PLINY ON A WET PLASTER (34.155)

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BOOK 34, PARAGRAPH 155 OF PLINY'S *Natural History* concerns the medicinal properties of scale of iron (*squama ferri*), among them its use as a component in a wet plaster or *hygremplastrum*. The relevant part of the text appears as follows in the Teubner edition of Ian-Mayhoff (Leipzig 1897):

praecipua tamen commendatio eius (sc. squamae ferri) in hygremplastro ad purganda vulnera fistulasque et omnem callum erodendum et rasis ossibus carnes recreandas. componitur hoc modo: propolis oboli VI, Cimoliae cretae drachmae VI, aeris tusi drachmae II, squamae ferri totidem, cerae X, olei sextarius. his adicitur, cum sunt repurganda volnera aut replenda, ceratum.

This text presents several problematical features, of which the most serious is the corruption of the words between *modo* and *Cimoliae*. Manuscripts and editions offer the following variants and conjectures:

propolis Mayhoff (cf. 22.107 and Scribonius 209); *pari* V R d T a Detlefsen (1873, cf. 36.158); *pal* B; *om.* h *edd. vett.*; *picis* Harduinus (1741); *panis* Ian (1860, cf. 22.138); *aluminis* Sillig (1851, cf. 34.149). Mayhoff mentions as other possible conjectures *galbani* (cf. 24.21 [11.16] and Scribonius 210) and *panacis*, cf. Diosc. *Eupor.* 1.188. Among recent editors Rackham (Loeb, Cambridge, Mass. 1952) adopts *propolis* while K. C. Bailey (*The Elder Pliny's Chapters on Chemical Subjects* Part 2, London 1932) and Le Bonniec (Budé, Paris 1953) print *pal* between obeli.

oboli VI] obolis sex B^1; *-lis ex* V edd. before Harduinus; *-lis et* d T.
Cimoliae cretae drachmae VI] cimolia creta duobus drachmis edd. before Harduinus; *duae* (for *sex*) Harduinus; *sex* om. B.
aeris tusi drachmae II] om. B.
tusi] tunsi Sillig; *tritus* a; *totidem vett.*
duae edd. before Harduinus; *ex* (del. *drachmae*) *vett.*
squamae] squama edd. before Harduinus.
ferri] ferreae R d T Harduinus; *ferreae et* V.
cerae] cera a.
X Mayhoff; *XL* B^1; *XI* B^2; *sex* d T Harduinus; *ex* all other MSS.
olei] oleo h edd. before Gelenius (1554).
sextarius] sextario edd. before Harduinus.

In the *apparatus criticus* on the passage Mayhoff also proposed *obolis X . . . drachmis X . . . drachmis II . . . sextariis* [sc. *singulis*].

I am grateful to Klaus-Dietrich Fischer (Berlin) for helpful information relating to the history of medicine.

We shall begin with some comments on the forms of the passage previously considered acceptable, and then venture a new reconstruction of the original text.

First, *propolis*. This adhesive substance with a consistency midway between gum and wax is used by bees to strengthen the lining of the honeycombs and to provide a watertight seal for the hive. In Antiquity *propolis* from Attica was particularly celebrated (Scribonius 214). Its medical uses included the removal of thorns (Pliny 28.245) and splinters (Diosc. 2.84) and also the treatment of abcesses (Celsus 5.28.11); in this connection it appears in Celsus' prescription for the *emplastrum ad extrahendum* (5.19.15). Scribonius does prescribe it as well for fresh wounds, but mainly for broken bones, bruises, sprains, etc. (209) and for animal bites, glandular swellings, etc. (214). In these applications the other components of his prescriptions (as also those of Celsus) are entirely different from those specified by Pliny for the *hygremplastrum*.

