Time to Gather Stones Together: Greek λάας and Its Indo-European Background*

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The origin of Greek λάας ‘stone’ and its unique inflectional paradigm is one of the most notorious problems in Greek nominal morphology. Much ink has been spilled on this topic, but even though many insightful suggestions have already been made both about its inner-Greek connections and its possible cognates in other Indo-European languages, we still have no plausible scenario that would shed light on the morphological peculiarities of λάας and explain how a vast host of different forms claimed to be related to it actually belong together. In this paper I will first propose a new morphological analysis of λάας (§1); then I will discuss related words in Greek (§2) and other Indo-European languages (§3); and finally I will offer a novel root etymology (§4).

1. Before we can address the morphological issues, the phonology of the word should be discussed. The vowel /a/ in the first syllable of λάας is long (and the fact that this long /ā/ has not been subject to the Attic-Ionic sound change *ā > *ē > *ǫ seems to indicate the Aeolic provenance of the word in Homer). This /ā/ is usually found in the arsis where it is not resolvable into two shorts and is therefore likely to be a direct continuation of a Proto-Greek *ā.

Despite earlier assumptions,1 the hiatus in λάας cannot have arisen from the loss of digamma, as indicated by Cypriot gen. sg. -la-o (similarly Cretan λάο) and as now proved by Mycenaean ra-e-ja ‘(made) of stone’ (Heubeck 1961). Rather, as correctly seen by Heubeck, Beekes (1985:15) and Rasmussen (1990–1991:90), the likeliest Proto-Greek re-construction for λάας is *lāhas (with *-h- < *-s-).2

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1 Preliminary versions of this paper were presented at the Harvard Indo-European Workshop, the 21st Annual UCLA Indo-European Conference and the Institute for Linguistic Studies (St. Petersburg). I would like to thank the audience at all three venues, in particular, Nikolai Kazansky, Petr Kocharov, Craig Melchert, and Andrey Shatskov, as well as Jay Jasanoﬀ, Martin Peters, Jeremy Rau, and Brent Vine, who commented on the written version. The usual disclaimer applies.

2 The lack of vowel contraction in the outcome of Proto-Greek *lāhas in Homer is essentially unproblematic; cf. likewise disyllabic *deh₁-sos > *dēhs > θεος vs. Θεό(κιοιδίνς).

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1 Brugmann 1900:100–4; Saussure 1909.

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The morphology of λάας (m., later also f.) places the word in a class of its own within Greek: gen. sg. λάας, dat. sg. λάι (Π 739, verse-final), acc. sg. λάαν (9× in Homer), du. λάς, gen. pl. λάων, dat. pl. λάεσ(ε). It has often been assumed that the masculine gender of λάας is not original, but rather that the word shifted from the neuter under the influence of other words meaning ‘stone’, such as ὁ λίθος and ὁ πέτρος; under this assumption our word was originally a neuter as-stem *lāhas, gen. sg. *lāhahos of the type γέρας, γέρας ‘prize’. The theory that masculine λάας, acc. λάαν is a secondary development has been adopted by Hamp (1967b:17) and Rasmussen (1990–1991:90), who have further argued that *lāhas, gen. sg. *lāhahos is an inner-Greek replacement of inherited heteroclitic *lāhar/-n- (< *leh2r in Rasmussen’s reconstruction). But even though *lāhas may continue a neuter as-stem, this solution is unlikely.

First of all, in our case there is nothing in Greek that could support the reconstruction *lāhar: there is not a single trace of the alleged oblique stem *lāhar- or of derivatives like *lāhαρος. Both Hamp and Rasmussen explicitly refer to E. Benveniste’s well-known claim that the Greek neuter stems in -ας are in fact remodeled heteroclitic *r/n-stems (Benveniste 1935:33). However, this claim has been shown to be generally without foundation. Benveniste’s theory was in large part based on the idea that any ro-derivative should ultimately be based on an r-stem, hence his reconstructions *σέβαρ (for σέβας ‘awe’, because of σοβαρός), *δέμαρ (for δέμας ‘body’, because of Gmc. *timra-) or *ψέφαρ (for ψέφας ‘darkness’, because of ψεφαρός), etc. But since the appearance of Benveniste’s influential book our knowledge of Indo-European nominal morphology in general and of the history of Greek as-stems has increased dramatically. First, we now know that *-ro- existed as an independent suffix, derivationally unrelated to *r/n-stems. Second, it has become clear that Greek as-stems have multiple origins. In fact, there are only two members of this small class that are at all likely to have an *r/n-stem in their derivational prehistory, namely, τέρας ‘marvel’ and πάρας/πέρας ‘limit’, which may continue *k’er-r and *per-γ γ (note that both of these words have an -r- in the root). Early attestation

3 In post-Homeric times this anomalous declension was gradually eliminated.

4 Buck 1955:93; Chantreina 1958:211.

5 Mostly associated with Caland systems, e.g., *krūh₂- ‘gore’ (Young Avestan xra-) → *kruh₂-rō- ‘gory’ (Vedic krāra-). See Nussbaum 1976; 1998:528n25 and now Rau 2009:65–186. For other types of *ro-formations see Vine 2002.

