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THE HIPPOCRATIC TREATISE *PERI OPSIOS*
(*DE VIDENTI ACIE, ON THE ORGAN OF SIGHT*)¹

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Summary

The nature and affiliations of the work are addressed. The closest affinities in medical subject matter (details of eye flux and cautery), linguistic expression (features of syntax, grammar and vocabulary) and stylistic tone (didactic and magisterial aspects) are seen to be with Places in Man. The inference that the work has an 'early' date and west Greek provenance, and that the author may have interacted with Almageon or Empedocles, both known to have taken an interest in the eye, is examined. Evidence for an 'Egyptian' or 'Libyan' (North African) connection is adduced, and a case made for input from Cyrene.

The work on sight occupies a mere four pages of Greek in the modern printed text.² The treatise is not only brief; it is also both technical and corrupt. Little attention has been paid to it in recent decades. Such short works—we may compare the still shorter *On Anatomy* and the somewhat longer *Definition*—are peculiarly difficult to interpret, and to place in the wider context of the Hippocratic Corpus and other writings. Here this attempt is made. To argue that different works of the Hippocratic Corpus belong together, a conjunction of similar content and similar language is required. Many associations in content can be explained simply by access to a common pool of knowledge, from which items might be taken and reworked. Unless it is unusually esoteric, or there is a high concentration of coincident elements, content is not a reliable indicator. Language may be somewhat more reliable, though here too caution in interpretation

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² Sichel *op. cit.* *Littere* 9.152–161 (1861); *Ermerins* 3.279–283 (1864); Joly (1978) 168–171.

is imperative. Where such elements as vocabulary, or grammatical and syntactical features, or use and frequency of particles and pronouns are shared—especially where these are distinctive or non-standard—they may be pointers to a common tradition.

The title (not, of course, original) may have arisen from a compiler's glance at the first words. The term ὄψις, used three times in the work—in 1 (plural), 2 (singular) and 8 (singular)—can be either abstract or concrete in sense (9.152 and 158 L.). In the former case (the sense in 2 and 8, and the sense more common in the Hippocratic Corpus), it is always singular, 'vision'. In the latter case (the sense in 1), it may be singular or plural, with reference to the seeing organ; that is to the 'eye(s)' or to the central 'seeing part' of the eye, iris with pupil or perhaps pupil alone, though for this the word κοπή was available. We might translate 'On Vision' or 'On Sight'; but a general title 'On the Eye' is more apt to the actual content and the rather cumbersome 'On the Organ of Sight' conveys the dual sense, abstract and concrete, of the word ὄψις.

The work, written in a didactic and magisterial style, is a surgical manual, or more probably, in view of its excessive brevity, its abrupt asyndetic beginning and equally abrupt ending, and its marked omissions of common eye afflictions (such as the classic symptom 'inflammation' and the serious condition 'rupture', leading to protrusion of the eyeball) an excerpt from, or notes on, a surgical manual. Procedures are detailed for a series of eye complaints; these can be identified with a degree of plausibility as glaucoma, cataract, effects of trachoma, night blindness and seasonal ophthalmia. The exclusively surgical content makes comparison with non-surgical treatises difficult. There are some general resonances with the practices, and so with the vocabulary, of such surgical works as *Uleers* and *Articulations*; also with surgical procedures in the gynaecological treatises. Other affinities can be traced with works which are primarily theoretical (especially with *Places in Man*) or primarily prognostic (especially with *Diseases 2* and *Internal Affections*) or primarily prognostic (especially with *Prophetic 2*) but the emphasis is naturally different.³

The practice of cautery, which features prominently in *Organ of Sight*, features also in *Places in Man*, *Diseases 2*, *Affections*, *Internal Affections*, *Articulations* and *Mochlicon*, as well as certain parts of *Epidemics* and a few other works. It is argued below that the closest connections, in this as in other respects, are with *Places in Man*.⁴ Cautery has traditionally been associated with the name of Euryphon and regarded as a 'Cnidian' practice. However, it may more properly be regarded as an ancient practice, persisting in pockets everywhere.⁵

