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Anatolian *marashanha* and the many uses of fennel

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Abstract

The Hittites used the seeds of a particular plant, now known to have been called *marashanha*, in a ritual for cursing a conquered city to ensure its desolation. Other parts of the same plant provided food and medicine. We have combined textual, botanical, linguistic and herbalist evidence to propose that *marashanha* denoted at least one species of fennel. This plant readily colonises deserted habitation sites and possesses properties in common with *marashanha*. We further propose that the Anatolian word '*marashanha*' has a common origin with the Greek word for fennel, '*marath(r)o-*', and that the impact of folk etymology on the latter reflects the use of fennel as a female contraceptive. Fennel's ability to inhibit conception accords with the barrenness which the Hittite ritual sought to impose upon a conquered city.

Özet

Hititler dini törenlerde zapdettikleri bir şehri lanetlemek ve tümüyle tahrip edildiğini garantilemek için '*marashanha*' adıyla bilinen kendine has bir bitkinin tohumlarını kullanmışlardır. Hititler bu bitkinin diğer kısımlarından da yiyecek ve ilaç temin etmişlerdir. Biz, metne ait bilgileri, botanik, dil bilimi ve şifalı bitkiler biliminden topladığımız bilgiler ile birleştirerek *marashanha*'nın rezene bitkisinin, en az bir türü olduğunu önermekteyiz. Bu bitki terkedilmiş yerleşim alanlarında kendiliğinden çoğalır ve '*marashanha*' ile ortak vasıflara sahiptir. Eski Anadolu'da kullanılan '*marashanha*' kelimesi ile Grekçe'de rezene bitkisinin adı olan '*marath(r)o-*' kelimesinin ortak bir kökeni olduğunu ve rezenenin doğum kontrol yöntemi olarak kullanılması sonucu halk etimolojisinin '*marath(r)o-*' kelimesinin şekillenmesini etkilediğini de önermekteyiz. Rezene bitkisinin gebeliği önleyici bu gücü ile Hititler'in dini törenlerde ele geçirdikleri bir şehri çoraklaştırmaya çalışmaları birbiriyle uyumludur.

Hittite records contain a number of references to towns being captured and laid waste. Sometimes the Hittites are the victors and sometimes they are the victims, whether of an external foe or through civil war. Having conquered a town and decided to render it uninhabitable, Hittite practice was to curse the site in order to deter future re-occupation. One may presume that something similar was also the habit of the other peoples of that era and region, among them the Hattians, from whom their Hittite conquerors inherited so much.

Surely the best known instance of a city being captured, cursed, then later re-occupied (in this case by the victorious side themselves), is that of the Hittite capital, Hattusa, in the 17th century bce, marking the start of what today is commonly called the Old Kingdom. The text reporting this sequence of political events dates from much later than the events themselves, after the Hittites had adopted cuneiform writing along with other cultural elements of ultimately Mesopotamian origin.

Something is known of the Hittite ritual for cursing a conquered city, although the earliest extant texts on the process postdate the capture of Hattusa by some centuries. The main physical action performed during the ritual was to sow the site with the seed of a certain plant, the identity of which is the subject of this paper. It is a reasonable assumption that the act of sowing would have used only a token amount of seed and so would have been more symbolic than comprehensive. Seeding the whole site seems unlikely, given the scale of enterprise required, though not absolutely impossible.

Mesopotamian tradition knew of the cursing of conquered cities by means of a ritual comparable to the Hittite, but the specific identity of the plant used there remains undiscovered. In their own texts the Hittites routinely wrote Sumerian and Akkadian terms in place of some of their native words, and the identity of the plant used in Anatolia has remained concealed behind the so far untranslated sumerogram ZÀ.AḪ.LI. The continuity of Mesopotamian terminology into Anatolia has been essential for understanding and translating the Hittite, but one must allow that the actual species of plant thus designated may have varied with location. Any botanical identity proposed for a plant in Mesopotamia cannot therefore be presumed to then apply equally in Anatolia, nor vice versa.

Not only do the ranges of plants vary, but the Anatolian city-cursing tradition may well have predated the times of strong Mesopotamian influence and so also may have differed from the Mesopotamian tradition in ways that cannot yet be detected. The botanical identity of the Hittite city-cursing plant must therefore be investigated from the Anatolian perspective predominantly, with the Mesopotamian evidence treated as secondary.

We cannot tell whether the ritually seeded site was visited later to check on the germination, whether indeed the seed used was of the same species as the plants that subsequently covered the site naturally, or whether the species used was consistent and unvarying for every occasion. However, such considerations are unlikely to have detracted from the symbolic value of the ritual.

Hittite texts of all genres (Hoffner 1998; Beckman 1999; Singer 2002; Haas 2003; Haroutunian 2003) contain many clear references to gaining and losing territory and towns, but the curse-counteracting rituals for which details are known are all to ward off or remove malign influences from an individual or from an established community. Despite the detail devoted by Hattusili to his recapturing the deserted site of Nerik and refounding it (Singer 2002: 99–100), one finds no direct clue about what must have been a crucial state ritual for reconsecrating a depopulated and cursed town before re-occupation.

Should a city refounding ritual ever be discovered, then one may hope that the text will prescribe how to remove the effects of a curse laid previously upon the intended site. The actions needed to clear the growth physically may well tell us something significant about the plant's properties. Fortunately the city-cursing plant is ascribed a number of additional roles as food and as medicine in other texts. Moreover, the recently discovered Ortaköy fragment 95/3 spells out the plant's name syllabically, allowing a degree of linguistic speculation to be brought into play when trying to identify the species.

The present paper is far from being an exhaustive study. It augments the evidence summarised in Süel, Soysal 2003 with botanical and other information so as to propose that the city-cursing plant was one or more species of fennel, members of the genera *Ferula*, *Ferulago* and *Foeniculum* in the family Umbelliferae or Apiaceae.

The evidence adduced here for the proposed identification of the city-cursing plant is not conclusive, and assessing it is a matter of weighing a combination of probabilities. Some of the evidence invites the likely exclusion of certain plants, none of the evidence is in definite disagreement with the fennel proposal, while the rest of the evidence points more positively towards the identification. The properties of the city-cursing plant have led some scholars to prefer to translate it as 'cress' or 'weed', which is not intended as a specific identification, but is rather a generic designation deduced from textual references to the plant's various uses. This paper does not seek to challenge this interpretation by offering an alternative, but aims instead to apply a similar deductive approach to newer evidence and thus to increase the level of certainty about the species of plant involved.

