OBSTETRIC AND GYNAECOLOGICAL EDUCATION.

BY

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A premature birth on December 25th, 1642, at Wools-thorpe, in Lincolnshire, is historical.

"A widow, whose husband had died a few months after their marriage, gave premature birth to a posthumous male child. He was so weak that two women, sent to fetch a tonic to revive him, did not expect to find him alive on their return. He was so small that he could have been put into a quart mug. So, in after-days, his mother told him. When he grew to manhood he saw an apple fall from a tree in the Woolsthorpe garden; he pondered the matter, and, by-and-by, he propounded the law of gravitation. Sir Isaac Newton was rescued from his infant danger by his mother's love. But who may tell how many an undeveloped philosopher has perished from lack of an intelligent mother's care?"¹

To-day the loss of a large proportion of babies is reported even after the skilfully conducted and well calculated

FIG. 1.—A still-birth: un-reduced occipito-posterior head moulding. Forceps bruising of the right cheek and temple. The blood stains on the right groin and thigh were due to a loose ligature on the cord.

operations and manipulations of the best obstetric practice. During the past fifteen years the high infantile death rate from preventable causes has been greatly lessened by the activities of local health departments, with incalculable gain to the country. Infant welfare knows no restriction in pictorial illustration, and its attractions are universal; the progress of maternity welfare work, on the other hand, has been repeatedly held up from within and without by formidable obstacles. Of late, however, the Ministry of Health and the Ministry of Education have sought and published full information concerning maternity welfare, and although at present there are many difficulties in the way of capital expenditure, local statutory subcommittees under the Maternity and Child Welfare Act should increase their faith in higher obstetrical and gynaecological service—the core and the backbone of maternity welfare. In the eagerness of enterprise ideas are let loose often only to gather adjectives and succumb; if an idea survives to become a motive and to be carried into actual practice, control makes a collar round its neck. One such collar may be seen in advertisements for pre-maternity clinic medical officers, when it is stated that "every circumstance being equal, preference will be given to women candidates." It has not been shown that women medical students have had in the past any exceptional advantages of training; patients desire, and are entitled to, the services of the most skilful of the available applicants.

The Teaching of Obstetrics and Gynaecology to Medical Students and Graduates.

In London the teaching of obstetrics and gynaecology to medical students and graduates has been dealt with recently in the report of a committee of inquiry appointed by the Council of the Obstetrical Section of the Royal Society of Medicine. To draft a guiding report—appreciative of the present and constructive for the future—is a formidable task. London is of gigantic growth, and complexity is a part of her fate and a good deal of her security. The extent, depth, candour and honesty of the present report cannot be too freely acknowledged.

Regarding the methods at present adopted general agreement is expressed in the report that—

(1) The systematic instruction is generally satisfactory. (2) The practical instruction is defective in several respects: (a) From hospitals without a students' midwifery ward students are sent out, often alone, to cases in the district. (b) The lying-in hospital merely "signs up" for cases. (c) In hospitals with a students' midwifery ward, the small size of the latter and non-continuous attendance by the student, who is rarely in residence, are to be noted. (d) The teaching, if any, is given almost exclusively by juniors (the registrar or the resident obstetric officer). (e) The average number of gynaecological beds is too limited: restricted attendance by the student at the time taking out his midwifery cases has been observed. (f) The consequences of defective practical training fall on the mother and the child—on the mother in the death rate from sepsis and in disabling complaints; on the child in that it is too often left to the nurse's discretion without reference to the doctor. (g) The neglect, notably in emergencies, to seek the services of a specialist or of a hospital contributes to the lack of hospital accommodation for women in labour and of suitable public means of transport.

These frank statements disarm all criticism on the need for more efficient practical instruction. The basis of an efficient scheme of training was also outlined, and the report so far carried complete approval.

With regard to reforms required in the future, unanimity in the Council was not secured, and the two propositions that led to the slight dissension are stated in the Alternative Report. They were: (1) The establishment of large centres devoted solely to the study of obstetrics and gynaecology, and not forming part of a general hospital and medical school; (2) the suggestion that the students can only be educated efficiently where large numbers of patients are available.