The author of *Affections* states his intention to write a treatise on diseases of the eyes, and inevitably, speculation has centred on whether our fragment represents this work.⁶ Having treated other diseases arising from the head, the author declares, in the rather grandiose expression of the future perfect tense, that he will treat eye diseases separately (*Aff.* 5 [6.214 L.]). He also regards diseases as arising from the senses of smell, hearing, sight and from venery as well as from the more conventional aetiologies of hot, cold, wet, dry, food, drink, exertions and wounds (*Aff.* 1 [6.208 L.]). However, his treatment of other head diseases is very, very general and entirely different from the surgical works; and, if we are investigating possible common authorship, we must note that he says he will write also on suppuration, phthisis and gynaecology (*Aff.* 33 [6.244 L.]).

The range of works projected by the author of *Affections* resembles that proposed by the author of *Articulations*; and the question of inter-related authorship resembles that between *Articulations* and *Glands*, which is closely connected with *Places in Man*.⁷ There are coincident elements in the treatises *Articulations*, *Glands*, *Regimen in Acute Diseases*, *Epidemics* and the gynaecological works.⁸ *Organ of Sight* may now be added to this broad grouping, while *Affections* is an outlier. Vocabulary and expression common to *Organ of Sight* and the gynaecological writings are explored below. For the moment, it may be noted that one peculiarity of *Affections* is that the author refers to a work on

⁴ For *Places in Man* (*Loc. Hom.*), see Craik (1998); also Joly (1978) and Littré 6. 273–349. For references to editions of other Hippocratic works cited in this paper, including to Littré, see Craik (1998) x–xiv.

⁵ See Thivel (1981) 281–282.

⁶ An affirmative answer is given, on the basis of a scrutiny of particles only, by Rodríguez Aláiz (1993).

⁷ See Craik (1998) esp. 23, 137–138; (2002) 285–287.

⁸ See Craik (2002) 287–288, esp. 288 n. 3.

³ An instance of context-dependent vocabulary is ἵσσις, regularly used of hands-on surgical treatment; an instance of context-dependent expression is the repetition of such 'next' conjunctions as ἐπειτα and τότε for indicating successive stages in a series of instructions.

drugs, called *pharmakitis* at 15, 23, 28, 40 (6.224, 234, 240 and 250 L.) or *ta pharmaka* at 4, 18, 27, 29 (6.212, 228, 238 and 240 L.). The content seems to have some association with the recipes in *Organ of Sight* for an eye ointment. Both groups of recipes, those in *Affections* and those in *Organ of Sight*, coincide in part with recipes in the gynaecological works (*Mul.* 1.102–105 [8.224–228 L.]) and in *Regimen in Acute Diseases* (*Acut. Sp.* 65–66 [2.520 L.]).

The author of *Places in Man* regards the aetiology of illness as flux from the head to various parts of the body, including the eyes. Different kinds of ocular flux are classified and appropriate treatments for each specified.⁹ The treatments are: eye salves (13.1,2 [6.300 L.]); purging the body by enemas and laxatives (13.1,4 [6.300 L.]); purging the head by nasal insertions (13. 2,4 [6.300 L.]); cautery of the vessels in the temples (13.7 [6.300 L.]); and, in an extreme case, making incisions in the scalp to the bone (13. 5 [6.300 L.]). Similarly, in *Organ of Sight*, according to type of symptoms, the treatments are: eye salves (9.2,3 [9.160 L.]); purging the body (7.1 [9.158 L.]; 9.1 [9.160 L.]); purging the head (1.1,2 [9.152 L.]; 7.1; 9.1); cautery of the vessels (1.1,2; 3.1–4) and incising the scalp (4.2; 8). There is also cautery almost up to the bone in the skull (3. 1–2). In both treatises too, trephining is practised (*Loc. Hom.* 32 [6.324 L.]; *Vid. Ac.* 8), as is venesection or cupping (*Vid. Ac.* 3.1, 9.1). Treatment of the eyelids, as prescribed in *Organ of Sight* (2.1; 4.1–2; 5.1; 6.1), is by similar methods; that is, by surgical cutting and burning, and by ointments. The author of *Organ of Sight* specifies flux only once (9); this passage recalls the description of eye flux in *Glands*, a treatise already seen to be closely parallel to *Places in Man*. In these works, ophthalmia is associated with flux and swellings (*Gland.* 13 [8.586 L.]; *Vid. Ac.* 7 [9.158 L.]).

