

[With the Author's Compliments.]

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ANCIENT EGYPTIAN MEDICINE :

BIBLIOGRAPHICAL DEMONSTRATION

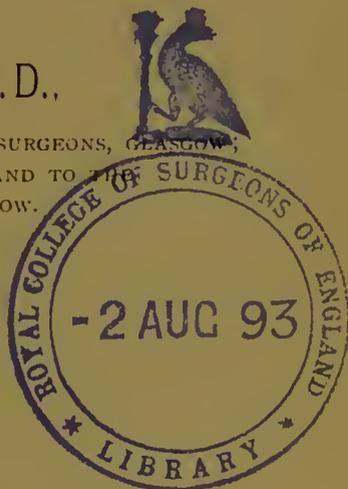
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BY

JAMES FINLAYSON, M.D.,

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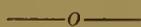
Printed from the "British Medical Journal," 8th April, 13th and 20th May, 1893.

GLASGOW :

PRINTED BY ALEX. MACDOUGALL, 81 BUCHANAN STREET.

1893.

PREFATORY NOTE.



IN reprinting this article from the *British Medical Journal*, advantage has been taken of a larger type to make the rubrics more conspicuous by the use of thick black letters, and also to supply the modifying marks, above and below certain letters, in some of the Egyptian words. A few misprints or other errors have been corrected, but no further changes have been made.

Since this article appeared, Mr. F. L. Griffith, of the British Museum, has communicated to the *British Medical Journal* of 3rd June, a short account of "A Medical Papyrus from Egypt:" a facsimile of this he will publish, shortly, in his "Kahûn Papyri" (Pl. V and VI). This Papyrus, he says, goes back to the XIIth Dynasty, beginning at 2466 B.C.—nearly one thousand years before the date of the Ebers Papyrus. It deals chiefly with matters connected with Diseases of Women, Pregnancy, Sterility, &c.

Dr. Joachim, of Berlin, informs me that he is at present translating into German the medical fragments extant in the Coptic literature, including those published by Zoega: this translation is expected to be ready before the end of the year.



ANCIENT EGYPTIAN MEDICINE:

*A BIBLIOGRAPHICAL DEMONSTRATION.**

—o—

Ancient Medicine is the title of one of the Hippocratic books. On hearing its name for the first time we can scarcely restrain a smile at such a title being given to a book by one who is termed the "Father of Medicine." When, however, we place the date of his treatise over against the abysmal depths of Egyptian chronology,† we feel that Hippocrates belongs to the modern rather than the ancient period of medicine, just as a perusal of his works convinces us that he is animated by what we may fairly call the modern spirit. Some comparison of dates may help us in our estimate of the periods referred to:—

* The plan followed consists in showing all the best editions of the authors discussed, and also the most authoritative works bearing on the subject, so far as these are available; extracts from these are selected and read, so as to place the subject before the meeting, and time is given for examining the various books. In the present case the beauty of the facsimiles added special interest to the demonstration. The curator and librarians of the Glasgow University Library gave much help by looking up references and by drawing on their stores of Egyptological books. Various friends aided in writing out translations or comparing them with the text.

† Cheops, who is mentioned in the British Museum Medical Papyrus as receiving a book of cures therein quoted from (see Fig. 4 of this paper), has his reign put down for the year 3733 B.C. Hippocrates lived about 460 to 357 B.C.

	Authorities.	Dates.
1st Egyptian Dynasty,	Brugsch,	4400-4166 B.C.
Khufu, or Xufu, or Cheops (IVth Dynasty),	Brugsch,	3733 B.C.
XIIth Egyptian Dynasty,	Brugsch,	2466-2266 B.C.
Exodus of Israelites,	Budge,	About 1350 B.C.
Ebers Papyrus,	Joachim,	About 1550 B.C.
Berlin Medical Papyrus,	Brugsch,	About 14th cent. B.C.
British Museum Medical Papyrus, (20th-22nd Dynasty),	Bireh,	About 1100 B.C.
Herodotus, . . . . .	. . . . .	Born 484 B.C.
Hippocrates, . . . . .	. . . . .	460-357 B.C.
Septuagint Version of the Bible, . . . . .	. . . . .	From 280 B.C. downwards.
Diodorus Siculus, . . . . .	. . . . .	Time of Augustus Cæsar.
Celsus, . . . . .	. . . . .	Time of Augustus Cæsar.
Galen, . . . . .	. . . . .	128 or 130-200 A.D.
Clement of Alexandria, . . . . .	. . . . .	Died about 220 A.D.

GREEK AND LATIN AUTHORITIES.

The study of Egyptian medicine has long been pursued with great learning and assiduity, so far as this could be reached by a study of Greek authors. The works of Herodotus, Diodorus Siculus, Galen, and Clement of Alexandria are the chief sources; the Latin digest of Pliny was also utilised.*

* Prosperus Alpinus, *De Medicina Ægyptorum, Editio Nova*, Lugd. Bat., 1719. Hermannus Conringius, *De Hermetica Medicina, Libri Duo*, Helmest. 1669. O. Borriehius, *Hermetis Ægyptorum et Chemicorum Sapientia ab Hermanni Conringii Animadversionibus Vindicata*, Hafniæ, 1674. Richard Strong Sargent, "Observations on the State of Medical Science in Egypt, Ancient and Modern," *Dublin Journal of Medical Science*, vol. xx, Dublin, 1842, p. 81. J. Clarkson, "On the State of Medicine in Ancient Egypt," the *Medical Times*, vols. x and xi, London, 1844, 1845. M. Donovan, "Were the Priests of Ancient Egypt the First Physicians?" the *Medical Press and Circular*, 1870, vol. ii, p. 20. J. G. Wilkinson, *The Manners and Customs of the Ancient Egyptians*; new edition revised by Dr. Samuel Birch, 3 vols., London, 1878; various quotations from Herodotus and Diodorus are given, and also other points of medical interest referred to. Dr. Richard Millar's *Disquisitiones* are mentioned in the text. Clemens Alexandrinus, *Stromata*, Lib. vi, Potter's edition, vol. ii, p. 758.

In the treatises on the History of Medicine by Le Clerc, Sprengel, and Haeser will be found many details and references; while in the more recent work of Puschmann on the *History of Medical Education*, 1891, some other aspects of this subject are dealt with. In Glasgow we have had from one of our medical professors a very full and valuable summary of Egyptian medicine from this point of view—Dr. Richard Millar's *Disquisitions in the History of Medicine*, Edinburgh, 1811. Part I of this book was all that appeared, but it contains a chapter of nearly 100 pages on Egypt, and, in addition, an elaborate note on "Priest-Physicians," not only in Egypt, but all over the world; many other exhaustive annotations and references to various sources of information then available are also given in this book.

The practice of medicine was evidently in the hands of, or at least regulated by, the priesthood, in whose charge the sacred books were preserved. Dr. Richard Millar* expresses it thus:—

"In Ancient Egypt the practitioner was obliged to regulate his conduct, not by his own views, but solely by what was written in the six sacred books of Tot (Thoth = Hermes). Provided he followed these implicitly, no blame was incurred though the patient died; if he departed from them in the least, and at the same time the case ended fatally, his own life became the forfeit. †—(*Diod. Sic.*, L. I, 82)."

PASTOPHORI—PRIEST-PHYSICIANS.

With regard to the Pastophori (literally "shrine-bearers") with whom the physicians were closely associated, the follow-

* *Disquisitions in the History of Medicine*, Edinburgh, 1811, p. 261, note.

† This was, however, in all probability merely a nominal law or one held in reserve to check abuses. "The law which enjoined a strict adherence to the regulations contained in these books which were never seen but in the hands of the Pastophori during a procession must have been altogether nugatory" (J. Clarkson, *Medical Times*, vol. x, London, 1844, p. 91). The complicated formulæ and large choice of alternative remedies indicated in the Ebers Papyrus would seem to show that no great weight was attached to strict adherence to special methods, deviation from which was fatal.

ing extract from Puschmann (p. 24) may be regarded as conclusive, although there has been much controversy as to their exact position:—

“The Pastophori constituted a class of priests who for the rest, as G. Ebers has had the kindness to point out to me, held by no means so low a rank as is attributed to them in historical works. The doctors were bound to maintain a spiritual character, and allowed themselves, therefore, to rank with the Pastophori, although the higher priestly dignities probably remained open to them (the High Priest of Sais bore the title Chief of the Doctors). On the other hand, the Pastophori were by no means likewise doctors, as many think, but had as a body quite other functions, as their name, indeed, indicates. The relation of the Pastophori to the doctors was doubtless the same as that of the scholar to the cleric in the Christian Middle Ages; all scholars did not belong to the clergy, but, at the same time, all clergymen might be considered scholars.” *

PHYSICIANS OR ENTOMBERS ?

Not only have the relationships of priests and physicians in ancient Egypt and the exact rank of the Pastophori been subjects much disputed, but there has been even a confusion introduced, as between physicians and embalmers, based on a passage in the book of Genesis (chap. L, verse 2): “Joseph commanded his servants, the physicians, to embalm his father, and the physicians embalmed Israel.” In the Septuagint the

* The relationship of priests and physicians in ancient Egypt is viewed differently by M. Donovan in an article in the *Medical Press and Circular*, 1870, vol. ii, p. 20, entitled, “Were the Priests of Ancient Egypt the First Physicians?” He says: “On the whole, it does not distinctly appear by any historical record that medicine was practised by the priests of ancient Egypt. . . . We only find that these sacred characters made the healing art a part of their studies. . . . It is probable that in ancient Egypt medicine was thus relegated. The physicians procured transcripts from the priests of the prescriptions authorised by law, and employed them, as they were bound to do, under penalty, the priests occasionally using the same formulæ in cases, perhaps, of charitable dispensation.”

word used ἐνταφιασταῖς means “entombers”; in the Hebrew the word has a different meaning, and is elsewhere translated *ιατρός* in the Septuagint. The following extract from Dr. Sargent’s article* may be interesting; for this criticism he says he was “indebted to a learned friend” :—

“The word Ha-rō-phē-eem is from the root Rā-phā, *sanavit*, which derivation would of itself justify the interpretation ‘physicians.’ But we have the corroborating sanction of the other parts of the Hebrew scriptures in which the word occurs, Jer. viii, 22, where we read that well known sentence, ‘Is there no balm in Gilead? is there no physician there?’ And in Job xiii, 4, ‘Ye are all physicians of no value.’ It is remarkable that the Septuagint translates the word in these passages from Jeremiah and Job by *ιατρός*. We are surely, then, justified in concluding, from the use of the word in the other parts of the Scripture, and from the light thrown on the version by the original, that the Septuagint meant by the word ἐνταφιασταῖς a peculiar office of some of the physicians of Joseph’s household.”

On submitting this extract to my friend, Dr. Robertson, the professor of Oriental languages in the university here, he says :—

“The word ‘Rophe’ is the regular word for physician. . . . The word occurs quite frequently, both as a noun and verb, ‘heal’ and ‘healer.’ The passage in Genesis L is, as analytical critics make it out, from one of the oldest sources, the Jehovist, and the Septuagint variation in this place may have arisen from the fact that the translation being made in Alexandria, from 280 B.C. downwards, the translators, familiar with a special craft, as perhaps embalming had come to be, used the special technical word.” †

* “Observations on the State of Medical Science in Egypt, Ancient and Modern,” *Dublin Journal of Medical Science*, vol. xx, p. 81, Dublin, 1842.

† We need not go beyond our own city for evidence of the connection which existed between our profession and the embalmers. Our own Faculty in Glasgow gave partial licences, for example, to barbers to practise “barberising,” “polling,” etc., and to others for the “curing of simple wounds and the embalming of corpses.” The founder of our Faculty

This last clause expresses the view which had occurred to myself, although I have no special knowledge of such subjects. This digression may be excused on the ground that it is somewhat important for the historical reputation of our profession that the Hebrew word "physicians" should not be regarded as entirely synonymous with the Greek term which means those who put people into their tombs!

