A Lecture

ON

PREVENTIVE MEDICINE AS APPLIED
TO OBSTETRICS.*

BY

J. M. MUNRO KERR, M.D.,

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY, GLASGOW UNIVERSITY.

In the "Resolutions of the General Medical Council with regard to Professional Education" which came into force in January, 1923, you will find the recommendation¹ "That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of medicine." You are commencing the study of obstetrics and gynaecology. What, therefore, could be more appropriate on this the opening day of the session than an address on preventive medicine as applied to obstetrics?

The science and art of obstetrics are concerned with: A, Pregnancy; B, Parturition; C, Puerperium. Each of these events has disturbances peculiar to it. Some of them are preventable; others with our present knowledge are beyond our control. In this introductory lecture I propose to deal only with the more common complications which are preventable.

A. PREGNANCY.

In many of the early civilizations the pregnant woman received special attention and consideration. Crude tests for pregnancy and remedies for the incidental discomforts were employed. The instability of the nervous system was recognized, and great importance was attached to the effect of external influences. But the scientific management of pregnancy, or, as it is more popularly expressed, "the care of the expectant mother," is of recent date, and has gradually evolved as we have come to understand in some slight degree the complicated changes in the normal physiological processes which produce the disturbances peculiar to pregnancy. Only in the last decade has this important branch of preventive medicine received official recognition. In 1915 a very far-reaching Act was placed on the Statute Book—namely, the Notification of Births (Extension) Act, 1915—which relegated to the public health authorities the responsibility of the proper care not only of the parturient and her offspring up to school age, but also of the mother during pregnancy. As a result, an ever-increasing number of ante-natal clinics have been established. Unfortunately, full advantage is not taken of them. To remedy this failure of pregnant women to seek medical advice it has been suggested to make the payment of maternity benefit, which all insured women enjoy under the Insurance Act, conditional on the pregnant woman engaging a medical practitioner or midwife some months before the expected confinement. The recommendation by the Committee on Puerperal Morbidity and Mortality that this should be done at least twelve weeks beforehand² is futile, for the most common disturbances of pregnancy commence very much earlier than is generally supposed. Besides, many pregnant women suffering from chronic disease, such as syphilis, albuminuria, glycosuria, tuberculosis, etc., must be treated at the very commencement of pregnancy.

Now, you very naturally ask why this physiological process of pregnancy should produce such serious disturbances. As you are all aware from your physiological studies, the process of pregnancy should be a "symbiose harmonique homogène" (Bar), in which the mother takes her food better, utilizes the food which she takes, and improves in general health. Unfortunately, however, in many instances it is of a very different nature: the ovum in its growth and maintenance not only draws on the mother's capital, but actually seriously injures the mother by reason of the disturbances it produces on all the tissues concerned with metabolism. This malign process begins very early in pregnancy, not with the placental formation,

as many writers indicate. Its incidence dates back to the time of embedding, when the tissues of the endometrium are digested and destroyed by the trophoblast of the ovum, and the end-products are directly thrown into the maternal circulation. In no other way can one explain a case which was under my care many years ago and profoundly impressed me at the time. This was a patient who began to have nausea and vomiting ten* days after marriage. The last menstruation ended two days before her marriage. Thus the early disturbances incidental to pregnancy were experienced about the seventh or eighth day after fertilization, and anything from the first to the sixth day from the commencement of embedding.

There occurs in pregnancy, therefore, a battle between natural resistance and enemy forces, the imperfectly controlled activities of the ferments produced by the developing ovum. When the latter gain mastery a "negative phase" of metabolism is produced and the various complications of pregnancy develop, which are referred to as the toxæmias of pregnancy.

The care of the expectant mother is chiefly concerned with assisting her to combat this tendency towards a negative phase, by careful dieting, improving elimination, avoiding fatigue, and administering particular and more specialized remedies according to her requirements. To accomplish this satisfactorily the patient must be seen and overhauled at short intervals (three to four weeks). At the present time this medical examination is still incomplete, for we know comparatively little regarding these ferments, and we have still only very crude methods for testing their presence and the early dyscrasias they induce. But if pregnant women are supervised and suitably treated the graver toxæmias seldom develop. A striking instance of this is eclampsia or convulsions, for among pregnant women supervised by obstetric specialists and careful general practitioners it very rarely occurs. The death rate from eclampsia in Scotland and Glasgow during the years 1918-23 was as follows:

Death Rate from Eclampsia.

