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THE LYDIAN CONSONANT SYSTEM

1.0 The Problem with Lydian[1]

Roberto Gusmani's Lydisches Wörterbuch, published in 1964 and updated by three supplements, remains the most comprehensive and accessible work on Lydian. But anyone who ventures into the Lydian bibliography before or after that year soon finds that some of what Gusmani claimed to be reasonably certain was – and still is – open to re-interpretation. This is true even for something as fundamental as the transcription of the alphabet. The problem is not to decipher the 26 signs, since the Lydian alphabet is largely derived from the Greek and Lycian, but rather to determine their phonetic values, for sometimes Greek or Lycian analogues fail to provide a sound that fits the phonological context of a sign.

I propose first to chart the main stages in the transcription of Lydian consonants, from that of Enno Littmann (1916) to the consensus transcription (e.g., in Gusmani's Wörterbuch).[2] At that point I turn to a re-evaluation of the Lydian stop phonemes. Epigraphical evidence confirms what early transcribers suspected, that the phonetic value of some signs was not what foreign counterparts suggested. However, although new values for these signs solve one problem, the resulting phonological system poses new questions regarding the historical development of Lydian stops and the phonetic nature of one in particular.

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[1] This article began as a paper presented to the UCLA Indo-European Conference in May 1990. My thanks go to members of the UCLA community, Jaan Puhvel, Richard Janko, Sarah Morris, and Antonio Loprieno, for criticism and guidance. Any shortcomings herein are the responsibility of the author alone.

[2] I have kept to the main line of scholarship, ignoring fruitless suggestions on the transcription or phonetic value of a given sign. For the sake of brevity, I give in general only my conclusions on each transcription rather than a detailed argument.

The table below lists the Lydian consonant signs with the tran-
scriptions of Littmann and Gusmani, and references to the sections
of this study where these signs are discussed.

Lydian consonant transcriptions in Littmann (1916) and Gusmani
(1964)

Lydian	Littmann	Gusmani	section
ᑫ	b	b	2.4.1
↑	q	c	2.3.2
⅄	d	d	2.4.3
8, 8	f	f	2.2.1
ꭥ	g	g	2.4.4
⅄	k	k	2.4.4
ꟼ	l	l	2.1.3
↑	ũ	λ	2.1.3
ꟹ	m	m	2.1.4
ꟼ, ꭓ	n	n	2.1.4
ꝛ, ꝛ	ć	v	2.1.4
+	h	q	2.4.5
ꝗ	r	r	2.1.2
Ⲧ, ǂ, I	s	s	2.2.2
ꝛ, ꙅ, ꙅ	ś	ś	2.2.2
T	t	t	2.4.2
Ⲧ	ñ	τ	2.3.2
ꟼ	v	v	2.1.1

2.0 Developments in the Transcription of Lydian Consonants
2.1 The Glide, Trill, Lateral, and Nasal

2.1.1 The glide ꟼ. Littmann (1916: 6) transcribes this sign as *v* and
considers a bilabial value (/w/) more likely than a labio-dental (/v/).
Regarding consonantal *u* (/w/) as a more accurate description of the
nature of this sign, Cuny (1921: 2) prefers to transcribe it as *w*, as do
Eichner (1986 and 1987) and others more recently, especially in light
of its easy confusion with Grk. nu (v) used to transcribe ꝛ (see 2.1.4
below). Sayce (1925: 30) and Gusmani (1964: 32) agree, but maintain
the transcription *v*. The most eloquent testimony to the glide nature
of this sign is Meriggi's etymology (1935: 82) of *buwaś* 'or he' <
*bu- 'or' + the enclitic pronoun *-aś*. The passage of *w > f* in *lewś* >

lefś (possibly also *wiświd* > *fiśfid*) is enough for Gusmani (1965: 206) to consider a fricative value in at least some instances. Such a development supports the possibility that *f* = /ɸ/; thus *w* > *f* = /w/ > /ɸ/ (see 2.2.1).

2.1.2 The trill ٩. Littmann (1916: 9) and thereafter = *r* (/r/). On the syllabic use of this sign, see 2.1.5.

2.1.3 The laterals ٦ and ٣. Littmann (1916: 7) recognizes that ٦ is *l* (/l/). As for ٣, this sign proved more difficult to identify. Littmann (1916: 15–16) transcribes it as *ũ* (a nasal *u*-sound). In Cook (1917: 82 and 221), Arkwright is the first to suggest an *l*-sound, though Cook himself continues to use Littmann's *ũ*. Danielsson (1917: 14) independently confirms the lateral quality of the sign and proposes a velar or retroflex *l*-sound distinct from *l*, which he transcribes as *L*. Cuny (1921: 2) supports the velar lateral and is the first to use λ as a transcription; he also echoes Arkwright's suspicion that the sign could also represent a vocalic sound, and consequently proposes λ̥ as well. Thereafter, λ was the commonly accepted transcription, although there was still no firm consensus on two details: was λ (1) a palatal or velar lateral? and (2) a syllabic or consonantal *l*-sound? Although Thurneysen (1922: 36) recognizes the sign's palatal character, Kahle and Sommer (1927: 23–24 n. 2) are the first to see a palatal lateral (i.e., /ʎ/). This view finds general agreement in the literature.

Most recognized that ٣ had both a consonantal and syllabic function, even if λ was not the proposed transcription. This is most easily shown by *bλ* and *qaλmλuλ* (as transcribed by Gusmani [1964]). The metrical studies of Miller (1968), West (1972, 1974), and Eichner (1986, 1987) have improved our knowledge of the syllabic use of λ as well as of other signs (see 2.1.5).

