Current Topics and Events.

THE British Institute of Philosophical Studies has been formed by a number of professed philosophers together with some leading men of science, public men, and men of affairs. It is the belief of the promoters that philosophy has a larger part to play in the national life than has yet been recognised, both as an education and discipline to the individual, and as the basis of that more synthetic view of knowledge which they take to be the required corrective of the specialism enforced upon students by the rapid growth of science. They think that, in the position which the physical sciences have now reached, the need of a philosophic account of principles and methods is more apparent than it may formerly have been; that there is accordingly more disposition on the part of scientific men to discussions which might, not long ago, have been dismissed as metaphysical; while the philosophers on their side have much to learn of the picture of reality as presented by modern physics. It is considered also that on the side of human relations and social ideals the lack of a common basis is widely felt, and the promoters remember that the systematic exploration of such a basis is a part of the historic task of philosophy. Recognising the existence of an excellent philosophical faculty in the University of London, the Institute will cater specially for the non-academic student, but this does not mean the casual visitant to more or less popular lectures. Lectures with a wide appeal are certainly included in the plan, but the aim is rather to establish systematic courses extending over a considerable period, combining tutorial work or small discussion classes with more formal lectures, and providing for the direction of study, the writing and criticism of essays, and all that may enable a student to make a serious start in his subject. The formation of a good philosophical library is an essential part of the scheme, and it is hoped that the drawing together of a number of philosophers, who are at present a somewhat lonely race, to co-operate in the advancement of their subject, may prove a stimulus and encouragement to original work, with which it is hoped that the Institute may be associated.

IN 1892 Dr. John Hopkinson, in his presidential address to the Junior Institution of Engineers, laid down the principles on which an equitable method of charging for the electric light could be devised. Probably no subject has been more discussed by electrical engineers than his method of charging, and numerous modifications of it have been tried in practice. At the Institution of Electrical Engineers, on April 2, G. Wilkinson and R. McCourt read a paper describing a novel modification of Hopkinson's principle, that each consumer should bear his proportion of the cost of the standing charges as well as the cost of the number of units he uses. In several cities a two-part tariff is employed, which consists of a fixed charge based on the rateable value of the premises, and in addition a low price per unit for all the electricity used. The obvious criticism to this system is that the assessment of the building for rating purposes does not necessarily bear any relation to the consumer's demand. The authors propose that each consumer should fix his own maximum demand for electrical energy. So long as this maximum demand is not exceeded, then, if his consumption during the quarter exceeds a definite number of units, all units in excess of this amount would be charged for at a merely nominal rate. On the other hand, if he ever exceeded his "maximum demand," all units expended during the time of overload would be charged for at the full rate. A simple meter was described which records the charge automatically on a high-rate and a low-rate dial. When a consumer was exceeding his demand one or more neon lamps fixed in suitable places were illuminated so that he knew that he was paying at the higher rate. The system is, in our opinion, fairly equitable, but we think that most consumers would have a difficulty in understanding it and would have a suspicion that advantage was being taken of their ignorance.

IN the discussion on the financial resolution in connexion with the Imperial Institute Bill which took place in the House of Commons on March 30, it was stated by a member that little appeared to have been heard of the actual work of the Institute. It is therefore appropriate to direct attention to the principal publication of the Institute, namely, its quarterly Bulletin, which has now reached its twenty-third year of issue. Each number of this quarterly contains results of investigations conducted in the laboratories of the Institute, articles and notes on the production and utilisation of Colonial and other raw materials, a summary of recent progress in agriculture and the development of natural resources, and notices of recent books dealing with such subjects. In the number of the Bulletin just issued (vol. 23, No. 1) a new feature has been introduced consisting of a classified bibliography relating to Colonial development and resources. This section should prove of great value to workers overseas. The investigations at the Institute recorded in the present issue include the examination of the berries of a South African tree which yields an oil shown to be suitable for soap-making; the determination of the properties of balsa wood from British Honduras and monkey apple timber from Sierra Leone and a study of their possible uses; and an investigation of certain British Honduras woods as paper-making materials. A third instalment of an article on the possibilities of cement manufacture in the Crown Colonies and Protectorates contains incidentally the results of examination at the Institute of various cement-making materials from Trinidad, the Bahamas, British Honduras, and Fiji. An article giving an account of the henequen or Mexican sisal hemp industry of Yucatan should prove of interest to planters in Kenya, Tanganyika, and other parts of the British Empire where the production of sisal hemp is of increasing importance.

