of chest, without any bronchitic or pneumonic complication that I could discover, a case indeed precisely similar to Allen's, but much more severe.

Viewing Walsh's case in connexion with such cases as those just detailed, it seems, as I have said, not improbable, that an attack of the epidemic, a few days before his death, may have produced a pleuritis, which in his shattered constitution ran rapidly and unfelt to its fatal termination ; and certainly under all the circumstances, in the present state of our knowledge in reference to latent diseases, we would not be justified in adopting unreservedly the opinion, which probably first suggests itself to every one, that this affection had originated five or six weeks previously.

ART. IV.—*Observations on the State of Medical Science in Egypt, ancient and modern.* By RICHARD STRONG SARGENT, M.B., Member of the College of Physicians in Ireland, Physician to the Sick Poor Institution, Dublin Female Penitentiary, &c.

[Read at the Evening Meeting of the College of Physicians, in March, 1841.]

EUROPE and Asia in all modern ages have gloried in a social condition immeasurably elevated above what obtained in Africa ; yet from the most permanent of traditional records, religious rites, and from the most unchanging of social arrangements, such as the institution of castes, and from the ascertained origin of the pure and mixed sciences, it is rendered more than probable that the germs of civilization, in whatever degree of expansion they now exist in the more favoured portions of the globe, have been received by them from an African source, that source is Egypt. This country, in whatever aspect it be viewed, possesses an interest peculiar and distinct from that of every other nation. The shadowy grandeur of its primeval civilization, the memory of which has been preserved, not by vague and fabulous traditions and fantastic legends, which bear along

with them their own refutation by their absurdity, but by stupendous works of art, of which, if some are mere monuments of vastness of design, and miracles of architectural performance, others are most assuredly records of a high degree of social and national advancement ; the splendour of its old military renown ; the strange admixture of scientific truth with barbaric ignorance and degrading superstition exhibited in its institutions ; its frequent connexion with the chosen people of God, either as friends and allies, or as enemies and persecutors ; its being so largely identified with prophecy ; nay, even the mere physical peculiarities of its situation, soil, and climate ; all these considerations unite in giving to the land of Egypt an interest and an importance which can belong to no other region of the world. Does the philosophic historian and antiquarian endeavour to retrace the progress of national and social development, as at present existing in the most civilized nations of Europe and of Asia ? He is conducted, on the one hand, through the middle ages of European history to the Roman and Grecian social constitutions, and thence to the valley of the Nile, as the source of the wisdom exhibited in the institutions of a Cecrops, an Inachus, a Pelagus, and a Cadmus. Nor was it merely by these primitive colonists that Greece became enlightened by the proverbial wisdom of Egypt, but from the same source did its greatest legislators, historians, and philosophers derive those stores of information, which, combined, adorned, and reflected by Grecian genius, conferred such glory on their country, and such imperishable renown upon themselves. I need only refer to the names of Lycurgus, Solon, Pythagoras, Plato, and Herodotus. Nor is there less convincing evidence of the eastern forms of civilization having been originally derived from an Egyptian origin, but the details of this evidence were unsuited to the present occasion. In like manner, if the mathematician, the astronomer, or the physician, revolve back the records of his favourite science, to discover its first dawnings, he will find them to be ultimately derived from the same fertile source of mental

and practical philosophy. And this consideration leads me to the immediate object of this essay, which is to lay before the College some brief observations on the state of medical science in Egypt at the more remarkable periods of the numerous dynasties which have existed in that marvellous land.

The duties of the legislator, natural philosopher, religious teacher, and physician, were in the earliest ages, of perhaps all nations, combined in the person of the same individual or class of individuals; hence the knowledge acquired by them, and transmitted unchanged, and frequently unimproved, to their successors, was strangely confounded and corrupted. This was particularly the case with the ancient Egyptians; their priesthood propounded laws, regulated the calendar, exercised the mathematical arts that the physical peculiarities of the country rendered necessary, regulated the religious belief and ceremonies, and practised the healing art. Thus the magical mysteries of their theology became mixed with their medicine; and in the brief notices of them which have been transmitted to our times, the subjects are so mixed, that it is not easy to separate the one from the other; nor is this matter of mere induction, but it is expressly declared by the scholiast on the Tetrabiblos of Ptolemy, "that their ancient books did not treat separately of medicine, astrology, and religion, but of all these together."