REPUTED ABHORRENCE OF THE PARASCHISTES.

The statement as to the aversion in which the Egyptians held the man who made the preliminary incisions in the dead body required for embalming, although generally accepted, has often appeared rather ridiculous; for the importance attached to the process of embalming was very great, as securing the continued life and happiness of the deceased; and it seems absurd to suppose that the man making the necessary incisions should be hated or pelted with stones, as he ran away, after doing what the friends of the dead really desired. This pelting (if a real occurrence) was probably very much a ceremonial form,* typifying the opposition and resentment of the deceased at such an interference with his body; survivals of similar forms may be traced in connection with certain marriage ceremonies in some countries. The following extract from a paper by Professor Alexander Macalister, of Cambridge, shows that the reputed abhorrence referred to is not borne out by recent researches: † —

received a fee for "bowelling" (that is, embalming) the laird of Houston, the provost of the city; and in his *Whole Art of Chyrurgerie*, 1612, written while practising in Glasgow, he gives directions for embalming dead bodies (see *Account of the Life and Works of Maister Peter Lowe*, by James Finlayson, M.D., Glasgow, 1889, pp. 47 and 21.)

* See Wilkinson, *Manners and Customs of the Ancient Egyptians*, London, 1878, vol. iii, p. 474; also Puschmann, *History of Medical Education*, London, 1891, p. 23.

† *Anatomical and Medical Knowledge of Ancient Egypt* (abstract), Royal Institution of Great Britain, 5th March, 1886.

“There is in *Diodorus Siculus** an account of an episode in the operation of embalming which has long passed current as authentic. He says that when the sacred scribe inspected the body he marked on its left side how much it was lawful to cut. Then the paraschistes, holding in his hand a knife of Ethiopian stone, dissected the flesh as far as the law permitted; then, turning suddenly, he fled away as fast as he was able to run, pursued by the execrations of the bystanders, often pelted with stones, and otherwise maltreated. Then the taricheutæ enter, and, passing their hands through the incisions into the body, remove therefrom the digestive organs, the heart, the kidneys, and other viscera. Then they wash out the cavities with palm wine and aromatics, and finally replace the parts, which have been anointed with antiseptics.

“While some portions of this description agree both with the earlier account given by Herodotus and with the national literature, yet the first part I believe to be purely fictitious. There is no confirmation in Egyptian literature of that portion which relates to the ill treatment of the outcast paraschistes. There is no trace of any such popular commotion in any of the pictures representing the stages of the process. Nay, we have direct testimony on the subject, for it is written in the Rhind Papyrus, concerning the embalming of the Lady Ta-ani, ‘they made the incisions by the hand of a χ ar-heb in the place of opening at the eighth hour.’ It was this grade of priests who began and who carried out the process of embalming. M. Revillout has proved conclusively that the paraschistes and taricheutæ are two Greek names for the same functionaries, whose native name is χ ar-heb. In the Rhind Papyrus, before quoted, it is written, ‘preserved is the body by the χ ar-heb, who is thoroughly acquainted with the science of embalming.’ From other passages in Egyptian writing, we learn that these χ ar-hebs were priests, sacred scribes, men of high

* The passage referred to by Professor Macalister may be found in *Diodorus Siculus, Historical Library made English* by G. Booth, London, 1700, Book I, chap. vii. The Greek passages from Herodotus (Book II, § 86-89) and Diodorus are given and translated by T. J. Pettigrew, *History of Egyptian Mummies*, London, 1834, pp. 44-49. Translations and remarks on these accounts are also given by Wilkinson, *Manners and Customs of the Ancient Egyptians*, new edition, by Samuel Birch, London, 1878, vol. 3, pp. 470-473.

character, physicians, to whom even magical powers were ascribed, for the breath from the mouth of a *zar-heb* has power to dissipate disease of the heart. Further, we learn from several records that the incisions were not all made at once, but in at least two series; for the perfect preservation of a mummy was accomplished gradually, the process spreading over seventy days. The *zar-hebs* were men with no civil disabilities; they bought and sold land, they made contracts, they drew up formal marriage settlements for their wives, and received payment in money, vegetables, wine, and other articles."

DECIPHERING THE HIEROGLYPHICS.

The "national literature" referred to in this extract has within the last fifty years cast a completely new light on old Egyptian life. We now have a very extensive study of the monuments which survive, and of ancient papyri which have been unrolled, deciphered, and published in facsimile. The tombs, pyramids, and ruins are rich in all sorts of inscriptions and illustrations; but with regard to such special departments of knowledge as medicine, we have to look chiefly to the papyri. Copies of these have been found buried away with the dead, but the grave has been made to give up its secrets, and a motto well known in our profession may well be applied here also—" *Nec silet mors.*"

The deciphering of Egyptian hieroglyphs and papyri is undoubtedly one of the most brilliant achievements of our century, and a distinguished member of our profession, Dr. Thomas Young, had an honourable place as a pioneer in this investigation.* He was one of those who made at least a beginning in the translation of the inscription on the Rosetta Stone; but modern Egyptologists, even in our own country, admit that the main credit is due not to him, but to Champollion, and the claims put forward in the *Life of Dr. Thomas*

* Dr. Young's papers, letters, &c., on this subject are contained in vol. iii of his *Miscellaneous Works*, edited by John Leitch, London, 1855. They extend to 475 octavo pages.

Young are regarded by them as exaggerated; his reputation in other fields of research, however, is so great, that he can well bear some deduction in this matter, where in any case the credit due to him is still very great.

Even if I were an Egyptologist (and I need scarcely say I am not), this is not the time or place to expound the deciphering of Egyptian hieroglyphics, but some statement of the matter is almost essential to make our demonstration to-night intelligible. Three different forms of Egyptian writing are recognised:—*

1. *The Hieroglyphic*.—This was employed chiefly on monuments, consisting of figures of birds, beasts, men, or definite objects sculptured in stone or painted on wood.

2. *The Hieratic*.—In this the sacred and medical papyri were usually written. The emblems used in the hieroglyphs are contracted, mere indications being used to save the trouble of forming pictures of birds, beasts, &c. Some form of cursive writing became essential for ease in execution when passing from stone to papyrus.

3. *The Demotic or Enchorial*.—This variety was used by ordinary people, or for the ordinary purposes of life. In this the contractions were carried still further. It was the hieroglyphic and the demotic or enchorial varieties which were carved on the Rosetta Stone, along with the well known Greek, which rendered possible the interpretation of the unknown characters.

The first clue was obtained by the occurrence of certain royal names in the inscription, the pronunciation of which was so far fixed. The symbols making up these names were discovered to be phonetic, and so the value of certain symbols, as the expression of certain sounds, could be made out.

The old Egyptian language, revealed by the phonetic value of the hieroglyphs, had long ago ceased to be spoken; even

* For short popular expositions see E. A. W. Budge, *The Dwellers on the Nile*, London, 1891; also the articles on "Hieroglyphics" and "Alphabet" in *Chambers's Cyclopaedia*, 1890.

before it had ceased to be spoken it had ceased to be written in its original form of hieroglyphs, &c., the use of Greek letters having come to be substituted for the old forms of writing; the pronunciation, however, was so far preserved and rendered intelligible to us by these letters. This old Coptic language and literature came, therefore, to be of great importance to the hieroglyphic decipherer, and Champollion had prepared himself for his task by a prolonged study of the Coptic; for when sounds indicated by the hieroglyphs were made out, as just explained, Coptic words, with similar sounds, came to the aid of the decipherer, and for this purpose the version of the *Bible* in the Coptic language, dating back to the third century of our era, was found to be specially useful, as the language ceased to be written, or even spoken, in the course of time. Many words still remain untranslatable owing to the absence of any known Coptic equivalents; this is specially apt to occur in medical treatises as regards the names of diseases, animals, plants, minerals, or drugs. Other bilingual or trilingual inscriptions were also found, and these confirmed the earlier results and aided the decipherer still further. But in the Egyptian hieroglyphic writing there is another element as well as the phonetic. Mr. Budge says:—*

“Certain hieroglyphs were used as *determinatives*. By a determinative is meant a sign which represents the *idea*, either directly or indirectly, of the word written. For example, in the word for ‘child,’ the first three signs give the word for child (phonetically), and then follows the determinative, which is the picture of a child.”

The letters of our European alphabet are phonetic signs, with, as seems to us, a purely arbitrary character; but it has been shown (or attempted to be shown) that the Greek and Roman letters are but modifications of the Egyptian hieroglyphics. Corresponding letters for similar sounds are shown to be modified first into the hieratic contractions, from

* *The Dwellers on the Nile*, p. 44.

them into old Phœnician, and lastly into Greek.* The very names of the Greek letters bear the stamp of Semitic origin. *Alpha*, meaningless in Greek, is evidently the same as the Hebrew *Aleph*, an ox; *Beta* is the Hebrew *Beth*, a house, &c.

The change from the hieroglyphic emblems carved on monuments, to the cursive form on the hieratic papyrus, is somewhat similar to the change in our small Roman letters, originating from the corresponding capitals; the lines had to be rounded to facilitate writing. The resemblance and the difference are well shown in comparing the same passage in the two forms, remembering, however, that the hieratic reads from right to left (like the Hebrew), while the hieroglyphs read (as in English) from left to right (see Figs. 1 and 2, where the hieratic is translated into regular hieroglyphs).

RED COLOURS AND RUBRICS.

Portions of the hieratic papyri are written in red, although the bulk is in black. The red portions are indicated in the *fac simile* of the Berlin medical papyrus by lighter printing (see Fig. 3), although in one page the red is reproduced as a sample. The red occurs in the headings of a book, or of certain of the sections, also in the statement of the disorder for which a medical prescription is intended; red, likewise, occurs frequently in the marks indicating the quantities of the remedies to be used in the prescription. These headings, or "rubrics," as they are called, show to us the use of red colours for such purposes in the most remote antiquity; our own word "rubric" implies red, although the directions or headings called rubrics are often enough, now-a-days, printed in black, no doubt usually in some different form of type.

The use of colours in the Egyptian writing was, however, extended at times to represent ideas as a species of "determinative." Mr. Budge says:— †

* See an interesting table in *Chambers's Cyclopædia*, edition 1888, art. "Alphabet."

† *The Dwellers on the Nile*, London, 1891, p. 41.

“The scribe wrote on papyrus with a reed, the hieroglyphs being generally traced in outline. He carried his inks in small hollows in his palette. The greater part of the ordinary inscriptions on papyrus are written with black ink, but directions for the repetition of certain passages, or rubrics, and the initial paragraphs are written in red. Texts written in other colours are found, but they are not common. Where it was possible the scribe represented an object in its natural colour; he made the sun red, the moon yellow, trees, plants, and all vegetables, green; but objects requiring out-of-the-way colours were not so well done, owing to the comparatively limited supply of colours at the disposal of the scribe. Reeds cut like modern pens were also used for writing, and specimens of these may be seen in the British Museum (North Gallery, Second Egyptian Room).”

THE IBIS MISTAKEN FOR THE GOD THOTH.

Owing to this study of Egyptian monuments and the reading of their ancient papyri, we are enabled, although so many centuries later than Herodotus or Pliny, to understand Egyptian life and manners better than they did, and we can sometimes make out in what way their errors arose. A curious story is given by Pliny to account for the introduction of enemata into the practice of medicine in Egypt, ascribed by him to an imitation of a fabulous procedure of the bird named the ibis:—*

“The like device to this—namely, of clisters, we learned first of a fowle in the same Egypt, called ibis [or the blacke storke]. This bird having a crooked and hooked bill, useth it instead of a syringe or pipe to squirt water into that part, whereby it is most kinde and wholesome to avoid the doung and excrements of meat, and so purgeth and clenseth her body.”