6 Τέρας is likely related to πάλεων ‘monster’, which can be traced back to *k’erōr (with liquid dissimilation); amphikinetic k’er-ar can then be explained as an internal derivative of *k’er-r/in-, which itself will give Proto-Greek *k’er-ar > *k’er-as > τέρας. As far as πάρας is
of -\textit{t}- in the oblique stem of these two words (\textit{πείρατ-, τέρατ-}, PN Τερεσίης) sets them apart from the rest of the neuter stems in -\textit{as}- as well as from λάας\. Other neuter \textit{as}-stems in Greek can either be analyzed as primary \textit{s}-stems derived directly from a root in final \textit{*h_2} or as secondary \textit{s}-stem derivatives from \textit{*h_2}-stems. There is thus no evidence for a general and regular development of PIE heteroclitic stems into Greek \textit{as}-stems.

The hypothesis that λάας is a reflex of *lāhar < PIE *lēh₂sr is thus not backed up by any actual evidence: in fact, it rests solely on the presumed equation of this word with Armenian \textit{leirn} ‘stone’ and Old Irish \textit{leir} ‘id.’, to be discussed below—but, as we will see, these forms do not have to be explained as outcomes of *lēh₂sr-\textit{n}- either.

In view of the problems involved in the derivation of λάας from a PIE heteroclitic stem, an alternative solution is desirable. In my view λάας directly continues an animate stem *le\textit{h₂}e\textit{s}-h₂-s, acc. *le\textit{h₂}e\textit{s}-h₂-m, which is best understood as a “singulative” formation derived from a stem with a collective suffix \textit{*h₂} by adding the endings for animate nouns, \textit{*s} in nom. and \textit{*m} in acc. The derivation of “singulatives” of this type was described by Leukart (1980:238–47; 1994). Leukart’s best known example is *ne\textit{yān(i)a} ‘young man’ (Attic ναῦτις, Ionic νεῦτις), derived from a collective noun *ne\textit{yān(i)a} ‘group of young people’:

\begin{itemize}
  \item \textit{*neyo} ‘young’
  \item \→ \textit{*neye\textit{h₂}} ‘being young, youth’
  \item \→ \textit{*neye\textit{h₂-h₁(e/o)n}} ‘having youth’ (> Hsch. νεύων νεύς?)
  \item \→ \textit{*neye\textit{h₂-h₁n-eh₂}} ‘group of young people’
  \item \→ \textit{*neye\textit{h₂-h₁n-eh₂-s}} ‘member of a *neye\textit{h₂-h₁n-eh₂}’
\end{itemize}

Another illustrative example is Greek ναῦτης ‘sailor’:

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7 See Nikolaev (to appear).
8 As Leukart points out, unattested \textit{*ṿōviiū} (→ \textit{ṿōviiāς}) must be a replacement of \textit{*ṿaṿā} (cf. fem. ṿōviiā/ṿṿṿṿṿṿā, not \textit{*ṿṿṿṿṿṿā}.)
9 The analysis here differs from the one originally proposed by Leukart only insofar as he glosses \textit{*neye\textit{h₂}} as ‘Gesamtheit der jungen Leute’ and operates with an individualizing \textit{*n}-suffix, while I use Hoffmann’s possessive suffix \textit{*h₁(e/o)n}- instead.
*noleh₂u- ‘ship’
  → *neh₂u-(h₁)-tō- ‘having a ship’ (barbātus type)
  → *néh₂u-(h₁)-to- ‘the one having a ship’
  → *néh₂u-(h₁)-teh₂- (coll.) ‘ship’s crew’
  → *néh₂u-(h₁)-teh₂-s ‘a member of the crew’

For *h₂-derivatives from athematic stems we may compare Janda’s attractive derivation of Greek δροῦς, δρόσος f. ‘tree, oak’ (Janda 1997:141–5). The base word in this case is clearly PIE *dol eru- ‘tree’; the stem *druh₂- ‘wood’ can be reconstructed based on Younger Avestan drū-,11 and the following derivational chain can be posited:

*dol eru- ‘tree’
  → *dru-h₂- ‘wood’
  → *druh₂-s, *druh₂-m ‘a single tree; a type of tree’

Greek λᾶς, λᾶν ‘single stone’ can likewise be explained as a singulative, derived from a stem in *-h₂- (Proto-Greek *lāhāi) with the meaning ‘mass of stones’.12

The next step is to offer a derivational account of *lāha ‘stones, mass of stones’. Such a form with a collective meaning is very likely to be a “neuter plural” with suffixal *-h₂ made from a stem whose Proto-Greek shape was *lāh-. What may in fact lie behind this *lāh- is a neuter s-stem *le h₂-elas- ‘stone’ with an early vowel contraction after the loss of the laryngeal (compare Old Indic bhās- ‘light’ < *b₂eh₂-elas-, Avestan dāh- ‘gift’ < *deh₂-elas-).13 As a collective neuter plural of this stem we would expect a form *leh₂-es-h₂ of the same structure as Greek *hōres or Latin genera14; this *leh₂-es-h₂ ‘mass of stones’ is the

12 This solution only superficially resembles the reconstruction proposed for λᾶς by Pedersen (1926:44–7), who, building on Saussure 1909 (= 1922:587), regarded λᾶς as a reflex of an animate stem *λαφ-ς, *λαφ-(ς)-ος, which would effectively be an instance of a special declensional type unparalleled among the *h₂-stems (note the sigmatic nominative and the absence of any ablaut in the paradigm).
13 Alternatively, Proto-Greek *lāh- could go back to a neuter root noun *le h₂- ‘stone’; however, as we will see below (§2), other evidence makes this reconstruction unattractive.
14 *gēnēs- → *gēnesh₂ (Homeric γένος, γένεα) is not the oldest way of making neuter plurals from s-stems: originally, as has long been seen, these were derived internally (*gēnēs- → *gēnūs) and traces of this model can still be found in Indo-Iranian, where amphikinetic s-stems were reinforced by adding *-h₂ (e.g. *yarcās-i ‘shine’ > Old Indic vārcāmsi = Old Avestan varvāhī).
source of Proto-Greek *lāha, which serves as the basis for an externally derived "singulative" *lāha-s > lāhas.  