2.1.4 The nasals ٣, ٦ and ٦. Littmann (1916: 7–8) and thereafter, ٣ = *m* (/m/), ٦ = *n* (/n/). On the syllabic use of these signs, see 2.1.5 below. As with the palatal lateral, a transcription for ٦ did not come easily. The most recent transcription offered for this sign, *i* (/i₁/), suggested by Woudhuizen (1984: 92–93) on the basis of its similarity to Phoen. *yôd*, bears witness to how many of Littmann's sensible conclusions have been ignored. Littmann (1916: 17) mentions the resemblance to the Phoen. sign, but warns that *yôd* "is represented in Lydian by l, and the sign for this vowel cannot have been received by the Lydians twice at different periods, once from the Greeks and

once from the Phoenicians"[3]. Woudhuizen (1984: 92 n. 7) acknowl-
edges Littmann's warning but ignores it and fails to explain how his
i (/i₁/) differs from I (*i*).[4]

Littmann was unable to suggest an enduring transcription, due in
part to a lack of external comparisons. He transcribes the sign as *c̓*
with three possible values (phonemic representations are my own):
ts (/ts/), *ty* (presumably /t'/), and *tš* (/tš/); Littmann himself prefers
the last. Some scholars simply chose between these three values, while
others suggested alternatives, notably Thurneysen's *sⁱ* (1922: 39–40)
and Fraser's *ρ, ρ̣* (1923: 144), a liquid (consonantal and syllabic) of
unspecified quality. Cook (1917: 82 and 221 n. 3) hints at a major
change: although continuing to transcribe the sign with Littmann's
c̓, he mentions Arkwright's suggestion that the sign represents an *n*-
sound. With the second volume of Sardis 6, Buckler (1924: xii–xiii)
transcribes the sign with Grk. *v* (perhaps a vocalic nasal /n̥/). For
Haas (1961, 1962) the sign represents a palatal (/n'/) which he
transcribes as *n̂*.

Gusmani (1964: 33) also sees a palatal *n*, though more recently
(1978: 842–845) he has raised doubts about the palatal quality of
the sign, pointing to one source of Lyd. -*v* (acc. sg. and dat. pl. < gen.
pl.) < IE *-*m*. However, the evidence may not necessarily preclude a
palatal. Lydian phonology and morphology reveal a number of
innovations and analogical extensions: the spread, for example, of
the IE pronominal nom./acc. neuter ending *-*d* to all Lyd. neuters. I
prefer to see the -*v* of the declensional endings as an analogical

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3   Heubeck (1978) reaches similar conclusions. However, Gusmani (1975: 137) sees
    a much more complex process in the borrowing and alteration of the Lydian
    alphabet.

4   Woudhuizen's main concern is to establish an Anatolian origin for the Etruscans.
    In "Etruscan Origins: the Epigraphic Evidence" (1982–83) he concludes that
    Lydians were in control of the iron industry of Etruria in the archaic period, basing
    his conclusions on comparisons (often questionable) of the Lydian and Etruscan
    alphabets which prove (in his opinion) that writing was introduced to Etruria
    from Lydia and Cilicia. The linguistic portion of the article is also problematic: on
    p. 113 he states that the form *tisardi* (Gusmani *tiśardv*) consists of a particle *ti-*
    (cognate with Lyc. -*te* which indicates position) and *sardi-*, root *sar(d)*-, an "archaïc
    form of *sfar(d)* [sic for *śfard-*] 'Sardis'". What he fails to explain is how the archaic
    form appears to generate an -*f*- *ex novo*. He continues this line of argumentation
    in "Lydian: Separated from Luwian by Three Signs" (1984) where he misrepresents
    the chronology of Lydian scholarship by saying that research in the 1930s was
    hampered by the transcription of three signs with the assigned values /n/, /c/, and
    /q/; but the transcription *q* for Lyd. + is not used before Gusmani (1964).

extension of the pronominal as well.[5] Thus an original acc. ending -*n* was replaced by the pronominal ending -*v* which had palatalized due to the influence of a preceding front vowel. Cases of -*in* in the inscriptions are rare, and are most commonly seen in the enclitic particle -*in*. This and other examples may be explained as secondary. Therefore, a palatal value for *v* (/n´/) need not be rejected.

2.1.5 The syllabic function of certain liquids and nasals. Brief mention has already been made about the syllabic function of a number of the liquids and nasals. In his metrical analysis, Miller (1968: 208–209) uncovers these conventions: (1) *λ* and *v* are used to indicate palatal or syllabic *l* and *n*; (2) *l* and *n* are used for non-palatal and non-syllabic *l* and *n*; (3) *m* and *r* do not have palatal variants, but they may be used syllabically when occurring between consonants or in final position. West (1972: 166–167) arrives at similar conclusions: (1) *λ*, *v*, and *r* are syllabic when between two consonants; (2) *λ* and perhaps *r* also have syllabic value when they are followed by two consonants of which the second is *l* or *λ*; (3) *m* has syllabic value in the cluster *kmś*, etc.; (4) *ś* has syllabic value in clusters like *kśb*, (5) *bτ*, *dτ*, *kτ*, and possibly *kt* and *dt* generate anaptyctic vowels in some instances.

2.2 The Fricative

2.2.1 The fricative 𐤚. The similarity of this sign to Etruscan *f* induces P. Kretschmer in Keil and Premerstein (1908: 102–103) to bestow upon it the same value.[6] Littmann (1916: 11–12) accepts this on the basis of the equation Lyd. *śfard*- 'Sardis' = Aram. *sprd* = OPers. *S(a)parda*- = biblical Hebrew *Sefârad*; further, because the correspondence between Lyd. *b* and Grk. π/φ and Aram. *p* suggests that *b* was

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5   It is equally possible that the palatal spread from *i*-stem and *u*-stems. That palatalization can occur in Lydian after *u* is suggested by forms such as *ciws* for *ciwś* (on *s* and *ś*, see 2.2.2) and *ciwvalis* for *ciwnalis*. The lack of palatalization in *lewś* is due to the the word being a Greek loan, perhaps borrowed after the palatalizing effect of *w* had ceased to operate.

6   The Lydian *f*-sign has been an unfortunate pawn in the controversy over a Lydian origin for the Etruscans. The bibliography on the Lyd. evidence up to 1963 can be found in Carruba (1963: 383–385); for subsequent endeavours, see Georgiev (1967) and, less reliably, Woudhuizen (1982–83). The Lemnian inscriptions add to the mystery, but on the whole, attempts to place the Etruscan *Urheimat* in Anatolia betray a feeling that high culture could not have arisen anywhere but in the Eastern Mediterranean.

used to represent *p* (see 2.5 below), the 8-sign must represent *f*. Buckler (1924: xii), on the other hand, regards it as "a mere approximation", calling attention to an occasional interchange between *f*, *b*, and *w* (see 2.4.1 below) which render "precise differences between the sounds . . . difficult to determine". Kahle and Sommer (1927: 22) consider this very interchange to be evidence enough for using *f* in transcription. Cuny (1921: 7) observes the lack of a sign for *p* and correctly assumes a development *p* > *$*p^h$* > *f*. (This turns out to be true only in some environments: see 2.5 below.) As for the sign's phonemic value, given the alternation of *f* with *w* (see 2.1.1 above), the bilabial /ɸ/ suggested by Cuny (1921: 6) is attractive.