At this point a halt is dictated by the observation that the adoption of the report, or of any alternative or alternatives, is directly the concern of London—where to introduce harmony by yielding, or giving and taking, is probably not beyond attainment, preferably from within. The general body of the medical profession has proved over and over again the advantages of special departments in general hospitals, especially those with medical schools. Wherever separate centres for obstetrics and gynaecology are essential these centres will be established; their medical officers, after limited tenures of office, will seek other obstetrical and gynaecological posts in general or special hospitals where skilled teaching and training are desired for medical students or graduates and pupil-midwives or midwives.

London will rise to her own gigantic demands. Lesser municipalities may be reminded that the late Sir William Sinclair of Manchester in 1907 pleaded for the establishment of municipal maternity homes. The practising midwives are supervised and the pre-maternity clinics administered by local authorities. In Liverpool 720 in-patients were admitted to the Maternity Hospital in 1918—499 by direct application to hospital, the remainder from the following sources:

Transferred in labour from the outdoor ladies' charity	23
Sent by medical practitioners	115
Sent by practising midwives after failure to find a registered medical practitioner	41
Referred from pre-maternity clinics	42
	221

This analysis establishes the great value of the Liverpool Maternity Hospital for obstetrical training, and shows that in a very large proportion of the cases the difficulties and complexities of labour arose or were first realized during labour. Dr. Stookes, one of the honorary surgeons, has recently summarized² the thirty-three years' work done in the present building opened in 1885. Dr. R. A. Hendry has described³ an illustrative day's work at one

FIG. 2.—Full term central placenta praevia. The dark shading denotes the increased area and distribution of the placenta. (Reduced.)

of the prematernity clinics. Being given a hospital performing central functions, and in close contact with the University, Liverpool has not completely failed. Extensions are urgently wanted and the hospital board of management is in difficulties, for the building of Sir William Hartley's new hospital cannot reasonably be commenced. Converted houses are the only alternative to expensive temporary wooden sheds which the present site cannot accommodate. Each week ten to fifteen applicants, whose homes or lodgings are overcrowded or unsuitable, are refused admission. Fortunately these cases are normal, and the large Poor Law institution is across the road, so that smooth transference on foot, or by stretcher, is possible. There is this striking contrast: the Poor Law institutions possess wide and open doors, and in some areas are inviting and encouraging paying patients at a time when public health authorities are seeking more beds.

The obstetric assistant, preferably a graduate with distinction, having experience of one or more hospital resident posts, serves under university departmental control, and supervises the practical obstetrical work of

to the usual lecture theatre, namely, a practical classroom and a laboratory and a museum, which invite and tempt the students to see and test for themselves (during daily working hours) the normal and the abnormal in fresh and preserved specimens; to practise palpation on mannikins supplied with normal and abnormal fetuses, and to cultivate under trained departmental supervision, familiarity with instruments, appliances, casts and operation methods.

The saving of time in the overcrowded medical curriculum becomes reflected upon clinical clerkship and systematic study, for both of which it is an essential preparation and accompaniment; practical tests have always been prominent in the university final examination in obstetrics and gynaecology. It is thus seen that in the obstetric clinic at Liverpool the recommendations of the General Medical Council have been carried out for twenty years; the result has been a steady improvement in the clinical obstetrical training of all students and an encouraging record of public service of past obstetric assistants. The department is of opinion that the education and training of the pupil-midwives should be provided within its walls, but not necessarily by the same teachers;

FIG. 3.—Mannikin opened to show the type of contracted rachitic flat pelvis.

FIG. 4.—The mannikin closed during vaginal examination of the pelvic cavity.

