

# The Text of the Hippocratic *Treatise On The Eye*

Elizabeth Craik

## I Introduction

The study of ancient medicine is very different from the study of Greek tragedy. A major difference is that the manuscripts of tragic texts have been well worked over and the collations of many predecessors are available. Of course these are not uniformly reliable, and stemmatic study is subject to constant refinement: for example, Dawe's work on horizontal tradition demonstrated convincingly the deficiencies of Murray's Oxford Classical Text of Aeschylus, and Lloyd-Jones' Sophocles differs substantially from that of Pearson — but their work and that of Diggle on Euripides will not quickly be superseded. Some Hippocratic texts have received similar attention, especially from Jouanna and his colleagues in Paris; but many are still quite neglected.<sup>(1)</sup>

*Organ of Sight* occupies a mere four pages of Greek in the modern printed text.<sup>(2)</sup> The treatise is brief and allusive in content; in addition, the text is seriously corrupt. In part, the pervasive corruption lies in the technical nature of the work, which deals with procedures naturally unfamiliar to scribes, as to scholars. In part, it lies simply in visual or aural error on the part of scribes, liable to make mistakes when faced with difficult and unfamiliar material, and liable to treat such a short piece as relatively unworthy of attention. Sichel laments the 'état de mutilation tel qu'il est impossible de reconstituer un texte irréprochable'; Ermerins finds both the corrupt state of the text and its technical content such obstacles to comprehension that he declines to translate large parts of it; Joly (who follows Sichel closely) concurs that 'les problèmes ... ne comportent pas de solution tranchée'.<sup>(3)</sup> A further problem is that, while there is no shortage of mss containing the work, the tradition is uniform and so uniformly corrupt.<sup>(4)</sup>

(1) On Hippocratic mss, see Diels, H., *Die Handschriften der antiken Ärzte*, I Teil: 'Hippokrates und Galenos', *Abh. Königl. Preuss. Akad. Wiss.*, phil.-hist. Klasse (Berlin, 1905).

(2) Sichel *ap.* Littré 9, 152-61 (Paris, 1861); Ermerins 3, 279-83 (Utrecht, 1864); Joly, CUF t. 13, 168-71 (Paris, 1978). Other major editions cited are those of Cornarius (Basle, 1538); Foesius (Frankfurt, 1588); van der Linden (Leiden, 1665); reference is made also to the Latin translation of Calvus (Rome, 1525) and to Iugler, *Hippocratis de visu libellus* (Helmstadt, 1792).

(3) Sichel 152; Ermerins Praefatio XL-XLI; Joly 163.

(4) M = Marcianus gr. 269, s. X  
H = Parisinus gr. 2142, pars antiquior, s. XII  
I = Parisinus gr. 2140, s. XIII

The text depends entirely, directly or indirectly, on the tenth century ms M (Marcianus 269).<sup>(5)</sup> In the absence of evidence from the separate strand of the tradition represented by V (Vaticanus gr. 276, twelfth century) and mss descended from V such as C (Parisinus gr. 2146), much used by Littré, the deep-seated corruption in the text with its single medieval source is intractable.<sup>(6)</sup> Sichel knew readings of M through information from Daremberg, but did not recognise M's early date, priority and relative importance. Similarly Ermerins knew M only indirectly, through readings communicated by Cobet. Sichel collated and recorded the readings of the *recentiores*, especially the Parisian *recentiores*, with great thoroughness. Ermerins supplemented Sichel's critical apparatus with information from one further ms in the Netherlands (Q). Joly collated M and relied on Sichel for the rest.

For this edition, I have seen all but two mss (Haun. and Mo., both recently collated by others). Several minor mistakes in Joly's representation of the text of M have been corrected. On checking Sichel's apparatus for the *recentiores*, I find many instances where the punctuation is wrongly recorded. This is unsurprising, as versions of the punctuation vary greatly (especially in relation to headings or quasi introductory material) and are frequently awry, betraying a complete lack of comprehension on the part of scribes: there is a tendency to reduce the text to staccato bursts of short clauses, or apparent semantic units, devoid of overall syntactic sense. These different versions have no interest except as a means of suggesting links among the *recentiores*. Scrutiny of the mss merely reinforces the impression of careless transmission. It is remarkable that several obvious errors in M go almost universally uncorrected

---

R	=	Vaticanus gr. 277, s. XIV
Ca	=	Cantabrig. Caius Coll. 50, s. XV
E	=	Parisinus gr. 2255, s. XV
F	=	Parisinus gr. 2144, s. XIV
G	=	Parisinus gr. 2141, s. XV
Haun.	=	Hauniens. Gl. Kgl. 224, s. XVI
J	=	Parisinus gr. 2143, s. XIV
K	=	Parisinus gr. 2145, s. XV
Laur.	=	Laurentianus 74, 1, s. XV
Mo.	=	Monacensis gr. 71, s. XV
Mut.	=	Mutinens. Estensis gr. 220, s. XV
O	=	Baroccianus 204, s. XV
Q	=	Vossianus fol. 10, s. XVI
U	=	Urbinas 68, s. XIV
W	=	Vaticanus gr. 278, a. 1512
Z	=	Parisinus gr. 2148

(5) On M, see esp. Jouanna, J., 'L'Hippocrate de Venise (Marcianus gr. 269; coll. 533): nouvelles observations codicologiques et histoire du texte', *REG* 113 (2000), 193-210.