The story of ἵαζ ends here. However, two problems are still unresolved: first, the analysis just proposed presupposes that ἵαζ is ultimately derived from a root *leh₂-, for which no further evidence is known. Secondly, if there indeed existed an s-stem *leh₂-es-os- 'stone', it is unclear why a new singular/singulative with the same meaning had to be derived from the neuter plural *leh₂-es-h₂. To answer the first of these questions and find further evidence for the postulated root we will have to take a fresh look at other words for 'stone' in Greek and other Indo-European languages. The answer to the second question will emerge along the way.

2. First we will address the remaining Greek evidence. The first word to be discussed here is Attic-Ionic λιαία / λάβα / λαίαι 'pebble', 'small stones used as weights in an upright loom'. The root vocalisms of λιαία and λαία(*) can be reconciled under the assumption that the ἐ-timbre of λιαία is due to a vowel dissimilation in original *laija- (compare the similar dissimilation in Messenian αὐλεία 'curtain' vs. αὐλαία, Heraclean προτερεία 'former' vs. προτερεία). The mobile accent (λιαία/λαίαι) makes the reconstruction of a *i- stem very plausible (compare the accent pattern in other devi-stems in Greek: καύστερα, καυστερῆς 'burning hot' or ἄγνια, ἄγναι 'street'); our word, therefore, is likely to be an *i-derivative of some kind. Since *laija- simply means '(small) stone', it is unlikely that it was originally a genitival or possessive derivative; *-ih₂- in this case is merely an extension without an apparent derivational meaning, compare φῦζα 'flight' vs. *φυγα- (found in adv. φυγα-δε). 

The next question is what exactly *laija- is an *ih₂-derivative of. It might appear attractive to trace *laija- back to the s-stem *lāh- (< *leh₂-es-os-), reconstructed above for ἵαζ, but this is impossible: Proto-Greek *laija- would give

15 The inflection of ἵαζ should in this case be regarded as "heteroclitic": the oblique case-forms (gen. sg. λαίας, dat. sg. λᾷ) historically belong most likely to the declensional paradigm of a different stem. One likely source of these forms is the underlying s-stem: gen. sg. *leh₂-es-os, dat. sg. *leh₂-es-i > *laihos, *laihi. For a similar "heteroclitis" compare οὐδάς, οὐδός 'ground' (stem *oud-as-) vs. spondaic dat.sg. οὖδει (< *oud-ej, stem *oud-) or adj. μέγας, acc. μέγαν, but μεγάλ- in the oblique case forms. Alternatively, λαίας, λᾳ can be traced back directly to *leh₂-es-h₂-os, dat. sg. *leh₂-es-h₂-i.

16 For original -αι- note also the name of the blue rock thrush λαιός: the bird owes its name to its habit of perching openly on rocks or ruins.
for phonological reasons (*).

In my opinion, the only preform that would produce the required outcome is a reconstruction *lāja, with a metathesis *-u- > *-y- after a non-front vowel (compare *ayetos > aijetos; āetos Περγαμόν, Ionic αἰετός, Attic ἄετός ‘eagle’).

Despite their similar meanings and apparent root connection, Aeolic λάος ‘stone’ and Attic-Ionic *λαυς- *‘(small) stone’ are thus not immediately related: for phonological reasons (*λαυς- can only go back to a protoform with a *-u- in it. In fact, there is further evidence for a Proto-Greek *lāy- ‘stone’ from which *lājā- could have been derived.\(^{18}\)

First, there is the Attic adjective κραταύλεος ‘rocky, of hard stones’ (A. Ag. 666; E. El. 534). According to the laws of Attic phonology, (κραταῖλεος cannot go back to a proto-form *lāso- (that would be derivationally related to the s-stem *lāh- < *leholes-), since the latter would develop into Attic *-λος. The sequence λεο- can only come from *lēlāyo-: *leō- > *lēgo- < *légo- (< *lēgo- < *lāyo-).\(^{19}\)

\(^{17}\) Even if one were able to generate a Proto-Greek *lās- as a super-zero-grade, there is an inner-Greek phonological problem with this analysis. Since the function of *-ih2 in this case is unrelated to Motion, it is unlikely that speakers would have been able to detect a morpheme boundary in a putative *lās- > *lāh-; this being the case, *lāhjā would give Attic-Ionic *lāxα ( < *lēj(j)ā < *lājā), since in all non-Aeolic dialects the sequence *aloijV < *-alojV- without intervening morpheme boundary is reflected as *-aloiV with a subsequent loss of non-syllabic *i (see Kiparsky 1967:629; Peters 1980:142 and Peters 1984:99n* for a discussion of the dialectal outcomes of Proto-Greek *-oxio, *tellejelo- and *gelasjelo-). A borrowing from an Aeolic dialect (where *lahjā would indeed have given λαυς-) would be unlikely in the extreme, given the technical meaning of our word. For these reasons it does not appear possible to explain *(e)λαυς as a derivative of *leholes-.