In the tomb of Osymandias, at Thebes, was deposited a library containing, according to Diodorus Siculus, 20,000 volumes; this is probably the first collection on record, and it contained amongst other works the forty-two books said to have been written by Thoth, the minister of Osiris, and the inventor of many of the arts and sciences. To enter into an account of the antiquarian researches regarding this personage would be out of place, but he probably was the same as the Hermes Trismegistus of the Greeks. The treatises in question were probably the compilation of centuries, (as it was usual to promulgate every addition to science under the same title), and were denominated "*embre*," or "*scientia causalitatis*." This primitive encyclo-

pædia, as it may well be called, contained the digest of knowledge from which the priesthood were instructed in theology, abstract and ritual, politics, jurisprudence, astronomy, cosmogony, geography, physical and mathematical, as far as referred to Egypt, education, poetry, and music ; and to conclude, the six last books treated of anatomy, the practice of medicine generally, the instruments of surgery, pharmacy, diseases of the eye, and those of women ; the different parts of this code were entrusted to different sections of the priesthood, the medical portion, being committed to the care of the inferior order called "*Pastophori*,"* who were the practical physicians superintending the administration of drugs, and the performance of operations. But what were deemed the higher branches of the art, the prophesyings, as they were called, and the magical rites which accompanied the remedial measures, were reserved to themselves by the higher order of priests. To discover the details of practice were now a vain inquiry ; according to Aristotle, no treatment was attempted until after the fourth day of the illness ; the physician then proceeded to prescribe according to the rules of his written code, from which, if he deviated, he was liable to suffer death in case the patient died.† This arrangement was perhaps a salutary one, in a semibarbarous age, when "an act of uniformity," as it might be termed, in medicine, was necessary to preserve whatever light and knowledge already existed, and to prevent the frequently unprincipled experiments of barbarous quackery. But it must also have produced as a necessary consequence, that the science could not receive any practical improvements from a more extended experience, and must degenerate into a mere routine, unintellectual art ; and such appears to have been the fact. At the period of the reign of Sesostris primitive Egypt appears to have reached the summit of its military, social, and literary renown ; but the

* For a particular account of the divisions of the Hermetic volumes and their subjects, with the partition amongst the priesthood, see Clemens Alexandrinus, Strom. lib. vi.

† Diod. Sic. lib. i.

absurd notion of their having arrived at the *ne plus ultra* of civilization, procured the enforced obedience to their then written code, thus insuring, not their stationary position, for this may be as impossible a condition for nations as for individuals, but a gradual declension.

The jurisprudence of the record referred to was of a very advanced character, some of its provisions were touching questions, which are now denominated medico-legal, and may be mentioned here. Women who were pregnant at the time of conviction of capital crimes, were not executed until after their delivery. Sanatory laws were enforced, and an accurate register was kept of births and deaths, with the causes of the latter, by officers specially appointed for the purpose. The Egyptian physicians possessed a renown that extended to the surrounding nations, and Homer has recorded the medicinal virtues of the plants of Egypt and the skill of her practitioners, in the following lines :

Αἰγυπτίῃ τῇ πλεῖστα φέρει ζείδωρος ἄρουρα
 Φάρμακα, πολλὰ μὲν ἐσθλὰ μεμιγμένα, πολλὰ δὲ λυγρά.
 Ἴητρος δὲ ἕκαστος ἐπιστάμενος περὶ πάντων
 Ἀνθρώπων· ἥ γὰρ Παιήονός εἰσι γενέθλης.

And at the time of the visit of Herodotus, about 450 years before our era, he describes Egypt as abounding with physicians ; and he states, that each devoted himself to the treatment of a distinct class of diseases, attending to the head, to the teeth, the eyes, abdomen, or what were denominated secret disorders, (*α φανεων νουσων*). Surgical operations were studied as a separate branch of the art. If we compare this statement with the division of the science in the Hermetic volumes, we cannot but remark the strict analogy between the division of labour in those distant times, and what obtains at the present day in the most civilized European countries. There was one peculiarity in the condition of the faculty of primitive Egypt which, by its members at least, would be deemed an improvement even in this forward age, which was, that each recognized physician

was allowed a public provision made for them by law, this did not prevent them from receiving fees for their attendance on the sick, except in two instances, when they attended travellers taken ill whilst on a journey, or any one connected with the military class or order. *

