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INDO-EUROPEAN 'JAW, CHEEK, CHIN'

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LISTED BELOW are a number of words from various Indo-European languages which all seem to descend from a common root meaning 'jaw, cheek, chin'. This root was early reconstructed as **gén(u)-*, the shape which would seem to be required to account for the initial consonantism of the forms cited under (a). However, the Sanskrit form cited under (b) appears to reflect an initial aspirated stop **ǵh*. The forms cited under (c) could reflect either an aspirate or a non-aspirate initial.

- a. Gk. *génus* 'jaw, cheek', *gnáthos/gnathmós* 'jaw, cheek', *généion* 'chin', Lat. *genunus* 'molar', *gena* 'cheek', Goth. *kinnus* 'cheek', OE *cinn* 'chin', Arm. *cnawt* 'cheek, jaw'
- b. Skt. *hānu-* 'jaw'
- c. Av. *zanu-* 'jaw', Lith. *žándas* 'jaw', OIr. *giun* 'mouth', Toch A *sanweṃ* 'jaws (dual)'

A theory advanced by Pedersen (1926:48, note 1) and Kuryłowicz (1935:53–54) and widely accepted since then (e.g., Sturtevant 1942:86; Hoenigswald 1965:95) accounts for the unexpected *h* in this and several other Sanskrit words by positing an original sequence **ǵH* (or **gH*). However, in other examples it is clearly the *a*-coloring laryngeal which causes the aspiration of the preceding velar; cf. Skt. *duhitár-* 'daughter' vs. Gk. *thugátēr*, Skt. *máhi* 'big (neut. sg.)' vs. Gk. *méga*. The *a* of Greek corresponding with the *i* of Sanskrit must reflect an *a*-coloring laryngeal, as shown at great length by Beekes (1969) and more recently by Sihler (1988).

The difficulty in tracing Skt. *hānu-* back to a form **ǵAenus* is that such a proto-form should have yielded reflexes with the root-vowel /a/ throughout Indo-European. Instead, an original short **e* is reflected wherever this word occurs as a u-stem, except in Toch A *sanweṃ* (no cognate in Tocharian B), where short /a/ with palatalization of the preceding stop reflects long **e* (Winter 1965a:110). Winter states that 'this **ē* can only be derived from **eE*', since 'lengthened grade seems impossible to justify'. However, Adams (1988:110) notes that neuter nouns in Tocharian tend to have root accent with lengthened grade of the vowel. Since *sanweṃ* has been shifted from

feminine to neuter in Tocharian, the lengthened grade *ē is indeed justified, as against the positing of earlier *eE.

Nevertheless, the Tocharian word, like its cognates in Greek, Latin, Germanic, and Celtic, simply cannot go back to a proto-form *ǵAenus with an *a*-coloring laryngeal in the first syllable. On the other hand, we can demonstrate that an original root form *ǵenHus, with some sort of laryngeal in the second syllable, must underly Goth. *kinnus* and its Germanic cognates. The key is the double *n* found in all the Germanic languages, which is usually attributed to the fact that this word is a u-stem (Lehmann 1986:218). Since PIE *-nw- goes to Proto-Germanic *-nn-, forms of the noun with accented vocalic suffixes would have naturally had a sequence *-nwǀ-, leading to *-nnǀ. The double *n* could then have been extended throughout the paradigm by analogy.

This explanation seems plausible until we realize that the sequence *-nw- would have occurred in the u-stems only in a few cases such as perhaps the genitive-locative dual. Moreover, not a single declined form of u-stems retained in Proto-Germanic descends from a form with PIE stem *w (Wright 1954:94). It is rather dubious to claim that a consistent double *n* is due to analogy from a few forms which may not even have existed in pre-Germanic at the time of the shift of *-nw- to *-nn-. Even if they did exist, the forms in question would certainly have been marginal within the paradigm and hardly likely to cause a remodelling of nominative, accusative, genitive, or dative singular and plural. Doubling of /n/ is also entirely lacking in *sunus*, the only other Gothic u-stem with a pre-stem n (Wright 1954:54–55). In short, the usual explanation for the double *n* of *kinnus* is remarkably unconvincing.