\(^{18}\) The following discussion owes much to insights contained in Brugmann 1900:102–4 and Pedersen 1926:45–6.

\(^{19}\) Nevertheless, it should be pointed out that κραταύλεος as evidence in support of Proto-Greek *lēlāyo- is indecisive: there are two factors that complicate any such inference from this word. One is that κραταύλεος, even though it is only attested in Attic tragedy, might still be a poetic borrowing from Ionic (note that the first member of the compound κραταῖλεος clearly has a Homeric ring to it, cf. κρατιάκεος, -γαλος). If (-)λεος is Ionic, a development *lāho- > *lāo- > Λεόν- with quantitative metathesis, but without contraction, would likewise be entirely legitimate, in which case we would have to admit that (-)λεος does not guarantee a Proto-Greek *lēlāyo- as it could be related to Proto-Greek *lāh- ( > λάος) instead. The second complicating factor is that even if (-)λέος is not an Ionic borrowing, it may easily be a poetic creation, imitating the alternation between the forms of Homeric -λάος and Attic -λεος ‘host of men’ (< *lāyo- < *leholes-), both of which were exploited in Attic tragedy for metrical purposes (e.g., λεός [E. Andr. 1089] ~ λάος [E. Andr. 19], Μενέλαος ~ Μενέλαος).
A firmer foundation for nominal *lāy- is provided by Attic ἱἀόρα, Ionic ἱἀύρη ‘passage, alley’, Mycenaean ra-u-ra-ta, ra-wa-ra-ta: the proto-form of this word can be unproblematically reconstructed as Proto-Greek *layrā. However, its relation to the words for ‘stone’ is still not immediately apparent, for semantic reasons. The only thing we can say about the meaning and usage of this word with any certainty is that ἱἀύρη specifically refers to narrow passages;²⁰ only once, in a late text (Plu. Crass. 4), is this word applied to a cleft leading inside a cave. However, the theory that the original meaning of Proto-Greek *layrā was *‘cleft in a rock; tunnel in a mountain’ is supported by the very plausible etymology of this word suggested by Jokl (1934:46–8), who compared ἱἀύρη to Albanian (Geg) lerë f. ‘pebble bank, heap of stones’ (< *layrā, cf. err ‘darkness’ < *ausra, Lithuanian ausra)).²¹ The semantic development from ‘cleft in a rock’ to ‘narrow passage’ is quite possible, and Proto-Greek *layrā thus provides one more argument in favor of a Proto-Greek *lāy- ‘stone’.

Further supporting evidence for a Proto-Greek nominal stem ‘stone’ starting with *l and ending in *y is supplied by the Attic-Ionic verb (κατα)λεύω ‘to stone’ (Hdt.+). Since the meaning of the verb strongly suggests denominative origin and its shape is perfectly compatible with this assumption,²² we may surmise that it was derived from a nominal stem in -u-. As Brugmann (1900:102–3) already noticed, the allomorph λεύ- does not need to be original in the present stem, but could rather have been transferred from the stem λεύσ- in the aorist and future.²³ This λεύσ- can go back to Common Greek *ley-s- or *lēy-s- (the latter with Osthoff’s Law).

The facts can now be summarized as follows: while Greek λάς in all likelihood is based on an s-stem *lās- from PIE *leh2-es- (ultimately from a root *leh2-), Greek also appears to have words meaning ‘stone’ derived from *lēy-/ *lāy-/ *lay- (with ablaut typical for “long-diphthong” roots). The formal and

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²⁰ From the Melanthius episode in the Odyssey (ξ 126–38) we learn that only one person could attack within a ἱἀρη at a time (μία δ’ οὖθι γίγνετ’ ἐφορμή), and a scholiast confirms this, glossing ἱἀρη as στενή ὀδός. In Herodotus (1.180) the word refers to small alleys leading off of main streets, and similarly, in Pindar (P. 8.86), the λαύραι are back streets, where defeated contestants hide from their enemies.


²² Compare pres. *ταύο-, aor. ταύσ- ‘to be more, to be superfluous’ in Hsch. ταύσας- πλεονάσας derived from ταύ- (Hsch. ταύς μέγας, πολύς).

²³ Compare the denominative βασιλέως type, where the present stem in *ēy-je/o- did not develop into *ēye/o- in any dialect of the second or first millennium (except Elean), as might be expected, but was instead analogically refashioned after the sigmatic aorist.
semantic similarity between *leh₂- and *lëg- is too striking to be fortuitous. In my opinion Proto-Greek *lëg-/*lůy- can be further analyzed as an acrostatic u-stem *lēh₂u-: the preconsonantal root-allomorph *leh₂u- gives Proto-Greek *lay-, found in λάυρη and λαῦά (cf. *neh₂u-C in ναῦς ‘from aboard ship’, ναύτης ‘sailor’), and a reflex of prevocalic *leh₂y- is found in Proto-Greek *løy-o- > Attic-Ionic *løy-o- > -λευς (cf. *neh₂y-V in the Ionic gen. sg. νηξ ‘ship’), while lengthened-grade *lēh₂-u- > *lē-xu- (> λεῦς). The u-stem *lēh₂-u- can now finally be compared to the root *leh₂- reconstructed above for λαῦς.