Some general idea of the Egyptian practice has been preserved by Diodorus Siculus, who derived his materials from Hecataeus, an officer of Alexander's army, who visited and minutely described the institutions of Egypt in the reign of Ptolemy Soter. They generally prescribed evacuations, which they effected either by emetics, cathartics, or by injections; fasting was frequently prescribed, as they deemed the greater number of diseases to be derived from the effects of repletion; habitual purging at regular intervals was also very common; but all those modes of treatment were accompanied in cases of urgent illness by magic rites, as I have before stated. Dreams were regarded in Egypt with religious reverence, and the prayers of the devout were rewarded by the gods with an indication of the remedies their maladies required; but this and probably magic ceremonies were resorted to as a last resource, when the skill of the physician appeared baffled. A similar superstitious feeling induced them to offer *ex votos* in the temples. These were of various kinds, some promised a certain sum for the maintenance of the sacred animals belonging to the deity, whose interposition they solicited, which in the case of children, was decided by weighing a certain portion of the hair of the head, either the whole or one-half or one-third, shaved expressly for this purpose, and as soon as the cure had been accomplished, they performed the vow by giving an equal weight of silver to the curators; these persons travelled about advertising by placard, the virtues and kindness of their own deities,† and, no doubt, the spontaneous termination in health of numerous affections, gave renown to deities represented by

* Diodor. Sic. lib. i.

† See Wilkinson's *Arts of the Ancient Egyptians*, vol. iii.

apes, birds, and reptiles at that time, as it has since done to universal elixirs, infinitesimal doses and zoomagnetic manipulations, the absurdity of which can only be surpassed by the simplicity and credulity of the believers in their virtues. Some of those *ex voto* offerings have been discovered by modern research. A hand and forearm of ivory, supposed to be of this origin, is in the collection of Mr. Salt ; a tablet also has been found with an ear, and certain rude figures of acoustic or surgical instruments engraved on it, which was probably an offering for the relief of some disease of that organ.

It has been stated, that one of the Hermetic books relating to medicine, contained a treatise on anatomy, and it has been asserted by Pliny, that their kings ordered dissection for the purpose of throwing light on disease, (for the study of medicine was not considered beneath the dignity of the sovereign himself. Galen alludes to a treatise on this science by one of the kings ; this might occur from the frequent elevation of one of the priesthood to the throne). Many other statements are made, which at first sight would induce the inquirer to suppose that practical anatomy was cultivated generally by the "*Pastophori*;" but from all the evidence at present before us, I fear we are scarcely justified in positively concluding, that dissection, properly so called, was practised in Egypt during the Pharaonic period. Of the contents of the Hermetic books on anatomy we can know nothing, and the existence of their theological and astrological anatomy does not make it probable that the true knowledge of the subject had a real existence. The practice of embalming is too interesting a subject to be omitted whilst on this question, particularly as some antiquarians deem it in some degree a proof of the practice of anatomy ; now to me it seems to militate against the practice. The veneration in which they held the dead body, and their metaphysical speculations on the future destinies of man, led to the practice, and would naturally prevent the habitual custom of useful practical dissection ; indeed, such was their abhorrence of any one who injured a

dead body, that the individual who made the necessary incision by which the thoracic and abdominal viscera were extracted, was pursued by all present as the object of execration. The mode of embalming has been so frequently described that it is enough to state, that through an incision made in the left flank, the contents of the abdomen and thorax were extracted, and the contents of the cranium were removed by introducing hooked crotchets through the nostrils, and breaking down the cribriform lamella of the ethmoid bone, by which the brain and membranes were withdrawn without defacing the external features; this custom might prevent some gross ignorance as to the number, size, &c., of the viscera, but most assuredly it was not by such dissection that the splendid discoveries in anatomy were made in the Alexandrine school, under the Ptolemies.* A question has been raised, *whether the embalmers were physicians or not?* and a writer in the Encyclopædia Metropolitana asserts, that the argument founded by the learned Warburton on the passage in Genesis, where “*Joseph commanded his servants the physicians, to embalm his father, and the physicians embalmed Israel*,”† cannot be maintained, as it is founded on a wrong rendering of the original, the Septuagint translating the word we term “*physicians*” by *ενταφιασταις*, “*entombers*” or “*undertakers*.” To decide the question by a reference to the original I am indebted to a learned friend for the following criticism :

“The word *חַרְפְּאִים* (*Ha-rō-phē-eeem*), is from the root *רָפָא* (*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, namely, JER. viii. v. 22, where we read that well-known sentence, “*Is there no balm in Gilead? is there no*

* For an accurate collection of all the ancient and the best modern accounts of embalming, see Pettigrew on Mummies.

† Genesis, c. l. v. 2.

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 *ιατρος*. We are surely then justified in concluding from the use of the word in the other parts of Scripture, and from the light thrown on the version by the original, that the LXX. meant by the word *εταφιασταις*, a peculiar office of some of the *physicians* of Joseph's household."

