MILESTONES IN MIDWIFERY

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PART 2

Whilst the general introduction of the forceps for the delivery of a living child, which would otherwise have died, was a tremendous advance in the obstetric art, the problem of delivery in cases where the forceps must obviously fail because of gross disproportion, remained unsolved. It was a case of embryotomy every time, or leaving the mother to die undelivered. In those cases where the mother did so die the post mortem Caesarean section was quite widely practised. The possibility of Caesarean section on the still living mother was legendary rather than practical at the time of the first of the Chamberlen family. The history of Caesarean section is another fascinating story in the annals of the obstetric art. Its origin is lost in the mists of antiquity. We find that Hippocrates, Galen, Soranus and others never refer to it. Yet Virgil tells us that Dionysus was so delivered out of the belly of Semele, and the writing in the Mischnagotl and the Talmud make it clear that this operation must at least have been known to the ancient Jews before the Christian era. We read in the latter that it is not necessary for a woman to observe the days of purification after removal of a child through the parieties of the abdomen. We remember, too, that Macduff was from his mother's womb untimely ripped. There is a remarkable account of this operation performed by a native surgeon which was witnessed by a Dr. Felkin, who was travelling in Uganda amongst uncivilized peoples, which suggests the possibility that this operation was practised by the uncivilized long before it received recognition by the medical profession. Felkin's account is worth reading in full:—

'The operation was performed at Katura in 1879, on a primapara 20 years of age, who was first reduced to a state of semi-intoxication with banana wine. The patient was fixed to the bed with bands of cloth placed over the thighs and thorax, while the ankles were held

by an assistant. The operator evidently possessed distinctly more knowledge of asepsis than his civilized confrères of that period, since before commencing the operation he washed the patient's abdomen and his own hands with banana wine, instead of deferring the cleansing of the hands until after the operation, as was customary among civilized practitioners at that time. The surgeon then made a rapid midline incision from the pubis to umbilicus through the whole thickness of the anterior abdominal wall, and through part of the uterine wall. Bleeding from the parieties was arrested by means of a red-hot iron, sparingly applied. The incision in the uterus was then completed, the child removed, the cord clamped, and the child handed to an assistant. The uterus was massaged to make it contract, and the cervix uteri dilated with the fingers. The placenta and blood clots were then removed through the abdominal wound. Further haemorrhage from this region was checked by use of the red-hot iron. The uterus was not sutured. A porous grass mat was placed over the wound, secured there, and the various bands which secured her being removed, the patient was turned over so that the fluid in the abdominal cavity would run out on to the floor. She was then replaced in her former position, and the mat being removed, the edges of the abdominal wound were brought into close apposition, seven thin iron spikes, well polished and resembling acu-pressure needles, being used for the purpose and fastened by a string made from bark cloth. The wound was dressed with a paste made from roots, covered with a warm banana bag, and a firm cloth placed round the abdomen. The woman stood the operation in silence until the pins were placed in position. The wound was dressed on the third, fifth and sixth days, one or more pins being removed on each occasion. The temperature never rose above 99.6° F., except on the second night after the operation, when it

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was 101° F., and the pulse 108. The wound was entirely healed by the eleventh day, and the woman appeared to make an excellent recovery. Such a well-developed technique suggests that the operation had been known and practised for a long time.'

An interesting sideline in the history of Caesarean section is the occurrence of the self-inflicted operation. Whilst the profession was arguing to be or not to be, some women in desperation performed the operation on themselves. The earliest record of such a case is given in 1769, when a negro woman cut the child out of the left side of her abdomen, using a broken butcher's knife. She was sufficiently determined at this performance that she is recorded to have made an incision 3 in. deep into the child's thigh! Apparently a negro midwife rendered first aid and returned the intestines into the abdomen, and a surgeon subsequently sewed up the wound. The patient recovered and it would appear that subsequently she became pregnant again and, being a violent tempered woman she had to be watched carefully throughout the next labour to prevent recurrence of the performance! Many other such cases are recorded, and the details of an antenatal case reported to the *Lancet* in 1886 is worth reading.