THE arrangement of the Science Exhibition in the Government Pavilion at the British Empire Exhibi-

tion, at Wembley, is this year in the hands of a Royal Society committee under the chairmanship of Mr. F. E. Smith. The theme of the principal section of the physical exhibits is the subject of radiation and wave motion ; and the extended spectrum of electromagnetic oscillations and radiations, from slow oscillations and wireless waves at one end, through the visible region, to X-rays and γ rays at the other, has been taken as the basis of arrangement. The exhibits will show the methods of generation and detection of radiation in the different regions and will illustrate the properties of the rays ; and the essential correspondencies will be emphasised, *e.g.* selective absorption of visible rays will be compared with resonance and the tuned circuit in the wireless region. A very large proportion of the exhibits will be working demonstrations. Space will also be devoted to the work on atomic structure, where the exhibits will include models of the atoms. Meteorology, terrestrial magnetism, and seismology will again be represented, and a working seismograph will be shown. The arrangement of the sections of zoology, botany, and physiology will follow rather similar lines to that of last year, where the exhibits having a bearing on evolutionary theory were found to be extremely popular. A revised edition of the Handbook is to be published, which will contain an introductory article by Sir Oliver Lodge. Other new articles are by Prof. G. Elliot Smith on " The Human Brain," Mr. C. Tate Regan on " Darwinism," and Dr. E. J. Allen on " Life in the Sea."

IN our issue of February 21, p. 276, we referred to the system of loan collections which is in operation at the Salford Museum and also at the American Museum of Natural History. Such a scheme, we learn, has for twelve years been the basis of the " Lending Department " of the Newark Museum, Newark, New Jersey. Born and raised in a public library building, this museum has adopted many of the ways of the modern library. This has been all the easier as its Director, John Cotton Dana, is also City Librarian. The Lending Department of the Museum, although open to the general public, is used almost entirely by the schools. Its collections number more than 5000 objects, classified under 28 heads, of which the most important are life and customs, geographical, dolls in costume, and industrial process charts. Science and nature study are also well represented. Descriptive and illustrated matter accompanies most of the exhibits, which are made up according to requests and delivered to the schools three times a week—about 1500 objects a month. During 1924 more than 500 teachers in fifty out of seventy public schools used this Department. The Museum's collections thus came under the eyes and hands of more than 30,000 children—most of them between the ages of nine and twelve, and representing a dozen different races. Borrowing has been made as simple as in the library, and most of the objects may be kept for one month, with privilege of renewal. The popularity of this Department is the more notable because the Newark Museum is within an hour's ride of the great museums and collections of New York City.

THE services of preparators and laboratory attendants do not always meet with the recognition they merit. It is therefore pleasing to note that the cross of the Légion d'honneur has been conferred on M. Henri Vigreux, " garçon de laboratoire " at the Paris Faculty of Sciences. M. Vigreux, who entered the service of the Sorbonne in 1895, suffered severely from the bursting of an apparatus for fractional distillation in 1898. He set himself then to improve the apparatus of the chemical laboratories and became highly expert in glass-blowing, inventing many pieces of apparatus and many methods of great value to chemists and physicists. In 1919, having lost the left forefinger in another explosion, he travelled round the laboratories of the provincial universities teaching the craft of working in glass. M. Vigreux has previously received the silver medal of the Société d'encouragement pour l'industrie nationale and the " grand-prix " of a recent exposition of craftsmanship.