As I have alluded to the Egyptian theological or astrological anatomy, I will give a few from amongst the divisions of the human frame, and the heavenly powers or other deities that they are held sacred to, and under whose immediate protection they were considered to be. These examples are taken from the exposition which has been made by Champollion, from the "Book of the Manifestations," found in connexion with their mummies. The head was consecrated to Phré, the sun; the eyes, to Hathor, or Venus; the left temple, to the living spirit of the sun; the nose and lips, to Anubis; the neck, to Isis; and arms, to Osiris; the genitals to Osiris and the goddess Kopt, &c. &c. The question arises, was this the "anatomy" of the Hermetic volumes, from which the Pastophori were instructed in that science? Another presumptive proof of the cultivation of true anatomical knowledge is, the performance of operations; but these have been performed to some extent in all ages, however ignorant; we read of a few operations in the notices of ancient Egypt; but so vague are the statements transmitted to us, that no light is thrown on the question at issue. Ophthalmia has been endemic in Egypt in all ages, and the greatest of her princes, Rameses the Second, or Sesostris, became blind, and, unable to endure the privation, he committed suicide. His son and successor, Pheron, was more fortunate, he was blind for eleven years, and his sight was restored by operation; but the exact nature of either the disease or operation cannot be known.

The period of the Persian dynasty in Egypt was manifestly one of decline; yet the knowledge of her priesthood, and the

fame of her former grandeur, continued to draw the greatest minds of other countries to seek in Egypt the highest knowledge of their separate studies which the world at that time afforded. It was in the reign of Nectanebo I., about 337 years before Christ, that Eudoxus, the astronomer, Chrysippus, the physician, and Plato, the philosopher, visited Egypt; and these were at the head of their several schools in Greece. Both the illustrious Cyrus and Darius sent to Thebes to demand the assistance of its renowned physicians.

But whatever doubts rest on the subject of practical anatomy in Egypt during the Pharaonic and Persian dynasties, they are dissipated when we turn to the brilliant revival of science under the auspices of the first Ptolemies. The schools which were immortalized by the precision with which the obliquity of the ecliptic was established, by the measurement of a degree on the earth's surface, and by the demonstration of the precession of the equinoxes, were not less renowned for the cultivation of anatomy, clinical medicine, botany, chemistry, and toxicology. And the names of Erasistratus, Herophilus, Serapion, and Dioscorides, are still looked on with the deepest veneration by the cultivators of these sciences in the present day. Connected with them we have the most brilliant discoveries in anatomy; for instance, the lacteals of the intestines, and the ventricles of the brain, particularly the fourth; and the sinuses of the dura mater, combine their streams in that venous reservoir, still called from its discoverer, Torcular Herophili. This philosopher was said by Tertullian to have dissected not less than 600 subjects. The name of Serapion has been placed at the head of the empiric sect; and from his disregard of some of the crude physiological hypotheses of his day, he has been accused of empiricism in its worst sense; but, I believe, falsely; the old Egyptian practice was cautious and expectant, he seems to have studied it, and to have trusted more to observation at the bed-side, than to preconceived doctrines. I would place him at the head of clinical medicine. He was one of those who rested the whole science on what was termed by Glaucias, the tripod of medicine, viz., *obser-*

vation, history, and analogy. He even violently opposed anatomy, for the purpose of gratifying the superstitious prejudices of the Egyptians, who deemed it sacrilegious to touch a dead body.

Dioscorides, although a Cilician by birth, pursued his studies in Alexandria, and became physician to Cleopatra. His name has been associated with botany, and he considerably enlarged the bounds of that science. The number of species described by him exceeds 600, more than double those known to Hippocrates; but he did not confine his researches to plants, he wrote on minerals and their uses in medicine; on poisons and their antidotes; and his prescriptions may be denominated the first pharmacopœia.

Before we come to more recent times, it is impossible to leave unnoticed the impulse given to science by the establishment of the Alexandrine museum and library. The abstract, the mixed, and the sciences of pure observation, seemed for the first time to be cultivated, systematically, on their proper foundations; and whilst imagination and fanciful invention were excluded from their august temples, these latter faculties were cherished in their proper positions: poetry and rhetoric were cultivated; the richest monuments of Grecian genius were copied, studied, and preserved; and to the same school we are indebted for one of the most valuable legacies of ancient literature, the Septuagint translation of the Old Testament. These are the peaceful achievements which shed the most undying as well as the brightest glory round the memory of the first Ptolemies, and which will cause them to be venerated as the benefactors of mankind, when the memory of the mere conqueror will be blotted out or retained as the subject of execration, for the wholesale extermination of his fellow-men.