'A peasant woman of Viterbo, aged 23, of lymphatic temperature, short stature (1 metre 40 cm.), and of delicate constitution, was in the last month of pregnancy. As her condition was talked about amongst the neighbours, and provoked the anger of members of her family, and of her masters, she came to the following unheard-of determination. At 3 a.m. on the 28th March, as she relates, with a not very sharp knife, she opened her abdomen. The wound was linear, but somewhat jagged, 12 cm. in length, situated in the middle of the right iliac region, from a little above the level of the umbilicus downwards, and from without inwards. She penetrated with a somewhat less extensive incision into the uterus and extracted from it a male foetus at the ninth month, weighing 1 kgm. 900 gm. This foetus, before being extracted from the uterus, had received several important wounds in the thorax and abdomen, whereof it died before breathing, as was undoubtedly proved by the results of the microscopic analysis. The head had been divided from the trunk by a circular

incision at the base of the neck, and precisely between the penultimate and the last cervical vertebra. The end was detached from the placenta and the foetus. The placenta was perfectly healthy. This operation completed, the patient states that she tightly bound a bandage round her body, so as to bring the edges of the wound together and prevent the protrusion of the intestinal coils; then, having dressed herself at 5 a.m., two hours after the operation, she went to Viterbo on foot, a distance of one kilometre, and visited a married sister, to whom she said nothing of what had happened but breakfasted with her on bread and coffee and a cup of broth. She then left the house, and walked about the town for some time, in order, as she states, to show herself and put an end to the current talk about her pregnancy. At 10 o'clock, still on foot, she returned to her home in the country, on reaching it she was seized with unbearable abdominal pains, followed by violent vomiting and fainting. She quickly rallied and, the bandage having slipped upwards, almost the whole of the small intestines protruded. It was only then (about 11 o'clock) that the father, mother and brother became aware of the serious occurrence and went to Viterbo for medical assistance.

'We were the first to arrive on the spot at 4 p.m. the same day, 13 hours after the incision, and six hours after the escape of the intestines. We found the patient in pain, but not so much as might have been anticipated from the gravity of the case; she was conscious and tolerably calm. She was lying dressed in a small bed in a well-ventilated room. Without loss of time, with all possible precautions, and with the limited means at our disposal in the country, we proceeded to cleanse the intestines and to replace them in the abdominal cavity, after having emptied it of copious sero-sanguineous effusion. The wound was closed with twisted sutures, and a draining tube placed in its most dependent part. Strict injunctions for necessary care were given to the patient and her attendant. During the first five days no serious change occurred. The thermometer never rose beyond 39.5° C. There was no sign of uterine disturbance; the peritonitis was only partial; thirst slight; vomiting at night. During the first three days micturition was difficult and

the bowels inactive. The catheter was only used once, on the third day, from which period the bowels acted copiously and regularly. The patient slept for several hours the previous night; her sufferings were not great, and on the eighth day her recovery seemed assured. At the commencement, abundant bloody serum and badly smelling clots escaped from the turgid and painful abdomen. A considerable quantity of omentum protruded. Pus followed, thin at first, but became thick on the tenth day and then gradually decreased in quantity. The discharge all took place through the lower angle of the wound, the deep parts of which healed by first intention for about two-thirds of its extent. On the 25th day the wound was purely superficial and limited to 6 cm. in length. Cicatrization was complete on the 40th day. The patient is now (48th day) perfectly well and walks about. She is under the surveillance of the judicial authority and is receiving much sympathy from the public.

'The occurrence, though seemingly incredible, is perfectly true. We have related the actual facts, accepting the patient's statement that she operated upon herself. What is even more extraordinary than the operation is the recovery in the proved circumstances of the actual case. We shall be happy to supply any further information desired.—Raniero Baliva, M.D., Adolfo Serpieri, M.D.'

But I mentioned that the first authenticated Caesarean section occurred in the year 1500. In that year Jacob Nufer, a sow gelder, after imploring Divine aid performed the operation on his wife after 13 midwives and Nature had failed to deliver her. History records that both mother and child survived.

But it was not until 1582 that Francis Rousset became the first physician to have the courage to advocate Caesarean section on the living woman. He records a number of cases where the operation had been performed successfully, under conditions that would otherwise have been fatal to the mother and child. Three years earlier Ambrose Paré had published his great work on surgery, and in that he had mentioned Caesarean section, only to condemn it.