Year.	Glasgow.	Scotland.	No. of Births.	
			Glasgow.	Scotland.
1918	20=0.85 per 1,000	100=1.01 per 1,000	23,524	98,554
1919	29=1.12	103=1.02	25,875	106,268
1920	22=0.67	134=0.98	32,626	136,546
1921	25=0.87	123=1.00	29,712	123,201
1922	22=0.78	122=1.06	28,298	115,085
1923	35=1.31	126=1.13	26,702	111,902

Another most interesting group of disturbances are the complications which arise as a result of disorder in the ductless glands, for all these glands are affected by pregnancy. Take, for example, the increased diastatic content in the urine, associated in many instances with disturbances in the internal secretion of the pancreas; or the albuminuria which in some instances is associated with an imperfect thyroid secretion.

These disturbances, which the pregnant woman contracts as a result of this negative phase of metabolism, not only endanger her life during pregnancy—they increase the dangers of parturition. Nor is this the whole toll: in a number of instances, where they are not completely recovered from, they produce permanent chronic disease. For example, I know of several women who are at present suffering from chronic albuminuria which had its incidence in an albuminuria of pregnancy; some who have asthma when their general health is lowered, or their digestive process disturbed; and others whose general health, digestion, and feeling of well-being have never quite returned to the normal. Lastly, the injurious influence which these poisons exercise on the child must be taken into account. Some 30 to 40 per cent. of stillbirths are due

* Introductory to the systematic class of obstetrics and gynaecology, session 1923-24.

* Recently my attention has been directed to another case in which the morning sickness occurred on the eighth day after marriage and eleven days after the last day of the period.

to this cause. The chief difficulty at present is the treatment of these complications while they are still incipient. Among the well-to-do and comfortably off this does not arise—the patient can be transferred to a nursing home, or trained nurses brought in to take charge; but among those in less comfortable circumstances this is impossible in the patient's home, and institutional treatment is totally inadequate. A more satisfactory condition can only be reached when adequate hospital accommodation has been provided for all cases requiring institutional treatment.

In addition to this medical care of the expectant mother there is the more definite investigation and examination late in pregnancy with the object of recognizing or preventing the complications of parturition. The more common of these may be summarized under three heads: (a) malpositions of the child, (b) deformities of the pelvis, (c) tumours obstructing the canal.

(a) *Malpositions of the Child*.—An enormous number of women are allowed to drift into labour without a sufficient examination, and without any attempt being made to diagnose and correct malpresentations prior to labour. Transverse presentation can always be corrected, even in the later days of pregnancy. A similar procedure should also be followed in breech presentation, a complication not very serious in a multipara, but attended with great difficulty and resulting often in serious injury to the mother and child if the parturient is a primipara. Now, practically all these cases of breech presentation can be recognized in the later weeks of pregnancy, the child turned, and a vertex presentation established. In recent years a further advance has been made—namely, the conversion of occipito-posterior positions of the vertex (where the back of the child is towards the back of the mother—a very common and troublesome condition) into dorso-anterior positions. Personally I have not been very successful with this manœuvre. There are probably some peculiar factors still not understood which determine occipito-posterior positions; and so, while I believe a certain number may be corrected, it is not possible to do this in all cases. Fortunately, however, in most instances timely intervention during labour can bring about a correction of this very common and troublesome complication of parturition, but this will be referred to later.

(b) *Deformities of the Pelvis*.—This is a common cause of difficulty, especially in Glasgow where rickets is so prevalent; by pelvimetry, manual examination, and radiography it is possible to determine the degree of pelvic deformity and to estimate accurately the relative size of head and pelvis. Having done this, one is in a position to select beforehand the most suitable treatment, with the result that the foetal and maternal death rate from this serious complication can be reduced to a very low figure indeed. I remember one year in the Maternity Hospital I and my assistants had no maternal death and only one foetal death in our department among the cases which we saw in the late weeks of pregnancy or early in labour.