The Alexandrine library was three times destroyed, first during the civil wars of Cæsar, when it was restored by Antony; next during the religious wars under Theophilus, Archbishop of Alexandria; and finally by Amrou, the enthusiastic general of Omar. I may incidentally mention, that this last

destruction, though bewailed by every modern historian, and the literati of all Europe, has been doubted by Gibbon : however he consoles himself for the loss to literature, if it were true, by the sage reflection, that by becoming fuel for the public baths, the theological controversial writings of the preceding centuries were, at length, destined to be of some service to mankind. But this is not the only instance in which the philosophic historian was sunk by Gibbon for the gratification of uttering the only argument against Christianity which he well knew was unanswerable—a sneer.

Amongst the varied labours of the museum it is rather a strange fact, that we do not find the elucidation of the hieroglyphic literature of Egypt. The revival under the Ptolemies was so completely Grecian, that little effort seems to have been made to preserve the knowledge of primitive Egypt, which must then have existed. The only memorial of such an object was the publication of the ancient dynasties, by Manetho ; but neither he, who was an Egyptian who knew Greek, nor Eratosthenes, who was a Grecian acquainted with Egyptian, made known a key to those elaborate records, which existed in such profusion in the sculptured monuments of past ages ; how far these records would unfold the exact state of the abstract and practical sciences remains to be discovered, by more extensive and complete investigations than have as yet been made. Whilst alluding to this subject, I cannot deny myself the gratification of referring to the labours of a practising physician, the late learned Dr. Young, and claiming for a member of our profession, what has been pronounced by competent authority, “ the greatest effort of scholarship and ingenuity which modern literature can boast,” the deciphering the inscription on the stone of Rosetta ; thus furnishing a key to all the treasures of the hieroglyphic and demotic literature of Egypt, which have been or may hereafter be discovered.

As so much light has been thrown on the arts, habits, and civilization of the ancient Egyptians from the publication of the

pictorial representations on their monuments, it might naturally be expected, that our inquiry into the practice of the healing art would be much facilitated by their examination ; but although their arms, armour, chariots, harness, and mode of warfare, to the minutest particular, have been vividly depicted ; although their domestic arts, their husbandry, their amusements, their toys, their ornaments, and the minutest tools of those handicraft trades have been embalmed, as it were, in those brilliant representations ; the practice of the healing art, their operations and their surgical instruments have not been so preserved. Two groups only, which bear upon this subject, have been discovered at Beni Hassan, both which seem to refer to an operation on the head or eye : these have been figured by Wilkinson in his interesting work on ancient Egypt.

It is well known in the history of the sciences, that the Arabians preserved much of the knowledge which was lost or corrupted in the declining eastern empire, and made important additions to some of them : the art of medicine was amongst those. It is not my purpose to allude to the Arabian writers, but it is natural to suppose, that Egypt, when conquered by the Saracens, became tinctured with the prevailing doctrines of the Arabian schools ; however, wars and civil commotions so harassed the country for several centuries, that medicine, *as a science*, became totally extinct. I say *as a science*, for the *art*, as practised even by those most ignorant of its principles, exhibited many traces of probably the rigid Hermetic code, the physiological dogmata of the Alexandrine or Greek period, and the lessons inculcated by the accurate Arabian writers.

The learned Prosper Alpinus, who visited Egypt in the sixteenth century, could not sufficiently admire the incongruous union of the most barbaric ignorance of the professors of the healing art, with the fragmentary traces of a deeper knowledge than Europe herself possessed, as exhibited in some of their therapeutic indications. The decadence of medical science he ascribes to the barbarism and tyranny of the Turkish conquerors,

particularly of the Mamelukes. The learned were scorned and persecuted, the schools were deserted, and when the former were driven out or died away, the latter ceased to exist for the purposes of philosophy and medicine; and Egypt became destitute of science, literature, and professors: but amidst the dearth, the ignorance, and the corruption of the art he could discover many things, to use his own emphatic language, "*Veram præclarissimorum medicorum antiquitatem redolentia*," and which he deemed worthy of being known to the most learned of physicians.* This is a condition of society so curious and interesting, that a minute examination into its gradual development would form an instructive chapter in the history of human knowledge, and analogous conditions might probably be found for illustration, at the present day in the east: time, however, would not permit the inquiry. I shall merely give a few examples of practice, which must appear wonderful amongst a people whose physicians were said to belong to a grade "*infimum atque vilissimum*," and this, not so much on account of the barbarity of the nation, as of their own profound ignorance.

