

West Meets East: Early Greek and Babylonian Diagnosis*

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One of the challenges to Assyriology is to integrate itself into other disciplines. One promising response to this challenge falls within the field of ancient medicine, in which Akkadian medical literature has a fundamental contribution to make. Since much more work remains to be done, it may be useful to explore the parameters of this research, and in particular what can result from comparisons between Akkadian and Greek medicine. This is not to suggest that previous work in this area is of little value, since several important studies have laid the groundwork. Henry Sigerist's 'rational elements in Mesopotamian Medicine' attempted to incorporate Akkadian texts into the history of medicine,¹ although Sigerist introduced the subject within the framework of 'primitive and archaic medicine' (the subtitle of his first volume), betraying a Euro-centric bias in his approach, and he considered Akkadian medicine to be 'a system of medicine that was dominated by magic and religion'.²

René Labat's edition of the *Diagnostic Handbook*³ not only published many diagnostic omens, but the introduction to the volume attempted to associate Akkadian phraseology with Greek terms drawn from the Hippocratic corpus. It is difficult, however, to follow Labat's discussion, which consists mostly of a collection of Greek expressions without cross-references to corresponding Akkadian terminology. One can see why the work has received relatively little attention from medical historians.

Dietlinde Goltz's contribution regarding Akkadian and Greek methods of healing⁴ was an important step forward in relating Akkadian and Greek medical texts and concepts, but here again we encounter problems with cross-referencing. One can conveniently read her section on Akkadian medicine without consulting the chapters regarding Greek medicine, and vice versa, so that the comparisons between the two systems remain somewhat obscured by the manner in which the material is presented. Marten Stol's study of epilepsy⁵, on the other hand, is full of learned references to relevant

Greek medical literature but was not intended to represent a comprehensive survey of Akkadian and Greek medicine.

Each of these works has nevertheless contributed in significant ways to the study of Akkadian medicine, which is obviously the first step in this process of integration, namely establishing reliable texts which offer accurate translations to non-specialists. For this reason, the latest contribution to the subject by Nils Heeßel is a welcome addition.⁶ Heeßel's text edition and autograph copies of important new tablets from the *Diagnostic Handbook* corrects many of Labat's errors, and his introduction is a clear exposition of the text. He does not attempt, understandably, to integrate this material into a wider view of the history of medicine, nor should he be expected to have done so.⁷

Nevertheless, in the light of such a wealth of new information, it is now relevant to pose some larger questions, among which is, 'what is it all about?' It would be instructive to know how the *Diagnostic Handbook* compares with similar (and even roughly contemporary) manuscripts from the Hippocratic corpus, at least in the earliest stages of development of Greek medicine. The underlying question here is how the system of medicine or prognosis described in the Akkadian *Diagnostic Handbook* compares with similar texts in the Greek medical corpus.

Writing and Transmission of Medical Literature

First, let us examine how medical texts were composed and transmitted. In both, Babylonia and Greece,

*) The present article was originally conceived as a review of two books on related themes, on diagnostic omens (N. Heeßel, *Babylonisch-assyrische Diagnostik*) and on physiognomic omens (B. Böck, *Die babylonisch-assyrische Morphoskopie*) [see bibliography].

¹) H. Sigerist, *History of Medicine* (New York, 1955), I, 477ff. I would like to thank my colleagues in the History of Medicine research group in NIAS, Wassenaar (2000-2001) for their many helpful and critical comments on this paper, and especially Marten Stol, Philip van der Eijk, and Manfred Horstmanshoff, as well as Volker Langholf's helpful comments by correspondence. I am also most grateful for Philip van der Eijk's translation of Melampus, cited below, and for Marten Stol's considerable help in interpreting LB 2126, edited below.

²) *Ibid.*, 490.

³) *Traité akkadien de diagnostics et pronostics médicaux* (Paris and Leiden, 1951).

⁴) *Studien zur altorientalischen und griechischen Heilkunde, Therapie – Arzneibereitung – Rezeptstruktur* (Wiesbaden, 1974).

⁵) *Epilepsy in Babylonia* (Groningen, 1993).

⁶) *Babylonisch-assyrische Diagnostik* (Münster, 2000) [hereafter BAD].

⁷) Heeßel re-edits three tablets (nos. 26-28) which were also edited by Stol, *Epilepsy*, 55ff.; Heeßel's work places these tablets within the context of the *Diagnostic Handbook*, but without Stol's many references to literature outside of Mesopotamia.

medical texts tended to be copied and studied by professional healers stemming from certain families. In Babylonia, scribes of particular families, designated by the professional title of *asû* 'physician' or *mašmaššu* 'therapist', were known for copying medical and related tablets, such as the family of Ekur-zakir in Uruk.⁸ In the same way, the family of Hippocrates descended from a distinguished and famous family of healers, the Asclepiads, who traced their descent from the great healer-god Asclepius, and his own sons and grandsons continued in the same path as Hippocrates, as did other members of the family.⁹ Nevertheless, in both Greece and Babylonia such medicine was taught to students, both from within and without the family.¹⁰ In fact, it is somewhat surprising to note that the Hippocratic Oath was not designed to establish an ethical basis for the medical profession, but was rather originally intended as an oath for non-family apprentice-physicians to swear allegiance to the profession, something not required of members of the Asclepiad family itself. Only non-family members were required to swear the Oath, since family members were considered bound by heritage:

'to hold my teacher in this art equal to my own parents; to make him partner in my livelihood; when he is in need of money to share mine with him; to consider his family as my own brothers, and to teach them this art, if they want to learn it, without fee or indenture; to impart precept, oral instruction, and all other instruction to my own sons, the sons of my teacher, and to indentured pupils who have taken the physician's oath, and to nobody else.'¹¹

By the same token in Babylonia, tablets from Seleucid Uruk refer to copies made from the 'lectures' (*malsūtu*)¹² of Anu-ikšur, a distinguished scholar from a family of scholars, whose surviving *œuvre* consist mostly of medical literature.¹³ At the same time, students of medical

arts were not only warned against neglecting their studies, but were specifically instructed that unschooled persons were not allowed to recite from the *Diagnostic Handbook* and related literature.¹⁴ An even closer parallel to the purpose of the Hippocratic Oath can be found in a much earlier source, Papyrus Ebers, which adds a comment regarding a recipe for an abdominal complaint, that the prescription is a secret to be guarded by the physician, except for his own son.¹⁵ The picture which emerges from such comparisons is that originally Greek medicine, like that of its neighbours, was transmitted within the boundaries of family ties or oath-bound allegiances.

What is disturbing to most historians of Greek medicine, however, is the anonymity of so many of the treatises in the Hippocratic corpus, with much discussion among Classicists regarding authorship.¹⁶ For most of ancient Near Eastern literature, however, anonymity is the norm, and even a famous name associated with a text, such as Esagil-kīn-apli, hardly reveals whether that expert actually composed or merely edited a text from earlier versions.¹⁷ Nevertheless, comparison between the Akkadian and Greek sources is instructive here. The literary revolution represented by Greek science was the ability to write one's own opinion under one's own name, often mentioning rivals by name and attacking their theories. This type of medicine, referred to by Geoffrey Lloyd as 'rationalistic medicine', is contrasted with another type of Greek medical tradition, namely 'temple medicine', as exemplified by the inscriptions in the Aesclepiion in Epidaurus and elsewhere, in which all healing is anonymous, performed by the temple healers.¹⁸ It is this latter type

¹³) See Hunger, SBTU I 12.

¹⁴) See I. L. Finkel, *Fs. Sachs*, 148: 27', translating [nīg.z]u.zu.šē nam.ba.še.bi.da šā nīg.zu nu gub.bé sa-kik-ka ul dug₄[ga], 'do not neglect your knowledge! He who does not attain(?) knowledge must not speak aloud the sa.gig omens.' See also W. G. Lambert, *Fs. Borger*, 142f.

¹⁵) See W. Westendorf, *Handbuch der altägyptischen Medizin* (Leiden, 1999), ii, 585: 'Dann sollst du ihm Mittel machen, die ein Geheimnis sind gegenüber einem Untergebenen des Arztes, außer deinem eigenen Erben/Nachfolger' [reference courtesy Jacco Dieleman].

¹⁶) See the chapter on 'writings in search of an author' in Jouanna, *Hippocrates*, 56-71, and Wesley D. Smith, *The Hippocratic Tradition* (Ithaca, 1979), 204-246. Philip van der Eijk, in his essay, 'Towards a Rhetoric of Ancient Scientific Discourse', *apud* E. J. Bakker, *Grammar as Interpretation. Greek Literature in its Linguistic Contexts* (Leiden, 1997), 77-129, argues that attributions of Hippocrates suppressed the names of authors of these treatises, and that, in any case, such treatises may have been collective works edited from the writings of itinerant doctors.

¹⁷) See Finkel, *Fs. Sachs*, 144f.

¹⁸) See G. E. R. Lloyd, *Magic, Reason and Experience* (Cambridge, 1979), 45ff. The treatise *Diseases II* is a good

⁸) See H. Hunger, *Spätbabylonische Texte aus Uruk I* (Berlin, 1976), 11-13. See the colophon to Heeβel, BAD no. 16, from Uruk, giving the family pedigree of the scribe, a member of the Ekur-zakir family, and *ibid.* no. 33, in which the scribe Rīmūt-Anu is mentioned from the Šamaš-iddin *mašmaššu* family. See below, fn. 105.

⁹) See Jacques Jouanna, *Hippocrates*, transl. M. B. DeBevoise (Baltimore, 1999), 10-16. In fact, both of the two main rival schools of medicine, of Cos and Cnidus, consisted of two branches of the same Asclepiad family; see *ibid.*, 49f. More on these two schools will be discussed below.

¹⁰) Plato (Protagoras 311b-c) mentions in a dialogue between Socrates and an Athenian named Hippocrates, that it was possible to study medicine with Hippocrates of Cos for a fee, meaning that one need not be a member of the family to study with Hippocrates. See Jouanna, *Hippocrates*, 5 and 46.

¹¹) Jouanna, *Hippocrates*, 47f.

¹²) CAD M/1 171 translates rather ambiguously 'reading', whereas Hunger's translation of 'lectures' is more clear and persuasive.

of medicine which predominates from Babylonia. We have no debates or rivalries in Akkadian sources, no conflicting opinions or minority opinions, but only alternative remedies given as part of a great anonymous literature. If there was experimentation or trial-and-error at some stage during the composition of Akkadian medical texts, we have no access to it, nor to any of the discussions which may have resulted in the final compositions. Nor is there an alternative corpus of 'alternative' medicine written by private doctors or healers in the first person, as opposed to 'official' Akkadian medicine.¹⁹ This is the crucial difference, then, in the form in which Akkadian and later Greek medical writing is formulated. The Hippocratic corpus represents something of a transition period, as shown by the anonymity of most of the treatises, in contrast to later (or even some contemporary) Greek medical literature (such as Diocles, Herophilus, and Galen) which was composed under the names of the author, freely expressing opinions and polemic.

Theory and Disease Classification

The second point of general comparison between Babylonian and Greek medicine revolves around theoretical approaches to understanding the causes and treatment of disease. This is a complex question, usually discussed from the point of view of magic vs. medicine,²⁰ which will not be the approach taken by the present discussion. In contrast to ascribing diseases to external and/or undeterminable factors (e.g. the gods, demons, insects, wind, etc.), such as that in Babylonian medicine, Greek science began to develop a theory of humours, characterised by the notion of an internal imbalance of the body fluids (phlegm, bile, etc.) or a surfeit of bodily fluids (*peritoma*). Generally speaking, one notes that while Babylonian medicine primarily treated symptoms with pharmacological remedies, Greek medicine, during the course of its own development from the fifth century onwards, relied increasingly upon fasting, diet, and regimen, as well as drugs to produce 'evacuations' (emetics, purgatives) and phlebotomy. None of these latter forms of therapy are well-attested in Babylonian medicine,²¹ although they may occur sporadically.

example of an anonymous treatise which could theoretically come under the category of 'temple medicine'.

¹⁹) Cf. for example the standard type of colophon from Ašurbanipal's library, Heeßel, BAD 206.

²⁰) See Ludwig Edelstein, *Ancient Medicine* (Baltimore, 1967), 205ff.

²¹) See Heeßel, BAD 46, giving instances of vomiting, urinating, and excretion as symptoms, but not as intentional forms for therapy, which is a standard characteristic of Greek medicine. Occasionally in Babylonian medicine, the physi-

Nevertheless, within this general framework one can distinguish developments within Greek medicine as it transformed itself from a more Babylonian-type of pragmatic medicine into its more theoretical mode of medicine, culminating in the writings of Galen. For a long time it was widely accepted that, in its earliest phases, Greek medical writings distinguish between two 'schools' of medicine, one at Cos and the other at Cnidus, only a few miles away on the mainland. The 'schools' are related in the sense that both schools trace their origins back to the Asclepiad family, to which Hippocrates himself was a member, and the Hippocratic corpus and later writers make occasional reference to a lost work, the *Knidiai Gnōmai*, lit. 'Cnidian signs'.²² The main evidence which survives regarding 'Cnidian' medicine comes from the Hippocratic treatise on *Regimen in Acute Diseases*,²³ in which the Hippocratic author critically assessed Cnidian methods of healing:

'The authors of the book called *Opinions from Cnidus* have given a correct account of the symptoms in patients suffering from various diseases and, in some cases of the ultimate effects of the disease'.²⁴

The Hippocratic author comments that these descriptions are too simplistic, the remedies prescribed in the Cnidian works were too few; 'later writers, however, have approached the subject in a more scientific way'.²⁵ Although this criticism has been seen as an attack from the 'Coan' school of medicine on the 'Cnidian' school, Langholf has demonstrated that such an assertion cannot be proven;²⁶ all we can safely conclude is that Cnidian medicine was considered to be unsophisticated by the standards of the anonymous author of this Hippocratic treatise. The second inference that we can draw from this and other references to the *Knidiai gnōmai* is that there is little trace of any theory of humours in Cnidian medicine, and in general it did not follow the same road taken by later Hippocratic theoreticians.²⁷ Hence,

cian held the tongue of the patient in order to encourage vomiting, which is similar to early Greek medical practice (see Goltz, *Heilkunde*, 90), but this is exceptional.

²²) See the useful discussion in V. Langholf, *Medical Theories in Hippocrates* (Berlin, 1990), 12-36.

²³) Jouanna, *Hippocrates*, 410, dates the text to the end of the 5th cent. BC, and he notes that Galen considered the text to be a critique of Cnidian medicine by Hippocrates.

²⁴) *Regimen in Ac. Dis.* 1 = *Ibid.*, 14f., and J. Chadwick and W. N. Mann, *apud* G. E. R. Lloyd, *Hippocratic Writings* (Harmondsworth, 1983), 186.

²⁵) *Regimen in Ac. Dis.* 3, transl. Chadwick and Mann. *op. cit.*

²⁶) *Ibid.*, 15ff.

²⁷) See, for instance, E. D. Phillips, *Aspects of Greek Medicine* (New York, 1973), 37: 'Whereas Coan books err in being too speculative, Cnidian books from time to time have grotesque features such as curious readers have come to expect from the medicine of earlier ages'.

we begin our search by examining those treatises in the Hippocratic corpus which have been referred to – controversially – as ‘Cnidian’, or ‘early’, since we are looking for phases of Greek medicine which may have elements in common with medicine from Babylonia.²⁸ Our intention, therefore, is to exclude most of the Hippocratic corpus except for those treatises which appear to be early.

Three other references in *Regimen in Acute Diseases* are worth noting in this same passage referring to the *Knidiai gnōmai*. The author adds a remark to say that,

‘what the ancients (*hoi archaioi*) wrote on regimen is not worth mentioning either. They left it out of consideration, despite its importance.’²⁹

This reference to ‘the ancients’ alerts us to the fact earlier (presumably pre-Hippocratic) medicine was inadequate and unsophisticated and represents a more archaic form of medicine which had not developed in the way later Greek medicine had done. At the same time, it reminds us that we find no trace in Babylonian medical literature of references to diet or regimen. No existing Akkadian medical or therapeutic texts offer advice on how to remain healthy, nor does any Akkadian text recommend different diets for various seasons or even illnesses. The fact that the genre is completely unknown in Babylonia may have some relevance to the Hippocratic complaint that the ‘ancients’ (*hoi archaioi*) never bothered with diet and regimen.

