *rȁmo*, Cz. *rámě* (with PSlav. acute intonation) and in Goth. *arms*, OHG. *aram*. Lat.

armus can reflect **armo-* < **h₂erHmo-* (not **h₂orHmo-*, see II.C.4.5) or **aramo-* < **h₂rH-emo-* (cf. *animus*, section IV.F.2). However, the latter is not supported by any other language. I conclude that *armus* need not reflect **h₂rHmo-*, although it is possible.

1.3. Conclusion

The material is arranged in the following diagram. In the category "unreliable", all words that can reflect *HRHC-* equally well as *HVRHC-* or *HRVHC-* are listed. The labels of the categories characterize the strength of the evidence.

	probable	possible	unreliable
Ră-	3 *rapere* <**h₁rh₁p-*	1 *rabiēs* <**h₁rh₂bh-*?	2 *racēmus*
	5 *ratus* <**Hrh₁to-*	6 *vacāre* <**h₁uh₂k-*?	4 *ratis*
		7 *vannus* <**h₂uh₁ntno-*	
		8 *rādō* <**rasd-* <**HrHs-*	
Rā-			11 *rārus*
			12 *rāvus*
aRa-			13 *anas*
			14 *animus*
			15 *anta*?
			16 *arduus*?
			17 *armus*?
aR-			15 *anta*?
			16 *arduus*?
			17 *armus*?

Although the material is quantitatively limited, it is not conflicting: **HrHC-* and possibly **HuHC-* merged with PIE. **RHC-* and yielded **raC-* and **vaC-*, respectively. There is no evidence for the development of **HNHC-*, where one might expect **HeNHC-* (*anas* < **h₂(e)nh₂-t-*) because of the early vocalization of the syllabic nasals in Italic (see IV.D.2.3.4).

1.4. Celtic

The evidence for the development of **HRHC-* in Celtic is very scanty. L.S. Joseph 1982 mentions three instances:
1. OIr. *ard* < **HrHdhu̯o-*, which was discussed above (no. 16), is unreliable;
2. OIr. *arbor* 'grain' < **h₂rh₃-ur* is, I think, not very re-

liable either because it is possible that in *-*HuV*- the laryngeal was dropped (thus also Ringe 1988);
3. Olr. *ainm* 'name' reflects **HnHmn*. This is apparently correct.

We can probably extend this list:
4. If. W. *rath-u*, Bret. *razh-añ*, Lat. *rādō* reflect a PIE. form, this must be reconstructed as **HrHsd*- (see no. 8 above);
5. If Hamp's etymology of W. *gweilydd* is accepted and its connection with Gr. εὐνις is correct, it must be reconstructed as PBrit. **u̯asi*- < PIE. **h₁uh₂s-i*- (see no. 6 above).

Note that the picture we get in this way (viz. *HrHC*- > *răC*-, *HuHC*- > *u̯ăC*-) fits in well with the developments in Latin. We have no evidence for the development of **HNHC*- in Latin (perhaps *anas*?). Thus, the development of **HRHC*- is no obstacle for the Italo-Celtic hypothesis.

Celtic points to **HNHC*- > *aNC*- and **HLHC*- > *LăC*-. About the intermediate stages one can say the following:

**HnHm*- yields Olr. *ainm*, which is the only example. If we take this form seriously, the following remarks can be made. Since the result of **HnH*- apparently merged with that of **Hn*- (> **an*-), it is likely that the intermediate stage between **HnH*- and *an*- was **Hn*-. It may perhaps be assumed that the second laryngeal was lost by dissimilation. One may wonder why the development of nasals differed from that of liquids and *i*, *u*. Perhaps the answer lies in the chronology of events. It is evident that in Latin the vocalic nasals developed into **en*, **em* earlier than the vocalic liquids developed into **or*, **ol* (see IV.D.2.3.4). If we assume that the same chronology obtained for Celtic, **HNHC*- would have become **HVNHC*- when **HLHC*- was still maintained. Subsequently, **HLHC*- became **LăC*-, a development in which **HVNHC*- < **HNHC*- could not take part. But there is a serious drawback to this picture: if **HNHC*- indeed became **HVNHC*-, one would expect the latter to have become Celt. **aNaC*-, which is not what we find in *ainm*, where the second laryngeal was apparently lost. And it was in order to explain *ainm* that we assumed that *HNHC*- developed differently from *HLHC*-. Thus, one might prefer to see in *ainm* an (incidental) dissimilation of **h₃nh₃mn* to **h₃nmn*, which is not representative for the regular development of **HNHC*- in Celtic. If this is so, there is no argument against the assumption that **HNHC*- became Celt. *NăC*-, just as **HLHC*- became *LăC*-.

**HrHs-dō* and **HuHs*- yielded **rasdō* and **u̯as*-, re-

spectively (in W. *rhathu*, *gweilydd*). Since here the result of **HRH-* merged with that of **RH-* (see IV.D.1.2), it is likely that the intermediate stage between **HRH-* and **Ră-* was **RH-*. One may assume that the second laryngeal was vocalized and that the initial, anteconsonantal laryngeal was lost.

1.5. *HRHC-* and *RHC-*: a synthesis

It appears from section 1.3 that PIE. **HRHC-* yielded Lat. *RăC-*, which means that it merged with *RăC-* from *#RHC-*. Beekes 1988b, 41 notes that the same merger occurred in Germanic (Goth. *namo* 'name' < **HnHm-*, OIc. *magr* 'meagre' < **mh₂kro-*). But it seems that initial **HNHC-* did not yield Celtic **NHC-* because otherwise one cannot explain *a-* in Olr. *ainm*, which might reflect **HnHm-* (contrast Olr. *nathair* < **nHtrik-* and *lainn* < **lHsni-*). However, as was pointed out in 1.4, *ainm* is unreliable. It seems more likely that the regular treatment of **HRHC-* is represented in W. *rhathu* < **HrHsd-* and W. *gweilydd* < **HuHs-ilio-*, if at least these etymologies are correct. If this is accepted, we may summarize the developments in Germanic and Celtic in the following way:

(1) Germanic: **HRHC-* > **RăC-*
**RHC-* > **RăC-*
(2) Celtic: **HRHC-* > **RăC-*
**RHC-* > **RăC-*

Since we have no information on the development of **HNHC-* in Latin, we cannot decide whether it developed as in Germanic or differently.

Beekes assumes that the merger of **HRHC-* and **RHC-* into *RăC-* means that the loss of the initial laryngeal preceded the development of **RHC-* into *RăC-*, which indeed seems to be the most logical explanation. A development **HRHC-* > **HRăC-* cannot, however, be ruled out, despite Beekes' assertion (cf. **sRHC-* > *sRăC-*, not **sRāC-*?). The development of **HRHC-* to **RăC-* may be a common development of Italic, Celtic and Germanic, but it must be borne in mind that we have no clue as to what exactly happened to **HNHC-* in Latin (and Celtic because *ainm* is unreliable).

2. Word-initial *HRHV-*

2.1. Introduction

I have found only three words which can shed light on the development of word-initial **HRHV-*. These are: *animus*,

armus, and *arvum*.

2.2. Material

1. *animus* 'mind, spirit', O. *anamum*, is cognate with Gr. ἄνεμος 'wind', which reflects a root $*h_2enh_1$- 'to blow'. Gr. ἄνεμος could in theory reflect $*h_2onh_1$-*mo*- (Ruijgh 1971). This reconstruction is more likely than $*h_2enh_1$*mo*- because an *o*-grade root is common in derivatives in *-*mo*-. However, as Beekes 1972, 118 pointed out, the latter is not decisive: θερμός, Arm. *jerm* have *e*-grade, and so does Gr. κευθμός; but cf. Lat. *formus*, Av. *garəma*-. "The statement that *e* was typical of the adjective, *o* of the substantive, seems based on this case only and has therefore little value. It is contradicted by the forms with *o*." (p. 118). Beekes concludes "that we must be careful with ablaut grades; what holds good in many cases, need not be true in all" (see *armus* below). One must therefore conclude that $*h_2enh_1mo$- is perhaps less likely, but cannot be ruled out. Other possibilities are $*h_2nh_1mo$- and $*h_2nh_1emo$-.

We may return to $*h_2onh_1mo$-. As regards the colouring of *o* to *a* by contiguous $*h_2$ in Greek, I follow Kortlandt 1980b, 127, who concludes that in $*h_2o$ and $*oh_2$, $*h_2$ merged with $*h_3$ and *o* was not coloured to *a* unless $*h_2$ was restored at a later stage on the model of forms with $*h_2e$, $*eh_2$. Cf. Gr. ἀγός < $*h_2oǵós$, with reintroduction of $*h_2$ from ἄγω < $*h_2eǵ$- etc.

It is perhaps conceivable that in $*h_2onh_1mo$- $*h_2$ was restored on the basis of $*n$-$h_2nh_1(e)m$- > νηνεμία. It is unlikely, however, that this restoration occurred both in Greek and in Italic (where any trace of a model is lacking). Moreover, Ruijgh's reconstruction (as well as Beekes') must probably be rejected because in Latin $*h_2o$ did not yield *a*, not even if there was a good model for restoring $*h_2$ (see II.C.4.5):

1. *ollus*, *uls*, *ultrā* < $*h_2ol$-, cf. *alius* < $*h_2el$-;
2. OLat. *ocris* < $*h_2oḱ$-*ri*-, cf. *acer*-*bus*, Gr. ἄκρις < $*h_2eḱ$-;
3. *uncus* < $*h_2onḱo$-, cf. *ancus* < $*h_2enḱ$-*o*-;
4. *ungulus* < $*h_2ong^w$-, cf. *angulus* < $*h_2eng^w$-.

Since *HRHC- yielded Lat. *RăC*-, not *aRaC*-, it is unlikely that *animus* reflects $*h_2nh_1mo$- (despite Peters 1980, 2).

It seems possible to start from a protoform $*h_2nh_1em$-*o*-, which yielded $*h_2enh_1emo$- > *anemo- > *animus*. The Oscan form underwent syncope: *anemo- > *anmo- > *anamum* (by anaptyxis, Buck 1905, 35).

I conclude that *animus*, Osc. *anamum* cannot reflect *$*h_2onh_1mo$*- or *$*h_2nh_1mo$*- and that *$*h_2enh_1mo$*- was less likely (though not impossible) from the start. It seems most likely that the Italic forms reflect *$*h_2nh_1emo$*-, which also accounts for Greek (thus Kortlandt op. cit.).

2. *armus* 'arm, shoulder' < **aramos* belongs to a root *$*h_2erH$*-. Skt. *īrmá-*, Av. *arəmō*, OPruss. *irmo* 'arm' and Lith. *ìrm-ėdė* 'gout' (lit. 'arm-eating') reflect *$*h_2rHmo$*-. According to Hamp 1981a, 187-189 SCr. *rāme*, Goth. *arms* and Lat. *armus* reflect *$*h_2orHmo$*-. But for Latin this is impossible. As an alternative, one may reconstruct *$*h_2rHemo$*- for Latin, but this explains neither the Germanic nor the Slavic forms. It is therefore likely that one must reconstruct *$*h_2erHmo$*- (thus Beekes 1972, 119 note 4). If this is correct, it cannot be used here.

3. *arvum* < *$*h_2rh_3$*-*eu-o*-(?). See IV.E.3.3 no. 1.

On *anas* < *$*h_2enh_2$*-*t*- see IV.F.1.2.3; on *anta* < *$*h_2(e)nH$*-*teh_2$*- see IV.F.1.2.4; on *hālāre*, *anhēlāre* see II.C. 4.2 no. 36; on *nota* see IV.D.1.3.6.1.

2.3. Conclusion

On the basis of *animus* and *arvum* we may perhaps conclude that **HRHV*- yielded Lat. *VRV*-. Since the conclusion is based on two forms only and neither of these is certain, it must be regarded as tentative.

3. Word-initial *HRHR*-

No examples.

4. Word-initial *HIH*-

4.1. *#HIHC*-

There are two possible examples, viz. *vacuus*, *vacāre* < *$*h_1uh_2$*-*ko*- (IV.F.1.2.1 no. 6) and *iăcĕre*, *iăcēre* < *$*(H)ih_1$*-*k*- (IV.D.1.2.2 no. 1). In both instances, the reconstruction of the initial laryngeal is uncertain. In view of section 4.3., the development of *HIHC*- to *IăC*- is what one would expect.

4.2. *#HIHV*-

No examples.

4.3. *#HIHR-*

The only probable instance is *vannus* < *$*h_2uh_1nt$-no-*, which was discussed in IV.F.1.2.1 no. 7 above. It points to a syllabification *HIH̥RC-*. Had the syllabification been *HIHR̥C-*, *$*h_2uh_1nt$-no-* would probably have yielded *$**h_2uh_1ənt$no-* > **uantno-* (*/C __ CCC*, see VI.E.3).

G. COMPLEX CONSTELLATIONS.

1. Introduction

In spite of the detailed subdivisions made in chapter IV of this book, there remain a number of constellations which are reflected in Latin but have not yet been systematically discussed. Since these remaining constellations are the most complicated ones, there are but few examples. Yet, they are of some importance for the determination of syllabification rules.

The words that are discussed in this section have in common that they reflect a constellation consisting of:
1. four "vocalizable" sounds (*H*, *R*, *I*), or
2. two *I*'s and one *II*.

This distinction is reflected in the presentation. The order of presentation is based on the order of the "vocalizable" sounds *H*, *R*, *I* of which the word consists.
section 2: four "vocalizables":
2.1. *H-*: 2.1.1. *HH-*; 2.1.2. *HR-*; 2.1.3. *III-*;
2.2. *R-*: 2.2.1. *RH-*; 2.2.2. *RR-*; 2.2.3. *RI-*;
2.3. *I-*: 2.3.1. *IH-*; 2.3.2. *IR-*; 2.3.3. *II-*.
section 3: combinations of two *I*'s and one *H*:
3.1. *HII*;
3.2. *IHI*;
3.3. *IIH*.

All Latin words (except *iuvencus*, *iuvenis* and the type *pīus*) which belong in this chapter have been discussed at some length in the preceding sections because they were relevant for the particular problems treated there (e.g. *lāna* < **HulHn-eh₂-*, which is relevant for the development of *CRHC*). Constellations involving a complicated cluster with a word-initial laryngeal are not discussed in chapter II but in the present sections because these constellations always contain an internal laryngeal as well (e.g. *#HRHIV*).

2. Constellations of four "vocalizable" sounds (*H,R,I*)

2.1. *H-*
2.1.1. *HII-*
No material.

2.1.2. *HR-*
2.1.2.1. *HRH-*
The only possible example reflects *HRH /# ___ IV*: *rāvus*

'hoarse' < *$Hr\dot{h}_1uo$-? (IV.E.3.3 no. 9).

2.1.2.2. *HRR-*
No material.

2.1.2.3. *HRI-*
Examples comprise two constellations:
1. *HRI /# __ HC*:
rītus 'rite' < *$h_2r\dot{i}H$-tu-* (or *$h_2rei(H)$-tu-*?) (II.B.2.2 no. 28);
ir-rītāre 'to irritate' < *$h_3r\dot{i}H$-to-* (or *$h_3rei(H)$-to-*?) (II.B.2.3 no. 38);
**rūtus* in *rūta caesa* < *$Hr\dot{u}H$-to-* (IV.E.2.3.2 no. 22).
2. *HRI /# __ HIV*:
rīvus 'brook' < *$h_3r\dot{i}H$-uo-* (or *$h_3rei(H)$-uo-*??) (II.B.2.3 no. 39).

2.1.3. *HI-*
2.1.3.1. *HIH-*
See IV.F.4.3 on *vannus* < *h_2uh_1ntno-* (i.e. *HIH /# __ R*).

2.1.3.2. *HIR-*
One example of *HIR /# __ H*: *lāna* 'wool' < *$Hu\dot{l}Hn$-eh$_2$-* (IV.D.1.3.2.1 no. 19).
One example of *HIR /C ___ IV*: *fīlius* < *dhh_1ilio-* (IV.E.2.4.3 no. 1).

2.1.3.3. *HII-*
The only examples are the cognates *iuvencus* (*HII /# __ HR*) and *iuvenis* (*HII /# __ HV*?).
1. *iuvencus* 'young cow', U. Npl. *iuengar* /*juwengar*/ 'id.' (Meiser 1986, 69), reflect *$h_2i\dot{u}H\dot{n}\acute{k}$-o-* (U. *-eh$_2$-*). Cf. Olr. *óac*, W. *ieuanc*, Bret. *yaouank* 'young' < **iouanko-* < **iuuanko-* (on **uu̯* > *ou̯* in British and Irish see Cowgill 1985, 22, 24). The vocalization of Italic and Celtic is identical to the one found in Skt. *yuvaśá-* 'young ' < *$h_2i\dot{u}H\dot{n}\acute{k}o$-*.
$h_2iuH\dot{n}\acute{k}o$- can be analysed as *h_2iu-* (cf. Lat. *aevum* < *h_2eiu-o-*) + the "Hoffmann-suffix" *-*Hn-* + the suffix *-*$\acute{k}o$-/-*$\acute{k}eh_2$-* (for the Hoffmann-suffix see Hoffmann 1955). According to Rix 1981, 108, the Hoffmann-suffix was *-*h_3n-*. This must probably be rejected on the basis of *iuvencus* because in general the vocalized nasals in Latin were coloured by a preceding laryngeal. Moreover, the participle in *-*mh_1no-* probably contains the same suffix: *-*m*- (verbal noun) + *-*h_1n-* + *-*o*-. In the same way as *h_3ng^wh-i-* yielded *h_3eng^whi-* > *ongwi-* >

unguis 'nail' (see II.D.2.1.5), so **$h_2iuh_3n̥ḱo$-* would be expected to yield **$h_2iuh_3enḱo$-* > **iu̯onḱo-* > **iūncus*. If the suffix was **-h_2n-*, one would probably expect U. ***iuangar* rather than *iuengar*; so what remains is **-h_1n-*, which accounts for both *iuvencus* and *iuengar*.

2. *iuvenis* 'young man' may reflect **h_2iu-h_1en-*, with full grade of the Hoffmann-suffix, but **h_2iu-h_1n-V-* is also possible: **$h_2i̯u̯h_1n$-* > **$(h_2)i̯u̯an$-* > **iu̯an-* (?) > Lat. *iuven-is*. The reason why *-en-* appears instead of **-in-* is obscure.

2.2. *R-*
RH-: No material.
RR-: No material;
RI-: one instance:
RIHIV: *līvēre, līvor* < **(s)liHu̯-V-* (IV.E.2.3.1 no. 4).

2.3. *I-*
No material.

3. Combinations of two *I*'s and one *H*

3.1. *HII*
(See also 2.1.3.3 on *HIIHR*).
3.1.1. *HII /C __ V.*
Two words reflecting this constellation pose related problems. The third and fourth reflect *IHI*, but the problem is the same as for *HII*. They are the following:
1. *pīus* 'pious', probably of the root **pHu-* 'to cleanse, purify' (see IV.E.2.4.4 no. 21). As to *-ī-* (inscriptions and Romance), see WH. and EM. ad locc. Thus: *pīus* < **pHuio-*;
2. *fīō, fīs, fĭeri* 'to happen, become' of the root **bhHu-* (see IV.E.2.4.2 no. 7). The *-ī-* is always long, except sometimes in *fierī* and *fierem* (Sommer 1914, 544). *fiō* may be reconstructed as **bhHuio/e-*;
3. *suf-fiō, -īre* 'to smoke', of the root **dhuH-* (see IV.E.2.3.2 no. 16); the whole form reflects **-dhuHie/o-*;
4. *in-ciēns* 'pregnant' < **-ḱuH-i̯ent-*, cf. Skt. *śváyate* 'swells', Gr. κυέω 'be pregnant' < **ḱuH-eie-*, Skt. *śūná-* 'swollen', *śávīra-* 'powerful' < **ḱ(e)uH-*.

In all four words the radical **-u-* has disappeared, but opinions differ as to the exact reconstruction of the developments.

There are Sabellian cognates of nos. 1. and 2., which likewise present forms that lack the *-u-:
ad 1. O. *PIÍHIÚÍ* 'pio' reflects **pīōi*; U. Nsg. masc. ppp. *PIHAZ*, *pihos* 'piatus' and the imp. fut. *PEHATU*, *pihatu* etc. point to **pē-os*, **pē-āie/o-*. Meiser explains these forms by assuming lowering of *-ī- to *-ē- immediately before back vowels (1986, 48-49). He claims that *-ī- in O. *PIÍHIÚÍ* was taken from the G, Lsg. masc. and the adverb (*-ēd), which had a front vowel in the ending.
ad 2. O. *FIIET*, *FIÍET* 'fiunt' (but cf. U. *FUIA* 'fiat', *FUIEST* 'fiet') must be compared with *fīō*.

Leumann 1977, 187 reconstructs *pīus* as **pu̯ī-i̯os* ("zur Not"), *fīō* as **bhwīyō* (stem **bhw-ī-*, p. 530) and *suffiō* as **dhu̯ii̯ō*. According to Sommer 1914, *pīus* reflects **pu̯-ii̯os* (p. 221), *fīō* reflects **bhu̯-ii̯ō*. We also find *suffiō* < **-dhu̯-ii̯ō* in Sommer-Pfister 1977, 170. WH. reconstruct *pīus* < **pu̯-īi̯os*, *fīō*, *fīs*, *fit* < **bhu̯-ii̯ō*, *-īsi*, *-īti* (a "semithematic" *io/ī*-present, thus apparently also Leumann 1977, 530), *suffiō* < **-dhu̯-ii̯ō* and *inciēns* < **-ku̯-i̯ent-s*. According to EM., *pīus* may reflect **pw-īyos*, and *suffiō* may reflect **-dhw-ī-*. No reconstructions of *fīō* and *inciēns* are given. Thus, we end up with a variety of different reconstructions. The following intends to bring some clarity in the matter.

Thurneysen 1879, 23 assumed that as a result of a sound law, **-ūi̯-* yielded *-īi̯-* in Italic, in which he was recently followed by Meiser 1986, 37 and 53 note 3, who terms the development the *pius*-Gesetz. Accordingly, *pīus* reflects **pūi̯os* < **puHi̯o-* < **pHui̯o-* (with metathesis); *fīō* reflects **fūi̯ō* < **bhuHi̯oH* < **bhHui̯oH-*; *suffiō* reflects **-fūi̯ō* < **-dhuH-ioH*; *inciēns* reflects **-kūi̯ent-* < **-kuH-ient-*.

Since the matter is relevant for a correct understanding of the history of *fīō* and *suf-fiō*, I must explain my position on the history of the fourth conjugation. I believe that the inflectional type *veniō*, *venīs* etc. can be explained on the basis of a fully thematic *ie/io-* rather than a semithematic *ī/io-* inflection (Thurneysen op. cit.). Since I intend to discuss the history of the inflections of *audīre* and *capĕre* elsewhere, I will not go into the matter here, as it falls outside the scope of this book.

In my opinion, there are two possible interpretations of the material, which may be exemplified by **dhuH-*: either **dhuH-ioH*, *-iesi* yielded **dhu̯Hi̯oH* > **dhu̯ii̯ō* > *-fiō* etc. (this development is found in Celtic: OIr. *-biu* 'I am' <

*bhu̯iio̯ < *bhuiō < PIE. *bhHu-ioH); or *dhuH-ioH yielded *dhŭiō > *dhīio̯ > -fiō according to the pius-Gesetz. The four instances must be screened individually.

1. pīus < PIt. *pīos cannot reflect *pu̯-iio̯s < *puH-ios, as this would leave the attested -ī- unexplained. The assumption of a suffix *-īio̯s (< *-iH-io̯s??) cannot be supported because there is no such suffix. Thus, pīus favours the pius-Gesetz. Its etymology, however, is not entirely certain.

2. The vocalization *bhu̯-iio̯ō (< *bhuH-iō or *bhHu-iō) explains fīs < *fīsi < *fu̯iesi; *fīt < *fīti < *fu̯ieti; fīmus, fītis etc., but does not explain -ī- in fīō, fīunt. Here -ī- may have been introduced from the other persons, but, as Leumann 1977, 530 remarks, nothing comparable happened to scĭō, scīs, *scīt, scīmus, scītis, scĭunt (though this is not decisive). Note that Celtic points to *bhu̯iio̯e/o- (Olr. biuu, W. byddaf, Bret. bezan < *biio̯e/o-). Thus, fīō cannot be claimed to favour either of the two theories. The -u- of U. FUIA, FUIEST is enigmatic (the forms may have been based on the stem *fŭ- (cf. Lat. fŏre, fūī).

3. suf-fiō can be explained on the basis of both *dhuHioH > *dhu̯iio̯ō > -fiō and *dhuHioH > *dhūio̯ō > *-fīō > -fiō. As to the expected shortening of antevocalic -ī-, which took place in suffiō, suffiunt, but not in pīus and fīō, Sommer 1914, 530 points to the fact that -ī- is found in a syllable that was stressed by the early initial accent, which may have caused the preservation of the old quantity.

4. inciēns can be explained on the basis of both *ḱuHient- > *ḱu̯iio̯ent- > -ciens and of *ḱuHient- > *ḱūio̯ent > -ciens.

In view of the long ī in pīus and fīō, fīunt I am inclined to accept the pius-Gesetz proposed by Thurneysen. It is possible that *CuHiV- yielded *Cūio̯V-, in other words, that *CuHiV- was treated like *CVHiV- (cf. lēvis < *leh₁iu-, clāvus < *kleh₂uo-), but there are other possibilities (e.g. *puHio- > *puio̯i(io̯)o- > *pŭīo- > pīus? *puHio- > *piHio̯io̯- > pīus?)

3.1.2. *HII /V __ C*

lēvis probably replaces *lēio̯us < *leh₁ius (IV.E.7.3.1.1 no. 2).

3.1.3. *HII /V __ V*
ob-līvīscor < **leh₁iu̯-*? (IV.E.7.3.1.1 no. 2).

3.2. *IHI*
See 3.1.1 no. 3 for *suf-fiō* < **-dhuHioH*.
See 2.1.2.3 no. 2 for *rīvus* < **h₃riHuo-* (?).
#IHIC: *vītis* < **u̯iHti-* < **u̯Hi-ti-*? (IV.E.2.4.3 no. 12).
#IHIV: *viēre* < **u̯iH-* < **u̯Hi-*? (IV.E.2.4.3 no. 12).

3.3. *IIH*
3.3.1. *IIII /C __ C*
1. *spūtus* < **sp(i)u̯H-to-*? (IV.E.2.4.4 no. 22);
2. *sūtus* < **s(i)u̯H-to-*? (IV.E.2.4.4 no. 23).
Both are uncertain. Perhaps **siuH-* > **suuH-*, cf. **puHio-* > *piHio-*??

3.3.2. *IIH /# __ C*
1. *in-vītus, -vītāre* < **-u̯iH-to-* (IV.E.2.3.1 no. 3);
2. *iūbilāre* < **i̯uHb(h)-*?? (IV.E.2.3.2 no. 17);
3. *iūs* < **i̯uH-s-* (IV.E.2.3.2 no. 18);
4. *vīnum* < **u̯iH-no-*? (IV.E.2.3.1 no. 9);
5. *vīrus* < **u̯iH-so-* (IV.E.2.3.1 no. 10);
6. *vīs* < **u̯iH-s* (or **u̯eiH-s*??) (IV.E.2.3.1 no. 11).

See 2.1.3.3 for *IIH /H __ R*.

V. ADDITIONAL PROBLEMS

A. LOSS OF LARYNGEALS

1. Introduction

The subject of this section are the conditions under which a laryngeal was lost, i.e. *H > ø, as far as this is relevant for the Latin material. Three different constellations will be illustrated with Latin examples: the loss of a laryngeal in a constellation *-*oRH*- (section 2); the loss of a laryngeal in composition (section 3); the loss of a laryngeal between stops in a non-initial syllable (section 4). Instances are rare, and the material of 3 and 4 partly overlaps.

2. Loss of the laryngeal in PIE. *-*oRH*-

Ever since De Saussure (*Mélanges Nicole*, 1905, p. 511) it has been thought that after an *o*-grade a PIE. laryngeal was not vocalized. The instances that appear in the literature generally reflect a constellation *-*oRH*-, which yielded -*oR*-. The Greek material was discussed by Beekes 1969, 238-242. It has been claimed that the loss of the laryngeal dates from PIE.

As far as I know, there are three Latin instances that point to the loss of a laryngeal in this environment.

1. *collis* 'hill' reflects **kolni*- < **kolH-n*-, cf. the nasal present -*cellĕre* 'to raise oneself' < **kel-n-H* (see V.D.3.2 no. 2). The laryngeal is reflected in the acute intonation of Lith. *kélti*, Latv. *cẽlt* 'to lift' < **kelH*- and of Lith. *kálnas*, Latv. *kãlns* 'hill' < **kolH-no*-. The latter may be directly compared with Lat. *collis*. The *n*-stem reflected in Baltic and Latin is also found in Gr. κολωνός, κολώνη 'hill' < **kolH-ōn*- and Goth. *hallus* 'rock' < **kolH-n-u*-, OE. *hyll* 'hill' < **klH-n-i*-, which in view of the ablaut and the variety of suffixes after the -*n*- point to a PIE. *n*-stem **kolH-ōn*, G. **klHn-os*.

Lat. *collis* cannot reflect syncopated **kolani*- because this would yield **colnis* (cf. *ulna* < **olena*) and, moreover, syncope did not affect trisyllabic words with a short vowel in the final syllable (Pedersen 1922). Thus, it must reflect **kolni*- < **kolHn*-, in which the laryngeal was lost at an early stage. Compare *columen* 'top, summit' < **kelamen* < **kelH-mn*, which has vocalized the laryngeal. The synonymous form *culmen*

must in origin be identical with *columen*. In my opinion, it arose in the quadrisyllabic oblique case forms, where the second syllable was regularly syncopated. On the basis of these forms a new NAsg. *culmen* was created.

2. *culmus* 'stubble, stem (of wheat)' is cognate with OHG. *halm*, Latv. *salms* (with acute intonation, AP. 1), Russ. *solóma*, SCr. *slàma* 'id.' (AP. a) < **ḱolH-m-*. In view of Gr. καλάμη 'stubble', κάλαμος 'reed' < **ḱlh₂-em-* we must reconstruct a PIE. *m*-stem. In principle, *culmus* could reflect syncopated **kolamos* (Mayrhofer 1987, 102 note 66), but syncope does not normally affect trisyllables with a short vowel in the final syllable. One might assume that the syncopated stem, which regularly arose before an ending in a long vowel (DAbl. *culmō*, G. *culmī*, Npl. *culmī*), was generalized throughout the paradigm, but I know of no other *o*-stem in which this was evidently the case (cf. *animus*, *molitus*, *vomitus*, *super*, *-um* etc., *asinus*, *fraxinus*, *anhēlus* etc.); the only possible exception is *palmus* < **palamos*, but here syncope might have been generalized under the influence of *palma* < **palamā-*, *palmes* < **palamet-*. *ornus* < **orinos* < **osenos* 'ash' probably owes the loss of the vowel to the special treatment of *-ri-*, cf. **tris* > **trs* (> *ter*). It thus seems likely that in *culmus* the laryngeal was never vocalized.

3. In view of Skt. *ūdhar*, OE. OS. *ūder*, OHG. *ūtar*, the root of Lat. *ūber* 'udder' must be reconstructed as **HuHdh-*. As **HuHdh-* would probably have yielded Lat. **vad-* (see IV.F.1.2.1 no. 6. *vacāre* and 7. *vannus*), *ūber* most likely reflects a full grade **HouHdh-*, which is attested in Gr. οὐθαρ. In the latter form, the second laryngeal was obviously lost, otherwise **ou̯a-*, **ou̯e-* or **ou̯o-* would have been expected, depending on the quality of the laryngeal. The same loss probably occurred in Latin, if we accept the argument that in a constellation *-VuHC-* a laryngeal was normally vocalized (cf. *cūdō* < **koud-* < **kouad-* < **kouadh-* < **keuHdh-*, where the fact that **-dh-* did not become *-b-* indicates that originally there was an intermediate vowel between **-u-* and **-dh-*; see IV.E.7.3.2.1 no. 1). The laryngeal in the proto-form of *ūber* was obviously lost before the purely Latin development of **dh* to *b* after *u* took place. Thus, *ūber* < **oudh-* < **Houdh-* < **HouHdh-* is the third Latin instance where a laryngeal was lost after *o*-grade if the intervening consonant was a resonant.

One might want to avoid positing the loss of a laryngeal

after *o*-grade altogether by assuming that within the paradigm the root-form in which the laryngeal was regularly lost (before a vowel) was generalized throughout the inflection. In this way one could assume that in a paradigm **kolH-ōn*, G. **k(o)lH-n-os* > **kol-ōn*, **k(o)lH-n-os*, the form **kol-* was generalized, which would lead to a Gsg. **k(o)l-n-os*. In my opinion, this suggestion does not carry much conviction because it does not explain why the loss of the laryngeal is limited to the position after *o*-grade (not only in Latin, but also in Greek), nor does it explain *ūber* and οὖθαρ, where one does not find **HouHdh-* alternating with **H(o)uHedh-*.

It is true that the phonetic motivation for the development seems conspicuously absent (thus Beekes 1988a, 72). Despite the limited number of examples the loss of the laryngeal after *o*-grade appears to be descriptively adequate, however. The relation of *o*-vocalism to the loss of a following laryngeal is admittedly obscure, and it therefore seems more likely that we must search for a third member of comparison, e.g. something that governs both *o*-vocalism and laryngeal loss (or something more intricate). Since we do not yet understand why and how *o*-vocalism arose in PIE., this third member is perhaps still to be found.

Remarkably, Lith. *kálnas*, Latv. *kalns* and Latv. *salms*, Russ. *solóma* have acute intonation and indicate that the laryngeal was present up to a relatively late stage. Perhaps the laryngeal was reintroduced (in *kálnas* after *kélti*), but this would not solve Latv. *salms*, Russ. *solóma*. We may consequently assume either that the loss of **-H-* in **-oRH-* was a dialectal development in PIE. (which is unlikely, as Italic and Greek do not seem to have shared any other innovations), or that the laryngeal was not primarily lost after *o*-grade in PIE. but rather remained consonantal at that stage and was subsequently lost, at least in Greek and Latin, but remained as an intonational feature in Balto-Slavic. Since a detailed investigation of the Balto-Slavic evidence would lead us too far from the actual subject of this book, the matter cannot be pursued.

3. Loss of the laryngeal in composition

It has often been assumed that a PIE. laryngeal is lost in the second member of a compound, including reduplicated forms (e.g. Kuryłowicz 1956, 172, 197 f., Beekes 1969, 242 ff., Mayrhofer 1986, 129, 140). Most examples derive from Indo-Iranian, e.g. Skt. *kīrtí-* : *carkṛtí-*, *stīrṇá-* : *á-stṛta-*, and some

from Greek, e.g. γίγνομαι, not **γιγαν-, νεο-γνός, not **-γανος, of the root *ǵenh$_1$- (cf. no. 3 for examples from Gaulish and Gothic). Four instances can be claimed for Latin.

1. *Cōnsus*, Gsg. *-ī* 'altrömischer Gott des Ackerbaus, unter dessen Schutz das Bergen der Feldfrucht stand' (WH.). The semantically attractive connection with *condĕre* 'to put away, lay up for store', *condĭta* 'laid up store' < **kom-dhh$_1$-* stems from Osthoff. *Cōnsus* may then be reconstructed as **kom-dto-* < **kom-dhh$_1$-to-*, lit. 'the hidden one' (note that the altar erected in his dedication was situated below ground level), with loss of the laryngeal between stops. The derivative *Cōnsuālia* presupposes an *u*-stem **kom-dhh$_1$-tu-* 'hiding'. This etymology implies that *-ĭ-* < **-ă-* < **-H-* in *condītus* and in the ppp. of other compounds of **dhh$_1$-* and **dh$_3$-* is due to restoration of the laryngeal on the basis of the simplex.

The etymology appears to be accepted by WH., but not by EM., probably because of the formal problem.

The loss of **H* in *Cōnsus* is usually compared with the Vedic type *devá-tta-* 'given by the gods' < **-dto-* < **-dh$_3$to-* (WH.). Note that since the laryngeal was located between stops in a non-initial syllable, the word may belong in section 4.

2. *cognītus* perhaps reflects **cognătos* < **gnaH-to-* (loss of **-H-*) < **gnh$_3$-to-*, but other explanations are possible (e.g. a vocalization **-gn̥h$_3$-to-* in composition, or an original form **-ǵnh$_3$-et(o)-* > **-genoto-* > **-gnoto-* (syncope) > *-gnītus*). See IV.D.1.3.6.2.

3. A number of forms of the root **ǵenh$_1$-* 'to engender' seem to have lost the laryngeal at a very early stage. The comparison of Gr. νεο-γνός, Goth. *niu-klahs* < **kna-ha-* (not **-kuna-*) and Gaul. *Truti-knos* (and many other names in *-knos*, *-gnos*) with Lat. *prīvī-gnus*, *benī-gnus*, *malī-gnus* points to the loss of the laryngeal in PIE. already. (**-ǵnh$_1$-os* would have yielded Italic **-genos*; in **benigenos* the vowel of the second syllable would have been syncopated).

However, Lat. *gignĕre* 'to engender' does not by itself point to the loss of **-h$_1$-*: it may reflect **gigene/o-* (with syncope) < **gignh$_1$e/o-*. Gr. γίγνομαι has clearly lost the laryngeal at an early stage, and the extrapolation to Latin may point to loss in PIE. already.

It has been claimed that these forms reflect a PIE. root **ǵen-* (beside enlarged **ǵenh$_1$-*), which is allegedly supported by

a number of Latin forms in which the reflex of a laryngeal is missing outside composition and reduplicated forms (e.g. Cowgill 1965, 148). However, it seems that these forms can be explained differently.

germen 'seed' < **genmen* may reflect syncopated **genamen* < **ǵenh₁-mn* (Mayrhofer 1987, 101, also on Ved. *jánman-*, *jániman-*). As syncope does not normally occur in trisyllabic words with a short vowel in the final syllable, the syncopated form was probably introduced from the quadrisyllabic oblique cases (cf. *culmen*, *columen* in section 2 s.v. no. 1. *collis*).

gēns (f., *i*) 'clan, family, progeny, race, nation, people' reflects **gen-ti-*. If it had contained the root **ǵenh₁-*, one would expect **gena-ti-* > **geneti-* or **geniti-*. It is unlikely that the medial vowel would have been syncopated, given the fact that the final syllable contains a short vowel in most case forms. Thus, *gēns* seems to prove a root **ǵen-*. Note, however, that the PIE. *ti*-formation of this root is reflected in Lat. *nāti-ō* < **ǵnh₁-ti-*. In view of *nātiō* and the aberrant root shape of *gēns*, it is likely that *gēns* reflects a relatively recent formation (thus EM. s.v.), cf. *pars* < **par-ti-*, based on the verbal stem *par-* < **prh₃-V-* (see IV.D.1.3.5.2). *gēns* does not therefore provide strong evidence for a PIE. root form **ǵen-* beside **ǵenh₁-*.

4. *vici-ssim* 'mutually', a compound of *vicis* 'turn', has been explained as **viki-dtim* < **-dh₃t-im* 'given, giving in turn' (Brugmann 1901, 182; thus also Schmidt 1973, 48), cf. Skt. *bhága-tti-* 'lucky gift'. The etymology is perhaps not compelling but other attempts at an explanation are less convincing: shortened form of **vicissātim* id. (Solmsen; the analysis of the latter remains obscure); haplology of *vice-cessim* (cf. *cēdere* 'to yield', Lagerkrantz, also Leumann 1977, 234). See WH. s.v. *vicis*. *vicissim* may rather belong in section 4.

Since *Cōnsus* and *vicissim* may belong in the next section (**-H-* between stops), *cognītus* is open to different interpretations and *gignĕre* may reflect syncopated **gigen-*, the compounds in *-gnus* are the only instances for which early loss of the laryngeal can be independently demonstrated.

4. Laryngeal between stops in a non-initial syllable

According to Schmidt 1973 and Mayrhofer 1986, 137-138, the development of a laryngeal between stops in a medial syl-

lable differs from that of a laryngeal in other positions. Mayrhofer claimed that *-*H*- developed into *-H_e- (as opposed to *-$_eH$- in other positions) and that *-H_e- was vocalized in some languages (e.g. Greek and Tocharian) and dropped in others (e.g. Germanic, Armenian and Baltic). One of the few examples that he adduced is the word for 'daughter', PIE. *$dhuǵh_2tēr$, which yielded Gr. θυγάτηρ, Toch. B *tkācer*, Arm. *dowstr*, OHG. *tohter*, Lith. *duktẽ*.

Mayrhofer's account of the development is open to dispute. It presupposes that the roots of the development go back to PIE. (his *-H_e-), whereas it seems that since the results in the various languages differ, the development rather belongs to the post-PIE. period. Furthermore, the assumption that the vowel was dropped in *-H_e- but not in *-$_eH$- calls for special pleading. Besides, it may be contended that the loss of the laryngeal in *$dhuǵh_2tēr$ in various languages has nothing to do with the environment set up by Schmidt and Mayrhofer. The loss in Germanic, Baltic and Iranian requires no special rules, and is regular on all counts. As to Armenian, the rules for the vocalization of a laryngeal in a medial syllable are not yet absolutely clear, but it seems that a laryngeal in medial syllables was only vocalized before a consonant-cluster (Beekes 1988a, 77). Thus, it seems that the loss of the laryngeal in the Armenian reflex of 'daughter' is regular and does not require a special rule governing the development between stops.

The actual proof for the theory that a laryngeal between stops was lost at some stage must come from languages that normally vocalize a word-internal laryngeal. One of these languages is Latin: cf. *genitor* < *$ǵenh_1tōr$, *prōsper* < *-sph_1ro-, *anas* < *h_2enh_2-*t*-, *cerebrum* < *$ḱerh_2sro$-, perhaps *ianitrīcēs* < *$ienh_2tr$-, *temerē* < *$temHso$-, and the verbs *molĕre*, *sonĕre*, *vomĕre* (see IV.B.1.4 passim).

I have come across four instances in which a laryngeal may have been lost between stops in a medial syllable, but there is some interference with the type of loss discussed in 3.

The strongest instance does not come from Latin but from Oscan.

1. O. *FUTÍR*, Dsg. *FUTREÍ*, *FUUTREÍ* 'daughter' reflects *$fuxt(ē)r$ < *$fukt(ē)r$ < *$fugt(ē)r$ < *$dhuǵh_2t(ē)r$, cf. Gr. θυγάτηρ, Skt. *duhitár*- (cf. also Steinbauer 1989, 242 note 20, who gives the same reconstruction but does not specify the conditions for the loss of *H). See also IV.B.1.5.1 below for a less convincing explanation.

Gaulish *duxtir* 'daughter' (Larzac) also has lost $*h_2$, which Prof. K.R. McCone attributes to the position of the laryngeal between stops (lecture during the Maynooth summer school, 1989).

In Latin there are three possible instances.

2. *Cōnsus* < **kom-dhh$_1$to-*. See section 3. above.

3. *passus*, the ppp. of *pandō* 'to spread', and *passim* reflect a root **peth$_2$-*, cf. Gr. πίτνημι, πέτασσε 'to spread, open'. For an explanation of the *-a-* I refer to VI.E.4. However, since *-a-* in *passus* was probably taken from the present, the form need not be old (it may have been based on the model *scindō*, *scissus*, *findō*, *fissus*). If *passus* is an innovation, we are still left with *passim* < **p(V)th$_2$-ti-*. Thus, a reconstruction *passus* < **patto-* < **pVth$_2$-to-*, and *passim* < **pVth$_2$-ti-*, with loss of the laryngeal between stops, is probable.

4. *vicissim* < **-dh$_1$ti-* ? (See section 3 above).

We may now evaluate the material. O. *FUTÍR* and Gaul. *duxtir* are clearly the most impressive examples. They point to the loss of the laryngeal, clearly after the PIE. period, and perhaps as a shared, i.e. Italo-Celtic, development. It seems possible that the loss was conditioned by the adjacent stops. The phonetic explanation may be that with the articulatory and acoustic energy decreasing towards the end of the word and with the flow of air in *-THT-* being interrupted twice by the stops, the "vocalizable" laryngeal in a medial syllable did not develop into the vowel *-a-* but remained as a stop *?*, which was lost. If this is correct, the accent must at the time have been a fixed initial stress-accent or a free pitch-accent.

The other forms are at best corroborative only: *Cōnsus* is a name and therefore lacks an important component for finding its etymology, although in this case we can make a reasonable assumption. If it reflects **kom-dhh$_1$to-*, it may belong to the type *devátta-*, with PIE. loss of **H* in a compound, rather than to the type *FUTÍR*/*duxtir*. The same alternative is available for *vicissim*, which has no absolutely convincing etymology either.

passus and *passim* seem to be reasonable instances, but they belong to a Latin etymon beset with problems and may be relatively recent forms that were built on the present.

It may be noted that there seems to be no convincing counterevidence against a development **CVTHT-* > **CVTT-*.

conditus, the ppp. of *condĕre*, and similar cases may have restored the laryngeal after the simplex.

I conclude that there is some evidence which indicates that a laryngeal between stops in a medial syllable was lost without a trace; and that this loss may be a shared development of Italic and Celtic, if it is not older.

B. THE SHORTENING OF PRETONIC LONG VOWELS IN ITALIC, CELTIC, AND GERMANIC

1. Introduction

In 1961, an article by V.A. Dybo appeared which was based on two striking observations: first, that many roots have an alternation between a short and a long vowel. Second, that an extensive part of the words with a short root variant belongs to the western part of the Indo-European area, i.e. Italic, Celtic, and Germanic; and in corresponding words, the Italic short root variant coincides with the Celtic one, while Germanic coincides in the case of roots ending in an intervocalic resonant, e.g. Lat. *vir*, OIr. *fer*, Goth. *wair*, but Skt. *vīrá-*, Lith. *výras*; Lat. *cŭtis*, W. *cwd*, but OHG. *hūt*, Gr. σκῦτος; Lat. *fūtūrus*, OIr. *ro·both*, but Skt. *bhūtá-*, Lith. *bū́tas*. Starting from this observation, he published a list of material (taken from Pokorny's IEW.) showing that long vowels as found in Greek, Sanskrit, and Baltic, and reconstructed for Slavic, were shortened in Italo-Celtic before the PIE. accent. The same development was claimed to have occurred in Germanic, but only before a resonant. On cases where Greek and Sanskrit contradicted the reconstruction of the Italo-Celtic and Germanic accent, Dybo based his assumption that the latter languages, together with Balto-Slavic, represented an older stage of accentuation. Thus, Dybo reconstructed barytone **dhúHmos* in order to account for the long vowel in Lat. *fūmus*, in spite of Skt. *dhūmá-* and Gr. θῦμός.

Illič-Svityč (1962) accepted Dybo's theory of pretonic shortening in Italo-Celtic and Germanic. However, he raised objections to Dybo's assumption that Italo-Celtic, Germanic and Balto-Slavic represented an older stage of accentuation than Greek and Sanskrit, on the grounds that it is impossible to explain how the latter languages would have deviated. He maintained that the Greek and Sanskrit accentual system was closest to that of PIE., and devised an elaborate system of PIE. intonational oppositions on the root vowel, from which the Italo-Celtic, Germanic and Balto-Slavic accent could be derived by retraction of the stress (which would e.g. generate the root stress of **dhúHmo-* needed to explain *fūmus*; see also Kortlandt 1981, 12 ff.).

Kortlandt (1981) also accepted Dybo's theory of pretonic shortening and agreed with Illič-Svityč's criticism of the supposed archaic western and northern Indo-European accentuation. How-

ever, Kortlandt disagreed with Illič-Svytič's theory of stress retraction in Italo-Celtic (for his discussion see 1981, pp. 14-15). As an alternative, he posited a relative chronology that would explain the facts without having to assume an accentuation that deviated from that of Sanskrit and Greek. This relative chronology would show "that the pretonic long vowels that have been preserved had not yet arisen at the time when the shortening operated" (p. 13). Thus, Kortlandt assumes:

1. *VH* > *V* (*V* = PIE. **e*, **o*)
2. *V̄* > *V̌* /_ ´ (where ´ denotes the PIE. accent)
3. *iH*, *uH* > *ī*, *ū*
   RH > *Rā*

In this way, the preservation of the long vowel in *fūmus* < **dhuHmó-* would be regular.

According to Dybo, long *r̥̄*, *l̥̄*, *n̥̄* and *m̥̄*, which regularly yielded Lat. and Celtic *rā*, *lā*, *nā* and *mā*, could also be shortened, the result of which was allegedly *ar*, *al* (examples of the nasals are lacking). However, the examples which Dybo gives are extremely doubtful and allow a different interpretation. Olr. *com-alnathar* 'fills' < **pl-n-H-*, *at-baill* 'dies' < **g^{w}l-n-H-* do not reflect *RH*. W. *sarn* 'litter', W. *darn* 'share' were probably based on the nasal presents **str-n-H-*, **dr-n-H-* (thus Joseph 1982, 47, 48); W. *dala*, Bret. *dalc'h* 'to hold' does not have a reliable etymology; Olr. *bard*, W. *bardd* 'bard' is too obscure to be used; Olr. *cairem* 'shoemaker' may reflect **krp-* (cf. OIc. *hrifling*); Lat. *carpisculum* 'kind of shoe' is probably a loan from Greek; Lat. *cartilāgō* 'cartilage' does not have a reliable etymology (cf. *crātis* 'basket'?); Lat. *arduus*, Olr. *ard* 'high' is too uncertain. Besides, **r̥̄* > *rā* etc. must nowadays be read as **rH* > *rā*. If Dybo's shortening entailed the loss of the laryngeal, **rH* should be reflected as **r̥*, which would not work for *dala/dalc'h*, *bard/bardd*, *carpisculum*, *cartilāgō*. If, on the other hand, shortening affected the stage *rā*, one would expect to find Italic and Celtic *-ră-*, which would not explain any of the forms. Moreover, Olr. *lán*, W. *llawn* 'full' < **plh$_1$nó-*, cf. Skt. *pūrṇá-*, Olr. *gnáth*, W. *gnawd* 'accustomed' < **ǵnh$_3$tó-*, cf. Gr. γνωτός and Lat. *nātus*, *grātus*, *lātus*, *strātus* and *plānus* (see IV.D.1.3.2.1) show that pretonic **RH* > *Rā* was not subject to shortening at any stage. Thus, Kortlandt's chronology can in this respect be wholly subscribed.

Kortlandt's rules imply that long *ī*, *ū* < **iH*, **uH* were preserved. In those cases where *ī* and *ū* seem to have been

shortened, the short vowel is, according to Kortlandt, due to the fact that here the laryngeal originally preceded *i* and *u*. Kortlandt obtains the evidence for this reconstruction mainly from Balto-Slavic: the final accentuation of Russ. *žilá* 'lived' (fem.) and the broken tone (as opposed to sustained tone ˜) of Latv. *dzîvs* 'living' show that retraction of the accent according to Hirt's law did not take place in these forms. The reason must be sought in the original position of the laryngeal: *žilá* and *dzîvs* do not reflect original **g^{w}iHláH* and **g^{w}iHuós* (where the accent would have been retracted according to Hirt's law) but **g^{w}HiláH* and **g^{w}Hiuós*. For the details I refer to the section on **HI* in Latin, IV.E.2, esp. 2.1 and 2.4, and to the Appendix section 2 (on Celtic), where Dybo's material is discussed. As to Latin and Celtic, there is some evidence that pretonic **-Hi-*, **-Hu-* (according to the PIE. accent) yielded *-ĭ-*, *-ŭ-*. Thus, I agree with Kortlandt that pretonic **HI* yielded Italic and Celtic *ĭ*, *ŭ*, not as a result of Dybo's rule of shortening but as a result of the loss of the laryngeal.

The rules governing the development of **-Hi-*, **-Hu-* explain an extensive part of Dybo's material but, as Kortlandt concluded, a number of instances remain: in some words PIE. **eH*, **oH*, **iH*, **uH* are reflected as *ĕ*, *ŏ*, *ă*, *ĭ*, *ŭ*. As was noted above, Kortlandt assumed that **iH*, **uH* > **ī*, **ū* were not subject to pretonic shortening in Italic and Celtic. I cannot agree on this point because in my opinion Lat. *vir*, Olr. *fer* cannot be explained in any other way, as we will see below.

Summing up, I accept Kortlandt's claims that *RH* > *Rā* was not liable to pretonic shortening and that a large number of instances of *ĭ*, *ŭ* adduced by Dybo actually reflect **Hi*, **Hu* and have nothing to do with pretonic shortening. However, I do not agree with Kortlandt that *ī*, *ū* < **iH*, *uH* were exempt from shortening.

The purpose of the present section is to screen Dybo's material excluding the instances containing *RH* and *Hi*, *Hu*, in order to see whether there is any evidence for shortening. If so, two questions arise:

1. Did shortening obtain in (PIE.) pretonic position.
2. Did the Italic and Celtic development differ from the Germanic one in that in the latter shortening only occurred before a resonant but in the former two before any consonant.

Furthermore, Kortlandt's claim that **iH* and **uH* were not shortened in Italo-Celtic will be investigated.

2. Outline

All material adduced by Dybo as evidence for pretonic shortening will be presented except those cases in which PIE. **HI* has a short reflex in Italic and Celtic, which are discussed elsewhere (IV.E.2 and Appendix 2). This leaves the short reflexes of PIE. **eH*, **oH*, **iH*, **uH* > **ē*, **ā*, **ō*, **ī*, **ū* and of lengthened grades, and, only for Germanic, short reflexes of **HI* (see 5).

Dybo's material will be split up according to language. Section 3 deals with Latin, section 4 with Celtic, and section 5 with Germanic. A final conclusion will be drawn in section 6.

3. Shortening in Latin

In 3.1 the evidence for the shortening of **ē*, **ō*, **ā* is discussed; in 3.2 that of **ī*, **ū* < **iH*, **uH*. Section 3.3 gives a few examples of stressed long vowels. The counterevidence is discussed in 3.4. Section 3.5 offers an evaluation.

3.1. Shortening of **ē*, **ā*, **ō*

1. *ferus* 'wild', *fera* 'wild animal' is cognate with Gr. θήρ, G. θηρός 'animal' and with Lith. *žvėrìs*, Npl. *žvėrys*, Gpl. *žvėrų̃*, Latv. *zvẽrs*, Sln. *zvȇr* 'animal'. The acute intonation of the Lith. Npl. and the broken tone of Latvian point to AP. 3 and to PIE. **-eh₁-*. The intonation of Sin. *zvȇr* does not show the reflex of the laryngeal because of the operation of Meillet's law in mobile paradigms (i.e. Slavic c corresponding with Baltic acute 3). The Greek form must in view of Baltic reflect **ǵhueh₁r-*. The short vowel of Lat. *fĕrus* cannot be explained on the basis of this root unless we assume an ad hoc form **ǵhuh₁er-*. It seems preferable to regard *ferus* as shortened from **ǵhuēro-* < **ǵhueh₁ro-*. The accentuation of the latter (which is a post-PIE. form) is unknown, but oxytonesis seems likely.

2. *frĕtum* 'strait, channel, raging, swelling', *frĕtāle* 'frying pan' probably reflect **bhr-eto-*, cf. the formation of Gr. νιφετός (see IV.E.3.3 no. 6). The assumption that *frētum* reflects **bhrēto-* < **bhreh₁to-* is possible but in no way compelling.

3. Dybo reconstructs *co-gnĭtus* < **-gnõtos* < **-gnōtos* (i.e. **-ǵneh₃to-*). If this form indeed contains the *to*-participle of **ǵneh₃-*, one expects PIE. zero grade of the root (cf. Goth. *kunþs*; Skt. *jñātá-* has (secondary) full grade, Gr. γνωτός and

Olr. *gnáth*, W. *gnawd* are ambiguous). The full grade that is allegedly attested in *-gnītus* must have been secondary, perhaps taken from *nōscō*, *nōvī* or the supinum *nōtum*. However, the ppp. *nōtus* of *nōscō* does not have a shortened vowel, although according to Dybo it reflects the same proto-form as *-gnītus*, which turns the whole idea that *-gnītus* reflects **-gnōtos* unlikely. Nor can it reflect **-ǵnh₃tós* > **-gnātos* because *RH* > *Rā* was not liable to shortening. It is thus very doubtful that the form can be used as evidence for pretonic shortening. For alternative suggestions to explain *-gnītus* see IV.D.1.3.6.2.

4. *lăbāre* 'to slip, fall' vs. *lābī* 'to slip' < **(s)l(e)h₂b-*. The short vowel of *lăbāre* need not be explained by shortening because it most likely reflects the regular development of zero grade **(s)lh₂b-* (vs. full grade in *lābī* < **sleh₂b-*), cf. *dĭcāre*, *dīcere*, *-dŭcāre*, *dūcere* (see IV.D.1.2.2 no. 2).

5. *mŏlestus* 'troublesome' is cognate with *mōlēs* 'mass', *mōlīrī* 'to make an effort'. If the root was **moH-* (cf. OHG. *muoan* 'to tire'), *mŏlestus* must reflect shortened **moHl-es-*. The reconstruction is not compelling, however, and Lat. *mōl-*, *mŏl-* may simply reflect PIE. quantitative ablaut **mōl-*, **mŏl-* (see IV.C.1.3.1 no. 4). Compare *sēdēs* (h_1-stem based on the lengthened grade of a root noun), *sēdāre* (based on the root noun), *sĕdēre* (full grade **sed-*). Thus, *mŏlestus* is at best a possible case of shortening.

6. *nŏta* 'mark, sign' < **gnōta* < **ǵneh₃-teh₂*. Pretonic shortening may solve the problem of Lat. *-ŏ-*, but the problem remains why *-ō-* in *nōtus* was not shortened. For alternative explanations see IV.D.1.3.6.1 *nŏta* is at best a possible case of shortening.

7. *săgāx* 'sharp-witted' must be compared with *sāgus* 'wise', *sāgīre* 'to have a good nose, perceive keenly', Gr. ἡγέομαι < **seh₂g-* (see IV.B.1.4.2.1 no. 15). It is unnecessary to explain *săgāx* by assuming shortening, as it may simply reflect a zero grade root **sh₂g-* (cf. *dĭcāx*, *dīcere*, *fŭgāx*, *fūgere*).

8. *sĕrēscere* 'to become dry', *sĕrēnus* 'clear, dry' is generally connected with Gr. ξηρός 'dry'. OHG. *ser(a)wēn* 'to become dry' also has short *-ĕ-*. Gr. ξερόν 'shore' (only ε 402 and two later passages, evidently based on this verse) may have nothing to do with ξηρός originally (see Frisk and Chantraine). The forms may be analysed as **ksēr-o-*, **kseh₁r-o-*, or

**kseh$_1$-ro-*. The first possibility has nothing to commend itself because it is unlikely that an *o*-stem adjective contains a lengthened grade. Skt. *kṣārá-* 'sharp, burning, biting', *kṣāyati* 'burns', *kṣātí-* 'glow' point to a root *kṣā-* < **kseh$_1$-*, probably < **dhgheh$_1$-* (Mayrhofer, EWaia s.v.), and as a result they are probably not cognate with *sērēscō*. Note, however, that the Skt. forms are not essential to the argument. Thus, *sērēnus*, *sērēscō* and OHG. *sēr(a)wēn* probably reflect the shortened stem of **kseh$_1$ró-* (cf. the oxytonesis of the Greek form).

OIr. *serb*, W. *chwerw* etc. 'bitter' point to **sw-* and are semantically remote; they cannot be compared.

9. *ulna* 'elbow' probably reflects **HoHlén-* (see II.F.2). The final accentuation is shown by Gr. ὠλήν, ὠλένη, ὠλλόν.

10. The short vowel of *vădum* 'ford, *vădāre* 'to wade' vs. *vādĕre* 'to go' probably reflects a zero grade root **uh$_2$dh-* rather than shortened **uādh-* < **ueh$_2$dh-* (see IV.D.1.2.2 no. 17).

3.2. Shortening of **ī*, **ū* < **iH*, **uH*

11. *mŭsculus* 'mussel'. The assumption that *-ŭ-* is the product of shortening depends on the connection with *mūs* 'mouse' < **muHs-* (see IV.E.2.3.2 no. 19), which is not convincing. Note that the diminutive of *mūs* is *mūsculus*, with long *-ū-*. *mŭsculus* cannot be used.

12. *pŭter* 'rotten' < **pŭtri-* belongs to the root **puH-*. Short *-u-* is also found in OIr. *othar* 'ill' < **pŭtro-*. As an alternative for pretonic shortening, one may think of a special treatment of *-H-* before *-TC-*, for which there are more indications (see IV.E.2.3.3 no. 6; and, more general, IV.D.1.3.4.2). The assumption of **pHu-* cannot wholly be discarded, despite the fact that there is no evidence at all for **Hu*. Thus, *pŭter* is only a possible case of pretonic shortening. There is no proof for the required oxytonesis, but this assumption is possible.

13. *rŭpex* etc. < **Hru-p-*, not **HruH-p-* (see IV.E.2.3.3 no. 7).

14. *rŭtus* < **Hru-to-*, not **HruH-to-* (see IV.E.2.3.3 no. 8).

15. *sūcula* 'piglet', *sū-bulcus* 'swine-herd': see Appendix 2.6 no. 3. Since the short vowel is not limited to Italic and Celtic,

a different explanation is likely.

16. The assumption that *tŭmēre* 'to swell, be swollen', *tŭmor* reflect **tuHm-* (cf. Dybo 1961, 22, Kortlandt 1981, 7:C) is not compelling. Cf. Skt. *túmra-* 'strong, thick', Lith. *tuméti* 'to become thick' < **tum-*.

17. *vĭr*, U. *veiro* (with short *-ĭ-! See Meiser 1986, 46) 'man', cf. OIr. *fer*, W. *gwr*, Goth. *wair* etc. < **uĭro-*, reflects PIE. **uiH-ró-* in view of Skt. oxytone *vīrá-* 'hero' and Lith. *výras*, Latv. *vīrs* (AP. 1, with retraction according to Hirt's law). It seems impossible to explain *-ī-* as analogical, and it must thus be the result of a regular sound law. Dybo's shortening is therefore attractive. There is independent evidence for the oxytonesis. See IV.E.2.3.3 no. 3 and Appendix 2.6 no. 2.

3.3. Stressed long vowels

As is expected, originally stressed long vowels are reflected as long vowels in Latin: *dōnum* < **dóh₃nom*, cf. Skt. *dā́nam*; *fāma* < **bhéh₂meh₂-*, cf. Gr. φήμη; *frāter* < **bhréh₂tēr*, cf. Gr. φρήτηρ, Skt. *bhrā́tar-*; *rādīx* < **ur(é)h₂diHk-*, cf. Gr. ῥᾰ́δῑξ, *nōmen* < **h₃néh₃mn*, cf. Skt. *nā́man-*.

The evidence for stressed *iH* and *uH* comprises *frīgus* < **sríHǵos*, cf. Gr. ῥῖγος, and the monosyllabic forms *vīs*, *mūs*, *pūs*, *sūs* and *tū*.

3.4. Counterevidence

Since Dybo's rule predicts that every pretonic long vowel (i.e. with respect to the PIE. accent) was shortened in Latin, long vowels that were originally pretonic constitute counterevidence.

Instances of pretonic *ē*, *ā*, *ō* (3.4.1) must be distinguished from those of pretonic *ī*, *ū* (3.4.2). Note that Kortlandt 1981 claimed that *ī* and *ū* < PIE. **iH*, **uH* were not liable to shortening, so that in his theory the material adduced in section 3.4.2. cannot be considered as counterevidence.

3.4.1. Pretonic *ē*, *ā*, *ō*

There are but few forms where the prehistoric accentuation can be established with some certainty.

The ppp.s *nōtus*, *sprētus*, *suētus*, *ēmptus*, *vāsus*, *plētus*, *crētus* etc. reflect the verbal adjective in *-to-*, which was originally always oxytone. However, these forms cannot be

used as counterevidence because they reflect a full grade root, which, being anomalous from the standpoint of PIE. morphology, must be due to a relatively late remodelling. Thus, *sprētus* probably replaced **sprātus* < **sprh₁tó-* on the model of the perfect *sprēvī*, and *nōtus* replaced **gnātos* < **ǵnh₃tó-* on the model of *nōscō*, *nōvī*. Similarly, *pōtāre* 'to drink' was probably based on the innovated ppp. **pōtos*, which replaced **pătos* < **ph₃tó-*.

Similarly, *plēnus* received its full grade root (cf. Olr. *lán*, Skt. *pūrṇá-* < **plh₁nó-*) from *plēre*.

māter, cf. Skt. *mātár-*, cannot be used as counterevidence, as was pointed out by Kortlandt 1981, 13-14, because Gr. μήτηρ points to barytonesis and the word may have belonged to the PIE. static inflection (**méh₂t-r-*; see Beekes 1985, 133).

clāvis 'key' < **kleh₂ui-* must be compared with Gr. κλείς, G. κλεῖδος (see IV.D.1.3.2.1. no. 4). The accentuation of the Greek form cannot be used as evidence for PIE. oxytone **kleh₂uí-*, however, because *-īd-* may secondarily have attracted the stress, cf. χείρ, χειρῖδ-.

More important is *suāvis* 'sweet' < **suādui-* < **sueh₂dú-*, cf. Gr. ἡδύς, Skt. *svādú-*. If *suādēre* can be equated with Skt. *svādáyati*, its long vowel is unexplained.

Even more important in view of its isolation is *fāgus* 'beech', which on the evidence of Gr. φηγός must reflect **bheh₂ǵó-*.

3.4.2. Pretonic ī, ū

Pretonic ū is found in *sūtus* < **suH-tó-* (cf. *sŭō*), *spūtus* < **spuH-tó-* (cf. *spŭō*; see IV.E.2.4.4 no. 22-23). It is conceivable that *-ū-* was reintroduced from the perfect **sū-u̯-ai*, **spū-u̯-ai*, although there is no direct evidence that the perfect stem indeed contained a long vowel: the attested forms are *suī*, *spuī*, in which *-u-* may have been shortened in antevocalic position. Similarly, *pūtēre* 'to rot' may have been based on the innovated ppp. **pūtos* (which would then have replaced **pŭtos* < **puHtó-*). Compare the type *sprētus*, *nōtus* in 3.4.1.

Stronger counterevidence is provided by two isolated ppp.s for which an analogical restoration of the long vowel cannot be considered: *in-vītāre* and *in-vītus*, which reflect **uiH-tó-*, cf. Skt. *vītá-* (see IV.E.2.3.1 no. 3), and **rūtus* in *rūta caesa* < **HruH-tó-*, cf. OCS. *ryti*, Russ. fem. pret. *rýla* (which points to **HruH-*, not **HrHu-*) cannot easily be dis-

missed.

A final important counterexample is *fūmus* 'smoke' < **dhuH-mó-*, cf. Gr. *θῡμός in θῡμιάω, Skt. *dhūmá-* (see IV.E. 2.3.2 no. 16). *fūmus* is not an isolated word, however, as its cognates *fūlīgō* 'soot, carbon' < **dhuH-li-* and *suf-fiō* < **-dhuH-ioH* are attested. The former definitely reflects barytone **dhúHli-* in view of Lith. *dū́lis*, Latv. *dūlis* (AP. 1) 'smoke used in bee-culture'. (In oxytone *i-* and *u*-stems retraction of the accent according to Hirt's law did not take place, cf. e.g. Lith. *sūnùs*, Latv. *sûns* (AP. 3); see IV.E.2.1.3). It is at least possible that *suffiō* reflects barytone **dhúH-* as well and it therefore seems possible that the *-ū-* in *fūmus* was restored, although this is no more than a hypothesis.

3.5. Evaluation

It has turned out that only a part of the forms adduced by Dybo actually support his theory of shortening. The results of the preceding discussion are presented in the diagram.

The following words constitute the evidence for pretonic shortening. The counterevidence, consisting of words with a long pretonic vowel, is added.

probable	possible	unreliable
1 *fĕrus* <**ǵhueh₁ro-*	2 *frĕtum* <**bhre(h₁)to-*	3 *co-*
8 *sĕrēnus* <**kseh₁ró-*	5 *mŏlestus* <**moHl-*	*-gnĭtus*
suāvis <**sueh₂dú-*	6 *nŏta* <**ǵneh₃teh₂-*	4 *lăbāre*
fāgus <**bheh₂ǵó-*	9 *ulna* <**HoHl-én-*	7 *săgāx*
		10 *vădum*
17 *vĭr* <**uiHró-*	12 *pŭter* <**puHtri-*	11 *mŭs-*
in-vītus, *-vītāre* < **uiHtó-*	*fūmus* < *dhuHmó-*	*-culus*
		13 *rŭpex*
**rūtus* < **HruH-tó-*		14 *rŭtus*
		15 *sŭcula*
		16 *tŭmēre*

The oxytonesis that is required to explain the shortening can be demonstrated for *ulna* and *vir*, and probably for *serēnus* and *serēscō*, if these are based on the adjective **kseh₁ró-*. There is no indication that *fĕrus* resists the assumption of original oxytonesis.

On the other hand, *suāvis*, *suādēre*, *fāgus*, *in-vītus*, *in-vītāre*, *rūtus* and perhaps *fūmus* constitute counterevidence that cannot be dismissed. On the basis of the Latin material we

may conclude that Dybo's theory that any pretonic long vowel in any context was shortened, cannot be maintained. Kortlandt's limitation of the shortening to *ē*, *ā*, *ō* does not explain the long vowel of *suāvis*, *suādēre* and *fāgus* on the one hand, and the short vowel of *vĭr* on the other. Since despite the counterevidence the forms that are in agreement with pretonic shortening cannot be dismissed, we must look for another solution.

If we consider the probable cases of shortening and the counterevidence, it is remarkable that the former have the original structure *VHRV́*, and the latter the structure *VHTV́* (except *fūmus* and perhaps *pŭter*, which may not be reliable, as indicated above). Dybo's rule can therefore be reformulated as follows:

$$(VH,\ IH\ >) \qquad \bar{V} > \check{V} \qquad /\_\_RV\acute{}$$

That Dybo's rule entails the shortening of a long vowel rather than the loss of a postvocalic laryngeal appears from the treatment of pretonic *RH*. The fact that the latter was not affected by Dybo's rule (cf. *plānus* < **plh₂nó-*) can only be explained if we assume that *RH* had not yet become *Rā*, as Kortlandt has proposed. If we assume that Dybo's law means loss of the laryngeal, we cannot in any way explain why *RH* failed to be affected.

The formulation of Dybo's rule as given above has the decided advantage that it coincides with the formulation given by Dybo and accepted by Kortlandt for the conditions of shortening in Germanic. Kortlandt's chronology must be modified: the development of **IH* to **ī*, **ū* must chronologically be identified with the development of **eH*, **oH* to **ē*, **ā*, **ō*; both precede Dybo's rule of shortening and the development of **RH* to **Rā* in Italic and Celtic.

4. Shortening in Celtic

The material used has been taken from Dybo. A thorough search for more material (both evidence and counterevidence) has not been undertaken. Shortening of **ē*, **ā*, **ō* is discussed in 4.1; shortening of **ī* and **ū* in 4.2; examples of stressed long vowels are given in 4.3; counterevidence is presented in 4.4; in 4.5 the material is evaluated.

4.1. Shortening of **ē*, **ā*, **ō*

1. Olr. *caraid* (weak *ā*-verb), W. *caru*, Bret. *karout* 'to love', cf. the participial formation Olr. *carae* < **karant-*

'friend', is a denominative verb based on the adjective *keh_2ro- that is attested in Lat. *cārus*, Goth. *hors*, Latv. *kārs*, and probably also in Gaulish personal names containing *Caro-*, *-carus* (see IV.C.1.5.2 no. 3 and Vendryes C-36). Short *-a-* may be explained by assuming pretonic shortening, but in that case the original accentuation of the verb *$karā$- must have differed from that of the adjective, which in view of the long vowel in *cārus* was barytone. Alternatively, OIr. *caraid* reflects the zero grade root *kh_2r- (in which case the verb is not based on *cārus* etc., which is less likely). Hamp (*Ériu* 27, 1976, 5 f) prefers a basic *$krHo$- with metathesis (cf. IV.B. 3.1). Thus, *caraid* is a possible case of shortening.

2. OIr. *deil* 'female pig of two years old', *dela* (Cormac, pl. of *deil*?), *delech* 'having udders, milch cow', 3pl. pres. *denait*, W. *dynu*, Bret. *denañ* 'to suck'. These forms belong to the root *$dheh_1$-, *$dheh_1$-*i*- 'to suck, suckle' (see Pokorny IEW. 241 f. and IV.E.2.4.3 no. 1 s.v. *fīlius*).