FIG. 5.—The mannikin and fetus arranged for abdominal and vaginal palpation; the fetus held above the brim; forceps not to be applied; 3-inch conjugate.

the students who reside with him in his official residence—a university hostel—during the period of their attendances on at least twenty labours. Daily attendance at the Liverpool Maternity Hospital is as follows:—

- (1) Ante-natal care.
- (2) Out-patient and ward visits at 10 a.m. by the obstetric assistant or the registrar, or both; at 12 noon by the honorary surgeon on duty in his three months' rota. (There are four honorary surgeons, of whom one is the university professor *ex officio*.)
- (3) Labours and obstetrical operations at any hour of the day or night.

It is significant that students have almost invariably partly or wholly, given up a vacation to their practical training in obstetrics; these holiday sacrifices recall the overdue remedy, the revision of the whole medical curriculum. It is to be remembered as a reason against too formidable an inflation or isolation of obstetrical and gynaecological educational courses that our students have already attended the systematic lectures on medicine, surgery, and midwifery, and have for at least nine months become familiar with clinical methods in a general hospital, during their medical clerkship (six months) and surgical dressership (three months). Throughout all past inquiry obstetrics and gynaecology have been declared inseparable either in teaching or practice. The constitution of the department of the Liverpool University therefore stands on the ground of long-standing and firm agreement; generous support has been bestowed upon it during twenty years by the University Council, by the Medical Faculty, by Medical Practitioners, and by the Liverpool and District Trained Midwives Association. This concerted encouragement has developed equipment additional

this will bring to the midwives a more exact acquaintance with the relative extent of the doctor's education and training.

Details are given below of cases illustrating the need for the uses of such an organization as I have depicted.

CASE I.

A male fetus, 10lb. 11oz. in weight and 22½ in. in length, stillborn as a result of natal incidents (Fig. 1). The healthy mother, aged 38, had had three early abortions and had borne six living full-term children. In her tenth pregnancy, on the computed 270th day, the vertex presented in the R.O.P. position. In the patient's house, in the district of the Ladies' Charity, the obstetric assistant called by the midwife performed a difficult forceps delivery. There had probably been an error in the reckoning of the duration of the pregnancy; protracted gestation and oversize (which are not, however, incontestable) were not suspected at the time of labour.

What ante-natal officer or other medical man would have ventured to advocate Caesarean section in the treatment of the labour unless the patient had been under observation before the suspect stage?

CASE II.

In a case of central placenta praevia (Fig. 2) a fatal haemorrhage, without appreciable dilatation of the cervix or separation of the placenta, occurred in the public ambulance during a journey to the maternity hospital. A full-term uterus and well-grown fetus in the first vertex position above a central placenta praevia amply denote Caesarean section.

What authority could safely and prudently provide against the intervention of this sudden calamity?

CASE III.

A primigravida, aged 34, already three days in labour, arrived in hospital at the 301st day of gestation with a large dead

fetus, 8 lb. in weight, *in utero* above the brim of a generally contracted pelvis; the membranes had ruptured prematurely through a 1 in. dilated cervix; the temperature was 102° to 103.8°, and there was a rigor on each of the three days in hospital before the completion of the labour. The fetal head was at once perforated to assist descent; feeble pains were observable and, full dilatation of the cervix being attained two days later, the collapsed head having reached the perineum, the child was with great difficulty extracted. The temperature immediately became normal; the recovery of the patient followed without further complication. The fetus was macerated and had been ten days dead.

In this case the head was above the brim in the primi-gravida, the gestation prolonged and the pelvis contracted; the lesson is that fetal death and maternal danger could have been avoided by previous examination and consultation. In Liverpool we endeavour to sharpen the dull grasp of history, symptoms, and physical signs by the cultivation in the practical classroom of individual research and repeated experiment. Deformed pelves display their truths and normal pelves stand by them for comparison. We have twelve mannikins in hard wood—teak excels oak, although the slight cracks in the latter can be easily filled with cement. Each mannikin (Figs. 3 to 6) is an accurate

FIG. 6.—The galvanized iron frame and the rubber pelvic floor can be removed and cleaned. The iron frame slides under the grooves beneath the fixed iron plates.