One striking common element between the treatises *Places in Man* and *Organ of Sight* is that detailed instructions are given as to how cautery of the vessels should be performed. These instructions are given in similar terminology and with a similar emphasis in content, for instance with procedures to arrest haemorrhage. In addition to the passages with reference to the eyes, discussed above, both treatises have sections dedicated to the subject of cautery (*Loc. Hom.* 40 [6.330 L.] ~ *Vid. Ac.* 3 [9.154–156 L.]). This section of *Organ of Sight*

has generally been dismissed as out of place in a work on the eye.¹⁰ However, it is entirely apposite: although it concludes with the general statement that the principles of cautery are the same everywhere in the body, it commences with instructions relating to the eye in particular, as becomes evident when the brief and allusive content of *Organ of Sight* is compared with Celsus' extended and clear account of treatments for eye afflictions (7.7.15). Although some elements in the instructions recur elsewhere in the Corpus where cautery is recommended, the strictly surgical stance is unique to *Places in Man* and *Organ of Sight*. The technical term διακαίειν "cauterise" is similarly used; and procedures are similarly outlined. The same salient elements are present in both and it is hard to resist the conclusion that they derive from a common stock of lore or a common written source.

In addition, and perhaps more significantly, a close comparison between the practical instructions given in the two works for treatment of the eye shows a clear and striking coincidence in theoretical approach. In *Organ of Sight*, a distinction is made between eye flux "from above" and eye flux "from below" (ἄνωθεν . . . κάτωθεν, 3.3 [9.156 L.]). In *Places in Man*, a similar distinction is made between fluid flowing from between flesh and bone (that is, between scalp and skull) and fluid flowing from brain (that is, from below skull). Flux "from above" (flux A, common) is from the top of the head, from the area below the scalp and above the skull; flux "from below" (flux B, exceptional and serious) is flux from the brain, from deep inside the head, below the skull. These passages too are illumined by the long and full discussion of Celsus (7.7.15). Celsus' source here is probably *Organ of Sight*: in addition to features already remarked, both works prescribe binding with ligatures and marking the vessels with ink.

When the passages relating to two types of eye flux are viewed in conjunction with the description of the vascular system in *Places in Man* (3.1–2 [6.280 L.]), it appears that flux A is envisaged as passing from the head to the vessels in the temples and so to the outer corners of the eyes, and flux B envisaged as passing from the head through vessels in the forehead to the inner corners of the eye.

¹⁰ Joly (1978) 169 n. 1 comments "ce chapitre semble égaré dans une oeuvre d'ophtalmologie".

⁹ See Craik (1998) 147–151 on *Loc. Hom.* 13 (6.300 L.).

Treatment of A is routinely effected by cautery of the temporal vessels, or if this fails by incising (*Loc. Hom.* 13. 3–6 [6.300 L.]) or cauterising (*Vel. Ac.*) the scalp. The therapy applied in other treatises may point to a similar underlying, though there not explicit, set of beliefs: at *Diseases* 2.12–13 (7.18–24 L.), the treatment of flux from the head and elimination of peccant matter by eight eschars at different points on the head (beside ears, at temples, on the back of the head, at inner point of eyes); and at *Affections* 2 (6.210 L.), the instruction to incise the scalp or to cauterise the vessels.