A far more convincing explanation assumes a postresonant laryngeal causing gemination of the resonant. This is exactly the explanation advanced by Lehmann (1952:36–46) to account for the Germanic Verschärfung, that is, for the Germanic gemination of *w and *y after short vowels in certain words. Lehmann's account of the Verschärfung is now standard. Obvious correlates to the development of *ǀwH, *ǀyH to *ǀww, *ǀyy are *ǀrH, *ǀIH, *ǀmH, and *ǀnH to *ǀrr, *ǀll, *ǀmm, and *ǀnn, respectively. Numerous examples of just such developments have been adduced by Seebold (1966), Eichman (1973), and especially Lühr (1976). The examples are sufficiently numerous, and the historical process itself sufficiently natural, that we can accept the double *n* of *kinnus* as the unremarkable result of a regular Germanic sound change involving postvocalic resonants plus laryngeals.

The implications for the reconstruction of the word are significant. Since the Germanic words are exactly cognate with the short u-stem nouns in the other languages, we must reconstruct a common inflected short-u noun for Indo-European. And since Germanic is hardly likely to have inserted a laryngeal randomly between root and stem, Gk. *génus*, Lat. *genuīnus*, etc. must

descend from exactly the same root *ǵenHus. Skt. *hānu-*, on the other hand, indicates a proto-form *ǵHenus. Since the laryngeal in the first syllable is nowhere indicated outside of Indic, the most reasonable explanation is that the Indo-Iranian forms reflect a simple shift of the laryngeal to the first syllable.

The laryngeal can also be demonstrated in forms of the root other than *u*-stems. The acute accent of Lith. *žándas* requires a laryngeal (Watkins 1965:117), while the /a/ quality of the vowel indicates an *o*-grade form of the root. Fraenkel (1962–65:1289) reconstructs *ǵonH-dh-. Gk. *gnathós*, poetic form *gnathmós*, meaning primarily 'jaw' but also 'cheek', look very similar to *žándas*. At first glance, the Greek words would seem to represent *ǵnA-dh-, with vocalization of the laryngeal, which is the analysis accepted by Winter (1965a:111), although this is a problem for him since he mistakenly believes that Tocharian and Armenian require us to reconstruct *E rather than *A for this root. A problem for us is that vocalization of the laryngeal in a root-shape such as *ǵnAdh- is unexpected. We would expect such a root to have a syllabic resonant followed by a consonantal laryngeal in Proto-Indo-European, which would yield Gk. *ǵnāthós, Attic Gk. *ǵnēthós; cf. *gnēsios* 'belonging to the race' < *ǵnEs-, connected with *génos* 'race' < *ǵenE-. Yet we consistently find short /a/ in all dialects in *gnathós*. For this reason, Beekes (1969:190), expanding on Specht (1932:113 n.1), states that *gnathós* is a non-Indo-European word. In support of this conclusion, he mentions a large number of possibly non-Indo-European words in Greek that are only vaguely similar in form and hardly similar at all in meaning to *gnathós*, for example, *knódon* 'teeth on a hunting spear', *knōdālon* 'wild creature', and even *knáptō* 'to card (wool)'.

The fact is that *gnathós* means exactly 'jaw, cheek', and that it is far more similar in form and meaning to *génus* than to the other words that Beekes mentions. The only exception is a Hesychian gloss, *kánadoi* 'cheeks, jaws'. *Kánadoi* does indeed appear to be related to *gnathós*; it may be a Macedonian form despite the voiceless initial. But we can hardly attach much importance to a Hesychian word of uncertain provenance, as compared to the well-attested *gnathós*. In any case, to connect *kánadoi* to *knódon*, etc., is no more semantically reasonable than to connect *gnathós* to the same words.

We should also reiterate the similarity of Greek *gnathós* to Lith. *žándas*, a similarity which Beekes dismisses in favor of his far more dubious intra-Greek cognates for *gnathós*. In fact, *gnathós* and *žándas* are obvious cognates. If *gnathós* 'jaw' is semantically close enough to *knádon* that they must be related, then presumably *žándas* is also related to *knádon*. Thus, if *gnathós* is non-IE, then *žándas* (and its Latvian cognate *zuōds* 'chin, jaw') must be non-IE as well. This conclusion is especially to be rejected insofar as the Baltic words are the only reflexes of *ǵenH- 'jaw, cheek, chin' in those languages, while their development from a presumed *ǵonHdh- is quite regular. Lastly, we cannot

forget that words for body parts are rather basic vocabulary items, not the most likely candidates for borrowing, so that both Gk. *gnathós* and Lith. *žándas* are far more likely to be inherited words than not. In short, we cannot agree with Beekes' rejection of the Indo European ancestry of *gnathós* despite the seemingly divergent development of the sequence *CHRC-.