*$dheh_1$- is found in Skt. *dhātrī* 'nurse', *dhārú-* 'sucking', *dhắtave* 'to suck', 3pl. perf. *dadhúr* (RV.), 3sg. aor. *ádhāt* (AV.), caus. *dhāpáya-* (RV.) 'to suck'. (In view of these forms, the present *dháyati* probably reflects *dhh_1-*eie*-.) Arm. *dayl* 'beestings' < *dhh_1-*l*-*i*-; Gr. θῆλυς 'female, quenching', θηλή 'breast, teat', θήσατο 'sucked'; Lith. *dėlė̃* 'leech', *pirma-dėlỹs* 'first-born', Latv. *dẽle* 'leech', *dêt* 'to suck', *dę̂ls* 'son' (with acute intonation, pointing to *-eh_1-); Russ. *déva*, SCr. *djèva*, Sin. *dẹ́va* 'girl' (AP. a, pointing to acute *-ĕ- < *-eh_1-); Lat. *fēlāre* 'to suckle', *fēmina* 'woman', *fēlīx* 'fertile, happy', U. *FELIUF* (Apl.) 'lactentes'.

On the other hand, *$dheh_1$-*i*- is attested in Skt. *dhắyas-* (Ved.) 'refreshment', *dhītá-* (< *dhh_1*i*tó-) 'sucked', *dhenú-* 'cow' = Av. *daēnu-* 'female, suckling' (< *$dheh_1$*i*-*nu*-), *dhénā* 'female, breast, suckling'; Arm. *dayeak* 'nurse' < *dhh_1*i*-; Lith. *dienì* 'in calf' < *$dheh_1$*i*-; Latv. *dīle* 'sucking calf', *dîlît* 'to suck' < *dhh_1*i*-; OSwed. *dīa*, MLG. *tīen*, *dīen* 'to suckle' < *dhh_1*i*-*je/o*- (with metathesis); Lat. *fīlius* 'son' < *dhh_1*ilio*-.

Goth *daddjan*, OSwed. *dæggian* 'to suckle', OCS. *dojǫ* 'I suckle' may reflect *$dhoih_1$-*eie*-, based on the metathesized zero grade *$dhih_1$- < *dhh_1*i*-.

It may now be attempted to trace the Celtic forms back to one of the two roots. On OIr. *dínu* 'lamb' see below. *deil* and *delech* cannot reflect *$dĭl$- < *dhh_1*i*-*l*- because the lowering would then be inexplicable. (Both *deil* and *delech*

have palatal *-l-*, which presupposes an earlier front vowel following it; lowering of *-i-* does not occur before front vowels). Thus, *deil*, *delech* reflect **dheh$_1$-l-*, and point to shortening. There is no clear indication for the original accentuation, but Gr. θηλή points to a prototype **dheh$_1$lo/eh$_2$-*, from which the Celtic forms may have been derived. The Celtic verbal forms are less clear, the problem being that so few Olr. forms are transmitted: Pedersen 1913, 505 mentions a 3 pi. nasal present *denait* (cf. W. *dynu*), 3 pl. imf. *-dentais* (written *-déndaís*) and a reduplicated preterite 3sg. *dith*, rel. *dide* < **dhi-dh-* (see Thurneysen 1946, 427). In any case, the nasal present is irrelevant because it presupposes **dhi-n-H-*, and shortening need not be invoked.

A form which is not shortened is attested by Olr. *dínu* 'lamb' < **dheh$_1$-* or **dhih$_1$-* < **dhh$_1$i-*.

As to OE. *delu* 'teat' etc. see below, section 5.1.

We may conclude that Olr. *deil*, *delech* are plausible instances of shortening of **dhēl-* < **dheh$_1$-l-*.

3. If W. *ffraeth* 'ready, swift, generous, humorous, sharp-tongued' < **sprăxtos* (Dybo 1961, 14: 37; Kortlandt 1981, 4: A 37) is cognate with Skt. *sphūrjati* 'to break forth', Gr. σφαραγέομαι 'to groan with fullness' < **sprh$_2$ǵ-*, it may reflect **sbhrh$_2$ǵ-tó-* > **sprăgto-* > **sφraxto-* > *ffraeth* (for **RH* > *Ră* see section 4.6 below and IV.D.1.3.4, esp. 1.3. 4.3). If, on the other hand, it is cognate with Gr. σπαργάω 'to be extremely full' < **sprǵ-*, it may reflect **sprǵtó-* > **sprăgto-* etc. (for **R* > *Ră* before PIE. media see VI.D).

It is unlikely that **sprăgtos* reflects shortened **sprāgtos* < **sprh$_2$ǵtós* because **RH* or its reflex was not liable to shortening (cf. Olr. *lán*, W. *llawn* 'full' < **plh$_1$nó-*). Neither is it likely that **sprăgtos* reflects **sprāgtos* < **spreh$_2$ǵ-tó-* because the *to*-participle generally has a zero grade root. W. *ffraeth* cannot therefore be used as evidence for shortening.

4. Olr. **gnethe* (only Apl. *gnethi*, attested several times) 'done' is the participle of *gníid* 'does'. The exact etymology of the latter (**ǵenh$_1$-* or **ǵneh$_3$-*) and the interpretation of a number of forms (e.g. the present formation) are not clear in every detail. Forms containing a stem *gné-* are attested in the subjunctive. According to Thurneysen 1946, 442, *gnethi* also contains long *-é-*. This assumption is proven by the fact that short *-e-* would have been raised to *-i-* before the suffix *-the* < **-tio-*. Consequently, it cannot be used.

5. OIr. *molaid* 'to praise' is inflected as a weak verb, which, in the case of an *a*-verb, points to a denominative origin. The basic noun is found in British, viz. W. *mawl* (m.) 'praise', cf. W. *moli*, Bret. *meuliñ* 'to praise', which points to **mōlo-*. The relation of *molaid* to *mawl* is comparable to that of *caraid* to Lat. *cārus*. Unlike *caraid*, *molaid* cannot be explained as a zero grade **mHl-* because the latter would have yielded **mal-*.

The etymology is obscure, however. Vendryes M-61, 62 mentions four possibilities:

1. the root is identical to that of OIr. *már*, W. *mawr* 'big', cf. OIr. *máraid* 'to praise' (Pokorny IEW. 704: *mē-/mō-*);
2. the root is **mel-*, cf. Gr. μάλα, Lat. *melior*;
3. the Irish verb was borrowed from British, where **ō* in the PBrit. antepenult was regularly shortened to *ŏ* (Pedersen 1909, 279);
4. the root **mel-* (or **melp-*?) may be compared with Germ. *melden* < **meldh-*, Gr. μολπή 'song' < **molp-*.

Since 2 is semantically unattractive, 3 is gratuitous, and 4 has the difficulty that **mel-* is not attested alone and **melp-* (preferred by Vendryes) does not explain the lengthened grade in *mawl* (a root noun **mōlp* cannot be supported by any evidence), I would prefer etymology no. 1 (thus Pokorny, IEW.). If this is correct, W. *mawl* may reflect **móH-lo-*, and OIr. *molaid* may reflect **moHlāie-*, with shortening. In view of the short root-vowel in *caraid* we may then subscribe to Dybo's theory that denominative *ā*-verbs originally did not have root stress.

In view of the problematic etymology, however, *molaid* is only a possible case of shortening.

6. OIr. *mrath* (ntr.) 'betrayal', W. *brad*, Co. *bras* 'deception' < **mrătom* is the verbal noun of OIr. *-mairn*, 3pl. abs. *mairnit* 'to betray', which in turn is usually connected with Skt. *mṛṇáti*, *mṛṇáti* 'to crush', Gr. μάρναμαι 'to fight' < **mr-n-h₂-*. Thus, *mrath* etc. reflects **mr(e)h₂-to-*, the expected result of which would have been **mráth*. It has been assumed that the short *-ă-* is a morphological zero grade (see IV.D. 1.2.1; thus Joseph 1982, 31-57). The problem of this explanation is that the full grade was not **mreh₂-*, but **merh₂-* (cf. OIr. subjunctive stem *mera-*), so that it does not belong to the type of root in which morphological zero grade is at home. On the other hand, Kuryłowicz 1956, 198 claimed that *-ră-* resulted from **-rH-* in compounds, cf. pret. pass. *do·grath* <

-grH-to- of *gairid* 'calls', *ro·rath* < **-prh₃-tó-* of *ernaid* 'bestows', and W. *yngnad* 'judge' < **-ǵnh₃-to-*. In this context, the OIr. compound verbal noun *fomraith* may be of importance.

We have entered the field of the complex development of PIE. **-RH-* in Celtic, which has not yet been unravelled in every detail. What is important for the present discussion is that in a number of words a zero grade *-RH-* is reflected as *-Ră-* rather than as expected *-Rā-* (see esp. Joseph 1982). Since, as we saw in section 1, Dybo's rule cannot explain the short reflex of *-RH-*, it does not necessarily solve the short *-a-* of *mrath*. We can even go a step further. The verbal noun *rath* of *ernaid* 'to bestow' belongs to the root **prh₃-* (cf. Gr. ἔπορον, πέπρωται, Lat. *parĕre*, see IV.D.1.3.5.2 no. 11 and D.2.3.2.1 no. 15). *rath* cannot reflect a full grade **pre/oh₃-to-* because this would have yielded **rōto-* > **ráth* or, with shortening, **roth*. Thus, it must reflect **prh₃-to-*. *mrath* (which is also a verbal noun in **-to-*) must then reflect a zero grade root as well: **mrh₂-to-*. As Dybo's law cannot account for *Ră* < **RH*, it cannot account for *mrath*. Thus, *mrath* cannot be used to support pretonic shortening.

7. W. *nyddu*, Bret. *nezañ* 'to spin, twist', cf. OIr. *sniid* < **(s)niɟe/o-* < **snh₁-ie/o-* (see V.D.2.2.1 no. 9). This word cannot be used. OIr. *snithe* has long *-ī-* and cannot be used either.

8. OIr. *naunae* (f., *iā*) 'famine' (> *núnae*). The form *noíne* was probably formed after *oíne* 'fasting' (Pokorny ap. Vendryes N-21). The British cognates are W. *newyn* (m.), MCo. *naun*, Bret. *naon* 'hunger'. These point to **năuon-iā/io-*. The root **nau̯-* may be compared with Latv. *nâvs* 'dead', *nâve* 'dead', *nâvêt* 'to kill' < **neh₂u-*. Lith. *nõvis* 'dead', *nõvė* 'death' etc. have circumflex *-o-*, which is probably secondary in view of the broken tone of Latvian and Celtic **-ă-*. Russ. *nyt'* 'to be sore' reflects **nuH-*, ORuss. *navь* 'corpse', Cz. *u-naviti* 'to tire' point to **neHu-*. Goth. *nawis* 'dead', *naus* (*i*-stem) 'corpse', OIc. *nár* id., OE. *nē(o)* id. < **nău̯-* < **nHu̯-*. Celtic **nau-* may reflect **nHu̯-* and does not require the assumption of pretonic shortening.

9. OIr. *om*, W. *of* 'raw' < **ŏmo-* must be compared with Skt. *āmá-*, Arm. *hum*, Gr. ὠμός 'raw', which point to **ōmó-*. Since lengthened grade in a PIE. *o*-stem adjective is unlikely, **ōmó-* may be reconstructed as **HoHmó-* (or perhaps, in view of Arm.

h-, **h₃eHmó-* or **h₂eh₃mó-*). Since the assumption of ablaut in the case of a PIE. *o*-stem cannot be maintained and, besides, a zero grade **HHmó-* would probably have yielded PCelt. **ămo-*, the Celtic words are best explained as the result of shortening. The alternative that **ŏmo-* reflects **Hh₃-em-* cannot altogether be ruled out but there is no basis for the assumption of a basic *m*-stem. The original oxytonesis is indicated by Greek and Sanskrit.

10. The Olr. verbal noun *rath* 'grace, virtue' etc., W. *rhad* 'grace, blessing; free, cheap' and the passive preterite *·rath* 'was bestowed' belong to the paradigm of *ernaid* 'bestows' < **pernăti* (with analogical full grade taken from the subjunctive, cf. *sernaid*). The closest correspondent of the verb is Gr. ἔπορον, Lat. *parĕre* < **prh₃-* (see IV.D.1.3.5.2 no. 11 *pars* and IV.D.2.3.2.1 no. 15 *parĭō*). As the root contained **h₃* and its full grade was **perh₃-*, not **preh₃-*, *rath* cannot be explained from **preh₃tó-* with pretonic shortening (see no. 6 above). Thus, *rath* most likely reflects zero grade **prh₃-tó-*. The short reflex of this constellation cannot in general be explained by Dybo's rule (cf. *gnáth*, *lán*).

11. The Irish personal name *Sadb* (f.), which is usually reconstructed as **sŭăduo-* and compared with Gaul. *Svadu-genus*, *Svadu-rix*, Lat. *suāvis*, Gr. ἡδύς, Skt. *svādú-* 'sweet', can hardly be used as evidence. As a name, it does not have a lexical meaning, which means that the formal comparison cannot be checked.

12. Olr. *saigid* 'to (try to) reach' is cognate with Lat. *sāgīre* 'to have a good nose, perceive keenly', *săgāx* 'sharp-witted'. Like the latter it may reflect zero grade **sh₂ǵ-* and does not therefore support pretonic shortening.

13. Olr. *serb*, W. *chwerw*, Co. *wherow*, Bret. *c'houerv* 'bitter' point to **su̯eru̯o-*. Both semantically and formally a connection with Lat. *serēnus* 'dry' etc. is unlikely (see 2.1 no. 8).

14. Olr. *srath* (*o*, masc.) 'valley, bottom, meadow, grass', W. *ystrad* 'valley', Bret. *strad* 'le fond, l'endroit le plus bas' is usually connected with Olr. *sernaid* 'to spread out', W. *sarnu* 'to pave, litter'. The latter reflect a root **sterh₃-*, cf. Gr. στρωτός, Lat. *strātus* (Beekes 1969, 211, Narten 1967, 57-66). Beside **strh₃-* are attested **str-* (Gr. στρατός) and **stru-* (Lat. *struĕre*), which do not enter into the discussion because *srath* cannot be explained on the basis of either form.

srath cannot be explained as shortened **streh$_3$tó-* or **stroh$_3$tó-* because this would have yielded **srŏth*. Neither can it be explained as shortened **strāto-* < **strh$_3$tó-* because **-rā-* < **-rh$_3$-* was not liable to shortening (cf. *lán* < **plh$_1$nós*). If it is cognate with *sernaid*, the explanation of the *-ă-* may ultimately be the same as in the case of *mrath* and *rath*.

15. Ir. *trog* (*o*) 'offspring, parturition' has been compared with SCr. *trâg*, Gsg. *trăgovi* (acc. par. (c)), SCr. *trăga* 'stock, family, race'. If the similarity is not fortuitous, the Irish and Slavic forms may be reconstructed as **trog-*, Slavic *-a-* appearing in accordance with Winter's law. The connection with Lat. *trăhĕre* 'to draw' < **trHgh-* (?) has nothing to commend itself (see IV.D.1.3.4.1 no. 9).

Ir. *traig*, *traige* 'offspring, descendants' cannot be adduced. The *Dictionary of the Irish Language* s.v. reads: "A word invented on the basis of population names in *-rige* where *t* precedes the suffix, perh. under infl. of *trog*...".

OIr. *traig* etc. 'foot' is discussed in IV.D.1.3.4.3.

Thus, none of the forms points to shortening.

16. OIr. *úasal*, W. *uchel*, Co. *huhel*, Bret. *uc'hel* 'high' reflect PCelt. **oupsĕlo-*, which may be compared with Gr. ὑψηλός 'high'. It is possible that Celtic *-ĕ-* reflects shortened **-ē-*. However, the Greek form may contain a lengthened grade, which would point to an *l*-stem **h$_1$ups-ēl*. In that case the Celtic form may be based on the oblique cases, which had **-ĕl-* (e.g. Asg. **-el-m*).

Thus, *úasal* etc. is at best a possible case of pretonic shortening.

17. OIr. *uilen*, W. *elin*, OCo. *elin*, Bret. *ilin* 'elbow' < **ŏlēn-* < **ōlēn* < PIE. *HoHl-én* is a possible case of shortening. See 3.1 no. 9 above and 5.1 no. 1 below.

4.2. Shortening of ****ī, *ū** < *IH*

For Ir. *beo*, *bolach*, *bruith*, *crott*, *dumach*, *fichid*, *fithe*, *guth*, *lenomnaib*, **lon*, *lucht*, *rucht*, *sith*, W. *ffrwst* and W. *twf* see Appendix 2.2. For W. *cwd* < **kŭ-* see IV.E.2.4.2 no. 6. These words are not relevant here.

18. OIr. verb. nec. *bethi* < **bhiatowios* cannot be used. See Appendix 2.6 no. 1.

19. OIr. *cuil* 'fly', W. *cylion* 'midges' < **kŭli-* may reflect

*kHulí- rather than *kuHlí- and cannot be used as independent evidence for pretonic shortening (see Appendix 2.2. no. 3).

20. OIr. *fer*, W. *gwr*, Co. *gur*, Bret. *gour* 'man' < *uĭro- < *uiHró- (see 3.2 no. 17 above, 5.2 no. 12 below and Appendix 2.6 no. 2).

21. OIr. *othar* 'sick' < *puHtro- is a possible case of pretonic shortening. See 3.2 no. 12 above and Appendix 2.6 no. 4.

22. OIr. *socc* 'pig's snout', W. *hwch*, Co. *hoch*, Bret. *houc'h*, *hoc'h* 'swine' < *sŭkko- cannot be used, because *sŭ- is attested in Greek and Germanic, where shortening cannot have applied (cf. OE. *sugu*; see Appendix 2.6 no. 3).

4.3. Stressed long vowels

A stressed long vowel was maintained in e.g. OIr. *dán* 'gift' < *dé/óh$_3$nom, cf. Skt. *dā́nam*, OIr. *bráthair*, W. *brawd* 'brother' < *bhréh$_2$tēr, cf. Gr. φρήτηρ, Skt. *bhrā́tar-*.

4.4. Counterevidence

A thorough search for counterevidence (i.e. long vowels in originally pretonic position) has not been undertaken, which obviously limits the value of this paragraph. The material used was again taken from Dybo (i.e. ultimately taken from Pokorny's IEW.).

OIr. *máthair* 'mother', cf. Skt. *mātár-* cannot be used as counterevidence: cf. Gr. μήτηρ (see section 3.4. above).

OIr. pret. pass. *-críth* 'was bought' < *k^{w}riH-tó- and *-bíth* 'was beaten' < *bhiH-tó- have pretonic -ī- < *-iH-, which was obviously not shortened.

4.5. Conclusion

In Celtic, the following words support the assumption of shortening of long vowels (Irish unmarked, British cognates are not included).

probable	possible	unreliable
2 *deil* <*dheh$_1$l-	1 *caraid* <*keh$_2$ro-	3 W. *ffraeth*
9 *om* <*HoHmó-	5 *molaid* <*moHl-	4 *gnethe*
	8 *naunae* <*n(e)h$_2$u̯-	6 *mrath*
	12 *saigid* <*s(e)h$_2$ǵ-	7 W. *nyddu*
	16 *úasal* <*oupsēlo-?	10 *rath*

probable	possible	unreliable
	17 *uilen* <**HoHl-ḗn*	11 *Sadb*
		13 *serb*
		14 *srath*
		15 *trog*, *traig(e)*
20 *fer* <**uiHró-*	19 *cuil* <**kuHli-*?	18 *bethi*
-críth <**k^{w}riHtó-*	21 *othar* <**puHtro-*	22 *socc*
-bíth <**bhiHtó-*		

The only reliable counterevidence I have come across is *-críth* and *-bíth* < **k^{w}riHtó-*, **bhiHtó-*.

Although the number of reliable instances is small, the evidence is not conflicting and allows a conclusion: a long vowel was shortened in pretonic position (see nos. 9, 17 and 19). Since all of the reliable instances and five out of seven possible instances have a following resonant and since the long vowel was not shortened in *-críth* and *-bíth*, which have a following stop, we may conclude that pretonic shortening occurred only before a resonant:

$\bar{V} > \check{V} \quad /\_\_RV\acute{}$.

Thus, the Celtic evidence independently confirms the conclusion reached in section 3.5 on the basis of Latin.

5. Shortening in Germanic

According to Dybo, a long pretonic vowel was shortened in Germanic only before an intervocalic resonant. Kortlandt followed this view and accepted that not only **ā*, **ē*, **ō* but also **ī* and **ū* were liable to shortening, unlike in Italo-Celtic, where, in his opinion, **ī* and **ū* < **iH*, **uH* remained.

Dybo's list of shortened vowels in Germanic comprises instances containing PIE. **eH*, **oH*, **iH* and **uH* before a resonant. Short reflexes of PIE. **Hi* and **Hu* in Germanic must be included as well because PIE. **Hi* and **Hu*, both pretonic and stressed, regularly yielded Germanic **ī*, **ū* (cf. e.g. OIc. *húð*, OE. *hȳd*, OHG. *hūt* 'skin' < **kHutí-*; see Appendix section 3), and in this respect Germanic differs from Italic and Celtic.

In the following discussion, only possible instances of shortening before a resonant will be discussed.

Accordingly, the material may be subdivided into: shortening of **ē*, **ā*, **ō* (5.1), shortening of **ī*, **ū* < **iH*, **uH* (5.2), shortening of **ī*, **ū* < **Hi*, **Hu* (5.3). Instances of stressed

long vowels are mentioned in 5.4, and the counterevidence is discussed in 5.5. Section 5.6 contains the conclusion.

5.1. Shortening of **ē, *ā, *ō*

1. Goth. Asg. *aleina* (with obscure *-ei-*), OHG. *elína*, OIc. *alin*, OE. *elin*, *eln* 'ell' reflect PGm. **ălĕn-*. A reconstruction **HHl-en-* perhaps is not impossible (cf. Gr. ὀλε-, Arm. *oł n*, Toch. A *āle*?), but in view of Lat. *ulna* and OIr. *uilen* etc. it is preferable to reconstruct **ŏlĕn-* < **ōlen-* < **HoHl-ĕn-*. See 3.1 no. 9, 4.1 no. 17 and II.F.2 no. 2.

2. OE. *delu*, OHG. *tila* (f. *ā*), OHG. *tili* (f. *iā*), Swed. dial. *del*, *däl* (m.) 'teat' reflect a root **dheh$_1$-* or **dheh$_1$i-* (see 4.1. no. 2 above). In view of the correspondence with Gr. θηλή, the Germanic forms probably reflect **dheh$_1$-*: oxytone **dheh$_1$léh$_2$-* would have yielded **dhēlắ* > OE. *delu*. *-i-* in OHG. *tila* was probably taken from *tili* < **dĕlį̄ō*.

If the root was **dhh$_1$i-*, the Germanic words would have undergone shortening: **dhh$_1$iléh$_2$-* would have yielded **dhīlắ* > *dhĭlắ* > **delō* > OE. *delu*. In that case there is no independent evidence for oxytonesis.

The same roots are found in OHG. *tāen* (weak verb, class 1) 'to suckle' < **dā-jan* < **dheh$_1$-ie/o-* and OSwed. *dīa*, MLG. *tīen*, *dīen* id. < **dī-jan* < **dhh$_1$i-ie/o-*.

3. The comparison of Goth. Apl. *granos* 'braids', OE. *gronu* 'moustache', OIc. *grǫn* 'moustache, lip' with SCr. *grána*, Asg. *grânu* 'twig, side-line', Cz. *hrana* 'rib, side' is semantically too remote to prove anything.

The only comparison worth considering is that of OIc. *grǫn*, OHG. *grana* 'pine-tree' with SCr. *grána* 'twig'. The non-acute vowel of SCr. points to PIE. lengthened grade (Kortlandt 1975, 73) and the mobile AP. c to PIE. oxytonesis: **ghrōnéh$_2$-*. If the connection is maintained, the Germanic forms may reflect either shortened **-ō-* or an ablaut-variant **-ŏ-*. In view of the uncertainty of the connection the etymon cannot be used.

4. Goth. *naus*, OE. *nē(o)*, OIc. *nár* 'corpse' < **nău̯i-* may reflect a zero grade **nh$_2$u̯i-* and need not reflect a shortened form. On the other hand, Latv. *nâvs*, Lith. *nõvis* 'dead' (with metatonical circumflex due to retraction from antevocalic **i*, see Kortlandt 1977) point to a full grade root and original oxytonesis (in view of Latvian) in the *i*-stem: **neHuí-* or **noHuí-*. Thus, the Germanic forms are a possible case of

pretonic shortening.

5. OHG. *ser(a)wēn* 'to dry' probably reflects **ksēr-* < **kseh$_1$-ro-*, cf. Lat. *sērēnus*, Gr. ξηρός 'dry' (see 3.1 no. 8).

6. OIc. *valr* 'round' is cognate with SCr. *vâl*, Sln. *vâl*, Russ. *val* 'wave', which point to lengthened grade **uōl-* (Kortlandt 1975, 73). Russ. *volná*, OCS. *vlъna*, Pol. *weĺna* 'wave' reflect **u̯l̥-*; Lith. *ap-valùs* 'round' reflects full grade **uŏl-*, which may be the basic form of OIc. *valr*. *valr* cannot be used as evidence for pretonic shortening.

5.2. Shortening of **ī*, **ū* < **IH*

7. OSwed. *bulin*, *bolin* 'swollen' may reflect **bhuHl-* (or **bhHul-*?), cf. OHG. *pūlla*, OE. *bȳle* 'bump', in which case one must assume that **-uH-* > **-ū-* was shortened. However, in view of OSwed. *bulde*, *bolde*, Dutch *bult* 'bump' < **bhlH-*, OS. *blādara*, OHG. *blāt(t)ara* 'blister' < **bhleh$_1$-*, a more or less synonymous root **bhlh$_1$-* existed in Germanic. OSwed. *bulin*, *bolin* may consequently reflect **bhlh$_1$-eno-*. Thus, it is at best a possible case of pretonic shortening.

8. OE. *fyrs* (m., *i*) 'furze, gorse' is usually compared with Lith. Npl. *pūraĩ* (AP. 2 and 4), Latv. *pûŗi* (Npl. of an *i̯o*-stem) 'wheat', SCr. *pȉr* 'spelt', Cz., Slk. *pýr* 'weeds', Sln. *pîr* 'spelt'. The interpretation of these forms is somewhat complicated by the fact that they point in different directions. SCr. and Cz., Slk. point to **puHro-* or barytone **pHúro-* (which would both have yielded a PSlav. acute, AP. a). Sln. has AP. c., which within Slavic is doubtlessly secondary (Prof. F. Kortlandt, p.c.). Latvian has an acute root (**puH-* or **pHu-*). Lithuanian on the other hand points to a non-acute root, which, since the root must have contained a laryngeal in view of the long vowel of the Greek forms and the primary AP. a in Slavic, must be secondary. Gr. πῡρός, Dor. οπῡρός 'wheat', πῡρήν 'kernel, stone' have pretonic -ū-, which probably points to PIE. **-uH-* because pretonic **-Hu-* would in accordance with section 1. of the Appendix have given Gr. **-ŭ-*. Thus, Greek confirms that the Lithuanian and Slovenian forms have a metatonical circumflex.

If *fyrs* is cognate with these forms, it reflects shortened **pūr-* < **puHr-*. However, the connection is semantically far from compelling, and *fyrs* is at best a possible case of shortening.

9. OIc. *linr* 'soft, smooth', Swed. *len* 'delicate, soft', MoHG. (dial.) *len* 'soft, weak'. If they are cognate with Goth. *af-linnan*, OHG. *bi-linnan* 'to yield', Gr. λιάζομαι id., Skt. *lī́yate*, *ni-līna-* 'to cower, cling to', the root is **lih₂-*, and *linr* etc. may then be identified with Skt. *līna-* < **lih₂-no-*. It is unlikely that *linr* etc. are based on the nasal present **li-n-h₂-* because in that case we would probably have found ***linnr* (according to the gemination-rule, if correctly discovered by Rosemarie Lühr 1976; see the criticisms of Beekes 1988a, 97 and Polomé 1988, 404 note 13). However, a connection with Lat. *lēvis*, Gr. λεῖος < **leh₁i-* does not seem impossible (see IV.E.7.3.1.1 no. 2). Either way, *linr* reflects a shortened vowel: *lĭn-* < **līno-* < **lih₂no-* or *lĭn-* < **līno-* < **lh₁ino-*. Original oxytonesis is likely in view of the pervasive oxytonesis of verbal adjectives in *-na-* in Sanskrit.

10. Goth. *sunus*, OIc. *sunr*, OHG., OE. *sunu* 'son' < PGm. **sŭnus* must be identified with Skt. *sūnús*, Lith. *sūnùs*, OCS. *synъ* 'son' < **suH-nu-*. The root is **su-*, **suH-*, cf. Toch. A *se*, B *soy* < PToch. **sway* < **su̯H-iu-*, probably Gr. υἱύς 'son' < **suHiu-*; (late!) Skt. *sŭta-* 'son', Olr. *suth* 'birth'. In view of the correspondence with the Balto-Slavic and Sanskrit forms it is unlikely that Goth. *sunus* etc. contain the root **su-* rather than **suH-*. Thus, the Germanic forms are probable instances of shortening. The original oxytonesis is found in Sanskrit and reflected in the Baltic AP. 3 and the Slavic mobile AP. c.

11. The root of OHG. *dūmo*, OS. *thūmo*, OFri. *thūma*, OE. *dūma* 'thumb' (lit. 'thick one') < **þūm-* and OSwed. *þumi*, OIc. *þumall* 'thumb' < **þŭm-* is PIE. **tu-*, **tuH-*. Compare **tu-m-* in Lith. *tuméti* 'to thicken', Skt. *túmra-* 'strong, thick' and **tuH-m-* in MBret. *tiñva* 'zusammenwachsen (von einer Wunde)' (see Appendix 2.2 no. 17 s.v. W. *twf*). It seems unlikely to me that the Germanic alternation **þūm-/þŭm-* must be ascribed to a PIE. difference in root shape. The assumption that **tŭm-* can be explained as a shortened form of **tūm-* < **tuH-m-ōn* is therefore preferable. This presupposes a Proto-Germanic *n*-stem with mobile stress, of which North-Germanic generalized the originally pretonic root **tŭm-* and West-Germanic the originally stressed root **tūm-*, both reflecting **tuHm-*. There is, however, no independent evidence for the accentuation.

12. Goth. *waír*, OIc. *verr*, OHG., OS., OE. *wer* 'man' reflects PIE. **uiHró-*, see 3.2 no. 17 and 4.2 no. 20 above.

5.3. Shortening of *ī, *ū < *HI

13. Swed. dial. *bylja*, *bölja* 'small nest' probably belongs to the root **bhHu-* (see IV.E.2.4.2 no. 7; Appendix 1.2 no. 1). The long reflex is found in e.g. OIc. *býr* 'Wohnstätte', OE. *bū* 'house' < **būwi-*, OIc. *búð* 'Wohnung, Zelt, Hütte'. Since the root is normally connected with the notion 'to live somewhere, dwell' in Germanic, the connection of *bylja* is semantically plausible. It probably reflects the shortened root: **bul-i-* < **bhu-l-* < **bhū-l-* < **bhuH-l-* < **bhHu-l-*.

14. Goth. Asg. *lun* 'Lösegeld', *us-luneins* 'Erlösung', the short vowel of which is confirmed by OE. *ā-lynnan* 'to loosen' < **-lunjan*, may be equated with Skt. *lūná-* 'cut off' < **luH-nó-* < **lh₂u-nó-* (for the root see IV.E.2.1.1 and Appendix 1.2 no. 2, cf. Gr. λῦτός, λῦσί-). The short *-u-* of the Germanic forms may be explained as the result of shortening. In view of Skt. *lūná-*, Goth. *lun* probably reflects the oxytone form.

It may be relevant to note that Germanic also points to a root **lŭs-* in e.g. Goth. *fra-lusnan* 'to perish', *fra-liusan* 'to lose', OIc. *losna* 'to loosen'. But since short *-ŭ-* is always found in conjunction with the "Erweiterung" *-s-*, the possibility that *lun* reflects PIE. **lŭno-* rather than **lHuno-* seems unlikely.

15. Goth. Asg. *qiwana* 'alive, lively', which presupposes a Nsg. **qius*, reflects **kʷĭuas* < **gʷĭuos* < PIE. **gʷHi-uó-* (see IV.E.2.4.3 no. 13 and Appendix 2.2 no. 1). Since **-Hi-* normally yielded Gm. **-ī-*, short *-ĭ-* in this word is probably the result of shortening: **gʷHiuó-* > **gʷiHuó-* > **gʷīuó-* > **gʷĭuó-* > **qius*.

5.4. Stressed long vowels

A stressed long vowel before a resonant obviously was not shortened: cf. Dutch *maal* 'young cow' < **méh₁lom*, cf. Gr. μῆλον; OHG. *sāmo* 'seed' < **séh₁mōn*, cf. Lith. *sėmenys* (AP. 1), SCr. *sjȅme* (AP. a).

5.5. Counterevidence

I have come across two instances. The first is OSwed. *stūr*, MLG. *stūr* 'big, strong' < **stuHro-*, which on the evidence of Skt. *sthūrá-* 'big, strong' reflects an oxytone form. However, since adjectives in *-ra-* show a marked tendency towards oxytonesis in Sanskrit (Lubotsky 1988, § 2.65), the oxy-

tonesis of *sthūrá-* need not be old.

The other instance was adduced by Eichner ap. Peters 1980, 173 note 125, viz. OHG. *ruowa* 'rest' < **h₁roHu̯-éh₂-*, cf. Gr. ἐρωή. However, as Peters points out, the Greek form may be a recent formation (thus also Frisk), in which case *ruowa* does not provide reliable counterevidence.

It should be noted that an extensive search for counterevidence was not undertaken. The material used was taken from Dybo.

5.6. Conclusion

The Germanic evidence for pretonic shortening may now be classified (Goth. unmarked).

probable	possible	unreliable
1 *aleina* <**HoHlén-*	4 *naus* etc. < **neh₂uí-*	3 *granos*
2 OE. *delu* <**dheh₁léh₂-*		6 OIc. *valr*
5 OHG. *serawēn* <**kseh₁ró-*	7 OSwed. *bulin* < **bhuHl-*	
9 OIc. *linr* <**lih₂nó-*		
10 *sunus* <**suHnú-*	8 OE. *fyrs* <**puHr-*	
11 OSwed. *þumi* <**tuHm-ōn*		
12 *wair* <**uiHró-*		
13 Swed. *bylja* <**bhHul-*		
14 *lun* <**lHunó-*		
15 *qiwana* <**gʷHiuó-*		

OSwed. *stūr* etc. and OHG. *ruowa* do not provide reliable counterevidence.

The evidence allows us to reach a positive judgement on Dybo's shortening rule. There are abundant reliable indications that shortening took place in pretonic position (1, 2, 5, 9, 10, 12, 14 and 15)

Thus, the Germanic shortening matches that of Latin and Celtic almost completely. The only difference lies in the treatment of pretonic PIE. **-HI-*: in Italic and Celtic pretonic **HĬ* yielded **ĭ*, **ŭ*; in Germanic **-HI-* became **-ī-*, **-ū-* (cf. OE. *hȳd* < **kHutí-*) in any position, and was subsequently shortened before resonants in pretonic position.

6. General conclusion

After having considered the evidence adduced by Dybo 1961, we may conclude that in Latin, Celtic and Germanic there

are words displaying a short vowel that cannot be accounted for by the normal rules of historical phonology of these languages. Of the many instances that were adduced by Dybo, only a part bears scrutiny. This part suffices to allow the conclusion that a long vowel was shortened before a resonant in pretonic position.

Dybo's claim that in Italic and Celtic the short pretonic vowel arose also before consonants other than resonants is not borne out by the material and is, as far Latin is concerned, untenable in view of the counterexamples. Kortlandt's claim that in Italo-Celtic pretonic *-*iH*- and *-*uH*- were not subject to shortening does not explain Lat. *vīr*, U. *veiro*, OIr. *fer*, W. *gwr* etc. < **uīro-*; furthermore, this limitation finds no support in the material, except in Lat. *fūmus* < **dhuH-mó-*, which may, however, have restored the long vowel after the protoforms of *fūlīgō* and *suf-fiō*. Kortlandt's assumption that *-*RH*- > Italic and Celtic *-*Rā*- was not liable to shortening is most likely valid in view of Lat. *plānus* 'flat' < **plh₂nó-*, OIr. *lán*, W. *llawn* 'full' < **plh₁nó-* etc. This restriction allows us to decide that Dybo's rule entailed the shortening of a long vowel rather than the loss of a laryngeal (see the end of section 1). All this results in the following simple chronology:

1. **eH, oH, iH, uH* > **ā, ē, ō, ī, ū*
2. Pretonic shortening of a long vowel before a resonant (Dybo's rule)
3. **RH* > *Rā* in Italic and Celtic

The pretonic shortening of long vowels before a resonant, which we may term Dybo's Rule, can be independently demonstrated for Italic, Celtic and Germanic. Since the conditions in the three languages are identical, the development was probably a shared one. On the other hand, we have evidence that Italic and Celtic on the one hand and Germanic on the other were separated by (at least) one development preceding Dybo's Rule: in Germanic pretonic *-*HI*- had already become *-*ī*-, *-*ū*- (and therefore liable to shortening), whereas in Celtic and Italic it remained unchanged, or had already yielded *-*ĭ*-, *-*ŭ*- throughout.

Dybo's Rule may thus be formulated:

(*VH, IH* >) $\bar{V}$ > $\check{V}$ / __ *RV́* (Italo-Celto-Germanic, i.e. West-Indo-European)

C. THE DEVELOPMENT OF THE PIE. NOMINAL STEMS IN *-*H*- IN LATIN

1. Stems in *h_2

In this section two issues will be discussed. Some aspects of the history of the Latin first declension are the subject of section 1.1. Section 1.2 treats the various reflexes of PIE. stems in *-*iH* in Latin.

1.1. The Latin ā-stems

1.1.1. Introduction

One of the most interesting issues that have recently been debated about is whether the PIE. *h_2-stems were inflected according to a mesostatic paradigm, with pervasive *-eh_2- (e.g. Rix 1976, 129), or according to a mobile paradigm. Beekes 1985 has pleaded for the latter, largely following Pedersen 1926. Briefly paraphrased, he adduces the following arguments:

1. The original Nsg. was *-h_2, not *-eh_2, as appears from Toch. -$\bar{a}$ < PToch. *-a < *-h_2 (Kortlandt ap. Beekes 1985, 20); Latin -$\check{a}$ (Beekes 1985, 21-25); the PIE. neuter plural, which was originally identical with the Nsg. ending of the *h_2-stems (Beekes 1985, 28-34). Indirect evidence can be gleaned from the vocative sg. of Indo-Iranian (pp. 102 ff.) and from the disappearance of the *h_2-stems in Hittite.
2. The Gpl. of the *h_2-stems in Baltic (Lith. -ų), Slavic (OCS -ъ), Old Irish (-$\varnothing$ < *-$\check{o}m$) and perhaps elsewhere (esp. Germanic) points to PIE. *-h_2-om, not *-eh_2-om. The former cannot have replaced the latter because there was no motivation (whereas there was for the reverse development; Pedersen 1926, 27 f., Kortlandt 1978b, 293, Beekes 1985, 140 ff.).

If the argument is accepted, it may subsequently be asked whether the *h_2-stems in general reflect a proterodynamic (PD, N -h_2, A -h_2m, G -eh_2s etc.) or a hysterodynamic paradigm (HD, N -h_2, A -eh_2m, G -h_2os etc.). Pedersen 1926 and Beekes 1985 decide for the latter, for the following reasons.

1. The Gpl. in *-h_2-om, not PD *-eh_2-om (see above).
2. The deviant shape of the paradigm in various languages may be explained as the result of remodelling. The reason for this remodelling must have been that the characteristic morpheme *-h_2- was lost before the endings starting with a vowel in a hysterodynamic paradigm (e.g. Gsg. *-h_2-os > *-$\varnothing$-os; Pedersen 1926, 27).

3. The HD Asg. in *-*ām* < *-*eh₂m* must be old because "in no PD inflection was the full grade of the suffix introduced into the accusative." (Beekes 1985, 36).

The aim of this section is to confront the idea that the Latin first declension reflects a PIE. HD paradigm with the Latin evidence. Two points are of special interest: the Latin Nsg. in *-ă* (1.1.2); the Latin Gsg. in *-āī* (1.1.3). As to the compound type *indigena*, *agricola* (< *-*genh₁*, -**k*ʷ*elH*?), I have nothing new to add (the reader is referred to Leumann 1977, 281).

1.1.2. The Latin Nsg. in *-ă*

Ernout 1953, 18 f. (see also Beekes 1985, 22-23) offers a synopsis of attempted explanations, all of which depart from the thesis that the Nsg. in *-ă* is secondary, and replaces an original *-*ā* (< *-*eh₂*). For a criticism of all these views, and also that of Lejeune 1949, see Beekes loc. cit., who concludes, with Leumann 1977: "Die bisherigen Erklärungsversuche für *-ă* statt *-ā* sind nicht überzeugend." Beekes concludes that as all other solutions have failed, *-ă* must be original, i.e. reflect a PIE. Nsg. in *-*h₂*.

The rare forms *hosticapas* 'one who captures enemies', *par(r)icīdas* 'murderer of a relative' (beside *-capa*, *-cīda*) were not discussed by Beekes, and might be regarded as counterevidence. The forms are usually cited with long *-ās* but the only evidence for this assumption is the preservation of the timbre of the vowel before *-s*. Strictly speaking, there is no independent evidence for the development of unstressed *-ăs* in Latin, and it may well be assumed that it remained (thus Pedersen 1926, 52). Forms like *tībi-cen* < *-*can* do not shed any light on the issue, as *-*an* may have developed differently from *-*as* (cf. *-*ās*, which remains (e.g. Npl. of *ā*-stems), *-*ām*, which was shortened to *-ăm* (Asg. of *ā*-stems)). However, one might assume that the development of the Gsg. of the consonant stems *-*es* to *-is* and nominatives of the type *arti-fex* < *-*fak-s* shows that some kind of reduction took place, and on the strength of this evidence it may be argued that *-a-* in *-as* is long; but the argument is far from compelling. Even if we assume that the ending was *-ās*, we may not conclude that this presupposes a Nsg. in *-ā*. It is unlikely that *-*s* was added to masculine stems in *h₂ already in PIE. (Cowgill 1965, 177; apart from *mégh₂-s and root-nouns ending in a laryngeal). The Nsg. in *-as* may therefore be considered an innovation. One

may wonder whether this new Nsg. was formed by adding *-*s* to the Nsg. or rather by taking the pervasive oblique stem *-*ā*- as a basis and adding -*s* to this form. We may compare the origin of the Nsg. of the third declension type *caedēs* (which replaces *-*a(s)* < *-h_1(s)) on the model of the Asg. **caidēm* > *caedem* (see V.C.2.1.2) and the general tendency for third declension nominatives to be based on the Asg. (e.g. *canis* for **cō* after Asg. *canem*). Accordingly, it is conceivable that the Nsg. in -*ās* (if it contains -*ā*- at all) was not based on the original Nsg, but rather on the oblique stem. Thus, it cannot be used as evidence against a Nsg. *-h_2 > -*ă*. Note also that beside *paricidas* the normal type *paricida* exists as well.

1.1.3. The Gsg. of the *h_2-stems in Latin

Beside a limited number of remnants of a Gsg. in -*ās* (generally in *pater familiās* (also -*ae*); *Latonas*, *escas* (Liv. Andr.); *terras*, *fortunas* (Naev.), *vias* (Enn.)), the normal Gsg. of the Latin *ā*-stems from the earliest documents onwards is -*āī* (> -*ae*). In Oscan and Umbrian, -*ās* is the sole existing ending (e.g. O. *eituas*, U. *TUTAS*, *totar*).

Leumann 1977, 418 states: "Das Vorbild des im Latein das alte -*ās* ersetzenden -*āī* war der *ī*-Genetiv der *o*-Stämme. Die Übertragung des *ī* mag zuerst bei den *ā*-Maskulina wie *scrība*, *agricola* erfolgt sein". This appears to be the communis opinio among scholars (see also Blümel 1972, 39).

While the identification of -*ī* in -*āī* with the -*ī* of the Italo-Celtic Gsg. of the *o*-stems is beyond any reasonable doubt, I think that the details of the origin of -*āī* as propounded by Leumann are puzzling. It is difficult to believe that the origin of the successful ending -*āī* lies in the marginal group of masculine *a*-stems. More important: I cannot see how an *ā*-stem paradigm Nsg. *-*ă*, A. *-*ām*, D. *-*āi*, G. *-*ās* can be remodelled to Gsg. -*āī* on the basis of *-*os*, *-*om*, *-*ōi*, *-*ī*: the required model would have to be an *o*-stem Gsg. *-*oī*. Neither a model (e.g. an *o*-stem Gsg. *-*oī*), nor a motivation (the Gsg. -*ās* is a distinctive ending; the homonymy with the Apl. hardly gives reason for confusion) are present in the case of Latin -*āī*.

One must, I think, conclude two things: first, that -*āī* was not *modelled* on the *o*-stem Gsg. -*ī*; second, that *-*āī* did not arise as a more convenient alternative for *-*ās* but rather replaced another ending. Thus, -*āī* (or its predecessor) may have existed beside *-*ās* for a longer period of time as they did not

belong to the same paradigm but were in complementary distribution. When the difference between the originally distinct paradigms vanished and *-ās* and *-āī* became rival endings, one of the two was ousted, in Latin *-ās* (apart from a few remnants), in Sabellian *-āī* or its predecessor.

As *-ās* may have originated in proterodynamic h_2-stems (the Vedic *devī́*-type, cf. Gsg. *-yā́s*; the word for 'woman', **$g^{w}enh_2$*, Gsg. **$g^{w}neh_2s$* in OIr. *ben, mná*), it seems likely to look for the origin of *-āī* in the hysterodynamic h_2-stems (the Vedic *vṛkī́ḥ*-type, Gsg. *-ías* < **-iH-os*, and, probably, the *ā*-stems in general (Beekes 1985, 34 ff.)). The original Gsg. in the latter type was **-h_2-os* > **-ø-os*, which, being an uncharacteristic ending which does not fit in an *ā*-stem paradigm, must have been particularly susceptible to remodelling. However, a model for the creation of *-āī* is as yet lacking. For this we must make a brief digression to Celtic.

The OIr. Gsg. of the *ā*-stems ends in *-e* < **-i̯ăs* or **-i̯os* (Cullen 1972, 227-229). The other singular cases reflect a Nsg. **-ā* (OIr. *-ø*, leniting, Brit. *-ø* with *ā*-affection), Asg. **-ăm* (OIr. *-ø*, nasalizing and with palatalization), Dsg. **-ăi* (OIr. *-ø*, leniting and with palatalization). It is likely that Gsg. **-i̯as* (*-*i̯os*) replaces **-os* < **-$h_2$os*, as the distinctive proterodynamic ending **-ās* < **-eh_2-s* would have remained (as OIr. *-a*), and has indeed remained in the Gsg. *mná* < **$g^{w}neh_2s$*. That this Gsg. *-i̯as* dates back to Proto-Celtic times is shown by the fact that in Gaulish the *ā*-stem Gsg. in *-ias* (beside possible traces of *-as*) is particularly frequent (Lejeune 1985, 88-94). As in Latin, the motivation for replacing the original Gsg. **-h_2-os* > **-os* is evident, but a persuasive model is lacking. The usual assumption that **-i̯as* was taken from the **-iH*-stems (e.g. McCone fthc.) does not provide this model: why should **-i̯as* be preferred over proterodynamic **-ās* in **$g^{w}nās$* (with which the rest of the paradigm was almost identical) and in the *devī́*-type **-iās*? The latter has admittedly not left any definite reflex in Irish, but its former presence can be inferred from the correspondence *rígain*, Skt. *rājñī́* 'queen'. The vocalization of **-n-* to **-an-* in PCelt. **rēganī* can only be explained on the basis of proterodynamic oblique cases such as Gsg. **rēgn̥ās*, Dsg. **rēgn̥āi*.

With some hesitation I propose the following scenario. The PIE. Gsg. **-h_2-os* > **-os* was replaced by **-iH* > **-ī*, the morpheme that also appeared as a new genitive of the *o*-stems in Italo-Celtic (Note that both had **-os* after the loss of the

laryngeal, and cf. *-osio* in Faliscan). This *-ī* may in origin have been identical with the formative of the *devḯ* and/or *vṛkḯḥ*-types, which originally meant something like '(something, -one) belonging to (*devá-* or *vṛ́ka-*)'. The introduction of *-ī* in the h_2-stems may be attributed to the Italo-Celtic period. In Latin, the paradigm Nsg. **-ă*, A. **-ām*, G. **-ī*, D. **-ăi*, Npl. **-ās* was remodelled by generalizing the characteristic vowel *-ā-* in all oblique cases, which led to a Gsg. *-ā-ī*. This remodelling apparently did not take place in Sabellian, where there is no trace of **-ī* (not even in the *o*-stems) and the *devḯ*-type Gsg. in *-ās* was apparently generalized. In Celtic, the *ā*-stem Gsg. *-iH* was remodelled into a more normal Gsg. **-iHos* after the *ī*-stems (e.g. Gsg. *blíadnae* < **-iHos* of the Nsg. *blíadain* < **-ī*; **-iHos* ultimately reflects the *vṛkḯḥ*-ending, which in Irish evidently spread to the *devḯ*-inflection). The ending **-ās*, which probably survives in some Gaulish words and in the Olr. word for 'woman', was apparently generalized in Celtiberian, which has only evidence for *-ās*.

In relation to the Celtic remodelling it may be noted that if the genitive morpheme **-iH* was identical to the suffix of the *devḯ-* and/or *vṛkḯḥ*-type, it was capable of inflection. In that case, the *ā*-stem Gsg. **-iHos* may have meant 'of someone /something belonging to X' (in which X is the lexical meaning of the root of the word). The semantic difference between this and 'of X' may subsequently have been lost in favour of the latter, so that **-iHos* simply ended up as the Gsg. of an *ā*-stem (cf. Engl. 'a friend of John's'). I wonder if in this way we come to a better understanding of a number of enigmatic case forms of the Indo-Iranian *ā*-stems, viz. the Gsg. *-āyās*, D. *-āyai*, L. *-āyām*. Assuming that the formation in *-ih₂*, which was in part functionally equivalent to the original Gsg. of the HD **h₂*-stems **-h₂os* > **-as*, ousted **-as* (which was uncharacteristic), and taking X as a symbol for a root, the following development can be conceived of: as I have suggested for Celtic, X-*ih₂* 'belonging to X', functionally a Gsg. of X-*h₂*, could itself retain a formal Gsg. ending: X-*yās*, which meant 'of someone, -thing belonging to X'. The latter, formally a Gsg., could have ousted X-*ih₂* in the function of genitive of X-*h₂*, a development that may have been furthered by the lexicalization of X-*ih₂* formations in general (i.e. *devḯ* did not mean '(someone) belonging to a god' any longer, but 'goddess', and *rathḯḥ* did not mean '(someone) belonging to a chariot' any longer, but 'charioteer'). Two steps remain: the replacement of a new Dsg.

and Lsg. on the basis of the Gsg. *-*yās*, and the introduction of the characteristic vowel -*ā*- before these endings. If this explanation is correct, the Lsg. in -*āyām* is the exact equivalent of Engl. 'at the baker's'. I wish to stress that this explanation is tentative, but it does not seem inferior to the attempts made so far to explain the Ilr. paradigm (see Hock 1975).

1.1.4. Conclusion

The developments assumed for Italic and Celtic may be summarized in a diagram:

PIE: hysterodynamic

	It-C.	PCelt. I	PCelt. II	Latin	Sab.
N	*-h_2	>*-*ă*	>*-*ă*	>*-*ă*	>>*-*ā*
A	*-eh_2-*m*	>*-*ām*	>*-*ām*	>*-*ām*	>*-*ām*
D	*-h_2-*ei*	>*-*Hăi*	>*-*Hai*	>>*-*ai*	>>*-*āi*	>>*-*āi*
G	*-h_2-*os*	>*-*Hos*	>>*-*iH*	>>*-*iHăs*	>>*-*ā-ī*	>>*-*ās*

1.2. PIE. stems in *-*iH* in Latin

Four types of primeval **iH*-stems may be distinguished on the basis of Latin.

1. As is well known, the Sanskrit *devī́*-inflection (N. -*ī*, A. -*īm*, G. -*yās*, D. -*yai* etc. < *-ih_2, *-ih_2-*m*, *-ieh_2-*s*, *-ieh_2-*ei*; a proterodynamic paradigm) generally corresponds with Latin feminines in -*īc*-, cf. *genetrīx*, Skt. *jánitrī* < *$ǵenh_1$-*tr*-ih_2 (Leumann 1977, 283, 376-377; for Latin. -*c*- see IV.C.1.6). There are three other Latin types whose origin may be traced back to the *devī́*-inflection.

a. Feminines in -*īna* (Leumann 1977, 327), cf. *rēgīna*, Skt. *rājñī́*, Olr. *rigain* < **Hrēǵnih*$_2$.

b. *avia* (which is the only word originally belonging to this "class"; *neptia* replaces *neptis*), the feminine beside *avus*, may perhaps be classed among the *devī́*-formations, first because it did not merge with the inflection of *neptis*, *socrus*, which arguably belong to the *vṛkī́ḥ*-inflection (cf. Skt. *naptī́ḥ*, *śvaśrū́ḥ*; see below), and in the second place because in form *avia* is identical with the denominal abstracts in -*ia*, for which a *devī́*-origin can perhaps be argued (see c).

c. The denominal abstracts in -*ia* (*audācia*, *mīlitia*, *invidia* etc., see Leumann 1977, 291, 292) may be compared with the Greek (οοφίᾱ, ξενίᾱ) and rare Sanskrit (*dūtiyā́* 'Botengang', *dūtá*- 'Bote') denominal abstracts in -*ίᾱ* and -*yā*, respectively (see Wackernagel-Debrunner III, 833, 840). It is

tempting to connect this formation with the OCS. abstracts in *-ynji* (e.g. *pravynji* 'justice'), which Lohmann (1932, 63 f.) has demonstrated to be identical to the *devī*-inflection. Note also the Germanic abstracts in **-īn-* (e.g. Goth. *manageis*), for which the same origin is assumed (Krahe-Meid (1965-1969) III, 67). Thus, it may be argued that the Vedic, Greek, and Latin abstracts in **-iā-* are an offshoot of the *devī*-inflection. On the other hand, both Greek and Sanskrit have maintained the *devī*-class as a separate category, and it is obscure why and how the abstracts in **-iā* would have become separated. It thus seems conceivable that the origin of these abstracts is more complicated.

2. Latin correspondences with the Sanskrit *vṛkīḥ*-inflection are more difficult to find (N. *-ī*, A. *-yàm*, G. *-yàs*, D. *-yè* etc. < **-iH*, **-iH-m*, **-iH-os*, **-iH-ei*; a hysterodynamic paradigm). The only certain instance is the Latin *i*-stem *neptis* 'granddaughter', which corresponds to Skt. *naptīḥ*, G. *naptyàḥ* and to W. *nith* 'id.' < **nextī* < **neptiH*. *neptis* may be compared with *socrŭs* 'mother-in-law', which corresponds to Skt. (hysterodynamic) *śvaśrūḥ*.

It is generally assumed that *neptis* acquired its *i*-stem inflection as a result of remodelling of the paradigm on the basis of the regular outcome of the Asg. **nept-ih₂-m* > **neptim* > *neptīm*. While the process as a whole is perfectly feasible, I am not confident about one crucial detail: that **-ih₂-m* yielded **-īm* and not **-iăm*. The latter development may be compared with that of **-íh₂m* in Sanskrit (**-íh₂-m* > **-íHam* > *-yàm*) and Celtic (**-ih₂m* > **-iam* > **-ien* > Olr. *-i* in *blíadnai*, *rígnai*). There are two (admittedly not compelling) reasons for assuming that **-ih₂m* yielded **-iăm* in Proto-Latin:

a. If the abstracts in *-iā-* are an offshoot of the *devī*-class (see above), an Asg. **-ih₂-m* > **-iăm* would explain why the Nsg. **-ih₂* > **-ī* (see III.4) was remodelled to *-iă*. However, if **-ih₂m* yielded **-īm*, it seems unlikely that the other oblique cases (e.g. Gsg. **-iās* < **-ieh₂-s*) would have been powerful enough to change N. **-ī*, A. **-īm* into **-iă*, **-iām*.

b. The type *māteriēs*, *-iem*, *-iāī* etc. may be explained on the basis of an **ih₂*-stem with an Asg. **-ih₂-m* > **-iăm* > *-iem*, which caused the remodelling of the Nsg. **-ī(s)* to *-iēs* (see 2.4.3 below). If one accepts this, the supposition that **-ih₂m* yielded **-iam* > *-iem* is inherently accepted as well.

As both arguments depend on the correctness of uncertain

ideas, I do not insist that *-*ih₂m* yielded *-*iăm*, but there are at least some indications that it may have done so. It may therefore be interesting to explore alternative explanations for *neptis*.

It may be argued that *neptis* is based on other oblique cases than the Asg., where the laryngeal was lost before endings beginning with a vowel, e.g. Gsg. *-*ih₂-es* (or *-*ih₂-os*) > *-*ias* (or *-*ios*), Dsg. *-*ih₂-ei* > *-*iai*. This may probably be rejected: it seems doubtful that a paradigm N. *-*īs*, A. -*iăm*, G. -*iăs* could have entered the *i*-inflection. Only a Gsg. *-*ios* may have had an identical counterpart in the *i*-stem Gsg. *-*ios* (Skt. *ávyas*), but it is extremely doubtful whether either ending existed in Italic, which has evidence for a Gsg. *-*es*. *-*ih₂-es* > -*iăs* (which is, incidentally, supported by Olr. -*e*, Ogam -*IAS*, Gaul. -*ias* < PCelt. *-*iăs*) has little in common with the *i*-stem Gsg. *-*i-os/es* (for which type there is no direct evidence in Italic, cf. *-*ei-s* > Osc. -*eis*). The parallel adduced by Szemerényi 1985, 270 note 33, AV. *napt́ih*, which replaces RV. *napt́ih*, fails in this respect: in Vedic, the *i*-stems and the paradigm of *napt́ih* had a common Isg. -*yā* and Gpl. -*īnām* and, as far as the hysterodynamic *i*-stem type is concerned, a common Dsg. -*ye*, Abl.Gsg. -*yas* and NApl. -*yas*. Thus, the rise of the *i*-stem Nsg. *napt́ih* in Vedic can be explained.

I would like to suggest that the merger of **nept iH-* with the Latin *i*-stems does not present a problem if we reconstruct a PIE. suffix *-*ih₁* instead of *-*ih₂*. In that case, the Asg. *-*ih₁-m* > *-*iĕm* would have become *-*īm* > -*īm* (cf. *audīt* < *-*īt* < *-*iet(i)*) and the Gsg. *-*ih₁-es/os* > *-*ies/os*, Dsg. -*ih₁-ei* > *-*iei* would have become identical with the hysterodynamic *i*-stem endings. Thus, the rise of *neptĭs* (and, mutatis mutandis, *socrŭs*) would be comprehensible. This suggestion implies that at least part of the Vedic *vṛkt́ih*-inflection reflects stems in *-*ih₁*. It must be stressed again that the argument is based on delicate evidence.

3. Verbal abstracts of the type *ac-iēs*, *alluv-iēs* etc. reflect *-*ih₁*-stems. They may have been inflected according to the *devt́i*-paradigm (see 2.4.2 below).

4. For an attempt to explain the type *māteriēs*, -*iem*, -*iāī* on the basis of a PIE. *-*ih₂*-stem, see 2.4.3 below. Since this type, which comprises denominal abstracts and collectives, remained distinct from the almost synonymous abstracts in -*ia*

(see no. 1 above) and probably had an original Nsg. in *-*iHs*, it may be suggested that the type *māteriēs* reflects the type *vṛkī́ḥ*.

One might wish to distinguish a fifth group, viz. the feminine adjectives in *-ia* (which sometimes were substantivized, e.g. *rēgia*, *victōria*, *patria*, Leumann 292). It is likely, however, that these represent *-*ih*$_2$-stems that were remodelled according to the proportion masc. *-*os* : fem. *-*ă̄* = masc. *-*ios* : fem. x (x = *-*iă̄*).

Summarizing, one may distinguish the following PIE. types on the basis of Latin:
1. *devī́*-type stems in *-*ih*$_2$: feminines in *-īc-*, probably feminines in *-iā-* (*avia*), the type *regīna* and perhaps the denominal abstracts in *-iā-*;
2. *devī́*-type stems in *-*ih*$_1$: possibly verbal abstracts in *-iēs*;
3. *vṛkī́ḥ*-type stems in *-*ih*$_2$: possibly the type *māteriēs*, *-em*, *-iāī*;
4. *vṛkī́ḥ*-type stems in *-*ih*$_1$: possibly *neptĭs* (cf. *socrŭs*).

2. Stems in *h_1

2.1. Introduction

A discussion of the state of the art concerning the research of the stems in *-h_1- necessarily starts with the name of Holger Pedersen, who in his monograph entitled *La cinquième déclinaison latine* (Copenhagen 1926) ingeniously defended the idea that there existed stems in *-h_1- in PIE. and that these accounted for two inflectional types in Latin, viz. the fifth declension and the third declension type *caedēs*, G. *-is*.

2.1.1. The fifth declension

Pedersen's argument concerning the fifth declension runs approximately as follows (pp. 14-18). If there was no inherited nucleus of forms containing *-ē-* (< *-*eh*$_1$-), it is inconceivable that *diēs* (based on the PIE. Asg. **diēm*, probably from **diēum*) and *rēs* (< **reh*$_1$*i-*, but see now Beekes 1985, 80-81, who assumes PIE. **Hreh*$_1$-, which is not altogether convincing but would only strengthen Pedersen's argument) would have given rise to a separate *ē*-declension. "La cinquième déclinaison ne peut être un simple ramas fortuit d'éléments hétérogènes; elle suppose un noyau hérité." It is unlikely that *rēs*, *diēs* alone could in any way lie at the basis of the type *faciēs*, *speciēs*, *materiēs*. Apart from *diēs*, *rēs*, *spēs*, *fidēs* and Old Latin

plēbēs, *famēs*, the fifth declension comprises numerous abstracts in *-iēs*, which greatly outnumber the forms in *-ēs*, and in this sense they lie at the heart of the fifth declension. If one does not acknowledge a PIE. *-eh₁*-declension and wishes to assume that *fidēs*, *spēs* etc. were in some way attracted to the type *diēs* (which is unlikely), one must still account for the type in *-iēs* in some other way. One might assume that the type *māteriēs* originated from the inflection of *māteria* (a small number of words vacillate between the *iē-* and *iā-* declensions) and that some forms came to be influenced by the inflection of *rēs*. Pedersen discusses two scenarios that were suggested to account for this.

(1) According to Sommer (1914$^{2/3}$, 394, 402), the Asg. of the *devī*-type, PIE. **-ih₂-m* (laryngeal mine), became **-iăm* > **-iem* (cf. *corni-cen* < **-can*), which could have been the starting-point for the *ē*-vocalism (under the influence of *rēs*). This explanation, however, would only work for Latin and does not account for the *ē*-inflection of U. *auie* 'augurio' (cf. U. *AVIE-KATE*, *avie-cla*) < **au-iē-* and Apl. *iouie* 'iuvenes', Dpi. *iouies* < **iou-iē-*, as Sommer admits and Pedersen does not fail to underline (in Sabellian short vowels were not reduced, so **-iam* would have remained). Moreover, Pedersen suggests that the timbre of the vowel in **-iam* would probably have been protected by the analogy of the oblique cases. An Asg. **-iim̥* > **-iiem* (that is, of a stem that did not contain a laryngeal) would perhaps solve the Umbrian problem but, as Pedersen points out (p. 17), there is no basis for the reconstruction of such a form. In general, it is doubtful that an Asg. *-iĕm* (with short *-ĕ-*) alone could have caused the rise of the *ē*-inflection.

(2) Thurneysen (1921, 200-202) assumed that in a paradigm N. *-i̯ā*, G. *-i̯ās* the suffix *-i̯ā-* regularly became *-i̯ē-*. There is, however, no basis for this suggestion, as Pedersen pointed out.

Thus, Pedersen concludes that there is no reason to abandon the theory that PIE. *ē*-stems lie at the basis of the Latin fifth declension.

Recently, an alternative explanation of the type *māteriēs*, *māteria* was suggested, which does not start from a PIE. *h₁*-stem but from a particular type of hysterodynamic **ih₂*-stems with a Nsg. in **-iēh₂-s* (Steinbauer ap. Mayrhofer 1986, 133-134). According to this theory, a PIE. paradigm N. **-iēh₂s*, A. **-ieh₂m*, G. **-ih₂es*, D. **-ih₂ei* yielded **-iēs*, **-iām*, **-ias*, **-iai*. The loss of a laryngeal after lengthened grade **-ē-* with-

out colouring it to *-ā-* is in itself possible, although I have found no independent evidence to support this claim for Latin (rather the reverse, cf. perhaps *nāvis* < **nēh₂u-*, *sāl* < **sēh₂l*; see IV.C.1.3.6.1). The *iā*-inflection *māteria*, G. *māteriae* would then be based on the Asg. **-iām*, and the *iē*-inflection on the Nsg. **-iēs* (which would according to Steinbauer fit in nicely with the oldest Latin system, where the Nsg. had *-iēs* while oblique cases had *iā*-stem endings; for this system see below). The type *aciēs*, *speciēs*, which has no forms in *-iā-*, may then be explained by assuming generalization of *-iē-* throughout the paradigm. That the latter type was once inflected like *māteriēs*, G. *māteriae* would appear from the equation of *aciēs* with PGerm. **agjō* (OHG. *ecka*, OIc. *eggia*).

Steinbauer's theory presents three problems, which, to my mind, are strong enough to discredit it:

1. The PIE. paradigm. There is no evidence, apart from the present issue, that stems in h_2 had a lengthened grade suffix **-ēH*. The oldest nominative of the hysterodynamic inflection of stems in a laryngeal (and of all other stems, but this does not concern us here) had a zero grade suffix, which is reflected in Latin: the Nsg. *-ă* reflects **-h₂*, not **-eh₂* (Beekes 1985, 21-25). The type Skt. *pánthās*, *pánthām*, *pathás* does not contradict this: the Nsg. *-ās* < **-eH-s* (with full grade, and no evidence for lengthened grade) was based on the Asg. *-ām* < **-eHm*. It probably replaces older **-H(-s)*, as is perhaps indicated by the OPers. stem *paθi-* < **panthi-* < **pontH* (Beekes 1989a, 7-13). The acute intonation of the Nsg. ending of the Baltic *ā*-stems (Lith. *dienà* < **-ā́* < **-aH*) indicates that it cannot reflect **-ēh₂*; otherwise the Baltic intonation would have been circumflex (see Kortlandt 1985a, 118f.). Thus, a Nsg. **-ēH(-s)* is unlikely. Compounds with *-dheh₁-* as their second member probably had a Nsg. **-dhēh₁* (Kortlandt 1985a, 120), but these, actually being root nouns, cannot be compared with the *ā*-stems, which had suffixal **-h₂-*. It may alternatively be proposed that the Nsg. in **-ēh₂s* arose at some later date, say Proto-Italic. To this may be objected that there is no evidence whatsoever for productive lengthened grade of a similar type. (The introduction of the long vowel in the agent suffix *-tōr-* and in *vōx*, *vōcis* throughout the paradigm cannot be compared: here the lengthened grade was originally present already in the Nsg. of the paradigm, whereas in the case of **-ēh₂-s* one must assume that *-ē-* was introduced from else-

where.)

2. The distribution of *iē-* and *iā*-stem forms in the Latin paradigm. As Steinbauer observed, there seems to be a clear-cut distribution of *iē-* and *iā*-forms in the paradigm of *māteriēs, -ia* at an early stage of Latin. This distribution is somewhat blurred in Plautus and Cato already but may be inferred from Lucretius. Taking *māteriēs* as an example, one finds:

Nsg. *-iēs* (22x)
Asg. *-iem* (8x), *-iam* (1x)
Gsg. *-iāī* (41x), *-iae* (3x)
Ablsg. *-iā* (1x).

See Bailey 1949, 74.

Thus, there appears to be a system:

Nsg. *-iēs*
Asg. *-iem*
Gsg. *-iāī* (> *-iae*)
Ablsg. *-iā*.

It seems possible that the Nsg. *māteriēs* was used for metrical convenience because *māteria* does not fit into a hexameter (except if *-a* is elided), but this cannot explain the Asg. in *-ĕm*. There are three reasons for not attributing this system as a whole to poetic licence. Firstly, the creation of a rather strict system is the exact opposite of the expected tendencies of poetic licence; secondly, the distribution is supported (though the situation is not so clear as in Lucretius) by Plautus (Nsg. *māteriēs* 3x, Dsg. *-iae* 1x) and by Cato's De agri cultura (Nsg. *-iēs* 4x, *-ia* 1x, Asg. *-iem* 6x, *-iam* 2x, Abl. sg. *-iē* 2x, *-iā* 2x, Dsg. *-iae* 1x); and thirdly, poetic licence does not explain the preponderance of the Asg. *-ĕm*, nor the starting point for the metrically convenient Nsg. *-iēs*. The general picture appears to be that Lucretius rather faithfully maintained an archaic paradigm which was becoming blurred in the less elevated speech of Plautus and Cato, although one may wonder whether the Nsg. in *-iēs* is not just a poetic licence.

If one compares Steinbauer's reconstructed paradigm with the paradigm attested in Lucretius, there is an important difference: according to Steinbauer, the *iā*-inflection originated from the Asg., whereas in Lucretius' system the Asg. had *-iem*. As it is not clear why an original **-iām* would have been replaced by *-iem*, *-iem* is probably the old Asg. of the paradigm.

3. The distribution of the alternation *-iē-/-iā-* in the lexicon. As will be argued in more detail in section 2.4.3, the alter-

nation of *-iā-* and *-iē-* is found only in denominal mass nouns (*muriēs*, *māteriēs*) and abstracts (*luxuriēs*, *barbariēs*) and in (productive) abstracts of adjectives in *-itia*, *-itiēs*, but never in the numerous deverbal abstracts (*faciēs*, *speciēs*, *subluviēs*, *aciēs* etc.), which can hardly be accidental.

Steinbauer identifies *aciēs* with PGerm. **agjō*, claiming that one must reconstruct a stem in **-ih₂*. This is not necessarily correct. We know that if there were PIE. stems in **-ieh₁-*, these have disappeared in Germanic. (It is likely that this process started in the Nsg., where **h₂eǵ-i̯h₁ > *agi̯ă* merged with **u̯roǵ-i̯h₂ > *wrakja̯*. The generalization of PGm. **-ō* for **-ă* is of a later date; on this and on the **ih₂*-stems in Germanic in general see Beekes 1990.) Since Latin distinguished *iē-* from *iā*-stems (*milit-ia* etc.) and Germanic did not, it is impossible to prove on the basis of Germanic that *aciēs* must be explained from a stem in **-ieh₂*.

Thus, Steinbauer's suggestion might in theory account for the inflection of the denominatives (which have *-iē/iā-*), but not for that of the deverbatives, which still require an *-iē-* (< **-ieh₁-*)-inflection. We may note that if the deverbatives require an **ieh₁*-inflection, there is no a priori reason why the denominative *-iē/iā*-inflection must necessarily be explained from **-ih₂* and not from **-ih₁*-stems.

We may conclude that Steinbauer's hysterodynamic **-ieh₂-* stems, which have an unlikely Nsg. **-iēh₂-s* from the viewpoint of IE. morphology, do not account for the alternation of *-iē-* and *-iā-* in the paradigm of *māteriēs*, *-ia* in Lucretius, nor for the deverbative type *speciēs*, *aciēs* (which has *-iē-* throughout). Steinbauer's suggestion must therefore be abandoned.

As a preliminary conclusion, which may serve as the basis for the discussion in section 2.4, Pedersen's view that a PIE. **-eh₁*-inflection must lie at the basis of the fifth declension can be wholly endorsed.