The next 200 years were devoted to a

constant and bitter argument between the famous obstetricians of those times concerning the merits and demerits of Caesarean section and craniotomy. Mauriceau put the weight of his great name against Caesarean section on the living patient, claiming that it was rare that 'an expert surgeon fails to deliver the child dead or alive; whole or in pieces, by the natural route.' However, the operation continued to be performed on rare occasions and in England apparently it was performed 19 times; during the eighteenth century, with only one maternal survival. The introduction of symphiotomy in 1768 turned the scale further against Caesarean section, though William Smellie admitted that it might be justified on occasion. It is not difficult to understand the high mortality—those who did not die from shock and haemorrhage, must have died of infection—no attempt was made to suture the internal incisions and most of the cases were operated on after many days in labour. And so we find the argument going on through the nineteenth century—Caesarean section versus craniotomy, but Caesarean section gaining ground. Kayser, of Copenhagen, was able to collect 338 cases recorded with a maternal mortality of 62 per cent. That was between 1750 and 1839.

The year 1876 marks a new era in the Caesarean operation. In that year Professor Porro of Paris carried out the operation in which, after removal of the child from the uterus, he amputated the uterus, believing correctly that the high mortality was due to infection passing up through the uterus into the peritoneum. The patient was a dwarf with a rachitic pelvis with a true conjugate of $1\frac{9}{10}$. Both ovaries were removed at the same time and the stump of the cervix exteriorized. The Porro operation became widely popular and between 1885 and 1889 apparently 158 operations were performed with a 29 per cent. mortality. The necessity for sacrificing the uterus was abolished a few years after Porro's original operation by Sanger, who instituted a new method of suturing the uterus. This had been suggested many years before by Lebas, but it was not until Sanger reintroduced it that it became an established practice.

Valuable as were these contributions,

Caesarean section would still today be the hazardous operation of 100 or more years ago were it not for Lister and Pasteur, and much of the improved mortality with this operation must obviously be attributed to Listerism. The lower segment operation was first suggested by Frank in 1907, and finally the advent of chemotherapy has widened the scope and reduced the dangers of Caesarean section.

I must now turn to another aspect of obstetric practice that during these centuries was giving cause for great anxiety amongst ever-increasing numbers of man-midwives, and causing an infinite amount of suffering and loss of life amongst patients—puerperal sepsis. It is ironical that this disease should have become such a horrible scourge at that very period of time when obstetrics was being elevated from the region of primitive crudity to scientific art. Puerperal sepsis must have existed in sporadic form right through the ages. We read accounts of the disease, which are remarkable for their accuracy of clinical observations, in the writings of Hippocrates, whose theory of it as milk fever persisted through nearly 2,000 years as the most widely accepted theory of origin. It is not difficult to understand why puerperal sepsis existed merely in sporadic form for so long. The vast majority of confinements occurred in isolation with minimal of local interference. When interference became necessary, the patient was usually past hope of recovery and died of exhaustion, obstructed labour or haemorrhage, long before she had the opportunity to develop puerperal infection. But in the 17th and succeeding centuries two events of major importance were occurring. On the one hand there was the ever increasing introduction of the physician to effect delivery in difficult cases, and on the other hand the foundation of a variety of institutions for the care and treatment of the sick poor. One of the earliest and most famous of such institutions was the Hotel Dieu in Paris. The conditions in many of these early lying-in hospitals were appalling to our modern ideas. No attempt was made to segregate the various types of case, and often 6-8 patients were crowded into a single large bed. In one of the halls or wards of this Hotel Dieu 800 patients were accommodated, not all in beds, but many on heaps of straw on

In this position the parturient is half sitting on the husband's knees. There are two trusty friends who each hold one hand of the parturient and push with the other on the parturient's knees, while the accoucheur kneels between them and receives the child. This position is said to be slightly wearisome to the husband in the case of delayed labour.