Pliny himself is our source for the most comprehensive surviving inventory of the medicinal effects of *propolis* (22.107): *propolis alvorum . . . aculeos et omnia infixa corpori extrahit, tubera discutit, dura concoquit, dolores mulcet ulceraque iam desperantia cicatricem cludit*. None of these properties would serve any purpose in the *hygremplastrum* of our passage. The same is true of Celsus' listing of basic medicinal substances: he counts *propolis* among those *quae concoquunt et movent pus* (5.3), *quae aperiunt ora in corporibus* (5.4), and *quae evocant et educunt* (5.12), while the other ingredients in Pliny's prescription have emollient and styptic properties.[1] For this reason it is very unlikely that *propolis* was the reading of the original text, however easily its corruption might be accounted for by haplography from the following *oboli[s]*.[2] Indeed *oboli[s] sex* is itself perhaps unsound: for one thing, the quantifier *sex* with *oboli[s]* is open to the objection that six obols correspond exactly to one drachma (*NH* 21.185),[3] and Pliny avoids using "six obols" rather than "one drachma" even when it might have been appropriate to do so (e.g., 25.54 [*nigrum melampodion*] *datur plurimum drachma una, modice quattuor obolis*). Further doubt is cast on *sex* by the variants *ex* (V) and *et* (d T). As for *oboli[s]*, it could well be an attempt to elicit an intelligible word from an already corrupt text, perhaps under the influence of the following weight specifications.

[1]At least according to ancient belief, cf. Celsus 5.1 *sanguinem supprimunt . . . creta . . . Cimolia . . . squama ferri*, 5.15 *molliunt aes combustum . . . cera . . . oleum*. (Later in this paper I shall argue that *aeris (comb)usti* should be read in place of the transmitted *aeris tusi* in the passage of Pliny under consideration.)

[2]The word *propolis* is unanimously transmitted in all the passages listed in Ian's index, with the exception of 21.83 *tropoli* V.

[3]Cf. F. Hultsch, *Griechische und römische Metrologie*[2] (Berlin 1882) 150 and Tafel XIII.

Efforts to reconstruct Pliny's original text must begin by asking just what he was trying to say. At first we wonder why he gives a list of the ingredients of the *hygremplastrum*, which contradicts his normal practice. Of all the places in which *emplastrum* appears in Ian's index[4] only one couples it with *componere*, 35.191 *emplastrisque, quae siccandi causa componuntur*, and neither there nor in the other occurrences of *emplastrum* are the ingredients named.

A solution to the problem is provided by taking note of another of Pliny's habits of writing: for the benefit of the average Roman reader he often explains the specialized terms and procedures of the subject he is treating with the help of concepts that are either generally familiar or that he has previously discussed.[5] One might therefore expect Pliny to have chosen to render *hygremplastrum*, which occurs only here in extant Greek and Latin,[6] by a more accessible term.

In fact Roman medical literature does contain a term that was used instead of the rare *hygremplastrum*, namely *lipara* (a shortened form of ἡ λιπαρὰ ἔμπλαστρος), a plaster derived from plant or animal oils or fats, roughly corresponding to our salve. On the assumption that the specifications in our passage are approximately correct—that is, ca 70 g. of solid matter in a round half-litre of oil—, the plaster Pliny is describing corresponds perfectly to a *lipara*. It thus appears very likely that Pliny explained *hygremplastrum* with the current term *lipara*. It is mentioned by Celsus (5.19.25), *lenia . . . quaedam emplastra sunt, quas liparas fere Graeci nominant* (prescription follows), 5.19.26–28 (additional prescriptions), 5.26.35 *deinde, ubi cutis ipsa exasperata est, lene medicamentum, quale lipara est*, 5.27.13 *ea quae lenia ad sanitatem perducant . . . ex (iis est) quaelibet lipara*; by Scribonius 220, 222 *lipara ad intertrigines et exasperationem ⟨et⟩ tumorem mirifica*, 223; by Pelagonius 181 *utere lipara cum pannis minutis usque cum ulcus purgatum sit*, and by Pliny himself 23.162 *(oleum myrti) additur in medicamentis, quae liparas vocant*, 33.105 *(scoriam argenti) addunt in medicamenta, quae liparas vocant*, 33.110 *vis* (sc. *scoriae argenti) . . . siccare, mollire, refrigerare, temperate purgare, explere ulcera, tumores lenire; talibusque emplastris additur et liparis supra dictis* and 34.174 *(molybdaenae) usus in lipara ad lenienda ac refrigeranda ulcera et emplastris*.[7]

This internal argument is supported by another based on the transmission

[4]The following references should be corrected: for 28.140 read 28.141; for 33.10sq. read 33.105, 110.

