

KNIFE AND FIRE

Medical Practice of East and West

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. Background

This paper is the product of my experience as a classical philologist working on Hippocratic texts exposed, through living in Kyoto, to eastern medical traditions. The material presented here has a strong Hippocratic base and the attempt at comparative study is at this stage tentative. The Hippocratic treatises - attributed to, but not all, indeed perhaps not any, written by Hippocrates of Kos - date to around the fifth century BC, the 'classical period' of Greek civilization. Hippocrates was revered by Galen, and Hippocratic medicine, as mediated through Galen, became the foundation of modern western medicine. But since the nineteenth and twentieth centuries modern medicine, in becoming high tech, has deviated from its Hippocratic roots. In some respects, the medicine of the Hippocratic Corpus (HC) is more similar to traditional Chinese medicine (TCM) than to modern western medicine.¹⁾

I am very grateful to the students at Kyodai who initiated me in these similarities. I think of those in my first lecture course on Hippocrates, especially Gonoji-kun who showed me where to find my first KANPO shop, and Sawada-san who instructed me on Japanese gourds - and to those in my last such course, especially Okada-sensei who introduced me to colleagues at the Meiji University, experts in the theory and practice of acupuncture and moxibustion. However, when in Japan my first obligation was to SEIYOKOTEN and I did not venture far into the fascinating field of comparative study. Since retirement I am free. And I have been stimulated to think further about such comparisons by two scholars, whose help and influence I warmly

acknowledge. The first is Professor Shigehisa Kuriyama, whose brilliantly original book illuminates the fundamentally different ways in which the same thing can be perceived in different cultures – that is, human anatomy in ancient Greece (primarily of the time of Galen) and in China (of around the same date, in the early centuries of our era);²⁾ but I argue here for similarity rather than difference, convergence rather than divergence, in the earlier Hippocratic period. The second is Dr Vivienne Lo, who has patiently instructed me in early Chinese history and generously shared with me her work on the earliest evidence for ideas about the ‘channels’ of the body. (See Section V below.)

There are obvious limitations and difficulties in essaying an approach neither clearly synchronic nor firmly diachronic: present-day Japan cannot (of course) be directly or meaningfully compared with the Greek world of 500 BC. And Chinese evidence from the Han period falls several centuries after the Hippocratic material. I shall return later to these fundamental methodological problems.

. **Hippocratic Physiology: Nature of the Body**

In the HC, the body is viewed as important bits (~ organs, viscera such as lungs, liver, kidneys) and orifices (including eyes, ears, genitals) linked by hollow tubes, ducts or channels of which the most important are the *phlebes* (~ veins and arteries, not distinguished), and solid threads for which the general term is *neura* (~ ligaments, nerves etc.). The Hippocratics were aware that their explanations did not meet the complexity of the body and allowed for channels intermediate between *phlebes* and *neura* (variously described, e.g. as ‘hollow *neura*’); also, in addition to the regular channels, for irregular channels which might ‘open up’ to convey an excess of fluids. These refinements do not concern us here. What does concern us is the way in which the main vascular system was envisaged, and especially views held on the location of vessels in the head and neck (route to the lower body); and views of the contents of the vessels in a healthy and unhealthy state. It must be stressed that these views as presented in the HC are not

abstract anatomical surveys; but rather practical adjuncts to physiological understanding, as in *Places in Man* or aids in therapeutic intervention, as in *Nature of Man*. The general treatise *On Anatomy* deals only incidentally with the vessels.³⁾