More recent scholarship has provided the historical and comparative evidence. Heubeck (1959: 45–46) establishes a number of correspondences between earlier-attested Anatolian languages (Hittite, Luvian) and Lydian, concluding that Lyd. *f* is indeed a fricatival outcome of Anatolian *p* (e.g., the Hitt. preverb *pāi-*, *pē-*: Lyd. *f(a)-*). Shevoroshkin (1967: 51), Haas (1962: 170 and 1968: 63), and Gusmani (1975) have revealed other sources for *f*.

2.2.2 The sibilants Ŧ and ٢. Littmann (1916: 9–10) recognizes these as sibilants: ٢ (and variants ⧽ and ⅗) = *ś* (or *š*), Ŧ (Ɪ, Ŧ) = *s*. Although these are still the accepted transcriptions, there is a problem: the values are correct, but not for the right signs. While most followed Littmann's transcription, Kahle and Sommer (1927: 25 n. 2) are the first to suggest that *s* (Ŧ) is the product of secondary palatalization. However, it is not until Meriggi (1935: 96 n. 48) that the transcription is shown to be flawed. He concludes tersely that *ś* = *s* and *s* = *ś*. His warning that altering the transcription would cause confusion has unfortunately been heeded quite faithfully.[7] Haas (1962: 174–176), however, takes a partial step towards rectifying what Heubeck (1965: 75) calls an "illogical and misleading" state of affairs: he transcribes Ŧ (Littmann's *s*) as *ş* (a palatal *s* < /sⁱ/ which Haas explains as "Polish *ś*"); ٢ (*ś*), on the other hand, he leaves untouched.

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7   Vetter (1959: 6, with *ŝ* for *ś*), Haas (1962: 174–176), Gusmani (1964: 34), Heubeck (1965), and Shevoroshkin (1967: 15). Heubeck's position on the sibilants is puzzling. In his article on these sounds in Lycian and Lydian (1965) he follows Meriggi in pointing out the problems of the conventional transcription. In 1969: 404 he calls the difference between *s* and *ś* "difficult to determine"; similarly the difference between *l* and *λ*, and (1978: 404) *n* and *v*. Finally, in 1978: 60 he gives /z/ as the phonemic value of Ŧ without explanation.

2.3 The Affricate

2.3.1 The affricate Ɪ. Littmann (1916: 8–9) notes the similarity
between this sign and Grk. Ξ, but internal evidence leads him to
conclude that the sign represented /ŋ/, which he transcribes as ñ.
Buckler (1924: xii–xiii), on the other hand, follows Arkwright's
suggestions and rejects Littmann's ñ in favor of the circumscription
τ representing some type of dental phoneme. Buckler's τ finds a wide
though not universal following. Subsequent scholarship concerned
itself with further defining the sign's phonemic character. Branden-
stein (1932: 71) first wonders whether τ = /ts/. Haas (1962: 200)
and Gusmani (1964: 34 and 1968) agree. Heubeck (1978: 58–60)
adds further evidence in support of the affricate /ts/: whereas in most
Greek dialects Ξ represented /ks/, the Therans used the sign for /dz/.
Thus it may be that the Lydians borrowed the sign as the closest
match to their own stop + sibilant phoneme.

2.3.2 The affricate ↑. The transcription c, championed above all
others by Gusmani (1964: 32–33 and thereafter), was suggested by
Brandenstein (1929a: 263, 1929b: 328) with the value /ts/ or /tš/, in
part because of the correspondence between Lyd. ↑iws (i.e., ciws)
and the Hesychian gloss that says Ζευσις is Lydian for Ζεύς. However,
the value /ts/ has a rival, though its supporters agree on neither a
transcription nor its exact value. Bossert (1931: 314) claims that the
sign represents /ϑ/, which he transcribes Þ , though he later substitutes
ϑ (1936: 431, 1944: 111). Masson (1950: 188), Heubeck (1959:
51–58),[8] and Neumann (1967) agree. Most recently, Melchert (1991:
134) has proposed /z/ or /dz/.
    Although there is little unity on the transcription or the sign's value
in Lydian, a great deal of agreement exists regarding the historical
developments which produced the sound represented by ↑. Heubeck
(1959: 51–58) provides the most thorough examination, demon-
strating that the sign represents the outcome of IE *d(h) + front
vowel, e.g., ciw- < *diwi-.

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[8] Heubeck is only gradually convinced of a voiceless value, but finally transcribes
     the sign as Þ (1969: 404).

2.4 The Stop System as of 1964

A major shift in the interpretation of these signs since the appearance of Gusmani's Wörterbuch necessitates that they be taken together. I will first present the research on each sign prior to 1964, then discuss the problems with the accepted transcription.

2.4.1 The stop ᗺ. Littmann (1916: 4) transcribes this sign as *b*. The form obviously suggests a voiced labial stop, but there has been some debate over its phonemic nature, in part because of an apparent interchange with *f*. The dat.-loc. sg. form of the Lyd. word for 'year' *borlλ* occurs in four inscriptions (16, 41, 42, 59), but in no. 50 the initial letter is *f-* rather than *b-*: *forlλ*. In much the same way, the verbal stem *fēnsλibi-* 'to injure' appears in eleven inscriptions (2, 3, 4a, 4b, 6, 7, 8, 10, 19, 23, 45) with *-b-*, in a single inscription (no. 1) with *-f-* (*fēnsλifi-*). Cuny (1921: 5–6) regards this as evidence of a fricative and goes so far as to transcribe the sign as β = /β/. For Haas too (1962: 171) such an interchange is testimony that *b* = /β/ (*ƀ* in Haas) in some cases. Heubeck (1969: 403) accepts the possibility, but later (1978: 60) follows Gusmani's speculation (see 2.5 below) that *b* = /p/.[9] Indeed, there are three problems regarding *borlλ: forlλ* and *fēnsλibi- : fēnsλifi-* as evidence of a fricative. First, Haas (1962: 171 n. 1) admits that while *b* may = /β/ in some words, the fact that Lyd. *b* transliterates Grk. π in *bartaraś* Παρταρας (no. 40) attests to a more complex situation.[10] Gusmani (1964: 31) adds the correspondence Lyd. *b* in *ibśi-* 'Ephesos' = Grk. φ in Ἔφεσος = Aramaic *p* in *'pśśy* (no. 1).[11] Second, only two firm examples of a *b : f* fluctuation are attested; for both, the form in *f-* appears earlier than the form in *b-*, making the possibility of a *b > f* development less likely.

