Introductory address on midwifery, delivered at Aberdeen University, October 27, 1869 / by Andrew Inglis.

INTRODUCTORY ADDRESS

ON

MIDWIFERY,

DELIVERED AT

ABERDEEN UNIVERSITY, OCTOBER 27, 1869.

BY

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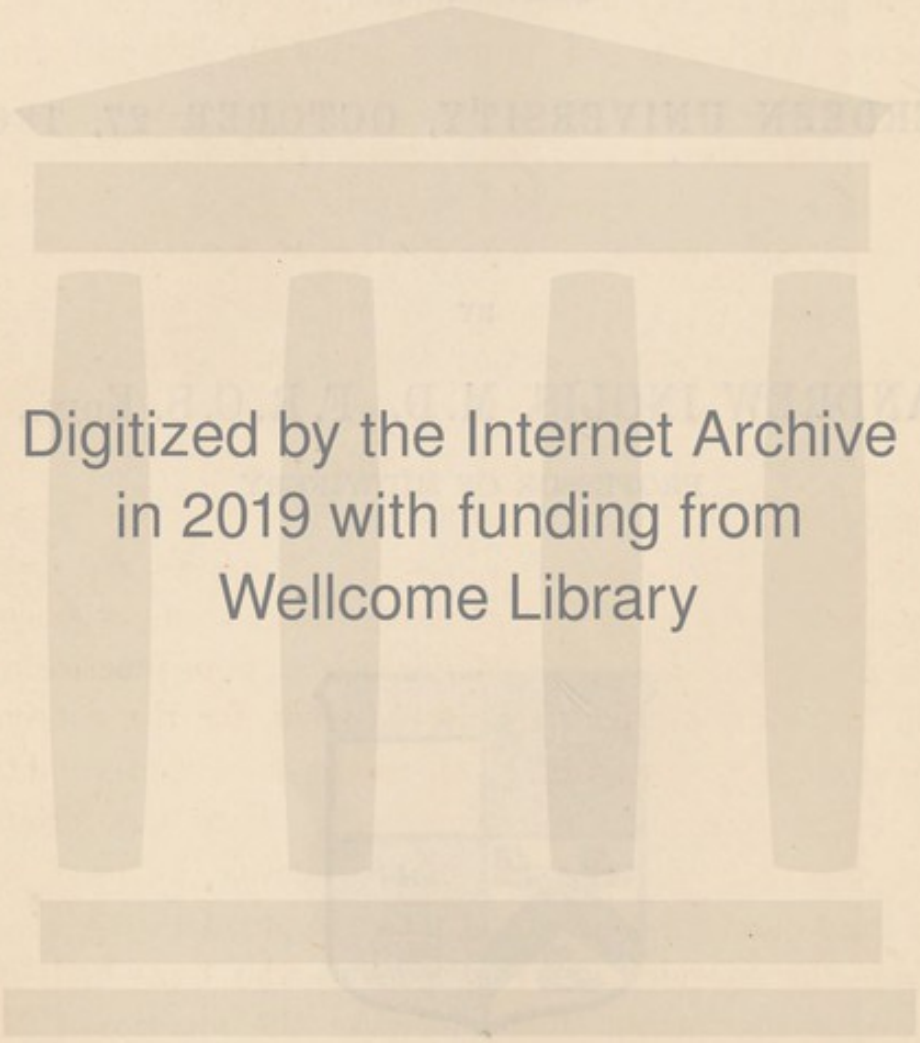

INTRODUCTORY ADDRESS.

In entering upon a course of lectures, it is obvious that one of the first things required is to define its subject in such a manner as shall succintly convey a correct idea of the principal matters it embraces. As, however, I intend to give a detailed programme of the course in a subsequent lecture, I shall content myself at present with remarking that the term "Midwifery" is used in a twofold sense, and therefore must be viewed in a twofold aspect,—the one practical, and the other scientific. In its simplest signification, the practice of Midwifery means the attendance given to a woman during the act of parturition, from the commencement of labour until its completion, with a view to its being accomplished with safety to mother and child. On the other hand, as a branch of instruction, according to Velpeau, Midwifery ought "*to comprise all human knowledge relating to the reproduction of the species,*" or certainly, at least, as much of it as is required to enable the individual that is to practice it to do so in the most efficient manner possible, for the safety of mother and child in every variety of circumstance and condition connected with pregnancy or parturition. That the latter of these two aspects is not only the more scientific, but that it is also the only basis for a safe and rational practice, will be apparent from the consideration that persons who have had little or no previous instruction often undertake the practice of Midwifery, and by tact and good fortune escape from making any grave errors at first; and, if they have sufficient presence of mind and power of observation, may in time learn to cope with many contingencies met with in ordinary practice; but that, nevertheless, they run a constant risk of meeting with unforeseen difficulties which must inevitably prove fatal in the hands of the uneducated. Nor is this all, for we know that in former times, for want of scientific tuition, the most extraordinary ideas were

entertained as to what was the duty of attendants on parturient women, what were the means most conducive to the easy accomplishment of an ordinary labour, and what were the causes of difficulties and the probable means of overcoming them ; and practices have been recommended and resorted to that would never for a moment have been thought of by persons having even a moderate knowledge of anatomy and physiology. That this has been the case, the early history of the progress of Midwifery, not unlike that of the progress of the other branches of medical knowledge, affords abundant evidence—as I hope to shew by the following sketch of the progress, sayings and doings of our predecessors ; premising, however, that the history of Medicine and Midwifery are so intimately mixed up with each other that it is impossible to give a sketch of the latter without a preliminary view of the former. I trust that in what follows I shall on this account be excused for apparently stepping beyond the limits of our proper subject.

To proceed, then. The origin of Medicine must necessarily be involved in much obscurity, and it is quite impossible to say when or in what country a knowledge of it was first cultivated and reduced to something like a system. Even in the earliest times, it must certainly have been practised, although in these ages the assistance of one friend given to another in illness must have been all that could be obtained. Professor Schultze, in his History of Medicine, points out the strong probability "that Adam," as he says, "yielding to the all authoritative voice of necessity, discharged the office of accoucheur to his wife, and thus performed the first operation in surgery ;" but, however much we may indulge in conjecture on the subject, we possess no record of antediluvian or primæval Medicine and Midwifery, and in patriarchal times the only Scriptural allusions shew the practice of the latter to have been in the hands of females.

