

## ROOTS WITH NASAL INFIX IN POKORNY

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Traditionally a number of Indo-European roots are assumed to have a variant with a nasal before the last consonant (*CeNC*). Such 'prenasalized' forms are exceptional, however, and it may be supposed that some of them are loanwords from a substratum language. It is well known that the North-European substratum from which many words were taken over in Germanic knew such prenasalization. Here I shall discuss the forms of this type that are given by Pokorny, i.e. the cases where he notes this variation at the head of a lemma. I limit myself to roots consisting of two consonants. Roots of three consonants with a nasal variant can be analysed as having a different enlargement (*CC-eN-C* beside *CC-eC*) and therefore remain within the recognized pattern of IE roots.<sup>1</sup> See however on three consonant roots Appendix I.

For the sake of economy, the reader is supposed to have Pokorny on his desk.

Pok. p. 114 *\*bheg-*, *bheng-* 'zerschlagen, zerbrechen'.

Phrygian  $\beta\epsilon\kappa\acute{o}\varsigma$  is unreliable.

Lith. *beñgti* does not belong here, as its circumflex points to original *-gh-*; Derksen 1996, 234. Nor does *bangà* 'wave' agree with Skt. *bhaṅgá-* 'wave', as this meaning in Sanskrit is secondary; KEWA II 461.

Without nasal we have Arm. *bekanem* 'break'.

OIr. *-boing* has evidence for *\*bheg-* and a form with a nasal, but the nasal forms seem to go back to *\*bhu-n-g-* (McCone 1991, 43; though a connection with Skt. *bhunákti* 'enjoy' is semantically difficult).

The only form with a nasal that remains is Skt. *bhanákti*, with *bhaṅgá-*. Klingenschmitt 1982, 184f. starts from *bh-n-eg-* > *bhanag-*,

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<sup>1</sup> The variation *CeC/CeNC* might also be analysed as *CeN-C*, but this requires that we allow biconsonantal roots to show variation in the last consonant. This is found in the type *\*g<sup>w</sup>em-/g<sup>w</sup>eh<sub>2</sub>-*. I discussed such roots in 1974. (The solution there proposed is probably not correct, but the article gives some evidence. Perhaps, e.g., *-em-/eh<sub>2</sub>-* was introduced analogically from triconsonantal roots, as Lubotsky suggests to me.)

with later spread of the nasal. Thus EWAia II 242. We shall discuss the nasal presents from two consonant roots below.

Pok. 437 \**ghed-*, *ghend-* '(an)fassen, ergeifen'

On the Albanian forms see Demiraj 1997, 185; the situation is rather complicated. Russ. *gadatʹ*, Lith. *gódoti* is discussed by Derksen, 1996, 67; the situation is too complicated to draw any certain conclusions at the moment.

While Greek (χαλδάνω) and Celtic (OIr. *ro-geinn*, W. *gannaf*) seem to point to the nasal form, Latin has both: *prehendo*, *praeda* (but \**praenda* would be impossible in Latin).<sup>2</sup> In Germanic E. *to get* is clear, but Goth. *duginnan* 'begin' etc. is subject to debate: whereas Seebold and LIV defend the relation, Lehmann (s.v.) rejects it. I am inclined to the first view. We shall discuss the group at the end.<sup>3</sup>

Pok. p. 523 \**kak-*, *kank-* 'Ast, Zweig, Pflock'

Here belongs the group of Skt. *śákhā*, to which are generally reckoned Arm. *c'ax*, Lith. *šakà*, OCS *soxa*, Goth. *hoha*. Whether or not Alb. *thekë* belongs here is irrelevant for the moment. These words have no nasal.

Those with nasal are the following: Skt. *śaṅkú-* and *śákti-* (not here, EWAia), Celtic forms, OIc. *hár*, *haell* and OCS *sokъ*.

Skt. *śaṅkú-* 'Pflock, Holznagel', with which EWAia compares Lith. *at-šankẽ* 'Widerhaken' (not given by Pokorny) and OIc. *hár* 'Ruder-dolle' (< \**hanha-*). Connection with *śákhā* is labelled 'ganz fraglich'.

Celtic forms. Vendryes s.v. *cécht* 'plough' (< \**kankto-*) connects Skt. *śaṅkú-*. He does not mention W. *cainc* 'Ast', although the connection seems quite probable.

For Lith. *at-šankẽ* Fraenkel prefers connection with *šankùs* 'beweglich', which seems quite improbable to me. Given the meaning, the Lithuanian word may rather belong to the next lemma (Pok. 537).

OCS *sokъ*. 'Splitter' might belong to the group. This seems confirmed by Lith. *šakalys* 'Splitter' (not mentioned by Fraenkel, strange-

<sup>2</sup> Lat. (h)edera has no etymology.

<sup>3</sup> De Vries Ned. Etym. Wb s. *beginnen* says: "In het germaans is het woord rijk ontwikkeld: is hier substraat-werking aan te nemen?" (In Germanic the root is well represented; are we to assume substratum influence?) I do not understand his argument, and I see no further indications for substratum influence except the possible existence of a nasalized root variant itself (\**ghend-*), which is the object of our research.

ly enough). The latter form reminds of Skt. *śakala*- id. Note that *soxa* has a fricative.

The situation is difficult to judge. One might keep the nasal-forms separate - in which case our problem is solved. If one does connect them, as the meanings are quite similar (notably Ir. *cécht*), the a-vocalism and the nasalization suggest non-IE origin. Note that in that case Sanskrit would participate.

Pok. 537 *\*keg/k-*, *keng/k-* 'Pflock zum aufhängen, Haken, Henkel'

OIr. *alchaing* 'Rechen, Waffengestell' is of uncertain etymology, even the first part of the word; Venryes A-60. The meaning is not well comparable with the other words. - Lith. *kéngé* is a loanword (Fraenkel).

The Germanic words for 'hook' (including 'Hechel' and 'Hecht') have been extensively discussed by Boutkan 1999, 12-17, who demonstrated that the group is of non-IE origin.<sup>4</sup>

What remains is NPers. *čang* 'claw' (< *\*kengo-*; the form is perhaps found in LAv. *pəšo-.cingha-*, better *-caŋha-*). I have no idea on this word. One might compare Russ. *kogotʹ* 'claw'. This word may have been influenced by *nogotʹ*. (Note that the word would have had *gh* if it were IE.) These two words do not permit to posit PIE root variants.