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[9] Gusmani (1964: 31–32 and 1965: 206 n. 16) explains a possible *w : b : f* interchange in the root *tarw- : tarb- : t(a)rf-* as various outcomes of *-w-* in different environments: *tarw-* occurs only before *-o-*, *tarb-* before *-τ-* and *-l-*, *tarf-* before *-λ-*, *trf-* before *-n-* and *-ā-*. This may, however, simply be a case of three separate roots that happen to share a partial stem in *t(a)r-*. The desire to connect all words of similar appearance is one of the hazardous temptations when working with a language so meagerly attested as Lydian. Had Greek survived as poorly and we were faced with τάρβος 'fright', τάρφος 'thicket', and ταῦρος 'bull', we might fall into a similar trap.

[10] This correspondence is first noticed by Littmann (1916: 4).

[11] Jongkees (1938: 356) regards the correspondence between Lyd. *b* and Grk. φ /pʰ/ as evidence for an aspirate /bʰ/, but does not consider the Aramaic *p* which lacks such aspiration.

Third, *forlλ* in no. 50 is accompanied by *bill* and *brdunlis*, not *fill
and *frdunlis, which begs the question: why *f* for *b* in *borlλ* but not
the others? The answer may lie in scribal confusion of two very similar
signs, ꓯ and ꓼ, as originally suggested by Littmann (1916: 63).

2.4.2 The stop T. Littmann (1916: 11) and thereafter = *t* (/t/).
Cuny (1921: 3) insists that *t* had the general value /tʰ/, but the value
/d/ between vowels (see 2.5 below).

2.4.3 The stop *λ*. Littmann (1916: 5) transcribes as *d*. Herbig's
suggestion in Littmann that *d* = the interdental fricative /ð/ finds
support from Cuny (1921: 3), Thurneysen (1922: 38), and more
recently Gusmani (1978: 834 n. 4 and 842) and Melchert (1991:
134). Cuny notes that Grk. -δ-, -νδ- (more accurately -νδρ-), and
-δρ- are not rendered by Lyd. -*d*-, -*nd*- (i.e., -*ndr*-), and -*dr*- between
vowels, but rather by -*t*-, -*ntr*-, and -*tr*-: Lyd. *katowa*- = Grk. Καδοας,
Lyd. *aλiksãntru*- = Grk. Ἀλεξανδρο-, Lyd. *atraśta*- = Grk. Ἀδραστο-,
alluding to an avoidance of the voiced dental. If *d* had become a
fricative, this would explain the use of *t* in such instances. But see
2.5ff. below.

2.4.4 The stops Ἡ and ꓤ. On Ἡ: Littmann (1916: 7) = *k* (/k/). Cuny
(1921: 3) sees an aspirate /kʰ/, but also intervocalic /g/ (cf. 2.4.2
above). Bossert (1944: 115) claims a two-fold pronunciation *ḫ* /χ/
and *k* /k/ based on the use of Grk. χ in Lyd. glosses (e.g., νύχμα[12])
and on Lyd. forms in *k* which correspond to foreign *ḫ* sounds: Lyd.
Artakśassa- = Aram. *'rtḫšsš* = OPers. Ṛ̌taxšaça-. But Bossert's claim
that Lyd. *k* = Grk. χ (= /χ/) rests on the false interpretation of the
Greek sound as a fricative rather than the aspirate /kʰ/ which lasted,
as Allen (1968[3]: 23) shows, into the 2nd century B.C. That Lyd. *k* =
Aram. *ḫ* and OPers. *x* proves only that the Lydians rendered the
foreign sound by the closest means available.[13]
As for ꓤ, Littmann (1916: 4) suspects that this sign is *g* and com-
pares it to forms of *gamma* in East and West Greek alphabets. But in
view of its rarity (only two attestations by that time) he allows for
the possibility that it is a variant of ꓒ (a vowel sign). Buckler (1924)

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[12] Gusmani (1964: 271–77) rejects all of Bossert's glosses save νύχμα. The aspirate
here may simply be analogical to Greek forms in -χμ- such as δραχμή 'drachma'.
[13] This accords well with Hittite forms in *ḫ* rendered in Greek by *k* (e.g., Hitt. *Tarḫunt*-
= Grk. Τάρχων, *Harran* = Καρραι).

and Friedrich (1932) leave it untranscribed. Sayce (in Buckler [1924: 67], later in Sayce [1925: 30]) explains his decision to print *g*: (1) Lyd. Ɔ is similar to signs with the same value in the Lycian and Corinthian alphabets; (2) Lyd. is otherwise lacking a *g*-sign; and (3) the sign Ɔ occurs in the word *atrgolλ*, spelled *atrokl* later in the same inscription, which suggests graphic variants of the same word. Although Sayce does not express it as such, the variants *atrgolλ* : *atrokl* imply voicing in a voiced environment. Further evidence of such voicing is supplied by Swanson (1947: 205–206); this is discussed further in 3.2 below.

2.4.5 The stop ✝. Littmann (1916: 13–14) admits that proof is scarce for his transcription *h* (or a second possibility χ = /χ/); his evidence lies in similar signs in Lycian and some Greek alphabets, and in the name of a deity, which he transcribes as *Hŭdãnś*. In Sardis 6.1 Buckler had already identified this name, accompanied by *tawśaś*, as equivalent to Ζεὺς Ὑδηνός, the 'Zeus of Hydē', *tawśaś* being cognate with Skt. *Dyãus* < IE **dyēws*. It is true that ✝ in Lycian = *h* and that in the form X this sign is used in a number of Greek alphabets (though properly χ = /k^h/, not /χ/). But if we accept the arguments on λ /l′/ (2.1.3 above), Littmann's transcription would have to be altered at least to *Hλdãnś*, thus weakening the connection with Grk. Ὑδηνός. With Sayce's identification (1925: 39) of Lyd. *tawśaś* 'big, mighty' as the Lyd. word represented by Hesychius' gloss ταύσας 'mighty' rather than by Grk. Ζεύς, the association crumbles between Littmann's *Hŭdãnś Tawśaś* and Ζεὺς Ὑδηνός.