(6) But see Jouanna, CUF t. 4, *Epid.* 5 and 7 (Paris, 2000), 95-7 on the closeness of M and V.

(αὐτόματα, 1.1; θαλασσοειδῆ, 1.2; μηλησίῳ, 4.1). There is an almost total lack of marginalia (even in mss where these abound for other works) and such glosses as do exist are banal in the extreme (in G, δέυων glossed βρέχων, 3.2). There is, however, a general regard for marking new topics: a red initial letter or a small space precedes a separation into ‘chapters’ similar to that adumbrated in notes by Cornarius, then pioneered in his text by van der Linden, refined by Iugler and followed in modern editions. M has a sizeable space only before 7 init., but has slight spaces before each of the repeated ἐπειτα ‘then’ conjunctions in 3.1; while there is not complete unanimity in the *recentiores* over the existence or placing of these sense divisions there is most general agreement over the start of our chapters 7, 8 and 9. R, however, has spacing before 4, 7 and 8 and Laur. only before 6 and 8.

In M, f. 212 starts with the words ὁ κάτωθεν 3.3 and ends with the words ἐπανιῆς δὲ, 7.1. At both points, where scribal inattention is explicable, the text is particularly problematical and can be understood only with substantial extension and emendation. Although the precise nature of the relation of the later mss to M and to one another is much debated and there is no agreement on details of classification, the general lines of affiliation are clear. The mss H and I are both close to M, either through faithful copying or — as has been suggested — because they share a common (lost) source; they are in turn the basis of the later tradition. The consensus view that I had a great influence on the later tradition — for instance being source of F, source in turn of G, source in turn of Z — is corroborated in the case of this work. That different sources can be seen in R is clear also: R agrees more often with H (and is familiar with the second hand in H) but at the same time shares several readings with I. There is no evidence from this treatise that R had access to significant material extraneous to the tradition of MHI. Detail in the critical apparatus is confined to the readings of M, H, I, R. In the final analysis, precise textual study is of no help whatsoever in retrieving the original lost text of this work. As elsewhere, it may be suspected that scribes were more concerned with general fidelity to content than with an exact record. In this edition, clues to the source and nature of corruption are sought in other Hippocratic works, and in parallel passages of Celsus and Galen. This is, of course, a hazardous enterprise. It must be stressed that, where emendations are suggested on this basis, they lay no claim to verbatim restitution of the lost original; rather to recovery of the lost gist expressed in wording which is possible and plausible. The only justification is that manifest nonsense is here converted to patent sense fitting its context.

Earlier editors and translators made distinctive contributions, in line with their work on other Hippocratic treatises. Both Calvus and Cornarius, generally conservative and literal, used translation as a means of explication

and interpretation. Calvus, using the ms W at Rome in 1512, made the obvious correction of μηλησίω to μλησίω, 4.1 and recorded the variant, or intelligent conjecture, ξύσιος for κρίσιος, 4.2; the translation *scapulares* ‘scapulars’, 3.1, may be significant. Cornarius’ annotations, comprising both observations and corrections, contained in his personal copy of the Aldine text of 1526 survive, as was realised by Sichel, who checked and recorded his notes in the copy at Göttingen; from this it is possible to see the use Cornarius made of further ms sources.<sup>(7)</sup> Foesius, thanks to an influential patron, had access to three mss held in the royal library at Fontainebleau where they were transferred in 1544 and catalogued in 1550; he had also seen the Vatican ms now known as R. Foesius printed a text in line with the current vulgate, but permitted himself some deviations from this in translation and comment, notably in 4 and 7. Van der Linden followed Foesius but not slavishly; he is familiar with Ermerins’ ms Q. The philological value of these early printed texts lies primarily in the access of scholars then to a wider range of manuscript sources than we now possess. In practice, however, the sources they cite add little to our knowledge and do not mitigate our dependence on M. The medical value of these early printed texts is considerable, especially for such surgical works as *Organ of Sight*. All contributors were practising doctors who had personal experience of bloodletting and cupping — and of such activities before Harvey’s work of 1628 changed our perception of the blood vessels and their course in the body.

It has commonly been asserted that there is no ancient reference to *Organ of Sight*, which would authenticate its place in the Hippocratic Corpus of antiquity. This negative view can be contested with regard to the Galenic gloss ἄτρακτον, relevant to 4.1; Erotian’s gloss φολίδα, relevant to 6 and possibly also οὐλῶ relevant to 4.1 (falling in the appropriate position in Erotian’s list: in the third category, Therapeutics, placed with the lost work *On Wounds and Missiles*, between *Head Wounds* preceding and *Fractures with Articulations* following); διαφανέσι 2 and 5, ταχύ, 3.4 and ξυσμῶ, 6.1 may be candidates also. That many words glossed by Galen are present in the treatise confirms that the vocabulary has a Hippocratic, if at times recondite, character. Hesychios too contains much of relevance to the work.

## II Emendations

- (1) 2 *init.* τὰ λημία ἐν τοῖσιν ὀφθαλμοῖσι, τῆς ὀψιός ὑγιέος ἐούσης τῶν νεωτέρων

(7) On Cornarius, see Montfort, M.-L., ‘Le traité hippocratique *De videndi acie* est-il d’époque impériale?’, in I. Boehm & P. Luccioni (edd.), *Les cinq Sens dans la médecine de l’époque impériale* (Lyon, 2003).