Pok. p. 655 *leb-*, *lob-*, *lāb-*, *-b/p-* and *(s)-*, *(s)lemb(h)* 'schlaff herabhängen'

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<sup>4</sup> For Du. *honk* and EFris. *hunk* Pokorny gives the meaning 'Pfahl, Posten'. This meaning is clearly secondary: in baseball the honk is the (safe) corner, the home, the goal which one must reach. In the play this corner was indicated by a pole of some kind, which functions as goal; it is only in this sense that the word could mean 'pole'. It is mostly assumed that the word is related to Du. *hok* 'pen, shed'. This word too occurs only in Dutch and Frisian, EFris. *huk*. (Connection with Du. *hukken*, OIc. *húka* 'to squat', as 'a squatting building' is most improbable.) As De Vries 1971 indicates it is rather a corner which was fenced off where animals were kept or material, which was later covered over. (A good parallel is *winkel* 'shop', originally 'Winkel, corner'.) This was already pointed out by Ten Doornkaat Koolman 1882 s.v. *hunk*: because of its meaning "liegt es nahe, um *hunk*, *honk* als eine Nebenform von *huk*, *hok* (Stall, Ställe, Koben etc. od. Winkel Ecke etc., wo man etwas stellt) anzusehen." Thus the word belongs to MDu. *hoec* (MoDu. *hoek*) 'corner' < PGm. *\*hōk-*. (De Vries explains the short vowel in *hok* as expressive shortening; rather the *u* of these words is original, as Boutkan demonstrated.)

If we look at the nasalized forms, and leave the Germanic forms aside for the moment, we have:

Lat. *limbus* 'border, fringe', which has no etymology;

Gr. λέμφος 'Rotz, Nasenschleim', which hardly fits semantically. The word is compared (Frisk, Chantraine) with λάμπη, λαπ(π)-, which proves that the word is non-Indo-European (Furnée 1972, 160).

Skr. *rāmbate* 'schlaff herabhängen' remains, which may be a nasal present. See also Schrijver 1991, 179 (but compare Derksen 1996, 83 on the Balto-Slavic forms: length and acute rather due to Winter-Kortlandt's rule).

Without nasal one compares Gr. λοβός, but its meaning ('Ohrläppchen; Schotenhülse') is not quite clear. Chantraine is not certain that this is one word. He is also prepared to accept that it/they are loan-words. As to λεβηρίς 'abgezogene Schlangenhaut', its meaning 'Bohnenhülse', which reminds of λοβός, rests only on Hesychius. I don't think that the word has the normal suffix -ηρίς from -ηρος, but rather that it is a non-IE suffix, cf. ἱμβηρίς (= ἔγχελυς Hsch.). - Lat. *labāre* is difficult because of its *a*, and uncertain because of its meaning.

What then remains is a mass of Germanic forms (with and without nasal), which I shall not go into (note that the nasalized forms often have *b* < \**bh*, while the non-nasalized ones often point to PIE \**p*; note also the frequent geminates). It is obvious that they are very expressive (add Dutch *slampampen* 'to drink'). This is a typical Germanic complex, which cannot be used for PIE. See further Boutkan (1998: 56).

Pok. 732 \**meth-*, *menth-* 'quirlen, drehend bewegen'

There are two forms without nasal:

Russ. *motátʹ* 'aufwickeln, schütteln, verschwenden' is now connected with OCS *metq*, *mesti* 'werfen' and Lith. *metù mésti* id. and separated from the Balto-Slavic forms with nasal.

Greek μόθος etc. cannot be connected because of the θ.<sup>5</sup>

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<sup>5</sup> μόθος has no etymology. Chantraine's connection with ἄμοτον with μο- < \**m̥h-* and a dental suffix is useless speculation, especially as ἄμοτον is "obscure, d'autant plus que le sens original ne se laisse pas fixer." On the connection with μόθων 'son of a helote, brought up as fosterbrother' Chantraine says that μόθος presents a general meaning, and that μόθων "est pris en mauvaise part., ce qui ne constitue pas une difficulté." But I see no agreement in meaning at all. Note also μόων = μόθων Hsch. (mentioned nowhere), which no doubt had Laconian zero < h < σ < θ. μούσαξ· ὁ ὑπὸ τοῦ βοαγοῦ τρεφόμενος Hsch. may be a variant of μόθαξ =

So we only have forms with nasal. Skt. *mánthati* points to *\*menth<sub>2</sub>-* (though *h<sub>1</sub>* is also possible). Whether the other forms in Pokorny are cognate is irrelevant for our problem. For further verbal forms see LIV 395.

Pok. p. 887 *\*seg-*, *seng-* 'heften, sich anhängen, berühren'

Very much is uncertain in this group. MHG *senkel* etc. must be connected with *senken*, *sinken* and does not belong here; Seebold s.v.

Lat. *sagum* 'Soldatenmantel' is of Gaulish origin; note that the *-a-* makes a problem, as *o* did not become *a* in Gaulish/Celtic. For the other Celtic forms, Mlr. *sén* 'Fangnetz' etc. see Vendryes S-85, who is very sceptical about the proposals.

Three word groups remain, all presenting problems.

The Sanskrit verb *sajati* has *n* in all forms; cf. notably RV *-san̥ga*. Still it is often assumed that the nasal is secondary, but this is not certain.

Slavic has forms like OCS *pri-segnŏti* 'berühren, ergreifen'. It has been doubted that this root is cognate (Klingenschmitt Verbum 185 n. 26, who posits a root *\*seng-* or *\*sengw-*). LIV 468 derives the root from *\*sng-*, from a nasal present *\*s-n(e)-g-*, with the doubtful type of nasal present. Kortlandt 1988, 389 assumes a root *\*seng-*, with Winter's law in Cz. *sahati* etc., but with the law blocked before *-ng-n-*. He thinks that Lith. *segù sègti* 'heften, schnallen, beschlagen', the only form without a nasal, was extracted from a nasal present with a cluster *-ngn-* (which explains why Winter's law did not apply).

So the PIE root may have been *\*seng-*, without variants. This provides no evidence for the variation we look for.

Pok. 916 *skabh-*, *skambh-* 'stützen'

There are only Skt. *skabhñāti* and Lat. *scamnum*. Both have their problems. As PIE had no *\*a*, it is supposed that the verbal root had *\*e*, which seems confirmed by Av. *fra-sciñbayōit*, though this form is "isolé et tardif" (Kellens, Verbe 134). The nasal would have been taken over from *stabhnāti*, which seems possible. What is surprising is that all nominal forms have the nasal. In itself, there is no reason not to assume *\*skembh-* (with or without *-H*: both the present in *-ñāti* and the other *i*-forms can be easily analogical).

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μόθων, with  $\sigma < \theta$ . Bourget, Dial. lac. 99 n 4. μοθοῦρας τὰς λαβὰς τῶν κωπῶν Hsch., 'loom of an oar', has no etymology either. It should be listed as a third independent lemma.