The seeds of desolation

In the absence of direct evidence as to which plant was chosen for cursing a city and why, it seems appropriate to adopt a common-sense approach by stepping mentally into the shoes of someone seeking to devise a suitable ritual. In order to encourage the conquered place to remain desolate, what better than seeding it with a plant which clearly characterises a deserted or devastated habitation?

Given time, many species will colonise a site which has been left to the unassisted attention of nature. The ritual would require the seed of a plant which grows rapidly and thickly in that situation and which is visible from a distance. One is therefore looking for a plant which both flourishes uncultivated on a höyük and is also one of the most distinctive components of the overgrowth observed there. Whether or not this plant has other uses as well is a separate matter.

If the chosen plant was also known to poison farm animals, to inhibit crop plants, to irritate the skin and even to prevent the conception of children, what better way to ensure the continuance of barrenness? The cursed site is thus rendered not only visually desolate and inimical to visitors, but also magically inhibits the reappearance of a population.

The idea that some sort of fennel might have been the Hittites' city-cursing plant was first stimulated by the traditional etymology of a toponym on the other side of the Aegean, none other than Marathon itself. The name of the town has long been supposed to mean 'covered in

fennel' and to refer to a pre-existing site which was overgrown with that plant (Liddell, Scott 1940: 1080). Indeed, in Marathon today one finds the edible fennel species *Foeniculum vulgare* growing freely on roadsides and dry waste ground. We should also remind ourselves that the site of Ugarit is Ras Shamra, 'fennel cape'.

Both Anatolia and Greece fall within the range in which fennels grow wild, and the readiness with which these plants colonise deserted sites round the Mediterranean remains observable in many locations. Some sites have had their plant cover stripped off so as to conserve the archaeology, but the site of ancient Aptera in Crete, for one, was to be seen in April 2005 overgrown with giant fennel (*Ferula communis*), with the smaller species *Foeniculum vulgare* distributed less densely.

It is a reasonable assumption that the Hittite ritual would have sought to mimic or encourage the way nature covers the site with vegetation. The proposal that fennel was the plant whose seed was used is amenable to further investigation by comparing fennel's many uses with the roles recorded for ZÀ.AḪ.LI besides that of cursing a city. An Anatolian name for ZÀ.AḪ.LI was recently revealed as *marashanha* in the fragmentary Ortaköy tablet 95/3. This discovery opened up a new linguistic avenue to the investigator alongside the botanical, culinary and medicinal considerations.

Ortaköy tablet fragment 95/3

The reader is referred to Süel, Soysal 2003 for details of the provenance and textual analysis of this tablet, which is dated on stylistic grounds to the Late Middle Kingdom in the early 14th century bce. The present writers are greatly indebted to that article for the observations and findings that it offers, many of which have been incorporated below without further attribution.

Because the surviving areas of the tablet contain a list of useful plants, the text of Or 95/3 is classified as a relatively rare instance of the genre named 'practical vocabulary', though it is unclear whether the original unbroken text was devoted solely to that topic. While it is clear from the grouping of lines and the phrasing that useful plants are what is being catalogued, the tablet contains no explicit statements about how these plants were actually used. Or 95/3 comes from the site of Hittite Sapinuwa, north of Hattusa, and exhibits a 'careful and neat ductus', but also frequent irregularities, especially in the Sumerian and Akkadian words, which have led to its identification as probably a school tablet. However, the well-practised look of the handwriting contrasts with the fragment's irregularities in content. This suggests that the scribe was perhaps no simple beginner, but could have been a relatively proficient writer who was taking on an unfamiliar subject.

The fragment represents much of the lower portion of a tablet, with part of the bottom and part of one edge present. Text survives on both sides, though it is not clear which is the front and which the back. The side with the larger amount of text is provisionally taken as the obverse. Whether the tablet should really be read reverse first instead is a question here left unexamined, because the answer seems very unlikely to have any effect upon the present investigation.

The plant list found in the fragment consists of a pair of columns with the Mesopotamian plant names in the first column and an Anatolian 'explanation' in the second. Each individual entry is separated from the entries above and below by a single horizontal ruling across both columns. Each surviving entry consists of between two and five lines.

A total of 65 lines are present in whole or part, broken by horizontal rulings into 26 entries. Two of the entries are illegible, but the remaining 24 contain a total of 37 partly or wholly discernible items. Some items occupy more than one line, some contain the document's sole reference to a plant, while others clearly form a catalogue sequence with the items adjoining them.

The grouping of entries seems to relate to the properties of the plants somehow, and so the position of each entry in the list is taken as possibly having some implication for the identity of every plant mentioned in the surviving text. As a 'rule of thumb' the plants in two adjoining entries are presumed likely to share some property or close relationship, as perceived when the text was composed. By the same token, two entries widely separated in the list are provisionally taken as unlikely to have shared much of significance.

Each face of Or 95/3 originally had four columns. On each face the pair of columns making up the right-hand half is the continuation of the list held in the left-hand pair of columns.

The obverse exhibits all four columns, but with the loss of most of the fourth. In terms of the list's structure the left-hand pair of columns on the obverse can conveniently be designated as section A, followed by a gap of uncertain size and then by the continuation of the list in section B, the right-hand pair. The reverse exhibits a small part of the first three columns only. This gives us sections C and D, again separated by a gap, where D lacks its Anatolian explanation column entirely.

The content of the four sections is summarised in table 1, in which the 'plants covered' column combines the best of the original's Mesopotamian and Anatolian columns. This document attests the four new plant names *kumi*, *kirusa*, *marashanha* and *zukki(s)* in a Hittite context.

