

order of precedence of professorial function. By this inversion the Society of set purpose desires to recognise research as a definite profession and to advance, and to maintain, the principle that the labourer is worthy of his hire no less when engaged in research than when engaged in class instruction.

Yet one word more upon this subject. Munificent as the gifts are which the Society has received, enabling it to do what it is doing toward this end it has at heart, may we not venture to hope that the funds already to hand for that purpose will prove but the auspicious starting-point for yet others of similar destination. To say this is but to echo the concluding sentence of Sir Alfred Yarrow's memorable letter. With such aspirations, our desire is that in due course either the Royal Society or other bodies may have it in their power to endow the research of all those individuals whose life ought, in the best interests of the community, to be devoted to scientific research as the main purpose of their life-career.

#### THE MEDALLISTS.

**COPLEY MEDAL.** Prof. Horace Lamb.—For forty years Prof. Lamb has been recognised as one of the most prominent and successful workers in applied mathematics in Great Britain. He is the foremost authority on hydrodynamics, not only in Great Britain but the world over. Prof. Lamb's scientific activity, originally centring around the subject of hydrodynamics, has radiated thence into most branches of physical science and he may be regarded as the outstanding representative to-day of the school founded by Stokes, Kelvin, Clerk Maxwell, and Rayleigh. In recent years he has made important contributions to seismology, the theory of tides, and other branches of geophysics. Specially perhaps should be mentioned the assistance he has given of recent years to the Aeronautical Research Committee. Mathematical questions involved in the flow of air round aircraft, in the action of propellers, and the stresses in aeroplane structure, are of fundamental importance, but are exceedingly difficult; and here, as elsewhere, Prof. Lamb's mathematical skill and power of clear exposition have proved of the highest value.

**ROYAL MEDAL.** Prof. Charles James Martin.—Prof. Martin is distinguished for contributions both to physiology and to pathology. Investigating snake venoms, he differentiated two groups in virtue of their action, one nervous, the other, so to say, humoral. His work on heat-regulation in monotremes threw light on the evolution of the thermotaxis of warm-blood animals. More recently his researches have lain in the colloidal chemistry of proteins, and in protein-metabolism. As Director of the Lister Institute he has contributed to many investigations, in addition to those actually issued in his name. Thus he has been intimately associated with the inquiry into the influence of accessory food factors of diet in the prevention and remedying of "deficiency" diseases, such as scurvy and rickets, an inquiry the success of which may be regarded as one of the recent triumphs of preventive medicine.

**ROYAL MEDAL.** Sir William Napier Shaw.—In the great advances made during the last twenty-five years in the science of meteorology, Sir Napier Shaw has been amongst the foremost pioneers. During his twenty years' administration at the Meteorological Office, that Office saw three marked steps forward: two of these were changes in its quarters; the third and greatest was the change in outlook of the work of the Office, whereby it assumed, under Sir Napier Shaw's stimulating influence,

the character of a scientific institution for the interpretation of meteorological phenomena. With the assistance of his scientific staff, he has developed the physical and dynamical aspects of the subject, and has done much to concentrate attention upon the thermodynamics of meteorology, wherein the motions of the water-laden air are interpreted as the action of a thermodynamic engine. His contributions to knowledge of the air and its ways have been largely responsible for changing the basis of meteorology from one of empiricism to one of science.

**DAVY MEDAL.** Prof. Herbert Brereton Baker.—Prof. Baker's researches in various fields of chemical investigation, his examination of highly purified tellurium from various sources for the possible presence of higher members of the same group of elements, and the redetermination of its atomic weight, are of outstanding merit. It is, however, his remarkable researches on the influence of traces of water in modifying chemical change, whether of the nature of combination or of decomposition, which constitute perhaps his especial distinction. The results obtained by complete drying were as remarkable as they were unexpected, because they were in direct opposition to those which followed careful drying by usual methods. The bearing of Prof. Baker's researches on theories of chemical change is as important as his conclusive experimental demonstrations of the phenomena themselves.

**HUGHES MEDAL.** Dr. Robert Andrews Millikan.—Dr. Millikan has long been regarded as one of the most skilful experimenters in physical science. He is awarded the Hughes medal especially for his determinations of the electronic charge  $e$  and of Planck's constant  $h$ . When physicists were still ignorant of the value of the electronic charge to within 5 per cent., Dr. Millikan, by a method of the utmost ingenuity, arrived at the value  $4.774 \times 10^{-10}$  E.S.U., for which he claimed an accuracy of one part in a thousand, a claim which has stood the test of time. His determination of  $h$  was not only remarkable in itself, but was of still greater value as finally vindicating the Einstein-Bohr view of the nature of the photo-electric phenomenon.

#### University and Educational Intelligence.

**EDINBURGH.**—Dr. Theobald Smith, of the Rockefeller Institute for Medical Research, New York, United States, gave an address in the University on Tuesday, November 27, on comparative pathology. He emphasised the common basis—theoretical and biological—of human and animal pathology; the divergence in methods of treatment of human and of animal patients is determined in the case of the latter by economic considerations. He urged that individual treatment of animals should be replaced more and more by preventive measures, and that future stock-owners should be brought to realise this by a sound education in the principles underlying disease.

**LIVERPOOL.**—Sir Heath Harrison, Bart., founder of the chair of organic chemistry in the University, has generously contributed a further sum of 2500*l.* towards the endowment of the chair.

**DR. C. E. WEATHERBURN**, of Ormond College, Melbourne, has been appointed professor of mathematics at Canterbury University College, Christchurch, New Zealand.

