

Educational Topics and Events

BIRMINGHAM.—The degree of D.Sc. has been awarded to A. A. Hirst for papers published in the *Transactions of the Institution of Mining Engineers* on the cleaning of coal, principles involved in separation of particles, and allied subjects; and to F. M. Lea for work published in the *Philosophical Transactions*, the *Journal of the Society of Chemical Industry* and in building research technical papers, mainly dealing with properties of cement.

BRISTOL.—Dr. E. L. Hirst has been appointed to the Alfred Capper Pass chair of chemistry, in succession to Prof. F. Francis, who is to retire in July next. Dr. Hirst is at present reader in the chemistry of natural products in the University of Birmingham, and in addition has had experience as a lecturer in the University of St. Andrews, at Newcastle and in the University of Manchester. He is an organic chemist with an international reputation for his work on sugars, starches and celluloses. His studies have led him to chemical and biological investigations into the nature of vitamin C which involved collaboration on the biological side with the Lister Institute of Preventive Medicine. Dr. Hirst was successful in elucidating the constitution of vitamin C and, in collaboration with Prof. W. N. Haworth, has devised methods for the manufacture of the vitamin from the simpler sugars. He is also interested in the part played by sugars in the growth of plants. For these researches he was awarded the fellowship of the Royal Society in 1934.

Prof. W. E. Garner, Leverhulme professor of physical chemistry in the University, has been appointed director of the Chemical Laboratories, on the retirement of Prof. Francis.

In the eleventh annual report, for 1934-35, to the Court of Governors of the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1, attention is directed to the finances of the School. The accounts show a deficit of nearly £3,000 for the year, annual subscriptions and donations amounting to about £10,000. It is the aim of the School that funds raised in this way should supplement the University grant and income from endowments to the extent of £12,000-£15,000. Sir Austen Chamberlain, the chairman of the Court of Governors, became a member of the Board of Management, by virtue of his office under the provisions of the revised charter, and Sir Cooper Perry succeeds Sir Harry Goschen as chairman of the Board. Prof. W. Jameson's report on the work of the School for the year ended July 31, 1935, surveys the activities of the School. The Ross Institute of Tropical Hygiene, incorporated in the School, has assisted in various ways industrial undertakings in many parts of the world. These include gold, copper and other mines, development companies in Australia, Africa and Europe, and plantations in India, Ceylon and Malaya. In the Department of Industrial Physiology, consultations and collaboration with industrial bodies have featured largely in the work of the session, and include problems of lighting and dust, protective masks for furnace workers, heat insulation in ships, tropical tentage and insulation of tropical helmets with linings of reinforced aluminium foil, and electric aids to hearing. A list of the papers, reports, etc., published from the School during the year is appended.

Science News a Century Ago

The Royal Observatory, Greenwich, in 1836

THE year 1835 had been for Airy, as he wrote in his autobiography, "a busy and anxious year". Appointed to succeed Pond as Astronomer Royal, during the last quarter of the year he had resided at Cambridge but had visited Greenwich once a week. "Through the last quarter of 1835," he said, "I had kept everything going on at the Greenwich Observatory in the same manner in which Mr. Pond had carried it on. With the beginning of 1836 my new system began. I had already prepared 30 printed skeleton forms (a system totally unknown to Mr. Pond) which were now brought into use. And, having seen the utility of the Copying Press in merchants' offices, I procured one. From this time my correspondence, public and private, is exceeding perfect.

"At this time the dwelling house was still unconnected with the Observatory. It had no staircase to the Octagon Room. . . . The North-east Dome ground floor was still a passage room. The North Terrace was the official passage to the North-west Dome where there was a miserable Equatorial, and to the 25-foot Zenith Tube (in a square tower like a steeple, which connected the N.W. Dome with Flamsteed's house). . . . The Computing Room was a most pitiful little room. There was so little room for me that I transported the principal table to a room in my house, where I conducted much of my own official business. A large useless reflecting telescope (Ramage's), on the plan and nearly of the size of Sir W. Herschel's principal telescope, encumbered the centre of the Front Court."