[*many lines lost from top of obverse*]

Obverse: section A – *nine entries – 14 items*

Entry	*Plants covered*	*Entry*	*Plants covered*
§1' (4 lines)	• *ta-wa-ti-iš* = ?'fenugreek' • 'small *tawati*' • 'standing *tawati*'	§7' (3 lines)	• *marashanha* (= ?'fennel') • '*marashanha* seed' • 'desirable *marashanha*'
§2' (3 lines)	• 'oven-roasted *tawati*'		
§3' (3 lines)	• 'pot-roasted *tawati*'	§8' (2 lines)	• *ga-lu-lu-u-pí-iš* = ?'purslane'; literally = 'finger(s)' • 'seed of galulupa'
§4' (2 lines)	• *ku-u-mi* = something medicinal		
§5' (2 lines)	• *ga-ak-ku-ú-ša* = ?'rocket'	§9' (3 lines)	[*2 unintelligible lines*] • *[a-a]n-ki-iš-ša* = ?
§6' (2 lines)	• *ki-ru-ú-ša* = ?'leek'		

[*bottom of tablet, then many lines lost before section B*]

Obverse: section B – *ten entries – 17 items*

Entry	*Plants covered*	*Entry*	*Plants covered*
§1'	[*unreadable trace of last line of entry only*]	§7' (2 lines)	• *dankwi[s kappanis]* = 'black cumin' • *na-na-ya(-)[* = something medicinal
§2' (2 lines)	• 'asa foetida' • ?'endive'	§8' (3 lines)	• '*na[naya-* of the mountain' • some sort of shoot(?) called *hasus[ara-]* = 'queen'
§3' (2 lines)	• ?'mint'	§9' (5 lines)	• *kap-p[a-a-ni-iš]* = 'cumin' • *hark[is kappanis]* = 'white cumin' • *da[nkwis kappanis]* = 'black cumin'
§4' (3 lines)	• a type of onion • ?a type of garlic		
§5' (2 lines)	• a type of onion • *ku-un-k[?u-* = ?a type of onion	§10' (2 lines)	• something ?with a white middle
§6' (2 lines)	• a type of bulbous vegetable • 'leek'		

[*end of obverse, then many lines lost from top of reverse*]

Reverse: section C – *four entries – three items*

Entry	*Plants covered*
§1'	[*unreadable trace of last line of entry only*]
§2' (2 lines)	• *zu-uk-ki-iš* = ?
§3' (3 lines)	• *zi-na-ak-ki-iš* = ?
§4' (min. 2 lines)	• ?*[ka-a]r-ša-ni-an-za* = ?'soaproot'

[*many lines lost before section D*]

Reverse: section D – *three entries – three items*

Entry	*Plants covered*
§1' (min. 2 lines)	• something ?medicinal
§2' (4 lines)	• ?leaf of date palm heart or something ?sword-shaped
§3' (min. 3 lines)	• ?blue coloured form of the plant covered in entry D2'

[*many lines lost before end of reverse*]

Table 1. Summarised content of the extant sections of Or 95/3, as interpreted by Süel, Soysal 2003, with the marashanha *entry (A7') amended to reflect the fennel proposal*

Although Hittite is the language of the explanation column, several individual plant names are quoted there which either occur nowhere in the Hittite corpus or have a look about them which is non-Hittite and, Süel and Soysal suggest, possibly Luwian. This may mean that the plant in question originated outside the Hittite area, or that the scribe was not native to the Hittite area, or both.

The uncertainty over whether all of the plant names in Or 95/3 are truly Hittite led Süel and Soysal to prefer the more general designation 'Anatolian' in the title of the explanation column. As instanced by its title, the present paper has extended this approach to the subject as a whole and uses 'Anatolian' as a cover name for all relevant languages of the region.

The grouping of the entries in Or 95/3 corresponds partly to that in the Mesopotamian plant list known as 'ḪAR-ra = *ḫubullu* XXVII', and this parallelism helped Süel and Soysal with the fragment's restoration and commentary. This similarity between the two documents also suggests that Or 95/3 was itself derived from an ultimately Mesopotamian model, rather than being composed in Anatolia as a catalogue of Anatolian plants only.

Some members of a speech community who use a particular plant name may be less aware than others of the different kinds of plant designated by that name and of the properties of those various plants. Opinions and understanding may thus vary within a single speech community and may even be inconsistent, with, for instance, a town dweller being less familiar with wild plants than a farmer. When two speech communities come into contact, each with an independently composed set of plant names, it is hardly surprising if there are puzzles in equating one community's botanical catalogue closely with the other's. The outcome is likely to be a patchy mix of straightforward matches, approximations, unresolved uncertainties and even some errors.

One might suppose that Anatolia would have known one or more plant classification traditions of its own, more properly suited to the local flora and originally independent of Mesopotamian methods. That the local Anatolian plants may not have provided a one-for-one match with the Mesopotamian is suggested by the uneven content of the explanation column in Or 95/3, sometimes containing a single word, sometimes a descriptive phrase or clause, and with some entries apparently out of sequence.

Despite the limitations imposed by Or 95/3's fragmentary nature, there are definite hints that the Anatolian explanation was composed with a degree of uncertainty. One has the impression that the scribe may even have been defeated on some points. For instance, entry 3' of section C has text on all three Mesopotamian lines, albeit not legible. However, only the single word *zinakkis* appears on the first Anatolian line, and the last two lines are blank, as though no obvious equivalent to the rest of the Mesopotamian was readily available, perhaps leading the scribe to give up and move on to entry C4'.

Section A starts with the most elaborately worded part of the whole fragment, the three entries on *tawati.* Here the phrasing of the Hittite gives the clear impression that the Anatolian explanation contains definitions, rather than direct translations (table 2). What is more, some of these definitions have an impromptu look, as though the scribe were groping for the words to match Mesopotamian terms which were already poorly reproduced.

Entry	Line(s)	Hittite text	Meaning
1'	1'	*taw[at]is*	'*tawati*'[1]
	2'	*ami[ya]n[z]a tawati[s]*	'small *tawati*'
	3' - 4'	*ar[ta]ri kuis tawatis*	'*tawati* which stands'[2]
2'	5' - 6a'	*UDUN-nitkan kuis tawatis sanhuwanza*	'*tawati* which is roasted by oven'[2]
3'	7' - 9'	*harsitkan kuis sanhuwanza tawatis*	'*tawati* which is roasted by pot'[2]

Notes

1. The Sumerian is SULLIM, which could denote fenugreek. However, the Anatolian *tawati* has been kept as the translation here, since the identity of the plant remains unproven.
2. These three items have each required a complete relative clause, which strongly suggests that the various types of SULLIM were not each matched by a separate Anatolian name.