We may now briefly turn to the Baltic *ē*-stems. Only a small fraction of these stems reflect PIE. **-eh₁*-stems (e.g. Lith. *meñtė* 'paddle', Skt. *mánthā-*, perhaps *žvãkė* 'torch', Lat. *facēs*) and stems in **-ieh₁-*, the majority being derived from *ih₂*-nouns to which the suffix **-eh₂-* was added (thus e.g. Lith. *vìlkė*, cf. Skt. *vr̥kī́ḥ*). Another small fraction is represented by compounds containing the root **dheh₁-* as their second member (e.g. Lith. *avì-dė* 'sheepfold'). See Stang 1966, 201 ff. and especially Kortlandt 1977, 324-325 and 1985a, 119-120, who contrived these reconstructions. It is thus evident that one can-

not claim that 'the' Baltic ē-stems all reflect PIE. *eh₁*-stems.

2.1.2. The third declension type *caedēs*, G. *caedis*

Concerning the third declension type *caedēs*, *vātēs*, G. *-is*, Pedersen presents us with the following argument (p. 56 ff.). There were hysterodynamic **h₂*-stems in PIE. (which we may now reconstruct as Nsg. **-h₂*, A. **-eh₂-m*, G. **-h₂-os*, D. **-h₂-ei*; see Beekes 1985, 34 ff.) and the question might arise if there also were hysterodynamic **h₁*-stems. He claims that if the latter are reflected in the type *vātēs*, G. *-is*, a solution is provided for a problem that was hitherto unsolved. Pedersen argues that this type cannot be explained from the Nsg. of an *s*-stem of the type *Cerēs*, *-eris*, *pūbēs*, *-eris* because the latter maintained its *s*-stem inflection in Latin and because stems in *-ēs*, unlike the type *caedēs* (excluding only *vātēs*), comprise adjectives and designations of persons (εὐ-γενής, Σω-κράτης). The type *caedēs* cannot reflect *i*-stems either (thus Hirt 1921, 55, 57, Sturtevant 1937, 57-62, also Hocquard 1981; with Nsg. **-ēis* > *-ēs*, A. **-ēim* > **-ēm*) because the oldest ending of the Gpl. was *-um*, not *-ium* (cf. Ernout 1965, 7-28). It appears from the equation of *facēs* 'torch' with Lith. *žvākė* 'id.' (which may, incidentally, be false) and from such derivatives as *facē-tus* 'choice, elegant' (cf. Cicero: *dicendi fax*, *verborum fax*; rejected by EM.), *famēlicus* (*famēs*), *prōlētārius* (*prōlēs*), *vulpēcula* (*volpēs*) etc. that the type *caedēs* reflects an *ē* (= **-eh₁-*)-stem.

As far as the inflection is concerned, Pedersen points to the close parallelism of Lat. *vātēs* and Skt *pánthās:*

Nsg.	*pánthās*	*vātēs*	(< **-eh₁-s*)
Asg.	*pánthām*	*vātem*	(< **-eh₁-m*)
Dsg.	*pathé*	*vātī*	(< **-h₁-ei*)
Gsg.	*pathás*	*vātis*	(< **-h₁-os/es*)
Lsg.	*pathí*	*vāte*	(< **-h₁-i*)
Npl.	*pánthās*	*vātēs*	(< **-eh₁-es*)
DAbpl.	*pathíbhyas*	*vātibus*	(< **-h₁-bh(i)os*)
Gpl.	*pathā́m*	*vātum*	(< **-h₁-om*, Skt. **-aHam*)

One cannot fail to be impressed by Pedersen's reasoning: the type *caedēs*, *vātēs*, G. *-is* cannot be explained from any other known type than a **h₁*-stem; the inflection required to account for the Latin paradigm is a perfectly regular hysterodynamic inflection.

Recently (1985, 37-38 and 1989a), Beekes showed that the PIE. Nsg. was probably not **-eh₁-s*, but rather **-h₁(-s)*. The

latter might explain the OPers. Asg. *paθim* under the assumption that this was based on a Nsg. **paθi* < **-ḫ₁* (cf. Skt. *jáni-* < **gʷenh₂*, which formed the basis for an *i*-stem inflection); moreover, a Nsg. in zero grade **-h₁* would be parallel to the Nsg. **-h₂* of the **-eh₂*-stems. This nominative might explain why Lat. *pōns*, *pontis*, which reflects PIE. **ponteh₁-*, cf. Skt. *pánthās*, did not become a noun of the type *caedēs* in Latin because there was only a narrow basis for the creation of the latter type (viz. the Asg.; thus Beekes 1985, 38): a paradigm **ponth₁(s)*, **ponteh₁m*, **p(o)nth₁es* would yield **ponta(s)* (or directly **ponts*, in accordance with section V.A.4?), **pontēm*, **pontes* > **pontes* (> **-is*?), *pontem*, *pontis*, which could easily have been attracted to the inflection of the *ti*-derivatives. In the type *caedēs*, the vocalism of the Asg. must have been introduced into the Nsg. at some stage (cf. Skt. *pánthās* replacing **panthi(s)* (OPers. *paθim*) after the Asg. *pánthām* and *diēs*, which was based on the Asg. *diēm* < **diēum*; Beekes 1985, 38, 1989a, 12).

According to Kuryłowicz 1966, 19 f., the type *caedēs*, *-em*, *-is* arose from root nouns (**caid-s*, **-m̥* > *-em*, **-es*) under the influence of *rēs*, *rĕm*, *diēs*, *diĕm*. Not only does this analogy seem unlikely in itself, but it also remains unclear why only the Nsg. was changed. It is undeniably the case that old root nouns entered the *caedēs*-inflection (e.g. *sēdēs*, G. *sēdis*), but in my opinion this is understandable only if there was an inherited nucleus of forms with N. *-ēs*, A. *-em*, G. *-is* which could attract the root nouns. Thus, I think that Kuryłowicz's proposal has little to commend itself.

We may conclude that at the basis of the fifth declension and of the third declension type *caedēs*, G. *-is* undeniably lie PIE. stems in **-h₁-*. To what extent elements of a different origin were incorporated is a different matter, which will be discussed below.

2.2. Outline

We may now proceed to a more detailed discussion of a number of problems that are involved in assessing the history of the **h₁*-stems in Latin. Section 2.3 deals with the third declension type *caedēs* and concentrates on the provenance of the words that constitute this type. In section 2.4 the fifth declension is discussed, which is subdivided into nouns in *-ēs* (2.4.1), verbal abstracts in *-iēs* (2.4.2), and the denominal type *māteriēs*, G. *-iae* (2.4.3). Section 2.5 considers the fate of

the *h_1-stems in Celtic.

2.3. The third declension type *caedēs*, G. *caedis*

It has been established that the nucleus of the type *caedēs* reflects PIE. hysterodynamic stems in *h_1: Nsg. *-h_1(-s), A. *-eh_1-m, G. *-h_1-os/es, D. *-h_1-ei etc. > *-a(s), *-ēm, *-es, *-ei etc. At some stage the Nsg. was replaced by *-ēs* after the Asg. *-ēm. In this way the attested paradigm N. *-ēs*, A. *-em*, G. *-is*, D. *-ī* arose. It is important to note that after the shortening of the Asg. ending *-ēm > *-em* the paradigm differed from that of the root nouns only in the Nsg.

2.3.1. Discussion of the material

Ernout (1965, 7-28) has discussed all Latin nouns of the type *caedēs*. He concluded that the following nouns did not belong to this type: *corbēs* 'basket' (normally *corbis*, an *i*-stem), *cautēs* 'stone(s)' (older *cōtēs*, pl. of *cōs*, *cōtis* 'whetstone'), *fidēs* 'string(s) of a lyre' (usually plural; *fidi-cula* points to an old Nsg. *fidis*, which is attested), *veprēs* 'thorn-bush' (in Republican Latin only plural; also sg. *vepris*), the unclear form *tōlēs* 'wen on the neck, goitre', the adjectives *cōnflagēs*, *-flugēs*, *-fragēs* (Gloss., hapax legomena) and probably *vallēs*, also *-is* 'valley'. These forms will not be discussed below.

The remaining forms comprise verbal abstracts (which will be discussed at the end of this section) and a limited number of other forms that cannot be united under a common label (except that there is a relatively large proportion of animal names). The latter are discussed in alphabetic order on the basis of Ernout's list. I have added 13. *stirpēs*.

1. *aedēs* (f.), also *aedis*, Gsg. *-is* originally denoted the fire place (root *$h_2$eidh-, cf. Gr. αἴθω 'to burn'), but came to be used for a room with a fire place, and also for a small temple consisting of a single room. The plural *aedēs* denoted the house (i.e. a group of rooms; see EM. s.v.).

The oblique cases seem to point to an old *i*-stem: Ablsg. *-ī* (very rare; it may be read *-ĕ* (thus Ernout 1965, 9)), Apl. *aedīs* (later *aedēs*), Gpl. *aedium* (never *-um*). There is, however, no evidence for an IE. *i*-stem of this root, but rather for a root noun, cf. Skt. *sam-ídham*, *-e* 'in order to inflame', *agnídh-* 'causing the fire to burn' (thus EM.). Moreover, the old *i*-stems influenced the type *caedēs* rather than the other way round (Ernout 1965, 28), so that it is impossible to account

for the Nsg. *aedēs* if we start from an *i*-stem. On the other hand, Lat. *aedicula* (contrast *volpēcula*, a real *ē*-stem) shows that the *ē*-inflection cannot be old and points to an older consonant stem (an *i*-stem origin being out of the question; cf. *canīcula*, for **canicula* with metrical lengthening which is based on the consonant stem *can-* 'dog'). As *aedēs* does not appear to reflect an *ē*-stem or an *i*-stem, we are left with the hypothesis that it reflects an old root noun. Root nouns are known to have adopted the *caedēs*-inflection: *sēdēs* (?), *trabēs*, *canēs (-is)* (see below).

There is a steady growth of the influence of *i*-stems upon the *caedēs*-type, cf. *sēdēs*, Gpl. *sēdum*, later *sēdium* etc. What we must explain is why this influence started earlier in *aedēs*, *aedis*.

The semantic split between sg. *aedēs*, *aedis* (cf. *canēs*, *canis* below), G. *aedis* 'temple' and the plural *aedēs* 'house' may well have entailed the early (but historic) loss of the sg. in *-ēs*, *aedēs* 'temple' because it was both formally and semantically ambiguous and there was an alternative form, viz. *aedis*. The paradigm Nsg. *aedis*, Npl. *aedēs* that arose in this way was in every aspect an *i*-stem paradigm and may have caused an early complete merger with the *i*-stems.

2. *apēs* (Gloss.), also *apis*, G. *apis* 'bee' has a Gpl. in *-um* and *-ium* (the latter being obviously an innovation), and an Apl. in *-ēs* (never *-īs*). The Nsg. *apis* is probably secondary, as in *canēs*, *canis*, and may be ascribed to the influence of the *i*-stems. *apēs* has no etymology.

3. *canēs*, also *canis* 'dog', of which the former seems to be the older form (Ernout 1965, 10-11), has an old Ablsg. *canĕ* and a Gpl. *canum*. It reflects a PIE. *n*-stem **ḱu-n-*. *canēs* replaces the old Nsg **kō* < **ḱu̯ōn*. The form *canis* is probably due to the influence of the *i*-stems. On the further history of this word see VI.C.2.2.2 no. 1.

4. *clādēs* 'disaster, defeat' belongs to the same root as *cellō* < **kel-n-H-* (see IV.D.1.3.2.1 no. 1). It is possible that *clādēs* reflects **klh₂-dheh₁-*, cf. *pūbēs* below and loc. cit.

5. *fax*, G. *facis* 'torch' seems to have had an old Nsg. *facēs*, as Festus informs us (P.F. 77, 19, according to EM. "imaginaire"). If Pedersen and WH. are correct in connecting *facētus* 'choice, elegant' with *fax*, the *ē*-stem may be old. It is not possible to adduce Lith. *žvãkė* 'id.' as evidence for the

archaism of the Latin inflection because the origin of the Baltic *ē*-stems is rather more complex. As it is not certain that *facētus* belongs with *fax*, *fax* need not be explained as an innovation (which is, however, still possible, cf. *plebs* in view of *plēbēs* (see below)). Since *fax* is the normal form and *facēs* may be explained as an innovation (cf. *trabs*, *trabēs* below), I would prefer to reconstruct a PIE. root noun **ǵhu̯ok-s* (for the *-a-* and a discussion of the etymology see VI.C.2.2.2 no. 2).

6. *fēlēs* (also *-is*) 'cat, marten, ferret', with Gsg. *-is*, Abl. *-ĕ* and Gpl. *-ium* (taken from the *i*-stems) may be compared with W. *bele* 'marten', which has a different formation, though: it may reflect **bheleg(h)o-* (WH. s.v.). The *ē*-inflection may have been taken from *volpēs* 'fox' (see below).

7. *gerrēs*, G. *-is* 'inferior salted seafish' has no etymology.

8. *mēlēs* Abl. *-ĕ*, Gpl. *-ium* (Plin.) 'badger, marten' has no etymology. For the inflection cf. *fēlēs* and *volpēs*.

9. *nūbēs* (rarely *nūbis*) 'cloud', Abl. *-ĕ*, Gpl. *-ium*, also (Gloss.) *-um* (the latter is probably older) may be an old *ē*-stem in view of *nubēcula*. However, Servius informs us that Livius Andronicus used a Nsg. *nubs*. This may be secondary (cf. *plebs*, *plēbēs*), but in view of the great age of *nubs* it seems more likely that it is old, and that *nūbēs* is secondary (cf. *trabs*, *trabēs*; *sēdēs*). The etymology does not help: the only reliable cognate is W. *nudd* 'haze' < **noud(h)-*.

10. Beside *palumbēs* (m./f.; Pliny has *-is*), G. *-is* 'wood-pidgeon' one finds *palumbus* (m.), which, as Ernout 1965, 15-16 states, cannot have been formed after *columbus* 'pidgeon' because the old form of the latter was *columba*. It does not have a clear etymology.

11. *pūbēs* (f.; a N. in *-is* appears at a late stage), Abl. *-ĕ*, but *-ē* in Plautus' Pseud. 126 in a mockery of official style, 'the hair which appears on the body at the age of puberty' may be an old *ē*-stem. It must be distinguished from the *s*-stem adjective *pūbēs*, G. *pūberis* 'grown up, of ripe age', which is possibly a back formation based on *impūbēs*, where the *s*-stem (in a compound) is regular, cf. Gr. ψευδής based on ἀψευδής (Pedersen 1926, 74, 77 note 2). Etymologically *pūbēs* is far from clear, but it may contain the root **peu-* (in Skt. *pumắn-* 'man' and in *puer*?) and the root **dheh$_1$-* 'to put' (thus Peder-

sen loc. cit.). As will be shown in 2.4.1, compounds in *-dheh$_1$- had a tendency to develop a fifth declension inflection, which would explain the Abl. sg. in -ē (but the latter may not be reliable).

12. *sēdēs* 'seat, abode' may reflect a root noun in view of its lengthened grade root. This root noun would explain the derivation of *sēdāre* 'to calm, make sit' (Steinbauer 1989, 142). However, Skt. *sadhás-tham* 'seat, abode', *sádhiṣ-* (ntr.) 'id.' seem to point to **sed-H-(e)s-*, so that it seems possible that *sēdēs* reflects an original h_1-stem (thus Kuiper 1948, 23-35). It seems feasible that a root noun **sēd-* and a h_1-stem **sed-eh$_1$-* merged in *sēdēs*, the inflection of the two differed only in the Nsg. after the loss of the laryngeals and the shortening of the Asg. **-ēm* to *-ĕm*. The difference in meaning between **sēd-* and **sed-eh$_1$-* is obscure.

I see no compelling reason to identify *sēdēs* with the *s*-stem OIr. *síd* 'peace'. The latter may be compared with Gr. ἕδος, Skt. *sádas-* 'seat' < **sedos*. The *-í-* of *síd* is probably secondary (cf. W. *hedd* 'peace', with short *-e-*), taken from the root noun.

13. *stirpēs* beside *stirps* (f.), G. *stirpis* 'lower part of the trunk of trees, plants' does not have an etymology. The *-ē-* may be secondary (cf. *trabs*, *trabēs*).

14. *strāgēs* 'ruin', Abl. *-ĕ*, contains the root **strh$_3$-* of *sternō*, *strāvī*, *strātum*. *strā-g-* is also found in *strāgulus* 'which serves for spreading or covering'. Although *strāgēs* looks like a nomen actionis, there is no verbal root *strāg-* and it is thus best treated as denominal.

15. Beside the common Nsg. *trabs* 'beam' one also finds *trabēs*. The long vowel of Osc. Asg. *TRÍÍBÚM* < **trēb-* points to a root noun. In Latin, the zero grade root **trab-* (possibly from **trb-*, or a morphological zero grade, see VI.D.2.1 no. 8) was generalized. The Ng. in *-ēs* was evidently an innovation.

16. *vātēs* (m.; sometimes *vātis*), G. *-is*, Abl. *-ĕ*, Gpl. *-um* (Liv., Plin., Tac., in poetry always) 'seer'. Cicero uses both *-um* and *-ium* but the former must be older. It has been claimed that *vātēs* reflects an *i*-stem **u̯ātē(i)s* in view of OIr. *fáith* 'seer', which is an *i*-stem, but this must be rejected, first because of the Lat. Ablsg. and Gpl., and second because OIr. *fáith* may itself be a remodelled **u̯ātē-*, as will be argued in

section 2.5.

17. *verrēs* (m.) 'male swine, boar' is cognate with Skt. *vṛ́ṣan-* 'bull' < **-en-*, cf. *vṛ́ṣanas*, not *-ān-*. It probably reflects a remodelled Nsg. **u̯ersē(n)* (thus already Pedersen 1926, 62 note 1).

18. *volpēs* (f.; late also *-is*) 'fox' probably reflects an old ē-stem, cf. *volpēcula*. Hoffmann (1967, 31-32) compared *volpēs* < **u̯lp-eh₁-* with Av. *urupi-*, *urupa-* 'weasle, dog-like animal vel sim.' < **lup-h₁* and **lup-eh₁-*, respectively. If the equation is correct, the etymon would be important because it represents the only h_1-stem that is reflected as such in two branches of Indo-European (note that *facēs*, Lith. *žvākė* is unreliable, see above). However, **u̯lp-* and **lup-* are different roots, and it may be argued that they had a different meaning: **u̯lp-* probably denoted the wild cat (Lith. *vilpišỹs*, Pers. *gurpak*) and **lup-* the jackal (Schrijver fthc.c). It is probably safest to conclude that a word belonging to this semantic field (predatory animals of medium to small size) was a h_1-stem in PIE. Cf. especially Lat. *fēlēs*, *mēlēs* (which probably owe their inflection to *volpēs*).

We may conclude that the inflectional type N. *-ēs*, A. *-em*, G. *-is*, Abl. *-ē*, Gpl. *-um* is not of secondary origin in a number of Latin words. In the following diagram the words which have an Indo-European etymology and which belong to the old nucleus of the Latin third declension with Nsg. in *-ēs* are presented. It is claimed that these forms reflect PIE. hysterodynamic stems in **-h₁-*:

probable		possible		uncertain	
16	*vātēs* <**ueh₂teh₁-*	12	*sēdēs* <**sĕdeh₁-*	5	*facēs*, *fax*
18	*volpēs* <**ulpeh₁-*			9	*nūbēs*, *nubs*

4. *clādēs* < **kl(e)h₂-dheh₁-* and 11. *pūbēs* < **peu-dheh₁-* may reflect the root noun **-dheh₁-*. If so, the reason why these forms ended up in the third, not the fifth declension (as *fidēs*, *spēs*) is obscure (for the argument why they should see 2.4.1). Perhaps these forms originally did belong to the fifth declension but were transferred to the third at an early stage, cf. *plebs* beside originally fifth declension *plēbēs*.

It must be emphasized that the extremely small number of etyma that reflect a h_1-stem cannot be used to deny that the inflectional type N. *-ēs*, G. *-is* stems from PIE. h_1-stems, be-

cause the reconstruction of this type as PIE. h_1-stems rests on different grounds (see section 2.1.2). Note the presence of *h_1-stems in Celtic (see 2.5).

Apart from these more or less isolated words there is a relatively large body of feminine deverbal nomina actionis in *-ēs*, G. *-is*, which are archaisms from the Latin point of view (thus Ernout 1965, 28):
amb-āgēs sg. 'detour, circuit', pl. 'circumlocutions' (*ambigĕre*), *ind-āgēs* 'investigation' (denom. *indāgāre*, cf. *agĕre*), *caedēs* 'massacre' (*caedĕre*), *com-pāgēs* 'connection, joint' (*pangĕre*, cf. *impāgēs*, *prōpāgēs*, *repāgēs*), *contāgēs* 'contact' (*contingĕre*), *ind-olēs* 'inborn quality', *prōlēs* 'progeny', *sub-olēs* 'offshoot, progeny' (*alĕre*, cf. *ind-olēscĕre*), *lābēs* 'fall; stain' (*lābī*), *luēs* 'fluidity, plague' (*luĕre*), *mōlēs* 'huge mass' (*mōlīrī*; *mŏlestus* may have been formed after *modestus*, Pedersen 1926, 62), *ruēs* 'ruin' (*ruĕre*), *rūpēs* 'rock, precipice' (*rumpĕre*), *saepēs* 'hedge, fence' (also *saeps*, which may be original; cf. *saepīre* 'to enclose'), *praesaepēs* 'enclosure' (also *praesaepe*, *-is* and *-ia*, cf. *praesaepīre*), *sordēs* 'dirt' (*sordēre*; but see Pedersen 1926, 75, who reconstructs **soro-dheh$_1$-* and refers to the fifth declension forms Gpl. *sordērum* (Plaut.), Ablsg. *sordē* (Lucr.)), *squalēs* 'filth' (after *sordēs*? Cf. *squalēre* 'to be stiff, rough'), *struēs* 'heap' (*struĕre*), *tābēs* 'melting, consumption' (*tābēre*), *vehēs* 'carriage, wagon-load' (*vehĕre*).

It seems probable that this formation goes back to Indo-European because its origin cannot be explained as a Latin innovation, but it is impossible to find a formal equivalent in other languages (but cf. Irish verbal nouns of the type *buith*, which have adopted a peculiar inflection, see section 2.5; and perhaps the Lith. type *bė̃gė* of *bėgti*?). The type may be compared with the verbal abstracts in *-iēs*, which, however, seem to have a somewhat different history.

According to Pedersen 1926, 77, these verbal abstracts reflect a proterodynamic paradigm which had *-ē-* < **-eh$_1$-* throughout the paradigm. They therefore originally belonged to the fifth declension, as appears from the fact that some forms had an Abl. in *-ē*, and subsequently went over to the third declension type *vātēs*, G. *-is*. In my opinion, this is unconvincing. In Republican Latin, the Ablsg. in *-ē* is found only in *contāgē* (1x, Lucr.), *lābē* (1x, Lucr.), *sordē* (Lucr.), *squalē* (2x), *tābē* (Lucr.), in all instances except *squalē* beside the expected form in *-ĕ*. One may explain *-ē* as a form created for

metrical convenience. The confusion may have been caused by *famēs* and *plēbēs*, which originally belonged to the fifth declension but later adopted third declension forms (see below). If the type *caedēs* originally belonged to the fifth declension, one would expect to find many more forms with *-ē-*, as in the case of *famēs* and *plēbēs*.

2.3.2. Conclusion

Of all Latin words that inflect according to the type *caedēs*, G. *caedis* only four instances have an inherited hysterodynamic h_1-stem:

1. *sēdēs* < **sed̆-eh₁-*?
2. *vātēs* < **ueh₂t-eh₁-*
3. *volpēs* < **ulp-eh₁-*
4. deverbal nomina actionis in *-ēs*, G. *-is* < **-eh₁-*, **-h₁-es*.

The hypothesis that a number of hysterodynamic h_1-stems lost their characteristic inflection is confirmed by *pons*, *pontis*, cf. Skt. *pánthās*, G. *pathás* < **pónt(e)h₁-s*, **pnth₁-ós*. The explanation for this loss may be that there only was a narrow basis for the development of *-ē-* in the Nsg., viz. the Asg. **-eh₁-m*, and that at some stage the protoform of the Nsg. *pons* (viz. Nsg. **ponth₁s* > **pontas* > **pontes* > **pontis*? Or directly **ponth₁s* > **ponts* > *pons*?) was particularly apt to be associated with the derivatives in **-ti-*.

Several consonant-stems have acquired the *caedēs*-inflection (which meant the replacement of the Nsg. *-s* by (the more characteristic) *-ēs*): *canēs* < **ḱu̯on-*; *trabēs* (beside *trabs*) < **trb-*; *sēdēs* < **sēd-* (?); and possibly *facēs* (beside *fax*) < **ǵhu̯ok-*; *nūbēs* (beside *nubs*) < **neudh-*.

2.4. The fifth declension

2.4.1. Nouns in *-ēs*

Apart from *diēs*, which does not reflect a PIE. stem in **-h₁-*, only *rēs*, *spēs*, *fidēs* and in Old Latin *plēbēs* and *famēs* belong to this declension (Greek personal names like *Herculēs* will not be discussed). All are feminine.

1. *rēs* < **Hreh₁(i)-*. Beekes 1985, 80-81 considers the possibility of a root noun **Hreh₁-* rather than an *i*-stem **Hreh₁-i-*. He explains Skt. *rayi-* on the basis of an old Nsg. **Herh₁s* > **aris* (cf. Asg. **Hreh₁m* > **rām*). Uncertain. In Latin, **rēis* would probably have yielded *rēs*, cf. (**leh₁iu-* >> **lēiuis* > *lēvis*). **rēis* would then owe its *-ē-* to the oblique cases which had consonantal **-i-*, e.g. Gsg.

*Hreh$_1$-i-os.

2. *spēs* (f.) 'hope' reflects a root **speh$_1$-*, cf. OCS. *spěti* 'to succeed in sth.', Lith. *spėti* 'to be in time for' < **speh$_1$-*, OE. *spōwan* 'to succeed' < **spoh$_1$-*. In Latin there are a number of *s*-stem forms, viz. Asg. *spērem* beside *spem*, and Npl. *spērēs* (Enn. ann. 128 (Apl.), 429 (Npl.)) beside *spēs* (Plaut.), which must be secondary. They were most likely based on a compounded adjective, cf. Gr. ψευδής based on ἀψευδής, cf. Skt. *medhá*, *su-medhás*. This adjective may be reflected in *exspes* 'hopeless' (always Nsg.) and indirectly in *dē-spērāre* 'to be desperate'. It is unlikely that *spēs* was an original *s*-stem that was influenced by *rēs*, because *s*-stems remained in Latin (*mōs*, *mōris*, *mūs*, *mūris*, contrast *sūs*, *suis*; thus Pedersen 1926, 74). The PIE. inflection was probably **speh$_1$-s*, A. **speh$_1$-m*, G. **sph$_1$-os*. The full grade root was apparently generalized in Latin.

3. *fidēs* 'faith, confidence, honesty' always inflects according to the fifth declension (cf. *fidēlis*). It looks like a verbal abstract of *fīdĕre* 'to trust', but if that is correct one must explain why it was not inflected according to the third declension type *caedēs*, *caedis*. The answer to this was given by Meillet (1922, 215-218), who claimed that *fidēs* was remodelled on PIE. **kred-dheh$_1$-* (Skt. *śraddhá*, Lat. *crēdĕre*), with which it was (almost) synonymous. The original inflection of *fidēs* would thus be N. **-dheh$_1$* (or **-dhēh$_1$*, which is reconstructed by Kortlandt 1985a, 120 in order to account for the circumflex intonation of the Nsg. of the **-eh$_1$*-stems in Baltic), A. **-dheh$_1$-m*, G. **-dhh$_1$-os*, which was identical to that of *spēs*, but differed from the type *caedēs* in the Nsg. (which had **-h$_1$*, not **-eh$_1$*). The full grade **-eh$_1$-* was obviously generalized in the oblique cases at an early stage. The reason why *fidēs*, unlike *plēbēs* and *famēs*, resisted the tendency towards third declension inflection may be that *fidēs* belonged to a more elevated (and therefore more archaic) style of speech.

4. *plēbēs*, G. *-eī*, *-ī* 'the common people' (cf. *plēbēcula*) appears to be older than N. *plēbs*, G. *plēbis* (Ernout 1965, 16). According to Pedersen 1926, 63, 70-71, one may reconstruct a PIE. proterodynamic paradigm **plēdhūs*, G. **plēdhwēs*, with generalization of **-wē-* in Latin in order to account for the fifth declension inflection. However, as Beekes 1985, 39 pointed out, Gr. πληθύς, G. πληθύος points to a paradigm **pléh$_1$dhuh$_1$(-s)*, A. **plh$_1$dhuéh$_1$-m*, G. **plh$_1$dhuh$_1$-ós*, in

which the form of the suffix in the Asg. was ousted. Beekes also claimed that the Nsg. cannot have been *-*ueh*$_1$*(-s)* because then the loss of this full grade (supported by the N. and Asg.) would be unmotivated.

Steinbauer ap. Mayrhofer 1986, 113 reconstructed a *-*h*$_2$-stem N. **plh*$_1$*dhuēh*$_2$*(-s)*, A. **plh*$_1$*dhueh*$_2$*-m*, G. *plh*$_1$*dhuh*$_2$*-os*. One may object that there is no reason for the reconstruction of a *-*h*$_2$-stem (no trace of a reflex of the Asg. *-*ueh*$_2$*m* > *-*uām* is found); that the lengthened grade in the Nsg. is unique; that the Greek Nsg. cannot be explained; and, finally, that the full grade of the root in Latin is a mystery.

Thus, a hysterodynamic stem in *-*h*$_1$ with a Nsg. in (zero grade) *-*h*$_1$- accounts best for Gr. πληθύς. We may then assume that the Latin paradigm was based on the Asg. It is legitimate to ask why the word joined the fifth declension and did not inflect like the (hysterodynamic) type *caedēs*, G. *caedis*. I think that the problem may be solved if we consider the regular phonetic development of the PIE. paradigm in Italic, which would yield PIt. **plēfūs*, **plēfēm*, **plēfes* (with loss of *u̯ after a labial stop, see Meiser 1986, 185; for simplicity's sake I have reconstructed a full grade root for all cases, which corresponds with the final result in Latin). It is easy to see that there is reason to create a new Nsg. because the old Nsg. made the paradigm unique. If we assume that this new N. was based on the Asg. (cf. *diēs*, based on *diēm*), the paradigm is: **plēfēs*, **plēfēm*, **plēfes*. This paradigm was inflectionally identical to **spēs*, **spēm*, **spēs* (< **sph*$_1$*-es*), **fiθēs*, **fiθēm*, **fiθes*, and like *spēs* and *fidēs* it joined the fifth declension. As we have seen earlier, the fifth declension is constituted by (hysterodynamic) nouns that had an original N. and Asg. in *-*ēs*, *-*ēm* (which led to the generalization of *-ē-* throughout the paradigm), whereas the type *caedēs* probably had a different Nsg., viz. in *-*h*$_1$*(s)* (> *a(s)*?). We may assume that **plēfūs* was replaced by **plēfēs* at an early stage (because the word joined the fifth declension), when the type *caedēs* still had a Nsg. in *-*a*.

5. *famēs* 'hunger' (later *famis*) has an old fifth declension Gsg. *-ī* (Cato, Lucilius), which was later superseded by *-is* (of the third declension), and an Ablsg. *-ē* (third decl. *-ĕ* appearing only very late), see Ernout 1965, 12. Compare *famē-licus* 'hungry'. *famēs* has no reliable etymology.

We may conclude that, as far as can be ascertained, the

old nucleus of the ē-stems (as distinct from the *iē*-stems) is formed by hysterodynamic root-nouns which had a full grade suffix *-eh_1- in the N. and Asg. and in the Npl. In *spēs* and (perhaps) *rēs* and *fidēs*, which reflect root nouns in *-h_1, the full grade is inherited in these case forms; in *plēbēs* the Nsg. originally had a zero grade suffix, but there is reason to believe that a new Nsg., with a full grade suffix based on the Asg., was created at an early date (Proto-Italic). Since *famēs* has no etymology, its history cannot be reconstructed.

The introduction of the full grade suffix *-ē-* < *-eh_1- into the Gsg. *-ēī* and the Dsg. *-ei* is exactly parallel to the introduction of *-ā-* into the G. and Dsg. of the ā-stems which was discussed in section 1.1.4.

It is important to note that there is no evidence to indicate that the ē-stems of the fifth declension arose from proterodynamic h_1-stems (type N. *-h_1, A. *-h_1-*m*, G. *-eh_1-*s*, D. *-eh_1-*(e)i* etc.).

2.4.2. Verbal abstracts in *-iēs* (type *aciēs*)

As we have seen in the introduction, there are stems in *-iē-* that have cases with *-iā-*stem forms (see 2.4.3) and others that have *-iē-* throughout the paradigm. Both categories are always feminine. The latter category, which is discussed in this section, consists of verbal abstracts. It is not productive any more in Latin (thus Leumann 1977, 285), whereas it must have been so at a somewhat earlier stage in view of the fact that relatively recent compounds have an abstract in *-iē-* (Pedersen 1926, 80).

The following list, which is based on Brosman 1987, 330, contains all instances of verbal abstracts in *-iēs:*
aciēs 'sharpness, edge' (*acēre*), numerous compounds in *-luviēs* (*-luĕre*): *adluviēs* 'pool' (*adluĕre*), *conluviēs* 'filth' (*conluĕre*), *diluviēs* 'inundation' (*diluĕre*), *ēluviēs* 'washing away' (*ēluĕre*), *inluviēs* 'inundation (*illuĕre*), *interluviēs* 'connecting flow of water' (*interluĕre*), *prōluviēs* 'inundation, scourings' (*prōluĕre*), *subluviēs* 'dirt' (*subluĕre*); *cariēs* 'rotting' (cf. *śr̥ṇāti* 'breaks?', Olr. *ara-chrin* 'withers', see IV.E.13.2.2.1); *congeriēs* 'heap, mass' (*congeria* only late, 2nd cent. AD; *congerĕre*); *faciēs* 'shape, forms' (*facĕre*) and *superficiēs* 'top, surface'; *ingluviēs* 'crop, maw' (**ingluĕre*, WH. 612); *maciēs* 'leanness' (*macēre*); *perniciēs* 'destruction' (*pernecāre*) and *interneciēs* (*internecāre*); *prōgeniēs* 'descent, progeny'

(*prōgignĕre*); *prōperiēs* 'posterity, progeny' (*parĕre*); *rabiēs* 'rage, madness' (*rabĕre*); *saniēs* 'corrupted blood' (deverbal? No etymology); *seriēs* 'series, row' (*serĕre*); *speciēs* 'view, appearance' (*specĕre*).

There is one verbal abstract that has *iā*-stem forms, viz. *effigiēs* 'likeness, effigy' (*effingĕre*), *effigia* (Plaut. Rud. 2,4,7, Afran. ap. Non. 493, 2, Inscr. Orell. 7416 λ.), Npl. *-iae* (Lucr. 4, 105), Apl. *-ias* (Lucr. 4, 42 and 85). It seems possible that the *iā*-stem is original, cf. *reliquiae*, *dēsidia* (*relinquĕre*, *dēsidēre*) etc. and that the forms in *-iē-* arose under the influence of the type *materia*, *-iēs* (2.4.3 below).

For *glaciēs* 'hardness, ice' (cf. *gelū*?), which only has forms in *-iē-*, a deverbal origin cannot be demonstrated, but in view of its meaning it cannot be ruled out either (thus also *saniēs*, which has no etymology at all).

Formally, a *vṛkī́ḥ*-type origin may be considered possible if we assume that the full grade suffix, original in the Asg. **-ieh₁-m*, was generalized (cf. 1.1, where a similar generalization of **-eh₂-* > *-ā-* is advocated for the **h₂*-stems). However, it seems more likely that these *iē*-stems can be identified with the Vedic deverbatives *śámī* 'work' and *śácī* 'might' (thus Wackernagel-Debrunner II.2, 405-407, Leumann 1977, 285). These Vedic forms belong to the *devī́*-inflection, which consists of PIE. proterodynamic stems in **-iH-* (Nsg. **-iH*, A. **-iH-m*, G. **-ieH-s*, D. **-ieH-(e)i*). It is thus conceivable that the Latin verbal abstracts in *-iēs* reflect PIE. proterodynamic *ih₁*-stems. The PIE. paradigm would then be:

N. **-ih₁*
A. **-ih₁-m*
G. **-ieh₁-s*
D. **-ieh₁-(e)i* etc.

This developed into Proto-Italic:

N. **-ī*
A. **-iĕm* (**-ih₁m* > **-ih₁em* > **-iem*? See 1.2 above)
G. **-iēs*
D. **-iēi* etc.

The only case which was subsequently changed was the Nsg. *-ī*, which was replaced by *-iēs* after the oblique cases and after the model of the Nsg. type *spēs*. We may compare the development of the abstracts in *-ia*, which probably reflect a *devī́*-paradigm as well (1.2 above).

2.4.3. The denominatives of the type *māteriēs*, G. *māteriae*

The type *māteriēs* differs from the type *speciēs* not only by the fact that the alternation *-iē/iā-* in the paradigm of the former is not found in the latter, but also in that the type *speciēs* consists of deverbal abstracts and the type *māteriēs* of denominal abstracts and collectives. There is thus ample reason to distinguish two types of *iē*-stems. This implies that the conclusion that the type *speciēs* continues PIE. proterodynamic h_1-stems cannot automatically be extended to the type *māteriēs*.

Before we can proceed to a discussion of the background of the alternation *iā/iē*, the material will be presented, which is taken from Brosman 1987, 331-332:

1. *māceriēs* (e.g. Colum. 8,15,2; 11,3,2) 'wall built of soft clay', Asg. *-iem* (CIL I^2 2216, Varro rust. 3,15,1) belongs to the same etymon as the denominative verb *mācerāre* 'to soften'. Plautus already has a Nsg. *-ia* (Truc. 303, 305). Cato has only a *ia*-stem (1x Asg. *-iam*, 1x Npl. *-ias*, 1x Apl. *-ias*). The word does not occur in Lucretius. Compare the etymologically identical word *māceria*, *-iēs* (both 1x) 'grief, affliction' (see EM., WH.).

2. *māteriēs* 'matter, wood' is derived from *māter* 'mother'. The distributional pattern of *iē*- and *iā*-stem forms was discussed in the introduction. The oldest paradigm was Nsg. *-iēs*, A. *-iem*, other cases *-iā-*.

3. *mūriēs* 'brine, pickle' beside *mūria* (both 1x in Cato's De agri cult.), cf. Asg. *-iam* (2x ibid.). It does not have an etymology.

4. *prōsapiēs* (only late), also *-ia*, cf. Ablsg. *prōsapiā* (Plaut.) 'family, race' has no etymology.

5. *intemperiēs* (Plaut. Cap. 911), cf. Npl. *-iae* (Plaut. Au. 642, Ep. 475, Mi. 434), Apl. *-ias* (Cato, de agr. 144.2) 'inclemency' belongs to the same etymon as *temperāre* 'to proportion duly', which is probably derived from *tempus* 'set time'. Cf. *temperiēs* beside *temperia* 'proper measure'.

6. *barbariēs* (Cic. Brut. 74, 258), *barbaria*, cf. Ablsg. *-iā* (Plaut. Poe. 598) is derived from *barbarus* 'rude' < βάρβαρος.

7. *luxuriēs* (Cic.), cf. Asg. *-iam* (Cic.), Gsg. *-iae* (Plaut. As. 819, Tri. 8) 'rankness' seems to be based on an adjective

**luxurus*, cf. *luxus*.

8. A productive formation of abstracts in *-itiēs*, *-itia* derived from adjectives (I have noted all occurrences in Lucretius; Plautus always has only *-iā-* (also in the N.Asg.) except in *segnitiēs*): *almitiēs* (*almus*), *amaritia*, *-iēs* (*amārus*), *amicitia*, *-iēs* (*amīcus*; Lucr.: Asg. *-iem* (1x), Gsg. *-iae* (1x), *-iāī* (1x)), *calvitiēs* (*calvus*), *cānitiēs* (*cānus*), *dūritia*, *-iēs* (*dūrus*; Lucr.: Asg. *-iem* (1x)), *lātitia*, *-iēs* (*lātus*), *longitia*, *-iēs* (*longus*), *malitia*, *-iēs* (*malus*), *mollitia*, *-iēs* (*mollis*), *munditia*, *-iēs* (*mundus*), *nēquitia*, *-iēs* (adv. *nēquiter*), *nōtitia*, *-iēs* (*nōtus*; Lucr.: N. *-iēs* (2x), A. *-iam* (4x), *-iem* (1x), G. *-iāī* (1x)), *pigritia*, *-iēs* (*piger*), *plānitia*, *-iēs* (*plānus*), *segnitia*, *-iēs* (*segnis*; Plaut.: N. *-iēs* (1x), A. *-iem* (1x)), *spurcitia*, *-iēs* (*spurcus*; Lucr.: N. *-ia* (1x), *-iēs* (1x)), *tarditiēs* (*tardus*), *vastitiēs* (*vastus*).

9. *caesariēs* 'hair' and *pauperiēs* (postclass. for class. *paupertas*) have no forms in *-iā-*. Since they are denominatives (cf. *Caesar*, *pauper*), they may be classified here.

Pedersen 1926, 81 remarked: "Le flottement entre la cinquième et la première déclinaison dans *māteriēs : māteria* etc. est tout simplement la conséquence du sens identique ou à peu près identique des suffixes *-jē-* et *-jā-* de la déclinaison régulière". Pedersen points to the denominative abstracts in *-ia*, *-iam*, *-iae* etc. (see Leumann 1977, 291, e.g. *astūtia*, *superbia*, *militia*, *familia*, *invidia*, *rēliquiae*), which reflect stems in **-ieh₂-* (see Wackernagel-Debrunner II.2, 831 and 840 and section 1.2 above). He also remarked (ibid.): "Il est signifiant que ce flottement ne se rencontre que dans les mots dont l'analyse morphologique était facile; on a *māteriēs*, *luxuriēs*, *dūritiēs* et *māteria*, *luxuria*, *dūritia* etc., mais on n'a qu'une forme dans *glaciēs*, *bēstia* etc." I cannot subscribe to this observation because the morphological analysis of *mūriēs*, *-ia* and *māceriēs*, *-ia*, *prōsapiēs*, *-ia* is not evident.

As we have seen in section 2.1.1, the paradigm Asg. *-iĕm*, G. *-iāī* > *-iae*, D. *-iae* etc. must reflect an older state of affairs and cannot be an invention for the sake of metrical convenience. Only the Nsg. *-iēs* may in a number of instances be attributed to poetic licence, but as its very existence cannot thus be explained, the form must have existed in normal speech.

It does not seem possible to generate the attested paradigm

on the basis of a h_1-stem: both a *devī́*-paradigm (N. *-ih_1, A. *-ih_1m, G. *-ieh_1s > *-$\bar{\imath}$, *-iem (?), *-$i\bar{e}s$) and a *vṛkī́ḥ*-paradigm (N. *-ih_1, A. *-ieh_1m, G. *-ih_1es > *-$\bar{\imath}$, *-$i\bar{e}m$, *-ies) would leave the *ā*-stem forms in the oblique cases unexplained. Following a suggestion by Professor Beekes, I think that both the Asg. in *-iem* and the *iā*-inflection of the other oblique cases can be explained on the basis of a *-ih_2-stem. The essential point for the creation of the Nsg. in *-iēs*, which replaces a normal *devī́* or *vṛkī́ḥ*-type *-$ih_2(s)$ > *-$\bar{\imath}(s)$, was the Asg. *-ih_2m > *-$i\breve{a}m$ > *-$i\breve{e}m$*. The model for the creation of *-iēs*, *-iem* was provided by the verbal abstracts in *-iēs*. We may compare the creation of a Nsg. *-ēs* beside an Asg. *-em* in original root nouns on the model of *vātēs*, *vātĕm*. Since the *devī́*-type probably generated the types *-trīc-*, *regīna* and *avia* and perhaps the abstracts in *-ia*, *-iam*, *-iāī*, and since the type *māteriēs* did not merge with these forms (although the semantic distinction between the denominal abstracts in *-iā-* and in *-iā/iē-* is slight), *māteriēs* probably does not reflect a *devī́*-paradigm, but rather a *vṛkī́ḥ*-paradigm. Also the original Nsg. of the type *māteriēs* was probably *-$\bar{\imath}s$ < *-ih_2-s*, not *-$\bar{\imath}$ < *-ih_2*. This proposal has the decided advantage of explaining why the Nsg. was not changed into *-ia*, as it was in *avia* and the abstracts in *-ia*, *-iam*, *-iae*. We may therefore conclude with some reservation that the type *māteriēs* reflects *ih_2-stems of the *vṛkī́ḥ*-type. The Asg. *-iem* < *-iăm* < *-ih_2m*, which replaces PIE. HD *-ieh_2-m*, may be compared with Skt. *vṛkíăm* < *-iHm*. The zero grade suffix was evidently introduced on the basis of the Nsg. and all other oblique cases (except the PIE. locative in *-ieh_2-i*).

In the D.Gsg. etc. *-ih_2-es*, *-ih_2-ei* > *-$i\breve{a}s$*, *-iai*, the *-ă-* was replaced by *-ā-* after the simple *ā*-stems (see section 1.1.3 and 4).

The proposed development may be presented in a diagram:

	PIE.	It-C. (?)	It.	Latin
N	*-ih_2-s*	> *-$\bar{\imath}s$	> *-$\bar{\imath}s$	>> *-iēs*
A	*-ih_2-m*	> *-$i\breve{a}m$	> *-iem*	> *-iem*
G	*-ih_2-es/os*	> *-$i\underline{i}as$	>> *-iāī*	> *-iāī*
D	*-ih_2-ei*	> *-$i\underline{i}ai$	>> *-iāi*	> *-iae*

2.4.4. Conclusion

The Latin fifth declension originated from the following sources:

1. The *ē*-inflection arose from hysterodynamic root-nouns with a

full grade *-eh₁-* in both the N. and Asg. (**speh₁-*, **-dheh₁-*). *plēbēs* ended up in this category at a later stage.

PIE.	It-C. (?)	It.	Latin
N **Cĕh₁(s)*	> **-ē(s)*	> **-ē(s)*	> *-ēs*
A **Ceh₁-m*	> **-ēm*	> **-ēm*	> *-em*
G **Ch₁-es/os*	> **-ĕs*	>> **-ēī*	> *-eī*
D **Ch₁-ei*	> **-ei*	>> **-ēi*	> *-ei*
Np **Ceh₁-es*	> **-ēs*	> **-ēs*	> *-ēs*

2. The deverbative *iē*-stems reflect **ieh₁*-stems, possibly proterodynamic stems of the Vedic type *śámī*, *śácī*.

PIE.	It-C. (?)	It.	Latin
N **-ih₁*	> **-ī*	> **-ī*	> *-iē+s*
A **-ih₁-m*	> **-iĕm*	>> **-iēm*	> *-iem*
G **-ieh₁-s*	> **-iēs*	> **iēs*	>> *-iei*
D **-ieh₁-(e)i*	> **-iēi*	> **-iēi*	> *-iei*

3. The denominative *iē/iā*-stems probably reflect hysterodynamic **ih₂*-stems in which the Nsg. **-ih₂-s* > **-īs* was replaced by *-iēs* after the Asg. in **-ih₂m* > **-iăm* > *-iem* on the model of the *iē*-stems. The uncharacteristic G. Dsg. etc. were remodelled on the corresponding case forms of the *ā*-stems and the synonymous *iā*-denominatives (type *militia*).

2.5. Reflexes of the **h₁*-stems in Celtic

According to Thurneysen 1921, 202, the Ogam Gsg. *AVITTORIGES* occurring in the bilingual inscription of Eglwys Cymmun, Wales, may represent the Gsg. of a stem in *-ī*, G. *-iēs*. The nominative is rendered *AVITORIA* in the Latin translation. However, Thurneysen does not really insist on this. In his *Grammar of Old Irish* (1946) p. 188, he rather prefers to consider *-IGES* = [*ijes*] as the intermediate stage of **-iās* to *-e*, on the grounds that the normal Ogam Gsg is *-IAS* and that it is unlikely that Lat. *AVITORIA* was written for Celtic *-ī*. We now know that historically the Gsg. of *ī*- and *iā*-stems cannot have been *-iās* because this would have yielded Olr. *-(e)a*; Olr. *-e* rather reflects the ending of the hysterodynamic **ih₂*-stems, **-ih₂-os* > *-*ios* > *-e* (Cullen 1972, 227-229). The expected Gsg. ending of a *iē*-stem would be either **-ieh₁-s* (proterodynamic) or **-ih₁-os* (hysterodynamic). The former would yield **-iīs* and the latter **-ios* (> Ogam *-IAS*). It is therefore possible to regard *AVITTORIGES* as a

relic of the *iē*-stems.

We may now turn to the fate of the h_1-stems of the Latin type *vātēs*, *caedēs*, G. *-is*. It is well-known that *vātēs* corresponds to the *i*-stem OIr. *fáith* 'seer'. As we saw in section 2.3, *vātēs* cannot be explained as an old *i*-stem, and one may therefore try to explain *fáith* as an old *ē*-stem. Before attempting this, a special type of OIr. *ī*-stems must be discussed.

A small number of feminine substantives (see Thurneysen 1946, 186) has a peculiar inflection which belongs neither to the ih_2- (*bliadain*), nor to the *iā*- (*soilse*), nor to the *i*-stems (*súil*):

	ih_2-stems	*i*-stems
sg N *méit* 'quantity'	*rígain* 'queen'	*súil* 'eye'
A *méit*	*rígnai*	*súil*
G *méite*	*rígnae*	*súlo*
D *méit*	*rígnai, rígain*	*súil*
pl NA *méiti*	*rígnai*	*súili*

The type *méit* is usually considered to represent a 'mix' of the *i*- and ih_2-stems (Pedersen 1913, 89). In my opinion, this is very unsatisfactory: it is unlikely that an original *i*-stem adopted a Gsg. in *-e* because *i*-stems of all genders kept their regular inflection. Nor is it probable that an original ih_2-stem lost its distinctive D. and Asg. ending under the influence of the *i*-stems because known ih_2-stems (*rígain*) simply retained these endings in OIr. As far as the old $*ih_2$-stems were confused in late OIr., there was confusion with *ā*- or *iā*-stems, not with *i*-stems (Thurneysen 1946, 186 infra). It is in my opinion preferable to assume that an old inflection underlies the type *méit*, and this was most likely an $*eh_1$-stem.

The correspondence of OIr. *méit* with MW. *meint* points to a Nsg. **mantī*. **-ī* cannot reflect *-iH*, as in the oblique cases this **-iH-* would leave an ending in the A. and Dsg. in OIr. (cf. the $*ih_2$-stems). It must therefore reflect **-ē* < $*-eh_1$. If this is admitted, we may reconstruct a h_1-stem paradigm which strikingly corresponds with that of the h_2-stems in Irish:

PCelt.	h_1-stem	h_2-stem
N	$*-eh_1$	$*-eh_2$
A	$*-eh_1-m$	$*-eh_2-m$
G	$*-h_1-os$	$*-h_2-os$
D	$*-h_1-ei$	$*-h_2-ei$
Npl	$*-eh_1-es$	$*-eh_2-es$

These yielded:

N	*-ē	*-ā
A	*-ēm	*-ām
G	*-os	*-os
D	*-ei	*-ai
Npl	*-ēs	*-ās

Just as the uncharacteristic Gsg. of the h_2-stems was replaced by *-ios* < *-*ih*$_2$*os* of the typically feminine *ih*$_2$-stems (for an attempt to explain the details see section 1.1.3 above; note, however, that *-*ēos* would have yielded *-e* regularly), so was the equally uncharacteristic Gsg. of the feminine h_1-stems. The further development is entirely regular:

N	*-ē	> *-ī	> ^{i}-ø
A	*-ēm	> *-īm	> ^{i}-ø
G	*-ios	> *-eah	> -e
D	*-ei	> *-ī	> ^{i}-ø
Npl	*-ēs	> *-īh	> -i

The h_1-stems of Latin are all feminine except *vātēs*. The fact that the *méit*-inflection is always feminine confirms that its origin may be sought in the h_1-stems.

Olr. *fáith* was not reflected as a noun of the *méit*-type. This can easily be explained: it was the only masculine noun among the h_1-stems. The split between the type *méit* and *fáith* occurred when in the former the Gsg. *-os* was replaced by the typically feminine Gsg. *-ios* < *-*ih*$_1$*os*. At that stage *fáith*, in the form N. **wātīs*, A. **wātīm*, G. **wātos*, D. **wātī*, Npl. **wātīs* could regularly have entered the *i*-stem inflection when vowels in final syllables were shortened: this only required the rise of a new (not typically feminine) Gsg. *fatho* to replace **fāth* < **wātos*.

It may finally be noted that the Gaulish Npl. οὐάτεις, transmitted by Strabo, may represent the regular Npl. of a h_1-stem: -ετς (= prob. [īs]) < *-ēs < *-*eh*$_1$*-es*.

3. Summary

Since there is a considerable number of PIE. types of nominal stems in *-*H* and since these are reflected in Latin in various ways, it may be useful to present the results of this section in a diagram. Of course, some issues remain insecure to a certain extent, and these I have provided with a question mark.

	*h_2-stems		*h_1-stems	
	HD	PD	HD	PD
*H	ā-stems	no reflexes	1 type *vātēs*, Gsg. *-is*; *pons*, *pontis*; secondary: type *trabēs* < √-nouns; 2 root nouns of the 5th. decl. (*spēs*); secondary: *plēbēs*.	no reflexes
*iH	*māteriēs*, *-iā-*?	1 type *-īc-* 2 *regīna*, *avia*? 3 type *militia* (denom. abstr.)??	*neptis*?	type *aciēs* (deverbal abstracts, 5th decl.)

D. THE LATIN REFLEXES OF PIE. VERBAL ROOTS ENDING IN A LARYNGEAL

1. Introduction

It seems legitimate to devote a special chapter to the development of verbal roots ending in a laryngeal. The problems involved in assessing their history are largely morphological and set them apart from non-verbal forms that contained a laryngeal, which can usually be classified as cases of *CHC*, *CRHC*, *CeRH*, *CHV* etc. without requiring elaborate discussion. An example may clarify the point. *molĕre* 'to grind' reflects a root **melH-* (cf. Lith. *málti*). It gives rise to a number of questions, such as: does *molĕre* reflect an athematic (**melH-ti*) or a thematic inflection (**melH-e(ti)*); if it is the former, on what form(s) was the Latin paradigm based, the sg. **melH-mi*, *-si*, *-ti*, the 1pl. **mlH-mos* or the 3pl. **mlH-enti*, or some other (non-present) form? On the basis of the conclusions reached in the previous chapters about the development of the PIE. laryngeals in Latin, we can narrow down the possibilities: Lat. *molĕ-* may reflect either **melH-C-* or **melH-V-*; but in order to decide between the two we must discuss morphology, and that is what the present chapter will largely be devoted to.

There has been a fair amount of scholarly discussion about a number of Latin verbs that are supposed to reflect an athematic inflection, viz. the type *molere* < **melH-* and the so-called *nā-/nă-*verbs. The most recent and most important discussions are Watkins 1965, 184-186 and 188-189 and Steinbauer 1989, 96-99 and passim. In the main the history of these verbs is clear, but there remain some problems of detail. I intend to devote some attention to these matters (sections 2 and 3).

I shall present a list of all Latin verbs that reflect a root in a laryngeal. It will be helpful to distinguish four types, which will be discussed in four sections: original athematic root presents (or aorists) (section 2), which may be subdivided in roots of the type *CeCH-* (2.1) and roots of the type *CeH-* (2.2); nasal presents (section 3); reduplicated forms (section 4); remaining verbs (section 5).

2. Original athematic root presents (or aorists)

This category comprises two types, the first with a full grade root *CeCH-*, e.g. *vomĕre* < **ɥemH-*, cf. Skt. *vámiti* < **ɥemHti* (2.1), and the second with a full grade *(C)CeH-*, e.g.

nāre < **sneh$_2$-*, cf. Skt. *snáti*, and *dăre* < **dh$_3$-* (2.2).

2.1. Roots of the type *CeCH-*

Verbs with this type of root have ended up in the third (*vomĕre*, section 2.1.1) and first conjugation (*arāre*, 2.1.2), and sometimes apparently in both (e.g. *sonĕre*, *sonāre*, 2.1.1).

According to Watkins 1965, 182-189, there were a number of athematic verbs of the structure *CeCH-mi* etc. which, as a result of the vocalization of the laryngeal, developed into an athematic *ă*-inflection. Thus, the inflection merged with that of the nasal presents of roots in a laryngeal (see section 3). This development was of Italo-Celtic date, according to Watkins. Thus, PIE. **ɥemH-ti* (cf. Skt. *vámiti*) became **ɥemăti*. The latter regularly joined the Latin third conjugation after the weakening of internal vowels: **ɥemati* > *vomĭt*. The 1sg. **-ămi* and 3pl. **-ănti* were replaced by the (originally thematic) endings *-ō*, *-unt*, as happened in all athematic inflections in Latin. Watkins claimed that these *ă*-verbs formed a distinct class in Latin on account of the identical perfect (*-uī*) and ppp. formations (*-ĭtus*), which he reconstructed as ending in **-aɥai*, **-atos*. According to Watkins, this group of verbs shows a tendency towards the *ā*-inflection because of the influence of denominative *ā*-verbs derived from *o*-grade nouns of the type τόμος /τομή. The exact mechanism would be the following: at a late prehistoric stage of Latin, all athematic *ă*-verbs of the type *vomit* had an *-o-* (< **-e-*) in the root, either according to regular sound laws (in **ɥoma-*, **doma-*, **suona-*, **mola-*) or analogically after **ɥoma-* etc. (in **tona-*). Thus, all these verbs had the structure *CoRă-*. The denominative verbs (e.g. *vorāre* < **g^{w}orā-*) had the structure *CoRā-*. According to Watkins, the latter influenced the former.

Cardona 1961, 415 raised the following objections:

(1) "But the perfects *domuī*, *moluī*, *sonuī*, *tonuī*, *vomuī* need indicate no special affinity among these verbs other than probable dissylabic origin. And the *-uī*-perfectum enjoyed a degree of productivity in Latin; e.g. *tenuī* beside *tetinī*."

(2) "Neither does speaking of a trend towards generalization of the first conjugation in this group make much sense. For *sonere/sonāre* and *tonere/tonāre* the statement is justified, but *domāre* was never anything but an *ā*-verb in Latin and *vomere*, *molere* did not transfer to the first conjugation in the simplex."

(3) "Finally, Watkins' explanation of the *-ā-*flexion is not very

convincing. Nouns of the types τομή, τόμος....were quite rare in Latin....".

Watkins reacted to Cardona's objections in the 1965 edition of Evidence for Laryngeals, p. 188-9. As regards the first objection, Watkins' reaction was not very adequate, except that he pointed out that the classification was not only based on the perfect but also on the ppp. in *-itus*. In my opinion, the essential point in Watkins' argumentation is the correspondence of an *u*-perfect (presupposing a disyllabic stem; there is no reason to believe this perfect to be secondary (as against *tenuī* beside older *tetinī*), which is moreover supported by the fact that all verbs agree in this) with a *third* conjugation present. This can only be understood if the root was *CVCV-*, in this case (with a PIE. root **CeCH-*) *CVCă-*. And the latter can only be understood on the basis of a PIE. athematic present **ɥemHti* yielding **ɥemati*. We know, furthermore, that the athematic inflection is old in at least a number of these verbs (cf. *vomĕre*, Skt. *vámiti*).

To the second objection Watkins answered that the transfer to the first conjugation started in some verbs, where it was completed early, and spread slowly, without reaching *vomĕre*; and that this was a natural way of development. This may be true, but at face value it is not clear why the transfer to the first conjugation would have been complete in *domāre* while the spread did not reach *vomere* at all.

In my opinion, the most important objection has not yet received full attention. Watkins claimed that nouns of the τόμος/τομή -type may have been rare, but that they existed none the less, as appears from the derivation of *vorāre*. This is of course true (see Steinbauer 1989, 88 ff.). But the essential point is: why would the *vorāre*-type inflection have spread to the **domă*-type at all? In the first place, the type *vorāre* was rare (thus Cardona); secondly, if we admit that the *vorāre*-type exerted influence, this influence must have occurred at an early stage, before the vowel weakening (when **doma-* was not yet **domi/e-*), and must have stopped immediately after vowel weakening because then there would not be any similarity left. In this scenario, it may be possible to explain *vomere*, *molere* (as opposed to *domāre*) as forms that only just missed the boat, but it is definitely impossible to explain why beside *tonāre*, *sonāre*, which had arisen before vowel weakening, *tonere* and *sonere* remained in existence for so long, being exact synonyms over a period of centuries. I conclude that it is unlikely that

the ā-inflection of *tonāre*, *sonāre* can be explained in the way suggested by Watkins.

Thus, there is reason to believe that *molere*, *vomere*, *sonere* etc. reflect an athematic conjugation, but the question of the rise of ā-inflection in a number of these verbs is as yet unsolved.

We may now turn to the material.

2.1.1. Third conjugation verbs

1. *cluere* (no perf. or ppp.), also first conj. *cloāre* 'to clean', (both only attested by grammarians) probably reflect a root **ḱleuH-*, cf. W. *clir* 'clean' < **ḱluH-ro-*, Goth. *hlūtrs* 'clean' < **ḱluH-tro-*, Lith. *šlúoti*, pret. *slaviaũ* 'to clean', Lith. *šlúota*, Latv. *sluôta* 'broom' < **ḱlouH-*. Whether both verbs really existed in Latin is doubtful (see EM. s.v.). *cloāre* may be a Rückbildung based on *cloāca* 'sewer'. If *cluere* is old, its present may reflect **ḱlouati* < **ḱleuH-ti*, or possibly thematic **ḱleuH-e(-ti)*.

2. *molĕre*, *moluī*, *molitum* 'to grind' reflects **melh₁-* (for **-h₁-* cf. Gr. μέλευρον 'flour'). The original athematic inflection (Watkins 1965, 185) explains the ablaut difference between Lat. *molĕ-* < **melh₁-* and W. *mal-u* 'to grind' < **mlh₁-V-*. The Latin present was based on the sg. **melh₁-ti* > **melăti*, which by regular rounding of **-ela-* to **-ola-* and vowel weakening of unstressed **-ă-* became *molit*. Note that there is no independent evidence for the reconstruction of a root *present* (as opposed to an aorist).

The Welsh form was apparently based on the 3 pl. **mlh₁-enti* > **malenti*. The vocalism of Olr. *melim* was probably introduced from the non-present stem, as in *sernaid*, cf. W. *sarnu* (Joseph 1982, 47), but it is possible that *-e-* is the vowel of the old athematic singular. The Irish verb has *e/o*-inflection (Thurneysen 1946, 353), which may have been based on 3 pi. **malenti* < **mlh₁-enti*.

Immolāre 'sacrifice' does not point to an old **molāre* beside *molĕre* because it is a denominative, based on *mola* (EM. s.v. *molō*).

Outside Italo-Celtic there are numerous cognates, e.g. Skt. *mṛṇáti* 'to crush' < **ml-n-eh₁-*, Lith. *málti*, Goth. *malan* 'to grind' < **molh₁-*, Russ. *molót'*, *meljú* < **melh₁-*. The latter forms have *o*-vocalism in the root, which is difficult to explain (cf. e.g. Jasanoff 1978, 44). Note that *molĕre* cannot reflect PIE. **molH-* because this would probably yield Lat. **mal-* (see

VI.C.2).

3. If *petĕre, petīvī, petītum* 'to try to reach' is cognate with **peth$_1$-*, **pteh$_1$-* 'to fall' in πίπτω, πέπτωκα, πεπτηώς or **peth$_2$-* 'to fly' in Gr. πέτομαι etc., it may reflect an athematic present. But the etymology is not certain. *-ī-* in the perfect and ppp. may have been taken from *cupĕre, cupīvī, cupītum*, which is semantically akin (Leumann 1977, 594).

4. *sonĕre, sonuī, sonitum* 'to sound' < **sṷenH-* reflects an athematic present according to Watkins 1965, 185. Cf. RV. imperf. *asvanīt* 'sounded' < **-sṷenH-t*. The third conjugation inflection 3sg. *sonit* is the phonetically regular outcome of **sṷenati* < **sṷenHti*. OIr. *-seinn* 'plays (a musical instrument)' < **sṷen-* (attested *-nn* is analogical, see Vendryes s.v.) has *e/o*-inflection, like *melim* above.

sonĕre (Accius, Ennius) was soon replaced by *sonāre*. It is in my opinion inconceivable that *sonā-* arose in the same athematic paradigm as *sonĕ-* < **suenă-* (despite EM. s.v.) and I am therefore attracted to Steinbauer's proposal (1989, 124-5) that it reflects a causative **sṷonh$_2$aie-* < **sṷonh$_2$eie-*, cf. RV. *svanáyati*. The only problem I see is that if the root ended in **h$_2$* it is difficult to explain why OIr. *-seinn* has *e/o*-inflection (unless a thematic inflection is assumed, with restoration of **-e-* for **-a-* < **-h$_2$-e-*). In view of this problem, one may prefer the alternative that *sonāre* is a denominative derived from *sonus*.

5. *terĕre, trīvī (triī), trītum* 'to rub'. The history of this verb is particularly difficult to establish. The perfect and ppp. appear to be based on a root **treh$_1$-i-* (see IV.E.2.4.3 no. 11), whereas the present has **terH-* (cf. Ved. *dhā-, dhāy-, dhe-* 'to suckle' < **dheh$_1$-(i-)*).

In Greek one can find a root **terh$_3$-* in τιτρώσκω 'blesser (avec une flèche, p.ex.)' (translations taken from Chantraine), τρωτός 'vulnérable' and probably also in the aorist τορεῖν 'percer' (Beekes 1969, 178 and 1988a, 75 (on τορ-)). The basic meaning of **terh$_3$-* seems to be 'to wound by piercing' (see esp. Chantraine s.v. τιτρώσκω), which makes a connection with *terere* uncertain. Moreover, Lat. *trīvī* probably reflects full grade **treh$_1$i-*, which points to **h$_1$*.

Beside **terh$_3$-* there is evidence for **terh$_1$-* in τέρετρον 'borer, gimlet', τέτρημαι, τρητός 'percer, trouer', 'bore through sth.' (see Beekes ibid.). The latter may be compared with OHG. *drāen* 'to turn, wind' < **treh$_1$-*. Its basic meaning

would be 'to rub (out) by winding movement', which is an apt description of the operation of a gimlet, from which 'to bore through'. Thus, it is not only formally (*trīvī*) but also semantically attractive to connect *terere*, *trīvī*, *trītum* with **terh$_1$-* (**treh$_1$i-*). Compare especially *terebra* 'borer' < **tera-srā-* < **terh$_1$-*.

It is impossible to decide whether the present *terit* etc. reflects athematic **terati* < **terh$_1$-ti* or thematic **tereti* < **terh$_1$-e(ti)*.

6. The present *tonĕre*, with perf. *tonuī*, ppp. *tonitus*, 'to thunder' is found only once (Varro Men 132 ap. Non. 49, 17), the usual form being *tonāre*. The Saturnian *Quomne tonas, Leucesie, prai ted tremonti* may provide a second attestation. The verse evidently dates from a period when final *-i* of the primary verbal endings was still present (*tremonti* > Class. *tremunt*). If so, *tonas* does not reflect a present but rather a subjunctive, which is not surprising after *quomne*, with old secondary endings. *tonas* must then be a subjunctive of *tonĕre*, not *tonāre*.

tonāre has been explained by Eichner 1974, 58 Anm. 4, who reconstructs it as a 'causative' **(s)tonh$_2$aie-* < **(s)tonh$_2$-eie-*, cf. Ved. *stanáyati* 'thunders', which explains the *o*-vocalism of the root. An alternative possibility is that *tonāre* is denominative, derived from *tonus*. It seems possible that *tonĕre* was formed after *sonĕre* beside *sonāre* (thus Brugmann 1916/7, 243[1]). But in view of the Ved. imp. *stanihi*, *tonĕre* may reflect an athematic present, in which case the *o*-vocalism of the root must be analogical, after *tonāre*, or after *sonĕre*, *molĕre* (Watkins 1965, 185).

7. *vomĕre*, *vomuī*, *vomitum* 'to vomit' < **ɥomă-* < **ɥemh$_1$-* must reflect a root present in view of Ved. *vámiti* < **ɥemh$_1$-ti* (Watkins 1965, 185). Cf. Lith. *vémti* 'id.' for the laryngeal. Gr. ἐμέω, ἔμετος point to **-h$_1$-*.

8. Steinbauer 1989, 98, 129 f. (but not Watkins 1965) claimed that *lavĕre* may also reflect an athematic present. In all probability it reflects a root **leuH-*, **louH-* (see Ruipérez 1950, 386, 407, Beekes 1969, 232-233, Steinbauer 1989, 129 f.). The main problem with this root is the unexplained *o*-vocalism in a number of forms (Gr. λοέω, λόϜεσαι, Arm. *loganam*, also Lat. *lavō*, see VI.C.1.2.1 no. 14), which need not concern us here. Although direct evidence is lacking, we may conclude from Gr. λοέσσαι (for **λεϜσ-?*), which has a vocalized laryngeal, that

PIE. had an athematic present or aorist. If so, we may reconstruct Lat. *lavit* as **lauati* < **louH-ti*.

Beside *lavĕre* there is *lavāre*, which in later Latin completely ousted the former (except in compounds, where one only finds *-luĕre*). As Steinbauer 1989, 98 observed, long *-ā-* cannot have arisen in the athematic paradigm. He therefore assumed that *lavā-* arose by analogy to the type **(s)nāti* < **(s)neh₂-ti*, pi. **(s)nămos* < **(s)nh₂-mos*. There are three objections to be made. First, one does not expect this ablaut to have been productive, the tendency being towards generalization of one ablaut form throughout the paradigm (in this case *nā-*; for *nātāre* see IV.D.1.2.2 no. 14). Even if we assume that *lavă-/lavā-* was indeed created, it is highly unlikely that in this verb the ablaut left distinct traces in attested Latin, whereas there is no trace of ablaut in any verb of the type **nāti*, **nămos*, where this ablaut originated (see 2.2 below). Second, it is not clear why the ablaut *-ă-/-ā-* spread only to **lava-* and not to **ɥema-* and **mela-*. Third, and most important, Steinbauer's suggestion does not explain the difference in meaning in Old Latin between *lavĕre*, which denotes the action of washing, bathing, and is usually transitive, and *lavāre*, which denotes a state (to wash, said of water), or an intransitive or reflexive action (to be washing, to wash oneself) (see EM. s.v.). Thus, I think that another solution must be found.

In view of the difference in meaning between *lavĕre* and *lavāre*, one may suspect a difference in formation. EM. very aptly compare *stāre* 'stand' and *sistere* 'place, take a stand'. In an important article, Cowgill (1973) has shown that in view of its stative meaning and in view of the Sabellian forms (e.g. O. *STAHÍNT*) *stāre* must reflect **stă-ē-* (see 2.2.1 no. 12). In this way, we can equate *stāre*, *sistere* with *sedēre*, *sīdere* (< **si-sd-*), and to some extent with *iacēre* 'lie', *iacĕre* 'throw' (cf. Leumann 1977, 553). I would like to suggest that *lavāre* is a similar form, and that it reflects **lavă-ē-*, a stative verb derived from **lavă-* found in *lavĕre* (as to the contraction of *-ăē-* to *-ā-*, I refer to Cowgill 1973).

In later Latin, *lavĕre* gave way to *lavāre* and the original distinction in meaning was lost. Only in compounds did *lavĕre* survive as *-luĕre*, which is not surprising because all compounds (*ab-*, *al-*, *col-*, *dī-*, *ē-*, *il-*, *prō-*, *sub-*) denote an activity and are usually transitive.

It may finally be remarked that apart from *cluere*, of which no forms are known, *petere*, which does not have a

clear etymology, and *terere*, which has a root *$*treh_1i$-* in non-present formations, four out of five verbs have identical perfect and ppp. forms: *moluī*, *sonuī*, *tonuī*, *vomuī* < *$*-a-w-ai$* and *molitus*, *sonitus*, *tonitus*, *vomitus* < *$*-a-tos$* (thus Watkins 1965, 185). This confirms that they reflect identical formations.