In any case, the development of *CHRC- in Greek is not so clear cut as Beekes (1969) states. Beekes (1988:74) grants that in anlaut, that is, in the sequence *#RHC-, the laryngeal rather than the resonant was vocalized, as in *mákrós* 'long' < *mAkros compared to *mēkos* 'length' < *meAkos; this is a reversal of his earlier position on such sequences (see Beekes 1969:183). Moreover, if we accept the Indo-European origin of *glōssa* 'tongue', Ionic *glássa*, as Beekes does (1969:246), then we seem to have an ablaut pattern *RCoAC- > *CRōC-, *CRAC- > *CRaC-. This is of course unacceptable to Beekes, so that he is required to posit a PIE ablaut between *-lo- and *-l̥- / *-l̥- for this root and several others whose Greek reflexes show the same pattern. Yet perhaps the most significant contribution of the laryngeal theory to Indo-European linguistics is that it allows us to reduce the number of ablaut series reconstructed for the proto-language. For example, the /ō-/a/ patterning of Gk. *phōnē* 'voice' vs. *phásis* 'utterance' is now understood as simply a regular distinction between *ō*-grade and zero-grade, that is, *bhoA- vs. *bhA-. The exact same patterning is reflected in *glōssa* vs. *glássa*. If acceptance of such an obvious conclusion requires us to admit that *CRHC- does not always give *CRC- in Greek, surely this admission is preferable to reestablishment of a PIE *o-∅* ablaut pattern.

Gnathós, then, is an Indo-European word descended from a *dh-suffixed zero-grade form of the root *genA-. In form it is exactly parallel to Lith. *žándas*, except that the latter reflects *o*-grade rather than zero-grade in the first syllable. The Greek word is particularly valuable in allowing us to establish that the laryngeal in question was *A.

Lat. *gena* 'cheek', usually attested in the plural, is typically regarded as an analogical formation from pre-Latin **genus*, with influence from *māla* 'cheekbone, jaw-bone' as well as the functional desire to distinguish 'cheek' from *genū* 'knee'. It is true the *u*-stem **genAus* is reflected in Latin in the derivative adjective *genuinus* (*dēns*) 'molar', but while it is still possible that *gena* is an analogical formation, it is no longer necessary to assume that it is. The common core that we have reconstructed thus far is *genA-, with later suffixes *-u and *-dh accounting for various developments. *Gena* could well be the unsuffixed reflex of what would appear to be an original feminine *ā*-stem.

However, we have not yet finished with the various Greek words. *Géneion* 'chin', a word with many derivatives in Greek, is somewhat troubling since it shows no sign of *a*-vocalism in the second syllable. That is, it looks like a regular development from *genew-yon, with a full-grade vowel in the second

syllable followed by the suffix *-yo-*. From **genAewyon*, on the other hand, we would expect the unattested **gēnaion*. However, *gēneion* and its derivatives, unlike *gēnus* and *gnathós*, have no formal cognates outside of Greek. We are therefore safe in seeing them as purely Greek formations, with /e/ in the second syllable by analogy with the usual development of *u*-stems with the *-yo-* suffix (Buck & Peterson 1945:47).

