the century, declined at a more accelerated pace compared with the rate of fall for the pulmonary form. There have been, in fact, two concurrent movements. As regards mortality, tuberculous meningitis is one-third, abdominal tuberculosis one-fifth, and other forms two-fifths of the rates then prevailing. Along with this, there has been noticeable a decided diminution in the severity assumed by the various forms of tuberculosis at the younger ages of life, applying particularly to glandular and abdominal disease, but also to bone and joint affections, which are showing less tendency to rapid abscess formation, while amyloid disease is now seldom encountered. It is, of course, impossible to disentangle the factors influencing these epidemiological results, but no doubt the contracting sources of human infection have contributed. It will be observed that the greatest fall has taken place in abdominal tuberculosis—a fact of considerable significance, as this affection is mostly bovine in origin. Although something has been accomplished under the Tuberculosis Order in eliminating grosser disease from among dairy herds, such a wholesale improvement can scarcely be credited to this cause. It appears much more likely that the greatly increased practice of pasteurization of ordinary city milk, to which 80 to 90 per cent. of the supply has been subjected for some years, has interposed a degree of protection against transmission of this form of tuberculous infection. This is a subject which is worthy of the fullest investigation as part of the very vital question of the relation of pasteurization of milk to the public welfare.

PERSONAL EXPERIENCES IN MIDWIFERY.

BY

R. KELSON FORD, M.D., M.M.S.A.,

SHAROE GREEN HOSPITAL AND MATERNITY HOME, PRESTON, LANCs.

THE publication of individual hospital statistics is occasionally somewhat misleading, particularly with regard to midwifery, for selection of cases almost always takes place to some extent.

For instance, one of the best-known maternity hospitals in London has recently published a statement that there have been no maternal deaths in three years out of many thousands of cases. It is doubtful whether mentally unsound persons, or those suffering from advanced tuberculosis of any kind, or those with active septic infections are freely admitted; but these patients must be treated somewhere, and the series reported below is offered for consideration as entirely unselected.

This analysis represents some 1,300 cases, forming a consecutive series in an institution. The majority of the patients were private bookings, the remainder being made up from a county council, a county borough council, and a Poor Law authority. Almost all of them were drawn from labouring classes, though other social classes are also represented. A large proportion of the patients worked, chiefly in mills, till shortly before confinement. Though all of them were officially under my personal care, a certain number were under the charge of other medical officers during my absence, from 1926 to 1930.

It should be explained that the institution in question has no x-ray apparatus, and has not hitherto been able to obtain x-ray reports as to presentations, etc.; also that it has no suitable arrangements for infants, and no incubator.

Ante-natal attendances have been very satisfactory, though instructions have by no means always been followed. In thirty-seven cases attendances were very bad. In seventy-six cases the patients were seen for the first time on their admission to hospital. Patients still sometimes prefer their own treatment for constipation, etc., and fear dental treatment; sometimes dentists have declined to extract when I wished it.

More than half the patients were primigravidae. One point brought out very clearly, though not sufficiently for statistical purposes, was that in a large number of cases pregnancy preceded marriage. The ages of the patients concerned have varied as would be expected, the youngest being 15 and the oldest 45. The oldest primigravida was

43. The longest duration of marriage before pregnancy occurred was seven years.

The average diagonal conjugate measurements, taken over part of the series only, come to 4.7 inches. Though this is very near the 4½ inches usually considered normal, a surprisingly large number of patients were encountered in which this diameter lay between 4 and 4½ inches. A very definite impression was gained that pelvis affected by a slight degree of contraction are definitely on the increase. On the other hand, flat pelvis were rarely met with. One instance of Naegele pelvis occurred.

With regard to presentations, there were no instances of face or brow presentation apart from anencephaly. There were twenty-six breech deliveries, three following failure of external version. External version was performed fifty-six times, of which fourteen were successful only under an anaesthetic. The number of occipito-posterior presentations treated by Ballantyne's padded binder has not been recorded; a large number of cases were also successfully treated by this means during labour.