NEARLY two years ago, complaint was made before the Intellectual Co-operation Committee of the League of Nations at Geneva that the Vienna Academy of Sciences was so impoverished as to be unable to publish its transactions. At about the same date, extensive abstracts of its papers were published by *Die Naturwissenschaften* at Berlin. For a year past NATURE has reported at least the titles of papers read. These have been taken from the *Anzeiger* pamphlets reporting each meeting. The complete volume of *Anzeiger* for the year is now to hand. (Akademie der Wissenschaften in Wien. Mathematisch - naturwissenschaftliche Klasse. Anzeiger. 61. Jahrgang 1924, Nr. 1 bis 27, pp. 209. Hölder, Pichler, Tempsky. Wien, 1925.) It will be valued as giving in a collected form reports which have been scattered through a number of small continued contributions. Such are the reports from the Handel-Mazzetti botanical expedition to China, the reports of the Radium Institut and the meteorological reports.

THE February weather map of the Dominion of Canada records some unusual features for the month. In all Ontario the mean temperatures were in excess of the normal, by 6°-10° F. in the region of the lower lakes and the Ottawa valley. The province of Quebec had the mildest February since 1877, and in many parts the ground was nearly bare of snow at the close of the month. In the maritime provinces last February was one of the mildest on record, with little or no wintry conditions after the first week. In many parts the thin covering of snow on bare ground seriously delayed lumbering operations. In the prairie provinces and British Columbia the month was milder than usual, except to the north of the fifty-fifth parallel, where the mean temperature was considerably below normal. In the Yukon there was a deficiency of 8°-10°. Precipitation was generally deficient except in Quebec, part of southern Ontario, Vancouver Island, and the lower Fraser valley.

UNTIL further notice the Science Library, South Kensington, will remain open until 8 P.M. on Thursdays and Saturdays. After 6 P.M., entrance to the Library will be through the Imperial College of Science and Technology in Imperial Institute Road.

AT the meeting of the London Mathematical Society, to be held on April 23 at 5 P.M., in the rooms of the Royal Astronomical Society in Burlington House, Dr. Harold Jeffreys will give a lecture on "The Interior of the Earth." Members of other scientific societies will be welcome.

DR. F. W. ASTON, fellow of Trinity College, Cambridge, has been elected a member of the Athenæum under the provisions of the rule of the club, which empowers the annual election by the committee of a certain number of persons of distinguished eminence in science, literature, the arts, or for public service.

APPLICATIONS for grants in aid of scientific investigations bearing on agriculture to be carried out in England and Wales are invited by the Ministry of Agriculture and Fisheries. They must be made upon a prescribed form (A. 53/TG) obtainable from the Secretary to the Ministry, Whitehall Place, S.W.1.

THE fourth course of training of seed analysts will be held in the summer of 1925, beginning on July 7, at the Official Seed Testing Station, Cambridge. Particulars of the course can be obtained from the Secretary, National Institute of Agricultural Botany, Huntingdon Road, Cambridge.

A JOINT general discussion on "The Physical Chemistry of Steel-making Processes" is to be held by the Iron and Steel Institute and the Faraday Society on Monday, June 8, at the Institution of Civil Engineers, Great George Street, London, S.W.1. Sir Robert Hadfield, Bart., will deliver the introductory address, and a provisional programme of papers covering the various phases of the manufacture of steel has been issued.

PROVIDED works of sufficient merit are submitted, the second award of the Nichols prize of the Royal Society of Medicine, value 250*l*., will be made in 1927. The prize is open to British subjects for the most valuable contribution towards "The discovery of the causes and the prevention of death in childbirth from septicæmia." Competing essays must be typed or printed in English, accompanied by the names and addresses of the authors, and be submitted not later than October 1, 1927, to the Secretary, Royal Society of Medicine, 1 Wimpole Street, W.1.