From the earliest profane records we learn that in various countries of the East the practice of Medicine was almost exclusively in the hands of the priesthood ; nor was this at all to be wondered at. In the total absence of any correct knowledge of anatomy and physiology, all those deviations from the healthy performance of the various functions of the body which gave rise

to pain or suffering, or which threatened danger to life, were ascribed to the anger of the Gods or to the evil eye of their fellow mortals, and the priests were therefore the persons to whom it was natural to apply for the purpose of averting, mitigating, or removing them. Thus we find in savage tribes at the present time the practice of Medicine is in the hands of the rain-maker and the obi man, and cures are supposed to be effected chiefly by superstitious observances, with, perhaps, a slight admixture of empirical remedies.

Nor does it appear to have been otherwise with the more civilized races of antiquity, and, as we are informed by Herodotus, this was particularly the case in Egypt, where, notwithstanding the attainment of a pretty high civilization and considerable progress in many of the useful arts, it was not until about the year 450 B.C. that the priests met with any serious opposition in the practice of Medicine. He tells us that a revolution then took place in these matters ; that soon every distemper had its own physician, who confined himself to the special study of it alone ; and that these practitioners vigorously contested the palm of popularity with the priests, and in time acquired all the business. Nothing, however, is known of the style of practice of these physicians, for they kept their views secret ; but there can be no doubt that it must have been much better than that of the priests,—the former alone considering themselves free to treat disease in whatever manner they deemed best, while the priests, on the other hand, were liable to the punishment of death if they deviated from the practice prescribed in the six Sacred Books, even although by such deviation they cured their patient. In fact, it was held to be better that "ninety and nine should fall victims to a recognised erroneous practice, than that the validity of their precepts should be called in question by a heretical patient presuming to recover in contradiction to them."

About the same time that these Esoteric physicians in Egypt destroyed the monopoly of Medicine, held for so many ages by the priests of that country, a similar change was effected in the Grecian territories. There, also, the priesthood had arrogated to themselves the medical practice, maintaining the doctrine that all disease came from above, and could not be removed without

their intercession. Besides this general ascription of disease to supernatural influence, one deity in particular was supposed to preside over the art or practice of Medicine, by name Æsculapius. It is a matter of doubt whether his existence is to be held altogether as mythical or not. Perhaps, rather, we may consider him as a mortal, who was deified on account of some successful cures effected by him. There are several individuals, indeed, for whom the same name and honours were claimed, and to most of whom a celestial origin was ascribed. The most noted claimed his parentage from Apollo. His sons, Machaon and Podalirius, are said to have practised their art in the camp of the Greeks during the Trojan war, and their descendants, under the name of Asclepiadæ, obtained a hereditary priesthood in the temples of their great ancestor, and were resorted to as being in possession of all the knowledge derived from him either in writing or by tradition. There is no reason to believe that this was either extensive or profound, although Galen has asserted that among the Asclepiadæ, children were taught dissection, just as they were taught reading and writing. The value to be attached to this assertion of Galen will become apparent when his own amount of anatomical knowledge comes to be considered. Another account of the origin of the word Æsculapius is, to say the least of it, ingenious. It is asserted that the Syrian words, "*is calafat*," mean "a man with a knife," hence—a surgeon, and that many may thus have, even contemporaneously, received the name.

After a time we find that some men, bolder than others of their age, contrived to cast aside to a certain extent the assumptions of a priestly caste, and founded schools where the teaching was of a more rational character than that of the priesthood. According to Cicero, one of the first of these was the school of Crotona, instituted in the time of Tarquin the Proud by Pythagoras. There were also about the same time other three schools equally famous,—those of Cos, Cnidos, and Rhodes. These seem to have been the first where Medicine was honestly and systematically studied and taught, and there is no doubt that it was their influence that, by inducing a healthy scepticism, enabled Hippocrates, some generations after their foundation, to propound with success his great theory, "*that all diseases*

had definite discoverable causes existing in the constitution." I may here mention that the earliest information in obstetrics which I have met with is a quotation from Empedocles of Agrigentum, a member of the school of Crotona, who flourished about 600 B.C., and who is well known on account of the circumstances of his death, having, it is said, fallen down or precipitated himself into the crater of Mount Etna during an eruption. From Galen we learn that Empedocles had some very curious ideas concerning the fœtal respiration, which he thought took place by the lungs. "As soon," said he, "as that humidity, of which there is a great store on the first formation of the fœtus, begins to be diminished, the air insinuating itself through the pores of the body succeeds it; after this the natural heat, by its tendency to make its escape, drives out the air, and when this natural heat enters the body again the air follows it afresh." He seems to have had no idea at all of the functions of the placenta and umbilical cord. About 150 or 200 years after Empedocles came Hippocrates, whose writings are so justly admired even in the present day. The works ascribed to him are the earliest medical treatises that have been handed down to us in anything like a complete form; and though many of them are believed to be spurious their value is still very great, as they give us a very distinct idea of the doctrines and practice of the time. In them we have, among other things, a most elaborate physiological and practical treatise on Midwifery, and also a history of some cases and their sequelae; and there is no doubt that great improvement had been attained during these years of emancipation from priestcraft. After the death of Hippocrates, his sons Thessalus and Draco carried out their father's doctrine to an extreme height, and founded the sect of the Dogmatists. This sect held the idea that "*Where observation failed, reason might suffice;*" and they sought for the origin of diseases in remote and theoretical causes. These theorists carried their views to such absurd lengths that at length they lost credit, and about 300 B.C. were supplanted by the Empirics of Cnidos, under Serapion the first of that name, of Alexandria. This latter sect, which had at that time existed for nearly 100 years, held doctrines quite opposite to those of the Dogmatists; in fact, instead of searching

for remote causes they treated symptoms alone, and were most careful in classifying them. These two opposing views were taken up strongly by the two principal sects of philosophers of the day,—the Stoics favouring the Dogmatists, and the Epicureans the Empirics. By this time the school of Rhodes had disappeared entirely, and that of Crotona had almost done so; but a new one had arisen, which in time came to be of great eminence. The college I refer to was that of Alexandria, founded by Ptolemy Soter about 300 B.C., and kept up most carefully by his successors. The history of the library of this Institution is almost incredible. We are told that when completed in the time of Cleopatra it contained 900,000 volumes, and it is a historical fact that three of these volumes alone cost together 15 talents, or £3000 sterling. These were the originals of the works of Sophocles, Euripides, and Œschylus. Besides the library and schools, there were also hospitals, which gave great opportunities for obtaining medical information.

