MATERNAL MORBIDITY AND MORTALITY

A SCOTTISH REPORT

The report on maternal morbidity and mortality in Scotland which has recently appeared[1] is the outcome of an inquiry instituted in October, 1929, when the Scottish Department of Health decided to call for a report upon all deaths occurring during pregnancy, parturition, and the first four weeks of the puerperium. The total number of deaths thus investigated was 2,527, but the scope of the survey was greatly widened by an attempt to estimate the prevalence and the nature of the " various sicknesses as opposed to mortality " from which pregnant women suffer. A report was therefore called for in regard to all pregnant women who gave birth during the semester ending June, 1932. In response 39,205 schedules were voluntarily returned, and the labour which their examination entailed must have reached almost astronomical proportions. The special attention which has been given in this report to sickness as opposed to mortality justifies the variation from previous reports in title—morbidity taking precedence of mortality.

Probably no greater effort has been made or will ever be made in the study of clinical data in the mass ; admiration for the patient industry of the authors, Dr. Charlotte Douglas and Dr. Peter McKinlay, will be universally accorded, though doubt may arise whether the results achieved constitute an adequate return for so great an expenditure of labour. The report itself directs a warning finger at the weak spot in the system of massed returns from numerous scattered observers when it points out that " a large measure of dubiety [exists] in many cases," since much of the information asked for was not given, and the time and care bestowed upon the schedules by different collaborators varied greatly (p. 69). The elaborate care with which the authors of the report have scrutinized the returns and examined them from every angle carries the conviction that nothing better than this can be done with material obtained in the manner described: the orange has been squeezed dry. If further inquiries into the general problems of maternal mortality and morbidity are to be undertaken it would probably be wiser to direct them into other channels.

The report proper is short, occupying only twenty-eight pages out of a total of 218, the remainder being devoted to appendices. This arrangement enables the authors to present the results of their general survey of the problem, together with the conclusions and recommendations at which they arrive, in conveniently compact and prominent form ; the analysis upon which the conclusions are based is given in detail in the appendices, which are closely packed with information, much of it recondite in character, and well calculated to serve as the basis of further particular inquiries.

The " general trend of maternal mortality " is dealt with in an appendix of thirty pages—full of interest no doubt to the statistically minded, but rather difficult for the general reader to follow. Much interesting information can be gleaned about such matters as the effect exerted by the decline in the birth rate upon the rates of maternal mortality, the influence of age and parity, and of the age at marriage. The seasonal variations, which occur fairly regularly in maternal mortality, and particularly in the rate of mortality from sepsis, are described and their causes discussed. The data are illustrated by numerous tables and graphs, one of the latter being economically utilized to display the course of nine different conditions over a period of twenty years.

[1] Report on Maternal Morbidity and Mortality in Scotland. By Charlotte G. Douglas, M.D., D.P.H., M.C.O.G., and Peter L. McKinlay, M.D., D.P.H. Edinburgh: H.M. Stationery Office. (3s. 6d.)

Aetiological Factors

Another appendix is devoted to a discussion of the aetiology, both of maternal morbidity and of maternal mortality. In this section will be found the results of the analysis of the 39,205 schedules referred to above. A practical suggestion arising out of this part of the inquiry is that " poor health " during pregnancy is a factor of considerable importance in the causation of maternal mortality, and deserves much more attention than it has hitherto received. The further suggestion is tentatively advanced that during pregnancy there is a definite decline in the incidence of " good health," but it is admitted that the evidence in support of it may well be questioned. Generally speaking, the results of this inquiry into the occurrence of sickness during pregnancy are regarded with some suspicion by the authors, who point out that some of the conclusions which emerge are at total variance with experience. As an instance they quote the returns as showing that perineal lacerations had occurred in only 0.1 per cent. of previous pregnancies.

It was found that the death rate from sepsis was definitely higher in young women (under 25) than in older women, the proportion of deaths due to sepsis being 41.4 per cent. in the former and only 29.3 per cent. in the latter. From a general survey of the distribution of maternal mortality the interesting point is made that while the three Border counties have the highest general rates, their mortality rate from sepsis is 25 per cent. below the average for the whole of Scotland. The midland industrial belt shows a wide variation between the east central region, where the mortality rate is 8 per cent. below the average, and the west central region, where the mortality rate is 5 per cent. above the average. Over the whole country the rate for sepsis in urban districts is 21 per cent. above the average.

