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The Greek word for 'lead'

1. The forms of the Greek word for 'lead', and its possible further connections, have not yet received a convincing explanation, in spite of the discovery of the Mycenaean form; see e.g. HULD, EIEC s.v. *lead* (whose reconstruction, **bölümo-*, is quite unacceptable). I think that the Mycenaean form gives the key to solve these questions.

2. The Mycenaean form is *moriwodo*, which must, as is generally accepted, be read */moliwdos/*.[1] The word was already identified in Documents (1956, 77, 79).

Though there is agreement on the fact that several forms of the classical language are due to assimilation or metathesis (see the etymological dictionaries)[2], it is not always sufficiently stressed that only two forms are old,

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[1] *moriwodo* for */moliwdos/* is unusual orthography. We expect that the *w* in this form, at the end of a syllable, would not have been written (on the principle see BEEKES 1972). Therefore several scholars at first rejected the identification (see AURA JORRO). I have no solution for this question. One may remember, however, that the second element of an *u*-diphthong is always written in Mycenaean, so we might have found **moriudo* (Mycenaean probably had no opposition between *u* and *w* in this position), and that the notations *u* and *w* (+ 'dead' vowel) interchange (cf. *diujo*, *diwijo*), though only in cases where the *w* could belong to the following syllable. Further, *w* before consonant is always written, but we only have the groups *wr* and *wj* where the *w* may (also) belong to the next syllable. There are a few exceptions to the rule, e.g. *araromotemena /ararmotmena/*, *araruwo(h)a /ararwoha/*. LEJEUNE (1961, 411 n. 17) also thinks that we must read */moliwodos/* and remarks that the number of syllables may vary in loanwords. These instances can be considered as syncope or anaptyxis (cf. FURNÉE 1972, 378–385). Still, I do not think that we must read *-wodos*.

[2] One is inclined to assume that βόλιμος is due to metathesis, and βόλιβος to assimilation within this form. However, Att. βόλυβδος suggests that the first step was assimilation of *m-* to the following *b*. But in that case we would have to assume that in βόλιβος *b – b* was again dissimilated to *b – m*, which would mean that the *m* of βόλιμος would have nothing to do with the original *m-*, which is not likely.

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the other ones being (much) younger (and often of limited distribution). These are μόλιβος and μόλυβδος, both found in Homer, the latter in the form μολύβδαινα 'piece of lead, used as the sink of a fishing-line'. Thus AURA JORRO s.v. *moriwodo* notes as the first form μόλιβδος. (This form has now been found on a lead plate in Olbia from about 500 BC; SEG 26 no. 845rev.) The later forms can be easily derived from these two forms, on which also most derivatives are based.

The distribution which these forms show, ι followed by β only, υ followed by βδ, makes one think that this is not accidental; the forms with -ιβδ- and -υβ- appear only much later. One would be inclined to look for an interpretation which explains this distribution. (SOLMSEN 1909, 59 pointed out that the ancient grammarians had already observed this distribution: εἰ μὲν ι ἐστίν, τὸ δ οὐκ ἔστιν..., ἐὰν δὲ τὸ υ, τὸ δ; Herodian II 551, 28.)

The many (later) variants of the word made scholars perhaps sceptic about the Mycenaean variant, which at first sight could not be easily fitted in. The unexpected form *moliwdos*, postulated by nobody who tried to explain the classical forms, did not seem to be helpful. LEJEUNE 1971, 171 calls it "une nouvelle variante". Now the difficult classical forms do probably presuppose an unusual form (as *moliwdos* is). Further, the Mycenaean form is centuries older than the others. Of course, it is not impossible that there were other variants in Mycenaean times, but we may first try to find an explanation starting from the assumption that the strange Mycenaean form is simply the origin of - both - classical forms. I think that this is unproblematic...

SOLMSEN already argued that the ι is the original vowel. His view now seems neatly confirmed by the Mycenaean form.

