

University and Educational Intelligence

LONDON.—The following degrees have recently been awarded: D.Sc. degree in astrophysics to C. S. Beals (Imperial College—Royal College of Science) for works entitled "The Wolf Rayet Stars" (*Pub. D.A.O.*, 1930), and "Spectrophotometric Studies of Wolf Rayet Stars and Novæ" (*Pub. D.A.O.*, 1934); D.Sc. degree in biochemistry to G. M. Richardson (University College and Imperial College—Royal College of Science) for six works on biochemistry (*Proc. Roy. Soc.*, B, 1934, and *Biochem. J.*, 1931–33); D.Sc. degree in chemistry to T. Malkin (private study) for five published papers dealing with the application of X-rays to structural problems of organic chemistry, together with ten conjoint subsidiary contributions.

SIR WALTER HAMILTON MOBERLY, Vice-Chancellor of the University of Manchester, has been appointed chairman of the University Grants Committee in succession to the late Sir Walter Buchanan Riddell.

THE Carnegie Trust for the Universities of Scotland in its thirty-second annual report directs special attention to the operation during the last five years of its schemes for the endowment of post-graduate research. The principal scheme, under which fellowships, scholarships and grants are awarded, has now been operating for thirty years, during which period scientific investigation in the universities by 1,162 persons has been subsidised by this means to the extent of more than a quarter of a million sterling, the expenditure for the six quinquennia beginning 1903–8 having been: £27,754, £35,698, £27,540, £39,465, £51,047 and £69,268. "What this has meant to the enrichment of the intellectual life of the Scottish universities may in part be inferred," says the report, "from the fact that the total publications received have numbered 227 volumes and 2,002 other original contributions." The problem has been, not to find suitable and well-qualified applicants, but to find sufficient means to finance them, and in order that the amount available should meet the requirements of the situation so far as possible, the value of the individual awards for 1932–33 was reduced, fellows' stipends being lowered from £300 to £250, senior scholarships from £200 to £175 and other scholarships from £175 to £150; and it has now been found necessary to place all scholarships on the uniform level of £150. A welcome indication of better times is afforded by the fact that resignations on account of appointment to salaried posts have again become numerous. Other financial aids to research are provided by the Trust in the shape of grants towards the maintenance of the laboratory of the Royal College of Physicians of Edinburgh, amounting during the last quinquennium to £9,369, and awards to university assistants and lecturers devoting not less than half their time to research, amounting during the same period to £18,329.

EDUCATION in India in 1927–32 is reviewed by Sir G. Anderson, Educational Commissioner with the Government of India in a volume of 274 pages obtainable from the Manager of Publications, Delhi (price 5s.). The situation and tendencies disclosed by the review afford but scanty ground for satisfaction with the past or confidence in the future: some are characterised as alarming and there is no

support for the theory that the progress of education is qualifying the people of India to rule themselves. Economic distress has been made an excuse for indiscriminate retrenchment instead of being used as an occasion for restraining wasteful and ineffective expenditure, the prevalence of which was demonstrated by the Hartog Committee of 1928. Among instances cited are: the continuance unchecked in Bengal of a reckless and impetuous multiplication of primary schools regardless of quality; the retention of numerous primary schools with only three classes although well known to be almost wholly useless; filling of a large percentage of primary school places with pupils much too old to benefit by the instruction; a growing tendency towards communal separation, involving scandalous waste and inefficiency; the rapid increase in the number of students who throng the colleges and high schools without the qualifications requisite for deriving benefit from the instruction. Since the transfer of educational control in 1921 from the central to the local government, there has been a rapid growth of provincial particularism which may have fostered local initiative but has involved overlapping and extravagance particularly in regard to university education. A strong central educational intelligence service is badly needed. One of the most disastrous faults found throughout the secondary school systems is the preoccupation with the goal of university entrance qualification to the exclusion of all other aims. Ample evidence is to be found in the report that "the educational systems of India need to be recast and adjusted to the requirements of new conditions".

Science News a Century Ago

Death of Sir John Barton

On August 25, 1834, Sir John Barton died at Windsor Castle. He was buried in the cloisters of St. George's Chapel and a memorial tablet was erected to him by command of William IV. For forty-six years he had served as secretary and treasurer first to William IV when he was Duke of Clarence and then to Queen Adelaide. He was born at Plymouth in 1771. At one time Barton was comptroller of the Mint and he made several improvements in coining machinery. One obituary notice of him said that he was the inventor of a floating compass, a hydrostatic balance, a hydrostatic floating lamp, a draw-bench for use at the Mint and an "atometer" with which a millionth of an inch was rendered a sensible measure to the eye. He originated the ornamental effect produced by the decomposition of the rays of light reflected from polished metallic surfaces covered with a series of very minute lines or grooves, ruled upon them by a diamond point, and also a method of producing a cube in a lathe, which he applied to a scheme for the prevention of the forgery of Bank of England notes, by engraving upon these cubes and printing from them an interpolated coloured line.

Whewell on Tides

IN his researches on the tides, Whewell asked for observations made in various parts of the world, and in the *Journal of the Franklin Institute* a letter was published from Prof. A. D. Bache addressed to the Committee of Publications. Writing on August 26, 1834, Prof. Bache said: "It is no doubt well known to you, and to those of your readers who follow the

progress of general science that the Rev. Mr. Whewell, of Trinity College, Cambridge, is engaged in endeavouring to advance the important, and hitherto comparatively neglected, science of the tides, the first results of these investigations being the memoirs on, and map of cotidal lines, contained in the *Transactions of the Royal Society of London*, for 1833. Through the kindness of a mutual friend, I have received the articles, also from the pen of Mr. Whewell, on the subject just referred to, which accompany this note, and which I should feel obliged by your inserting in that part of the *Journal* of the Institute where they will be most likely to meet the eye of anyone who may be disposed to contribute good tide observations to the stocks which Mr. Whewell is now accumulating for the further elucidation of the subject."