the ground. Lighting and general sanitation were primitive to a degree, and overcrowding so gross that often a dead body was left unnoticed for many hours in close proximity to patients who were still alive but too ill to protest, and doubtless their feeble protests often passed unheeded. Their attendants were more often concerned with religious ministrations to the dead and dying than with the nursing and treatment of the sick but still living. It does not require much imagination to realize what happened as a result of herding together large numbers of women for the purpose of delivering their babies—often with much local interference from the physicians, who we must remember had not the elements of surgical cleanliness as we know it today. Small wonder then that there broke out, in consequence, a series of epidemics of puerperal fever, which ravaged the countries of Europe for the next 200 years and carried off thousands of puerperal women. Over 200 such epidemics are recorded between the years 1652 and 1862, and there must have been many more minor unrecorded examples of this new disease. The first such epidemic occurred in Leipzig in 1652, and M. Peu described the ravages of the first epidemic within the walls of Hotel Dieu in 1664. In the former the mortality rate amongst the lying-in women was 90 per cent., and in the latter still greater for a short period of time. A still worse epidemic spread through Lom-

bardly nearly a century later, where it is stated that not a single woman survived childbirth for a period of a year at the height of the epidemic. Many such epidemics occurred in Vienna, Dublin, London, Edinburgh and other cities where lying-in hospitals for the poor were being founded in rapid succession. Small wonder such epidemics occurred in such conditions, when we remember that physicians had no real understanding of the nature of the disease they witnessed so frequently. But their continued recurrence made some, at any rate, of the physicians practising midwifery begin to think more seriously about this new and dangerous disease. We find Harvey, Burton, Denman, Kirkland and many others writing at length their theories of the causation of puerperal infection, without unravelling any of the real problems. Two names, however, deserve special mention. Charles White was a Manchester surgeon, mentioned by de Quincey as the most eminent surgeon in the North of England. He gives an interesting account of the lying-in chamber in the middle of the 18th century:—

‘When the woman is in labour, she is often attended by a number of her friends in a small room, with a large fire, which, together with her own pains, throw her into profuse sweats. By the heat of the chamber and the breath of so many people the whole air is rendered foul, and unfit for respiration. This is the case in all confined places, hospitals, jails, and small houses inhabited by many families, where fevers are apt to be generated, and proportionately the more so where is the greatest want of free air.

‘If the woman’s pains be not strong enough, her friends are generally pouring into her large quantities of strong liquors, mixed with warm water, and if her pains be very strong, the same kind of remedy is made use of to support her. As soon as she is delivered, if she be a person in affluent circumstances, she is covered up close in bed with additional clothes, the curtains are drawn round the bed and pinned together, every crevice in the windows and door is stopped close, not excepting even the keyhole, the windows are guarded not only with shutters and curtains, but even with blankets, the more effectually to exclude the fresh air, and the good woman is not suffered

to put her arm, or even her nose out of bed, for fear of catching cold. She is constantly supplied out of the spout of a teapot with large quantities of warm liquors, to keep up perspiration and sweat, and her whole diet consists of them. She is confined to a horizontal posture for many days together, whereby both the stools and lochia are prevented from having a free exit. This happens not only from the posture of the patient, but also from the great relaxation brought on by warm liquors and the heat of the bed and room, which prevent the over-distended abdominal muscles from speedily recovering their tone, whereby they are rendered unable to expel the contents of the abdomen, which lodging in the intestines many days, become acrid and quite putrid.’

White stressed the importance of fresh air, clean linen, sunlight and, above all, posture in order to allow drainage of the lochial discharge from the uterus and vagina. The other name to mention is Alexander Gordon, who was the first to recognize the contagious nature of the disease. But they never got beyond the stage of theorizing, and it was not until another 50 years had elapsed that the real nature of puerperal infection was proven. Then occurred one of those curious events in the history of medical research and scientific discovery. Two men practising medicine thousands of miles apart, had a similar chance experience which enabled them both to reach the same correct explanation of what they had observed. Oliver Wendell Holmes was a man of many parts, and Osler describes him as the most successful combination which the world has ever seen of the physician and man of letters. He was born in Massachusetts in 1809, and graduated from Harvard in 1829. He studied law as well as medicine, won for himself a place of high rank in the literary world, and finally became a distinguished anatomist at Harvard Medical School. We are concerned here, however, with his contribution to the knowledge of puerperal fever. He first became interested in this subject when he learned of the death of a physician who had been infected in performing a post mortem upon the body of a woman who had died of puerperal fever. This physician had delivered several women after acquiring infection, and all had died of puerperal sepsis. His research into the ravages of puerperal