3. It is time for us to leave Greek and place the reconstruction *leh₂u- in a broader Indo-European context.

The first step in this direction was already made above: as we have just seen, Greek λαῦρη ‘narrow passage’ and Albanian lërë ‘pebble bank’ make a PIE *lēh₂uro- nearly indispensable. A tertium comparisonis for this proto-form is perhaps found in Anatolian. The word in question is Milyan lakre- (nom.-acc. pl. lakra, dat. sg. lakri), variously translated as ‘Steinplatte’ (Ševoroškin 1977:135), ‘Steininschrift’ (Meriggi 1980:367) or ‘Steinmal’ (Eichner 1993:145). If indeed this word denoted a stone tablet, a stele, or any kind of ritual object made of stone, a derivation from a possessive denominative ro-derivative *leh₂uro- ‘stony, made of stone’ would certainly be appealing. But would it work phonologically? In fact, Hajnal (1995:26) made a persuasive case for /γ/ as the phonological value of Lycian (k) and suggested Proto-Anatolian *-hy- as the origin of this secondary labiovelar. If Hajnal’s theory is correct, Milyan lakre- may go back to *løy-ro- < *løy-u-ro- < *leh₂uro-. This analysis of the Milyan word depends crucially on a meaning like ‘stone plate’ that is not established beyond doubt and also assumes a controversial phonological development. 26

24 The lengthened grade might seem suspect, but there is hardly any other way to explain the verb (-)λαῦς: a reconstruction *leu-s- with short vowel would make any connection with other words for ‘stone’ impossible (which would be undesirable). In addition, Common Greek *lëg- beside *løy- seems to be required by the corrupt gloss in Hesychius ἱλαῦληξ ἱλδάλεστος (ms. λαῦδη), which, as Brugmann (1900:100) noticed, must be a non-Ionic-Attic reflex of *løy-o- (> leo- with antevoctal shortening): the change of antevoctal e to i is alien to Ionic or Attic. Nevertheless, we are dealing with an emended form: note the claim made by Pedersen (1926:45) that the original lemma may rather have been ἱλαῦληξ.


26 See Kloekhorst 2008:126 for a different phonological interpretation of Milyan κ (I owe this reference to C. Melchert); note that Kloekhorst’s identification of the sound as /ç/ is based solely on systemic grounds.
less, the possibility remains that Milyan lakre- provides a complete match to Greek λαύρη and Albanian lerë.27

We are finally in a position to tackle two notorious forms: Armenian leăr'n and Old Irish lie. Let us briefly review the pertinent facts.

The Armenian n-stem leăr'n (gen. sg. lerin) 'mountain' has often been derived from PIE *klee'tr ‘slope’ (PIE *kleī- ‘incline’),28 but Hamp (1967a, b) rejected this traditional albeit often criticized derivation in favor of a very appealing comparison to various Greek forms discussed above (λᾶας, λάων, λαύρη). Hamp was not sure whether the underlying root contained *s or *y, but he noticed correctly that under either analysis leăr'n must go back to a proto-form with a long vowel in the root.29

Old Irish lie (disyllabic, later liā, lia) 'stone' goes back to a stem with a final etymological *-nk-, as can be inferred from the oblique forms: dat. sg. liic, gen. liac, nom. pl. lieic. Like Armenian leăr’n, the Old Irish word adds an interesting twist to our discussion, since the vowel in the initial syllable of lie is unlikely to go back to *ę raised in hiatus before *-enC- > *-ę- of the following syllable: a proto-form with a short vowel in the root would have given *le.ąg/.30 This fact

27 There is one potential argument that lends further support to this analysis, namely, the possibility of an etymological relationship between Milyan lakre- and Lydian laqrisa 'covered passage, dromos', compared to the Milyan word by Ševoroškin (1977:135) and Eichner (1993:145). Since laqrisa clearly designates an element of a tomb and is therefore something made of stone, this word may be based on our *lehu2aro- 'of stone'. Unfortunately, the phonology in this case is unverifiable. The normal sources of Lydian q are the inherited labiovelars *k and *g and the sequences *ku and *k( (Gérard 2005:57), but there are no examples that could prove or disprove that Lydian q could also come from a secondary labiovelar (intervocalic Proto-Anatolian *-Hu-).

There might even be a third Anatolian comparandum, namely, Hittite lahhrura- 'offering table' or 'stand', which was compared to Milyan lakre- by Melchert apud Hajnal 1995:26. The leap of faith is to assume that the original meaning of lahhrura- (< *lehu2ar-ro-) was 'stone table' and that by normal semantic extension the word came to designate any table, including wooden ones. This is of course suggested as a mere possibility.

28 Cf. Greek κλήτις ‘hill’.

29 In view of the paucity of reliable examples no fixed rules can be written; nevertheless, it has been plausibly argued that a Proto-Armenian sequence *-i.a- (with *i from *ę or *i) gives -ea- (compare aor. -eac’ < *-iha < *-iça), while a sequence *-ę.a- contracts to -a- (compare garown < *gesaro- < *ges-r- ‘spring’ or arion < *esar- < *heshe2r- ‘blood’).

30 Pace Lindeman (1997:85) the first vowel of lie is unlikely to be explained as a product of vowel raising in hiatus: while there are several examples of raising of *ę to i before a (from *a or unstressed *o), e.g., gen. sg. niad 'sister's son' < *nepotos (see Schrijver 1995:387), there is no evidence to support the claim that *a in *le.ąg- < *le.ank- (where *a < *a before a
was also acknowledged by Hamp (1967b:87), who reconstructed *lēXnk- (where \( X = *s \) or *\( u \)).