Only *lāvī*, *lautus* seems to be different, but this may be merely due to late developments: *$*laṷa-tos$* > *$*laṷətos$* would regularly have yielded *lautus* (see VI.E.7.1). As for *lāvī*, there is no communis opinio about its origin. Expected *$*laṷaṷai$* would yield *$*laṷəṷai$* > *$*laṷṷī$*. The latter probably gave *lāvī* regularly, exactly as *$*aį̯i̯ō$* (< *$*agi̯ō$*) yielded *āiō* (thus Maniet 1975, 75). This solution would also account for the type *cāvī* < *$*caṷ-i-ṷai$*, *fōvī* < *$*foṷ-i-ṷai$* (old causatives) and the type *fāvī* < *$*faṷ-a-ṷai$* < *$*g^whou-h_1$-* (old statives; for *$*-a-$* < *$*-h_1$-* see Cowgill 1973, 295; for *-ou-* > *-au-* see VI.C.1).

2.1.2. First conjugation verbs

There are seven verbs that possibly reflect athematic presents and belong to the first conjugation. As all Latin *ā*-verbs are either denominative or reflect a root in *$*-eh_2$* (section 2.2), it must be explained why the following verbs ended up as first conjugation verbs.

9. The reconstruction of the present tense of *amāre*, *amāvī*, *amātum* 'to like, love' as a root present was proposed by Steinbauer 1989, 130-132. The only certain cognate is Olr. *námae* 'enemy' < *$*nāmant-$* < *$*n̥-HmH-(e)nt-$* (for the etymology see O'Brien 1923, 321, Meid 1962, 116 f.). Note that the initial nasal was vocalic, against the rule for word-initial resonants to be consonantal (see IV.D.1.2). This has a striking parallel in Greek, where word-initial *RH*- always has consonantal *R*, except in negative compounds with *$*n$-*, e.g. νώνυμος, νηνεμία, νημερτής. Cf. Beekes 1988b, 42, who claims that this development is caused by the morpheme boundary after *$*n$-*.

We may ask why a root present *$*h_2emH-ti$* > *$*amati$* ended up as a first, not as a third class verb like *vomĕre*. Steinbauer suggests that the full grade root was *$*h_2meh_2$-*, not *$*h_2emH$-*, and assumes that in monosyllabic forms like *$*h_2mah_2-t$* the initial laryngeal was vocalized according to a rule devised by Peters 1980, 42. Thus, one would get *$*amā$-*. This alleged vocalization was discussed and rejected in II.B.3. Apart from the inherent unlikeliness of this vocalization, one may seriously doubt

the presence of the injunctive type *h_2meh_2-*t* in Italic. Even if it did exist, one may doubt whether it was influential enough to cause remodelling of the entire verbal paradigm. I therefore conclude that Steinbauer's suggestion has little to commend itself.

I think that a good case can be made for considering *amāre* not to be a root present but an *ē*-stative derived from a root present **ama-* < **h_2emH-*, of the type *stāre* < **stă-ē-* and, probably, *lavāre* < **lava-ē-*. There are three arguments in favour of such a reconstruction. First, *amāre* in the sense 'to love' (EM.: 'être amoureux') may semantically be analyzed as a stative. Second, the formation of *amīcus* 'friend', which is plausibly reconstructed as **amaikos* by Steinbauer ibid., is exactly parallel to that of its only comparandum *medīcus* if we reconstruct an *ē*-verb: **ama-ē* : **ama-iko-* = **med-ē-* : **med-iko-*. Third, the formation of *amor* can best be explained if there was an *ē*-stative beside it. *-or*-abstracts beside *ā*-verbs are very rare (Leumann 1977, 379; those that do occur are probably analogical after semantically related forms: *clāmor* after *strīdor*, *canor*, *clangor* etc., and *error*, orig. 'geistige Verstörtheit' after *horror*, *stupor*, *terror*, *timor* etc.).

There does not appear to be a trace of **amĕre* < **ama-* < **h_2emH-*. It is likely that **amĕre* was ousted by *amāre* before our earliest Latin documents. The meaning 'faire l'amour' of *amāre* may be explained as the original meaning of **amĕre*, which was incorporated into the semantic sphere of *amāre* when **amĕre* was lost. This development is exactly parallel to that of *lavāre* in later Latin.

10. *arāre* 'to plough' most likely reflects an athematic root present, like Gr. ἀρόω 'id.' (Chantraine s.v.). As Steinbauer pointed out (1989, 128), **h_2erh_3-* would probably have joined the third conjugation if it was inflected as a thematic verb. However, when we admit that *arāre* reflects an athematic present **h_2erh_3-ti* > **arăti*, we must still explain why it did not merge with the third conjugation type *vomĕre*. I think that the most likely solution was given by Watkins 1965, 186, who puts *arat* etc. "in relation with the preservation of the vocalism in *alacer*, *anas*, *calamitas*", where unstressed *-a-* tended to resist weakening because of the preceding *aR-* (see Leumann 1977, 100, Sommer-Pfister 1977, 89).

11. *calāre* 'to call', cf. OLat. *kalator*, was discussed in IV.D.2.3.2.1 no. 2. It contains the root **klh_1-* found in Gr. καλέω, κέκληκα, καλήτωρ. The original athematic inflection is

perhaps reflected in καλέω, which has vocalized *h_1; -α- in the root may be explained from a 3 pl. *klh_1-énti > *kalenti. Umbr. *KAŘETU*, *KAŘITU*, *carsitu* (i.e. /kařétu/, Meiser 1986, 207) reflects PIt. *kalē-. We may attempt to explain the first conjugation inflection of Latin and the second conjugation inflection of Umbrian on the basis of a PIt. paradigm 3sg. *kalati, 3pl. *kalenti < *$kelh_1$-ti, *klh_1-enti (for *e > a after a pure velar, see VI.B). In Latin, a new paradigm was created on the basis of the singular forms. The preservation of the quality of internal -a-, as in *ārāre*, may have led to the transfer into the first conjugation. We may perhaps assume that in Umbrian the 3pl. *kalenti served as a base for remodelling into an ē-verb.

Lat. *calendae* does not presuppose *kalē- for Latin because it may have arisen from *calandae (Steinbauer 1989, 175).

12. *dolāre*, *dolāvī* 'to hew, cut square' may reflect a present *delH-ti- or thematic *delH-e-ti, but in view of Skt. *dālayati* 'make burst' it may also reflect a causative *$dolh_2$-eie-. The etymology is uncertain (Steinbauer 1989, 126).

13. *domāre*, *domuī*, *domitus* 'to tame' may reflect either an athematic root present *$demh_2$-ti (thus Watkins 1965, 185) or a thematic present *$demh_2$-e-ti. There is no independent evidence for either, and neither possibility explains the first conjugation inflection. Steinbauer suggests that *domāre* reflects a 'causative' *domaje- < *$domh_2$-eie-, cf. Ved. *damáyati*, which would account for the ā-inflection. *domuī* and *domitus* agree well with the causative formation, cf. *monēre*, *monuī*, *monitus*.

14. *vetāre* (< OLat. *votāre*, Nonius), *vetuī*, *vetitus* 'to forbid' belongs to the same type as *domāre*, which points to a reconstruction *$uoth_2$-eie- (see VI.C.2.3.2.3 no. 4).

15. *amb-ulāre* belongs to the root *h_2elh_2- which is attested in Gr. ἀλάομαι 'to roam', Latv. *aluôt* id. U. *amb-oltu* 'ambulato' cannot have contained *-ā- because the latter would not have been syncopated. It seems likely that the Umbrian form reflects *-olă- < *-ala- < *h_2elh_2-, where the second laryngeal was syllabic in an athematic conjugation (thus also Gr. ἀλάομαι). Latin -ulā- < *-alā- may be explained from *-ala-je/o- which replaced athematic *-ală- in compounds (see 3.3 below). If this is correct, the Umbrian form was remodelled on the simplex, cf. Lat. *sternĕre*, *cōnsternāre*, but also, as

a recent compound, *cōnsternĕre*.

16. The following forms are generally considered to be denominatives; they do not point to a PIE. athematic inflection: *forāre* 'pierce' (root **bhorH-* in Russ. *borót'* 'bezwingen'?); *morārī* 'to pause' (cf. Lat. *mora* 'pause' and OIr. *maraid* < **mr̥H-e-ti*); *parāre* 'to prepare' (root **prh₃-* in e.g. Gr. πέπρωται); *vorāre* 'swallow' (root **gʷerh₃-* in e.g. Gr. βιβρώσκω). I refer to Steinbauer 1989 for further details.

2.1.3. Conclusion

We may now draw up a complete list of Latin verbs that reflect PIE. athematic root presents (or aorists) of "disyllabic roots" (type *CeCH-*).

2. *molit* < **melati* < **melh₁-ti*
4. *sonit* < **sṷenati* < **sṷenh₂-ti*
6. **tonit* < **tonati*, replacing **tenh₂-ti*?
7. *vomit* < **ṷematī* < **ṷemH-ti*
8. *lavit* < **laṷati* < **loṷh₃-ti* (or **-h₁-*?)
9. If *amāre* reflects **amă-ē-*, we may reconstruct **amăti* < **h₂emH-ti*
10. *arat* < **arāti*, replacing **arăti* < **h₂erh₃-ti*
11. *calat* < **kalāti*, replacing **kalăti* < **kelh₁-ti*
15. If *amb-ulāre* reflects **-ală-i̯e-*, we may reconstruct **h₂elh₂-ti*

For a number of other verbs it is formally possible that they reflect a root present, although there is no evidence that they actually do.

1. **cluit* of the root **ḱleuH-*
3. *petit*, if it belongs to **peth₂-* or **peth₁-*
5. *terit* of the root **terh₁-*
13. *domat*, of the root **demh₂-* (but see below)?
14. *vetat*, of the root **ueth₂-* (but see below)?

It is unlikely that the remaining verbs reflect an athematic paradigm (i.e. 4. *sonāre*, 6. *tonāre*, 8. *lavāre*, 12. *dolāre* and the denominatives in 14).

It appears to be likely that athematic presents of disyllabic roots merged with the thematic verbs of the third conjugation as a result of the weakening of internal vowels. Where this weakening did not occur, as in *ara-* and *cala-*, the verb merged with the (originally thematic) *ā*-conjugation. Other *ā*-verbs probably reflect causatives (*sonāre*, *tonāre*, *domāre*, *vetāre*) or statives (*lavāre*, *amāre*) of roots ending in a laryngeal. We may conclude that we do not have to assume influence of the

denominatives such as *vorāre* (Watkins) in order to account for the *ā*-inflection of any single verb.

The *ă*-presents, which arose from PIE. athematic root presents (and theoretically also from root aorists) of disyllabic roots, remained a distinct class of verbs until the vowel weakening, that is, until some time after the breakup of the Proto-Italic unity. Comparing PIt. **mela-* with PCelt. **male/o-* 'to grind', we may be confident in reconstructing for Italo-Celtic an ablauting paradigm **melh₁-ti* (> PIt. *melati*), **mlh₁-enti* (> PCelt. **malenti*).

2.2. Roots of the type *(C)CeH-*

2.2.1. Material

1. The exact history of *dăre, dedī, dătus* 'to give' is to some extent clouded. It is unclear why and how *dăre* replaced the reduplicated present Gr. δίδωμι, Skt. *dádāmi*, which is still found in Sabellian (U. *TERTU, dirstu* 'dato' < **didătōd*; O. *didest* 'dabit'), and probably also in Lat. *reddere* (see section 4 no. 2 below). In any case, *dăt, dămus, dătis, dănt, dăbō* etc., *dătō, dărem* etc. reflect **dh₃-C*, presupposing an athematic conjugation, most likely the root-aorist (cf. Cowgill 1973, 274). The length in 2sg. pres. *dās* and 2sg. imp. *dā* seems to be due either to lengthening in monosyllables (EM. s.v.) or rather (because there are no certain instances of such lengthening) to analogy with *stās, laudās* (Bammesberger 1984, 75-80).

2. *condĕre, crēdĕre, perdĕre* etc., perf. *-didī*, ppp. *-dĭtus* contain the root **dheh₁-*. This compound verb probably reflects an athematic verb with generalized zero grade of the root (**-dhh₁-si* etc.; thus e.g. EM. s.v. *dō* and Watkins 1965, 186), but it is possible that the immediate predecessor of the attested Latin verb was thematic (**dhh₁-e/o-*, cf. *sistĕre*, Ved. *tíṣṭhati*). The forms may reflect reduplicated **dhi-dhh₁-* in which the reduplication syllable was lost by syncope.

3. In view of Gr. athem. φημί, Dor. φᾱμί and Arm. *bam* 'to say' < **bheh₂-mi*, the present of Lat. *fārī, fātus* 'to say' reflects an athematic present with a generalized full grade root **bheh₂-*.

4. *flāre, flāvī, flātus* 'to blow' must be compared with OHG. *blāen* etc. < **bhleh₁-je/o-* 'to blow'. It is unlikely that Lat. *flā-* reflects **bhlh₁-je/o-* because this would probably yield **falje/o-* (cf. IV.E.13.2.2). Since **bhleh₁-* is also

impossible as a protoform, *flā-* can only reflect **bhlh₁-C*. Thus, it must reflect a root present, with *flā-* generalized from the 1. and 2pl. **bhlh₁mos*, **bhlh₁tes*.

5. *flēre*, *flēvī*, *flētus* 'to weep, cry' < **bhleh₁-*, cf. probably OCS. *blějati*, Latv. *blêt*, MHG. *blæjan* 'to bleat' < **bhleh₁-*. It cannot be decided whether the Latin verb ultimately reflects athematic **bhleh₁-mi* etc. or thematic **bhleh₁-i̯ō* etc.

6. *hiāre* 'to yawn' < **ǵhieh₂-* may reflect an athematic root-present (or aorist) or a **i̯e/o-*inflection. Cf. Lith. *žióti*, SCr. *zjàti* 'to yawn' (see IV.E.2.4.3 no. 4).

7. If *dēlēre*, *-lēvī*, *-lētus* 'to destroy' is cognate with Gr. ὀλε- 'to destroy' < **h₃(e)lh₁-* (thus, hesitating, EM.), 3sg. pres. *dēlet* probably reflects **-h₃leh₁-ti* or **-h₃leh₁-ie-ti*. The etymology is uncertain, however.

8. *nāre*, *nāvī* 'to swim, float' ultimately reflects an athematic present, cf. Ved. *snáti* 'swims', but the immediate predecessor of the Latin verb may have been **snā-ie-*. The root must reflect full grade **(s)neh₂-*, as zero grade **(s)nh₂-* would have yielded **nă-* (cf. *nătāre*, based on the ppp. **nătos*, see IV.D. 1.2.2 no. 14).

9. *nēre*, *nēvī*, *nētus* 'to sew' < **(s)neh₁-*, cf. Gr. νῆν 'to spin', must be compared with OIr. *sníid*, W. *nyddu*, B. *nezañ* 'to spin, twist'. The long vowel in OIr. *sníid* is not indicative of old length (despite Vendryes S-152) because vowels in hiatus were lengthened in OIr. (Thurneysen 1946 33). In view of the short vowel of the British forms, the Proto-Celtic present was most likely **snĭi̯e/o-*. The participle OIr. *sníthe* probably reflects **sneh₁-tio-*, without the present tense suffix **-ie/o-*.

It appears from OHG. *nāan* etc. 'to sew' < **neh₁-* that the root had mobile **s-*, which may help to explain PCelt. **snĭi̯e-* from PIE. **snh₁-*: in **(s)nh₁-ie-* the *-i-* was probably vocalic, as in Latin (cf. IV.E.13.2.2); and *-n-* probably was not vocalic because it was word-initial, apart from mobile *s-*, which did not alter the situation (as in Latin and Greek, see IV.D.1.2.4). Thus, **(s)n̥h₁i̯e-* probably yielded **(s)nie-*, which became **nii̯e-* > **nĭð-* in British (cf. W. *dydd* 'day' < **dĭi̯eus* < **diēus*) and yielded *sní-V-* in OIr.

Lat. *neō*, *nēs*, *nĕt* points to a full grade root **(s)neh₁-*. The Greek imperfect ἔννη may reflect athematic **h₁e-sneh₁-t* (Chantraine s.v. 2. νέω), but in itself ἔννη may also reflect

contracted thematic *h_1e-sneh$_1$-et. In order to explain the ablaut difference between Celtic and Latin, we must probably reconstruct an athematic present for Italo-Celtic. The Latin present was based on the sg. *(s)néh$_1$-ti. The Celtic *ie/o-inflection was probably based on the plural stem *(s)nh$_1$-. Compare Olr. airid, W. ardd-u 'to plough' < *h_2(e)rh$_3$-ie-, reflecting an Italo-Celtic root present (Lat. arat, see 2.1.2 no. 10 above); and compare W. mal-u, which was based on the 3pl. of an athematic paradigm (see 2.1.1 no. 2 above).

10. re-plēre 'to fill' < *-pleh$_1$-, cf. plēnus 'full', Gr. πίμπλημι, aor. πλῆτο, Ved. pṛṇā́ti, aor. áprāt 'to fill'. The Latin verb reflects the PIE. root aorist *pleh$_1$-t, with generalized full grade (thus Strunk 1967, 42).

11. The present of rērī, rātus reflects either athematic *Hreh$_1$- or *Hreh$_1$-ie/o-.

12. stāre 'to stand (static)' probably reflects *stă-ē- (i.e. a post-PIE. formation, created after the vocalization of the laryngeals, and (regularly) based on the zero grade form *stă- < *sth$_2$-) and is a stative formation, as was convincingly argued by Cowgill 1973. Strunk's criticism, 1976, 243-244, apparently shared by Bammesberger 1984, is interesting but in my opinion not convincing. Strunk admitted that the evidence in favour of Cowgill's solution is extensive, but objected that (1) the root aorist *steh$_2$-t etc. could have static meaning, as appears from Vedic, so that it is not necessary to reconstruct *stă-ē- for Latin, and that (2) it is unlikely that ăē would have contracted at all in view of ahēnus < *aesnos < *aiesnos, cf. also the absence of contraction in cluēre, ciēre. As far as the first objection is concerned, Strunk seems simply to dismiss the essential point that stāre always and exclusively means stative 'to stand', which sets Latin apart from Vedic, where eventive 'stand' can in a number of occurrences acquire stative meaning; moreover, it is clear from Sabellian that to this stative meaning corresponded a stative form (e.g. O. *STAHÍNT*). As far as the contraction of *ăē to *ā is concerned, it must be stressed that ahēnus < *aiesnos, which is admittedly a problem (see esp. Cowgill 1973, 293 note 45), constitutes the entire counter-evidence. Perhaps only a constellation of three or four moras was contracted (e.g. āe, aē) but a constellation of two moras was not (*aesnos). We may regard the absence of contraction in cluēre, ciēre as irrelevant to the present issue because the treatment of *iV*, *uV* may and often does differ from that of

other vowels + *V*. On the previous pages the following parallels for contraction of **ăē* to *ā* were proposed: *lavāre* < **lava-ē-*, *amāre* < **ama-ē-* (see above); compare also *cāseus*, perhaps from **kaōs-* < **kau̯ōs-* (IV.E.3.3 no. 4).

13. *in-trāre* is probably cognate with *trāns* 'through, over'. Its present may reflect **-treh$_2$-mi* etc. or **-trh$_2$-mi* (with generalized zero grade, as in *flāre*) or **-treh$_2$-i̯ō* etc. (**trh$_2$-iō* would probably yield **tariō*). As the full grade of the root **trh$_2$-* probably was **terh$_2$-* (cf. Goth. *þairh* 'through'), zero grade **trh$_2$-mi* is more likely.

2.2.2. Conclusion

There is evidence to indicate that the following Latin verbs reflect PIE. athematic root presents:

3. *fātur* < **bheh$_2$-*
4. *flat* < **bhlh$_1$-*
8. *nat* < **(s)neh$_2$-*
9. *net* < **(s)neh$_1$-*

The following verbs appear to be based on a PIE. athematic root aorist:

1. *dat* < **dh$_3$-*
2. *con-dit* etc. < **dhh$_1$-*
10. *-plet* < **pleh$_1$-*

It is formally possible that at some stage between PIE. and Latin the athematic inflection was replaced by a *ie/o*-inflection, e.g. *nat* < **nāti* < **nāeti* < *nā i̯eti*, replacing **nāti* < **(s)neh$_2$-ti*. But nowhere is there an indication that this intermediate stage indeed existed.

For some Latin verbs there is no direct evidence for a PIE. athematic inflection, so that it is unclear whether the Latin forms reflect this, or rather a *i̯e/o*-inflection:

5. *flet* < **bhleh$_1$-*
6. *hiat* < **ǵhieh$_2$-*
7. *dēlet* < **-h$_3$leh$_1$-*?
11. *rētur* < **Hreh$_1$-*
13. *in-trat* < **-tr(e)h$_2$-*

It is remarkable that all verbs that are based on a root present reflect a full grade root, as in the type *vomĕre*, *sonĕre*, except *flāre*. The tendency to avoid homonymy with *flēre* may have helped to tip the balance to *flā-* when the original ablaut **bhlēti*, **bhlāmos* was eliminated.

3. Nasal presents of roots ending in a laryngeal

3.1. Introduction

Nasal presents belonging to roots ending in a laryngeal have generally ended up in the Latin third conjugation, e.g. *sternĕre*, cf. Ved. *stṛṇā́ti*, whereas in Old Irish they constitute a separate class, the athematic **nă*-verbs (Thurneysen's BIV class), cf. *sernaid* < **sternăti*. In order to explain this state of affairs, Watkins 1965, 184 reconstructed an Italo-Celtic athematic *nă*-conjugation, which by regular weakening of unstressed vowels and the thematicization of the 1sg. and 3pl. pres. merged with the old thematic *e/o*-verbs in the third conjugation. According to Watkins, the *nă*-conjugation resulted from the early generalization of the zero grade stem of the PIE. paradigm **stṛ-n-eh₃-ti*, **stṛ-n-h₃-mes*, **stṛ-n-h₃-enti* (example mine), which, as he argues convincingly, is exactly parallel to the generalization of the zero grade form in Lat. *iungō*, cf. PIE. **iu-n-eǵ-ti*, **iu-n-ǵ-enti*.

This concept has recently been challenged by Dieter Steinbauer (1989, 99 and 134), who attempted to demonstrate that regular reflexes of the PIE. ablauting paradigm were maintained up to a later date, which would account for such instances as *pellĕre* < **pelnă-* < **pelnh₂-* beside *ap-pellāre* < **pelnā-* < **pelneh₂-*. Accordingly, he regarded the assumption of an Italo-Celtic *ă*-conjugation as not compelling.

Before we can embark upon a discussion, the complete Latin material will be presented.

3.2. Material

1. *-cellĕre*, *-culī*, *-culsus* 'to shock' was discussed in D.I. 3.2.1 no. 1, where a nasal present **kel-n-H-* was posited. For the root, compare Lith. *kálti*, Russ. *kolót'* 'to beat' < **kolH-* (with unexplained *o*-vocalism).

2. *-cellĕre*, *-celsus* 'to raise oneself', cf. *celsus* 'high', probably belongs to the root **kelh₃-* in Lith. *kálnas* 'hill', Gr. κολωνός 'id.' (see section V.A.2 s.v. *collis*). It most likely reflects a nasal present **kel-n-H-*, not a *d(h)*-present (pace EM. and WH. s.v.). The latter type was very rare in Latin (only *tendĕre*, *tetinī*). A full grade root is common in Latin nasal presents, and *celsus* may have analogical *s*, as in *-culsus* above, and in *pulsus*, where an earlier **poltos* is proven by *pultāre*, which itself probably replaces **plātos* < **plH-tó-* (thus Steinbauer 1989, 149 and note 25).

3. The hapax legomenon *per-fines*, a subjunctive of a verb meaning 'to break', presupposes an infinitive **per-fināre* (with *-nā-*). It may be compared with OIr. *benaid* 'hew' < **bhi-n-H-* and with Russ. *bít'*, fem. pret. *bíla* < **bhiH-*.

4. EM. connect *pellĕre*, *pepulī*, *pulsus* 'to drive' with Gr. πάλλω 'to shake', which is not convincing for semantic reasons. It is more likely to be cognate with the OIr. fut. *eblaid* 'will drive' < **pi-plā-ti* and the present *-ella* in e.g. *ad-ella* 'visits' < **pelnā-* (Vendryes 1910-11, 301 f.). On *pulsus* see above no. 2. If so, *pellere* reflects a nasal present **pel-n-H-*. Compare *com-pellārī*, *ap-pellāre*, which have first conjugation inflection.

5. *sperněre*, *sprēvī*, *sprētum* 'to scorn' reflects **sper-n-h_1-*, cf. Ved. *sphurátˌi* 'to jerk', Lith. *spìrti* 'to kick away' < **sprh$_1$-*.

6. *sterněre*, *strāvī*, *strātum* 'to strew, spread' reflects **ster-n-h_3-* in view of OIr. *sernaid* 'to strew, litter' (with *-e-* introduced from the subjunctive *sera-*, cf. W. *sarnu* 'id.', Joseph 1982, 47) and Skt. *stṛ́ˌṇāti* 'to spread'.

7. *dē-stināre* 'to destine' contains **sth_2-* 'to stand'. The nasal present can hardly be old.

8. If *temněre*, *-tempsī*, *-temptus* 'to scorn' is cognate with Gr. τόμνω, aor. ἔτεμον 'to cut' < **temh$_1$-*, which is very doubtful for semantic reasons, it reflects **t(e)m-n-h_1-* (for the laryngeal see Beekes 1969, 221 ff., Ruijgh 1988, 457 note 42 and 45).

9. *tollĕre*, with its formal perfect *tetulī* and ppp. *lātus* < **tlh_2-tó-*, 'to lift', reflects **t l-n-h_2-*, cf. OIr. *tlenaid* 'to take away' < **tlinăti* < **tlnh$_2$ti*; Gr. aor. ἔτλημεν 'bore' < **tlh_2-*.

The following nasal presents are usually considered to reflect a root in a laryngeal, but it is in fact more likely that they are thematic (or secondarily thematicized, cf. *iungere*) verbs with a nasal suffixed to the root. Note that all verbs have a root ending in *-i-*.

10. *cernĕre*, *crēvī*, *crētus* 'to decide' must be compared with W. *go-gryn-u* 'to sieve' < **kri-n-* and with Gr. κρῑ́νω 'to judge, decide' < **krinˌiō* < **kri-n-* (the Greek present is perhaps denominative). Gr. κρῑτός is identical with *certus*

'certain' < *kritos*. The latter is considered to be the original ppp. of *cernere*; *crētus* was probably created beside *crēvī* after the model of *delēvī*, *delētus*, *sprēvī*, *sprētus*, *nēvī*, *nētus*. Beside this root **krī-* there is also **krē-* < **kreh₁-* in *ex-crē-mentum*, which may also account for the *ē* in *crēvī*. The latter may alternatively be explained from a long vowel preterit **krēi-u̯-*, for which see E.7.3.1.1 no. 2 s.v. *linĕre*, *lēvī*.

11. *dēclīnāre* 'biege, lenke ab' may be compared with Gr. κλίνω < **klinio̯*, fut. κλῑνῶ, ppp. κλῑτός, Skt. *śritá-* 'angelehnt' < **klī-*. Compounded *-clīnāre* reminds one of *pellĕre*, *appellāre*, *sternĕre*, *consternāre*, which presupposes an uncompounded **clīnĕre* (see 3.3). The attested uncompounded form *clīnāre* is a very late form and therefore probably a decompound (thus EM., WH.). The root vocalism *-ī-* probably reflects full grade **-ei-*, cf. *sternĕre*, *pellĕre* etc. The original form of the present stem must have been **kli-n-*. An alternative for positing a nasal present is to assume that *-clīnāre* was derived from an adjective **klei-no-*; this may explain the present tense inflection of Greek.

12. *linĕre*, *lēvī*, *lĭtus* 'to besmear' probably reflects a root **h₂li-*, not **liH-* because the latter cannot account for the short vowel of *lĭtus*. It is probably not cognate with Olr. *lenaid* 'remains, follows, clings to' < **li-n-H-*. (See II.B.2.2 no. 14).

13. *sinĕre*, *sīvī* or *siī*, *sĭtus* does not have a reliable etymology (see EM.). In view of the short vowel of *sĭtus*, the present probably reflects **si-n-e/o-*.

3.3. Discussion

One important observation which is relevant to the issue outlined in the introduction has not yet, as far as I know, been made: all uncompounded nasal presents have merged with the third conjugation, whereas all nasal presents that belong to the first conjugation are compounds (**perfinā-*, *dēstinā-*). The correctness of this observation is confirmed by *a(b)-spernārī* beside *spernĕre*, *appellāre*, *compellārī* beside *pellĕre*, and *cōnsternāre* (also *cōnsternĕre*) beside *sternĕre*. This distribution can hardly be accidental. The problem is that there are compounds with third conjugation inflection, e.g. *con-sternĕre*, *per-cellĕre*, *ex-cellĕre*. It is likely that these must be explained as more recent compounds than those

with first conjugation inflection. This assumption is justified by the semantics of *cōnsternāre* 'to perplex, terrify', which is clearly more distant from its base *sternĕre* 'to spread, strew, cover' than *cōnsternĕre* 'strew over, pave'.

The Latin distribution probably has an analogue in Celtic (see Vendryes 1910-11). In Old Irish, the nasal presents corresponding to Lat. *sternĕre*, *tollĕre* etc. have yielded the B IV class of strong verbs (Thurneysen 1946, 356), with examples such as 3sg. abs. *sernaid*, *tlenaid*, conj. *-sern*, *-tlen* < **sternă-*, **tlină-* (requiring short *ă*). There are however two nasal presents that only occur compounded, viz. *-ella* 'goes' < **pelnā-* and *do-airchella* 'encompasses' < **to-are-k^{w}elnā-*, which belong to the *ā*-inflection (Thurneysen's AI presents).

The situation in Celtic resembles the one in Latin so closely that it is in my opinion legitimate to look for an identical explanation. Before attempting this, we must discuss two earlier theories explaining the type in *-āre*.

The traditional view is that the type *cōnsternāre* belongs to the heterogeneous group of verbs of the type *occupāre*, usually labelled *ā*-intensives (Leumann 1977, 549). This type is held together by the fact that it contains first conjugation verbs, of various meanings and often compounded, that stand in some relationship to cognate third conjugation verbs, e.g. *oc-cupāre* beside *capere*. As Steinbauer 1989, 136 has convincingly argued, *occupāre* and numerous other verbs in *-āre* are clearly denominative in origin (cf. *au-cep-s*, *iū-dex*, *iūdicāre* etc.), while the type *cōnsternāre* (with *-n-*) clearly is not. Moreover, the type *occupāre* consists not only of compounds (cf. *fugāre*, *dicāre*), whereas the type *cōnsternāre* does. One may therefore conclude that the latter has a different origin.

Steinbauer himself proposes to derive *cōnsternāre* from full grade forms of nasal presents with **h_2* of the type **tl̥néh$_2$-ti*, assuming that this **-eh$_2$-* > *-ā-* became productive and ousted **-eh$_3$-* > **-ō-* (in *cōnsternāre*) and **-eh$_1$-* > **-ē-* (in *aspernārī*). This is, in my opinion, too complicated to be convincing and calls for a lot of special pleading. It is for instance not clear why **aspernērī* < **sperneh$_1$-* would not have been tolerated. Steinbauer offers one clear argument for deriving the type directly from nasal presents, viz. that *cōnsternĕre* and *cōnsternāre* share the perfect *cōnstrāvī* and a ppp. *cōnstrātus*. In my opinion, this is not decisive, firstly because one also finds *cōnsternāvī*, *cōnsternātus*,

which admittedly may be secondary, and secondly because, as Steinbauer points out himself (p. 102 and 238 note 19), one cannot reconstruct a Proto-Italic perfect, or even a Proto-Sabellian one, for *ā*-verbs: thus, since *cōnsternāre* did not have an old perfect, it could have adopted the existing perfect of *sternĕre*.

Apart from the formal problems of deriving the type in *-āre* directly from nasal presents, the most important objection is that Steinbauer's suggestion does not explain why the forms in *-āre* are confined to compounds. Thus, I think that his explanation cannot be maintained.

Since the type in *-āre* cannot successfully be explained from an ablauting paradigm **-nā-/-nă-* < **-neH-/-nH-*, there is no reason for assuming that this ablauting paradigm was maintained up to a late stage in Italic. I therefore propose to accept Watkins' explanation for the simplicia: Lat. *tollit* and Olr. *tlenaid* reflect **tlnăti* < **tl̥nh₂-ti*, with generalization of the zero grade form throughout the paradigm, as in *iungō*. (As for the development of the laryngeal to *ă*, not *ā*, this is probably regular: if at the stage before **nH* had become **nā* or **nă* **tlnh₂ti* had syllabic **-l̥-* (> Lat. *-ol-*, Olr. **-li-* > *-le-*), we may assume that **-n-* was consonantal and that **-n̥H-* regularly resulted in **-nă-*).

According to Strunk, it is possible that the full grade of the root in *sternĕre* and *sernaid* reflects an archaic type (1967, 53). For two reasons I do not think that this is likely. Firstly, we know that the full grade of the root in Olr. *sernaid* is recent in view of W. *sarnu*: *-e-* was evidently introduced from the subjunctive *sera-* < **sterh₃-* (Joseph 1982, 47). Secondly, if *sternit* and *sernaid* reflect **sternHti*, one would expect the latter to have yielded **sternāti* because **-n-* would be vocalic. Thus, one would expect *-ā-*, not **-ă-*inflection. It is unlikely that **sternāti* was remodelled into **sternăti* after the type **tl̥năti* < **tlnh₂ti* (where **-ă-* had arisen regularly) because in Latin the full grade type is most frequent: *-cellĕre* (2x), *pellĕre*, *sperněre*, *sternĕre* and possibly *temnĕre* against zero grade in *tollĕre*. This frequency of full grade roots, and therefore regular **-nā-* < **-n̥H-*, would certainly have tipped the balance to generalization of *-ā-* instead of *-ă-*.

We must now return to the *-ā-* in compounds, for which the following reasoning may be suggested, taking Lat. *-pellāre* and Olr. *-ella* as examples. There is no longer any reasonable

doubt about the reconstruction of thematic *-āje/o- for the Italic and Celtic ā-conjugations and the Germanic ō-conjugation (Cowgill 1959; despite McCone 1982, 22, see Kortlandt 1979a, 44 and 1984a). -pellare, -ella must clearly be derived from a nasal present, and we see that they went over to the ā-conjugation. What has happened may therefore be that they were thematicized. Thus, a simplex *plnă- stood beside a compound *-plnă-je/o-. The motivation for this distribution may be that a compound is a derived form, and the common derivative verbal suffix is *-je/o-. I think that there is an important parallel which indicates that this proposal is not entirely speculative.

The idea that the Latin capiō-inflection must be compared with the Balto-Slavic i/ī-conjugation was suggested by Kortlandt 1989a, 109, who reconstructed a BSl. athematic present with full grade suffix *-éi- in the singular and zero grade *-i- in the plural. According to Kortlandt, the type capiō reflects this athematic i-inflection, with generalization of the zero grade suffix (as in the nasal presents), and with the regular replacement of the 1sg. and 3pl. athematic endings by the thematic ones:

*kap-i-mi > capiō
*kap-i-si > capīs
*kap-i-ti > capīt
*kap-i-mos > capĭmus
*kap-i-tes > capĭtis
*kap-i-enti > capiunt

The Latin ī-verbs, on the other hand, reflect the PIE. fully thematic *je/o-inflection (e.g. venīs < *g^{w}m̥-jesi).

However, we find that beside a number of simplicia of the type capiō, capĕre there appear compounds of the ī-conjugation (see e.g. Meillet-Vendryes 1927, 267-268):

parĕre	-	comperīre
iacĕre	-	amicīre
fodĕre	-	exfodīrī (Plaut. Mil. 315)
gradī	-	adgredīmur (Plaut. As 680, Rud. 299)
		progredīrī (Plaut. Cas. 862)
lacĕre	-	inlicīte (Naev. Trag 30 R)

The rare uncompounded forms with -ī- (e.g. facīmus, facīs, cupīs (Plaut.)) were probably used for metrical reasons.

This distribution (athematic -i- in simplicia, thematic *-je/o- in compounds) in my opinion indicates that in compounds the athematic i-conjugation was thematicized to a

*-*i*-*ȷe/o*-conjugation (> -ī-).

I therefore conclude that there was a general tendency for athematic verbs to adopt the *ie/o*-inflection in compounds at an early period, at least going back to Italo-Celtic.

4. Reduplicated presents

Latin has six reduplicated presents of roots in a laryngeal which go back to PIE. The question arises whether these reflect a thematic or an athematic inflection.

1. *bibĕre*, *bibī*, *bibĭtum* 'to drink' reflects **pi-ph₃-*, cf. Falisc. fut. *pafo*, *pipafo* 'I will drink'. The latter is probably secondary and remodelled on the present (Leumann 1977, 578). Falisc. *pa-* probably reflects athematic **ph₃-* (cf. Lat. *dă-bō* < **dh₃-*, Leumann ibid.; for an analogical explanation of *pa-* see Klingenschmitt ap. Steinbauer 1989, 236 note 8). Ved. *píbati* 'to drink' and Olr. *ibid* reflect a thematic present **pi-ph₃-e/o-* or **pi-bh₃-e/o-*.

2. Reduplicated **di-dh₃-* is reflected in *reddĕre* 'to give back, return'; cf. Gr. δίδωμι, Skt. *dádāmi*, both athematic.

3. *reddĕre* 'to turn sth. into sth.' probably reflects reduplicated **-dhi-dhh₁-*. The same reduplicated present may have been present in *condĕre*, *prōdĕre*. The reduplication syllable was lost by syncope.

4. *gignĕre*, *genuī*, *genitum* 'to bring forth' reflects a root **ǵenh₁-*. The present *genĕre* is probably recent (see EM.). There is evidence that the laryngeal was lost at an early stage in some forms of this root, cf. e.g. Gr. γίγνομαι, νεογνός, *prīvi-gnus* (Mayrhofer 1987, 102; see V.A.3). Note, however, that *genuī* and *genitum* reflect **genă-* < **ǵenh₁-*, with vocalization of the laryngeal. In view of the Greek present, *gignĕre* probably reflects thematic **gi-gnh₁-e/o-*.

5. The present stem of *serĕre*, *sēvī*, *satum* 'to sow' reflects **si-sh₁-*, which has no counterpart in other languages. Balto-Slavic (Lith. *sėju*, OCS. *sějǫ*) and Germanic (Goth. *saian*, Dutch *zaaien*) have a **ȷe/o*-present.

6. *sistĕre*, perf. *stetī*, ppp. *stătus*, 'to place (oneself)' and U. 1sg. pres. *SESTU* reflect **si-sth₂-*. The thematic conjugation of Skt. *tíṣṭhati*, Av. *hištaiti* contrasts with athematic Gr. ἵστημι.

The main problem is whether these Latin presents reflect a thematic or an athematic inflection. Scholarly opinion generally favours the former, without going into the reasons for doing so (see e.g. EM. and WH. s.v., Cowgill 1973, 271; Leumann 1977, 34, however, assumes athematic inflection for *sistĕre*).

In view of the attested athematic formations in other languages, one might assume that *reddĭt* and *sistĭt* reflect **re-didăti* and **si-stăti* < **-didh₃ti*, **sisth₂ti*, which is formally possible. The required generalization of the zero grade root throughout the paradigm is parallel to the same phenomenon in the nasal presents. U. *SESTU* cannot be used to prove original thematic inflection because it may reflect **sistă-(i̯)ō*, with secondary thematicization of the athematic root **sistă-* and subsequent syncope of *-ă-*. The same reconstruction may be proposed for *serĭt* and *bibĭt*, although there is no indication for a PIE. athematic inflection in these verbs.

If one may conclude from the formal correspondence between Ved. *píbati* and Olr. *ibid* that PIE. had thematic **pi-ph₃-e/o-* only, one must reconstruct this thematic inflection also for Lat. *bibĭt*. However, it is possible that in Skt. and in Olr. the thematic inflection replaces an earlier athematic one, which is actually what the Vedic accent indicates (cf. *bíbharmi*). From a Latin point of view, the system *bibe- : *pă-* is identical to **dide-* (in *reddit*) *: dă-* and to *siste- : *stă-* (which can be reconstructed as the basis of *stāre* < **stă-ē-*). If this parallelism reflects a common system and if *bibĕre* reflects a PIE. thematic present (which is doubtful), we may perhaps conclude that **dide-* and *siste-* reflect a thematic paradigm. However, it is hazardous to extrapolate what is perhaps the case for *bibit : pafo* to the other forms. Thus, we are left with assumptions only.

5. Remaining verbs, with other formations

15. *cavēre* 'to beware' reflects a root **keuH-*. It is a causative and goes back to **(s)kouH-eie-* (see VI.C.1).

16. *parĕre* 'bring forth, procure' belongs to the *capiō*-subclass of the third conjugation and reflects **prh₃-i-* (see IV.D.2. 3.2.1).

For the 'causatives' *sonāre*, *tonāre* and *domāre* (?) see 2.1.1 no. 4, no. 6 and 2.1.2 no. 13, respectively. For the statives *lavāre*, *amāre* and *stāre* see 2.1.1 no. 8, 2.1.2 no. 9 and 2.2.1 no. 12, respectively.

For *facĕre* and *iacĕre* see IV.B.1.4.1.1 no. 4 and IV.D.1.2.2 no. 1, respectively.

E. ITALO-CELTIC, THE DEVELOPMENT OF THE LARYNGEALS AND NOTES ON RELATIVE CHRONOLOGY

1. Italo-Celtic

Since laryngeal developments may be counted among the earliest phonetic developments of the IE. languages, one may wonder whether they support the hypothesis of a one-time Italo-Celtic unity. A balanced view concerning the status of Italo-Celtic in general was advanced by Cowgill 1970, 113 ff., who held that at an early stage of the disruption of PIE., Italic and Celtic shared some innovations, the most important being the formation of the superlatives, and that then followed a long period of divergence prior to our earliest documents.

When considering developments that may support the Italo-Celtic hypothesis, we must look for developments that are exclusive to Italic and Celtic and which cannot be shown to be posterior to divergencies on the basis of relative chronology. In this section, we are dealing only with the developments discussed in this book, i.e. the phonological developments of the laryngeals, morphological developments of stems in a laryngeal, and the history of non-laryngeal *a* in Latin.

As it turns out, a few supposedly common developments bear scrutiny.

1. The development of interconsonantal laryngeals to *-a-* irrespective of their place in the word is common to Italic and Celtic. In Germanic, a laryngeal in this position yields *a* only in an initial syllable and perhaps in a final syllable (Beekes 1990) but is simply dropped in a medial syllable (cf. OHG. *kind* < **ǵenh₁to-*). Examples which illustrate that a laryngeal in medial syllables was vocalized in Italic and Celtic are e.g. W. *aradr* 'plough' < **h₂erh₃trom*, *anadl* 'breath' < **h₂enh₁tlom*; Lat. *temerē* 'dark' < **temHso-*, *cerebrum* 'brain' < **ḱerh₂srom*. The incidental loss of the laryngeal in medial syllables between stops may be a common development in view of the correspondence of O. *FUTÍR*, Gaul. *duxtir* < **dhuǵh₂tēr*.

2. A development which stands a good chance of being a shared Italo-Celtic development because of its specific nature, is the rise of **-a-* after a vocalic resonant and before a PIE. media followed by a consonant (*CRDC* > *CRăDC*, see VI.D), e.g. Lat. *magnus* < **mǵ-no-*, Olr. *mál*, W. *mael* < **mǵ-lo-*. The de-

velopment of *RH* to *Ră* before *TC*, which is rather less well founded, may perhaps be considered a common innovation, too.

3. A distinctly common morphological development is the rise of the *-nă-*inflection based on PIE. nasal presents of roots ending in a laryngeal, cf. OIr. *t l e n a i d*, Lat. *t o l l i t* < **t l n ă t i* < **t l n h₂ t i* (Watkins 1965). The phonetic component of the development is discussed sub no. 1. What confirms the suspicion of a common innovation is that in both Celtic and Italic compound presents of this type acquired the suffix **-i e/o-*, which is too specific to be attributed to accidence (see V.D.3.3).

4. The adoption of the Gsg. ending *-ī* instead of PIE. **-h₂os* by the hysterodynamic **h₂*-stems (see V.C.1.1.3) may perhaps be considered an Italo-Celtic development. However, the phenomenon cannot be considered proven, which gives reason for caution.

5. Perhaps the rise of the epenthetic vowel *-a-* in *CaCCC* < *CCCC* (cf. *s a r c i ō* < **s r k i̯ o H*) belongs to the Italo-Celtic period, if the origin of *-a-* in OIr. *a r c o*, W. *a r c h a f* < **p a r s k ō* < **p r(k) s k o H*, OIr. *t a r t* < **t r s t-* and W. *a d a r* < **p t-t r-* is identical (see VI.E.3). If this is correct, we can date a number of developments to the Italo-Celtic period because these logically precede the rise of *-a-* in *CaCCC*:
a. The vocalic nasals had already developed into *ₐn*, *ₐm* (except in *-NHC-*, which yielded *-N ₐ HC-*, see b.): **h₃dnt-* > **h₃d ₐ nt-* > Lat. *d e n s*, OIr. *d é t*, W. *d a n t* (not ***h₃adnt-*), **h₂rǵnto-* > **h₂rǵ ₐ nto-* > Lat. *a r g e n t u m*, OIr. *a r c a t*, W. *a r y a n t* (not ***h₃ragnto-*).
b. *R̥HC* had already yielded *R ₐ HC*: **k l h₁m-* > **k l ₐ Hm-* > Lat. *c l ā m-ā r e* (not ***k a l Hm-* etc.).
c. Loss of word-initial **h₁-* as a segment: **h₁ng^wni-* > **h₁ₐng^wni-* > **ₐng^wni-* > Lat. *i g n i s* (not **h₁ₐng^wni-* > **h₁ang^wni-* > ***a g n i s*).

For a more detailed discussion I refer to VI.E.3. It may be noted that since an interconsonantal laryngeal probably yielded (phonemic) *-a-* already in Italo-Celtic (see no. 1 above), the epenthetic vowel in *CaCCC* was not phonemic until after *CHC* > *CaC*. PIE. did not have a phoneme *a*.

Other developments cannot be used to support a specific Italo-Celtic linguistic unity.
6. Pretonic **HI* yielded *ĭ*, *ŭ* in both Italic (*f ŭ t-ū r u s* < **b h H u-t ó-*) and Celtic (OIr. pret. pass. *·b o t h* < **b h H u-t ó-*).

The same development is probably found in Greek (φῦτός). It is unlikely, however, that the development in Italo-Celtic and Greek is a shared one because there is no evidence for other such innovations of Italic and/or Celtic on the one hand and Greek on the other. Thus, the Greek development was most likely independent. This suggests the possibility that pretonic **HI* yielded *ĭ*, *ŭ* in Italic and Celtic independently. The maintenance of **HI* in pretonic position may be a retained feature rather than a common innovation. In view of *parit* < **prh₃-i-ti* and *haruspex* < **ǵhrHu-*, which display the typically post-Italo-Celtic reflex of antevocalic **RH* (see IV.D.2.3.4, and also 3 below in this section), the laryngeal in **HI* may generally have been maintained until after the supposed Italo-Celtic unity.

7. Dybo's rule of shortening of pretonic long vowels (i.e. $\bar{V}$ < PIE. **eH, oH, iH, uH*) before a resonant is common to Italic, Celtic and Germanic (see V.B). It seems that prior to Dybo's rule, Germanic was affected by at least one sound-law that distinguished it from Italic and Celtic, viz. the development of pretonic **HI* to **ī, ū* (see V.B.5, Appendix 3). This might imply that Dybo's rule operated at a time when Italic and Celtic formed a unity and Germanic was beginning to diverge.

8. The development of *CRHC* to *CRāC* can be observed in Italic and Celtic (cf. Lat. *grānum*, Olr. *grán*, W. *grawn*). The development cannot be a shared one, however, in view of Olr. *olann*, W. *gwlan* < PCelt. **ulănā-* < **Hu̯l̥hneh₂-* vs. Lat. *lāna* < **u̯lānā-* < **(H)u̯l̥Hneh₂-*, as was pointed out by Beekes 1988a, 93-94 note 9. According to Ringe 1988, 422 (who follows Cowgill 1970, 149 note 30), the development of **RH* to **Rā* is a shared Italo-Celtic one, and postdates the typically Celtic loss of laryngeals between resonants and semivowels (cf. Olr. *arbor* 'grain' < **h₂erh₃u̯r̥*). However, since *RH* > *Rā* probably postdates Italo-Celtic and the loss of *H* between resonant and semivowel is dated with relation to **RH* > **Rā* by Ringe, there is no reason to suppose that the loss of **H* between resonant and semivowel antedates Italo-Celtic. Accordingly, the assumption that shared Italo-Celtic developments postdated diverging typically Celtic (and Italic) developments is unfounded. This does not mean that the development of *CRHC* > *CRāC* cannot be a shared Italo-Celtic development which postdated certain restrictedly Celtic or Italic developments; the only implication is that it cannot be demonstrated that such a situation actually occurred. The development of *CR̥HC* to

CR$_{\partial}$HC perhaps is of Italo-Celtic date (see no. 5).

9. That *#RHC-* yielded *#RăC-* in Italic, Celtic and Germanic is a result of a syllabification rule that may stem from PIE. (see Beekes 1988b and IV.D.1.2.4). Thus, *-ă-* is the regular reflex of an interconsonantal laryngeal (see no. 1 above) and does not represent an independent development.

10. The development of *#HRHC-* to *RăC-* in Italic (*rapiō* < **HrHp-*) and Germanic (Goth. *namo* < **h$_3$nh$_3$m-*) seems to point to an Italo-Germanic isogloss which excludes Celtic in view of Olr. *ainm* 'name' < **h$_3$nh$_3$m-n*. However, there is some evidence that *HRHC-* normally yielded *RăC-* in Celtic as well (W. *rhathu*, *gweilydd*, see IV.F.1.4); in that case, *ainm* may simply represent an isolated instance, possibly due to the dissimilatory loss of the second *-h$_3$-*. In any case, *ainm* and Goth. *namo* represent a different treatment. Whether Latin agrees more with Germanic than with Celtic in the treatment of *HRHC-* cannot be ascertained because Latin does not have a reflex of zero grade **h$_3$nh$_3$m-*.

11. The preservation of the PIE. **h$_1$*-stems as a separate category in both Latin (type *vātēs*, V.C.2) and Celtic (type Olr. *méit*, MW. *meint*, Bret. *ment*, see V.C.2.5) should be considered a retained archaism rather than a shared development.

We may conclude that the development of the laryngeals in Latin offers no serious objections to the Italo-Celtic hypothesis on the one hand, and provides us with a few developments that stand a good chance of being Italo-Celtic ones on the other.

2. Developments before Italo-Celtic

Two developments may be dated before the Italo-Celtic stage.

1. Dybo's rule of pretonic shortening, which was common to Italic, Celtic and Germanic and seems to have operated under identical conditions. Since at the time, Germanic was distinguished by at least one sound-law (viz. pretonic **HI* > ī, ū), Dybo's rule may perhaps be dated to the beginning of the Italo-Celtic period.

2. The development of *VH, IH* before consonant into ē, ā, ō, ī, ū, which is presupposed by Dybo's rule (see V.B). In view of the tonal features of the reflex of *VH, IH* in Baltic (acute) and Slavic (rising) and the distinctive short quantity of the reflex of *VH, IH* in Slavic, the development of *VH, IH* to ē, ā etc.

postdates the PIE. period. In view of this and of the supposed Italo-Celto-Germanic unity that can be posited on the basis of Dybo's rule, the development of *VH, IH* > *ē, ā* etc. may be dated to this common period.

3. Developments after Italo-Celtic

At least four developments took place in Proto-Italic after the Italo-Celtic period because Italic and Celtic behaved differently.

1. *CRHC* > *CRāC* (see no. 7 of section 1);

2. *CRHV* > *CaLV-, CeNV-* (e.g. *calēre, valēre, palma; similis, sine, tenuis*); contrast OIr. *samail, sain*, which point to *CNHV* > *CaNV-*. Since the development of *CLHV* to *CaLV* postdated that of *CNHV* to *CeNV* (see IV.D.2.3.4), the former cannot date back to the Italo-Celtic period either.

The assumption that *CNHV* yielded *CaNV* in Italo-Celtic and that *-aN-* yielded **-eN-* in Italic must be rejected because there are many instances in Latin of retained **-aN-* of other origins (e.g. *canĕre, manēre, ānser, ambō, ancus* etc.). The assumption that *CNHV* yielded *CeNV* in Italo-Celtic and that **-eN-* yielded **-aN-* in Celtic must be rejected as well because there are instances in Celtic of retained **-eN-* of other origins (e.g. OIr. *cingid* < **kengeti, lingid* < **plengeti, scendid* < **skendeti*, W. *hynt* < **sent-*, W. *ythr* < **$h_1$enter*). There is evidence for Italo-Celtic *N̥* > [$_{\partial}N$] (see 1.5.a above).

3. *HRC-* > *aLC-, e/a/oNC-* depending on the colour of the laryngeal (*argentum; umbilīcus, ambi*); contrast Bret. *amann*, OIr. *imb* < PCelt. **amban* < **$h_3$ng^w-n*. This development implies that in Proto-Italic the laryngeals **h_2* and **h_3* were still distinct phonemes, at least word-initially before vocalic sounds.

It seems that the rise of non-laryngeal *a* (see chapter VI) typically belongs to the period of Proto-Italic in three cases, as far as can be gleaned from the scanty evidence:

4. **e* > *a* after pure velars: O. *KARNEIS*, cf. *carō* < **(s)ker(H)-Vn-* (or **(s)krH-Vn-*?) (see VI.B); contrast Lat. *scandĕre* with OIr. *scendid*, W. *chwynnu*.

5. PIE. **ou̯* > **au̯* (Thurneysen-Havet's law), which antedates the PIt. development of PIE. **eu̯* to **ou̯* (see VI.C.1); contrast Lat. *lavō* with OIr. *lóathar*, MoBret. *laouer* < PCelt. **lou̯atro-*.

6. **o* > **a* /*m*, *u̯* ___ *CV*: PSab. **man-* 'hand' < **mon-*, cf. OIr. *muin* < **moni-* (see VI.C.2); contrast Lat. *mare* with OIr. *muir*, W. *mor* < **mori*.

VII. LATIN *A* OF NON-LARYNGEAL ORIGIN

A. INTRODUCTION

As is well known, Latin presents us with a considerable body of words containing an *a* of non-laryngeal origin. In earlier years, the origin of this *a* was often sought in the PIE. reduced grade (schwa secundum), e.g. WH. *magnus* < *$m_{e}ǵ$-nós* as opposed to Gr. μέγας < **méǵ-* (see also Meillet 1937[8], 102), but this ablaut grade can no longer be maintained and is now generally abandoned. On the other hand, present-day handbooks of Latin still operate with reduced grades, see Sommer-Pfister 1977, 51-52, Leumann 1977, 50.

Others saw in *-a-* the reflex of an automatic vowel that appeared in zero grade roots. Cf. EM. s.v. *magnus* < **m°ǵ-no-*: "L'addition d'un suffixe secondaire **-no-* a entraîné le vocalisme radical zéro, d'où **m°g-*". However, if *-a-* arose as an automatic vowel, one should be able to predict its occurrence, which up to now has not been possible.

Other attempts to clarify the forms with *-a-* center around so-called popular forms, thus e.g. EM. 599 s.v. *scandō*: "*scandō* a le vocalisme radical *a* qui charactérise des formes populaires, expressives, telles que *caedō*. Ce vocalisme n'a rien d'essentiel; c'est une déviation qu'explique le caractère particulier du mot." Apart from the fact that one fails to grasp "le caractère particulier" of *scandō* 'to ascend' and numerous other instances of non-laryngeal *a*, the theory is a shot in the dark because it does not allow one to operate with well-defined rules.

Wharton 1892 advanced the theory that PIE. **e* and **o* developed into Latin *a* before the PIE. accent, which would explain *a* in *magnus* < **meǵnó-*, *fractus* < **bhreǵtó-*, *quattuor* < **k^{w}etuóres* (Skt. *catvā́ras*), *aries* < **eriét-* (cf. U. *ERIETU*, with **e-*), *mare* < **morí* (cf. **o* in Olr. *muir*, W. *mor*). There are, however, numerous exceptions to this rule, e.g. *septem* < **septḿ* (Gr. ἑπτά, Skt. *saptá*), *formus* < **g^{w}hormó-* (cf. Gr. θερμός), *cervus* < **ker(H)uós* (cf. Gr. κεραός). Wharton tried to account for these exceptions by assuming that two "Latin" dialects existed side by side, a "pitch-dialect" in which the PIE. tonal accent was strong enough to cause **e* and **o* to change into *a*, and a "stress-dialect" in which initial stress prevented this change. It is

clear that this cannot be called a solution: its framework, the existence of two dialects which differed in the nature of the accent and which became mixed up later, is far-fetched; if a dialectal difference was at issue, one would expect forms with *e* or *o* (from one dialect) to alternate with forms with *a* (from the other), but these cannot be found; furthermore, the theory of two dialects is such that it can neither be proved nor disproved on the basis of the material, so that it may be considered worthless.

Collitz 1897 therefore rejected Wharton's idea of two dialects and assumed that the change of pretonic **e* and **o* to *a* took place only in open syllables. This would explain why *e* and *o* were maintained e.g. in *quīnque* < **pénkʷe* (Skt. *páñca*, Gr. πέντε), *septem* < **septm̥* (see above), *octō* < **oḱtṓ* (cf. Skt. *aṣṭā́*, Gr. ὀκτώ), *decem* < **déḱm̥* (cf. Gr. δέκα, Skt. *dáśa*, Goth. *taíhun*). In Collitz's view, the *a* of *quattuor* arose in **kʷetúr-*, cf. Skt. Apl. *catúras*, and the *a* in *magnus* arose in the early form of the adjective found in Gr. μέγας, Skt. *máhi*, which had an open first syllable (which is unfortunately not pretonic).

If one evaluates the positive evidence adduced by Collitz for what he calls Wharton's law, one finds that it is extremely slight. His main argument rests on the *-a-* of the ppps. *status*, *satus*, *datus* and of *faciō*, which, as we now know, reflects a PIE. laryngeal. Of what remains, not a single form supports Collitz's views. *quattuor* may have pretonic *-a-* but, at least in Latin, is in a closed syllable; *magnus* has *-a-* in a closed syllable; *aper*, G. *aprī* 'boar' reflects **apros*, which is evidently cognate with OIc. *jǫfurr*, OE. *eofor*, OHG. *ebur* < **eƀuros* < **epr̥-*, but again *-a-* would have arisen in a closed syllable; neither *nancīscor* nor *nactus* 'to attain' have *-a-* in an open syllable; *pariō* 'to produce' reflects **prh₃-i-* and cannot be used. Moreover, *egō* 'I' < **eǵṓ* (cf. Gr. ἐγώ) and the causatives *moneō*, *doceō* < √*-o-éi-* have retained pretonic *e* and *o* in open syllables.

Pedersen 1905, 339 accepted the results of Wharton's and Collitz's investigations but did not go into the matter. Since as yet any positive evidence for Wharton's law and Collitz's reformulation is lacking while there is counterevidence, it cannot be accepted as it stands.

Kuryłowicz 1956 took a morphological approach towards the problem of non-laryngeal *-a-*. On p. 175 he claimed that the ablaut *TRV̄ : TR̄* (i.e. *TReH : TRH*) was replaced by *TRV̄ :*

TRă on the model of *dhē : dhă*, *dō : dă* etc. He held that "un changement comme *u̯rēǵ* > *u̯raǵ* est décomposable en une phase de soustraction (*u̯rēǵ* > *u̯r̥ǵ*) et une phase additive (*u̯r̥ǵ* > *u̯raǵ*), puisque la forme *u̯r̥ǵ* est phonologiquement admissible. Le passage du vocalisme *ē* au vocalisme *ă*, la soustraction de *ē* et l'addition de *ă*, se fait par l'intermédiaire de zéro (*u̯r̥ǵ*)..." As a result, Kuryłowicz claims, the ablaut *ReT : Ṛ T* could be replaced by *ReT : RaT* (e.g. Gr. φλέγω, Lat. *flăgrāre*). Similarly (p. 176), on the model *TV̆T : TăT* (< *TeHT : THT*) the ablaut *TeT : TT* was replaced by *TeT : TaT* (e.g. Lat. *secāre*, *sacēna*).

The essential point in Kuryłowicz's argument is the way in which he thinks the type *u̯rēǵ*, *u̯răǵ* came about. His assumption of intermediary *u̯r̥ǵ*, crucial to the argument, is the result of speculation and a highly abstract conception of morphological change, which I find myself unable to understand. Since I fail to see the necessity to assume intermediate *u̯r̥ǵ*, Kuryłowicz's explanation of *flagrāre* and *sacēna* seems unconvincing to me.

Kuryłowicz's attempt to explain the ablaut *TeR : TaR*, which may have been based on *TeR(H)o- : TaR(H)o-* < *TṚHo-*, seems more promising. While this model is plausible as far as antevocalic *TeR : TṚ* is concerned, the extension to roots of the type *TeRT : TRT* (e.g. **bhers : *bhr̥s- > *bhers- : *bhars-* in *fastīgāre*, cf. Skt. *bhr̥ṣṭí-*, pp. 177 ff.) is not evident and calls for special pleading. Moreover, this analogy is applied with some degree of arbitrariness. Thus, **bhr̥s-* was replaced by **bhars-*, but **pr̥k-* was not replaced by **park-*, cf. Lat. *poscō* < **pr̥kskō*. Although analogy evidently does not work as an exceptionless sound law would and Kuryłowicz's theory could not therefore be rejected, it calls for a considerable amount of special pleading for every word in which the analogical replacement of *-Ṛ-* by *-aR-* supposedly took place.

A very different approach to some words was taken by those scholars who assumed that some instances of Latin *-a-* can be attributed to a substratum language, which originally belonged in the western and northern European area. The most attractive examples comprise geographical designations as *lacus* 'lake', *mare* 'sea' (see esp. W.P. Schmid 1985, E.P. Hamp 1979, Kuryłowicz 1956, 194-195). Although substratum-words certainly existed in every single language, it is not easy to identify them with certainty, at least if they have cognates in other IE. languages. Isolated words can in general be ascribed to a sub-

stratum (or adstratum) unless there are very specific reasons for deciding otherwise (e.g. a thoroughly IE. morphology). Substratum-words which have cognates can in general be traced in a number of ways: a phonologically common protoform cannot be reconstructed (e.g. Lat. *ervum*, Gr. ἐρέβινθος 'pea'); the morphology of the form clearly is not Indo-European (e.g. Gr. ἐρέβινθος); the word belongs to a semantically defined class of words for which borrowing is especially likely, e.g. designations of material objects (e.g. Lat. *testa*, *casa*). None of the criteria is watertight. As to the phonological criterium, it is possible that a word is of IE. origin and reflected in a regular way in, say, two languages, but subsequently borrowed from one or both of these into other IE. languages (e.g. *vīnum*, see Beekes 1987d). If all reflexes of such a PIE. word are taken on a par, a common protoform cannot be reconstructed, but still the word ultimately goes back to PIE. The morphological criterium seems to be a better tool for distinguishing substratum-words because the morphology of a word is either IE. or not IE. Actually, however, the situation is more complex, and there is a distinct subjective element present. Some scholars may think Gr. ἀστραλός, allegedly cognate with Lat. *sturnus* 'starling' and reflecting **$h_2$strnlo-*, looks un-IE. because of its sequence of suffixes containing a resonant; others, however, could claim that the starting point is a PIE. *n*-stem **$h_2$stor-n-*, which was in Latin remodelled into an *o*-stem and in Greek provided with the suffix (of IE. origin) **-lo-*. Neither theory can be denied a certain degree of plausibility. The semantic criterium allows even less certainty because the fact that a semantic class of words is prone to being borrowed does not mean that every word belonging to this class is in fact borrowed. Thus, the word for plough, a material object, has a perfect IE. etymology and may be reconstructed as **h_2(e)rh_3-trom*. In practice, we can only be reasonably certain that a word belongs to a substratum if there is a combination of at least two of the three criteria, phonological, morphological and semantic. Such a case is Lat. *ervum*, Gr. ἐρέβινθος 'pea'.

We may now return to the main argument concerning the examples *lacus* and *mare*. These words are found over a fairly large territory (Italic, Celtic, Germanic, Balto-Slavic, and as to *lacus*, also Greek; **mori* is reflected in Ossete), which renders a substratum-origin less likely, though not impossible (it would require a huge substratum-area, or a very early date of borrowing). The phonological criterion for assuming a substratum origin

is that the reflexes in the various languages cannot be reduced to a common form (if we assume, as I do, that PIE. did not have a phoneme *a). There is no morphological reason for assuming that *mare* and *lacus* are not of IE. origin; neuter *i*-stems are admittedly rare, but there is nothing inherently un-IE. about them, and non-neuter *u*-stems are common in IE. Actually, the morphological correspondence of OCS. *loky* with Lat. *lacū-na* < *-*uH*- points to an IE. origin. The semantic reason for considering *mare* and *lacus* as non-IE. is that designations of geographical terms are often borrowed. Summing up, there is a phonological and semantic reason for considering *mare* and *lacus* as loans but their morphology is in accord with IE. usage. Thus, the possibility of a substratum-origin seems clearly present. However, in the following chapters it is attempted to show that the phonological criterion is incorrect: *mare* and *lacus* can reflect **mori* and **locus*, which are possible basic forms of the cognates in other languages. This leaves only the semantic criterium, which, as we have seen, is not by itself enough to discard an IE. origin.

In the following chapters, I have followed a different path by trying to account for non-laryngeal *a* as a result of regular, phonetically conditioned developments of PIE. **e* (section B), **o* (section C), and zero (section D) by means of sound laws. The presentation of the material goes from the (in my opinion) clearest to the more obscure rules. All proposals except Thurneysen-Havet's law (C.1) and to a certain extent the delabialization of **uo*- to **ua*- (which was suggested by Hamp) are new. I would like to claim that five sound laws exhaustively account for the instances of non-laryngeal *a* in Latin.

B. LATIN *A* AFTER PURE VELARS

1. Introduction

As Meillet demonstrated (1894a, 277-304) and has been widely accepted since then (cf. especially Meillet 1937[8], 95-96, Steensland 1973, Kortlandt 1980a, 1986b), PIE. had only two velar series, not the traditional three, labio-, palato- and pure velars. This conclusion has been reached because "one hardly finds a single environment where all series were opposed to each other" and because "the cases of so-called "Gutturalwechsel" are far too numerous to be disposed of as incidental irregularities" (Kortlandt 1980a, 245). For a detailed discussion of the material I refer to the works of Meillet and Steensland and, on Balto-Slavic velar interchange, Čekman 1974, Kortlandt 1978c.

On the evidence of the satem-languages, Meillet concluded that after **s-* (mobile and fixed) there was no opposition between pure and palatovelars: only pure velars are found. This neutralization is considered to be of PIE. date. In the case of mobile *s-*, the pure velar that arose after *s-* was often introduced in the forms of the same etymon in which mobile *s-* happened to be missing (in this limited sense, the assumption of a phonemically relevant third series of pure velars is justified). I shall not go into this matter here and shall accept Meillet's conclusions as correct. An illustration of the main points may nevertheless be useful.

In Sanskrit, for instance, PIE. **(s)ke-* yielded *ca-* (with loss of mobile *s-*), e.g. in *cárman* 'skin', cf. Gr. κείρω, and did not merge with **ḱe-*, which yielded *śa-*, e.g. in *śástram* 'knife' < **ḱes-trom.* In Lithuanian, **(s)ke-* remained, but **ḱe-* became *še-*. In both Skt. and Lith., the reflex of **(s)k-* in which *s-* was lost merged with the reflex of PIE. **kʷ-*. The distinct reflex of PIE. **ḱe* and **(s)ke-* in these languages indicates that there must have been a phonetic difference in PIE. between **ḱe-* and (neutral, non-palatal) **(s)ḱe-*, probably in the sense that the latter had a clearly non-palatal *k-*. As was indicated above, this non-palatal *k-* may have been phonemicized when the sound that conditioned it, mobile *s-*, was lost. There is as yet no evidence for a threefold opposition of pure, palato- and labiovelars in any IE. language (see Kortlandt 1980a) because in the satem-languages the pure velars merged with the labiovelars and in the centum-languages the pure velars merged with the palatovelars.

It appears that a large number of instances of non-laryngeal *a* in Latin are found after these "pure velars" which arose after **s-* (this was already noted by Meillet 1937[8], 94). What is more, there is hardly any evidence for maintained **-e-* in this position. Consequently, the hypothesis may be advanced that PIE. **-e-* yielded Lat. *-a-* after pure velars.

It may be well to point out that what follows does not depend upon the correctness of Meillet's ideas concerning the origin of pure velar *k*. If one prefers to reconstruct three series of velars for PIE., one cannot dismiss the central idea of this section for that reason.

In the following section all Latin words that have an *a* which cannot reflect a laryngeal and which appears after a pure velar are discussed (2.1). Subsequently, all Latin words that have *-e-* after a pure velar are considered (2.2). In section 3, examples of Lat. *-e-* after palatovelars are given. The material is evaluated in section 4.

2. Material

1. *cacūmen* 'top' may be compared with Skt. *kakúbh-* (fem.) 'top'. Skt. *kakúd-* is attested at a late stage, and *-d-* is probably secondary (Mayrhofer, KEWA). *cacūmen* itself was probably remodelled on *acūmen* 'top, point' (thus WH.), in which case the former may have replaced **cacummen* < **kakubh-mn̥*. If the formation is old, the root must have contained *e*-vocalism, in which case Lat. *-a-* may have arisen secondarily after the pure velar **k-*.

The root-vocalism of *kakúbh-* is obscure. **kekubh-* would have yielded **cakubh-*, and in accordance with Brugmann's law **kokubh-* would have yielded **kākubh-* (cf. perhaps RV. *kākúd-* 'Kehle, Schlund', Mayrhofer EWaia). The assumption of restoration of *k-* for *c-* or of *-ă-* for *-ā-* cannot be supported by any evidence, but one of the two is perhaps not impossible. *cacūmen*, *kakúbh-* may be analyzed as a reduplicated form of **kubh-* (or **k^{w}ubh-*). Since this root structure is impossible in PIE., we may perhaps reconstruct earlier **(s)kubh-*, with mobile *s-*.

In view of these problems, *cacūmen* is at best a possible instance of *a* < **e*. It seems to be an instance of PIE. **a*.

2. *calamitās* < **kelH-m-* or **klh$_2$em-*, cf Lith. *kálti*, Russ. *kolót'* 'to beat' for the pure velar, which may have arisen after mobile *s-*. See IV.D.2.3.2.1 no. 1.

3. *calāre* < **kelh$_1$-* or **klh$_1$-V-*, cf. perhaps late Skt. *uṣā-kala-* 'cock' for the pure velar, which may have arisen after mobile *s-* (cf. OHG. *scellan* 'schallen, tönen' etc. See Pokorny IEW. 550). See V.D.2.1.2 no. 11 and IV.D.2.3.2.1 no. 2.

4. The quantity of *-a-* in *calidus* 'with a white spot on the forehead' is unknown. The word appears only twice, in Isid. orig. 12, 1, 52 and in Chiron, Mul. 795 (both late), where it is written *callidus*. It is uncertain whether the same word occurs in some corrupt glosses, where it is written *callidus*. Thus, there seems to be no reason in Latin to assume *-ā-*, as WH., Pokorny IEW. 548 and others do.

calidus must be compared with U. *BUF KALEŘUF* 'cows with a white spot on the forehead', which points to PIt. **kaledo-*. These forms are semantically very close to Lith. *kalýbas*, *kalývas* 'dog with a white spot in the neck' and forms with an *m*-suffix such as Swiss German *helm* 'spot on the forehead of cattle', Swed. dial. *hjälm* 'blässiger Ochs oder blässiges Pferd' < **kel-m-*, MoPers. *čarma* 'grey horse', Kurd. *čerme* 'white' < **kel-mo-*, and possibly Lat. *columba* 'pigeon' < **kol-on-bh-*. It seems possible that Skt. *karkí* 'white cow' (AV.) reflects a cognate **kol-k-iH*. All these forms point to a root **kel-*, without a laryngeal. It is formally unlikely that *calidus* can be compared with Gr. κηλάς 'goat with a callous spot on the forehead'. The latter may, in my opinion, rather be connected with Lat. *callum* 'callous' < **kHl-no-* (see IV.B. 1.4.4.1 no. 4).

