ANCIENT EGYPTIAN MEDICINE.

[A BIBLIOGRAPHICAL DEMONSTRATION¹ IN THE LIBRARY OF
THE FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW,
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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,² 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.

	Authorities.	Dates.
1st Egyptian Dynasty.....	Brugsch	4400 B.C.
Khufu, or Xufu, or Cheops 4th Dynasty.....	Brugsch	3733 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.....	Birch (20th— 22nd Dynasty)	About 1100 B.C.
Herodotus.....		Born 484 B.C.
Hippocrates.....		460—357 B.C.
Septuagint Version of the Bible.....		From 280 B.C. down- wards
Diodorus Siculus.....		Time of Augustus
Celsus.....		Cæsar
Galen.....		Time of Augustus
Clement of Alexandria.....		Cæsar
		128 or 130—200 A.D.
		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.³ 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

¹ 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.

² 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.

³ Prosperus Alpinus, *De Medicina Egyptorum*, Editio Nova, Lugd. Bat., 1719. Hermannus Conringius, *De Hermetica Medicina*, Libri Duo, Helmest., 1689. O. Borrichius, *Hermetis Egyptorum et Chemicorum Sapientia ab Hermann Conringii Animadversionibus Vindicata*, Hafniae, 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 *Disquisitions* are mentioned in the text. *Clemens Alexandrinus, Stromata*, Lib. vi, Potter's Edition, vol. ii, p. 738.

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 Millar⁴ 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 following 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 hkewise 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.⁵

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 word used *ἐνταφισταῖς* means "entombers"; in the Hebrew the word has a different meaning, and is elsewhere translated *iarpós* in the Septuagint. The following extract from Dr. Sargent's article⁶ may be interesting; for this criticism he says "he was indebted to a learned friend."

The word Ha-rô phœ-em is from the root Râ phâ, *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 *iarpós*. 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 *ἐνταφισταῖς* 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."⁷

⁴ *Disquisitions in the History of Medicine*, Edinburgh, 1811, p. 261, note.

⁵ 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.

⁶ 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."

⁷ "Observations on the State of Medical Science in Egypt, Ancient and Modern," *Dublin Journal of Medical Science*, vol. xx, p. 81, Dublin, 1842.

⁸ We need not go beyond our own city for evidence of the connection which existed between our profession and the embalmers. Our own

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 in 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,⁹ 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:¹⁰

There is in *Diodorus Siculus*¹¹ 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 *yar-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 *yar-heb*. In the Rhind Papyrus, before quoted, it is written, "preserved is the body by the *yar-heb*, who is thoroughly acquainted with the science of embalming." From other passages in Egyptian writing, we learn that these *yar-hebs* were priests, sacred scribes, men of high character, physicians, to whom even magical powers were ascribed, for the breath from the mouth of a *yar-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 *yar-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 inscrip-

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 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).

⁹ See Wilkinson, *Manners and Customs of the Ancient Egyptians*, London, 1878, vol. iii, p. 474; also Fuschmann, *History of Medical Education*, London, 1891, p. 23.

¹⁰ *Anatomical and Medical Knowledge of Ancient Egypt* (abstract), Royal Institution of Great Britain, March 5th, 1886.

¹¹ 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 passage from Herodotus (Book II, § 88-89) 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.

tions 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.¹² 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 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:¹³

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, etc. 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 before it had ceased to be spoken it had ceased to be written in its original form of hieroglyphs, etc., 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:¹⁴

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

¹² Dr. Young's papers, letters, etc., on this subject are contained in vol. iii of his *Miscellaneous Works*, edited by John Leitch, London, 1855. They extend to 475 octavo pages.

¹³ 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 Cyclopædia*, 1890.

¹⁴ *Dwellers on the Nile*, p. 44.

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 them into old Phœnician, and lastly into Greek.¹⁵ 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, etc.

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 facsimile 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, nowadays, 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:¹⁶

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.¹⁷

M. Chabas, in a chapter entitled "La Médecine des Anciens Égyptiens—Antiquité des Clystères—Signes de la Grossesse," says:¹⁸

"We know that the use of clysters goes back to remote antiquity. Dioscorus 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."¹⁹

¹⁵ See an interesting table in *Chambers's Cyclopædia*, Edition 1888, Art. Alphabet.

¹⁶ *Dwellers on the Nile*, London, 1891, p. 41.

¹⁷ *Natural History*, Book 8, chap. 27, Holland's Translation, London, 1834. The like device to this, namely, of clysters, we learned first of a fowlin 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 dounge and excrements of meat, and so purgeth and clenseth her body.

¹⁸ F. Chabas "Mélanges Egyptologiques" (1ère série), Paris, 1862, p. 66.
¹⁹ 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

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 Medizin*, 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 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,²⁰ nor J. Rosellini,²¹ adduces any picture which testifies to amputation. Perhaps the absence of the left arm of the god Chem or Mim points to this,²² 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;²³ it has been edited by him, and issued in facsimile 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.