I cannot take leave of the Greek schools without taking notice of the writings of Aristotle, which acquired so much influence over men's minds for many succeeding ages. The extent and variety of his works stamp him as an almost universal genius, and many of them, no doubt, evince profound thought and exalted reasoning powers. By some he has been considered the father of inductive philosophy, and he certainly recommends a method of investigation very much akin to it. If we examine, however, especially his treatises on Anatomy and Physiology, we shall find that many of the alleged facts and observations on which he founded his conclusions were merely current popular opinions very often erroneous. He was aware of the existence of placental fishes,—a fact only lately verified, but the evidence he gives for it seems to rest entirely on the report of some fishermen, from whom much of his other information was also derived.

With regard to human dissection, we are told distinctly by Celsus and Galen that it was never known to have been practised except by Herophilus and Erasistratus, who lived at Alexandria about 300 B.C. To them, we are told, were alloted for dissection criminals who were condemned to death, and by some accounts we are led to believe that they did not always delay their inves-

tigations until life was extinct. This practice of theirs, however, has been much exaggerated. The works of Herophilus are now lost, except a few short quotations in some of the medical books written about the first or second century, but their value is such that Gabriel Fallopius, a distinguished anatomist, who lived about the end of the 16th century, declared that he would almost as soon think of contradicting the Gospel as the authority of Herophilus. Though Celsus and Galen have given these two men the credit of being the only known dissectors of the human body, their statements are not correct, and it seems hardly probable that such direct means of obtaining information, though repulsive, could have been totally abstained from once the idea had been suggested. Accordingly, after careful search, I have been able to find that at least one old author, namely, Soranus of Ephesus, asserted that he practised human dissection, and what is still extant of his writings puts the matter beyond doubt. Yet it is strange that a new science, begun under such auspices, should die out so soon ; but it actually did so, for no more was heard again of persons dissecting the human subject till Vesalius, in the 16th century, startled the whole of Europe by boldly daring to do so in public, at the Universities of Padua, Pisa, Bologna, and Venice, in all of which institutions he held the Professorship of Anatomy.

In Rome, as well as in Egypt and Greece, in the earlier times, the people looked to the priests for aid in sickness, and temples were built to the gods, and offerings given to priests, for intercession in cases of illness. The extent to which this custom prevailed may be judged from the fact that not only was there a goddess whose aid was invoked in cases of difficult labour, but there was even a temple to the Dea Ossifraga, to whom those with broken bones could pray and offer gifts, in order that their bones might be mended. This in time was found not to answer very well, and the healing art was taken up by freedmen and slaves. No doubt they went out at first only as a sort of nurses, and were not employed to the neglect of the priests, but merely for the sake of giving additional relief to the patients. It was found, however, that tangible relief was much better than intangible, and, accordingly, these practitioners gradually assumed positions of increased consequence in proportion as their skill was appre-

ciated. The medical art becoming thus free of the priesthood, began to improve rapidly, and, about fifty years before the Christian era, a new sect was formed, called the Methodists. This sect, however, was not of such great importance as the Dogmatists or Empirics. It was founded by a dilapidated teacher of elocution, who assumed the name of Asclepiades, as was often done in those days by physicians who aspired to the attainment of a position akin to that of the hereditary descendants of the god of medicine. As is generally the case with quacks of all ages and nations, this man, having failed in the business he was brought up to, took to medicine, and founded his self-recommendation on the basis that all who had practised medicine previously to himself were unworthy of credit. He and his followers, beginning with Themison, believed that all diseases arose from *relaxation* or *constriction* of the tissues; but they also recognised a mixed condition, which, in time, by comprehending everything, became applicable to nothing, as usually happens with crude attempts at generalization not founded on observation and experiment. From this time forth, however, we have many improvements and additions to the art of medicine. This advancement was contemporaneous with the growth of Christianity, during which, although the classical attainments of the Romans had already begun to decay, yet science and philosophy were still eagerly and successfully cultivated. In medicine there was a decided advance, as may be seen by referring to the works of Celsus, Galen, and others who flourished in the 2nd or 3rd centuries. The works of Galen greatly surpassed those of all others in these times. He did not profess to follow the ideas of any particular sect, but selected impartially from the writings of all whatever views seemed to him best; and, besides compilation, we find in his works much that is original. So complete an ascendancy did his writings obtain over those of every other medical author, and so undisputed became his authority on subjects connected with the healing art, that all the then existing sects disappeared, and for 1300 years his opinions were received as oracular in the schools of all civilized countries. His knowledge, however, of the anatomy of the human frame was wonderfully small considering his great reputation, for he tells

us that he never dissected, nor witnessed the dissection of any human subject, and refers with pride to the fact that he *once saw* a human skeleton ; and many of his statements in regard to the anatomical structure of the human frame are evidently derived from what he had observed in the corresponding parts in the lower animals. After Galen's time there were many treatises published which were undoubtedly of great value to the profession, but few can claim merit on account of originality. One of the best samples of such treatises is that of Ætius of Amida, a wonderfully careful and systematic compilation from all the most famous authors of the day. His list, quoted from an unknown author called Philumenus, of the various operations for delivery, is, though short, more complete than that of any author who has written on the subject, even up to the 16th century.