Lat. *scamnum* 'bench, stool, step', dim. *scabellum*, has been connected with the Sanskrit verb. Schrijver proposed that \**e* became *a* in Latin after original pure velar (1991, 431, 434f). However, I am not sure of the interpretation of the Latin word. We do not know whether the form in fact had \**bh-*, and the *a* may be original. Also the meaning does not fit very well: the Ilr. nouns mean 'Stütze, Pfeiler' (confirmed by the Finnish loan *sampo* 'Säule'), which very well fits 'stützen', but 'stool' does not, to my mind. The old connection of the word with σκαπτων, σκήπτρον 'Stab' (see s.v. σκήπτωμα) is not satisfactory either. The word may well be an isolated substratum word.

So Indo-Iranian may have \**skebh-* or \**skembh-*. If the Latin word is cognate, we have a problem only if the *m* belonged to the root of the Sanskrit verb; if it is not related, there is of course no problem.

Pok. 918 (s)k(h)ed-, (s)k(h)e-n-d- 'zerspalten, zerstreuen'

As Skt. *skhadate* is young and must be discarded, evidence for an aspirate disappears.

We can regard Gr. (σ)κέδασα, σκίδνημι (σκεδάσνυμι is very recent and should not be used in historical linguistics) as the basis of this lemma. It points to \*(s)kedh<sub>2</sub>-. We therefore consider the forms without nasal as unproblematical for our problem. Note that Lith. *ked-* requires -*dh-* (as -*d-* would have given a long vowel) and so belongs to a different root. (If Latv. *šķēdērs* points to a nasal, this is a problem.) The same holds for OCS *šted-*, Russ. *ščed-*. The forms OCS *štedrъ* and *šted-ēt* are problematic. As here the nasal is only found in the verb, it may be an analogical nasal present. If *šted-* is cognate with *skod-*, we have again a nasalized form against one without a nasal. But Vasmer s.v. *ščvedryi* 'liberal' does not mention OCS *skodъ* 'poor, small'. The antecedents of MDu. *scateren*, *schaeteren* (Eng. *scatter*, *shatter*) are unclear.

There remain two forms with a nasal. Skt. *skandhá-* 'Schulterknochen', *skándhas-* 'bough, branch' are connected with Av. *skānda-* 'Bruch, Zerbrehen' and *scindayeiti*. If I understand him correctly, Mayrhofer rejects the connection with other forms: "Auf die ... ausserarischen Anschlüsse muss wohl verzichtet werden" (KEWA 3,507). LIV 498 maintains the connection, assuming that \**sk(a)d-n-* became \**skand-*. It must also be assumed that the -*dh-* derived from -*dh<sub>2</sub>-*, and that the meanings are compatible ('to break' and 'to scatter, disperse' are not the same; note that Pokorny's 'zersplittene, zersprengte' for σκίδνημι is incorrect: the verb is never used for carving wood).

Lat. *scandula* 'shingle' (pace Ernout-Meillet *scindula* is late and easily explainable from *scindō*; the *-a-* is confirmed by OCS *skodъl-*) is unclear to me. We cannot see whether it had *d* or *dh*. According to Schrijver (1991, 419) it could represent *\*skend(h)-*. The meaning fits neither the Greek nor the Indo-Iranian verb. The Latin word agrees in meaning with Arm. *šert*, and Baltic words like Lith. *skedervà* 'Splitter', but the latter ones have *-dh-*. (It is improbable that Greek forms with σκ- *σχινδάλαμος*, *-αλμός* 'splinter', *σκιδαρόν* *ἄραιόν* have anything to do with our group, at least not if the words are Indo-European.)

The Tocharian forms (LIV 497f) give no further information.

I have not found any information on Ir. *scaindrim* 'zerspalte', mentioned Pok. 929.

I don't think that any of the forms mentioned has anything to do with the root *\*sken(-d)-*, Pok. 929, as all these forms concern (the) 'skin (bark)'.

Evidence for an old form with a nasal, then, is too uncertain.

Pok. 1011 *\*ste(m)b-*, *ste(m)bh-*, *ste(m)p-* 'stützen, anhalten, hemmen, treten, stampfen, etc.'

This lemma must be completely reshuffled. I discuss first the roots in *-b*, then the other two, and after that I will see whether they are related with each other in spite of the different final consonants.

Forms with *-b*.

Skr. *stambá-* 'Büschel' does not belong here because of its meaning. Kuiper (FS Debrunner 249) argued for Munda origin.

Gr. *στέμβω* mainly occurs in glosses; see Frisk, Chantr. But its meaning is clear, 'to shake' strongly': *κινῶ συνεχῶς*, 'maltreat': *ὑβρίσαι* and 'schmähen': *λοιδορεῖν*; *ἀστέμβακτον* *ἀκίνητον* ... It is obvious to take 'shake' as the basic meaning. Though it is generally connected with OHG *stampfon*, I think that this is wrong; 'to shake' is a quite different notion than 'to step, stampfen'. The etymology dates from a time when every word had to have an IE etymology, and when words were equated on the basis of the form, even if the meanings were quite different. Foreign origin is confirmed by *στόβος* *λοιδορία*, *στοβέω* 'schmähen': prenasalization is a well-known feature of the Greek substratum. Further confirmation of non-IE origin would be *ἀστεμφής*, the meaning of which is much disputed<sup>6</sup>, but which is

<sup>6</sup> This is well illustrated by the fact that Chantraine states that the *ἀ-* must be 'copulatif' while he translates 'inébranlable'; others therefore take it as negative.

glossed ἀμετακίνητος. Interchange β/φ is also well-known from the Greek substratum.

The Germanic forms can be summarized by Du. *stap*, MoG. *Stapf* with *Stapel*, *Stufe* OHG *stuofa*) beside *stampfen* (OHG *stampfon*). - MoG. *stumpf* and *Stumpf*, *Stump(en)* do not belong here. They belong with *Strumpf* (Seebold s.v.) and further with *Strunk*. To these also belongs *Stummel* with *-b* < \**bh*. The many variants point to a substratum word. See also De Vries 1971 s.vv. *stomp*, *stommel*, *stoof* (OIc. *stúfr*), *stobbe*, *strobbe*, *stromp*, *stronk*, *struik* (G. Strauch); Beekes 1999. (Because of Lith. *stimbūr̃ys* 'Schwanzstumpf' Seebold thinks that *Stumpf* etc. do belong with *stiñbti*. But this verb means 'holzig werden' and has nothing to do with the word *Stumpf* etc., nor with the IE root \**stembh-*, as we shall see below. Note that also Latv. *stebere* has the meaning 'Schwanzstumpf'; Vasmer s.v. *stoborъ*.)

Mr. *sibal* 'a walking' is too uncertain.

Among the forms in *-b* the Germanic forms are isolated. Thus e.g. Hoard s.v. *step*: "no certain cognates are known". The variants with *m* are a typical feature of Germanic, originating in non-IE words. The group, then, comes from the Germanic substratum. Note the constant *a*-vocalism (the \**ō* of *Stufe* may represent a long *ā*).

Thus of the forms in *-b* nothing remains.

Forms in *-p-*.