[5]So, for example, at 33.74 *flumina ad hanc lavandam ruinam . . . corrugos vocant*, 34.133 *antispodon vocant cinerem fici arboris*, and 34.172 *fit et spodium ex plumbo eodem modo quo ex Cyprio aere* (a procedure more fully explained earlier).

[6]Cf. *ThLL* 6^3.3139.40 ff. (not counting its appearance at 1.34.46 as the headword for this chapter).

[7]Further references in *ThLL* 7^2.1472.13 ff.

of the text. The word *lipara* became unfamiliar soon after the end of Antiquity,[8] and so it is likely that even at a quite early date scribes made errors in copying this unintelligible word; spellings like *lippara*, *lypara*, *lepara*, and *lapara* are commonly found.[9] Some copyists went further and replaced what must have seemed to them a mistaken form with another that appeared to make sense. This process can be observed in two of the four places in Pliny where *lipara* appears, 23.162 *lepras* V d T, *lephras* E^{10} and 34.174 *lippara* d ed. Veneta 1499, *lyppara* a, *illi par* B^2. This last variant, *illi par*, comes very close to those transmitted in our passage (*pari* in five MSS, *pal* in another), making it appear even more probable that a form of *lipara* figured in Pliny's text.

I therefore propose to read *componitur hoc* (sc. *hygremplastrum) liparae modo* (*modo* is regularly postponed in Pliny). The process of corruption is easily accounted for. Once the unfamiliar *liparae* had been garbled in transmission, *modo* was brought forward and taken with *hoc* to form the phrase *hoc modo*. Then *obolis*, an indicator of quantity, was fashioned from the remains of *liparae*, wrongly thought to be an additional component of the *hygremplastrum*. This reconstruction may have been based entirely on the letters *li*,[11] and it is not clear whether a transposed form such as *par illi* (compare B^2's *illi par* at 34.174) needs to be postulated as an intermediate step.

Proceeding now to other areas of textual uncertainty in the passage, we note that the nominatives *drachmae* and *sextarius* do not fit Pliny's normal usage; in general he continues the construction of a sentence after the break marked by modern editors with a colon, as for example in 32.106 *quidam ita faciunt medicamentum: cerae et turis drachmas XX . . . olei veteris heminam* and 33.123 *fit autem (hydrargyrum) duobus modis: . . . trito minio*

[8]In addition to the fact that *lipara* does not occur in Isidore of Seville, there is no lemma for the word in the lexica of late Latin and Medieval Latin (Souter, DuCange, Blaise, Niermeyer). The word is recorded (on the basis of Oribasius 9.18) in F. Arnaldi, *Latinitatis italicae medii aevi inde ab a. 476 usque ad a. 1022 lexicon imperfectum* (repr. Turin 1970); also in the *Novum glossarium mediae latinitatis ab a. DCCC usque ad a. MCC* (Copenhagen 1957—), cited from Remigius of Auxerre (mid-ninth century), *de musica* p. 79 Gerbert, and rendered "enflure (dithyrambique)." It may be inferred from the absence of *lipara* in the *Romanisches etymologisches Wörterbuch* of Meyer-Lübke that it did not survive in the Romance languages.

[9]Cf. *ThLL* 7^2.1472.4 f.