M. Chabas, in a chapter entitled “*La Médecine des Anciens Égyptiens—Antiquité des Clystères—Signes de la Grossesse*,” says:—†

* *Natural History*, Book VIII, chap. 27, Holland’s translation, London, 1634.

† F. Chabas “*Mélanges Égyptologiques*” (1^{ère} série), Paris, 1862, p. 66.

“We know that the use of clysters goes back to remote antiquity. Diodorus Siculus and Pliny speak of this therapeutic method as employed by the Egyptians, and that tradition ascribed the invention to the ibis. According to Pliny, this bird injected water into its bowel by means of its beak. This ridiculous fable may be explained by the confusion which the Greek narrator makes between the ibis and the King Thoth, whose name is written, by means of hieroglyphs, precisely the same as that of this bird. Taking the ibis instead of its figurative value, and finding in his imagination the beak which serves as a cannula, he has travestied, in a grotesque manner, a serious tradition.”*

ALLEGED AMPUTATION OF LIMBS.

With the first development of modern Egyptology it was natural that some serious errors should arise, and it has passed into the standard works on the history of medicine that the ancient Egyptians were familiar with the amputation of limbs. The following note from Puschmann (p. 22) supplies all the information I can give on this point:—

“In Rosenbaum’s edition of K. Sprengel’s *Gesch. d. Arznei-Kunde*, Leipzig, 1846, Bd. 1, S. 73, note; as in Haeser’s *Lehrbuch der Geschichte der Medicin*, Jena, 1875, Bd. 1, S. 57, the remark is found that the ancient Egyptians were acquainted with amputation. This statement depends upon Larrey, who in his *Relation Historique et Chirurgicale de l’Expédition de l’Armée d’Orient*, Paris, 1805, p. 45, note, writes:—‘Le général Desaix poursuivit l’ennemi jusqu’au-delà des cataractes et donna ainsi à la commission des arts la facilité de visiter les monuments de la fameuse Thèbes aux cents portes, les temples renommés de Tentyra, de Cernak, et de Luxor, dont les

* Thoth (or more correctly Tahuti) was the god of letters, and the inventor of the arts and sciences. He was latterly spoken of as equivalent to Hermes; the sacred books of Thoth were, therefore, often called “Hermetic.” The titles of the six Hermetic books on medicine will be subsequently quoted as given by Clement, of Alexandria, in Greek. Thoth was usually represented as ibis-headed; the ibis was sacred to him; and, as M. Chabas says above, his name was written by means of hieroglyphs, precisely the same as that of this bird.

restes attestent encore l'antique magnificence. C'est dans les plafonds et les parois de ces temples, qu'on voit des bas-reliefs représentant les membres coupés avec des instruments très-analogues à ceux dont la chirurgie se sert aujourd'hui pour les amputations. On retrouve ces mêmes instruments dans les hiéroglyphes et l'on reconnaît les traces d'autres opérations chirurgicales, qui prouvent que la chirurgie dans ces temps reculés marchait de front avec les autres arts, dont la perfection paraît avoir été portée à un très-haut degré.' But neither Lepsius (*Denkmäler aus Ägypten und Äthiopen*, Berlin, 24 Bände), nor J. Rosellini (*I Monumenti dell' Egitto e della Nubia*, Pisa, 1832, 4 vol.), adduces any picture which testifies to amputation. Perhaps the absence of the left arm of the god Chem or Mim points to this (Champollion, *Panthéon Égyptien*, Paris, 1824, pl. iv), but no conclusions of this kind can be drawn from the curious forms of the images of the Egyptian gods. Thus, the proof that the Egyptians were acquainted with amputation has not yet been furnished. The hasty statement of Larrey, perhaps depending on a misunderstanding, must be proved and recognised by Egyptologists before it can be considered as a historical fact."

PAPYRI.

The most important of all the medical papyri, as yet known, is that which bears the name of Ebers;* it has been edited by him, and issued in *fac simile* in two beautiful volumes. These contain full-sized representations of each page of the papyrus, with the portions written in red reproduced in that colour. In the preface he gives an account of the finding of the papyrus; he gives a translation of the two first pages in full, with a rendering of the hieratic into hieroglyphs and into phonetics, and a translation into German, both done in interlinear fashion (see Fig. 2). The other pages have merely their contents summarised or indicated. In the second volume there is a Hieroglyphic-Latin glossary by Stern.

* *Papyrus Ebers: Das Hermetische Buch über die Arzneimittel der alten Ägypter in Hieratischer Schrift.* Herausgegeben, mit Inhaltsangabe und Einleitung versehen von Georg Ebers. Mit Hieroglyphisch-Lateinischem Glossar von Ludwig Stern. 2 vols. Leipzig, 1875.

The material written on by the Egyptians was termed papyrus. It was obtained from the plant known as *Cyperus Papyrus*, and is probably the same as the "reeds" referred to by Isaiah (xix, 6 and 7). In the revised version of the Bible the ark of "bulrushes" prepared for Moses is rendered, in the margin, as constructed of "papyrus." Papyrus was termed *byblus* in Latin.

On some of the pages of the *fac simile* the texture of the papyrus is very plainly seen.

"The mode of making papyri was this:—The interior of the stalks of the plants, after the rind has been removed, was cut into thin slices in the direction of their length, and these being laid on a flat board in succession similar slices were placed over them at right angles, and their surfaces being cemented together by a sort of glue, and subjected to a proper degree of pressure and well dried, the papyrus was completed. The length of the slices depended, of course, on the breadth of the intended sheet, as that of the sheet on the number of slices placed in succession beside each other, so that though the breadth was limited, the papyrus might be extended to an indefinite length." *

THE EBERS PAPYRUS.

I will now give an account of this celebrated Ebers Papyrus by Joachim,† who has published the first complete translation of it, page by page.‡ This is in German. As yet, we have no English translation; but Professor Alex. Macalister, of Cambridge, is only awaiting suitable leisure to publish his rendering of it, made some time ago.

In his introduction Joachim says:—

* Wilkinson, *Manners and Customs of the Ancient Egyptians*, new edition, London, 1878, vol. ii, p. 180.

† *Papyros Ebers: Das älteste Buch über Heilkunde. Aus dem Ägyptischen zum erstenmal vollständig übersetzt* von Dr. med. H. Joachim, Berlin, 1890.

‡ Professor Macalister says that there is a partial translation into Norwegian by Professor Lieblein.

“The Ebers Papyrus is at present preserved in the University Library at Leipzig. It surpasses in importance all other medical papyri in the richness of its contents, and its completeness and perfection; it is the largest, the most beautifully written, and the best preserved of the medical papyri. It was obtained by Ebers during his stay in Egypt in the winter of 1872-73 from a citizen of Luxor.

“It is 30 centimetres in height, and 20.23 metres in length. It was published by Ebers in an elegant form in 1875, and so made accessible to wider circles. It is in Hieratic writing, and consists of 108 pages. On each page there are, with few exceptions, 20 to 22 lines. Probably by an oversight in numbering it on the part of the writer, the figures 28 and 29 have been omitted, so that page 30 follows directly on page 27 without any interruption; and so the last page of the papyrus closes, not with the number 108, but 110.*

“On the back of the first page there is a calendar from which Ebers tried to determine the date of the writing. This calendar, and particularly the part relating to the King named Ba-gerḥ-Rā, gave rise to great difficulties in the deciphering. From the dates in this calendar Ebers fixed the composing of the papyrus in the years 1553-1550 B.C., ‘with a probability bordering on certainty,’ as he says in the introduction to his Papyrus; and he maintains also, in his treatise on ‘Augenkrankheiten,’ published in 1889, that ‘it may be affirmed that the Ebers Papyrus was written in the middle of the sixteenth century B.C.’ Whether it originated also at that date is a question to which we shall return later on.

“What are we to understand by the Ebers Papyrus? Its editor declares it to be the book *Περὶ φαρμάκων* mentioned by Clement of Alexandria (*Stromata*, lib. vi), and maintains this opinion in his latest work on his Papyrus just mentioned. We know that Clement of Alexandria, who lived in the second century

* According to F. L. Griffith, in a paper on “The Metrology of the Ebers Papyrus” in the *Proceedings of the Society of Biblical Archaeology*, vol. xiii, part vii (London, 1891), this error in numbering was intentional. He says (p. 393), “110 was a perfect number in Egypt; it was obtained by a little falsification in the numbering of the pages, for 28 and 29 do not exist.”

after Christ, and is considered one of the best authorities on Egypt, relates that 42 Hermetic books existed there, 36 of which treated of philosophy, and the remaining 6 of medicine: they are as follows:—

“(1) Περὶ τῆς τοῦ σώματος κατασκευῆς.

“(2) Περὶ νόσων.

“(3) Περὶ ὀργάνων.

“(4) Περὶ φαρμάκων.

“(5) Περὶ ὀφθαλμῶν.

“(6) Περὶ τῶν γυναικίων (νόσων).

“This opinion of the learned investigator, that the Ebers Papyrus was the Περὶ φαρμάκων, I cannot at all share. In a work of such a name the physician aims at a treatise on individual remedies, their influence, application, injurious effects, &c. The contents of the papyrus do not by any means answer to this; they treat rather of diseases of the organs, particularly disorders of the stomach, affections of the eyes, diseases of women, and also of the construction of the human body. I believe, therefore, that we must understand by the Ebers Papyrus a kind of medical compendium. It is hardly necessary to say that by this it loses nothing either in character or importance, especially as regards the history of medicine.

“The question here at once arises as to whether our papyrus be an original production. Lepsius, and perhaps most of the Egyptologists, declare it to be merely a copy. We shall not now inquire further into the reasons that the learned investigator has alleged for his opinion. That we have in fact, however, before us in this manuscript only a copy the papyrus itself gives positive proof. In some places, namely, page 18, line 1; page 89, line 1; and page 90, line 3, we find written in with red ink in the middle of the text the words ‘qem-sen = found destroyed.’ What would this phrase do in an original work? Further, we find a few passages repeated with only slight variations; compare the following:—page 37, line 10, to page 38, line 3, and page 38, line 10, to page 39, line 2; page 25, lines 3 to 8, and page 52, lines 1 to 7. There are besides to be found not infrequently the same prescriptions repeated in different places and for different illnesses.

“The manner and way in which this manuscript has originated can be best explained, as suggested by Ebers himself, ‘that the:

sacred scribe had in copying to combine different smaller writings into one, and, without thinking of the sense, had copied several pieces of the same meaning,' and, we may add, sometimes drew attention to existing gaps in these writings by the above mentioned 'qem-sen.'

"There is no doubt that the papyrus has been actually used; slight inaccuracies in the text have been corrected, consequent, I believe, on its use—sometimes, indeed, with paler ink than that in which the papyrus is written, as one can clearly make out. On the margin of the leaves there are now and then short remarks; for instance, on the margin of page 40 the word 'nefr = good' has been added three times in pale ink, different from the original; on page 41 there are on the margin the words 'nefr ar = well prepared.'

"As to the real age of the papyrus, I do not think that we shall ever succeed in determining it even approximately. It was, as we have said above, made up of various smaller writings; and this strengthens the supposition that the separate parts which form the papyrus belong to quite different periods of time. The grammatical study of our manuscript also supports this assumption in many respects. That isolated passages are of great antiquity—perhaps reach back in their origin to the remote dark ages—I have no doubt. Among such portions I count, for instance, page 46, line 10, to page 47, line 10; page 47, line 12; page 66, lines 15 to 18; and page 103, lines 1 to 3.