THE Annual General Meeting of the Association of Women Science Teachers will be held on Saturday, January 26, at University College, London. In the afternoon Miss Elles will lecture on "The Scientific Interpretation of Scenery" and the meeting will be open to all who are interested in the subject.

IN London, Ontario, the corner stones of the new arts and science buildings of the University of Western Ontario (formerly known as the Western University of London) were laid on June 18 last by the Premier of the Province. The cost of the buildings, more than a million dollars, is being provided for chiefly by grants from the provincial and county governments. The University has grown rapidly in recent years, its student enrolment (610) being three times as large as before the War.

A PROFESSOR of botany and director of the biological laboratories in the University College, Colombo, Ceylon, is required. Candidates should hold a first-class honours degree of a British University, with botany as the principal subject, or equivalent qualifications, and have a competent knowledge of plant physiology, with an acquaintance of botany as applied to agriculture either as plant pathology or genetics, or soil biology. Further information of, and application forms for, the appointment are obtainable until December 15, from the Assistant Private Secretary (Appointments), Colonial Office, Downing Street, S.W.1. The completed application forms must be returned by January 1.

AMONG "significant movements in city school systems" described in Bulletin No. 8 of 1923 of the United States Bureau of Education is the increase in size of the school buildings and grounds. In the larger cities buildings with 24 or more rooms are beginning to appear. This movement is partly due to the insistent modern demand for adequate provision in connexion with city schools for recreation, for physical training, and for practical work. In many cities it has been found that the expense involved in providing for these activities the requisite gymnasiums, auditoriums, manual training shops, home-economics and science laboratories, drawing and modelling studios, and playgrounds, while maintaining class rooms on the same scale as before for ordinary class instruction, is prohibitive. The "platoon," or "work-study-play," or "duplicate school" plan divides the school children of all grades into two groups—A and B. While those of group A are in the class rooms those of group B are in the playgrounds, auditorium, laboratories, or other specially equipped rooms, and vice versa, so that the school can be run with half the number of class rooms required under the ordinary system. Such schemes have been introduced in 53 cities, and in one of these more than 50 "platoon" schools are established.

THE Cincinnati public-schools psychological laboratory is responsible for an interesting attempt to trace the causes of failure in first and second-grade work of children not classified as mentally deficient. The experiment was carried out in an "observation class" of sixteen children from 1917 to 1921, and a detailed account of it has just been published in "Diagnosis and Treatment of Young School Failures"—Bulletin No. 1 of 1923, of the Washington Bureau. Diagnosis should, the writer declares, take account of the child's mental level (as indicated by the various intelligence tests), school history, state of health, general mental tone and attitude (*e.g.*, obsessions, phobias, or anxiety-states), and heredity. Treatment in the observation class resulted uniformly in

improvement as measured by mental tests notwithstanding that operative correction of physical defects such as removal of diseased tonsils and adenoids was, owing to parents' objections, in no case effected and unfavourable home conditions remained unchanged. Pleading for a widely extended development of psychological and medical clinics and other extra-class-room resources, the writer remarks, "The community-wide contacts of the school and its hold on the family through the child give it a strategic position for the discovery and diagnosis of mental, physical, and social ills which no other agency can possibly equal."

THE annual meetings of the Geographical Association will be held in Birkbeck College, London, on Wednesday, Thursday, and Friday, January 2, 3, and 4, 1924. The programme includes the following items:—Jan. 2, Prof. P. M. Roxby will open a discussion on "Regional Study in the University and the publication of its results"; Jan. 3, Mr. L. Mac D. Robison will give an address on Ceylon; Sir Richard Gregory will give his presidential address on "British Climate in Historic Times"; joint conference between the Royal Meteorological Society, the Geographical Association, and the Science Masters' Association, to consider the place of meteorology in education. Sir Napier Shaw will preside. Subjects of discussion: "The Place of Meteorological Observations in the School Course," and "The Teaching of Meteorology and Climatology in Schools from (1) the physical and (2) the geographical standpoint"; and M. Em. de Martonne, professor of geography in the University, Paris, will speak (in English) on "A Study of Transylvania"; Jan. 4, conference on railway geography. Mr. Alexander Bell, Assistant General Manager, L. and N.E. Railway, in the chair. Opened on behalf of the Geographical Association by Mr. Ll. Rodwell Jones and Mr. C. B. Fawcett.

IN 1919, arising out of a suggestion put forward by the Universities Bureau of the British Empire as to the desirability of establishing a scheme for the interchange of students between the Universities of Great Britain and America, the Imperial College of Science and Technology, S. Kensington, with the generous assistance of two of its governors, Sir Arthur Acland and Sir Otto Beit, initiated as an experiment a project designed to afford to selected Imperial College students a year's post-graduate study either at an American university, or in American works. The hope of the founders was that the awards might not only prove mutually advantageous to the students of the two countries, but also that a closer acquaintance would tend to foster a spirit of good fellowship and mutual understanding between the students of the two countries and the countries themselves. The original scheme contemplated 6 scholarships of 300*l.* each for one year, which the Imperial College made 400*l.* a year, and later Sir Alfred Yarrow generously contributed a sum sufficient to provide 4 additional scholarships. In all 12 scholars were sent to America, 10 with, and 2 without emoluments; 6 of these went to the Massachusetts Institute of Technology, 2 to Columbia University, 1 each to Cornell, Harvard, and Yale Universities, and 1 spent the year with the Tennessee Iron Coal and Railroad Co., and other works. Five of the scholars were awarded the degree of master of science at the conclusion of the year, and arrangements were made in three cases by the American institution for the students to remain for a second year. Judging from the reports which have been received, the experiment has been an undoubted success. The awards have been discontinued as the funds have been exhausted.