[10]The following entry in Mayhoff's apparatus, "*alephas* vet.," appears to stem from a misunderstanding: Mayhoff ran together Ian's "a *leph.*" (i.e., MS a reads *lephras* instead of the foregoing variant *lepras*), expanded it to *alephas*, and then furnished this imaginary variant with the despairing siglum *vett.*

[11]Compare 37.204 *maximum est pretium . . . arboris aut fruticis suco in sucino, opobalsamo, murra, ture*; B^1 has turned the unfamiliar *opobalsamo* into the recognizable Latin words *obolis amo*, even though this reading fits neither the sense nor the syntax of its context.

ex aceto aut patinis fictilibus impositum ferrea concha, calice coopertum. The ingredients appear in the nominative only when a complete sentence follows the colon, as in 23.136 *fit . . . panchrestos . . . hoc modo: sextarii III suci e pomo . . . rediguntur.* In deciding what case the ingredients of the *hygremplastrum* should appear in—since the nominatives cannot be brought into conformity with *componitur*—we must consider whether *componere*, as a preliminary stage to *constare*, functions like *fieri* and is thus to be construed with an ablative of material, or whether it is to be combined with *ex* + ablative.[12] On the analogy of 34.174 *compositio eius* (sc. *liparae) e libris III et cerae libra, olei III heminis* and 36.158 *iis medicamentis . . . quae ex croco componantur*, and with the support of the *ex* found in some MSS before *Cimoliae cretae*, we may give preference to *ex* + ablative, permitting the original text to be recovered from the transmitted variants. The second *drachmae* should be bracketed, since Pliny is not in the habit of repeating the same unit of measurement, as can be seen from the section of 32.106 cited above.

The reconstructed text therefore begins as follows: *componitur hoc liparae modo ex Cimoliae cretae drachmis VI.* In general we cannot tell for certain whether the components or quantities in Pliny's prescription have been accurately transmitted, since we lack similar prescriptions that might provide a basis for comparison. We should, however, take a closer look at the second element in his list, the unanimously transmitted *aeris tusi.*[13] It is not copper itself, but rather the oxide that forms on its surface, that has pharmaceutical—specifically bactericidal—properties. When copper is pounded, the outer surface is increased and the inert core diminished; the thinner the metal, the greater its effectiveness will be. On grounds of sense, therefore, *aes tusum* is unimpeachable. In chapters 100–109, however, where Pliny discusses the medicinal uses of copper, *aes* is never combined with *tundere*; the reference is always to *squama aeris.* On the other hand, *aes* is frequently joined with *urere*: 34.105 *aes ipsum uritur*, 34.106 *uritur . . . Cyprium (aes)* and *ustum (aes)*; 34.109 *et squama . . . et flos (aeris) uruntur.* In the Index (1.34.23) Pliny gives as the contents of this chapter *aeris usti effectus in medicina.* In Scribonius prescriptions for plasters to be used with wounds include *aeris usti pondo sextantem* (203) and *aeris usti, aeris Cyprii. . . .*[14] Celsus, too, frequently refers to burnt copper, for example 5.20.1 *qualis (pastillus) est, qui habet . . . aeris combusti . . . p. III.*

[12]On this point see A. Önnerfors, *Pliniana* (Uppsala 1956) 36–38.

[13]The only variants to be noted are without significance: *tritus* a, *tunsi* Sillig; *totidem* edd. before Ian-Mayhoff shows that several editors have had sufficient doubts about *tusi.*

[14]The repetition of *aes* might be the result of dittography, in which case the reference would not be to metallic copper (as is assumed by W. Schonack, *Die Rezepte des Scribonius Largus* [Jena 1913] 164).

It is hard to resist the conclusion that *usti* once formed part of our passage as well, and that it was later changed to *tusi*, perhaps under the influence of the nearby *squama ferri*.

The result of this discussion is to have restored the text of Pliny, *NH* 34.155 as follows:

componitur hoc liparae modo ex Cimoliae cretae drachmis VI, aeris usti II, squamae ferri totidem, cerae X, olei sextario.

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