

ignored. The need is especially great in our own country, where isolation from other countries and the existence of immense reservoirs of natural resources have let us seem to keep up with international progress in spite of our wasteful and inefficient methods. It were well to recognise that entry upon world affairs, which we cannot long avoid, will reveal costly weaknesses.

The appeal of science for the adoption of scientific methods in the daily life of the people, in the governments of community, State, and nation, in the settling of international questions, is not an appeal for efficiency at all costs. The life that is for ever bent over the exact equation, two plus two are four, a life that tries to express all its experiences in equations equally exact, is liable to be narrow, distorted, unhappy, and misspent. The man who worships scientific efficiency, like the man who is a slave to gold, or the man who pushes his religion too far, may acquire a harsh and selfish view of life; pity and charity may drop out of his vocabulary.

Our appeal is for the scientific method of treating the problems which are before us for solution. The scientific method is that which takes account of all the forces acting. It is therefore the just method. It is in full harmony with the golden rule, "Do unto others as you would have others do unto you." It is, if you please, in full harmony with the spirit of Christ. Support is given to research by the Governments and by generous men and women in order that the truth may be found and be made available in the service of mankind. The investigational laboratories of the universities, the observatories, the private institutions for research, have precisely these ideal purposes, and no other purpose. The various activities of the world contribute to the advancement of civilisation in proportion as they contain the ideal and the unselfish. That which is purely practical, containing no element of idealism, may sustain existence and to that extent be valuable, but it does not civilise. I believe it is the idealism of pure knowledge, the idealism in applied knowledge, the idealism in industry and commerce, the idealism in literature and art, the idealism in personal religion, which leavens the life of the world and pushes forward the boundaries of civilisation.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—The Herbert Spencer Lecture for 1916 will be delivered by Prof. J. Mark Baldwin, honorary professor of the University of Mexico, in the lecture-room at the University Museum on Wednesday, March 15, 1916, at 2.30 p.m. The subject of the lecture is not yet announced.

The Vice-Chancellor has just issued a memorandum dealing with the present position of University finance. He points out that by voluntary contributions from professors, examiners, and other officials, supplemented by grants from various funds and certain windfalls, the estimated deficit of 12,000*l.* for the present year has been met, and a small credit balance left to be carried over for next year's working. This, however, does not make the position secure. The deficit for 1916 can scarcely be less than 12,000*l.*, and it is shown that the University cannot count on a repetition in full of the voluntary contributions or of many of the grants. The Michaelmas term matriculations have fallen from 580 in 1914 to about 250 in the present year, and there seems no prospect of any increase in the number of undergraduates during the war. The heads of departments have made considerable retrenchments, but it is not easy to carry out a very drastic policy in this direction. It is pointed out that in some cases the

needs of medical students prevent the closing of a department, and in several of the laboratories important Government work is being carried on.

It is stated in *Science* that by the will of the late Mr. A. F. Eno, his residuary estate, which may be very large, is bequeathed to Columbia University.

The eleventh report of the University of Leeds has now been published. It has been found desirable that the annual report should in future appear in the autumn immediately following the close of the financial year, and consequently the present report covers the two sessions 1913-14 and 1914-15, and records the work of the University to September last. Every department of the University has been affected by the war, and the report is an inspiring record of the patriotic response of the staff and students to the call to assist the country in the great struggle. Since the beginning of August, 1914, 415 members of the Leeds University contingent of the Officers Training Corps have received commissions. In addition to this, a large number of the members of the University have joined the Army and Navy and are serving in the ranks. About one-third of the members of the teaching and administrative staff, and about the same proportion of the undergraduates who were in residence at the University in the session 1913-14, are now on active service. The roll of the members of the University on active service with his Majesty's Forces since the outbreak of the war now includes 917 names. There had been up to the date of the report sixty-six casualties among the members of the University serving with the Forces of the Crown. The University records with sorrow and pride that twenty-eight of its members have fallen in action or from the effects of wounds or poisonous gas. Seven members of the University have received military distinction.

ALL admit that the first duty of this country is to bring the war to a successful conclusion from the point of view of the Entente. The matter of paramount importance is to supply all the needs of the Army and Navy, and no unnecessary obstacle to the success of Lord Derby's recruiting scheme must be tolerated. But the war must end, and peace will bring with it difficulties to be overcome which will rival in magnitude the task of completely vanquishing our enemies. Problems will arise in connection with the health and physique of the nation which will tax the resources of the country's medical service to their utmost limit. The clash of arms will be succeeded by an equally deadly industrial competition. The reconstruction of the appalling devastation will call for all the resources of men of science and qualified administrators. It behoves us, therefore, to use our available men with a wise economy in view of the many and varied duties in front of the nation. Special ability in medical or other science, in technology, in everything, must be utilised with prudence. The addition of highly trained men in any branch of knowledge to the ordinary ranks of Army and Navy must be a last resort; and among the men who are added to His Majesty's Forces from time to time those who have graduated at a university, or have been highly educated in some other direction, should be marked out for commissions or special service. There are many students of military age in medical and other colleges whose duty to their country presents difficulty, and the case of medical students has been discussed widely recently. It has been decided that medical students in their first, second, and third years should be encouraged to join the combatant forces of the King, and presumably this applies to other students. The fourth and fifth year students, it has been suggested,

should serve in the Royal Army Medical Corps. It may be hoped that students of similar standing, who have qualified themselves in various branches of science and technology, will be found suitable places in other branches of the Services, where their special knowledge will be used to the best national advantage.