Armenian le\( a \)rn and Old Irish li\( e \) thus show a reflex of initial *lē- as opposed to *lā- (< *leh₂-) in Greek \( \lambda άος \) and *lāu- (< *leh₂u-) in the other forms we have examined above. Independently from one another, Eichner (apud Mayrhofer 1986:133) and Rasmussen (1990–1991:90) used this Armeno-Helleno-Celtic comparison as an example of Eichner’s Law: they resolved the conundrum posed by the *lē- ~ *lā- ablaut by reconstructing a root *lēh₂s-/lēh₂s-. Hamp’s proto-form *lēsaren- was revised by Rasmussen as *lēh₂s\( m \)- (with a blend of two heteroclitic stem formants, as in Latin \( \text{itineris} \)), and for Old Irish li\( e \) he reconstructed *lēh₂st\( n \)-, while Greek \( \lambda \acute{a}ος \) was supposed to go back to *le\( h₂s\)-.

Indeed, the reconstruction of a lengthened-grade vowel in the root (supported by Greek \( \lambda \acute{e}ν\omega \), as discussed above) seems to be the only phonologically plausible solution in our case. The root shape *le\( h₂s \)- is unproblematic as well: for this root type we may compare *peh₂s- ‘to protect’.

But how compelling really is the reconstruction *lēh₂s\( f \)-r-n-? One of the greatest attractions of this analysis has been its ability to derive Greek \( \lambda \acute{a}ος \) from effectively the same proto-form as Armenian le\( a \)rn and Old Irish li\( e \) (minus the lengthened grade); however, as we saw above (§1), Greek \( \lambda \acute{a}ος \) is unlikely to continue anything like a heteroclitic stem *lēh₂s\( f \)-n-. Even more disturbing is the fact that if we reconstruct a root *le\( h₂s \)-, following Eichner and Rasmussen, there is no way to integrate into this analysis the extended allomorph *le\( h₂u \)- pos- ited above.\(^{31}\)

To sum up, the Eichner-Rasmussen analysis is quite attractive and cannot be ruled out with certainty, but it nevertheless faces serious difficulties. Therefore I would like to suggest a slightly different reconstruction for Armenian le\( a \)rn and Old Irish li\( e \). Since intervocalic *-\( u \)- was lost in the history of Irish,\(^{32}\) there is no

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\(^{31}\) The second problem is in itself perhaps not insuperable and an attempt could be made to reconcile the Eichner-Rasmussen solution with the s-stem analysis of \( \lambda \acute{a}ος \) proposed above: the stem *lēh₂s\( f \)-n- would then be an instance of a stem with a complex suffix *s\( r \)/\( s\( e \)-n- back-formed to an s-stem, presumably based on a locative *le\( h₂-s\)-en. The endocentric meaning ‘stone’ would be compatible with the back-formation approach. However, an acrostatic *lēh₂s\( f \)-n- would be unique: in a *s\( r \)/\( s\( e \)-n-extension of a regularly inflected s-stem one would not have expected *\( e \)-grade in the root (for which the derivational base provides no evidence).

\(^{32}\) Cf. *h₂\( j\)buat\( g \)kos > *jo\( y\)\( t \)\( k \)os > Primitive Irish *\( o \)\( y \)eg\( g \)ah > Early Old Irish \( o \)\( e \)c, Old Irish \( o \)\( e \)c ‘young’.
problem with reconstructing *lēh₂yɡk-* > *lēyɡk-* as a proto-form for Old Irish lie. Likewise, a protoform *lēh₂yɡrno-* > *lēyɡrno-* is possible for Armenian leARN: compare *sneh₁yrti-* > *snēyrti-* > neard ‘tendon’. Under the reconstruction *lēh₂yɡr₁n-*—, both the Armenian and Celtic words can be compared with the *lēh₂u-* established above.35 Greek λάος shares the same root, but has a different derivational prehistory.

What are we to make of all this? In keeping with the promise made in our title, it is now possible to gather all the stones together: all the ‘stone’ words can now be subsumed under one of two derivatives from the root *leh₂-, namely, the s-stem *leh₂-es- and the u-stem *leh₂-u-.

4. The last unanswered question concerns the root *leh₂- which, it was argued above, underlies the words for ‘stone’ in at least five daughter languages: no evidence for such a root is on the record. But in fact, suitable evidence has long been available; we just need to know where to look.

Importantly, in different Indo-European languages we find a recurring pattern whereby words for ‘stone’ or ‘rock’ are based on verbs of ‘cutting’ and ‘splitting’:

- OCS skala, Gothic hallus ‘rock’: Hittite iškalla-1, Lithuanian skeliū, Greek σκόλλω ‘I split’;
- Latin saxum ‘rock, boulder’: OCS sēkō ‘chop’, Latin secāre, OHG sahs ‘knife’ and sega ‘saw’;
- Latin rūpēs ‘rock’: rumpere ‘break’.