Of the forms in *-p* Lith. *stāpas* 'Stützpfehl', Russ. *stepenʹ* 'Stufe' etc. seem to belong to the group *Stab* (Lith. *stābas*; see below) resp. *Stapf*. To the latter group belongs CS *stōpiti* 'treten'. (Not all forms are clear, e.g. *stēpinti* 'bestätigen'. (Skt. *sthāpáyāmi* has the causative *p*.)

Forms in *-bh*. With nasal:

Skt. *stabhnāti*. All forms point to \**stembhH-*. It may be useful to note its meanings, which already cover a broad field: 'stützen, hemmen [with a prop, support, one may stop something, from falling or rolling away], anhalten, sich stemmen [prop up oneself], widerstreben'. This set should be taken as the starting point for this lemma.

Greek. ἀστεμφής was discussed above. The words στέμφυλα 'ausgepresste Oliven oder Trauben', σταφυλή 'Weintraube' do not belong here. They are cognate (form and meaning are too close; note that στεμφυλίδες means 'black olives' (Chantr. s. στέμβω), in spite of Chantraine's hesitation. The ablaut is not Indo-European; it would be unexplainable in otherwise identical words. The words are no doubt



of non-IE origin (Chantraine Form. 251, Schwyzler 485). Chantraine's later denial (Dict. "une solution de facilité") is an example of his large-scale recalling of substratum words (as compared with his Formation). Whatever one may think of this remark, it is not an argument. Words of this meaning are often loan-words.

For Germanic (G. *Stummel*) see at the forms in *-b*.

Lith. *stem̃bti* has two meanings, 'widerstreben' and 'Stengel treiben, hart, zähe werden'. The first meaning is reminiscent of Skt. *stabhnāti*. The second (or both) are taken by Derksen (1996, 167) as originally acute, which points to old *\*b*. In that case the form would not belong here, unless we accept *b/bh* for Indo-European. Note that the nouns with a nasal all have the meaning 'Stengel' etc. in contrast to those without a nasal (see below).

Forms in *-bh*, without nasal:

Celtic Mr. *sab* 'Schaft, Pfeiler' may well be related with the following Germanic and Baltic forms. Derivation from *\*steh<sub>2</sub>-* is impossible, because Lith. *stābas* cannot have *a* from laryngeal, as this was never vocalized in Balto-Slavic. So the Celtic form would prove original *a*.

The Germanic forms are quite complicated. One notes the meanings: '1) hindern, stauen (?), steif sein; 2) Zeit; 3) Stab; 4) Steven; 5) Stamm. The first, at least 'hindern', may belong to a separate root, *\*stem-*, Pok. 1021 (note that these forms are only Germanic and Baltic, and therefore suspect of being non-IE.) I have no opinion on 2). Numbers 3. and 4. are most probably cognate. They reflect PGm. *\*stab-a-*, *\*stab-na-*. 5) *Stamm* is no longer derived from a form in *-bh* but from one with *-m-*. I considered the possibility that it was non-IE and a nasalized (not pre-nasalized) variant of *\*stabh-*, i.e. *\*stam-*,<sup>7</sup> but Toch. A/B *štām/stām* favours an IE origin and confirms the derivation from *\*steh<sub>2</sub>-*. Anyhow the form is irrelevant here. - So the Germanic forms can be represented by *Stab* < *\*stab-*.

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<sup>7</sup> A good case seems Du. *rijm* beside *rijp* (OE *hrīm* OS *hrīpo* etc.). The meaning 'frozen dew' is identical. A connection with OE *hrīnan* etc. 'berühren' seems possible ('das Übergestreifte', Seebold). (But a connection with Lith. *kréná* 'Haut auf der gekochten Milch etc.', derived from the root *\*krei-* 'to sieve' (which is not certain, it seems to me), is less likely.) To explain *p/m* Seebold assumes *\*hreip-* beside *\*hreip-n/ma-*. This seems rather a 'Notbehelf'. I propose that this is the substratum variation *p/m* (of a suffix after *\*hrei-*? Of course, PIE had no suffix *-b(o)-*). Cf. Beekes 1999, 18: Du. *streep* beside *striem*

Lith. *stābas* is generally connected with *Stab* (the short vowel confirms *\*bh*). There are also forms given with *-e-*. But *stèbti* 'staunen' also has the meaning 'beobachten' and the first meaning is no doubt derived from the second, and this has nothing to do with the root 'stützen' etc. Only *stebulė* 'Radnabe' may belong with *stābas*. - In Slavic we have SCS *stoborъ* 'pillar'. The form with *-e-* given by Pokorny, Russ. *stebatъ*, means 'nähen, steppen, peitschen, trinken', none of which bears any resemblance to the meaning of our root; see below on Pok. 1014 *\*stegh-*.

I wonder whether *Stab* etc. are non-IE. A form *\*stabh-* is reminiscent of *\*ghasdh-* 'pole, staff, spear', *\*bhabh-* 'bean', *\*bhardh-* 'beard', *\*dhabhro-* 'able, artisan'; cf. Kuiper 1995, 66, who notes the absence of voiced stops as against the frequent aspirates (which he explains by assuming that the original voiced stops of the substratum language were identified not with the PIE voiced = glottalized stops, but with the aspirates). The predominant *a*-vocalism seems to confirm the assumption. We saw that the Irish form would require an original *a*. We find *e* only in Balto-Slavic. Words for 'pole' etc. are often loans. Further it is important to note that the relevant forms only occur in Germanic, Balto-Slavic and Celtic.

Conclusion. We have an IE root *\*stembh(H)* in Skt. *stabhn̄d̄ti*. Other forms with nasal do not belong to this root. Forms without nasal are the group *Stab*, which I think is non-IE.

Pok. 1014 *\*stegh-*, *stengh-* 'stechen; Stange, Halm, Spitzes, Steifes'

We have also to consider Pok. 1014 2. *\*(s)teg-* 'Stange' etc. Because of the Winter-Kortlandt law the Balto-Slavic forms of this lemma belong to the root in *-gh*, e.g. Lith. *stāgaras* 'stalk'. (However, the agreement with *stābaras* with identical meaning 'dürrer langer Stengel' cannot be coincidental; so the words may, with a non-IE variation *b/g*, belong to the forms discussed above under *\*ste(m)bh-*.) - On the other hand, Lith. *sténgti* (Pok. p. 1015) had original *-g*. Note further that both *sténgti* and *stémbti* (also with circumflex) mean 'widerstreben' (Fraenkel *stem̃bti* 1.); here again we seem to find *b/g*.

There are only two (groups of) forms with nasal. Gr. *στόνυξ* is of a different structure and is irrelevant. *στάχυς* 'Ähre' (supposed to continue *\*stṇgh-*), beside *ἄσταχυς*, is a substratum word; Furnée 1972, 373 ("ohne sichere Etymologie", Frisk).

