

RECENT PUBLICATIONS ON EGYPTIAN AND BABYLONIAN MEDICINE *

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The beginnings of medicine are unknown to us; they lie hidden in a time of which no written records exist and it is chiefly left to speculation to reconstruct them. But there are few things which engage human curiosity as much as the unknown, and the earliest civilizations attract our inquisitiveness again and again, since they promise to throw some light on the yet remoter past. It is perhaps for this reason as much as for its own sake, that the medicine of Egypt and Mesopotamia has received the amount of attention revealed by the work of the last few years.¹

I. EGYPT

Up to 1930, the following medical papyri had been edited and translated:

Kahun gynecological Papyrus	}	written ca. 1900 B. C.
Kahun veterinary fragment		
Papyrus Ebers	}	written ca. 1500 B. C.
Papyrus Hearst		
London Papyrus	}	written between 1350-1100 B. C. approximately
Papyrus Berlin 3038		
Papyrus Brugsch minor		

To this list Breasted added in 1930 the edition together with the commentated translation of the Edwin Smith surgical Papyrus.²

* This year's *Research Seminar* was largely devoted to a critical discussion of the more recent literature on ancient medicine. The purpose was to determine what has been achieved in the last few years, where we stand to-day and what the next tasks of research will be. Some of the discussions will be published here.—H. E. S.

¹ For the literature reviewed in this article cf. also the volumes of *Isis* and of the *Mitteilungen zur Geschichte der Medizin der Naturwissenschaften und der Technik* from 1931-1935.

² The Edwin Smith Surgical Papyrus. Published in facsimile and hieroglyphic transliteration with translation and commentary in two volumes by James Henry Breasted. Chicago, 1930 (The University of Chicago Oriental Institute Publications vols. III and IV).

This papyrus, as is well known, contains on the recto 48 surgical cases together with explanatory glosses, whereas the verso gives some miscellaneous medical directions. It was written in about 1550 B. C. but originally it must have been much older. Breasted's remarkable publication gave a strong impulse to the studies of Egyptian medicine, as witnessed by the fact that most writings in the following years dealt either directly or indirectly with the problems touched upon by Breasted. I shall therefore limit myself almost entirely to the publications from 1931 on, especially since the previous literature has been assembled by Miron Goldstein.³

The first thing to be done was obviously to acquaint the medical world with this document, a task which was accomplished by a number of reviews, articles and translations. Max Meyerhof gave a paraphrased translation into German,⁴ and J. G. De Lint translated both the recto⁵ and the verso⁶ into Dutch and also gave a detailed account of the contents.⁷

Apart from all problems involved, the Edwin Smith papyrus has considerably broadened our factual knowledge of ancient Egyptian medicine. This is first of all true as regards surgery. Charles A. Elsberg⁸ wrote a short article on the papyrus in which he attempted a modern medical interpretation, and Sir D'Arcy Power, as an authority in the field of surgery, also devoted himself to this task,⁹ giving extracts from Breasted's edition, cited according to modern diagnosis. Karl Sudhoff went through the Egyptian papyri, ex-

³ Miron Goldstein, *Internationale Bibliographie der altaegyptischen Medizin 1850-1930*. Berlin, 1933.

⁴ Max Meyerhof, *Über den "Papyrus Edwin Smith," das älteste Chirurgiebuch der Welt*. In: *Deutsche Zeitschrift für Chirurgie*, 231, 1931, pp. 645-690.

⁵ J. G. De Lint, *Chirurgische Tekst van den Papyrus Edwin Smith*. In: *Bijdragen tot de Geschiedenis der Geneeskunde*, XI, 1931, pp. 211-232.

⁶ J. G. De Lint, *De Achterzijde van den Papyrus Edwin Smith*. In: *Nederlandsch Tijdschrift voor Geneeskunde*, 29, 1935, pp. 880-889.

⁷ J. G. De Lint, *De Papyrus Edwin Smith*. In: *Bijdragen tot de Geschiedenis der Geneeskunde*, XI, 1931, pp. 193-211.

⁸ Charles A. Elsberg, *The Edwin Smith Surgical Papyrus and the Diagnosis and Treatment of Injuries to the Skull and Spine 5000 Years ago*. In: *Annals of Medical History*, N. S. III, 1931, pp. 271-279.