Oliver Wendell Holmes.

fever resulted in the publication of his essay on the 'Contagiousness of Puerperal Fever,' which appeared in 1843. In this essay he gives full credit to earlier observers for recognizing that the disease could be carried from one patient to another, but he was able to offer undeniable proof that it was so carried. He argued that if, as in fact did occur, the disease prevailed in a single place there must be some local cause for its occurrence there. If a large number of cases occurred in the practice of a single person and few or none elsewhere, there must be some reason for connecting the cause of the disease with that person. It could not be chance, he argued, that accounted for a single physician having 16 fatal cases in a single month. His conclusions, amounting almost to rules for obstetricians, are worth quoting in full.

'1. A physician holding himself in readiness to attend cases of midwifery should never take any active part in the post mortem examination of cases of puerperal fever.

'2. If a physician is present at such autopsies, he should use thorough ablution, change every article of dress, and allow 24 hours or more to elapse before attending to any case of midwifery. It may be well to extend the same caution to cases of simple peritonitis.

'3. Similar precautions should be taken after the autopsy or surgical treatment of cases of erysipelas, if the physician is obliged to unite such offices with his obstetrical duties, which is in the highest degree inexpedient.

'4. On the occurrence of a single case of puerperal fever in his practice, the physician is bound to consider the next female he attends in labour, unless some weeks at least have elapsed, as in danger of being infected by him, and it is his duty to take every precaution to diminish her risk of disease and death.

'5. If within a short period two cases of puerperal fever happen close to each other, in the practice of the same physician, the disease not existing or prevailing in the neighbourhood, he would do wisely to relinquish his obstetrical practice for at least one month, and endeavour to free himself by every available means from any noxious influence he may carry about with him.

'6. The occurrence of three or more closely-connected cases, in the practice of one individual, no others existing in the neighbourhood, and no other sufficient cause being alleged for the coincidence, is *prima facie* evidence that he is the vehicle of contagion.

'7. It is the duty of the physician to take every precaution that the disease shall not be introduced by nurses or other assistants, by making proper inquiries concerning them, and giving timely warning of every suspected source of danger.

'8. Whatever indulgence may be granted to those who have heretofore been the ignorant causes of so much misery, the time has come when the existence of a private pestilence in the sphere of a single physician should be looked upon, not as a misfortune, but a crime, and in the knowledge of such occurrence the duties of the practitioner to his profession should give way to his paramount obligations to society.'

Holmes' conclusion, that the physician could and was in point of fact frequently the responsible agent in causing puerperal fever, aroused a storm of protest amongst well-meaning respectable, but unimaginative medical practitioners. He was severely criticized by Dr. Meigs of Philadelphia, who quoted the fact that a series of cases had occurred in the practice of the great Dr. Simpson of Edinburgh. The implication was obvious that such an eminent obstetrician could not possibly be responsible for causing such a disease. But Holmes was more than a match for such an argument, and his reply was

that Dr. Simpson had attended the dissection of two of Dr. Sidney's cases and freely handled the diseased parts. His next four childbed patients were affected with puerperal fever and it was the first time he had seen it in his practice. 'As Dr. Simpson is a gentleman, and as a gentleman's hands are clean, it follows that a gentleman with clean hands may carry the disease.' But having penned his brilliant essay and reproduced it as a monograph on Puerperal Fever on a Private Pestilence, he let the matter drop and embarked on no crusade to enforce his teachings on his dissident colleagues.