The surface resemblance between Arm. *cnawt* and *gnathós* is particularly strong, but Gk. *th* should correspond to Arm. *d*, not *t*. The Arm. sequence *aw* is also problematic, since it could theoretically derive from at least six different sources (Greppin 1978). But not all of these sources are likely in this particular root. In several cases Arm. /aw/ derives from PIE **aw*, as in Arm. *awčan* 'assistance' < PIE **aug-*. Most modern Indo-Europeanists, including Greppin, would regard the initial **a* of **aug-* as the reflex of a laryngeal. That is, the root is actually **Aweg-/Awg-*. **Aweg-* is reflected in Gk. *aēksō* 'to increase', but *awčan* must reflect the zero-grade **Awg-*. *Awčan* cannot descend from a different form **Aewg-*, since word-initially, this would have given Arm. **hawc-* (cf. *haw* 'grandfather' < PIE **Aew-*, Greppin 1988:183–84). Thus we are certain that word-medial Arm. /aw/ can derive from either **Aw* or **Aew*. It follows that *cnawt* probably derives from PIE **ǵnAw-* or **ǵnAew-* with a dental suffix; in other words, it reflects **ǵenAu-* with zero-grade in the first syllable. It is therefore more closely connected with the Gk. *u*-stem *gēnus* than with *gnathós*, but as in *gnathós*, the *a*-vocalism of *cnawt* reflects original **A*.

A final word which must be considered is Gk. *gēnuks*, a word recorded only by Hesychius, who glosses it as *pélekus* 'axe'. The semantic connection between *gēnus* and *genuks* would seem shaky except that *gēnus* is attested with the meaning '(sharp edge of an) axe' in as basic an author as Sophocles. Thus the semantic match is exact, leaving us little reason to doubt this particular Hesychian citation. Moreover, on the formal side, *gēnus* is twice found in Euripides with a long *ū* in the accusative singular *gēnūn* (with the more basic meaning 'jaw' rather than 'axe').

This appears to be an excellent example of the variation between nom. sg. *-uks* and acc. sg. *-ūn* predicted by Martinet's (1955, 1956) theory of laryngeal hardening. Briefly, Martinet hypothesizes that in sequences such as **uAs* in PIE, the **A* (phonetically [x] or something similar) hardened to **k*, thus setting up paradigmatic alternations with other forms in long vowel, such as **-ūm* < **uAm*. *Gēnuks* and *gēnūn* are therefore probably reflexes of a metathesized doublet **ǵenuA-* derived from **ǵenAu-*.

This further change of position on the part of the laryngeal may be disturbing to some readers. Thus far, we have posited a basic root **ǵenA-*, with two basic suffixed forms **ǵ(o)nAdh-* and **ǵenAu-*. Based on the second of these, we have also posited **ǵAenu-* to account for Skt. *hānu-* and **ǵenuA-* to account for Gk. *gēnuks/gēnūn*. The vast majority of the forms require no la-

ryngeal movement, while those that do require movement seem to have started from *genAu-, where the laryngeal occurs in the sequence -RHR-.

To account for the mobility of the laryngeal, we might, following Winter (1965a:110, 1965c:191–93), turn to a theory of laryngeal metathesis which explains a certain variation in the attested forms of the word ‘fire’ in Tocharian and elsewhere. Toch B *pūwar*, along with such cognates as Gk. *pūr*, can derive only from PIE *puAr. But Toch A *por*, along with Hitt. *pahhur* et al., must be from *peAur. Winter theorizes that in the zero-grade, a *CHR- form like *pAur could be metathesized to *CRH-. Lindeman (1987:65–67), in a critical discussion of this hypothesis, notes that it leaves the short /u/ of forms such as the Greek genitive singular *purós* unexplained. Lindeman cites a suggestion of Kuryłowicz’s that *purós* could derive from *pAurós, that is, the non-metathesized zero-grade. If this is correct, then it would indicate that the metathesis posited by Winter would be irregular, sporadic, even within a single branch of Indo European, as is also indicated by the divergent reflexes in the two Tocharian languages. This irregularity is not a problem, since we are not surprised to find metathesis operating sporadically.

Winter’s theory of laryngeal metathesis has neither been generally accepted nor generally rejected in the field. Beekes (1984:7) uses it in explaining Skt. *sū́ā-*, Av. *hūrō* (gen.) ‘sun’ < *suAl- as opposed to the nonmetathesized *seAul-/*sAul- attested elsewhere, including within Indo-Iranian (e.g., Skt. *svár-* ‘sun’). But he comments parenthetically, ‘I will not discuss the metathesis, which may have been different in the different languages, and which requires a broad investigation’. Similarly, Lindeman (1987:65) heads up his discussion of the theory by noting that ‘the material which has led to the assumption of a “laryngeal” metathesis in Indo-European is not very clear and offers many phonologic and morphologic difficulties’.

