

and good health were the prime requisites, though school might do more to awaken girls' interest in public questions. (c) Occupations which can be begun at an earlier age, e.g. secretarial and clerical work—journalism, accountancy, and civil service. Two views as to this class of girl. Either she should leave school at fifteen and go to a "crammer's," or the school should organise special courses. But school-trained girls are not wanted by business men. They find the school training rather "amateur," and in any case the atmosphere of school, when it is right, is not that of business. Six months or a year in a reorganised business school is a desirable interlude. Civil service ought not to encourage competitive examinations before sixteen, and so cut short the proper school time of a girl. Miss Haldane also opposed all utilitarian claims upon school. A better education of a general kind is what is wanted. The want of prospects under which most girls had to do their work and the narrow specialisation of the preparation for Government work had a most depressing influence. "We cannot afford to be economical in the matter of education. If school buildings must be plain, at least we must see to it that the staff is well-qualified and efficient." Miss Oldham pointed out the increased necessity for training women for economical independence. "What strengthens women in the best sense strengthens the nation." She urged free entry and free progress for women into all professions for which they are physically fit, an improved status for the home-maker, who should have a right to the best education and to the honour and rewards which belong to great tasks well discharged. "Motherhood is so important that a whole year might well be given to its problems in the education of every girl. Even for those who never marry, it should be remembered that the preservation of babies born is the first line of defence of our sex." Miss Charlesworth, "a voice from the bottom," as she expressed it, spoke from the clerk's point of view. The most important thing in the education of a girl is to develop "self-reliance and independence"—much more important than technicalities. A girl with this feeling will not do a woman's work for 12s. 6d. a week "if only it is genteel." School should teach girls not to take work without prospects. Girls are very apt to mistake permanence of employment for a career. Some standardisation for the education of clerks was a great need in these days. Miss Burstall, Miss Escott, Miss Foxley, Miss Sheavyn, Miss Higgs, and Mrs. Findlay took part in a very lively discussion. Miss Burstall was severely criticised for the view that Latin should be left to the *clever* girls—an expression which probably did not mean to its author what it suggested to her audience.

The section met again on Saturday morning. The large gathering was significant of the interest taken in the subject—education and industry. Sir William Mather declared that the two were connected as intimately as soul and body. Future historians will marvel at the fact that we made no attempt whatever between 1872 and 1889 to deal with technical education, and that until quite recently we gave more time and energy to quarrelling about the place of religion in education than to the problem of how to make our boys and girls "children of light." After paying a warm tribute to the work of the City and Guilds Institute, he pointed to the waste of elementary educational expenditure, because of the absence of any general form of continued schooling. Happily, Great Britain was a peculiarly plastic country. It learned best from its own mistakes, and herein lay the hope of the future. Such voluntary movements as that of the boy scouts had much to teach us. Mr. Maxwell Garnett pointed out the great gulf fixed between education and industry. We have thought out the material