Accounts of the course of the vessels are found in several Hippocratic treatises as well as in the fragmentary remains of the pre-Socratic philosopher Diogenes of Apollonia and in Plato's *Timaeus*. The most detailed accounts are in *Bones* and in *Places in Man* (as I stubbornly call it: some would prefer the politically correct title *Places in People* or *Places in Humans*). The former is a composite work which brings together various views of the vascular system with similarities and inconsistencies alike apparent. That different vocabulary is employed in different sections to express the routes of *phlebes* (two words for 'neck' and two for 'back') reveals the diverse sources for these beliefs. Different parts of *Bones* can be traced to different sources: 1-7 (probably) and 11-19 (certainly) to a work described by Galen as 'Appendix to *Mochlicon*' (Galen 19. 128 K.); 8 to Syennesis of Cyprus (so Aristotle HA 511b24-30); 9 replicates *Nature of Man* 1, while 10 replicates *Epidemics* 2. 4. 1.⁴⁾ Although these accounts are confused and fanciful in details, a salient common supposition is that the vessels originate in the head. There is some Hippocratic evidence - exaggerated by those who believe that the circulation of the blood was known to the Hippocratics - for a rival supposition that the heart played a central part in the system; but treatises presenting this picture are 'late'. It is a common supposition too that the vessels go in pairs; and the notion of interconnections is recurrent. Supposed pairing may be based on observation of visible conjunctions of veins and arteries, aided by the Greek tendency to favour duality and contrast in modes of thought.⁵⁾

My main concern today is with a common, but little noted, pattern which is regularly implicit and occasionally explicit in these accounts: the pattern of a single vessel going from head to lower body, associated with *myelos*, Ionic *myalos* 'marrow', that is spinal (or cerebral) fluid. The supposed existence of this route from upper to lower body can be

clearly seen in the account of flux theory presented in *Places in Man* (see commentary, especially 170-1) and in *Glands*; also in the accounts of diseases found in such works as *Internal Affections*. The course of such a vessel is described in *Bones* 13-18: it is 'rooted' in the genitals and 'intertwined like ivy' with the 'marrow'; it passes through the body behind the midriff (diaphragm), and through the neck and throat. This vessel which is 'white and sinewy' is described by the unexpected adjective *archaie* 'the ancient vessel', a term occurring only here in the HC. Commentators have mistranslated 'main' vessel; or emended *archaie* 'ancient' to *pacheie* 'thick', but neither expedient is helpful. We may note that the extended description of the 'ancient vessel' is preceded by a brief account of a vessel running around the entire head, with a complex network of channels leading to the brain (*Bones* 12); also that in *Places in Man*, a single vessel is believed to run from crown of head via forehead to bridge of nose. None of these postulated vessels corresponds with the realities of observation or of anatomy.

The 'ancient' vessel of *Bones* may be compared with the vascular anatomy tacitly postulated by Homer in the *Iliad*, our oldest extant Greek text. Homer uses the word *phleps* 'vessel' only once, with reference to a vessel running up the neck, between head and trunk. Two passages are relevant: in one, a hero dies when the single *phleps* said to travel right up the back and through the neck is severed; in the other, a hero is beheaded and *myelos* 'marrow' is said to spurt out (Homer *Il.* 13. 546-8; 20. 481-3). Commentators, surprised to find this rare lapse in Homer's anatomical knowledge and precision, rightly point out the anatomical impossibility. Like *phleps*, associated anatomical terminology is known to Homer, though rare in the epics. In addition to the sole occurrence of *phleps* *Il.* 13. 546 the term *sphondylion* or *sphondylos* 'vertebra' occurs only *Il.* 20. 483. The diminutive *sphondylion* is said by LSJ to be a diminutive 'in form only' and by Edwards, commentary *ad loc.*, to be introduced *metri causa* to avoid a cretic; however, the diminutive fits the sense, as the cervical vertebrae are relatively small. A related *hapax* is *brechmos* the equivalent of the

later *bregma* (anterior fontanelles) at *Il.* 5. 586, where a hero falls headlong ‘on *bregma* and shoulders’. The root sense *brecho* surely conveys an area where moisture was believed to collect rather than ‘because this part of the bone is longest in hardening’, pace LSJ.

To summarise: Homer’s belief that a single vessel carrying *myelos* travelled through the neck has Hippocratic analogues not only in the ‘ancient vessel’ of *Bones*, but also in aspects of the flux theory expounded in *Places in Man* and *Glands* (flux believed to travel via the *myelos* from head to back and to hips) and in aspects of the nosology presented in such works as *Internal Affections*.