ἀνθρώπων, ἣν τε θηλεία ἦ, ἣν τε ἄρσην, οὐκ ἂν ὠφελοίης ποιέων οὐδέν, ἕως ἂν αὔξηται  
τὸ σῶμα ἔτι

τὰ λημία Craik: τὸ ὄμμα MH: καὶ τὸ ὄμμα RI *fere recc.*

It is stated that a certain condition appearing in childhood is to be left alone until the sufferer is fully grown, then treated by surgery to the eyelid. The first consideration is that the transmitted text gives nonsense. The opening words τὸ ὄμμα ἐν τοῖσιν ὀφθαλμοῖσι ‘as to the eye in the eyes’ are meaningless, and the ensuing genitive absolute, introducing ὄψις ‘sight’ merely compounds the difficulty. The word ὄμμα, said by LSJ to be poetic and rare in prose, is in itself unexceptional, being Ionic rather than poetic (seventy-three occurrences in the Hippocratic Corpus and in some works, such as *Prorrhetic* 1, preferred to ὀφθαλμός).

A simple emendation, corroborated by Hippocratic parallels, gives perfect sense: τὰ λημία ἐν τοῖσιν ὀφθαλμοῖσι ‘as to sores in the eyes’. The corruption is readily explained, on grounds both of visual similarity, which would be especially marked at the majuscule stage, and of intrinsic plausibility, a technical term being supplanted by a common word, apparently suitable in context. The emendation has the added merit that it provides a quasi-heading at the start of a new topic, as is common in such nosological accounts (cf. the emphatic first words of 1, 5, 7 and 9). The term λήμη with the common diminutive form λημίον refers to noxious matter collecting in or flowing from the eyes: ‘rheum’, ‘discharge’, ‘secretions’. Properly speaking, ‘rheum’ is not a disease but a symptom. Here, it can be viewed as a protracted irritation in the eye which might lead to any one of a range of chronic conditions: the characteristic symptoms of conjunctivitis (soreness, grittiness, eyelids sticking together overnight with secretions at lid margins) and of blepharitis (red eyelids with scaling along the margins) are essentially similar to conditions such as entropion, where the lower lid is rolled over and the lashes irritate the eye, and ectropion or eversion of the lids, where there is similar concomitant irritation. The term was widely used in a metaphorical sense (most famously applied by Pericles, to the island Aigina seen in relation to the Peiraeus) and proverbially (Ar. *Nu.* 327); the prevalence doubtless reflects a high incidence of eye disease.

In *Prorrhetic* 2 (*Prorrh.* 2. 18), the effects of λημία σμικρὰ περὶ αὐτὰς (sc. τὰς ὀψιᾶς) ‘small sores around the sight’ are discussed, in a long and detailed discussion of ὀφθαλμοὶ . . . λημῶντες ‘eyes suffering sores’ where different developments of such a condition are considered. In this passage, λήμη (singular) is a key word, repeated eight times, with the diminutive λημία (plural) once. A succinct but clear description of eye troubles is found in

*Ancient Medicine*, there embedded in an account of the pathological effects of flux to nose, eyes and throat, i.e. chest (*VM* 18-19). The processes in the three fluxes are presented as parallel, with parallel features. The account in *Ancient Medicine* has strong similarities with material in *Prorrhetic* 2: emphasis on discharge called λήμη, ulceration of the eyelid (here clearly the lower lid, as it is stated that ulceration may extend to the cheek), ulceration in the eye (τὸν ἀμφὶ τὴν ὄψιν χιτῶνα ‘the tunic around the sight’, i.e. the sclerotic membrane); symptoms of streaming, pain and inflammation. In *Glands*, matter in flux from the brain, causing disease if it is not removed, is uniquely designated λύματα ‘impurities’, ‘purgations’ (*Gland.* 12): it may be suspected that this apparent hapax legomenon is in fact another corruption of λημία, this time by an aural error of a notoriously common type.

(2) 3. 1-4 ὅταν δὲ φλέβα παρακαύσης ἢ διακαύσης, ἐπειδὰν ἐκπέσῃ ἢ ἐσχάρῃ, ὁμοίως τέταται ἢ φλέψ καὶ πεφύσῃται καὶ πλήρης φαίνεται, καὶ σφύζει ὅτε ἄνωθεν τὸ ἐπιρρέον· ἢν δὲ διακεκαυμένος ὅτε κάτωθεν, ταῦτα πάντα ἦσσαν πάσχει.