Up to this date (300 A.D.), although the Roman empire had evidently entered on its period of decline, and the tyranny of its rulers must have placed many restraints upon the free expression of thought, yet the general diffusion of learning, the facilities of intercourse through the medium of one, or at most two languages understood through all the provinces, and above all, the energies of the Alexandrian school, which, amid much that was speculative, generally pursued the right track of experiment and observation in the cultivation of the physical sciences, had maintained the knowledge of medicine as well as other sciences at a comparatively high standard of excellence. The efficiency of this school may be judged by the fact that, among its Professors, there were Euclid as Professor of Mathematics, Timocharis of Astronomy, Theocritus and Callimachus of Literature, Cleombrotus and Serapion of Medicine, and Erasistratus and Herophilus of Anatomy and Surgery. But now a great change was approaching. The Roman Empire was hastening to its downfall, and, as the enfeebled central government gradually lost its power, the clergy gained, and, in time, acquired sufficient power to suppress all original research and freedom of thought over the whole of Europe.

We shall presently have occasion to recur to the state of medical knowledge in Europe during what are now called the dark ages, but, in the meantime, we pass on to say, that

long before then, the Mahometan priesthood had so far relaxed the strictness of their principles, that, under the more enlightened of the Caliphs, scientific knowledge, including that of medicine, came to be eagerly sought after by men whose predecessors had repudiated all learning, unless contained in the Koran. The most familiar to us of these writers of the Arabian School are Mesue, Rhazes, Avicenna, Albucasis and Averrhoes. There is no doubt that these men were very highly educated, and possessed all the information on medical subjects that could at that time be obtained. A very great proportion of their writings consists of translated excerpts from Hippocrates, Galen, Paulus and Ætius. Mesue, the first of these, lived about 800 years A.D., and was Physician to the famous Caliph Haroun Alraschid, so well known in connection with the Arabian Nights Entertainments. The others followed at pretty equal intervals, ending with Averrhoes, who died in the year 1206. The independent views of the latter on all scientific subjects gave such offence to the Caliph Almanazor that he confiscated his property, and banished him from Cordova, of which he was at that time Chief Magistrate, and also caused him to be imprisoned and made to recant his heresies in the mosque. After this degradation Averrhoes remained for some years in great poverty, but in time regained his former status. In concluding this short notice of the Arabian Physicians, I have to observe that, though they were most servile copyists of the Greek authors, we are indebted to them for some great improvements, both in the theory and practice of medicine. They were the first to divide the art of medicine into three great heads—physic, pharmacy, and surgery. They also were the first to describe eruptive diseases, such as small-pox, measles, &c. ; from them we first hear of the ligature of arteries, as it afterwards came to be almost universally practised in later days, until the introduction of acupressure ; and from them we have received many valuable medicines.

To return to the state of medicine in Europe. We have already alluded to the destructive effects which resulted from the downfal of the Roman Empire on almost every branch of human learning, but we must not blame the priesthood alone for

the lamentable consequences which slowly, but inevitably, followed. In the earlier centuries of this period the clergy were generally pious men, devoted to the spiritual oversight of their flocks, and bent on the conversion of the uninstructed multitudes from the lingering remains of Roman heathenism, or the rude superstitions of the invading tribes, and often successfully interposing to shelter those under their charge from the tyranny of their rulers, or the violence of the undisciplined hordes which overran the provinces. It was chiefly owing to the utter disregard for learning of any kind then prevalent among men whose whole time was occupied in warlike pursuits, that the clergy became perforce the custodiers of medical knowledge, and the resort of those who were suffering from disease or injury. It is probable that the relief or advice they gave was conscientiously given, but with them secular necessarily held a secondary or subordinate place to religious matters. The rigid asceticism among religious men so characteristic of the times, though in a manner forced upon them by the prevailing anarchy, was also most unfavourable to the cultivation of secular learning. When the cenobites of the caves and the desert afterwards became collected into communities, the monasteries became, indeed, the depositories of the manuscripts of a previous period, but when these buildings became merely the places of refuge of the timid, the superstitious, the indolent, and even the luxurious, it is no wonder that the valuable literary and scientific stores that had been placed in them fell into utter neglect. Not only did these remain unread amid the accumulated dust of ages, but no effort was made to record any kind of observation on the part of those who undoubtedly then had the monopoly of medical practice. Whatever other relics may have been preserved from monkish times, there has not been left to us a vestige of European medical literature from the last of the Roman writings until nearly the close of the Arabian period. Medical schools, indeed, are said to have existed before then in various parts of Europe, but we have no reliable account of any of them till the middle of the 11th century. The first sure indication I have been able to find of the existence of such an institution is to be found in the fact that a work on regimen, compiled by the school

of Salernum (Schola *tota* Salerni) was presented to the King of England previous to the year 1065. It is probable that the King meant in this work was Robert Duke of Normandy, son of William the Conqueror, for, returning wounded from the Holy Land about that time, he stayed at Salernum till his wound was healed. Some, however, believe it to have been one of the three Edwards who flourished at an earlier date, but this latter supposition is much less likely. Though very famous as a seat of medical learning, no great discoveries have emanated from this school, and it is to be presumed that its influence alone did service in the cause of the profession. The practice which it introduced seems to have consisted of strict rules, enjoining "moderation in all things" for the healthy, and a free use of the relics of the Saint Archelais for the diseased. Soon after the rise of the Salernian school, others began to spring up into notice in different parts of Europe. That of Montpellier seems to have, in time, surpassed them all, and pride in the celebrity of the institution has prompted the doctors there to place a bust of the father of medicine in their hall, with the inscription, "Hippocrates once of Cos now of Montpellier." Next in celebrity came the Medical Faculty of the University of Paris. When this Faculty was first organized is not known, but it is supposed to have existed in an imperfect state before the beginning of the 12th century. In evidence of this, we find in the records of the University, edicts prohibiting the clergy from attending the medical lectures, or practising medicine—the first of these edicts having been issued as early as the year 1139. They seem, however, to have been very much disregarded, if we may judge from their frequency and vehemence, the first four of them having been issued during a period of about 80 years, each fulmination being more strongly worded than its predecessor. The other two Faculties, viz., Law and Divinity, at that time were more fully organised, that of divinity, the famous Sorbonne, ruling the others despotically, in secular as well as ecclesiastical matters.