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," probably of a coarser variety. Papyrus was termed *byblus* in Latin.

On some of the pages of the facsimile 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."²⁴

THE EBERS PAPYRUS.

I will now give an account of this celebrated Ebers Papyrus by Joachim,²⁵ who has published the first complete translation of it, page by page.²⁶ 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.

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.

²⁰ *Denkmäler aus Aegypten und Aethiopien*, Berlin, 24 Bände.

²¹ *I Monumenti dell' Egitto e della Nubia*, Pisa, 1832, 4 vol.

²² Champollion, *Pantéon Egyptien*, Paris, 1824, pl. iv.

²³ *Papyrus Ebers: Das Hermetische Buch über die Arzneimittel der alten Ägypten in Hieratischen Schrift*. Herausgegeben, mit Inhaltsangabe und Einleitung versehen von Georg Ebers. Mit Hieroglyphisch-Lateinischem Glossar von Ludwig Stern. 2 vols. Leipzig, 1875.

²⁴ Wilkinson, *Manners and Customs of the Ancient Egyptians*, new edition, London, 1878, vol. ii, p. 180.

²⁵ *Papyrus Ebers: Das Älteste Buch über Heilkunde aus dem Ägyptischen zum erstenmal vollständig übersetzt*, von Dr. Med. H. Joachim, Berlin, 1890.

²⁶ Professor Macalister says that there is a partial translation into Norwegian by Professor Lieblein.

In his introduction Joachim says:

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 to 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 110.²⁷

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-gerh-Rä, gave rise to great difficulties in the deciphering. From the data 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,²⁸ 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 after Christ and is considered one of the best authorities on Egypt, relates that 42 Hermetic books existed there, 38 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, etc. 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 "gem-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 28, 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 "gem-sen."

There is no doubt that the papyrus has been actually used; slight inaccuracies in the text have been corrected, consequently, I believe, on its use—sometimes, indeed, with later 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. Maspero²⁹ 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 someone 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 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 Joachim³⁰ is here followed. The rubrics, which should appear in red, are indicated here by the use of italics.

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 Het äät, 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 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

²⁷ 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."

²⁸ *Stromata*, lib. vi.

²⁹ 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.

³⁰ *Papyrus Ebers: Das älteste Buch über Heilkunde aus dem Ägyptischen zum erstenmal vollständig übersetzt*, von Dr. Med. H. Joachim, Berlin, 1890.

Fig. 1.

plainer. The rubric at line 7, the beginning of the book, etc., is in red; also at line 11, another for the diseased belly, is likewise in red; the quantities ordered, $\frac{1}{2}$ drachm, $\frac{1}{3}$ drachm, etc., are also in red, apparently to make them stand out more plainly.

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: *behui* plant mixed with vinegar, to be drunk by the person (the patient). The same for the belly which is diseased; cummin $\frac{1}{2}$ drachm; goose fat $\frac{1}{3}$ drachm; milk to 0.6 litre; boil, pour out, and eat. The same: Pomegranate flour, $\frac{1}{2}$ drachm; sycamore figs? $\frac{1}{3}$ drachm; sweet vinegar (beer) 0.6 litre; as above.

Fig. 1 represents the first column of the lower half of the second page of the Ebers Papyrus in the hieratic writing; this is reproduced by photo-zincography, the exact size of the original; the red colour of the rubrics, however, is not given.

Fig. 2 represents the same portion up to line 14, rendered from the hieratic into hieroglyphs, with an interlinear

7) a.
 Anfang des Buchs von den Arzeneien

8) a.
 Zu beseitigen die Krankheiten im Leibe

10 9) a.
 τωδε (planta) durchrühren (kneten) mit Essig

10) a.
 zu trinken von der Person (dem Patienten)

11) a.
 15 desgl. für den Bauch, der krank ist

12) a.
 τανν cuminum $\frac{1}{61}$ Drachme

13) a.
 Schmalz der Gänse. $\frac{1}{3}$ Drachme

14) a.
 20 Milch $\frac{1}{2}$ = $\frac{1}{2}$
 (zu 0,6 Liter)

Fig. 2.

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.

[To be continued.]

PRESENTATION.—Dr. James Munro, of Moffat, was on March 21st entertained at dinner and presented with a silver ancient punch bowl, a jug, and fruit dishes, by his friends in and around Moffat, on the occasion of his retiring from practice after forty-four years.

MEDICAL MAGISTRATES.—The name of Mr. W. L. Winterbotham, M.B.Lond., Senior Surgeon to the Bridgwater Infirmary, has been added to the Commission of the Peace for the county of Somerset. On the recommendation of his Grace the Duke of Leinster, Dr. M. J. Kelly, Castledermot, has been appointed a justice of the peace for the county of Kildare.