33 The presence of other reflexes of *lēh₂u- in Celtic may tip the scale in favor of the derivation of Old Irish lie from *lēh₂yɡk- (even though it cannot of course be excluded that Celtic, just like Greek, inherited both *leh₂-es- and *lēh₂-u-, *lēh₂yɡr₁n-): as Schmitt (1997:825) recently pointed out, the Gaulish substratum is a likely source of the Romance words for ‘lava’ (Italian lava, French dial. lave). Schmitt’s reconstruction of Gaulish *laug- is not a mere inference from the Romance data, but is also supported by Gallo-Latin lausiae ‘pebbles in a stone-quarry’.

34 The root is that of Greek ντώ, Tocharian B ʂiŋ, Avestan snāwuar (see Eichner 1978:154).

35 It should be noted that we find quite a few other *uṛn-stems attested beside u-stems, e.g., *sneh₁yṛn- in Avestan snāwuar, Vedic snāvan- ‘sinew’ vs. *sneh₁ur- found in Avestan snāwuiia- ‘made of sinew’ (Nussbaum 1998:535; for other examples see Nikolaev 2009:479–81). It is tempting to see in such *uṛn-stems back-formations to loc. sg. forms in *-en of the respective bare u-stems. Accordingly a *uṛn-stem *lēh₂yṛn- found beside a u-stem *lēh₂u- would not be an odd formation at all; moreover, since we have independent evidence for the reconstruction of *lēh₂u- with ĕ-grade in the root (namely, Proto-Greek *lēu- in aor. λευσ- and Hsch.  timeval g), *lēh₂yṛn- would have an immediate morphological advantage over a putative *lēh₂-ṛn-, presumably back-formed to a regularly inflected s-stem *leh₂-es-.
It is thus entirely possible that the PIE *leh₂- we are looking for is not a root meaning ‘stone’, but rather a root meaning ‘to cut’ or ‘to split’. In fact, the morphology of the words for ‘stone’ we have reconstructed thus far is perfectly compatible with this approach and even speaks in its favor: it is surely no accident that the s-stem *leh₂es- and the u-stem *leh₂u- correspond to two types of verbal nouns that can be securely reconstructed for the proto-language. S-stems represent the productive and well-known late PIE way of making verbal abstracts, while the residual type of u-stem verbal substantives can be exemplified by Vedic jāsu- ‘exhilaration’, Greek τερος ‘ruination’, or Old Irish riuth ‘running’. Since action nouns can easily be concretized as result nouns, the verbal nouns *leh₂es-/*leh₂u- ‘cutting, splitting’ could come to mean ‘cut, split stuff’, whence ‘rock, stone’.

All that is missing now is actual evidence for a root *leh₂- ‘to cut’. There are two possible pieces of evidence for such a root.

The first is the Tocharian AB root lātk-<sup>4</sup> ‘to cut off’, which has no etymology. It is now nearly universally agreed that Tocharian verbal roots in -tk- originate in *skel-o-presents made to roots ending in a dental stop, where the *-s- in a resulting Proto-Tocharian cluster *-tsk- was lost by a sound law. In line with this theory Tocharian lātk-<sup>4</sup> can be mechanically traced back to *lh₂-T-, which can then be interpreted as our root *leh₂- with a dental extension.<sup>42</sup>

The second, less straightforward piece of evidence in favor of the reconstruction of a root *leh₂- with a meaning ‘to cut’ or ‘to cleave’ is the quasi-root *leyH- found in Old Indic ḍlav- ‘to cut, to split’, where pres. lunāti (Br.+; later also lunóti) is the best known and best attested part of the Averb; the verbal adjective (-)luna- shows the root in the zero-grade, while the full-grade form of the root
can be seen in the noun *lavi- ‘sickle’.43 As has long been noticed, this Old Indic root has a correspondence in Germanic *ley- (e.g., Old Norse le ‘scythe’ < *leyðn).

In my opinion, the apparent reflex of *leyH- in Indo-Aryan and Germanic is best interpreted as a new full grade, secondarily back-formed to the zero-grade *luH- (viz. *luh2-).44 For this process we may compare *kogh2- in OCS kovati ‘to forge’ and *keyh2- in Greek κάσ(σ)αυ ‘to split’; these “state I” forms are based on *kulh2-, the zero-grade of the root *keh2u- found in Tocharian B kau-, A ko- ‘to destroy, kill’ and Latin cauda ‘tail’, caudex ‘tree-trunk’.45

It is worth mentioning that zero-grade *luh2- is potentially attested outside Old Indic: an expected substantivization of adj. *luh2-tó- ‘cut’46 would be an i-stem *luh2-ti- ‘what is cut, opening’, a direct reflex of which we find in Hittite (katta)luzzi- ‘threshold’ (*‘what is beside the opening’).47 A further derivative of *luh2-ti- is *luh2-tōi- > Hittite luttāi- ‘window’.48 Both (-)luzzi- and luttāi- may equally contain unstressed reflexes of monophthongized *ou (or *eu), but in any event, these words are likely to be i-stem derivatives from a stem *luh2-to-.49

As in the case of *kulh2-, the zero-grade *luh2- might be a result of a laryngeal metathesis that converted original *lh2uC- to *luh2C-; it is thus not unreasonable

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43 lunātī has already been compared to Greek *lāq-, namely by Peters (1989:223), whose formulation largely anticipates the conclusions of this section of the present paper (“m.E. zu ai. lunātī gehöriges idg. *lēh2u-/*leh2u- ‘Stein’”).

44 The connection of lunātī, etc. to the family of *leyH- ‘set free, release’ (LIV 417; Toch. B lyewetār, Greek kōs, Latin lōō) was never very appealing semantically (and is rejected, for example, in EWAia).