ANTE-NATAL CONDITIONS.

There were forty-five admissions for ante-natal treatment; ante-natally a large variety of conditions were encountered.

Various forms of established heart diseases ...	24
Active pulmonary tuberculosis ...	7
Non-tuberculous diseases of lungs ...	6
Active tuberculosis of glands of neck ...	2
Tuberculosis of elbow ...	1
Venereal diseases ...	12
Bartholinitis ...	2
Glycosuria ...	4
Epilepsy ...	3
Pyelitis (pyelonephritis) ...	4
Erysipelas ...	1
Otorrhoea ...	3
Breast abscess ...	2
Salpingitis ...	2
Subacute rheumatoid arthritis ...	1
Chorea ...	2
Pernicious anaemia ...	1
Spleno-medullary leukaemia ...	1
Fibroids ...	2
Procidencia ...	1
Pelvic ovarian cyst ...	1
Pelvic dermoid cyst ...	1

One patient, sent in as a case of ante-partum haemorrhage, was not pregnant, but had a large haemopyosalpinx.

Of maternal deformities, retracted nipples were the commonest, but in only two cases was an extreme condition seen early enough for operation. Supernumerary nipples were uncommon, appearing about five times. Septate vagina was seen twice. One patient suffering from progressive muscular atrophy was admitted twice. Rigid coccyx was encountered once. During labour eighteen patients became unmanageable, but only once was the condition definitely diagnosed as insanity of labour. Reproductive insanity occurred on five occasions—once in pregnancy, once in labour, and three times after delivery. After delivery one patient developed chorea, two developed pleurisy (one of whom later became frankly tuberculous), and two developed apparently aseptic phlebitis.

Albuminuria was met with frequently, and has been classified as slight, moderate, and severe, the severe type being that found in pre-eclamptic toxæmia. The number in each group was: slight 126, moderate 52, severe 52; in addition, eclampsia occurred four times. In slight cases regulation of the bowels and increase of fluid intake were usually sufficient treatment. Moderate cases frequently responded to a mixture of the mist. buchu co. type. These patients were often placed on a meat- and salt-free diet. Severe cases were admitted whenever possible. Colonic lavage, barley and lemon water by the mouth, and the same mixture usually sufficed to bring about rapid improvement. In eclampsia a veratrine preparation is given at the first sign of a fit, and morphine and hyoscine may be used later, with an anaesthetic for delivery; hot packs have been used.

Vomiting sufficient to be called hyperemesis occurred twice in this series. As signs of ketosis were appearing, the patients were admitted and confined to bed. Gastric and colonic lavage were carried out, and the patients were fed by the rectum. In no case did this treatment suffice,

but rapid improvement followed the administration of ox bile per rectum.

Latterly efforts have been made to find a reasonable analgesic which could safely be used by nurses as a routine, at all events in an institution. After various trials the hypodermic injection of 1/100 grain of hyoscine hydrobromide in 2 c.cm. of sterile 50 per cent. magnesium sulphate solution has been adopted. Though patients occasionally need further injections, one dose usually suffices. If given at the end of the first stage of labour the second has almost invariably been more rapid and much less distressing to the patient. This procedure has now been employed in about 200 cases, apparently with considerable benefit.

Caesarean section was performed twenty times for conditions varying from disproportion to pulmonary tuberculosis and heart diseases. In these cases the operation has usually taken place under spinal analgesia. Episiotomy was employed fifty-five times in order to avoid lacerations, and in some cases no other assistance was required. Placenta praevia was encountered on seven occasions, being four times accompanied by albuminuria. Accidental haemorrhage also occurred—four times with albuminuria and three times without. Post-partum haemorrhage occurred nineteen times, on three of which it accompanied marked albuminuria, and was usually associated with delayed separation of the placenta.