. Hippocratic Pathology: Nature of Disease

As a preliminary, we can note that eye troubles were peculiarly prevalent in the ancient Greek world. Literary imagery abounds associated with eyes and vision. In *Airs, Waters and Places* there is much stress on ‘ophthalmias’ regularly arising with the change of the seasons. It was realized that the eyes are a good diagnostic indicator of health or disease; also that the eyes are affected in many apparently unrelated conditions (as is indeed the case with systemic diseases such as diabetes). Cataract was recognized as a degenerative disease; trachoma was endemic and other scrofular infections were prevalent.⁶⁾

Disease is, in Hippocratic terms, regularly associated with peccant matter, noxious stuff, often described simply as ‘moisture’. Whereas in health the vessels carry ‘good’ fluids nourishing the body (primarily, but not only, blood), in illness these fluids are adulterated or unbalanced. Phlegm (especially) and bile are the fluids most regularly implicated in this process, but the formal schema of the four humours develops only later. Typically, it is supposed that unwanted or excessive moisture gathers in the head, then disperses in flux to some bodily part which becomes affected by disease - eyes, ears, chest etc. Moisture stuck or fixed in the wrong place causes particular problems.⁷⁾

A distinction can be seen between noxious stuff localized in and flow-

ing from the scalp above the skull (hereafter, flux A) and noxious stuff localized in and flowing from the brain below the skull (hereafter, flux B): whereas the former was viewed as common and readily treated, the latter was thought serious and intractable. In discussion of eye troubles, noxious stuff from the scalp above the skull (flux A) was addressed by treating the flesh of the *bregma* or the vessels of the temples, while noxious stuff from the brain below the skull (flux B) was dangerously inaccessible in its course from brain to eye (*Places in Man* 13, *On the Eye* 3). There was a particular danger if matter should dry up and become stuck in these ducts (*Places in Man* 2. 2; cf. 3. 3). Celsus and Galen, despite huge practical advances not only in ocular anatomy and physiology but also in surgical techniques, continued to subscribe to such theoretical notions (Celsus 7. 7. 15; Galen *de methodo medendi* 10. 937-42 K.). They exemplify the general medical truth that theory tends to be conservative, while therapy is more innovative.

More generally, diseases presenting at various points in the lower body were thought to be particularly difficult to treat when the causal flux was associated with the conduit of the 'marrow', rather than with other routes from the head via *phlebes*, trachea or oesophagus. Diseases where the marrow was implicated were commonly associated with excess of sexual activity: semen and spinal fluid were allied in early Greek thought.

To summarise: A deep pathway from head to lower body, via the *myelos*, was invoked to explain various intractable conditions. Conditions associated with deep flux from the brain, involving *myelos*, were more serious than conditions associated with shallow flux from the top of the head, involving other fluids such as *phlegma*.

. Hippocratic surgery, especially cauterization (burning)

'Those diseases that drugs do not cure, the knife cures; those that the knife does not cure, fire cures; those that fire does not cure must be considered incurable' (*Aphorisms* 7. 87). The drugs most commonly utilised by Hippocratic physicians were purgatives: emetics, laxatives

and nasal insertions. The common aim was to eliminate noxious matter, by diverting it to a bodily orifice (or, if necessary, to an opening created for the purpose). Cautery and cutting fulfilled broadly similar functions (to reduce unwanted bodily moisture or eliminate fleshy tissue) and it seems that in the classical period individual practitioners or corporate groups favoured the use of one or the other method. Later, cutting prevailed: Galen made extensive use of phlebotomy but rarely mentions cautery (though he does prescribe it for 'streaming eyes' (14. 782 K.). Cautery might be practised almost anywhere in the body (back, chest, neck, head), and applied to fleshy as well as to venous areas, but cautery of the vessels was especially common. The dangers of the procedure were recognized and precautions were commonly advised.