The other group with a nasal is OE *stingan* 'stecken' and OHG *stanga* 'Stange'. (One might doubt that 'stechen, stecken' and 'Stange' are etymologically the same.) Now the question is whether there are

forms without nasal that are cognate with these Germanic words. Gr. στόχος has no certain etymology (Frisk, Chantr.). The Germanic forms from \**stagga* (p. 1014) are not very clear (see e.g. Hoad on *stag*). We are left with the Balto-Slavic forms. Under 2. \*(s)*teg*- Pokorny gives e.g. Latv. *stēgs* 'lange Stange' and Russ. *stožár* 'Stange' (which have *gh*). On p. 1015 we have Russ. *stegátʹ* 'nähen, steppen, peitschen' of which it is much less clear that it belongs with the Germanic forms. This verb resembles *stebátʹ* which has the same (curious) meanings. This is another instance of *b/g*, which points to a non-IE word.<sup>8</sup>

Thus the only group with a nasal is Germanic (*stingan*, *Stange*), but cognate forms without a nasal are not very clear. Since all the relevant forms are Germanic and Balto-Slavic (and show *g/gh*), the whole will be non-IE. This is most probably confirmed by OE *staca* 'stake', Du. *staak* 'pole, Stange', of which the group *Stange* is the nasalized variant: the prenasalization and the meaning ('sticks, poles' etc.) prove non-IE origin. A variant with *e* is OIc. *stjaki*, OHG *stehho* (with the same *e* as in *stingan*).

Pok. 1134 \**uek-*, *uenk-* 'biegen'

There is no reason to connect the roots with *a*-vocalism to which Pokorny refers: 1108 *vā-* [*ueh<sub>2</sub>-*], 1113 *uat-/uāt-* [*ueh<sub>2</sub>t-*], 1120 *uæg-/uag* [*ueh<sub>2</sub>g-*] and 1135 *uək-/uāk-* [*ueh<sub>2</sub>k-*]. We must connect, however, the roots 1148 *ueng-* 'gebogen sein' and 1149 *uengh-* 'gebogen sein'.

The last root consists of two nominal forms in Germanic (OS *wang* 'Aue' and OHG *wanga* 'Wange'). They may also be derived from \**uonkó-*. They are not essential for our problem (unless one would conclude from the *gh* that the form(s), showing an uncommon variant, are non-IE; I think that this conclusion would be premature).

The root 1148 \**ueng-* seems unproblematical: OHG *winken*, *wenken*, *wanken* and Lith. *vėngti* '(ver)meiden' (Alb. *vank* is not essential for our problem as we already have a form with nasal). Skt. *vāngati* (gramm.) is unreliable (KEWA III 124; it is not given in EWAia, not in III either); also the meaning, 'to limp', is not clearly related.

The root \**uenk-* is found in Skt. *vañcati*. Arm. *gangur* is not essential for our problem.

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<sup>8</sup> I wonder whether these words are cognate with NHG *steppen*, which has no clear etymology.

The Germanic forms Goth. *un-wāhs*, OE *wōhs* 'crooked' etc. may derive from *\*uonko-*. However, if one reconstructs *\*uanko-*, it may be connected with Lat. *vacillāre* assuming a non-IE *\*ua(n)k-*. This is done by Lehmann s.v. *unwāhs* and by Seebold s.v. *wanken* (though neither of them accounts for the vocalism). To this complex might be added OIr. *fán* 'Abhang, Höhlung; schräg' < *\*uāgno-* (Pok. 1120 s. *\*uæg-*, *uāg-*). The price is that we separate *unwāhs* from the Sanskrit verb.

A root form *\*uek-* is assumed only on the basis of Lat. *convexus* and Mr. *feccaid*. Ernout-Meillet have no etymology for the Latin word; Walde-Hofmann assumes *-vac-* as in *vacillāre*, which seems quite possible to me. In the latter case the word would not interest us here.

Mr. *feccaid* would have an expressive geminate. The word would be the only evidence for a form without nasal. The conclusion is that evidence for a non-nasal form of *\*uenk-* is not very strong; 1148f *\*ueng-*, *uengh-* always have a nasal.

I add the following root:

Pok. p. 787 *\*pāk-*, *pāg-* 'festmachen'

This root is now of course *\*peh<sub>2</sub>g-*, *peh<sub>2</sub>k-* (I think that the *-g-* is older). LIV 413 posits for the second *\*pāk-*, which is impossible because PIE had no phoneme *-a-*. Also, a quite different root which is in meaning and form almost identical to *\*peh<sub>2</sub>g-* is improbable. Skt. *pāśa-* 'Schlinge, Band' would have lengthened grade, which is less probable. Note that Latin has *paco* beside *pago*. The short *-a-* is based on one Avestan form, *ava.pašāt* (V 4,51; Kellens Verbe 107ff). I see two solutions. One is that the *a* of the root may be long (but written short); this is quite possible in Avestan. The second option is that the Indo-Iranian words are not cognate (cf. Seebold s.v. *fangen*: "und vielleicht ai. *pāśa-*").

There are only two forms with a nasal, and these are presents; only their formation is not quite clear. Lat. *pangō* could continue *\*ph<sub>2</sub>ng-*, Schrijver 1990, 114f, but he rather thinks that it is a Latin innovation, p. 97; thus already Kuiper 1937, 175.

More difficult is Germanic, e.g. Goth. *fāhan* < *\*fanχ-*, for *\*ph<sub>2</sub>nk-* would have given *\*funχ-*, see e.g. Schrijver 113 (he has forgotten this on p. 97). This problem may be solved by assuming that the *a*-vocalism of the root was restored (e.g. *\*ph<sub>2</sub>-n-ek-* would have given *\*faneχ-*, if this form ever existed). In Germanic the present can hardly be an innovation (unless by analogy; it has been assumed that it was

formed after *hāhan*), but *pangō* and πήγνυμι can hardly be used to prove an IE date for the nasal present (which is denied by Kuiper, 1937, 164, though especially because his work dates from before the laryngeal theory).

I give a survey of the forms discussed (+ good evidence for CeC/CeNC; ? doubtful; ?? very doubtful; - negative).

*bheg ( <i>bhanákti</i> , <i>bhangá-</i> )	??	*skabh ( <i>scamnum</i> )	??
*ghed ( <i>χαυδάνω</i> , <i>-hendo</i> etc.) +		*sked ( <i>skandhá-</i> , <i>scandula</i> )	?
*kak ( <i>śankú-</i> etc.)	?	*stebh ( <i>Stab</i> , <i>stābas</i> )	-
*keg ( <i>čang</i> )	-	*stegh ( <i>stingan</i> , <i>Stange</i> )	-
*lebh ( <i>rāmbhate</i> )	?	*uek ( <i>convexus</i> , <i>feccaid</i> )	?
*meth ( <i>mánthati</i> )	-	*pāk ( <i>pango</i> , <i>fāhan</i> )	-
*seg ( <i>sañj/g-</i> )	??		