We must assume that there were two different adaptations. Greek has no *w* (in most dialects), nor does it have a diphthong *iu*. (The diphthong *ui*, which arose in the history of Greek, is only found before a vowel; but it is irrelevant here.) So the *w* had to be deleted or changed. It is phonetically not difficult to assume that *wd* became *b*. The development *dw* > *b* is well known. If the cluster is reduced to one consonant, this cannot be labial a n d dental; it became labial. And it became a voiced stop, like the *d*. (Kortlandt suggest that there may have been metathesis to *dw* first.) This gives μόλιβος. It should be stressed that the sequence *-wd-* is not only impossible in classical Greek, but it is also hardly possible that Greek inherited such forms from Proto-Indo-European: if this had *CiuC*, which is very rare, as a rule the later

languages show reflexes of *CiuC*. Thus, Greek had to adapt the unusual sequence. (One might have expected that the form gave *μολιδος, with simple loss of the *w*, but it apparently did not.)

In the other development, *wd* became *bd*, which is not difficult either: the first consonant became a stop. Before that, apparently, the original *w*, which belonged to the same syllable as the preceding vowel, coloured this vowel to *u*. (And perhaps the *u* helped in the development of the *w* into *b*.) It may have been important that the syllable was unstressed. This gives μόλυβδος.[3]

The colouring of the *i* to *u* had been proposed by SOLMSEN 1909, 59f, but his explanation was not accepted. The difference with SOLMSEN's explanation is that it was not the *b* that coloured the vowel, but a *w* — what SOLMSEN did not know. And a *w* colours vowels earlier than a *b*.[4] — CHANTRAINE's suggestion (Dict.) that the Mycenaean *w* represents a fricative, must be rejected: it makes the assumed developments more difficult if not impossible, and there is no reason to suppose it. — SOLMSEN further supposed that the -δ- was a suffix. This may have been a reason to reject his interpretation, as it seems more probable that *b*/*bd* represent the same ready-made word. Now the Mycenaean form shows that the *i*-form also had *d*.

The word had always been connected with other words in -δος indicating minerals and the like (e.g. CHANTRAINE 1933, 359). These are κίβδος 'dross' and λύγδος '(white) marble'. The relation of κίβδος with κίβδηλος 'false (of coins)' is not altogether clear; see FURNÉE 316, who suggests a basic meaning 'worthless'. (He also points to a form κίβαλος· ὁ λῃστής (Suda) which I do not find mentioned elsewhere.) However, see LSJ s.v., where the meaning of κίβδος 'alloy of gold' and κιβδηλία 'dross of silver' show that 'dross' (or 'cheap alloy'?) can well be the original meaning. As to λύγδος, CHANTRAINE,

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[3] SOLMSEN thinks that μολυβρόν· τὸ μολυβοειδές H. also shows the development ι > υ before double consonant. I rather think that this form was derived from μόλυβος (the form found in the gloss).

[4] A partial parallel is, if FURNÉE's interpretation (1972, 184, 375) is correct, ὕδνον, if it has the same root as ἴτον, both forms going back to *ϝιτον. For the latter form this is probable because of the gloss οὐιτον· τὸ ὑπ' ἐνίων οἰτόν H. (sic). However, it is not certain that ὑδ- derives from *ϝιτ-. (FURNÉE thinks that some forms presuppose a prothetic vowel, *o-ϝιτ-. But this is probably unnecessary, and the forms ὕτνον, οἴδνον, οἴτνον used by FURNÉE are all first found in the Glossaria Latina, so these forms may be very late and due to itacism.) — For *wi* > *u* cf. *Vištāspa* — Gr. Ὑστάσπης; and Dutch, e.g. *tussen* — Germ. *zwischen*.

Dict., gives no argument against FRISK's remark that the suffix -δος was not productive in Greek, so that the word must be a loan. The connection with this suffix can now be retained; which does not prove that it is correct, however.

Both forms, then, can be easily derived from one form, the one which we have in Mycenaean and which is centuries older than the classical forms. This is exactly what one might have expected or hoped for. It should be stressed that the supposed developments are not Greek sound laws, but the adaptation of a foreign word with a structure which is impossible in Greek.

Note that this is a fine instance where the Mycenaean evidence gives the solution to an old problem. More specifically, it is quite remarkable that Mycenaean still has — we may suppose — the original form of the loanword. (Note further that Mycenaean accepted — for a short time? — the *w* in this position; of course, Mycenaean had a phoneme *w*.)