On the evidence of the Indo-Iranian and Lithuanian forms, I reconstruct a PIE. root **kel-*, with a pure velar that possibly arose after mobile **s-*. Lat. *calidus* may then reflect **kel-*. If this is accepted, the same development must be reconstructed for Sabellian.

5. *callis* 'animal path' may be compared with Lith. *kẽlias* 'road', perhaps with Gr. κέλ-ευθος (fem.) 'path, road', which, however, has the morphology of a substratum-word (cf. ἀκόλουθος), and probably also with SCr. *klánac* 'narrow pass, ravine', Sln. *klánəc* 'hollow road' < **kolni-*, which, despite EM. s.v., are both semantically and formally close to *callis*. The pure velar is demonstrated by the Balto-Slavic forms. It therefore seems possible that *callis* reflects **kel-ni-*, although there is no evidence for original *e*-grade of the root. The connection with *callum* cannot be maintained (see IV.B.1.4.4.1

no. 4).

6. *calx* 'heel' may reflect **kel(H)k-*, cf. Bulg. *kȍlka*, SCr. *kȕk*, also *kûk*, Gsg. *kùka* 'hip' < **klk-*, but the connection is uncertain. See IV.D.2.3.2.1 no. 5.

7. *cancer* 'lobster, crab'. Assuming that this word and its cognates do not contain expressive or onomatopoetic *-a-*, we can draw up the following reconstructions. If Skt. *karkaṭa-* 'lobster' reflects **karkṛta-* and is not a loan from some indigenous language, it could go back to **kor-kr-*. However, it seems advisable to follow Mayrhofer's reservations concerning its IE. origin (KEWA). According to Frisk s.v., Gr. καρκίνος 'crab' could reflect **karkr-ino-*. This may in turn reflect **kr-kr-ino-*, with reduplication as in Skt.

Both EM. and WH. assume that *cancer* reflects **karkros*. If this is correct, it also goes back to a reduplicated form, which, in accordance with the rule under review, could then be reconstructed as **ker-kr-o-* (see the Skt. form for the pure velar). The root **kr-* is conceivably identical to the one found in words for 'hard, strong', e.g. Gr. κάρκαροι· τραχεῖς (Hes.) and κράτος (thus EM., WH., Frisk). Cf. also no. 11.

Since there is no independent evidence for **-e-*, and as it is doubtful whether the Skt. form is cognate, *cancer* cannot be used as independent evidence for the rule **e > a* after a pure velar.

8. *candēre* 'to shine, be white hot', *-cendĕre* 'to cause to burn, set fire to', *candor* 'brilliant whiteness' must be compared with Skt. *candrá-* 'brilliant', also *-ścandrá-*, and *cándati*, intens. *cániścadat* (RV. 5, 43, 4) 'shines, is bright', which goes back to PIE. **(s)kend-*. I cannot agree with WH. that W. *cann* 'brilliant', MBret. *cann* 'full moon' necessarily point to PIE. **kand-* because these forms may reflect zero grade **(s)kn̥d-*. Alb. Tosk. *hënë*, Geg. *hânë* 'moon' reflects **(s)kand-nā*, which in turn can go back to **(s)kond-* because **o* and **a* merged in **a*, which yielded Tosc. *ë*, Geg. *â* before a following nasal (see Huld 1984, passim). Despite Frisk's assertion that it is cognate, Gr. κάνδαρος· ἄνθραξ (Hes.) perhaps is not of PIE. origin because PIE. **knd-* would have yielded Gr. **καδ-, not κανδ-, and a PIE. phoneme *-a-* did not exist.

Thus, the Sanskrit evidence points to **(s)kend-* and there is no certain evidence for **a* in other languages. It may accordingly be assumed that PIE. **(s)kend-* yielded Lat. *cand-*.

9. *carbō* perhaps reflects **kerHbh-* or **krHebh-*. See IV.D.2.3.2.1 no. 6.

10. If *cardō* 'hinge' is cognate with OE. *heorr(a)*, OIc. *hjarri* 'hinge', (perhaps) OIc. *hrata* 'to reel, stagger' < **krod-*, Gr. κραδή 'swing' < **krd-* and OHG. *scerdo* 'corner, angle' < **sker-t-*, we may perhaps assume that it reflects PIE. **(s)kerd-* (cf. Pokorny IEW. 934). The etymology is uncertain, and therefore *cardō* is at best a possible case of **e* > *a* after a pure velar.

11. *carīna* 'half a shell of a nut' < **ker-*? (see IV.D.2.3.2.1 no. 7).

12. *carināre* 'to hold sth. against someone' (P.F. 41, 13, Ennius) is probably a denominative, like *coquīnāre* from *coquīnus* 'cook' (EM.). OHG. *harawēn* 'verspotten', Latv. *karinât* 'zergen, necken', OCS. *u-korъ* 'boldness, daring', SCr. *pòkor* 'blame' point to an initial pure velar and to the absence of a laryngeal in the PIE. root; in fact, all forms may reflect **kor-*. Gr. κάρνη· ζημία, Toch. AB *kärn-* 'quälen, schlagen' < **kr-n-* and OIr. *caire* 'blame, disapproval', W. *caredd* 'id.' < **kr-i̯eh₂-* have a zero grade root. The first member of Gr. οκερβόλλω 'to insult', σκέρβολος 'insulting' could be cognate, but in view of σκέραφος, σχέραφος 'insult', the Greek forms may not be of IE. origin.

It may be supposed that the root of *carināre* goes back to PIE. **(s)ker-* and that **e* yielded *a* after the pure velar. *e*-grade of the root is not certain, however.

13. *carō*, Gsg. *carnis* 'meat' may reflect **(s)ker(H)-ōn* or **(s)krH-ōn* (see IV.D.2.3.2.1 no. 8).

14. *carpĕre*, *carpsī*, *carptum* 'to pick, pluck' can be compared with Lith. *kiřpti*, *kerpù* 'to cut with scissors', Latv. *cìrpt*, *cèrpu* 'to shave' < **k(e)rp-*, which indicate that the root did not contain a laryngeal, OIc. *harfr*, *herfe* 'harrow' < **korp-*, Skt. *kṛpāṇa-* (m.) 'sword', *kṛpāṇī* 'scissors, dagger' < **kṛp-*. Ir. *corrán* 'sickle' and *cirrim* 'to mutilate' are probably not cognate (see Vendryes C-74 s.v. *cerr* and C-213 s.v. *corrán*). Gr. κρώπιον, κρώβιον 'sickle' (also κροπ-, κροβ-) could according to Frisk be cognate, but the interchange of the labials may point to a substratum-origin. Frisk explains the interchange of -π- and -β- by assuming a root noun **κρώψ*. If this is correct (which is quite uncertain), the latter probably reflects PIE. **krōp*, with lengthened grade.

The pure velar that is attested in Baltic and Sanskrit most likely arose after mobile *s-*, cf. e.g. OE. *sceorfan* 'to bite' etc. (see Pokorny IEW. 944). Thus, *carpĕre* may reflect **(s)kerp-*, with *a* < **e*.

15. *carpĭnus* 'hornbeam' may be cognate with Lith. *skiřpstas* 'elm', *skirpstùs* 'beech', OPruss. *skerptus* 'elm'. A common trait of these trees are the crenated leaves. Pokorny accordingly connects them with the root **skerp-* 'to cut' (IEW. 944-5, see no. 14 above), which seems possible. Perhaps Hitt. ^{GIS}*karpina-*, a kind of fruit tree' is formally identical with *carpĭnus* (cf. Poetto 1973, 27-29), if it is not cognate with Russ. *grab*, *grabína* 'hornbeam' etc. (Neumann 1961, 78 note 4). In view of the Baltic forms and the root etymology, it is possible that *carpinus* reflects **(s)kerp-ino-*. Note, however, that the word could be a loan because, as Pliny remarks, the hornbeam is native to Italia Transpadana.

16. *carrĕre* 'to card' (also *carĕre*; *-rr-* is probably original, see WH.), *carmen* 'iron comb for wool' reflects a root **kars-* (Pokorny, IEW. 532-533), which may be compared with Lith. *kařšti*, *karšiù* 'to card', Latv. *kàrst* 'id.' < **kors-*. The Baltic forms indicate that the root did not contain a laryngeal. OCS. *krasta*, Russ. *korósta*, SCr. *krȁsta* 'scab, crust' point to **korHs-*, but they are semantically remote and therefore irrelevant. Whether Skt. *kaṣati* 'to scratch' is cognate is doubtful (see Mayrhofer, EWaia s.v.).

That the original root-vocalism was probably **-e-* rather than **-a-* and that the pure velar arose after mobile *s-*, is indicated by OHG. *scerran* 'to scratch' < **skers-*. We may therefore assume that *carrĕre* reflects **(s)kers-*. Lat. *carduus* 'thistle' (orig. 'scratching'?) may be cognate.

17. *caterva* 'troop, band' has an Umbrian cognate *KATERAMU*, *caterahamo* 'catervamini, congregamini', which is a verb derived from *caterva*. The alleged cognate Ir. *cethern* 'troop' does not seem to exist, as it is mentioned neither in the *Dictionary of the Irish Language* nor in Vendryes' LEIA. WH. reconstruct *caterva* as **kates-oụa* and connect it with *catēna* 'chain' < **kates-na* and *cassis* 'Jägergarn, Netz' < **kat-s-*, which is possible but not certain (thus also Meiser 1986, 184).

If *caterva* is cognate with OCS. *četa* 'troop, band', Russ. *četá* 'pair', OCS. *sъ-četati* 'to connect' (thus Vasmer s.v.), which would then point to pure velar *k-*, *caterva* might reflect **ket-*. However, in that case the formation of the Latin word

remains obscure and the origin of the pure velar is uncertain (after mobile *s-?). Unreliable.

18. *scaběre* 'to scratch (oneself), to scrape'. Lucil. ap. Prisc. (GLK II, 507, 1) has a perfect *scāberat*, which was probably modelled on the present (EM.). *scab-* must in the first place be compared with Lat. *scobis* 'grating, scraping, shaving', which shows that the root did not contain a laryngeal.

Goth. *skaban* 'to shear', OIc. *skafa*, OE. *scafan* 'to shave' reflect **skobh-*. Lith. *skabiù*, *skõbti* (also *skàbti*) 'to pluck, shave' and ORuss. *skoblь* 'scraping-knife' reflect PIE. **skobh-* as well; Lith. non-acute *-õ-* is probably the result of productive ablaut within Lithuanian.

Gr. σκάπτω 'to dig', σκάφος 'weeding', σκάφη 'basin, bath', also 'grave' are semantically remote and probably should not be compared.

In view of the pure velar in Balto-Slavic and the fact that *-o-* after a velar was obviously maintained (*scobis*), *scaběre* may be reconstructed as **skebh-*.

19. *scalpĕre* 'to scratch' has no evident cognates with the same enlargement *-p-*, except perhaps the Lith. nasal present *sklempti* 'glatt behauen, polieren'. Comparisons with Gr. σκάλλω 'to dig, weed', Lith. *skìlti* 'to crack', *skélti* 'to split' < **sk(e)lH-* have been suggested but are not convincing. If the resemblance of *scalpĕre* to *sklempti* is not fortuitous, one might reconstruct **skelp-* for Latin. As it is, no conclusions can be based on this form.

20. *scamnum* 'stool, step' < **skabh-nom*, dimin. *scabellum*, *scabillum*. This word may be compared with Skt. *skabhnáti* 'to support, fix' < **skṃbh-*, *skambhá-* 'pillar' < **skombhó-*. Av. *fra-šcimbana-* (ntr.) 'Stütze, Balken, Brückenbalken' (cf. Ved. *skámbhana-*) reflects **skembh-*. Although there is no trace of the nasal in Lat. *scab-*, a connection with the IIr. forms is likely, in which case we may reconstruct PIE. **skebh-* (cf. Gr. ἐλαχύς < **h₁lnghu-* but Lat. *levis* < **h₁leghui-*).

21. *scandĕre* 'to climb', *scāla* < **skandslā-* 'stairs' can be compared with MIr. *scendid* 'to jump', W. *cy-chwynnu* 'to jump up, go away' < **skend-*. In Vedic, one finds an intensive *caniškadat*, *kániškan* 'jumps, falls down, spurts out' and a root aorist *adhi-škán* 'jumped in', which also point to a root **skend-*, **sknd-* (in *-škan* < **-skend-*, the non-palatal velar must have been restored after forms which reflect **sknd-*). In

view of the Celtic verbs with *e*-grade in the root, Lat. *scandĕre* could be reconstructed as **skend-*.

22. *scatēre* and *scatĕre* 'to jump up (of water out of a well)' may be compared with Lith. *skàsti*, pres. *skantù* (also *skastù*), pret. *skataũ* 'to jump' < **skot-*. Lat. *scat-* possibly stems from **sket-*, but there is no evidence for *e*-grade. Whether Gr. ἐοκατόμιζεν· ἐσκάριζεν (Hes.) 'jumped' is cognate, is uncertain.

3. Counterevidence

Five words supposedly have Lat. *-e-* after a pure velar.

23. *cēna* 'meal', OLat. *cesna*, is cognate with O. Nsg. *kersnu*, Abl. pi. *kerssnais*, U. Asg. *šesna* 'cena', U. *ŠERSNATUR* 'cenati', which point to **kersnā-*. *cēna* is usually reconstructed as **kert-snā-* (EM., WH.) and connected with Skt. *kṛṇtáti*, ppp. *kṛt-tá-* 'to cut', Lith. *kiřsti*, *kertù* 'haue scharf, schlage heftig', which is an enlarged form of **(s)ker-* 'to cut' in e.g. Gr. κείρω, OIc. *skera*.

However, for semantic reasons this connection can hardly be considered compelling. Beside the semantic objection, there is a formal problem because **kertsnā-* would be expected to yield ***cerna*, cf. *farnus* < **fargsnos* (?) and *perna* < **persnā-* (cf. Goth. *fairsna*, Skt. *pā́rṣṇi-*). The objection that **-rtsn-* developed differently from **-rsn-* and **-rgsn-* cannot altogether be ruled out but is ad hoc and calls for special pleading. Preferable seems a connection which, as far as I am aware, has not yet been suggested, viz. with the *s*-stem that is reflected in *Cerēs*, *-eris* 'goddess of the fertile land', O. *caria* 'bread' (< **krsiā-* according to section VI.E.3?) (see Pokorny IEW. 577, root **ker-*, and Schindler 1975, 63 on the derivation of *Cerēs*). If this is correct, *cēna* may reflect a substantivized "Stoffadjektiv" in **-ino-* derived from the *s*-stem **ker-s-*. The alternative reconstruction of *cēna* as **kersinā-* might solve the problem of the development of the medial cluster if we assume that a cluster arising by syncope developed differently from early clusters (e.g. because **-rsn-*, **-rgsn-* had already yielded **-rn-* when syncope occurred and "new" **-rsn-* arose?).

However this problem may ultimately be solved, the connection with **(s)kert-* and therefore the reconstruction of pure velar **k-* are no more than a possibility.

24. *centō* 'garment made of several patches' shows a close

resemblance to class. Skt. *kanthā* 'cloth made of patches'. According to EM., this could be accidental. If the connection is nevertheless accepted (WH.), a root **kentH-* may be reconstructed. In order to explain why **k-* was not palatalized in Sanskrit, one must reconstruct **kontH-*. A form **kot(H)-* is reflected in OHG. *hadara* (f.) 'Lappe, Lumpen', Arm. *kᶜotᶜanak* 'cloth'. It may be assumed that *centō* reflects **kntH-* rather than **kentH-* and that the reflex of **-n̥-* merged with PIE. **-en-* after *e* following a pure velar had become *a*. However this may be, the main objection is that the etymology of *centō* is uncertain.

25. *scelus*, G. *sceleris* 'misdeed, crime' does not have a clear etymology. With reservation EM., WH. and Mayrhofer KEWA compare Skt. *skhálati* 'to stumble, trip', *skhalitá-* 'mangelhaft', Arm. *sxalim* 'strauchle, irre'. WH. and Frisk compare Gr. σκέλος (ntr.) 'leg, thigh', which they consider to be identical to Lat. *scelus*. The original meaning would be "Krümmung, Biegung" (Frisk s.v.). To this root **skel-* could also belong Gr. σκολιός 'wicked, crooked' and OHG. *scelah*, OIc. *skjalgr* 'squint-eyed' < **skel-ko-*.

If the etymology, which is far from evident, is accepted, we must reconstruct a root **skh₁el-*, not ***skel-*, in view of Skt. *skh-* and Arm. *sx-*. Thus, it cannot be used as counter-evidence but may provide an insight in the relative chronology (see 5 below).

26. *gelū* 'ice', *gelidus* 'icy' should be compared with OIc. *kala*, OE. *calan* 'to freeze', Goth. *kalds* 'cold' < **ǵol-*. The evidence for original non-palatal *g-* is extremely limited. Lith. *gélmenis* 'biting cold', *gelumà* 'id.' rather belong to the root of *gélti* 'to pick, stab' (Fraenkel, WH., EM.). OCS. *žlědica* < **želdica* 'frozen rain' should rather be connected with Gr. χάλαζα 'hail' (Frisk s.v.), which reflects **ghlh₂ed-*. According to Meillet (see WH.), OCS. *golotь* 'ice', Russ. *gólot'* 'Glatteis' belong to the root of *golъ* 'naked'. If the latter is not accepted, one can assume that PIE. **ǵ-* was depalatalized in Slavic before a following resonant (Kortlandt 1978c). I conclude that there is no compelling reason to assume that *gelū* reflects **g-* rather than **ǵ-*.

27. *helvus*, a colour "*inter rufum et album*" (P.F. 88, 18) < **ghelwo-* does not necessarily reflect PIE. **gh-* (Lith. *gelsvas* 'yellowish', Russ. *žëltyj* 'yellow') because one also finds Lith. *žalsvas* 'greenish', Russ. *zelënyj* 'green'. The rise

of the pure velar may perhaps be attributed to a development within Balto-Slavic (cf. Kortlandt 1978c, who assumes that palatovelars lost their palatal character before resonants in BSl.; in this etymon, the loss of the palatal quality may have arisen in zero grade forms).

We may conclude that of the five possible examples of Lat. *e* after a pure velar only *cēna* may bear scrutiny, but its etymology cannot be considered certain.

4. PIE. **-e-* after a palatovelar

The following examples indicate that PIE. **-e-* remained after a palatovelar:

1. *censeō* < **kens-*, cf. Skt. *śáṃsati*;
2. *cerebrum* < **kerh₂srom*, cf. Skt. *śíras*;
   cervus < **ker(h₂)uo-*, cf. OPruss. *sirwis*, Skt. *śíras*;
3. *gemma* < **ǵeb-*, cf. Lith. *žembėti*, *žémba*;
4. *genae* < **ǵen-*, cf. Lith. *žándas*, Latv. *zuôds*;
5. *gener* < **ǵen-*, cf. Lith. *žéntas*;
6. *gens* etc. < **ǵenh₁-*, cf. Skt. *jánas-* etc.;
7. *genū* < **ǵen-*, cf. Skt. *jā́nu-*, Av. *zānu-*;
8. *gerō* < **h₂ǵ-es-*, cf. Av. *azaiti*;
9. *heri* < **ǵhes-*, cf. Av. *zyō*;
10. *cīvis* < **keiu̯i-*, cf. OPruss. *seimīns*, OCS. *sěmьja*.

In *castrāre* < **kstr-*, cf. Skt. *śástram*, *-a-* probably arose before *CCC*, in accordance with section VI.E.3.

5. Evaluation

In the diagram, the Latin words that exemplify the reflex of PIE. **e* after a pure velar are listed.

probable	possible	unreliable
4 *calidus* <**kel-*	1 *cacūmen* <**kekubh-*	6 *calx*
8 *candēre* <**kend-*	2 *calamitās* <**kelH-*	7 *cancer*
14 *carpĕre* <**kerp-*	3 *calāre* <**kelH-*	11 *carīna*
16 *carrĕre* <**kers-*	5 *callis* <**kel-ni-*	17 *caterva*
18 *scabĕre* <**skebh-*	9 *carbō* <**kerHbh-*	19 *scalpĕre*
21 *scandēre* <**skend-*	10 *cardō* <**kerd-*	24 *centō*
	12 *carināre* <**ker-*	25 *scelus*
	13 *carō* <**ker(H)-*	26 *gelū*
	15 *carpinus* <**kerp-*	27 *helvus*
	20 *scamnum* <**skebh-*	
	22 *scatĕre* <**sket-*	
	23 *cēna* <**kert-* or **kers-*?	

On the basis of the evidence, we are safe to conclude that PIE. *-*e*- yielded Lat. -*a*- after a pure velar. Although *cēna* may be conceived of as counterevidence, it cannot outweigh the positive evidence.

The phonetic reason for the development may be sought in the opposition between **ke*-, **ke*- (< **(s)ke*-) and **k^{w}e*- which must once have arisen by the phonemicization of the originally allophonic pure velars, as was indicated in the introduction. Since **ke* was opposed to **ǩe*-, the non-palatal character of **k* was highly relevant. Thus, in its original form **ke* was non-palatal **k* followed by the front vowel **e* with an intermediary transition from back to front. Subsequently, the backness of **k* prevailed over the frontness of **e*, i.e. **ke*- > *kę*- > *ka*- (in which *ę* denotes a central, mid, unrounded vowel).

U. Nsg. *KARU*, O. Gsg. *carneis*, which are cognate with Lat. *carō* < **ker(H)-ōn* (?), may indicate that the development of **ke*- to *ka*- took place in Proto-Italic. However, the etymology is not certain (see no. 13 above).

scelus < **skh$_1$el-os* indicates that the development of **ke*- to **ka*- antedated the loss of the laryngeals between a consonant and a vowel. This suggests an early date for **ke*- > **ka*-, perhaps Proto-Italic.

It may be noted that the development of **ske*- to Welsh *chwe*- (not **ysge*-) can be explained in a similar way (see Schrijver fthc.b).

C. LATIN *A* RESULTING FROM DELABIALIZATION OF **O*

1. The law of Thurneysen and Havet: **ou̯ > *au̯*

1.1. Introduction

Thurneysen, in an article written in 1884 but published in 1887, was the first to suggest that in Latin antevocalic **ou̯* yielded *av*. He actually claimed that **ōu̯* yielded *āv* and that **olu̯* yielded *alv* as well (*octāvus*; *salvus*, *valvae*). According to Thurneysen, the delabialization of *-o-* was anterior to the development of PIE. **-eu̯-* to *-ov-*. Consequently, any *-ov-* found in Latin would reflect PIE. **-eu̯-*. Thus, one finds *cavus* < **ḱou̯os*, cf. Gr. κόοι, but *novus* < **neu̯os*, cf. Gr. νέος. The only exceptions noted by Thurneysen are *bōs*, *bŏvis* 'cow', which could have retained its *-o-* after the Nsg. *bōs* (dialectal) < **bous* < **g^{w}ous*, and *ovis* 'sheep', for which Thurneysen suggests a dialectal origin or, alternatively, a hypothetical Nsg. **ou̯is* > **ous* > **ōs* in which *-o-* would regularly have remained.

Havet reached the same conclusions as Thurneysen, probably independently, which he published in 1885. He tried to account for *bōs*, *bovis* and *ovis* by assuming that they were borrowed from Greek.

Horton-Smith devoted a comprehensive article to Thurneysen-Havet's law, in which he summarized the preceding literature and investigated all relevant material (1895). He accounted for *ovis* and *bovis* by considering them loans from another Italic dialect, and adduced *covinnus* 'carriage', which he disposed of as a loan from Celtic. He concluded (p. 458): "Lat. *ŏv-* (preserving Idg. *ŏ*), whether from Idg. *ŏu̯-* or from Idg. *ŏgh$^{u̯}$* or from Idg. *ŏg$^{u̯}$*, became Lat. *ăv-*, at a date later than the syncope of *ĕ* in the posttonic syllable, and probably not before the beginning of the third century B.C. at the earliest among the upper classes, and not till the beginning of the second century B.C. among the lower classes."

Kretschmer 1895 and 1904 and Solmsen 1904 (without acknowledging Kretschmer) noted more exceptions to what was now known as "the law of Thurneysen and Havet", viz. *vovēre*, *fovēre* and *movēre*, and on the basis of the etymological pairs *favíssae* - *fóvea*, *favílla* - *fóveō* and *avíllus* - *óvis* they concluded that the change of **ou̯* to *av* took place only in the position before the historical Latin accent. In the verbs

vovḗre, *vóveō*, *movḗre*, *móveō*, *fovḗre*, *fóveō* and in *cavḗre*, *cáveō*, *favḗre*, *fáveō*, *lavā́re*, *lávō*, the alternation of pretonic **-av-* and stressed **-ov-* was allegedly eliminated in favour of *-ov-* and *-av-*, respectively, which added an element of arbitrariness, and, more importantly, such paramount examples as *cávus* and *lávĕre* were supposedly the result of reshuffling (cf. *cavérna*, *cavā́re*; *lavā́re*, *lavḗbat*). *óvis* and *bóvis* could now be explained.

Juret (1918) criticized the reformulation by Kretschmer and Solmsen by pointing out that neither *cávus* nor *lávĕre* could be explained in this way. He furthermore reasoned that if the development **ou̯* > *av* depended on the historical Latin accent, **eu̯* > *ov* would have participated in it because the rise of the historical Latin accent was posterior to the development of **eu̯* to **ou̯*. (Note that the latter is convincingly dated to Proto-Italic by Meiser 1986, 37). Accordingly, *novémber* (cf. *novem*) and *novérca* 'stepmother' (cf. *novus*) remain unexplained. This criticism may also be directed at Horton-Smith, who does not adhere to the accent-rule but assigns a late date to **ou̯* > *av* for other reasons.

Indeed, Sommer 1914, 109-110 assumed that **eu̯* > **ou̯* could also develop into *av*. Sommer-Pfister 1977, 91 accept the accent-rule formulated by Kretschmer and Solmsen and assume that *cavus* was influenced by *cavérna* and *cavā́re* < **kou-*.

Leumann 1977, 49 expresses more reservation.

The only alternative for Thurneysen-Havet's and Kretschmer-Solmsen's interpretations has been presented by Szemerényi (1952). He took up the old idea that **ōu̯* developed into *āv*, which was already suggested by Thurneysen and which has found wider acclaim than Thurneysen-Havet's law (see e.g. Meillet-Vendryes 1927, 107). Szemerényi used this rule in order to explain the perfects *cāvī*, *lāvī*, *fāvī*, *pāvī* and *strāvī* < **kōu̯-*, **lōu̯-* etc., assumed that on the basis of this *ā* in the perfect, the **-ŏ-* in **koueiō* etc. was replaced by *-ă-*, and also held that by analogy with *caveō*, *faveō*, all words beginning with **kou̯-*, **fou̯-* replaced this with *cav-*, *fav-* (*cavus*, *caverna*, *favilla*, *Favōnius*, *favus*, *favissa*). Szemerényi further assumed that in *fovea* 'small pit, pitfall', the *-o-* was maintained because popular etymology connected the word with *fodiō* 'to dig'. Remarkably, *-o-* was not maintained in *favilla* 'ashes', *Favōnius* '(warm) wind', which are connected with *foveō*, *fōvī*.

It must be stated forthwith that the arbitrariness of these

analogies can only invalidate Szemerényi's construct. Moreover, the perfects *lāvī*, *cāvī*, *fāvī*, *pāvī* allow a clearly preferable and more widely accepted explanation, which is based on the stem **laṷa-*, **caṷi-*, **faṷi-*: **laṷa-ṷai* > **lauui* > *lāvī* etc. (see V.D.2.1.1). This shifts the explanation of the *-a-* back to the short vowel form. The words *octāvus*, *flāvus*, *rāvus*, *gnāvus* reflect **-eh₃-ṷo-*, and are therefore not on a par with **oṷ* > *aṷ*; in my opinion, they require a separate explanation (see IV.E.13.2.3.4). A convincing counterargument against the assumption that PIE. **ōṷ* yielded Lat. *āv* is *ōvum* 'egg' < **ōuiom*, which Szemerényi dismisses in an unsatisfactory way (see IV.E.13.2.3.4).

It seems unlikely that PIE. anteconsonantal **ou* could yield **au* as well, although there are but few examples of PIE. **ouC*. Compare *lūcus* 'wood' < **louko-*, OHG. *lōh* 'bewachsene Lichtung', Lith. *laũkas* 'field', and *clūnis* 'buttock' < **ḱlouni-*, Lith. *šlaunìs* 'hip', OIc. *hlaun* 'buttock'. If one adheres to the accent-rule of Kretschmer and Solmsen, however, the preservation of *-o-* would be regular because in both instances the diphthong is stressed.

We may now turn to the material.

1.2. Material

The material was taken from the literature cited in the preceding section. I have added *fraus* and *laus*. Two words were excluded: *avis* 'bird' < **h₂eui-* (see II.C.4.2 no. 58) and *avēna* 'oat' < **h₂eu-* (?) (see II.C.4.2 no. 55).

In section 1.2.1 the instances of **oṷ* > *av* are discussed, in 1.2.2 a preliminary conclusion is drawn, and in 1.2.3 the instances of Lat. *ov.* are listed.

1.2.1. Latin *av* < PIE. **oṷ* (and **eṷ* ?)

1. *avillus* 'agnus recentis partus', i.e. a young lamb (P.F. 14). According to Solmsen (1904, 5) and WH. s.v., *avillus* is the diminutive of *ovis* 'sheep' and allegedly supports the idea that the change of **oṷ* to *av* took place only in pretonic position. However, EM. state (with some reservation) that *avillus* could be a diminutive of *agnus* < **agʷno-*. Szemerényi 1952, 70 follows this view and assumes a development **agʷn-elo-* > **agʷn̥lo-* (syncope) > **agʷinlo-* > **aṷinlo-* > *avillus*, which seems phonetically irreproachable. The formation may be compared with that of *agellus* < **agr̥lo-* < **agr-elo-*, the diminutive of *ager*, and of *vexillum* < **ueksl̥lo-* <

**ueksl-elo-*, the diminutive of *vēlum*, and is, despite Solmsen's comment, completely regular. The creation of the diminutives *agnulus* and *agnellus* beside the awkward regular form *avillus* is a trivial matter. What strengthens the assumption that *avillus* (masc.) is a diminutive of *agnus* (masc.) rather than *ovis*, is that the latter is almost always feminine. Moreover, from a semantic point of view it is more likely that a word for 'newly born lamb' is a diminutive of *agnus* rather than of *ovis*.

Since *agnus* reflects **h₂egʷno-*, *avillus* cannot reflect **ou̯* < PIE. **ou̯*, *ogʷ* or *ogʷh*.

Whether *aububulcus pastor bovum* (CGL V 346, 39) contains *au-* < **ovi-* 'sheep' is extremely uncertain because the text of the gloss seems to be corrupt (EM.), the word means 'cowherd', and the assumption that it is a kind of dvandva 'sheep-cow-herd' finds no support in other Latin compounds.

2. *caudex* < **kau̯adh-* < **kou̯adh-* < **kouHdh-*. See IV.E. 7.3.2.1.

3. *cavēre*, *cāvī*, *cautum* 'to be on one's guard, beware, take heed' (transitive and intransitive). EM. and WH. agree in deriving *cavēre* from **covēre* and in linking it with forms that reflect a root **(s)kuH-* or **(s)kHu-*.

Gr. κοέω 'to notice, understand' reflects **kou̯-eie-*. A present **κοάω* is reflected in κοᾷ· ἀκούει, πείθεται, ἐκοᾶμες· ἠκούσαμεν (Hes.) and other forms. Frisk s.v. labels κοέω, **κοάω* an iterative-intensive, directly comparable with Lat. *cavēre* < **kou̯-*. The accentuation of SCr. *čȕti*, *čȗjēm*, Sln. *čúti*, *čȗjem*, Cz. *číti* 'to feel, notice' points to **kehᵢu-* or **keuhᵢ-* (cf. Kortlandt 1975, 69). The laryngeal is also reflected in Skt. *ā-kúvate* 'intends to', *ā́-kūti-* (f.), *ā́-kūta-* (n.) 'intention' < **kuH-*, *kaví-* 'wise', Av. *kavā*, *kavi-* 'kind of ruler' < **kouH-i-*. OE. *hāwian* 'to observe' reflects **kehᵢu̯-*. PGm. **skau-*, which is reflected in e.g. OS. *skawōn*, OHG. *scouwōn* 'to observe' may go back to either **skhᵢu̯-* or **skouhᵢ-*. These forms and Gr. θυο-σκόος 'kind of priest, lit. observing the sacrifice' < **skouHo-* point to the presence of mobile *s-* (Frisk s.v.).

Since there is evidence for PIE. **(s)kHu-* (OE. *hāwian*), it may be assumed that *cavēre* reflects a stative verb **(s)kHu̯-ehᵢ-* > *cavē-*, which would not conflict with its meanning. On the other hand, the majority of cognates point to **(s)kuH-* and, given the fact that *cavēre* can be used transi-

tively, it seems possible that *cavēre* is originally a causative (= intensive-frequentative) formation, which is supported by Gr. κοέω. Thus, *cavēre* is a possible case of *av* < **ou̯*.

4. Whether or not *cavilla* 'Neckerei, Stichelei, Sophisterei' goes back to **kou̯illa* depends on the value of the connection with Gr. κόβειρος, κόβᾱλος 'joker', allegedly from PIE. **kog*^{w}*-*. Note that Hesychius has a gloss καυαλός· μωρολόγος. The Greek forms look like substratum-words. Frisk, Chantraine and EM. do not accept the etymology. An alternative explanation connects *cavilla* < **calvilla* with *calvor* 'to deceive, quibble' (thus Gaius). It is clear that this word cannot be used.

5. *cavus* is generally derived from **kou̯os* and compared with Gr. κόοι· κοιλώματα, κόοι· τὰ χάσματα τῆς γῆς (Hes.) < **ḱou̯o-*, κοῖλος, 'hollow' < **kou-i lo-*; Olr. *cúa* < *cúae* 'hollow' and Bret. *keo*, *kev* 'cave' < **kou-io-*. Arm. *soyl* 'hole, hollow' < **ḱeulo-* is the only form that reflects *e*-grade. Whether Gr. κύαρ < **ḱuH-r* 'eye of a needle' is cognate (WH., Frisk) need not concern us here.

Portugese *covo* and Port. *cova*, Spanish *cueva* are considered to reflect the old vocalism, and, according to Horton-Smith 1895, 457, one may conclude that in 201 BC, when the Iberian peninsula was made into a province of Rome, the development of **ou̯* to *av* had not yet taken place in Vulgar Latin. Solmsen 1904, 2 raised two objections against this view:
a. One would expect to find traces of older **ou̯* in Plautus, which is not the case.
b. *ovis* and *bovem*, *-is* etc. are presumably borrowed into Latin after **ou̯* had become *av*. If the latter took place as late as the end of the third century or the beginning of the second, Latin would not have known words for 'sheep' and 'cow' before, which is extremely unlikely. If *ovis* and *bovis* had replaced older native terms, one would expect to find these still attested in Old Latin, which is not the case.
One more objection may be added:
c. Since PIE. **eu̯* had allegedly not yet merged with **ou̯* until after **ou̯* had developed into *av* (which one must assume in order to explain *noverca*, *november*, *novācula*, *cloāca* and, if Kretschmer's and Solmsen's accent rule is incorrect, *novus*, *novem* etc.), one would expect to find traces of **eu̯* in Old Latin. These traces are absent.

I tend to the conclusion that *covo*, *cova*, *cueva* < **cov-* cannot be used as a basis for dating the development of **ou̯* >

av. The explanation of **cov-* in these forms is unclear to me. Perhaps Prim. Lat. **cav-* became **cov-* by the same process that governed the development of PIt. **vak-* > OLat. *voc-āre* > Class. Lat. *vacāre*.

Finally, the much-debated history of *coum*, *cohum* may be discussed. The word is not attested outside glosses, and its primary meaning is obscure. Varro (l.l. 5, 235) states: "*sub iugo medio cavum, quod bura* (plough-beam) *extrema addita oppilatur* (is obstructed), *vocatur coum a cavo*." Festus, on the other hand, does not give any evidence of a connection with *cavus*: "*cohum lorum, quo temo buris cum iugo conligatur, a cohibendo dictum*" (P.F. 34, 28). It is not clear whether *cohum* 'heaven' vel sim. is the same word: "*cohum poetae caelum dixerunt, a chao ex quo putabant caelum esse formatum*" (P.F. 34, 28).

According to Thurneysen 1887, 155, *coum*, *cohum* (in which *-h-* would only be a graphic design to mark the hiatus, as in *ahēnus*) originally belonged to the same paradigm as *cavus*: *coum* goes back to the forms in which **-u̯-* disappeared before *-o-* of the ending (e.g. Asg. **cou̯om* > **coom* > *coum*). In other cases **-ou̯-* remained until it developed into *-av-*. Subsequently, a semantic split would have arisen.

Thurneysen's deliberations rest upon the correctness of the etymological connection of *coum* with *cavus*. EM. are more careful and consider it a mere possibility. WH. reject the etymology. Thurneysen apparently gave up the idea some years later (1894, see WH. s.v. *cohum*). It is probably best not to base any conclusions about the change of **ou̯* to *av* on *coum*, *cohum*.

6. *favēre*, *fāvī*, *fautus* 'to be favorable, favour'.

There are three hypotheses about its etymology.

faveō reflects **bhouH-eie-* (thus e.g. Thurneysen op. cit.), which is a causative of **bhuH-* 'to be'. It would originally have meant 'to make someone grow'. For the semantics cf. Skt. *bhāváyati* 'to cause to be, cherish, refresh'.

Solmsen op. cit. connected *faveō* with *foveō* 'to warm' and derived both from a causative **dhogʷh-eie-* that can be directly compared with Skt. *dāháyati* 'to set fire to, cause to burn'. This etymology offers three problems:

a. The semantic transition of 'to warm' to 'to be favorable' is not self-evident.

b. Whether the connection of *faveō* with *foveō* is correct depends on the correctness of the accent-rule found by Kretschmer

and Solmsen, which as yet has not been proven. As far as *faveō/foveō* is concerned, the different vocalism of the root cannot be used to support this accent-rule.
c. U. *fons* 'favens', Npl. *foner* (*i*-stem) cannot have contained PIE. **-g^{w}h-* because this would yield *-f-* in Umbrian (thus Szemerényi 1952, 55). We may conclude that *fons*, which is clearly cognate with *faveō*, cannot be cognate with *foveō* < **dhog^{w}h-*.

It seems clear that *faveō*, as opposed to *foveō*, cannot reflect **dhog^{w}h-*. Incidentally, U. *fons* does not help much in solving the origin of *faveō*. It only shows that the proto-form contained PIE. **-u̯-*. *fons* can reflect Sab. **founi-*, **feuni-*, **fauni-*, or **fou̯Vni-*, **feu̯Vni-*, **fau̯Vni-* (with syncope).

The OLat. inscription *fove L. Corneliai L. f.* (CIL I^{2} 573), where one expects classical *fave*, does not prove that *foveō* and *faveō* ultimately go back to the same verb but at best that *faveō* goes back to **foveō* 'to be favorable', whatever the exact origin of this form may be. On the other hand, it is possible that *fove* is unreliable, either a mistake or representing a local development of older **fave* (cf. **covos* in Iberian Romance above).

The third possibility is that *faveō* reflects **g^{w}hou-* found in OCS. *gověti* 'to worship', Cz. *hovetí* 'Nachsicht haben, gewähren, schonen', Russ. *govét'* 'to fast', USorb. *howić* 'günstlich, dienlich sein, begünstigen' and Arm. *govem* 'praise' (thus e.g Meillet, Brugmann, see WH. s.v., Vasmer, WH., EM. with some hesitation). OIc. *gá* 'seine Aufmerksamkeit auf etwas richten, Achtung, Ehrfurcht haben' does not necessarily require **ghou-* instead of **g^{w}hou-* because the reflex of PIE. **g^{w}hou-* in Germanic is obscure. WH.'s reconstruction of *faveō* as **ghou-*, with an ad hoc development of **gh-* before *-ou-* is therefore unnecessary.

Since the connection of *favēre* with **g^{w}hou-* is preferable for semantic reasons to that with **bhouH-*, we may conclude that *favēre* probably reflects **g^{w}hou-eie-* and provides evidence for Thurneysen and Havet's law. Note that the assumption of **bhouH-eie-* does not change this conclusion. The fact that *favēre* is intransitive is no decisive counterargument against the assumption that it is a causative (=intensive-frequentative) formation: cf. intransitive *nocēre* 'to damage'.

7. *favīlla* 'ashes, embers, soot' (with *i longa*, CIL V 3143; cf. Romance **faīlla*) has generally been connected with the root **dheg^{w}h-* of *fovēre* 'to warm, cherish', Skt. *dáhati* 'to

burn', Lith. *dègti* 'id.' According to Thurneysen 1887, 159, the divergent vocalism of *favīlla* and *foveō* can be explained by assuming that *favīlla* reflects **dhog^{w}h-* while *foveō* reflects **dheg^{w}h-*. Solmsen 1904, 9 pointed out, however, that as *foveō* is clearly a causative, it has *o*-vocalism (see below, 1.2.3 no. 5). According to Solmsen 1904, 7 and WH., *favīlla* goes back to **fovílla*, with pretonic change of **-ov-* to *-av-*. EM. s.v. *foveō* state that *favílla* reflects **dh°g^{w}h-*, as does OIr. *daig* 'flame'. However, OIr. *daig* goes back to *e*-grade **degi-* < **dheg^{w}hi-* (cf. Gsg. *dego*, Thurneysen 1946, 54) and *-°-* cannot be accepted any more. It might be assumed that in *foveō*, *o*-vocalism was restored after the other causatives. In that case, the absence of restoration in *cavēre* and *favēre* may be attributed to the fact that they are semantically atypical causatives.

The formation of *favīlla* is obscure. WH. mention that the suffix *-illa* is also found in *scintilla* 'spark' (where there is no evidence for *-ī-*), but this does not explain anything. It is in fact very difficult to reconstruct an acceptable conglomerate of PIE. suffixes that would have yielded Lat. *-īlla* (*-i-Hn-leh$_2$-* is the only one I see). If *-īlla* is in some way based on an *i*-stem, one expects an *e*-grade root in view of OIr. *daig*, *dego*, which would mean that the word cannot be explained by Thurneysen-Havet's law (unless one assumes, with Sommer, that **eu̯* < **eg^{w}h-* could yield *av* as well). In any case, there is no evidence that *favīlla* contains an *o*-grade root.

In view of the obscure formation and technical meaning of the word, *favīlla* may rather be considered a non-native word. Note that semantically the connection with *foveō* etc. is possible but not compelling. I conclude that *favīlla* is an unreliable example of Thurneysen-Havet's law.

8. *favis(s)ae*, *-ārum*. P.F. 78, 10: *favisae locum sic appellabant, in quo erat aqua inclusa circa templa. Sunt autem qui putant favisas esse in Capitolio cellis cisternisque similes, ubi reponi erant solita quae in templo vetustate erant facta inutilia*. According to EM., this word is probably of foreign origin, as is shown by the suffix *-is(s)ae* (cf. *caris(s)a*, *matissa*), and perhaps has some connection with *fovea* 'trap, den, hole'. WH. accepts Solmsen's derivation of *favíssae* from **fov-*, and the connection with *fóvea*.

In view of the meaning of *favissae*, however, viz. 'water-tanks' or 'cases', this connection is far from compelling. More-

over, the etymology of *fovea* itself is unreliable. There is thus no convincing reason to assume that *favissae* reflects **fov-*.

9. The connection of *Favōnius* 'west wind' as 'warming wind' with *foveō* is a mere flatus vocis.

10. *Fovii qui nunc Favi dicuntur* (P. epit. 87). No evidence can be extracted from this name (Thurneysen 1887, 159, Solmsen 1904, 13).

11. *favus* 'honeycomb' does not have an etymology (see EM., WH.). The connection with PIE. **ǵheu-* 'to pour' explains neither the meaning nor the *f-*.

12. *fraus*, G. *fraudis* 'deceit' may in the first place be compared with *frūstrā* 'in vain'. EM. do not mention any etymology. However, as WH. point out, the root is most likely identical with that of OHG. *triogan* etc. 'to deceive', Skt. *drúhyati* 'hurt', Av. *družaiti* 'deceive' < **dhreu-gh-* and Skt. *dhrúti-* (RV.) 'deceit', *varuṇa-dhrút-* (RV.) 'den Varuṇa hintergehend', *satya-dhvṛ́t-* 'die Wahrheit verdrehend' (RV, 10th book) < **dhru-*. **dhru-* in turn probably reflects **dhur-* (see AIGr. I 206), cf. Skt. *dhvárati* 'bends, injures, causes to fall', Hitt. *duuarne-* 'durch Bruch verletzen, zerbrechen' (see Oettinger 1979, 151). Skt. *dhūrtí-* (RV.) 'Beschädigung, Bösheit', *dhū́rvati* (RV.) 'damage' must belong here as well and probably reflect **dhurH-*.

In view of the shape of this root, the *-a-* of *fraus* cannot be explained on the basis of a laryngeal. It thus seems likely that *-au-* may be explained from **-ou-* in accordance with Thurneysen-Havet's law. Since the latter probably did not operate in anteconsonantal position (see the introduction), *fraus* may be reconstructed as **dhrou-Vd(h)-*. *frūstrā* may reflect **dhrou-C-* or **dhreu-(V)C-*.

13. *laus* 'praise, commendation', originally 'feierliche Nennung' (see WH.) does not have a reliable etymology (thus EM.). If the root is identical to that of Goth. *liuþon* 'to sing, praise', OIc. *ljóð*, OE. *lēoþ*, OHG. *liod* 'song' < **leu-t-*, *laus* may perhaps be reconstructed as **lou-Vd(h)-*. Uncertain.

14. *lavĕre*, *lāvī*, *lautum* 'to bathe, wash' (transitive) and *lavāre*, *lāvī*, *lautum* 'to bathe' (transitive and intransitive) is discussed extensively in V.D.2.1.1 no. 8, where it is held that the Latin forms reflect a root **lauă-* < **louH-*. We may now concentrate on the root vocalism.

The young form *lōtus* probably developed from *lautus* (cf. *plōtus*, *plautus*, see Thurneysen 1887, 157). *lūtus*, like *luō*, *luĕre*, is a decompound (of e.g. *abluō*, *ablūtus* < **-lauō*, **lautus*). If *lōmentum* 'washing soap', also 'blue paint', attested from Cicero onwards, is cognate, it probably reflects **lau-* (like *lōtus*) rather than **louementum* with retained *-ou-* (which would be very surprising). U. *VUTU* /*wōtu*/ 'lavito' reflects **louetōd* according to Meiser 1986, 155 (in accordance with V.D.2.1.1 **louatōd* would be more correct); on the other hand, one may just as well reconstruct **lau̯atōd* because in Meiser's chronology syncope precedes the monophthongization of the *u*-diphthongs, and both **ou* and **au* yielded U. *ō*.

WH. and EM. agree that Lat. *lav-* goes back to **lou̯-*. Greek has λούω beside Hom. λοέω, and an *s*-aorist λοῦσαι < *λόεσαι. λοέω was probably based on the *s*-aorist, which reduces the forms to a present **lou̯ō* and an aorist **lou̯esai* (Frisk s.v.). A form **lou̯e-* is also attested in Gr. λοετρόν (Hom.), λουτρόν (Att.) 'bath', which has a somewhat surprising Mycenaean correspondent *rewotorokowo* /*lewotrokhowos*/, cf. λοετροχόος (o 346). Ruijgh 1967, 241[41] and Beekes 1969, 232 suggested that **leu̯o-* was changed to **lou̯e-*, similar to what happened to the *s*-aorist ὀτορέσαι, which replaces **stero-* < **sterh₃-*. This seems possible. The dilemma is clear: if **lewo-* is old, the PIE. root was **luh₃-*; if **lowe-* is old, the root is **luh₁-*.

It seems impossible to assume that the *o*-vocalism of the verbal forms can be attributed to **h₃* in view of Latin. The inflection of the Latin forms presupposes a root **lau̯ă-*. The fact that the laryngeal is responsible for the root-final *-a-* means that it cannot account for the vocalism of *lav-*, which consequently probably reflects **lov-* in accordance with Thurneysen-Havet's law. Thus, the Latin forms presuppose PIE. **louH-* in the verb. This vocalism is surprising but not altogether unknown: cf. Goth. *malan*, Lith. *málti* 'to grind' < **molh₁-*.

As far as Gr. λοετρόν is concerned, this must be compared with OIc. *lauðr* 'washing powder', OE. *lēaþor* 'id.', which point to **louH-*, with old *o*-vocalism of the root.

We may conclude that Gr. **λοϝε-* is old in both the verb (in view of *lavĕre*, *lavāre*) and the *tro*-derivative (in view of OIc. *lauðr*) and that the root was therefore **louh₁-*. The Mycenaean forms then remain obscure. The implication of this reconstruction is that Hitt. *laḫ-*, *laḫḫu-* 'to pour' cannot be cognate because **h₁* is not reflected as *ḫ* in Hittite and because

Hittite points to **lHu-* and the other languages to **luH-*. Note the alternative etymology presented by Oettinger 1979, 424.

Lat. *lav-* is a probable case of *-av-* < **-ou̯-*.

15. *pavēre, pāvī* 'to be struck by terror, be afraid' is often connected with Lat. *pavīre, pavītum* 'to beat the ground in order to make it even', **ob-puviō* 'to strike', *dēpuviō* 'id.' (EM.), which is not evident semantically. The value of other cognates is also a matter of dispute. Gr. παίω 'to hit' is possibly cognate, which would imply that the root contained a laryngeal, **ph₂u-*. Whereas the connection makes sense for *pavīre*, which agrees with the Greek form both in meaning and in formation, it does not for *pavēre*, which has a different meaning. The connection of *pavēre* with Gr. πτο(ι)έω 'to frighten, trouble' is an alternative possibility and has been accepted by many scholars (e.g. Pedersen 1893, 287, Sommer 1914, 240, Leumann 1977, 49). However, according to Frisk and WH., Gr. πτο(ι)έω should be connected with the root found in Gr. καταπτήτην 'sie (du.) scheuten', πεπτηώς 'geduckt', πτήσσω 'ducke mich', πτώσσω 'ducke mich, fliehe', Arm. *t^{c}ak^{c}čim* 'to conceal oneself' < **pth₂-*, which lacks *-u̯-*.

The most plausible etymology is in my opinion the connection with OIr. *úath* 'fear' < **pou-to-*, W. *ofn* 'fear' < **pou-no-*, W. *uthr* 'terrible' < **poutro-*, which is semantically impeccable and formally possible if we assume that **pou̯-* yielded Lat. *pav-*. This etymology is preferred by Vendryes U-11 s.v. 1. *úath*.

16 *răvus* 'hoarse' < **Hrou̯o-* or **HrHu̯o-* (see IV.E.3.3 no. 9).

1.2.2. Conclusion

The following words have Lat. *au* < **ou̯*.

probable	possible	unreliable
5 *cavus* <**ḱou̯o-*	2 *caudex* <**kouHdh-*	1 *avillus*
6 *favēre* <**g^{w}hou̯-*	3 *cavēre* <**kouH-*	4 *cavilla*
14 *lavĕre* <**louh₁-*	12 *fraus* <**dhrou̯-Vd(h)-*	7 *favīlla*
15 *pavēre* <**pou̯-*	16 *răvus* <**Hrou̯o-?*	8 *favissae*
		9 *Favōnius*
		10 *Favī*
		11 *favus*
		13 *laus*

There is independent evidence that *cavus, favēre, lavĕre*

and perhaps *cavēre* and *pavēre* contain PIE. *o*-grade.

1.2.3. Latin *ov* < **ou*, **eu*

For all instances of Lat. *ū* and *ō* < **-ouV-* see IV.E.7.2: *nūdus* reflects **nog^{w}odhos*, *vōtum*, *fōtum* etc. reflect **-og^{w}h-*, all other instances mentioned there except *ūpiliō*, *ōpiliō* (see no. 12 below) reflect or may reflect **-eu-*.

1. *bōs*, G. *bovis* etc. 'cow' is a loan from an Italic language in which PIE. **g^{w}* developed into *b* (as in Sabellian). Its PIE. ancestor was probably **g^{w}h$_{3}$-eu-*. The presence of **h$_{3}$* is borne out by three circumstances:
a. In this word one never finds *-e-* in any language: Gr. βοῦς, Arm. *kov*, Toch. B *ke$_{u}$*, OIr. *bó* 'cow' < **g^{w}ou-*.
b. Brugmann's law did not operate in Skt. Dsg. *gáve*, Isg. *gávā*, Lsg. *gávi*, Gpl. *gávām*, which may be explained by the fact that **h$_{3}$e* had not yet merged with PIE. **o* (Lubotsky 1990, 133-134); the assumption of **g^{w}eu-* > Skt. *găv-* is not supported by languages which have not merged PIE. **eu̯* and **ou̯*. Moreover, the accent of Gr. βοῦς can be explained if we assume contraction: **g^{w}o'us* < **g^{w}eh$_{3}$us*, which presupposes the presence of a laryngeal.
c. The word for 'cow' is most likely cognate with the root **g^{w}h$_{3}$-* in Gr. βόσκω 'to graze', βοτόν 'head of cattle' (Lubotsky ibid.).

The Nsg. *bōs* may reflect **g^{w}ēh$_{3}$us* (> Skt. *gáuḥ*?, Latv. *gùovs*) or **g^{w}eh$_{3}$us* > **bous* > *bōs*, with a dialectal treatment of **-ou-* (e.g. Praenestinian; see Blümel 1972, 33-34). **g^{w}h$_{3}$eus* or **g^{w}h$_{3}$ous* are less likely in view of the accent of Gr. βοῦς, which points to contraction of an original disyllable. Whether *bōs* can be used as counterevidence, depends on the date of Thurneysen-Havet's law. If the latter is a purely Latin development (as Horton-Smith and all recent literature following Kretschmer and Solmsen contend), *bōs* cannot be considered counterevidence because it is a loan. However, if the law dates back to Proto-Italic (which would be borne out by the fact that PIE. **eu̯* > PIt. **ou̯* did not take part), *bovis*, *-em* etc. provides clear counterevidence. We will return to this issue in the evaluation.

2. *cloāca* < *clovāca* (Varro, various inscriptions) 'sewer' was connected with *cluĕre*, *cloāre* 'to cleanse' by the Romans (EM.). Cognates can be found in Gr. κλύζω 'to wash (of the sea), cleanse' < **klŭd-*, W. *clir* 'clean', Goth. *hlūtrs*,

OHG. *(h)lūtar* 'clean' < **ḱluH-d-*, Lith. *šlúoju*, pret. *šlaviaũ* 'to clean' < **ḱleuH*, **ḱlouH-*. Thus, *cloāca* reflects **ḱleuH-* or **ḱlouH-*.

3. *coum*. See s.v. *cavus* , 1.2.1 no. 5.

4. *fovea* 'trap, den, hole'. The usual assumption that *fovea* may be cognate with Gr. χειά 'serpent's den' is unlikely for two reasons. Gr. χ- reflects **ǵh-*, which would yield Lat. *h-*, not *f-*. According to Frisk, χειά reflects **χεFε(o)-ιά*, if the form χεείαις (Nic. Th. 79) has been interpreted correctly (it is a conjecture, the ms. has χελείαις). If this is correct, the formation of *fovea* would diverge considerably from that of χειά to the point that their connection must be seriously doubted. It cannot be used as counterevidence. See also 1.2.2 no. 8 s.v *favissae*.

5. *fovēre* 'to heat, cherish' is a causative formation which reflects PIE. **dhogʷh-eie-*, cf. Skt. *dāháyati* 'to cause to burn'. For an explanation of *fōtus*, *fōmes*, *fōculum*, *fōmentum* < **foy̯i-* see IV.E.7.2.2 no. 2 and 7.2.3. Whether it is cognate with *favīlla* 'ashes' is doubtful because the obscure formation of the latter points to non-IE. origin.

Since strictly speaking *fovēre* does not contain PIE. **oy̯* but **ogʷh*, it cannot be used as counterevidence if Thurneysen-Havet's law took place at an early stage. If, on the other hand, the law operated as late as is often held, *fovēre* is a counterexample.

6. Gsg. *Iovis*, Asg. *Iovem* etc. reflect PIE. **dieu-*, cf. Gr. Ζεύς, Skt. *dyáus*.

7. *movēre*, *mōvī*, *mōtum* 'to move' (transitive and intransitive) is generally considered to be a causative (EM., WH., Leumann 1977, 541). Its cognate is found in Umbrian in the form *comohota* 'oblata', which is reconstructed as **kom-mou-to-* < **kom-moy̯-i-to-* by Meiser 1986, 140. The verb from which this participle is derived allegedly means 'bewegen, herbringen'. Note that neither PIE. *o*-grade, nor the presence of *-i-* (the causative suffix) can be ascertained on the basis of Umbrian because *-oho-* = */ō/* can reflect **ou*, *eu*, *au* and **ouV*, *euV*, *auV* (with syncope of *V*).

The only clear cognate of these forms outside Italic are Skt. *mī́vati* 'to move, push', *ḱā́ma-mūtaḥ* 'driven by desire', *á-maviṣṇu-* 'unentwegt, unbeweglich', which point to a root **m(i)uH-*. Whether Gr. ὑμεύοασθαι 'übertreffen, überschreiten'

and Lith. *máuti*, *máuju*, pret. *móviau* 'abreissen', Latv. *maût* 'an-, aufziehen, räumen' are cognate is uncertain from a semantic point of view, but they would not change the argument.

The inflection of *mḯvati*, *-mūta-* resembles that of *ṣṭhīvati*, *ṣṭhyūtá-* 'to spit' and *sḯvyati*, *syūtá-* 'to sew'. The corresponding Latin participles *spūtus* and *sūtus* show that the laryngeal originally stood after the *-u-* (see IV.E.2.4.4 no. 22, 23). This implies that *mḯvati* does not reflect **miHu̯-* but rather **miuH-*, although the explanation of the long *-ī-* is obscure to me.

Since *movēre* means both 'to move' and 'to move oneself', it cannot be considered a typical causative. Note that EM. remark that especially the perfect *mōvī* and the present participle *movēns* are often intransitive. However, the suffix *-ē-* can hardly be reconstructed as stative **-eh₁-* in view of the meaning of the verb, or as denominative **-eie/o-* (because *mov-* is a primary verb). This leaves a causative suffix **-eie-* as the only option. In view of *e*-grade causatives like *augēre* < **h₂euǵ-*, *suādēre* < **sueh₂d-*, *terrēre* < **ters-*, *cēvēre* < **keh₁u̯-* and *merēre* < **mer-*, it is perhaps possible to assume that *movēre* reflects **meuH-eie-*, which might explain why it did not become **mau-*. This reconstruction implies that the formation might not go back to PIE., where *o*-grade was probably general.

8. *novācula* 'knife' belongs to the root **kes-* 'to scratch' (EM.) and contains **ksneu-* found in Skt. *kṣṇáuti* 'to whet, sharpen' < **ksnéuti*, *kṣṇótram* 'whetstone' < **ksneu-* or **ksnou-* (thus Mayrhofer, KEWA s.v.). Accordingly, Lat. *novācula* reflects **ksneu-* or **ksnou-*.

9. *novem* 'nine' < **h₁neun*, cf. Gr. ἐννέα < **ἔνϝα/ἔνεϝα*, Goth. *niun*, Skt. *náva* < **h₁neun*. *novembrēs* 'november' is derived from *novem*.

10. *novus* 'new' < **neu̯os*, cf. Gr. νέος, Skt. *náva-* < **neu̯os*. *noverca* 'second wife of a widower, mother in law' is derived from *novus* (EM.).

11. *ovāre* 'to pray, praise' has generally been connected with Gr. εὐάζω 'to jubilate' and thus probably reflects **h₁eu-*.

12. *ovis* 'sheep' reflects **ou̯i-* < **h₃eu̯i-* (see II.C.4.3 no. 8). Several explanations for *ov-* can be suggested:
a. One could maintain that **ou̯i-* was restored in order to avoid homonymy with *avis* 'bird' < **h₂eu̯i-*, but if this was

the only reason, restoration of *ou̯-* seems unlikely to me.
b. It has been assumed that *ovis* is a loan, like *bōs*, *bovis* and *asinus* (thus Thurneysen, Havet, Horton-Smith). There is, however, no reason to think so other than the presence of *o-*. Moreover, depending on the date of Thurneysen-Havet's law, the loan-hypothesis may not solve the issue (see no. 1, *bōs*).
c. Thurneysen 1887 considers the possibility that *ovis* is based on a Nsg. **ou̯is* > **ous* > **ōs*, where *o-* would regularly remain (cf. **mou̯itos* > *mōtus* for the assumed development). There is, however, no trace of such a Nsg., whereas the model *bōs*, *bovis* shows that there is no reason why this Nsg. should have disappeared again. The homonymy with *ōs* 'mouth' would rather have prevented the rise of **ōs* 'sheep' in the first place. Moreover, it is doubtful (though not impossible) that the Nsg. could have caused the remodelling of the entire paradigm.
d. The suggestion that **ou̯* was maintained in the Gsg. **ou̯ios*, Dsg. **ou̯iei* (cf. Skt. *ávyas* etc.; Von Planta ap. Horton-Smith 1895, 462 note 2) seems incredible because there is no trace of endings of this type in any Italic language.
e. The explanation by means of the accent-rule of Kretschmer and Solmsen would solve *óvis*, but not the forms *ovíllus*, *ovínus*, *ōpiliō*, *ūpiliō* etc. Moreover, the positive evidence for the accent rule is very scanty, as will be seen below.
f. The PIE. accent cannot solve the matter either: one could surmise that a syllable accented in PIE. retained its **ou̯* whereas an unaccented syllable did not. This would explain *cavēre* < **kouH-éie-*, *favēre* < **gʷhou-éie-* and *ovis* < **h₃éu̯i-* (Gr. ὄις, Skt. *ávi-*), but not *cavus* < **ḱóu̯o-* (Gr. κόοι).
g. A final possibility is that *ovis*, like *bovis*, contains *o-* < PIE. **h₃e-*, and not PIE. *(H)o-*. It is conceivable that in Proto-Italic **h₃e-* had not yet merged with **(H)o-*, as in Armenian, Albanian, and Sanskrit (see Kortlandt 1984b, Lubotsky 1990). It appears from the development of **HNC-* (II.D.2.1) that **h₃* was still present as an independent phoneme in Proto-Italic. Note that Thurneysen-Havet's law may have taken place in the same period.

I shall return to this matter in 1.3.

13. *vovēre* 'to pledge' is a causative and may be compared with U. *VUFRU* 'votivum', Skt. *vāghát-* 'sacrificer' < **uogʷh-* and perhaps Gr. εὔχομαι 'to pray' < **h₁eugʷh-*. It accordingly reflects **(h₁)uogʷh-eie-*. Since this word does not contain old **ou̯*, it need not be considered counterevidence.

1.2.4. Conclusion

The thirteen instances that can be adduced as counter-evidence against Thurneysen-Havet's law can be classified as follows:

a. No reliable etymology: 3. *coum*, 4. *fovea*.

b. PIE. **eu̯*: 6. *Iovis*, 9. *novem*, *novembrēs*, 10. *novus*, 11. *ovāre*. The reconstruction of **eu̯* rather than **ou̯* is possible for 2. *cloāca*, 7. *movēre* and 8. *novācula*.

c. PIE. **og^{w}h*: 5. *fovēre*, 13. *vovēre*.

d. PIE. **og^{w}*: *nūdus* < **nog^{w}odhos*.

e. Two instances remain: 1. *bovis*, which is not a native Latin word and cannot therefore yield compelling counterevidence (unless Thurneysen-Havet's law dates back to Proto-Italic); 12. *ovis* < **ou̯i-* < **h$_{3}$eu̯i-*.

If we strike PIE. **eu̯* and **og^{w}(h)* as possible input for Thurneysen-Havet's law, we may conclude that *ovis* is the only clear counterexample.

1.3. Evaluation

We have seen in 1.2.2 that the only constellation which is subject to Thurneysen-Havet's law is PIE. antevocalic **ou̯*. There is little but undeniable evidence that PIE. **ou̯* yielded Latin *av*. All instances of Latin *ov* must or can be explained from PIE. **eu̯* or **og^{w}(h)*, except *ovis* 'sheep' and the loan Gsg. *bovis*. In view of the positive evidence, I am inclined to consider *ovis* insufficient as a counterexample to refute Thurneysen-Havet's law (I shall return to it in 1.4).

The observation that *ou̯* > *av* was governed by the historical Latin accent, as Kretschmer and Solmsen assumed, is not supported by the evidence. The pairs *favílla* : *fóveō*, *favíssae* : *fóvea*, *avíllus* : *óvis* and *favére* : *fóveō* must be interpreted differently. Moreover, *cávus* and *lávere* prove that **ou̯* became *av* even if it was stressed. The extensive analogical reshufflings necessary to reconcile the accent-rule with the attested forms presuppose a high antiquity for the development **ou̯* > *av*, which contrasts with the relatively recent rise of the historical Latin accent (viz. after syncope). Since PIE. **eu̯* did not become *av*, Thurneysen-Havet's law must have preceded the merger of **eu̯* and **ou̯*. The latter probably took place in Proto-Italic, despite isolated *neuen* 'nine', *neuna fata* 'nona fata', both from Ardea, and thus antedates the rise of the historical Latin accent by centuries. For this dating see esp. Meiser 1986, 37, where one may note Steinbauer's remark on

the Ardean forms; he considers them to be the result of a secondary dissimilation of (*eu̯ >) *ou̯ > eu. I think that when the opposition between *eu̯ and *ou̯ was lost, the phonetic realization could in principle vary between [eu], [əu] and [ou], i.e. the initial vowel was distinctively mid (contrast au, which had a distinctively low first element), not distinctively front or back, rounded or unrounded. It is therefore possible to write either eu or ou, and orthographic convention in Ardea apparently chose the former.

We may conclude that the historical Latin accent had nothing to do with the development of *ou̯ to av. Thurneysen and Havet evidently found the correct formulation of the rule and all later hypotheses which differed from their views may safely be discarded:

PIE. *ou > Lat. av /__V

Thurneysen-Havet's law consisted of the neutralization of the opposition between ou̯ and au̯, i.e. a back vowel before u̯ (+labial, +sonant) lost the distinctive marking for labialness. This created a simplification of the system of contextual oppositions. As *ou̯ was now lost, the contrast between the first vowels in *eu̯ and *au̯ became an opposition between [mid] and [low], i.e. the feature [+front] of *eu̯ became redundant. This enabled *eu̯ to become *əu̯ > Lat. ov.

1.4. Relative chronology

Since Thurneysen-Havet's law is not conditioned by the historical Latin accent, it is not necessarily a relatively late development.

Horton-Smith (1895, 456-7), who did not adhere to the accent-rule, nevertheless thought that the development was a rather late one, which had not yet taken place in Rustic Latin by 204 and in Vulgar Latin by 201 B.C., for three reasons:

a. "Lat. nūdus 'naked' from *noudo-s from *novedo-s from *no(g)u̯edo-s (: Goth. naqaþs 'naked' etc.) from Idg. *nogʷ-, proves that the change of Prim. Lat. ŏv- (preserving Idg. ŏ) to ăv- was later than the syncope of ĕ in the posttonic syllable".

b. "The Spanish and Portugese words (Span. cueva, Port. cova) shew that cŏvo-, not căvo-, was still the Vulgar Latin stem of our first example (..) at the time when Spain was made a province, 201 B.C.".

c. "add to this the fact that Ennius, by whom the country-term cŏvum, cŏum or cŏhum was used, did not come to Rome till 204 B.C.".

Argument c. has been disposed of in 1.2.1 no. 5. Argument a. is invalid as well. As was argued in section IV.E.7.2.1 no. 4 and 7.2.3, *nūdus* arose from contraction of **-ou̯o-* < **-ogʷo-*, not as a result of syncope. Thus, it only shows that Thurneysen-Havet's law did not operate in the period between the moment that intervocalic **gʷ* became *-u̯-* in Latin and the moment of contraction of **-ou̯o-* to **-ou-* > *-ū-*. In view of the following considerations, Thurneysen-Havet's law must be dated before that period. As to argument b., it was argued above that *-o-* in Ibero-Latin **covos*, *-a* may have been secondary, cf. *vac-āre* < OLat. *voc-* < PIt. **u̯ak-* (cf. U. *-vac-*). Thus, Horton-Smith's chronology is insufficiently documented.

We have seen that the change of **ou̯* to **au̯* preceded that of **eu̯* to **ou̯*, and that the latter must probably be dated to the Proto-Italic period (Meiser 1986, 37). One may conclude on the basis of *vovēre* and *fovēre* that intervocalic **gʷh* merged with *u̯* in Latin after the change of **ou̯* to **au̯*. Since the former is a typically Latin and the latter most likely a Proto-Italic development, this confirms the chronology, which consequently may be schematized as follows:

1. **ou̯* > **au̯*;
2. **eu̯* > **ou̯* (Proto-Italic);
3. **gʷh* > *u̯* */V__V* (Latin);
   **gʷ* > *u̯* */V__V* (Latin).

Thurneysen-Havet's law can in principle be very old. No other typically Latin development can as yet be dated before it. Checking the indexes of Buck 1905, Meiser 1986 and Pokorny's IEW. in search of reflexes of PIE. **ou̯* in Sabellian, I did not come across any form that shows that the law did or did not occur in this branch of Italic. Perhaps this is not surprising, given the fact that the extant Sabellian material is much more limited than that of Latin, where despite the large amount of available material only few reliable instances can be found. Moreover, in Umbrian, syncope occurred on a large scale prior to the monophthongization of the *u*-diphthongs to *ō*, so that the latter completely blurred the original difference between **au̯V*, **ou̯V* and **eu̯V*.

OIr. *lóathar* 'Becken', MBret. *lovazr*, MoBret. *laouer* 'id.' < **louatrom* < **louh₁-trom* probably indicate that Thurneysen-Havet's law did not operate in Celtic. We can thus be fairly accurate in dating it to the Proto-Italic period.

In view of this dating, we may reconsider *ovis* and *bovem*, *-is*, which cannot be dismissed as a loanword any more

because even a loan from Sabellian should have taken part in Thurneysen-Havet's law. It is striking that both *ovis* and *bov-* contain *ov* < **h₃eu̯*, not PIE. **ou̯*. In view of the fact that in Proto-Italic PIE. **h₃* must still have been present as an independent phoneme, and in view of the Proto-Italic date of Thurneysen-Havet's law, the claim is justified that at that time PIE. **h₃eu* had not yet merged with PIE. **ou̯*, so that the former was not subject to the development of **ou̯* to **au̯*. If this is correct, all exceptions to Thurneysen-Havet's law have been accounted for.

Thus, we end up with the following chronology:

1. **ou̯* > **au̯*;
2. **eu̯* > **ou̯*; **h₃e* > *o* (Proto-Italic);
3. **g^{w}h* > *u̯ /V__V* (Latin);
   **g^{w}* > *u̯ /V__V* (Latin).

2. Latin *a* after PIE. **m, *u̯, *k^{w}, *g^{w}, *g^{w}h*

2.1. Introduction

In surveying the material, one cannot fail to notice that numerous examples of non-laryngeal *a* are found after a labial consonant (e.g. *mare*, *malus*, *marītus*, *quatiō*, *squalus*, *vas*, *vacca*). This was already observed by Pedersen 1905, 416. Among these words, *mare* and *vas* may serve as typical examples.

1. *mare* (ntr.) 'sea' < **mari*, cf. Olr. *muir* (ntr., *i*), W. Co. Bret. *mor* 'sea', Goth. *mari-saiws* 'sea', OHG. *meri* (ntr., *i*), OCS. *morje*, Lith. *mãrė* 'sea' < **mori-*.

2. *vas*, Gsg. *vadis* (m.) 'surety, bail' < *u̯adh-*, cf. Goth. *wadi*, OIc. *veð*, OS. *weddi* 'bail', Lith. *vãdas* 'guarantee, surety', *ùžvadas* 'hostage', *vadúoti* 'to redeem' < **u̯odh-*.

On the basis of these etymologies, the hypothesis can be formulated that PIE. **o* developed into *a* after the labial consonants *m-* and *u̯-*. With the latter may perhaps be included PIE. **k^{w}-*, *g^{w}-*, *g^{w}h-*. A similar hypothesis has been advanced by E.P. Hamp with regard to Lat. *quaerĕre*, supposedly from **k^{w}ois-* (1982-83, 98-99).