The only reliable case is *ghed-*; the others are for various reasons not certain enough to base conclusions on for PIE. This is also the opinion of Klingenschmitt 1982, 184f., who interprets *\*ghe(n)d-* as a normal nasal present.

The existence of nasal presents from two consonant roots is not generally accepted. Klingenschmitt thinks there were such presents. Thus also LIV, which adopts the interpretations of Klingenschmitt. LIV makes it easy to find such presents. See my list in the appendix II (2 cons.). I shall very shortly review these forms (in the order of the appendix).

\*uebh- 'weben' LIV 599.

Skt. *unap*.

This form is clear, but the root may have had *h<sub>1</sub>-* because of Myc. *ewepesesomena* (Peters 72 does not refute this).

\*ghed- 'fassen' LIV 173. *χαυδάνω*, *pre-hendo*, etc.

This is one of our roots; see above. It is suggested that *\*ghned-* was reanalysed as *ghṇned-*, on the basis of which some languages made *\*ghend-*; Klingenschmitt 1982, 184 n. 26. See further below.

?2. *med-* 'voll, satt werden' LIV 380.

Skt. *mādati* 'erfreut'.

This verb occurs beside Skt. *mādati*. LIV assumes *\*m-ṇ(e)-d-* > *\*m(a)nad-/mad-* leveled to *mand-*. The generally accepted solution, however, is that *mand-* derives from *\*ma-md-*.

?\*red- 'schürfen' LIV 449.

MP *rand-* is the only evidence.

The root is that of Skt. *rādati*. The development would be again *\*r<sub>e</sub>ned-* > *ranad-* etc.<sup>9</sup> (One may doubt the vocalisation. Furthermore, it is widely accepted that PIE did not have roots beginning with *r*. So we have to reconstruct *\*Hred-*, which is triconsonantal. - The evidence clearly is not enough to prove a PIE form.

*\*ued-* 'quellen' LIV 599.

Skt. *unátti*.

Again we cannot be sure that the root did not have *h<sub>1</sub>-* (*h<sub>2</sub>-* and *h<sub>3</sub>-* are excluded by Hitt. *wed-*). Whether Lat. *unda* and Lith. *vanduō* derive from an old nasal present is improbable: nominal derivations from the stem of a nasal present do not date from PIE but are "einzelsprachlich". Rather the forms derive from *\*u(o)d-n-*.

*\*sek-* 'versiegen, austrocknen' LIV 474.

Lith. *senkù*, Slav. *seč/k-*; very doubtful OE *sengan* 'sengen' etc.

This is the same verb as Skt. *saścasi*, á-*saścant-*.<sup>10</sup> These Balto-Slavic nasal presents can well be innovations: "Wir haben nicht den geringsten Grund für die Ursprache einen Präsenstypus" like this "anzunehmen", Kuiper 1937, 185.

*\*bheg-* 'brechen' LIV 52.

Skt. *bhanákti*, Arm. *bekanem*, Lith. *beñgti*.

This is one of the roots we discussed above. The Lithuanian form does not belong here; see the remarks above (Pok. 114). Klingenschmitt 1982, 184f assumes *\*bh<sub>h</sub>eg-* > *\*bhanag-*; thus EWAia II 242 s. *bhañj-*. Note that the Indian form is now isolated.

*\*seng-* 'heften, anhängen' LIV 468.

OCS *pri-segnqti* 'anfassen, ergreifen'.

This root was discussed above (Pok. 887). The root probably had a nasal, the Baltic form will be an innovation of that language.

?*\*teg-* 'schwören' LIV 559

OldIr. *-toing*, W. *twng*.

Pf. *-tethaig* and the verbal noun *-tech* and Corn. *ty* 'oath' have no nasal. On the difficulties presented by *tong-* see McCone 1991, 45f.

<sup>9</sup> I assume that the notation with the small *e* is identical with that of a vocalic *n* (as above in *mped*), both notations indicating a phonetic variant, a Sievers form (thus Klingenschmitt 1982, 185). See the text below on these forms.

<sup>10</sup> Note that *\*ἔσκετο* probably does not exist: it once occurs as a variant of *ἔσχετο*, which is well understandable; the form with *κ* is said to be a conjecture by Aristarchus as being a form of 'to be', as in *ἔσκειν*.

An IE nasal present can hardly be assumed on this basis. (Phryg.  $\tau\epsilon\tau\iota\kappa\mu\epsilon\nu\omicron\varsigma$  is unrelated.)

\**leg*<sub>h</sub>- 'sich (hin)legen' LIV 357.

OCS *lęq*

From \**lŋgh*- "falls nicht slavische Neubildung, die allerdings unmotiviert erschiene." (LIV n. 3).

1. \**bheh*<sub>2</sub>- 'glänzen, leuchten, erscheinen' LIV 54.

Arm. *banam* 'to open', Gr.  $\phi\alpha\nu$ - ( $\phi\acute{\alpha}\nu\omega$ ), Alb. *bën* 'to do'.

The Albanian form is usually explained as \**bhh*<sub>2</sub>-*niō* (with frequent -*niō* in Albanian). The nasal present form \**bh-ŋ-h*<sub>2</sub>- >  $\phi\alpha\nu$ - would be the basis of the Greek verb. Arm. *banam*, aor. *bac'i* would show a nasal present. But would it be a nasal present of this type? \**bhh*<sub>2</sub>-*n*- is sufficient.

2. \**bheh*<sub>2</sub>- 'sprechen, sagen' LIV 55.

Skt. *bhánati*.

The form would come from \**bh-ŋ-eh*<sub>2</sub>- > \**bhanā*-. N. 3: "Wenn ... nicht zu einer Parallelwurzel \**bhen(H)*-", which may also be found in OHG *bannan*.

2. ? \**keh*<sub>2</sub>- 'graben' LIV 306.

Skt. *khánati*. Lubotsky 1988, 15 reconstructs \**kenh*<sub>1</sub>-, on the basis of Phr. *keneman*. Again \**k-ŋ-(e)h*<sub>2</sub>- > \**kan(ā)*-.

2. \**teh*<sub>2</sub>- 'tauen, schmelzen' LIV 560.

Arm. *t'anam* 'benetze, tauche ein'.

This the root of OCS *tajq*. The situation is the same as in the case of Arm. *banam* above.