But only a year after Littmann's Sardis 6.1, Danielsson (1917: 23) unwittingly paves the way for a new transcription when he suggests cognates for three Lyd. words: (1) Lyd. ✝*is*, ✝*id* 'who, what' = IE **k^{w}is*, **k^{w}id*; (2) Lyd. ✝*λdãnś* = Grk. Ἀπόλλων 'Apollo';[14] (3) Lyd. ✝*aλmλu-* = Greco-Lydian πάλμυς 'king'. He concludes that Lyd. ✝ (Littmann's *h*) developed out of IE **k^w* with an intermediate stage **p*. Buckler (1924: xii) and others agree. Those who prefer to suspend their judgement, as well as a transcription, include Kahle and Sommer (1927) and even Friedrich (1960).

A turning point comes in 1959 with Vetter and Heubeck. Vetter (1959: 37 n. 17) suggests that Lyd. ✝ had the same phonemic value as Hitt. *kw-* (e.g., Hitt. *kwis*, *kwit* = Lyd. ✝*is*, ✝*id*). He does, however, continue to print *p* and never mentions this idea again. The possibility

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[14] The connection between *qldãnś* and Ἀπόλλων is illusory; see note 15 below.

that Lyd. + was a labiovelar is independently taken up by Heubeck (1959: 15–50). He provides the following correspondences: (1) The Hesychian gloss κοαλδδειν = Lyd. +λdãnś;[15] (2) πάλμυς = +aλmλu-;[16] (3) Μόψος 'Mopsos' = Μόξος 'Moxos';[17] (4) Hitt. kwis, kwit = Lat. quis, quid = Lyd. +is, +id.

Carruba (1963: 386 n. 16) is vehement in his desire not to dismiss too quickly the possibility that + = p. Haas (1961: 187) also dismisses Heubeck's labiovelar, but not as an apologist for p. Instead he sees in + a palatal outcome of *k^w before front vowels as in Indo-Iranian, and later (1962: 190–200) uses this value to perform some etymological surgery on +aλmλu-, for which he denies a Lydian origin, preferring to explain it as a Phryg. or Pre-Phryg. loanword.[18] Haas' evidence rests on too many assumptions, and the possibility that + is the palatal outcome of *k^w is highly unlikely in a centum language.

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[15] From the Hesychian gloss κοαλδδειν· Λυδοὶ τὸν βασιλέα "the Lydians call their king κοαλδδειν". Littmann (1916: 17–19) connects this word with Lyd. cuwellλ (quvellū in Littmann). Vetter (1959: 37 n. 17) emends κοαλδδειν to κοαλμειν (where ΔΔ is a scribal error for Μ) and compares it to Grk. πάλμυς as evidence that Lyd. + was at some point similar to Grk. κοα-. But Mentz (1922: 191–192) was the first to see correctly the relation between κοαλδδειν and Lyd. qldãnś, though he later recanted. qldãnś had for a long time been associated with Grk. ᾽Απόλλων as proof that + = p, but there are with this phonetic problems.

[16] Since Πάλμυς occurs in Homer (as the name of an Anatolian king), the form must have been borrowed into Greek quite early. Heubeck hypothesizes that it was borrowed in Mycenaean times before Grk. *k^w and *g^w (represented as Linear B qe, qi, qo) became π/β/φ, τ/δ/θ, κ/γ/χ, and that a form *κ‸άλμυς became πάλμυς along with other examples of *k^w (etc.) before back vowels (e.g., σπάλαθρον 'hoe' = Linear B qa-ra-to-ro). He also compares the name of the Phoen. city g-b-l, possibly borrowed as *g^wblos into Greek, hence βύβλος 'papyrus'; cf. Hitt. kursa- 'animal hide' > Grk. βύρσα.

[17] Linear B mo-qo-so (*mok^wsos) becomes Grk. Μόψος, but the name also appears in Anatolia with -k- (Hitt. Muksa, even the Lydian Μόξος in Nicolaos of Damascus). This suggests different outcomes of *k^w.

[18] Haas too connects +almlu- with κοαλδδειν by emending the Grk. form to *κοαλμειν (with no mention of Vetter's similar emendation). In Haas' view, the Hesychian gloss would represent an older form in k^w prior to palatalization before front vowels. He explains the πάλμυς of the Ephesian Greek poet Hipponax as a literary reminiscence: the poet wanted to use Lyd. čalmlu- (Gusmani qalmλu-), which would be rendered in Greek as *τιαλμυς or *θιαλμυς (cf. Iranian names in č- > Grk. τ), but since the average Greek reader would fail to recognize this transcription, Hipponax turned to Homer's Πάλμυς, which shows the Phryg. outcome of k^w.

2.5 Challenges to the Earlier System

The traditional values of the Lyd. stop system did not remain unchallenged for long after the Wörterbuch. In fact, Gusmani (1965, 1978) himself challenges the transcription. He dismisses the *g*-sign as a graphic archaism (1965: 204 n. 4 and 1978: 835), simply an abandoned attempt to represent the voiced allophone of *k* in voiced positions and not a separate phoneme at all (cf. *atrgolλ* : *atrokl* in 2.4.4 above). He goes on to argue that foreign transcriptions of Lyd. names indicate a voiceless rather than voiced bilabial value for Lyd. *b*. Two examples of this were noted above: Lyd. *bartaraś* : Παρταρας and Lyd. *ibśi-* : Grk. Ἔφεσος : Aram. *'pśśy*. To these he adds Lyd. *sabλa-* : Σαπλα-. Only Lyd. *baki-* : Grk. Βάκχος fails to attest to a *b* : π/φ correspondence, though if Lydian had only the voiceless bilabial, the sign for that phoneme would have to suffice for a foreign bilabial, whether voiced or voiceless.[19] But this produces a stop inventory with only one voicing contrast: /p : Ø, t : d, k : Ø, kᵂ : Ø/.[20] Such a system, with a voicing contrast in only the dentals, is not unknown.[21] Within Indo-European, however, and more specifically among the Anatolian languages, it would be both unique and highly unlikely. But the existence of a perfectly good *t*-sign rules out the possibility of de-voicing the phonetic value of the *d*-sign as with Lyd. *b*. However, like the *b*-sign, Lyd. *d* does not correspond to similar sounds in foreign languages (see 2.4.3 above). Listed below are Lydian names, their foreign counterparts, and the direction in which the name was borrowed.