ἢ διακαύσης *del.* Ermerins ὅτε ἄνωθεν . . . ὅτε κάτωθεν Craik: ὅτε κάτωθεν . . . ὁ κάτωθεν *codd.* : ὅτι κάτωθεν (*del.* ὁ κάτωθεν) Ermerins: ὅτε κάτωθεν . . . (*del.* ὁ) κάτωθεν Joly

The subject of this chapter is cautery of the vessels. Sichel comments that we have ‘préceptes généraux sur le mode d’exécution de l’ustion des veines’, asserting (wrongly) that cautery in the back is taken as an example, ‘comme applicable à un plus grand nombre de maladies’ and (rightly) that cautery in all parts of the body is believed to follow the same principles. He wonders, following Cornarius, whether the chapter is somehow misplaced. Ermerins allows cautery to be relevant because of its use in ophthalmology, but finds the sense awkward and has recourse to some emendation and extensive deletion. Joly sees no relevance in the chapter, commenting dismissively ‘Ce chapitre semble égaré dans une oeuvre d’ophtalmologie’.<sup>(8)</sup> It is here argued that cautery of the vessels in the back of the head and neck is intended, and that the purpose is to arrest a flux of noxious matter primarily affecting the eyes and secondarily threatening lower parts of the body: there is no need to suppose a lacuna at 3.1 and emendation is required in 3.3.

The effects on the eyes of two types of flux (cf. *Places in Man* 1.3, 13.3) are here allusively indicated: flux A (superficial, mucus-like in content, coursing from the scalp to the temples, with potential to stray further, if unchecked) and flux B (deep, salty in content, coursing from the brain to the inner corners of the eyes, with potential to stray dangerously further if unchecked — and

(8) Sichel 139; Ermerins *Prolegomena* XL and 280, n. 3; Joly 169, n. 1.

viewed as hard to arrest). In ancient ophthalmology, cautery of the vessels of the temples was a routine treatment for flux A; in the case of flux B, other vessels were addressed, the aim always being to prevent peccant matter from spreading further down the body. In *Places in Man* the vessels which ‘press on the eye, those which constantly beat and are situated between ear and brow’ are cauterised (*Loc. Hom.* 13.7). In *Diseases 2* these vessels are cauterized, but treatment extends comprehensively to six other vessels of the head: two alongside the ears, two at the inner corners of the eyes, and two ὀπισθεν τῆς κεφαλῆς ἔνθεν καὶ ἔνθεν ἐν τῇ κότιδι ‘behind the head on either side at the occiput’ (*Morb.* 2. 12. 6; cf. 2. 1 and 2. 8). In addition, cautery of the neck was practised in order to stop the progress of noxious matter to the flesh ὀπισθεν ‘behind’ by the vertebrae and to divert it to the nose for expulsion (*Loc. Hom.* 21.1). The usage of ὀπισθεν ‘behind’ in these passages to indicate the back of the head or neck, rather than the back itself, parallels usage here; similarly a contrast between ἔμπροσθεν and ὀπισθεν with reference to the front and back of the head can be seen in *Head Wounds* (VC 2, 3).

It is significant that the adjective νωτιαῖος with or without the substantive μυελός is commonly applied to the spinal fluid, rather than to the blood vessels of the back (*Artic.* 45, 46, 47 etc.; *Mochl.* 1; *Gland.* 11, 14); and while ὀστέον may refer to the sacrum (usually as τὸ ἱερὸν ὀστέον) it is not used of the backbone generally. Thus, the vessels loosely designated ‘of the back’ may be more precisely designated as the vessels which run from head to neck and to back, that is those through which the νωτιαῖος μυελός ‘marrow’ or ‘spinal fluid’ was believed to course from the brain to the lower body. The simple term ὀστέον lit. ‘bone’ is commonly used of the skull, where context makes it clear that the skull is intended (as throughout *Head Wounds*).

Confirmation that the author’s concern is with specialist matters of ophthalmology comes from Celsus. Several points in Celsus’ account of eye therapy pick up and illumine passages of *Organ of Sight*, where the narrative is compressed and allusive to the point of unintelligibility, notably the phrases ‘having bound’ and ‘having traced’: Celsus explains how a ligature is placed round the patient’s neck, and how the vessels of the temples and the top of the head are marked with black ink (7. 7. 15 H). Further, Celsus’ leisurely explanation permits emendation of the puzzling repeated phrase ‘from below’ in 3.4. In an extended discussion of treatments for phlegm descending from the head to the eyes (7. 7. 15), Celsus distinguishes between a flux of phlegm from the upper vessels that lie between skull and scalp, i.e. above the skull; and a flux of phlegm from the lower vessels that lie between skull and membrane of the brain, i.e. below the skull. The first case is common and readily treated, the second is serious and intractable. The reason for this is that the vessels in the first case are accessible (above the skull, coursing

to the temples) whereas in the second they are inaccessible (below the skull, coursing from brain to eye). Celsus allows for the possibility of flux from both sources simultaneously.

Celsus is quite emphatic that this knowledge is widespread, and that procedures to arrest the flow of phlegm by treating the vessels are a matter of common and universal practice, ‘celebrated not only in Greece but among other peoples too, to the extent that no part of medicine is more widely practised throughout the world’. While the aim was universal, a wide range of diverse procedures was used in different communities and at different dates to attain it: some made a series of incisions at various points in the scalp; some used cautery at various points instead or as well. This considerable local variation in the choice of the precise point to be targeted is corroborated by the evidence of other medical authors, and by papyri of ophthalmological content.<sup>(9)</sup> In some societies too the procedure was routinely applied to neonates (among the Ethiopians, Severus *ap.* Aetius 7. 93) or to young children (at the age of four years, among the Libyans, Hdt. 4. 187. 2), while in others it was a response to a pathological state.

