

investigation of the results following schemes of infant welfare if their true effects are to be determined. With regard to the latter, the danger of "overdoing it" is emphasised. For instance, in Poplar, in spite of an extensive infant welfare scheme in being, the infantile death-rate has risen. It is suggested that this disappointing result may be traceable to the people being harassed by a multitude of health visitors, which upsets them and makes them disinclined to adopt the measures urged upon them.

The third and final report is a statistical study by Dr. Brownlee of some of the data relating to infantile mortality. It is shown that the growth of the child is a continuous process from a period at least six months prior to birth up to the age of about four years, a process which is not interrupted either by the act of birth or by the act of weaning.

Certain disease conditions have also been investigated. Convulsions diminish in a perfectly definite manner from the age of two months to that of four years. In the group of premature births and wasting diseases some considerable saving of infantile life seems to be possible. The group of diarrhoeal diseases is found to be a homogeneous statistical group, though it undoubtedly includes several distinct specific infections, from which it is inferred that the reason for the frequency of these diseases at the ages at which they occur must be sought for in the development of the child rather than in the type of parasite. Scarlet fever, measles, bronchitis, and pneumonia have also been investigated.

From the foregoing brief summary it will be seen that this report contains matter of much importance, and its appearance at this time is most opportune.

R. T. H.

BARON DAIROKU KIKUCHI.

BARON KIKUCHI, whose death took place on August 19, was one of the most conspicuous among the band of men who modernised education in Japan. He was born in Yedo (now Tokyo) on March 17, 1855, and came of a family of noted scholars. Both his father and grandfather were specially interested in Western learning, and Kikuchi himself early received a strong bias in the direction of scientific study. He was the youngest member of a small group of promising students whom the old Shogunate Government sent to Europe in 1866. Owing to the revolutionary change of government which occurred in Japan in 1868, Kikuchi was recalled home; but two years later he was again ordered abroad, this time to England. After some years spent at school he entered the London University College in 1873, but ere long passed on to Cambridge, where he graduated as nineteenth wrangler in 1877.

Returning home, he became professor of mathematics in the college where he had been himself a young pupil, which had developed gradually to the standard of a university. Originally known as the Kaisei-gakko, this school grew into what was

afterwards known as the Tokyo University, and this in due course amalgamated with the Kobudaigakko, or College of Engineering, and became the highly organised Imperial University of Japan.

It was in the Tokyo University that Principal Sir J. A. Ewing, then professor of engineering and physics, carried out his well-known experiments on magnetic hysteresis; and associated with Kikuchi in these and later days were Edward Divers, professor of chemistry, C. D. West, professor of mechanical engineering, John Milne, the famous seismologist, as well as others, including the writer of this notice. Our intercourse with Kikuchi was marked with cordiality and mutual appreciation from the first, in great measure due, no doubt, to his experience as a schoolboy and student in London and Cambridge. He greatly admired the English genius for self-imposed discipline, and used to say that if he had not been a Japanese he would have desired above everything to be an Englishman.

From 1881 Kikuchi added to his professorial duties the office of the Dean of the College of Science, a highly responsible post at that time of strenuous educational development. As one of the members of the House of Peers under the new Constitution he was of great service in advancing various Bills of educational and economic importance, and rapidly established for himself a high reputation as a man of sagacity and administrative power. The mere enumeration of the public offices which he filled is a tribute to the confidence his fellow-countrymen reposed in him. In succession he held the posts of Vice-Minister of Education (1897-98), President of the Imperial University, Tokyo (1898-1901), and Minister of Education (1901-3).

As one of the representatives of the Imperial Academy of Japan, he attended the meeting of the International Association of Academies at Vienna in 1907, and thereafter spent a considerable time in this country. His course of lectures on Japanese education, delivered in that year under the auspices of the University of London, were published in English in 1909. This book contains the first systematic account of the history of education in Japan given to the world at large, and will ever remain a work of great value to the educational historian. A remarkably succinct sketch of the fundamental characteristics of the old Japanese civilisation, and of the way in which it proved itself equal to the absorption of Western learning, was given in an address delivered before the Royal Society of Edinburgh in June, 1907, and published in the Proceedings (vol. xxvii.).

After this stay in Europe, where Kikuchi renewed acquaintance with many former friends and made many new ones, he returned to Japan to take up again responsible educational duties. Up to the day of his last illness he was in the midst of all movements which were making for efficiency in education. In March of this year, for example, he was appointed director of the newly established National Physico-Chemical Institute.

Called comparatively early in life to take a great

and ever-increasing share in shaping the destinies of his country in regard to science and higher education, Kikuchi had scant leisure for mathematical research. His chief work as an investigator was historical, and he contributed a number of papers to the Tokyo Mathematical Society on the mathematics of the old Japanese school. He also wrote a text-book on elementary geometry for use in Japanese schools and colleges. Of far greater moment to his country, however, was his disinterested devotion to the cause of the higher learning in science and morals. It was for this that he was created a Baron in 1902. His successive honours came to him simply because he was indispensable to his country and to his sovereign. But to the end he retained all the characteristics which endeared him to us—modest, courteous, gracious, always acting from the highest motives, strong in purpose yet never aggressive, and combining in a singular degree the finest traits of the Japanese Samurai with the best qualities of the youth of England. At the most impressionable time of life Kikuchi lived under the full influence of the best culture our island kingdom can offer; and we may be pardoned for regarding his pre-eminent success as in no small measure due to his unconscious training in a land where liberty, individuality, and zeal for the common good are of the very air we breathe. C. G. KNOTT.