We may shortly summarize the results (+ good; (?) some doubt; ? uncertain/doubtful; ?? very doubtful; - wrong):

* <i>uebh</i> -	<i>unap</i>	?
* <i>ghed</i> -	$\chi\alpha\nu\delta\acute{\alpha}\nu\omega$ etc.	?
2. * <i>med</i> -	<i>mándati</i>	??
? * <i>red</i> -	<i>rand</i> -	-
* <i>ued</i> -	<i>unatti</i>	(?)
* <i>sek</i> -	<i>senkù</i> , <i>sęk/č</i> -	??
* <i>bheg</i> -	<i>bhanákti</i>	?
* <i>seg</i> -	- <i>sęq</i>	??
* <i>teg</i> -	<i>tongaid</i>	??
* <i>leg</i> <sub>h</sub> -	<i>lęq</i>	??
1. * <i>bheh</i> <sub>2</sub> -	<i>banam</i> , $\phi\alpha\nu$ -	(?)
2. * <i>bheh</i> <sub>2</sub> -	<i>bhánati</i>	?
2. ? * <i>keh</i> <sub>2</sub> -	<i>khánati</i>	??

2.\**teh*<sub>2</sub>-*t'anam*

?

My conclusion is that the existence of nasal presents of biconsonantal roots has not been proven beyond doubt, but that it is not impossible that they existed. The presents are found in Sanskrit and in Balto-Slavic, languages where nasal forms were productive.

Another question is whether the actual forms found can and must be explained in this way. I make the following remarks. One reconstructs - always - a form *Cn(e)C* and assumes that this was realized as [*C<sub>n</sub>(e)C*], which is called a Sievers form (see n. 9); and the full grade form is supposed to give Skt. *CanaC*. But one may ask why always the Sievers form was adopted. Why don't we have \**ghned*-? Then, from the roots *med*-, *sek*-, \**seg*- we would certainly expect \**mned*-, \**snek*-, \**sneg*-. Further why would we not get \**ġneg*, \**ṛned* (*r<sub>e</sub>ned*-) (if the last root did not have *H*-); cf. *unad*-, not \**u<sub>n</sub>ed*/*u<sub>e</sub>ned*, which would give Skt. \**vanad*-. Lubotsky points out to me that the Sanskrit forms could easily be secondary: a nasal present of *ud*-, *bhag*- becoming *u-na-d*, *bha-na-g*.

The reconstruction [*C<sub>n</sub>eC*] is supposed to give *CanaC* in Sanskrit; but this form results on the one hand in *bhanag*-, but on the other hand in (the type) *mand*-. Note that in most other languages we would get *CaneC*, as with the root *ghed*-. As far as I know, no forms of the type *CaneC* are found in any language (other than Sanskrit). So I keep strong doubts about the interpretation of the presupposed nasal presents.

We return to the problem of \**ghe(n)d*-. The Greek verb can be easily explained from a root \**ghend*-. Otherwise the total restructuring on the basis of a nasal present must be assumed (from \**χανεδ*-/\**χαδ*?). But why would, in that case, the future get \**ghend*-? Perhaps \**ghed-s*- (> *ghess*-) with introduction of an *n*? Latin *-hendo* may derive from (the nasal present) \**ghnd*-. On the other hand, Lat. *-hendo* : *praeda* strongly suggests a nasal present (but above I pointed out that \**praenda* is impossible in Latin). For OIr. *ro-geinn* McCone (1998) pleads for \**ghnond*- instead of \**ghnd-n*-.

Seebold (s.v. *beginnen*) notes that we often find forms with double nasal from this root, *χανδάνω*, *ro-geinn*, *du-ginnan*. This suggests that \**ghend*- arose from \**ghed-n*-. Only presents with *-n(e/o)-* seem rare; they are not given/assumed in LIV. I have the impression that especially the sequence *-dn-*, more than other clusters with *n*, is liable to metathesis; perhaps because the two consonants are homorganic?



One might compare our verb with the roots of three or more consonants that show *-eC/-eNC*. I did this on the basis of the lemmata in Pokorny. The result is, quite different from what I expected, that these forms are concentrated in the area where we find large scale substratum influence. See Appendix I. The only instance that has an entirely different distribution is *\*h<sub>1</sub>le(n)g<sup>wh</sup>-* 'light'. Here the forms with nasal are found from Indo-Iranian to Germanic; the forms without nasal are found in Lat. *levis*, OCS *лѣгъкъ* and OIr. *laigiú*. Note that these three forms do not agree.

So we might consider the possibility that *\*ghe(n)d-* is non-IE too. The root is found in Germanic, Celtic, Latin, Albanian, and Greek. Its presence in Greek is surprising, but there seem to be instances where Greek has loans from a European substratum. See my forthcoming article. Note that verbs with a comparable meaning are also substratum words, like Lat. *capio*, *habeo*. Still, I feel not sure about this possibility.

Another suggestion to be made is that the nasal is original, but that it disappeared in some forms. This may be the solution for the word 'light', discussed just above.

## Appendix I

I looked at nasal variants (in *-eNC*) with more than one consonant preceding, which I collected from Pokorny. I just noted the languages in which these nasal variants occur. (Note that I used Pokorny's material as he presents it, without checking the reliability of his analysis).

350 gal-	glengh-		Gm.			
359 geleb(h)-	glembh-		Gm.			
385 ger(k/g)-	grenk/g-		Gm.	Bl.		
386 gerd-/gred-	grend-	Kl.	Gm.	Bl.		
387 gerb-	gremb-		Gm.	Bl.	Sl.	Gr.
429 ghel-, ghləd-	ghlend(h)-	Kl.	Gm.	Bl.	Sl.	
545 kelə-	- klombho-		Gm.	Bl.		Gr.
567 ker-	- krenk- (568)		Gm.	Bl.		
948 (s)kerb(h)-	- skremb-		Gm.	Bl.	Sl.	
987 (s)pel-	- (s)pleng-		Gm.			
995 sperd(h)-	- sprend(h)-		Gm.	Bl.	(Sl.)	
996 (s)pereg-	- spreng-		Gm.			
998 spergh-	- sprengħ-		Gm.			
1022 ster-	- stremb/p- (1025)		Gm.	Bl.		
1031 ster(k̄)-	- strenk̄-	Kl.		Bl.		

1152 uerbh- - urembh-	Kl.	Gm.		Gr.
1153 uerg- - ureng-		Gm.	Sl.	Lat.
1155 uerg'h- - ureng'h-		Gm.		Gr.
1155 uerk- - urenk-		Gm.	Bl. Sl.	

The list requires no comment. The phenomenon is Germanic, often with Baltic, (much) less often with Slavic and Celtic. Latin and Greek participate only rarely. An etymological screening may point out that the Greek forms do not belong here. But sometimes Greek appears to have forms of this origin. It is thus clear that these forms derive from the substratum found predominantly in Germanic and Baltic.