Bloodletting, as one of the most important remedial agents, was largely resorted to, and was practised in putrid fevers, variola, phrenitis, angina, pleuritis, pneumonia, inflammation of all the abdominal viscera, in external inflammations, such as erysipelas, and ophthalmia, in the different forms of cynanche, external tumours, convulsions, epilepsy, and hæmorrhages; the catalogue might be extended, but it was not the universal adoption of this remedy that is most worthy of remark, but their various modes of performing the operation; these were varied according to the disease, its seat, and its severity, and were *venesection*, *arteriotomy*, *local scarifications*, and *cupping*. In venesection, they did not confine themselves to the veins of the arms, but, according to the seat of the disease, opened the frontal veins, those at the angles of the eye, the jugulars, those of the

* Prosper Alpinus de Medicina Egyptorum, lib. i. ch. 3.

arms, and the lower extremities ; in inflammation of the mouth and throat, they opened the ranine veins. But their boldest operation was the section of numerous arteries. In the present day, the branches of the temporal are alone opened ; but the Egyptian surgeons without hesitation bled from the temporal, the auricular, the occipital, and the termination of the radial, or, as Alpinus expresses it, that artery of the hand which is placed between the thumb and the index finger ; this is the more marvellous, as at the period we allude to, arteriotomy was not attempted in Europe, even by the Italian physicians.* Local scarification was much practised, particularly in the cases of infants, women, and eunuchs, who, loaded with fat, did not present a full development of the superficial veins : blood was extracted in this manner with much address, and in considerable quantity, from the lips, gums, nares, and the external passages of the ear : the lower limbs were freely scarified in certain diseases. The fourth mode of operation was by cupping ; for this purpose they used the horn of a small ox, or an instrument of a peculiar shape, made of glass : the vacuum was formed by suction through an orifice at the smaller extremity, the larger being fixed on the skin ; the scarifications were made with a single instrument, and the suction being again applied, the body of the instrument was filled with blood ; dry cupping was also practised.

The moxa was frequently used as a means of relieving deep-seated pains, in severe affections of the head, the spine, and larger joints, particularly the hip joint, and in paralysis of the muscles. They formed a pyramid of cotton wound round with a silken thread, the base was firmly fixed to the skin, and whilst the combustion was taking place, the surrounding parts were preserved from the effects of radiation ; the pyramid was made either solid or hollow to modify the eschar. I have been thus particular to show the minute coincidence of their practice with our, I may say recently introduced, mode of applying the same

* P. Alpinus, lib. ii. cap. 11 and 12.

remedy. The diseases, too, in which it was applied are precisely identical with those in which it is now deemed useful.

A frequent disease was calculus of the bladder, which they attempted to remove without incision ; this they did by distention of the urethra and neck of the bladder with graduated bougies, and the introduction of a canula, through which they effected the extraction of the stone, *broken into fragments if it were too large to be removed entire.** If it be too much to call this lithotritry, the consideration of the operation might have proved eminently suggestive. I would give the two modes detailed by Alpinus, but that I fear I have already indulged too far in those details, which, however interesting to the members of the College, may prove irksome to the unprofessional portion of my auditory.

As we have now arrived at a period in which we can collect accurate information on the physical peculiarities of the soil and climate of Egypt, and the prevailing diseases, with the treatment of each, it would be a matter of some interest to enter on those subjects with some minuteness ; but disquisitions would naturally arise of too technical a nature to be of general interest ; they would also protract this sketch beyond its proper limit ; but not to pass by altogether the subject, I shall make a few observations. Herodotus described the ancient Egyptians as being remarkably healthy : far different is the record of all later writers ; and to detail the diseases described as endemic in Egypt, would be to enumerate all those known elsewhere, with some of a peculiar malignancy all their own. Alpinus, before referred to, has a fearful catalogue ; modern research has generally confirmed his relations, and added others of which he made no mention. The same general causes are assigned, viz., the long continuance of excessive heat, the thermometer varying from 90° to 112° F., pestilential malaria, and the destructive wind called zaniel, or the simoom. Traversing the sandy deserts of

* Alpinus, lib. iii. cap. 13.

Africa, unmodified by rivers, lakes, or forests, the southern winds arrive in Egypt laden with all the noxious exhalations of the desert ; at their approach the serene sky becomes black and heavy, the sun loses its splendour, and becomes of a dim violet hue ; a light warm breeze is felt, gradually increasing in heat, till it almost equals that of an oven. Though no vapour darkens the air, it becomes so gray and thick from the floating clouds of impalpable sand, that it is necessary to use candles at mid-day ; every green leaf immediately withers ; the animal creation equally suffer ; the breathing becomes quick and difficult, the pores of the skin are closed, and a feverish habit is induced : the increasing heat pervades every substance, and water, no longer cool, is rendered incapable of mitigating the intolerable thirst by which the whole body is oppressed.