"In summing up the results of our joint reflections, it may be asserted with truth that in the Ebers Papyrus we have before us a kind of medical compendium or compilation which was written down, at the latest, in the year 1550 B.C., but which belongs in its separate parts to different periods of time more or less remote."

The account of the purchase and discovery of this MS. is given by Ebers in the preface to the facsimile of the papyrus. He says that in the winter of 1872-73, while in Thebes, he was offered this papyrus by a resident there. He was informed that it had been obtained fourteen years before from a grave at El Assassif, near Thebes, and had been found between the legs of a mummy. The original

finder of the papyrus was dead, so that the exact grave could not be ascertained. The calendar written on the back of the papyrus impressed Ebers with the importance of the manuscript, and this, with the beauty of the writing, led him to purchase it.

EGYPTIAN VIEWS ON DISEASE AND DEATH.

Before proceeding to give some of the contents of this papyrus, it may be well to state the general nature of Egyptian views on the subject of disease and death, and the means of averting these calamities. M. Maspero * puts it thus:—

“The Egyptians are not resigned to think that illness and death are natural and inevitable; they think that life once commenced should be indefinitely prolonged; if no accident intervened, what reason could there be for its ceasing? In Egypt, therefore, a man does not die, but some one or something assassinates him. The murderer often belongs to our world and can be easily pointed out; another man, an animal, an inanimate object, a stone detached from the mountain, a tree falling upon a traveller and crushing him. Often, though, it belongs to the invisible world, and only reveals itself by the malignity of its attacks; it is a god, a spirit, the soul of a dead man, that has cunningly entered a living person, or that throws itself upon him with irresistible violence. Once in possession of the body, the evil influence breaks the bones, sucks out the marrow, drinks the blood, gnaws the intestines and the heart, and devours the flesh. The invalid perishes according to the progress of this destructive work; and death speedily ensues unless the evil genius can be driven out before it has committed irreparable damage. Whoever treats a sick person has, therefore, two equally important duties to perform. He must first discover the nature of the spirit in possession, and, if necessary, its name, and then attack it, drive it

* G. Maspero, *Life in Ancient Egypt and Assyria*, translated by A. P. Morton. London, 1892, p. 118. In this book, under the guise of a description of the life of an individual, an account is given of illness, medical treatment, death and burial, as made known to us by the national literature.

out, or even destroy it. He can only succeed by powerful magic, so he must be an expert in reciting incantations and skilful in making amulets. He must then use medicine to contend with the disorders which the presence of the strange being has produced in the body; this is done by a finely graduated *régime* and various remedies."

In view of this statement, we may the better understand the invocation found in the first page of the Ebers Papyrus, which is here given in full, and magical invocations will be found in the other papyri also. The German translation of Joachim* is here followed.

The rubrics, which should appear in red, are indicated here by the use of thick black letters.

MAGICAL INCANTATION.

"The beginning of the Book on the preparation of medicines for all parts of the body of a person. I went forth from Heliopolis with the priests of H̄et āāt, the lords of defence, the kings of eternity and of deliverance. I went forth from Sais with the maternal goddesses, who promise me protection. Words were given me by the Lord of the Universe, wherewith to drive away the sufferings of all the gods, and deadly diseases of every sort. **So many chapters are** on this my head, this my neck, these my arms, this my flesh, and these my limbs, to punish the mockeries of the high ones, who cause by magic this disease in my flesh and in these my limbs, so that as often as it [the disease] penetrates into this my flesh, this my head, these my arms, into my body, and into these my limbs, Ra has compassion, saying: I will protect him from his enemies. It is his leader Hermes, who has given him the words, who procures the books, and who bestows upon the learned ones [literally, those who know everything], and on the physicians who follow him, the honour of unravelling that which is dark. Whom God loves, he quickens; I am one whom God loves, therefore he quickens me. **Words to be said in the preparing of medicines for all parts of the body of the patient.** So let it

* *Papyrus Ebers: Das älteste Buch über Heilkunde. Aus dem Ägyptischen zum erstenmal vollständig übersetzt* von Dr. med. H. Joachim, Berlin, 1890.

be, a thousand times. This is the book for the healing of all diseases. May Isis cure me, even as she cured Horus of all the suffering which his brother Set had inflicted on him when he killed his father Osiris. Oh, Isis, thou great enchantress, heal me, deliver me from all evil, bad, typhonic things, from demoniacal (epidemic?), and deadly diseases, and pollutions of every sort which rush upon me, as Thou didst deliver and release thy son Horus. For I have been forced to go into the fire and to pass through the water. May I not fall into the snare of the day when I shall say I am mean and deplorable. Oh, Ra, Thou who hast spoken for thy body; oh, Osiris, Thou who prayest for Thy manifestation; Ra speaks for his body, Osiris prays for his manifestation. Deliver me then from all possible evils, from bad, wicked, typhonic things, from demoniacal (epidemic?) and deadly fevers of every sort."

MEDICAL FORMULÆ.

The second page of the papyrus goes on to deal with medicinal remedies, and furnishes recipes in a form not unlike our modern prescriptions. There are 20 lines in this second page. When we get, however, to line 7, the page is divided into what we may call two columns, which contain prescriptions, this division into columns being apparently intended both to save space and to make the prescriptions plainer. The rubric at line 7, **the beginning of the book, &c.**, is in red, also at line 11, **another for the diseased belly**, is likewise in red; the quantities ordered, $\frac{1}{64}$ drachm, $\frac{1}{8}$ drachm, &c., are also in red, apparently to make them stand out more plainly. (See Figs. 1 and 2.)

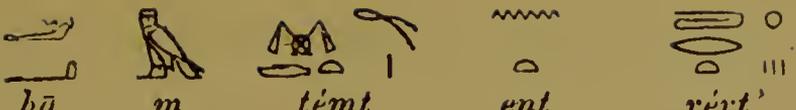
As rendered by Ebers, we read in English as follows (Joachim's translation is only very slightly different):—

"Beginning of the book of remedies to remove diseases in the belly: *ðehui* plant mixed with vinegar, to be drunk by the person (the patient). **The same for the belly which is diseased;** cummin $\frac{1}{64}$ drachm; goose fat $\frac{1}{8}$ drachm; milk to 0·6 litre; boil, pour out, and eat. **The same:** Pomegranate flour $\frac{1}{8}$ drachm; sycamore figs? $\frac{1}{8}$ drachm; sweet vinegar (beer) 0·6 litre; as above."

The image displays a portion of the Ebers Papyrus in hieratic script. The text is arranged in several columns. The first column contains lines 7 through 10. The second column contains lines 11 through 14. The third column contains lines 15 through 18. The fourth column contains lines 19 through 20. The script is highly stylized and cursive. Line numbers 10, 15, and 20 are written in red ink to the right of the corresponding lines.

FIG. 1

Represents the first column of the lower half of the second page of the Ebers Papyrus in the hieratic writing, beginning with line 7; this is reproduced by photo-zincography, the exact size of the original; the red colour of the rubrics, however, is not given.

7) a. 

hā *m* *tēmt* *ent* *rért'*

 Anfang des Buchs von den Arzneien

8) a. 

ter *séxmert'* *m* *xet*

 Zu beseitigen die Krankheiten im Leibe

9) a. 

θehui' *asmāu* *her* *heqt'*

 τωβε (planta) durchrühren (kneten) mit Essig

10) a. 

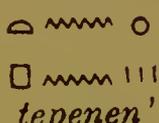
seürä *an* *sé*

 zu trinken von der Person (dem Patienten).

11) a. 

ket *ent* *xet* *séxmer - s*

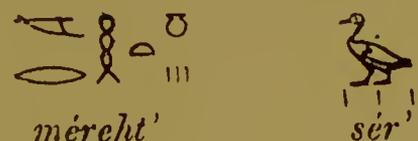
 desgl. für den Bauch, der krank ist

12) a. 

tepenen'

 τΔΠΛ cuminum 

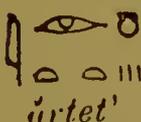
 $\frac{1}{61}$ Drachme

13) a. 

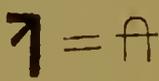
mēreht' *sér'*

 Schmalz der Gänse. 

 $\frac{1}{3}$ Drachme

14) a. 

irtet'

 Milch  = fl

 tēmit

 (zu 0,6 Liter)

FIG. 2

Represents the same portion up to line 14, rendered from the hieratic into hieroglyphs, with an interlinear translation into phonetics and into German, as given by Ebers. In comparing line by line the hieroglyphs and the hieratic writing, to trace the nature of the contractions, the hieroglyphs must be read from left to right, and the hieratic from right to left.

EBERS PAPYRUS—EAR DISEASE.

In trying to judge of the nature of the medicinal remedies recommended in these old times, one of the best ways is to take some special department, of limited size, and to give a translation of all that concerns it. The section on the ear has been selected for this purpose. We must remember, however, that this is a very severe test, as the growth of the specialties has of late years been enormous. No doubt if general practitioners in this country were now tested by their knowledge of the aural specialty, the result would be to show the majority of them at a great disadvantage as compared with how they might appear if tested on the wider basis of general practice. The following is from Joachim's translation (page 91 of Papyrus):—

“The Beginning of the Remedies for an Ear that Hears Badly: Red-lead and resin from the *am*-tree, grind to powder, and rub down in fresh olive-oil (?), and apply to the ear.

“Another for an Ear from which Matter Runs Having a Bad Smell: Frankincense in goose-grease, cream from cow's milk, bedet-corn (a particularly pure kind of soda), *ḥauit*-resin; crush to powder, rub down, mix and apply to the ear.

“Another Form of Treatment for the Ear: Use cool remedies in place of warm. If the *met** trembles, then make for it ut of greenstone: crush to powder, and use four days thereafter.

“After that make for it a Charpie: Oil $\frac{2}{3}$, honey the remainder. Apply frequently. If there is running from the orifice, make for it a ball for drying wounds (consisting of) resin of acanthus, resin of zizyphus, lotus, willow-berry, cumin; crush to powder, and apply. If it becomes enlarged underneath, **then make for it the remedy for drying up wounds:** head of the *āmāmu*-animal, gazelle's ears (?), tortoiseshell, *annek*-plant. Stop it up with this frequently. Do this without delay. If it runs out on the ground, then it is a cure of the ear; for it breaks

* *Met*, plural *metu*, signifies the passages, muscles, nerves, vessels.

by the shooting forth of the God Šu [God of the air]. If it does not fall to the ground, then make a slime the size of the protrusion (the swelling), enclose it in the milk-juice of the sycamore tree so that it mingles with its blood: do not add oil or honey. Cut off the half of it, as it is not wanted that the blood fall from the other half also, that it be not entirely corrupted. [Translation from MS. here uncertain.] **If you afterwards perceive that it has healed up, then make for it:** Oil, wax; boil, and spread with it: do not take much. Treat in this way every abscess that breaks. If it goes off in abundance, then make a linen bandage, and tie up round the back of the head.

“What to do in the treatment of an ulcer that extends into the ear. There is swelling inside; there is the matter from the abscess and the dirt in the ear, with watery fluid from the fermented *mesθā*-drink. Go round about it (the ulcer) with the knife, as far in as it is diseased, and make for it oil, honey; inside a charpie of flaxen stuff. Spread over with this that it may become whole.

“Remedy for a Consecrated Ear, that is Suppurating: Olive-oil (?) 1, frankincense 1, se χ epet-seeds 1, syringe into the ear. **Another**—Se χ epet-seeds 1, frankincense 1, sea-salt the same. **Another for Drying Up an Ear that is Running:** Vermillion 1, cumin 1, ass’s ear 1, ḥātet-oil 1, olive-oil (?) also.”

GENERAL DISEASES: WORMS.

