sumptuous volumes, price 2 guineas. Another volume, bearing the title, *The Grouse in Health and in Disease, being the popular edition of the Report of the Inquiry on Grouse Disease*,[8] has now been published at the price of 12s. 6d. It is edited by Mr. A. S. LESLIE, Secretary of the Committee, with the assistance of Dr. A. E. SHIPLEY, F.R.S. In preparing the popular edition many chapters in the earlier part of the book have been simplified and shortened, as have also many sections of the second part, which deals with the diseases of grouse, but a chapter has been added to show how far the observations in the laboratory have been confirmed by observations on the moor. The third part, which deals chiefly with the management of grouse moors, and is of direct practical interest to moor owners, has been reprinted almost without alteration. The popular edition is illustrated by 21 plates and a number of figures in the text. It is dedicated to the gamekeepers on the grouse moors of Great Britain, and should be read with interest by all members of that intelligent and observant calling.

We are not surprised to learn that a second edition has already been called for of Dr. RENDLE SHORT'S *The New Physiology in Surgical and General Practice*,[9] a book of which we were able to speak very favourably when reviewing the first edition last December (p. 1479). The author has utilized his opportunity to introduce references to some new points, and to add a new chapter on the growth of bone.

Dr. OSCAR JENNINGS has written very agreeably a short book entitled *Le Bain Turco-Romain*.[10] It falls naturally into two parts—the first historical, the second dealing with the modern applications of the hot-air bath, with its accessory massage and douches. He calls it a compilation, but it is this and something more, for he has clearly had a good deal of experience of the value of this bath in the minor errors of metabolism which afflict city dwellers and in what Sir Spencer Wells called "cachexia londinensis." The mistake commonly made, as Dr. Jennings perceives, is to take the Turkish bath too seriously, to go into too hot rooms, and to spend too long a time in them. Such a bath is exhausting, whereas a short bath, staying long enough in a hot room to ensure copious perspiration, following this by a warm douche or needle bath cooled down to outdoor temperature, and that, again, by a rest in the horizontal position for half an hour or less, is refreshing. M. Lucas-Championnière has written a preface for the book, in which he gives expression to his well-known views as to the importance of physical methods in the treatment of many chronic disorders, and for the relief of the later effects of injuries of the limbs.

Dr. MCKAIL'S *Public Health Chemistry and Bacteriology*[11] is intended as a companion to a course of laboratory work. The author states in the introduction that "the accumulation of scraps of knowledge derived from the parent sciences, under the heading of public health chemistry and bacteriology, is justifiable only on the score of convenience and the importance of economizing the student's time." It is certainly wise thus to impress on those taking such a course of work for the diploma of public health, that the four months' work demanded, comprising 120 hours each at chemistry and bacteriology, does not suffice for the acquisition of more than a slight acquaintance with the subject, and that long attention to such work and experience in it are necessary to constitute any one an expert. Necessarily such a book as this covers a wide field and does not delve deeply into any one part of it; the work is based on the author's actual experience in teaching these subjects, and will be found a very useful volume for the purpose for which it is intended.

[8] *The Grouse in Health and in Disease, being the popular edition of the Report of the Committee of Inquiry on Grouse Disease.* Edited by A. S. Leslie, Secretary of the Committee, assisted by Dr. A. E. Shipley, F.R.S. London: Smith, Elder and Co. 1912. (Roy. 8vo, pp. 492; plates 21, figs. 36. 12s. 6d. net.)

[9] *The New Physiology in Surgical and General Practice.* By A. Rendle Short, M.D., B.S., B.Sc.Lond., F.R.C.S.Eng., Honorary Surgical Registrar, Bristol Royal Infirmary; Senior Demonstrator of Physiology, University of Bristol. Second Edition, Revised and Enlarged. Bristol: John Wright and Sons; London: Simpkin, Marshall, Hamilton, Kent, and Co. 1912. (Cr. 8vo, pp. 255. 5s. net.)

[10] *Le Bain Turco-Romain, ses applications hygiéniques et thérapeutiques étudemédico-historique.* Par le Docteur Oscar Jennings, de la Faculté de Médecine de Paris. Préface du Docteur J. Lucas-Championnière. Paris: Vigot Frères. 1912. (Med. 8vo, pp. 69. 2 fr. 50c.)

[11] *Public Health Chemistry and Bacteriology: a Handbook for D.P.H. Students.* By David McKail, M.D.Glasg., D.P.H.Camb., F.R.F.P.S.G. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1912. (Crown 8vo, pp. 416. 6s. 6d. net.)

INFANT MORTALITY AND STILLBIRTHS.