In the light of these objections, we cannot state incontrovertibly that laryngeal metathesis as reconstructed in detail by Winter is responsible for the laryngeal movement posited above for *genA-. Nevertheless, it remains the most reasonable hypothesis. Winter himself applies it to this very root, stating that Skt. *hānu-* < *gHenu- reflects not the original full-grade form of the root, but a full-grade based entirely on the zero-grade *ǵnHu- (1965a:110). *gHenu- would have been created by analogy with a set such as *peAur-/*pAewr-/*puAr-. Winter assumes that the change of *CHR- to *CRH- was a regular one, which in fact seems unlikely, given the variation attested within languages. But the analogy he posits would still be entirely possible, and is probably the correct explanation here.

As for the metathesis evidenced by Gk. *gēnuks/gēnūn*, it, too, can be explained by Winter’s theory. The sequence *-nAus/*-nAum, like *gnA-, is a sequence of *CHR-, and it meets Winter’s further conditions (1965c:192) that no vowel immediately precede the laryngeal, that the laryngeal not be in

initial position, and that the resonant be followed by a consonant. Thus the shift from *genAus/-m to *genuAs/-m requires no new theoretical apparatus.

A final note on Gk. *gēnus* is required before summarizing our conclusions to this point. There is good evidence, such as that from *thugátēr* 'daughter', that interconsonantal laryngeals were vocalized in Greek. But in solid examples such as this one, usually at least one, and most often both of the surrounding consonants are obstruents (Beekes 1988:72). In apparent exceptions such as *tolmāō* 'dare' < *tolA-m, the laryngeal is most frequently between two resonants. Lindeman (1987:104) points out that in PIE, the resonants *r *l *m *n *i *u were all inherently more sonorous than the laryngeals. Therefore, in a sequence *-VRHR-, we would not expect vocalization of the less sonorous element *H. This observation provides a cogent phonological explanation for the development of words such as *tolmāō*, which Beekes is unable to account for. The development of *genAus to Gk. *gēnus*, with ultimate loss rather than vocalization of the laryngeal, is therefore both regular and phonetically natural.

We turn now to the conclusions to be drawn from the 'jaw, chin, cheek' root. First of all, there is evidence from Germanic, Greek, Baltic, Italic, and perhaps Armenian that the original form of this root was *génA- and that the laryngeal was maintained in the u-stem *génAu-. Since there is independent evidence that PIE *ǵA > Skt. /h/, the most reasonable explanation for Skt. *hānu-* is that the laryngeal has been transferred to the first syllable, probably via the mechanism outlined above. The only other ways of accounting for *hānu-* are as follows: (1) Reconstruct PIE *ǵEenAu-. This is a most unlikely looking root. Moreover, it requires what there is no other evidence for, namely a shift of *ǵE to Skt. /h/. A form *gAenAu- is of course impossible because the non-Indic words do not have a-vocalism. (2) Attribute the Sanskrit aspiration to borrowing from an unknown dialect, or suggest a desire to differentiate 'jaw' from 'knee', or suggest analogy based on an unknown source, or, most honestly, call the aspiration 'unexplained'. If, indeed, there were no other signs of a laryngeal in this root, calling the aspiration unexplained probably would be the wisest course. But in the face of abundant evidence for the a-coloring laryngeal in the root, the explanation given here for *hānu-* is superior to both of the alternatives.

This explanation is particularly important in that *hānu-* has hitherto been a problem for the theory that *ǵA/*gA give Skt. /h/. Mayrhofer (1986:139) is unable to account for the fact that, as he sees it, the other evidence indicates that *ǵA/*gA give /h/ but that this word plainly indicates *ǵE > /h/. As long as *hānu-* remained unexplained, it would remain a stumbling block for the theory that only the a-coloring laryngeal had this aspirating effect. Now the stumbling block is removed, and the general theory is much stronger.