With regard to more general diseases, Egyptian medicine is much concerned with the treatment of worms of various kinds. In the introduction to his translation, Joachim gives good reasons for regarding “pendworm” as representing what we know as *tænia mediocanellata*: “the root ‘pen’ means *se déplisser*, to unfold oneself; the determinative indicates a worm.” The *tænia solium* is excluded as the Egyptians did not eat pork. In a similar manner he makes out that “heft-worm” represents our *ascaris lumbricoides*: “the root *heft* means to stretch oneself forth, to wind oneself, to creep; the determinative indicates likewise a worm.” He shows that this worm cannot have been a tapeworm, as it is

described in one passage as “the dark, black heft-worm,” terms quite inadmissible for a tapeworm.

Perhaps the most interesting disorder referred to in the papyrus is one still connected with worms, the “*āāā*-disease,” and shown by Joachim and Scheuthauer,* independently to be *chlorosis Ægyptiaca*, due to the *Ankylostomum duodenale*. As the subject is very important, I will quote Joachim’s section on this subject from his Introduction :—

“THE *ĀĀĀ* DISEASE = CHLOROSIS *ÆGYPTIACA*.

“Under this title a disease is frequently mentioned in the first half of our Papyrus, and, judging from the great number of prescriptions mentioned for it, it must have been widely spread over Ancient Egypt; further, we find it again in the Papyrus Brugsch. Numerous conjectures as to its nature have been already published, mostly, however, by Egyptologists, but no one has hitherto succeeded in giving a satisfactory explanation of it. In order to hit upon a more exact definition, I collated in the first place all those passages in our Papyrus in which the *ĀĀĀ* disease is described or mentioned. It would lead us too far to reproduce this collation here; anyone, by taking up the translation, can quite easily in a short time collect these references by means of the index. Originally I believed from the whole clinical picture (we have to do, as is explicitly mentioned in the manuscript, with a disease of the abdomen) that I could conclude that the disease was an affection of the nature of cholera, or dysentery, all the more, indeed, as dysentery nowadays still appears with extraordinary frequency in southern countries, especially in Egypt. There were many points, to be sure, which told against this theory. I will not enter here further upon these numerous considerations; only two points shall be quoted as shortly as possible. The ancient Egyptians were excellent observers, and it would indeed be remarkable that they should have left altogether disregarded in the description the most striking symptom of both of the diseases mentioned, namely, the

* “Beiträge zur Erklärung des Papyrus Ebers, des hermetischen Buches über die Arzneimittel der alten *Ægypter*,” *Virchow’s Archiv*, Bd. 85, 1881.

diarrhœa. Further, however, I concluded from the order not infrequently mentioned in connection with this disease, 'to be taken immediately after going to bed,' that the patient was not confined to bed by this illness, as would, of course, be the case with cholera and acute dysentery, and that, consequently, the disease in question was a chronic one, as we would say nowadays. Thus cholera and dysentery were from the very outset absolutely excluded.

"Now, on the other hand, a more accurate examination of all those passages in which the word mentioned occurs, resulted in showing that, without doubt, the $\bar{A}\bar{A}\bar{A}$ disease must be taken in connection with worms, a view which Scheuthauer had already published before me (*Virchow's Archiv*, Bd. 85, S. 343-354). The passage in question is upon page 19 of the Papyrus; there an excellent remedy is prescribed to be used for the abdomen of a patient *who has in his abdomen worms, which are produced by the $\bar{A}\bar{A}\bar{A}$ disease.* From my collation of passages I could further conclude that the disease in question must have been a chronic and dangerous disorder of the digestive system, which occurred very frequently in Ancient Egypt, and one which left behind it serious disturbances on the part of the circulatory apparatus, especially of the heart. To this combination of symptoms thus shortly sketched, there corresponds pretty exactly the *Chlorosis Ægyptiaca*, occasioned by the *Ankylostomum duodenale*, a disease which is also nowadays extraordinarily common in Egypt, according to the unanimous communications of competent investigators, such as Pruner-Bey, Bilharz, and Griesinger. 'We consider it as only a very moderate estimate,' says the last named author (*Archiv für physiol. Heilkunde*, Bd. xiii, S. 556), 'if we suppose that one-fourth of the population of Egypt suffers from this disease—*Chlorosis Ægyptiaca*—to a greater or less extent.'

"It was interesting and at the same time very instructive for me that, in one of the most recent works upon this subject by Lutz (*Volkmann's Sammlung klinischer Vorträge*, Nr. 255, 256, S. 47), some of the symptoms mentioned in our Papyrus, in particular those relating to the heart, are rendered almost in the same words: The 'heart palpitations,' the 'feeling of pain' in the heart region, which declares itself 'sometimes as a dull pressing, sometimes as decided stabbing and burning,' are represented in our manuscript by 'the heart weakness, heart palpitations, and

heart stab.' A comparison of the two passages teaches us, therefore, that the Ancient Egyptian physicians knew how to observe well.

"Of course I do not wish to conceal the fact that the determinative sign used with the word 'ĀĀĀ'—namely, the Phallus—although not exactly against our view, certainly does not seem to tell in its favour; still, the word 'ĀĀ = ass,' for example, has also the determinative sign of the Phallus, and we cannot, in accordance with our present ideas, furnish a satisfactory explanation for this; it is thus possible that the ancient Egyptians desired to express by this sign a theory which is not now intelligible to us. On the other hand, however, according to the observations of Lutz (*Op. cit.*, S. 55), impotence develops in males in severe cases of *Chlorosis Ægyptiaca*, and pregnancy occurs very seldom among the female patients; further, the development of puberty is delayed in this affection for months and years. It might, therefore, be supposed that the Egyptians wished to direct attention to this phenomenon by the determinative sign of the Phallus. All things considered, the conclusion which I have drawn is, indeed, well substantiated—that we must understand by the 'ĀĀĀ' disease the *Chlorosis Ægyptiaca* occasioned by the *Ankylostomum duodenale*."

Two other forms of disease repeatedly mentioned in this Papyrus may also be referred to here, particularly as they are both connected, so far, with the symptoms of *Chlorosis Ægyptiaca*. The following quotation from Joachim's Introduction shows how the inherent difficulties of the subject are dealt with, and pretty satisfactorily overcome, when attacked by one who is at once an Egyptologist and a practitioner of medicine:—

"THE UĤA DISEASE.*

"The root UĤA means to annihilate, to destroy. The disease occurs almost exclusively in the abdomen, and is a chronic affection, attacking men and women. Outward applications were chiefly adopted for its removal; but along with these internal remedies

* Compare Brugsch Papyrus (see Fig. 3 of this paper) and the description of the disease rendered there as "Ouchet" and "Uh'tu."

were also prescribed often 'to be taken warm.' The disease occurs besides 'in each limb' and 'in a person's flesh (body).' In one passage further 'the true UHA disease' is mentioned, and by that is meant, in my opinion, virtually the UHA disease in the abdomen, as distinguished from the same affection 'in each limb.' A certain basis for its determination is afforded by two places in which the UHA disease (for the very first time in our Papyrus) is mentioned: they may be found on page 23 of the Papyrus. In one of these purgatives are expressly ordered for the accompanying persistent and obstinate constipation: in the other it is said of the disease that it 'lies in the body pressing heavily.' From these facts it appears to me as if one should understand by the UHA disease the chronic constipation and meteorismus (flatulence) of the lower abdomen so common in *Chlorosis Aegyptiaca*. 'The constipation,' says Lutz (*Volkmann's Sammlung klinischer Vorträge*, Nr. 255, 256, S. 40) 'is very difficult to overcome by purgative medicines, and leads not uncommonly to considerable faecal obstruction: the patients feel it to be a very burdensome symptom, whose removal brings them great relief.' The UHA disease in each limb or in a person's flesh (body) can be explained either as being swellings of perhaps a gouty nature, or as the uneasiness experienced in the whole body in the condition which I have supposed to exist—there lies a heaviness in all the limbs.

"Now, a passage occurs on page lvii, line 4, of the Papyrus, which can scarcely be brought into harmony with our explanation: there we have, namely, the mention of the Uḥat disease in the eye. I believe with Lüring that here, as in line 10, we should not read 'Uḥat' but Neḥat (=squinting), and that we are confronted with a mistake of the copyist. In most passages, indeed, where this disease is mentioned at all, we do not find Uḥa but its plural Uḥau: only in two (page xxv, line 9, and page xxvii, line 16) is the singular to be found, and then it is on both occasions not Uḥat but Uḥa. It appears thus, in fact, as if we merely had to do on page lvii, line 4, with a mistake of the copyist.

"U χ EDU = PAINFUL SWELLING.

"The word U χ ed is, according to Brugsch, 'not unconnected with pinguis, crassus, obesus.' Now we are taught by a collation of

all the passages in which this word is mentioned, in our Papyrus, that the disease truly occurs in the most varied parts of the body, but especially and principally in the abdomen : after that, in the mouth also, in the legs, on the rump, in the back, heart, urinary passages, eye, trembling arm, in the teeth, in the head, and in all the limbs : suppurating wounds which arise from Uχedu are also mentioned. They occur, besides, with no great infrequency in connection with the $\bar{A}A\bar{A}$ disease, and this appears to me to give a certain basis for the explanation of the word.

“All things considered, the conclusion is well established that one must understand by this expression, first of all, the painful swelling of the abdomen, which appears with such extraordinary frequency, and at a very early stage of *Chlorosis Ægyptiaca* : ‘the whole lower abdomen,’ says Lutz (*Volkmann’s Sammlung klinischer Vorträge*, Nr. 255, 256, S. 43), ‘is painful, with or without pressure being exercised, and is also commonly distended by flatulence.’ The general explanation given answers also excellently for the different parts of the body in which the Uχedu otherwise occurs : the special meaning however, which is to be given to this word in connection with the individual situations must remain undetermined, on account of the quite inadequate description at our command.”

EBERS PAPYRUS : EYE DISEASE.

The chapter on eye diseases is an extensive one, as we might expect from the prevalence of such disorders in Egypt at the present time, and from the obvious character of such affections. This chapter extends from the bottom of page 55 of the Papyrus to the thirteenth line of page 64. This chapter has been translated in full by Ebers himself in a special monograph published in 1889.* He gives a translation, clause by clause, of the hieratic text, into phonetics (or sometimes into hieroglyphs), and into German. There are also elaborate annotations on various words as to their meaning, and especi-

* *Papyrus Ebers : Die Maasse und das Kapitel über die Augenkrankheiten von Georg Ebers.* Leipzig, 1889. Des xi Bandes der Abhandlungen der philologisch-historischen Classe der Königl. Sächsischen Gesellschaft der Wissenschaften No. 2 und 3.

ally on the names of the drugs, diseases, &c., mentioned. In the second portion of the monograph he goes over the same ground, giving a continuous translation into German alone. In such a chapter we naturally look to see how far the discrimination of different forms of disease extended; evidently the knowledge of this subject was very considerable. In addition to such general terms as blindness, blood in the eye, inflammation, remedies to improve the vision, and remedies to be used at certain seasons of the year, the following more definite disorders are recognised by Ebers, as indicated by the Egyptian names descriptive of the disorders (several occur repeatedly):—Hydrophthalmus, Staphyloma, Infiltration of Cornea, Muscæ Volitantes, Lippitudo, Stillicidium, Cataract, Leucoma, Iritis, Ectropium, Entropium, Trichiasis, Pinguecula or Xanthelasma (fat in the eyes), Granulations, Chalazion, Contracted Pupil, Blepharitis, Pterygion, Abscess of Lids, Chemosis, Cancer, Dacryocystitis, Ophthalmoplegia.

Professor Macalister calls attention to the sources from which two of the eye prescriptions were derived. “One ointment for the eye, whose formula he (the writer of the Papyrus) gives, was invented by Chui, the President of the College [page 63 of Papyrus, line 4]; another is a foreign prescription in use among the Phœnicians at Byblus” [page 63 of Papyrus, line 8].