During all this dark period, superstition, worse than that of the old heathen times already recorded, prevailed over Europe, and at first no medical works seem to have been written. After the eleventh century, one or two began to appear from time to

time, but contained nothing but simple and self-evident rules for preserving health, similar to, or copied from, the book of the Schola Salerni. Then, added to these rules, the authors of a later date produced extraordinary details of symptoms, most of which they must have invented themselves, and astrology at last became a necessary ingredient in all medical works. The most complete sample of such a work is perhaps that of Arnold of Villanova, published about the year 1300. The greater part of this production consists of the most childish rules for air, exercise, diet, &c., addressed to various persons of eminence. The most childish of these letters is, perhaps, that to the Queen of Arragon, in which, among many other equally mild pieces of advice, he tells her to keep her mind easy, her bowels open, and always to empty her bladder when she rises in the morning. Like Dr. Cumming, he quarrelled with the Pope, foretold when the world would end, and lived many years after the predicted day. Moreover, he believed in charms of all sorts to protect from disease, shipwreck, &c., for instance, he gives a set of twelve such, one for each sign of the zodiac, of which the following is a sample. "The eleventh sign is that of Aquarius. Therefore, on the day before the thirteenth of the month of February, take some gold, and make it into a round seal, and while your hammer is striking, say—"*Rise our God, shew forth thy strength and come out and save us.*" "*Thou who rulest Israel, look down,*" *&c.*, and while the sun is in Aquarius, cut on one part of it the figure of Aquarius, "ZADACHIEL," and "SAINT THOMAS," —and on another part round about, "*This is the Lamb of God, who taketh away the sin of the world;*" and, in the middle, "UTHION," "JOTH," "DETH." The virtues of this seal, in general, are these:—No creeping thing can hurt those carrying it, or come near them, and it cures watery eyes, sore shins, and many other ills." That Arnold was not singular in his medico-astrological views may be gathered from an English Almanack, in my possession, dated 1383. It gives first a drawing of the human body, with the twelve zodiacal signs, each on its respective region—for instance, Aquarius, on each shin ; and it tells how to find a given patient's disease, by finding the star of his nativity, then the sign of the zodiac which prevailed on the accession of

the disease, and, lastly, by examining his urine. At first the reader might be led to believe that such diagnosis was mathematically certain, but at the end of the work there is inserted the following qualification, which stultifies the whole :—" Morovr diligentli we sal take hede what es ye abilite of ye seke, yt es to say, whey he have disposicion to receyve impssyons of influens fro aboven, for if yis wer not take hede of ye same iugemet, wer of hoole as of seke, for ye same howre yt sortes (Socrates) or iohn waxis seke, ye same howre Plato or Robberd waxis hoole and ye fygur of heven, no chaunged bot ye influes of heve in seke es impressed by caus of debylite of ye flesche, and more recepcyon of ye influence, and in hole men es not impressed, bycause ye matr es oyrwise dysposyd yan in seke."

In Britain, also, about the same time, two men of a very similar stamp to that of Arnold were to be found, viz., Gillertus Anglicus and John of Gaddesden. Their works are strange mixtures of credulity and quackery. They taught nothing but the most idiotical and complicated ideas of diseases, founded on belief in humoral pathology,—a hobby which they both rode to death ; *e. g.*, Gilbert has a most elaborate and absurdly fanciful detail of the symptoms (varied according to temperament) which appear in a man who has slept with a woman who has *spoken* to a leper. This nonsense is again to be found in John of Gaddesden's " Practica Medicinæ a capite ad Pedes," copied most accurately, but he adds to it a recipe for the woman, which shows that he, at least, did not believe that she could have acquired the disease in such a simple manner. He advises her to throw a somersault backwards and come down heavily on her feet, and then to sneeze so as to shake out the morbiferous material, " *tunc erit salva.*" For centuries this deplorable state of matters continued, any amelioration which took place being very slow indeed. All prescriptions in these days were written in fear and trembling, headed as now by ℞, the sign for Jupiter, and also interlarded with other cabalistic symbols and scraps of texts, like those in the quotation I have given from Arnold, as Paracelsus naively tells us, " *Ne diabolus scribentem auferat.*" For a while works containing such absurdities stayed any little demand for learning which existed among the laity, and did not offend the conserva-

tive ideas of the priesthood; but, when truths discovered by a common exercise of observation, and theories arrived at by legitimate methods of induction, began to be promulgated, the clergy took alarm, and works containing such material, and often the authors of them too, were mercilessly sought for and destroyed, and that even in cases where the truths contained in these works were pretty well buried among masses of the most palpable error. A desire for truth, however, had arisen, and the study of physical science could not be repressed. In proof of this increased demand we find the character of the MSS. of these times gradually changing. In the older times they were full of fabulous material, and most carefully executed and illuminated; but as the age advanced the amount of fable diminished, and original and true material began to be introduced, while the careless execution of the writing in these later parchments shows that the multiplication of copies for use was the main object of their writers. This multiplication, though slow, did its work surely, and the yearly increased demand for books resulted in the invention of printing. This discovery suddenly put an end to the struggle which had lasted so long. The clergy in vain tried, first to extinguish, and when too late, to control the use of the new art; but in spite of all their efforts the demand for knowledge and for the right of individual research became more and more urgent, and in time manifested itself in the Reformation, after which the clergy lost the despotic power they had so long possessed. The culture of the Physical Sciences now began to progress,—that of Medicine among the rest, and the record of what has been done since that date is not a mere matter of interest to antiquarians, but the basis of all modern medical instruction.

Having thus traced the history of the healing art, as a whole, up to the end of the dark ages, let us now turn to the history of midwifery up till the same time. It progressed with the other branches when these were progressing, but not with the same pace, for there were influences to retard it which did not affect them. The different steps of advancement it made from the time of the early Greeks till the days of the Reformation, a period of about 2000 years, may be portioned off into five great epochs.