Table 2. The tawati *entries in section A of Or 95/3 (Anatolian explanation only)*

The translation suggests that entry A1' relates to naturally differing kinds of *tawati*, while A2' and A3' seem to refer instead to some of its culinary uses and to be interpretations of the Mesopotamian wording. Whether the Mesopotamian was indeed referring to five different plants or not, it is possible that the five kinds of *tawati* are not all mutually exclusive.

If Or 95/3 was indeed derived from a plant list of ultimately Mesopotamian origin, then the many irregularities of spelling point to the model document having previously passed through intermediate stages of transcription where understanding appears to have been less than complete. On top of that, some of the Anatolian explanation has an ad hoc and uncertain look to it. Whether or not the fragment is actually from a school tablet, the irregularities observed in those parts of the text that are clearly understood must be presumed to indicate that the other parts too may exhibit irregularity to some extent. The linguistic value of three of the new plant names attested by Or 95/3 may therefore be compromised by uncertainty over the accuracy of their spelling.

Fortunately *marashanha* is the one new plant name written syllabically more than once. There is indeed an irregularity present, but it is simply the omission of the grammatical ending one time out of three (table 3).

A nasal consonant before another consonant is frequently omitted in written Hittite, and so it could be argued that *ma-ra-aš-ḫa-an-ḫa-pát* in line 18' is a complete and correct writing which represents *marashanhan-pat.* This would have to be either the nominative singular of an alternative neuter stem or the accusative of the *marashanhas* seen in the previous two lines. Despite the comments made below on plant name gender alternation in both Hittite and Greek, a switch of gender in the third of these lines seems very unlikely, and a switch of case is improbable, but would anyway have no impact upon our investigation.

NÍG.AL.DI appears as a designation of certain plants in Mesopotamian documents, but, whatever the mix of plants denoted by ZÀ.AḪ.LI and NÍG.AL.DI in a putative Mesopotamian model document for Or 95/3, it would appear from the explanation in line 18' that NÍG.AL.DI had no direct Anatolian equivalent in name, but only some kind of counterpart in function. As in the foregoing cases of *tawati* this suggests a lack of clear equivalence between the Mesopotamian and the Anatolian flora, or a lack of knowledge about Mesopotamian flora on the part of the scribe, or perhaps both.

The scribe may well have been simply a pupil parroting an existing text, but there are other possibilities. For example, if it is true that the Anatolian explanation indicates a degree of difficulty in deciding which local plants to allocate against the Mesopotamian names, then the scribe may have been more like a researcher who was seeking to expand the repertoire of reference documents in Sapinuwa, perhaps by drawing upon less familiar traditions from further afield.

In the third *marashanha* item the unexplained Mesopotamian 'object of desire' is taken to refer to the medicinal and culinary uses of ZÀ.AḪ.LI, but the Anatolian gives an impression of hesitancy or compromise, reminiscent of what has been observed above about *tawati* and *zinakki.* All this suggests that a different kind of function was in the scribe's mind for the first two *marashanha* items, and, given that the second

	Mesopotamian column		**Anatolian explanation**	
Line	**Text**	**Meaning**	**Text**	**Meaning**
16'	ZÀ.AḪ.LI	'*zà.ḫi.li*'[1]	*ma-ra-aš-ḫa-an-ḫa-aš*[2]	'*marashanha*'
17'	NUMUN ZÀ.AḪ.LI	'seed of *zà.ḫi.li*'	ZÀ.AḪ.LI-*aš* NUMUN-*an*	'seed of *marashanha*'
18'	NÍG.AL.DI	'object of desire'	*ma-ra-aš-ḫa-an-ḫa-pát*[3]	'*marashanha* as well'

Notes

1. ZÀ.AḪ.LI is a spelling so far restricted to Anatolia. The regular Sumerian spelling, *zà.ḫi.li*, is used for the Mesopotamian meaning here, since the plant's identification as fennel remains unproven.
2. This is the nominative singular of a noun of the common gender. The Anatolian word is retained here as the English translation in the absence of a proven identification of the plant.
3. To be restored as *ma-ra-aš-ḫa-an-ḫa-<aš>-pát.* The omission of a sign is typical of the irregularities found throughout the fragment, but the three writings taken together give confidence, not only that '*marashanha*' is a complete spelling of the stem, but also that the common gender nominative singular is to be restored before the suffixed particle *-pát.*

Table 3. The marashanha *entry (7') in section A of Or 95/3*

item is the seed of this plant, the city-cursing role was perhaps the dominant thought at the moment of moving on to the third item, the possibly incongruous-seeming 'object of desire'.

It is ZÀ.AḪ.LI, without mention of NÍG.AL.DI, which appears in other Hittite documents, where the plant's functions in medicine, food and city-cursing are specified. By giving us an Anatolian name for it and by placing it in a sequence of plants, the entry on ZÀ.AḪ.LI in Or 95/3 has added two fresh starting points for investigating the identity of the plant. One new starting point is linguistic, which is taken up later. The other is what the relative positioning of the entries in Or 95/3 can tell us about how *marashanha* may have resembled or differed from the other plants listed.

Marashanha versus other plants in Hittite texts

Among the Anatolian plants identified with some degree of certainty in cuneiform sources, none has hitherto been proposed as being a fennel, so far as the writers are aware. This at least means that the field is open, so to speak, for what in this paper is called the city-cursing plant, ZÀ.AḪ.LI/*marashanha.*

In table 1 the *marashanha* entry is preceded by six surviving entries and followed by two others, and this fact should permit some deductions to be made about the group of plants among which *marashanha* was classified. Similarly the grouping of entries elsewhere in Or 95/3 should allow *marashanha* to be excluded from at least some other plant groups.

None of the uses for ZÀ.AḪ.LI known from other sources are given in Or 95/3 itself. However, the document can still be coaxed into yielding further information that might help place *marashanha* more closely within a rough spectrum of possibilities. The certainty with which *marashanha* may be included in a given group or excluded from it is, however, compromised by reservations about the adequacy of the Anatolian explanation, as explained above. The immediate context of the *marashanha* entry is not a reliable indicator, at face value, of how a purely Anatolian catalogue might have looked.