The author of *Regimen in Acute Diseases* also comments about Cnidian treatment being too few in number, consisting mostly of purges with milk and

whey, which does not seem to fit the pattern of Babylonian medicine as we know it.³⁰ However, another passage in the same context in *Reg. in Ac. Dis.* requires scrutiny from a Babylonian perspective:

Nevertheless, some³¹ were well acquainted with the manifold varieties of each disease and with their differentiation. They were mistaken, however, when in their writings, they wanted to indicate exactly the numbers [of varieties and differentiations] of each disease, because it is obviously quite difficult to tell numbers if one identifies the disease of each patient only on the basis of [the observation] how one disease differs from the other [instead of identifying it, for instance, on the basis of an observation of elements common to others], and on the basis of the assumption that two diseases are not identical unless they have the same name.³²

The complaint here seems to be that the pre-Hippocratic physicians had no proper understanding of how many diseases one can identify, since the tendency was to treat each set of symptoms as a separate disease, rather than recognising common characteristics that could be grouped together. This statement could equally serve as a remarkably concise summary of how diseases are described in the Babylonian *Diagnostic Handbook*. There are a great many disease names given in the *Diagnostic Handbook*³³, usually indicating various types of fever, paralysis, seizure (epilepsy), stroke, or leprosy-type conditions. There is no distinction between a word which might be considered to be a general category of disease, e. g. *ummu* ‘heat’ (for fever) as opposed to *humtu*, a type of fever. Both types of terms for fever occur in similar contexts. In addition, many other specific labels for disease were given as the ‘hand’ of a ghost or god, the hand of various demons (such as the demon of the privy, Šulak), or even the ‘hand’ of a (violated) oath or murder.³⁴ One important new text in the *Diagnostic Handbook* lists 70 entries of symptoms, and in 21 cases gives corresponding names of diseases, and at the end of the tablet we find a further 20 entries giving disease names with corresponding ‘hand of the god’ labels.³⁵ In each case when a disease is given, different symptoms are de-

illnesses, begins, ‘if a man’s “heart” (or abdomen) is ill, on the second day let him drink the milk of a pure cow with ghee’. The incipit often served as the ‘title’ of the work; see F. Kūchler, *Beiträge zur Kenntnis der assyrisch-babylonischen Medizin* (Leipzig, 1904), 14, and BAM 575: 51. Might this represent a similar type of treatment as that ascribed to the ‘ancients’ in the Greek text?

³¹) Presumably, the ‘ancients’ or possibly the writers of the *Knidiai gnōmai*.

³²) *Regimen in Ac. Dis.* 3, transl. Langholf, *Medical Theories* 14f., used here because it is the most literal of the available translations in English.

³³) See Heeßel, BAD 48.

³⁴) *Ibid.* 49–54, and see M. Stol, JEOL 32 (1991–92), 44ff.

³⁵) Heeßel, BAD no. 33.

²⁸) We follow the assumptions of current Classical scholarship that treatises such as *Internal Affections*, *Diseases II* cp. 12–75, the first part of *Affections*, and *Diseases of Women* are early treatises, often referred to as ‘Cnidian’ in modern scholarship. The problem with the terminology ‘Coan’ and ‘Cnidian’ has been clarified for me in a private communication from Volker Langholf:

‘I would prefer not to localize the decisive stages of medical history around 400 BCE exclusively in the small neighbourhood of Cos and Cnidus. The world was big in those days, and mobility, locomotive as well as social, was enormous. Hippocrates was a Coan, certainly, and Euryphon was a Cnidian. But there were doctors at many other places too, most of them forgotten. They were itinerant craftsmen, even long before 400 BCE, and from the corpus itself we know how far they travelled. Cos and Cnidus and other cities had medical men and presumably medical apprentices, but about the internal organization of the groups of physicians and their relationship to other groups little is known.’

²⁹) *Regimen in Ac. Dis.* 3, transl. Langholf, *ibid.*, 15 (which is more literal than the Chadwick – Mann translation).

³⁰) *Regimen in Ac. Dis.* 2. One incipit of an Akkadian medical text, which covers a rather wide range of internal

scribed, and in no case are the same symptoms repeated for the same disease name.³⁶ Furthermore, there are many cases when similar symptoms will be given different disease names, such as the case referring to right and left kidneys respectively being 'seized', and although the patient is conscious, he staggers without being aware of it, and will die; in each instance a different god's 'hand' is associated with the symptoms.³⁷

Such labels for diseases were not unknown to Hippocratic physicians. In the treatise *Sacred Disease*, the writer argues against his colleagues who associate diseases with particular gods:³⁸

But perhaps what they profess is not true, the fact being that men, in need of a livelihood, contrive and devise many fictions of all sorts, about this disease among other things, putting the blame, for each form of the affection, upon a particular god.

If the patient imitate a goat³⁹, if he roar, or suffer convulsions in the right side,⁴⁰ they say that the Mother of the Gods (*mētera theōn*) is to blame.

If he utter a piercing and loud cry they liken him to a horse⁴¹ and blame Poseidon.

Should he pass some excrement,⁴² as often happens under the stress of the disease, the surname Enodia

is applied.

If it be more frequent and thinner,⁴³ like that of birds, it is Apollo Nomius.

If he foam at the mouth⁴⁴ and kick,⁴⁵ Ares has the blame.

When at night occur fears and terrors,⁴⁶ delirium,⁴⁷ jumpings from the bed and rushings out of doors,⁴⁸ they say that Hecate is attacking or that heroes (*hērōōn*)⁴⁹ are assaulting.

The crucial point of comparison here is that individual symptoms, referring to epileptic-like seizures, are each associated with separate gods or divine beings, such as the Heroes. If one simply imagines the phrase 'hand of' the particular Greek god here, one has a reasonable replica of a text resembling the Akkadian *Diagnostic Handbook*. The comparison is understandable given that the author of *Sacred Disease* offers this passage as an illustration of an earlier approach to disease diagnosis, associated with the names of gods, which was considered by his day to be *passé* and incorrect, but happily resembles Akkadian texts dealing with similar themes. The passage suggests earlier Greek medicine and late Babylonian medicine had things in common.

This probably all looked muddled and confused to Hippocratic physicians, who were beginning to work with case histories, as in the treatises on *Epidemics*.⁵⁰

³⁶) *Ibid.*

³⁷) *Ibid.* no. 152: 39-40, see also Stol, JEOL 32, 64f., giving names of illnesses specifically mentioned in therapeutic texts.

³⁸) *Sacred Disease* 4 (trans. Hippocrates = Loeb II, 147-149), and cf. Jouanna, *Hippocrates*, 186; note that we have altered the format of the passage, but not the wording. See also R. Parker, *Miasma: Pollution and Purification in Greek Religion* (Oxford, 1983), 244f., explaining the roles of the various gods mentioned in this passage.

³⁹) Heeßel, BAD 218: 3, [diš su-šú kúm-i]m u šed, kin-šú ma-a-ād la-[š]u qer-bet u, u ge, la ina-ah gù-šú gim gù uz [šú gedim] a-hi-i ina har-ba-ti dab-su, '[if his body is] hot and cold, his suffering is severe and an attack is imminent, day and night he cannot rest and his voice is like that of a goat, [the hand of a] foreign [ghost] from the steppe has seized him.'

⁴⁰) Stol, JEOL 32, 45, regarding the 'hand of the god', remarks that the Hand of Ištar was associated with the left side of the body while the Hand of Šamaš was associated with the right side. This detail fits with the passage from *Sacred Disease* regarding the Mother goddess.

⁴¹) See Heeßel, BAD 310: 22, diš gig gíd.da gig-ma ki-ma anše.kur.ra igi.lá gig.bi nu ke-šir, 'if the illness drags on and he appears like a horse, that illness will not end well.' Heeßel, BAD 313: 22, translates '(etwas) wie ein Pferd sieht', following Stol, *Epilepsy*, 86, 'he sees (something) like a horse', but the verbal form can be interpreted as passive rather than active. In this passage, there is a clear distinction in verbal forms in ll. 22-32, all of which have the same structure, all of which use the logogram igi.lá referring to the patient intransitively as 'looking like' an animal, whereas from ll. 35-43 the text employs the logogram igi.igi-mar, in which the patient transitively 'sees' various persons and objects as omens.

⁴²) See Stol, *Epilepsy*, 61: 16 (= Heeßel no. 26: 19'), referring to a seizure: 'if at the time it overcomes him, his limbs are dissolving, his innards seize him time and again, his bowels move: Hand of a Spirit'.

⁴³) The section in the *Diagnostic Handbook* describing characteristics of excrement is unfortunately broken, except for colours, see TDP 134: 15-21.

⁴⁴) See Heeßel, BAD tablet 26: 15', 17'-18', 62', 77' and 27: 36, for references to spittle running down from the mouth: see also Stol, *Epilepsy*, 70 rev. 17.

⁴⁵) See Stol, *Epilepsy*, 67, referring to a seizure: 'if, at the time it has seized him, as he is sitting, his eye squints, his lip is 'loose', his saliva flows in/from his mouth, his hand, his foot, his torse(?) of the left side kick like a slaughtered ram ...'. Note the juxtaposition here of saliva flowing from the mouth and kicking.

⁴⁶) A series of symptoms of epilepsy refer to seizures coming at night, leaving the patient feverish and wide awake with fear; cf. Stol, *Epilepsy*, 63.

⁴⁷) See Stol, *Epilepsy*, 61: 19-22, in which the patient 'forgets himself', and talks but does not know what he has said; another possible interpretation of this passage is that it refers to delirium.

⁴⁸) Although there is no Akkadian symptom of epilepsy which quite conforms to running out of doors. See Stol, *Epilepsy*, 70-71, which gives symptoms referring to the patient constantly throwing off his garments and does not sleep, and he keeps getting up and talking and shivers all the time. ll. 19-24.

⁴⁹) I. e. ghosts.

⁵⁰) See M. D. Grmek, *Diseases in the Ancient Greek World* (Baltimore, 1983), 284-304, and Wesley D. Smith,

and thereby began describing diseases much more systematically. We have no single example of a case history from Akkadian sources, which is another major point of difference between Babylonian and Greek medicine. Hence the distinctions between manifestations of disease in Babylonia were obscured by the way data was collected, since any patient could potentially suffer from more than one ailment at the same time, and the potential for confusion of symptoms in the way they were recorded in Babylonia was enormous. However, one must not lose sight of the fact that the *Diagnostic Handbook* was never intended to describe case histories of individual patients. The system of recording symptoms was purely for the sake of prognosis, to be able to tell whether the patient would live or die, or perhaps how long he (or she) might survive, or to predict the course of the disease (i. e. that the patient might first get better and then die). One treatise in the Hippocratic corpus, on *Prognostics*, partially operates in a similar way to the Akkadian *Diagnostic Handbook*, also listing symptoms occurring from head to foot, with the idea of predicting whether the patient would live or die.

The common feature in both the Babylonian *Diagnostic Handbook* and prognostics in the Hippocratic corpus was the observation of *signs*, namely the 'good signs' and 'bad signs' on which the physician could base his judgment as to whether the patient would recover or die.⁵¹ The following passage from the early Hippocratic treatise, from the fifth cent. BC, *Epidemics I*, could potentially be used to characterise prognosis in Babylonia as well:⁵²

The factors which enable us to distinguish between diseases are as follows:

First we must consider the nature of man in general and of each individual and the characteristics of each disease.

Then we must consider the patient, what food is given to him and who gives it – for this may make it easier for him to take or more difficult – the conditions of climate and locality both in general and in particular, the patient's customs, mode of life, pursuits and age.

Then we must consider his speech, his mannerisms, his silences, his thoughts, his habits of sleep or wakefulness and his dreams, their nature and time.

Next, we must note whether he plucks his hair, scratches or weeps.

We must observe his paroxysms, his stools, urine, sputum and vomit.

We look for any change in the state of the malady, how often such changes occur and their nature, and

the particular changes which induce death or a crisis.

Observe, too, sweating, shivering, chill, cough, sneezing, hiccup, the kind of breathing, belching, wind, whether silent or noisy, haemorrhages and haemorrhoids.

We must determine the significance of all these signs.⁵³

Jouanna comments on this passage, noting the lack of any hierarchical organisation, but seeing it as a catalogue 'intended only as a sort of guide for the attending physician'.⁵⁴ One could hardly better describe the Akkadian *Diagnostic Handbook*, judging by the incipit which served as the title of the *Diagnostic Handbook*, namely 'when the *āšipu* went to the house of the sick man'. The format of the listing of symptoms, without any discernible logical order, characterises the Akkadian text rather succinctly.⁵⁵ It seems clear that the actual art of symptom notation and prognostics was not much further advanced in early Greek medicine than in contemporary Babylonia, but the new departure of Greek medicine took the form of therapy, including the use of diet, evacuations, fasting, and phlebotomy, while Babylonian medicine carried on its traditional methods of pharmacology.

Returning now to the Hippocratic view of their earlier predecessors, we find another argument in *Sacred Disease* directed against *hoi prōtoi*, the ones who 'first' referred to seizures as the 'sacred' disease, because they had no cure other than incantations and purification. The author of *Sacred Disease* observes that these predecessors treated sufferers by using 'purifying objects':⁵⁶

Of the purifying objects (*katharmatōn*), some they hide in the earth, others they throw into the sea, others

⁵³) The format of the passage has been changed, but not the wording. Cf. also Langholf, *Medical Theories*, 51 on the art of diagnosis, citing *Epidemics IV* 43:

'That we [observe] with the eyes, the ears, the noses, the hand. [There are] the crises, and the other things by which we make observation. [On the one hand, there is] the patient; [on the other hand there is] the practitioner, who in each case, touches or smells or tastes and is informed about the rest: hair, complexion, skin, vessels, sinews, muscles, flesh, bones, marrow, brain, the blood and its effects, spasms, hiccups, respiration, faeces: these are the means by which we observe.'

⁵⁴) Jouanna, *Hippocrates*, 303. See also Langholf, *Medical Theories*, 194ff., where he compares this text with Plato's *Phaedrus* in attempt to argue for a type of hierarchical logic. It is true that the text proceeds from an observation regarding 'man in general' to the more specific case of a patient, which is not an argument found in the Babylonian *Diagnostic Handbook*, but Jouanna's observation is more convincing; there is no more logical arrangement of symptom observation in this text than in comparable texts from Babylonia.

⁵⁵) See Heeßel, BAD 42ff.

⁵⁶) Hippocrates, Loeb II, 148f.

'Implicit Fever theory in *Epidemics 5* and *7*', *Medical History*, suppl. 1 (London, 1981), 1-18.

⁵¹) See Jouanna, *Hippocrates* 302, *Prognostics* 15 (Hippocrates, Loeb II 33).

⁵²) Transl. Chadwick and Mann, *apud* Lloyd, *Hippocratic Writings*, 100.

they carry away to the mountains, where nobody can touch them or tread on them.

As in the previous passage cited from this treatise, there are clear parallels to be found in Akkadian, but in this case in magical rather than medical literature. Akkadian *namburbî* incantations were designed to ward off the evil results of ominous occurrences, such as the sighting of snakes or scorpions in the house, etc. The basic ritual concept of *namburbî* incantations is purification of the patient and of his house through the use of various ritual objects, such as a ritual drum or scapegoat, and the house is purified through the use of fumigation, holy water, and a torch.⁵⁷ Such objects used during the purification were either thrown into the river or deposited in an inaccessible place, or else burned,⁵⁸ and in the counterpart incantations, the unholy Evil was commanded to cross the river and cross over the mountains, so that it should remain forever at a safe distance away.⁵⁹ In other cases the ritual figurines used in the purification ritual were wrapped in hair, placed in a special pot and then buried.⁶⁰ It seems likely that the author of *Sacred Disease* was referring to an earlier incantation literature (in Greek?) which had certain distinctive parallels with Akkadian *namburbî* rituals and incantations, which continued to be copied and used in Babylonia throughout the Persian and Seleucid periods, and even later.⁶¹

This is not the only example of Greek awareness of magical practices which resemble those from Babylonia. The following dialogue in Menander, in which a slave makes fun of his master's hypochondria, seems to reflect the salient details of Akkadian Šurpu-type rituals:

What do I suggest you do? If there had really been anything wrong with you, then you'd have had to look for a real cure. But there isn't. Find an imaginary cure for your imaginary disease and persuade yourself that it's doing you some good. Get the women to wipe you round in a circle and fumigate you. Sprinkle yourself with water drawn from three springs, with salt and lentils added.⁶²

The references here to making a magic circle and wiping down and fumigating the patient, as well as

spinkling the patient with water, are all reminiscent of Akkadian Šurpu purification rituals using a censer and torch and holy-water laver. In Šurpu rituals, a brazier is surrounded by a magic circle (Šurpu I 2-3), water is sprinkled, a torch is lit, and the incantation priest wipes the patient down with flour (*ibid.* I 10).⁶³ All of these various elements are mentioned by Menander in his dialogue, poking fun at magic.

Magic vs. Medicine

The boundary between magic and medicine in Mesopotamia has usually been considered to be rather blurred, or as Henry Sigerist so succinctly put it, 'in studying the history of ancient Mesopotamian medicine, we must always remember that in all civilizations of this area, religion, magic, science, and learning were one, an inseparable whole, and it is as such that we must approach it.'⁶⁴ Tablet 28 of the *Diagnostic Handbook*⁶⁵ provides us with one strong argument against this prevailing view of Sigerist and many others.