The translation 'cauterise', and the Greek verb *kaiein*, literally 'burn', may be somewhat misleading. The sense may be simply 'apply heat, using a cauterising instrument' and the action merely the application of a gentle soothing warmth: the inherent sense 'burn' does not necessarily or always involve extreme heat, far less branding and scarring. Cautery might be dry (a less invasive treatment) or wet. In dry cautery, the instrument is used simply to apply gentle warmth over or alongside the blood vessels, with a view to changing the consistency or the movement of their contents. In wet cautery, the instrument is placed across them, apparently with the intent of actually breaking the wall of the vessel (hopefully vein, not artery) or even severing it. In both wet and dry procedures, sponges were used to mitigate the pain, to control the severity of the heat, or to mop up blood. (Similarly, in dry cupping, the cupping instrument is applied to the surface of the skin and left there, with the aim of drawing out noxious stuff from the unbroken skin by suction; in wet cupping the skin is broken or scarified in order to remove blood or noxious matter from a vessel or elsewhere.) The instruments used in cautery varied: the most common were rods of metal directly heated by fire (hence the injunction not to allow the instrument to become 'white-hot') or of wood heated by dip-

ping in hot oil (boxwood, *Internal Affections* 28). However, the use of vegetable matter is attested also (*mykes* ‘fungus’, *Internal Affections*: it is not clear which plant was used). (There is a secondary meaning of *mykes* ‘suppuration’ and the cognate verb *mykaomai* ‘suppurate’, perhaps allied with *myxa* ‘mucus’ and the adjective *myxodes* ‘mucus-like’: the lexicographer Erotian and Galen Glosses recognize that only.)

For eye troubles (flux A) cautery of the vessels of the temples was the first recourse: in *Places in Man* (13. 7) the vessels which ‘press on the eye, those which constantly beat and are situated between ear and brow’; and in *Diseases 2* (12. 6; cf. 2. 1) these vessels comprehensively with six other vessels of the head – two alongside the ears, two at the inner corners of the eyes, and two ‘behind the head on either side at the occiput’. Another surgical expedient intended to arrest the downward course of disease-inducing flux is scarification of the scalp at the *bregma*. Trephination of the skull was practised also. These procedures were prevalent throughout the known world, with considerable local variation according to Celsus, writing in the first century AD (Celsus 7. 7. 15).

In a section dealing with general principles of cautery, the author of *On the Eye* (3) indicates cautery of vessels ‘of the back’ and ‘behind’. These vessels may be the same pair as are designated in *Diseases 2* and cf. *Bones 9* = *Nature of Man 11* (flux A). However, as the adjective used is that commonly applied to the spinal fluid, the vessels loosely designated ‘of the back’ may be more precisely designated as the vessels which run from head to neck to back, that is those through which the ‘marrow’, cerebral or spinal fluid was believed to course from the brain to the eye or lower body (flux B). Cautery of the vessels in the neck was practised in order to stop the progress of noxious matter ‘behind’ and to divert it to the nose for expulsion (*Places in Man* 21. 1). In *Glands* as well as in *Places in Man*, the marrow carries noxious flux to lower parts of the body (*Gland.* 11, 14). In *Koan Prognoses*, a list of diseases not found before puberty (significantly: sexual maturity is involved) includes ‘flux in the back’ (*Coac.* 5. 502). In *Internal*

Affections, two types of ‘phthisis’ are related to abnormal functioning of the ‘marrow’: in one, the marrow becomes filled with blood (or the hollow vessels filled with bile and phlegm); in the other, the marrow becomes dry, with blockage in the ‘small vessels’ from the brain and here, cauterisation of the neck is prescribed (12, 13; cf. *Places in Man* 21 discussed above).

To summarise: Cautery and cutting were used to address many conditions, including eye troubles. The sites of surgery were chosen on the basis of supposed routes through the body, the aim being to change the constitution or the consistency of body fluids coursing through the vessels. One such route carried the ‘marrow’ or spinal fluid, believed to originate in the brain and allied also with semen.