Paris Geographical Society and Sir John Ross

On September 1, 1834, Sir John Ross on receiving the Gold Medal of the Paris Geographical Society (*Bull. Soc. de Géog. Paris*, ser. 2, 1), wrote:

"Gentlemen—M. de Bacourt, Chargé d'Affaires de France, has remitted your letter of April 13, accompanied by the gold medal of your Society. I beg to assure the learned and distinguished members of the gratification which I feel, following my return to Europe after a voyage of unusual length and difficulty. Nothing could have afforded me greater pleasure than the honourable and enviable dignity that the Society has conferred. Inspired by these sentiments, the gold medal, awarded in a manner so flattering, will be transmitted to my descendants as a precious witness of the esteem entertained by the Society for my efforts for the advancement of geographical knowledge. I beg you to believe that I am not less sensible of the flattering expressions which marked the occasion of the gift.

Your most obedient and most humble Servant,
John Ross."

Draper on Capillary Attraction

John William Draper (1811–1882), the father of Henry Draper (1837–1882), was born in England but at the age of twenty-one years emigrated to the United States. While a student in the University of Pennsylvania he made experiments on capillary attraction, an account of which was published in the September number of the *Journal of the Franklin Institute* for 1834. After reviewing what was then known of the subject, he said: "This was the state in which I found capillary attraction; my attention was first drawn to it during those tiresome moments of returning health which follow an autumnal fever. Perhaps, if there be any merit in these experiments, it may hereafter be of service to someone to know that they were begun in sickness and in a land of strangers; they were pursued in all the calamity of family bereavement and in the depths of forests, alike unused to music, to poetry or to philosophy. Solitude if it be conducive to the development of intellect, and favourable to the exercise of thought, is likewise attended with many evils. Though no disturbance arises from the intrusion of the frivolous, yet the counsel and assistance of the wise are wanting, and, indeed, those advantages which are supposed to result from such tranquillity are, for the most part, only fictitious appearances, which like certain other apparitions, everyone can discourse of, but no one can say he has seen."

Societies and Academies

PARIS

Academy of Sciences, July 2 (*C.R.*, 199, 1–104).
A. LACROIX: New observations on the distribution of tectites in Indo-China and in the neighbouring countries. **GIUSEPPE SANARELLI** was elected *Correspondant* for the Section of Medicine and Surgery in succession to the late J. Cantacuzène. **BERTRAND GAMBIE**: Tetrahedra inscribed in a Σ quadric and with edges tangent to a quadric *S*. **POTOTZKI**: The determination of complexes all the congruences of which are *W*. **A. ROSENBLATT**: The application of Picard's method of successive approximations to the study of certain partial differential equations of the parabolic type with two independent variables. **LÉON MOTCHANE**: The distribution of the points of continuity of a function of *n* variables continuous with respect to each of them. **V. NIEMYTSKI**: Unstable dynamical systems. **HEINRICH HILMY**: Movements stable in the Poisson sense and the recurrent movements of a dynamical system. **BERNARD KWAL**: The tensorial fields which accompany Dirac's electron: the theory of the neutrino and the antineutrino. **JEAN PONTREMOLI** and **MAX SERRUYS**: The influence of anti-detonants on the velocity of combustion and the temperature of exhaust in internal combustion motors. **ANDRÉ COUDER**: The compensation of double refraction in astronomical objectives. Discussion of the effects produced in telescope objectives by double refraction due to insufficient annealing. The use of a compensator consisting of a plate of Iceland spar is suggested. Results of experiments made with the large equatorial at the Strasbourg Observatory are given, showing the value of the compensator. **J. GAUZIT**: The ultra-violet extremity of the spectrum of the night sky. One interesting result obtained was the presence of emission lines in the region of the large absorption band of atmospheric ozone: work in confirmation of this is in hand. **FERNAND BALDET**: The continuous spectrum of comets. **A. PORTEVIN** and **D. SÉFÉRIAN**: Experimental study of the thermal state during autogenous welding. **MILLE, N. CHOUKROUN**: The superficial electric moments in the interior of a liquid. **JAMES BASSET**: The influence of pressure on the electrical resistance of a rod of impure zirconium oxide in air. At constant temperature, the resistance of the zirconia rod increases with the pressure. In air at 900° C. a rod having a resistance of 4,500 ohms under atmospheric pressure alters to more than a million ohms under 4,000 kgm./cm.². **LÉON BLOCH**, **EUGÈNE BLOCH** and **PIERRE LACROUTE**: The analysis of the first spark spectrum of bromine. **JEAN BOUCHARD**: The influence of viscosity on the decrease of the fluorescent power of solutions of certain colouring materials as a function of the concentration. **G. MONOD-HERZEN**: The energy of linkage, the mass of the neutron and the grouping of atomic nuclei. **WALTER M. ELSASSER**: The linkage energies in the radioactive families of uranium-radium and thorium. **JEAN PERREU**: The heat of crystallisation of hydrated salts in slightly supersaturated solution. **JEAN AMIEL**: The preparation and explosion temperature of some complex compounds of copper chlorates with the primary amines. **PIERRE JOLIBOIS**: The chemical reactions in different parts of a tube containing rarefied gas. **MARCEL MATHIEU**: The study by Röntgen rays of the fixation of acetone