The text, often obscure, is elliptical and allusive. The expression is disconnected, asyndetic and without stylistic pretension. The language is rough, functional and unidiomatic. The syntactic structures are primitive, with compound sentences lacking subordinate clauses and a marked tendency to obse or careless repetition, especially repetition of the demonstrative pronoun. (See 1, τοῦτον, τοῦτον, τοῦτο, καὶ τοῦτο, τοῦτο, τοῦτοισιν, and 6, verb τρῖβειν "rub" repeated six times, to describe both preparation of ingredients in an eyewash, and its application to the patient.) Occasional alliteration is not a mannered stylistic device but suggests rather a mantra, mnemonic of the trainee physician; or it may simply be fortuitous. (See 1, καθάριεν . . . κεφαλὴν . . . καίεν . . . καθοῖς καὶ κόβατος τῆς κεφαλῆς.) Second person address is used and instructions are most commonly given by jussive infinitives, conjoined with nominative participles. These features occur in *Places in Man*, and in a few other works. There are two more unusual features in common with *Places in Man*: firstly the use of plural verb with neuter plural subject, perhaps a trace of Doric idiom, and secondly causal ὥς for regular ὅτε with participle.¹¹ (See 3.4, ἐπειδὴν τὰ ἔλκεα ὕγια γέγονται and 9.2, ὥς πεύματος ἐτρέγοντος.)

In linguistic, as in syntactical aspects, there are several points of overlap. For instance a preference for compound verbs is apparent (such as the verb *καυκαίεν* "cauterise beside" occurring only in *Organ of Sight* and *Places in Man*); this is striking, as, in other respects, the language is so plain.¹² Some of these formations may originate

¹¹ Such usage may have been emended away as a solecism by ancient scribes or modern editors in other, more studied, treatises; the irregular ὥς is here emended by Ermerins.

¹² On such compounds, esp. of δι- and ἐνω- verbs, cf. Craik (1998) 100–101, 198.

as aspects of precise surgical instruction and description: with the three times repeated *ἐκκαταίεν*, "burn in and down" in the highly technical context of *Organ of Sight* 3, cf. *ἐκκαταίεναι* "cut over and up" of equally technical contexts in *Head Wounds*.¹³ Similarly, the *pro-* verbal prefix is frequently used of surgical procedures: *Organ of Sight* 3, *προαφήμην*, "let [blood] before" has parallels in such verbs as *προκαθαίρω*, "purge before" and *προδούω*, "wash before". However, in *Organ of Sight* the following *dic-* compounds are preferred where the simple verbs would suffice: *διαβλάτω*, *διαθεπτικώ*, *διακρίω*, *διασκηναίω*, *διακρίω*, *διαχωρίζω*. Another instance of overlap is the expression *αἷμα ἀφίεναι* (so used only in these two works, though the same verb occurs followed by the genitive in *Affections* and in *Diseases* 2).

The diminutive *σπογγίον*, "little sponge" (twice in *Organ of Sight*) occurs elsewhere only in *Places in Man* (once) and in *Diseases* 2 (three times); elsewhere *σπογγίος* is invariably used. Use of diminutive forms is in general a feature of gynaecological writing. As noted above, *Organ of Sight* has particular links with the gynaecological works; we may add here therapy by the laxative *ἐλαττήριον*, use of the cream *μυσορώς* and specification of wool as "Milesian". Linguistic peculiarities common to *Organ of Sight* and the gynaecological works are these: firstly, adjectives with *-ειδής* termination (such as *θαλασσοειδής*, which occurs three times in *Organ of Sight*, cf. *Diseases of Women* 2.116 (8.236 L.), where three separate such adjectives occur, perhaps coincidentally in a description of ocular pathology); secondly, use of the dual number (if we accept Ermerins' persuasive emendation from the dative singular to the dual at 2.1 (9.154 L.), very rare in the Hippocratic Corpus even where duality is stressed: it occurs only in the gynaecological works and *Epidemics* 5.¹⁴ There are common idiosyncrasies in vocabulary also; for example the rare verbs (compounds again) *περιελάω* "wind around" and *συνμύω* "close [the eyes]".

