

## News and Views.

PROF. GAETANA PONTE, the courageous Director of the Etna Observatory, describes the present eruption of Etna as being far more violent than the outbreaks of 1910, 1911, and 1923, all of which began to diminish in intensity after four or five days. The eruption began on Nov. 2 with a dense emission of ash-charged gas from the north-eastern slopes. Observation was difficult on account of mist, but it was noticed that lava began to flow copiously from three different places during that afternoon. The next morning lava broke through still more vigorously east of Mascali, and since then almost every day has seen the appearance of a new fissure. The torrent of lava that descended the Villonaccio valley quickly surrounded Mascali, and by Nov. 7 the little town was destroyed. In the valley to the north the lava has crossed the main railway line and reached the sea. A third flow in the valley to the south seriously threatens Carrabba and the larger town of Giarre. Here soldiers have been blasting out a depression to conduct the lava to the sea. On Nov. 8, Prof. Ponte flew over the great volcano and reported lava streams from several of the central craters. He predicted that the eruption would continue for at least another week. Since then a copious stream has started from a fissure five miles north-west of Mascali. Reports dated Nov. 12 stated that there had been a decrease in activity and it was hoped that the halt of the lava flow would be definite. Already a rich agricultural district of fertile gardens and orchards has been overwhelmed, and villages, bridges, roads, viaducts, cables, and water pipes have been destroyed. There has been little loss of life owing to efficient evacuation organisation, and already refugees are employed in making a new road from Giarre towards Annunziata.

THE secretariat of the Imperial Agricultural Research Conference, which held its inaugural meeting a year ago, has issued a second report detailing the action taken on the various recommendations which were then made. It appears that little headway has yet been made with the larger schemes proposed. The establishment of a chain of Empire research stations, the creation of new imperial bureaux and correspondence centres, the scheme for large-scale irrigation research, the training of biologists to meet the expected greatly increased demand, are either shelved for the present or are still under consideration. It is not proposed to create new research stations until the staff of the Amani Institute is brought up to full strength. The governing bodies of the institutions to which it is recommended that clearing houses of information should be attached have accepted the recommendations in principle, and the British Treasury has accepted the principle of a contribution towards the cost, but the other countries of the Empire have yet to nominate representatives to a body which is to discuss questions of organisation, cost, and their contributions. A discussion is proceeding with the Standing Committee of Vice-Chancellors of Universities, and the Headmasters' Association is being met, on the steps to be taken to increase the output

of biologists. Effect has been given, however, to several of the minor recommendations. It is disappointing to find that the manufacturing interests in Great Britain, which have been approached by the Ministry of Agriculture to provide scholarships for biological students and research workers, have not responded with any enthusiasm. It is equally disappointing to find such small indications of any enthusiasm of Overseas Governments of the Empire to undertake any financial responsibility for the encouragement of schemes of co-operative Empire research, although a year has elapsed since their formulation.

THE problem of water supply in great cities is one of growing importance, and not without anxiety for the future. Trustworthy statistics show that in the old type of house with water laid on but without hot water or bath, the daily consumption was seven gallons per head per day. In a modern cottage with bath and hot water, the daily consumption is fifteen gallons per head. With the view of adequate conservation and distribution of water supplies in the future, the Ministry of Health advises the appointment of regional water committees in Great Britain. A pamphlet under that title, issued by the Ministry, describes the work of such committees. They should be purely advisory and have no executive power. All the water boards and other water authorities whose interests are likely to be closely connected should be grouped in a committee with the view of discussing and reaching a common policy. Committees are advised to plan in detail for twenty years ahead, and in broad outline for fifty years. Periodical revision of projects will be necessary. Available supplies of water should be allocated to the best advantage of all areas in the region, and local supplies should not be overlooked in favour of upland sources. Reliable estimates of cost should always be obtained. It is hoped that those committees will be helpful in avoiding friction between rival claimants for water areas, and will reduce expense in the acquisition of satisfactory water supplies.

IN modern times mechanical advances produce their economic effect much more rapidly than was the case formerly. It took about forty years for a fairly complete network of railway systems to be established: twenty years for the roads of the country to be overrun and even congested by motor transport: and it will be a matter of a few years only from the full conquest of the air for air transport to become an important factor in our economic life. The railway companies have indicated that they are not to be caught napping a second time. The Air Council itself in its attempt to look ahead has now approached the local authorities with the view of enlisting their support to establish aerodromes in most of the towns. Inter-communication by air exists to-day between almost every large city on the Continent, particularly in Germany, and the encouragement to civil aviation afforded by municipal aerodromes is proving of great value. In a circular letter from the Air Ministry

to the local authorities in Great Britain, it is pointed out that in the absence of similar facilities, British industry cannot derive full advantage from air transport, and it is not possible for merchants to utilise aircraft, whether private or hired, for the speedy conveyance of material and documents either to Croydon, where they can connect with the cross Channel air service, or direct to their destinations abroad.

MUCH as the civil flying club movement has done to stimulate interest and foster enthusiasm in the air, progress is still hampered by lack of aerodromes and landing grounds. While provision for these facilities by the State must be confined to terminal points on 'trunk' routes, the establishment of a network of aerodromes, it is asserted, must devolve on the local authorities. Every town of any importance will sooner or later find it as essential to possess aerodromes as to possess stations, roads, and other facilities of transport. The Air Ministry is to be congratulated on this progressive step to foster a necessary development. The sooner local authorities become alive to the truth of the Air Ministry's contentions, the easier will it be for them to purchase land suitable for this purpose, before speculation renders the price prohibitive.