A Galenic work supplements and verifies the substance of Celsus’ account. In a late section of *de methodo medendi*, a vast compilation in 14 books occupying over 1,000 pages in Kühn’s edition, similar views on aetiology and therapy are propounded. As it is the head which sends ῥεῦμα ‘flux’ to the eyes, the head must be treated first; sometimes flux comes from the brain and sometimes from the vessels; when it comes from deep ἀγγεῖα ‘pockets’ (sc. in brain) it is hard to treat; the general treatment is by phlebotomy. Detailed instructions for this are given: shave the head; carefully address the vessels ὀπίσω ‘behind’ and those by the ears and those in the forehead and brows; cut those which beat most; it is better to apply a cord (βρόχον, lit. ‘noose’) before cutting. It is explicitly stated that some doctors cut out part of the vessels in the belief that this is the only effective treatment (10. 937-42 K.). The vessels treated are ‘those in the back of the head, in the region of the ears, and those in the temples’. There is not much reference to cautery in Galen; but cautery is recommended ἐπὶ τῶν ῥευματιζομένων ὀφθαλμῶν ‘for eye flux’ in the pseudo-Galenic *introductio seu medicus* (14. 782 K.).

The general intent of our surgeon’s preparations is clear and the scene in the surgery can be visualized as follows. The patient lies prone, legs extended, on a couch, probably leaning on the floor with his hands in such a way that the head is below the level of the trunk, causing the vessels in the head to become engorged and so more visible. The surgeon is sitting (or standing,

(9) Marganne, H.-H. *L’ophtalmologie dans l’Égypte gréco-romaine d’après les papyrus littéraires grecs* (Leiden, New York, Cologne, 1994), esp. 147-72, with figs 13-18.



depending on the height of the couch) alongside or slightly in front, where he can reach over the head of the patient, in such a way that he can apply a ligature to the neck, trace the precise location of the vessels of the head (in the crown and occiput; also beside the ears, in the temples and in the neck) — or perhaps even the entire course of the vessels is to be traced for purposes of didactic demonstration — and then operate with instruments handed to him by an assistant.

There is no need to postulate a lacuna before the first of the five ‘then’ conjunctions of 3.1; in this breathless composition the Greek can readily be understood as it stands as a series of memos. There is a double parenthesis after the first ‘then’ conjunction, which is recapitulated in the second: ‘Then (having bound, having stretched out the legs, having set below a couch from which he can lean with his hands) — let someone hold his waist — then . . .’ The aorist participles indicate preparatory actions, and the associated infinitives main procedures (in reverse order). This is a series of technical instructions, to be followed in a precise sequence.

With the reading ὅτε κάτωθεν . . . ὁ κάτωθεν in 3.3, the repeated κάτωθεν ‘below’ is problematical. Where we have two closely placed phrases, parallel in expression, we expect them to be parallel in sense also. Ermerins emends the first expression and deletes the second; he also reads διακεκαυμένη feminine for masculine (sc. φλέψ), and translates *similiter vena tenditur, et inflata est et pulsatur, quia ab inferiore est id, quod influit; sin perusta est, haec omnia minus patitur*, ‘the vessel is similarly stretched and swollen and it beats because the matter which flows in comes from below; but if it is thoroughly cauterised it suffers all this to a lesser degree’. Sichel does not emend and translates very loosely: ‘lorsque le sang afflue de bas en haut . . . à une partie inférieure du dos’. But the point of this is quite unclear. Joly emends the second expression by deleting ὁ, then essentially follows Sichel’s translation, ‘... elle bat lorsque le sang afflue de bas en haut; si la cauterization profonde est faite en bas (du dos), tout cela a lieu à un moindre degré ...’; he explains that cautery was being effected at as low a point as possible in the body in order to prevent the upwards return of peccant humours. But if this is the point, the expression is unduly contorted, and there remains a lack of parallelism between two apparently corollary expressions.

With the proposed emendation ἀνωθεν . . . κάτωθεν ‘from above ... from below’ the reference is to two opposed locations, rather than to two identical locations. The reference is to flux from the upper part of the head, or flux from the lower part. Flux from the upper part runs to the temples, and so the pulse is a good diagnostic indicator; flux from the lower part (the brain) runs to the inner corners of the eyes, and so the pulse is not significant in diagnosis (*Loc. Hom.* 13.3; Celsus 7. 7. 15).

(3) 7 *init.* νυκτάλωπος· φάρμακον πινέτω ἐλατήριον, καὶ τὴν κεφαλὴν καθαιρέσθω. καὶ κατασχάσας τὸν αὐχένα ὡς μάλιστα, πιέσας πλείστον χρόνον, ἐπαιεῖς δὲ διδόναι ἐν μέλιτι βάπτων <σκόροδα> ὡμὰ καταπιεῖν μέγιστα ὡς ἂν δύνηται ἐν ἡ δύο <καὶ> ἥπαρ βόος.