Responsibility for "Avoidable Deaths"

As in the case of previous reports, a careful attempt has been made to pick out the deaths which should be regarded as " avoidable," and it is claimed that no death was so classified if there was reasonable room for doubt. The formula of the " primary avoidable factor " introduced and recommended by the English Departmental Committee was not employed. In the result 60 per cent. of all deaths classified as directly attributable to child-bearing were regarded as avoidable, a proportion considerably higher than that found in the English inquiry (46 per cent.). The responsibility for avoidable deaths is attributed to negligence on the part of the patient in, roughly, one-third, and to faulty attendance on the part of doctor, midwife, or institution in two-thirds of the cases. The investigators would no doubt agree that the allocation of blame in these cases is no simple matter, and calls for great circumspection. Can it fairly be said, for example, that a woman is responsible for her own death because, being ignorant of their importance, she failed to make use of the facilities for ante-natal supervision provided for her? Or if a doctor or a midwife, conscientiously acting according to the best of their admittedly imperfect knowledge, commits an error of judgement which leads to disaster, can the responsibility for death be fairly placed upon their shoulders? Such a position would certainly not be taken in respect of surgical operations. Personal responsibility is not alleged in the report, but such figures as are given may be misunderstood by the public and unfairly quoted in wholesale condemnation of medical practice. The authors probably realize this, for they say in a different connexion (p. 68) that the proportion of " avoidable " deaths must not be regarded as indicating the level to which the maternal death rate can be brought in practice. It is to be hoped that this cautionary state-

ment will not be overlooked by the lay reader, for it is necessary to an understanding of what is meant by "avoidability."

Influence of Ante-natal Care

The section dealing with the results of ante-natal care will be read with interest in view of the fact, which has become the subject of much comment, that so little effect has been produced upon the maternal mortality rate by the wide extension of ante-natal supervision that has been brought about in recent years. In this report more than 28 per cent. of the maternal deaths are attributed to lack of adequate ante-natal care. The standard of adequacy adopted by the investigators is not stated, and perhaps it is not capable of definite statement. The number of examinations by doctor or midwife, and the number of attendances at the clinic, is possibly the only practicable criterion, but the quality of the supervision given is of at least equal importance with the amount, and quality can only be judged by results. It is therefore interesting to note that out of 504 cases in which ante-natal care was given by an institution it was regarded as inadequate in ninety-four—that is, in about 18 per cent. (Table 3, p. 17). Whether the inadequacy, in these cases, consisted in the giving of bad advice, or in failing to carry out routine measures of supervision, is not stated. The report, however, makes it clear that in Scotland, as elsewhere, ante-natal supervision has not reached the level of efficiency which it may fairly be expected to attain.

To faulty intra-natal management 559 deaths are attributed, making 22.67 per cent. of the total. The view is taken that in the majority of these fatalities, whether occurring in institutional or in private practice, "an undue desire to hurry the confinement was at the root of most of the troubles." The report further makes a strong point of the "extreme gravity" of hurrying the third stage (p. 21). It is also deplored that "major obstetrical deliveries were attempted in unsuitable surroundings, with inadequate equipment, and very often with inadequate anaesthesia." In this connexion emphasis is laid upon the point that one of the chief functions of ante-natal supervision should be "the selection of cases suitable for delivery at home." All this is unfortunately an oft-told tale, and serves sadly to confirm the conclusions arrived at in previous reports.

Analysis of Causes of Maternal Mortality

The most interesting section, as well as the longest, is that in which the detailed analysis of the causes of maternal mortality is set out and discussed. Twenty-seven different causes of death are passed in review, and the clinical data furnished by the returns are tabulated and minutely examined. This section is a model of careful and exhaustive investigation. It is not possible in this survey to do more than select a few of the many interesting points which emerge.

There were 154 deaths from *abortion*: 90 per cent. of these occurred in urban districts, and the cause of death in 90 per cent. was sepsis. Attention has previously been called to the fact that *hyperemesis* is a more frequent cause of death in Scotland than in England and Wales. In the report the proportion of the total mortality due to this cause was 4.5 per cent., while in England and Wales during the same period it was only 1.3 per cent. It is further pointed out that in Scotland the proportion of deaths from this cause is rising: in the decennium 1911-20 the proportion was 2.31 per cent. of the total; in the succeeding decennium, 1921-30, it rose to 3.99 per cent. A useful piece of constructive work might be done by an expert inquiry into the causes of this striking difference between the two countries in respect of the frequency of occurrence of hyperemesis and its tendency to terminate fatally.

There were 145 deaths from *eclampsia*, and of these forty-five—that is, nearly one-third—died undelivered; this is one of the saddest statements in the report, for it suggests that there is a considerable lack of co-operation in Scotland between the different elements of the maternity service.