Entries 7', 8' and 9' of section B cover several kinds of cumin, with which, presumably, the obscure *nanaya* and *hasusara* were somehow closely associated. One use of both cumin and fennel is as a carminative, and it is superficially tempting to see the medicinal item *kumi* in entry 4' of section A, a new *hapax*, as in some way cognate with Greek *kyminon*, given how plant names of ancient origin often transcend the language boundaries of later times. However, that *marashanha*, three entries below *kumi*, was not in fact a type of cumin may be asserted with some confidence. One reason is that the Hittite word for cumin is already known to have been *kappani.* This appears in entries B7', 8' and 9', translating the Sumerian *gamun*, a word itself related to Greek *kyminon.* Another reason for such a confident assertion is the distance in the list between the *marashanha* and the *kappani* entries. For the same reasons *kumi* is unlikely to be cumin after all, and the similarity of name must furthermore serve as a warning against etymological speculation based on single words.

The first three lines of section A are devoted to types of *tawati*, which may be fenugreek, according to Süel and Soysal. It is reasonable to suppose that *marashanha* was not classed as being closely similar to *tawati*, though the two may have possessed some perceived features in common, given their proximity in the list.

In another document (*KBo* 13.248 i 6') *tawati* is paired with what is indisputably coriander (ŠE.LÚ^{SAR}). Coriander (*Coriandrum sativum*), also one of the Umbelliferae, does not appear in Or 95/3, nor can we tell whether it was in the missing part. Nevertheless, given both that ŠE.LÚ^{SAR} is distinct from *zà.ḫi.li* in Mesopotamian sources and that the Mesopotamian column for ZÀ.AḪ.LI/*marashanha* does not mention ŠE.LÚ^{SAR}, it is therefore very probable that *marashanha* is not coriander.

In entry 8' of section A and immediately after the *marashanha* entry comes *galulupa*, which is possibly purslane, according to Süel and Soysal. This adjacency could well mean that the two plants were classified as sharing one or more properties. It may also be noteworthy that *galulupa* is the only other plant in the surviving parts of Or 95/3 beside *marashanha* to have its seed catalogued as a separate item. However, purslane is a plant quite unlike fennel in all key aspects. If the adjacency of the two entries and the separate itemisation of their respective seed are to be treated as significant, then we suggest that *galulupa* will turn out to be something other than purslane.

Section B shows a distinct allium group in entries 4', 5' and 6', and their distance from the *marashanha* entry may therefore indicate that *marashanha* is not an allium. However, this is made less clear-cut by entry 6' of section A, which may refer to leek immediately before the *marashanha* entry.

One culinary product of *asa foetida* is a gum similar to that made from both fennel root and from the root of the extinct plant silphium, which is widely believed to have been a species of fennel. However, the position of the possible *asa foetida* item in entry 2' of section B, at some remove from the *marashanha* entry, would seem to run counter to there being a particularly close relation between these two plants.

Sections C and D offer nothing of strong relevance to the quest. Whatever their entries turn out to describe, it seems likely that *marashanha*, located as it is almost centrally in section A, is distinct from all of them.

Fennels in Anatolia

The fennels are all tall, more or less upright and branched with large clusters (umbels) of small yellow flowers. The many species found round the eastern Mediterranean grow to a height of at least 1m, with the giant fennel, *Ferula communis*, occasionally reaching to as much as 5m tall. Several species occur in Turkey, grouped into the three genera *Ferula*, *Ferulago* and *Foeniculum* (Pesmen 1972; Pimenov, Leonov 2003), and there is no evidence that the situation in ancient times was significantly different. Some fennel species in Turkey are known from only a couple of examples and have very limited ranges, and it is almost certain that not all have yet been catalogued, since two discoveries of new species were announced while this paper was in preparation: *Ferulago trojana* in the west (Akalin, Pimenov 2004) and *Ferula coskunii* in the Amanus (Duman, Sağiroğlu 2005).

All three genera are ruderals, plants of the roadside and the rubble heap, which flourish in disturbed and depleted ground, preferably on limestone. This is the main reason why they take so readily to deserted habitation sites. Fennel seed is technically a single-seeded fruit with fruits borne in pairs. However, like most medicinal and culinary literature, and so as to maintain semantic continuity with Sumerian *numun*, we refer throughout simply to 'seed'.

The genus *Foeniculum* is found throughout the area, both wild and cultivated, and stands from 1m to 2m high. When hearing the word 'fennel' in a non-scientific context, most people would probably think of members of this genus in particular. Its species *Foeniculum vulgare*, wild or bitter fennel, is the type widely used as a foodstuff and a source of medicine nowadays and in the past. This species readily grows in largish clumps and is sometimes described as being coastal only, but that is not really the case. Rather, it is such an ordinary species that botanists striking inland in search of rarer plants tend not to make special mention of it. The existence of newer cultivated varieties, such as *Foeniculum vulgare* var. *dulce*, sweet fennel, makes no difference to the proposal made in this paper.

The genus *Ferulago* is also found throughout the area, though more sparsely distributed than *Foeniculum*. Its species grow to about 1m high, and it is little more than a poisonous weed with limited medicinal use and no culinary value. The discovery of the evocatively named species *Ferulago trojana* was announced in 2004 (see above).

The genus *Ferula* covers the giant fennels, of which the new species *Ferula coskunii* was reported in 2005 (see above). Of the other species *Ferula communis* reaches to 4m or even 5m high and is the species usually found around the Aegean. *Ferula communis* is particularly associated with overgrazing and is found in sub-littoral areas only, but this is not because of a need to be near the sea, but because it does not grow at altitudes above 400m and is thus absent from the Anatolian plateau. The stems are theoretically edible when young, and this species has some medicinal and other uses, but is generally avoided these days as being too toxic. Although *Ferula communis* is the only fennel species repeatedly noted on ruined sites in Turkey, visitors tended not to venture inland and so would have observed relatively few Hittite sites. Furthermore, the smaller fennel species present would have made a less noteworthy impression than the towering *Ferula communis* already met on non-Hittite sites at lower altitude. In fact, as at Aptera in Crete, the Anatolian coastal sites dominated by giant fennel would also have had species of the smaller genera present, but visually dwarfed by *Ferula communis*.