A COMPREHENSIVE report has recently been issued by the Royal Statistical Society, which deserves to be studied by every one who seeks to draw conclusions from statistics of infant mortality, more particularly if it is desired to draw comparisons between the statistics of this and other countries. It is the "Report of the Special Committee appointed by the Council of the Royal Statistical Society to inquire into the systems adopted in different countries for the registration of births (including stillbirths) and deaths with reference to infantile mortality."

The method adopted for obtaining the necessary information was to send inquiry forms to all the registration officers of the civilized states of the world. The number of inquiries sent out was 136, and the number of replies received was 103, and it is rather surprising to find that amongst the states from which no reply was received were five within the British Empire, including the provinces of British Columbia and Quebec. There were also no replies from five states within the German Empire, twelve states of the United States of America, and ten other foreign states, including Russia, China, and Brazil. But although not complete, the information is sufficient for most practical purposes. The form of inquiry is given in an appendix, and the answers are tabulated with copious notes, so that the answers given by any country to any question can be found without difficulty.

History and Practice of Registration in General.

Table I gives the dates for each country of the earliest records based on their present registration systems. All, with two exceptions, commence in the last century. The two exceptions are Sweden (1749) and Finland (1751). Half a century later France, Norway, and Denmark adopted their present systems. England and Wales made no attempt at universal compulsory registration of births or deaths until thirty-eight years later (1838); Scotland only in 1855; and Ireland not until 1864.

But it would be quite wrong to assume that there was no registration at all in any of these countries before their present systems were adopted. Thus as long ago as 1538 registration of baptisms and funerals was established in England, the records being kept by the lay clergy. In London weekly "bills of mortality" were published as far back as 1517, but do not appear to have been based on any medical evidence as to the causes of death. Moreover, only those baptisms and funerals which were conducted by clergy of the Established Church were recorded. All others were ignored. This state of things continued down to 1838, when civil registration was established. But even then the system was not completely compulsory until the passing of the Births and Deaths Registration Act (1874). No material change has been made in the United Kingdom since the latter date, except that under the "Notification of Births Act (1907)," which only applies to those sanitary districts which have "adopted" it, the duty of declaring the birth is extended to the father of the child (including an illegitimate child), if residing in the house at the time of the birth, and to any person in attendance on the mother at the birth or within six hours after the birth. The Act applies to stillbirths of twenty-eight weeks uterine gestation.

In England and Wales a body may be legally buried without any permit from the registration authority, provided that the person who buries or performs any funeral or religious service for the burial of the body afterwards gives written notice to the registrar. And in most other countries it has been found necessary to sanction or condone such unregistered deaths in special circumstances. The report approves of the regulation in force in Anhalt, where, in special cases, burial is allowed without a registrar's permit on the authority of the chief of the local police; that officer reports the fact at once to the registrar. In England and Wales, we may point out, such a special case would be dealt with by the coroner, who has all the machinery of the police to enable him to get at the facts, and possesses far greater and more elastic powers than any police in the world, except, perhaps, the Russian secret police. The report, however, expressly excludes consideration of the coroner's procedure.

In several of the United States undertakers are bound to see that all registration formalities are fully observed. In

another—Indiana—the duty of declaring a death is imposed on the medical practitioner last attending the deceased person, on pain of a fine and the forfeiture of his right to be paid for his professional services to the deceased!

Stillbirths.

By far the most important and instructive part of the report is that which deals with stillbirths. Not only is the meaning attached to the term "stillbirth" very different in different countries, but the practice with regard to registering differs—no registration of stillbirths being required or even allowed in the United Kingdom or in many of the overseas dominions and colonies, while in almost all other countries registration takes place under the general law applying to all births and deaths.

The Cape of Good Hope sets a laudable example to the Mother Country, inasmuch as the law defines "birth" (registrable) as meaning and including the birth of any *viable* child, whether such child be living or dead at the time of birth; and by regulations the following definitions are in force:

"Stillbirth" means the delivery of a formed child which has not shown any sign of life after complete birth.

"Formed child" means any fetus at such a stage of development as to be readily recognized by any uninstructed person as a human child.

"Complete birth" means the body of the child is entirely outside the mother, but does not include either the division of the umbilical cord or the delivery of the after-birth.

"Sign of life" means the performance of any physiological sign of life, such as breathing, crying, movement, pulsation, or the like, seen or heard, after complete birth.

It is obvious that if stillbirths are registered as deaths the figures for infantile mortality will be larger than if they are excluded. The confusion thus introduced into all comparative statistics relating to infantile mortality and kindred studies is naturally the aspect which most concerns the Royal Statistical Society. But we may point out in passing that the English registration law, in absolutely ignoring stillbirths, is open to the very serious medico-legal criticism, to which we drew attention nearly twelve years ago in the last of a series of articles on death certification.[1] Facilities for crime afforded by the English practice were there fully set out, and some striking expressions of opinion quoted from the report of the Select Committee on Death Certification, 1893.