A final topic which must be considered is whether this root provides any evidence that, at least in some phonetic environments, the change of *ǵA to *ǵh occurred outside of Indic. In fact, there is one slight indication from *ǵenAus/*ǵAenus of *ǵA resulting in Gk. /kh/, providing we accept that PIE 'jaw' and 'knee' are related. Without listing all of the cognates, which can be found in the standard etymological dictionaries, suffice it to say that the 'knee' root has traditionally been reconstructed as *ǵenu-, with various reflexes indicating a normal alternation between *e*-grade, *o*-grade, and zero-grade for the first syllable. Semantically, the relation between 'jaw' and 'knee' is the same as that found between ModE *ankle* and Gk. *ankūle* 'bend of the arm, wrist; bend of the knee', both of which descend from a root *ang-/*ank. Semantically as well as formally, then, the resemblance between PIE 'jaw' and PIE 'knee' is quite strong. As a result, qualified acceptance of the connection (e.g., Buck 1949:22) is more prevalent than qualified rejection (e.g., Frisk 1973:1.321).

The conclusion that 'knee' is connected with 'jaw' will be more secure if we can demonstrate that 'knee' should be reconstructed as *ǵenAu-, rather than simply *ǵenu-. We begin with Lat. *genū*, where the long *ū* might be taken to reflect earlier an *uA resulting from laryngeal metathesis. However, according to the ancient grammarians, long *ū* was the usual ending for all neuter fourth declension nouns in Latin. Buck (1933:199) and Leumann (1977:441) doubt that the ancient grammarians were correct in this regard, hypothesizing that they extrapolated incorrectly from a few definite cases in verse where the meter assures us that the *ū* was indeed long. Leumann states that there was a phonological, metrical cause for the lengthening in these cases; Buck, on the other hand, prefers to regard these examples as old duals or collective plurals. The latter would have been originally *ǵenu-H, so if Buck is right, then even if the long *ū* of *genū* does indicate an earlier sequence *-uH, it still does not necessarily demonstrate a laryngeal in the root.

Since there are so few neuter fourth declension nouns in Latin (Leumann [1977:355] lists a total of five), and since it is hard to determine the origin of the long *ū* of the nominative singular which may not even be the regular ending, plainly *genū* cannot be taken as proof that PIE 'knee' must be reconstructed with a laryngeal. In Greek, however, there is somewhat better evidence. The basic Greek word for 'knee' is *gónu*; two related words of interest are *gnúks* and *prókhnu*, both meaning 'on the knees, kneeling'. *Prókhnu* also occurs with the meaning 'completely', but this is obviously a metaphorical extension (Chantraine 1968–80:233). *Gnúks* is usually regarded as analogous to adverbs with regular /ks/; e.g., *púks* 'with the fist' < *pug-s (Schwyzer 1959:620; Frisk 1973:1.317). But if Greek had formed such an analogous adverb from *gónu*, surely it would have been **gónuks* rather than *gnúks*. It is

more likely that *gnúks* derives directly from earlier *gnuA-s, a form with laryngeal metathesis in the zero-grade.

Laryngeal metathesis could also have given *ǵAnu-. Word-initially, the sequence *ǵAnu- would presumably have yielded Gk. *ǵánu-, but in *prókhnu* the sequence occurs postvocally. Moreover, it was probably postvocalic already in PIE, since Homeric *prókhnu* seems to have exact formal cognates in Skt. *prajnu-*, Av. *frašnu-*, words whose exact meanings are unclear but which certainly have something to do with the bended knee (Frisk 1973:2.605; Lehmann 1986:220; Monier-Williams 1899:659). Thus, here we seem to be dealing with PIE *progAnu-, with a metathesized variant *progAnu- yielding Gk. *prókhnu*.

If we do not accept *progAnu- as the origin of *prókhnu-*, then the aspirated /kh/ becomes extremely difficult to explain. Chantraine (1968–80:233) mentions a suggestion that it is 'expressive', not a very illuminating proposal. Schwyzler (1959:328) lists other hypotheses, none of which seems to have gained acceptance. But my own explanation remains highly questionable without further support, first in the form of other signs of a laryngeal in the root, second in the form of other examples of a Greek development of voiced nonaspirates to aspirates. The second type of evidence can be found in Chapter 4 of Pulju (1996). As for the first type, Gk. *gōnía* 'corner, angle' has typically been seen as akin to *gónu* (Liddell & Scott 1968:364; Chantraine 1968–80:233), but as Frisk (1973:1.337) points out, from pre-Gk. *gonwía we would expect Attic **gonía*, Ionic **gounía*. However, the attested long *ō* is explained if we assume *ǵonAwía > *ǵoAnwía. Similarly, the long *ū* of Gk. *ignáū/igníē* 'part of the leg behind the knee and thigh' could be explained by a metathesis of *-nAu- to *nuA-, if this word is descended from *en-gAnu- (cf. Frisk 1973:1.708).