The Hittite heartland, lying above the altitude limit for giant fennel, would have known only some species of *Ferulago* and *Foeniculum* directly, while contact with the Luwian lands would probably have made giant fennel familiar, but unusable in the plateau environment. According to our proposal, all local species of *Foeniculum* would have gone under the name ZÀ.AḪ.LI in Hittite, but in particular *Foeniculum vulgare*. This grows to the height of an adult person and higher, forms sizable clumps, is found throughout the area and aptly matches the food, medicine and city-cursing rôles of ZÀ.AḪ.LI/ *marashanha*. However, we consider it possible that *Ferulago*, and perhaps *Ferula communis* too, may have also been designated ZÀ.AḪ.LI, but we cannot tell whether the three genera and their species were perceived in Hittite times as being related to one another in the way known to modern science.

Not only would the monumental *Ferula communis* have been so much more appealing than other fennels as the marker of a cursed and desolate city site, but its deterrent nature would also have been confirmed by its greater toxicity to grazing animals and irritant effect on human skin. Whether *Ferula communis* was used to curse cities in the non-Hittite lowland areas where it flourishes we cannot tell, nor do we know whether the Hittites attempted to use it for that purpose back on their own plateau. For this reason the possibility cannot be discounted that *marashanha* may have denoted more than one genus of fennel to the scribe of Or 95/3 and that this factor may underlie the scribe's apparent hesitancy when deciding the Anatolian equivalent to NÍG.AL.DI, 'object of desire'.

The relevance of Classical sources

Pliny, Galen, Dioscorides and others have much to say about types of fennel and their uses. Close examination of Classical sources is certainly one way to throw light on the obscurities of the plant references in Hittite, and much rewarding work surely awaits the attention of scholars. However, the aim of this paper is solely to present the proposal that ZÀ.AḪ.LI/*marashanha* should be translated as 'fennel' and to base this proposal upon evidence that comes primarily from Anatolia itself.

The continuity of tradition from the Bronze Age into the Classical era is a worthy and fascinating subject, but it lies outside the scope of this paper. The Classical authors' coverage of plant lore is geographically too wide and scientifically too imprecise to provide direct and clear evidence about ZÀ.AḪ.LI/*marashanha.* The value of the Classical sources to this paper lies not in helping to identify species, but in confirming that the use of plants for female contraception was familiar and well documented.

Most famous in this role was silphium, generally believed to have been a species related to giant fennel, whose few centuries of success and subsequent extinction in the time of Nero have both been attributed to the enormous demand for its contraceptive properties. Mentions of fennel in a gynaecological context are fewer. Referring to a species or variety whose exact identity is uncertain, Pliny the Elder asserts that *Hippomarathum .. prodest .. feminarum menstruis haerentibus. Efficacius in eo semen quam radix* ('"Horse fennel" is good for halted menstrual flow in women. In this the seed is more efficacious than the root', Thayer 2001: Book 20, xcvi 258). The restoration of a woman's regular cycle was in fact achieved by removing the pregnancy which had halted it. It is reasonable to assume that this kind of knowledge would have been widespread in earlier eras too.

The culinary aspect

The stems of the giant species *Ferula communis* are edible as a vegetable, but only when young. Its absence from the Hittite area rules it out from being the original city-cursing plant. The various species of *Ferulago* are toxic under almost all circumstances and have no role as food, as far as we can tell. All species of both these genera tend to be avoided by grazing animals. In considering the identity of ZÀ.AḪ.LI/*marashanha*, the third fennel genus, *Foeniculum*, is the sole remaining candidate.

As a relevant digression in the context of food crops, gardeners know that fennel is one of the plants which inhibit the growth of other kinds of vegetable and herb planted close by. The formal study of the allelopathy of the fennels is still in its infancy (for example, Lamoureux, Koning 1998), and the attribution by horticulturalists of this deterrent effect to the leaf litter of fennel is anecdotal, rather than proven. Whatever the cause, the effect is clearly seen and would have contributed to fennel's reputation as a plant that keeps other crops away. This property is fully in line with other aspects of the city-cursing function that this paper is proposing for fennel.

What little is certain about the use of ZÀ.AḪ.LI itself in a food context is consistent with the culinary uses of *Foeniculum vulgare*, whose large and accessible body of literature spans many centuries and cultures. The root, stem, leaves, buds and seeds of *Foeniculum vulgare* are all consumed, but with a tendency to treat each as a separate commodity, be it as spice, flavouring or a main dish. The Hittite wording suggests a distinction between ZÀ.AḪ.LI's roles in flavouring and as a main dish (Süel, Soysal 2003: 360, n. 39, 40), but further detail is lacking.

Although widely used in food, *Foeniculum vulgare* can be dangerous under certain circumstances. Being toxic is only one step away from having medicinal value, and examining its medical uses takes us much further towards identifying ZÀ.AḪ.LI/*marashanha* than the meagre evidence from the kitchen.

The medicinal aspect

The statements made below are drawn from modern sources, of which there are many, both academic and popular, some printed and some accessible via the internet. The bibliography contains a selection (Namavar Jahromi et al. 2003; Choi, Hwang 2004; Dadalioğlu, Evrendilek 2004; Lee 2004; Duke 2005; Raintree 2005).

Broadly speaking, all the fennels contain similar physiologically active substances, but the proportions of these vary widely by genus. The toxicity of *Ferulago* and *Ferula* make their species little used in modern medicine, while *Foeniculum* is much milder and more controllable in physiological effect, in line with its relatively safe food value.

The juice of the fennels, especially of *Ferula communis*, contains an irritant which can blister the skin and whose effect is exacerbated by sunlight. In general, medications derived from the fennels are damaging when used incautiously or in an uncontrolled way.

Foeniculum vulgare contains a carminative and can also relieve other kinds of stomach trouble, as well as aches and pains in general. Extracts of it repel internal and external parasites. It is the least risky of the fennels, and, as with the culinary aspect, this is the species generally intended when the medicinal uses of fennel are mentioned.

All three genera contain an anticoagulant which helps avoid thrombosis, but excess of this leads to internal haemorrhage. In grazing animals it causes the life-threatening condition ferulosis through the same effect by which some modern rodenticides kill rats and mice.

All three genera contain a uterine stimulant which promotes lactation, but can trigger abortion during pregnancy. This property led to the non-toxic species *Foeniculum vulgare* being used as a post-coital female contraceptive, because a sufficient dose causes immediate abortion, if conception has indeed taken place. The literature, both Classical and later, tends to talk of fennel's ability to correct hormonal irregularity in women, phrasing which conceals the plant's true mode of operation as an abortifacient. This plant would surely have impressed the pre-scientific mind as having the ability to control human fertility. The active substance involved can in fact cause damage to the reproductive organs in grazing animals of both sexes.