Induction of labour was performed thirty-six times. The original method employed was the insertion of an oesophageal tube into the uterus; latterly, however, in a few cases a warm solution of mercurochrome in glycerin (about 0.5 per cent.) has been injected through a catheter into the uterus. This method was first tried because of the presence of pus around the cervix. It has not been uniformly successful in the induction of labour, but has succeeded on about two-thirds of the occasions on which it was used. The labours have been uniformly free from the very mildest suggestion of morbidity.

Forceps were employed ninety-six times (7.38 per cent.). On three occasions bipolar version was performed successfully instead of high forceps. Craniotomy was performed once in this series, the child being already dead. The placenta was removed manually fifteen times, always followed by hot intrauterine acriflavine douches; none of these cases became morbid.

Notifiable sepsis occurred sixty-five times as follows:

Following intervention	...	...	...	...	16
No intervention, etc.	...	...	...	...	34
Admitted as puerperal sepsis	...	...	...	...	12
Admitted as puerperal insanity	...	...	...	...	3

An inquiry into the relation between intervention and morbidity of even the very mildest degree gives twenty-nine cases in which some form of intervention was followed by some presumably infective reaction, and 117 cases in which no sign of morbidity followed. In a few instances, patients exhibited conditions ante-natally which might have influenced the subsequent development of morbidity. Among these patients were those who were attending the local venereal disease clinic (unknown to me till later), others with forms of vaginitis and leucorrhoea, subjects of severer forms of albuminuria, and those whose gums and persons were filthy.

An attempt has been made to classify the cases of notifiable sepsis in terms of associated pathological conditions, with the following result:

Local uterine (and vaginal) infections...	...	...	...	36
Pelvic infections (parametritis, etc.)	...	...	...	7
General abdominal infection (peritonitis)	...	...	...	7
Blood infections	...	...	...	8
Breast abscess	...	...	...	3
Uncertain	...	...	...	1

Included in the above were two patients who developed mental symptoms. Two are omitted from the above list, both suffering from pulmonary tuberculosis without any evidence of pelvic infection. Another who was also suffering from pulmonary tuberculosis has been included as a case of uterine infection. One case is noted as "uncertain," the patient exhibiting mild pyrexia on the thirteenth and fourteenth days only, with no physical signs or treatment whatever.

Post-natal work does not seem to appeal to the imagination of patients so much as ante-natal work. There were only about 360 post-natal attendances, compared with about 6,700 ante-natal.

TREATMENT.

An attempt has been made gradually to standardize the treatment given according to the clinical type met with. A patient who shows a rise in temperature above normal, or an increase in pulse rate to 80 or more, is considered as demanding close attention. As soon as both conditions occur together the cervix is inspected and an intrauterine injection of glycerin containing 1 per cent. mercurochrome is made.

Uterine Sepsis.—Intrauterine injection of glycerin and mercurochrome is given as above. This treatment, repeated usually once but sometimes twice a day, suffices almost invariably to cure the condition. It should be mentioned, however, that occasionally offensive lochia are drained away from the uterine cavity through the catheter before the glycerin is injected. If the rise in temperature and the increase in pulse are marked, an intramuscular injection of 2 to 5 c.cm. of sterile milk is administered for non-specific shock. This also is often repeated daily.

Pelvic Conditions.—The above treatment is usually suspended when pelvic cellulitis or peritonitis appears to be developing. Hot vaginal douches are substituted, and latterly hot tampons of cataplasma kaolini (B.P.C.) with the addition of 5 per cent. extract. belladonnae viride have been found very useful indeed. Drainage is naturally afforded at the earliest indication. It has been found that spontaneous diarrhoea may indicate the commencement of a pelvic abscess before any definite physical signs can be elicited. A polyvalent serum is usually employed.

General Peritonitis.—Drainage and continuous rectal saline with glucose and brandy have proved the only useful remedy in my experience. I would comment, however, upon the extreme difficulty of early diagnosis. Slight distension relieved by pressure was the only sign obtained in two of my cases. A polyvalent serum is also employed for this condition.