1st. The Hippocratic, beginning about the year 500, B.C.

2nd. That beginning about the first century, A.D., and represented by Celsus.

3rd. That beginning about the fourth century, and represented by Ætius of Aruida.

4th. The Arabian, beginning about the ninth century.

5th. The dark ages, which last, however, cannot, strictly speaking, be called a period of *advancement*.

Knowledge of the anatomy and physiology of the parts connected with generation varied but little during all those five periods, and the old methods of philosophy prevailed for century after century, leading men to spend their time in attempts to assign reasons for the statements of Hippocrates and Aristotle, which, in these matters at least, were excessively absurd. According to them, the womb consisted of pouches like that of the lower animals, the males being carried in the right and the females in the left pouches. In the 15th century we find that this erroneous idea had become still more corrupted, for Mundinius, in his "Anatomy," describes 7 pouches—3 on the right for boys, 3 on the left for girls, and one in the middle, "consecrated to hermaphrodites;" and, according to Nicholas Roché, the symptoms of inflammation in each respective pouch was so markedly different that the physician could easily tell which of them was affected. This persistent ignorance of the form and relations of the uterus and its appendages is most remarkable when we consider that Herophilus and Erasistratus must have dissected these parts, and most probably described them accurately. Moreover, Soranus, in the first century, gave an accurate description of the human uterus and appendages, the changes of form it undergoes during the different periods of life, and also during and after pregnancy. In this work he distinctly states that he has found from actual dissection that the human uterus is single, unilocular, thick in its walls, and somewhat like a pear-shaped cupping glass, while that of the lower animals is double, multilocular, membranous as to its walls, and helicoid in shape. These views of his were never accepted; and a very meagre description by Vesalius is accredited the first account of the human uterus.

The ovaries were called testiculi, and were supposed to secrete

a seminal fluid similar to that of the male. Ambrose Paré says that "The seed of the male being cast and received into the womb is accounted the principal and efficient cause; but the seed of the female is reputed the subjacent matter or the matter wherein it worketh." He then goes on to say that "a great portion of this seed cometh from the brain, yet some thereof falls from the whole body, and from all the parts both firm and soft thereof. For unless it come from the whole body and every part thereof, all and every part of the issue cannot be formed thereby, because like things are engendered of their like, and therefore it cometh that the child resembleth the parent, not only in stature and favour, but also in the conformation and proportion of his limbs and members, and complexion and temperature of his inward parts, so that diseases are at times hereditary, the weakness of this or that part being translated from the parent to the child."

Before quitting the subject of the uterus and the spermatic fluid, I may mention that the prevailing idea regarding plural births was, that they arose from the locular form of the uterus, or from the superabundance of the seed. In these times there was no limit to the capacity of the uterus, and many fabulous stories are told of the numbers of children born at one birth. Paré gives a portrait of a woman big with child, who was twice pregnant, once with nine, and once with eleven children, and who was obliged while in that state to support her belly with a strap passed over her shoulders. Many other old authors mention fifteen or twenty being born at once. Carpus, I am told, in his anatomy, relates that a woman bore at one time sixteen well formed children and a small horse. Avicenna tells of thirty-three in one case. Cælius, of one hundred and fifty in another. These latter all shewed signs of life, and had fingers and toes the size of hairs. All these stories, however, are put quite into the shade by one which several old authors quote, and which shews the credulity of the dark ages. A certain Countess found fault with a beggar for having twins, telling her that she must have lain with two men, or she would never have had two children at once. The beggar cursed her, wishing that she might have at one birth as many children as there are days in the year. Accordingly, the Countess, though her husband

had been long away, gave birth, one morning about nine o'clock, to three hundred and sixty-five children, all alive, but who, along with their mother, died before evening. A priest, however, who was called in, is said to have succeeded in performing the rites of the Church in good time. For the sake of expedition he had to baptize them two at a time; and, probably because a good stock of names could not be got up on the spur of the moment, the boys were all called John, and the girls all Elizabeth. I may mention that there is a little discrepancy between some of the accounts of this most remarkable case, four of the authors who relate it, modestly contenting themselves with the smaller number of three hundred and sixty-four. However, the majority of the authors I have consulted are for the larger figure.

The next point which I have to refer to is the duration of pregnancy. Hippocrates mentions that nine months is the usual period, but he believes that, under certain circumstances, a child may be carried as long as eleven. If a child be born before the eighth month it is likely to live, but, as the eighth month is one of unrest and illness for the fœtus, a good labour and a live birth cannot be expected during it. The restlessness disables the child from finding its way into the world, and thus deprives the mother of its help during the labour. The Pythagorean school had another mode of accounting for the still-birth of eighth month children. They likened pregnancy to a triangle, whose sides were equal respectively, to 3, 4, and 5, and the area equal to 6. The problem is as follows :—

$3 + 4 = 7 \times 5 \times 6 = 210$ = No. of days in 7 months.
$3 + 5 = 8 \times 5 \times 6 = 240$ = Do. 8 months.
$4 + 5 = 9 \times 5 \times 6 = 270$ = Do. 9 months.

But they said numbers are male and female, and as copulation between two odd, or male, numbers could not be fruitful, so no eighth month fœtus could live. Hippocrates also tells us that up to the seventh month the fœtus maintains the erect position in the womb, but when that time has expired that it turns itself upside down, and malpresentations were ascribed to obscure causes interfering with this intra-uterine somersault. In proof of this it was held that heartburn proceeded from the tickling

of the child's hair against the stomach, and that it disappeared at the seventh month ; moreover, in confirmation, it was stated that women had most heartburn while carrying boys, because *boys have more hair on their heads than girls.* Though eleven months was the Hippocratic limit to the period of pregnancy, some authors in the middle ages believed that the period might now and then be considerably extended. Two cases are related —one by Aventinus and the other by Krantzius— where the child was born after twenty-four months' gestation. In both of these the child emerged "loquens et gradiens." I have also read in two other mediæval works of two children born alive after three years' gestation and four years' gestation respectively.