(c) *Tumours Obstructing the Canal*.—These are not difficult to recognize or treat, if diagnosed before labour commences.

B. PARTURITION.

The problems of pregnancy are simple compared with those of parturition. Already morbidity and mortality incident to pregnancy are progressively lessening, but this cannot be said of parturition.

I. THE INCIDENCE AND CAUSES OF MATERNAL MORTALITY IN CHILD-BED.

(a) Infection.

The death rate from puerperal infection in Scotland and Glasgow for the years 1921-23 was as follows:

Deaths from Puerperal Infection. (Per 1,000 births.)				
Year.		Scotland.		Glasgow.
1921	...	2.42		2.45
1922	...	2.33		3.28
1923	...	2.2		2.7

Although parturition is a natural process, unfortunately in a large proportion of cases it does not run a natural

course any more than does a pregnancy; further, where it terminates spontaneously its management must be carried out with all aseptic precautions. Puerperal infection is a wound infection. Infection of a wound can only be prevented by special preparation of patient, surgeon, and nurses; so in obstetric practice puerperal fever can only be prevented by employing similar procedures. This is done in all maternity hospitals. Puerperal infection in such institutions only occurs (in uninterfered-with cases) where the individual has accidentally acquired infection prior to her admission to hospital. This is termed "autogenetic infection." Could all parturient women be treated in well appointed maternity hospitals or nursing homes puerperal infection could be reduced to a minimum. This is not practicable. But the providing of institutional treatment for all primiparae, in addition to all multiparae whose labour is obviously or likely to be a complicated one, is feasible, and would be of tremendous advantage; for the primipara is much more prone to infection than the multipara, because her labour is generally longer and more difficult.*

As regards domestic midwifery practice, a number of women can be safely treated in their own homes, provided the accouchement is carried out on approved lines. But a much greater number cannot be attended as satisfactorily, and still more should not have their confinements at home, for, apart altogether from the danger, every sense of decency is violated by confinements taking place in such houses.

The reasons why infection is more prone to occur in domestic midwifery practice are:

(1) The preparation of the patient beforehand cannot be carried out thoroughly in a private house. To appreciate this it is only necessary to contrast the preparations made by a surgeon prior to operation and those generally employed by the obstetrician, or by any medical attendant in domestic practice. You are familiar with the extreme care taken by the surgeon in the cleansing of his hands, in the wearing of rubber gloves, in the sterilization of his instruments, in the preparation of the field of operation, in ensuring that only absolutely sterilized swabs and dressings are employed, and that sterilized towels, sheets, etc., are placed below the patient and immediately around the field of operation. How different the case of the parturient confined in her own bed, attended by an accoucheur whose hands are often imperfectly cleansed and who seldom wears rubber gloves, sponged before and after delivery by nurses who perform all kinds of duties—toilet of the bowels, tidying of the rooms, cooking—and who rarely if ever wear rubber gloves. Take, again, the swabs and dressings—very often removed from a packet of gamgee or cotton-wool bought from the nearest chemist and never sterilized. Fortunately, however, not all practitioners trust to such unsterilized swabs and dressings. Many obtain sterilized gauze from such firms as Bell and Croyden, or a local nursing home, while at present I am glad to report that a number of health authorities are prepared to supply such dressings for a small sum, or free of charge in necessitous cases. But probably the greatest source of danger is from the field of operation. The surgeon who is about to perform an operation shaves the field, cleanses it most carefully with soap and water and antiseptics, and surrounds it with towels before he proceeds to the operation. The field of operation in the case of the parturient, except in maternity hospitals and in the hands of obstetric specialists and a few general practitioners, receives but perfunctory attention, and yet it is a most septic area. The hair of the pubis and folds of the vulva teem with pyogenic organisms, constantly added to from the bowel, which is in the immediate vicinity. Until the same procedure is carried out in all parturitions as is followed in surgical operations maternal mortality and morbidity will not appreciably diminish, for from this area organisms extend and are carried up by the examining fingers, especially if the obstetrician has to carry out any obstetric operation such as forceps delivery or version. It has been urged that women would object to such preparations. This I am sure is not so. I am perfectly certain that if it were impressed on all parturient women that this detail is necessary, few would object. As a matter of fact they make no objection when this is done in a nursing

* Vide Table 1, p. 75, 1923 Report, Medical Officer of Health.

home, or in their own homes prior to an operation. There is no use pretending that parturition is a simple physiological process, and that the management of it is equally simple: in 20 to 30 per cent. of cases there are major or minor abnormalities, and in all there is the risk of infection.

