Educational Topics and Events

BIRMINGHAM.—The Huxley Lecture is to be delivered on December 10 at 5.30 p.m. in the Medical Theatre of the University, by Prof. A. M. Carr-Saunders, professor of social science in the University of Liverpool, who has chosen as his subject "The Population Problem in Great Britain".

CAMBRIDGE.—The Vice-Chancellor gives notice that the professorship of animal pathology is vacant by the resignation of Prof. J. B. Buxton. A meeting of the electors will be held on January 19. The Council of the Senate has determined that at this election preference shall be given to a candidate whose experience and interests lie chiefly in scientific investigation rather than in veterinary practice, and that a professional veterinary qualification, though undoubtedly advantageous, shall not be regarded as essential.

EDUCATIONAL films have been produced in such numbers and variety and are in such wide demand as to justify the publication by the Central Information Bureau for Educational Films (103 Kingsway, London, W.C.2) of a "National Encyclopædia" and of bi-monthly bulletins, entitled *Film Progress*, for keeping it up to date. Bulletin No. 4, issued in September, reviews the work of the Bureau from 1932, the year in which it was formed. It published in the following year a "Guide", which was brought up to date and re-issued as the "National Encyclopædia" a year ago. Through the medium of *Film Progress* it keeps in touch with schools in all parts of the Empire and in many foreign countries, including China, Chile, Holland, Latvia, Rumania, the U.S.A., and the U.S.S.R. It has advocated the formation of a school and parents film society to aid in the installation of projectors in schools, an object which is also attainable through the formation of local branches of the British Film Institute. The current issue of *Film Progress* includes several reviews of books, descriptive lists of new films and detailed practical suggestions on how to train members of the school staff and selected students in the handling of projectors. Very many of the new films described appear to be admirably suited for inclusion in cinema entertainment programmes but for the supposed prejudice of cinema-goers against everything admittedly educational. Among them is "Citizens of the Future", a survey of public education claiming to show how the schools are fitting children to employ their leisure time in useful occupations and preparing them to take their proper place in a world demanding high standards.

PROFESSORS of "Things in General" are needed to cope with the undergraduate situation in American universities to-day. This is one of a number of interesting conclusions reached by Prof. H. G. Merriam of Montana in a recent address on "The Liberal Arts College in State-supported Universities". The ancient ideal of making a scholar and gentleman as the aim of a university education was long ago given up, but the idea of making scholars continues to influence university instruction. Now it is recognized that among the myriads that pass on from high school to college, very few have the stuff from which scholars can be made, and a vast amount of instruction, lacking the integrating power of a clearly defined goal, is a futile hodge-podge. The primary function of instruction during their first two years in college should be, in State-supported, if not in all institutions, to train the students for worthy citizenship. Real problems of the individual and of society must be dealt with realistically and frankly, even when this involves breaking away from the American tradition that a college professor should avoid themes of popular contemporary interest lest he should be quoted in newspapers. The youth of to-day are impatient of theory except as manifestly applicable to live issues. The content and technique of instruction must be based on a consideration of such questions as: "What does the individual need to know about the fundamentals of the good life; about what good reasoning is and what its value; about the uses of emotion and the control of it; about society, its composition and working; about what factors in politics can be and should be controlled?"; and developed in the light of the conception of education as a gradual slow lifting of the people of a democracy to as high a level of thinking and feeling as possible.

Science News a Century Ago

Electric Currents in Metalliferous Veins

WRITING from 4 Clarence Street, Penzance, on December 6, 1836, to William Sturgeon, W. J. Henwood, the Assay Master of Tin in the Duchy of Cornwall, dealt with the subject of "Electric Currents observed in some Metalliferous Veins". In his communication he described briefly the geology of Cornwall and the methods of making his experiments, discussed the results obtained, and examined the various theories which had been put forward to explain the phenomena. Experiments were made by pressing plates of sheet copper 12–20 inches long and 3–4 inches wide closely against such portions of the metallic contents of the veins as were thought proper for examination. Copper wires 0·05 inches in diameter were connected to the plates and to a galvanometer. In some cases, 600 feet of wire were required. Copper, pyrites, vitreous copper ore, black copper ore, galena and blende were among the contents of the veins, but it was only from the metallic parts of the veins that currents were obtained. Henwood had assisted Robert Were Fox in the first experiments of the kind made, and he had then extended them to mines in all parts of Cornwall (*Sturgeon's Annals*, **1**, 124).

Graham's Work on the Constitution of Salts

AT a meeting of the Royal Society held on December 8, 1836, Frances Baily being in the chair, the second part of a paper by Thomas Graham was read. It was entitled "Inquiries respecting the Constitution of Salts of Oxalates, Nitrates, Phosphates, Sulphates and Chlorides". "In the third section," said the report on the paper, "he discusses the constitution of the phosphates. Phosphoric acid, he observes, is quite peculiar in being capable of combining with bases in three different proportions; forming besides the usual class of monobasic salts, containing one atom of acid to one atom of protoxide as base, two other anormal classes of salts, in which two or three atoms of base are united to one atom of acid, namely

the pyrophosphates and the common phosphates, as they are usually denominated, but which the author proposes to designate by the terms *bibasic* and *tribasic* phosphates. Arsenic acid forms only one class of salts; but that class is anormal; every member of it containing three atoms of base to one atom of acid like the common, or tribasic, phosphates. These anormal classes of phosphates and arseniates are the only known salts to which the ordinary idea of a subsalt is truly applicable: all other reputed subsalts being probably neutral in composition, as has been shown by the author in the case of the subnitrate of copper; for they all bear an analogy to this salt in their small solubility and other properties, while they exhibit little resemblance to those classes of phosphates and arseniates which really possess more than one atom of base."