The long /ā/ of Skt. *jānu-* 'knee' is normally attributed to the action of Brugmann's Law; that is, *ǵonu- > *jonu- > *jānu-*. *Jānu-* could not derive from *ǵonAu-, since Sanskrit did not lengthen short *o before two consonants. But it could derive from *ǵoAnu- as easily as from *ǵonu-, so that the Sanskrit reflex does not preclude the reconstruction of a laryngeal in the root. Tucker (1931:109) cites Arm. *cunr* 'knee' as definitely reflecting *ō, but in fact Arm. *u* can also derive from *o before nasal plus consonant (Brugmann 1888:70), so that *cunr* does not necessarily derive from *ǵoAn-. As for the /k/, which appears in some of the declined forms of *cunr* as well as in MidPers. *zānūk* 'knee', I have too little expertise in these languages to comment on whether they might possibly represent a hardened laryngeal.

Further discussion of IE 'knee' words is unnecessary here; the interested reader may refer to Pokorny (1959:380–81), as well as to the sources cited above. Our main interest is in establishing the possibility that *ǵA/*gA may give /kh/ in Greek. *Prókhnu* is one piece of evidence in favor of such a

conclusion, and while there are not too many other indications that this root should be reconstructed with the laryngeal *A, there seems to be no counter-evidence demanding a non laryngeal reconstruction. Tentatively, therefore, we can assume for 'knee' a root *ǵenAu-, seemingly identical in the proto-language to *ǵenAu- 'jaw', and subject to the same laryngeal metathesis that is evidenced by the attested words meaning 'jaw, etc.' But the postulated development *ǵA/gA > Gk. /kh/ requires more examples before we can place too much confidence in its validity.

REFERENCES

- ADAMS, DOUGLAS Q. 1988. *Tocharian historical phonology and morphology*. New Haven, CT: American Oriental Society.
- BAMMESBERGER, ALFRED, ed. 1988. *Die Laryngaltheorie und die Rekonstruktion des indogermanischen Laut- und Formensystems*. Heidelberg: Carl Winter Universitätsverlag.
- BEEKES, ROBERT S. P. 1969. *The development of the Proto-Indo-European laryngeals in Greek*. The Hague: Mouton.
- . 1984. PIE 'sun'. *Münchener Studien zur Sprachwissenschaft* 43:5–8.
- . 1988. Laryngeal developments: A survey. In Bammesberger 1988, 59–105.
- BUCK, CARL DARLING. 1933. *Comparative grammar of Greek and Latin*. Chicago: University of Chicago Press.
- . 1949. *A dictionary of selected synonyms in the principal Indo-European languages*. Chicago: University of Chicago Press.
- , & Walter Peterson. 1945. *A reverse index of Greek nouns and adjectives*. Chicago: University of Chicago Press.
- CHANTRAINE, PIERRE. 1968–1980. *Dictionnaire étymologique de la langue grecque*. 4 vols. Paris: Editions Klincksieck.
- EICHMAN, TH. L. 1973. Althochdeutsch *sinnan* 'streben nach', sanskritisch *san-*, *sā* 'gewinnen', und hethitisch *sanh-* 'erstreben'. *Zeitschrift für vergleichende Sprachforschung (Kuhn's Zeitschrift)* 87:269–71.
- FRAENKEL, ERNST. 1962–1965. *Litauisches etymologisches Wörterbuch*. Heidelberg: Carl Winter, Universitätsverlag.
- FRISK, HJALMAR. 1973. *Griechisches etymologisches Wörterbuch*. 3 vols. Heidelberg: Carl Winter, Universitätsverlag.
- GREPPIN, JOHN A. C. 1978. The sequence *awC* in Classical Armenian. *Zeitschrift für vergleichende Sprachforschung (Kuhn's Zeitschrift)* 92:282–93.
- . 1988. Laryngeal residue in Armenian: Genetic and loan evidence. In Bammesberger 1988:179–93.