We shall now see whether this hypothesis can be substantiated and, if so, how its conditions must be defined. I have collected all Latin words with an *a* after a labial consonant which cannot have arisen from a laryngeal. They will be classified and discussed according to which consonant precedes the *a*. In section 2.2 the instances of non-laryngeal *a* after *m* (2.2.1) and after **u̯* (2.2.2) are discussed. In this chapter the notation

*ų comprises PIE. *ų and the labial element of the labiovelars. A preliminary conclusion is drawn in 2.2.3. In section 2.3 all words that have Lat. *mo-* and *ųo-*, or reflect it (e.g. *mūtuus* < **moi-*, *bonus* < **duonos*) are listed. Section 2.3.1 deals with the circumstances under which PIE. **e* became Lat. *o*, and the words having Lat. *mo-*, *vo-* < **me-*, *ųe-* are listed in 2.3.1.2. In 2.3.2, instances of old *mo-* and *ųo-* are discussed. A preliminary conclusion regarding Lat. *mo-*, *vo-* is drawn in 2.3.3. A final evaluation is made in 2.4. Finally, 2.5 deals with *lacus*.

2.2. Delabialization of **o* to *a* after labial consonants

2.2.1. Instances of Lat. *ma* < **mo*

(See the table in 2.2.3.)

The following words starting with *ma-* are not discussed:

a. Unreliable etymology: *mactus* (*mactāre*, *magmentum*), *macula*, *maerēre*, *malina*, *mallō*, *malva*, *mancus*, *man(n)isnavius*, *mannus*, *mantīsa*, *mantiscinor*, *mariscus*, *marisopa*, *marrubium*, *marruria*, *marūca*, *matula*.

b. Loanwords: *maccus*, *macellum*, *machaera*, *mac(h)iō*, *madeia*, *mafortium*, *-te*, *magdalia*, *magis*, *mahalum*, *mahonus*, *maia*, *maiūma*, *malacus*, *malandria*, *malaxāre*, *mallus*, *malt(h)a*, *mamphūla*, *mamphur*, *mangō*, *mannīre*, *mantellum*, *mantica*, *mantia*, *Manturna*, *mapālia*, *mappa*, *marcus*, *marga*, *margarita*, *marisca*, *mariscalcus*, *marmor*, *marō*, *marra*, *marsuppium*, *masca*, *maspetum*, *massa*, *massaris*, *massāre*, *mastic(h)ē/mastix*, *mastīgia*, *mastūca*, *mataris*, *mataxa*, *matta*, *mattea*, *matticī* (?), *mattiobarbulus*.

c. Onomatopoetic words: *ma*, *mamma*.

d. *ma* < **mH-*: *macer*, *madēre* (*madulsa*, *mattus*), *mandere*, *maris*.

e. *ma* of non-laryngeal origin, but probably not reflecting **mo-*: *magnus* (*magis*, *māior*, *maximus*), see VI.D.2.1 no. 5; *māla* (*maxilla*), see VI.E.3.2 no. 6.

Nine instances of *ma-* remain, which are presented in alphabetical order.

1. *malleus* 'mallet, big hammer' is considered to be cognate with OCS. *mlatъ*, Russ. *mólot*, SCr. *mlât* 'hammer' (thus WH., EM., Pokorny IEW. 716-717). The Slavic forms reflect PIE. **mol-to-*. It is not clear how one must explain *malleus*. As to *-ll-*, according to WH. it can reflect *ll* or, more likely, *ld* or *ln*. WH. hold that *malleus* most likely reflects **malno-*

or *malni- 'Zermalmung', in which mal- must be identified with the root *mel(ə)- 'to crush, grind': if it belongs to the aniṭ-variant, mal- reflects *mə̥l-; if it belongs to the seṭ-variant, mal- reflects *mlə-, as in palma, cf. Gr. παλάμη. The reconstructions suggested by WH. call for some remarks. In the first place, Lat. malleus and PSlav. *molto- have no formative element in common apart from the root. It is therefore feasible that both acquired an identical meaning independently, simply because they were derived from the same root, viz. *mel(H)-. In the second place, the evidence for an aniṭ-root *mel- is limited to Olr. pret. pass. -mleth < *mlto- and to PSlav. *molto-. The former may be secondary, in which case it was based on the present stem mel-id (i.e. *melH-, *mlH- > *mel-, *mlH-, which is replaced by *mel-, *ml-, cf. secondary pret. pass. -sreth of sernaid, PIE. *sterh$_3$-). In Slavic, the laryngeal may have been lost by the operation of Meillet's law. In any case, it is unlikely that malleus reflects an aniṭ-root. Thirdly, the type palma does not reflect *plə-m- (i.e. *plH-m-), but *plH-em- (see IV.D.2.3.2.3). The upshot is that PSlav. *molto- does not provide more than a semantic parallel for malleus, that the latter most likely reflects a root *melH- 'to crush', and that malleus cannot reflect *mlH-lo-, -so-, -d(h)o-.

From the numerous possible reconstructions of malleus, the one that accounts for both -ll- and -a- must be preferred. As to the suffix -eus, one could compare *mat-ea 'hoe' (see no. 9 below, and WH.). It seems likely that *mallo- must be interpreted as a deverbative nomen instrumenti in *-lo- of the type rāllus 'ploughing iron' (cf. rādere), sella 'chair' (sedēre; see Leumann 1977, 311). If we apply the proposed development of *mo- > *ma-, this analysis would lead to a reconstruction *mala-lo- < *mola-lo- < *molH-lo-. Syncope of the internal -a- would have regularly obtained in the quadrisyllabic derivative *malaleo- > malleus.

malleus cannot be separated from marculus (Lucil. etc.) 'small hammer'. The latter is usually reconstructed as a nomen instrumenti *mal-tlo- > *mar-tlo-. This is probably unjustified. Nomina instrumenti in *-tlo- are usually neuter (but cf. culter 'knife'), whereas marculus is masculine. More importantly, the meaning of marculus is that of a diminutive. It therefore most likely reflects *mar-kelo- < *mal-kelo-, which reflects either *mala-kelo- < *molH-kelo-, or *mallo-kelo- < *malalo-kelo- (cf. e.g. canicula, of canis). For a dis-

cussion of other forms, especially the "Rückbildung" *marcus* and the hypercorrection *martulus*, I refer to WH. s.v.

Thus, *malleus* and *marculus* are possible instances of *ma-* < **mo-*.

2. The etymology of *malus* 'bad' is not clear. EM. suggest, with due reservation, that it is cognate with Lith. *mẽlas* 'lie' (thus also Fraenkel s.v.), Arm. *meł* 'sin', Av. *mairya-*, an epithet of evil beings < **mel-*, and possibly with Gr. μέλεος 'vain' < **meles-os*, βλάο-φημος < **mls-* (Frisk, hesitatingly) and OIr. *mell* 'destruction' < **mel-so-*. Beside Lith. *mẽlas*, Žem. *mãlas* is attested, which, together with Latv. *màlds* 'mistake', may reflect **mol-*. On the other hand, WH. prefer to connect *malus* with PGm. **smalaz* < **smh$_1$lo-* 'small' in the Goth. superlative *smalista*, and in OE. *smæl*, OS. OHG. *smal*, cf. Gr. μῆλον 'head of a flock (of sheep, goats)' < **smeh$_1$lo-*. In view of the semantics, WH.'s suggestion is far from evident and inferior to EM.'s etymology.

O. *mallom* 'malum' and *mallud* are attested in the Tabula Bantina in the legal formula *dolud mal(l)ud, perum dolom mallom*. This formula may as a whole have been borrowed from Latin *dolus malus* (thus EM., WH.).

In view of Lith. *mẽlas*, *mãlas* etc., one could reconstruct **malo-* < **molo-*, bearing in mind that neither the etymology nor the *o*-grade of the root are certain.

3. *manēre*, *mānsī*, *mānsum* (older **mantom*, reflected in *mantāre*) 'to stay, remain, wait' must be compared with Gr. μένω 'to wait, stay'. I assume, with Frisk s.v., that Gr. μεμένηκα is a late formation, not to be compared with *manēre*. In view of its stative meaning, *manēre* reflects a formation in **-eh$_1$-* rather than a causative in **-eie-*. However, *manēre* cannot reflect **mn-eh$_1$-*, with the zero grade root that is usual in this formation, because in that case *-a-* remains unexplained. There is no evidence for a "Sprossvokal" *-a-* in any other Latin form, and a reduced grade **m$_ə$n-* cannot be considered any more. If we were to assume that in **mneh$_1$-* a vowel arose, e.g. because we could envisage a development **mneh$_1$-* > **mn̥neh$_1$-* (in accordance with Lindeman's version of Sievers' law), this would be **-e-* because a vocalic nasal always yielded **eN* in Latin (cf. *centum* < **ḱm̥tom*; *sine* < **seni* < **sn̥Hi*; **HNC-* yielded **e/a/o/NC-* via **HeNC-*). A more plausible idea was suggested to me by Professor Beekes, viz. that one might consider *manēre* to be a stative in **-eh$_1$-* that

was based on the (stative) perfect root **mon-*, which may then be compared with the OCS. type *gorěti* 'to be warm' < **g^{w}hor-eh$_1$-*. If this is correct, *manēre* reflects **mon-eh$_1$-*, with delabialization of **-o-* after *m-*.

4. *manus* (*u*, fem.) 'hand'. Such forms as *mancus* 'maimed' (if cognate!) point to an earlier consonant stem because here suffixal **-u-* could not have been syncopated (unlike in *manceps*, G. *-cipis*, *mandāre*). This consonant stem is also found in U. Apl. ***MANF*** 'hands'. U. ***MANUV-E*** 'in manu' is an *u*-stem form, O. *manim* 'manum' belongs to the *i*-inflection. Cognates outside Italic are OIc. *mund*, OE. *mund*, OHG. *munt* 'hand' < **mn-tó-*. OIc. *mundr* has the technical sense 'the sum which the bridegroom had to pay for his bride, and which after the wedding became her own property' (cf. also MoHG. *Vormund*). A similar meaning is found in OIr. *muin* < **moni-* 'patronage, protection'. Compare also Hitt. *mani̯aḫḫ-* 'einhändigen, übergeben, verwalten', which shows that the etymon is not an areal term. Co. *manal* 'sheaf' probably is not cognate.

Some scholars consider Gr. μάρη (fem.) 'hand' to be cognate, which is claimed to reflect the NAsg. of an *r/n*-neuter (thus Frisk s.v.). This cannot be maintained because the root of this alleged *r/n*-stem would consist of **m-* only, which is impossible in PIE.

In view of Celtic **mon-i-*, Italic **man-* probably reflects PIE. **mon-*. Note that the *-a-* is not limited to Latin, which points to the fact that **mo-* > **ma-* would belong to the PIt. period.

5. *marcēre* 'to be withered, wrinkled, weak', *marcidus* 'decayed, rotten'. Lat. *fracēs* 'dredges of olives' cannot be compared with *marcēre* (pace EM. s.v.) because **mr-* yielded Lat. *br-*, not *fr-* (cf. *brevis* < **mreghu̯i-*). Pedersen 1909, 163 compared OIr. *mraich*, *braich*, W. *brag* 'malt' with *marcēre*, which is unlikely for semantic reasons (cf. esp. Bret. *bragez* 'germ of grain'; for an opposite view see Vendryes s.v. *mraich*). A better chance of being cognate have MIr. *brén*, W. *braen*, MBret. *breyn* 'rotten, putrified'. The Welsh form points to **mrakno-*, which may be the basic form of Irish, but not of MBret. *breyn*, which reflects **mrekno-* (perhaps also the protoform of Irish) or **mraknio-* (thus Jackson 1967, 157). MHG. *meren* 'Brot in Wasser oder Wein eintunken' probably reflects **merhen* < **merk-*. Lith. *miřkti* 'to become weak, soaked', *meřkti* 'to soak' also point to **m(e)rk-*. Both are most likely

cognate with *marcēre*.

Since *marcēre* is a stative in **-eh$_1$-*, it is unlikely that the root contained *o*-grade, zero grade being the norm (Meillet 1937[8], 209). One would therefore expect a development **mrk--eh$_1$-* > **mork-ē-* > *marc-ē-*.

6. *mare* 'sea' (*i*, ntr.). The Ablsg. *mare* (Lucr.) and Gpl. *marum* (Naev.) could point to an original consonant stem, but these are probably secondary forms (thus EM., WH. ad locc.). Nevertheless EM. propose a PIE. consonant stem, on grounds which are not indicated. Since, however, Celtic and Germanic point to an *i*-stem, from which the Balto-Slavic forms can be derived as well, *mare* most likely reflects an *i*-stem. EM. reconstruct *mare* as **mr-*, which is not found in any other language, whereas WH. seem to think of an ablaut **a*, **o*, which is no longer acceptable.

Olr. *muir* (*i*, ntr.), W. Co. Bret. *mor* 'sea' represent Proto-Celtic **mori*. This form is also reflected in OHG. *mari*, *meri* (masc., ntr.) 'sea', OE. *mere* (masc.) 'lake, pond, sea', OS. *meri* (masc.) 'pond, ditch', Goth. Asg. *mari-saiw* 'sea', OIc. *marr* (masc., *i*) 'sea'. Lith. *mãrė*, pl. *mãrės* 'sea, "haff"', OPruss. *mary* go back to **moriā* (Levin 1973, 189-196). OCS. *morje* is a neuter *io*-stem. Whether OE. *mōr*, OHG. *muor* 'marsh' are cognate is uncertain. In view of Ossete *mal* < **mori*, the etymon clearly belongs to PIE.

Since Celtic points to *o*-vocalism, which is in agreement with Germanic and Baltic *-a-* and Slavic *-o-*, it is likely that *mare* reflects **mori*.

7. *margō*, *marginis* 'side-line, border' may be compared with Pers. *marz* 'region', Goth. *marka* 'border, area', which point to PIE. **morǵ-*. Olr. *mruig* 'territory, area', W. Bret. *bro* 'country' < **mrogi-* are somewhat problematic, and may perhaps be explained as the result of an incidental metathesis.

margō most likely reflects **morǵ-*.

8. *marītus* 'coupled, married; husband' belongs to the root **mer-*, **mor-*. Its formation is opaque. WH. consider it a *to*-derivative of a word **m$_e$rī* 'junges Weib', allegedly the feminine of **mVrio-* attested in Skt. *márya-* 'young man'. This idea is rejected by EM. because **marī* is attested nowhere (cf., however, Gr. μεῖραξ below). The closest cognates of *marītus* are the *o*-grade forms W. *morwyn*, OCo. *moroin* 'girl, maiden' < **mori-gnā*, which presuppose an *i*-stem (see Pedersen 1909, 104, Jackson 1953, 462), and Lith. *martì* 'girl, bride (without

children)' < *mor-t-ih_2. *e*-grade is attested in Gr. μεῖραξ 'young girl, youngster' < *mer-$i̯h_2$- + -*k*-, W. *merch*, and Lith. *meřgė*, *mergà* 'girl'.

Since *o*-grade is not universal in this etymon, one cannot be absolutely sure that *marītus* reflects **morīto-*, but in view of the *i*-stem **mori-* attested in Celtic this seems likely.

9. *mateola* 'hoe, grip of a hoe' (Cato) is a diminutive of **matea*. The Romance languages point to a form **mattea*, which is most likely a "Rückbildung" (thus WH.). The suffix *-ea* may be compared with *-eus* in *malleus* (see no. 1. above). The root *mat-* probably has cognates in Skt. *matíyam* 'Knüppel, der zum Kampf und zum Schollenschlagen benutzt wurde', *matī-kṛ-* 'einebnen, glattschlagen' < **met-*, OCS. *motyka* 'hoe' < **mot-*, and possibly also in OHG. *medela* plough' < **met-*, Latv. *matara* 'Rute, dünne Stange', *matigi* 'Femerstange am Pfluge' < **mot-*. Thus, the root of *mateola* could go back to **mot-*, although we cannot be absolutely sure about the original vocalism. As a technical term, the word could easily have been borrowed, which would invalidate it as evidence in the present discussion.

2.2.2. Instances of Lat. *ua* < **u̯o* (**u̯* = PIE. **u̯*, k^w, g^w, g^wh)

All instances of *qua-*, *va-* were investigated, as well as those instances of *fa-* which reflect **g^wh-* or **ǵhu̯-*. The material is presented in alphabetical order.

The following words starting with *qua-*, *va-* are not discussed.

a. Unreliable etymology: *vacerra*, *vacillāre*, *vafer*, *vallēs*, *vallessit*, *vappō*, *varius*, *vaspix*, *vatāx*, *vatius*, *vavatō*.

b. Loanwords: *vaccīnium*, *vanga* (?), *vargus*.

c. Onomatopoetic words: *vae*, *vaha*.

d. *-a-* of laryngeal origin: *quam*, *quandō*, *quantus*, *quasi*, *vacāre*, *vacuus*, *vadum*, *vadāre*, *vagīna* (?), *valēre*, *vallus*, *valvae* (?), *vannus* (?), *vapor* (*vapidus*, *vappa*), *varus*, *vascus*.

e. *-a-* of non-laryngeal origin, but not reflecting **-o-*: *quadrāginta*, *quadrāns*, *quadru-*, *quartus*, *quater*, *quattuor* etc. (< **k^wet-*, see VI.E.3.2 no. 11).

The remaining words may point to delabialization of **-o-* after **u̯-*.

1. *canis* 'dog' is obviously cognate with Gr. κύων, G. κυνός, OIr. *cú*, G. **con*, W. *ci*, Skt. *śvā* etc. < PIE. **ḱuōn*, **ḱuon-m*, **ḱun-os*, but the origin of *-a-* and the loss of *-u̯-* are among the most vexing problems of Latin. The most commonly presumed scenario claims that the Gsg. **ku̯anes* < PIE. **k*^{w}*ə́nes* was remodelled to **kanes* on the Nsg. **kō* < **ḱu̯ō* (see WH. s.v., Leumann 1977, 149). The most important objections to this conception are that it can no longer be maintained that PIE. had a "reduced vowel" phoneme (schwa secundum) and that the Gsg. was not **k*^{w}*nes/os*, but **ḱunes/os*.

It seems preferable to assume that the Asg. **ḱuon-m* > **kuon-em* yielded **ḱuan-em*, and that this was the form which was remodelled on the Nsg. and subsequently formed the basis for the attested paradigm *canis* (*-ēs*), *canem*, *canis*. The analogical loss of the labial element may be compared with the loss in *vōcem*, *vōcis*, *vŏcāre* on the basis of the Nsg. *vōx* < **u̯ōk*^{w}*-s*.

The generalization of *can-* may have been supported by the presence of a representative of the root **(s)ḱenH-* 'young (dog)', which would have yielded Lat. **can-*, cf. OIr. *cano*, W. *ceneu*, pi. *canawon* 'whelp, puppy' < **kanawōn* < **knh*$_2$*eu-*, Russ. *ščenok* 'id.' < **skenH-*, Arm. *skund* 'id.' < **skon-tā*.

2. *fax*, also *facēs*, G. *facis* 'torch' is generally connected with Lith. *žvākė* 'candle' < **ǵhu̯ok*$^{(w)}$*-* (on the inflection see V.C.3.1 no. 5). Gr. διαφάοοειν· διαφαίνειν (Hes.) cannot belong to this root because the *-α-* cannot be explained on this basis. According to Frisk, the Greek form should be compared with Gr. παιφάοοω, which has a doubtful meaning, appr. 'blitzen, schimmern' (root **bhh*$_2$*-*, cf. φάος 'light'). According to EM., Gr. φώψ 'light' (Hes.) belongs to the same root as *fax*. If this is correct, it is the Nsg. of a root noun, **ǵ*^{w}*hōk*^{w}*s*. Given the late attestation of the word, one would do safer to follow Frisk s.v., who considers it "eine Umbildung von φώς", possibly after ὤψ 'eye, face' (cf. Chantraine s.v.: "Glose apparemment corrompue"). Alb. *duk-em* 'erscheine, leuchte hervor, werde gesehen', *duk* 'An-, Aussehen' probably reflects zero grade **ǵhuk-* (WH.).

In view of the Lithuanian form, Lat. *fax*, *facēs* probably reflects **ǵhu̯ok*$^{(w)}$*-*.

3. E.P. Hamp (1982-1983, 98-99) derived *quaerĕre* 'to search, ask' from a root **k*^{w}*eis-* meaning 'to see', cf. OIr. *ad-cí* 'sees' < **-k*^{w}*is-*, *ciall*, W. *pwyll* 'sense, intelligence' <

**kʷeislo-*. He starts from the desiderative **quaessō* > *quaesō* 'want to see > ask, beseech', the meaning of which was transferred to (non-desiderative) *quaerō*. Hamp reconstructs *quaerĕre* as **kʷois-*, with delabialization of **-o-* after **kʷ-*. Both EM. and WH. deny the etymology but do not offer a preferable alternative. Indeed, Hamp's explanation of the semantic development may be considered possible (cf. Lith. *kviẽsti* 'invite', OPruss. *quoi* 'wants', which, incidentally, point to PIE. **kʷ-* instead of **kʷ-*) but is not compelling. The most important objection to the etymology is that the assumption of *o*-grade in the root of an *e/o*-verb is improbable. *quaerĕre* can hardly reflect an old perfect for semantic reasons.

If *obscūrus* 'dark', which Hamp connects with *quaerĕre*, literally means 'obstructing one's sight', and if it goes back to **-kʷoiso-*, the *-o-* was obviously not delabialized. However, *obscūrus* need not belong to this root (cf. e.g. Pokorny IEW. 951, who reconstructs a root **(s)kū-* 'cover').

4. *quālum*, *quālus* (also *-ll-*) 'basket of plaited wickerwork, kind of filter' has a diminutive *quasillum*, *quasillus*, which points to **kʷaslo-*. A form *cōlum*, *cōlus* 'filter made of plaited wickerwork' must probably be compared with *quālum*, even though WH. prefer to connect it with *caulae* 'Gehege, Hürden', which is unlikely because a form **caulum* is not attested and because *caulae* is never found as **cōlae*. According to EM., *quālum* is a loan because *quasillum* obviously did not partake in rhotacism.

If OCS. *košь* < **kʷosio-* 'big basket of wickerwork' can be compared, which is admittedly hazardous given the technical character of the words, one has reason to assume that *quālum* has non-laryngeal *-a-* and may go back to **kʷoslo-*. The relation between *quālum* and *cōlum* remains obscure. Perhaps *cōlum* was the native Latin word and *quālum* (in view of *-s-* in *quasillum*) a borrowing from another Italic language, though this does not explain why the former maintained **-o-* and the latter did not. In view of these uncertainties and of the doubtful etymology, *quālum*, *cōlum* cannot be used.

5. The etymology of *quatĕre*, *quatiō*, *quassī* (very rare), *quassum* 'to shake, hit', in compounds *-cutĕre*, *-cutiō*, *-cussī*, *-cussum*, is uncertain. It is probably cognate with OS. *scuddian*, OHG. *scutten* 'to shake' < **skuđjan* < PIE. **skut-*, OIc. *hossa* 'to throw' < **kut-s-* and Lith. *kutù*, *kutėti* 'aufrütteln' < **kut-*. EM. compare Gr. πάσσω 'streuen,

sprengen' < *$k^{w}atiō$(?), which, as Frisk states, is "semantisch unbefriedigend". Skt. *kvath-* 'to boil' may for semantic reasons be compared with Goth. *haþ-* 'to foam' rather than with *quatiō*.

It seems possible that *quatiō* reflects **(s)kuot-i-*. As to the (unexplained) *o*-vocalism, compare *fodiō*, *foděre*.

The usual explanation of *-cutiō* etc. is that it arose from syncopated **-kwatiō* or as a result of vowel weakening (Leumann 1977, 90).

6. *squalus* 'seal' is generally connected with OIc. *hvalr* 'whale' < **$k^{w}olo-$* and with OPruss. *kalis* 'catfish' < **$k^{w}olo-$*. In view of these forms, *squalus* probably goes back to **$sk^{w}olo-$*. Whether *squatus* 'eel' is cognate remains uncertain.

7. *suāsum* 'dirt' may be cognate with *sordēs* 'dirt' < **sụord-*, cf. Goth. *swarts* etc. 'black' < **sụord-*. If this is correct, *suāsum* reflects **suăssum* < **suardtom*. If the latter reflects **suord-*, the reason why *-o-* changed to *-a-* here but remained unchanged in *sordēs* is obscure. An alternative explanation is offered in VI.E.3.2 no. 15. Note that the etymology of *suāsum* is uncertain.

8. *vacca* 'cow' is generally considered to be cognate with Skt. *vaśā́* 'cow' < **wek-eh₂-*. The geminate *-cc-* in *vacca* could be due to expressive gemination (thus Marstrander, Meillet, Persson, see WH.). It has been a matter of dispute whether Skt. *vāśitā́* 'cow in rut' is cognate. According to Mayrhofer, KEWA s.v., the latter is derived from a root *vāś-* 'to low'. Alternatively, it could be a *to*-participle of the causative stem of *vaś-* 'to long' (Walde-Pokorny I 214). If the latter is correct, *vāśitā́* probably has nothing to do with *vaśā́* because *vaśā́* simply means 'cow' (Mayrhofer KEWA s.v.). It may be objected, however, that 'begehrend gemachte' is a somewhat laborious circumlocution.

In theory *vacca* could go back to **wok̑-eh₂-*, but *o*-grade is not supported by Skt. *vaśā́*. Thus, *vacca* is at best a possible instance of *va-* < **ụo-*.

9. *vagus* 'wandering', *vagārī* 'to wander' do not have a clear etymology. The connection with Skt. *váṅgati* 'goes, limps' must be given up (Mayrhofer, KEWA s.v.). Lith. *vagiù*, *võgti* 'to steal', beside having an entirely different meaning, does not have an acute long vowel arisen from Winter's law, and therefore,

unlike Latin, reflects *u̯og$^{(w)}h$-. The best chance of being cognate have OIc. *vakka*, OHG. *wankōn* 'to totter, stagger' < **wong-* and OHG. *winkan* 'sich seitwärts bewegen, schwanken, winken, nicken', OE. *wincian* 'to nod' < **weng-*, which seem to have fixed *-n-*. If this was originally the present tense infix (which would imply an analysis **Hwog-*, **Hw-en-g-*), *vagus* may be reconstructed as **wogos*. *vagus* is at best a possible instance of delabialization.

10. *valgus* 'bow-legged' is perhaps cognate with Skt. *válgati* 'leaps, bounds, waves', OE. *wealcan*, OHG. *walken* 'to roll, move to and fro; walk' < **u̯olg-* (thus WH., Pokorny IEW. 1144). If this is correct, *valgus* reflects **u̯olgos*. EM. reject the etymology. Since the connection is not evident from a semantic point of view, *valgus* is at best a possible case of delabialization.

11. *valvae* 'the leaf of a door, a folding door' reflects **u̯olHueh$_2$-* or, in accordance with section IV.E.13.2.3.2.1 no. 3, **u̯lHueh$_2$-*. Uncertain.

12. *vas*, Gsg. *vadis* 'surety, bail' < **u̯adh-* may be compared with Goth. *wadi*, OIc. *veð*, OS. *weddi* < PGm. **wadiam*. In view of Lith. *vãdas* 'guarantee, surety', *ùžvadas* 'hostage', *vadúoti* 'to redeem' < **wadh-* < PIE. **u̯odh-*, the root of *vas* did not contain a laryngeal. Consequently, PGm. **wadiam* reflects **u̯odh-io-*. Accordingly, Lat. *vas*, *vadis* most likely reflects **u̯odh-*.

13. *vastus* 'enormous, wide' is probably cognate with OIr. *fot*, *fut* 'length', *fotae* 'long' (Pedersen 1909, 32, WH. s.v.). If this is correct, the basic form must have been **uosdho-* or **uasdho-*. OIr. *-o-* may be secondary in this environment, cf. OIr. *brot* 'point', W. *brath* 'bite, sting' (see Hamp 1979, 158-166). Since *o*-vocalism is not demonstrably original, *vastus* cannot be used as evidence. On *vāstus* 'empty, desolate' see IV.F.1.2.1 no. 6.

2.2.3. Conclusion

A number of instances of non-laryngeal *-a-* turn out to reflect PIE. **o* after **m-* or **u̯-*; in *marcēre*, the *-o-* is of PIt. date (**mark-* < **mork-* < **mṛk-*).

probable	possible	unreliable
4 *manus* <**mon-*	1 *malleus* <**molH-*	
5 *marcēre* <**mr̥keh₁-*	2 *malus* <**molo-*	
6 *mare* <**mori*	3 *manēre* <**moneh₁-*	
7 *margō* <**morǵōn*	8 *marītus* <**mori-*	
	9 *mateola* <**mot-*	
2 *fax* <**ǵhu̯ok^{w}-*	1 *can-* <**ku̯on-em*	4 *quālum*
6 *squalus* <**sk^{w}olo-*	3 *quaerĕre* <**ku̯ois-?*	7 *suāsum*
12 *vas* <**u̯odh-*	5 *quătĕre* <**ku̯oti-*	13 *vastus*
	8 *vacca* <**u̯oḱeh₂-*	
	9 *vagus* <**u̯ogo-?*	
	10 *valgus* <**u̯olgo-?*	
	11 *valvae* <**u̯olHu-?*	

We may conclude that there is a considerable amount of evidence which favours delabialization of *o* to *a* after *m-* and *u̯-*. As will turn out to be of crucial importance, all probable and possible instances are limited to two phonetic contexts:
1. **ma-*, **u̯a-* in an originally open syllable: *manēre*, *manus*, *mare*, *malleus* (< **mala-lo-*), *malus*, *marītus*, *mateola*, *squalus*, *canis*, *quatiō* (< athematic **ku̯at-i-*), *valvae* (if < **u̯olau̯ā-* < **u̯olHu̯eh₂-*); all case-forms of *fax* and *vas* except the Nsg.; *vacca* may have a recent geminate. *quaerō* is an exception, but its etymology is uncertain.
2. **ma-* before *-r-* + velar stop: *marcēre*, *margō*. Perhaps the formulation may be extended to **ma-*, **u̯a-* before liquid + velar stop in view of *valgus*, but this is not a very reliable instance and it will be seen in the following section that there are counterexamples where *-o-* remained before *-l-* + velar (*mulgēre*, *mulcēre*).

In view of Sab. **man-* 'hand', delabialization also took place in Sabellian.

2.3. Counterevidence: Lat. *mo, uo*

Despite the fact that there are reasons to believe that **-o-* was delabialized after *m-* and **u̯-*, numerous Latin words start with *mo-* and *vo-* (including *quo-*). All instances, including those of **moi-*, **u̯oi-* > *mū-*, *vī-* and those where *u̯* has disappeared (e.g. *bonus* < *duonos*, *foris* < **dhu̯or-*) are listed and discussed in this section.

The outline of this section is as follows: 2.3.1. Recent *mo, uo* < **me, *ue*; 2.3.1.1. The development of **e* to *o* in Latin;

2.3.1.2. Material: *mo, uo* < **me, *ue*; 2.3.2. Old *mo, uo*; 2.3.3. Conclusion.

Before we proceed to the material, some remarks concerning the circumstances under which **e* became *o* in Latin must be made.

2.3.1. Recent *mo, uo* < **me, *ue*

2.3.1.1. The development of **e* to *o* in Latin

Instances of *o* < **h₃e* left aside, PIE. or PIt. **e* yielded *o* (which in turn could become *u*) under three circumstances, of which the last is ill-defined.

1. **eu* > **ou*: **neuos* > *novus*, **h₁neun* > *novem*;
2. **el* > *ol* except before front vowels and before *-l-*: **kʷelō* > *colō*, **uelti* > *vult*, but *sceleris*, *celer*, *velle* (< **uel-se*);
3. in a labial environment under certain circumstances, e.g. **sue-* > **suo-* > *so-* in *soror*, *somnus*; between **u̯-* and *-o-* in the following syllable, e.g. *duenos* > *duonos* > *bonus*.

The third rule requires some discussion because scholarly opinions differ considerably and the problem cannot be regarded as solved.

In order to give some idea about agreements and disagreements, the main reference works may be cited.

Leumann 1977, 46-47 assumes that **su̯e-* yielded **su̯o-* > *so-* (**suesōr* > *soror*). On p. 101 he notes that *e* in an open first syllable may be assimilated to an *o* in the following syllable (*o*-Umlaut): *bonus* < *duenos*, but *bene*, *bellus*; *homō* < **hemō*, cf. OLat. *hemonem*.

Sommer-Pfister 1977 seem basically to have the same ideas. On p. 55-56 it is noted that **su̯e-* became **su̯o-* and that **quĕ-* became **quo-* > *co-* before *-qu-*, *-c-* (*coquō* < **kʷekʷō* < **pekʷō*). Whether or not **u̯e-* yielded *vo-* is said to be obscure because of the interference of *o*-Umlaut, which is discussed on p. 93: **e* > *o* before *o* in the following syllable, except in **-ero-* (*merus*, *erus* etc.). Examples comprise *bonus* < *duenos*, *homō* < **hemō*, *glomus* < **glemos* (*s*-stem), *modus* < **medos* (cf. O. *MEDDISS* < **medo-dik-s*). Sommer-Pfister assume extensive operation of analogical levelling in order to account for such forms as *legō*, *genus*, *tendō* etc.

Monteil 1973, 95 claims that *e* became *o* before *mo* (*homō*) and between *w-* and *-Co-* (*bonus*, *colō*).

As a final example, Meillet-Vendryes 1927, 107-108 offer yet a different formulation, viz. that *Cwe-* became *Cwo-*

(*soror*, *bonus*, also *colō* < **k^{w}elō*), but they do not express an opinion on apparent exceptions such as *quercus*, *bene*, *bellus*.

Two preliminary remarks should be made.

It is remarkable that both Leumann and Sommer-Pfister distinguish a rule **sue* > **suo-* from a rule that explains *duenos* > *duonos* > *bonus* while there seems to be no phonetic motivation (**-ue-* > **-uo-* after *s-* but not after **d-* makes no sense) or observational consideration to do so: as appears from the table below, **sue-* yields **suo-* only before back vowels, while *due-* yields *duo-* under the same circumstances but not before *-ll-* (*bellum* < **duellom*, *bellus* < **duenelos*; the reason for this exception may be the front articulation of *-ll-*). It therefore seems evident that one must look for a single rule, viz. Monteil's **e* > *o* /*w*__*C*o.

Sommer-Pfister's assumption of massive analogical restoration of *e*-vocalism seems most improbable, especially because it leads to the assumption that e.g. in the numerous *o*-stems an alternation **e/o* (< **e*) in the root was always eliminated in favour of **e*. As far as can be seen, the occurrence of *o*-Umlaut is limited to an *e* that was followed or preceded by a labial, and there are just a handful of examples. If rounding of **e* had occurred on as large a scale as advocated by Sommer-Pfister, one would expect to find more traces of it and, what is more, not only in the limited set of labial environments.

It seems that almost all instances of so-called *o*-Umlaut which have been adduced in the handbooks mentioned above, including the type **suesōr* > *soror*, can be explained by the following rule:

**e* > *o* /*C*[+labial, +sonant]____ *C(C)V*[-front].

The notation [+labial, +sonant] covers **u̯*, *m*, and also the labiovelars (which are stops with coarticulation of a sonant *w*); it excludes the labial stops *p-*, *b-*, *bh-*.

1. *bonus* < *duonos* < *duenos*; *bene* < **duenēd*;
2. *colō* < **k^{w}elō* (*colis*, *colit* analogical?);
3. *coquō* < **k^{w}ek^{w}ō* (*coquis*, *coquit* analogical?);
4. *modus* < **medos* (*modī* analogical);
5. *momordī* < **memord-*;
6. *socer* < **suekuros*;
   socrus < **suekru-*;
7. *somnus* < **suepnos* (*somnī* analogical);
   sopor < **suepōs*;

8. *sonō* < **suenō* (*sonis*, *sonit* analogical?);
9. *soror* < **suesōr*;
10. *vomō* < **u̯emō* (*vomis*, *vomit* etc. analogical?).

volō and *molō* are not included because these may owe their *-o-* < **-e-* to the *-l-*.

Since it is difficult to believe that in no.s 2, 3, and especially 8 and 10 the majority of the forms, which have the reduced vowel *-i-* in the second syllable, have analogical *-o-* (in *sonō* and *vomō* only the 1sg and 3pl. have a back vowel in the second syllable), it may be surmised that this *-i-* was not a front vowel, but a mid vowel, appr. [ə] or [ɪ]. If, on the other hand, the rounding preceded vowel reduction, nos. 8 and 10 still had the back vowel **-a-* in the second syllable, and rounding of the root vowel would be regular.

In accordance with the rule, rounding is absent in *emō*, *tremō*, *fremō*, *premō*, *semol*, *nemus*, *-oris*, *equus*, *tempus*, *templum*, *cremō*, *gemō*, *gremium*, *legō*. *vetus* may owe its *-e-* to the oblique cases, e.g. *veteris*, and *metō* to *metis*, *-it* etc. Some problems remain, however.

glomus < **glemos*, **glemes-* may have rounded *-e-* because *-l-* was strongly velarized, which entailed rounding (cf. **el* > *ol*). Romance **glemus* was probably taken from the oblique cases. However, if EM. are correct in assuming an *o*-stem **glom-o-* beside an *s*-stem **glem-es-*, *-o-* in *glomus* may reflect old **-o-*, and we need not invoke rounding of **-e-*.

homō < **hemō*, cf. *hemonem* and *hemona* 'humana' (P.F.) is not explained by the rule. O. *HUMUNS*, U. *homonus* < **dhghom-* probably contain old *-o-*. *hemona* and *hemonem* can hardly be considered as archaizing inventions of the grammarians because there is no model on which archaizing *-e-* could have been based. We may perhaps consider ablaut (in view of the Sabellian forms with *-o-*) and claim that *homō* reflects *o*-grade **dhǵhom-ōn* (cf. EM. s.v.). *nēmō* does not necessarily point to **ne-hemō* because **ne-homō* may have yielded the same result (the first vowel determines the quality of the contracted vowel, see Cowgill 1973).

memor, *meminī* < **memon-* may have restored the *-e-* in the reduplicating syllable, as must have happened in the case of *memordī* beside *momordī*. Compare also *spopondī* beside *spepondī* (Leumann 1977, 586).

In view of *merus* and *bellum* < **duellom*, *bellus* < **duellos* < **duenelos*, an *-e-* which was immediately followed by *-r-* or *-ll-* was not rounded. *r* and *ll* were proba-

bly strongly alveolar (cf. Lat. *-ll-* > *-l'-* in French and Spanish) and therefore unaffected by the following back vowel. Compare the development of **e* to *o* before *-l-* but not before *-ll-*. Note that only *merus* points to the fact that *-r-* prohibits rounding, so that the exception is not beyond doubt. Especially relevant is the fact that the only instance of rounding after *m-* is *modus*. If we strike this word and assume that rounding of **e* to *o* occurred only after **u̯-* (incl. **k*^{w} etc.), *merus* is no longer an exception to rounding because its *-e-* is regular then, and we can refrain from assuming that intermediate *-r-* prohibited rounding. Since we lack more material, a decision cannot be made.

We may conclude that it seems possible to reduce all instances of rounding of *e* that could not be explained by rules 1. and 2. to a single rule, which was given above. Leaving out the distinctive features [+labial, +sonant], we arrive at a practical formulation:

3. **e* > *o* /*m*, *u̯* (incl. **k*^{w})___*CV*[-front] (*C* is not *r*, *ll*).

2.3.1.2. Material: *mo*, *uo* < **me*, **ue*

What follows is a list of all instances where Lat. *mo*, *u̯o* do not reflect PIE. or PIt. **mo*, **u̯o* but rather **me*, **u̯e*. These instances cannot therefore be used as counterevidence against the proposed rule that **mo*, **u̯o* yielded **ma*, **u̯a*.

2.3.1.2.1. *mo*, *uo* < **me*, **ue* before *-u̯-*

1. *movēre* 'to move (oneself)' probably reflects **meuH-* because *e*-grade root in causatives is not uncommon in Latin (see VI.C. 1.2.3 no. 7) and PIE. **-ou̯-* would have yielded *-av-* in accordance with Thurneysen-Havet's law (see VI.C.1.2.3 no. 7).

2.3.1.2.2. *mo*, *uo* < **me*, **ue* before "velar" *-l-*

2. *colĕre* 'to cultivate' < **k*^{w}*el-*, cf. Gr. πέλομαι.
3. *colus* 'distaff' < **k*^{w}*el-u-*, cf. Gr. πόλος 'id.' (which has a different formation).
4. *fulvus* 'deep yellow' may be compared with Lith. *gel̃tas* 'yellow'.
5. *molemōnium* 'plant that promotes vomiting'? No etymology.
6. *molĕre* 'to grind' and derivatives < **melH-* (see V.D.2.1.1 no. 2).
7. *molestus* 'troublesome' is cognate with *mōlēs* 'mass', *mōlīrī* 'to make an effort'. *mōlēs* probably reflects a root noun (see IV.C.1.3.1 no. 4) and *mŏlestus* an *s*-stem with

e-vocalism of the root: **melos* > **molos*. As in *modestus*, which is based on **modos* < **medos*, cf. U. *MEŘS*, the adjective was based on the *s*-stem with a rounded vowel, i.e. on a paradigm **modos*, **modes-*, which replaced regular **modos*, **medes-*.
8. If *volāre* 'to fly' reflects a root **g^{w}el-* (cf. Skt. *garútmān-* 'winged'), it may have *vol-* < **vel-* < **g^{w}el-*.
9. *volnus* probably reflects **ɥelanos* < **ɥelHnos* (see IV.B. 1.4.4.1. no. 20).
10. *volō*, *volumus*, *volunt* < **ɥel-*, cf. *velle*.
11. *volpēs*?? See also 2.3.2.1.
12. *voltur* < **ɥel-*? (cf. *vellĕre*); see also 2.3.2.1.
13. *voltus* < **ɥel-*?? (cf. Goth. *wulþus* < **ɥlt-*); see also 2.3.2.1.
14. *volvō* 'to roll' < **uelHu-*, cf. Gr. εἰλύω.
15. *vola*, *volaemum*, *Volcānus*, *volgus*, *Volturnus*, *Volumnus*, *volva/volba* do not have an etymology but may reflect Prim. Lat. **-el-*.

2.3.1.2.3. *mo*, *uo* < **me*, **ue* /__ *CV*[-front]
16. *bonus* < *duenos* (CIL I^{2} 4);
17. *coquō*;
18. *modus* 'way, manner' probably goes back to **medo-*, cf. O. *MEDDÍSS* 'iudex' < **medo-dik-s* (WH.). Compare also the *s*-stem that is reflected in U. *MEŘS* 'ius' < **med-os* and in Lat. *modes-tus*. WH. claim that an *o*-stem **modo-* and an *s*-stem **medos* became confused and *o*-grade of the root was generalized in Latin. This assumption is probably unnecessary because in accordance with rule 3 of 2.3.1.1, **medo-* would regularly have yielded Lat. *modus* (but see the end of 2.3.1.1 for some reservations). A strong argument in favour of **medo-* rather than **modo-* is provided by O. *MEDDÍSS*. *modes-tus* and *moder-ārī* were obviously based on the *s*-stem **medos*, *medes-*. The rounded root-vowel, which was original in the Nsg., was apparently generalized throughout the paradigm and consequently ended up in the derivatives (cf. *molestus*, no. 7 above). The generalization of *-o-* was probably favoured by the presence of the *o*-stem **medo-* > *modus*.
19. *socer*, *socrus*.
20. *somnus*, *sopor*.
21. *sonĕre* (cf. Skt. *ásvanīt*, see V.D.2.1.1 no. 4).
22. *soror*.
23. *vomĕre* (cf. Lith. *vémti*, see V.D.2.1.1 no. 7).

2.3.2. Old *mo, uo*

In this section, the counterevidence of the delabialization rule proposed in 2.2. is discussed. Since it may be suggested that **mo- > ma-* and **u̯o- > va-* were limited to open syllables but occurred also in the position before *r* + velar, those Latin words which display *mo-*, **u̯o-* in a closed syllable and not before *r* + velar cannot be considered counterevidence. These instances are listed in 2.3.2.1. The remaining instances of *mo-*, **u̯o-*, i.e. in open syllables or before *r* + velar, fall into two groups, viz. the words that lack an etymology (2.3.2.2) and the real counterevidence (2.3.2.3).

2.3.2.1. *mo, uo* in closed syllables, not before *r* + velar

collis, *collus* (< **k^{w}ol-*), *cum* (< **k^{w}om*), *formus* (< **g^{w}hormo-*), *fulvus* (< **g^{w}he/oluo-*), *modius* (with PIt. *-i-*, cf. *sepeliō* < **sepeli̯ō* (no syncope) and *māior* < **magi̯ōs*), *mollis*, *mons*, *monstrum*, *morbus*, *mordēre*, *morior*, *mors*, *mortuus*, *mox*, *mulcēre*, *mulgēre*, *mūtāre*, *mūnia* (< **moi-*), *sordēs* (< **suord-*), *sūdor* (< *suoidōs*, cf. OE. *swāt*), *vīcus* (< **u̯oiḱos*, cf. Gr. οἶκος), *vīdī* (< **u̯oid-*), *volpēs*, *voltur*, *voltus*, *vorrō*, *vortex*, *vortō*, *vorsus*, *voster*.

2.3.2.2. *mo, uo* in open syllables in words which lack an etymology

monēdula, *Monēta*, *morācias nucēs*, *morētum*, *vopiscus*.

These words may have entered Latin after **mo-* and **u̯o-* had become *ma-*, *va-*.

2.3.2.3. *mo* and *uo* in open syllables

There are nine instances, constituting the counterevidence against the supposed development of **o > a* */m, u̯___CV, r* + velar. They can be divided into the following five types.

1. PI. *forēs* 'door', *forum* 'forum, open square' most likely reflect PIE. **dhuor-*, cf. Skt. Npl. *dvā́ras* 'doors' (with aberrant *d-*), OCS. *dvorъ* 'Hof', Toch. B *twere* 'door'. Other ablaut variants of this stem are **dhuōr* (Skt. *dvā́r*, Alb. *derë* 'door, house') and **dhur-* (e.g. in Lith. pi. *dùrys*, *dùres*, OCS. *dvьri*, Goth. *daúr*, Gr. θύρᾱ). Av. Asg. *dvarəm* 'gate', OPers. *duvarayā-maiy* 'an meiner Pforte' have *-ă-* in an open syllable, which points to **-ĕ-*. In any case, Lat. *forēs*, *forum* cannot reflect **dhuer-* because **-e-* probably did not become *-o-* before *-r-* (cf. *merus*), in any case not before *r* + front

vowel (*forēs*).

Thus, Lat. *for-* clearly reflects **dhuor-* and may be considered strong counterevidence. However, there is reason to believe that the **u̯* was lost at an early stage, perhaps even in Proto-Italic. PIE. **dhuor-* yielded PIt. **fu̯or-*, where the **-u̯-*, standing after a labial, was dropped. Compare U. *subocau* 'rufe an' < **sub-u̯okʷ-*, Lat. *aperīre* < **ap-u̯er-*, *oportet* < **op-u̯ort-* (see Sommer-Pfister 1977, 168, Leumann 1977, 202 and especially Meiser 1986, 185). If we assume that **fu̯or-* had already become **for-* when **u̯o* became **u̯a*, it would not have taken part in the latter development.

2. *monēre* 'to warn' < **mon-eie-*, *vovēre* 'to pledge' < **uogʷh-eie-* have their formation in common. It seems possible that *o*-vocalism was restored on the model of the other causatives. In the case of *monēre*, restoration may have been favoured in order to distinguish it from *manēre* < **mon-ē-*, which was semantically distinct. One could assume that in *manēre* *o*-vocalism was not restored because it was not a causative, and consequently pressure towards restoration would be absent. As to *vovēre*, an alternative explanation of the retained *o*-vocalism may be that **-gʷh-* yielded PIt. biphonemic **γw-*, which was responsible for a closed syllable, thus preventing the delabialization of *-o-*. This is admittedly a mere assumption, which cannot be supported by any evidence.

3. *vocāre* 'to call' is evidently a denominative derived from *vōx*, *vōcis* < **u̯ōkʷ-* (Steinbauer 1989, 24, 216). **u̯o-* may have been restored after *vōx*, *vōcis*, a tendency that was favoured because it maintained the distinction between this verb and *vacāre* 'to be empty'.

4. For *votāre* > *vetāre* 'to forbid', three more or less plausible etymologies have been suggested.
a. A connection with the root **u̯et-* in Gr. ἐτός 'vain' (thus WH.; not mentioned by Chantraine and Frisk; the latter considers ἐτός an adverb in -τός).
b. A connection with **gʷet-* in Goth. *qiþan* 'to say', Arm. *kočᶜem* 'I call' (< **gʷot-i-*; rejected by WH. and Lehmann ad locc., doubted by EM.).
c. A connection with the root **u̯et-* in Olr. *feth-* 'to say', OW. *guetid* 'says', MW. *dy-wed-af* 'I say', W. *gwadu* < **u̯ot-* 'to deny, disown' (rejected by WH. and doubted by EM.).

In view of the semantics of W. *gwadu*, a connection with

b. or c. seems possible.

That *votāre* is the OLat. form is based solely on Nonius 45, 4. According to Pedersen 1900, 90, *vetō* is primary and developed into *votō*. In accordance with the rule formulated in 2.3.1, **u̯etō* would have become *votō*. However, it seems more likely that the verb contains PIE. *o*-grade in the root. As EM. remark, *vetāre*, *vetuī*, *vetitum* belongs to the type *domāre*, *domuī*, *domitum*, *sonāre*, *sonuī*, *sonitum*, which have *o*-vocalism of the root. *domāre* and *sonāre* probably reflect the causatives **domh₃-eie-*, **suonh₂-eie-* (see V.D.2.1.2 no. 14), which points to the conclusion that *vetāre* reflects **u̯oth₂-eie- > *u̯otaie- > votā-*. If this is correct, the first syllable of *votāre* was originally closed. See no. 5.

5. In five words, **mo-* and **u̯o-* have been maintained in a syllable which was originally closed before the laryngeals were lost.
a. *mola* 'millstone, mill' < **molH-eh₂-*, cf. *molĕre* < **melH-*. The relation between the two may be compared with that of *toga* and *tegĕre*. A reconstruction **melH-eh₂-* is phonetically possible, but less likely for morphological reasons.
b. *monīle* 'necklace' may be compared with Skt. *maṇí-* 'necklace', which probably reflects **monH-i-* (Lubotsky 1988 § 2.10; the retroflex, however, may point to non-IE. origin). *monīle* may reflect **monį̄eli-*, the first syllable being closed because of PIt. consonantal **-į̄-* (cf. *aud-īte* < **-į̄ete*).
c. *mora* 'delay, pause' is the verbal noun of the root **merH-* in OIr. *maraid* 'to remain, be left over, stay'. It reflects **morH-eh₂-*.
d. *sonus* 'sound' reflects **suonHos*, cf. Skt. *svána-* 'sound', *ásvanīt* 'sounded'. A reconstruction **suenHos* is phonetically possible, but less likely for morphological reasons. *sonāre* probably reflects **suonh₂-eie-* (see V.D.2.1.1 no. 4).
e. *vorāre* 'to swallow' is a denominative verb (Steinbauer 1989, 216), which presupposes a basic noun **gʷorh₃-o/eh₂-* (cf. *carni-vorus*) of the verbal root **gʷerh₃-* which is reflected in Gr. βιβρώσκω 'to gnaw, eat', Lith. *gérti* 'to swallow'.
f. *votāre* may reflect **uoth₂-eie-* (see no. 4).

It may be remarked that all forms except *monīle* may have **o < *e* in accordance with the rule formulated in 2.3.1 if we allow the change to have taken place in the case of intermediate *-r-*. However, as was said above, old *o*-vocalism is in all instances more plausible than old *e*-vocalism, and it is uncertain whether or not we can allow the change **e > o* before *-r-* (*merus*). I would therefore prefer the following solution.

One may wonder if the laryngeals were still present when delabialization of *mo-, ṷo- > ma-, ṷa-* in open syllables occurred. From the point of view of relative chronology this is possible because the presence of the laryngeals in Proto-Italic is required in order to account for the development of *#HRC-* (see II.D.2.3) and *-RHV-* (see IV.D.2.3.4), and the delabialization must be dated to the same period in view of the correspondence between Lat. *manus* and PSab. **man-*.

2.3.3. Conclusion: the origin of Lat. *mo, ṷo*

The relevant material can be subdivided into four categories.

a. *mo, ṷo* < **me, ṷe* (2.3.1);

b. *mo, ṷo* in a closed syllable (2.3.2.1); to this category may belong the words in which the syllable was closed by a laryngeal (2.3.2.3 nos. 4 and 5);

c. *mo, ṷo* in open syllables in words which lack an etymology (2.3.2.2); these words may have entered Latin as borrowings after the Proto-Italic period;

d. *mo, ṷo* in open syllables: the possible counterevidence (2.3.2.3):

1. *forēs, forum* < **dhuor-* (loss of *-ṷ-* prior to delabialization?);
2. *monēre, vovēre* (restoration?);
3. *vocāre* (restoration?).

2.4. General conclusion

The evidence that favours the rule that **-o-* became **-a-* after **m, *ṷ* (which includes **ṷ, k^w, g^w, g^wh*) is considerable and comprises particularly strong instances (e.g. *mare* < **mori*, *manus* < **mon-*). Most instances can be explained by the rule:

(1) **o > a /m, ṷ ___ CV*;

There are two words which point to a slightly different rule:

(2) **o > a /m (ṷ) ___ r* + velar.

Counterevidence against rule (2) is absent, but the rule is not firmly established in that it is based on two words only (*margō, marcēre*). *marcēre* points to the conclusion that rule (2) took place after the development of **r̥ > or*, if at all.

Rule (1) is supported by six probable and eight possible instances, and the counterevidence (i.e. Lat. *mo, ṷo*) can be dismissed without grave difficulties.

The development of **mo-, *uo-* into **ma-, *ua-* consisted of the neutralization of the opposition between **mo : *ma, *uo-*

: *ua- i.e. a back vowel (+sonant) after u and m (+labial, +sonant) lost the distinctive marking for labialness. This created a simplification of the system of contextual oppositions. The development only occurred in open syllables and before *rk*, *rg*, probably because in these environments **o* was phonetically lower than in other environments.

In view of the correspondence of Lat. *manus* with Sabellian **man-*, the rule dates back to Proto-Italic, which may account for the fact that the laryngeals play a role in the conditioning (type *sonus* < **suonHos*). The assumption that the change of **me*, *u̯e* into Lat. *mo*, *uo* postdates the development of **mo*, **u̯o* into *ma*, *ua* is in agreement with this chronology.

The evidence which was discussed indicates the following relative chronology:

1. PIE. **dh-* > **f-*;
2. **fu̯-* > **f-* (*forum*, *forēs*);
   **r̥* > **or* (or stage 1.? *marcēre*);
3. **mo-*, **uo-* > **ma-*, **ua-* in open syllables and before **rk*, **rg*;
4. *CHV* > *CV* (**su̯onHos* > **su̯onos* etc.);
   **eu̯* > **ou̯* (*movēre* < **meu̯-*?);
5. (Prim.Lat.) **me-*, **ue-* > **mo-*, **uo-* ("o-Umlaut");
   **e* > **o* before "velar" *-l-*.

3. **-o-* > *-a-* after **l-*?

In view of Olr. *loch*, Gaul. *penne-locos* (name of a place on the shore of the lake of Geneva), OS. OE. *lagu*, OCS. *loky* (< **-uH*) 'lake' < **loku-*, it seems likely that Lat. *lacus* 'id.' reflects **loku-* as well. Co., Bret. *lagen* 'small lake' reflects **logen* and does not point to old *a*-vocalism (PBrit. unstressed **-og-* > *-ag-*, Hamp 1982a, 143-146). Gr. λάκκος 'pond' probably reflects **l̥kus̯os*. If *lacus* indeed reflects **lokus*, the similarity to the delabialization discussed above is striking. Velar *l* in Latin often entails rounding (**el* > *ol*) and may be responsible for *-o-* in *glomus* < **glemos* (see 2.3.1.1), so that it seems to fall into the same category of sounds as *m* and *u̯*. In *lacus*, delabialization would have taken place in an open syllable, as in the case of **mo* and **u̯o*.

The only counterexamples to a rule **o* > *a* / *l* ____ *CV* which I have come across are the following:

1. *locus* 'place' < **st lokos*, which is perhaps not decisive because it does not have an etymology (EM.) and may have entered the language after the PIt. delabialization had taken place.

2. *lŏcusta* (note the quantity, and Romance **lacusta*!) 'grasshopper' does not have an etymology either. It probably is a loan.

3. *loquī* 'to talk' probably reflects **t luk*^{w}-, cf. OIr. *ad-t luchedar* 'gives thanks', *do-t luchedar* 'demands' (Pedersen 1909, 43), but cf. Russ. *tolk* 'meaning' < **t lk*-, which points to Lat., Ir. **t lok*^{w}-.

Since the positive evidence consists of a single word, no definite conclusions can be drawn.

D. *A* BETWEEN RESONANT AND MEDIA IN ITALIC AND CELTIC

1. Introduction

Considering the pairs Lat. *frangĕre* 'to break', OIr. *braigid* 'to fart', W. *bramm* 'fart' and Lat. *magnus* 'big', OIr. *mál*, W. *mael* < **maglo-* 'prince', one may advance the hypothesis that at least one type of non-laryngeal *a* is not confined to Latin (or Italic), as the ones discussed in the preceding sections, but may date back to the Italo-Celtic period. At first sight, the similarity between the two etyma consists in the fact that *a* is preceded by a resonant and followed by a media (symbol: *D*), i.e. a PIE. glottalized stop. It turns out that if we were to construct a hypothesis which states that under certain circumstances an *a* developed between a resonant and a media, more than the two instances of non-laryngeal *a* just cited receive an explanation.

Before attempting any further specifications, we turn to the material.

2. Material

All instances of non-laryngeal *a* after a resonant and before a media in Latin were collected on the basis of EM. and WH. The Celtic material was not systematically investigated; the extensive material provided by Kuryłowicz 1956 has been of great help, however (p. 166 ff., esp. 175-177).

In section 2.1, all instances are discussed; in 2.2, the material is evaluated. Counterexamples are discussed in 2.3.

2.1. Italic and Celtic *a* of non-laryngeal origin between *R* and *D*

1. *flagrāre* 'to be in flames', *flamma* < **flag-ma* 'flame' contain the root **bhlǵ-* found in Lat. *fulgēre* 'to shine', *fulgur* 'lightning', *fulmen* 'id.' < **bhlǵ-*; Gr. φλόξ, Gsg. φλογός 'flame' < **bhloǵ-*, φλέγω 'to burn' < **bhleǵ-*; OHG. *blecchen* 'to make visible' < PGerm. **blakjan* < **bhloǵ-*; and possibly Skt. *bhárga-* 'strahlender Glanz' < **bhelg-/bholg-* (with a pure velar or **g*^{w}). Vendryes derives MIr. *imblissiu* 'pupil of the eye' from **im-bhlg-s-* (*RC* 40, 431 f.), which is uncertain (one might alternatively think of the root **bhliǵ-* in Lith. *blizgĕti* < **bhliǵ-sk-*, OIc. *blíkia*, OE. *blīcan* 'to shine' < **bhleiǵ-*).

Whether **flag-* reflects **bhlǵ-*, **bhleǵ-* or **bhloǵ-* cannot be determined on the basis of this etymon. *flagrāre* is most likely a denominative based on **flăgro-*, which is itself based on the verbal root **fleǵ-* (Gr. φλέγω). Substantives of this kind generally have a zero grade root in Sanskrit (*akrá-* 'horse', root *añc-* 'to go'; *kṣurá-* 'razor' < **kʷsu-ro-*, cf. Gr. ξυρόν 'id.'; *mṛdhrá-* 'neglecting, hostility' < **mldh-ro-*; *riprá-* 'dirt', root *rip-* 'smear, adhere' < **lip-*). Thus, we could reconstruct zero grade **bhlǵ-*. On the relation of this zero grade to *fulgēre* < **bhlǵ-* see below.

2. *frangĕre*, *frēgī*, *frāctum* 'to break', cf. *frāctiō*, *frāctus* (u); *con-frăgus*, *nau-frăgus*, *frăgor*, *fragmen*. These forms reflect a root **bhrag-*. The nasal present may be recent (cf. *rumpō*) because no such form is found in Germanic or Celtic.

Ir. *braigid* 'to fart, break wind', W. *bram*, Co. Bret. *bramm* 'fart' < **bhrag-smn* also reflect a root **bhrag-*. The *-o-* of Ir. *broimm* (= W. *bram* etc.) has arisen under the influence of the following nasal (Vendryes s.v.). Italo-Celtic **bhrag-* is evidently cognate with Goth. *brikan*, OHG. *brehhan* 'to break' < **bhreǵ-*, Goth. *ga-bruka* 'fragment' < **bhrǵ-*, and probably also with Skt. *giri-bhráj-* 'aus Bergen hervorbrechend' < **bhreǵ-*.

frangĕre and *braigid* (*ie/io*-pres.) do not reflect a common inflection and probably represent independent restructurings of a lost present, perhaps an athematic root present. The original vocalism of *frangĕre* and *braigid* cannot be determined. Nasal presents originally had a zero grade root, and so do *ie/io*-presents, but *frangĕre* and *braigid* probably are not original nasal and *ie/io*-presents. In *frāctus*, *frāctiō* one expects a zero grade root, in the *tu*-derivative *frāctus* a full grade root, but it is doubtful whether all forms are equally old. For the lengthening in *frāctus*, *frāctiō* according to Lachmann's law see IV.C.1.4.2. *frēgī* may have been formed after *fēcī*, *iēcī*, cf. *agĕre*, *ēgī*, *āctum*.

3. *gradior*, ppp. *gressus* (older **grassus*, cf. *grassārī* 'to go about') 'to step' is generally derived from a root **ghredh-*, which could then also be found in Ir. *ad-greinn* 'to track, follow' < **g(h)rn(d)n-* (Thurneysen 1946, 353). On Av. *aiβi-gərəðmahi* see Kellens 1985, 177. Goth. Asg. *grid*, MHG. *grit* 'step', *griten* 'die Beine auseinanderspreizen' do not belong to this root because *griten* has the ablaut-pattern of

a root containing old *-i-* (thus e.g. WH.). The Germanic forms reflect **ghridh-*, which may also be reconstructed for Lith. *grìdyti* 'to walk, travel', OCS. *grędti*, *grędǫ* 'to come' (< **ghrindh-*).

Thus, we are left with *gradī*, Ir. *-greinn*. Whether *g-* and *-d-* reflect **g-* or **gh-* and **-d-* or **-dh-* cannot be ascertained on the basis of these forms. The only possibility that can be ruled out is ***grd-* because this root-shape was inadmissible in PIE. The fact that we find Lat. *-a-* may point to a root **ghrd-*, but since there is no independent evidence for *-d-*, the word cannot be used as evidence concerning the problem under review.

The relation between the presents *gradior* and *-greinn* (< **-grainn* < **grandn-* < **grndn-*?) mirrors that between Lat. *frangō* and *braigid* (*ie/io*). As in the case of *frangĕre/braigid*, *gradior* and *-greinn* probably reflect a restructured present, most likely an athematic root-present.

4. *labra* 'lips', *labia* 'id.' should be compared with OE., OFri. *lippa*, MoE. *lip* < **lepjan-*; OHG. *lefs* < **leps-* and OFri. *lepur*, OHG. *leffur* < **lepuz-* seem to point to a Germanic *s*-stem **leb-es-*. On the basis of the etymology, it is not clear whether the Latin forms reflect **lb-*, **leb-* or **lob-*. Given the limited distribution, the etymon may not be of IE. origin. The Latin forms can therefore at best provide possible evidence.

5. *lac*, *lactis* 'milk' must be compared with Gr. γάλα, γάλακτος 'id.' (as to *-gt-*, not *-kt-*, cf. Gr. γλάγος). On the basis of the Greek form (< **glh₂egt-*?), one may assume that the Latin word reflects **glh₂gt-* (thus Monteil 1973, 183). This reconstruction presupposes that initial **g-* was lost in Latin, which is irregular (dissimilation? Hofmann IF 56 (1938), 115). Cf. Gernot Schmidt 1973, 65-66, who reconstructs **dlHǵ-t-*, which would regularly yield Lat. *l-*. However, the reconstruction of a laryngeal seems impossible in view of the following:
(1) Greek has a number of forms which cannot reflect a root in a laryngeal: Hom. γλάγος, Cret. κλάγος, γλάκκον, γλακῶντες· μεοτοὶ γάλακτος (Hes.). Gr. γλακτο-φάγος (N 6) could be a result of confusion of γάλακτ- with γλάγος etc. Frisk s.v. thinks of syncope, or rather of an original **glakt-*, from which γάλακτ- must be explained by "Vokalentfaltung". The former is not an accepted phenomenon in Greek, the "Vokalentfaltung" is disputable as well. Frisk's proposals are there-

fore unverifiable.
(2) Arm. *kaxc^{c}*, *kat^{c}n* 'milk' appear to reflect **g̥lgt-s*, **g̥lgt-m*, respectively (Weitenberg 1985, 104-5 and note 7); a laryngeal cannot have been present, even if the Armenian forms reflect a zero grade (**-l̥H-* > Arm. *-ala-*, Kortlandt fthc.b).

We may conclude that the PIE. word for 'milk' did not contain a laryngeal. The reason to insist on a PIE. reconstruction of the 'milk'-word despite the formal problems, is that Bangaṇi, a recently explored Indo-Aryan language with an archaic layer of non-Indo-Aryan *centum*-words, has a word *lɔktɔ* 'milk' (Zoller 1989, 198). As to Lat. *lăc*, the most straightforward assumption is that PIE. **glgt-* (or **dlgt-*) yielded **lăgt-* > Lat. *lac*.

6. *magnus* < **mag-no-*, *maximus* < **magisemo-* (Cowgill 1970, 125), *māior* < **maiiōs* < **mag-iōs* must be compared with Gr. μέγας 'great' < **meǵ-h$_2$-s*, Skt. *máhi-* < **meǵh$_2$-*, OIc. *mjǫk* 'much', Goth. *mikils* 'great' < **meǵ-*. O *mais* 'maius', *maimas* 'maximas' reflect **mag-i̯-* (Meiser 1986, 38). It is unlikely that the *a* can be ascribed to the influence of **mh$_2$ḱ-* found in Gr. μακρός 'long', which had an entirely different meaning in Latin: *macer* 'meagre' < **mh$_2$ḱro-*.

Ir *mál*, W. *mael* 'prince, chief, king, noble' reflects **mag-lo-*, cf. Gaul. *Maglo-*, *-maglos* (cf. e.g. Gaul. *Broccomaglos* with W. *Brochfael*, and Gaul. *Cunomaglos* with Ir. *Conmál*, W. *Cynfael*). It is cognate with Ir. *maige* 'great' < **magio-*, *maigne* 'id.', *mag-lorg* 'club, bludgeon', lit. 'big stick', *magdae* 'vast' (Vendryes ad locc.). Some confusion is caused by the fact that the root **mh$_2$ḱ-* seems to be attested in W. *magu*, Co. *maga*, Bret. *magañ* 'to cause to grow, feed' < **mh$_2$ḱ-*. Pedersen 1913, 574 states that OIr. *mogaid*, *mag-* 'to grow' is cognate with W. *magu* etc. and thus cannot be cognate with *mál* etc. However, one never finds **mach-* in Irish. In any case, it is best to separate W. *magu* etc. (with **-k-*) and Ir. *mogaid* (perhaps with **-k-*) from *mál* etc. Note that *mál*, W. *mael* cannot reflect **mak-lo-* because this would have yielded W. ***magl* (Pedersen 1909, 125).

Since adjectives in *-no-* are usually oxytone and have a zero grade root (Meillet 1937^{8}, 264), *magnus* most likely reflects **mǵ-nó-*. If we assume that *mál*, *mael* reflects an old adjective, a zero grade **mǵ-ló-* seems most likely in view of the fact that Greek adjectives in -λο- are mostly oxytone, which points to an originally zero grade root (Bally 1945, 72). The comparative originally had an *e*-grade root (Meillet 1937^{8}, 270),

which points to **meǵ-iōs*. In view of Gr. κρέοων, κράτιστος the superlative *maximus* < **magisemo-* may reflect zero grade **mǵ-*. Of course, we must count with the fact that not all forms are equally old, and that the vocalism of one form may have replaced that of another.

7. *nassa* 'Fischreuse, aus Binsen geflochtener Korb mit engem Hals, aus dem die Fische nicht wieder entkommen können' (WH.) can be compared with Olr. *naidm* 'string', *nasc* 'string, ring', *nascid* 'to connect, bind', Bret. *naskañ* 'to tether'. EM. and Vendryes reconstruct a root **nedh-*, which is based on Skt. *náhyati* 'binds, ties', *naddhá-* 'bound', *-náh-* 'bound'. However, Goth. *nati* (ntr.), OE. *net*, OIc. *net* etc. < **natia-* point to a root in PIE. **-d-*, and since these forms are semantically close to *nassa*, *nassa* most likely reflects the same root (thus WH.). The reconstruction of the etymon poses certain problems.

nassa and PGm. **natian* may reflect **nHd-* (see IV.D. 1.2). Since Olr. *nascid* etc. has *a*-vocalism as well, it too may reflect **nHd-*. If this is correct, Lat. *nōdus* 'knot' and OIc. *nót* 'large net' reflect **noHd-*. However, the vocalism of OIc. *nist* 'brooch, pin', OHG. *nestilo* 'string' (< **ned-t-*?), OHG. *nusta* 'band' < **nd-t-* and of Olr. *nessam*, W. *nessaf* 'nearest', O. *NESSIMAS* 'proximae', U. *nesimei* 'proxime' (< **ned-tm̥o-*?) militates against a laryngeal and rather points to a root **ned(h)-*, *nd(h)-*. On the basis of the latter root, the *-a-* of Italo-Celtic **nad-* may be explained like that of *magnus* etc., and PGm. *natian* may reflect **nodio-*, if at least the root was **ned*, not **nedh-*. Lat. *nōdus*, OIc. *nót* would then go back to PIE. lengthened grade **nōd-* (see IV.C. 1.3.5.2 no. 5). However, these reconstructions are faced with the objection that the connection of **nad-* with Gm. **nest*, **nust-* on the one hand and with It-Celt. **ness-* on the other is not certain: there is no trace of **-d-* in either, and a semantic connection with the latter is questionable. Consequently, *nassa*, *nascid* etc. are at best possible instances of non-laryngeal *-a-*.

If *nassa* is based on the *to*-participle, it reflects a zero grade root. Zero grade is probably also reflected in the *sk*-present Olr. *nascid*, Bret. *naskañ*.

8. *trabs*, Gsg. *trabis* 'wooden beam, architrave' < **trab-* belongs to the root **trb-* 'to build, inhabit' (see Vendryes s.v. Olr. *treb*), which is also attested in Sabellian: according to Meiser 1986, 95, U. *tremnu* 'hut' reflects **treb-no-* (< **-ĕ-*).

In Oscan, one meets with forms containing a long vowel: *TRÍÍBÚM* 'domum', *TRÍÍBARAKAVÚM* 'aedificare', *TRIBARAKKIÚF* (*n*-st.) 'aedificium' < **trēb-*. OIr. *treb*, W. *tref* 'hamlet, village' reflects **trb-* or **treb-*, OIc. *þorp* etc. 'small enclosure, village' reflects **trb-*, and Lith. *trobà*, Asg. *tróbą* 'construction, house' reflects **trob-* (with lengthening and acute according to Winter's law and analogical *-o-* for **-uo-*). It is unlikely that Gr. τέρμνα, τέρεμνα (Npl.) 'house' belong here because one would not know how to explain the interchange ε/α, which cannot be fitted into a PIE. paradigm and points to a substratum origin.

In view of the lengthened grade attested in Sabellian, the root noun attested by *trabs* is probably very old and may lie at the basis of all other forms (on *trabēs* see V.C.2.3.1 no. 15). The Italic forms point to a PIt. paradigm **trēb(s)*, Gsg. **trăbes*. The latter may perhaps regularly reflect zero grade **trb-*.