The Gresham Lecturers

ON December 9, 1836, the Court of Common Council of the City of London considered a report which had been presented on the question of transferring the Gresham Lectures from the small incommodious room at the Royal Exchange to the City of London School. In its report of the proceedings, *The Times* said: "There are seven lecturers under the will of Sir Thomas Gresham, each of whom is paid a liberal salary for occasionally lecturing upon scientific and other topics, in an obscure apartment in the Royal Exchange, and the very spacious and commodious school endowed by the Corporation being almost finished, a committee was appointed to consider and report the best means of deriving some public advantage from the employment of the lecturers. The Corporation have been for some time endeavouring to obtain the consent of the gentlemen who derive the pecuniary emolument from these appointments to transfer their exertions to some more enlarged sphere of action in the city; but hitherto all attempts to induce them to leave the old station, whose walls have so long witnessed their abortive labours, have been ineffectual."

The lecturers, with one exception, objected, maintaining among other things that the removal of the lectures to the School "would not be advantageous to the public, but on the contrary would be injurious to the foundation of the Gresham institution, by attaching it to the school and destroying its independence". *The Times* of December 13 contained a letter from one of the lecturers and a copy of the resolutions passed by himself and the others on November 17. One of these ran "That, in the opinion of the lecturers, there can be no want of funds to maintain or carry out the Gresham lectures according to the founder's intentions, it appearing from the report of the Charity Commissioners of 1821 that the yearly income of the Gresham estates then amounted to £6,080, while the yearly payments, on account of the trusts, only amounted to £1,113 4s."

The Gresham professorships of "divynitye, astronomy, musicke, geometry, law, physicke and rethoricke" date from 1595, Henry Briggs being the first professor of geometry. From 1597 until 1768, the lectures were given in Gresham's house in Bishopsgate Street. They were then given in the Royal Exchange until that building was destroyed by fire in 1838. In 1843 a special building was erected in Gresham Street, this being replaced in 1913 by the present College. The chairs of geometry and astronomy are the oldest in Great Britain.

Societies and Academies

Dublin

Royal Irish Academy, November 9.

NORMAN HARRIS: Petrological study of the Portrush sill and its veins. The Portrush sill has been mapped on the 25-in. scale, particular attention being paid to variations within the sill itself, and to the different types of veins and their relationship with the hornfelsed lias of the roof. The bulk of the intrusion is coarsely mottled olivine-dolerite; then passes marginally into a fine-grained intergranular type. Micrometric analyses show that the proportion of olivine and iron-ore increases with depth. Chemically the average rock corresponds to the Hebridean Plateau-Magma-Type. Various types of hornfels and their mineral developments are described. Several occurrences have been found of veins of mobilized hornfels which pass downwards into the sill from the roof. Other veins and sheets within the sill are shown to comprise metasomatized hornfels and also a variety of synthetic rocks which are referred to the action of the magma and its emanations on included rafts of hornfels. The absence of veins in the Lias roof and the capacity of the hornfels to inject the olivine-dolerite indicate that the hornfels was under internal compression, presumably due to expansion, while the upper part of the sill was contracting and under internal tension. A later hydrothermal stage is represented by widely distributed calcite-chlorite-zeolite veins. Five types of pyroxene have been recognized in the rocks investigated. Analyses are given of two of the pyroxenes: common augite and pigeonite.

Paris

Academy of Sciences, November 9 (*C.R.*, **203**, 901–960).

ALFRED LACROIX: The meteorites (æroliths) found in the Tanezrouft (Western Sahara). The two fragments found appear to have fallen at the same time, very recently. From the mineralogical and chemical examination, these meteorites are pliosideriferous chondrites.

JEAN CABANNES and JEAN DUFAY: Regularities in the spectrum of cometary nuclei.

MARC KRASNER: Multiplicative representation in the body of $\mathfrak{P}$-adic numbers relatively Galoisian.

FRÉDÉRIC ROGER: Taylor's formula and the differential geometry of ensembles.

CASIMIR KURATOWSKI: Projective ensembles and the operation (A).

P. ERDÖS and ERWIN FELDHEIM: The mode of convergence for the Lagrange interpolation.

RENÉ LAGRANGE: The theorems of addition of Legendre functions.

BOHUSLAV HOSTINSKY: The superposition of two sinusoids.

DANIEL BARBIER: The emission of electrons by the sun and its relation with terrestrial magnetic phenomena.

LÉOPOLD ESCANDE and GEORGES SABATHE: Errors produced by the inclination of the trajectories in calibrations carried out by means of hydrometric screws with counting gear. If the axis of the rotating screw is not in the same direction as the moving water, serious errors are produced. For an inclination of 20° the error is ten per cent, and this error increases rapidly with the angle.