. Globalisation

It is easy to outline broad similarities between the ancient Greek views of anatomy, physiology, pathology and therapy outlined above, and views held by modern practitioners of traditional Chinese medicine.⁸⁾ Both in the HC and in TCM, anatomical structures and orifices are seen in terms of the channels which link them to one another and to other areas of the body. Greek *phlebes* and Chinese *mo* are significant in physiology (normal – carrying blood and *pneuma* analogous to *qi*) and pathology (abnormal – carrying noxious matter, inducing disease). Their supposed paths do not exactly coincide, but several are broadly similar (and more similar to each other than either is to the observed paths of arteries and veins). Treatment by phlebotomy and cauterisation have broad similarities to treatment by acupuncture and moxibustion. Kuriyama has suggested that phlebotomy and acupuncture are connected; a parallel connection may be postulated between cauterisation and moxibustion or acumoxa.

More specifically, the route of the Chinese *du* channel (‘governor vessel’) from spine to back of head carrying life force is similar to that of the Greek vessel carrying vital *myelos*. And the vessel centrally placed in the forehead in some accounts is similar to the anterior continuation

of the *du* channel. Further, the points selected for cutting and cautery by Hippocratic eye doctors correspond rather closely with the points addressed by modern physicians treating eye complaints by acupuncture and moxibustion. In addition to points on the back of the head, both at crown and occiput, in the forehead, and in the eye area on the *du* channel, these are two of the three *yang* channels of the foot (urinary bladder channel of foot *taiyang* and gall bladder channel of foot *taiyang*); a trio of parallel channels are addressed.

Of course, there is a ready explanation for these similarities in treatment: as human physiology is constant, it is intrinsically probable that doctors of different societies at different times should treat similar afflictions in a similar way simply because they separately have discovered an effective treatment on an empirical pragmatic basis. (The common theory must then be regarded as a later common development.) After all, doctors do not cut and burn for fun, but in the hope of a cure; and they do not advocate treatments which never work, or at least seem to work. Even today, the reason for the undoubted effectiveness of the practice of acumoxa is not understood: the treatment seems to stimulate the body to resist disease and to become stronger; but its workings, especially in relation to particular diseases, where it acts not merely as a palliative but actually as a remedy, are mysterious. It has been suggested that acupuncture raises the red corpuscle count and enhances blood circulation; that it stimulates the nervous system (perhaps through specific neurological reactions between parts treated and parts affected); that it provokes responses in the cerebral cortex which in turn react on the organs. It seems to me that a profitable line of approach would be through one specific type of ailment, such as eye conditions, and within that through a condition which is highly localized and relatively well understood, such as cataract affecting the lens. Perhaps an eye surgeon or a neurologist might have theories about why particular treatments advocated in the HC, and practised in TCM, are effective?

There is a second possible way to account for similarities between

medical systems: contacts and interactions between peoples. I return now to the methodological problems mentioned at the outset. It is always difficult to decide whether apparent similarities are 'real': this applies even when comparing two writers of the same genre and era (such as the Greek tragedians Sophocles and Euripides in the fifth century) or two roughly contemporaneous belief systems (such as the religious cults of Athens and Thebes in the archaic age). How much may be put down to coincidence? How close must similarities be to become significant? In which direction does the influence go? For most critics, the answers will depend in part on the existence of contacts and opportunities. Problems arise in comparing material from different eras; and in comparing evidence from texts with evidence of archaeology.

Unquestionable similarities present themselves in the medicaments used in various countries. Here again eye diseases may be taken as paradigmatic.⁹ Doctors of Egypt, India and China as well as of Greece and Rome used liver therapy to treat night blindness (but perhaps because all discovered independently that liver, which is rich in vitamin A, was actually beneficial in this deficiency disease); all applied derivatives of copper as an astringent or haemostatic, and dried lily root as an analgesic (but, again, perhaps because independent trial and error proved their effectiveness).