## Appendix II

### ROOTS WITH NASAL PRESENT according to LIV

The roots are arranged according to the consonants after the vowel, in 'IE alphabetic order: stops (..k..k...kw..) s H i u r l m n

	pres	?gheud
2 CONS.	tres	terd
uebh	dueH	h <sub>2</sub> eidh
ghed	?gieH	bheud
?med	?kleh <sub>1</sub>	keudh
?red	h <sub>2</sub> leh <sub>1</sub>	?keudh
ued	pleh <sub>1</sub>	leudh
sek	?dreh <sub>2</sub>	reudh 1.
bheg	h <sub>3</sub> neh <sub>2</sub>	h <sub>2</sub> eldh
seg	steh <sub>2</sub>	?ueik 1
?teg	gneh <sub>3</sub>	ueik 2.
legH	?g <sup>w</sup> ieh <sub>3</sub>	h <sub>1</sub> euk
pak	klei	meuk
bheh <sub>2</sub> 1.	kleu	?teuk 2
bheh <sub>2</sub> 2.	?dhreu 1.	perk
?keh <sub>2</sub> 2.		serk
teh <sub>2</sub> 2.	2. CeCC	selk
	leh <sub>2</sub> p	temk
3 CONS.	leip	teh <sub>2</sub> g
1. CCeC	reup	Heig
?bhreg	terp <sub>1</sub>	peig 1.
h <sub>2</sub> ueg	?geubh	bheug 1.
sleg	?keubh	bheug 2.
dregh	?reh <sub>1</sub> t	ieug
stegH	k <sup>w</sup> eit	leug 2
h <sub>2</sub> nek	?ieut	?reug
h <sub>3</sub> reg	kert 1	h <sub>3</sub> ergh
uiek <sup>w</sup>	bheid	(s)teigh
h <sub>2</sub> res	ueid	?delgh

peik  
 ?seuk  
 peh<sub>2</sub>g  
 ?reig  
 dheigh  
 ?gheigh  
 delgh  
 h<sub>2</sub>emgh  
 leik<sup>w</sup>  
 seik<sup>w</sup>  
 melk<sup>w</sup>  
 h<sub>3</sub>eng(uh)  
 gheis  
 ?keis  
 ?k<sup>w</sup>eis  
 peis  
 ?ueis 1.  
 bheiH 1.  
 geiH  
 meiH  
 peiH  
 ?geuH  
 ?geuH  
 h<sub>2</sub>euH  
 ?keuH  
 leuH  
 peuH  
 ?seuH  
 bherH  
 derH  
 ?gheRH  
 g<sup>w</sup>erH  
 h<sub>1</sub>erH  
 dhalH  
 gelH  
 kelH  
 uelH 1.  
 teih1  
 ueih1 1.  
 ?ueih1 2.  
 seuh1  
 g<sup>w</sup>elh1  
 h<sub>3</sub>elh1  
 k<sup>w</sup>elh1  
 temh1  
 meth<sub>2</sub>

peth<sub>2</sub> 1.  
 ?peth<sub>2</sub> 2.  
 ueth<sub>2</sub>  
 dheg[uh]h<sub>2</sub>  
 leih<sub>2</sub>  
 deuh<sub>2</sub>  
 ?teuh<sub>2</sub>  
 kerh<sub>2</sub> 1.  
 kerh<sub>2</sub> 2.  
 merh<sub>2</sub>  
 perh<sub>2</sub>  
 terh<sub>2</sub>  
 kelh<sub>2</sub>  
 pelh<sub>2</sub>  
 telh<sub>2</sub>  
 demh<sub>2</sub> 2.  
 kemh<sub>2</sub>  
 senh<sub>2</sub>  
 h<sub>2</sub>ekh<sub>3</sub>  
 ?seuh<sub>3</sub>  
 dherh<sub>3</sub>  
 perh<sub>3</sub>  
 uelh<sub>3</sub>  
 h<sub>2</sub>emh<sub>3</sub>  
 g<sup>w</sup>elh<sub>3</sub>  
 gheh1i  
 dheh1(i)  
 seh<sub>2</sub>(i) 1.  
 seh<sub>2</sub>(i) 2.  
 deh<sub>2</sub>u  
 geh<sub>2</sub>u  
  
 4 CONS.  
 1. CCECC  
 (s)kerb?  
 gleibh  
 ?kneibh  
 ?skeubh  
 kueit  
 skeHt  
 (s)kert  
 ?bhleid  
 h<sub>3</sub>neid  
 skheid  
 ?sueid 2.  
 (s)teud 1.  
 h<sub>2</sub>merd

skerd  
 bhrend  
 ?ghreidh  
 ?Hieudh  
 h<sub>1</sub>leudh  
 ghleudh  
 bhleuk  
 h<sub>3</sub>reuk  
 sleuk  
 ?smeuk  
 pleh<sub>2</sub>g  
 spheig  
 (s)leug  
 (s)teug  
 h<sub>2</sub>uerg  
 h<sub>2</sub>merg  
 h<sub>3</sub>meigh  
 (s)tergh  
 ?uleik<sup>w</sup>  
 ?skebhH  
 bhreiH  
 ?gleiH  
 kreiH  
 h<sub>2</sub>leiH  
 h<sub>3</sub>reiH  
 ?kreiH  
 preiH  
 ?sueiH  
 ?uReiH  
 ?dreuH  
 ?treuH  
 spherH  
 (s)pelH  
 ?h<sub>2</sub>uerh<sub>1</sub>  
 skelh<sub>1</sub> 1.  
 skelh<sub>1</sub> 2.  
 ghrebh<sub>2</sub>  
 kreth<sub>2</sub>  
 (s)kedh<sub>2</sub>  
 (s)g<sup>w</sup>esh<sub>2</sub>  
 kwreih<sub>2</sub>  
 skeuh<sub>2</sub>  
 kremh<sub>2</sub>  
 suenh<sub>2</sub>  
 sterh<sub>3</sub>  
 (s)keH(i)

kreh <sub>1</sub> (i)	?menth <sub>2</sub>	stembhH
2. CeCCC	?meikh <sub>2</sub>	2. CCCeCC
k <sup>w</sup> erpH	h <sub>1</sub> eish <sub>2</sub>	(s)kueh <sub>1</sub> t
ieugH	meush <sub>2</sub>	h <sub>3</sub> sleidh
?peh <sub>3</sub> lH	5 CONS.	streig 1.
terkH	1. CCECCC	streig 2.
?keubh <sub>2</sub>	grenth <sub>2</sub>	
meith <sub>2</sub>	bhleudh <sub>2</sub>	

One observes the following facts.

When we find three consecutive consonants at the end of a root, the last is a laryngeal. When they are found at the beginning, the first is *s*- or *Hs*-.

The type CeCC (112) is much more frequent than CCEC (25).

When we look at the last consonant we find the following distribution (P = labial, T = dental, K = velar):

CCEC		CeCC		53	CCECC		32
-P/T/K	8	-P	6		-P	4	
-s	4	-T	15	}	-T	15	}
-H	10	-K	32		-K	13	
-i,u	3	-s	5		-H	26	
total	25	-H	54		total	58	
		total	112				

We see that the number of roots ending in stop is in every category almost as large as the number of roots ending in a laryngeal (8 - 10; 53 - 54; 32 - 26).

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