Of the matters which occupied Airy in January 1836, one was connected with the projected London and Gravesend Railway and another the chronometer work of the Observatory. It was proposed to carry the railway at a high level across the bottom of Greenwich Park. "On Jan. 9th," said Airy, "I received orders from the Admiralty to examine into its possible effect in producing vibrations in the Observatory. After much correspondence, examination of ground, etc., I fixed upon a part of the Greenwich Railway (not yet opened for traffic) near the place where the Croydon trunk line now joins it, as the place for trains to run upon, while I made observations with a telescope viewing a collimator by reflection in mercury at the distance of 500 feet. The experiments were made on Jan. 25th, and I reported on Feb. 4th. It was shown that there would be some danger to the Observatory."

As regards the custody of chronometers, Airy wrote: "In the inferior departments of the Admiralty . . . the Observatory was considered rather as a place for managing Government chronometers than as a place of science. . . . On Jan. 17th I mentally sketched my regulations for my own share in chronometer business. I had some correspondence with Captain Beaufort, but we could not agree, and the matter was referred to the Admiralty. Finally arrangements were made which put the chronometer business in proper subordination to the scientific charge of the Observatory."

The Hot Springs of the Pyrenees

WRITING from Edinburgh to Whewell, on January 7, 1836, J. D. Forbes said: ". . . My special thanks for Hopkins' paper, which arrived at an admirable

moment. I was reading a paper to our Royal Society about Auvergne, and particularly upon elevation craters, which was quite in point. I am writing a paper just now which I intend for the R. S., London, on the Pyrenean springs, their temperature, geological relations, etc.; and on the former point, temp., I am vain enough to hope that it may prove a sort of model to future observers: at least no one has hitherto so observed, I believe. . . . But these are only secondary occupations, which, with my lecturing labours, only revolve round my primary, the polarized heat. I have managed to magnify the effects so as to be, I hope, beyond cavil. . . . I think that experiment is a quietus for Biot”.

Societies and Academies

PARIS

Academy of Sciences, December 2 (*C.R.*, 201, 1073-1156). HENRI DOUVILLÉ: Notice on the work of the late H. F. Osborn, *Correspondant* of the Academy. ALEXANDRE GUILLIERMOND, MAURICE FONTAINE and Mlle. ANNE RAFFY: The existence in *Eremothecium Ashbyi* of a yellow pigment belonging to the flavin group. The pigment from the *Eremothecium* has been directly compared with Karrer's lactoflavin and shown to possess similar properties. It is suggested that the pigment may play an important part in the metabolism of these fungi. JULIEN COSTANTIN: The *enroulement* of the *Belle de Juillet* variety of the potato. Remarks on the favourable effects of high altitudes on this disease. CHARLES PÉREZ was elected a member of the Section of Anatomy and Zoology in succession to the late Louis Joubin. KAROL BORSUK: Contribution to the theory of dimensions. P. RACHEVSKY: A dual bimetric system. SERGE FINIKOFF: Stratifiable couples attached to surfaces the asymptotics of which belong to linear complexes. SZOLEM MANDELBROJT: The \bar{J} right lines and singular points of functions represented by Dirichlet's series. R. O. KUZMIN: The method of Tschebicheff for the approximate evaluation of integrals. JEAN LAGRULA: The intensity of gravity in Algeria, in the Midi of France and in the island of Majorca. Tables of results obtained during 1935 with the Holweck-Lejay pendulum. SANTIAGO ANTUNEZ DE MAYOLO: The interpretation of the α coefficient of fine structure. JACQUES YVON: The fluctuations of the density at the critical point. Discussion of a theorem of Smoluchowski from the point of view of the effect of gravity. PIERRE VERNOTTE: Concerning a problem of convection: insufficiency of the equation of heat. JEAN MERCIER: The determination of the region of synchronisation of two oscillators. JEAN BERNAMONT: The fluctuations of potential at the boundaries of a metallic conductor of small volume traversed by a current. MARCEL LAPORTE: The duration of the very short flashes of light obtained by discharging a condenser through a gas tube. Study of the discharge through a tube containing argon and mercury vapour. The duration of the very intense part of the flash was of the order of 10^{-8} second. JACQUES SOLOMON: The absorption in matter of particles of great energy. JEAN BECQUEREL: The determination of the paramagnetic susceptibilities of crystals of the rare earths, by the measurement of the paramagnetic rotatory powers. RAYMOND RICARD and ANTOINE SAUNIER: The spark spectra of