The distinction between magic and medicine, from the standpoint of disease and causes of disease, can be summarised as follows. Magic deals with ultimate causes of disease, such as irritated or petulant gods who may be angry at guilty humans, or harmful demons who bring on disease as part of their *raison d'être*, or disease may be the result of curse or witchcraft. All of these factors belong to the domain of magic, which uses incantations and rituals to alleviate or prevent disease resulting from these causes. Medicine, on the other hand, is less concerned with the supernatural than with the natural, and the focus of medicine is on alleviating symptoms, such as pain, fever, incontinence, or other bodily misfunctions. The causes of disease within medical contexts are usually more prosaic, such as a mote or insect which causing eye disease, or eating behexed food causing digestive problems, or drinking foul water.⁶⁶ What role does religion play within this scheme? There is little contradiction here, as pointed out by historians of Greek medicine, who are troubled by this question of rational explanations of disease as opposed to divine causes.⁶⁷ In Babylonian as in early Hippocratic medicine, the

⁵⁷) For a detailed discussion of *namburbî* rituals of purification, cf. S. M. Maul, *Zukunftsbewältigung* (Mainz, 1994), 94-100.

⁵⁸) *Ibid.*, 99.

⁵⁹) *Ibid.*, 91.

⁶⁰) *Ibid.*, 81.

⁶¹) M. J. Geller, 'Deconstructing Talmudic magic', in *Warburg Institute conference volume on Magic in the Classical Tradition* (forthcoming), giving evidence for a *namburbî*-type incantation in the Babylonian Talmud, indicating that the genre was popular in Babylonia throughout the Hellenistic and Parthian periods.

⁶²) *Phasma* 50-6, translation taken here from Parker, *Miasma*, 207.

⁶³) Although the Šurpu ritual does not call for lentils and salt to be mixed with the water, nevertheless both were common ingredients in Akkadian rituals, and Parker, *Miasma*, 227, suggests that salt was added to simulate sea-water.

⁶⁴) Sigerist, *History of Medicine* I, 412.

⁶⁵) Edited by Stol, *Epilepsy*, 81ff. and Heeßel, BAD 307ff.

⁶⁶) See W. van Binsbergen and F. A. M. Wiggermann, *apud* T. Abusch and K. van der Toorn, *Mesopotamian Magic* (Groningen, 1999), 30.

⁶⁷) See Jouanna's chapter on 'Hippocratic Rationalism and the Divine', *Hippocrates*, 181ff.

awareness of the role of gods and the supernatural was always recognised, but the focus was upon more immediate reasons for illness which could be identified through observation and deduction. It is clear from Tablet 33 of the *Diagnostic Handbook* that the references to 'hands' of gods refer to actual diseases, with rather remote connections to the religious character of the gods invoked. Everyone knew, of course, who these gods were and how all-encompassing was their power in relation to humans, but in this particular context the 'hands' of the gods refer – on a more concrete level – to a disease itself, associated with a set of symptoms rather than with religious ideas.

It is therefore somewhat surprising to come across Tablet 28 of the *Diagnostic Handbook*, within the context of a collection of omens dealing almost exclusively with symptoms and prognosis. This tablet deals with the unusual description of one disease 'turning' into another, i. e. 'an.ta.šub.ba'-seizure turning into 'hand of the ghost'-disease, and vice-versa.⁶⁸ The 'hand of the ghost'-disease is not identified as a modern disease by Franz Köcher,⁶⁹ but there is no doubt about the severity of this disease, since in every instance that it is mentioned with a prognosis, the patient will die.⁷⁰ The same can be said about the disease of *miqtu*, to which a special note is appended to the identification of this disease in Tablet 33, '*miqtu* is its name, the doctor shall investigate it'.⁷¹ This comment only applies to *miqtu*, among the many diseases enumerated in the passage.

The other unusual feature of Tablet 28 is that it includes medical prescriptions, which is exceptional within the *Diagnostic Handbook*, as distinct from ther-

apeutic texts in which symptoms are always followed by recipes.⁷² Furthermore, the rather unorthodox nature of the prescriptions is striking:

In order to rescue him, in the leather bag (made of the hide) of a virgin she goat: the (sanitary) towel of a woman who has given birth to(?) a male child, the eye of a dead man, (the plant) cynoglossum, the hair of a black dog, the fly of a dog, a dragon-fly, the hair of a monkey, male or female, the root of camel-thorn or *shok* that (grows) on a grave, sea-weed, (the plant) *nikiptu*; – the same.⁷³

Needless to say, one has to explain the bizarre collection of *materia medica* which are to be hung around the patient's neck, which hardly resembles what we expect from medical recipes. The solution to the problem revolves around the nature of the illness involved, namely an epileptic-like seizure able to resemble or even transform itself into another illness, which is equally intractable to cure. What 'cure' could reasonably be prescribed for this kind of disease?

I do not believe that the 'Sacred Disease' is any more divine or sacred than any other disease but, on the contrary, has specific characteristics and a definite cause. Nevertheless, because it is completely different from other diseases, it has been regarded as a divine visitation by those who, being only human, view it with ignorance and astonishment. This theory of divine origin, though supported by the difficulty of understanding the malady, is weakened by the simplicity of the cure, consisting merely of ritual purification and incantation.⁷⁴

The Greek passage points us in the direction of Babylonian treatment for epileptic-like seizures, which had no real possibility of treating this type of ailment other than with 'ritual purification and incantation'. The arcane and uncharacteristic *materia medica* in Tablet 28 of the *Diagnostic Handbook* serves as a kind of compromise, invoking magic-like amuletic ingredients within a medical context, but without invoking incantations, as a way of dealing with intractable disease. The fact that epilepsy represented an exceptional case both in Babylonia and in certain Greek medical circles should not escape our attention, since it once again suggests that we are dealing with similar or even related systems of medicine, at least in the 5th cent. BC.

⁶⁸) See in the early treatise *Affections* 12 (also described as 'Cnidian'), the statement that 'you must take care, for sometimes they (= fevers) change into acute diseases'; cf. Hippocrates, Loeb V 23. A similar statement occurs in the same treatise regarding phrenitis, which remarks that 'few escape this disease, either and it too sometimes changes into pneumonia' (*ibid.* p. 21). Most interesting, however, is the general rule for the physician given in *Affections* 8 (Loeb V p. 17), 'to be judged in diseases is when they increase, diminish, change into another disease, or end'.

⁶⁹) 'Spätbabylonische medizinische Texte aus Uruk', *Fs. H. Goerke* (München, 1978), 26-32, enumerating passages describing this disease and summarising the resulting symptoms as migraine, neck pain, tinnitus, irregular fevers, fainting and dizziness, none of which provide a consistent description of a disease recognisable today. According to Dr. Frans Schlessinger, medical consultant to the History of Medicine research group at NIAS, this collection of symptoms, if seen in a patient today, would be immediately recognisable as a 'cerebello pontine angle tumour', which causes tinnitus, deafness, and dizziness.

⁷⁰) *Ibid.*, 28-29.

⁷¹) Heeßel, BAD no. 33: 53-54, mu.ni mi-iq-tu₄ a.zu igi.

⁷²) Tablet 31 in the *Diagnostic Handbook* is also a collection of short prescriptions rather than omens, with the unusual rubric introducing the prescriptions: *ana gig-su nu gid.da*, 'in order not to prolong his disease'.

⁷³) Transl. Stol, *Epilepsy*, 83: 43-46, see Heeßel, BAD 308: 8-10.

⁷⁴) Transl. Chadwick and Mann, *Hippocratic Writings*, 237.

Classification of Disease

The author of *Regimen in Acute Diseases* again comments on 'ancient' medicine, but this time referring specifically to 'acute' diseases:

I should most commend a physician who in acute disease, which kill the great majority of patients, shows some superiority. Now the acute disease are those to which the ancients [*hoi archaioi*] have given the names of pleurisy (*pleuritis*), pneumonia (*peri-pneumonia*), phrenitis (*phrenitis*) and ardent fever (*kau-sos*), and such as are akin to these, the fever of which is on the whole continuous. For whenever there is no general type of pestilence [*loimōdeos nousou*] prevalent, but diseases are sporadic, acute diseases cause many times more deaths than all others put together.⁷⁵

Jouanna comments on the above passage that the Hippocratic writers were in the process of working out a classification of diseases, but in the meantime they only had the 'ancient' categories of 'acute diseases' and 'pestilence'; there was no clear distinction made here between acute and chronic disease, and in fact no real classification of diseases.⁷⁶ In this case, the four diseases are rather basic, two referring to lung conditions and two referring to conditions associated with fevers, similar to how Babylonian physicians might have categorised 'acute' diseases. For this information we must turn to the Akkadian medical corpus itself, in therapeutic texts rather than to the *Diagnostic Handbook*, where we find colophons grouping individual ailments into compositions under larger headings.

1) *šumma amīlu muhhašu umma ukāl*, 'if a man's brain contains heat (fever)'. Two large tablets, BAM 480 and 482, both bear colophons indicating that the two texts are subdivisions of a series known as, 'if a man has a fever in his brain'.⁷⁷ Another text in the same 'series', BAM 494, deals with specific medical conditions affecting the head, including various skin ailments.⁷⁸ The rubric seems to cover a wide range of symptoms associated with fever, including bloodshot eyes and clouded vision, as well as symptoms of 'sun-heat', *ašū*-disease and *ra'sānu*-disease.⁷⁹ Although fever can affect many other organs of the body, the association with the brain is suggestive, since Galen associates the disease of *phrenitis*, a combination mostly of fever and delirium, with the brain.⁸⁰

2) *suālu*. Similarly, another large grouping of individual conditions under a major heading is a series known as '*suālu*', or 'coughing', which combines recipes for many different types of thoracic illnesses, such as gall-bladder and even kidney problems, but all subsumed

under the heading of 'cough', usually referring to a type of lung or respiratory complaint.⁸¹ The disease category *suālu* may correspond to the concept of *peri-pneumonia* in Hippocratic medicine, which also refers in general to lung complaints, less specifically than the modern related term.⁸²

Another Greek text, preserved in Galen, probably represents an older form of Greek medicine, since it appears in the rather unusual format (for a Greek text) of listing clusters of symptoms according to parts of the body. This kind of list, although not typical of Greek medical writing, is certainly reminiscent of Babylonian medical literature and merits our attention. According to Volker Langholf, Galen quotes the following passage from an unknown source, although it is assumed to represent 'Cnidian' medicine because the language is Ionian Greek,⁸³ listing disease according to organs which are associated with the diseases, and other classifications.

7 diseases of the gall,
12 diseases of the bladder,
4 diseases of the kidneys,
from the bladder, 4 diseases of urine retention
3 tetani,
4 jaundices
3 consumptions

The passage is similar in content to headings in the treatise *Internal Affections*⁸⁴ enumerating diseases according to internal organs and ailments, with headings of sections such as: 'three consumptions' (ch. 10), 'three tetanuses' (ch. 52), 'four jaundices' (ch. 35), and 'four kinds of kidney ailment' (ch. 14).⁸⁵ *Internal Affections*, however, is not typical of most other treatises in the Hippocratic corpus, since it does not constitute a particular argument or point of view, as is often the case in other Hippocratic treatises. It appears

⁸¹) See Küchler, *Beiträge*, and BAM 575, etc. and D. S. Cadelli, *Recherche* p. 168 and 186, colophon to tablet II, 'if a man's epigastrium hurts him and he vomits bile when he belches, that man suffers from an internal malady'. The third tablet of the series (Cadelli, p. 224) has as its catchline, 'if a man is overcome by sun-light illness and he is sick with rising of the temple, ...'. The following tablet begins with symptoms of 'heat', presumably fever. All of these illnesses are subsumed under the series '*suālu*', which I would tentatively translate as 'pneumonia'.

⁸²) Both Marten Stol and Manfred Horstmanshoff have reminded me of Gr. *sialos*, a coughing disease which might be etymologically related to Akk. *suālu*. This is the only example which comes to mind of a possible Akk. etymology for a Greek disease name.

⁸³) Langholf, *Medical Theories*, 20, but could such a text have originally been taken from Akkadian?

⁸⁴) See discussion above, fn. 28.

⁸⁵) Jouanna, *Hippocrates*, 145 and 395. Jouanna dates the text rather exactly to 400-390 BC (without giving criteria). and compares the vocabulary to *Diseases II*, another text thought to be Cnidian.

⁷⁵) Hippocrates, Loeb II, 66-7.

⁷⁶) See Jouanna, *Hippocrates*, 153 and 448 n. 44.

⁷⁷) See Stol, JEOL 32, 52.

⁷⁸) See BAM 5, xxix.

⁷⁹) See BAM 3 and 9.

⁸⁰) See the discussion below, under BAD Tablet 22.

to be a vademecum, simply describing a disease and stating what a physician must do, usually addressed in the second person, e. g. 'if choking comes on, you must give the following medication until the patient vomits'.⁸⁶ In fact, *Internal Affections* may have been a compilation or redaction of medical writings dealing with various diseases, perhaps even drawn from different sources. Each passage begins with the name of the condition, referring either to an organ which was the location of the disease, such as the kidney, or else the name of disease itself, such as jaundice. The text then gives a brief description of the condition and usually the season of the year when the condition is likely to occur, and sometimes an external factor which might cause the condition, such as drinking stagnant water.⁸⁷ A description of the appropriate remedy is then given. Furthermore, there is no evidence in *Internal Affections* of any theory of humours, although disease is seen to have been caused by harmful fluids within the body, especially bile or phlegm, and sometimes blood.

1) *Diseases associated with organs: Lungs.* The text of *Internal Affections* begins with descriptions of five different conditions associated with the lungs. The first two (ch. 1 and 2) describe conditions (such as ulcers or rupture) in the windpipe⁸⁸, followed by four further descriptions of diseases of the lung⁸⁹ including a varicose vein in the lung (ch. 5) and an infection (ch. 6), indicating by coughing and vomiting.⁹⁰ The last description of a lung ailment begins, 'if a lung swells up' (ch. 7).⁹¹ *Liver:* The text then describes three different types of liver disorder, usually ascribed to black bile

(ch. 27)⁹², although symptoms are general, including fever, choking, and colic.⁹³ *Spleen:* No less than five different ailments are associated with the spleen, the first and second of which is ascribed to 'heat of the sun', similar to Akk. *šētu* or *himiṣ šēti*. The third spleen ailment 'arises from the blood' (ch. 32), the fourth from phlegm (ch. 33) and the fifth from bile (ch. 34)⁹⁴ resulting from eating too many raw vegetables and drinking water. *Bowel:* Three other illnesses are associated with 'ileuses' or bowel obstructions (ch. 44), and a further group of diseases are called 'thick diseases' (ch. 47), usually caused by phlegm and bile, and affect most parts of the body.⁹⁵ *Hips:* An interesting connection is made between 'hip disease' (*ischias*) arising from being exposed to the sun and hip joints becoming over-heated and dried (ch. 51), for which an Akkadian parallel illness exists, namely *murūš qabli*, which probably refers to the loins as well.⁹⁶

2) *Diseases as symptoms:* Certain diseases are categorised in their own right, rather than as the result of a disorder in an internal organ. Dropsy, for instance, is described separately as a disease, caused by external causes such as drinking too much water (ch. 23) or drinking stagnant water (ch. 26), although one type of dropsy 'arises from the liver' (ch. 24), while a second type of dropsy 'arises from the spleen' (ch. 25). As for the other types of disease in this catalogue, the disease of 'tetanus' refers to wounds or infections (ch. 52), while 'typhus' refers to fevers (ch. 39), and 'jaundice' (ch. 35) was associated with drunkenness. Dropsy, fevers, and jaundice were also treated in Mesopotamia

⁸⁶ *Int. Aff.* 27 = Hippocrates, Loeb VI 169.

⁸⁷ A similar notion occasionally occurs in the *Diagnostic Handbook*, such as Heeßel, BAD no. 17: 21-22, 'Wenn er während seiner Krankheit zuckt: Wasser der Spindel des Flusses hat er geschluckt. Wenn er während seiner Krankheit taumelt: Wasser der Spindel des Flusses hat er geschluckt.'

⁸⁸ *Int. Aff.* 1 = Loeb VI 71, 'If the bronchial tube of the lung ulcerates ... or if some of the pipes extending through the lung rupture into one another and are filled with blood'. Cf. AMT 52 9: 5, 'if foul black blood comes from the windpipe of his left lung' [ref. courtesy M. Stol].

⁸⁹ *Int. Aff.* 3 = Loeb VI 83 reads, 'This disease of the lung generally arises in the following way: when the lung attracts blood or salty phlegm and does not discharge it again, but it gathers there and grows putrid, from this tubercles are likely to form in the lung and produce pus'. The description compares reasonably well with BAM 557 11', '[if a man's] lungs ... and if a man's lungs contain blood, ... he continually spits up pus'.