The ideas respecting the formation of the fœtus were very obscure and curious, as were also the views concerning the accidents that might alter its conformation. A complete detail of these accidents, to the number of ninety-one, is to be found in a rare old work by an author called Licetus, written in the beginning of the 17th century. He believed, like Paré, that the spermatic fluid of both sexes combined to form the fœtus, and that excess of these fluids caused plural births. He supposed, however, that if this superabundance were combined with a want of distensibility of the uterus, there would be produced a double monster, that is—two individuals joined together. He believed strongly in superfœtation, but in this matter he was not singular —several authors in these times having recorded outbreaks of a disease which they called "*superfœtatio epidemica.*" He also describes the process of mixing all sorts of breeds together by superfœtation, and gives drawings of monsters, both single and double, thus made, with parts belonging to quite different animals. Cases where the two halves of a monster are of different sizes, he accounts for also by superfœtation,—supposing that the first, by right of possession, takes what he requires and leaves only the residuum for the second. He also enumerates, among other causes of monstrosities, the influence of Demons, Cacodæmons, Incubi, and Succubi. Besides all these absurd stories, he describes certain small animals which reside in the womb, and live upon embryos. "A woman," he says, "after nine months' gestation, brought forth one of these animals. It emerged with a great noise, and

filled the whole room with hissing sounds. Immediately after this some strong pains came on, and a full-sized boy was born, which did not live very long, having been so much chewed up by the reptile."

The early Greeks of the Hippocratic period knew absolutely nothing of practical Midwifery. They believed the human pelvis to be a straight tube like that of a goat, and compared the fœtus to an olive in a jar with a narrow mouth, from which it could only be extracted by bringing one of its ends out first. It is very strange that they never saw the full signification of their illustration, which afforded no explanation for their belief that extraction was more easily accomplished when the head, or blunt and incompressible end, presented, than when the narrow end protruded liberally supplied with handles. They had no instruments for assisting the blunt end out, Hippocrates telling us that, if the presenting head is arrested, one finger introduced into the mouth will be sufficient to extract it, while in the middle ages this statement was surpassed by some authors, who suggest that the hand can be passed beyond the head, and the finger hooked into the axilla as a means of extraction. If a leg or the breech protruded, it was advised to turn the child and make the head present, for they tell us that if the body be born before the head, both mother and child will almost certainly be lost. Turning, by introducing the hand into the uterus, is not much spoken of, and it seems that where they wished the child turned, they first cut off the presenting limb, and then either tossed the patient in a blanket, or tied her on to a bed or a ladder, and raised and suddenly let fall one end of it—a practice similar to that of modern midwives who, for the same purpose, are in the habit of hanging patients on a door, and then banging it backwards and forwards. In the Epidemics of Hippocrates, we find a case related where severe internal injuries followed this treatment by succussion. The next operation I shall mention is that of Embryulcia; the directions for the performance of which are more curious than useful. If the head presents it is to be opened with a knife and the bones picked out with a pair of pliers, an operation which modern accoucheurs find very difficult. With regard to the body, their directions are most minute as to the best manner

for taking it out piecemeal, under circumstances where now-a-days we should expect it to come of its own accord, or, if worth while, would pull it out by a limb. Their treatment of retained placenta is also noteworthy. When a child was born, the umbilical cord was not divided until the placenta came away ; and if it was too long in coming, the patient was seated on two stools placed a little apart, a wine-skin full of water was next placed below her, and the child laid on it, then the skin was pricked with a needle so that the water might ooze out, and as the skin collapsed, the child, falling gradually down, was expected to tighten the cord so as to draw out the placenta. If this failed, sternutatories were given, and the nose and mouth were held while they were acting. Such medicines, indeed, they gave in all cases of weak expulsive action.

In the time of Celsus (the second period I have marked out) the art of delivery had advanced a little. It had been discovered that a child born by the feet might live, and that such a birth might do no harm to the mother. Celsus advises the surgeon " by his hand to turn the child either upon its head or upon its feet," and he says that " a child being turned on its feet is not difficult to extract, for these being taken hold of, it is easily brought away by the hands (the operator's) alone." Regarding the extraction of the placenta, his views are the same as those of the present day. These points are the only ones of any importance, however, wherein he differs from former writers.

The next period I have to treat of is that represented by Ætius of Amida. In a large Cyclopædic work, compiled by him, we find a most extraordinary section quoted from Philumenis, in which we have nearly all the modern midwifery operations described, even including cephalotripsy, an operation which has only of late years been gradually finding its way into this country. Almost the only mistake made in this treatise is the statement that, if the placenta will not come away easily, it is better to leave it, " as it will putrify and come off in a few days in a discoloured sanies." From this date, the practice of Midwifery began to retrograde. The next treatise on it worth mentioning was that of Paulus of Ægina. Though the first to lay himself out for Midwifery as a speciality, he

shews complete ignorance on many points where Ætius was well informed, nor does he bring forward anything not known centuries before. These statements regarding Paulus, however, require to be qualified, by admitting that there is some difference of opinion as to the time when he lived. Many believe, from the materials he has collected, that he must have lived in the fourth century. If he did so, he certainly deserves credit for having advanced ; but if, as Dr. Friend seems to have proved, he flourished in the seventh century, his views show a decided falling off from those held by his predecessors.

Of the epoch represented by the Arabians, not much can be said. As I already stated, they were little more than copyists, and, probably, we are principally indebted to them for preventing previously made discoveries from being lost. Nevertheless, their works are most instructive to us, being very complete on all obstetric subjects. The fillet is first mentioned in their works. Albucasis, moreover, *figures* for the first time forceps for extracting the fœtal head, and gives the first known description of extra-uterine fœtation.

After their date, till the time of Ambrose Paré, in 1560, Midwifery in Europe, like other branches of the profession, not only did not progress, but even continued to retrograde, and we find nothing new in medical works, except nostrums of the most ridiculous kind.