As is well known, μόλυβδος is the Ionic-Attic form. Thus Hom. μολύβδαινα, which is found (Ω 80) in a simile about everyday life, will be the Ionic form. μόλιβος (Λ 237) will therefore have another origin (SOLMSEN l.c. thinks that this too is Ionic), either Aeolic or Achaeic; it cannot continue the Mycenaean form, as this had a different metrical structure. — Note that it cannot be excluded that in Mycenaean times Ionic already had a form **moluwdos* or **molubdos*. — In Doric we have evidence for μόλιβος and its developments.

3. The explanation is relevant to the much disputed question of further connections. A common origin (of *moliwdos*) with Lat. *plumbum* does not become easier because of the *i*, which must be original. Pedersen 1900, 110 proposed that the Latin word derived from μόλυβδος. He thought that **molubdom* became **molumbdom* > **mlúmbom* > *[*m*]*plumbum*. However, a first syllable was never syncopated in the history of Latin, so the idea is impossible. (Note that the Greek, i.e. Doric dialects in Italy had βόλιμος; in Syracuse we find the stem βολιβ-.)

If the word originated in Asia Minor (below), it is probable that it came to Italy through the Mycenaeans, which means that *moliwdos* was the original form, which seems phonetically impossible (see above on the loss of the first syllable). Note that it is most improbable that the *m* arose in *moliwdos*. That the Etruscans brought the word to Italy is improbable because of the voiced stop in *plumbum*. Another intermediate language is quite uncertain. I would consider the possibility that the word came to Italy through the Minoans in Sicily. But

they will have had the form *moliwdos*, which was taken over by the Mycenaeans. Only if one assumes that the Minoan form was different from the Mycenaean there may be a possibility. One might assume a form **mliwdo-* (for syncope/anaptyxis of o in substratum words see FURNÉE 381f, e.g. (σ)κόνυζα — κνύζα), which became **mluwdo-* etc. (Note that the Berber form requires the vowel after the first consonant; see n. 5.) Still, this development (e.g. *ml-* > *pl-*) does not seem probable to me. Also the development of the *m* in Latin is unexplained (the comparison with *sa(m)bucus* is not helpful).

It seems more attractive, therefore, to connect the Latin word with the Celtic (and Germanic, as loans from Celtic) words for 'lead', assuming a preform **pl(o)ud^{h}o-*, which may itself be a substratum word (thus DE VRIES 1971, PFEIFER 1989). A common innovation of Italo-Celtic might be envisaged, but PIE does not have a root **pleud^{h}-*, nor a suffix *-d^{h}o-*. Also Latin may well have original short *u*, not a diphthong as has Irish.

4. There is no reason whatever to think of a western connection of the Greek word. CHANTRAINE (Dict.) for example already pointed out that a loan from western Europe was historically improbable. Thus also HULD (EIEC s.v. *lead*): "we know from the beginning of the Bronze Age that the Greeks were already exploiting local sources of lead far earlier than their first millennium entry into the Iberian market." CHANTRAINE (Dict.) suggests that an Iberian word could have become a Wanderwort, but this is improbable as lead was found in many places. Essential is that we now know that there is not the slightest resemblance of the oldest form of the Greek word (*moliwdos*) with Basque *berun*.[5]

I see no ground to compare Georg. *b/prpenni*.

5. FURNÉE 1972, 312 n. 29 points to the Lydian god's name *marivda*, as a parallel for the sequence *-wd-*. This is of course not much to go on, but it is something. One might further adduce Lyd. *tivdali-*, adj. of a personal name, and in general the frequent *v* before consonant in Lydian (e.g. *fasivλi*, *sivraλa*; for the forms see GUSMANI 1964). KRETSCHMER (Glotta 21, 1933, 86) cites a

[5] Dr. M. Kossmann (priv. comm.) points out that the Berber forms show a general resemblance to the Greek and Latin forms, e.g. Sous Berber *aldun*, Ouargla *buldun*. He reconstructs for Proto-Berber *βaldūn/m*, *βāldūn*, *būldūn*. The form seems closest to μόλυβδος (> βολ(υ)βδ-?).