- HOENIGSWALD, HENRY. 1965. Indo-Iranian evidence. In Winter 1965b: 93–99.
- KURYŁOWICZ, JERZY. 1935. *Études indo-européennes*. Krakow: Skład Główny w Księgarni Gebethnera i Wolffa.
- LEHMANN, WINFRED P. 1952. *Proto-Indo-European phonology*. Austin: University of Texas Press.
- . 1986. *A Gothic Etymological Dictionary*. Leiden: E. J. Brill.
- LEUMANN, MANU. 1977. *Lateinische Grammatik, vol. 1: Lateinische Laut- und Formenlehre*. Munich: C. H. Beck'sche Verlagsbuchhandlung.
- LIDDELL, HENRY GEORGE, & ROBERT SCOTT. 1968. *A Greek-English lexicon*. 9th edition, revised Henry Stuart Jones, Roderick McKenzie et al., with a supplement edited by E. A. Barber et al. Oxford: The Clarendon Press.
- LINDEMAN, FREDRIK OTTO. 1987. *Introduction to the 'laryngeal theory'*. Revised version of the 1970 German edition. Oslo: Institute for Comparative Research in Human Culture.
- LÜHR, ROSEMARIE. 1976. Germanische Resonantengemination durch Laryngal. *Münchener Studien zur Sprachwissenschaft* 35:73–92.
- MARTINET, ANDRÉ. 1955. Le couple senex-senatus et le 'suffixe' -k-. *Bulletin de la société de linguistique de Paris* 55/1:42–56.
- . 1956. Some cases of -k/-w- alternation in Indo-European. *Word* 12/1:1–6.
- MAYRHOFER, MANFRED. 1986. *Indogermanische Grammatik, Band I.2: Lautlehre (segmental Phonologie des Indogermanischen)*. Heidelberg: Carl Winter Universitätsverlag.
- MONIER-WILLIAMS, MONIER. 1899. *Sanskrit-English dictionary*. 2nd edition. Citations from the 2nd reprint, 1981. New Delhi: Munshiram Manoharlal Publishers Pvt.
- PEDERSEN, HOLGER. 1926. Le cinquième déclinaison latine. *Historisk-filologiske Meddelelser* 11:5. København: Andr. Fred. Høst & Søn.
- POKORNY, JULIUS. 1959. *Indogermanisches etymologisches Wörterbuch*. Bern: Francke Verlag.
- PULJU, TIM. 1996. Problems in the Reconstruction of Proto-Indo-European Stop Consonants. Ph.D. Dissertation, UMI Number 9610694.
- SCHWYZER, EDUARD. 1959. *Griechische Grammatik, vol. I*. Munich: C. H. Beck'sche Verlagsbuchhandlung.
- SEEBOLD, ELMAR. 1966. Die Geminata bei gm. kann, ann und anderen starken Verben. *Zeitschrift für vergleichende Sprachforschung (Kuhn's Zeitschrift)* 80:273–83.
- SIHLER, ANDREW L. 1988. Greek reflexes of syllabic laryngeals with a post-script on PIE kinship terms in *-Hter. In Bammesberger 1988, 547–61.
- SPECHT, FRANZ. 1932. Beiträge zur griechischen Grammatik. *Zeitschrift für vergleichende Sprachforschung (Kuhn's Zeitschrift)* 59:31–131.

- STURTEVANT, EDGAR H. 1942. *The Indo-Hittite laryngeals*. Baltimore: Linguistic Society of America.
- TUCKER, T. G. 1931. *A concise etymological dictionary of Latin*. Halle: Max Niemeyer Verlag.
- WATKINS, CALVERT. 1965. Evidence in Balto-Slavic. In Winter 1965b: 116–22.
- WINTER, WERNER. 1965a. Armenian evidence. In Winter 1965b:100–15.
- , ed. 1965b. *Evidence for laryngeals*. The Hague: Mouton and Co.
- . 1965c. Tocharian evidence. In Winter 1965b:190–211.
- WRIGHT, JOSEPH. 1954. *Grammar of the Gothic language*. 2nd edition, with supplement by O. L. Sayce. Oxford: Clarendon Press.