⁹ Sir D'Arcy Power, *Some early surgical cases. I. The Edwin Smith Papyrus*. In: *The British Journal of Surgery*, XXI, 1933-34, pp. 1-4 and 385-387.

aming them for the description of cancer.¹⁰ To quote his results in his own words: "Ob man dem allen gegenüber von einem Bekanntsein mit Krebsleiden oder auch nur einer einigermaßen erkennbaren Vorstellung von solchen in den erhaltenen und bekannt gewordenen Papyri des alten Ägyptens reden kann, dürfte äusserst fraglich sein."¹¹ Sudhoff's critical analysis is certainly a good methodical warning against rash attempts at establishing a diagnosis based on scanty passages, as is so often done in books and papers on ancient and medieval medicine.

Not only the knowledge of surgery, but that of anatomy too has profited by recent research. J. G. DeLint¹² identified some Egyptian terms concerning the anatomy of the head, distinguishing between the various expressions for such parts as the skull, brain, meninges and crown. The whole anatomical and physiological knowledge of the Egyptians has now been analysed in a monograph by Hermann Grapow.¹³ He discusses the parts which were known, the terms by which they were designated and the physiological ideas which were associated with them. One of the most interesting results is that the word "metu" apparently had various meanings. In some places it might have meant muscles,¹⁴ whereas in the two treatises on the heart and the vessels it obviously meant blood vessels and any other kind of vessels containing water, air, faeces etc.¹⁵ There is, moreover, according to Grapow, an essential difference between these two treatises, of which one counts 46 and the other 22 vessels, a difference which probably depended on varying theories.¹⁶ After reading Grapow's book one cannot help feeling that the anatomical knowledge of the ancient Egyptians was not as great as has sometimes been claimed. Grapow himself indicates in another passage¹⁷ that he does not think that the Egyptian physi-

¹⁰ Karl Sudhoff, Krebsgeschwülste in altägyptischen Papyri? In: *Monatsschrift für Krebsbekämpfung* 1933, pp. 171-174.

¹¹ *Ibid.* p. 174.

¹² J. G. DeLint, Beitrag zur Kenntnis der anatomischen Namen im alten Ägypten. In: *Arch. Gesch. Med.* 25, 1932, pp. 382-390.

¹³ Hermann Grapow, Über die anatomischen Kenntnisse der altägyptischen Ärzte. Leipzig, 1935 (Morgenland, Heft 26).

¹⁴ Cf. *ibid.* p. 11.

¹⁵ Cf. *ibid.* pp. 17-18.

¹⁶ Cf. *ibid.* p. 15.

¹⁷ *Münchener Medizinische Wochenschrift*, 82, 1935, p. 960; cf. footnote 66.

cians participated in the preparation of the mummies, nor that they learned anything from it. Moreover, such anatomical knowledge as they possessed must partly have been dependent on mythological conceptions, as could already have been inferred from an article by W. Spiegelberg,¹⁸ in which the author showed by means of various passages that the heart was apparently thought an independent being, able to leave man in fear, etc. and to return to him afterwards.

The average historian of medicine, lacking a proper linguistic training, has usually to find his way through Egyptian medicine either in cooperation with an Egyptologist or by means of translations. If done with proper caution this can yield valuable results. A lamentable example, however, of an impossible approach has been set by Louis Baslez in his book on poisons in Egyptian antiquity.¹⁹ Baslez is apparently not even aware of the existence of the translations. He takes his material chiefly from modern works and those of Greek authors, to which he adds some lofty hypotheses of his own. As a result, our knowledge of this subject has been neither increased nor clarified.

Our knowledge of Egyptian pathology on the other hand, in connection with which I may mention an essay by Arlington C. Krause on Egyptian ophthalmology,²⁰ is not confined to the study of written records. The Egyptian mummies give direct indication of the existence several thousand years ago of diseases well known to the modern physician. Roy L. Moodie, noted for his work in paleopathology has now made roentgenologic studies of Egyptian mummies in the Field Museum of Natural History in Chicago.²¹ Unopened mummy packs were X-rayed, by which method the danger of damaging the mummies in unpacking was avoided. The diseases which thus could be diagnosed were arthritis, arterio-sclerosis and

¹⁸ W. Spiegelberg, *Das Herz als zweites Wesen des Menschen*. In: *Zeitschr. f. ägyptische Sprache u. Altertumskunde*, 66, 1931, pp. 35-37.

¹⁹ Louis Baslez, *Les poisons dans l'antiquité égyptienne*. Paris, 1932.

²⁰ Arlington C. Krause, *Ancient Egyptian Ophthalmology*. In: *Bulletin of the Institute of the History of Medicine, The Johns Hopkins University*, I, 1933, pp. 258-276.