copy (made by an expert carver) of a pelvis. It is placed in a dorsal position on a short, stout table, and can be washed and dried. The natural pelvic floor is imitated in each mannikin by a movable rubber diaphragm. In an adjacent cool tank are placed a number of normal and abnormal fetuses in a freshly preserved state. The value of practical trials with forceps on fetuses and mannikins cannot be overestimated. In calmer moments between the class hours facilities for familiarity with the employment of forceps steady the students' individual judgement with regard to patience or haste, and the conditions qualifying for success or disappointment in using the forceps-grip. (In dystocia the application of forceps cannot be commended, except in appropriate physical conditions.) Similarly craniotomy on a dead fetus is an operation demanding repeated trials. Version and intrauterine manipulations, including the manual withdrawal or separation of the placenta, are to be learned by the use of suitably sized clear glass globes placed within the mannikin; for this purpose fresh fetuses and placentae are provided. Without having received these preliminaries in practical training the student carries with him an awkward handicap in any future clinical work that he may undertake in homes or in hospital.

Bacon drew a distinction between arts mechanical and sciences of conceit. "In sciences of conceit the first author goes farthest and time lesseth and corrupteth, but in arts mechanical the first devise comes shortest and time addeth and perfecteth." In this brief sketch I have tried to illustrate the use of arts mechanical in obstetrical and gynaecological training.

REFERENCES.

- ¹ *The Nursing*, Sir Alexander Simpson's Introduction, 1907.
² *BRITISH MEDICAL JOURNAL*, November 21st, 1919, p. 701. ³ *Ibid.*, September 20th, 1919, p. 385.

Two uncommon causes of death have lately been reported. A child of 4 died at Blackburn from toxic gastritis, following the eating of about thirty potassium chlorate tablets. A boy of 12 died at Wrexham from poisoning, due to the use of a stem of hemlock as a pea-shooter.

THE Cunard Steamship Company have contributed £10,000 in response to the appeal of the University of Liverpool.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association.

Held at Cambridge June 30th to July 2nd.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL MEDICINE.

Professor G. H. F. NUTTALL, M.D., F.R.S., President.

PROBLEMS OF FILARIASIS.

BY

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HAVING recently had occasion to study the literature of filariasis we found therein many conflicting statements. Our intention in this paper is to draw attention to some of these, as they concern fundamental questions, an accurate solution of which is necessary for elucidating the relationship of *Filaria bancrofti* to those forms of lymphatic disease which are commonly known as filariasis.

TABLE I.—Showing *Microfilaria* Rate at Different Age-Periods.

Age (Males).	Bahr (1912): Fiji.		Cruickshank and Wright (1914): Cochin India.	
	Population.	Percentage Infected.	Population.	Percentage Infected.
C-10 ...	72	1.4	25	24.0
11-20 ...	222	15.7	246	20.3
21-30 ...	212	37.7	233	22.7
31-40 ...	118	47.5	199	27.1
41-50 ...	83	45.7		
51-60 ...	58	44.8		
61-70 ...	39	41.0	58	20.1
71 and over ...				

According to Bahr's data the microfilaria rate for males increases at each age-period up to the 31-40 period, and then remains practically stationary, while according to Cruickshank's and Wright's figures for males the rate is practically the same at all age-periods. If these data represent the actual state of affairs in the two countries the difference is remarkable and requires explanation. The

TABLE II.—Showing *Microfilaria* Rate among those showing Signs of Lymphatic Disease and among those not showing Signs.

Author and District.		Number Examined.	Microfilaria.	Percentage.
Manson (1883), Amoy, China.	Diseased ...	65	38	58.5
	*Not diseased ...	605	24	4.0
Bahr (1912), Fiji.	Diseased ...	*221	99	45.0
	Not diseased ...	*91	31	34.0
	Diseased ...	†79	16	20.0
	Not diseased ...	195	8	8.0
	Diseased ...	185	28	33.0
	Not diseased ...	1184	44	24.0
	Diseased ...	‡30	10	33.0
	Not diseased ...	‡143	21	15.0

* Males over 20 years.
† Males under 20 years.

‡ Females over 20 years.
§ Females under 20 years.