A persistent recurrent theoretical belief, seen in Greece, India and China alike, is that fire is present in the eye. This notion, however, probably arises from universal perception of light sensations arising from deformation of the eyeball in darkness – or, popularly, 'seeing stars' on receiving a blow to the closed eye. The idea that light is actually generated in the eye, and, with it, the idea that the eye sends out rather than receives signals in vision, was slow to disappear and persisted in Europe even after Kepler (1571-1630) argued against it, to be finally disproved by Morgagni (1682-1771).¹⁰

There is good evidence for extensive contacts between Greece and Egypt throughout the classical period and long before it. Although there are chronological difficulties – resting primarily on the lack of

documentary evidence from similar eras - it can be argued that Hippocratic ophthalmology in particular has an 'Egyptian' or 'Libyan' (North African) connection, with input from the Greek city Kyrene.¹¹⁾ Connections with Babylonia are similarly easy to substantiate.¹²⁾

Persia, which conquered both Egypt and Babylonia, occupied in the classical period a pivotal position between Greece and the large non-Greek world loosely designated 'Asia'. Though there was sporadic warfare between Greece and Persia, many Greek colonies, foundations where the original Greek population was adulterated by non-Greek settlers, such as Miletos on the coast of Asia Minor (modern Turkey) and Kyrene in Kyrenaika (North Africa), contrived to maintain friendly relations with Persia for at least part of the time. Many Greeks were in the pay of the Persian court. Prisoners of war must have passed between the regions. It is even possible to name individuals who moved freely between the continents, among them the medical men Pythagoras (admittedly a nebulous figure) and Demokedes (whose career can be plausibly reconstructed). In every age, top doctors have gravitated or have been attracted to royal courts where patronage guaranteed prestige.

It is known from the case-histories detailed in the *Epidemics* that the Hippocratic physicians practised on the fringes of the Greek peninsula: in regions to the north such as Thessaly, Thrace and the island of Thasos; and in regions to the east, including cities such as Kyzikos on the Asiatic side of the Propontis (Sea of Marmara). The most far-flung case recorded is at Odessa on the western shore of the Black Sea (modern Bulgaria). This is contiguous to the regions inhabited by the Scythians, a nomadic people with a wide-ranging habitat (*Aer.* 18; *Hdt.* 4. 46 *sqq.*). Contacts between the continents and the cultures, with such nomadic peoples as intermediaries, are a tantalising possibility. Another region which may have been an intermediary between the east and the Greek world is Bactria (modern Afghanistan); but the evidence for early Greek travel to this region is less reliable (*Hdt.* 4. 204).

Many of the cities mentioned in the *Epidemics* had a flourishing

trade, exporting timber, grain, dried fish and various luxury goods to the Greek mainland. It is reasonable to suppose that ideas came along these trade routes with merchants and their goods. But how far east can we venture? It is certain that the Hippocratic doctors had access to medical specifics unavailable in Europe. Cinnamon and other spices are mentioned, quite casually. It is generally believed that Greek knowledge of India began with Alexander's expeditions; but it is possible that he merely opened up routes already partially known. Certainly, the Greeks had contacts with India indirectly through Persia; India had contact with China.

Chinese trade is almost synonymous with the silk-route. Now here is a coincidence. Kos was a centre not only of medicine but of sericulture. Where did Kos get the knowledge and the materials to produce silk? The earliest authority for silk spinning at Kos is Aristotle (*HA* 5. 19. 551b13), but he is quoting a well-known story ('it is said that ...') and he implies antiquity in the names attributed to the first woman said to be responsible, and to her father – Pamphile, daughter of Plateus. These are heroic names, such as we find in Homer. It has been argued that the silk of classical Kos was not Chinese silk from silkworms but an inferior variety, such as that from one of the large *Saturniae* which furnished the tussore silk of India.¹³⁾ It has been suggested too that the silk of Kos was raw silk, combed out like flax rather than reeled as a thread off the cocoon. But even if such suggestions are correct, sericulture implies contact with the near east. It is surely possible that with it there was indirect access to oriental medical ideas. The debt of Homer to the near east is now generally acknowledged.