(2) Where operative intervention is necessary there is not the same assistance available as in a hospital or nursing home, where one or more assistants can be summoned. This is a matter of very great importance.

(3) Because a confinement upsets the rest of the work of a busy general practitioner, and he is inclined to hasten the delivery. I shall refer to this more fully in a moment.

(b) Haemorrhage.

The next most important cause of maternal death is haemorrhage, the incidence of which is about 0.8 to 0.85 per 1,000. The haemorrhages of the later weeks of pregnancy and parturition are accidental occurrences which, as far as we are at present aware, cannot be prevented. We can, however, lower the mortality, which is very considerable in this complication, by improvement in treatment, and especially if a greater number of such cases are transferred early to hospital.

(c) Injuries.

These are very difficult to estimate, because in many cases where injury to the patient results from the delivery death takes place not as a result of shock or injury, but owing to the fact that the bruised tissues become infected; death is usually due to septicaemia. Most of the grave injuries result from hastening unduly the delivery. As a matter of fact the two generally go together. To extract the head situated at the outlet is comparatively simple and safe, and at worst will only result in a slight tearing of the perineum which can be easily repaired; but to apply forceps while the head is high in the pelvis, especially if it is still within the neck of the uterus, is a different matter. No one can ever pull down the head with forceps as well as Nature can drive it down. Infinite patience is necessary in many cases. The busy general practitioner says he has not time to wait, and after some years he persuades himself that not only is it more convenient to himself to deliver with forceps as soon as possible, but that it is actually in the interests of his patients that they should not be allowed to remain in labour longer than necessary. Further, and this is a very important matter, many individuals, particularly of the artisan class, appraise the value of the accoucheur by the promptitude with which he delivers them and relieves them of their suffering. This hurrying of a delivery with forceps cannot be too strongly condemned. Yet, knowing this, and with witesses who represented how serious and how frequent were the injuries which resulted from too early application of forceps, the Scottish Departmental Committee* has nothing further to suggest than discussion in medical societies and journals, as if this had not already been done *ad nauseam*, and without having the slightest effect in bringing about a more careful attitude towards the employment of forceps.

II. THE INCIDENCE AND CAUSES OF INFANT MORTALITY (STILLBIRTH) THE RESULT OF LABOUR.

There are four common causes of death during delivery: injury; certain forms of haemorrhage during the later weeks of pregnancy and labour; prolapse or falling down of the umbilical cord; and prematurity.

(a) *Injury* to the child is naturally proportional to the difficulty of the delivery. The prevention of this has already been considered in connexion with maternal mortality and morbidity.

(b) *Haemorrhage (Maternal).*—As regards haemorrhage, we find that this takes a very great toll of both mothers and children. In one particular condition where the after-birth comes first (placenta praevia) the maternal death rate of the Glasgow Maternity Hospital in 489 cases for the years 1920-24 inclusive was 13 per cent. and the foetal death rate 71 per cent.—not a very satisfactory state of matters, and one which could be greatly improved were

the cases of this complication recognized early and transmitted to hospital immediately. The results of the Edinburgh Maternity Hospital are practically the same.³

(c) *Prolapse of Cord.*—As regards the falling down of the cord, we find that it is associated with a very high infant death rate, but a negligible maternal mortality.

(d) *Prematurity* as a cause of foetal death is well known to you.

III. REMEDIAL MEASURES NECESSARY TO LOWER MATERNAL AND INFANT MORTALITY IN CHILDBED.

There is at present a general conviction that improvements are necessary; the difficulty lies in determining the direction in which these should be initiated. As a contribution to the subject I would put forward the following policies.