²¹ Roy L. Moodie, *Roentgenologic Studies of Egyptian and Peruvian Mummies*. Chicago, 1931 (Field Museum of Natural History, *Anthropology, Memoirs*, vol. III).

pyorrhoea together with osteitis absorbens. The frequency of arthritis has often been stated as a remarkable fact and now R. Wood Leigh, studying the pathology of a collection of Egyptian skeletons in the museum of anthropology at the University of California,²² suggests a possible explanation. Leigh paid special attention to the condition of the teeth and arrived at the conclusion that "In Egypt in Predynastic times abrasives were admixed with the food being prepared, with resultant destructive attrition; when the Ptolemies ruled, the cuisine was refined, a function was abetted, caries and alveolar degeneration were rampant."²³ Now Leigh thinks that the dental lesions might have led to infections affecting the joints.²⁴

As far as the positive findings go, the studies of Moodie and Leigh have confirmed our previous knowledge and this is also true of the negative result, since neither author could find any traces of syphilitic lesions.

Before the Edwin Smith papyrus was published there existed two views on the general character and development of Egyptian medicine: one, supported by many historians of medicine, simply recording the existence side by side of both magical and empirical elements, the other theory, last expounded by Warren R. Dawson,²⁵ according to which the empirical element in Egyptian medicine developed from primitive magic. Now magic expresses itself in two ways, oral (incantations) and manual (certain ritual performances).²⁶ Dawson thinks that the empiric part as found in the rational applications of drugs, etc. was a later development of the magical rites.²⁷ Breasted himself admits that he formerly adhered to the latter theory,²⁸ but then the study of the Edwin Smith papyrus changed his views. This papyrus appeared to Breasted to be a purely scientific and rational document, standing high above all the other papyri, even the Ebers, which latter Breasted called a magical

²² R. Wood Leigh, *Notes on the Somatology and Pathology of Ancient Egypt*. Berkeley, California, 1934 (University of California Publications in American Archaeology and Ethnology. Vol. 34, No. 1).

²³ *Ibid.* p. 37.

²⁶ *Cf. ibid.* p. 23.

²⁴ *Cf. ibid.* p. 33.

²⁷ *Ibid.*

²⁵ Warren R. Dawson, *The Beginnings, Egypt and Assyria*, New York, 1930 (Clio Medica No. 1).

²⁸ *Cf. Breasted p. 14 seq.*

hodge-podge²⁹ as far as the prescriptions were concerned. Dawson in his review³⁰ admitted at least the rational character of the Smith papyrus.³¹ He explained it on the basis of its surgical content where the causes were obvious and where the Egyptian physician did not need to have recourse to magical explanations.³²

Breasted's contention concerning the scientific character was on the whole supported by Max Meyerhof³³ and George Sarton.³⁴ It is true that both Meyerhof³⁵ and Sarton³⁶ are sceptical as to the authorship of the deified ancient physician Imhotep suggested by Breasted; while Sarton thinks it an exaggeration to say that the papyrus was very near the discovery of the circulation of the blood,³⁷ Meyerhof reserves his judgment as to the alleged influence on later Greek medicine.³⁸ But these are almost the only exceptions taken.

Hans Bonnet,³⁹ on the other hand, objected to Breasted's contention, since as a surgical text the Smith papyrus could not be compared off hand with the other texts. And further, because he thinks the whole arrangement practical. While Dieppen had already advised caution in the acceptance of Breasted's conclusions,⁴⁰ it was Karl Sudhoff⁴¹ who insisted that a true appreciation could only be based on a thorough comparison of all the texts. The occurrence of a negative verdict which, although dissuading the physician from any therapeutical attempts, is nevertheless followed by further inquiries, was one of Breasted's chief arguments for the "purely scientific" interest of the Smith papyrus. Sudhoff admitted the practical importance of such a verdict⁴² but he drew attention to the fact that it also occurred in the papyrus Ebers⁴³ and the latter,

²⁹ Cf. Breasted p. 35.

³⁰ Warren R. Dawson, The earliest surgical Treatise. In: The British Journal of Surgery, XX, 1932-1933, pp. 34-43.

³¹ Cf. *ibid.* pp. 40-41.

³⁵ Cf. l. c. p. 680.

³² Cf. *ibid.* pp. 41-42.

³⁶ Cf. l. c. pp. 359-360.

³³ Cf. footnote 4.

³⁷ Cf. l. c. p. 364.

³⁴ In: *Isis* XV, pp. 355-367.

³⁸ Cf. l. c. p. 689.

³⁹ In: *Oriental. Literatur Zeitung*, 34, 1931, pp. 833-836.

⁴⁰ Paul Dieppen, Von der altägyptischen Medizin. In: *Deutsche medizinische Wochenschrift*, 57, 1931, 1380-1381.