⁹⁰ Loeb p. 91, description of vomit: 'if you pour out the vomitus onto the earth, it corrodes the earth as vinegar', which is comparable to descriptions of vomit as being poured out to see if flies will be attracted to it or not; cf. Heeßel, BAD 201: 60, discussed further below.

⁹¹ See BAM 558 11', '[if] (the patient's) lungs become congested'.

⁹² 'Black bile' (*martu šalimtu*) occurs in TDP 64: 49, but not with any special significance, since it is listed, as is often the case, with other colours, namely yellow, red, and white (bile); see Stol, *Epilepsy*, 27ff., and Langholf, *Medical Theories*, 46-50.

⁹³ Babylonian medicine seems to have attached little diagnostic importance to the liver.

⁹⁴ See Stol, *Epilepsy*, 31f., showing that the spleen was the 'black' organ, probably associated with bile.

⁹⁵ Akk. *kabātu* as a medical symptom can refer to 'being difficult' when describing an action, such as breathing, but in other cases this meaning is inappropriate, as when referring to the head, knees, or eyes; see CAD K 15b. A meaning of to be 'heavy' or 'thick' might be appropriate here as a description of how the organ feels to the patient, i. e. 'dense', and could correspond to Greek *pachu*. See also Heeßel, BAD no. 27: 8 (= Stol, *Epilepsy*, 75), 'if a man is "thick" (*kabitu*) and contorts either his hand or foot', and TDP 82: 27, giving the diagnosis as *sa.dugud*, 'thick tendons'. *kabātu*, 'to be heavy', can refer to the eyes, see Heeßel, BAD no. 17: 34 and 38. See Stol, *Epilepsy*, 62: 23, 'if, at the time it overwhelms him, his torso(?) is heavy for him (*kabissu*) and gives him sharp pains ... it will be heavy for him (*kabissu*) in the middle of the day'. This is not far off the description of 'thick' diseases in the Greek text.

⁹⁶ CAD Q 11, Heeßel, BAD 200.

as separate categories, not necessarily associated with internal organs.⁹⁷

3) Finally, one other notable feature of *Internal Affections* concerns the variety of symptoms which may be associated with a particular internal organ, such as the kidneys or liver. A disease of the spleen, for instance, encompasses foul smells from the ear and gums, ulcers on the legs and constipation.⁹⁸ It is clear that the organ itself was perceived as the general location or perhaps origin of the disease, but symptoms could refer to many other parts of the body and reflect many other types of conditions. The text of *Internal Affections*, however, offers no explanation regarding the relationship between internal organs and disease,⁹⁹ which is another feature which distinguishes this text from other more theoretical works in the Hippocratic corpus.

The question is whether Babylonians ever had any system of classification of diseases which is comparable to what can be found in *Internal Affections*. One text which merits comparison is Tablet 33 of the *Diagnostic Handbook*, which contains the important double listing of diseases with both the descriptive name of the disease and the 'hand of the god' label.¹⁰⁰ Of the two known manuscripts, one is known to come from Uruk, owned by a *mašmaššu*-therapist, Rīmūt-Anu. The bulk of the text, however, takes the form of a lengthy list associating the main characteristics of the disease with a name of the disease, with each line beginning *šumma*(diš) *simmu*(gig) *šikin*(gar)-*šu*, ending with *šumšu*(mu.ni), 'if the *šiknu* of the skin-disease is ..., its name is ...'. Heeßel translates this phrase as 'wenn der Befund der Krankheit', CAD prefers to translate *šiknu* as 'nature' of the disease¹⁰¹, but the present author prefers 'placing', referring to the place

of the disease (or plant or stone) within a list or unspecified scheme. In Tablet 33 of the *Diagnostic Handbook*, the 'placing' (*šiknu*) of a disease is often compared to another disease, e. g. in the first line of Tablet 33, if the 'placing' of the disease is like (the disease) *ummedu*, then 'it's name is *ašû*(-disease)'. The diseases in this text have something in common: they all have external manifestations and symptoms, and refer mainly to skin diseases and external conditions. The list includes:

abābu, *abiktu*, *ašû*, *bubu'tu* (boils), *ekketu* (scabies), *epqēnu*, *gallû*, *girgiššum* (red boil), *guzallu*, *harāsu*, *išītu*, *kirbānu*, *kiširtu*, *kullaru*, *lipī alpi*, *miqtu*, *nipištu*, *pentu*, *rišūtu*, *ruṭibtu* (dampness), *sāmānu*, *šinnahtiru*, *širiptu* (red spot), *šadānu*, *šahšahhu*, *šibiṭ šāri*, *ziqtu* (pock).

Another section of Tablet 33 (ll. 87-102) contains brief descriptions of an entirely different set of diseases:

ahhāzu (jaundice), *amurriqānu* (jaundice), *bu'sānu* (diphtheria?), *kiššatu* and *kiššat šēti*, *maškadu*¹⁰², *sagallu* (muscle/tendon disease)¹⁰³, *šaššatu*¹⁰⁴

There is no reference made to the *šiknu* of this second list of diseases, since they appear to refer to jaundice and diseases affecting the joints which are not visible from external examination.

These latter diseases should be compared with a unique late medical tablet from Uruk, also owned by the same Rīmūt-Anu whose name appears in the colophon of the Uruk manuscript of Tablet 33 above.¹⁰⁵ This second Uruk text of Rīmūt-Anu attempts to provide a classification of diseases, but on this occasion 'internal' diseases which are associated with four internal bodily organs, namely 'heart' (referring to the organ of cognition), 'belly', 'lungs', and 'kidneys'.

⁹⁷) See Heeßel, BAD p. 48, in which dropsy (*aganutillû*), jaundice (*ahhāzu* and *amurriqānu*) and fever (*dihu*) occur together in Tablet 33 of the *Diagnostic Handbook*, with several other diseases.

⁹⁸) *Int. Aff.* 31 = Loeb VI 181.

⁹⁹) We expect that bile or phlegm might have affected the organ.

¹⁰⁰) See above, and Heeßel, BAD 353ff., and Stol, JEOL 32, 65.

¹⁰¹) CAD Š/II 437.

¹⁰²) Paralysis or arthritis? Cf. Heeßel, BAD no. 33: 100, in which pain throughout the legs prevents walking, often associated with *sagallu*.

¹⁰³) Cf. Heeßel, BAD no. 33: 98, the symptom of which is pain in the thighs preventing use of the legs.

¹⁰⁴) Perhaps a type of arthritis, since symptoms include stiffness of the hips, neck, and hands and feet, cf. Heeßel, BAD no. 33: 95' and CAD Š/2 175.

¹⁰⁵) See Heeßel, BAD 374. The *mašmaššu* Rīmūt-Anu, well known in Uruk (see H. Hunger, SBTU I 11), was a brother of Anu-ikšur, the other Uruk *mašmaššu* who occurs so often in colophons. Rīmūt-Anu is dated in one text to the time of Darius (SBTU V 231: 44-45, a duplicate to KAR 44, the catalogue of incantations [ref. courtesy R. van der Spek]). See above, fn. 8.

H. Hunger, SBTU I 43, cf. F. Köcher, *Fs. Goerke*, 17-39.

1	<i>ul-tu lib-bi</i>	<i>hīp lib-bi</i>	from the 'heart'	depression
2	KI.MIN	<i>miqtu(an.ta.šub.ba)</i>	ditto	seizure
3	KI.MIN	<i>qāt ili</i>	ditto	hand of the god
4	KI.MIN	<i>be-en-nu</i>	ditto	hand of Ištar
5	KI.MIN	<i>ahhāzu</i> (^d dim.me.lagab)	ditto	jaundice
6	<i>ul-tu ka-ar-šū</i>	<i>mu-ru-uš qaqqadi u pi-[i]</i>	from the belly	head disease and mouth
7	KI.MIN <i>pi-i</i>	<i>šin-nu b[u-']-šá-nu</i>	ditto, mouth	tooth; <i>būšanu</i> ¹⁰⁶
8	KI.MIN MIN	<i>kišir(kéš) x-mu</i>	ditto, ditto	...
9	KI.MIN MIN	<i>tak-pi</i> ¹⁰⁷	ditto, ditto	prickling
10	KI.MIN MIN	<i>pa-šit-t[u₄] : mar-tu₄</i>	ditto, ditto	bile, gall-disease
11	KI.MIN	<i>m[a-l]i me-e</i>	ditto	dropsy
12	KI.MIN	<i>qāt eṭimmi(gedim.ma)</i>	ditto	hand of ghost
13	KI.MIN	<i>maš-ka-du</i>	ditto	joint disease
14	KI.MIN	<i>mi-šit-ti</i>	ditto	stroke
15	KI.MIN	<i>a-šu-ú</i>	ditto	...
16	KI.MIN	<i>gi-iš-ša-tu₄</i>	ditto	...
17	KI.MIN	<i>hi-mit šēti ù nap-har mur-šu</i>	ditto	'sun-light'-fever and all illnesses
18	<i>[ul-t]u ha-še-e</i>	<i>dap-pi</i>	from the lungs	bloodclot(?)
19	[KI.MIN]	<i>ši-i-qu</i>	[ditto]	eczema (affecting nose/lips)
20	[K]I.MIN	<i>šá-a-ri</i>	ditto	wind
21	KI.MIN	<i>e-[z]i-zu</i>	ditto	(excreting?)
22	KI.MIN	<i>bu-šá-a-nu</i>	ditto	diphtheria
23	KI.MIN	<i>ši-in-na-ah-tir</i>	ditto	(intestinal-disease)
24	<i>ul-tu bir(kalâti)</i>	<i>hi-niq-ti</i>	from the kidneys	stricture
25	KI.MIN	<i>nīš libbi (šà.zi.ga)</i>	ditto	impotence
26	KI.MIN	<i>muṣṣu šuburri</i>	ditto	anal disease
27	KI.MIN	<i>sa-gal-lu₄</i>	ditto	muscle-disease
28	KI.MIN	<i>la a-li-du-ti</i>	ditto	barrenness
29	KI.MIN	<i>rēmu šá zi-i-ri</i>	ditto	womb which is twisted
30	KI.MIN	<i>ka-le-e šāri(im)</i>	ditto	'gas' retention

(colophon)

Let us first compare this text with Heeßel, BAD No. 33. In the first *simmu šikinšu*-list in that tablet, the following diseases are mentioned which also appear in SBTU I 43: *ašū*, *šinnahtiru*, and *šibiṭ šāri*. Presumably, these three diseases are exceptional cases in that they manifest themselves externally while also being associated with internal organs (belly and lungs). However, the more striking correspondence is with the second list in BAD no. 33, since many of the diseases mentioned there also occur in SBTU I 43. Let us compare the two lists:

BAD 33	SBTU I 43
<i>ahhāzu</i> (jaundice)	5 (associated with heart)
<i>amurriqānu</i> (jaundice)	
<i>bušānu</i> (diphtheria)	22 (associated with lungs); also l. 7
<i>kiššatu</i> and <i>kiššat šēti</i>	16 (associated with belly) (<i>giššatu</i>)
<i>maškadu</i> (joint disease)	13 (associated with belly)
<i>sagallu</i>	27 (associated with kidneys)
<i>šaššatu</i>	

There is a certain structure in the text of SBTU I 43, although it is difficult to deduce without having a commentary or collateral information. Nevertheless, the division of diseases according to four organs is not very different from what is found in the Greek *Internal Affections*, in that various diseases are associated with key internal body organs. In some cases we can see the logic. The first section deals with the 'heart', the seat of cognition in Babylonia, as in Aristotle. All diseases associated with the 'heart' are diseases which were later associated with the brain in later Greek medical

lore, namely epileptic-like seizures and depression. The second category of diseases which is relatively easy to comprehend is the last section, associated with the kidney, in which all diseases mentioned reflect lower abdominal conditions, including impotence and 'anus' (i. e. gastro-intestinal) disease, muscle disease affecting the legs

¹⁰⁶) See Heeßel, BAD p. 48.

¹⁰⁷) A by-form of *tikpu* < *takāpu*, 'to prick', see AHw. 1305.

(*sagallu*), barrenness, and 'gas' retention. The middle two sections are more difficult to identify, in terms of the associations with organs. In section 2 listing diseases associated with *karšu*, the stomach or belly, we find a variety of ailments, including stroke (*mišittu*), joint disease (*maškadu*), and even a general category of 'sun-light fever and all sickness' (17). Similarly in section 3, dealing the lungs, we find symptoms affecting the nose and mouth (*būšanu*), but also those which seem to refer to the gastro-intestinal tract, namely *ezizu*¹⁰⁸ and *šinnahtiru*. Nevertheless, a similar pattern emerges from the Greek text of *Internal Affections*, in which symptoms ascribed to an organ can cover all parts of the body. The symptoms associated with 'bowel obstruction' (ileus), for instance, would probably fall into our Babylonian category of *karšu*. The Greek patient suffers from chill, his skin has a lead colour, his body is soft to the touch, his legs are heavy, he trembles and pants when he walks, his arms and eyebrows hang droop, he has a headache and thirst at night, and his food remains undigested.¹⁰⁹ Each of these symptoms could equally be related to other ailments and could have been described in terms of another disease instead.

There are two important aspects to the Akkadian text: 1) The Babylonian scribe assigns various 'diseases' to four organs or areas of the body, although the 'diseases' may also be a short-hand notation for the symptoms usually associated with those diseases. Hence, the information provided in *Internal Affections* and SBTU I 43 is roughly parallel, providing symptoms belonging to a problem in one or another internal organ. While the Greek text specifically enumerates the symptoms associated with a diseased organ, the Akkadian text simply gives the disease-name usually associated with the appropriate symptoms. 2) The Akkadian designation *ultu*, 'from' the heart, stomach, lungs, or kidneys, implies that certain illnesses originated in these particular organs, i. e. the 'seat' or 'place' from which they originate. The idea is complementary to *šiknu*, which refers to the external manifestations of the illnesses in BAD No. 33, while SBTU I 43 is concerned with the 'seat' of the disease within the internal anatomy.

Ironically, the best available explanation for both BAD no. 33 and SBTU I 43 may exist in a roughly contemporary Greek text, in a passage from the Hippocratic corpus on *The Art*, in which the author maintains that the art of medicine is only effectively applied by those who have the appropriate education. He continues as follows:

Men with an adequate knowledge of this art realize that some, but only a few, diseases have their seat

(*keimena*)¹¹⁰ where they can be seen; others, and they are many have a seat where they cannot be perceived. Those that can be perceived produce eruptions on the skin, or manifest themselves by colour and swelling; for they allow us to perceive by sight or touch their hardness, moistness, heat or cold, what are the conditions which, by their presence or absence in each case, cause the diseases to be of the nature they are.¹¹¹

Here again is a passage which could as easily apply to Babylonian as well as Greek medicine, since the characteristics of colour, hardness¹¹² or softness, wet or dry¹¹³, hot and cold are prominent descriptions of body symptoms in the *Diagnostic Handbook*. Nevertheless, the crucial point here is the distinction between those symptoms which are easily seen, i. e. have external manifestations which are visible to external examination, and those diseases or symptoms which are located within the body and cannot be seen. This is the crucial distinction which can be detected in two Akkadian texts under discussion, namely BAD 33 and SBTU I 43. The two listings of diseases refer to diseases which can be seen and those which cannot, and the latter are necessarily associated with various internal organs, although perhaps on a somewhat arbitrary basis, from our point of view.

Astral Medicine

The fourth century BC physician Diocles of Carystus also made reference to the 'ancients', who 'made their prognoses of disease on the basis of the phase and orbit of the moon'.¹¹⁴ This information is quite consistent with diagnostic astrological texts in Late Babylonian sources, if the 'ancients' here can be compared with their fellow practitioners in Babylonia; Heeßel has shown that this type of prognosis was fully developed in Babylonia in later periods, during the last phase of the use of cuneiform script.¹¹⁵ Such an approach to medicine was not unique to Babylonia, since the author of the Hippocratic treatise on *Airs, Waters, Places* stresses the contribution of astronomy to medicine, and warns that diseases come to a crisis under the rising of

¹¹⁰) The translation of 'seat' here is not entirely satisfactory, nor is it used as a technical term, but Gr. *keimein* means 'to lie', which is not so far from Akk. *šakānu/šiknu*.

¹¹¹) Loeb II 206-7.

¹¹²) See Heeßel, BAD 177: 59', which is to be read *am-ša aš-ša-a-ma*, (fingers and toes) 'are cataleptic and stiff' [reading courtesy M. Stol].

¹¹³) See Heeßel, BAD 229: 47' (= TDP 244: 12), which is to be read 'ud *u duru-ub*', 'dry and wet', as descriptions of symptoms [reading courtesy M. Stol].

¹¹⁴) P. van der Eijk, *Diocles of Carystus* (Leiden, 2000), 130f.

¹¹⁵) Heeßel, BAD 112ff.

¹⁰⁸) See M. Stol, *Fs. Borger*, 344.