1. Modifications and Improvements in Present-day Domestic Midwifery.

A number of the suggestions which I am about to make will be accepted and are easily carried out; others are more controversial and more difficult to secure.

(a) *It is essential that hospital accommodation should be increased.* Practically all grave surgical and medical diseases receive institutional treatment. Until a similar course is followed in obstetric practice maternal and foetal mortality and morbidity cannot be greatly reduced among the artisan class.

(b) *All nursing homes and private houses in which women are received for their confinements should satisfy the health authorities.* I am sure everyone will agree with the recommendation of the Scottish Departmental Committee (paragraph 101) "That legislation be considered to make the conduct of maternity homes illegal unless they are registered by the local authority and conducted to their satisfaction."* In some nursing homes the appliances for sterilizing instruments, towels, bed-linen, etc., are inadequate; the conveniences for any operation defective; and the nursing inefficient and insufficient. Even more dangerous are private rooms or houses in which women are received for their confinements.

(c) *Power should be secured by the local health authorities to remove a patient from her dwelling house to hospital if the house is deemed unsuitable for a confinement.*

(d) *As far as possible, primiparae should have their confinements in a hospital or nursing home.* I have already pointed out the relatively large mortality and morbidity in primiparae.

(e) *It is of the very greatest importance that the training of maternity nurses should be extended, and that every two or three years they should have a revision course in an institution.*†

(f) *Rubber gloves for midwives and nurses.* All midwives should be compelled to wear sterilized rubber gloves when sponging the patient during and after her delivery. It is a very simple detail and would cost very little. This is necessary as they are called upon to do all manner of household duties—bathing the child, cooking food, tidying the house, keeping the patient's room in order, stoking the fire, etc.—and as their hands in consequence are frequently contaminated.

(g) *The supply of a sterilized outfit for the confinement.* This question has already been considered.

(h) *Better training of students in clinical midwifery.* It is little short of a disgrace that at the present day the student on graduation is unfitted for the practice of midwifery. His clinical training is inadequate, yet the day after he qualifies he may be called upon as assistant or locum tenens to perform serious obstetric operations which he has never done himself, or even seen performed. He would never attempt to deal with medical or surgical problems of the same magnitude. In this connexion the reports of the English and Scottish Curriculum Sub-committees are of particular interest, for both committees recommended a period of continuous and uninterrupted

* The Midwives and Maternity Homes Bill recently introduced applies only to England.
† This has been recommended by the Ministry of Health, Whitehall, Circular 517, p. 3, June, 1924.

training in obstetrics and gynaecology as the best arrangement to secure satisfactory instruction in these departments. The English committee advocated six months, "no extraneous subjects to be studied at the same time."⁴ (St. Thomas's Hospital School has recently adopted this recommendation.) The Scottish committee was of opinion that one term—namely, three months—might be sufficient, and suggested that during this term instruction in vaccination and medical diseases of sick children should be included.⁵ It is only by having students for a continuous period that it is possible to give them adequate instruction. Obstetrics is on a different footing from that of medicine and surgery, because the exigencies of hospital obstetric practice are such that regular hours for teaching, demonstrations, etc., are not always possible and cannot always be arranged beforehand. The great success attained by the Rotunda and Coombe Hospitals in Dublin is largely due to the fact that students resident in these hospitals give up their whole time to the study of obstetrics and gynaecology. Personally I think that three months' clinical training would be sufficient, provided the students were given a preliminary course of thirty to forty lectures. This course should be given in the fourth year, and the three months' concentrated clinical teaching during one term of the fifth year. Further, I think it would be of great advantage to the final year student if for the other two terms of the fifth year he did either medicine or surgery. Thus he would do obstetrics, gynaecology, and pediatrics one term; medicine, ophthalmology, and fevers in another term; and surgery and throat, ear, and nose in the third term. Taking our school of Glasgow with a final year of roughly 150 students, that would mean that 50 were allocated to each of these divisions, and these 50 distributed over the different clinics. This would result in only three or four senior students being attached to each clinic. Under such an arrangement the student would gain a much more thorough clinical experience in obstetrics, medicine, and surgery, than is possible under existing conditions.