and equipment side of education much in advance of the human. The scientific way of handling educational problems was much handicapped by the want of a technical language. The use of the words of ordinary life was productive of all kinds of misconceptions. Education should aim at developing a single wide interest. The old notion of a general education was psychologically absurd. Coherence at seventeen is the surest way to comprehensiveness at twenty-seven. By means of a chart, Mr. Garnett showed what should in his view be the relation of each grade of education to the rest. Mr. J. Graham described the practice of the Leeds authority in providing a quasi-technical training for boys about to leave the elementary school. The work began in two or three so-called "Day Preparatory Trade Schools," in which the time-table was divided into three broad sections dealing about equally with English, drawing, and manual work. Now it is proposed to extend this provision to all the elementary schools of the city. On leaving the school, the boys enter a trade, and a real technical education should begin, lasting for four years (fourteen to eighteen), and occupying half the pupil's time. In the secondary schools the vocational claim is being admitted. The matriculation examination should be broadened. The present dominating influence of the university upon the schools should be weakened, but the secondary schools ought not to be made into technical schools. The president of the Association pleaded for practical suggestion. He did not think our present system was wrong because it turned out too few trained minds. Incidentally he criticised the use of the term "Honours" in the universities. Principal Griffiths raised the question of education in its relation to want of understanding between employers and employed, not a little, he thought, due to such "class" education as that of Ruskin College. The discussion closed with some account of the educational work done by the Westinghouse Co. for its younger employees.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The fifth edition of the War List of the University was published by the *Cambridge Review* on November 15, and is an impressive quarto volume. It consists of 90 pp. and cover, and contains more than 11,000 names. Trinity College has 2500; Pembroke 1052, Gonville and Caius 952; Clare 750; Emmanuel 648; Trinity Hall 603; Jesus 559; King's 556; Christ's 540; and St. John's 513. The other colleges also show a great increase in numbers. The list not only contains the names of past and present members of the University who are serving in every branch of both Services, but, so far as is known, after each name appears the honours awarded for distinguished service; also, alas! the large number of both killed and wounded. It is a record of which the University may well be proud, showing, as it does, Cambridge University's fine spirit. There are 614 killed, nearly 900 wounded, and 123 prisoners and missing. The distinctions comprise:—Mentioned in Despatches, 241; V.C., 3; D.S.C., 1; D.S.O., 36; Military Cross, 48; D.C.M., 4; K.C.B., 1; C.B., 2; C.M.G., 6; Medaille Militaire, 4; Croix de Chevalier, 10; Croix de Guerre, 4; Russian Orders, 5; Serbian Order, 1.

THE Long Fox lecture will be delivered by Dr. Richardson Cross, at the University of Bristol, on Wednesday, December 1. The subject will be "The Evolution of the Sense of Sight."

A VERY useful summary of the recent literature bearing on the application of psychology to problems of childhood and adolescence is given in the *Psychological Bulletin* (vol. xii., No. 10). In a summary it is difficult to note any one section in particular, but in view of its extreme importance both to educationists and social workers of all grades, the work of Woolley and Fischer in a monograph entitled "Mental and Physical Measurements of Working Children" is important. As a result of an investigation of 800 working children they found that about 85 per cent. were retarded at the age of fifteen in height, weight, lung capacity, and the mental processes of memory and reasoning. Such studies giving evidence of the detrimental effect of a particular environment ought not to pass unnoticed.

FROM the issue of *Science* for October 15 last we learn that Mr. J. H. Schiff, a member of the board of trustees of Barnard College and its first treasurer, has given 100,000*l.* to the college for a woman's building. The University of California has received 20,000*l.* from an anonymous donor to endow the "Dr. C. W. and Mrs. Fox Memorial Beds" in the University of California Hospital. The beds are to be maintained in the new University Hospital, now being erected in San Francisco through the gift of 123,000*l.* by friends of the University. The superior court of San Francisco has just decided in favour of the University a suit for 29,000*l.* brought by the regents against the heirs of the late Mr. J. M. Keith, who had refused to pay the balance of 29,000*l.* due under a subscription made toward this new hospital by Mr. Keith, of which but 1000*l.* had been called for at the time of his death. The will of the late Anna Yarnall creates a trust fund of 5000*l.*, which is placed in the hands of the trustees of the University of Pennsylvania for the support of the botanic gardens of that institution.