κατασχάσας Foesius *ex Serv. ms novit*: κατάξας *codd.* διδόναι ἐν μέλιτι βάπτων <σκόροδα> ὡμὰ καταπιεῖν μέγιστα ὡς ἂν δύνηται ἐν ἡ δύο <καὶ> ἥπαρ βόος Craik: διδόναι ἐν μέλιτι βάπτων ἥπαρ βόος ὡμὸν καταπιεῖν μέγιστον ὡς ἂν δύνηται ἐν ἡ δύο *codd.*

The treatment of ‘night blindness’, an anomaly of vision marked by impairment of dark adaptation, is outlined. Night blindness takes two main forms; the more common is where vision in moderate illumination is good, but in feeble illumination deficient. Night blindness is not a substantive disease, but a symptom associated with deficiency of vitamin A (sometimes called ‘the ophthalmic vitamin’), which is present in animal fats such as milk, butter, and eggs; and, above all, in liver. Night blindness can occur both in individuals suffering from any condition which depletes blood vitamins, especially such febrile conditions as pneumonia, pulmonary tuberculosis, or malaria; and also in communities affected by famine or severe malnutrition. In ancient medicine, symptoms such as night blindness and even fever were frequently regarded and treated as diseases in their own right. There was, however, much awareness of, and interest in, the ways in which different ‘diseases’ might interact, developing or mutating into something apparently different, and the Hippocratic doctors were fully aware of the typical associative context of night blindness, recognizing the ways in which it tended to accompany other illnesses; also, more generally, the ways in which the eye might be affected by complications in other apparently unrelated diseases.<sup>(10)</sup>

The text of this short chapter is compressed, or, rather, truncated and corrupt. There are two main problems, relating to two aspects of the prescribed treatment, which is expressed in a series of superlatives: first (surgical), two things are done to the patient’s neck ‘as much as possible’ and ‘for a very long time’, but M’s κατάξας ‘having broken’ is nonsense and πιέσας ‘having pressed’ is unclear; second (dietary), the injunction to eat a lot of raw liver with honey is both intrinsically improbable and quite unparalleled. Sichel keeps κατάξας but describes the verb as obscure and probably corrupt; he takes it in the sense of ‘l’appui des ventouses scarifiées’. Ermerins reads

(10) See Grmek, M. D., ‘La description hippocratique de la “toux épidémique de Périnthe”’, in M. D. Grmek and F. Robert (eds), *Hippocratica*, CIH III (Paris, 1980), 199-221.

κατασχάσας ‘having cut’ but leaves the entire section untranslated, dismissing it as *locus male scriptus* ‘a badly transcribed passage’ and more severely *totus locus pessime se habet* ‘the whole passage is in a dreadful condition’; in the introduction he commits himself only to the curt *nyctalopis curatio describitur* ‘a treatment for night-blindness is described’. Joly marks the verb with daggers of corruption, and attempts no translation.<sup>(11)</sup> The second problem, which has attracted considerable scholarly interest, is that the loosely appended expression ‘one or two’ is unclear, as is the reference of μέγιστον ‘very big’. Debate has centred on whether one or two huge ox livers are to be eaten (so Joly, ‘il faut faire avaler, crus et trempés dans du miel, un ou deux foies de boeuf, aussi gros que possible’), whether one huge ox liver is to be eaten one or two times (so Sichel, ‘il faut faire manger, une ou deux fois, un foie de boeuf cru aussi gros que possible, trempé dans du miel’), or in one or two portions (so Ermerins, who suggests the insertion of μέρος ‘portion’).

The difficulties may be resolved by comparison with content in other treatises (especially *Diseases 2*, *Prorrhetic 2* and *Epidemics 6*; but also *Diseases 3*, *Epidemics 2*, *Koan Prognoses*, *Prognostic* and *Places in Man*). In particular, from the association of night blindness with the disease known as κυνάγχη ‘the choker’ it is possible to put the treatment here prescribed in a wider context. We can emend and expand the text to give a sense in accord with parallel treatments of night blindness and associated conditions in the Hippocratic Corpus and other sources. However, while the text may be satisfactorily explicated in this way, and it is clear that something has been lost, restoration is offered for example only. It does, however, seem certain that a reference to garlic has dropped out. The two aspects of the therapy prescribed are: first, cupping (as Sichel perceived, on the basis of medical probability, but without emendation or argument); and second, a dietary régime of (raw) garlic and (cooked) liver.

The condition of night vision is discussed at *Prorrhetic 2*. 33 and 34 from a theoretical standpoint: it tends to affect boys and young men, who sometimes recover spontaneously in seven months time; elimination of noxious matter, especially downwards, is beneficial; patients with this disease or a flux of tears of long duration should be asked if they suffered headache before these concretions. As in *Organ of Sight*, it is explicitly stated that purging is useful in therapy, and implicitly supposed that bodily fixation is significant in aetiology. A more pragmatic approach to the condition is found in *Epidemics 6*. 7.1: night blindness is associated in a particular year with painful ‘ophthalmias’ and with other symptoms or ailments, above all, with coughs, pneumonia and ‘chokers’. The doctor of *Epidemics 6* found the array of symptoms intractable. Treatments essayed, without great success, included laxatives, emetics and

(11) Sichel 150, Ermerins XL, Joly 171.

phlebotomy, including surgery on the tongue. Among the patients some endured great pain, especially those who suffered from swollen vessels in the temples and the neck. Night blindness is associated with a similar range of unpleasant symptoms in a shorter account at *Epidemics* 4. 52: ears and mouth are affected (toothache and mouth ulcers); there is cough, fever and digestive disorders. The association between eye trouble and ‘the choker’ appears also in *Epidemics* 2. 6. 12, in the brief instructions ‘carry out phlebotomy for the choking disease and for ophthalmia’. Also, at 2. 2. 24, there is a full clinical description of symptoms apparent in ‘the choker’: the focus here is on appearance of, and sensations in, neck, throat and jaws.