IN our issue of January 17, p. 96, we expressed regret that such an old-established firm of optical instrument makers as that of Sir Howard Grubb and Sons, Ltd., of St. Albans, should have gone into voluntary liquidation. We are glad now to learn from Sir Charles A. Parsons that a new company, trading as Sir Howard Grubb, Parsons and Co., has purchased from the liquidator the goodwill, drawings, and sundry plant and machinery of the firm, and that workshops of up-to-date design are being erected at Heaton, Newcastle-on-Tyne, especially suitable for the building of large astronomical telescopes and observatory equipment. The advice and experience of Sir Howard Grubb will be at the disposal of the new company. All communications should be addressed to Heaton Works, Newcastle-on-Tyne.

THE Smoke Abatement League of Great Britain held a Conference in the Town Hall, Manchester, on November 3-6, 1924, at which a series of papers was read by persons interested. The papers and discussions have now been published in a handy volume (5*s*. 6*d*. post free) to be obtained from the Secretary, C. Elliot, 33 Blackfriars Street, Manchester. This symposium covers practically every aspect of the subject; the law and smoke; the measurement of air pollution; the effect of smoke on human life, vegetation, and buildings; smokeless fuels prepared by low and high temperature carbonisation; steam generation; electrical power supply; and lastly, the economic aspect of a smoky atmosphere. Looking through the papers one is struck by the very diverse remedies prescribed by the advocates of different processes, and a general consensus can scarcely be obtained. Doubtless all will contribute a share, and the publication is certainly of value as bringing to a focus the many ideas which are expected to lighten the darkness of our industrial cities.

THE report of the National Physical Laboratory for the year 1924 is a quarto volume of 220 pages, 170 of which are devoted to accounts of the researches which are at present in progress in the Laboratory. These accounts are as a rule sufficiently detailed to allow the reader to understand the object of the research, the method adopted and the results which so far have been obtained. They are accompanied by illustrations which add considerably to their interest and their value. So far as the amount of testing work done during the year is concerned, there has been an increase since the previous year in all departments except those connected with engineering and shipbuilding. The need of new buildings for physics and electrotechnics has again been pressed by the Committee, and it is hoped that funds for them will be forthcoming at an early date. A large proportion of the research work is undertaken for the Research Associations of the Department of Scientific and Industrial Research and for other Government Departments, and the rest is under the control of Sir Joseph Thomson, Sir Ernest Rutherford and Sir William Bragg, who visit the Laboratory from time to time.

THE after-Easter lecture session at the Royal Institution will commence on Tuesday, April 21, at 5.15, when Prof. J. Barcroft will begin a course of four lectures on "Some Effects of Climate on the Circulation." The Tyndall lectures will be delivered by Prof. R. Whiddington on the passage of electricity through vacuum tubes, commencing on Tuesday, May 19. On Thursday afternoon, April 23, Mr. F. Kingdon Ward will begin a course of two lectures

on exploration in Tibet. On succeeding Thursday afternoons there will be two lectures by Prof. H. J. Fleure on prehistoric trade and traders on the west coasts of Europe, and two by Prof. F. O. Bower on the natural classification of ferns as a study in evolution. Mr. W. P. Pycraft is to give two Saturday afternoon lectures on use and disuse and their effect on the bodily structure of animals. The Friday evening meetings will be resumed on April 24, when Dr. W. A. Craigie will deliver a discourse on the Icelandic Sagas. Succeeding discourses will probably be given by Prof. W. L. Bragg, Dr. H. H. Dale, Prof. C. G. Darwin, Dr. Thorne M. Carpenter, Sir Henry Newbolt, and others.

MESSRS. Negretti and Zambra, 38 Holborn Viaduct, London, E.C.1, have issued a useful list of second-hand and shop-soiled instruments which they have for disposal. The list contains, among other items, a useful selection of microscopes, pieces of surveying apparatus, and thermometers, while under "sundries" are offered projectors, barographs, aneroids, and so on. The list should be seen by all who are contemplating the purchase of apparatus.