Such is the fearful account of one of the meteorological phenomena of Egypt by modern travellers ; the aspect of the country is almost as rapidly changed as the condition of its atmosphere. Volney observes, that it assumed in succession the appearance of an ocean of fresh water, a miry morass, of a green level plain, and a parched desert of dust and sand. Along with these causes, an insufficient supply of food, its frequently noxious quality, and a degree of filthiness of habit beyond all description, place the mass of the population under physical conditions perhaps more disposing to disease than those surrounding any other people. Under these circumstances we cease to wonder at the relation of the numerous severe affections occurring in Egypt. Ophthalmia, in many and obstinate forms, is all but universal ; skin diseases of peculiar malignancy and inveteracy abound ; variola has been very fatal in Egypt ; putrid fevers and intermittents are frequent ; phrenitis of great violence also occurs, so as even to destroy life in a few hours ; mania, dysentery, and rheumatism are prevalent, along with several surgical disorders, such as calculus, hydrocele, herniæ, &c. ; and to crown the whole, plague in its worst and most destructive forms. Although the older writers mention severe inflammatory affec-

tions of the chest as common in the country, Clot Bey asserts, that Egypt enjoys an immunity from those diseases, as also from consumption ; and he even proposes a residence there for patients suspected of phthisis.

To meet this mass of disease the native physicians possess neither the elementary sciences of their art, nor even the practical skill of former ages ; and the best account of Egyptian practice contains merely a record of gross and frequently disgusting superstitions. I can but refer to Mr. Lane's interesting volumes on modern Egypt. I do not of course allude to the numerous European practitioners who abound in Egypt. When the Venetians more than 300 years ago established a consulate there, it was accompanied by an Italian physician ; and since that period, Italian, French, and English physicians have multiplied, so as to become the practitioners who attend all those of station and wealth.

Fortunately this is not the last aspect in which we have to view our subject ; and I cannot better close these observations, than by giving some account of the establishment of a school of medicine at Abouzabel, under the auspices of M. Clot, a French surgeon, who has been advanced to the rank of Bey of Egypt, and colonel in the army ; and who possesses, or, at least, did possess unbounded influence over the celebrated Mohammed Ali.

The barbarism of Egypt has been often tintured and almost redeemed by some refinement emanating from the influence of previous civilization, or from the high personal qualifications of the reigning despot. On the other hand the revivals which have occurred have been characterized and stained by some features of barbarism. This was the case under the Ptolemies of old, and this has been the case in the present "*regeneration*" of Egypt, as the French are pleased to term the modern innovations under its present ruler.

It was to the faithful devotion of his Albanian soldiers Mohammed owed his rapid rise to the supreme power ; and almost every introduction of European science, and every new fiscal ar-

rangement, have been made to accomplish one ultimate object, the support and well-being of an army beyond the natural strength of Egypt, viewed in reference either to her population or her wealth ; but whatever may have been the motive which led to them, the effect of many of his innovations must finally be of incalculable advantage to the country. And none more so than the revival of pure medical science in the land where it first arose.

In his attempts to form an army regulated and disciplined according to European tactics, Mohammed discovered that he would be defeated unless he had the benefit of European *medical* as well as *military* science to organize the hygiene of the masses which were to compose his battalions. Of 20,000 inhabitants of Cordofan and Darfour, only 2000 remained alive after two years' drilling. Small-pox at first committed fearful ravages, and after that plague was stayed by vaccination, they perished by thousands without any adequate disease being assignable.

In 1825, the Egyptian agent at Marseilles proposed to M. Clot, a surgeon practising in that city, to go into Egypt to organize the service of health. He did so, and the army of course was his first care. The ignorance of the native practitioners presented the greatest barrier to the contemplated changes. A school of medicine with its hospitals, professors, and apparatus was to be created ; and this, under difficulties, which to any other than a man of bold and daring genius, would have been insurmountable. Near the ancient Heliopolis, at Abouzabal, was stationed a military force of 60,000 men ; the military hospitals there, he deemed the most appropriate foundation for the course of education of the future military surgeons and physicians of renovated Egypt. As a strong instance of the good sense of M. Clot, I may mention the fact, that he did not get himself appointed a member of the supreme council of health, which was his first care to have established ; but I shall allow him to state the position in which he found himself in his own words ; in his

address before the *Academie de Medicine* at Paris, about seven years subsequent to his first arrival in Egypt, he says :