There were 108 deaths from "failed forceps"—a name characterized in the report as "a convenient term of obstetrical jargon"; of these deaths sixty-two were due to shock and the remainder (forty-six) to sepsis. Fatalities which arise in this manner are a deep reproach to obstetric practice. *Shock* following spontaneous delivery was the cause of death in thirty-seven cases; of these seven were cases of acute inversion, while eight followed rupture of the uterus. Four were cases of the high forceps operation carried out in the patient's home by a doctor who gave the anaesthetic himself. The authors are inclined to attribute the occurrence of shock in uncomplicated labour in some part to ill-health during pregnancy; there were twenty-two deaths in the series which were brought about in this manner.

The section dealing with deaths from *sepsis* deserves special attention; the cases are dealt with in groups and are exhaustively considered from the clinical standpoint. After *non-instrumental delivery* there were 313 cases, after instrumental or manipulative delivery 219 cases, and after Caesarean section nineteen cases. The only suggestion the report makes in regard to the causation of the cases which occurred after non-instrumental delivery is that the third stage was hurried in a considerable proportion. The negative fact is emphasized that so far as was known none of the persons in attendance "had been in contact with infection or had any septic focus" (p. 177). It is evident that an inquiry on different lines will be necessary to elucidate the causation of these disturbing cases.

The authors found reason to believe that deaths occurring from *sepsis after instrumental delivery* showed a tendency to "increase as social conditions improved." If this view is correct the position becomes still more disturbing. In seventy-five out of the 219 deaths in this group the operation is regarded as having been unnecessary; it was undertaken either "for delay" or "at the request of the patient."

Some Constructive Proposals

It will be now evident that the story which the report has to tell is one of almost unmitigated gloom, and the feeling of depression produced in the mind of the reader is not greatly alleviated when he turns to the very short chapter of conclusions and recommendations for improvement, which occupies only five pages. Definite schemes are not to be looked for in a report of this character, but the few constructive proposals which are made, though useful, touch only the fringes of the subject.

The first recommendation is almost a truism—namely, that pregnancy should be "supervised as a unity"; supervision should be begun early and continued throughout; this supervision should be in the hands of one medical attendant. Unfortunately no hint is forthcoming of the great administrative difficulties to be overcome in carrying out this recommendation. "Continuous supervision," the report continues, should include three "special examinations" by a medical practitioner, and details are given of the manner in which the special examinations should be carried out. Local authorities are asked to "consider" a scheme of voluntary notification of pregnancy.

It is strongly recommended that, except in the case of "minor interference," the advice of an obstetric specialist should be obtained before operations are undertaken, although it is admitted that in rural areas this may not be practicable. An important practical recommendation is that in cases of emergency the midwife should be allowed "direct access to the staff and services of the nearest hospital equipped to deal with such conditions." Those who are familiar with the conditions under which midwives practise know that much delay would often be spared if this recommendation were carried out.

In regard to maternity institutions it is urged that they should be of sufficient size to justify the appointment of a resident medical officer specially trained in obstetrics. It is regarded as essential that maternity nursing should be undertaken only by midwives, and the establishment of a

" local authority midwives service " is recommended as being in the best interests alike of patients and of midwives. In these two last-named particulars the report is in agreement with the proposals of the Joint Council of Midwifery, which were summarized in these columns on February 23rd, 1935 (p. 371).

Miscellanea

A final word should be said as to the form and style of the report. It can have been no easy task to present to the reader a clear summary of the facts which can be gleaned from the enormous mass of information collected. On the whole, the authors have admirably overcome their difficulties, but a freer use of paragraph headings would have been welcome. The important chapter on sepsis after instrumental delivery is difficult to follow, because the cases are arranged in several series (referred to indifferently as " groups " and " subgroups ") without any clear indication of the transition from one series to another. Cross-headings would have been of great assistance to the reader here.

There is, further, in many places, a certain lack of precision both in statement and in the use of terms: thus " spontaneous labour " sometimes means " spontaneous delivery " ; in discussing cases of " high forceps " it is stated that " the heads were unfixed when the instruments were applied." Presumably this means that in each case the head was not engaged, but in obstetric parlance the difference between " fixation " and " engagement " is fundamental.

It was a real surprise to find that a certain confusion exists north of the Tweed with regard to the name of one of Scotland's famous obstetricians. He is correctly named in a footnote (p. 35) as Matthews Duncan, but in the text he becomes Duncan Matthews! Can it be that Scotland is forgetting the names of her honoured dead?