¹⁰⁹) *Int. Aff.* 44 = Loeb II 218-221.

certain stars, especially the Dog Star and Arcturus.¹¹⁶ We should not conclude, therefore, that Diocles's comment about the 'ancients' refers directly back to Babylonian sources, but only that earlier Greek medicine closely resembled some of the methodology and concepts of Babylonian medicine. We are thus still faced with the same question, namely, how much did early Greek and late Babylonian medicine resemble each other?

Prognosis

The opening paragraph of the Hippocratic treatise *Prognostics* explains the art as follows:

It seems to be highly desirable that a physician should pay much attention to prognosis. If he is able to tell his patients when he visits them not only about their past and present symptoms, but also to tell them what is going to happen, as well as to fill in the details they have omitted, he will increase his reputation as a medical practitioner and people will have no qualms in putting themselves under his care. Moreover, he will the better be able to effect a cure if he can foretell, from the present symptoms, the future course of the disease.¹¹⁷

This statement could have applied to Babylonian medical practice equally well, in all respects. The Babylonian *āšipu* visited the sick man's house, as did his Greek counterpart.¹¹⁸ One finds similar statements in both the *Diagnostic Handbook* and *Diseases II* that the physician should not attempt to diagnose or treat the (terminally ill) patient.¹¹⁹ The *āšipu* was not only faced with predicting the patient's future (he will get better, he will die, he will linger, etc.),¹²⁰ but he also had to 'fill in the details they [the patients] have omitted', as the Greek writer says above, explaining symptoms which the patient himself does not recognise. One frequently encounters in the *Diagnostic Handbook* the

expression that the patient 'does not know' what he is doing (i. e. his symptom) or 'forgets himself'.¹²¹

Hence, the system of prognosis, as known in the *Diagnostic Handbook*, has many parallels in the Hippocratic corpus on *Prognostics*, as already partially noted by Labat,¹²² although more needs to be said on this subject. Labat also pointed out general parallels in terminology between the *Diagnostic Handbook* and various other Hippocratic treatises, including *Coan Prenotations* and *Prorrhethics*, without exercising any critical evaluation of the Greek sources, which differ considerably from each other. The treatise on *Coan Prenotations*, for instance, is a collection of aphorisms, with those referring to parts of the body arranged *a capite ad calcem*, and the text, dating from the end of the fourth cent. BC, was probably drawn from a number of Hippocratic treatises.¹²³ *Prorrhetic I* also consists of collections of aphorisms, while *Prorrhetic II* is a collection of prognostic 'signs', both treatises lacking any recognisable order, and both dating to the fifth cent. BC. According to Jouanna, the second treatise was probably composed by the same author as that of *Prognostics*.¹²⁴

Nevertheless, it is the second chapter of *Prognostics* which is of particular interest here, since it most resembles the *Diagnostic Handbook* as a composition, rather than as separate clauses:¹²⁵

In dealing with acute diseases, the Greek physician is instructed to examine the patient's face first, to see how it compares with the face in a healthy state, and he must look for the following symptoms:

Nose sharp, eyes hollow, temples sunken¹²⁶, ears cold¹²⁷ and contracted with their lobes¹²⁸ turned outwards, the

¹²¹) If, ditto (= if the patient is sick for one day) and he is struck on the right side of his groin, and he forgets himself, it is the Hand of Šulpa'ea and he will die.

If ditto and his 'passage' (anus) on the right side is swollen and turns black, and he is not aware that he staggers, it is the Hand of Adad, he is struck in midday and he will die.'

Heeßel, BAD 153: 49' and 52'. See also Stol, *Epilepsy*, for the observation in the *Diagnostic Handbook* as to whether the patient is 'awake' or 'not awake' (*libbašu e-er / la e-er*).

¹²²) Labat, TDP xxxviii f.

¹²³) Jouanna, *Hippocrates*, 379.

¹²⁴) *Ibid.*, 406 f.

¹²⁵) Hippocrates, Loeb II, 8-11.

¹²⁶) BAD no. 15: 55', his forehead is 'pressed' (*he-sa-at*), or alternatively, 'his temples are collapsed (*šub-ta₃*)' (Heeßel, BAD no. 22: 36), which may correspond to the Greek expression here.

¹²⁷) BAD 19/20: 45, ears cold.

¹²⁸) TDP 70 17, 'if a (patient's) ears constantly stick up (*ittanazqapā*), and for Akk. *ruqqi uzni*, see Heeßel, BAD 215 and CAD R 419, for the meaning of 'ear lobes' (lit. 'cauldron' or 'kettle'), which can also apply to other parts of the body, e. g. liver or spleen.

¹¹⁶) Jouanna, *Hippocrates*, 215.

¹¹⁷) Transl. Mann and Chadwick, *Hippocratic Writings*, 170.

¹¹⁸) The opening line of the *Diagnostic Handbook*, 'when the *āšipu* goes to the house of the sick man', or in the colophon of the tablet, 'when you approach the sick man', correspond rather nicely to the statement in the Hippocratic *Prognostics* 3, 'when the physician visits the patient, he should find him ...' (*Hippocratic Writings*, 171). The idea of a 'hospital' for the sick did not develop until the Byzantine period, *pace* H. Avalos, *Illness and Health Care in the Ancient Near East* (Atlanta, 1995), 184, suggesting that the Gula temple might have served as a healing centre, similar to the Asclepion.

¹¹⁹) See Heeßel, BAD 61 n. 90 and Jouanna's note on *Diseases II* 48 in his edition of *Hippocrates Malades II* (Paris, 1983), 251 [ref. courtesy P. van der Eijk].

¹²⁰) See Labat, TDP, xlii f., and Heeßel, BAD 62 f.

skin about the face hard and tense¹²⁹ and parched, the colour of the face as a whole being yellow or black¹³⁰.

If the Greek physician cannot yet make a prognosis, he must then ask,

whether the patient has been sleepless, whether his bowels have been very loose, and whether he suffers at all from hunger.¹³¹

If the patient admits to these symptoms, there is less danger, but if the patient does not admit to the symptoms, 'it is a sign of death'. If the disease persists for more than three days, the Greek physician must re-examine the patient, paying particular attention to the eyes:

For if they [the eyes] shun the light, or weep involuntarily¹³², or are distorted¹³³, or if one becomes less than the other¹³⁴, if the whites be red or livid¹³⁵ or have black veins in them¹³⁶, should they be restless¹³⁷ or protruding¹³⁸ or very sunken¹³⁹ or if the complexion of

the whole face be changed¹⁴⁰ – all these symptoms must be considered bad, and in fact fatal.

To anyone familiar with the Babylonian *Diagnostic Handbook*, such descriptions are commonplace. It is not the actual correspondences with individual Akkadian phrases which are comparable here, although we have noted them in footnotes to the text above, but rather it is the form of the Greek passage which is particularly noteworthy. This passage differs from the aphorisms of other prognostic texts, such as *Coan Prenotations* and *Prorrhethics*, since *Prognostics 2* consists of a list of symptoms, much as the listings in the *Diagnostic Handbook*. Furthermore, it is noticeable that all the symptoms mentioned *Prognostics 2* refer to the organs of the head, rather than symptoms of individual diseases.¹⁴¹ Hence, if one slightly reworded the Greek passage by adding the words 'If the patient's nose is ..., eyes are ..., temples are ..., ears are ..., etc., one ends up with a noticeably similar literary structure to that of the *Diagnostic Handbook*. We see this same literary structure in other Greek texts which we have referred to above as 'Cnidian', and which show many similarities with texts from Babylonia.¹⁴²

Description of Symptoms

It is not only the content of Babylonian and Greek medical texts which need to be considered, but also the literary form in which the information is transmitted, since the wording and expressions may indicate a common curriculum or school tradition in which such medical texts were composed and studied and taught. Hence, the structure of medical statements in both Greek and Akkadian may provide relevant information

face is yellow and his eyes are deep-set, he will die' (diš igi.meš-šú sig₇.meš u igi²-šú šap-la gam).

¹⁴⁰) The association here in the Greek text between eyes and face may hint at a Babylonian connection, since 'eye' and 'face' share the same logograms, igi and igi², which can be difficult to distinguish in some contexts.

¹⁴¹) One of the distinguishing features between Greek and Babylonian medicine is the Greek use of case histories, describing diseases rather than symptoms based upon parts of the body; see below.

¹⁴²) There are many examples of individual recipes in *Diseases II* 12-75 which contains examples of phraseology with possible identifiable Akkadian parallels. Cf. for example the following (ch. 21 = Loeb V p. 229):

Another disease: pain suddenly seizes the head in a healthy person, and he at once becomes speechless, breathes stertorously, and gapes with his mouth; if anyone calls to him or moves him, he moans; he comprehends nothing; he passes copious urine, but is not aware of it when he does. Unless fever occurs in this patient, he dies in seven days; if it does he usually recovers.

¹²⁹) Probably corresponding to Akk. *šepuru*, 'pinched', see TDP 78: 71, 'if his face is pinched ...'.

¹³⁰) TDP p. 72: 14: 'if his face is yellow and black, he will die'. The combination of 'yellow and black' is remarkable as a symptom, since the combination virtually never occurs in reality, and may indicate a literary parallel here.

¹³¹) Cf. Heeßel, BAD no. 16: 6 and 90', 'if ditto (he was ill for one day) and he evacuates "excrement of hunger(?)" (*še₁₀ ba-ru-ti-šú*), he will die'.

¹³²) Cf. another tablet of the *Diagnostic Handbook* from Sultantepe, STT 89: 184-5, which reads, *egir ir-ú i-[s]al-lal-ma nu zi-bi ud dib-su um-taš-š[e-r]u-šu gim ir nu zu*, 'after (the patient) weeps, he goes to sleep and does not get up, and when his seizure has "released" him, he was not aware that he was weeping' (courtesy M. Stol, cf. CAD B 36).

¹³³) Chadwick and Mann, *Hippocratic Writings*, 171, translate 'squint'. See Stol, *Epilepsy*, 67: rev. 1-3 (= Heeßel, BAD 26: 62'), 'his eye squints' (*iššu išappar*).

¹³⁴) See J. Fincke, *Augenleiden nach keilschriftlichen Quellen, Untersuchungen zur altorientalischen Medizin* (Würzburg 2000), 150, citing an eye-disease medical text with the phrase, *diš na igi²-šú sig-na šá úš šak-na*, if a man's eyes become small, being bloodshot' (BAM I 22 rev. 27').

¹³⁵) In both physiognomic omens and the *Diagnostic Handbook* we find omens referring to the 'white' of the eyes being either 'red' or 'yellow' (*puši inī sām* and *puši inī aruq*), see Fincke, *Augenleiden*, 154 and 180f.

¹³⁶) Heeßel, BAD no. 17: 77, 'his eyes are full of "red threads"' (= blood vessels). One medical text describes the patient's eye as *šer'ānu (inī) magal sām*, the vessel (of the eye) is very red', see Fincke, *Augenleiden*, 154.

¹³⁷) Chadwick and Mann, *Hippocratic Writings*, 171, translate 'wander', which fits well with TDP 50: 10, 'if (the patient's) eyes "wander" (*iš-ša-nun-da*)'.

¹³⁸) Cf. Akk. *zaqāpu*, which can refer to pointing or to be erect, referring to parts of the head, particularly 'eyes' (see Heeßel, BAD 26: 80-81), the top of the head (BAD 22: 68), or hair (BAD 19: 125); in the D-stem, CAD Z 51 translates *zuqqupu* as 'to make (eyes) protrude'; see Fincke, *Augenleiden*, 183.

¹³⁹) See Fincke, *Augenleiden*, 166, citing a passage from the *Diagnostic Handbook* (TDP II pl. xiii: 12), 'when a man's

as to whether some parts of each respective medical corpus may have come from a common source.

One of the key texts in the Hippocratic corpus which bears comparison with its Akkadian counterparts is considered to belong to the oldest stratum of the corpus among texts describing diseases. The source is *Diseases II*, chapters 12-75 (which differ considerably in style and content from chapters 1-11), and although thought to represent 'Cnidian' medicine, the assumption is not valid.¹⁴³ Like the Akkadian *Diagnostic Handbook*, the text of *Diseases II* 12-75 describes diseases based upon observation of external symptoms and questioning of the patient. Let us begin with an example of a description in *Diseases II* 72 of the disease *phrenitis*, which, as we have argued below, could be comparable with the Akkadian descriptions of fever and delirium:

Phrenitis (var. *phrontis*): something like a thorn seems to be in the inward parts and to prick them.¹⁴⁴

Loathing attacks the patient, he flees light and people, he loves the dark, and he is seized by fear.

His diaphragm swells outwards, and is painful when touched.

The patient is afraid, and he sees terrible things, frightful dreams, and sometimes the dead.¹⁴⁵

Langholf comments that the expression 'seeing the dead' comes from an archaic period of medicine,¹⁴⁶ but the statement occurs often enough in Babylonian medical and diagnostic texts to be seen as a normal expression. See, for example, in the *Diagnostic Handbook* no. 28: 71, 'If ditto (= he suffers from a long illness and) he continually sees dead persons, ditto (= he will recover)'.¹⁴⁷

Furthermore, the simile in *Diseases II* 72 of a thorn or stick pricking the patient's innards also occurs in the *Diagnostic Handbook*, Tablet 13:

If he has a piercing pain or (he feels as if) a stick is placed in his epigastrium, and he defecates blood, he will die.

If he has a piercing pain or (he feels as if) a stick is placed in his epigastrium, and he throws up dark

blood, towards the second or third day he will die.

If he has a piercing pain or (he feels as if) a stick is placed in his epigastrium, he is constipated, he will die.¹⁴⁸

A variant occurs in BAM 216: 29', 'if a man has piercing pain and it stings him like a thorn (*sil-le-e*), it is the Hand of a Ghost', which appears to be the same simile as in the Greek text.

For the purposes of the present discussion, we shall restrict our survey to examining the headings of chapters in *Diseases II* 12-75, Volker Langholf's description of which will serve as a useful basis for our comparisons with the *Diagnostic Handbook*.¹⁴⁹ Langholf describes a distinctive pattern in the Greek text in which symptoms are listed in a two-part manner. The first part of the symptom serves as the 'title', in which either the name of the disease is given or a brief qualification of the name, e. g. 'another (disease)', the purpose of which is simply to identify the condition. The second part of the symptom contains a description of the 'signs' or symptoms, stipulating, for example, that the patient feels pain or vomits bile, coughs, or has blurred vision. This formal structure of symptoms is strikingly similar to symptoms listed in the *Diagnostic Handbook*, as we will see below.

Langholf gives the following examples of 'titles' of entries in *Diseases II*:¹⁵⁰

If water gets to the brain (*egkephalos*) (ch. 15)¹⁵¹

Another disease: if the little bloodvessels around the brain contain too much blood and heat the brain¹⁵² (ch. 17)

If the vessels in the head contain too much blood (ch. 18)

If the brain is suffering from bile (ch. 19)

If the brain is mortified [Liddell - Scott: 'gangrenous'] (ch. 20)

If he gets struck [in the skull] (ch. 23)

¹⁴⁸) TDP 114: 42'-44', see also *ibid.* 118: 24 and 120: 32.

¹⁴⁹) Langholf, *Medical Theories*, 55ff. One interesting point arises from Langholf's discussion of the 'title' of *Diseases II* 24, 'when caries (*terēdōn*) is in the bone', to which Langholf remarks that the word *terēdōn* originally meant 'wood-worm', which probably refers 'to the archaic concept of the cause of that malady' (Langholf, *Medical Theories*, 55). The archaic meaning may well relate to the Akkadian myth of the tooth-worm, against which Akkadian incantations were usually employed. In one case, however, a medical recipe seems to rely upon sympathetic magic, see Thompson, *AJSL* 54 (1937), 35f., 'if a man has a toothache, he crushes a worm on his tooth.'

¹⁵⁰) Translations are adapted both from Langholf, *Medical Theories*, 56 and Hippocrates, *Loeb V*.

¹⁵¹) Thompson, *AJSL* 53 (1937), 234, 'if the head holds water', see BAM 480.

¹⁵²) Akkadian: if a man's brain contains heat (BAM 3, etc.).

¹⁴³) See Langholf, *Medical Theories*, 52ff.

¹⁴⁴) See also *Int. Aff.* 8 (Loeb VI, 97), trans. Jones: 'the patient is pierced through by pain as if a needle were pricking him'.

¹⁴⁵) Hippocrates, *Loeb V* 326-7, see Langholf, *Medical Theories*, 54. Note the combination of physical and psychological symptoms described in the Greek passage, which relates to our discussion of *phrenitis* below in regard to Tablet 22 of the *Diagnostic Handbook*.

¹⁴⁶) Langholf, *Medical Theories*, 54; the expression occurs only in this one passage in *Diseases II* and in *Regimen IV* (on dreams).