(i) *Special revision courses for general practitioners.* If general practitioners are to continue to undertake obstetric practice it would be almost necessary for them to undergo revision courses in hospital every two or three years. In times past they gained experience in a haphazard fashion from the numerous cases they attended. But obstetric practice is passing largely into the hands of midwives, with the result that general practitioners are gradually losing in experience and dexterity. The tendency therefore must be: (1) a number, and probably the best general practitioners, will refuse to undertake the responsibility of difficult obstetric practice—namely, emergency calls by midwives—except *ad misericordiam* appeals; (2) less capable practitioners will volunteer; (3) young graduates of little experience anxious to increase their practice will undertake the work.

2. An Obstetric or Maternity Service.

Although domestic midwifery practice might be improved along the lines suggested, the improvement would not be very decided. Sooner or later I believe it will be necessary to establish an obstetric or maternity service. I have long held this view, and in recent years have questioned a large number of my medical friends in general practice regarding such a service. The majority of them have expressed the opinion that they would be very pleased indeed to be rid of obstetric cases, especially among the artisan class, as they interfere with the ordinary work of a practice. A number, however, are opposed to the suggestion, but this opposition I reckon would be short-lived.

The future of domestic medical practice must be in the direction of pure medicine. Undoubtedly, a generally knowledge and experience of all the specialties is necessary, but medicine has become such a vast field that it is impossible for any single individual to follow new developments in all its branches. If preventive medicine is to be advanced, it is in the field of general practice that most can be accomplished. Specialists rarely see disease at an early stage: it is the general practitioner who has this great opportunity. Rather than be worried with the weary drudgery

of midwifery practice, with its irregular hours and constant anxieties, surely it would be preferable to have more time to devote to pure medicine. Many of my friends in general practice are most despondent over ordinary general practice and its future. Personally, I do not share their pessimism. There is a tremendous future for general practice if the general practitioner, instead of trying to qualify in every specialty, devotes his time and energies to becoming an expert physician.

This special obstetric service to which I have referred should be relegated to obstetric specialists who would give up their whole time to the particular service (this would include ante-natal and post-natal maternal and infant welfare). It would be inadvisable and unfair to other local practitioners to appoint one individual practitioner for part-time service, except in outlying country districts, where obviously it is impossible to have such specialists. In large cities and towns the difficulty of establishing an obstetric service would not be very great, nor would it be costly, for the skeleton of the scheme is present in the existing hospitals and health centres. The difficulty would be with the outlying parts of Argyllshire, the Western Isles, and the extreme North of Scotland. But even in these outlying districts much could be done, and few disasters would result if all patients were examined during pregnancy and before labour, if in the event of there being a suspicion of the probability of any difficulty they were transferred to the nearest maternity centre, and if all primiparae were transferred to these centres.

Further, the natural body to direct such an obstetric service is the Ministry of Health* and the different boards of health. For, as you are aware, by the Notification of Births (Extension) Act, 1915, on them has been placed the responsibility of seeing that not only the expectant mother and the mother and child after delivery, but the mother during her delivery, shall receive proper care. It would be desirable that at the Ministry of Health for Scotland some individual who has had extensive practical experience of obstetrics and maternal and child welfare should act as director of the service, and that in addition assistant directors should be located (for Scotland two, or at most three, would be sufficient), say in the North, East, and West of Scotland. This, I think, would be necessary, as so very few of those engaged in public health work have had any practical experience of obstetrics.

Arguments may very readily be advanced that this is giving the Ministry of Health and the health authorities too much power, is interfering with the liberty of the subject in removing from her the choice of doctor,† and involves the expenditure of large sums of money. At every step, as more responsibilities have been placed on the health authorities, the same objections have been raised against interference with the liberty of the subject and the vested interests of the profession.