We return to medicine, especially ophthalmology. A persuasive case has been made for connections between Indian and Greek medicine.¹⁴⁾ But it must be conceded that similarities traced between Greek and Indian medicine do not coincide with those similarities which seem to exist between Greek medicine of the HC and TCM. Here is another methodological problem: by being sufficiently selective, one can make a

case for similarities (or indeed differences) between various systems; but these must always be viewed with caution.

In treating Indian and Chinese medicine, we run into serious chronological disjunctions. There is early textual evidence for Indian medicine (c. 1000BC or earlier, written in classical Sanskrit). In this copious and highly sophisticated material, ophthalmology is well represented: conditions are classified on an anatomical basis and then according to methods of surgical treatment. As in the ophthalmology of the HC, there is extensive recourse to venesection and to various forms of purgatives (enemas, emetics, errhines); and, again as in the HC, scarification is practised to treat diseases of the eyelids. However, a much deeper knowledge of the anatomy of the eye is apparent, and surgery is correspondingly ambitious. Notably, cataracts are treated by couching.¹⁵⁾ For Chinese medicine on the other hand there is no documentary evidence, and very little evidence of any kind, before early second century BC. That is not to say that medicine begins in this period; merely that medicine before the Han period cannot be reconstructed. In view of the disturbed political conditions, this is unsurprising.

In the earliest extant Chinese medical texts, from tombs dated to 168 BC (the Ma-wang-dui tombs), cautery is recommended for eye troubles.¹⁶⁾ These texts contain records also of eleven 'channels' traversing the body: there are different versions with interrelations as complex as those in Hippocratic accounts of the course of the *phlebes*. From around the same period comes the silent yet eloquent testimony of a black lacquered figurine on which six lines or channels are mapped out in red.¹⁷⁾ Whether the figurine presents an early model for the practice of acumoxa, or an early presentation of self-cultivation ideals can be debated. The purpose of the figurine and the nature of the channels is opaque, and the relation of the channels to those described in contemporary and later texts (themselves not fully consistent) is imprecise and indeterminate: there is a broad overall similarity but also some variation in detail. The variation in detail prompts

comparison with the variation in detail in the versions of the *phlebes* presented in the Hippocratic treatise *Bones*. On the figurine, the lines run more or less parallel along the length of the body. One line begins between the buttocks and follows the spine to the head (analogous to the *archaie phleps* of *Bones*); there are roughly parallel lines on either side (analogous to the system presented in *Bones* 9 = *Nature of Man* 11). These correspond with the *du* channel and with the *yang* channels of the foot, discussed above.

Where do we go from here? Some general points can be made. Moxibustion preceded acupuncture in China just as cautery was more prevalent than cutting in early Greek medicine. In China, stones were originally used. There is no evidence that stones were used in Greek medicine, but texts often fail to specify materials. Early Chinese texts indicate that cautery was used for eye troubles and also for haemorrhoids – as in Greece. Originally there was no elaborate system of points with measurements, any more than in Hippocratic practice. We see similar channels with similar paths and similar use of knife and fire in medical treatment. But is this significant? In the end, broad ideas have to depend on precise study for substantiation. Ancient Greek ideas about the routes of the *phlebes* have been much discussed, but always mapped against the system of veins and arteries; the development of Chinese ‘channels’ is now being systematically studied, but primarily in relation to later acumoxa practice. A comparative diagrammatic representation of different Greek and different Chinese theories would be interesting. The *archaie phleps* ‘ancient vessel’ tends to be disregarded because it does not correspond with vascular realities. It does however correspond with a channel in the earliest Chinese evidence, later highly significant in Daoist self-cultivation theory. Daoist ideas about the desirability of sexual abstinence and Hippocratic theories about the consequences of over-indulgence in sex are centred on a similarly located bodily duct and that duct is authenticated in the earliest evidence for both traditions. As to ophthalmology – my starting point for this study – precise comparisons might be

made between the points targeted by physicians in east and west; and the advice of a neurologist might assist in determining the rationale for these treatments.