There are many other references to the same disease, or rather, perceived group of diseases. In *Koan Prognoses* (*Coac.* 357-72), many bad or mortal signs are specified in the group of diseases designated τὰ κυναγχικά ‘the choker types’: much attention is paid to observation of throat (internal) and neck (external) and when the disease ‘turns to’ the lung, sufferers either die in seven days or become purulent; in *Prognostic* (*Prog.* 23) ulceration of the throat is a similarly bad sign. Bleeding from the neck is there regarded as the safest and best course but it is recognized that there are dangers in the treatment as well as in the condition itself. Writing on throat ulceration, the author refers to the risks attendant in cutting the uvula; the verbs used are ἀποτάμνεσθαι and ἀποσχάζεσθαι (discussed further below). In *Affections* also (*Aff.* 4), the verb σχάζειν is used of the same operation: if the swelling of the uvula does not go down, the treatment is ὀπισθεν ξυρήσαντα τὴν κεφαλὴν, σικύας προσβάλλειν δύο, καὶ τοῦ αἵματος ἀφαιρέειν ὡς πλείστον, καὶ ἀνασπάσαι ὀπίσω τὸ ρεῦμα τοῦ φλέγματος, ‘first shave the back of the head, apply two cupping vessels, draw off as much blood as possible and draw backwards the flow of phlegm’; then, if there is still no amelioration, the knife is applied, σχάσαντα μαχαίρῳ ... σχάζειν. ‘having cut with a knife ... cut’. In *Diseases* 3 (*Morb.* 3. 10) discussion of ‘the choker’ leads to treatment of παρακυνάγχη, ‘a variant on the choker’: for this, phlebotomy of vessels in the chest, bleeding from the arms (if the patient is strong enough), incision of vessels under the tongue and purging with *elaterion* are all prescribed; this meshes with material following on treatment of ‘the choker’ in *Diseases* 2. Similarly, in *Regimen in Acute Diseases* (*Acut. Sp.* 9-10) therapy of two forms of ‘the choker’ is by phlebotomy of vessels in the arms and under the tongue. Purgation by *elaterion* and bleeding from the arm are both prescribed also in *Places in Man* (*Loc. Hom.* 30).

In *Diseases* 2, several kinds of ‘choker’ are discussed and differentiated. These passages provide illumination of the treatment adumbrated in our treatise. In the first brief mention of ‘the choker’ in *Diseases* 2 (*Morb.* 2. 9), only one type is noted. Its locus is in the jaws and the area of the neck, sometimes also under the tongue or somewhat above the chest. In the ensuing

section, the author proceeds to discuss the clearly related disease σταφυλή ‘the grape’, where surgery on the swollen uvula is imperative. In the second part of *Diseases 2*, three different types of ‘the choker’ are discussed at some length and followed by a discussion of ‘the grape’. In these three instances of ‘the choker’, the differences lie in symptoms, development and, accordingly, therapy indicated, also to some extent in the supposed aetiology and site of the trouble. The treatment in the first type (*Morb.* 2. 26) is to apply a cupping vessel to the first cervical vertebra, then after shaving the hair beside the ears, to apply cupping there, and once pressure is established, to leave the vessels in place for as long a time as possible (πρὸς τὸν σφόνδυλον τὸν ἐν τῷ τραχήλῳ τὸν πρῶτον . . . παραυρήσας . . . καὶ ἐπὶν ἀποσφίγξῃ τὴν σικύην ἐὰν προσκεῖσθαι τὸν πλεῖστον χρόνον). Extensive follow-up treatment includes purging by suppositories or enema. The treatment in the second type (*Morb.* 2. 27) is to apply a cupping vessel as in the first, then to apply a sponge soaked in hot water to neck and jaws; again, there are extensive further recommendations in which a new element is the prescription, where *empyema* is developing, of a bedtime snack of raw garlic, as many cloves as possible (σκόροδα ὡμὰ τρωγέτω ὡς πλεῖστα) accompanied by neat strong wine. In both cases, fumigation too is practised. The third type (*Morb.* 2. 28) differs from the others: it is less serious; treatment is by dietary manipulation and application of poultices. Also, the ‘back of the tongue’ is affected. In this respect, it seems to serve as a transition to ‘the grape’, the subject of the ensuing section (*Morb.* 2. 29); there too the jaws are swollen but the main problem lies in the uvula, which must be pressed against the palate and its extremity cut (ἀποπιέσας διαταμεῖν ἄκρον).