A different and in my opinion plausible explanation can, however, be offered. It seems possible that *trab-* replaces **torb-* < **tr̥b-* because the ablaut **trēb-*, **trăb-* is much more common than **trēb-*, **tr̥b-/torb-*, cf. *facĕre*, *fēcī*, *factum*, *capĕre*, *cēpī*, *captum* and Lat. *fānum* < **făsnom*, O. *FÍÍSNÚ* < **fēsnā* < **dh(e)h₂s-* (IV.B.1.4.1.1 no. 5). The productivity of the pattern *ē/ă* is demonstrated by *agĕre*, *ēgī*, *āctum*, *frangĕre*, *frēgī*, *frāctum*. In that case, *trabs* contains a so-called "morphological" zero grade.

2.2. Evaluation

The following Latin and Celtic words display an *-a-* of non-laryngeal origin which has arisen between a resonant an a PIE. media (Latin unmarked).

probable	possible	unreliable
1 *flăgrāre*, *flamma*, √ **bhleǵ-*	3 *gradior*, OIr. *-greinn*, √ **ghred-*?	7 *năssa*, OIr. *nascid*, √ **ned-*?
2 *frangĕre*, OIr. *braigid*, √ **bhreǵ-*	4 *labra*, *labia* √ **leb-*	
5 *lăc*, G. *lactis*, <**glgt-*	8 *trăbs*, √ **treb-*	
6 *magnus*, OIr. *mál*, √ **meǵ-*		

The amount of evidence is very small. However, the probable instances are strong and cannot be dismissed as incidental aberrations, especially in view of the striking correspondence with Celtic. Thus, I think that the idea that *-a-* arose between *R* and *D* in Italo-Celtic can for the moment be maintained. Before turning to the counterevidence, we may try to specify further the conditions under which *-a-* may have arisen.

In view of *flagrāre*, *gradior* (?), *lac*, *magnus*, *maximus*, *nassa* (?), *trabs* (?) and *mál*, *mael*, *braigid* (?), *nascid*, *naskañ* (?), which probably reflect a zero grade root, it seems likely that the origin of *-a-* may be sought in zero grade roots. This is confirmed by two observations:

1. If *-a-* arose in zero grade *-RD-*, we can account for the fact that the presence of *R* is essential, whereas if *-a-* arose from *ReD* or *RoD*, we cannot.
2. There is direct evidence against the assumption that *a* arose from *e* and (to a lesser degree) from *o*:

a. *ed̆re*, *ēsse*, *ēsus*, *ēsca* < **$h_1$ed-* 'to eat', *tĕgĕre*, *tēctum* < **(s)teg-* 'to cover', *lĕgĕre*, *lēctus* < **leǵ-* 'to collect', *rĕgĕre*, *rēctus* < **$h_3$reǵ-* 'to straighten', *egō* < **h_1eǵ-oH* 'I', *pēior* < **pedi̯ōs* 'worse';

b. *odor*, *olēre* < **od-* < **$h_3$ed-* 'smell', *odium* < **od-io-* 'hate', *toga* < **(s)tog-* 'cover', *modius* < **modio-* 'measure'.

3. The assumption of original *o*-grade is impossible for *frangĕre*, *braigid*; *gradior* (?) and unlikely for *lac*, *magnus*, *maior*, *maximus*.

It may be concluded that the most likely supposition is that *-a-* arose in zero grade *RD*. In that case, the vocalism of *maior* (for IE. **meǵiōs*) was based on that of *magnus*.

When we consider the list of instances, it is striking that most reflect tautosyllabic **RD*:

1. *flagrāre*, *flamma* (vs. *fulgēre*, *fulgur*!).
2. *frāctus* (*u* and *o*), *frāctiō*, *fragmen* (but *-fragus*, *fragor*); OIr. *braigid* < **bhrg-i̯e/o-*; OIr. *broimm*, W. *bram* etc. < **bhrg-smn*; if *frangĕre* and *braigid* reflect an athematic present (see no. 2 above), this had tautosyllabic **bhrg-* as well.
3. *gradior*, Ir. *-greinn* probably reflect an athematic present.
4. *labra*, *labia*.
5. *lact-* < **glkt-*.
6. *magnus*, *maior* (but *maximus* < **magisemo-*); OIr. *mál*, W. *mael*, Ir. *maige* (< **magi̯o-*) (but *mag-*, *magdae*).
7. *nassa*, OIr. *nascid*, *naidm*, Bret. *naskañ*.

Especially no. 1 is illustrative. *-fragus* (2) may be based on a substantive **-frax*, cf. *sacrifex, sacrificus. fragor* (2) may have been based on verbal **frag-*. *maximus* < **magisemo-* (6) may have replaced regular **engisemo-* < **mgisemo-*, which would have been highly aberrant (but cf. *ingens* < **ṃg-ent-*?). Similarly, Ir. *mag-, magdae* may have replaced **ang-* < **mg-V-*. Since the root *trab-* probably arose in the oblique cases, in which *-r-* and *-b-* were not tautosyllabic (except in some pl. obi. cases, which as a rule are not influential), it must probably be explained as a morphological zero grade, as indicated above (no. 7). The conclusion that only tautosyllabic **RD* yielded **RaD* is confirmed by the counterevidence.

2.3. Counterevidence

In accordance with the observations made in 2.2, counterexamples are those words in which the reflex of tautosyllabic **RD* contains the normal reflex of a vocalic resonant before a stop, i.e. *or, ol, em, en* in Latin and *ri, li, am, an* in Celtic.

I have found four examples. As far as Celtic is concerned, an exhaustive search has not been undertaken.

1. *cor* (ntr.) 'heart' reflects **ḱṛd*. This form is based on the oblique cases, e.g. Gsg. **ḱṛd-es/os*, where *-d-* does not belong to the first syllable. *cor* replaces **ḱērd*, cf. Gr. κῆρ, which was probably the Italo-Celtic form.

Olr. *cride* 'heart' and W. *craidd*, Bret. *kreizh* 'heart, middle' can only be connected by reconstructing a protoform **kred-io-* (thus Pokorny IEW. 580; Beekes 1985 considers the possibility that the original Gsg. was **ḱred-s*, not **ḱrd-os*; the former could have served as a basis for the Celtic derivative; cf. Skt. *śraddhā́*, Lat. *crēdō*, Olr. *creitid*, W. *credu* < **ḱred-*).

2. *fulmen* 'lightning' < **bhlǵ-mn*. This form may be explained as a recent formation, based on *fulgēre, fulgur*, which reflect antevocalic **bhl̥ǵ-*.

3. *ignis* 'fire' probably reflects **h_1ng^wni-* (see II.D.2.1.4 no. 16). Since the development of **h_1ng^w-* to **$(h_1)eng^w$-* postdates the Italo-Celtic period, one might have expected **h_1nag^wni-*. However, as Kortlandt 1988a has shown, the glottalic element of the PIE. glottalized stops (i.e. the mediae) was lost between nasals in PIE. already. As a result, **h_1ng^wni-* did not contain

the required input for the development of Italo-Celtic *-a-*.

4. *mollis* 'soft' < **molduí-* reflects an *u*-stem, cf. Skt. *mṛdú-* 'id.'. It is reasonable to suppose that it was still an *u*-stem in Italo-Celtic, where *-l-* and *-d-* were not tautosyllabic.

5. *mulctus* 'milked' is the ppp. of *mulgēre* 'to milk' < **h₂molǵ-eie-*, on which it may have been remodelled (cf. *nōscō*, *nōtus*, *molō*, *molitus* etc.). Compare also the *tu*-derivative *mulctus*, which may reflect **h₂melǵtu-*.

Similarly, Olr. *mlicht* (not ***mlacht*) 'milk' may have been modelled on *mligid* < **h₂mlǵ-V-*.

None of the counterexamples turns out to be decisive. It is true that the suggested alternative explanations imply remodellings which cannot all be proved. However, if the rise of *-a-* dates back to the remote period of Italo-Celtic unity, there was a lengthy time-span between the rise of *-a-* and our earliest documents, during which extensive reshufflings may have taken place.

3. Conclusion

There is little but striking evidence for the rise of an Italo-Celtic *-a-*. It probably arose under very specific conditions:

**ṚD* > **RaD* /__ *C*

Counterevidence is not altogether lacking (five instances were discussed) but all instances can be provided with an alternative explanation.

In section IV.D.1.3.4.2, the similarity of the rule **ṚDC* > **RaDC* (i.e. **R^{H}TC* > **RaTC*, *-^{H}-* denoting the glottalic element of the glottalized stops) to the rule **RHTC* > **RaTC* was pointed out. If the two developments are related, it may be surmised that the glottalic element (a laryngeal or the first part of a glottalized stop) ultimately yielded **a* before *-TC-*. This, however, though attractive, remains speculative. Cf. also **h₁pro-* > *aper*? (II.3.2).

In section II.3.2 no. 3, the *a-* of *aiō* < **ăǵi̯ō* 'I say' was explained on the basis of a constellation very similar to that of the type *magnus*: **h₁ǵi̯ō* > **(h₁)agi̯ō*. The difference with the type *magnus* is that in *aiō* the sound preceding *-a-* was not a resonant but a laryngeal. This may not be a decisive difference, however, because both resonants and laryngeals belong to the potentially syllabic sounds. Since *aiō* is isolated, the explanation remains speculative.

E. REMAINING INSTANCES OF NON-LARYNGEAL *A*

1. Introduction

A considerable number of instances of non-laryngeal *a* in Latin remain unexplained, even if one accepts the rules suggested in the preceding sections. In my opinion, most of these instances can be reduced to a single phonetic context, so that it seems possible to account for them by means of a sound law. Before turning to these cases, we will discuss a number of unreliable instances of non-laryngeal *a* in Latin.

2. Unreliable instances of non-laryngeal *a*

1. *fracēs* 'dredges of olive-oil' is probably cognate with OIc. *dregg* (*iā*) 'yeast, dredges', OLith. *dragės*, Latv. *dradži*, OCS. *drožďьjǫ* 'dredges', but the velars do not match. Compare the root of Dutch *droesem*, OE. *drōme*, OHG. *truosana* 'id.' < PGm. **drō-* < **dhroH-* (?). In view of the formal problems and the semantics, one may suspect irregular reshapings or borrowings.

2. *lapis* 'stone' is most likely cognate with U. Ablsg. *VAPEŘE*, Apl. *VAPEF-*, Ablpl. *vapersus* 'seat' < **lapid-* (Meiser 1986, 57). The connection with Gr. λέπας (ntr., only NAsg.) 'naked rock', λεπάς Gsg. -άδος 'barnacle' cannot be maintained because Italic **-id-* cannot be equated with Gr. -αδ- and λέπας, λεπάς perhaps belong to the root of λέπω 'to peel'. Thus, *lapis* has no etymology outside Italic and there is therefore no evidence that it contains non-laryngeal *-a-*. One may suspect a substratum origin.

3. *latus*, *-eris* 'side, flank' most likely is not cognate with the Olr. *s*-stem *leth* 'side' (despite EM. s.v. and the close formal and semantic resemblance) because the Irish form should be compared first and foremost with Olr. *lethan*, W. *llydan* 'wide', W. *lled*, Co. *les*, Bret. *led* (m.) 'width', which reflect the PIE. root **pltH-*. Olr. *leth*, W. *lled* etc. should be equated with Skt. *práthas-*, Av. *fraθah-* 'width' < **pletH-es-* (see Pokorny IEW. 833; WH.). For a semantic parallel of the connection between 'wide' and 'side' compare OHG. *sīta*, OE. *sīde*, OS. *sīda*, OIc. *síða* 'side', which are cognate with OE. *sīd* etc. 'wide', and also OCS. *strana* 'side' of the root **ster(h₃)-* 'to spread'.

Despite Pokorny IEW. 1018-1019 and WH. s.v., *lātus*

cannot be connected with Arm. *lain* 'broad', OCS. *stьlati* 'to spread' < **stlH-* because *latus* has short *-ă-*.

4. *patēre* 'to be wide open', which replaces **ptH-eh$_1$-*, probably received its *-a-* from *pandĕre* (see E.4).

5. *planta* 'foot-sole' is perhaps cognate with the root **pltH-* 'wide', but semantically the connection is far from compelling, and *-n-* is unaccounted for.

6. *sacēna* 'sacrificial knife' (1x) occurs beside *scēna* 'id.' (2x), both of which are found only in Festus: *scena ab aliis a quibusdam sacena appellatur dolabra pontificalis* (422, 32); *scenam... utrum securis an dolabra sit ambigitur... Livius in Lydio: "corruit quasi ictus scena, haut multo secus"* (444, 8). In view of the cited passage from Livius Andronicus and of the etymology (*secāre* 'to cut', root **sek(H)-*), *scēna* is obviously the original form. It could be suggested that the hapax *sacēna*, if it is reliable at all, arose under the influence of *sacer*.

It is possible to explain the following instances of *a* as due to the influence of a laryngeal.

7. *aper* 'boar' may reflect **h$_1$pro-*, with early vocalization of the laryngeal before **-TC-* (see II.B.3.2 no. 5 and 3.3). One might alternatively consider influence of *caper*, as is often assumed.

8. *aries* 'ram' may reflect **h$_1$r-ie̯t-* (see II.D.2.2.1 no. 2), but cf. U. Asg. *ERIETU*, which has *e-*.

9. *far* < **bhHrs-*? (see IV.B.3); most likely a cultural borrowing.

10. *grāmen* 'grass' < **ghrăs-mn* is probably cognate with Goth., OHG. etc. *gras* (ntr.) 'grass'; OE. *grǣd* (masc.) 'id.' < **ghrē-*, MHG. *gruose* 'junger Pflanzentrieb' < **ghrō-s-*, OE. *grōwan*, OHG. *gruoen*, OIc. *gróa* 'to grow' < **ghrō-ie/o-*. In view of these forms, one may reconstruct a root **ǵhreh$_1$-*. PGm. **grasan* reflects the zero grade **ǵhrHs-*, cf. OHG. *glat* < **ghlHdh-o-*, *slaf* < **slh$_2$bo-*. Accordingly, Lat. *grāmen* may reflect **grās-mn* < **ǵhrh$_1$-s-mn*.

11. *grămiae* 'viscous humour, rheum, that collects in the corners of the eyes', adj. *grammōsus*, may be compared with Goth. *qrammiþa* (with unreliable anlaut, see Lehmann 1986, 279) 'Feuchtigkeit', OCS. *grьměždь* 'gramiae' (also *-re-*, *-ro-*, formation obscure, and cf. SCr. *krmēlj*). Because of the formal

problems (Lat. *ā/ă*, *-mm-*; Goth. *q-*, *-mm-*; the formation of OCS.) and the semantically questionable connection of the Gothic form, a reliable protoform can hardly be reconstructed.

12. *trăhĕre* may reflect a root **dhrHgh-* (see IV.D.1.3.4.1).

13, 14. *faba* 'bean', cf. Russ. *bob* 'id.', and *cabō*, *caballus* 'horse', cf. OCS. *kobyla* 'id.' probably are not of IE. origin (see EM. s.v.). Perhaps *barba* < **bhardha* belongs in the same category; cf. OCS. *brada*, Russ. *borodá*, Lith. *barzdà*, OHG. *bart*; since there is no evidence for a different vocalism than *-a-*, the word may belong in Kuryłowicz's category of words containing "European *a*". A reconstruction **bhh$_2$erdh-* is unlikely for morphological reasons.

3. Latin *-a-* in *CaCCC*

3.1. Introduction

All remaining words with non-laryngeal *a* in Latin (16 instances) contain or formerly contained a constellation *CaCCC*. Since this can hardly be dismissed as accidental, and since a rule that takes the specific environment into account can explain the remaining instances of non-laryngeal *a* exhaustively, it seems legitimate to try and find a sound law that connects the rise of *-a-* with the environment *C__CCC*.

3.2. Material

The material is presented in alphabetical order. See the table in 3.3.

1. *castrāre* 'to cut, prune, castrate' is derived from a nomen instrumenti **kastrom*, which can be identified with Skt. *śástram* 'cutting instrument' < **ḱes-* or **ḱos-trom*. The same root is found in Skt. 2pl. *śasta* (RV.), 3sg. *śāsti* (Brahm.) < **ḱĕs-*. Gr. κεάζω most likely reflects **keuh$_2$-* (see IV.E. 7.3.2.1 s.v. *cūdō*).

Skt. *śástra-* suggests that **kastrom* reflected a full grade root, but since one usually finds a zero grade root before **-tro-*, it is possible that *śástra-* replaced **kṣtra-*.

2. *farcīre*, *farsī*, *fartus* 'to make fat, stuff', Abl. *farte* 'filling', A., adv. *fartim*, *fartor* 'Hühnerstopfer'. These words have a common root **fark-*, from which a *i̯e/i̯o*-present and several derivations involving a suffix with initial *-t-* are drawn. Generally, though with much reservation, this root is compared with Gr. φράσσω 'umzäunen, unschanzen, ausrüsten' <

bhṛk-i̯ō, φράγνῡμι, aor. ἐφράγην 'id.' < *bhṛǵ-*. Apart from the considerable difference in meaning, it is not clear whether the form φρακ- or φραγ- must be considered original.

If the etymology is nevertheless accepted, Lat. *farc-* may have arisen from *bhṛk-*, *bhork-* or *bherk-* before a consonant (*-tu-*, *-to-*, *-ti-*, *-tōr*; *-i̯e/i̯o-*; as to non-syllabic *i̯*, cf. *māior* < *magi̯ōs* and the absence of syncope in *sepeliō* < *sepeli̯ō*). In the *i̯e*-present (cf. Gr. φράσσω), the *ti*-derivative and the *to*-participle one expects a PIE. zero grade root.

3. As was already indicated in IV.B.1.5.1 - with much reservation - it is possible to explain *farnus* 'ash?' on the basis of a zero grade form **bhrǵno-* > **bhargno-* > *farnus*, but the problem is that we would expect the basic protoform to have been **bhrHǵno-* (cf. *fraxinus*, Lith. *béržas*, Skt. *bhūrjá-*). It may tentatively be suggested that in the original paradigm **bherHǵ-s*, G. *bhrHǵ-os* the laryngeal was regularly lost in the Nsg. (before *TC* in the second syllable, cf. O. *FUTÍR* < **fukt-* < obi. **dhuǵh$_2$-tr-*?). This may have led to the analogical removal of the laryngeal in the Gsg. Subsequently, the suffix **-no-* was added to the new oblique stem **bhrǵ-*, which yielded **bhrǵ-no-*. A problem that this proposal faces is that according to the rule formulated in VI.D.3, **bhrǵno-* should have yielded **bhraǵno-*. The obvious way out is the following. In section IV.C.1.4.2 it was argued that the glottalic feature of a tautosyllabic glottalic obstruent was lost after a laryngeal: **lh$_1$d-to-* > **lăd-to-* > *lāssus*, not **lāsus* by Lachmann's law'. This implies that **bherH$^{?}$g-s* may have yielded **bherHg-s* (where $^{?}$ denotes the glottalic element of the glottalized stop), and it may be suggested that the glottalic element was lost before the laryngeal was.

A final and important problem is the relation of *farnus* with *fraxinus*. *farnus* was, according to my suggestions, based on an oblique stem based on a Nsg. in which the laryngeal was lost. *fraxinus*, however, contains the oblique stem which maintained the laryngeal. Possibly *fraxinus* was derived from the oblique stem of the consonant-stem before the remodelling which led to **bhergs*, **bhrg-os* and eventually to *farnus* took place.

All this, coupled with the uncertainty of the connection of *farnus* with *fraxinus*, turns the argument into speculation. *farnus* cannot be used as independent evidence.

4. *fastīgāre* 'to make pointed, bring to a point, slope', *fastīgium* 'the top of a gable, gable end, pediment; extreme part, slope, summit'. These words reflect **farst-* < **bharst-*. Lat. *fastus* 'pride' (*u*-stem) is probably cognate as well. Leumann 1977, 550 states that the formation of *fastīgāre* can be compared with that of *fatīgāre*, *castīgāre*, *fūstīgāre* and *vestīgāre*. *fastīgium* can be compared with *vestīgium*. Their derivation is unclear according to Leumann, but it is probable that a *ti*-derivative lies at their origin. This *ti*-derivative is found in Skt. *bhṛṣṭí-* 'point, spike, edge, corner', OHG. *burst*, *borst* 'bristle', OE. *byrst* 'id.' < **bhṛs-tí-* (the Skt. forms incidentally show that the root did not contain a laryngeal). A different suffix is found in Ir. *barr*, W. *bar*, Bret. *barr* 'top' < **bhṛso-* (with **r̥* > *ar* before *s*, Pedersen 1909, 44).

Since *fastīgium*, *fastīgāre* reflect the *ti*-derivative **farsti-*, which in view of the cognates reflects a zero grade root, one might be tempted to think that **bhrst-* yielded **bharst-*. On *poscō* see 3.4 below.

5. *-a-* in *ianitrīcēs* may parhaps have arisen in the oblique cases **i̯ntr-* < **i̯nh₂tr-* of PIE. **ienh₂-tēr* if we assume the following developments: PIE. **inh₂tr-* had non-syllabic *i-* (cf. Skt. *yā́tar-* and see IV.D.1.2), which led to a syllabification **i̯ṇh₂tr-*. Syllabic *-n-* before tautosyllabic *-H-* yielded **-nₔH-* (> **-nā-*). Since **i̯nₔ-* was not an admissible word-initial cluster, we may perhaps assume that it became **iₔnₔ-*, which leads to a disyllabic protoform **iₔnₔh₂tr-*. In view of the (not compelling) argument in IV.B.1.5.1, we may assume that a laryngeal was lost in the second syllable before *-TC-*, which yielded **iₔnₔtr-* and finally **iₔntr-* because the second *ₔ* was automatic (non-phonemic) at this stage (the same string of developments may be invoked for *pānus* < **pnHksno-*, see no. 9). Finally, **iₔntr-* may have become **i̯antr-* (*/C ___ CCC*), which yielded a paradigm **i̯enatēr*, obl. **i̯antr-*. The latter may have been remodelled to **i̯anatēr*, **i̯anatr-*, which ultimately yielded *iani-tr-īc-ēs*. Very uncertain.

6. *māla* 'jawbone; cheek, beard' (cf. dimin. *maxilla*) < **smakslā-* must be compared with Olr. *smech* 'chin', Alb. *mjekr* 'beard, chin' < **smeḱ-*, Skt. *śmáśru-* (ntr.) 'beard' < **smeḱ-* or **smoḱ-*, Lith. *smãkras* 'beard, chin', Arm. *mawruk^{c}*, *moruk^{c}* < **smak-* replacing **smek-*? (Pedersen 1906, 351). *māla* < **smakslā-* may reflect **smeksleh₂-*, **smoksleh₂-* or

**smksleh₂-*.

7. *nancīre* (also *nancīrī*), *nactus* 'to get, gain, obtain', *nancīscor* belong to the root **h₂neḱ-* 'to reach' found in Skt. *náśati*, Av. *nasaiti* 'to reach', Goth. pret.-pres. *ga-nah* 'es reicht', OIr. pret. *-ánaic* 'came' (< **h₂e-h₂noḱ-e*, cf. Skt. perf. *ānáṃśa*). This root must be distinguished from **h₁neḱ-* 'to bring, carry' in Gr. ἤνεγκον, OCS. *nesti*, Lith. *nèšti* (see Beekes 1979, 18).

The nasal in *nanciō* is probably old in view of *-ánaic*, *ānáṃśa*, although its origin (nasal present?) is uncertain. *nanciō* most likely reflects zero grade **h₂n-n-ḱ-i̯ō*. *nactus* was probably modelled on *nanciō*, cf. *vincĕre*, *victus*, *relinquĕre*, *relictus*. The original ppp. **h₂nḱto-* would have yielded ***anctus*.

8. For *pandō*, which probably replaces **pand-mi* < **pnd-mi*, see E.4 below.

9. If *pānus* 'tumor' reflects **panksno-* and may be compared with OCS. *pǫčiti sę* 'to be inflated', Russ. *púčit'* (acute!) 'id.' < **ponHk-*, it may reflect **penHksno-*, **pnHksno-* or even **ponHksno-*. If we start from a full grade root, the laryngeal may have been lost before *TC* in the second syllable (see IV.B.1.5.1). If we start from a zero grade root, the same process as in the case of *ianitrīcēs* may be considered: **pnHksno-* > **pn̥Hksno-* > **p̥n̥Hksno-* > **p̥n̥ksno-* > **p̥nksno-* > **panksno-* > *pānus*. Since the etymology is possible but doubtful, so is the reconstruction.

10. *passer* 'sparrow' may reflect **pet-tr-* or **pt-tr-* (root **pet-* 'to fly'), see IV.D.2.3.2.1 no. 16. **pt-tr-* is also possible. Cf. perhaps W. *adar* 'birds' < **patṛ-* < **pt-tr-*, with simplification of the geminate **-tt-*.

11. *quattuor* 'four' reflects PIE. **kʷetuōr* (cf. Goth. *fidwor)*. For the interpretation of these and other forms, see Beekes 1987a. The origin of the geminated *-tt-* is obscure. Leumann 1977, 219 hints at the possibility that a tenuis was regularly doubled before **u̯*, which is ad hoc. If it is nevertheless correct, we may assume a development **kʷetu̯ōr* > **kʷettu̯ōr* > **kʷattu̯ōr* > *quattuor*. However, it is uncertain whether **-e-* was the source of this type of non-laryngeal *a*. The explanation of *-a-* in this etymon may alternatively start from the zero grade root of the oblique cases of **kʷetwōr*, the ordinal (*quārtus*) or the compounded forms

(*quadru-* < **kʷtru-*, *quadrā-ginta*, *quadrāns* etc. < **kʷtr-*, cf. Gr. τρά-πεζα < **kʷtr̥-ped-*, τρυ-φάλεια < **kʷtru-*). In the reconstructions of these forms, we do not find the environment *C* ___ *CCC* unless we assume that in **kʷturto-* (the ordinal) the *-u-* was non-syllabic and the *-r-* syllabic: e.g. **kʷtu̯r̥to-*; that this is the correct syllabification is indicated by Gr. τέταρτος < **kʷetu̯r̥to-*, and it will turn out to be so for Latin as well. Compare also **kʷtr-dkmtom*, with **C* ___ *CCC*. Contrast Lat. *tru-cīdāre* < **kʷtru-* (if cognate), which lacks *-a-*, perhaps because *-u-* (unlike syllabic *-r-*) did not count as *C* in this context.

The fact that *-t-* became *-d-* in *quadru-*, *quadrā-*, may perhaps be explained by assuming that fortis **-t-* became lenis in a heavy consonant-cluster (i.e. in the zero grade root **kʷtr-*) and later merged with the reflex of PIE. **-d-*. Since the ordinal originally had a zero grade root, too (cf. Skt. *turíya-*, Av. *tūiryō*, Gr. ταρτη-μόριον 'quarter' < **kʷtur-*, **kʷtr-*), the immediate predecessor of *quārtus* 'fourth' would then be expected to have contained lenited **t* > **d* as well. It is usually assumed that *quārtus* reflects **kʷatu̯orto-*, in which the first *-t-* was lost by dissimilation, and that **kʷau̯orto-* yielded **kʷaorto-* (loss of **u̯* before *o*) > *quārtus* (see e.g. WH., Leumann 1977, 492). The weak point is the assumption of an ad hoc and phonetically improbable dissimilatory loss of *-t-*, which can now be avoided. If we assume that **kʷtu̯rto-* yielded **kʷdu̯rto-* and that subsequently *-a-* arose regularly, **kʷadu̯r̥to-* > **kʷadu̯orto-* would regularly have become **kʷau̯orto-* (cf. **suādu̯is* > *suāvis*), which yielded *quārtus* in the accepted way which was indicated.

O. *petora* (Festus) most likely reflects **petur-* < **kʷetur-*, which displays neither gemination of *-t-* nor the rise of *-a-*.

Summarizing, *quadru-* and *quadrā-ginta* most likely reflect **kʷdru-*, **kʷdr-dkmt-*; *quārtus* most likely reflects **kʷaduorto-* < *kʷdu̯r̥to-*. In *quadrā-* and *quārtus*, the original context of **a* was **C* ___ *CCC*. *quattuor* may reflect **kʷettu̯-* (if **e* > **a*), but it seems possible that *-a-* was based on the oblique cases (which had a zero grade root) or introduced from the ordinal and from *quadrā-*, *quadru-*.

12. *sarcīre*, *sarsī*, *sartum* 'to patch up, mend' and *sartor* 'Flickschneider' have a common root **sark-*, which is probably cognate with Gr. ἔρκος 'closure, bullwark', ὀρκάνη 'closure, wall' < **serk-*, *sorḱ-* and Hitt. *šar-nin-k-* 'to compensate'.

If one accepts the etymology one can assume, as in the case of *farciō*, that *sarciō* etc. reflect anteconsonantal **serḱ-* or rather **sr̥ḱ-* (because verbs in *-je/jo-* usually have a zero grade root). Whether U. *sarsite* 'universally?' is cognate, is very doubtful (Meiser 1986, 89).

13. *sarīre*, *-īvī*, *-ītum* 'to hoe, weed' is also written *sarr-* (Cato R.R. 161, 2), cf. *carrĕre*, *carĕre* (with old *-rr-*, see VI.B.2 no. 16). WH. consider the forms with *-rr-* as "schlechtere Schreibung", which is unlikely in view of Romance **re-sarriō* (indicating that *-rr-* is "sprachwirklich") and *sarritor* 'person who hoes'. If Lat. *serra* 'saw' is cognate, which is admittedly doubtful, this also points to *-rr-*. *sarculum* 'light hoe' can have developed from **sars-tlom* regularly. However, outside Latin a root **sers-* cannot be found, whereas a root **ser-* probably can if one assumes that the *-n-* in Skt. *sr̥ṇí* 'sickle', *sr̥ṇya-* 'sickle-shaped' is a suffix. I do not think that this presents enough evidence against a Proto-Latin form **sarr-*, which is arrived at by internal reconstruction. It seems possible that *-rr-* was simplified to *-r-* in accordance with the *mamilla*-law, which states that a geminate followed by the Latin accent becomes a single consonant (Sommer-Pfister 1977, 157): this applies to some forms in the paradigm, so that confusion could arise as to whether the root was *sar-* or *sarr-*.

The root **ser-* which underlies Latin *sarr-* < **sars-* is also found in lat. *sarpĕre*, *sarpō/sarpiō*, *sarpsī*, *sarptum* 'to cut the vine', *sarmen* < **sarp-mn* 'osiers'. With *sarpĕre* can be compared Gr. ὄρπη, OCS. *srъpъ*, Latv. *sirpis* 'sickle' < **sr̥p-*, Ir. *serr* 'id.' < **serp-* (Pedersen 1909, 94). These forms show that Latin *-a-* cannot be explained on the basis of a vocalized laryngeal.

It is probable that *sarriō*, *sarculum*, *sarptum*, *sarmen* reflect anteconsonantal **sr̥s-* or **sers-*. In the *je/jo*-verb *sarrīre* and the ppp. *sarptus* one expects a zero grade root, in *sarmen* a full grade, but the latter may be a rather late formation. *sarpĕre* may have taken its *-a-* from *sarrīre*. Note that *-a-* in this verb may have arisen regularly in the perfect **s(e)rp-s-* and the ppp. **s(e)rp-to-*, and that introduction of *-a-* into the present prevented a formal merger with *serpĕre* 'to crawl'. I conclude that *sarrīre* is a probable and *sarpĕre* at best a possible case of *-a- /C ___ CCC* (the latter cannot in any case be used as evidence for the proposed rule).

14. *spargere*, *sparsī*, *sparsum* 'to strew, sprinkle, scatter',

cf. Engl. *sprinkle*, Dutch *sprenkelen* < **spreng-*, may perhaps be compared with Olr. *arg* 'drop' if this reflects **parg-* and if *spargere* reflects a root with mobile *s-*. If, however, *arg* is cognate with W. *eiry*, C. *ergh*, Bret. *erc'h* 'snow' < **argio-*, which is formally less problematic and semantically possible, the Celtic etymon rather belongs to PIE. **h₂erǵ-* 'white, shining' (Vendryes A-88). Other connections must be viewed with even more scepticism because of their semantic remoteness: Eng. *spark*; Gr. σφαραγέομαι 'to burst with a noise, crackle, splutter, as liquids when thrown upon the fire; groan with fullness, to be full to bursting', Skt. *sphū́rjati* 'bricht hervor' < **sbhrh₂(e)ǵ-* (with **sbh-* > *sph-* according to Sieb's law); Gr. οπαργάω 'to be full to bursting, swell, be ripe' < **sprǵ-*; and many others (see Pokorny IEW. 996-998).

In view of the formal and semantic problems, it is very doubtful whether *spargere* may be connected with σφαραγέομαι and whether it reflects a root containing a laryngeal. The most attractive connection, with PGerm. **sprenk-*, rather points to **sprg-*, without a laryngeal. In my view, the latter is probably an enlarged form of **sper-* in Gr. σπείρω < **sper-i̯ō* 'to sow, strew, sprinkle', σπέρμα 'seed', which is supported by the semantics. If so, *spargere* contains an *a* of non-laryngeal origin.

If *spargō* goes back to an earlier athematic present **sparg-mi*, we may reconstruct the latter as **sperǵ-mi*, or, with generalized zero grade, **sprǵ-mi*. Since there is no evidence whatsoever for this athematic paradigm, *spargĕre* cannot be used as independent evidence for the rule under review.

15. *suāsum* < **suerd-to-* or **su̯r̥d-to-* (for the syllabification *Cu̯r̥C* see s.v. *quattuor* (no. 11): *quārtus* < **quaduorto-* < **quadu̯r̥to-*)? See V.C.2.2.2 no. 7.

16. For possible *vannus* < **u̯antno-* < **h₂uh₁ə̯ntno-* < **h₂uh₁n̥tno-* see IV.F.1.2.1 no. 7.

The only possible example of the development in Sabellian is O. *caria* 'bread', which, if cognate with *Cerēs*, reflects **ḱrsi̯ā-* or **ḱers-*, *kors-* (see VI.B.3 no. 23 s.v. *cēna*).

3.3. Evaluation

The following words contain non-laryngeal *-a-* */C__CCC*:

probable		possible		questionable	
1	*castrāre*, √*ḱes-*	2	*farcīre*, √*bherk-*?	3	*farnus*
4	*fastīgāre*, *fastus*, √*bhers-*	8	*pandĕre*, pres. **ptnH-*	5	*ianitrīcēs*
6	*māla*, √*smek-*	9	*pānus*	15	*suāsum*
7	*nancīre*, √h_2*neḱ-*	12	*sarcīre*, √*serk-*?	16	*vannus*
10	*passer*, √*pet-*	13	*sarpĕre*, √*serp-*		
11	*quattuor*, *quārtus*	14	*spargĕre*, √*sperǵ-*?		
13	*sarrīre*, √*sers-*				

In view of O. *caria* the development may date back at least to Proto-Italic.

It may strike one that 2., 3., 4., 12., 13., 14. have *-a-* before *r* + consonant, and in view of the widespread phenomenon that a vowel before *rC* has a lower articulation, the hypothesis might be advanced that **e* (or **o*) became *a* before *rC*. This must be rejected in view of the following counterexamples: *mergĕre*, *mergae*, *nervus*, *quercus*, *serpĕre*, *vergĕre*, *verrĕre* (with old **-e-*);
formus, *mordēre*, *porcus*, *torquēre* (with old **-o-*);
currus, *horrēre*, *morbus*, *mors*, *mortuus*, *poscĕre*, *vorsus* (with **or* < **r̥*).

In all instances of non-laryngeal *a* which remained after section VI.E.2, the *-a-* is found in a very specific phonetic context, viz. *C* ___ *CCC*. This can hardly be considered accidental, and therefore it is legitimate to look for a sound law which governs the rise of *a* in this specific context.

We now arrive at the question of the exact origin of *a*. The material suggests two possible origins. 2. *farcīre*, 4. *fastīgāre*, 7. *nancīre*, 8. *pandĕre*, 11. *quārtus*, *quadru-*, *quadrā-*, 12. *sarcīre* and 13. *sarrīre* suggest that *-a-* arose in zero grade forms, which implies that it is an epenthetic vowel which resolved complicated clusters of obstruents and resonants: *(C)CCCC* > *(C)CaCCC*. However, in none of the forms is the assumption of original *e*-grade altogether impossible; for *e*-grade in *nancīre* and *pandĕre*, cf. *sternĕre*, *spernĕre*; *e*-grade may have been introduced into *fastīgāre* from *fastus* < **bherstu-* and in *sarrīre*, *farcīre*, *sarcīre* from non-present forms. The alternative for assuming that *-a-* arose as an epenthetic vowel is that *-a-* arose from **-e-*, which may be based on 1. *castrāre* (?), 6. *māla* (?), 10. *passer* (?), 11. *quattuor* (?), 13. *sarpĕre* (?), 14. *spargĕre* (?). However,

there are two objections with which the assumption of *-a-* < **-e-* is faced:

1. The development of **-e-* > *-a-* */C* ___ *CCC* is phonetically unmotivated.
2. What is more important: all instances adduced as evidence for original *-e-* may have contained zero rather than *e*-grade; what is more, it is far easier to assume that the instances which seemingly favour original *e*-grade actually reflect zero grade than to assume that the instances which seemingly reflect zero grade actually reflect *e*-grade. Thus, the evidence for **e* > **a* is not compelling.

These objections clearly tip the balance in favour of epenthetic *-a-*. The epenthesis consists in the insertion of a vowel, *a*, before the third obstruent or resonant counted from the end of a cluster of four or more consonants, e.g. **ḱstrom* > **ḱastrom*, **smḱsl-* > **smaksl-*, **h₂nnḱi̯-* > **h₂nanki̯-*. As to the exact environment of *-a-*, it can be observed that it is always preceded by at least one consonant and followed by three consonants. The three consonants by which *-a-* is followed are: stops and *-s-* (**kstrom* > **castrum*, **kʷtu̯rto-* > *quārtus* etc.), syllabic and non-syllabic resonants (*r*, *l*, *m*, *n*: non-syllabic in **castrum*, **smksl-* > *māla*, syllabic in **bhr̥sti-* > *fastīgāre*, **h₂nn̥ḱi̯ō* > *nanciō*, **sr̥si̯ō* > *sarriō* etc.) and non-syllabic *i* and *u* (*quārtus*, *sarriō*, *nanciō* etc.). In the case of syllabic *i* and *u*, no epenthetic vowel arose: **kʷtru-* > *tru-cidāre*, **bhristi-* > *festīnāre* (Schrijver fthc.a).

We may now turn to the counterevidence.

3.4. Counterevidence against **(C)CCCC* > **(C)CaCCC*

The counterevidence comprises forms which did not develop an *-a-* in a constellation *CCCC*. The instances may be classified in four groups.

1. Forms containing a syllabic nasal, which may already have developed into [ₔn] before the epenthesis of *-a-*: **h₂rḱnto-* 'silver' > *argentum*, with vocalization of **-n̥-* to **-ₔn-* before epenthesis, otherwise we would have found **h₂rḱnto-* > **h₂ragnto-* > **ragentum*; **dḱmtom* > **(d)ḱₔntom* before epenthesis, otherwise we would have found **daknt̥om*; **h₃dnt-* > **h₃dₔnt-* (before epenthesis) > *dent-*, not **h₃dnt-* > **h₃adnt-*.

If the *-ₔ-* which was the result of the vocalization of PIE. **n̥*, **m̥* stood before *CCC* itself, it merged with the epenthetic vowel: **h₂nn̥ḱi̯-* > **h₂nₔnḱi̯-* > *nanciō*; **pn̥d-mi* >

*p_{∂}nd-mi > *pand-mi >> pand-ō (see section 4. below).

2. Forms containing *CRHC*, which may already have developed into *CR$_{\partial}$HC* before the epenthesis of *-a-*: *ǵnh$_1$tó- > *ǵn$_{\partial}$h$_1$to- > *gnātus*, not *ǵanh$_1$tó-; *ǵrHno- > *ǵr$_{\partial}$Hno- > *grānum*, not *ǵarHno-; *plh$_2$no- > *pl$_{\partial}$h$_2$no- > *plānus*, not *palh$_2$no-* etc.

3. The development of *CRHTR* into *CRăTR* (see IV.D.1.3.4) may have preceded the rise of epenthetic *-a-*: *ghlHdhro- > *ghlădhro- > *glăber*, not (with epenthesis) > *ghlaHdhro- > *glāber*.

4. Epenthetic *a* did not arise in word-initial position, cf. *n̥bhri- > *$_{\partial}$nbhri- > Lat. *imber*, not *amber* (see II.D.2.1.4 no. 17). In order to explain why *h$_1$ng^{w}ni- > *h$_{1\partial}$ng^{w}ni- became Lat. *ignis*, not *agnis*, it may be assumed that word-initial *h$_1$- had lost its phonemic status at the time of epenthesis (i.e. it was not opposed to zero): *h$_{1\partial}$ng^{w}ni- > *$_{\partial}$ng^{w}ni-. Contrast the fate of *h$_2$- and *h$_3$-, which must have been independent phonemes at least up to Proto-Italic times (see II.D.2.3 on *#HNC-* and VI.C.1.4 on *ovis, bovem*, not *avis, *bavem*).

I found one isolated counterexample: in accordance with the epenthesis rule, one would expect that *pr̥kskō yielded *parkskō, not *poscō*. It is perhaps possible to assume that *parkskō once existed and that it was replaced by *pr̥kskō (> *por(k)skō) because this provided a better apophonic match for *prex, precāre* and because *-sk- was a productive suffix, before which the root *pr̥k- could be restored.

In conclusion, if *-a-* arose as an epenthetic vowel in clusters of more than three consonants, this must have happened after the vocalization of the syllabic nasals to *$_{\partial}$n, *$_{\partial}$m; after *CRHC* had become *CR$_{\partial}$HC*; after *CRHTC* had become *CRăTC*; and after word-initial *h$_1$- was lost as an independent phoneme. The counterevidence cannot outweigh the positive evidence, and it is possible to account for the counterevidence by means of a relative chronology.

3.5. Celtic

Since the development of epenthetic *-a-* was probably a very early development (cf. O. *caria*?), we may wonder whether there is Celtic evidence. W. *adar* (3.2. no. 10) is a possible instance if it reflects *ptr- > *patr-*. Stronger instances are

OIr. *tart* 'thirst' < **trs-t-*, cf. OHG. *durst* 'id.' and OIr. *arco* 'I ask', W. *archaf* 'id.' < **parsk-* < **prk-sk-*. OIr. *mlas*, W. *blas* 'taste', < **mls-t-* (cf. Russ. *molsát'* 'to suck, gnaw' < **mḷs-*) and Ir. *frass* 'rain' < **u̯rs-t-* < **h₁urs-t-* (cf. Gr. ἐέρση 'rain' < **h₁uers-*) do not show the expected forms **malst-* and **u̯arst-*. It is possible that these forms do not belong to the same chronological layer as *arco*, *tart*, *adar*. As to *frass*, this form must have maintained syllabic *-u-* up to a relatively recent stage: see IV.D.2.3.2.1 no. 20. *valēre* on OIr. *flaith*, *olann*, W. *gwraidd*. **h₁urst-* may have become **u̯r̥st-* only after epenthesis. OIr. *mlas*, W. *blas* may reflect a relatively recent (post-epenthesis) formation where *CCCC* arose too late for epenthesis. It may then have merged with **u̯r̥st-*. According to Pedersen 1909, 44, **r̥* and **ḷ* became *ar, al* before *sV* and *ra, la* before *sC*, which, as the adduced forms bear out, is a simplification of the actual situation.

We may conclude that Celtic has a number of possible but no certain examples of epenthesis.

3.6. Conclusion

We have seen that there is evidence that *-a-* arose in the environment */C__CCC* and that this development may date back to Proto-Italic in view of O. *caria* and even to Italo-Celtic if the Celtic material can be relied upon. Since this environment accounts for the remaining instances of non-laryngeal *a* exhaustively, it cannot be dismissed as irrelevant. The evidence favours the assumption that *a* arose as an epenthetic vowel in zero grade forms of the type *(C)CCCC*, which developed into *(C)CaCCC*.

4. Lat. *pandĕre* 'to spread'

4.1. Introduction

Although its etymology is relatively clear, the history of Lat. *pandĕre*, *pandī*, *passus* has not yet been clarified in an entirely satisfactory way. It must evidently belong to the same root as *patēre* 'to be open' (cf. O. *PAT[IT]* 'is wide'), *patulus* 'spreading' and, outside Italic, Gr. aor. ἐπέτασ(σ)α, perf. πέπταμαι 'to spread' and Av. *paθana-* 'large, enormous' < **petH-eno-*. The Greek forms point to PIE. **peth₂-*. This root must in some way lie at the basis of *pandĕre* and *patēre*. The nasal present *pandō* may be compared with O. 3pl. subj. imperf. *PATENSINS* 'open' and with the archaic

Greek present πίτνημι < *p(e)t-n-eh$_2$-.

Various proposals were made to account for *pandĕre*. There appear to be four problems:

(1) The PIE. root had *-t-, but *pandĕre* has -d-;

(2) Gr. πίτνημι and O. *PATENSÍNS* < *patn̥síns < *patnă-s- (Meiser 1986, 96) prove that the nasal infix originally followed the *-t- and preceded the *-h$_2$- (*pt-n-eh$_2$-), which is in accordance with PIE. morphology. In *pandĕre*, however, the nasal precedes the -d-;

(3) There is no trace of vocalization of the laryngeal in *passus*;

(4) The origin of -a- in the Italic forms is unclear.

I shall discuss these problems in the order in which they are presented here with the aim to provide the reader with a synthesis that may shed more light on *pandĕre*. The starting point will be a regular PIE. nasal present *pt-n-eh$_2$-ti, *pt-n-h$_2$-mes, *pt-n-h$_2$-enti, with ppp. *pth$_2$to-.

4.2. Discussion

4.2.1. *-t- > -d-

This development reminds one of *pingĕre* 'to paint', cf. Skt. *piṃśáti* < *pi-n-k-, cf. Gr. ποικίλος < *poiḱ-* and *mungĕre* 'to wipe, blow the nose', cf. Skt. *muñcáti* 'frees, looses' < *mu-n-k- (Thurneysen 1883). It is unlikely that *pingĕre* is due to the influence of *fingĕre* (thus Leumann 1977, 151 following Schulze), in the first place because this in itself is not evident, and secondly because the alternation *k/g* seems to be old in view of OCS. *pěgъ* 'variegated' < *poig-. This alternation is also found in such instances as *pangĕre*, *pepigī*, Gr. πήγνῡμι, ἐπάγην beside *păcīscor*, *pāx*, *pācis*.

There seems to be no consensus about the exact conditions of the alternation of tenuis and media. According to Thurneysen 1883, PIE. *-kn- (the same goes for *-tn-, *-pn-) became *-nkn- > *-ngn- > -ng-. This is in itself conceivable, but I doubt whether it can explain *pingĕre*. Even if we admit that in this case we must start from a nasal suffix and not an infix, it is difficult to follow Thurneysen in reconstructing a 1sg. *-k-n-ō > *-knō because the nasal presents had athematic inflection; thus, the 1sg. would have been *-k-n-mi, which is phonetically rather different (it has vocalic -n̥-, which is relevant for the present issue, see on Cz. *výheň* below). Brugmann I 631 assumed that the alternation *k/g* etc. arose in certain clusters containing a nasal, without specifying the exact circum-

stances. It may be observed that Thurneysen's and Brugmann's ideas are compatible.

As for the Latin material, this was recently discussed by Kortlandt (1989b, 104), who claimed that *pingō* and *mungō* may be explained by assuming that the opposition between the three series of PIE. obstruents (*t*, *d*, *dh*) was lost in a nasal environment (he refers to Thurneysen's article). He also argued that *fissus* 'split', *scissus* 'torn', *strĭctus* 'strung' "escaped Lachmann's law because of the neutralization in *findō*, *scindō*, *stringó*." He pointed to the remarkable fact that this neutralization explains a number of exceptions to Winter's law in Balto-Slavic, e.g. in Lith. *ugnìs*, PSl. **ogńь* 'fire' < BSl. **ungnis* < **n̥gʷnis*, where **gʷ* lost its glottalization before consonantal **n*. On the other hand, PIE. **gʷ* did not lose its glottalization before vocalic **n̥*, as is shown by Cz. *výheň*, SCr. *vȉganj* 'forge' < **ungʷn̥io-*, which was subject to Winter's law (thus Kortlandt 1988a).

The fact that this neutralization can be found in both Latin and Balto-Slavic points to great antiquity (thus Kortlandt 1988a). Although the exact conditions are a matter of some dispute, it seems likely that the neutralization also occurred in the singular forms of the nasal present **ptneh₂-mi*, *-si*, *-ti*, where **-t-* was followed by a consonantal nasal and preceded by a stop. In the plural forms, where **-n-* was vocalic, e.g. in **pt̥nh₂me*, **pt̥nh₂enti*, the neutralization probably did not occur, if we apply the argument concerning the Balto-Slavic word for 'fire' to Latin.

Thus, we have reason to believe that PIE. 3sg. **pt-n-eh₂-ti*, 1pl. **pt-n̥-h-₂me*, 3pl. **pt-n̥-h₂-enti* regularly yielded **pTneh₂ti* (where *T* denotes the archiphoneme), **ptnh₂me*, **ptnh₂enti* at an early stage, arguably in PIE. already. For **T* I will henceforth write **d* because the neutralized stops merged with the mediae in Latin (after Lachmann's law).

4.2.2. The development of **-tn-*, **-d(h)n-*

There are two theories about the development of **-tn-*, **-d(h)n-* in Latin. The first claims that the regular result is always *-nd-* (Thurneysen 1883, 301-304, Szemerényi 1950, 169-179); the second claims that the result is *-nn-* (e.g. Sommer-Pfister 1977, 176). As Leumann 1977, 200 remarks, there are convincing examples for both. I cite only his examples, as others are very doubtful (e.g. the gerund, and *mundus* < **mūtno-*??).

1. **-tn-*, **-d(h)n-* > Lat. *-nn-*:

a. *annus* 'year' < **h₂etno-*, cf. Goth. DpI. *aþnam* 'id.' < **h₂etno-* and U. *acnu*, O. *AKENEÍ*, *aceneis*, *acunum* 'year' < PSab. **akno-* < PIt. **atno-* (Meiser 1986, 96);
b. *penna* 'wing' < **petna*, cf. OIr. *én*, W. *edn* 'bird' < **petno-* (much-discussed OLat. *pesna* (1x, Festus) remains unexplained);
c. *vannus* 'winnow' probably does not reflect **u̯atno-*, but rather **u̯antno-* (see IV.F.1.2.1 no. 7 and VI.E.3.2 no. 16); it cannot be used;
d. *mercēnnārius* 'mercenary' < **mercēd(i)nārius*, cf. *mercēdōn-ius* (P.F.);
e. compounds with the preverb *ad-*, e.g. *ad-nuō* > *annuō*.

2. **-tn-*, **-d(h)n-* > Lat. *-nd-*:
f. *fundus* 'bottom' < **bhudhno-*, cf. OIr. *bond* 'sole' and Skt. *budhná-* 'bottom', OE. *bodan* 'floor' < **bhudh-nó-*; cf. also Gr. πυθμήν and OHG. *bodam* id < **bhudh-m-*;
g. *unda* 'wave' < **udna*, cf. U. Dsg. *UNE /unné/* < **udni*, Nsg. *UTUR /udur/* 'water' (Meiser 1986, 94); Skt. Gsg. *udnás*. Compare also Latv. *ûdens* < **und-*.

Two observations may be made. First, it is remarkable that the two instances of PIE. **-tn-* yielded Lat. *-nn-* (*annus*, *penna*), whereas the two instances of Lat. *-nd-* reflect **-dhn-* (*fundus*) and **-dn-* (*unda*), not **-tn-*. This distribution is parallel to the one in Sabellian, where **-tn-* yielded **-kn-* (in **akno-*), while **-dn-* yielded **-nn-*. Second, the metathesis to **-nd-* seems not to be confined to Latin but is also found in Celtic (OIr. *bond*) and Baltic (Lith. *vanduõ*, Latv. *ûdens*), which probably indicates that the development is old (thus Sommer-Pfister 1977, 177, Kortlandt 1988a).

This leads me to the conclusion that PIE. **-tn-* did not merge with **-d(h)n-* in Italic. The former remained in Proto-Italic and at a late stage yielded Lat. *-nn-* and Sabellian **-kn-* (cf. **-tl-* > **-kl-*). **-d(h)n-*, on the other hand, underwent metathesis to **-nd(h)-* at an early stage (Italo-Celtic, or earlier) and yielded Lat. *-nd-*, Sab. *-nn-* (where it merged with *-nn-* < PIE. **-nd-*).

In *mercēnnārius* and *annuō*, the cluster **-dn-* arose at a late stage, in the former by syncope, in the latter by composition, so that it did not undergo metathesis any more. This "new" **-dn-* obviously merged with PIE. **-tn-* in Latin.

When we apply these conclusions to the paradigm that was reconstructed at the end of 2.1, we obtain the following results

for, say, early Italo-Celtic:

3sg. *pdneh$_2$ti > *pn̥deh$_2$ti
1pl. *ptn̥h$_2$me remains
3pl. *ptn̥h$_2$enti remains

On the basis of this paradigm, the following items can be explained:

1. -nd- in Lat. pandō, which stems from the singular forms.
2. *-tn- in O. PATENSÍNS < *patn̥-s- < (syncope) *patnă-s-, which stems from the plural forms. There are two possible answers to the question why *-tn- did not yield O. -kn-. First, -t- may have been restored, e.g. after PAT[ÍT] 'ist breit' (Meiser 1986, 96); second, the Oscan form may have been based on the 3pl. *ptn̥h$_2$enti > *p(a)tenanti, where *-tn- did not arise before the syncope.
3. The root *pann- < *patn-, also stemming from the plural, which is probably reflected in Lat. dis-pennite (only Plaut. Mil. 1407, confirmed by Nonus; thus Godel 1961, 71-75).

Conversely, pandō on the one hand and PATENSÍNS, dispennite on the other confirm the existence of a paradigm in which *-nd- and *-tn- alternated, which can now be explained.

4.2.3. Loss of the laryngeal

In accordance with what was said in V.D.3.3, zero grade was generalized throughout the paradigm of nasal presents in Italo-Celtic (*iu-n-g-, *k^{w}ri-n-h$_2$-; the full grade of sternō, sernaid is probably recent, see V.D.3.3). The paradigm of pandō would accordingly develop into:

3sg. *pn̥dHti
1pl. *ptn̥Hmes
3pl. *ptn̥Hanti

There is evidence which indicates that in Italo-Celtic a laryngeal between stops was lost in a non-initial syllable (see V.A.4). The loss of the laryngeal in passus < *p(a)th$_2$to- may be explained in this way. The 3sg. *pn̥dHti would yield *pn̥dti.

Thus, we arrive at the following paradigm, which may be dated approximately to the end of the Italo-Celtic period:

3sg. *pn̥dti
1pl. *ptn̥Hmes
3pl. *ptn̥Hanti.

I claim that this paradigm is a fairly reliable reconstruction of the Italo-Celtic paradigm. The laryngeals were probably main-

tained until (shortly) after this period, at least in a number of contexts: The development of *-ṇH- to *-nā- between consonants postdates the Italo-Celtic unity in view of the different treatment in *lāna* (with -ā-) vs. Olr. *olann*, W. *gwlan* (with -ă-) 'wool' < **HulHneh₂-*. The development of antevocalic *-ṇH- into It. -*en*- and Celt. -*an*- is probably also posterior to this period because the results differ (see IV.D.2.3.4).

4.2.4. Italic *a*

The final and perhaps most disconcerting problem regards the origin of Italic -*a*-. One would expect that the paradigm of 2.3 developed into Proto-Italic:

3sg. **pₒndti* (with **-ən-* > Lat. -*en*-, Sabellian -*an*-)
1pl. **ptnāmes* (*-CṚHC-* > *-CRāC-*, see IV.D.1.3.2)
3pl. **ptenanti* (*-CṆHV-* > *-eN-*, see IV.D.2.3)

It is possible that the plural forms were remodelled after the "regular" *nă*-inflection (*tollere* < **tḷnă-*), which had -*nă*- throughout the paradigm, but there is no indication that this is indeed what happened.

**pₒnd-ti* would regularly yield Sab. **pand-* (Meiser 1986, 69). It seems possible that -*a*- spread to the plural forms and to the stative **pt-ē-* so as to resolve the consonant cluster. This would explain the vocalism of O. *PATENSÍNS* and *PAT[ÍT]*.

The development of **pₒnd-* to Lat. *pand-* is reminiscent of *nanciō*, which most likely reflects **h₂nₒnkio̯H* < **h₂nṇkio̯H*. If my explanation of *nanciō* is correct (*a* /*C* ___ *CCC*, from zero grade, VI.E.3), which seems a reasonable possibility, **pₒndti* would regularly yield **pandti*, from which -*a*- could have spread to the ppp. *passus* and to the stative *patēre*. The Latin present paradigm was evidently remodelled on the stem of the original singular (but cf. *dis-pennite*).

4.3. Conclusion

The proposed explanation of Lat. *pandō*, *dis-pennite* and O. *PATENSÍNS* presupposes a number of developments in a distinct chronological order. Four phonetic developments were discussed, which probably belong to four different stages in the relative chronology.

1. The neutralization of the opposition between the three series of PIE. obstruents in heavy consonant clusters containing a nasal, which probably belongs to the PIE. period;
2. The metathesis of *-*d(h)n*- to *-*nd(h)*- (but not of *-*tn*- to

*-*nt*/*d*-), belonging to the Italo-Celtic period, or possibly even earlier in view of the Baltic correspondences;
3. The loss of laryngeals between stops in a non-initial syllable, which may perhaps be dated to the Italo-Celtic period;
4. The development of epenthetic *-a-* in *C* __ *CCC*, which may date back to Proto-Italic or even earlier.

PIE. **ptneh₂ti*, **ptnh₂enti* would accordingly develop as follows:

stage 1.	**pdneh₂ti*,	**ptn̥h₂enti*;
stage 2.	**pn̥deh₂ti*,	**ptn̥h₂enti*;
stage 3.	**pn̥dh₂ti* > **pn̥dti*,	**ptn̥h₂enti*;
stage 4.	**pn̥dti* > [*pəndti*] > **pandti*,	**ptenanti*, replaced by **pat(e)nanti*

Subsequently, the athematic paradigm was thematicized and a new plural was created in Latin on the basis of the stem **pand-*.

The advantage of the explanation proposed here lies in the fact that Lat. *pand-* on the one hand and O. *PATENSÍNS*, Lat. *dis-pennite* < **patn-* on the other can be explained from a single basic Proto-Italic paradigm which had regularly arisen from a regular PIE. paradigm, without the necessity to assume complicated analogies at any stage.

F. CONCLUSION

It has been attempted to show that five sound laws can account fairly completely for the instances of non-laryngeal *a* in Latin:

1. PIE. **e* > *a* after a pure velar: *candēre* < **(s)ḱend-*;
2. PIE. **oų* > *aų* (Thurneysen-Havet's law): *cavus* < **ḱoų-*;
3. PIt. **o* > *a* /m, ų (l?) ___ *CV*: *mare* < **mori*;
   /m ___ *r* + velar: *margō* < **morǵōn*;
4. PIE. **RDC* > *RaDC*: *magnus* < **mǵ-no-*;
5. Rise of epenthetic *a* /*C* ___ *CCC*: *castrāre* < **ḱstr-*.

No. 4 belongs to the Italo-Celtic period (cf. Olr. *mál*, W. *mael* < **mǵ-lo-*); no. 1 perhaps belongs to the Proto-Italic period (O. *KARNEIS*, Lat. *carō*?); no. 2 dates back to Proto-Italic because it took place before the Proto-Italic development of **eų* > **oų*; no. 3 belongs to the same period in view of Sab. **man-*, Lat. *manus* 'hand'; no. 5 may perhaps be of Proto-Italic date in view of O. *caria* < **ḱrsi̯ā-*, or even of Italo-Celtic date in view of e.g. W. *adar*, *archaf*, Ir. *arco*, *tart*. Thus, all developments can be dated to relatively early phases of the language.

VII. GENERAL CONCLUSIONS

The present chapter contains a summary of the positive results which have been reached in the various subsections of the book.

The presentation of the results follows the order of presentation in the book. Each item is accompanied by an illustrative example.

Chapter II. Laryngeal at the beginning of the word

B. In PIE. *#HC-*, the laryngeal is lost without a reflex (e.g. *novem* < **h*$_1$*neun*), the only possible exception being the group *HTC-* (*aiō* < **h*$_1$*ǵ̥oH*?).

C. *#HV-*: **h*$_1$*e-* > *e-* *edō* < **h*$_1$*ed-*
**h*$_2$*e-* > *a-* *agō* < **h*$_2$*eǵ-*
**h*$_3$*e-* > *o-* *opus* < **h*$_3$*ep-os*
**Ho-* is always reflected as *o-*, irrespective of the quality of the laryngeal, cf. *ollus* < **h*$_2$*ol-*.

D. *#HR-*: the resonant is vocalized, but the result is different for the nasals and the liquids:
**h*$_1$*NC-* > **eNC-* *indi-* < **h*$_1$*ndo-*?
**h*$_2$*NC-* > **aNC-* *amb-* < **h*$_2$*mbhi-*
**h*$_3$*NC-* > **oNC-* *unguis* < **h*$_3$*nghu-*
**h*$_2$*LC-* > **aLC-* *artus* < **h*$_2$*rtu-*
There is no reliable evidence for the development of **h*$_1$*LC-* and **h*$_3$*LC-*, but it is maintained that these constellations most likely yielded *aLC-* as well.

E. *#HI-*: As far as can be ascertained on the basis of the scanty material, the laryngeal is always lost:
#HIC-: *ŭstum* < **h*$_1$*us-to*; *imāgō* < **h*$_2$*im-*
#HIV-: *ventus* < **h*$_2$*ueh*$_1$*nto-*

F. *#HHC-*: this constellation probably yielded Lat. *aC-*:
acu-pedius < **HHḱu-ped-io-*.

Chapter III. Laryngeal at the end of the word

2. *-CIH#* > *-Ca*: **itH* > *ita*
3. *-VH#* > *-V̄* : 1sg. pres. **-oH* > *-ō*
4. *-IH#* > *-Ī* : **k*$^{\text{w}}$*ih*$_1$ > *quī*

Chapter IV. Laryngeal in the middle of the word

B. *CH*:
1. *CHC* > *CaC*: **sh₁to-* > *satus*
2. *CHV* > *CV*: **ǵenh₁os* > *genus*
3. *CHR* > *CaR* **kh₂nto-* > *cantus*
**kHlno-* > *callum*

It seems likely that the resonant was vocalized: **kh₂n̥to-* > **kh₂ento-* > *cantus*, **kHl̥no-* > **kalno-* > *callum* (cf. II.D).

C. *VH*:
1. *VHC*
1.3. All instances of lengthened grade in Latin have been discussed.
Lengthened grade **ē* was probably coloured to *ā* by **h₂*: **nēh₂u-* > *nāvis*, **h₂ēḱri-* > *ācer*.
There is some evidence that a laryngeal was lost at a very early stage (PIE.?) before a lengthened grade: **ǵlh₂-ōu-* > *glōs* (not ***galōs*).
1.4. All instances of *ē, ā, ō* resulting from Lachmann's law have been listed. The latter did not operate on *a* < **H̥*: **lh₁d-to-* > *lassus*. Instances like *cāsus* < **kHd-to-* may be explained by assuming restoration of the glottalic feature of **-d-*.
1.5. **eh₁C* > *ēC*: **dheh₁-k-* > *fēc-ī*
**eh₂C* > *āC*: **bhreh₂tēr* > *frāter*
**eh₃C* > *ōC*: **h₃neh₃mn* > *nōmen*
Leaving aside the type *octāvus* (IV.E.13), it seems that **oHC* always yielded *ōC* (**doh₃nom* > *dōnum*). There is no absolutely decisive evidence for **oh₂C*, but in view of *mediōcris* < **medhio-h₂okri-* it probably yielded *ōC* as well.
1.6. There is no reliable evidence that **VHs* yielded *V̄ks*. It rather resulted in *V̄s* (*pāscō* < **peh₂sk-*).
2. *VHV*: a laryngeal between vowels was lost and contraction followed: Npl. **-eh₁es* > *-ēs*.
There is no reliable evidence for the assumption that **eh₃V* yielded **aH̯V* in Latin.
3. *VHR* yielded *V̄R*: **meh₁ns-* > *mēnsis*.

D. *RH*
1. *RHC*
1.2. *#RHC-* yielded *RăC-*: **lh₂k-* > *lacer*.
1.3. *-RHC-* yielded *-RāC-*: **tlh₂to-* > *lātus*.
Perhaps *-RHTC-* yields *-RăTC-*: **ghlHdhro-* > *glaber*.

2. *RHV*
2.1. *#RHV-* perhaps yielded *RV-*: *$*lh_2ei$-uo- > laevus.*
2.2. *-LHV-* yielded *-aLV-*: *$*klh_1$-eh$_1$- > calēre.*
-NHV- yielded *-eNV-*: *$*smh_2$-el-i- > similis.*
3. *-RHR-* yielded *-RāR- (> -RăR- /___ C)*: *$*g^wlh_2$nd- > glāns.*

E. *HI* and *IH*
Only the more striking developments are summarized.
2. *CIHC, CHIC*
2.3. *CIHC* yielded *Cī/ūC*: **u̯iH-s > vīs.*
2.4. There are indications of a double reflex of *CHIC*.
If *CHIC* was pretonic in PIE., the result was probably Lat. *Cĭ/ŭC*: **bhHu-tó- > fŭtūrum.*
If *CHIC* was stressed in PIE., the result was probably Lat. *Cī/ūC*: **g^wHíu̯e/o- > vīvĕre* (?).
3. *CHuV* probably yielded **Cau̯V*: **kh$_1$uero- > caurus.*
7. *VuHC* probably yielded **Vu̯aC*: **keuHdh- > *keu̯adh- > cūdō* (not ***cūbō*).
It has been attempted to demonstrate that Lat. *ū* resulted from syncopated Prim. Lat.**ou̯V* (*prūdēns < *prou̯idents*) and from contracted Prim. Lat. **ou̯o* (*rūs < *rou̯os, nūdus < *nou̯odhos*), whereas Lat. *ō* resulted from contracted Prim. Lat. *ou̯e, ou̯i* (*nōnus < *nou̯enos, mōtus < *mou̯itos*).
13. *-LHuV-* probably yielded *-aLu̯V-*: **klHuo- > calvus.*
Instances which seem to point to *-Rāu̯V-* may reflect **-Reh$_3$u̯o-*, with delabialization of **-h$_3$-* before *-u̯-*: *gnāvus < *ǵneh$_3$u̯os*. A similar delabialization may be argued for Germanic (OIc. *knár < *knēu̯az < *ǵneh$_3$u̯o-*).

F. *HRH* and *HIH*
1. *#HRHC-* probably yielded *RăC-*: **Hrh$_1$tó- > rătus.*
2. *#HRHV-*: perhaps *animus* reflects **h$_2$nh$_1$-em-o-*.
4. *#HIHC-* probably yielded *IăC-*: **h$_1$uh$_2$-k- > văcuus.*

Chapter V. Additional problems

A. The Latin evidence for three types of laryngeal loss is presented:
2. **oRH > oR*: **kolHni- > collis.*
3. In the second member of compounds: **ǵnh$_1$-o- > prīvī-gnus.*
4. Between stops in a non-initial syllable **kom-dhh$_1$to- > Cōnsus* (?).
The example of no. 4. may actually belong to 3. Stronger

evidence for 4. is provided by O. *FUTÍR* < **fugtēr* < **dhuǵh₂tēr*.

B. In Italic, Celtic and Germanic, a long vowel (*ē, ā, ō, ī, ū*) before a resonant in PIE. pretonic position appears to have been shortened: Dybo's rule.
3. Latin: *fĕrus* < **ǵhuēró-* < **ǵhueh₁ró-*.
4. Celtic: OIr. *om*, W. *of* < **ōmó-* < **HoHmó-*.
5. Germanic: Goth. *sunus* etc. < **sūnus* < **suHnú-*.
Compare especially Lat. *vir*, U. *veiro* (< **vĭr-*), OIr. *fer*, Goth. *wair* < **u̯iró-* < **u̯īró-* < **u̯iHró-*.

C. PIE. nominal stems in a laryngeal
1. Stems in **h₂*. The relation of the Lat. Nsg. type *hosticapas* to the normal Nsg. in *-ă* has been discussed. The former cannot be used to prove that the latter reflects **-ā* < **-eh₂*. Thus, the idea that *-ă* reflects zero grade **-h₂* can be maintained.

It is tentatively suggested that the Gsg. *-āī* reflects an Italo-Celtic Gsg. **-iH*.

The Latin reflexes of the *devḯ-* and *vr̥kḯh₁-*types are traced (see the diagram in V.C.3).
2. Stems in **h₁*. Pedersen's idea that PIE. stems in **h₁* lie at the basis of the Latin fifth declension and of the third declension type N. *caedēs*, G. *-dis* can be wholly endorsed.
2.3. All Latin words belonging to the type *caedēs* have been discussed, and a small body of Latin words which reflect PIE. **h₁*-stems has been established (e.g. *vātēs* < **u̯eh₂teh₁-*). As a category, the type *caedēs* reflects PIE. hysterodynamic *h₁*-stems (thus Pedersen).
2.4. All words belonging to the fifth declension have been discussed. The origin of the ē-stems as a class can be traced to (hysterodynamic) root nouns with a Nsg. in **-eh₁* (*spēs* < **speh₁-*; contrast the **h₁*-stems of 2.3, which reflect a Nsg. in zero grade **-h₁*). The *iē*-stems (verbal abstracts, e.g. *cariēs, aciēs*) may reflect proterodynamic stems in **-ih₁* (cf. Ved. *śámī, śácī*).
The type *māteriēs, -iem, -iāī* etc. may reflect PIE. stems in **-ih₂* of the type *vr̥kḯh₁*, with a Nsg. in **-ih₂-s*.
2.5. The **h₁*-stems are most likely reflected as a separate category in Old Irish, viz. the type *méit* < **mantī* < **mantē* (cf. W. *meint*).
3. The results of 1. and 2. have been summarized in a diagram. In general, most **i(e)H*-stems are proterodynamic, and most

(e)H-stems are hysterodynamic.

D. PIE. verbal roots in a laryngeal
2.1. The type *molĕre, vomĕre* reflects athematic presents in *-ă- < *-H- (*molit < *melati < *melh₁ti*; Watkins). All instances have been discussed, and it has been attempted to account for a number of stems which ended up in the first conjugation (*lăvāre < *lou̯ă-ē-, vetāre < *u̯oth₂-eie-*).
3. Watkins' idea that nasal presents of roots ending in a laryngeal yielded an Italo-Celtic athematic *nă*-conjugation can be endorsed (cf. **tl̥nh₂-ti > *tl̥nă-ti* > Lat. *tollit*, OIr. *tlenaid*). It has been found that presents in *-nā-* of this origin are limited to compounds in both Latin and Celtic. **-nā-* most likely reflects **-nă-i̯e/o-*. The latter type may be compared with *parĕre* : *com-perīre* etc. < **par-i-* : **-pari-i̯e/o-*.

E. Italo-Celtic. Three developments which have to do with laryngeals and one that concerns non-laryngeal *a* can be claimed to go back to the period of Italo-Celtic linguistic unity. In view of the typically Latin (or Italic) development of *#HRC-* and *-RHV-*, the PIE. laryngeals must still have been present in Proto-Italic as distinct phonemes.

Chapter VI. Non-laryngeal *a*

In this chapter, an attempt has been made to explain the numerous instances of non-laryngeal *a* in Latin by means of five sound laws, four of which are new.
B. *a* < PIE. **e* after pure velars: *candēre < *(s)kend-*;
C. *a* < PIE. **o* /___ *u̯* (Thurneysen-Havet's law): *cavus < *ḱou̯o-*;
a < PIt. **o* /*m, u̯ (l?)*__ *CV*: *mare < *mori*;
*vadis < *u̯odh-es*;
/*m (u̯, l?)*__ *r*+velar: *margō < *morǵ-ōn*;
D. *RaDC < *R̥DC* (Italo-Celtic): *magnus < *mǵno-*;
OIr. *mál*, W. *mael < *mǵ-lo-*;
E. *a* (< ø) /*C*__ *CCC* (It-C.?): *castrāre < *ḱstr-*.
E.4. deals with the complicated history of *pandĕre*; its *-a-* may be explained in accordance with the rule advocated in E.