MENTAL HYGIENE CONFERENCE IN BRUSSELS

The third European Reunion of Mental Hygiene was held in Brussels at the close of last month, delegates being present from Australia, Canada, the United States, France, Finland, Holland, Italy, Switzerland, Esthonia, Belgium, and Great Britain. Three main topics were discussed.

The Boarding-out System

The subject of boarding out mental patients in other families was introduced by Professor G. Corbieri of Milan, who said that this was practised at Arezzo, Florence, Lucca, Treviso, and Trieste, the foster families for the most part being peasants residing near a mental hospital and being supervised by a medical practitioner. He thought this plan worthy of extension in other countries. Dr. Sano, medical director of the Gheel colony, said that this boarding out of the insane, epileptic, and the mentally defective had been practised at Gheel since the sixth century. There was a small central hospital to which patients could be sent, if necessary. Dr. J. Vié described the conditions at Ainay-le-Château in France, and said that this boarding-out plan was a form of social psychotherapy, from which much might be expected in suitable cases. One of the fundamental indications for it was the need of providing for cases of chronic mental illness or defect which would otherwise be completely isolated from society. Sir Laurence Brock, chairman of the Board of Control, said that the plan was being tried in Great Britain, but there had been difficulty in finding suitable homes except in rural areas such as Suffolk and Wiltshire. One problem was the keeping of the male patients out of public-houses. He doubted whether the boarding out would effect any appreciable financial economy, but restoration to health might well be accelerated in recoverable cases.

Punishment and Upbringing

Sir Hubert Bond, senior commissioner of the Board of Control, took the chair at the discussion on the psychological value and dangers of punishments and restrictions in the upbringing of the child. Dr. Meng of Basle, who opened, approached the question from the psychoanalytical standpoint, basing the use of punishments and restrictions on the fundamental desire for the control of others which existed in every human being. All such restraints should aim at bringing the aggressive tendencies of the child under the control of a strong personality. Psycho-analysis had brought to light the emotional interactions between parents and children. All educational methods should be examined from the point of view of their present and future effectiveness in controlling the aggressive and sexual instincts of the child, so that he might become truly developed and balanced, be freed from the desire to dominate others, be capable of steady work and controlled affection, and be able to subordinate his own desires and wishes to the interests of his fellows. Dr. H. Crichton-Miller stressed the importance of the family and the school as the essential agents of social adaptation. Education should make the individual fully conscious of himself, and a social being. The basic duty of the adult was to adapt the child to life with a minimum of suffering, on a basis of establishing emotional conditioned reflexes. The stress on the vengeance aspect of punishment was, he thought, a characteristic error of the Freudian school of thought. In the process of adaptation to life it was desirable that the child should be surrounded by controlling forces, which in their impersonality and inexorability should appear to him to approach closely to the laws of nature. The adult who was using his desire for power tended to be arbitrary and autocratic, and therefore to destroy the child's sense of emotional security ; even the bitter resentment which an over-strict regime would provoke was less damaging than such a feeling of insecurity. The ideal formula for the child should be: " I shall do this in order that I may become a man and independent ; if I do not do this I shall suffer from the opposition of society." Punishments and restrictions, though valuable in the early stages of education, could not in themselves produce that positive state of mind which should be the aim of all education. Dr. Doris Odlum agreed that nothing was worse for a child than to feel insecure about the emotional attitude of the adults around it. Children were emotional barometers as regards the adults in their environment. Dr. Forel of Geneva supported the view that a discipline founded on the desire to render the child an independent personality was the ideal of all education. The extent to which punishment was used must depend upon the individual child and the parent or teacher. The method was of less importance than the spirit which actuated it.

Mental Hygiene and the Press

Opening a discussion on mental hygiene and the Press, Dr. Forel stressed the influence of the Press upon the psychology of the people, and also emphasized the value of financial and other independence. He was strongly opposed to publication of reports of suicides, to advertisements of quacks, abortionists, and unauthorized patent drugs, and to accounts of unsavoury law cases. It would be most beneficial if a newspaper could have on its staff a critic who was competent to assess the mental hygiene values of the news to be published. Dr. van der Spek of Holland commented on the suggestibility of the public, which rendered the Press one of the greatest forces in the world for good or ill. It was unquestionable that much remained to be done to combat these evil forces which were inimical to the mental welfare of the people.

At the conclusion of the conference Sir Laurence Brock and Dr. Doris Odlum, on behalf of the National Council of Mental Hygiene for Great Britain, extended an invitation for the fourth European reunion, to be held in London in July, 1937.