The following short extracts, selected as specimens, are rendered from Ebers’ translation. The remedies, however complex and potent, do not seem to have superseded entirely the necessity for reciting formulæ of words over the preparations.* Thus we have on page 60 of the Papyrus:—

“Another (Remedy) for Driving Away the Cataract in the Eyes: Come verdigris ointment! Come verdigris ointment! Come thou verdant one! Come efflux from the eyes of Horus!

* Compare the incantations and magical formulæ in the Berlin Medical Papyrus, the British Museum Medical Papyrus, and others referred to in the sequel.

Come thou effusion from the eyes of the god Tum ! Come ye stuffs, ye who proceed from Osiris ! Come to him (the patient) and take from him the water, the pus, the blood, the pain in the eye, the chemosis, the blindness, the flow of matter, which are worked there by the god of the inflammations, of each kind of death, of each kind of pain, and of all evil things which are found in these eyes—**so many of them** there are too. **So it is to be recited over the verdigris ointment, dissolved in beetle honey, with which we should mix cyperus, which then should be laid upon the eyes in the prescribed fashion.**”

Another specimen of incantation, over the remedies to be used, is found on page 58 of the Papyrus:—

“Another, for removing the White-Growth in the Eyes. (Albugo or Leucoma). When it thunders in the southern sky towards evening, and a tempest rages in the northern sky, when the pillar of Osiris is thrown into the water, and the sailors of Ra brandish their weapons, and thereby heads fall into the water, who is there then who catches them and finds them ? It is I, who catch them ; it is I, who find them ; whilst I bring to you your heads, whilst I raise your necks, whilst I set in its place that which has been cut from you. So do I conduct you, in order that the god of fever and of every kind of death may be driven away, &c. **When these words have been recited over tortoise-brain mixed with honey, it should be applied to the eyes.**”

The following extract shows how the section on eye diseases begins, on page 55 of Papyrus, and two or three of the first prescriptions are also given:—

“Here begins the Book of the Eyes. Remedies against the Growth of Disease which one finds in the Blood in the Eye (in the blood filling the eye). Upper Egyptian soda or saltpetre, I Ro ; Honey, I Ro or Hin ; caraway, I Ro ; Tooth grain—a sort of incense, I Ro.

“To treat the Water in the Eye (Hydrophthalmus) : incense, I Ro ; myrrh, I Ro ; seeds or berries, I Ro ; χ ntë green earth, I Ro.

“Treatment of the Disease of the Growth (staphyloma) : Lower Egyptian soda, I Ro ; minium, I Ro ; green eye paint (probably verdigris), I Ro ; honey, I Ro or I Hin.”

The concluding clause in the following prescription is very encouraging (page 63 of Papyrus):—

“Prepare still another (Application) for Removing a Swelling on the Nose (Disease of tear-sac: Dacryocystitis): Antimony, I Ro; Arabian wood-powder? I Ro; dried myrrh, I Ro; honey, I Ro or I Hin. Let this be rubbed into the eye for four days. Mark this well:—for it is certainly the right thing (to do).”

The following remedy, although specified for certain seasons, seems really to apply to the whole Egyptian year (page 61 of Papyrus):—

“Another Eye Ointment, to be used in the seasons of the heat (summer), of the sprouting (winter) and of the overflowing or inundation (that is, in all three seasons or four-monthly periods of the Egyptian year): Let one triturate antimony in the morning with the fat of the Trp-goose, without, however, bringing the latter to the fire, and the eye may be anointed with this at night.”

The next prescription is a striking one, not only from its universal application, but also from the use in it of a Human Brain, to which, no doubt, its potency was ascribed (page 61 of Papyrus):—

“Other Remedies for the Eye, in which anything at all has become diseased : Let one take a human brain and divide it in half. Let one-half of it be added to honey, and the eye be anointed with this in the evening; the other half should be dried and finely ground, and it may then be used for anointing the eye in the morning.”

The widespread idea of some connection between the ear and the eye, as shown by the boring of the ears and the wearing of earrings for eye affections, which is still practised, receives an interesting illustration in the following old Egyptian prescription (page 57 of Papyrus):—

“**Another Remedy for Blindness :** A pig’s eyes, take the water found therein ; antimony, I Ro ; red lead, I Ro ; wild honey, I Ro. Mix and powder finely, inject this into the ear of the patient, thereby he will become well at once.”

This chapter of the Ebers Papyrus has been discussed in a monograph by Hirschberg, “*Ægypten. Geschichtliche Studien eines Augenarztes,*” Leipzig, 1890, reprinted from the *Deutsche medicinische Wochenschrift* for 1889, but I have not seen these papers.

VASCULAR SYSTEM.

There is an account of the vascular system in this Papyrus which should be compared with a similar section in the Berlin Papyrus on page 15—the one copied in this paper (Fig 3).* The subject is very difficult to understand, even in the French and German accounts, so that I avail myself the more willingly of Professor Alex. Macalister’s summary.† He says:—

“The section of this Papyrus, which begins on the ninety-ninth page, is a treatise on the vascular system entitled ‘*The beginning of the mystery of medicine—knowledge of the motions of the heart, and knowledge of the heart.*’ ‘*There are vessels from it to all parts which the physician Nebsext, priest and Lord of Healing, describes. All these he points out with his fingers to the head, to the neck, to the hand, to the epigastrium, to the arms, to the legs : all he enumerates from the heart, because the vessels are from it to all parts : as he describes, it is the beginning of the vessels to each organ.*’ The author then proceeds to enumerate the distribution of these vessels from the heart, and first gives those ascending to the head. Digressing from the vessels to the animal spirits, Nebsext tells us that these vital spirits enter one nostril, penetrate to the heart through the tube

* Compare also the account given by M. Chabas of the doctrine of vessels ; *Mélanges Égyptologiques*, Paris, 1862, pp. 63, 64 ; and also by Brugsch, in his account of his facsimile, page 15 of the Berlin Papyrus.

† Abstract of paper on “Anatomical and Medical Knowledge of Ancient Egypt,” Royal Institution of Great Britain, 5th March, 1886.

which carries them into the body-cavity. A little further on he states another singular hypothesis concerning these vital spirits; for, speaking of the ears, he says: '*There are four vessels going to the two ears together, two on the right side, two on the left side, carrying the vital spirit into the one right ear, the breath of death into the left ear, that is, it enters on the right-hand side, the breath of death enters on the left-hand side.*' Nebsext next describes the vessels of the upper and lower limbs and the arteries of the viscera."

APHORISTIC STYLE AND HIPPOCRATES.

Professor Alex. Macalister goes on further to raise the question as to whether the Hippocratic school of medicine may not have acquired their aphoristic style from Egyptian medical writings. In connection with the Berlin Medical Papyrus, evidence will be subsequently adduced to show that an actual prescription found there may be traced in one of the Hippocratic treatises. He says:—

"The anatomical description is followed by a series of aphorisms regarding the pathology of vascular disease, arranged in separate sentences; *protasis* and *apodosis*, beginning respectively with *Ar* and *Pu* reminding us of the ἤν μὲν of Hippocrates; indeed, there is such a Hippocratic aspect about these, that one cannot resist the conviction that we have reached here the source of much of the Hippocratic learning. It is possible that the earlier phrase may be interrogative and the latter an answer, but it is more likely that the *protasis* is conditional than interrogative. They relate to such conditions as syncope, cardiac disturbances from abdominal distension, enlargement of the heart, &c. There are twenty-two such queries; thus there is an allusion to valvular stenosis in one which says, '*If the orifice of the heart be turned back, then constricted is the mouth of the heart.*'"

WEIGHTS AND MEASURES: PHARMACY.

Another subject still requires to be mentioned, namely, the weights and measures in the Ebers Papyrus. This is obviously of great importance in connection with the pre-

scriptions given; but its value is not limited to this, as it has relation to the whole theory of the weights, measures, and fractions used by the Egyptians. In the prefaces both of vol. i and ii of the facsimile of the Papyrus this subject is discussed shortly (p. 18 and p. vii respectively), but Ebers subsequently wrote a special monograph* dealing with this matter (*Die Gewichte und Hohlmaasse des Papyrus Ebers*). These questions, however, are of too technical a nature to detain us here. The views of Ebers on this subject have not been universally accepted, and just lately Mr. F. L. Griffith has taken up the discussion. After a study of "The Rhind Mathematical Papyrus," he went on to give the results of his inquiry into "The Metrology of the Medical Papyrus Ebers."† To these special memoirs reference must be made by all interested in this question.

The materia medica and pharmacy of the ancient Egyptians are pretty fully discussed in an important work on the history of pharmacy, by Dr. J. Berendes.‡ Although the Ebers Papyrus is largely drawn upon, it is by no means the sole source of the author's review of the subject. He gives in the same book a short account of the views of Ebers on the weights and measures of the Ebers Papyrus. He likewise deals with the different pharmaceutical appliances used by the Egyptians, and he enumerates the different forms in which remedies were administered, both for internal and external use. The various remedies employed in medicine, whether derived from the animal, mineral, or vegetable kingdom, are also discussed, and poisons are likewise mentioned.

Before passing from the Ebers Papyrus, it is proper to refer

* *Papyrus Ebers: Die Maasse und das Kapitel über die Augenkrankheiten von Georg Ebers.* Leipzig, 1889. Des xi Bandes der Abhandlungen der philologisch-historischen Classe der Königl. Sächsischen Gesellschaft der Wissenschaften No. 2 und 3.

† *Proceedings of the Society of Biblical Archaeology* (5th May, 1891), Lond., 1891, vol. xiii, p. 392. The Rhind Papyrus is discussed in vol. xiii, p. 328 and vol. xiv, p. 26.

‡ *Die Pharmacie bei den alten Culturvölkern. Historisch-Kritische Studien.* Halle, 1891. (S. 55-81.)

to the widely known novels written by Ebers, based on his study of Egyptian life and literature. In the *Egyptian Princess* an important character introduced is an Egyptian oculist. In *Uarda* there is also an Egyptian leech of scientific character: Nebsecht* is represented as devoted to surgery and to the study of the heart, a specimen of a human heart being stolen for him for this purpose. He is likewise represented as privately deriding the efficacy of incantations, and as getting a blind pastophorus, Teta, to do the recitations, while he did the real surgery. In both of these novels, but particularly in the former, numerous notes are given bearing on the medical practice and knowledge of the Ancient Egyptians.

PAPYRUS BRUGSCH: BERLIN MEDICAL PAPYRUS.

The Berlin Medical Papyrus—called also the Papyrus Brugsch—stands next in importance to the Ebers Papyrus. It was indeed the first, and for a long time the chief source of our knowledge of Egyptian medicine. It has been fully published in facsimile, by Brugsch; † there are twenty-one pages, with two additional pages on the reverse side. Page 12 of the facsimile is printed with the headings or rubrics in red ink, as in the original. In the other pages the red ink is indicated by the fainter character of the black writing as shown in Fig. 3 (see page 42), where page 15 is reduced by photography so as to be about two-thirds the size of the original; this page has been selected for reproduction here, as Brugsch gives a translation of the first four lines, and these have a special interest in connection with similar passages

* He is represented in the novel as the grandson of the great Nebsecht, quoted from in the Ebers Papyrus, as giving a description of the vascular system (see quotation already given).

† *Recueil de Monuments Égyptiens*. Par le docteur Henri Brugsch. Deuxième partie. Leipzig, 1863. Pl. lxxxv-cvii. Also published separately; "Notice raisonnée d'un traité médical datant du XIV^{ème} siècle avant notre ère et contenu dans un papyrus hiéroglyphique du Musée Royal de Berlin." Leipzig, 1863.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

FIG. 3.