(a) *Institutional Department of Obstetric Service.*—In Glasgow there are three institutions which receive maternity cases—the Royal Maternity Hospital, the Parochial Hospitals, and the Cottage Nurses' Training Home in Govan. In 1922 the Maternity Hospital treated 3,641 indoor cases, the Parochial Hospitals (Duke Street, Oakbank, and Stobhill) 254 cases, and Govan Hospital 159 cases. Now the Maternity Hospital is very much overcrowded, and I estimate that institutional accommodation there would require to be doubled.‡ But what really is most urgently required is an additional maternity hospital in the busiest centre of the south side of the city. Obstetric specialists are in charge of these institutions. They and their assistants would continue in charge, and act as consultants to those engaged in the ordinary outdoor maternity service. Their position in the obstetric service could be determined later, but they should ultimately be the senior officers of this service, and as their positions are vacated by retirement or death the more junior members of the staff would be promoted. This in turn would mean promotion of those engaged in the domestic

* A similar proposal was made by Professor A. Louise McIlroy in this JOURNAL, October 4th, 1924 (p. 642).

† The obstetric service indicated would not preclude any individual electing to be attended by a general practitioner or obstetric specialist.

‡ It has been decided recently to increase the accommodation in the Royal Maternity Hospital by forty to fifty beds.

part of the service. Whether the services of the senior or hospital staff should be whole- or part-time would require to be considered. Personally, I think they should be permitted to undertake consultative obstetric practice.

(b) *The Outdoor or Domestic Part of the Service.*—Now, on the basis of the outdoor department of the Glasgow Maternity Hospital and the figures of births in Glasgow in 1922, Mr. Jones, secretary to the Public Health Department, has very kindly supplied me with an approximate estimate of the number of obstetric specialists Glasgow would require for a maternity or obstetric service such as I suggest.

"City of Glasgow (1922)."

"Total births ...	...	...	29,493
Of which medically attended—			
By doctors at home ...	...	...	8,288
By doctors in institutions ...	...	...	3,025
			11,313
Leaving births non-medically attended ...			18,180
Of which attended by—			
Maternity Hospital outdoor nurses ...	...	...	3,678
Other institutional nurses ...	...	...	661
Certified midwives ...	...	...	13,682
Others ...	...	...	159

The proportion of births medically attended is equal to 38.4 per cent., and non-medically attended 61.6 per cent.

"Assuming that the services of a medical man will be called in, as at present, the problem is to ascertain what proportion of the 18,180 births non-medically attended will require medical assistance.

"The Maternity Hospital report shows that for the year 1922, out of a total of 3,757 births attended by the outdoor nursing staff, 454, or 12 per cent., were classified as 'abnormal.' These abnormal cases were attended by a doctor, two of whom were able to overtake the whole work.

"Assuming further that the proportion of abnormal cases exhibited among the Maternity Hospital outdoor cases will apply to the total of 18,180 non-medically attended births, then the relative number would work out at 2,179.

"If, therefore, two whole-time doctors are able to overtake 454 cases, five doctors should be able to overtake the total work. It is understood the outdoor medical assistants attached to the Maternity Hospital work alternate turns of twenty-four hours each. It is unlikely that a permanent staff would be prepared to do this, and in order to make provision for day and night duty, holidays, sickness, etc., it would probably be necessary almost to double the estimated number. Of course, whatever total number is determined upon would be inclusive of the two at present engaged by the Maternity Hospital.

"As shown above, 13,682 births were attended during the year 1922 by certified midwives. During the year these midwives issued 3,120 emergency calls for medical assistance. This is equal to 23 per cent., compared with the Maternity Hospital 12 per cent. Midwives, however, are required by the rules to call for doctors in a variety of circumstances which, under the Maternity Hospital classification, are probably not regarded as abnormal.

"Midwives would continue to make these calls, and probably it should be provided that this work should be undertaken by the proposed permanent staff. This makes it necessary to provide adequate numbers, but the ten suggested above might be regarded as a sufficient provision to undertake the whole work.

"Medical fees on midwives' emergency calls during the year 1922 amounted to £2,040, and this sum would be available towards meeting staff salaries."