Notes

- 1) For approach, see E. M. Craik edition with introduction, translation and commentary of the Hippocratic treatise *Places in Man* (Oxford, 1998). For similarities, see E. M. Craik 'The Lasting Significance of Hippocratic Medicine' in *Reconstitution of Classical Studies* No. 13, Kyoto, March 2003.
- 2) *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine*, Zone Books, NY 2002.
- 3) See E. M. Craik, 'The Hippocratic Treatise *On Anatomy*', *Classical Quarterly* 48 (1998), 135-167.
- 4) On *Places in Man*, see E. M. Craik commentary 106-114; on *Bones*, see C. R. S. Harris, *The Heart and the Vascular System in Ancient Greek Medicine* (Oxford, 1973), 50-73; M-P. Duminil 'La Description des vaisseaux dans les chapitres 11-19 du traité de la *Nature des Os*', in *CIH* III (Paris, 1980), 135-48, *Le Sang, les vaisseaux, le coeur dans la collection hippocratique: anatomie et physiologie* (Paris, 1983), *Hippocrate t. 8 Plaies, nature des os, coeur, anatomie* (Paris, 1998).
- 5) Cf. G. E. R. Lloyd, *Polarity and Analogy* (Cambridge, 1996).
- 6) These will be discussed in my forthcoming edition, translation and commentary of the short Hippocratic treatise *On the Eye*.
- 7) For this theory expressed by a non-medical writer, see E. M. Craik, 'Thucydides on the Plague: Physiology of Flux and Fixation', *Classical Quarterly* 51 (2001), 102-108.
- 8) See E. M. Craik 'The Lasting Significance of Hippocratic Medicine' in *Reconstitution of Classical Studies* No. 13, Kyoto, March 2003.
- 9) See H. Nielsen, *Medicaments used in the treatment of Eye Diseases in Egypt, the countries of the Near East, India and China in antiquity* (Odense, 1987).
- 10) See O.-J. Grüsser and M. Hagner, 'On the history of deformation phosphenes and the idea of light generated in the eye for the purpose of vision', *Documenta Ophthalmologica* 74 (1990), 57-85.
- 11) See M.-H. Marganne 'Links between Egyptian and Greek Medicine',

- Forum* 3, 5 (1993), 35-43 for general negative conclusions and E. M. Craik, 'The Hippocratic treatise on the Organ of Sight', Proceedings of Hippocratic Congress at Newcastle, forthcoming, for positive conclusions in the case of ophthalmology.
- 12) See D. Goltz, *Studien zur altorientalischen und griechische Heilkunde. Therapie, Arzneibereitung, Rezeptstruktur, Sudhoffs Archiv Suppl.* 16 (1974); also 'Krankheit und Sprache', *Sudhoffs Archiv* 53 (1969), 225-69.
- 13) See D'Arcy Wentworth Thompson, tr. and comm. Aristotle, 1910; Frazer, tr. and comm. Pausanias, vol. 4, 1898.
- 14) J. Filliozat, *La doctrine classique de la médecine indienne. Ses origines et ses parallèles grecs* (Paris, 1949); see also R. Bernier, 'Étude comparative de l'embryologie hippocratique et de l'embryologie indienne antique', *CIH* 7 (Madrid, 1992), 37-53.
- 15) See N. K. Bidyadhar, 'Susruta and his ophthalmic operations', *Archives of Ophthalmology* 22 (1939), 550-74; 'Principles of Susrutian ocular therapy interpreted in the light of modern ophthalmic science', 25 (1947), 582-628.
- 16) See introduction, J. Kovacs and P. U. Unschuld, *Essential Subtleties on the Silver Sea* (Berkeley, Los Angeles, London, 1998).
- 17) See H. Zhiguo and V. Lo, 'The channels: a preliminary examination of a lacquered figurine from the Western Han period', *Early China* 21 (1996), 81-123. I am indebted to Vivienne Lo for a most helpful discussion of this artefact. See also V. Lo, 'Spirits of Stone: technical considerations in the treatment of the Jade Body', *Bulletin of SOAS* 65 (2002), 99-128.

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