NOTES.

IN three Chadwick public lectures on the part of hygiene in the European war Dr. Woods Hutchinson gave some noteworthy facts in connection with the progress of military hygiene. The present world-struggle is probably one of the least deadly ever fought in proportion to the numbers engaged. Less than 5 per cent. of the wastage of former wars was due to wounds or deaths in battle; the other 95 per cent. was caused by disease. In the armies themselves the ratio was six to nine deaths by disease to one in battle or from wounds. In this war the ratio is sixteen deaths in battle to one from disease. Of the wounded who survive six hours 90 per cent. recover, of those who reach the field hospitals 95 per cent. recover, and of those who arrive at the base hospitals 98 per cent. get well. Barely 5 per cent. of the wounded are crippled or permanently disabled. There is good reason to believe that the death-rate of this war does not exceed 5 per cent. per annum. The subjects of food and diseases of an army were also discussed. The superb health and vigour of our armies on the Western front are due largely to the rich and abundant supply of food. These armies had less sickness and fewer deaths from pneumonia and other diseases than they used to have in barracks in times of peace. The old plagues of army camps—cholera, Black Death, and spotted typhus—all lifted their heads in Italy, in Serbia, and in Russia, but all were promptly stamped out by modern sanitary science. The total number of cases of serious or lasting "shell-shock," so called, and mental disturbance, during 1916 in the trenches in France, was 2600, fewer than one per 1000 of the armies in the field, and fewer than half of the ordinary insanity rate in men of military ages in times of peace. Modern nerves had stood the fearful strain of this war superbly.

An appeal to the Local Government Board to take action towards establishing a Ministry of Health was

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made by a deputation from the Standing Joint Committee of Industrial Women's Organisations which waited on the President of the Board (Mr. Hayes Fisher) on November 16. Mr. Stephen Walsh (Parliamentary Secretary) was also present. The organisations represented were the Women's Trade Union League, the Women's Co-operative Guild, the Women's Labour League, the National Federation of Women Workers, and the Railway Women's Guild. It was urged that the new department's basis must be the public health side of the Local Government Board, and that it would not serve merely to re-name that Board the Ministry of Health. Such a Ministry should take into partnership the National Insurance Commissioners, and it was absolutely essential that it should be dissociated from the old Poor Law system. On the same day Mr. Hayes Fisher received a deputation on the same subject from the Society of Medical Officers of Health, and the Association of County Medical Officers of Health. Mr. Hayes Fisher, in replying, said that the Local Government Board was asking for a Bill that would enable local authorities in England and Wales to do all the things that were being asked of the new Ministry of Health. This Bill had not been able to go any further because the National Insurance Commissioners were asking for similar powers in respect of infant welfare and maternity. Whoever might obtain the powers, the responsibility for carrying them out would rest with the medical officers of health.

THE stress of war has brought success sooner than was anticipated to the efforts which have been made for many years to secure the establishment of a National Seed-testing Station for England and Wales. Scotland and Ireland have for several years had the advantage of such stations, and now England has at last fallen into line. The new station, which is associated with the Food Production Department of the Board of Agriculture, was formally opened on November 14 by the President of the Board, whilst the same evening the text of the Testing of Seeds Order was issued by the Ministry of Food. This Order becomes operative on January 1, 1918, and institutes a close control over the sale of the more important seeds. The testing of samples in connection with the Order will be carried out in the new station, which is fully equipped for the purpose, and will further undertake the testing of seeds for farmers and allotment-holders at a nominal fee of threepence per sample, and for seed traders at half a crown per sample. The station is located at 70 Victoria Street, S.W.1, and is under the direction of Mr. R. G. Stapledon, advisory botanist of University College, Aberystwyth, who for some time has been actively associated with the work of the Food Production Department at headquarters. In declaring the station open, Mr. Prothero expressed the hope that in years to come there would be associated with it an Institute of Applied Botany, which would be of great service to agriculture.

An interesting and important report of the Nitrate Supply Committee (appointed by the United States Secretary of War) is summarised in *Science* for September 14. The chief recommendations made are as follows:—That out of the 4,000,000l. nitrate supply appropriation the following sums be made available for the purposes indicated:—(1) 600,000l. to be used in building a synthetic ammonia plant (best in south-west Virginia or a contiguous region), contingent upon the completion of satisfactory negotiations with the General Chemical Co. for the rights to use its synthetic ammonia process; (2) 120,000l. to be placed at the disposal of the War Department for building a plant for the oxidation of ammonia to nitric acid and concentrating the latter; (3) 40,000l. to be allotted to