These rules can account exhaustively for all reliable instances of non-laryngeal *a* in Latin. Since all rules probably date back to the remote period of Proto-Italic or even Italo-Celtic and the exact conditions may have been blurred in the meantime, some problems remain, but in the author's opinion these are not decisive.

Other problems

In this book, a number of problems which are not directly connected with the development of the laryngeals and of non-laryngeal *a* have been discussed:

1. The development of syllabic resonants in Italic: II.D.2.3; IV.D.2.3.4; VI.E.3.4 no.1.
2. Lengthened grade in Latin: IV.C.1.3.
3. Morphological zero grade: IV.D.1.2.1; VI.A.
4. $*k^{w}u-$ > Lat. *u-*: IV.E.4 no. 4.
5. The development of $*ouV$ to Lat. *ū* and *ō*: IV.E.7.2.
6. Latin syncope: IV.E.7.2; IV.E.7.2.3.
7. Chronology of the development of $Vg^{w}V > V\underset{\cup}{u}V$: IV.E.7.2.3.
8. The alleged development of $*-l\underset{\cup}{u}- > -ll-$ in Latin: IV.E. 13.2.3.1.
9. The Hoffmann-suffix $*-h_1n-$: IV.G.2.1.3.3.
10. The "*pius*"-law: IV.G.3.1.1.
11. The circumstances under which PIE. *e* became Lat. *o*: VI.C.2.3.1.1.
12. Lenition of stops in heavy consonant-clusters in PIE.: VI.E.4.2.1.
13. The development of **d(h)n* (> Lat. *nd*, Sab. *nn*) and **tn* (> Lat. *nn*, Sab. *kn*): VI.E.4.2.2.

APPENDIX

THE DEVELOPMENT OF PIE. **CHIC* IN GREEK, CELTIC AND OTHER LANGUAGES

1. The development of **-HI-* in Greek

1.1. Introduction

In a number of Greek roots one finds an alternation between short ŭ, ĭ and long ū, ī. This alternation is partly due to a late type of productive verbal ablaut, e.g. in the νυ-verbs, where PIE. **-neu-* : **-nu-* was replaced by Greek -νῦ- : -νῡ-, and also in a group of largely expressive verbs with *i-* or *u-* vocalism in the root (the type τρῑ́βω, φρῡ́γω, cf. τέτρῐφα, ἐτρῑ́βην). On the latter, see Ruijgh 1976, 337-347.

There appear to be roots where the alternation ῐ : ῑ, ῠ : ῡ cannot be ascribed to late, productive verbal ablaut because the alternation is not limited to the verb, e.g. πῦρ, πῡρός, φῡ́οις, φῠτήρ, φῦμα, φῡλή. This type of alternation seems to be found exclusively in roots for which we must reconstruct a PIE. root **CHI-* (not **CI-* or **CIH-*): compare Hitt. *paḫḫur* with πῦρ, and Russ. *bylá*, Latv. *bût*, Skt. *bodhí* with φύοις etc. Because of this homogeneous origin and because of the absence of a model that could explain the ablaut through analogy (see below and 1.4), we must, in my opinion, look for a sound law that governs the distribution between Gr. ῠ : ῡ and ῐ : ῑ < PIE. **-Hu-*, **-Hi-*.

From the viewpoint of Greek, one is justified in regarding the "ablaut" ῡ - ῠ which is the reflex of PIE. **Hu* as analogical after e.g. οτᾱ- : οτᾰ-, θη- : θε-, especially because ῡ is found in forms which reflect an old full grade, e.g. the *s*-aor. ἔφῡσα, the active root aorist ἔφῡν, the noun φῦμα, and ῠ is found in forms which reflect an old zero grade, e.g. the medial root aorist λῠ́μην, the ppp. φῠτός.

However, if the matter is viewed from Indo-European, this scenario is in my opinion less likely. We may take the root **bheHu-* as an example. The absence of full grade forms of the type **bheHu-* (or, with metathesis, **bheuH-*) in Greek is remarkable. Yet there is no clear reason why **bheHu-* should have been absent from PIE. because an ablaut **bheHu-* : **bhHu-* is perfectly normal and, what is more, because we have evidence for PIE. **bheHu-* in Skt. *bodhí* and in Celtic (see be-

low). We cannot assume that **bheHu-* regularly yielded Gr. φῡ- because this is inherently unlikely (cf. cases like λαῖον < **leh₂u-iom*). We must therefore assume that **bheHu-* was analogically replaced by **bhū-* at some stage. This scenario has a parallel in Vedic: **bheHu-* is only attested in the relic imperative *bodhí*, which shows that **-eHu-* regularly yielded *-o-*, and the aorist *ábhūt* must be a replacement of IIr. **abhaut*. The replacement of **bheHu-* by **bhū-* must have occurred after the ablaut had been blurred by the phonemicization of the colouring of **e* by the laryngeal because before that time there was no reason for analogical remodelling (i.e. **bheHu-* > **bhau-* or **bha?u-*, if **-H-* was **-h₂-*). We may wonder why **bheHu-* > **bhau-* was replaced by (Gr.) **bhū-*. If PIE. **bhHu-* would regularly have given **bhŭ-* regardless of the phonetic environment, it is unclear why **bhau-* would have been replaced by **bhū-*: one would rather expect that the "new" full grade of **bhŭ-* was **bheu-*, **bhou-*, identical to the existing ablaut PIE. **u* : **eu* : **ou* (cf. ἤλῠθον, ἐλεύοομαι). If **bhHu-* would regularly have given Greek **bhū-* regardless of the phonetic environment (as in Sanskrit), it is not difficult to see why **bhau-* : **bhū-* was replaced by **bhū-* throughout because this would simplify the paradigm. In that case, however, it is difficult to explain Gr. **bhŭ-* in the nominal forms: in the verb, **bhū- : *bhŭ-* may have replaced pervasive **bhū-* in the same way as τέθνηκα, τέθνᾰμεν replaced earlier pervasive **τέθνη-*, but the productive ablaut of the type θνᾰ- did not reach beyond the finite verbal paradigm: cf. θνητός, βλητός, τλητός vs. φῡτός, λῡτός. Thus, the short ῠ of φῠτός, λῠτός and also that of φῠοις, φῠτλον and of ἱμάς (see no. 6 below) is hardly analogical. I conclude that it is unlikely that the roots of the alternation ῠ : ῡ go back to secondary ablaut after e.g. οτᾰ- : στᾰ-. The absence of full grade forms of the type **φαυ-* < **bheh₂u-*, however, does point to analogical remodelling. In my opinion, the most likely scenario therefore is that ῡ : ῠ arose as a result of a sound law and that full grades of the type **bheHu-* were subsequently replaced by φῡ-. I shall return to this issue below (1.4).

1.2. Discussion of material

I have checked the Greek material in Pokorny's IEW. All instances of Gr. ῐ, ῑ, ῠ, ῡ which according to Pokorny belong to PIE. roots with *-ī̆-*, *-ŭ̄-*, *-ēu-*, *-ēi-*, *-āu-*, *-āi-*, *-ōu-*, *-ōi-*, *-əu-*, *-əi-* (that is, roots with evidence for PIE. **-HI-*)

were collected and will be discussed. Verbal forms were not examined in detail (but see section 1.3 on a type of productive ablaut which is relevant here) because in these the original distribution of -ĭ-, -ŭ- vs. -ī-, -ū- may have been disturbed by productive ablaut of the type τρῐ́βω, ἐτρῐ́βην. An example may clarify the point: if one considers the long vowel in πῑ́θι, one might conclude that PIE. *-h_3i- in *ph_3i- 'to drink' yielded long -ī- in Greek. However, the length of -ι- may be secondary, as may be supposed for -υ- in κλῡ́θι, cf. Skt. *śrudhí* < *$\acute{k}lu$-: it is reasonable to suppose that -ū- in κλῡ́θι stems from a innovative ablaut of Greek (although an alternative explanation as metrical lengthening is also possible in view of the fact that κλῡ́θι, κλῡ́τε only occur at the beginning of a verse). We may reasonably assume that -ī- in πῑ́θι may have had the same origin, which has nothing to do with a PIE. laryngeal.

The material will be presented in order of indicativeness: reliable instances of PIE. *-*HI*- come first.

1. It seems best to start with a discussion of the Greek root φῡ̆-, φῡ- because we know that its PIE. form was indeed *$bhHu$- and because there is a relatively large number of forms with φῡ̆- and φῡ-. Antevocalic φῡ̆- (e.g. φυή, φύω) probably reflects metathesized *$bhuH$- because *$bhHu$- would yield *φαF-. No forms with *φαF- are attested, although there is no obvious reason why antevocalic *$bhHu$- could not have occurred. It is likely that the "anomalous" form *φαF- was eliminated at an early stage, and replaced by "normal" φῡ̆-.

If one considers the short -ῡ̆- in φῡ̆τός, φῡ̆τόν 'plant, creature', φῡ̆οικός, φῡ̆τών 'planted place, vineyard', φῡ̆τήρ, φῡ̆τάς 'plant', φῡ̆ταλιᾶ 'planted place, orchard' and the long -ῡ- in φῦμα 'growth', φῦλον 'race, tribe, class', one might conclude that there is some correlation between stressed *$bhHu$- and Gr. φῡ̆- and between unstressed *$bhHu$- and Gr. φῡ-.

There seem to be numerous counterexamples of the same root *$bhHu$-, however: φύτιος 'generative', φύοις 'nature, growth', Φύταλος (if it belongs to *$bhHu$-), φύτωρ (if it exists, see Chantraine s.v. φύω), φύτλον 'race' and φύτρον 'plant' have stressed short -υ-, and φῡ̆ί-ζοος 'producing corn' and φῡλή 'race, tribe, body of men' have unstressed long -ῡ̆- (the quantity of -υ- in φύτλη 'race, stock' and φύτρᾱ (Hes.) 'growing' is unknown).

An explanation on the basis of the accent therefore does not seem successful. But there is an important point that was not taken into consideration: the conditions for the rise of -ῡ̆-

and -ῡ- from *-*Hu*- must have operated when the laryngeal was still present, i.e., at a relatively early stage between PIE. and Greek. If the accent played a role in governing the distribution of -ῡ- and -ῠ-, which is yet to be examined, we cannot automatically transpose a Greek form with its accent to that relatively early stage, in the first place because we know that the accent may have shifted in the meantime as a result of typically Greek accent rules and, secondly, because some words are late formations, which may have been absent at an earlier stage of the language. We must therefore re-evaluate the material. It goes without saying that there is considerable danger of falling into sheer speculation, e.g. if one posits earlier accentuations that differ from the attested ones only because these would nicely conform to a preconceived rule. In order to avoid this, we must base our assumptions on clearcut comparative accentological evidence, which basically falls into two categories. In the first place, we must compare a given Greek form with the accentuation of its Vedic counterpart. However, this counterpart is often missing. In that case we must take into account the innovative tendencies of Greek accentuation in general in comparison with Vedic, e.g. the barytonesis of Greek *i*- and *u*-stems, which in view of Vedic is certainly an innovation. It must be noted that the first type of evidence presents us with the older accent of a form unless we have reason to assume that Vedic has innovated, whereas the latter type usually only casts doubt upon the value of the attested Greek accentuation (which is clearly inferior, though not unimportant evidence).

We know, for instance, that φῦοις must reflect **bhHu-tí*- in view of Ved. *bhūtí*-: barytonesis was generalized in Greek ι-stems, while Vedic preserved the more original accentuation (see Lubotsky 1988, § 2.11-2.12 and § 3.3-3.4). The final accentuation of φῠτός, φῠτόν is confirmed by Skt. *bhūtá*- and Latv. *bûts*.

We have no comparative evidence for the accentuation of φῠτάς, -άδος, φῠτών, φῠοικός, φῠτιος, φῠτωρ, Φῠταλος, φῠταλιᾱ́ (Myc. *pu-ta-ri-ja*), φῠτλον and φῠτρον, some of which may be late formations (esp. φῠτάς, also φῠοικός) or altogether unreliable (φύτωρ, which may not even exist, Φύταλος, which is a name). The accentuation of φῠτών, -ῶνος is probably unreliable because nomina loci in -ών are always oxytone, which points to productivity (Schwyzer 1977, 488), and they may not be Indo-European in origin. φῠτιος belongs to a group of verbal adjectives which is clearly linked with the

(oxytone) *to*-participle. All these Greek forms are accented on the root (cf. καθάροιος, ἀμβρόοιος, γνήοιος, see Schwyzer 1977, 466), which is probably a late phenomenon in view of the accentuation of the **-i(H)o*-suffix in Vedic (unstressed in e.g. *dámiya-* 'belonging to the house', *ráthíya-* 'relating to the chariot' but stressed in e.g. *viśíya-* 'belonging to the community', *udaníya-* 'watery'). The accentuation of φύτιος is therefore unreliable. The barytonesis in φῦτλον, φῦτλη is probably unreliable for a similar reason (cf. χύτλον, ἄντλος, ἐχέτλη, see Schwyzer 1977, 533), although we do not have Vedic evidence for this suffix, which is indistinguishable from PIE. **-tro-*. Note especially that χύτλον, with zero grade of the root, may point to a PIE. unstressed root. But note also that φῦτλον is a late form and therefore accentologically unreliable; it is well known that Greek neuters show a strong tendency towards barytonesis. As to φῦτρον (which may be a late formation because it is attested very late, see Chantraine), Greek forms in -τρον are always barytone, except λοετρόν and δαιτρόν. In view of the considerable amount of Vedic oxytone forms in *-tra-*, the Greek barytonesis, which was productive in neuters, is likely to be secondary in a number of words.

We may now turn to the forms with long -ῡ-. The barytonesis of φῦμα is matched by Ved. *bhúman-* 'world' < **bhHú-mn̥*, and is therefore old. There is no Vedic cognate of φῦλον. In view of the productivity of barytonesis in Greek neuters, the place of its accent is unreliable. As far as masculine forms in -λο- are concerned, both barytone (ὄχλος 'crowd') and oxytone forms (καυλός 'stem, spear-shaft', Lubotsky 1988, § 3.11) are attested in Greek. There is no compelling reason to suspect that φῦλή has recently innovated its accent (cf. θηλή 'teat' vs. ζεύγλη 'loop attached to the yoke', Lubotsky 1988, § 3.21), although the pattern νεῦρον, νευρά might be invoked, on which φῦλή could have been based. The length in φῡοίζοος is remarkable when compared with the short -υ- in φῦοις. We must note that these forms probably reflect unrelated formations. φῦοις is matched by δόοις, but φῡοι- by δωοί-δικος, δωοι-άραις. The accentuation of these compounds, which is in accordance with the "Dreisilbengesetz", must be secondary in view of the barytonesis of Skt. *dā́ti-vāra-* 'giving treasures'. It is unlikely that φῡοι- received its length from δωσι- because this type of compound is rare in Greek and not at all productive.

This brings us to the following results. The classification is

based on the degree of certainty of the accentuation at the time of the development *Hu > ū, ŭ. The categories 'probable', 'possible', 'unreliable' refer to whether the accentuation of a Greek word is demonstrably old, and not due to metatony.

(1) *bhHu- > φῡ- in the following words:

probable	possible	unreliable
1 φῡτός <*bhHutó-	1 φῦτλσν <*bhHutlóm	1 φῡτάς
2 φῦσις <*bhHutí-	(or *bhHú-tlom)	2 φῡταλιᾶ
3 φῡτήρ <*bhHutḗr		3 φῦτωρ
		4 Φῦταλος
		5 φῦτρσν
		6 φῦτιος
		7 φῡσικός
		8 φῡτών

(2) *bhHu- > φῡ- in the following words:

probable	possible
1 φῦμα <*bhHúmn̥	1 φῦλον <*bhHú-lom
2 φῦλή <*bhHuléh₂-	
3 φῡσί- <*bhHútí-	

It appears to be a reasonable assumption that PIE. unstressed *bhHu- yielded Gr. φῡ- and stressed *bhHu- yielded Gr. φῦ-. φῡλή is a clear exception, however (see below).

2. The evidence may be supplemented by the nominal forms of two other verbal roots, viz. *uelH-u- 'to turn, wind' in Gr. εἰλύω, Skt. ūrṇóti 'covers, wraps around' < *u̯l̥H-n̥-eu-, which may be an enlarged form of *uelH- in Latv. vel̂t 'to roll, turn around (see IV.E.13.2.3.2.1 no.3. valva, especially on the semantics); and *lHu- in Gr. λύω, if it is cognate with λαῖον 'part of a plough, sock or blade' < *leh₂uiom (uncertain).

With φῡτός, compare λῡτός < *lHu-tó-;

With φῦσις, compare ἅλῦσις 'chain' (see Frisk ad loc.) < *u̯l̥Hu-ti- (the original accentuation of the latter is unknown; Greek i-stems are pervasively barytone due to a secondary remodelling);

With φῦτρον, compare λῦτρον 'ransom, atonement' < *lHu-trom and ἔλυτρον 'covering, sheath' (with ŭ or ῡ) < *uelHu-trom;

With φῦμα, compare ἔλῦμα 'stock of the plough' (see

Chantraine s.v. εἰλύω) and εἴλῡμα 'wrapper' < **uélHu-mn̥*;

With φῡοι-, compare λῡσι- in compounds < **lHú-ti-*.

The accentuation of ἄλῡσις and λῦτρον, ἔλυτρον is unreliable (see above s.v. φῦοις and φῦτρον). ἔλῡμα, εἴλῡμα have unstressed -ῡ-; in any case, εἴλῡμα cannot be original in view of its ει-. Since Greek neuters are generally barytone, due to the productivity of barytonesis, the place of the accent in ἔλῡμα may be secondary. ἔλῡμα may have replaced *Fλῡμα < **ulHú-mn*, but this is merely a supposition (see the evaluation below).

There are other derivations from this root, which do not have an exact counterpart in the root **bhHu-*. ἔλῡμος 'case' < **uélHu-mo-* has unstressed υ < **Hu*, and so does λῡτέον 'to be refuted' < **lHu-téu̯o-*. βουλῡτὸν δέ (Il. II 779, Od. ι 58) 'until evening', litt. 'unyoking of the ox' is not indicative of unstressed **-Hu-* > -ῡ- (v. λῡτός) because its final accent may be due to the postposition δε (cf. Gr. ἐνθάδε = ἔνθα + δέ). In fact, it is unlikely that -λῡτον can be identified with λῡτός: it is most likely a nomen actionis of the type τόμος, that is, a barytone form.

Thus, λῡτός, ἔλῡμος and λῡοί- support the accent rule suggested above in order to explain φῡ- : φῦ-, whereas ἔλῡμα contradicts it. The latter may not be decisive. ἄλῡοις, λῦτρον and βουλῡτὸν δέ cannot be used as evidence.

3. There is some more evidence that can be used. In the verbal root **uerHu-* 'protect' (cf. Skt. *varūtár-* 'protector', *várūtha-* (ntr.) 'protection'), we find Gr. ἐρῦ- < **uerHu-* with unstressed -ῦ- in ἐρῦοι-, ἔρυμα, ἐρυμνός, ἐρυ̯ομός beside stressed ῥῡ- in ῥῦμα, ῥῦ́οιος, ῥῦοις (late), ῥῦτωρ and unstressed ῥῡ- in ῥῡτήρ, ῥῡτός. This only partly fits in with the proposed accent rule. Remodelling of earlier, more complicated alternations (**u̯erŭ-*, **u̯rŭ-*) to ἐρῦ- : ῥῡ- must be considered possible.

4. πῦρ 'fire', Gsg. πῡρός < **pHur-*, cf. Hitt *paḫḫur*, would also confirm the accent rule. The original Nsg. had full grade (**peh₂ur*).

5. On σκῦτος (ntr.) 'leather, hide, skin' < **(s)kHút-os* see IV.E.2.4.2 no. 6. *cŭtis*. There is no exact formal counterpart in other languages, but if the formation of σκῦτος is old, its barytonesis is probably old as well because neuter *s*-stems are pervasively barytone in PIE.

6. ἱμάς, -άντος (m.) 'leather strap or thong' (usually -ῐ̆-, but -ῑ- in K 475 and Φ 544), καθ-ῑμάω 'let down by a rope', ἰμονιά 'well-rope', ἰμανήθρη 'id.', ἰμαῖος 'of, for drawing water'. ἰμονιά is considered to be based on *ἰμων, and the other forms on ἱμᾰ́ (with long or short -ι- ?). If we accept this derivation from two basic nouns, and if we try to find an explanation for the attested alternation -ῑ-/-ῐ̆-, we may suggest that ἱμάς, ἱμαῖος reflect the original quantity of ι- in *ἱμᾰ́, and that ἰ- is based on the influence of *ἰμων. This is, of course, tentative.

The Greek forms are usually connected with PIE. *sē(i)-*, *səi- : sī-*; *sei- : sī-* (Pokorny, IEW. 891). The interpretation of the forms adduced by Pokorny is difficult. In the first place, Indo-Iranian points to a root **seH-*, **sH-* in the root aorist *(á)sāt* (RV), *áva-sā-* 'Lösung, Befreiung', *ava-sā́na-* (RV) 'Ausspannen, Rastort', *ava-sātár-* (RV) 'Löser'. The present *syáti* 'binds' (RV) probably reflects **sH-yá-*, cf. Av. **hāyeiti* in *aŋhāyā* (Yn. 32, 16), see Insler, *Language* 47, 1971, 581 ff. Insler argued that this laryngeal root must be distinguished from IIr. **si-*, **sai-* in Skt. *setár-* 'Fessler, Knebler' (RV), *sétu-* 'binding, fetter, bond, bridge' and also in the perfect *siṣāya* (RV) 'bound' < **si-soi-e* and the ppp. *sitá-*. However, *se-* may reflect **saHi-*, *si-say-* may reflect **si-saHi̯-* and *sitá-* may reflect **sH-tó-*. *sīmán-* (m.), later *sīmā*, orig. 'parting of the hair' (AV), later 'border', probably has nothing to do with the root 'to bind' (thus Mayrhofer KEWA ad loc.).

The RV. present *sināti* 'binds' clearly seems to point to a root **siH-* or **sHi-*, which confirms **seH-*, **seH-i-* and invalidates Insler's **seH-*, **sei-*. According to Hoffmann ap. Mayrhofer, KEWA III, 803, the inflection of *sināti* is based on a 1 pl. present **sinimás* < **sH-n-i-més*, so that there is evidence for **sHi-* after all. Alternatively, *sināti* may directly reflect a root **siH-*, which may itself go back either to original PIE. **siH-* or to metathesized PIE. **sHi-* (cf. *lunā́ti* 'cut' < **lu-n-eH-*, of PIE. **lHu-* (see IV.E.2.1.1)).

We may now turn to the evidence from other languages. None of the cognates necessarily points to a root **sHi-*. Hitt. *išḫiia-*, *išḫāi-* 'to bind' may, like *tiia-*, *dāi-* < **dhh₁-i-*, reflect **sH-* plus a suffix, not a Wurzelerweiterung, *-i-*; Lith. *siẽti*, Latv. *siet* 'to bind' point to **sei-*, though **sHei-* is also possible; OIc. *símí*, OE. *sīma*, OS. *sīmo* 'rope, tie' reflect **se(h₁)i-mōn*, **seih₁-mōn* or **siH-mōn* (< **sHi-mōn*,

see section 3 below); Ir. *sīm* (see Vendryes ad loc.) 'chain' may reflect (pretonic, see Appendix section 2) **sHi-m-*.

We may conclude that outside Greek there is evidence for **seH-* and for **seHi-*; there is no clear evidence for Insler's **sei-*. It is generally admitted that Gr. **ἴμων* can be identified with Germ. **sīmōn*. We may reconstruct both forms as PIE. **sHi-mōn*. Since Germanic *-ī-* was not shortened in accordance with Dybo's rule (V.B), the form was barytone, which would confirm the Greek accent-rule: **ἴμων* < **sHí-mōn*. *ἰμάς* has no counterpart in other languages. It probably reflects **sHiméh₂-* (in which case it conforms to the accent rule under investigation).

7. βρῖθος 'Wucht, Gewicht, Last', βρῑθύς 'wuchtig, schwer', βρίμη 'Angriff, Zorn', βρίθω 'to be heavy' etc. (Pokorny IEW. 477 s.v. **gᵘerĭ-*; on ὄβριμος 'gewaltig' see Frisk ad loc.) are usually considered to reflect enlarged forms of **gʷerh₂-* 'heavy' in βαρύς etc. In that case, these forms reflect **gʷrh₂-i-*, apparently with metathesis to **gʷrih₂-*. Only βρῑθύς would conflict with the proposed accent rule, but its accent need not be old in view of the generalization of oxytonesis in Greek *u*-stem adjectives. The etymon can hardly be used for the present purposes because βρίθω belongs to the type τρίβω.

8. λῑ́ς 'smooth' and Asg. λῖτα, Dsg. λῑτί 'linen cloth' reflect **lh₁i-t-* (for the root see II.B.2.2. no. 14), with mobile accent. It cannot therefore be used here. λῑτός 'smooth' is probably derived from λῑτ- (Fraenkel ap. Chantraine and Frisk). Since adjectives in *-to-* are always oxytone in Greek, the oxytonesis of λῑτός may be due to adaptation to the existing type. It can hardly be used to prove **Hi* > ī in originally pretonic position.

The following Greek forms cannot be used at all because their etymology is too uncertain:

a) with *-ī-*, *-ĭ-*

9. ἴς, ἰνός 'Sehne', ἶρις 'rainbow', ἴτυς 'Radfelge, Schildrand' were connected by Pokorny (IEW. 1121; see also Frisk ad locc.) with the root **uHi-* 'to wind' (see 2.2 no. 11 below), which is semantically unconvincing. That ἰτέα 'Weide, ein aus Weide geflochtener Schild' belongs to **uHi-* is possible, but not compelling. Because of the limitation law the paroxytonesis may have replaced original barytonesis. It is therefore no counter-evidence against the proposed accent rule.

10. λῑρός 'frech, lüstern' (Pokorny IEW. 665 s.v. *lē(i)- : ləi- 'wollen') may be cognate with λαιμός 'wild, ausgelassen', but it has no convincing further etymology. Dor. λᾶν 'to want', Gr. λᾶμα 'wish' point to *ɻlē- < *ɻleh₁- (cf. volō < *ɻel-), which is incompatible with -α- in λαιμός.

11. πίθηκος, πίθων 'monkey' (Pokorny IEW. 162 s.v. bhōi- : bhəi- : bhī- 'sich fürchten') has no serious etymology (see Frisk ad loc.).

12. The connection of οἶμός 'mit eingedrückter und aufgestülpter Nase' with the root *sɻĕ(i)- 'biegen, drehen, schwingen' (Pokorny IEW. 1041) is unlikely not only for semantic reasons, but in view of alleged *sɻ- > o- also for formal reasons.

13. The connection of (o)μῑκρός 'small' (Pokorny IEW. 966 s.v. smē[i]k- : smīk-) with OHG. smāhi 'small' < *smēk- < *smeh₁k- cannot be maintained because of the vocalism.

14. ομῑ́λη 'Schnitzmesser' (Pokorny IEW. 968 s.v. 2. smēi- : smə̄i- : smĭ̄-) probably has secondary -ī- (see Frisk ad loc.), cf. ομῑνύη, ομῑνύς 'Hacke' and especially OIc. smiðr etc. 'smith', which point to a root without a laryngeal. It may be a substratum word.

15. σπινός 'meagre' (cf. σπιδιός 'ausgedehnt'?, Frisk ad loc.; Pokorny IEW. 982 s.v. 2. sp(h)ei- : sp(h)ĭ̄- und sp(h)ē- : sp(h)ə̄- 'ziehen, spannen') probably does not belong to Pokorny's root for semantic reasons and has no convincing alternative etymology (perhaps with OIr. séim 'meagre' < *speimi- ?), nor does it offer any evidence for a PIE. laryngeal.

16. On ἀγχιοτῖνος 'nahe aneinandergedrängt' (Pokorny IEW. 1010 s.v. stāi-; stĭ̄-; stį̆-ā- 'verdichten, zusammendrängen, stopfen; gerinnen') see Frisk s.v. ἄγχι. Whether οτίλη (Pokorny ibid.) 'drop' belongs to *steh₂i- in οτέᾱρ 'stehendes Fett, Talg' < *stāi̯r < *steh₂ir is very uncertain.

17. τῖλος 'dünner Stuhlgang', τῖφος (ntr.) 'sumpfige Stelle, feuchter Grund' < *tī- (Pokorny IEW. 1053 s.v. tā-, tə-; tāi-, təi-, tĭ̄- 'schmelzen, sich auflösen...hinschwinden') may be connected with Russ. tína, OCS. tina 'Schlamm', Latv. tīrelis 'bog' (see Kortlandt 1975, 63 for the accentuation). The Balto-Slavic forms point to *tiH-, which may, but need not, have arisen from stressed *tHi-. The connection with Gr. τήκω, OCS. tajati 'to melt' < *teh₂-, which would lead us to consider *tHi- as the older form, being *teh₂- + -i-, is

too unreliable for semantic reasons.

18. χρῖσις 'Salbung', χρῖμα 'Salb', χρίω 'salben' (Pokorny IEW. 457 s.v. *ghrēi- : ghrəi- : ghrī-* 'darüberstreichen, hart darüberstreiben, bestreichen...') are usually connected with Lith. *griẽti* 'Sahne von der Milch schöpfen' < **ghrei-*, which in view of the intonation did not contain a laryngeal. The connection is, of course, uncertain for semantic reasons. The group belongs to the type τρίβω discussed by Ruijgh, and cannot therefore yield evidence for the development of **-HI-*.

b) with -ū-, -ŭ-

19. γρῦπος 'crooked' (Pokorny IEW. 389) is perhaps cognate with OE. *crumb*, OHG. *krump* 'crooked', although there are alternatives for the Germanic forms (see e.g. Franck - Van Wijk - Van Haeringen s.v. *krom*). There is no evidence for a laryngeal in Germanic (cf. Pokorny's *greu-p-*), and consequently there is neither for PIE. **-Hu-*. The word cannot be used.

20. The connection of ὑσ-κυθά· ὑός ἀφόδευμα, κυθ-ώδεος· δυσόσμου, κυθνόν· σπέρμα (Hes.) (Pokorny IEW. 627 s.v. *kŭdh-* 'Mist, Kot'??) with Lith. *šū́das*, Latv. *sūds* 'dung' is too uncertain to be relied upon.

21. κώκῡμα 'Schrei', κωκύω 'schreien' (Pokorny IEW. 535 s.v. *kău-, kĕu-* 'heulen') is perhaps cognate with Skt. *kā́uti* 'cries'. In view of the intonation of Lith. *kaũkti* 'to cry, howl' the root did not contain a laryngeal. If one wishes to maintain the connection, one may explain the long -ū- by assuming that it arose through secondary verbal ablaut of the type τρίβω.

22. λῡγαῖος 'dunkel', ἠλύγη 'Schatten' (Pokorny IEW. 686 s.v. 2. *leu-g- : lu-g- : lū-g-* 'schwärzlich, Sumpf') has no convincing etymology. It may be of non-Indo-European origin.

23. On λύθρον and λῦμη (Pokorny IEW. 681 s.v. 1. *leu-, leuə- : lŭ-*) see IV.E.2.4.2 no. 9 (unreliable).

24. λῦπη 'Kränkung' (Pokorny IEW. 690 s.v. *leup-* 'abschälen, entrinden, abbrechen, beschädigen');
25. μῦθος 'Word' (Pokorny IEW. 743 s.v. *mēudh-, məudh-, mūdh-* 'worauf bedacht sein, sehnlich verlangen');
26. μύκων· σωρός θημών (Hes.) (Pokorny IEW. 752 s.v. *mŭk-* 'Haufe' und Zubehör?) and
27. σκῦρος 'Steinsplitten' (Pokorny IEW. 954 s.v. 6. *skēu-(t-)* 'schneiden, brennen, kratzen' etc.) do not have a convincing etymology and cannot be used here.

28. συχνός 'numerous' (Pokorny 1098 s.v. 1. *tu̯ăk-*, *tuk-* etwa 'fest umschliessen, zusammenschnüren' (gr. weiter auch 'fest hineinstopfen u. dgl.')?) is usually derived from *τυκσνός, and connected with σάττω 'ausrüsten' < **tu̯akjō* < **tuh₂ek-*?, which is highly unsatisfactory for semantic reasons. It cannot be used.

29. The quantity of *-u-* in τύφη 'kind of plant' is unknown (Pokorny IEW. 1080 s.v. *tēu-*, *təu-*, *teu̯ə-*, *tu̯ō-*, *tŭ-* 'schwellen'). Presumed cognates have *-ū-*: Lat. *tūber* 'Höcker, Beule' (?), OE. *þūf* 'Laubbüschel';
There is no evidence that τύλη, -σς 'Wulst, Schwiele, Buchel', 'Pflock, Nagel, Penis' or τῡρός 'cheese' reflect **tHu-*. It is very doubtful for semantic reasons that τύφη, τύλη and τῡρός belong to the same root **tHu-* 'schwellen'. These words cannot be used here.

1.3. The verbal forms and productive ablaut

We now turn to a number of indicative verbal forms, which have three complications over the nominal forms. In the first place, the Greek accentuation is not indicative of the PIE. accent, so that we are entirely dependent on the accentological information from Vedic. Secondly, the verbal forms may be expected to be more liable to productive ablaut than nouns (cf. the type φρύγω, τρίβω, and the νυ-presents). As in the nouns, the PIE. full grades of the type **bheHu-* are not found in Greek, so they must have been replaced.

The quantity of *-υ-* in the Greek verbal forms of **bhHu-*, **lHu-* and **uelHu-* agrees completely, so that one may concentrate on **bhHu-* here, implying that the quantity of, say, the future of **bhHu-* in Greek is the same as that of the future of **lHu-* and **uelHu-*.

One finds a long vowel in: fut. φῡ́σω, σ-aor. ἔφῡσα, perf. act. πέφῡκα; and a short vowel in the medial root aorist λῠ́μην, the θη-aor. λῠθῆναι, perf. med. λέλῠμαι (*-ῡ-* in εἴλῡμαι is due to a later analogical development, see Ruijgh 1976, 341 on the type φρύγω). The distribution of ŭ : ū is parallel to the distribution of zero : full grade elsewhere, which might indicate that the former arose by analogy with the latter. However, as I have stressed in section 1.1, the rise of the alternation ŭ : ū in PIE. roots containing **Hu* cannot be ascribed to analogy altogether.

A special and illustrative instance is the root aorist ἔφῡν. Kortlandt plausibly argued that the original full grade root *φαυ-

(< *bheh$_2$u-, cf. Skt. *bodhí*) was replaced by zero grade φῡ- after laryngeal metathesis in order to obtain a more regular ablaut (1986a, 91). I.e., *φαυ- (< *bheh$_2$u-): *φῡ- (< *bhHú-): *φῠ̆- (< *bhHu-) was replaced by φῡ- : φῠ̆- by analogy with η : ε, ᾱ : ᾰ, ω : ο. The same replacement of *φαυ- by *φῡ- may have occurred in the type ἔφῡσα (full grade root is expected in the *s*-aorist) and φῡσω (cf. ἐλεύσομαι). In πέφῡκα, -φῡ- may have replaced *-φου- < *bhoHu-. I shall return to this replacement of full grades in the evaluation below. The originally zero grade root in λῠ́μην, λῠθῆναι, λέλῠμαι is confirmed by κτάτο, ἐκτάθην (κτείνω), ἐτύχθην (τεύχω), πέπταμαι (πετάννυμι), τέτυγμαι (τεύχω). It appears from Vedic that the perfect middle always had an unstressed root, so that *-Hu- > -ῠ̆- is the expected reflex in Greek.

1.4. Evaluation

It was argued that there is a correlation between unstressed *-Hu- and Gr. -ῠ̆- and between stressed *-Hu- and Gr. -ῡ-. The only true exceptions are φῡλή and ἔλῡμα. I have also argued, following Kortlandt, that there is a correlation between PIE. full grade and Greek -ῡ- (ἔφῡν, but also Skt. *ábhūt*). One may wonder whether one needs both correlations in order to explain the Greek forms. As I have tried to demonstrate in 1.1, I think we do.

The motivation for the replacement of *bhau- < *bheHu- by *bhū- is not difficult to see if one assumes that there already existed an "ablaut" *bhū- (< stressed *bhHu-) : *bhŭ- (< unstressed *bhHu-). As full grades were normally stressed, it was only to be expected that *bhau- was replaced by *bhū-, not *bhŭ-.

I conclude that, apart from the replacement of *bhau- by *bhū-, which must undoubtedly have occurred, we must necessarily assume that there was a rule which explains both Gr. *bhū- and *bhŭ- from PIE. *bhHu-: we need the latter rule in order to understand the former replacement.

We have seen that ἔλῡμα and φῡλή were the only reliable cases of counterevidence against the proposed accent rule. As to ἔλῡμα, it may perhaps be a late formation, or replace *Fλῡ́μα after the verbal stem *ἐλῡ́-, or its length may be analogical after φῡμα (Frisk). As far as φῡλή is concerned, we may assume that φῡ- replaced *φαυ- < *bheHu-. Full grade in the root is the rule in Greek λη-forms (cf. θηλή, κεφαλή, αὐλή, ζεύγλη, τρώγλη vs. ὀμίχλη, see Lubotsky 1988, § 3.21). It is

possible that some other nominal forms with Gr. -ῡ- replace a form with earlier full grade, e.g. φῦμα, πῦρ (cf. Hitt. *paḫḫur*) and especially φῦοι-, λῦοι- in view of δωοι-.

I conclude that there is some evidence that PIE. **CHuC* yielded Greek *CῡC* if stressed, and Greek *CŭC* if unstressed. This evidence largely derives from the root **bhHu-*. The counterevidence has turned out not to be strong enough. However, the evidence is such that a compelling conclusion cannot be drawn. As an alternative, one is reminded of the productive ablaut ῡ/ŭ (e.g. in the νυ-presents), which may have replaced Gr. **au/*u* < **eh₂u/*h₂u*. Note that the "ablaut" **ū* : **ŭ* that arose as a result of the development of **-Hu-* may have played an important role in the rise of the type φρύγω, τρίβω described by Ruijgh.

I have found no evidence for the development of **-Hi-* in Greek apart from ἰμάς etc. (no. 6 above), which points to a development identical to that of **-Hu-*.

We can formulate the following rule for the development of **-HI-*: if in a Greek etymon ŭ or ĭ alternates with ῡ or ῑ either in non-verbal forms or in verbal forms for which there is independent evidence for a PIE. laryngeal in the root, we may reconstruct PIE. **Hu*, **Hi*.

2. The development of **-HI-* and **-IH-* in Celtic

2.1. Introduction

In his discussion of an article by V.A. Dybo, Kortlandt 1981 claimed that PIE. pretonic **-Hi-*, **-Hu-* yielded Italo-Celtic **-ĭ-*, **-ŭ-*, whereas PIE. stressed **-Hi-*, **-Hu-* merged with PIE. **-iH-*, **-uH-* and yielded Italo-Celtic **-ī-*, **-ū-*. In this way he could explain why one finds a short vowel in Lat. *fŭtūrus*, Olr. *-both* < **bhHu-tó-*, cf. Gr. φῦτός, Skt. *bhūtá-*, Latv. *bûts*.

Dybo (1961) had claimed that long vowels (< **VH*, including **iH*, **uH*; PIE. lengthened grades) were shortened in pretonic position in Italo-Celtic. The same shortening allegedly took place in Germanic, but only before a resonant. On cases where Greek and Sanskrit contradicted the reconstruction of the Italo-Celtic and Germanic accent, Dybo based the assumption that Italo-Celtic, combined with Germanic and Balto-Slavic, represented an older stage of accentuation than Greek and Sanskrit. This approach was rightly criticized for its circularity (Illič-Svityč 1962, L. Joseph 1982, 33-34, Kortlandt 1981). Kortlandt's suggestion was an improvement in this respect. He made

a distinction between the development of *-*Hi*-, *-*Hu*- in Italo-Celtic and the pretonic shortening of *ē, *ā, *ō in Italo-Celtic and Germanic. I will adopt this distinction because the opposition between *-*Hi*-, *-*Hu*- and *-*eH*-, *-*oH*- is a factual opposition of the protolanguage. Pretonic shortening has been discussed in V.B., but we will come across it in the following sections.

The Celtic forms that were adduced by Dybo and Kortlandt will be discussed in the following pages.

2.2. Celtic *-ĭ-, *-ŭ- < PIE. *-*HI*-

1. OIr. *bíu, beo*, W. *byw*, Co. *byw, bew*, Bret. *bev* 'alive' reflect PCelt. **bĭu̯os*. The broken tone of Latv. *dzîvs* points to *$g^{w}Hiu̯ó$-. Russ. *živ*, SCr., Sln. *žîv*, Cz., Slk. *živý* have AP (c), which confirms the conclusion reached for Baltic (Kortlandt 1975, 54 for the forms). Compare also the final accentuation of Russ. fem. pret. *žilá* < *$g^{w}HiláH$. The oxytonesis of Skt. *jīvá-* confirms the oxytonesis of the Balto-Slavic forms. Celtic **bĭu̯os* consequently reflects PIE. *$g^{w}Hiu̯ó$-. Goth. Asg. *qiwana* 'living' also has short *-i-*, but this is probably due to Dybo's rule (see V.B). See IV.E.2.4.3 no. 13 on Lat. *vīvus*.

OIr. *bith*, W. *byd*, OCo. *bit*, Bret. *bed* 'world' < **bītu-* reflect the same root and must go back to *$g^{w}Hitu$-. W., Co. *biw* 'cow, cattle' is probably not cognate; it rather reflects the PIE. word for 'cow' (Kortlandt 1981, 4 fn. 5).

Gr. ζωός etc. must reflect *$g^{w}ieh_3$-, with a "new" full grade based on the metathesized form (i.e. *$g^{w}eh_3i$- : *$g^{w}h_3i$- > *$g^{w}eh_3i$- : *$g^{w}ih_3$- >> *$g^{w}ieh_3$- : *$g^{w}ih_3$-).

2. OIr. *buith* 'being' reflects **bhHu-tí-*, cf. Skt. *bhūtí-*, Lith. *būtìs*, Latv. *bût* and the short vowel in Gr. φῦσις (see above). The OIr. pret. pass. *-both* 'was' reflects **bhHu-tó-* in view of Skt. *bhūtá-*, Gr. φῦτόν, Latv. *bûts*. OIr. *both* (*ā*, fem.) 'hut' most likely reflects **bhHu-téh₂-*, with the same accentuation as **bhHu-tó-*.

That the root was **bhHu-*, not **bhuH-*, appears from:
(1) Latv. *bût* (see IV.E.2.1.3);
(2) Russ. *bylá* (see IV.E.2.1.3);
(3) The Greek alternation φῡ- : φῦ- (see section 1 above);
(4) The barytonesis of Skt. *bhū́mi-*, *bhū́ri-* (see IV.E.2.1.5);
(5) Evidence from full grade forms, firstly Skt. *bodhí*, in the second place the OIr. preterite of the substantive verb and the copula: 1, 2 sg. *-bá*, 3 sg. *-boí*, copula *-bo* < **bhāw-* < **bheh₂u̯-* (Kortlandt 1986a, 90) (see IV.E.2.1.1);

(6) Goth. *bauan* etc. < **bheh₃u-*, cf. Goth. *sauil* 'sun' < **seh₂uel-*.

On Italic **fŭ-* see IV.E.2.4.2 no. 7.

3. OIr. *cuil* (fem., Gsg. and Npl. in *-e*) 'fly', W. *cylion* 'midges', cf. Lat. *cŭlex* 'gnat', reflects PCelt. **kŭl-*. Pokorny IEW. 626 compares these forms with Skt. *śū́la-* 'Spiess, spitzer Pfahl, stechender Schmerz', *śūka-* 'Stachel eines Insekts, Granne des Getreides', Av. *sūkā-* 'Nadel'. These forms point to **kuH-*. PIE. **kHu-* is possible, but cannot independently be proven. Nor is there evidence for the oxytonesis required to explain the short vowel in *cuil*. *cuil* cannot be used as counterevidence. Note that it may also be possible to explain *cuil* from **kūl-* by shortening in accordance with Dybo's law.

4. OIr. *guth* (*u*, masc.) 'voice' must be compared with Skt. *hávate* 'calls', *hūtá-* 'called', *hávīman-* 'invocation' < **ǵh(e)uH-*. Gr. καυχάομαι 'to speak, call loudly' (with intensive reduplication), probably from **ǵheh₂u-* and the Vedic injunctive 1 pl. *hóma* < **ǵheh₂u-me* point to PIE. **ǵheh₂u-*. We must therefore reconstruct *guth* as **ǵhh₂u-tu-*. There is no independent evidence for the accentuation.

5. OIr. *sith-* 'continuous', *sithithir* 'as long as', W. *hyd*, Co. *hes*, Bret. *hed* 'length' < **situ-* or **siti-* (see Vendryes s.v.) reflect a root **seh₁-* that is enlarged by **-i-*. **seh₁-* is found in Lat. *sētius* 'later, less, worse', *sērus* 'late' = Ir. *sír* 'lasting, eternal', W.Co.Bret. *hir* 'long' < **seh₁ro-*. OE. *sīd* 'long', OHG. *sīto* 'lax' reflect **sh₁i-tó-* (note the metathesis despite the pretonic position) or perhaps **seh₁i-tó-*. OE. *sīð ðām* 'seitdem', OS. *sīth*, OHG. *sīd* 'seit' reflect **sh₁í-to-* or **séh₁i-to-* (on these forms see Lühr 1978, 122). The alleged relation with Skt. *sāyám* 'at night' (Pokorny 890, Lühr 21) is quite uncertain in view of its meaning.

Thus, Celtic **situ-* or **siti-* reflects **sh₁i-*. We cannot be sure about the position of the stress.

Dybo and Kortlandt adduced a number of other forms, which, however, cannot be used for various reasons:

6. OIr. *bolach* 'rash', OIr. *bolcha* 'pimples, pustules', cf. OSwed. *bulin*, *bolin* 'swollen', may reflect **bhuHl-* or **bhHul-* (Pokorny IEW. 98), cf. OHG. *pūlla* 'Beule', OE. *bȳle* 'id.' < **bhuHl-*, but *bolach* may alternatively reflect a root **bhelh₁-*, **bhleh₁-* (Pokorny IEW. 120), cf. OSwed. *bulde*, *bolde*, *byld* 'Beule' < **bhlh₁-*, OS. *blādare*, OHG.

blāt(t)ara 'blister' < **bhleh$_1$-*. If the latter is true, Ir. *bolach*, *bolcha* reflects **bholh$_1$-*, and the OSwed. forms reflect **bhlh$_1$-V-*. However, since OS. *blādare* etc. always have **-dh-*, and *bolach* does not, a derivation from **bhHul-* is perhaps to be preferred. It is clear that these forms cannot be used as evidence.

7. Ir. *bruith*, W. *brwd* 'boiling' etc, Ir. *en-bruithe* 'broth' reflects **bhru-*, not **bhrHu-*: see IV.E.3.3 no. 6.

8. Ir. *crott* 'harp, lute, hump, hunch' (ā, fem.), W. *crwth* (masc.) 'violin, harp, vessel, basket, box, hump, hunchback', W. *croth* (fem.) 'womb, belly' reflect a PCelt. root **krutt-*, with an unclear geminate, if all forms belong here (esp. W. *croth* is semantically aberrant). The Celtic forms are usually compared with Lith. *krūtìs* (AP. 4), Gpl. *krū̃tų* 'weibliche Brust', *krūtìnė* 'Brust' (Pokorny IEW. 627). In view of the accentual paradigm of the Lithuanian word and the intonation of the corresponding Latvian form *krùts* 'Hügel, Brust', the Baltic long vowel cannot reflect PIE. **-uH-* or **-Hu-*. It may be ascribed to productive ablaut in Baltic. There is no evidence for a laryngeal in the root of Ir. *crott* etc.

9. MIr. *dumach* (ā) 'sand-bank, bank, mound; heap, mass, mass of clouds: mist' is usually connected with the PIE. word for 'smoke', Skt. *dhūmá-*, Gr. θῦμός < **dhuHmó-*. Since the meaning 'mist' of *dumach* is clearly a secondary development (*Dictionary of the Irish Language* s.v. *dumach*), and since *dumach* is itself derived from *dumae* 'mound, tumulus, pile, heap', not 'smoke, mist' vel sim., we may be confident in separating it from PIE. *dhuHmo-*.

10. Ir. *fichid* 'fights', W. *gwychr* 'courageous, fierce', *gwychydd* 'hero' must be cognate, but the reconstruction of the velar presents difficulties: *fichid* points to **u̯ik-*, but W. *gwych-* to **u̯ikk-* (or **u̯ik-sk-* ?). Moreover, it is unclear how, if at all, W. *gwyth* 'anger, wrath' fits in. The root is probably the same as that found in Lat. *vincō* 'to vanquish' and in Goth. Dsg. *wigana* 'Kampf, Krieg', OHG. *irwigan* 'abgekämpft', OHG. *ubarwehan* 'überwinden', OIc. *vega* 'kämpfen, töten' < **u̯ik-*, i.e., a root which does not contain a laryngeal.

In view of these forms, it is difficult to connect OIr. *fích* 'feud, enmity, anger, resentment' < **u̯īk-* (?) with this root (but see McCone 1987, 9 on *-í-* in the verb). It cannot be equated with OIc. *vígr* 'in fighting condition, able to fight',

OIc. *víg* 'battle', Goth. *weihan* 'to fight' because these Germanic forms probably reflect **u̯eik-*. Lith. *výkis* (masc.) 'Leben, Lebendigkeit' has long *-ī-* but in view of the circumflex and of *vikrùs* 'munter' it can hardly be old. At any rate, there is no reason to think that *fichid* etc. reflect PIE. **u̯Hik-*.

11. OIr. *fithe* in *tech fithe* 'wicker house' must actually be read *fíthe*, with a long *-ī-* (see *Dictionary of the Irish Language* s.v. *fíthe*). *fíthe* reflects **u̯ī-tio-* < **u̯iH-tio-*. The root was PIE. **u̯Hi-* (cf. Russ. *vilá*, Latv. *vîte*), so that one would expect **u̯Hi-tió-* (if it was indeed oxytone) > Ir. **fithe*.

OIr. *fíthe* reflects the verbal adjective in **-tio-* of OIr. *-fen-*. It has long *-í-*, not short *-ĭ-*, which is found in the Indo-Europeanist literature. Since the root of the verb was originally **u̯Hi-* and since the verbal adjective had final accentuation in PIE., one would expect OIr. **fĭthe*, with short *-i-*, in accordance with Kortlandt's argument in 2.1. However, one may assume that *fíthe* was based on the metathesized form **u̯iH-*, which was the basis of the present *-fen-* < **u̯i-n-H-*. Compare the models OIr. *crenaid*, *críthe* (root **k^{w}riH-*), OIr. *benaid*, *bíthe* (root **bhiH-*).

The Germanic forms OE. *weðel* 'Binde', OHG. *wid(i)* 'Strick aus gedrehten Reisern', OHG. *kuna-with* 'Fessel', Goth. *kuna-wida* 'Fessel', OIc. *við*, Gsg. *-jar* 'gedrehtes Band' etc. (Pokorny IEW. 1122) have a short root vowel, and cannot therefore belong to **u̯Hi-*/**u̯iH-*. Most likely they must be connected with **u̯edh-* in OIr. *fedan* 'carriage', OIr. *fedil* 'yoke', W. *gwedd* 'yoke', Goth. *ga-widan* 'to bind', OHG. *wetan* 'to bind, yoke' and PGm. **windan* in e.g. MoHG. *winden*, Engl. *to wind*.

12. Ir. *lenomnaib* gl. *lituris* (Dpl.), OBret. *linom* gl. *litura* must be compared with Lat. *lĭnere*, *lēvī*, *lĭtum* 'to besmear, smoothen', which most likely reflects **h$_2$li-*, cf. Gr. ἀλίνω 'id.' (see II.B.2.2 no. 14).

13. Ir. *lon* 'Hammel, Schöps' (Pokorny, IEW. 681) probably does not exist: see *Dictionary of the Irish Language* p. 246 s.v. Ir. *lunu* (a hapax). It cannot therefore be compared with the root **lh$_2$u-* in Skt. *lunā́ti* 'cuts', Gr. λῡτός 'loosened' (see E.2.1.1).

14. Ir. *lucht* (*u*, masc.) 'contents, charge, cargo, people', W.

llwyth 'load, burden, tribe' reflect PCelt. **luktu-*. Pokorny IEW. 686 s.v. *leuģ-* 'brechen' connects this word with Skt. *rujáti* 'zerbricht, peinigt', Lith. *láužti*, Latv. *laûzt* 'to break (trans.), Lith. *lūžti*, Latv. *lûzt* 'to break (intrans.)' < **louģ-*, **luģ-*. The intonation of the Baltic forms must be explained by Winter's law, and does not presuppose a PIE. laryngeal. Pokorny also compares OE. *tō-lūcan* 'zerstören'. The meaning of the Celtic forms would have developed via an intermediate stage 'piece'. This is not evident, of course. I would propose to connect the Celtic forms with Goth. *ga-lūkan* 'einschliessen', OIc. *lúka* '(auf)schliessen' etc., OIc. *lok*, OE. *loc* 'lock' < PIE. **luģ-*. Germ. *-ū-* cannot be explained from PIE. **-uH-* because the latter cannot explain the short vowel in *lok*. Compare OE. *tō-lūcan* mentioned above, where *-ū-* cannot reflect **-uH-* in view of Skt. *rujáti*. It is more likely that in these cases Germ. *-ū-* is the result of a secondary Germanic ablaut (*ū : au : ŭ* after *ī : ai : ĭ* < **ei : *oi : *i*).

I conclude that we have no compelling reason to reconstruct a laryngeal in either **leuģ-* 'to break' or **leuģ-* 'to lock (in)'. Consequently, there is no reason to reconstruct a laryngeal for PCelt. **luktu-*.

15. Ir. *rucht* 'a noise of some kind, cry etc.' may reflect **Hruk-* (e.g. in OHG. *rohōn*), **Hrug-* (e.g. in Gr. ἐρεύγω 'to roar') or **HruHk-* (e.g. in Russ. *ryk*, SCr. *rȉk* 'cry'). Consequently, nothing can be based on it (see also II.B.2.1 no. 9 on Lat. *rūgīre*).

16. W. *ffrwst* (masc.) 'hurry' is probably cognate with Goth. *sprauto* 'schnell, bald' < **sproud-*. In view of *sprauto*, W. *ffrwst* probably reflects **sprud-st-*. The intonation of Latv. *sprûst* 'to press together', *spraûst* 'to stick something in something else', Lith. *spriáusti* 'hineinzwängen, klemmen' may be explained by Winter's law, if these forms are cognate, which in view of their meaning is very doubtful. There is no evidence for a laryngeal.

17. W. *twf* 'strength', *tyfu* 'to grow, increase', Lat. *tŭmēre* 'to swell, be swollen', *tumidus*, *tumor* probably reflect PIE. **tu-m-*, cf. Skt. *túmra-* 'strong, thick', Lith. *tuméti* 'to become thick'. A form with a different enlargement, **tu-H-* may be found in Skt. *tavīti* 'be strong', ORuss. *tyti* 'to become fat', in MBret. *tiñva* 'zusammenwachsen (von einer Wunde), gedeihen' < **tu-H-m-* and in OHG. *dūmo*, OS. *thūmo*, OFri. *thūma*, OE. *dūma* '(thick one,) thumb' (on OSwed. *þumi*, OIc.

þumall 'thumb' see V.B.5.2 no. 11). A PIE. **tHu-* cannot explain the **tŭm*-forms outside Italic and Celtic, and must therefore be rejected.

2.3. Celtic **-ī-, *-ū-* < PIE. **-HI-*

PIE. **-Hi-* and **-Hu-* could probably yield Celt. **-ī-, *-ū-*, cf. MW. *eskit*, Co. *eskit*, *esgis* 'shoe' < **ped-skūt-* < **-skHut-* (see IV.E.2.4.2. no. 6. on the root), Ir. *úr*, W. *ir* < **pHuro-* (see IV.E.2.4.4. no. 21) and Ir. *mín* < **mh₁ini-* (see IV.E.2.4.3. no. 9). In view of the condition that apparently governed the development to **ĭ, *ŭ* (i.e. pretonic position) and of the parallel situation in Greek we may assume that (PIE) stressed **-Hi-, *-Hu-* yielded Celtic **-ī-, *-ū-*. But it must be noted that this conclusion rests on precious little evidence.

OIr. *fíthe*, which reflects **u̯Hi-tió-*, was discussed above. Its *-ī-* instead of *-ĭ-* may be due to the influence of *bíthe*, *críthe*.

2.4. Evaluation

So far we have seen that there are a few words in which PCelt. **-ĭ-, *-ŭ-* reflect PIE. **-Hi-, *-Hu-*. Ir. *biu*, *buith*, *-both* and *both* have pretonic **-Hi-, *-Hu-*, with independent evidence for both **-Hi-, *-Hu-* and its pretonic position. On the basis of these forms we may perhaps conclude that in Ir. *sith-* and *guth* PIE. **-Hi-, *-Hu-* (for which there is independent evidence) was also pretonic.

There is some evidence that PIE. **-HI-* yielded **-IH-* > *-ī-, -ū-* in a number of words (MW. *eskit*, OIr. *úr*, OIr. *mín*). It cannot be independently proved that in these words *-ī-, -ū-* arose from PIE. stressed **-HI-*.

2.5. Celtic **-ī-, *-ū-* < PIE **-IH-*

This development is not the subject of dispute, and is generally accepted. I give two clear instances.

1. OIr. *críth* (*ā*) 'buying' < **kᵂrītā-*, W. *prid* 'valuable, bought' < **kᵂrītó-*, cf. Skt. *krītá-* 'bought', Gr. πρίατο 'bought', and especially ORuss. *u-krij-enъ* 'bought', where *-enъ* replaces **-tъ* in root-stressed participles (Dybo 1961, 18), which points to the operation of Hirt's law, and therefore to PIE. **kᵂrih₂-*. *críth* has the same formation and original accentuation as OIr. *bóth* 'hut', and W. *prid* as the Ir. passive preterite *-both*.

2. OIr. *-bíth* 'was slain' (pret. pass. of OIr. *benaid* 'hew'), cf. Russ. barytone *bit'*, fem. pret. *bíla* 'strike', which points to PIE. **bhiH-*. Ir. *-bíth* < **bhiH-tó-* is the exact counterpart of Ir. *-both* < **bhHu-tó-*.

2.6. Celtic **-ĭ-*, **-ŭ-* < PIE. **-IH-*

There are forms with Celtic **ĭ*, **ŭ* which presumably reflect PIE. **-IH-*, not **-HI-*. If this is found to be correct, we must look for the reason of this short reflex. When we have found this reason, we must wonder if, beside it, there are arguments for maintaining the proposed rule that pretonic PIE. **-Hi-*, **-Hu-* yielded Celtic **-ĭ-*, **-ŭ-*.

1. The OIr. verb. necess. *bethi* of *benaid* 'to strike' < **bhi-n-eH-*, pret. pass. *-bíth*, *bíthe* 'striking (adj.)' < **bhiH-* is a surprising form. The root **bhiH-* is found in Lat. subj. *per-fīnēs* = *perfringās* (P.F.) < **bhi-n-H-* (see V.D.3.2 no. 3) and in OCS. *biti*, Russ. *bit'* 'to strike'. The Russ. pret. fem. *bíla* points to PIE. **bhiH-*, not **bhHi-*. Note that one may conclude on the basis of Ir. *bíth*, *bíthe* alone that the root was **bhiH-*, not **bhHi-*. I think that the correct solution was found by Thurneysen 1946, 444, who suggested that *bethi* reflects **bia-towios*. In my opinion, **bia-* may replace **bī-* < **bhiH-* as a new zero grade based on the full grade **beiă-* < **bheiH-*, which was originally found in e.g. the subjunctive (cf. the full grade subj. *mera* < **merH-* of *marnaid* (B IV) 'betrays' etc.) Thus: **bhiH- : *bheiH-* > **bī- : *beia-*, replaced by **bia- : *beia-*. That forms of the type **biatowios* indeed existed is borne out by the British verbal of necessity, W. *-adwy*, Co. *-adow* < **-atowios*. British **-a-* in **-atowios* reflects short *-a-*, which probably stems from the *nă*-verbs, to which Ir. *benaid* belongs.

2. OIr. *fer*, W. *gwr*, OCo. *gur*, Bret. *gour* 'man' < **u̯īro-*, cf. Goth. *waír* and Lat. *vĭr*, is cognate with Lith. *výras*, Latv. *vīrs* 'man' (AP 1), Skt. *vīrá-* 'young man, hero'. The Baltic form has retracted the accent in accordance with Hirt's law, and the original oxytonesis is maintained in Skt. Since Hirt's law operated, one must reconstruct PIE. **u̯iHró-* (not **u̯Hi-*). The short *-ĭ-* in Ved. *vira-pśá-* 'abundance', originally 'man-cattle', must be connected with the IIr. loss of laryngeals in compounds rather than with the Western Indo-European *-ī-* (cf. Mayrhofer, KEWA s.v.). Toch. A *wir* 'young, fresh' < PToch. **ẃare-* < **u̯ĭro-* presents a problem. It may be a de-

compound, or in any other way secondary (much of the historical phonology of Tocharian remains to be explored).

The point is that the short vowel in *fer* etc. cannot be explained by Kortlandt's rule. Kortlandt tries to explain the Latin form by proposing a merger with the root of *vīrēre* 'be green, fresh', which is not convincing. The original length would, according to Kortlandt, have been preserved in Lat. *vīs* 'force' < **u̯iH-s*. He considers the possibility that the Celtic forms were a loan from Germanic, where the short vowel, in accordance with Dybo's rule, was regular (see V.B.1). The suggested explanations for *vir* and *fer* are in my opinion both unconvincing.

It seems clear that *fer* etc. regularly reflects PIE. **u̯iHró-* in some way, and it seems easiest to connect the development with the operation of Dybo's rule, as in Germanic. This deviates from Kortlandt's ideas concerning Dybo's rule. According to Kortlandt, pretonic **-IH-* was not shortened in Celtic, whereas it was in Germanic (see V.B, esp. 6, where it is argued that the shortening took place only before a resonant).

3. MIr. *soc* 'pig's snout, part of a plough', W. *hwch*, Co. *hoch*, Bret. *houc'h*, *hoc'h* 'swine' reflect **sŭkko-*, apparently with an expressive geminate (cf. Norw., Swed. *sugga*, *sugge* beside OE. *sugu*). **sŭ-* is also found in Lat. *sŭcula* 'small pig?' (see EM.), *sŭ-bulcus* 'swineherd', in OE. *sugu*, OS. *suga*, MLG. *soge* 'sow' < **sŭkā́*, and in Gr. οὖ-βώτης. It is difficult to explain in detail the evident connection with PIE. **suH-s* 'pig' in Gr. ὗς, σῦς, Av. *huš*, OE. OHG. *sū*, OIc. *sýr*, Alb. *thi*, Lat. *sūs*, Umbr. Asg. *sim*, Apl. *sif*, cf. Skt. *sūkará-* 'swine', Toch. B (pi. fem.) *swāñana misa* 'pork' (with *swā* < **suH-*).

There seem to be three possibilities:

a. **sū- : *su-* may be connected with the root **su-*, which has an enlarged form **suH-* 'to give birth' (Skt. *sū-* 'Erzeuger', *sū́tu-* 'pregnancy' etc., but (late, unreliable!) *suta-* 'son', OIr. *suth* 'birth'). This connection is semantically possible if the basic meaning was 'sow' (see Chantraine), but not compelling (see Mayrhofer KEWA s.v. *sūkará-*).

b. Italic and Celtic **sŭ-* reflects pretonic **sHu-*. This would also account for Gr. σῦβώτης, but not for OE. *sugu* etc. (see section 3 below); the suggestion must therefore be rejected.

c. Perhaps the most probable suggestion is that **sŭ-* is based on the oblique cases, e.g. Gsg. **suH-os*, Dsg. **suH-ei*, where intervocalic **-H-* was lost, and short *-ŭ-* resulted.

In any case, the problem of short *-u-* in *socc* etc. is not only a problem of Celtic. It probably cannot be used as counter-evidence against Kortlandt's accent rule.

4. Olr. *othar* (*o*, masc.) 'sickness, sick man' < **pŭtro-* is almost the exact counterpart of Lat. *pŭter* 'rotten' < **pŭtri-*. Skt. *pū́ti-* (AV.) 'stinking, putrid' has barytonesis, but this is unreliable because barytonesis in *ti*-forms was productive in post-RV. Vedic (see Lubotsky 1988, § 2.11). If barytonesis in *pū́ti-* was old, one could claim that the PIE. root was **pHu-* on the ground that *pū́ti-* failed to take part in the Indo-Iranian accent shift (see IV.E.2.1.5). But the barytonesis is unreliable, and the argument fails. Lith. *pū́ti*, Latv. *pūt* 'to rot' < **puHti-* point to PIE. **puH-*, not **pHu-*. All other forms in the other languages reflect **puH-*: Skt. *pū́yati* 'to rot, stink', *pū́ya-* 'pus', Arm. *hu* 'eitriges Blut', Gr. πῦθομαι 'to rot', OIc. *fúna* 'to rot', Lat. *pūs*, *pūris* 'pus', *pūteō* 'to rot', *pūtidus* 'rotten'. We have no independent evidence for the accentuation of **putro-*, but we may note that adjectives in **-ro-* are often (but not always) oxytone.

2.7. Evaluation

Since Olr. *fer* etc. can be explained by the operation of Dybo's rule of pretonic shortening (in a formulation that differs from both Dybo's and Kortlandt's), the only remaining unexplained form is Olr. *othar* < **puHtro-* (not < **pHutro-*). For a discussion of this form I refer to the section on Lat. *pŭter* (IV.E.2.3.3 no. 6).

2.8. General conclusion

The results are presented in the diagram. The following words can be used as evidence that PIE. *pretonic *-HI-* yielded Celtic **-ĭ-*, *-ŭ-*. Only the Irish forms are cited.

probable	possible
1 *biu* <**bi̯u̯o-* <**gʷHi̯u̯ó-*	1 *bith* <**gʷHitu-*
2 *buith* <**bhŭti-* <**bhHutí-*	2 *buthi* <**bhHutouios*
both < **bhŭtā* <**bhHutéh₂*	3 *cuil* <**ḱHul-*
-both <**bhŭto-* <**bhHutó-*	4 *guth* <**ǵhh₂utu-*
	5 *sith-* <**sh₁iti/u-*

The only instance of a long reflex of PIE. pretonic **-HI-*, is *fíthe*, which, however, may have its *-ī-* from Ir. *benaid*, *bíthe*, *crenaid*, *críthe*, which have very similar paradigms.

PIE. stressed *-*HI*- probably yielded Celtic. *-ū-, *-ī- in view of MW. *eskit* < **ped-skHut*-, OIr. *úr*, W. *ir* < **pHuro*- and Ir. *mín* < **mh₁ini*-, although nothing can be said about the original accentuation of these forms.

The normal reflex of PIE. *-*IH*- is Celtic *-ī-, *-ū-. It was found that there are three words that have a short reflex of PIE. *-*IH*-, viz. OIr. *fer*, W. *gwr* etc. < **u̯iHró*-, where the short vowel may be explained by Dybo's rule (V.B), OIr. *othar* < **putro*- < **puHtro*-, where the loss of *-*H*- may perhaps have something to do with the following cluster *-*TC*-, and *socc*, W. *hwch* etc. < **suH*-, where **su*- could have arisen from antevocalic **suH*- in the paradigm.

Although in Celtic there is only little evidence for the development of *-*HI*-, even in comparison with the scanty Greek material, and although no alternation *ū* : *ŭ*, *ī* : *ĭ* < *-*HI*- was preserved within one and the same root, as was the case in Greek, the general principle which governs the distribution of the short and long reflexes seems to be the same as in Greek. Celtic, unlike Greek, has given up the PIE. type of mobile accent that governed the distribution of *-*ĭ*/*ī*-, *-*ŭ*/*ū*-. It therefore is not surprising that in Celtic this alternation was levelled out to a larger degree than in Greek.

One may note that Celtic **bhŭ*- corresponds with Lat. *fŭtūrus*, *fore* and that OIr. *othar* corresponds with Lat. *pŭter*, and OIr. *fer* with Lat. *vĭr*.

3. The development of PIE. *-*HI*- in Germanic

It seems that in Germanic *-*HI*- yielded -ī-, -ū- not only in stressed, but also in pretonic position:

1. MHG. *brūsen* 'to bubble' < **bhrh₁u-s-iónom* (see IV.E. 3.3. no. 6).
2. OIc. *húð*, OE. *hȳd*, OHG. *hūt* < **kHutí*- (see IV.E.2.4.2. no 6).
3. OHG. *prūt* in *wintes prūt* 'storm' < **bhrh₁u-tó*- (see IV.E.3.3 no. 6).
4. OIc. *símІ*, OE. *sīma*, OS. *sīmo* 'rope, tie' < **sHimōn* (cf. Gr. *ἰμων; most likely an original barytone because -ī- was not shortened in accordance with Dybo's rule (see V.B); see Appendix 1.2 no. 6 above).
5. OE. *sīð ðam* 'seitdem', OS. *sīth*, OHG. *sīd* 'seit' < **sh₁í-to*- (see Appendix 2.2 no. 5).

This is not intended to be an exhaustive list, which falls outside the scope of the present book.

The short vowel of Goth. Asg. *qiwana* < **g^{w}Hiu̯ó-* seems to be an exception. It may probably be explained by Dybo's rule of pretonic shortening, which only operated before a resonant (see V.B.6).

4. General remarks concerning the development of PIE. **-HI-*

We have seen that in some branches of Indo-European PIE. **-HI-* may be distinguished from PIE. **-IH-*, whereas in others both constellations merged, the result being identical to the reflex of PIE. **-IH-*.

(1) In Indo-Iranian, **-HI-* merged with **-IH-* at some stage, but only after the Indo-Iranian laryngeal accent shift (see IV.E.2.1.5). Note that the difference between PIE. stressed **-IH-* and **-HI-* (until after the laryngeal accent shift) can be observed only in Indo-Iranian.

(2) In Balto-Slavic, **-III-* was metathesized to **-IH-*, but only after the operation of Hirt's law. Thus, **-HI-* and **-IH-* can still be distinguished by the accentuation if they were originally pretonic. Stressed **-III-* probably yielded **-IH-* at an earlier stage, which would explain the "new" full grades of the type Lith. *káuti*, Latv. *kaût*, Russ. *kovat'* of the root **kHu-* (see IV.E.7.3.2.1).

(3) In Greek, Latin and Celtic, pretonic **-HI-* probably yielded short *-ĭ-*, *-ŭ-*. Stressed **-HI-* merged with **-IH-* and yielded *-ī-*, *-ū-*.

(4) In Germanic, **-HI-* and **-IH-* merged to yield *-ī-*, *-ū-*, and there is no means of distinguishing the two.

(5) The same merger probably occurred in Tocharian as well (see Winter 1965, p. 192 on Toch. B *pūwar*, pl. *pwāra* 'fire' < **puH-r-* < **pHu-r-*; one may add Toch. A *kāc* 'skin' < **kwāc* < **kuHti-* < **kHutí-*).

I have found no evidence for Armenian and Anatolian, but I have not looked for it extensively.

It appears that the metathesis of pretonic **-HI-* is post-PIE. In view of (1), the metathesis of stressed **-HI-* is also post-PIE.

INDEXES

All words except the Greek ones are listed according to the order of the Latin alphabet. Accent and vowel length have been ignored. Note the following sequences:
Armenian: *l ɫ, r ṙ, t t^{c}* etc., Baltic: *s š, z ž*, Germanic: *a æ, o ǫ œ ø, d ð, t þ, h ƕ*, Indic: *b bh* etc., *n ñ ṅ, s ś ṣ*, Iranian: *ə a, s š, b β, d ð, g γ, t θ, n ŋ, x x^{v}*, Slavic: *e ę, o ǫ, i ь, u ъ, c č, s š, z ž*, Tocharian: *ä a, s ṣ*.

Numbers refer to pages.

The order of presentation is as follows: Latin comes first, then the other Italic languages, in alphabetical order of their names. Subsequently, the other sub-branches of Indo-European follow, again in alphabetical order. The languages belonging to each sub-branch are presented in alphabetical order.

Consequently, the lay-out of the indexes is as folllows:

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