It was left to Philip Semmelweiss independently to supply both the theory and the practice, and his life was the life of a crusader. His is the name that deserves pride of place so far in this story, and his whole medical life was devoted to the solution of this one problem of puerperal infection. Semmelweiss was a native of Budapest, and he received his medical education in the University of his native home town, and later went to Vienna. There he was soon appointed Assistant in the First Obstetric Unit of the Vienna Lying-in Hospital under a man named Klein. At that time the mortality from puerperal fever was roughly 10 per cent., and at times rose to a considerably higher figure. No explanation was forthcoming of how this disease was caused and, though the work of Gordon some 50 years previously had strongly suggested the contagious nature of the disease, obstetricians continued to omit many of the elementary precautions that he had suggested. Semmelweiss soon came to the conclusion that there was some factor present in the hospital that was responsible for this disease, but just what it was he could not discover, and might never have done so but for two facts. Firstly, this particular institution was divided into two parts. In the one, the First Division deliveries were conducted by medical students, and in the Second Division by midwives. The mortality in the former was 99 per 1,000 births over a period of six years, in the latter 33. This was a very striking fact to anyone who cared to take note of it. The striking difference appears to have been known and heeded by everyone except the Professor and his staff. The latter could think of no better explanation for this

Ignaz Philip Semmelweiss (1818-1865).

discrepancy than that the higher mortality in the First Division was due to the outraged modesty of the unfortunate women who had to be delivered in the presence of men. Considering that many, if not the majority, of the patients were drawn from a class generally depicted as abandoned women, this explanation seemed particularly inept. Semmelweiss worked hard to improve general conditions of lighting, ventilation and diet, without making much headway in the solution of his problem, and at the same time making a lot of enemies amongst the administrators of the institution in which he worked as a result of his ceaseless energy and fault finding. Then a chance occurrence gave him a clue. His great friend, one Kolletschka, died after pricking his finger whilst performing a post mortem examination. He died obviously of what we now call septicaemia, but Semmelweiss, seeing him in his final fatal illness, was impressed by the similarity of his disease to that from which so many of his unfortunate women patients died. The two diseases could only be one and the same. It became clear to him that the cause was the entrance of cadaveric material into the vascular system, in the one case through the finger, in the other through the uterus. The one outstanding thing that the medical students did which the midwives did not do, was to attend the post mortem room, whence they must often have received urgent calls that the head was on the perineum. If they got there

The height of prudery—a physician operating under the sheet.

in time, then they did not even wash their hands before conducting the delivery and then maybe examined two or three other women in labour. The answer was clear—Semmelweis ordered that the medical students must wash their hands in a solution of chloride of lime before making examinations or doing deliveries. By this simple measure the mortality dropped from 120 per 1,000 to 12 per 1,000 in six months. Here was a result and not merely a theory. In point of fact, his theory was only half correct, but his results were something positive and definite. To quote his own words:—

‘Supported by the experiences which I have collected in the course of 15 years in three different institutions all of which were visited from time to time by puerperal fever to a serious extent, I maintain that puerperal fever, without the exception of a single case, is a resorption fever produced by the resorption of decomposed animal organic material. The first result of this resorption is a blood-dissolution, and exudations result from the blood-dissolution.

‘The decomposed animal organic material which produces child-bed fever is, in the overwhelming majority of cases, brought to the individual from without, and that is the infection from without. These are the cases which represent child-bed fever epidemics. These are the cases which can be prevented.

‘In rare cases the decomposed animal matter which when absorbed causes child-bed fever, is produced within the limits of the affected organism. These are the cases of self-infection, and these cases cannot all be prevented.

‘The source whence the decomposed animal organic material is derived from without is the cadaver of any age, of either sex, without regard to the antecedent disease, without regard to the fact whether the dead body is that of a puerperal or non-puerperal woman. Only the degree of putrefaction of the cadaver has to be taken into consideration.

‘... At the Obstetric Clinic of the Faculty of Medicine at Pesth, it was physiologic human blood and normal lochia which were the etiological factor of a puerperal fever, inasmuch as they were left for a long time soaking the bed linen and undergoing decomposition.

‘The carrier of the decomposed animal organic material is the examining finger, the operating hand, the bed clothes, the atmospheric air, sponges, the hands of midwives and nurses which come into contact with the excrements of sick lying-in women or other patients, and then come again into contact with the genitals of women in labour or just confined. In a word the carrier of the decomposed animal organic material is everything which can be rendered unclean by such material and then come into contact with the genitals of the patient.