¹⁴⁷) See M. Stol, *Epilepsy*, 87 (= Heeßel, BAD no. 28: 35), with reference to a ritual which begins, 'if a man sees dead persons from time to time' (KAR 234: 27 = G. Castellino, *Or NS* 24 (1955), 260, AMT 7,1 i 11). The expression also occurs in dream omens, cf. STT 256: 5.

If a man suffers from bile (ch. 40)¹⁵³

When there is a disease of the lung (ch. 48)¹⁵⁴

If there is a wound in the *artēriē* (wind-pipe?), cough seizes the patient, and blood is expectorated, and the *pharynx* (pharynx?) is filled with the blood unexpectedly, and he expectorates clots of blood (ch. 53)¹⁵⁵

If both lungs suffer from spasm (or distension) (ch. 54b)¹⁵⁶

If a red inflammation occurs in the lung (ch. 55)

If a growth waxes in the lung (ch. 57)

If the lung is filled (ch. 58)

If a lung falls against the side (ch. 59)¹⁵⁷

If a rupture occurs in the chest and in the back (ch. 62)

ardent fever (*kausōdēs*) (ch. 63)¹⁵⁸

disease with hiccups (ch. 64)

stroke (*lēthargos*) (ch. 65)¹⁵⁹

drying-out disease (*auantē*) (ch. 66)

lethal disease (*phonōdēs*) (ch. 67)

livid disease (*pelīē*) (ch. 68)

disease with belching (*erugmatōdēs*) (ch. 69)

phlegmatic disease (ch. 70)

white phlegm (ch. 71)

Langholf¹⁶⁰ then proceeds to list the second clauses of the description of illness in these same passages, which often (although not always) occur after the 'title'; the clauses appear in an a+b+c format. Langholf refers to these descriptions as the 'signs' of the disease, a point reiterated by G. Manetti.¹⁶¹

strong pain seizes the head, and if he moves only slightly, he vomits bile (ch. 14)

when he stands up, vertigo seizes him (ch. 18)

if somebody calls or moves him, he moans but does not notice anything (ch. 21)

he has pain in the front of his head, he cannot see but he is drowsy, the vessels in his temples throb ... (ch. 25)¹⁶²

when he lies down, he suffocates (ch. 26)

¹⁵³) BAM 159 i 39, na.bi zé gig, 'that man suffers from bile'. See Langholf, *Medical Theories*, 40, with the important observation that 'in the Hippocratic treatises *kholē* is both the name of a body liquid (gall or bile) and the name of the organ that contains the liquid (the gall-bladder)'. The very same can be said of Akk. *martu*.

¹⁵⁴) Akkadian *murūḥ hašē*.

¹⁵⁵) See BAM 555 iii 55', 'he continually expectorates blood when he coughs continually' (referring to lung disease).

¹⁵⁶) Perhaps corresponding to Akk. *kiširtu hašē*, 'stricture of the lungs', see BAM 554 10.

¹⁵⁷) Akkadian: 'if a man's lungs are solid with his ribs', BAM 558 iv 3.

¹⁵⁸) There are two potential candidates in Akk., *ummu šarhu* and *ummu dannu*.

¹⁵⁹) Akk. *mišittu*.

¹⁶⁰) Langholf, *Medical Theories*, 57.

¹⁶¹) G. Manetti, *Theories of the Sign in Classical Antiquity* (Bloomington, 1993), 50ff.

¹⁶²) See Thompson, *AJS* 1937, 23, and BAM 480 1ff.

if he is forced [to drink something], it flows through his nose (ch. 28)

when he has not eaten anything, it hurts, him; but when he has eaten, he suffocates (ch. 40)

when he sits up, he coughs more (ch. 46)

when he turns over, he coughs and sneezes (ch. 54)

he vomits warm what he has drunk (ch. 60)

he cannot bear being without food, and he cannot bear having eaten (ch. 66)

whenever he has eaten, he gets respiratory troubles (ch. 71)

This type of a+b+c string of clauses in Greek medical descriptions is typical of the format of the *Diagnostic Handbook*, which often begins with a clause introducing the initial 'problem', usually thereafter abbreviated by 'ditto' (ki.min), then followed by another clause describing the problem, and finally there is a prognosis as to how the disease will develop (usually, 'he will get better' or 'he will die'); often 'ditto' is used in the last clause as well, if it is repetitive.

Many examples of this structure can be found throughout Heesfel's BAD, such as the following:

He consumes much bread, beer and fruit, but not sitting (well) in his belly he throws (it) up¹⁶³

the right and left sides of his forehead are in pain and his right and left eyes create a shadow¹⁶⁴

he eats bread and drinks beer and retches and his epigastrium and shoulders hurt, he coughs, hiccups and spits out his saliva (or phlegm)¹⁶⁵

If he has a craving but cannot eat it and retches and fever continually seizes him ...¹⁶⁶

If he, once or twice in his illness, first threw up bile and then blood ...¹⁶⁷

Furthermore, Langholf cites many references in *Diseases II* 12-75 to the number of days which will likely occur until the patient either dies or improves, in which the usual pattern is that cardinal numbers express the number of days that a disease persists, but ordinal numbers express single days in which something is expected to happen.¹⁶⁸ Here is an example from *Diseases II*: 'On the third or fourth day he discharges urine containing blood, and he dies on the seventh day; if he survives fourteen days, he recovers' (ch. 56). This formulation is frequently found in Tablet 16 of the *Diagnostic Handbook*, as in the following examples: 'If (the illness) laid him low for two days (ud.2.kám) but in the third day (*ina* ud.3.kám) seized him, ...'.¹⁶⁹ Or another case: 'if for six days (ud.6.kám) he is infected and on the seventh day (*ina* ud.7.kám) he cannot breathe, ...'.¹⁷⁰

¹⁶³) BAD no. 17: 10.

¹⁶⁴) BAD no. 16: 23, following from 21 and 22.

¹⁶⁵) BAD no. 22: 29-30.

¹⁶⁶) BAD no. 22: 4.

¹⁶⁷) BAD no. 17: 27.

¹⁶⁸) Langholf, 62ff.

¹⁶⁹) BAD 16: 25.

¹⁷⁰) BAD 16: 63'.

Hence, we can see many general parallels in the descriptions of diseases and symptoms in both the Greek and Akkadian sources. It must be stressed that these parallels are in no way arbitrary. The text of *Diseases II* 12-75 is not typical of other treatises in the Hippocratic corpus, and represents an early stage of medical writing in Greek. As in *Internal Affections*, there is little hint of later developments in Greek medicine, such as common use of venesection, a theory of humours, widespread use of purgatives and emetics, or references to case histories. The comparisons which we have discussed above do *not* apply to the Hippocratic corpus as a whole, but only to a small number of medical texts preserved in Greek which appear to reflect the same patterns of medicine known from Mesopotamia.

Further comparisons between *Internal Affections* and the *Diagnostic Handbook*

Renate Wittern has collected the data regarding disease diagnosis in *Internal Affections*,¹⁷¹ which is a useful resource for finding comparisons with the *Diagnostic Handbook*.

Occasionally in *Internal Affections*, the diagnostician is advised to test the patient in order to clarify his prognosis, and one of the tests, to see if the patient can see clearly or not, is described as follows:

This is how you can tell that he does not see: he does not blink when the finger is brought near.¹⁷²

The diagnostic test is methodologically comparable to the following passage in the *Diagnostic Handbook* Tablet 16:

If for six days he is infected and on the seventh day he cannot breathe freely, they shall sprinkle water into his face. If his eyes do not open, he will die, (but) if his eyes open and close because of the water which they sprinkled on him (and) he cries, he will live.¹⁷³

In both cases, the diagnostician is trying to get a reaction from the patient, either through blinking or reacting to being sprinkled with water on his face, and both types of passages are unique in their respective contexts.¹⁷⁴

¹⁷¹) R. Wittern, 'Zur Krankheitserkennung in der knidischen Schrift "de internis affectionibus"', *apud* *Fs. Goerke*, 101-119.

¹⁷²) *Int. Aff.* 48 = Loeb VI 233, see Wittern, *Fs. Goerke*, 102.

¹⁷³) Heeßel, BAD 177: 63'-64'.

¹⁷⁴) Another test performed by the *āšipu* concerned the nature of the patient's vomit: 'if he vomits from being ill, and a fly will approach his vomit, he will die' (Heeßel, BAD 201: 60). Although no such exact observation is known from early Greek texts, cf. *Int. Aff.* 6 (= Loeb VI 91): 'if you pour out the vomitus onto the earth, it corrodes the earth as vinegar'.

Wittern points out that not only is pain the most commonly mentioned symptom in *Internal Affections*, but that the pain is usually localised rather clearly, in the breast, back, head, abdominal cavity, eyes, skull, shoulder-blade and collar-bone, testicles, etc.¹⁷⁵ The very same observation could be made about the *Diagnostic Handbook*.¹⁷⁶ Particularly interesting is the Greek expression that 'gnawing pains (*dēgmos*) attack the body',¹⁷⁷ corresponding to Akk. *kašāšu*, 'gnawing'. Pain is also described in Greek as 'sharp', such as pain in the kidneys¹⁷⁸, corresponding to Akk. *zaqātu*, 'to sting', which often refers to pain while urinating.¹⁷⁹

These are only a selection of examples of diagnostic criteria which can be found both in *Internal Affections* and the *Diagnostic Handbook*, and much more could be said about correspondences between the two texts. The Greek text, for instance, makes note of all bodily fluids, such as mucous, pus, bile, urine, and blood, with remarks on the colour, consistency, amount, and whether it is clean or foul;¹⁸⁰ similar data can be found in the Babylonian *Handbook*.¹⁸¹

Greek parallels to *Diagnostic Handbook* Tablet 22

This unusual tablet is concerned with mental problems associated with physical symptoms, usually fever or vomiting. The tablet is divided into sections, each separated by a ruling.

The symptoms of the first section of this text (ll. 1-5) include a combination of physical and psychological problems, e. g. he has fever, he moans and is thirsty, has cramps, he craves food but cannot eat and retches, he breaks off while speaking, and he may have been subject to an attempt to 'make him eat magic'.¹⁸² The illness is a result of *li'bu*-disease, which although

¹⁷⁵) Wittern, *Fs. Goerke*, 103.

¹⁷⁶) See Heeßel, BAD 43.

¹⁷⁷) *Int. Aff.* 24 = Loeb V p. 153, also Wittern, *Fs. Goerke*, 104, 'nagender Schmerz', although the word in Greek may also mean 'to sting'.

¹⁷⁸) *Int. Aff.* 202 (Loeb V 119).

¹⁷⁹) See, for example, BAM 112: 17'.

¹⁸⁰) Wittern, *Fs. Goerke*, 106ff.

¹⁸¹) See Heeßel, BAD 73: 'Daneben wurden auch das Blut (Hämatoskopie) und der Speichel betrachtet, ohne daß diese Beobachtungen allerdings im Diagnosehandbuch an einer Stelle systematisch aufgelistet erscheinen. Alle diese Ausscheidungen wurden auf Farbe, Geruch und Konsistenz untersucht.'

¹⁸²) No. 22: 5, *ana maš-tak-ti kiš-pi šu-kul*. The *mašmaššu*-therapist is warned against making a prognosis (l. 3), possibly because of the danger of black magic being cited as the cause of the disease (i. e. the 'hand of mankind') and the laying of figurines of the patient, ll. 2-3).

unidentifiable is always associated with fever, and perhaps infection.¹⁸³

The next two sections deal with love sickness (for both men and women) and illness resulting from illicit sex (although not necessarily venereal disease), with the main symptoms being fever and loss of appetite, but include speaking to oneself and laughing without reason (l. 6). The following section (ll. 16-24) deals with jaundice-like symptoms with alternating fever and chills, as well as nosebleed, but the patient's mind is not entirely sound, since he asks for onions on an empty stomach (l. 21). The following section (ll. 25-26) describes the patient as being feverish while coughing up bits of black mucus.

The final and longest section of this tablet is a mixture of symptoms from a variety of diseases, but here again the symptoms are often psychological and include depression (l. 35 and 68) and manic-depression (l. 63), changes of mood (ll. 41-42) and delirium and irrational behaviour (ll. 44-56). Fever appears again as malaria (*di'u*, l. 67) and as daily fever (72), although in this case one cannot tell if fever is related to the other symptoms mentioned.

A case could be made that many of the conditions described in this tablet may correspond to Greek phrenitis, which Chadwick and Mann translate as 'brain fever'.¹⁸⁴ Although the translation is technically incorrect, it is nevertheless useful in showing contradictory evidence for this disease in Greek sources. The name itself implies 'inflammation of the *phrenes*', which are located in the diaphragm. According to Volker Langholf, an older idea occasionally appears in the Hippocratic corpus regarding the *phrenes* as the seat of intelligence, and *phrenitis* was associated with magic.¹⁸⁵ Nevertheless, the rather confused descriptions of *phrenitis*, with its large array of symptoms, may be partly because of a long history associated with this disease, originally associated with fever and delirium, but afterwards used as a general rubric associated with other symptoms as well, such as incontinence, nosebleed, etc.¹⁸⁶

¹⁸³) Although the dictionaries are reluctant to define this word, the related verb *la'abu* is defined as 'to infect'; see CAD L 6 and 181f. See also BAM 3 iii 47ff. giving a series of symptoms of fever resulting from *sili'tu*, probably another type of infection, affecting the ears, neck, stomach and bowels, loins and penis (see CAD S 263).

¹⁸⁴) *Hippocratic Writings*, 187.

¹⁸⁵) Langholf, *Medical Theories*, 40-46.

¹⁸⁶) According to S. W. Jackson, 'in phrenitis the primary disease condition was thought to be the brain'. Described as 'fever delirium', Jackson describes the symptoms of fever delirium as rapid breathing, insomnia, frightening dreams, 'forgetfulness without apparent reason, brash behavior (particularly in those who had previously been unassuming), and the tendency to drink very little.' According to Jackson, further symptoms during an attack included dry and then

The association, therefore, between phrenitis and the brain may be totally coincidental, in the sense that originally this combination of heat and delirium may have been rather arbitrarily associated with the brain, without any justification that is clear to us. It is often the case that symptoms are associated with a particular organ of the body, without our being able to know why. It may well be the case, therefore, that Galen's association of this particular fever with the brain may actually go back to an earlier idea, similar to that in Babylonia, in which a certain type of fever was thought to be associated with the brain, (*šumma ina muhhišu umma ukāl*, 'if a man has fever in his brain'), although fever could also be associated with other organs or with infection (*li'bu*, *sili'tu*). What is noticeable here is the wide variety of symptoms associated with fever, which we might expect, but also the particular combination of fever and a change in the patient's mental state, which is the central point. Like the descriptions of phrenitis, which combine fever and delirium with other symptoms, Tablet 22 of the *Diagnostic Handbook* assembles groups of physical symptoms which are associated in almost every instance with a psychological condition, and this particular formulation is unique within the *Diagnostic Handbook*.

Greek parallels to *Diagnostic Handbook* Tablet 31

One of the main differences between Greek treatises and their Babylonian counterparts is that of genre. In Babylonia, a clear distinction between lists of symptoms (i. e. the *Diagnostic Handbook*) and the therapeutic texts was usually maintained, despite much interdependence between the two genres, as pointed out by Marten Stol.¹⁸⁷ Within Greek medical literature, only *Prognostics* mostly resembles the Babylonian listing of symptoms, as pointed out above, while in *Diseases II* 12-75 and *Internal Affections*, the descriptions of disease symptoms are always followed by recipes and procedures, although it is conceivable that the final form of these works reflects redaction from different sources. In general, the Greek recipes and prescriptions are

bleary eyes, nosebleed, and hands picking at the bedclothes, or being unresponsive to questions and stimuli. See S. W. Jackson, 'Galen on Mental Disorders', *Journal of the History of Behavioral Sciences* 5 (1969), 365-384, especially 372f. See also M. Dols, *Majnun, the Madman in Medieval Islamic Society* (Oxford, 1992), 30-32. The assumption is that Galen's analysis of the disease was based upon his realisation that the brain served as the main organ of cognition, rather than Aristotle (and most other predecessors), who still assumed that the heart served this function.

¹⁸⁷) JEOL 32, 49ff.

quiet different from Akkadian ones, although comparisons merit further study.

Nevertheless, the *Diagnostic Handbook* is also not quite as uniform as one imagines, judging from one text now edited for the first time by Heeßel. Tablet 31 of the *Diagnostic Handbook*¹⁸⁸ actually consists of a series of symptoms combined with brief recipes, which is hardly characteristic of the other tablets in the *Handbook*. This tablet is the first tablet in the sub-series, *šumma šētu ihmussuma*, ‘if sun-light has overheated him’, which may be significant in that the symptoms cited are concerned mostly with fever and infection.¹⁸⁹ The recipes themselves are relatively simple, such as washing the patient down with cold water or bathing him¹⁹⁰, massaging him with oils or simple preparations in beer, and in the final two sections amulets are hung around the patient’s neck.¹⁹¹ Let us look at one example:¹⁹²

If ditto (= sun-heat has overheated him), he pulsates,¹⁹³ (sun-heat) pushes him away¹⁹⁴ and he has a burning fever¹⁹⁵, that man will suffer for 14 days. In order not to prolong (the condition), place him into cold water and keep him (there) until his insides continually shiver, then rub him with hot oils and he will get better.¹⁹⁶

One Hippocratic treatise, which is also considered to be ‘Cnidian’¹⁹⁷, has the following remedy for ‘ardent fever’ (*kausos*), probably the same or at least a similar form of fever to that described above.