This is little more than an impressionistic survey: much more philological work is required. As a caveat, it must be noted that this argument for a particular different nexus of connections would require refinement if other elements were introduced and a comprehensive

¹³ Cf. Hanson (1999).

¹⁴ The dual of *ὀφθαλμός* occurs only in *Epid.* 5 and *Mul.* 1: of *ορέλος*, only in *Mul.* 2 and *Feet. Ex.*; of *γείπ* only in *Epid.* 5, *Mul.* 2, *Nat. Puv.*

study made. The term ἄτρακτος for a cauterising instrument occurs only in *Organ of Sight* and in *Internal Affections*. There are a few coincidences also with the language of *Coan Prognoses*: the adjective λαμπρόν "bright" is applied to αἷμα "blood" only in that collection apart from *Organ of Sight* and the common pejorative term φλουρός (as in *Organ of Sight* 1), which one might have expected to be ubiquitous, is more common in *Coan Prognoses* than anywhere else with twenty-five of sixty-one occurrences in the Hippocratic Corpus; there is a cluster also in *Fractures* and *Articulations*, observed above to be aligned on other grounds with *Organ of Sight*.

However, it is clear that in both content (on eye flux and on cautery) and expression (style, syntax and grammar) *Organ of Sight* particularly resembles *Places in Man*. It has been argued that *Places in Man* is an early work, originating in Italy or in Sicily, a region where there were many distinguished medical practitioners, notably Democedes. It may be suggested that this treatise has a similar date and provenance; and that the author had affiliations with Alcmaeon of Croton (*floruit* around 500 BCE) and Empedocles of Acragas (*floruit* around 480 BCE), both known to have taken a particular interest in the eye.¹⁵ However, the severely surgical tone of *Organ of Sight* militates against direct comparison with these more theoretical and philosophical writers. Although precise connections are hard to establish, it is plausible that thinkers with an interest in the workings of the eye and doctors with an interest in diseases of the eye might have found their activities complementary; just as exponents of secular and of sacred medicine coexisted in Cos, Epidaurus and Pergamum.

Both Alcmaeon and Empedocles, like the medical writers, wrote of the 'bright', or fiery, element in the eye, and Alcmaeon viewed this as the part on which clarity of vision depended; language as well as thought has Hippocratic resonances (DK 24 A 5 = Theophrastus, *De sensibus* 25).¹⁶ And, like the Hippocratic writers, Alcmaeon observed that eye and brain were linked by *poroi* "ducts", probably to be regarded as the optic nerves. Alcmaeon was said to have dissected the eye (DK 24 A 10 = Chalcidius, *In Timaeum*. 279), but it is unlikely that this bears any relation to the activities of the

doctor of *Organ of Sight*: even if the story is true, the dissection was almost certainly of an animal.¹⁷ There is evidence that Democritus too took an interest in sense perception and dissected animals, cutting into the βρέγμα, "forehead".

It has already been argued that *Places in Man* shows some Egyptian influence. *Organ of Sight* surely does also, and to a greater degree. We should say rather that there may be input from various regions in north Africa; from Libya as well as Egypt. These terms were not always used with precision: Strabo used "Libya" for all of the African continent in stating that the inhabited world had three continents: Libya (the smallest), Europe and Asia (17.3.1). The evidence for Egyptian or Libyan input is varied and cumulatively compelling. Above all, there is the good fifth century evidence of Herodotus, who visited Egypt around 430 BCE.¹⁸ From Herodotus we learn that there was a degree of medical specialisation in Egypt: among specialist practitioners he mentions ophthalmologists as well as dentists and others (2.84). Further, he tells us that the Persian king Cyrus—seeking the best treatment—recruited an eye doctor from Egypt through the Pharaoh Amasis (3.1). Herodotus regarded the doctors of Libyan Cyrene as most famous after those of Croton: those of Cos and Cnidus do not rate a mention (3.131).¹⁹