cadmium. Results of a study of the Cd III and Cd IV spectra. PIERRE AUGER and ALBERT ROSENBERG: The analysis of the cosmic corpuscular radiation under a screen of 28 metres of soil. The results differ considerably from those obtained above the soil at various altitudes. The soft group, if it exists at this depth, cannot be more than 3 per cent, while at 3,500 metres it amounts to 40 per cent. GEORGES CHAMPETIER: The hydration of chromic chloride in heavy water (deuterium oxide). The hydration of chromium chloride in ordinary and heavy water has been followed by measurements of the electrical conductivity. The reaction proceeds more slowly in the heavy water, the ratio of the velocities being approximately one to three. Mlle. M. T. SALAZAR: The constitution of the capillary layer in solutions of malachite green. RENÉ DALMON: The nitration of cellulose by the vapour of nitrogen pentoxide. The yield of trinitrocellulose in this reaction was found to be 99.3 per cent. MARCEL BALLAY: The constitution and properties of some alloys of iron, carbon and beryllium. Study of seven alloys containing amounts of beryllium increasing up to 3.88 per cent. PIERRE VAN RYSSSELBERGHE: Thermodynamic potentials and affinity. PAUL RENAUD and ERNEST BAUMGARDT: The law of displacement of equilibrium. ANDRÉ CHRÉTIEN and OSCAR HOFFER: The existence of two hydrates of potassium thiocyanate. HENRI GUÉRIN: The action of heat on calcium and strontium ortho-, pyro- and metarsenates. The orthoarsenates can be heated to 1,200° C. in a vacuum without change: pyroarsenates and metarsenates by prolonged heating at temperatures above 800° C. are slowly converted into orthoarsenates. XAVIER THIESSE: The action of oxidising agents on sodium hypoferrite. A description of various products obtained by treating alkaline solutions of sodium hypoferrite with chlorine and bromine; the concentration of the sodium hydroxide is the determining factor. JEAN BARLOT: The hydrogenation of bituminous schists at the ordinary pressure. Results of the distillation of four schists of different types in hydrogen at the ordinary pressure. The yields of oil were increased, the tar and sulphur percentages reduced. Mlle. RENÉE LE BLANC: Some *Chaetoceros* of the Etang de Thau. ANTONIN TRONCHET: Observation *in vivo* of the tactile dots of the tendrils of *Bryonia dioica*. A. QUINTANILHA: The cytology of the copulations *illégitimes* in *Coprinus fimetarius*. ANTOINE MAGNAN and HENRY GIRERD: Study of the pressures about a pigeon beating its wings. BORIS EPHRUSSI and GEORGE W. BEADLE: The conditions of autodifferentiation of Mendelian characters. JEAN LAVOLLAY: The fixation and exchange of cations in living beings. The character of generality of the laws of exchange of bases. EMIL CIONGA: An acid ester contained in the root of officinal valerian. RAOUL LECOQ and RENÉ CAREL: Comparison of the acetone-producing action of some food lipids and castor oil.

AMSTERDAM

Royal Academy (*Proc.*, 38, No. 8, October 1935). J. H. C. LISMAN and W. H. KEESOM: The melting curve of oxygen to 170 kgm./cm.². The melting point of oxygen as a function of the pressure and a calculation of the triple point and density at the latter temperature. W. H. KEESOM and J. HAANTJES. (1) Further results of the separation by rectification of neon into its isotopic components. Densities and mean atomic weights of various