Berlin Medical Papyrus or Papyrus Brugsch. Page 15 of the facsimile is here reproduced by photography so as to be about two-thirds the size of the original. The fainter characters indicate the rubrics in the papyrus. The MS. is in the Hieratic writing, and reads as usual from right to left. A translation of the first four lines will be found in the text of this paper.

in other medical papyri. This papyrus, like the other medical papyri, is in hieratic writing, and the lines, as usual, read from right to left.

Brugsch gives the translation* of the first four lines of page 15, and his version may be rendered into English as follows:—

“Beginning of the treatise concerning the cure of *Ouchet* (Uh'tu). It was discovered in ancient writing in the form of a roll in a coffer under the feet of the [statue] of Anubis in the town of Sechem (Létopolis), in the time of his Holiness the deceased King ZĀZĀTI (or perhaps DED). After his death it passed to his Holiness the deceased King SEND, on account of its importance. So it was replaced at the feet [of the statue], where it was enclosed by the sacred scribe and the learned chief of the physicians NETERĪOTPOU. . . . This book being joined to . . . the physician consecrated offerings to it of bread, liquors, and perfumes, to be burned in the name of the Goddess Isis, of the God Horus, of the city of Chert'j, and of the gods Chonsou and Thot [surnamed] Am-Chrod.”

Before this Papyrus was published in facsimile Brugsch had communicated a paper on medicine as known to the ancient Egyptians, which he says was founded on an examination of this Papyrus (*Allgemeine Monatschrift für Wissenschaft und Literatur*, 1853). M. Chabas, also, in his *Mélanges Égyptologiques*, Paris, 1862, had a chapter on this papyrus: “La médecine des anciens Égyptiens—Antiquité des Clystères—

* “Commencement du traité concernant la guérison des OUCHET. Il fut découvert, en écriture antique, dans un coffre sous la forme d'un rouleau sous les pieds d'un Anoubis dans la ville de Sechem (Létopolis voy. notre Géographie de l'Égypte, vol. i, p. 243), au temps de la Sainteté du roi ZĀZĀTI (ou peut-être à lire DED), le justifié. Après sa mort il passa à la Sainteté du roi SEND, le justifié, à cause de son importance (*mench*, littéralement : bienfait). Voici qu'on le fit rentrer aux pieds [de la statue d'Anoubis]. Où il y fut enfermé par l'hiérogammate et le savant chef des médecins NETERĪOTPOU. . . . Ce livre étant réuni à . . . il (le médecin) lui consacra des offrandes en pains, en liquides et en parfums à brûler au nom de la déesse Isis, du dieu Horus de la ville de Chert'j, et des dieux Chonsou et Thot [surnommé] Am-Chrod.”

Signes de la Grossesse." There is, more recently, a short but important "Note on the Medical Papyrus of Berlin, by P. le Page Renouf," in the *Zeitschrift für Ägyptische Sprache und Alterthumskunde*, 1873, pp. 123-125. Brugsch says the Papyrus is thus described by Mr. Passalacqua in his *Catalogue raisonné et historique*, Paris, 1826, No. 1,558, p. 207: "It was carefully covered up in a vase of baked clay, along with the small manuscript 1,559, in similar hieratic writing, and bearing a date and *cartouches*; this vase was discovered alone amongst the ruins, at a depth of about 10 feet, near the pyramids of Sakkarah at Memphis." It is supposed to have formed part of the medical library at Memphis referred to by Galen (*De Comp. med. sec. gen.*, lib. v, cap. 2). According to Brugsch, the Papyrus, as judged by the writing, goes back to the 19th or 20th Dynasty; or, as he also puts it, to the fourteenth century before Christ. Parts of the treatise indicate their origin at a much earlier period. Thus the beginning of the second division of the papyrus at page 15 (see Fig. 3) indicates the existence of this portion in the most remote periods (2nd or 3rd Dynasty). There is no complete translation of this Papyrus, but Brugsch gives an indication of the contents of each page, and M. Chabas likewise gives a brief summary. Both of them translate some special portions of the text. M. Chabas says there are in this papyrus not less than 170 medical receipts applicable to a large number of different diseases; of these, 28 are for enemata. M. Chabas gives many prescriptions in illustration of the form of treatment pursued.

SOURCE OF HIPPOCRATIC AND OTHER PRESCRIPTIONS.

The two pages on the back of the Papyrus contain directions for ascertaining pregnancy, fertility, or sterility, and conclude with prescriptions for deafness and pains in the ear. With regard to the former, Mr. Renouf* has given

* *Zeit. f. Ägypt. Sprache*, 1873, p. 123.

an interesting reference to a passage in one of the Hippocratic books "On Sterility," and he suggested that much of the learning of the Hippocratic school may have come from Egypt.* The treatise "On Sterility" is not regarded as a genuine Hippocratic work, but its date goes back, according to Dr. Adams, at least to the time of Aristotle.

M. Chabas renders the passage into French thus:—

"Herbe batatu de taureau, pilée en vase clos, avec du lait d'une femme accouchée d'un enfant mâle. On fait manger cela à la femme, si elle vomit, elle enfantera : si elle a des borborygmes, elle n'enfantera pas, au contraire." †

The following is Littré's rendering into French of the passage from Hippocrates *περὶ ἀφόρων*, Tome VIII, p. 415, referred by Mr. Renouf:—

"Voulez-vous savoir si une femme concevra, donnez à boire le matin à jeun du beurre et du lait de femme nourrissant un garçon ; si la femme a des éructations, elle concevra ; sinon, non." ‡

Unfortunately for our comparison M. Littré has not adopted the text on which Mr. Renouf founds his criticism, which is based on the Greek (not the Latin) text from Kühn's edition, where we read *σικύην ποιῆσαι ἢ βούτυρον*, a reading recognised by Littré in his notes ; although thus printed in the Greek text of Kühn, his Latin translation has been made from a different text—"Si nosse velis an mulier conceptui sit idonea,

* Professor Alex. Macalister's views have already been quoted as to the Hippocratic aphoristic style being possibly an imitation of the Egyptian medical writings, with their Protasis and Apodosis.

† The herb Bull Batatu, pounded in a closed vessel with the milk of a woman who has just borne a male child. We make the woman eat this. If she vomits, she will bear a child ; if, on the contrary, she has borborygmus, she will not bear.

‡ If you wish to know if a woman will conceive, give her to swallow in the morning, while fasting, some butter and some milk of a woman suckling a male child. If the woman has eructations she will conceive ; if not, then she will not.

butyrum et lac mulieris puerum lactantis potui exhibeto”—omitting, as Littré does, any mention of σικύη (eucumber), which is so important in the argument. Mr. Renouf says:—“The word βούτυρον is, I believe, generally understood in this place to signify *butter*. But this is clearly a mistake. The prescription leaves a choice between σικύην ἢ βούτυρον, the former of these objects being a plant of the eucumber kind, and Hesyehius explains βούτυρος as βοτάνης εἶδος—a kind of plant. We may infer, from a passage of Athenæus, that it was an odoriferous plant. . . . It is most probably identical with the Egyptian *buteru* (or, as it is called, ‘Bull’s *buteru*’), for so I venture to transcribe the name of the plant called *batutu* by M. Chabas, and *boudodou* by Dr. Brugsch.”

Mr. Renouf also calls attention to another test of pregnancy or sterility found in this Papyrus, which has a pretty close resemblance to formulæ continued into comparatively modern prescriptions. This is also translated by M. Chabas. The following is rendered from Brugseh’s slight modification of this translation:—

(Verso, page 2, line 2.) “Another test of who will bear a child and who will not. Take wheat and barley which a woman steeps in her own urine for the period of a day; put in the same way the wheat termed ANR and that named ŠÁ.T, in two sacks; if they sprout and shoot out within, she will bear. If it is the wheat which sprouts it will be a male child, if it is the barley it will be a female; if they do not sprout at all she will not bear.”

In a book, vulgarly ascribed to Aristotle, but bearing on the title page “*Culpepper’s compleat and experienc’d midwife*. The fifth edition,” (London n.d.) we read on page 121:—

“Culpepper and others also, give a great deal of credit to the following experiment. Take a handful of barley and steep half of it in the urine of the man and the other half in the urine of the woman for the space of four-and-twenty hours, and then take it out and set it: the man’s by itself, and the woman’s by itself:

set it in a flower pot or some other thing where you may keep it dry; then water the man's every morning with his own urine and the woman's with hers, and that which grows first is the most fruitful, and if one grow not at all the party is naturally barren."

A very similar experiment with wheat, barley, and beans is given by Reynald in his *The Birth of Mankind*, 4th edition, London, 1654, p. 188;* but he sagely adds "trust not much this far fetcht experiment." If fetched from Egypt 3,000 years ago, this seems far enough indeed!

CLINICAL SKETCH OF OUCHET, UH'TU, OR UHA.

A clinical sketch of the disease termed OUCHET (or, as M. Chabas renders it, UH'TU), the nature of which has already been described in the extract from Joachim's introduction to the Ebers Papyrus under the name UHA, is thus given by Brugsch, who follows Chabas pretty closely in his rendering of this passage from the Berlin Medical Papyrus (page 13). The vivid descriptive touches remind one of some of the Hippocratic sketches of disease.

"His belly is heavy, the mouth of his heart (os ventriculi) is sick; his heart (stomach) is burning; his clothes are heavy upon him, many clothes do not make him warm; he is thirsty at night;

* "If ye be desirous to know whether the man or the woman be hinderance in conception: Let each of them take of wheat and barley corns, and of beans, of each 7, the which they shall suffer to be steeped in their several urine the space of twentie and foure houres; then take two pots such as they set Gelli-flowers in, fill them with good earth, and in the one let be set the *Wheat, Barly, and Beans* steeped in the man's water, and in the other *Wheat, Barly, and Beans* steeped in the woman's water, and every morning the space of 8 or 10 dayes, let each of them with their proper urine water the said seeds sown in the foresaid pots, and mark whose pot doth prove and the seeds therein contained doth grow, in that partie is not the lack of conception, and see that there come no other water or rain on the pots: but trust not much this far fetcht experiment."

his taste is perverted, as of one who has eaten sycamore figs; his flesh feels deadened, as one who finds himself ill; if he goes to stool his belly refuses to relieve itself; pronounce over him . . . there is a nidus of inflammation in his belly; his taste is diseased . . .; if he gets up, he is as one who is being hindered from walking.”

CURES BY WORDS, ANCIENT AND MODERN.

The magical element occurs in this Papyrus also in the last pages. M. Chabas renders a small portion into French.*

At page 20 of Papyrus, line 9, we have the heading “A Chapter for drinking remedies.”

“Arise! eternal one, destroying all evil before thee: thine eye is opened by Ptah; thy mouth is opened by Sakri: by this potent book of Baa where Paut-to has revealed the remedies . . . by Isis, the divine, are destroyed the deadly germs which are in the limbs of such a one, son of such a one” (*D'un tel, fils d'une telle*).

Formulæ of words were likewise used for the cure of disease in Christian times, some 3,000 years later—such is the clinging to magic in our profession. The founder of our Glasgow Faculty gives the following rhyme as a cure for a bleeding at the nose; but the caustic humour of his concluding sentence shows what faith he had in such methods of cure. He says:—

“Hieronimus Cardanus, who hath more curiously than divinely written, doth counsaile in great fluxe of blood to pronounce these words following thrice over:

‘Sanguis mane in te sicut Christus fecit in se.
Sanguis mane in tua vena sicut Christus in sua pœna,
Sanguis mane fixus sicut Christus quando fuit crucifixus.’