It benefits the patient to administer cooling agents both to the cavity and externally on the surface of the body, but taking care that he does not suffer a chill.¹⁹⁸

It is difficult to say why Tablet 31 has been included within the *Handbook*, although the relative simplicity of most of the recipes reminds us of the statement in

Affections regarding a remedy for fever: ‘give these patients whatever you think suitable to drink and to take as gruel’.¹⁹⁹

Specific Comments on Heeßel, BAD

The comments below are not in any way intended to detract from the enormous value of this book. Some of the following useful information has been supplied by M. Stol in a personal communication:

- p. 73 n. 24: the passage has been translated in CAD A/1 94, reading *adamatu*(mūd.ge₆) *bi-šú ina pī(ka) hašī(mur) šumēli*(150)-šú *illak(gin)*, ‘foul black blood comes from the “mouth” of his left lung’, although the logogram *ka.mur* should be corrected to read *gū.mur* = *embub hašē* ‘windpipe’ (see *AHw.* 180), and cf. Heeßel, BAD 150: 7’, where the same correction should be made [M. Stol].
- p. 106: add to the discussion of the SUR.GIBIL the remark by S. Lieberman, *Studies W. L. Moran*, ed. T. Abusch *et al.*, (Atlanta, 1990), 333 n. 182, and G. Beckman and B. Foster, *Fs. Sachs*, 14 No. 9d: 17²⁰⁰ [M. Stol].
- p. 147: 17’: read at the end of the line *ut-tu-[ku < atāku* (following von Soden) [M. Stol].
- p. 150: 3’: restore the demon name *sag.hul*].ha.za.
- p. 151: 10’: supply *u* after *ge₆-at*.
- p. 151: 21’: perhaps restore [*sig-ma mūd ú-tab-b*]a-ka *u*’, after l. 32’ in the same text.
- p. 177: 59’: for the last word in the line, read *aš-ṭa-a-ma* ‘stiff’ [M. Stol].
- p. 229: 47’: the signs after GIM should read *ud u duru₅-ub* (= *šābul u raṭub*), ‘dry and wet’ [M. Stol].
- p. 229: 55’: for *šar*-[...] *nak-kas*, read *tūg-šú [ú]-nak-kas*, (the patient) ‘tears his garment’, cf. TDP 182: 44-45.
- p. 253: 21: perhaps read at the end of the line, *kā-šum u-qá-ti-ir-šú*, ‘cold depresses him’, based upon an OB Vorlage.
- p. 254: 33: for *š[á-b]ul*, read *šapūlu*, cf. CAD Š/1 492.
- p. 255: 50: for *ana ma pap iš*, perhaps read *ana ma-kūr-ru*’, ‘towards the goat-star (constellation)’; cf. CAD M/1 142.
- p. 323: read at end *sig-aš* [M. Stol].
- p. 353: 6: the signs *uh ma* can possibly be understood as *kalmatu matuqtu*(ku₇), ‘sweet lice’, see CAD K 87 and CAD M/1 413 [M. Stol].

¹⁸⁸) Heeßel, BAD 342ff.

¹⁸⁹) Also mentioned is the *ašū*-disease, which is not yet clearly identifiable.

¹⁹⁰) BAD 343: 7, 18’.

¹⁹¹) BAD 344: 50’-56’.

¹⁹²) BAD 342: 6-8.

¹⁹³) Akk. *i-tar-rak*, which can refer to beating of the heart and to blood (presumably the pulse); cf. *AHw.* 1325. See Labat TDP 64: 47’, *šumma ina pīšu itarrak*, ‘if he palpates in his mouth’.

¹⁹⁴) Akk. *i-sa-kip-šú*, and the same verb appears in LB 2126: 12’, *qá-tam i-sà-ki-ip*, ‘he pushes away the hand’ (see appendix). Nevertheless, the meaning in the present passage is far from certain, although it occurs a second time in Heeßel, BAD 339: 5’ in a broken context.

¹⁹⁵) Akk. *ummu šar-hu*, which we would relate to the Greek *kausos* or ‘ardent fever’, a much-discussed term.

¹⁹⁶) Heeßel, BAD 343: 6-8.

¹⁹⁷) Jouanna, *Hippocrates*, 374, suggests that the first sections of *Affections* belongs to ‘Cnidian’ medicine, because of similarities with *Diseases* II.

¹⁹⁸) *Affections* 11 = Loeb V p. 21. Other kinds of similar statements can be found in both Akkadian and Greek, such as

the following: ‘If ditto (= sun-heat has overheated him) and he is now hot and now chilled, he has an infection but has no (outbreak of) sweat, that man will be ill for one month’, Heeßel, BAD no. 31: 12. Compare this with *Diseases* II 41 (Loeb V p. 259), ‘if, on the seventh day, chills seize this person, together with a violent fever, and he breaks out in a sweat, fine; if not, he dies on the seventh or ninth day.’

¹⁹⁹) *Affections* 14 (Loeb V p. 25).

²⁰⁰) To be read: *ana ugu en šu-up-ri sa-di-ru sur.gibil šab-tu*, ‘from head to foot, a section of the authorised edition’ (borrowing from I. L. Finkel’s translation, *Fs. Sachs*, 149: 25’).

Physiognomic Omina

It is a fortuitous coincidence that, at the same time as Heeßel's *Babylonisch-assyrische Diagnostik* appeared, a second dissertation was published in the same year, editing all Babylonian physiognomic omens. Barbara Böck's edition of these texts²⁰¹ previously published by F. R. Kraus²⁰² makes a useful contribution to the study of Babylonian medicine, since physiognomy also formed an important component of ancient medical lore. Just as the omens in the *Diagnostic Handbook* were intended as prognoses based on 'signs' taken from an ill subject, the physiognomic omens were drawn from 'signs' from a healthy subject. Although many other types of predictions could be deduced from physiognomic omens, nevertheless illness, death, and life-expectancy were popular themes among predictions drawn from physiognomy.²⁰³

There is an important difference, however, between physiognomic omens and the *Diagnostic Handbook*, regarding the transmission of this material. Certain types of 'scientific literature', and particularly in the form of omens, travelled widely in antiquity, crossing the great divide between the Classical and Babylonian worlds. Dream omens, for example, are known not only from Artemidorus' *Oneirocritica*, but similar types of omens can be found in Mesopotamia, Egypt, and the Talmud²⁰⁴, although comparisons must be restricted to the protases of these omens; the apodoses or interpretations of the omens were culturally specific and locally determined. The picture which emerges from comparisons of dream omens is that collections of 'signs' from dreams circulated in the ancient world and were translated from one language and culture to another, and then interpreted independently. A similar picture emerges with celestial omens, which spread both East and West, as pointed out by David Pingree.²⁰⁵ The fact that the Dead Sea Scrolls preserve fragments of Aramaic omens probably derived from Akkadian MUL.APIN and Akkadian physiognomic texts shows how widespread some of this literature had become in the Graeco-Roman world.²⁰⁶

²⁰¹) *Die babylonisch-assyrische Morphoskopie* (Vienna, 2000).

²⁰²) *Die physiognomischen Omina der Babylonier* (Leipzig, 1935).

²⁰³) See Böck, *Morphoskopie*, 33f.

²⁰⁴) The fact that most of the dream omens in the Babylonian Talmud were preserved in Hebrew rather than Aramaic probably indicates that the Talmudic 'Dreambook' originated in Palestine rather than Babylonia, in the form in which we have it.

²⁰⁵) 'Legacies in Astronomy and Celestial Omens', *apud* S. Dalley, *The Legacy of Mesopotamia* (Oxford, 1998), 125-137.

²⁰⁶) See B. Böck, 'An Esoteric Babylonian Community Revisited', *JAOS* 120 (2000), 615-620; M. J. Geller, 'New

It is not surprising, therefore, to find physiognomy in Greek scientific literature, and the question which arises is whether there is any common connection between Greek and Akkadian sources.²⁰⁷ There is actually precious little of physiognomy which survives from the Hippocratic corpus itself, and no full treatise on the subject.²⁰⁸ The treatise of *Epidemics* II succinctly remarks: 'Those with a ruddy complexion, sharp nose, small eyes, are bad (sickly). Those with ruddy complexion, flat nose, large eyes, are good.'²⁰⁹ A further comment is added in the following section: 'If the head is large and the eyes small, they are stammerer, they are quick to anger. People who are long-lived have more teeth. Stammerers and rapid talkers are severely melancholic. People who do not blink are quick to anger. Those with large head, large dark eyes, thick, blunt nose, are good ...'²¹⁰

There are two other sources, however, which draw our attention. The first is a Greek text called *peri palmōn*, listing omens derived from quivering movements of limbs of the body, ascribed to the mythical healer-mantic Melampus, who was known to Hesiod.²¹¹ The figure of Melampus as *iatromantis*, who not only treats the patient but also uses his skills as seer to diagnose the causes of disease,²¹² is not so different from the *āšipu*, who records symptoms and gives his prognosis in the form of omens. Although the text of *peri palmōn* is late, it is likely to be based upon earlier prototypes. The text itself has many parallels in other literatures, all collected by Diels, including Hebrew,

Documents from the Dead Sea: Babylonian Science in Aramaic', *Boundaries of the Ancient Near Eastern World, Fs. Cyrus H. Gordon*, ed. M. Lubetski *et al.*, (Sheffield, 1998), 224-229. Böck, *Morphoskopie*, 63 and 66, remarks on the Qumran fragment (4Q561) that it is an open question whether one can trace Akkadian rather than Graeco-Roman influence in the Qumran text, since the *a capite ad calcem* order of omens was a general characteristic of this literature and was not specifically Babylonian. The point is, however, that the preservation of the text in Aramaic rather than Hebrew argues for a Mesopotamian rather than Graeco-Roman origin, in contrast to another Qumran physiognomic fragment in Hebrew (4Q186), which is quite a different text without showing any likelihood of Babylonian influence.

²⁰⁷) Böck's introduction to *Morphoskopie* provides a brief survey of physiognomic omens in other literatures, *Morphoskopie*, 61-69.

²⁰⁸) No physiognomic treatise was mentioned by the first century AD writer Erotian, who drew up a list of 'authentic' Hippocratic treatises known to him; see Jouanna, *Hippocrates*, 63f. Nevertheless, it would not disturb our argument if a physiognomic treatise was considered to be 'non-authentic' or not composed by Hippocrates.

²⁰⁹) Hippocrates, Loeb VII 77.

²¹⁰) *Ibid.* 81.

²¹¹) H. A. Diels, *Beiträge zur Zuckungsliteratur des Okzidents und Orients* (Berlin, 1907-08).

²¹²) See Parker, *Miasma*, 208f.

Arabic, Turkish, as well as Slavic compilations in Russian, Serbian, and Bulgarian, and it is likely that Diels would have gladly quoted from Babylonian physiognomic omens, had translations been available to him, since there are many similarities. An example of the Greek text is as follows:

(2) If the head quivers or the hairs stand upright²¹³ or are shivering in an unsuitable moment, continuously for a longer time, this indicates a plot or revenge from a member of one's family or a relative; for a slave it means disease, for a girl blame, for a widow insult, for those who are poor and in need it means good things, for the rich it means lack of reverence of the gods and a change to their livelihood, for an ill person it means life.

(3) Otherwise: If the head quivers for a longer period, it means something bad. For a slave it means the death of his master, for a widow it means ruin ...

(4) If the whole head quivers, it indicates death: in others it means many good things.

(5) If the back part of the head²¹⁴ until the crown quivers, it indicates for everyone plot from one's enemies and adversaries, and the death of members of one's household; for the others it means some chance event: for a slave it means something good, for an unmarried woman the encounter of a beautiful man, for a widow disease; in others it means that one's wealth is in jeopardy, for a farmer it means exhaustion.

(6) If the right side of the head quivers, it indicates something good; for a slave it indicates joy and freedom, for an unmarried woman blame, for a widow something good and the continuation of widowhood.

(7) If the left side of the head quivers, it indicates ruin; for a rich man it means feasting, for a slave a change of household, for a crown blame, for a widow insult.²¹⁵

The fact that we have no specific Akkadian counterpart text to this literature may simply be accidental, since Akkadian physiognomy takes many specific forms, including the appearances of many types of skin lesions on the body. Hence, it would not be unexpected to find omens based upon involuntary movements of limbs, particularly since such omens exist for sacrificial animals.²¹⁶ Although no specific tablet of *Zukunftsliteratur* can be found in Böck's collection, nevertheless the subject matter is represented in at least one text, in which various involuntary movements of

limbs are described.

If the tendon of his rectum quivers (zi.zi-šú), he will suffer from rectal disease.

If his upper thigh quivers, he will be bed-bound.²¹⁷

[If the tendon] of his right foot quivers ...

[If the tendon] of his left foot quivers ...²¹⁸

If the tendon of the right ball of his foot quivers, he will get *sagallu*-paralysis,

If the tendon of the left ball of his foot quivers, he will be successful.

If the tendon of his right ankle quivers, he will have no (protective) personal god,

If the tendon of his left ankle quivers, he will have a legitimate heir.

If the tendon of the *shoulder* of his right foot quivers, he will prosper,

If the tendon of the *shoulder* of his left foot quivers, he will become rich.²¹⁹

Secondly, we must turn to (Pseudo?)Aristotle, who of course approaches this material as a philosopher rather than as a medical practitioner. Aristotle's treatise on *Physiognomics* first gives general physiognomic characteristics of animals, and in particular differences between male and female animals; his conclusion is that male animals are stronger and more aggressive, female animals weaker and 'less honest'.²²⁰ Aristotle discusses human physiognomy and what this tells us about human nature and character, consistently comparing male and female physiognomy, as well as human and animal characteristics. This is typical of Aristotle's methodology, namely drawing conclusions based upon observation of the natural world, which he uses as a metaphor for conclusions about human anatomy and behaviour. For example, Aristotle writes, 'Those with thin faces are careful, with fleshiness are cowardly; witness asses and deer. Those with small faces are little-minded; this applies to the cat and the monkey. Those with large faces are sluggish; witness asses and cattle.'²²¹ We can compare this passage to Alamdimmû VIII, 127-134, in which the protases of the omens begin, *diš igi alam gar*, 'if (the face is like) the face of a statue', after which in each case the face is compared to the face of a bison, lion, camel, hawk, dog, pig, fox, and various types of birds. The difference, however, is that Aristotle chooses his animal comparisons on the basis of some type of analogy: 'Those whose necks are full and thick are of savage temper; witness savage-tempered bulls. But those whose neck is of large size without being thick are magnanimous; witness the

²¹³) An expression which occurs both in Greek and Akkadian; see *Internal Affections* 29 (Loeb VI 174f.), 'the hairs of his head stand on end', and Heeßel, BAD 256: 68.

²¹⁴) Cf. Akk. *kutallu*.

²¹⁵) Translation Philip van der Eijk (personal communication). The same type of formulaic statements are repeated for other parts of the body, including sections corresponding to those cited in Böck, *Morphoskopie*, namely: thighs (Diels 139-142), ankles (Diels 157-158), heels (Diels 159-163), flat part of the foot (Diels 164-165), sole of the foot (Diels 166-167), flanks [of foot?] (Diels 168-169).

²¹⁶) See YOS 10 no. 48 and 49.

²¹⁷) Böck, *Morphoskopie*, 266: 25-26.

²¹⁸) *Ibid.*, 268: 54-55.

²¹⁹) *Ibid.*, 270: 65-70.

²²⁰) Aristotle, *Minor Works*, transl. W. S. Hett, Loeb, 110f.

²²¹) Loeb, p. 123.

lions.²²² Aristotle continues along these lines, comparing the eyes, nose, lips, head, shoulders, back, legs, feet, etc. to an assortment of animals, usually lion, dog, asses, sheep and goats, hawk, and cattle, always forcing the analogy between the animal characteristics and human physiognomy.

The interesting question is whether such logic on the basis of analogy can be found in Akkadian physiognomic omens? Occasionally we can find some similar patterns among the collection of commentary texts which have been edited by Böck in *Morphoskopie*. In one text (TBP 21), for instance, we find the following comment:

If he has the face of a fox, he is quarrelsome and a liar, (his brother will be poor).