In all three genera the root contains antibacterial constituents which can be made into a gum. This is perhaps the active agent in a decoction that helps eye trouble. Classical tradition ascribed to *Foeniculum vulgare* the property of reinvigorating a snake after it has sloughed its skin. The apparently reborn creature seeks out the plant and rubs against it or eats the seeds. This belief may have resulted from fennel's antiseptic properties combined with a presumption of its ability to promote new life as well as to inhibit it.

It has become clear that the use of plants as abortifacient oral contraceptives was well understood in ancient times and formed part of general knowledge often lost in post-Roman times. The herbs known to have these properties included more than one kind of fennel and the very fennel-like extinct plant silphium (Riddle 1992), but much of this lore came to be condemned as ungodly in Christian Europe and all but vanished from the medical literature. Fennel, myrrh, Queen Anne's lace and several other familiar herbs were once well known for their 'morning after' contraceptive capability. Modern research has confirmed this socially important function, and it is hardly likely that this use of the relevant local plants would have been unknown in ancient Anatolia as well.

Medicinal uses of ZÀ.AḪ.LI/*marashanha* are found in two fragmentary cuneiform passages and so can be compared to those of the fennels in only limited detail. In both instances the role played by the Anatolian plant is certainly not at odds with the uses prescribed for fennel. In *KUB* 44.61 obv. 3 the seed of ZÀ.AḪ.LI^{SAR} is administered as a gastrointestinal treatment in conjunction with a diuretic and other medications, possibly for acute constipation (Melchert 1983 and personal communication). A different recipe in *KUB* 44.65:(7') prescribes ZÀ.AḪ.LI^{SAR} to be ingested by a patient who is not responding to treatment, but the context is too damaged for one to tell either which part of the plant is used or which treatment has failed. One may note at this juncture that *Foeniculum vulgare* is widely prescribed nowadays as both a laxative and a diuretic.

In the second fragmentary occurrence the other ingredients specified along with ZÀ.AḪ.LI^{SAR} are the seeds of something and the buds of something else, but none are clear enough to identify. In *KUB* 44.61 obv. 3, however, the accompanying ingredients include *asa foetida* (NU.LUḪ.ḪA^{SAR}) and some sort of bulbous vegetable (AN.TAḪ.ŠUM^{SAR}), both of which are also found a few lines apart in section B of Or 95/3 (entries 2' and 6', respectively).

Handbooks on the medicinal uses of *Foeniculum vulgare* in widely varying cultures treat its seed (*fructus Foeniculi vulgaris*) as a separate commodity from the rest of the plant (for example, in Chinese medicine, Quinn 1973: entry 25 on *hsiao-hui*, entry 52 on *ta hui*). The fact that ZÀ.AḪ.LI/*marashanha* appears to be catalogued and deployed in a similar bipartite way may be coincidental, or it could indicate that fennel and its seed were likewise treated as two distinct commodities in Anatolian tradition too.

If ZÀ.AḪ.LI/*marashanha* was indeed a sort of fennel, then its role as an abortifacient is very likely to have been known in Anatolia, as elsewhere. It would then surely have been seen as a plant of both real and symbolic power, one which could remove fecundity at the behest of its user, whether from a woman or from the site of a conquered city.

The linguistic aspect

It is hardly surprising that local plant names are among those words which are liable to be inherited by an incoming language from its predecessor. Alternatively, a plant name may be borrowed by a neighbouring language when the speakers of the latter encounter the plant or its products in some way. Having been taken into the receiving language, a plant name often lacks a clear etymology there. Two languages can thus come to exhibit similar but etymologically irreconcilable versions of the same name, whether with one language as recipient and one as donor, or with both as recipients from an unattested donor.

Our purpose here is to point out a possible relationship between *marashanha* and the Greek stem *marath(r)o-*, 'fennel', and to speculate about how the latter may have been reshaped by folk etymology. We do not aim to prove that the two did indeed have a common origin, and even less to then identify a specific source

language. Our line of reasoning does indeed point to Greek being the borrower of something from somewhere, but evidence which might allow even as much as this to be said of the Anatolian is more meagre. Some linguists speculate about 'substratum' languages, but that too is more than can be justified at this juncture.

The idea that the Hittites' city-cursing plant could have been fennel had already occurred to one of the writers some years before the opportunity for linguistic investigation was afforded by the discovery of Or 95/3. The idea was triggered by the phenomenon of sites which are naturally fennel-covered, whether surviving in that condition like Aptera, or explicitly named as such, as with Marathon and Ras Shamra.

The toponym Μαραθών (genitive -ῶνος) is formed, via a derivational suffix regular in such usage, from the thematic stem μάραθον or μάραθος, 'fennel'. The same suffix is seen in, for instance, δαφνών, 'laurel grove', from δάφνη, itself considered to be one of the so-called Mediterranean 'substratum' plant names because of its unclear relationship to Latin *laurus*. Alongside the fact that μάραθο- exhibits alternation of gender, the neuter form of this word also has the longer variant μάραθρον. Such uncertainty about the gender and shape of the word indicates that it may have come in from another language.

Only the Hittite common gender is found for *marashanha* in the two instances which show an explicit termination, but it is interesting that some of the other plant names in the Hittite corpus (*tawati* and *kappani*) could be interpreted as showing an alternation of gender that is comparable to that seen in μάραθος/μάραθον. Although gender alternation in plant names falls outside the scope of this paper, such alternation could be taken to indicate that those nouns may have been borrowings into Hittite, parallel in manner to what may have happened in early Greek with the forerunner of μάραθ(ρ)ο-. However, one must remember, firstly, that Hittite sometimes used the undeclined stem for items in a list and, secondly, that the neuter singular of *-i* and *-u* stems was identical in form to the undeclined stem. There is therefore no explicit evidence of anything other than common gender for *tawati* and *kappani* (Melchert, personal communication).

We have no further evidence about the origin of the word *marashanha*. Concerning μάραθρον, however, it is possible to see how this longer variant of the Greek word may have come into being. Absorption of non-Hellenic vocabulary is one way by which Greek gained its lexicon of proverbial size and richness. From earliest times Greek has also shown a marked propensity to reshape incoming borrowings to look more like something already familiar.