THE recently issued report of the University of Leeds provides a noteworthy example of the scientific assistance which the universities have been able to give in the prosecution of the war. In August, 1914, at the instance of the Board of Agriculture and Fisheries, the Agricultural Department of the University prepared a handbill of suggestions for the management of gardens, allotments, and poultry, for the guidance of the population of Yorkshire, to enable the best use to be made of the remaining weeks of the summer in increasing the stock of food stuffs. This handbill was distributed throughout the three Ridings of Yorkshire. When the Government appointed a Chemical Trades Committee to investigate the question of dyestuffs and of explosives, the resources of the Department of Tinctorial Chemistry and Dyeing, founded by the munificence of the Clothworkers' Company, were placed at the disposal of the Committee. The Textile Department was able to render service in testing the strength and elasticity of cloths made for army contracts, and to advise members of the textile trades as to the methods of producing special fabrics hitherto manufactured in Germany. The Departments of Chemistry have been engaged in the preparation of products needed for the medical treatment of wounded soldiers, and experimental research has been carried out in connection with the treatment of those suffering from gaseous gangrene. Experiments have been made in the University laboratories to devise means of protection for the troops against poisonous gases. The staff of the Engineering Department, with the help of the Department of Physics, have been engaged in special work in connection with the war, and the resources of the laboratories have been placed at the disposal of the authorities for this purpose. And all this has been in addition to the noble work done by the Medical Department and the provision of 917 men for the Forces of the Crown.

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SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, November 11.—Sir William Crookes, president, in the chair.—Sir Ronald Ross: Studies on *a priori* pathometry.—Part i. The object of these studies is to determine the nature of the functions according to which the number of individuals infected with some disease should vary from time to time, on the supposition that the laws governing the rate of transference of the considered disease are already known *a priori*; and it is hoped that a future comparison of the curves so obtained, with the numerous statistical curves of epidemics already on record, will enable us to check the accuracy of the said *a priori* suppositions and to obtain light on the causes of the rise and fall of epidemics. The fundamental problem under consideration is the following:—If a population is divided into two groups, namely, those who are affected by some kind of happening, such as an infectious disease, and those who are not so affected; and if in unit of time a constant or variable proportion of the non-affected become affected, while simultaneously, a constant proportion of the affected become non-affected (that is, revert or recover); and if at the same time both the affected and the non-affected are subject to different birth-rates, death-rates, and rates of immigration and of emigration, so that the whole population may be incessantly varying during the period under consideration; then what will be the number of affected individuals and also the number of new cases at any moment during that period?—J. Barcroft and T. Kato: Effects of function activity in striated muscle and the submaxillary gland.—W. L. Balls and F. S. Holton: Analyses of agricultural yield. Part ii.—The sowing-date experiment with Egyptian cotton, 1913.—H. H. Thomas: Williamseniella, a new type of Bennettitalean flower.—T. Lewis: The spread of the excitatory process in the vertebrate heart. Part i.—The toad's ventricle. Part ii.—The tortoise ventricle. Part iii.—The dog's ventricle. Part iv.—The human ventricle. Part v.—The bird's heart.

Faraday Society, October 19.—Sir Robert Hadfield, president, in the chair.—F. Powis: The transference of electricity by colloidal particles. An attempt is made to calculate the charge carried by the particles of a colloidal solution produced by sparking (1) from a modification of Stokes's formula, (2) from the increase in conductivity on making the solution. The second method gives a value much greater than the first. Anions and cations are adsorbed in such a way that the concentration of each gradually decreases with increasing distance from the particle, until each finally becomes equal to that in the bulk of the surrounding medium.—F. H. Jeffery: Electrolysis of (a) nitric acid, (b) sulphuric acid, (c) orthophosphoric acid, using a gold anode. The platinum cathode was enclosed in a porous pot and the acid used for catholyte was of the same concentration as that used for anolyte. In all cases the soluble gold compounds formed contained the gold as complex anion; no gold was deposited on the cathode.—J. H. Jeffery: Electrolysis of concentrated hydrochloric acid using a copper anode. The platinum cathode was enclosed in a porous pot, and all experiments were performed in nitrogen or carbon dioxide. The copper dissolved in the cuprous condition and as complex anion alone, there being no deposit of copper on the cathode. No chlorine was evolved at the anode.—W. Clayton: The thermal decomposition of hydrogen peroxide in aqueous solution. Preliminary note. The rate of thermal decomposition of aqueous solutions of hydrogen peroxide is extremely