A VERY full and comprehensive catalogue (No. 125) of second-hand botanical works has just reached us from Messrs. Dulau and Co., Ltd., 34 Margaret Street, W.1. It contains 4439 titles conveniently arranged in the following sections: Regional Floras, Gardening and Horticulture, Fruit Culture, Sylviculture, Gardens and Landscape Gardening, Biology of Plants, Monographs, Biography, Bibliography, Terminology, Dictionaries, Manuals, etc., Herbals and Early Gardening, Cryptogamic Botany, Phyto-pathology, Geoponica, and Serial Publications.

THE Cambridge University Press will shortly publish Vol. 19 of the Royal Society's "Catalogue of Scientific Papers," covering the letters T to Z and completing the work. Another book to be issued by the same house will be "Aerial Surveying by Rapid Methods," by Prof. B. Melvill Jones, the main purpose of which is to discuss the possibilities of aerial photography as a means of surveying and mapping the earth, and to record and describe a series of experiments made at Cambridge by the author and the late Capt. J. C. Griffiths.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned: a guide-lecturer in agriculture at the British Empire Exhibition —The Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W.1 (April 25); an assistant lecturer in agriculture at the Agricultural Institute, Kirton, near Boston, Lincs.—J. C. Wallace, at the Institute (April 30); demonstrators in physics and organic chemistry respectively, at Bedford College for Women, Regent's Park, N.W.1—The Secretary (May 2); three assistant naturalists in the fisheries department of the Ministry of Agriculture and Fisheries—The Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W.1 (May 8); a woman lecturer in geography in the department of education of the University, Birmingham—The Secretary (May 16); assistant professor of zoology in McGill University, Montreal—The Secretary (May 20); an assistant professor of chemistry, of Egyptian nationality, at the Cairo School of Medicine—The Director (May 31).

ERRATUM.—In NATURE of April 4, p. 518, col. 1, line 14, the name of Mr. Savin is printed incorrectly as Sairn.

Our Astronomical Column.

A SIMPLE INTERFEROMETER. — Probably many people are under the impression that interferometer methods are only possible with very large instruments. This is undoubtedly the case where measurement of stellar diameters is in question. But a short paper by Mr. L. Richardson (Brit. Astron. Assoc. Journ., Feb. 25) describes an application of the method that is within the reach of all amateurs. This is a cardboard screen covering the object-glass with a number of parallel openings cut in it, the width of the closed spaces being made equal to that of the open ones. The card can be turned by strings from the eye-end about an axis in its own plane through its centre, and the amount of tilt read on a scale made of millimetre paper. Each star then shows a central image, and a series of diffraction images on each side diminishing in brightness. Turning on Castor (for example), the card is tilted until the distance between the principal and first diffraction image is equal to that between the two stars of the binary. The tilt of the card then gives a very good measure of the angular distance between the stars. Four measures of Castor give distances 4·57″, 4·56″, 4·54″, 4·59″. Since the images are short spectra, there is a liability to personality in the measures, but a single observer can obtain accurate relative results.

THE NEW WASHINGTON CATALOGUE OF FUNDAMENTAL STARS.—Prof. W. S. Eichelberger communicates to *Ast. Nach.* No. 5353 a paper on this catalogue, which will appear in full in vol. 10 of "Papers of the American Ephemeris," a summary of results being given in the Ephemeris for 1925. It uses the results of two observatories only (the Cape and Washington); the Cape declinations are corrected by −0·15″ tan zenith-distance-north, as a result of a rediscussion of refraction. The general result of the discussion is that the declinations in Boss P.G.C. need a nearly constant correction of about +0·47″ from 50° N. Decl. to 40° S. Decl.

Prof. Eichelberger then turns to the new Greenwich catalogue for 1925 and notes that, while on the published figures it agrees better with Auwers than with the new Washington one, yet if two changes were made, (1) the use of his new proper motions in bringing up to 1925, (2) giving Venus equal weight with the sun in fixing the equator point, the Greenwich and Washington results would not differ much.

The errors in Boss's proper motions are ascribed to uncorrected systematic errors in the older catalogues that he employed. In the future it will probably be desirable to discard, at least for fundamental stars, all catalogues that rest on observations with instruments the division errors, etc., of which were not determined by modern methods.