If a woman has the face of a fox, she is a hypochondriac ...²²³

The second clause in each case is still part of the protasis, and is an extra explanatory clause providing the logic behind the association. The fox was fabled for his sly, querulous, and dishonest nature,²²⁴ and the contrast between the male and female physiognomy reminds us of Aristotle's frequent comment, 'witness the male' or 'witness the female'. A similar example occurs in TBP 19, 'if he has a dog's foot, he is a hunter (he will be poor).'²²⁵ Here again the second clause belongs to the protasis, describing the man whose foot is like that of a dog, and hence a hunter. A somewhat similar observation was made by Aristotle:

Those that are small in the waist are hunters; witness lions and dogs.²²⁶

Similar comments about various animals appear in the Auszugstafel TBP 24, in which the one who has feet like a duck will become respected, to which the comment is added that (the duck's) foot is broad and covers much ground when it walks.²²⁷ The one whose foot is like a dove will have a regular income, since the dove's foot scatters dust when it walks, and the one whose foot is like a cat will achieve high office because the cat's foot turns around itself when it walks.²²⁸

Such comments within the omen corpus, and espe-

cially within commentary tablets, probably represent rare clues to what was taught in the scribal schools while these texts were being studied and copied. One can easily imagine that the *ummānu* possessed a rich store of oral traditional commentaries on standard or canonical texts, which was only occasionally and sporadically committed to writing. It is these comments, however, which may prove to show the connection between Babylonian scientific literature and Greek philosophy, since one of the great achievements of Greek scholarship was to produce treatises of argument and discussion of scientific issues, often in the first person and often with a polemical challenge to opponents, providing a clearer picture of the logic behind their conclusions. The lack of such literature from Babylonia does not mean, however, that such logic never existed or was never discussed, but only that it was hardly ever written down.

A final note regarding physiognomic omens regards one possible use of such a text, which is often the kind of information lacking from our sources. One Hebrew passage recorded in the Babylonian Talmud, Nedarim 66b, originates in Palestine but may offer a glimpse into how physiognomic omens could be used in everyday life. The situation is not entirely transparent, but the passage records an evaluation of a woman's physical appearance, to see if her husband is justified in refusing to have sexual relations with her.

A man once said to his wife, 'I vow (*konam*) that you will not benefit from me (i. e. sexual intercourse), until you show something beautiful in yourself to R. Ishmael son of R. Jose.'²²⁹

He said to them: 'Perhaps her head is beautiful?' 'It is round,' they replied.

'Perhaps her hair is beautiful?' '(It is) like stalks of flax.'

'Perhaps her eyes are beautiful?' 'They are bleared.'²³⁰

'Perhaps her ears are beautiful?' 'They are folded over.'

'Perhaps her nose is beautiful?' 'It is obstructed.'

'Perhaps her lips are beautiful?' 'They are thick.'

'Perhaps her neck is beautiful?' 'It is stubby.'

'Perhaps her belly is beautiful?' 'It protrudes.'

'Perhaps her feet are beautiful?' 'They are as broad as those of a duck.'²³¹

on the use analogy and word play in divination and magical texts does not mention this point; cf. her discussion, 'Babylonische Divination und Magie als Ausdruck der Denkstrukturen des altmesopotamischen Menschen', *Babylon: Focus mesopotamischer Geschichte, Wiege früher Gelehrsamkeit, Mythos in der Moderne*, ed. J. Renger (Berlin, 1999), 409-425.

²²⁹) A second century AD Palestinian rabbi from Sephoris.

²³⁰) So Jastrow, *Dictionary*, 550, although he cites another possible definition of 'half-closed'.

²³¹) See above and Böck, *Morphoskopie*, 286: 26, which uses the same metaphor.

²²²) Aristotle, *Minor Works* = Loeb, p. 121.

²²³) Or 'she is ill-disposed' cf. Böck, *Morphoskopie*, 250: 10-11.

²²⁴) See Lambert, BWL 200ff. the *Fable of the Fox*, in which the fox is described as being cunning, crafty, and thieving.

²²⁵) Böck, *Morphoskopie*, 252: 5, and see the similar comment in the *ahû*-text, *ibid.*, 267: 34.

²²⁶) Aristotle, *Minor Works* = Loeb, 117. For further examples of the use of analogy in Greek medical literature, see Volker Langholf, 'Frühe Fälle der "Verwendung" von Analogien in der altgriechischen Medizin', *Berichte zur Wissenschaftsgeschichte* 12 (1989), 7-18.

²²⁷) Böck, *Morphoskopie*, 286: 26.

²²⁸) Böck, *Morphoskopie*, 286: 29-30. Böck's own article

'Perhaps her name is beautiful?' 'It is *Liklukit*.'²³²

Said he to them, 'It is appropriate that they call her *Liklukit*, since she is ugly because of her defects'; and so he 'untied' her [from her husband].

The passage may originally have had a humorous intent, but the interesting aspect of this passage is that the physiognomic features of the woman are examined from head to foot, employing similar kinds of descriptions of parts of the body as in the omen literature. It therefore seems likely that physiognomic literature could have other kinds of applications in more practical realms of human relations.

Conclusion

What was Greek medicine like before Hippocrates? We get some idea what the Hippocratics themselves thought of their predecessors through their comments about the 'ancients' who indulged in various types of magical practices and rituals, and lacked any discernible system of disease classification or use of diet and regime. Furthermore, some of the earlier strata of Greek medicine, particularly those associated with 'Cnidian' medicine, seem to show many parallels with contemporary medicine in Babylonia. Although it is not possible to trace any definite borrowings from Babylonian medicine, such as technical terms or loanwords, or to find texts where one can prove that a Greek text was translated from a Babylonian original, nevertheless enough similarities exist in the phraseology and descriptions of symptoms to suggest some kind of relationship between pre-Hippocratic Greek and Babylonian medicine. One might even go further to suggest that there was only one major system of medicine in the oikumene of the Near East before Hippocrates, which later diverged into two quite different systems. Babylonian medicine represented an older classical tradition going back to the second millennium, which continued through until the Parthian period without too much innovation. In Greek circles, however, the fifth century BC introduced some important changes which highlighted many new developments in Greek medical thinking and writing. These included essays being written in the first person under an author's own name, the introduction of new systems of treatment such as diet and regimen, emphasis on purging and evacuation (which later included bloodletting), and case histories in which symptoms were associated with a named patient. None of these new approaches can be found in corresponding Babylonian medical texts, nor should we expect to find them, since Greek scientific influence in Mesopotamia in the 5th and 4th centuries

was probably negligible. Nevertheless, it is certainly worth noting in the recent text editions of Heeßel and Böck rich seams of comparisons between Babylonian and Greek science which begin to change our view of how these two societies related to each other.

Appendix

The following tablet in the Böhl Collection in Leiden is the only OB exemplar so far known of the *Diagnostic Handbook*, and only ten lines of which were edited by Heeßel.²³³ The following is a new edition of the text based on a new copy of the tablet.²³⁴

LB 2126 = TLB II 21 (copy van Dijk)

- 1' [.....] x-ma
 2' [.....] x
 3' [.....] x x [.....] la i-šu
 4' [...] x-šu qá-ta-a-šu ù ši-pa-a-šu ka-ši-a
 5' [ú-ul i]b-ṭi-²³⁵ la²³⁵ mu-ru-us-su i-ir-ri-ik
 6' [ú-u]l²³⁶ ba-li-iṭ a²³⁶-we-lu ba-li-iṭ²³⁶
 7' [šu]m-ma a-we-lum še-ra-am i-ba-ha-am-ma²³⁷
 8' [u]l-la-nu-um-ma i-na na-ak-ka-ap-ti-šu ma-hi-
 iṣ
 9' ù it-ta-na-ab-lu-uf²³⁸
 10' h[i]-pi-i-²³⁹ it²³⁹ še-ri-im ša-ag-ga-a-šum²⁴⁰
 11' šum-ma mar-šum i-na-a-šu da-ma-am ma-li-a
 12' li-ib-ba-šu iš-ta-na-hi-iṭ-ma²⁴¹ qá-tam i-²⁴²sà-ki²⁴²-
 ip²⁴²
 13' mar-šú šu-ú ú-ul i-ba-lu-uf
 14' šum-ma mar-šú di-gi-il-šu ga-li-it
 15' e-li bu-ul-ṭi-šu pa-nu-ú-šu du-um-qá-am
 16' iš-ku-nu mar-šú šu-u ú-ul ba-li-iṭ
 17' šum-ma mar-šú qá-ta-a-šu ù ši-pa-a-šu
 18' i-ik-ka-la-a-šu
 19' ši-ta-ás-sa-a-am mi-im-ma la pa-ṭe₄-er

²³³) Heeßel, BAD 99f.

²³⁴) Several new readings were contributed by Marten Stol.

²³⁵) A similar use of this verb occurs in *Mél. Garelli* 22, A 4347: 4, *ištu dannatum ib-TE-lu-ma*, 'les malheurs eurent cessés' [ref. courtesy M. Stol].

²³⁶) See W. W. Hallo, *apud* Abusch *et al.*, *Mesopotamian Magic*, 276f., an OB incantation and ritual which twice reads *ba-li-iṭ*, 'he will be well' (= YBC 8041: 9 and 21) [ref. courtesy M. Stol].

²³⁷) See CAD B 180.

²³⁸) See CAD B 63 s. v. *balātu* IV/3.

²³⁹) The reading *ṭ[ā]-wi-i-ṭi* is also possible.

²⁴⁰) See CAD Š/1 71.

²⁴¹) See CAD Š/1 91f.

²⁴²) See CAD Š/2 164, CAD S 70.

²³²) *lklwkyt* is a thick nauseating substance, cf. Jastrow, *Dictionary*, 711.

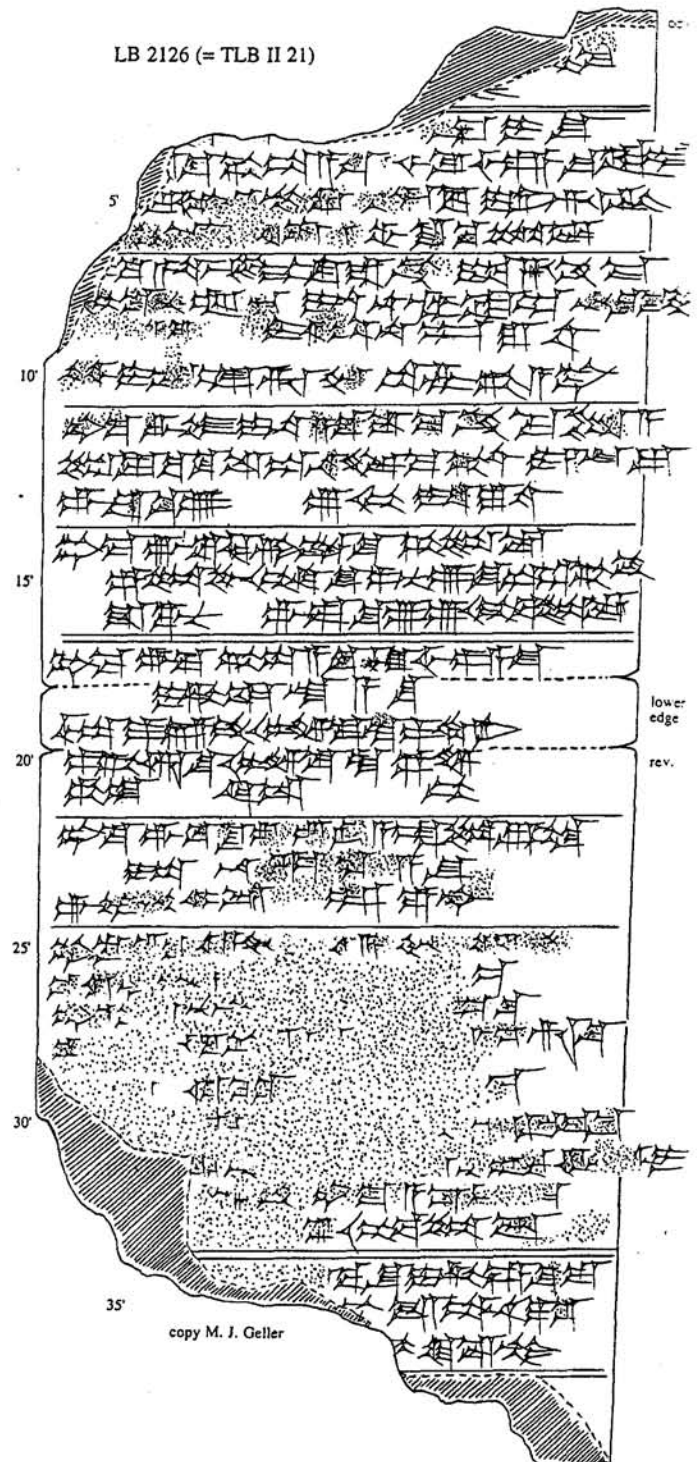
- 20' *pa-ga-ar-šu mi-im-ma la e-em*²⁴³
 21' *qá-at ki-iš-pí*
 22' *šum-ma mar-šú šu-ú ú-ni-a-at li-ib-bi-šu*²⁴⁴
 23' *i-ta-na-¹ka-la¹-a-šu*
 24' *mar-šu[m] hi-mi-iṭ še-e-tim*
 25' *šum-ma ¹mar-šú¹ ud.4.kam ud.¹5¹.ka[m]*
 ud.¹6¹.k[am]
 26' *¹x x gi-il¹ [..... ma-h]i-iš*
 27' *¹šum-ma x¹ nu ¹x¹ [.....-a]b-ba*
 28' *x [.....] ¹ú qá-ta-x x¹ [.....] ¹x x¹-ri-šu*
 29' *[.....] ¹x ki-ma x¹ [.....] ¹x¹*
 30' *[.....] ¹x¹ [.....] ¹li-ib-ba-šu¹*
 31' *[.....] ¹x x¹ [.....] ¹x-ab-ba¹ ú n[a-š]i-i*
 32' *[.....] ¹x-ša-am šum¹-ma a-we-[l]u*
 33' *[šú-ú] ¹ú¹-ul ba-li-iṭ*
 34' *[šum-ma mar-šú li-i]b-ba-šu i-ik-kal-šu-ma*
 35' *[li-ib-bi li-ib-b]i iṣ-ta-na-ás-si*²⁴⁵
 36' *[mar-šú šu-u e]k-ke-et-tim*

Translation:

- 1'- 2' ...
 3' [If a man and] he has no [.....],
 4' his [...], his hands and feet [have not] stopped
 being cold
 5' his illness will be prolonged,
 6' he is [not] healthy (but) the man will live.
 7' If a man is crossing the steppe,
 8' and at the same time is struck in his temples
 9' but he has recovered,
 10' it is the *back-breaker*-(demon), a murderer.
 11' If a man's eyes are full of blood,
 12' his heart keeps fluttering and he thrusts away
 the hand,
 13' that patient will not live.
 14' If a patient has a frightened look
 15' (but) his face looks better than in his healthy
 state,
 16' that patient is not healthy.
 17'-18' If a patient's hands and feet hurt him,
 19' and he never stops screaming,
 20' his body is not hot anywhere,
 21' it is the hand of a spell.
 22' If that patient's 'furnishings' of his belly
 23' continually hurt him,
 24' that patient (suffers from) 'sunlight'-fever.
 25' If a patient on the 4th, 5th, or 6th day

- 26' [.....] is struck
 27' if[.....]..
 28' ..[.....] hand(s) his
 29' [.....] when ..[.....]..
 30' [.....] .. [.....] his belly,
 31' [.....]..... and 'raised,'
 32' [.....]..... if [that] man
 33' [....., he] will not be healthy.
 34' [If a patient's] belly hurts him,
 35' and he cries, '[my belly], my belly!'
 36' [that patient (suffers from)] scabies.

LB 2126 (= TLB II 21)

²⁴³) See CAD M/2 75 s. v. *mimma*.²⁴⁴) See Leichty, TCS IV 167: 15, [*šumma izbu*] *ú-na-at ša-šú nu gál.meš*, translated by Leichty as 'if an anomaly's belly has no contents', but this does not explain the form of the noun.²⁴⁵) See CAD Š 165.

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Zur Wasseruhr: Ein Nachtrag zu AfO 46/47

In AfO 46/47 (1999/2000) 136ff. schlagen D. Brown, J. Fermor und Ch. Walker vor, daß es in Babylonien Einlauf-Wasseruhren gegeben habe: Wasser lief aus einem großen Gefäß in ein kleines, und die Menge in dem kleinen Gefäß wurde gewogen. Dadurch kann

erreicht werden, daß die Menge des gewogenen Wassers der Zeit (fast) direkt proportional ist.

Ich habe vergessen, die Autoren darauf hinzuweisen, daß eine solche Einlauf-Wasseruhr bereits von E. Gehlken in NABU 1991/95 vorgeschlagen wurde. Dieser Hinweis soll hiermit nachgeholt werden.

Wien.

Hermann Hunger.