So-called folk etymology is one of the analogical processes observed in language change in general and is often active when one language takes in a word from another language. When the borrowed word seems to have a deleterious meaning or makes no obvious sense to its new users, they may then reshape it as though it was built from their own pre-existing vocabulary. For instance, the Black Sea was called 'dark coloured' by local speakers of ancient Iranian dialects (Old Persian *aḫšaina*; Avestan *aẖšaēna*, Kent 1953: 165). Having been taken into Greek phonetically this became Attic Ἄξεινος, Ionic Ἄξενος, happening to mean 'inhospitable' and was later reshaped into Εὐ-ξε(ι)νος, 'kind to strangers'. By a similar process the Akkadian river name *Purattu* (Turkish *Fırat*) was transformed by the same ancient Iranian speakers so as to have the apparent meaning 'good to cross over' (Old Persian *U-frātu*, Kent 1953: 176), from which it passed into Greek as Εὐφράτης/Εὐφρήτης.

The modification of the etymologically opaque μάραθον to become μάραθρον gives the latter an apparent meaning by bringing the instrument suffix -θρον into play. Subtracting this suffix then leaves μαρα- as a stem, with the connotations 'get thin, dry up, wither, quench or die down (of fire)'. Some Greek speakers could thus have understood μάραθρον as a plant to make you thin, to settle the stomach, cure aches and even to prevent a woman from conceiving. These meanings accord well with the medicinal uses of fennel in many societies, modern and ancient.

If μάραθρον is indeed a secondary formation, then the shorter stem μάραθο-, usually neuter, should be closer to earlier forms in Greek and possibly of non-Hellenic origin. Fortunately, a Mycenaean forerunner is attested among the Linear B 'Spice Tablets', where *ma-ra-tu-wo* in MY Ge 602 (a useful exposition in Hooker 1980: 169) is closely associated with mentions of cumin (*ku-mi-no*), sesame (*sa-sa-ma*) and red safflower (*e-ru-ta-ra ka-na-ko*), allowing *ma-ra-tu-wo* to be read as *marathwo-*. However, word-final consonants are omitted under the spelling conventions of Linear B, and so the lack of an overt *-s* or *-n* termination means that the gender of *marathwo-*, generally presumed to have been neuter, in fact remains unproven. The subsequent loss of the *w* in most dialects is regular, resulting in μάραθο-, the basic attested alphabetic form of Classical times.

One thus finds early Greek *marathwo-* to the west of the Aegean in the Bronze Age and Anatolian *marashanha* to the east of it, possibly with the same meaning and apparently also sharing all or most of their first two syllables. As yet there is no obvious clue as to the origin of either, but the strong similarity in form and meaning allows us to propose some sort of common origin for

these words. In contrast, the difference between their tail ends, *-thwo-* and *-shanha-*, cannot be accounted for on present evidence.

Süel and Soysal describe '*marashanha*' as a word of good Anatolian shape and, on account of its length, possibly a compound. They go on to list several Anatolian toponyms and vocabulary items that begin with '*maras-*' and suggest that many of these, along with some of the other obscure words featured in Or 95/3, seem to have a Luwian look, or at least to be non-Hittite. If *marashanha* is indeed a compound noun, then it can be divided in more than one way, such as, say, *marasha-(a)nha.* However, taking *maras-* as its putative first element, there was a Bronze Age town named Marassa, which may have borne the same name as Classical Marassa near the coast of Cilicia (Zgusta 1984: 367) and may perhaps even have been the same place. The Hittite name of the Kızılırmak (the Classical river Halys) was Marassant(iy)a, which looks like the same name extended with derivational suffixes familiar in Anatolian toponyms. Was fennel particularly noticeable in those localities when their names were coined?

Conclusions

The Hittite textual evidence on ZÀ.AḪ.LI/*marashanha* and its seed shows that this plant is unlikely to have been fenugreek, leek, onion, cumin, garlic, purslane, rocket, *asa foetida,* endive or mint. Its medicinal and culinary uses, in so far as they can be understood, could apply to a number of other plants, including fennel. The cataloguing of *marashanha* and its seed as separate commodities is reminiscent of a similar convention concerning fennel in other traditions. However, the use of the seed for cursing a conquered city restricts the contenders greatly, making some kind of fennel, in our opinion, the most likely candidate.

The fennels are conspicuous among the natural overgrowth on a deserted habitation site and would surely have offered a ready symbol of the desolation to be imposed by sowing the seed. Furthermore, the chemical properties of fennel can harm livestock and crop plants, discomfort visitors and were possibly thought of as able to confer sterility at will. As a separate consideration, the word *marashanha* may or may not be of non-Hittite origin, but, if in part or whole the word means 'fennel', then some kind of etymological relationship with Greek *marath(r)o-*, Mycenaean *marathwo-*, may also be posited.

Although the giant species *Ferula communis* is the most visually impressive of the fennels found on some overgrown sites, it was absent from the Hittites' plateau homeland because of the altitude and so must be excluded. Species of the genus *Ferulago* must also be excluded because none can be used for either food or medicine in the way that *marashanha* is. Among the types of fennel presumed accessible to the Hittites we propose that the 1m to 2m high *Foeniculum vulgare*, wild or bitter fennel, is the species most likely to be found hiding behind the term ZÀ.AḪ.LI.

Whatever the etymological connection between early Greek *marathwo-* and Anatolian *marashanha*, the ritual use of *marashanha* seed by the Hittites to render a city site barren of humankind is reminiscent of one documented use of *Foeniculum vulgare*, namely as a post-coital female contraceptive. Also the fact that fennel species are so visibly characteristic of deserted sites would surely have confirmed to the Bronze Age mind the plant's rightness for the cursing of a conquered city.

The apparent hesitancy with which the scribe of Or 95/3 completed the *marashanha* section suggests that its equivalence to Mesopotamian ZÀ.AḪ.LI may not have been exact. Perhaps *marashanha* denoted one or more kinds of fennel whose uses differed to some extent from those of ZÀ.AḪ.LI, or perhaps ZÀ.AḪ.LI was itself a term whose definition was not fully clear to the scribe. Despite this uncertainty, we believe that one or more kinds of fennel, especially the species *Foeniculum vulgare*, offer the best fit on present evidence for the plant named ZÀ.AḪ.LI in Hittite sources.

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