In an unrelated passage (4.187.2) Herodotus informs us that cautery of the vessels in the crown and temples was regularly practised in Libya, with a view to ensuring health by the prevention of downward flow of phlegm. Such cautery, as a therapeutic rather than preventive measure, is readily paralleled in the many Hippocratic works which prescribe treatment for conditions arising from flux from the head, especially to the eyes but also to ears, nose and elsewhere in the body. These practices were widespread in antiquity. Celsus, writing in the first century CE, regards this aspect of medicine as part of universal practice, though with local variations: the *Afrorum curatio* was to burn the crown of the scalp to the bone, whereas in Gaul the vessels in the temples and the crown of the head were

¹⁷ In an important paper on this subject, Lloyd (1975) discusses the evidence of *Loc. Hom.*, *Aff.* and *Morb.* 2, but curiously makes no mention of *Vid. Ac.*

¹⁸ See Althoff (1993).

¹⁹ The appended statement on Cyrene has been deleted by Stein and a few others, in the belief that it is a scribe's chronological note; but most editors retain the text in its transmitted form, which was that known to Eustathius.

¹⁵ See Longrigg (1993) 58–60 on Alcmaeon and 72 on Empedocles.

¹⁶ Cf. Jouanna (1983) 215, n. 3.

treated. The "African" procedure is exactly that detailed in *Organ of Sight* (3.1–2 [9.154 L.]).

The second category of evidence is that of papyri, especially the Ebers papyrus, which deals with different diseases of the eyes and recommended treatments. Although this of a much earlier date, c. 1500 BCE, medical conservatism makes it acceptable as evidence.²⁰ The Ebers papyrus (ophthalmology) prescribes for one case, *sharu* disease, treatment by roasted ox liver pressed on the eye; further, at the beginning of the Kahun papyrus (gynaecology) a patient suffering from an eye disorder is prescribed, after treatment of both uterus and eyes by fumigation, a meal of fresh (?raw) ass liver.²¹ These passages in Ebers and Kahun may be considered with the treatment of night blindness in *Organ of Sight* 8, where the patient is apparently exhorted to "gulp down" one or two large raw ox livers.²² The reading "raw" ought probably to be emended. However, the gynaecological element is of interest, as in two Hippocratic passages; (cooked) liver is prescribed for gynaecological patients: *Diseases of Women* 1.34 (8.80 L.), sheep or goat liver in cases where, near parturition, the uterus fills with "wind" and 2.110 (8.236 L.), sheep or ox liver to control unnatural flow of menstrual blood. There are parallels in Herophilus, Celsus, Paul of Aegina, Aretaeus, Galen and Pliny for treatment of night blindness by (always cooked) liver of various animals; sometimes the cooking juices are used as a lotion as well as the meat for consumption.²³

Another parallel between early Egyptian medicine and the medicine of *Places in Man* is in the supposed system of the blood vessels. The distribution of the vessels, as described in the Egyptian "vessel book" is: to the back of the head, to the forehead, to the eye, to the eyebrow and to the temples; the vessels to the temples had as their contents blood and water, carried to the eye. Also, the distinction made between the bones in the head, perhaps skull and temporal bone, indicates an anatomy similar to that of exponents of

²⁰ See Nunn (1996) 199–200 on Ebers papyrus, 119 on *stelae* corroborating that ophthalmology existed as a recognised specialisation, and 206 on lack of evidence for any major change in the format or content of Egyptian medicine over the long period 2600 to 525 BCE.

²¹ See Nunn (1996) 200 on Kahun papyrus 1: "then you shall cause her to eat fresh liver of ass".

²² The passage is discussed by Gourevich (1980).