Pamphylian name Ἀπελαϝρυϝις (with a special sign for *w*), -ρυις[6]; it reminds one of the Mycenaean notation *ewiripo* beside *euripo* /*Euripos*/.

BUCHHOLZ 1972, 20 argues that the name Μολυβᾶς in Hierapolis confirms Asia Minor as the origin of the word. But this form is Greek (ZGUSTA 1964, 328 and 694), and the word μολυβᾶς 'lead-worker' is recent (papyrus 3rd cent. AD), so the name proves nothing. (Note that the form μολυβ-, without δ, is very late.)

There can be little doubt now that the word originated in the Aegean, in Greece itself or in (linguistically closely related) Asia Minor. Lead objects were found in the area since the 3rd millennium, and lead was found in many places (see e.g. MALLORY in the EIEC s.v. *lead*).

BUCHHOLZ (1972) showed that lead probably originated from Asia Minor, where it was found in three area's: the North West, from Troy to Sardes, in the South East, in Cilicia, and in the North East, near Trabzon). The first area seems the more probable source for Greece. Interesting is the observation (BUCHHOLZ 1972, 21, 56) that, after a start in the Early Bronze Age, in the Middle Bronze period the use of lead almost disappeared. He connects this convincingly with the arrival of the Indo-Europeans in Greece. In Late Bronze the use of lead again rises strongly. Thus the Indo-European Greeks may have taken over the word in early Late Helladic (1550 — 1050), before 1450 when it is attested in Mycenaean. But it may have happened earlier. And the word may have been in use already in Greece, as the 'pre-Greeks' had — nearly — the same language as the people in Asia Minor. But the word no doubt originated — together with the material itself and the technique of producing it — in Asia Minor. As to the process of refining lead, BUCHHOLZ refers to BENVENISTE's idea (1953) that the name for refining gold, ὄβρυζα, would originate from Asia Minor, in particular from Hittite, originally Hurritic, *huprushi* 'earthen vessel'. FRISK finds difficulty with the semantics, but this was explicitly answered by BENVENISTE, who argued that the process was called after the instrument (in which the material was heated) as is the case in Eng. *test* and French *coupelle*. This solves FRISK's problem, though it does not absolutely prove that this is the origin of the Greek word.

[6] HEUBECK 1956 (Kleine Schriften 283-288) argues that the first part of this word contains the name Apollo, and that this is followed by ϝρυ- from ῥύομαι. However, the latter identification has not been substantiated, and the formation of the word is unclear. What is essential here, is the notation — frequent in Pamphylian — -αϝρ-.

6. It may be recalled that the word for 'tin', κασσίτερος, is also a loanword. Lead and tin look very similar and therefore are often designated by the same term; in Latin they are called *plumbum nigrum* (lead) and *album*. See further SCHRADER–NEHRING 2, 700. In Ahaggar Touareg *ähâllun* means 'lead' and 'tin' (KOSSMANN ms.). HULD and MALLORY, EIEC s.v. *tin*, state that the Greek word "has all the hallmarks of an Aegean loanword". Probably the group *ss* is referred to. I cannot demonstrate that the two words derive from the same language.

Further, it has been proposed that χαλκός derived from Hittite/Hurritic *hapalki* 'iron'. This is of course far from certain.

Also, RUIJGH 1982, 209, argued that χρυσός may not be a loan from Semitic but from a third source. He further compared the structure of Κνωσός and Ἰᾱλῡσός. The source of the word, then, may have been Asia Minor.

Lastly, the word ἤλεκτρον (originally with long ἀ–) has no good etymology. Though it seems evident to connect it with ἠλέκτωρ, and CHANTRAINE notes that it is surely Indo–European, it is not possible to reconstruct a PIE form for this root (ᾱ(λ)– < **h*$_2$*eh*$_2$(*l*)–?; but then what is –εκ–? **h*$_2$*lek*– would give a short α–).

Note. The author is preparing an 'etymological' dictionary of loanwords (including substratum words) in Greek. It will be complementary to the Greek section which he prepares for the new Indo–European etymological Dictionary, which is started in Leiden. He would welcome suggestions and references.

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