The report of the Royal Statistical Society draws attention to the fact that no legislature in any country has ventured to define "stillbirth," even for legal purposes, and the only guidance in England or elsewhere to those whom it may concern is contained in the regulations made by the various statistical offices. It strongly recommends that an international definition of "stillbirth" should be adopted, and that stillbirths should be registered. In England the Registrar-General has quite lately adopted the definition given by the Central Midwives Board:

A child is to be deemed stillborn if after complete birth it has not breathed or shown any sign of life.

This is a very good working definition for midwives, but insufficient for scientific, statistical, or legal purposes. It does not determine at what stage of development a fetus becomes "a child," and it does not determine what may or may not be regarded as a "sign of life"—other than breathing.

The chairman of the committee, in his memorandum forming part of the report, points out that, as medical men are aware, a child may be born alive and capable of being kept alive, and yet die without making any respiratory effort in the absence of appropriate treatment. On the other hand, in prolonged labour it is known that the child may make a respiratory effort before the mouth is outside the mother's body—certainly before the child is wholly outside—and yet may die before birth is completed. Accordingly the chairman suggests that the test of life should be that the heart acts, and that the following definitions might be adopted universally:

A "stillborn" child means a child born after a period of gestation of not less than seven lunar months (twenty-eight weeks), whose heart has ceased to function before the whole of the body (including the head and limbs) has been completely extruded from the body of the mother; and a "stillbirth" means the birth of a stillborn child.

[1] British Medical Journal, December 15th, 1900, p. 1736.

The objection to this definition, in our opinion, is that the test of life—the acting of the heart—is not so easily applied, and would probably never be directly applied by any but skilled midwives, and could not, in the absence of breathing or movements, be checked by unprofessional onlookers. Again, would a *post-mortem* examination throw any light upon the question whether the heart had ceased acting before or immediately after birth, except indeed by inference from the appearances of the lungs? We must confess that we prefer the phrasing of the regulation we have already quoted as that of the Cape of Good Hope—"any physiological sign of life, such as breathing, crying, movement, pulsation, or the like"—which of course includes action of the heart.

The object of the limitation, "After a period of gestation of not less than seven lunar months (twenty-eight weeks)," is to draw a definite line between abortions or miscarriages on the one hand and registrable births on the other; and the line is drawn at twenty-eight weeks because at that period it is considered that the child is viable.

As to the period of gestation at which the product of conception is held to become capable of registration as a birth ("still" or otherwise) there is a great lack of uniformity. In some countries (Japan, for instance) it is four months; in others, nothing less than the ninth month. And in France and Holland, even children born alive but dying before registration (for which a period of three days is allowed) are counted stillborn (!) for registration purposes.

The chairman's proposed definition adopts the earliest period at which the fetus is generally recognized as viable, and in this he is following the recommendation of the Select Committee (1893). But he makes no suggestion, any more than did this committee, for meeting the practical difficulty—namely, that every fetus, of whatever stage, would have to be examined *post mortem* by a medical practitioner, in order that an authoritative answer should be given to the question, Is it under or over the limiting period of twenty-eight weeks, or whatever it may be? As we asked, twelve years ago, in the article to which we have referred:

If the burial is to be permitted without a medical certificate up to a certain period, how is the registrar or the burial authority to be satisfied as to the period reached in any given case?

Statistical Methods.

With regard to statistical methods, the conclusions of the report are:

1. That stillbirths should be tabulated separately, such tabulation to include, *if necessary*—
   - (*a*) The number of children born alive but registered as dead.
   - (*b*) The numbers born in each successive week or month after the prescribed (earliest) time for registrable stillbirths.

2. That for general use the infantile mortality-rate should be calculated from—
   - (*a*) The births of children born alive, including, *if necessary*, those born alive but registered dead.
   - (*b*) The number of deaths during the first year of life of children born alive, including, *if necessary*, the children "presented dead." "Presented dead" appears to mean born alive, but dying before the birth is "declared" to the registration authority, and within the period (three days in France) allowed by law for such declaration.

THE statistics published as usual at this season by the *Semaine Médicale* show that there are, this year in France 8,688 medical students, as compared with 8,779 last year. This diminution is entirely due to the French students, as the number of foreign students (1,301) has increased by 12. Only a very small proportion—not more than about 4 per cent.—of the foreign students proceed to a degree, a fact which appears to prove that they visit the French schools purely for purposes of instruction. Russia furnished the largest number of foreign students (849). Bulgaria came next (64), and Roumania third (57). Servia sent 12 students, and Greece 26. It appears, therefore, that Russia and the Balkan States furnish three-fourths of the foreign medical students in France.