I am inclined to think that Mr. Jones's estimate of ten obstetric specialists is possibly too generous, but if some of the industrial centres in the immediate vicinity of Glasgow were included it would probably be very near the mark. These obstetric specialists would naturally be responsible for ante-natal and post-natal work in connexion with the various centres to which they would be allocated. Each of them should have a specially trained midwife to act as an assistant. To my mind one of the strongest arguments in favour of this service is that the obstetric specialists would be constantly supervising and instructing the midwives.

As already stated, the rural problem is more difficult, but a very large proportion of the rural population could be served by obstetric specialists attached to the health departments of particular centres. There would remain, however, in the outlying parts of the country a number of individuals who could only be treated with extreme difficulty by an obstetric specialist from the nearest centre. But if all primiparae and any multiparae in whom there is the slightest suspicion of a difficult delivery were taken

into the nearest district hospital, this particular objection to an obstetric service because of unsatisfactory rural conditions would be largely overcome. Surely, if a very large proportion of women would be benefited by a maternity service, and only comparatively few could not avail themselves of it, it is advisable to do what is best for the greater number.

Nor would the cost be very great. In fact, on balance a saving would probably be effected, for about 50 per cent. of gynaecological affections are the result of infection, injuries, etc., during parturition. The cost of such cases to general and special hospitals is considerable, and would naturally be very greatly lessened by the establishment of an efficient obstetric service.

C. PUERPERIUM.

Time permits of only a word or two regarding the complications of the puerperium. These are for the most part the result of infection and injury during parturition, and are therefore preventable, as already detailed. There are, however, two special disturbances which, although of a minor character and never fatal, are responsible for a very considerable percentage of the gynaecological ailments encountered in general practice. They are subinvolution, or defective involution of the puerperal uterus, and backward displacement of the uterus. Subinvolution is a sequel of infection and retention of membranes, while backward displacement can be prevented by the wearing of a well fitted vaginal support for a month or two.

You see, therefore, how much preventive medicine can accomplish in the field of obstetrics if the care of the expectant mother is undertaken early in pregnancy, if the prospective complications of parturition are recognized and corrected as far as possible, if institutional treatment is made adequate, and if parturients in their own homes are looked after by efficient midwives whose work is supervised by obstetric specialists available at all times in case of necessity.

REFERENCES.

- 1 General Medical Council, Education Committee: Report on the Review of the Curriculum in Medicine. Recommendation (e), p. 16. May 23rd, 1922.
- 2 Report of Scottish Departmental Committee on Puerperal Morbidity and Mortality.
- 3 *Edin. Med. Journal*, April, 1925, p. 55.
- 4 General Medical Council, Education Committee: Report on the Revision of the Curriculum in Medicine, p. 22.
- 5 *Ibid.*, p. 54.

DIVERTICULA OF THE OESOPHAGUS.*

BY

JOHN MORLEY, CH.M., F.R.C.S.,

HONORARY ASSISTANT SURGEON, MANCHESTER ROYAL INFIRMARY;
HONORARY CONSULTING SURGEON, ANCOATS HOSPITAL;
LECTURER IN APPLIED ANATOMY,
MANCHESTER UNIVERSITY.

DIVERTICULA of the oesophagus are a somewhat uncommon cause of dysphagia, but the more general use of radiological examination in all lesions of the oesophagus has shown us that they are not as rare as was formerly supposed. They provide us with difficult problems as regards their etiology and surgical treatment, while they present a clinical picture distinctive enough to be well worthy of study.

It will be convenient first to describe briefly three illustrative cases, and then to deal in general terms with the problems that arise.

CASE I.

A man, aged 58, a textile machine worker, was admitted to the Manchester Royal Infirmary under my care on August 1st, 1924. He first noticed something wrong with his throat seven years before, when he was troubled with a choking sensation associated with difficulty in swallowing. The trouble was at first intermittent, but had grown much worse of late, and he had lost 14 lb. in the last five months. Soon after swallowing his food he would choke and bring part, but not all of it, back. Occasionally he would bring up, unaltered, some articles, such as peas, which he had swallowed twenty-four hours before. Long after a meal he was troubled by a constant inclination to swallow, and frequently he noticed a gurgling noise in his throat.

On admission the patient was considerably emaciated, but in

* Part of a post-graduate lecture delivered at the Manchester Royal Infirmary.