Blood Infections.—Local treatment was always given as for uterine sepsis, and a polyvalent serum administered. Remarkable benefit has followed the intravenous injection of 20 c.cm. of a colloidal silver preparation. This has been given twice a day, but usually only once daily.

Among other remedies which have been employed from time to time are colloidal calcium given intramuscularly with apparent benefit on several occasions, and vaccines of different kinds, none of which has been markedly beneficial.

In one case in which very mild pyrexia accompanied an apparently metastatic arthritis of the knee, aspiration of the joint was performed and was immediately followed by injection of 1 per cent. mercurochrome in glycerin; the condition then cleared up without further trouble.

In addition, radiostoleum was given as routine in the latter part of the series. While we did not obtain any results comparable with those originally published by Mellanby and Green, yet it was felt that its administration was followed by definite benefit. Ovarian residue by hypodermic injection was also employed; this was found definitely active in the induction of labour, but its use was abandoned owing to the tendency to increased haemorrhage after delivery. Liver extract was used systematically for anaemia, whether primary or secondary. In some instances it was administered by hypodermic injection, as it was not very well taken by the mouth. One case of pernicious anaemia was admitted as puerperal pyrexia, and naturally did very well. In one further instance at least this measure was followed by very remarkable improvement. When used, however, in toxæmias of pregnancy, no benefit was observed to follow.

CAUSES OF DEATH.

There are twenty-six deaths in this series, including those dying within a few minutes of admission. Of these twenty-six, two were ante-partum, nine occurred in patients sent in as cases of puerperal sepsis, and two in patients admitted as cases of puerperal insanity. One of the ante-partum deaths was caused by eclampsia, the other by heart failure. The eclamptic was not quite thirty-six weeks

pregnant, and had given no evidence of albuminuria until immediately before admission. A cardiac case had a bad history of alcoholism and strangeness of manner. She was sent in for heart failure, and was improving when labour came on. She then became very excited and violent, and died in a few minutes. In both of these cases post-mortem Caesarean section was performed unsuccessfully. The remaining deaths are attributed to a variety of conditions. It should perhaps be mentioned that as far as possible diagnoses were verified pathologically. The following is a table of causes:

General peritonitis following spontaneous delivery ...	5
General peritonitis following assisted delivery ...	1
Septicaemia following spontaneous delivery ...	2
Septicaemia following assisted delivery ...	1
Shock ...	2
Pulmonary embolism ...	2
Pelvic abscess ...	2
Influenzal broncho-pneumonia ...	4
Abscess of lung ...	1
Pneumonia developing during puerperal insanity ...	1
Cerebellar glioma ...	1
Aplastic anaemia with suppurative pyelonephritis ...	1
Generalized tuberculosis ...	1
Acute dilatation of the stomach ...	1
Exhaustion following acute mania ...	1

Some of the cases recorded in the above table merit further notice. In one of the cases of shock death followed manual removal of the placenta for haemorrhage in the third stage in a woman with marked albuminuria; in the other the patient was a very fat woman with chronic bronchitis and albuminuria, who died very soon after an easy forceps delivery. One case of pulmonary embolism followed white leg; the other, mitral stenosis. Of the patients with pelvic abscess, one was admitted five weeks after she had had her baby at home; the other had arrived very ill from West Africa suffering from pyelonephritis. The albuminuria cleared up, but the urine remained offensive and infected. Two days after the labour rigors returned, and pelvic abscess gradually developed. This was drained, but the patient died in five weeks.

Of the twenty-six patients who died, only seven had received any assistance in labour; one of the remaining nineteen was attended by her doctor in a normal labour; sixteen were midwives' cases; two were "B.B.A.'s."

An analysis was made of the infantile deaths, of which there were ninety-one in this series. In the following table the word "uncertain" refers to cases in which no post-mortem examination was made, or syphilis was suspected but not proved, etc.