“ I summoned to the proposed seminary the best informed of the rising generation, and 100 young Arabs were the first pupils ; new difficulties now presented themselves ; we were mutually ignorant of each other’s language ; how then, I said, were the pupils to be instructed ? I fortunately succeeded in finding in Paris three persons who understood French, Italian, and Arabic ; but these persons were ignorant of medical knowledge. I told them they should become physicians, but that they should first be pupils. I accordingly set them at work on the translating a treatise on anatomy, lessons from which were dictated to the pupils, who were afterwards examined by means of the interpreters ; but plates and wax models having failed to communicate the necessary anatomical knowledge, the dissection of the actual subject became essential ; but here almost insuperable obstacles were before us, independently of the idea of profanation of the body. The Egyptians have a theological doctrine that the dead feel the tortures to which they may be subjected ; the Pacha and the Minister of War refused to undertake the responsibility of sanctioning the practice ; at length, however, the chief of the Ulemas, a learned and enlightened man, was induced to *connive* at it ; two pupils were induced to begin on detached portions of the body, they were soon cured of their prejudices, and convinced of the indispensability of dissection ; in turn they convinced their parents and relatives, who convinced the rest of the people ; at length, from mere toleration, we were afforded actual encouragement, and finally, *Ibrahim Pacha and his Ministers of State assisted at a lecture on practical anatomy.*” Who cannot see in this brief extract the social advancement of years, perhaps I might say of centuries, crowded into a few months, through the wisdom and intrepidity, and indomitable energy of one man of genius ? The value of the pupils so educated soon was tested ; in a few years the murderous cholera burst over Egypt ; of the 260,000 inhabitants of

Cairo, 60,000 perished in less than a month; the foreign physicians fled; 150 of the pupils educated at Abouzabal were sent forth, confidence was restored by the success attending their treatment; thirty of them fell victims to their zeal; of the remainder, 100 were soon called to join the Syrian expedition of Mohammed Ali's troops, the success of which gave him his highest military renown. How much of the efficiency of those troops depended on the Arab surgeons educated by Clot Bey? but these were the successes which made the interference of European diplomacy, and finally, of British valour, necessary to preserve the integrity of the Ottoman empire, the ultimate results of which interference are still pending.

To supply the school with native professors, M. Clot deemed the best means of perpetuating its existence; and to accomplish this, a certain number of the most distinguished pupils were sent to Paris to study in the western schools, and to bring back to the East the most finished education and skill which France had it in her power to bestow. This object has been most happily accomplished, 500 physicians have been educated already; a complete school of medicine, anatomy, and pharmacy has been organized; and what was much more difficult of accomplishment, a school of midwifery and a *maternité* or lying-in hospital, have been established; the farther details on this interesting subject I would subjoin, but that I am warned by the time to conclude. It may not be uninteresting to state, that one of the difficulties to be overcome was an invasion of homœopathy; but to extinguish the pretence at once, Clot Bey gave it a fair trial before competent judges; I need scarcely add the result, that homœopathy was forced to abandon Egypt. Clot Bey is a rigid disciple of Broussais, indeed he deems the plague itself to be merely a severe form of gastro-enteritis.

In laying before the College these remarks on medical science in Egypt, and treating so large a subject so briefly, I necessarily incurred the risk of omitting many points of historical or practical interest, or of giving an undue prominence to

questions of minor importance : both of these errors I fear I may have fallen into, in my endeavour to make a selection of topics for consideration from so vast a field ; for these I have to entreat indulgence : and if I have alluded to some subjects less associated with medical than general literature, I can only offer in extenuation, the plea of the accomplished Roman advocate before a severe judicial tribunal, that, "*Omnes artes quæ ad humanitatem pertinent, habent quoddam commune vinculum, et quasi cognatione quâdam inter se continentur.*"

ART. V.—*On Partial Rupture of Nerves*. By JOHN HAMILTON, M.R.I.A.

THE following case is by no means of unfrequent occurrence :

CASE I.—A gentleman, aged about 36, of nervous temperament, while in the effort of stooping to catch a lady who was falling, felt a sudden snap as if something had given way in the sacral region, accompanied with the most violent pain, and sudden weakness of the lower extremities, so that with great difficulty he got up stairs to bed. The pain shot round the ilia to the abdomen, and down the legs, more marked on the right side than on the left. When I saw him a few hours after, he was lying in a contracted position in the bed, being unable to straighten the body without great aggravation of the pain. After some days' rest in bed, and active treatment, he got well.

On thinking over this case, I felt much difficulty in satisfying my mind as to its real nature. What had given way to cause such instant and severe pain, and such weakness of the lower limbs? The next case of a severer form points more clearly to an injury of the nervous system.

CASE II.—Mrs. R ———, a dairywoman, æt. 30, six years ago, when making a violent effort to pull down the back of a cart, the body extended to the utmost, felt something suddenly snap across in her back at the lowest part of the sacrum, a little to the left, attended with the most intense pain, and two