²³ Cf. von Staden (1989) 425–6.

two types of flux to the eye, upper and lower:²⁴ the anatomy of the head was well known, as in mummification procedures the contents of the brain were removed through the nose. And the suggestion of a remedy, three times repeated in the Ebers papyrus, to drive out blood, or "vessels of blood", from the eyes recalls the problem of αἱματῶδες τι... ὑγρόν "a bloody sort of moisture" at *Places in Man* 13.6 (6.302 L.).

There is much general evidence for communications between the regions. Egypt was known to Greeks already in the seventh century, when mercenaries served under the pharaohs, and there were soon Greek and Carian settlers (Hdt. 2.61). Homer mentions Egypt incidentally as a source of *pharmaka* "drugs" (*Odyssey* 4.227–232, Helen had drugs from Egypt, a fertile land and a rich source); in the classical era, Theophrastus regarded Egypt as a prime source of drugs (*History of Plants* 9.15; cf. *HP* 4, list of plants peculiar to regions: 4.2.1 ff. Egypt; 4.3.1 ff. Libya; 4.4.1 ff. Asia). This is corroborated by references in the Hippocratic Corpus itself to Egyptian, Libyan, and Ethiopian specifics. The adjective "Egyptian" occurs seventy-six times in the Hippocratic Corpus, with reference to perfume, soda, linen and so on. Ethiopian cumin too was prescribed. Most of these references are in the surgical and gynaecological works; also in *Epidemics* 2, 5 and 7, in *Internal Affections* and in *Regimen in Acute Diseases*. There was a regular trade route to the mainland from Egypt and from Sicily; grain especially was an important commodity, which had to be imported to the Greek mainland. In addition to grain, Egypt exported linen and papyrus; the main imports were wine, oil and pottery.

Cyrene, which was founded on the Libyan coast by Dorians from Thera in around 630 BCE, and which had a further influx of immigrants from Greece around 570 BCE, rapidly became an important Greek city: culturally cosmopolitan, intellectually vibrant, and prosperous both agriculturally and economically. Relations between Cyrene and the surrounding peoples, largely nomadic, were complex, as were relations with the greater powers of Egypt and Persia.²⁵ When the

²⁴ See Nunn (1996) 45 and diagram, 50.

²⁵ Laronde (1990) describes a situation of contacts and change, as well as conflicts. See also Schafer (1952) and, especially, the palmary survey of Hornblower (1983) 59–65, "Cyrene, Africa and Egypt in the fifth century". Strabo 17.3.21 gives a useful potted history.

Persians conquered Egypt in 525 BCE, Cyrene was able to coexist independently for a time, though it later became part of the Persian empire; it was free again in the middle of the fifth century, about the time its monarchy finally collapsed, but never regained its earlier importance.

It may be conjectured that Cyrene was an interconnecting hub, an intermediary in communications between the Aegean and Italy. Sea communications with both were good. The route to the Aegean was via Crete, due north of Cyrene and readily reached by favouring winds; to reach Sicily, voyagers could either take the direct route or hug the north African coast before making a short crossing on the open sea. Various pointers corroborate Herodotus' estimate of the importance of Libyan Cyrene as a medical centre. It was a major centre of Asclepius worship.²⁶ It was the centre of trade in the healing plant silphion, of which the local monarchy had a monopoly. Although the plant is familiar from illustrations on the coins of the region, it has not been certainly identified. One identification canvassed is *Thapsia Garganica*. The stalk and the sap had medicinal properties as a binding agent, or styptic. According to Theophrastus, the plant was peculiar to Cyrenaica, though according to Strabo an inferior variety grew in "Media".²⁷ The medicament is mentioned forty-six times in the Hippocratic Corpus. Exactly half of these occurrences are in the gynaecological works; there are some in the surgical works as well as *Internal Affections* (seven occurrences); *Regimen in Acute Diseases* (four); *Diseases 2* and *Diseases 3* (four each); *Diseases 4* (one); *Epidemics 7* (two).