From these parallels in the treatment of ‘the choker’, which in incidence is associated with night blindness in *Epidemics 6*, it is evident that the procedures so peremptorily indicated in our text are application of cupping and consumption of raw garlic. Blood-letting (phlebotomy or venesection) was a favoured Hippocratic recourse in many diseases; but — in part because it was so familiar, in part because it was a technique learned by observation rather than reading — few descriptions of it survive. Celsus exceptionally gives a description, stressing its importance in diseases which, like ‘the choker’, constrict the throat (2. 10. 1-17). The use of honey-coated garlic — presumably the honey intended to make the garlic more palatable, or easier to swallow, like a sugar-coated pill — is repeated in a prescription to purge a strong patient overcome by fever brought on by fatigue or by a journey in the section on fevers in *Diseases 2*: σκόροδα δοῦναι ἐς μέλι βάπτων (*Morb.* 2. 43.3). In a long series of cleaning-out prescriptions found in *Internal Affections*, all vegetables save garlic are proscribed; of garlic the patient is to eat as many (but it is not clear whether the plural indicates cloves or heads) as possible, raw, baked or boiled: ὡς πλεῖστα τρωγέτω καὶ ὡμὰ καὶ ὀπτὰ καὶ ἐφθά (*Int.* 21).

Garlic, especially when eaten raw, was widely regarded as having laxative and diuretic properties (*Aff.* 54, *Vict.* 2. 54; on honey cf. *Aff.* 58). One element remains to be explained: the presence of (?raw) ox liver.

I can discover no case of a patient being made to eat raw liver, with or without honey. It is not used even in poultices or pessaries, though various unlikely and unappealing animal applications are specified, especially in the gynaecological works. The regular treatment for night blindness, authenticated in a wide range of later sources — Herophilos, Celsus, Paul of Aigina, Aretaeus, Galen and Pliny — was to give a meal of liver, while using the cooking steam or juices as an eye-lotion (gravy from roasting, *de compositione medicamentorum secundum locos*, Gal. 12. 802 K; wine used in boiling, Plin. *NH* 28. 47).<sup>(12)</sup> Frequently, goat's liver is specified, perhaps because the goat was supposed to have good night vision (billy-goat to be preferred, Celsus 6. 6. 38). While there may be an element of sympathetic magic in the prescription, there is also a sound nutritional basis, which could not have been understood but which could have been appreciated through years of empirical observation and pragmatic prescription. Night-blindness is caused by a deficiency of vitamin A, and liver is a rich source of that vitamin (hence the cod liver oil, once forced into children).

There is a slight awkwardness in that the subject of the first sentence, with its two jussive clauses (a construction used only here in the work) is the patient, while the subject of the second sentence, with three nominative participles followed by an imperatival infinitive (with another participle βάπτων 'dipping' loosely attached and a further explanatory infinitive καταπιεῖν 'to swallow' dependent on it), is the doctor; but the sense is clear and the jerky Greek is characteristic of the work.

### III Conclusion

I ought to stress that the difficulties presented by this short work are not typical of Hippocratic texts, except in the general sense outlined at the outset. Such short works — we may compare the still shorter *On Anatomy* and the somewhat longer *Dentition* — are peculiarly difficult to interpret, and to place in the wider context of the Hippocratic Corpus and other writings.

Classical philologists are accustomed to consider absolute questions of authenticity and attribution, and comparative questions of influence and

(12) For a review of the evidence, see already Foesius I 736; also Staden, H. von, *Herophilus: The Art of Medicine in Early Alexandria* (Cambridge, 1989), 423-6; Gourevitch, D., 'Le dossier philologique du nyctalope', in M. D. Grmek and F. Robert (eds), *Hippocratica*, CIH III (Paris, 1980), 178-82.

the chronology of interaction. *Prima facie*, the questions addressed by the literary critic examining the language and content of Euripides' *Phoenician Women* in relation to other Theban plays, such as Aeschylus' *Seven against Thebes* and Sophocles' *Antigone*, resemble those asked by the medical historian attempting to disentangle connected strands in the works of the Hippocratic Corpus. However, in the case of the Corpus, the answers to such questions have proved elusive, and even the questions have come to seem at times pointless. Although the first person is often used, in such statements as 'I have written' or 'I shall write', it is not possible to identify authors, or even to establish common authorship; furthermore, some treatises seem to be in part collaborative. It may be said that all the Hippocratic works are mixed and derivative to some degree, and that few, if any, are original in an accepted literary sense: the terms 'redactor' rather than 'author' and 'compile' rather than 'compose' are appropriate; interpolation if detected is not to be condemned and deleted. Despite these difficulties, the search for ways to explain the formation and tradition of the corpus remains meaningful and challenging.

As to *Organ of Sight*, the closest affinities both in content and in language are with *Places in Man*. Although the content quite closely resembles the content of the section on eye diseases in *Prorrhetic* 2, the language and style are in no way similar. When we turn to other works in the Hippocratic Corpus, various elements of common content can be traced. The closest is the account of diseases affecting the head of *Diseases* 2: several sections show strong similarities and the arrangement by headings is the same. There is a further nexus of associations with treatises which give recipes (*Diseases of Women* 1, *Regimen in Acute Diseases*); and still another with treatises where cautery is employed (*Affections*, *Internal Affections*, *Articulations* in addition to *Places in Man* and *Diseases* 2). In language, alongside the striking parallels with *Places in Man*, there are some elements peculiar to our treatise and *Internal Affections* and some recurrent in the gynaecological works. There is some resemblance with some elements in *Epidemics*.

Although in two cases (discussed above) these similarities may facilitate emendation of *Organ of Sight*, where the transmitted text is problematical to the point of being meaningless, the nexus of interrelations demonstrates the complex intertextuality of the tradition. The interrelation of its geographical origins may also be more complex than commonly supposed — but that is another story.

(University of St. Andrews)