‘The site of infection by the decomposed animal organic material is the internal os uteri and upward from there. The inner surface of the uterus . . . is robbed of its mucosa and presents an area where absorption occurs with extreme readiness. The other parts of the mucosa are well clad with epithelium and do not absorb unless they are wounded. If it is injured any portion of the genitals becomes capable of absorption.’

From a man who knew nothing of bacteria and antiseptics, this is as near and true a description of the aetiology of puerperal fever as we could ever hope to get. Such a brilliant feat of clinical research should have crowned its author with laurels for the rest of his life, but as ever the way of the pioneer was hard. The ill will and personal jealousy of his superiors led to his dismissal from his office in

1849. He left Vienna and returned to Budapest, where he eventually became professor of midwifery. The application of his methods reduced the puerperal mortality first to 8.5 per 1,000 and ultimately to 3.9. In 1860 he published his life's work 'The Cause, Import and Prophylaxis of Childbed Fever.' And yet the world at large ignored this work. His contemporaries even argued and tried to prove him wrong, so that his life was spent in an atmosphere of perpetual frustration and opposition, and eventually he was taken to a lunatic asylum, where he died of a wound infection of his finger—once more a septicaemia.

Two years after the death of Semmelweiss, Lister published his first paper on antiseptics, and in 1879 Louis Pasteur read his famous paper on 'Puerperal Septicaemia' before the Academy of Medicine in Paris. The world now had the cause, bacteria, the mode of spread, contagion, and the remedy, antiseptics, and yet in England during the ten years period 1885-94 there were 23,456 deaths from puerperal infection. Even in the ten years period 1925-34 there were 1,000 more

deaths from puerperal infection than occurred in the years 1855-64. These figures are an eloquent testimony to the indifference and unwillingness to apply available knowledge. In the words of Munro-Kerr, 'The death rate persists at its present unsatisfactory level chiefly because the essential factors prejudicial to betterment are permitted to continue—not because we are ignorant of them but because we have not sufficient determination to remove them.'

I have endeavoured to outline a few of the most notable advances in the practice of the obstetric art during the past 450 years, and in particular to give some insight into a few of the remarkable men responsible for planting firmly these important milestones. I have made no mention of antenatal pathology and physiology, for these are of such recent development that nearly all our knowledge of them has accrued within the limits of the present century. That is undoubtedly the field with which all modern workers are chiefly concerned, and it is in that field that the next important milestone will be founded

BOOK REVIEWS

THE MICROSCOPE

By THEODORE STEPHANIDES, M.D. 1st Edition. Faber & Faber. London. 1947. Pp. 160. Price 10s. 6d.

This should prove a useful book to medical students, research workers, laboratory technicians and many others. It is simply and clearly written and not only gives an admirable description of the microscope, but also gives valuable information on the observations to be made, and the tests employed when purchasing an instrument. The latter is viewed both from the student's angle as well as that of the research worker. The second part deals with the technique of microscopical observation, and at the conclusion the author gives a practical bibliography and definition of terms used in microscopy.

S.D.N.

THE BLOOD PRESSURE AND ITS DISORDERS, INCLUDING ANGINA PECTORIS

By JOHN PLESCH. 2nd Edition. Ballière, Tindall & Cox. 1947. Pp. 1-307.

This book is both provocative and disappointing. Much of the book, in fact nearly a third, consists of

an appendix, and in the latter matter is found which is not relevant to the author's subject—for example, a description together with case records of his method of immunization and desensitization by injections of urine. Almost half of the book is taken up with the technique of the author's Tonoscillo-graph and a description of the results obtained.

His conception of angina pectoris differs from that usually understood in this country. He considers it is a disorder of the whole circulation and refers to intermittent claudication as angina of the femoral artery, maintains that some types of renal colic are due to angina of the renal artery, asserts that pain in the left hypochondrium can result from angina of the splenic artery and says that eye-strain is often due to angina of the ophthalmic artery. He states that anginal pain occurring when the patient is fast asleep has a prognosis less favourable than that which occurs during the day or before midnight. The reviewer is of the opinion that such symptomatology is much more likely to be due to cardiac infarction.

He firmly maintains (in italics!) that arteriosclerosis is curable and much is made of dietetic treatment. He has some interesting things to say about small pericardial effusions, but his statement