	Stillbirths.	Neo-natal Deaths.	Total.	Proportion per cent.
Prematurity ...	5	19	24	26.3
Albuminuria ...	10	5	15	16.5
Fatal deformities ...	6	6	12	13.2
Ante-partum haemorrhage ...	3	1	4	4.4
Pneumonia ...	—	1	1	1.1
Syphilis ...	1	1	2	2.2
Specific injuries ...	5	5	10	11.0
Following difficult labour ...	10	—	10	11.0
Uncertain ...	10	3	13	14.3
Totals ...	50 (3.84 %)	41 (3.15 %)	91 (7.0 %)	100

The fatal deformities were extremely varied, as the following list shows. Minor deformities have not been classified.

Anencephaly ...	4
Exomphalos ...	1
Multiple deformities (all different) ...	3
Patent interventricular septum ...	1
Meningocele (occipital) ...	1
Meningocele (frontal) ...	1
Duodenal stenosis ...	1

As regards injuries, lumbar puncture appeared successful in saving two or three infants. The fatal injuries were as follows:

Ruptured liver ...	3
Torn tentorium ...	6
Cerebellar haemorrhage without tear ...	1

Most of these occurred in cases of spontaneous delivery.

It is perhaps worthy of mention that many infants of apparently very feeble vitality (excluding birth shock) responded remarkably to the administration of one to two drops of adrenaline in a small quantity of saline by the mouth every hour.

REMARKS.

1. A somewhat incomplete summary is here presented of a series of maternity cases showing a deplorably high rate of mortality of 2 per cent. If, however, patients admitted for puerperal complications whose deaths were due to other diseases are omitted, a figure is reached of 0.4 per cent. This is still very high, and yet not high enough to represent the true mortality, since some of the other diseases would not have proved fatal apart from pregnancy and labour.

2. After five years' experience with mercurochrome in glycerin it is considered that this is a reliable, harmless, and absolutely efficacious antiseptic as far as the endometrium is concerned, and, possibly, for all mucous membranes.

3. The suggestion is made that 1/100 grain of hyoscine in 2 c.cm. sterile 50 per cent. magnesium sulphate solution is a safe and fairly effective analgesic for labour, though admittedly it has not yet received sufficient trial here.

SOME OBSERVATIONS ON SYPHILIS OF THE NERVOUS PARENCHYMA.

BY

R. BRUNEL HAWES, M.B., M.R.C.P.LOND.,

PROFESSOR OF MEDICINE, KING EDWARD VII COLLEGE OF MEDICINE,
SINGAPORE.

"NATURE does not deal in schemes and diagrams: every separate individual and each case has its own peculiarity." It is now generally recognized that dementia paralytica and tabes dorsalis are affections separated from each other by no distinct line, and that it is the individuality alone which determines on what part of the central nervous system the lesion shall fall; but it does not appear to be acknowledged that the same relation exists between tabes and syphilitic myelitis, the former being classed as quaternary syphilis and the latter as tertiary syphilis.

In some races in Malaya syphilitic myelitis is very much more common than in Europe, while in the same races tabes and dementia paralytica are proportionally rarer. In England Williamson² records only 32 cases as compared with 118 cases of tabes seen during the same period, and the opinion of many neurologists in Europe is that it is a rare disease. On the other hand, Mon Fah Chung³ in Peking puts its incidence at 39 per cent. of all cases of spinal disease.

I record here the findings in a series of consecutive cases of parenchymatous spinal syphilis in one race—namely, the Chinese—admitted to the Singapore General Hospital during a period of eighteen months. One case of transverse myelitis with a negative Wassermann reaction and two of gummatous pachymeningitis are omitted from the series. It has been impossible in all cases to get a history of the time that elapsed between infection and the onset of nervous manifestations owing to the low intelligence of many of the patients, the frequency of multiple chancres at different times, and the fact that a true Hunterian chancre without secondary infection is rare; if present, it often passes unnoticed in consequence of being painless. Similar series have been made at the great pauper hospital of Tan Tock Seng, but as they only show the same features they are not recorded.