⁴¹ Karl Sudhoff, Zum Papyrus Edwin Smith und anderen medizinischen Papyri. In: *Janus* 36, 1932, pp. 184-189.

⁴² Cf. *ibid.* pp. 187-188.

⁴³ Cf. *ibid.* p. 189.

being a compilation, could not be compared off hand to the surgical text.⁴⁴ Sudhoff also emphasized that the magical character of the Ebers ought not to be exaggerated.⁴⁵

It was from a similar point of view that B. Ebbell studied the papyrus Ebers again.⁴⁶ According to him, the Ebers gives an extract of the whole of Egyptian medicine, following a well arranged plan containing many rational explanations and on the whole a rational therapy too. For it is not true, Ebbell says, that incantations are used constantly. They rather constitute a small fraction and they must be considered as psychic consolation in cases which were difficult to treat. For the physician at the time of the Pharaohs was a real physician, "ein Naturforscher mit einem menschenfreundlichen Sinn."⁴⁷

This latter interpretation seems a little exaggerated and makes the Egyptian physician appear very much in the light of the modern psycho-therapist; besides, the records do not tell us much about his mental attitude towards his patients. They do, however, tell us something about the organization of the profession. The Edwin Smith papyrus was apparently the work of a surgeon, that is, a specialist. Now the statement of Herodotus written in the 5th century B. C., according to which Egyptian medicine was split up into many specialties, is well known. Starting from this passage and comparing it with the inscription on the tomb of the court physician Irj, H. Junker⁴⁸ was able to demonstrate the actual existence of nearly all branches mentioned by Herodotus, a contention which was further confirmed by an article by De Lint.⁴⁹ Junker thought that medicine must already have advanced very far in the ancient kingdom, "denn die Auflösung in Spezialfächer erfolgt im allgemeinen erst, wenn sich der Gesamtstoff von dem Einzelnen nicht mehr bewältigen lässt."⁵⁰ Personally I am not convinced of this idea, for

⁴⁴ Cf. *ibid.* p. 184.

⁴⁵ Cf. *ibid.* p. 188, footnote.

⁴⁶ B. Ebbell, *Papyrus Ebers und die altägyptischen Ärzte*. In: *Acta orientalia* X, 1932, pp. 95-107.

⁴⁷ *Ibid.* p. 107.

⁴⁸ H. Junker, *Die Stele des Hofarztes 'Irj*. In: *Zeitschrift für ägypt. Sprache u. Altertumskunde*, 63, 1928, pp. 53-70.

⁴⁹ J. G. De Lint, *Egyptische Spezialisten*. In: *Bijdragen tot de Geschiedenis der Geneeskunde*, XIV, 1934, pp. 48-52.

⁵⁰ Cf. Junker, *l. c.* p. 70.

if all the medical papyri together represent an approximate picture of the knowledge of the Egyptian physicians, it is hard to understand why this knowledge could not be grasped by a single person, a general practitioner. It would appear more likely that Egyptian medicine had sprung from various specialized practices taught by the father to his son or by the master to his pupil.

In 1933 René Fournier published a book on Egyptian medicine⁵¹ in which he tried to give a general outline of our knowledge of all its branches. On the evidence of the Egyptian historian Manetho and the Smith papyrus, Fournier believes that dissection of human bodies had been performed for anatomical studies.⁵² He estimates the Egyptian materia medica as numbering more than five hundred substances, of which some were magic, others empiric.⁵³ He sees a close relationship between magic and science⁵⁴ and thinks Egypt the origin of medicine, from which the Greeks borrowed extensively.⁵⁵ It is probably going too far to assert that the theory of the *Metu* was the germ of the humoral doctrine, and that this anticipated in its turn the propagation of oxygen and bacteria.⁵⁶ And Fournier also overlooked the fact that the papyrus Brugsch minor had already been published many years previously,⁵⁷ but on the whole the book is well written and gives a fair picture of our knowledge at the time of its publication.

It was in the same year that Hermann Ranke tried to sketch the development of Egyptian medicine.⁵⁸ Comparing the papyrus Ebers with the younger papyri and analysing the papyrus Smith, Ranke arrived at the conclusion that in ancient times both medicine and surgery were based on observation, degenerating during the period of the Hyksos (circa 1800 to 1600 B. C.) into mythology and magic. Ranke's essay was to some extent a forerunner of the thorough analysis of the whole material begun by the Berlin Egyptologist Hermann Grapow in 1935. So far only the first part of

⁵¹ René Fournier, *La médecine égyptienne*. Bordeaux, 1933.