45 See Jasanoff 1978:81; on Greek κόσ(σ)αυ from *keyh2- (not *kes- ‘to rub’) see Peters 1989:260. (I am grateful to Brent Vine for reminding me of the relevance of the root *keh2u- in this connection.)

46 A reflex of *luh2-to- is possibly found in the late Vedic acc. sg. fem. lūām (TS VII 5.9.1), which, however, may well be secondary.

47 For this semantic analysis see Kloekhorst (2008b:464–5), who points out that the word also refers to the lintel. The word thus probably referred at least originally to the frame surrounding a door or window.


49 The derivation *luh2-to- ‘cut’ → *l(o)e(y)h2-ti- ‘that which is cut’ (whence ‘cut; opening’) follows the model that in PIE was used to derive (i) substantivizations of adjectives (masculine) or (ii) adjective abstracts (feminine), see Nussbaum apud Vine 2006b:151.
to speculate that the real full-grade in this case is *leh₂u-. The next question is how this *leh₂u- should be interpreted: it may seem tempting to regard this stem as a u-present, but a more promising alternative in my opinion is to assume that the *u- in this form is the suffix of the nominal u-stem verbal abstract ‘cutting’, which is in fact lurking behind our *leh₂u- ‘stone’.

The key feature of the scenario just proposed is the penetration of the originally nominal suffix *u- into the verbal root. This is not unheard of: as a possible parallel one may quote the case of the root *terh₂- ‘to rub’ (τερῆ, τεράμον), where, apparently based on a nominal stem *terh₂-u- (Greek τερης), a new root-allomorph *truh₂- was created (τερηματικά, τρέξα ‘wear out’) to which in turn a new full-grade *truh₂-u- was back-formed, reflected in Slavic *truh₂-

5. We can now take stock. All of the words for ‘stone’ discussed in this paper can be traced back to a verbal root *leh₂- ‘to cut, to split, to cleave’ attested in Tocharian lātk, and, somewhat indirectly, in Old Indic lūnāti. The majority of the words for ‘stone’ are based on a u-stem verbal substantive *lĕh₂-u- ‘cutting’ that also had a concretized meaning ‘that which has been cut’. Verbal abstracts are a category that is characteristically prone to morphological renewal and u-stems already became residual in this function within the proto-language: at some

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50 Old Indic lūnāti, despite its primary appearance, does not militate against the solution just proposed: granted a possible preservation of *luh₂-to- ‘cut’ into Early Vedic, a nasal-infix factitative present stem could easily have been created based on the proportion pūdā- ‘clean(ed)’: pūdāti ‘make clean’ = lūdā- ‘cut’: X, where X is resolved as lūnāti *make cut’.

51 In fact, these two options need not be mutually exclusive: in my view, the forms sometimes labeled u-presents (of the type *geh₂-u- ‘to live’, *dênh₂-u- ‘to move out’, *ser-u- ‘to heed’, etc.) should be seen as denominate in origin and based on u-stem verbal abstracts of the type discussed above. A detailed discussion of this question cannot be accommodated here (for the reconstruction of u-stem *bĕrh₂-u- as the precursor of the verbal stem *bĕrh₂-u- ‘to boil, to flutter’ found in Germanic, Italic, Celtic, and Iranian, see in any event Nikolaev 2009:480n67).

52 See Nussbaum 1997:117, where the scenario for *terh₂-, *truh₂- and *truh₂-u- presented above is laid out, without, however, being fully endorsed by its author.

53 Overall, the system of derivatives from the root *leh₂- reconstructed above is reminiscent of the root *geh₂-(*geh₂-?) ‘to rejoice’ that seems to be the common denominator of two roots reconstructed in LIV 184, where we find *g(e)h₂-d- in Tocharian AB kātk- (< *katsk-) and Greek (Ionic) γῆθος ‘rejoice’, beside *geh₂-u- with u-extension in Greek γὰντα, γαῆρος ‘proud, exulting in’.
point the functions of *lēh₂u- ‘cutting; cut, split stuff’ were relegated to the productive s-stem *leh₂-es-, while *lēh₂u- itself became lexicalized in the meaning ‘rock, stone’ (cf. Latin saxum). *lēh₂u- and its derivatives *lēh₂yf/-n- and *leh₂u-ro- gave rise to such forms as Armenian leain and Old Irish lie, Greek ἄλατα ‘small stone’, ἄλεος ‘to stone’ and κρυται-λατος ‘rocky’, Greek λαός, Albanian lere and possibly even Hittite laḫḫura- and Milyan lakra.

History often repeats itself, and that is what must have happened with the verbal abstract *leh₂-es-: its late PIE collective *leh₂-es-h₂ similarly changed its lexical meaning from ‘split/cut substance’ to ‘mass of stones’ and as a result was no longer paradigmatically associated with *leh₂-es-. A new singular with the meaning ‘single stone’ was needed and this is the reason *leh₂-es-h₂-s > ἀλας was created.

References


54 Compare Mod. French vivre ‘to live’ vs. plural les vivres ‘food and drink’ (Wackernagel 1926–1928:270).

55 Compare German Trupp m. ‘herd’ (Medieval Latin truppus ‘id.’), the plural of which, Truppen, was used in military contexts and developed a meaning ‘troops’: as a result a new singular Truppe f. ‘one unit’ was back-formed.