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[19] Cuny (1921: 3) points out a further discrepancy in Greek : Lydian correspondences: Grk. aspirate vs. Lyd. non-aspirate (e.g., Lyd. *ibśi-* : Grk. Ἔφεσος, Greco-Lyd. gloss νύχμα, which implies a Lydian form in -*k*-). But the Greek counterpart often has no aspirate. And yet Cuny was not completely wrong if aspirate allophones are posited for the Lydian obstruents. Thus /k/ could be realized as [k] and [kʰ], etc. See 3.2.

[20] Even if one accepts that *d* represented /ð/ (see 2.4.3), the system would be unique in having no voiced obstruents but a single voiced fricative.

[21] Lass (1984: 149) cites Sentani as a language with a voicing contrast only in the dentals.

Lydian names and foreign counterparts[22]

Lydian	Foreign	Correspondence
atraśta-	Ἀδραστο-	t : d (Lyd. > Grk.)
aλiksantru-	Ἀλεξανδρο-	t : d (Grk. > Lyd.)
katowa-	Καδοας	t : d (Lyd. > Grk.)
śfarda-	Σάρδεις	d : d (Lyd. > Grk.)
lewś/lefś	Δεύς (Ζεύς)	l : d (Grk. > Lyd.)
lamētruś	Δημήτηρ	l : d (Grk. > Lyd.)

The names *atraśta-*, *aλiksantru-*, and *katowa-* betray a *t : d* corre-
spondence. However, such a conclusion is not supported by the name
of the Lyd. capital *śfarda-* : Grk. Σάρδεις 'Sardis' with a *d : d* corre-
spondence. Lyd. *lewś/lefś* : dialectal Grk. Δεύς 'Zeus' and Lyd.
lamētruś : Grk. Δημήτηρ 'Demeter' suggest that the Lydians inter-
preted initial Grk. δ as a lateral. In short, Lyd. *t* was very close to /t/;
Lyd. *d* was not /d/.[23]

Gusmani (1965: 209–210) notes a typological analogue. As with
the Lydian stop system of 1964, the Mycenaean Linear B lacked a
voicing contrast in all but the dentals. There is general agreement
that the Lin. B *d*-series did not represent a voiced dental in Minoan,
but rather some phoneme close enough to Grk. *d* to allow Mycenaean
scribes to appropriate it for the voiced dental stop.[24] The fact that
the Minoan loanword for 'labyrinth', attested in the Myc. genitive
da-pu$_2$-ri-to-jo with initial *d*, turns up as Classical Greek λαβύρινθος
with initial *l* could be explained if the Minoan phoneme had been
one that might be interpreted as both a dental and a lateral.[25] Accor-
dingly, Gusmani suggests a retroflex.[26] Sanskrit provides a similar
fluctuation between retroflex and lateral in different states of the
same language, with *ḍh* in the Classical language corresponding to
Vedic *ḷh*, e.g., Skt. *mīḍhám* : Ved. *mīḷhám* 'prize, reward' (cf. Grk.

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[22] I have omitted an Iranian loan, Lyd. *mitridasta-*, because there is no agreement on
which Iranian dialect provided the loan. The -*d*- of the Lyd. form may correspond
to Iran. /d/, /đ/, or /z/.

[23] In a forthcoming article "PIE Dental Stops in Lydian", H. Craig Melchert
independently reaches similar conclusions.

[24] Merlingen (1954: 6ff.) interprets the Linear B *d*-series as the representation of an
interdental fricative.

[25] Heubeck (1957: 149–153) agrees in principle with Merlingen (1954: 6ff.) but
notes the problem posed by the Myc. and Classical forms of the word for 'labyrinth'.

[26] Gusmani's suggestion of a retroflex is supported by Sampson (1985: 72), though
Gusmani is not mentioned.

μισθός) < IE *misdhóm*. It is likely that Lyd. *d* represented a phoneme distinct from Grk. /d/ but close enough to it that when the alphabet was borrowed, the Lydians adopted *d* as the nearest expedient. This produces the inventory: /p t d k kʷ/ (where /d/ represents a dental-like mystery phoneme). If neither Lyd. *b* nor *d* represented the expected voiced stop, and if *g* can be rightly dismissed, it is unlikely that *d* represented a voiced sound. Thus we are faced with an inventory bereft of any voicing contrast whatsoever. But problems remain, such as the *d* : *d* correspondence of Lyd. *śfarda-* : Grk. Σάρδεις, which demonstrates that the Greeks interpreted Lyd. *d* as equivalent to their *delta*.

3.0 A Re-evaluation of the Lydian Stops
3.1 A Possible Answer from Roman Gaul

The answer to the lack of concord between Lydian phonemes and their foreign counterparts may lie in Roman Gaul. In a study of Gaulish phonemics, Watkins (1955) describes a linguistic and epigraphical analogue to the Lydian situation. When Roman scribes (or, at least, scribes taught to write by Latin-speakers) recorded Gaulish names, consistency was not the rule. A voiced stop in a name written by one scribe may correspond to a voiceless stop or aspirated stop written by another. Watkins (1955: 18) provides, among others, the examples *Arisitum* : *Arisidum* (*t* : *d* correspondence) and *Epidius* : *Ebideos* (*p* : *b* correspondence). According to Watkins, "It is probable that the Latin voiceless stops are fortis, the voiced stops lenis. . . . [But] . . . Gaulish has a different combination of the two oppositions voiced-voiceless and tense-lax [i.e., fortis : lenis] . . ." Watkins (1955: 19) presents the relevant differences between Latin and Gaulish phonemes as follows; the dental stops represent any stop.

Latin-Gaulish stop phonemes from Watkins (1955)

	Fortis			Lenis	
Latin	-tt-		-t-	-d-	(-dd-)
Gaulish	-tt-	-t-		-d-	

Watkins explains: ". . . a confusion in the spelling of Gaulish /t/ (and of other single voiceless stops) can easily arise from the fact

that this /t/ shares one feature [i.e., voicelessness] with Latin /t/ and another [the fact that it is lenis] with Latin /d/." In other words, single p/t/k were voiceless fortis stops in Latin, but voiceless lenes in Gaulish: Latin /p, t, k/ = Gaulish /b̥ , d̥ , g̥ / (voiceless lenis stops).