THE appeal issued last July from the Office of the Board of Education for books to supply the needs of the 4000 or more British civilian prisoners interned in the concentration camp at Ruhleben in Germany met with a hearty response. More than 2000 volumes, mostly standard works, were contributed, and forwarded to Ruhleben. A second appeal has now been received from the camp for more books, and in giving publicity to it the Board of Education desires to thank all those who responded to the original request, whether for offers of books or of money. Under the auspices of a Camp Education Department a school and a science and art union have been organised at Ruhleben, which now have numerous classes, and some 150 lecturers and teachers, and 1500 students, divided into nine departments, which include two in engineering, and one each in mathematics and science, elementary physics, and navigation. The necessary funds for the educational work carried on at Ruhleben are raised by voluntary contributions among the prisoners themselves, and no prisoner is debarred by lack of funds from sharing in the advantages of the camp school. In responding to the appeal for additional books of an educational character it is requested that intending donors will, in the first instance, fill up and return a form which will be supplied on application. A careful selection will then be made, and notified to the donor, of the books suitable for despatch (through the Board of Education) to Germany, so as to comply with the very strict regulations which govern the transmission of literature to the camp. All communications on the subject should be addressed to Mr. Alfred T. Davies, Board of Education, Whitehall, London, S.W. Envelopes should have the word "Ruhleben" written in the left-hand corner.

THE confident prediction in our note last week on the articles in recent issues of the *Morning Post* on British universities and the call to arms, that when particulars of other than English universities were forthcoming it would be found that a similar satisfactory response had been made by Wales, Scotland, and so on, is borne out by the third article published by our contemporary on November 23. Taking the three constituent colleges of the University of Wales, the article shows that Bangor has about 230 students serving, and that five have been killed; that Aberystwyth has 284 in the forces, and that eleven have been killed or are among the missing; and that Cardiff has about 285 serving. One of the inevitable effects of the flocking of the students to the Colours has been a decrease in the number of candidates for examinations. Thus, while in June, 1914, the candidates for initial degrees numbered 1017, the number fell this year to 790. Generally speaking, the decrease in the attendance at the Scottish universities since the outbreak of the war, though very marked, has not been as large as in some of the English centres of learning. In the case of the University of Edinburgh, up to July 8, when an edition of the roll of honour was published, 853 students were known to be serving with the Colours, besides 2562 graduates and alumni; 62 had lost their lives, and 87 had been wounded. It was recently estimated that 1500 old students and 600 present students of the University of Glasgow were serving with the forces. About fifty are believed to have been killed, and many wounded. Apart from these, about 300 are engaged in munitions work. A number of senior medical students who have been invalidated

are returning to finish their course at the University, having been specially advised to do so. About 280 students of Aberdeen University are serving with the forces. The casualties at the end of September numbered 15 killed and 38 wounded. Of the graduates, alumni, and students of the University, more than 1300 are on naval and military service, and about 110 are under military training. The response from St. Andrews University has also been satisfactory. The writer of the article had received insufficient information to enable him to deal in detail with Irish universities.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, November 25.—Sir William Crookes, president, in the chair.—M. Black, O. W. Griffith, and L. Hill: The measurement of the rate of heat loss at body temperature by convection, radiation, and evaporation. An investigation of the rate of cooling of a surface at body temperature (1) dry, (2) wet, under varying conditions of atmosphere, with the view of elucidating the effects of climate, and of heating and ventilation of rooms on health and comfort. A large-bulbed spirit thermometer is employed of standard pattern—the Kata thermometer; methods of calibrating have been worked out, and a factor determined for each, so that the rate of cooling can be expressed in milli-calories per sq. cm. per sec. Some thousands of observations have been made in still air under varying conditions, and the cooling curves plotted; the theory of cooling detailed is the work of the late O. W. Griffith. Experimental results, independently obtained, agree with theory.—E. W. A. Walker: The growth of the body in man. The relationship between the body-weight and the body-length (stem-length). Observations have been made on infants, children, and young persons up to early adult age in order to determine whether any definite relationship could be shown to exist between the body-weight and the body-length. By the term body-length is meant the stem-length measured from the top of the head to the line joining the ischial tuberosities. This measurement corresponds to the body-length in animals, and was chosen in order that results obtained for man might be brought into comparison with those for other animals. The author finds that throughout the period of growth stem-length in man can correctly be expressed as a function of body-weight, and conforms to the formula, $l = k \cdot w^n$; where l is stem-length, w weight, k a constant, and n a power of approximate value $\frac{1}{3}$. For the male the value of n (to two places of decimals) is 0.33, for the female it is 0.32. If the stem-length differ by as much as 16.5 per cent. from the value calculated from the body-weight by means of the appropriate formula, the individual may be regarded as abnormal.—Prof. A. J. Brown and F. Tinker: The rate of absorption of various phenolic solutions by seeds of *Hordeum vulgare*, and the factors governing the rate of diffusion of aqueous solutions across semi-permeable membranes. It has been pointed out previously that the seeds of *Hordeum* (barley) are enclosed by a membrane which exhibits the exceptional property of differential permeability. When the dry seeds are immersed in aqueous solutions of most inorganic acids and salts, sugars, etc., water alone passes through their containing membrane; with other classes of solutes, however, such as the phenols, fatty acids, and monohydric alcohols, the solute enters the seeds together with water. In order to learn something of the physical properties which presumably govern the exhibition of differential permeability (only recognised to a marked extent with