“This forme of cure by words I doe not alleage here so much, for any effect I looke shall ensue thereupon, as for to content a number

* *Mélanges Égyptologiques*, Paris, 1862, p. 67.

of ignorant arrogant people, who neither will suffer paine, give leisure, or reward more expences for their health, but do ignorantly upon presumption imagine that all diseases should bee helped at their pleasure: to such people and to none other, have I set downe their remedies by words, which I hope in some measure shall satisfie them" (Peter Lowe, *Whole Art of Chyrurgerie*, 2nd edition, London, 1612, Lib. V, cap. 26).

BRITISH MUSEUM MEDICAL PAPYRUS.

The British Museum Medical Papyrus has not yet been published, but Mr. Budge informs me that it is likely to be included in a series of Papyri proposed to be issued by the Museum authorities at an early date. The only data we have as yet regarding its contents are those furnished by Dr. Birch, in whose paper there is a facsimile of two lines and a half of the hieratic writing. As his article may be rather inaccessible to many medical readers, I give extracts of the most important portions: its title is "Medical Papyrus with the Name of Cheops, by S. Birch." * He says:—

"The collections of the British Museum have lately been enriched by a fourth (Medical Papyrus) presented to the institution by the Royal Institution of London. This Papyrus had lain there for many years unrolled, and had attracted no attention, but on its removal to the British Museum, and subsequent enrolment there, its purport became evident, and it possesses the more interest that the names of two monarchs are mentioned in it, one of whom is the celebrated Cheops, the builder of the great Pyramid. The period of the 4th Dynasty is often referred to in mentioning the discovery of ancient rolls or books at a later age. . . . The Medical Papyrus of the Museum is not of the age of Cheops, for a later monarch, whose name resembles that of Amenophis III, is mentioned as a king in whose reign certain prescriptions were brought to perfection. It is consequently even later than that monarch; its script does not

* *Zeitschrift für Ägyptische Sprache und Alterthumskunde*, Leipzig, 1871, cap. 61.

resemble that of the Papyri of the 19th Dynasty, and it is probably to be referred to the close of the 70th [20th?] or beginning of the 22nd Dynasty.* The breadth of the Papyrus is very narrow, measuring about 7 inches wide; its length is about 8 feet. It is, unfortunately, much worm-eaten, and much of the lower part of the commencement is wanting, the lower part having been devoured by worms or lost. It is written on both sides, and, what is more remarkable, is a palimpsest, traces of the former writing still remaining on both sides. The script is neat, but rather coarse and thick, and it is accompanied throughout by numerous rubrics, the heading of the chapters and the directions. The formulas of the cures are very short, but the pages are closely written, and contain from nine to fourteen lines. . . . The manner of charming or addressing the wounds is by invoking the gods, as—

‘Oh Ra, oh Šu, oh Seb, oh Osiris, oh Creator of the gods, oh Nu, adoration to the great gods, bringing the ——— of the gateway, placing the unpleasant on the floor, praising the Sun as he comes out of the Horizon, turning in the cabin, proceeding in the ark, pass ye me along, renew ye me, avert from me all evil things, all evil maladies, all wounds which are in this flesh (*ha*) on all these limbs.’

“The remainder of this formula is neither so well preserved nor so intelligible. The rubric at the end of the chapter—not, however, written in red—states as follows (Fig. 4):—

[See Fig. 4, on next page.]

Dr. Birch goes on to say:—

“The whole expresses:—

‘This cure was discovered at night by the hand of a minister of the temple of the goddess who happened to go into the Hall in the temple of the city of Tebmut in the secret places of that goddess. The land at the time was in darkness, but the moon shone on that book all over it. He [it] was brought as a valuable treasure to His Majesty King Cheops.’

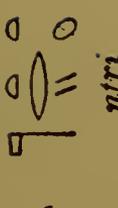
“The Papyrus, however, is not of the age of this monarch.”

* The 21st Dynasty is put down as extending from 1100-966 B.C.



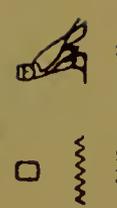
kamut *utā* *pn* *trh* *m* *hau* *m* *ush*

Was found this at night happening to go in hall



nt *at netr* *Tbnut* *n* *ntri*

of the divine abode in the city of Tebmut in the secret places of goddess



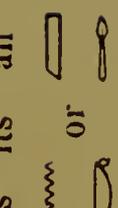
tn *tut* *karhb* *n* *ru per* *pn* *astu* *ta* *pn* *m*

that by the hand of a minister of temple that lo! land that was in



kku *an* *aah* *ubnj* *hr* *xai* *tr* *hr* *s* *nbt*

darkness was the moon it shone upon book that on sides its all



annut *s* *m* *bait* *n* *xru* *su* *xb* *xju* *or* *maxru*

was brought it in the treasure of the majesty the king Cheops justified

FIG. 4

Translation into hieroglyphs, phonetics, and English of part of the British Museum Medical Papyrus as rendered by Dr. Birch from the Hieratic writing.

Dr. Birch discusses the name construed by him as "Amenophis III," and says:—

"It proves that the Papyrus is not only later than Cheops, but also not so old as Amenophis III, as the perfection of the mode of cure in the days of Amenophis is alluded to as something of a past age; and the script of the Papyrus, much better than that of Berlin, more resembles that of the Leyden Papyrus, consequently making the document, as already stated, of a more recent age. The mode of treatment of the days of Cheops and Amenophis III considerably differed. In the time of Cheops the gods were invoked to cure the disease, and the physician exorcised the malady he wished to cure or eradicate. In the days of Amenophis III he also repeated certain formulæ over the patient, but the progress of knowledge called the use of drugs to aid the fetichism. Some of these formulæ were in a foreign language, apparently a Semitic one."

THE "FINDING" OF ANCIENT BOOKS.

The passage in this Papyrus here translated (Fig. 4) presents a considerable resemblance to the first four lines of page 15 of the Berlin Medical Papyrus (Fig. 3), as indicating quotations from older documents found in the temples of the gods. This process of "finding" a book is also mentioned in the Ebers Papyrus, at page 103 of the Papyrus, or page 185 of Joachim's translation:—

"Beginning of the Book for expelling the U χ edu in all the limbs of a person, as it was found in a writing under the feet of the god Anubis in the city of Letopolis; it was brought to His Majesty the King of Upper and Lower Egypt, the deceased Usaphais."

It has been suggested that this "finding" of ancient books in the temples has some resemblance to the "finding" of the Book of Deuteronomy. Professor Cheyne, in his little treatise on *Jeremiah: His Life and Times* (London, 1888, chapter vii, note at end), after referring to the "findings" mentioned in the medical papyri, goes on to say:—

“It is too much to believe that the priests and learned men of Egypt were so ignorant of their own literature as to discover these important works by a pure accident. It is much more probable that it was a conventional fiction of the priestly class to say that a book has been ‘found’ in a temple when it was wished to affirm and inculcate its sacred and authoritative character with special emphasis. May there not, then (considering the other traces of an acquaintance with Egypt in the book), be an imitation of this custom when Deuteronomy xxxi, 26, makes ‘Moses’ say:—‘Take this book of torah, and put it by the side of the ark of the Covenant’? The position assigned to the law book beside the ark (in a box of some kind, we must suppose) corresponds to that of the ‘coffer of books at the feet of (the Egyptian god) Anup.’ Deuteronomy does not, indeed, bear the title ‘found in a coffer beside the ark;’ but Hilkiah, in the narrative of 2. Kings, says that he found the book in the temple.”

MEDICAL FRAGMENTS, EGYPTIAN AND BABYLONIAN.

In addition to the three medical papyri already referred to, there are various other writings having more or less relation to medicine.

In Duemichen’s “*Fleet of an Egyptian Queen from the 17th Century before our Era*,” Leipzig, 1868, we find at page 3:—“Instructions for the preparation of the incense spices of first quality for which take I Hin of the Mastic which is used for the anointment of the divine limbs,” &c. Such formulæ have certain relationships with medical prescriptions.

In the *Papyrus de Turin*, by Rossi and Pleyte, Leide, 1869-1876, we have on Plate 34, and pages 48 and 49, “Liste l’onguents du temps de Ramses IX.”

C. Leemans, *Monumens Égyptiens du Musée d’antiquités des Pays-Bas à Leide—II Monumens Civils*, Leide, 1846. In his great work there is a *fac simile*, and an abstract in French, of Papyrus 1.345; this contains some remedies for diseases. The following incantation is of special interest, and

has been referred to by M. Chabas. It occurs on page 66, Plate 128 :—

“Fall on the dust O Samauna ! Yes . . . open your mouths O vessels of Men son of Men-t ! Throw out the A'ku which is in you ! For I do not speak to every kind of vessels : I speak to the vessels which have received the A'ku. Yes, you remain inert (?) on the ground : Yes Phra shall say ‘O Samauna die !’ Yes the Hathors shall say to Samauna ‘Depart !’” *

On Plate 131, in the same Papyrus, the editor says there is a sudden change ; instead of magical cures, there are actual receipts, prescribing different substances in definite doses for the cure of diseases ; amongst these remedies the names of honey and nitre are recognisable. In the same volume, Leemans gives an account of the Papyrus 1.348, containing formulæ for cures by means of incantations.

W. Pleyte, *Étude sur un Rouleau Magique du Musée de Leide. Traduction analytique et commentée du Pap. 348 revers*, Leide, 1866 ; this gives translations of various incantations used in connection with disease.

Mariette-Bey (Auguste), *Les Papyrus Égyptiens du Musée de Boulaq. Publiés en fac simile. Tome premier, Papyrus No. 1-9*, Paris, 1871. Papyrus No. 6 (Plates 33-35) has some medical interest : the editor gives in a few lines an account of it. It was found at Assassif (Thebes) under the head of an unnamed mummy. The place of finding has some importance in connection with the finding of the Ebers Papyrus there. This Boulaq Papyrus, No. 6, contains medico-magical formulæ, and the beginning of each receipt is indicated by some words written in red.

C. Leemans ; *Papyri Græci musei antiquarii publici Lugduni-Batavi, Tom. ii*, Lugd. Bat. 1885 ; this contains

* “Tombe sur la poussière ô Samauna ! oui . . . ouvrez vos bouches. vaisseaux de Men (fils) de Men-t ! Ejaculez l'A'ku, qui est en vous ! car je ne parle pas à toute espèce de vaisseaux ; car je parle aux vaisseaux qui ont reçu l'A'ku. Oui, vous demeurez inertes (?) sur le sol : oui, Phra saura dire : ‘O Samauna, meurs !’ Oui, les Hathors sauront dire à Samauna ‘Sors !’”

the Greek text and Latin translation of Papyrus V, catalogued as 1.384, which has some bearing on medicine.

Zoega published a transcript of a Coptic MS., evidently a fragment, which is said to deal with fevers, &c., but I have not seen it.

Before concluding this brief survey of Ancient Egyptian Medicine, one naturally asks for any indications of contemporary medical records in other countries, to compare with those already discussed. The influence of Egyptian medicine on the Hippocratic School has already been referred to, but Hippocrates and his school belonged to a subsequent epoch.

The following is said to be the only known specimen of an Assyrio-Babylonian prescription; it is copied from the *Records of the Past*, vol. xi, London, 1878 (W. A. I. iv, 26. No. 7); no approximate date is given by the translator, but we know that Egypt and Assyria had much in common:—

- “(1) For the eruptions and tumours which affect the body :
- “(2) Fill a vase which has held drugs with water from an inexhaustible well ;
- “(3) put in it a shoot of—a——reed some date sugar, some wine, some bitter hydromel ;
- “(4) add to it some——unki zaribu ;
- “(5) saturate it with pure water (and)
- “(6) pour upon it the water of the (sick) man ;
- “(7) cut reeds in an elevated meadow ;
- “(8) beat some pure *date sugar* with some pure honey ;
- “(9) add some sweet oil which comes from the mountain (and) mix them together ;
- “(10) rub (with this ointment) the body of the (sick) man seven times.”