3.2 Lydian as a Voiceless Lenis Language

I suggest that Lyd. stops were voiceless, just as Gusmani asserted for Lyd. b, but that they were lenis rather than fortis. As in Latin, Greek voiceless stops were fortis. It is really not surprising, then, that Greeks and Lydians would have the same difficulty in accurately rendering each other's phonemes, as had Romans and Gauls. This accounts for the otherwise problematic exceptions mentioned earlier; variation should be anticipated when speakers of a language with dominant fortis : lenis opposition attempt to reproduce a language in which such an opposition is absent.[27] Lydian *b* shows up in Greek as π, φ, or β; Grk. δ represents Lyd. *t*, but also *d*, and so on.[28]

Two further pieces of evidence can be offered in support of the voiceless nature of Lyd. stops. First, Carruba's analysis (1960: 32) of the Lyd. preverb *ēt-* < IE *endo* shows that the Lyd. reflex of IE *d* is *t*. Second, the *d/l* variation which seems to be a broad Mediterranean-Anatolian phenomenon appears in Lydian as a *t/l* variation. A sampling of this variation, including the Lydian evidence, is presented below (in part based on Heubeck [1959: 19–21]):[29]

d/l variation
  1. IE *nōmen* 'name' > Hitt. *lāman* : HLuv. *(a)dama-*
  2. Hitt. *Tabarna* : *Labarnas*
  3. Anat. *Lygdamis* : Assyr. *Dugdamme*
  4. Lyc. *Dapara* : *Laparas*
  5. Ἀδυάττης 'Adyattes' : Ἀλυάττης 'Alyattes' (Grk. rendering of a Lyd. name)
  6. Ὀδυσσεύς 'Odysseus' : Ὀλυττεύς 'Olytteus'

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[27] Einarsson (1932: 178–180) relates the confusion that speakers of modern Germanic languages have interpreting Finnish *p* vs. *pp*, etc. The confusion works in the reverse direction as well: cf. Germanic *argaz* 'passive homosexual' : Finn. *arka* and Est. *arg* 'cowardly', Goth. *paida* 'shirt, cloak' : Finn. *paita* 'shirt'.

[28] The use of the *g*-sign has been attributed to an attempt to represent a voiced allophone of *k* (see 2.4.4). The occasional Greek use of aspirates to transliterate Lyd. sounds suggests the existence of an aspirated allophone as well.

[29] Cf. Hiersche (1970: 32).

7. δάφνη : λάφνη 'laurel'
8. Lin. B *da-pu₂-ri-to-jo* : λαβύρινθος 'labyrinth'
9. Proto-Ital. **louksno-* 'shining, white' > Etruscan *tusna* 'swan' (via Umbrian **dosno-*)
10. OLat. vs. Lat. variants *dingua* : *lingua* 'tongue', *dacruma* : *lacrima* 'tear'
11. Lat. *odor* 'odor' : *oleō* 'to emit an odor', etc.
12. Lyd. *antola-* : *anlola-* 'grave stele', *fa-sitavad* '?': *silavad* 'looks after'(?)

It is likely, then, that in Lydian orginally voiced phonemes were devoiced. Such a system raises the important question of origins: was such a development Lydian-specific or did it have an earlier origin within Common Anatolian? Although Tocharian, with no voiced stops, offers a possible parallel, we cannot know if these stops were fortis or lenis. It is more profitable to look within Anatolian for answers to Lydian.

All Anatolian languages share a common innovation, the simplification of the IE three-way opposition of stops whereby voiced and voiced aspirate coalesced. The remaining two-way opposition is maintained in Hittite through the writing of single versus double consonants. Sturtevant (1933: 74–75 and 1951: 26–28) assumed that single consonants were voiced, double consonants voiceless. However, it may be useful to reconsider an earlier suggestion that the Hittite opposition was not one of voicing but rather of tenseness.[30] Perhaps proto-Anatolian underwent a further innovation in which voiced lenis stops were devoiced, producing a contrast between voiceless lenis (written in Hittite as single consonants) and voiceless fortis stops (Hitt. double consonants): (1) IE **bh, dh, gh* + **b, d, ǵ* (voiced lenes) > proto-Anat. **b, d, g* (voiced lenes) > CAnat. **b̥, d̥, g̥* (voiceless lenes = Hitt. *b/p, d/t, g/k/q*); (2) IE **p, t, ḱ* (voiceless fortes) > CAnat. **p, t, k* (voiceless fortes = Hitt. *bb/pp, dd/tt, gg/kk/qq*).[31] In this way, the Lyd. development of only voiceless lenis stops would simply represent a continuation of a process begun in an earlier stage

[30] Einarsson (1932: 177–182) and Petersen (1933: 22–23).
[31] This would also explain variation in the correspondences between Greek and other languages of Anatolia. For example: the Hesychian glosses (1) Βρίγες · οἱ μὲν Φρύγες "The Phrygians call themselves 'Briges'" (/b/ : /pʰ/); (2) γυγαί and κουκᾶ, Anat. words equivalent to Grk. πάππος 'grandfather', cognate with Hitt. *huhha-* and perhaps underlying Greco-Lyd. Γύγης 'Gyges'.

of the language, namely the loss of the fortis : lenis distinction as well:[32] CAnat. *$b̦$, $d̦$, $g̦$ (voiceless lenes) + CAnat. *p, t, k (voiceless fortes) > Lyd. $b̦$, $d̦$, $g̦$ (voiceless lenes).[33]

3.3 Ramifications of a Voiceless Lenis System

The realization that Lyd. stops were voiceless lenes has further ramifications. First, it counters the argument set forth by Haas (1962: 200) that Lyd. c should be regarded as a voiced phoneme. Second, it explains why Lydian appears to maintain only a voiceless labiovelar (+). Finally, it can aid the search for an answer to the puzzle of Lyd. d.

4.0 New Light on Lydian d
4.1 The Synchronic Evidence on Lyd. d

There are five important pieces of information about Lyd. d:

(1) The Lydians did not use d to represent Grk. /d/, preferring t in general, l initially.

(2) The Greeks were content to identify the d of Lyd. *śfarda-* with their delta, giving Σάρδεις.

(3) As part of an inflectional ending, d and t appear to interchange; as Gusmani (1965: 207–208) has shown, in such cases, d occurs twice as often as t. These endings are the neuter nom.-acc. of the noun and pronoun, and the third-person sing. of the pres.-fut. tense. As the neuter ending, d occurs almost exclusively. But in the verb, t is used in one-third of the attestations. In word stems (i.e., before any inflectional endings), t is found three times more frequently than d. This higher frequency of t in stems, but of d in endings, is an indication that d represents a more complex sound.[34]

(4) The d-sign is not tolerated in a large number of clusters which tolerate t. In clusters composed of dental stop + l or r, the inscriptions provide no attestations where d is the dental, but thirty-nine where t is the dental (*tl, tr*); there are ten examples where t is part of a stop + dental cluster, but none with d (*dt, bt, kt, qt*); and when a sibilant is

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[32] It is interesting to note that Weidner (1917: 25) saw the Hitt. double vs. single writing as an aspirate : non-aspirate opposition of voiceless lenis stops.