The remedies proposed in cases where the birth of the child is delayed from mechanical causes were often very curious, proceeded from no rational theory, and were good samples of the learning of the times. The berries of the Aristolochia were tied to the left leg of the patient to increase expulsive action, or perhaps the yellow crocus was prescribed. It was gravely stated that when the latter remedy was successful its colour was imparted to the child, but that did not signify much, as the colour would probably wash off. Jacobus Suterus tells us that he got an infallible recipe for cases of delayed labour. It consisted of a decoction in distilled water, of lily of the valley, white lily, and a bunch of white hairs, as thick as the middle finger, taken from the tail of a weasel. This remedy he was advised to keep secret, and not to use, except in very extreme cases, for he was told that the

hair would be found in a tuft on the top of the child's head. He says that he only used it once, *nisi pili defuissent.* In Moschion, we find the following advice to assist labour :—" Bind to the forehead of a ram, with a linen rag, the seed of the cornflower while still in the pod, and then lay it by, and, when there is need, tie it round the reins or loins of the patient, but the moment she brings forth, take it away, lest she expel the vulva also—*(ne vulva sequatur.)*" Wirsingius and Aldrovandus give another curious recipe, consisting of equal parts of cassia cinnamon, foenugrec, cardamoms, maiden hair, rue and borax, boiled in the urine of a little boy.

But no better style of practice could be expected, in Midwifery at least, up to this time, considering the peculiar disadvantages under which it laboured. Men were never allowed to see any ordinary cases, and therefore could not know what the natural process was ; and even when women, who practised this branch of the profession exclusively, admitted their inferiority to the other sex by sending for assistance in difficulties, they did not allow the surgeon thus sent for to see the patient, but only to give advice. These women were seldom educated, but had they all been so, it could not have made much difference, for even educated women in this enlightened age, in these matters at least, can rarely be induced to believe their own senses, when they meet with a fact which militates against their preconceived theory on the subject. Thus women, though they have had for thousands of years daily opportunities of ascertaining the form of the uterus, have made a point of disbelieving their own senses in the matter—thus it is that, at present, the stories concerning the hair on a boy's head producing heartburn, the relative position of boys and girls in the uterus, of the intra-uterine somersault of the fœtus, the death of eight months' children, the production of malformations in utero, and many other such fables, are believed, even among women of the higher ranks, in this as well as in other civilized countries ; and to this mental peculiarity in the sex, I believe, is due the fact that *no means of alleviating the sufferings of childbirth, or even its most trifling inconveniences, have ever been suspected to have emanated from a woman.* No advance was or could possibly have been made, as

long as this great obstacle remained, but to the French we are indebted for its removal, as late as the middle of the 17th century. In December, 1663, the Duchesse de la Valliere placed herself under the exclusive obstetric care of Julian Clement, independent of any anticipated necessity for a surgical operation, and this case alone shewed so markedly the difference between male and female attendance that he was appointed accoucheur to the Princesses of France, and he also was sent for, on three different occasions, to deliver the Queen of Spain. He, fortunately, allowed himself to be guided by common sense in his treatment, and experience of a few cases enabled him to discard pernicious superstitions which had existed unchanged, at least for the better, for thousands of years ; and, though he did nothing strikingly remarkable during his career, still his influence is felt to this day. He abolished the filthy custom of wrapping the patient in a warm bloody skin, just taken off a sheep or calf killed for the occasion, and was the first to admit fresh air and light to the patient's room,—an innovation still strongly resented by nurses of the present day. Besides this he gave up the old habit of treating the patient as if she were suffering from disease. After this, wards for Accouchement were opened in the Hôtel Dieu, Midwifery began really to be studied, and the transfer of the practice of it from the one sex to the other became soon pretty complete. A table of the mortality among women from delivery from that date up to the present shews most clearly how necessary the change was. Before men were employed as accoucheurs, *out of every thirty-six women who bore a live child one died;* while now, *of all who bear a child, living or dead, there is not more than one woman dies in five hundred,* and in some districts, *one in eight hundred;* and yet the tables which produced the result of 1 in 36 were compiled principally from baptism registers, so that most of the bad cases where the child was dead were excluded from the list. *In fact, in the hands of females, the mortality was probably three times as high as it would be were all deliveries left to nature alone.*

And now, before closing this hasty retrospect of the progress, sayings, and doings of those who have written on medical subjects before the age when the art of Midwifery became a scientific

one, let me hope that you will not carry away with you the impression that my statements regarding their slowness of progress, and my quotations from their errors and absurdities, imply censure. My intention is rather to shew that the want of progress in these ages has been due, not so much to the remissness of the men who studied it, as to the great retarding influence of the times, which affected all sciences alike in some respects, and their own in an especial manner; for, as we have already pointed out that the want of knowledge of anatomy was one of the leading causes of erroneous opinions and erroneous practice in Medicine and Midwifery, so we have to state that not merely the negative effect of the habit of reasoning from opinion rather than from fact or observation, but the positive prejudice that existed in all the periods we have been considering, against the desecration, as it was deemed, of the human body by dissection, rendered abortive any attempt at making it a branch of medical study. Now and then individuals, as we have pointed out, were courageous enough to strive against the current, and to brave the contumely and abhorrence with which such proceedings were regarded, but their example had little influence, and anatomy, as a branch of study, cannot be said to have existed.

A perusal of the ancient works is of great value. "*That there is nothing new under the sun*" applies most truly to the obstetric art, and there is hardly any operation in Midwifery, practised in the present age, the germ of which has not been indicated centuries ago. But manuscripts were perishable commodities; copying them was an expensive process; and political revolutions often swept away in a day the labour of years, and the inroads of barbarous tribes sometimes destroyed in their progress the whole scientific records of a nation. Let us be thankful that we live in an age when the art of printing has rendered it impossible that any valuable discovery, once published, should be lost; when every onward step in scientific knowledge is speedily communicated to the most distant parts of the world, and when only what is visionary and useless connected with the healing art is doomed to perish, while that which rests on a stable foundation will remain, as far as human foresight can predict, a permanent record for all succeeding ages.