⁵² Cf. *ibid.* pp. 10-11.

⁵³ Cf. *ibid.* p. 77.

⁵⁴ Cf. *ibid.* pp. 52-55.

⁵⁵ Cf. *ibid.* p. 12.

⁵⁶ Cf. *ibid.* p. 75.

⁵⁷ Cf. *ibid.* p. 5.

⁵⁸ Hermann Ranke, *Medicine and Surgery in ancient Egypt*. In: *Bulletin of the Institute of the History of Medicine*. The Johns Hopkins University, I, 1933, pp. 237-257.

Grapow's investigation of the ancient Egyptian papyri has been published.⁵⁹ Grapow distinguishes two fundamental elements in the papyri: "diagnoses" and "prescriptions."⁶⁰ Their formal difference lies in the fact that the diagnoses use coherent sentences, whereas the prescriptions use words loosely connected.⁶¹ This, however, is not a chronological difference; it rather represents the difference between text-book and collection of recipes.⁶² The diagnoses then are remnants of old text-books of which quite a few must have existed. And Grapow in analysing the papyri tries to reconstruct the titles and contents of these old books. Thus the gynecological papyrus Kahun represents an old book on gynecology, the Edwin Smith papyrus a similar book on wounds, whereas the Ebers contains remnants of many different books: on vessels, ophthalmology, diseases of the stomach, etc. The papyri Ebers, Hearst and Berlin 3038 are three big compilations of which the first is the best and the last the worst. The compilers had some kind of card index at hand, each card containing only one or very few notes.⁶³ This would account for the fact that some recipes are repeated or are not placed in their right order. Grapow devotes some space to a comparison of orthography, one of the chief results of which is that the scribes of the Ebers and Hearst simply followed the heterogeneous originals but that, on the other hand, these two papyri are not dependent on each other.⁶⁴ Whereas the physician is usually designated by "you," as in direct address to the reader, the patient is indicated by various forms such as "man," "woman," "somebody who is suffering from . . .," a difference which is important for the separation of the sources.⁶⁵

Grapow's book presupposes a knowledge of the hieroglyphs and I am therefore not able to appreciate all the various aspects which it presents. But fortunately Grapow also published a shorter essay⁶⁶

⁵⁹ Hermann Grapow, *Untersuchungen über die altägyptischen Papyri*. I. Teil. Leipzig, 1935 (Mitteilungen der vorderasiat.-ägypt. Gesellsch. 40. Band, 1. Heft).

⁶⁰ Cf. *ibid.* p. 8.

⁶¹ Cf. *ibid.* p. 72.

⁶² Cf. *ibid.* p. 11.

⁶³ Cf. *ibid.* p. 86.

⁶⁴ Cf. *ibid.* pp. 11-12.

⁶⁵ Cf. *ibid.* pp. 96-111.

⁶⁶ Hermann Grapow, *Die ägyptischen medizinischen Papyrus und was sie enthalten*. In: *Münchener Medizinische Wochenschrift*, 82, 1935, pp. 958-962 and 1002-1005.

omitting the more technical and linguistic details and adding a consideration of broader issues. A correct interpretation of the prescriptions is difficult since they were abbreviated,⁶⁷ but the identification of the drugs might be furthered by comparison with Greek pharmacological writings.⁶⁸ Grapow is moreover convinced of the existence of some influence of Egyptian medicine on its Greek successor.⁶⁹ The language of the diagnoses is that of scientific teaching, quite analogous to that of the mathematical texts.⁷⁰ This together with the fact that the designation of drugs does not contain new words, leads Grapow to the conclusion that ancient Egyptian medicine, showing a scientific character, reached its full development and was completed before 1600 B. C. and that in the time of the New Kingdom, it degenerated into sorcery.⁷¹

We have to wait for the second part of Grapow's work and it is to be hoped that Gardiner will soon edit the medical parts (i. e. nos. 6 and 8) of the Chester-Beatty Papyri.⁷² But so much seems to be certain, that the last five years have not only brought an increase of our detailed knowledge of Egyptian medicine but have also put it on a sounder philological basis allowing us to understand its chronological development and making us less dependent on imagination and general hypotheses.

⁶⁷ Cf. *ibid.* p. 1004.

⁶⁸ Cf. *ibid.*

⁶⁹ Cf. *ibid.* p. 1005.

⁷⁰ Cf. *ibid.* p. 959.

⁷¹ Cf. *ibid.* p. 1004.

⁷² Cf. H. R. Hall, *The Chester-Beatty Egyptian Papyri*. In: *The British Museum Quarterly*, V, 1930-1931, pp. 46-47.