[33] Anat. *p apparently shows two Lyd. reflexes: b and f. It is unclear what environments motivated the various outcomes.

[34] From personal communication with Ian Maddieson, Phonetics Laboratory, University of California, Los Angeles.

followed by a dental, *t* is the dental 23 times, with no attestations of *d* (*st*, *śt*). This intolerance is significant: *d* is actually replaced by *t* in the neut. ending when the presence of *d* would produce one of the untolerated clusters. For example, from the demonstrative stems *es-* and *ed-*, a nom.-acc. is formed by adding the Lyd. outcome of the IE pronominal **-d* marker. However, the attested forms show that *-t* has replaced *-d*: *esd > *est* = */ešd/ > /ešt/; *edd > *edt*.

(5) The presence of *d* causes palatalization in the nom. of the common gender of the demonstrative *ed-*: *edś > *eds* = */eds/ > /edš/.

I believe that Lyd. *d* was a voiceless lenis palatal stop: /d̥ ʹ/. Such a phoneme would understandably cause the palatalization of a following sibilant. Furthermore, it is the very kind of complex sound that might not be tolerated in certain clusters. In this light, all apparently anomalous forms of the demonstratives mentioned above can be explained as follows:[35]

Lydian pronominal stems
1. *edś > *eds* = */ed̥ ʹs/ > /ed̥ ʹš/: progressive assimilation causes /s/ to palatalize.
2. *edd > *edt* = */ed̥ ʹd̥ ʹ/ > /edt/: dissimilation of a double palatal cluster.
3. *esd > *est* = */ešd̥ ʹ/ > /ešt/: dissimilation of a double palatal cluster.
4. *esś > *eśś* = /*ešs/ > /ess/: regressive assimilation.

Proof that Lydian was intolerant of double palatal clusters rests in number 4 where progressive assimilation would have produced a double palatal; instead, regressive assimilation has simply eliminated the palatal.

4.2 The Diachronic Evidence

There is some diachronic evidence that Lyd. *d* (/d̥ ʹ/) occurred in an environment favorable to the palatalization of *t* (/d̥ ʹ/). (1) IE *kʷid should appear in Lydian as *qit; instead, the attested form is *qid*: thus *kʷid > Lyd. *qit > *qid* by palatalization of *-t* following the front vowel. (2) Similarly, IE *ne id appears not as Lyd. *nit but as *nid* 'not'.[36] (3) Original initial and intervocalic *y become Lyd. *d*:[37]

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[35] For a different interpretation (in which *d* = /d̥/), see Melchert (1991: 134).

[36] For the formation, cf. Hitt. *natta* < *ne-at + *a*; Skt. *ned*, Avest. *nōit̯* < PIndo-Iran. *na-id; Russ. *n´et*.

[37] I am grateful to H. Craig Melchert for sharing his views on this change. His work, "PIE *y > Lyd. *d*", will appear in the Gedenkschrift for O. Klíma.

Anat. **piyom* 'I gave' > Lyd. *bidv*; IE **(H₁)yé/ónt-* > Lyd. *dẽt-* 'mobi-le wealth'; and possibly IE **gliyeH₂-* (cf. Grk. γλία 'glue') > Lyd. *kλida-* 'earth'. The development of *y* to a palatal dental stop is not uncommon (cf. the similar development in Romance consonantal *i*).[38]

5.0 The Lydian Consonant System

The conclusion that Lydian possessed only voiceless lenis stops and that Lyd. *d* represents a voiceless lenis palatal stop offers the following system: /b̥ , d̥ , d̥ ´, g̥ , g̥ ʷ/, though it is perhaps simpler to assume that Lyd. stops = voiceless lenis (with voiced and aspirated allophones), and write /p, t, t´, k, kʷ/. Integrated into the entire consonant system, the result can be represented as in the figure below.

Lydian consonants

	bilabial	dental	palatal	velar	labiovelar
stop	ꟿ *b* /b̥ /	T *t* /d̥ /	ʎ *d* /d̥ ´/	Ж *k* /g̥ /	+ *q* /g̥ ʷ/
fricative	8 *f* /φ/[39]	ʔ *ś* /s̥/	Ŧ *s* /š̥/		
affricate		Ŧ *τ* /d̥ s/	↑ *c* /d̥ š/		
nasal	⅂ *m* /m̥/	⅂ *n* /n̥/	ʔ *v* /n̥´/		
lateral		⅂ *l* /l̥/	↑ *λ* /l̥´/		
trill		ꟼ *r* /r̥/			
glide	⅂ *w* /w/				

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I. Abbreviations of Journals.
AJP   American Journal of Philology.
Bibl. Or.   Bibliotheca Orientalis.
FF   Forschungen und Fortschritte.
IF   Indogermanische Forschungen.

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[38] Two things are problematic to this analysis: (1) Lyd. *dã-* 'to give' (?) < IE **dō-/ *deH₃-*, unless the *d-* of the Lyd. form is somehow secondary; (2) the fluctuation between *-d* and *-t* in the 3rd person verbal ending defies an explanation based on synchronic motivation. Oettinger (1979: 84–89) and Melchert (1992) see a cause in Eichner's theory of lenition after long vowels (1973: 79–83).

[39] Perhaps /β/.

JHS   Journal of Hellenic Studies.
JKF   Jahrbuch für kleinasiatische Forschung.
JRAS   Journal of the Royal Asiatic Society.
KF   Kleinasiatische Forschungen.
KZ   Kuhns Zeitschrift (= Zeitschrift für vergleichende Sprachfor-
           schung = Historische Sprachforschung).
LB   Linguistique Balkanique.
MIO   Mitteilungen des Instituts für Orientforschung.
OA   Oriens Antiquus.
OLZ   Orientalische Literaturzeitung.
RE   Pauly – Wissowa, Realencyclopädie der classischen Altertums-
           wissenschaft.
REA   Revue des Études Anciennes.
RHA   Revue Hittite et Asianique.
WZKM   Wiener Zeitschrift für die Kunde des Morgenlandes.

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