People and ideas, as well as goods, surely travelled these routes. Although, as usual, names are elusive it is clear that Egypt produced notable doctors, some known to mainland Greeks. The ideas of Ninyas of Egypt about disease-inducing flux are among those cited, with those of Euryphon of Cnidus and many others, including many from Italy and Sicily, in the 'Menoneia' (Anon. Lond. IX 37-44). There is a tradition of a visit to Cyrene as well as to Italy by Plato, who had pronounced medical interests. Iamblichus begins his catalogue of Pythagoreans with men of Cyrene (DK 58 A 1). Theodorus

²⁶ See Presicce (1991).

²⁷ See Theophrastus, *HP* 4.3.1 and also 9.1, 4, 7, on which see Capelle (1954), esp. 178-183, and Strabo 11.13.7 and cf. 2.2.3; 2.5.33; also Herodotus 4.169.

of Cyrene, whose name was used to signify an archetypal mathematician, speaks briefly, as an old man who was teacher of Theaetetus in Plato's dialogue of that name (Pl. *Theaetetus* 146 B). The career of the eye doctor who went to Persia, like that of Democedes (Hdt. 3.1, 125, 131-132), is evidence of interaction between distant regions and of considerable professional mobility; also of the tendency for the best doctors to gravitate to places where they could find power, prestige and patronage; that is, to royal courts or to wealthy aristocratic households. Similarly, Roman emperors employed distinguished physicians; among them Oribasius, a most prolific medical writer.

A parallel may be suggested. Poets as well as doctors depended on potentates and their patronage. Even the tragic dramatists, whose work is often taken to epitomise democratic Athens at its zenith, travelled to foreign courts: in old age, Aeschylus lived in Sicily and Euripides in Macedon, while Sophocles was regarded as unusual in not leaving the city. The career of the top poet Pindar is analagous in its locale to that of the top doctor Democedes, both being peripatetic. Both were active at Aegina and neither at Athens: a quarter of all Pindar's epinicians are for Aeginetans, only two for Athenians. Pindar had patrons in Sicily (centre, with the south Italian cities, of west Greek medicine), in Thessaly (where the doctors of the *Epidemics* practised) and in Cyrene (also a medical centre). The travels of Pindar can be plausibly reconstructed by inference from the content of his poems, in conjunction with information in the ancient *vita*. Chronologically, Pindar's career is as follows: around 498 BCE, patrons Aleuadae of Thessaly (*Pythian* 10); around 474-466 BCE, patrons Hieron and Theron in Sicily (*Olympians* 1 and 3; *Pythian* 1); 474 BCE, patron Telesicrates of Cyrene (*Pythian* 9); 462 BCE, patron Arcesilas, king of Cyrene (*Pythians* 4 and 5). The ancient *vita* tells of a stay at the court of Hieron, ruler of Syracuse. Scepticism about the information given by ancient biographers, and about biographical information implicit in an author's work, has been current for some time; but this scepticism—in any case rather exaggerated—is inappropriate in the case of a lyric poet evidently naming and praising his patrons. It is impossible to be certain that Pindar went personally to Cyrene to hear his odes performed, but it is highly probable.

Pythian 5 seems to display familiarity with the topography of Cyrene as well with its antiquarian traditions. In *Pythian* 4, a vast virtuosio work of thirteen triads, there is a concatenation of medical imagery. King Arcesilas is likened to an *ιατὴρ ἐπικαιρότατος*, "a most apt

treatise and *Internal Affections*. Particular passages of the short work particularly resemble passages from the treatises mentioned: *Prothetic* 2 (1, 2 and 9), *Internal Affections* (3 and 5), *Diseases* 2 (4, 6 and 8), *Regimen in Acute Diseases* (6). There is some resemblance with some elements in *Epidemics* (6 and 9). Although in two cases, these similarities may facilitate emendation of *Organ of Sight*, where the transmitted text is problematical to the point of being meaningless,³² the nexus of interrelations must induce caution. Once again, the complex intertextuality of the tradition is demonstrated. The interrelation of its geographical origins may also be more complex than commonly supposed.

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³² A new edition of the text is projected.

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