SEVERAL members of the staff of the Royal Botanic Gardens, Kew, have recently been studying problems of economic botany overseas. Mr. H. C. Sampson has just returned to Kew from his mission to British Honduras, which he paid at the request of the Governor of the Colony, with the approval of the Colonial Office and the Empire Marketing Board. His object was to study agricultural conditions in the colony and to offer advice as to future developments. The assistant director at Kew, Dr. T. F. Chipp, has just left to pay a visit to Cyprus and to the Sudan, at the request of the respective governments, to study botanical and agricultural problems, and he will be absent for about three months. This visit is being undertaken in connexion with the Empire Marketing Board's grant to Kew. A third visit, which should result in the acquisition of much valuable material both living and dried for the Herbarium, is being paid by Mr. J. Hutchinson. This also has been made possible by the Empire Marketing Board's grant to Kew. Mr. Hutchinson is making a careful study of the South African flora in conjunction with the South African botanists, which should be of great value to botanists in both places, as Kew possesses the old type specimens on which the "Flora Capensis" was written, but British botanists who have had to do with the flora have not seen the plants growing in their own home; while, on the other hand, very few of the botanists at the Cape have had the opportunity of seeing the types at Kew. The Director of the Royal Botanic Gardens, Dr. A. W. Hill, has just returned from delivering a short course of lectures at the Charles University, Prague, on the invitation of the University.

SIR GEORGE H. KENRICK has recently presented to the Natural History Department of the Birmingham Museum and Art Gallery his entire library of works

on entomology. The collections of insects in the Museum are of great importance and widely known, but no books relating to this particular branch of natural science have hitherto been available for consultation in the department. The gift comprises about five hundred volumes, including several early treatises, almost unobtainable nowadays, dealing with Lepidoptera found in every part of the world and containing hundreds of exquisite coloured plates. The collection also includes a number of popular books helpful to the beginner, as well as extensive series of reports and proceedings issued by various learned societies. A catalogue of the library is being prepared, and it is anticipated that the books will shortly be accessible, under proper conditions, to persons specially interested. For many years Sir George Kenrick has evinced keen interest in the progress of the Birmingham Natural History Museum. So early as the year 1912 he presented a collection of Midland Coleoptera, collected by the late Mr. W. G. Blatch. In 1915 he loaned, and afterwards presented, four handsome cases illustrating the evolution of the Lepidoptera, and so recently as 1927 he gave to the Museum his noted collection of foreign butterflies and moths, amounting to many thousands of specimens and arranged in eight mahogany cabinets. This collection, unfortunately, is not yet housed in the Museum owing to lack of adequate accommodation.

THE International Society of Experimental Phonetics, founded in connexion with the International Congress of Linguistics at the Hague in April of this year, has for its objects the promotion of research in phonetics. It is providing for the production of accurate apparatus for recording speech and measuring and analysing the speech curves. Arrangements for the publication of the work of its members are being made in England, Germany, and America. Its field of activity includes not only the linguistic side but also the physical study of speech with its relations to telephony, the psychology of speech, speech neurology, etc. Its governing board is at present constituted as follows: *President*, Prof. E. W. Scripture, Strudelhofgasse 4, Vienna, Austria; *Vice-President*, Dr. E. A. Meyer, Stockholm; *Honorary Members*, Prof. A. Meillet, Paris, and Prof. H. Zwaardemaker, Utrecht; *Regional Representatives*, Dr. A. Abas, Amsterdam; Dr. A. Äimä, Helsingfors; Prof. J. L. Barker, Salt Lake City; Prof. T. Benni, Warsaw; Prof. V. A. Bogoroditskij, Kasan; Dr. T. Dunajewski, Charkow; Prof. M. Grammont, Montpellier; Prof. C. A. Grandgent, Cambridge, Mass.; Prof. A. Gregoire, Liège; Prof. L. Grootaers, Louvain; Prof. P. Menzerath, Bonn; Prof. M. Metfessel, Iowa City; Mr. Marshall Montgomery, Oxford; Prof. I. Popovic, Cluj; Prof. A. Rosetti, Bucharest; Prof. L. Ščerba, Leningrad; Prof. E. W. Selmer, Oslo; Prof. T. Navarro Tomás, Madrid. The membership fee is 5s. (8½ Austrian Schilling). Applications for membership are received by the president or any regional representative.

A PAPER on "Field Archæology as a Profession," by Sir Frederic Kenyon, in the November issue of the *Nineteenth Century and After*, is in effect a timely

survey of present conditions in archaeological research which incidentally raises a number of questions of wider bearing than its title suggests. To a certain type of man, or woman, as Sir Frederic points out, the life of a field archaeologist has many attractions to offer; but it cannot be said that the supply of really suitable candidates is adequate. Still more is this true in anthropology, where the need of field work is as great, if not greater, but the opportunities are more limited than they are in archaeology. The number of students in our universities who take up social anthropology, apart from government officials, either prospective, on leave, or specially seconded, and missionaries, is disappointingly small. Academic authorities, when confronted with the dearth of suitable men in both branches of investigation, are, however, not without justification for their reply that, given the posts suitable, men will be found and trained to fill them. So far as archaeology is concerned, Sir Frederic Kenyon is able to point to the fields of investigation which have been opened up or extended since the War, some partly or entirely under our own jurisdiction, such as Iraq, Palestine, Cyprus, Honduras, India, and so on; others which are available through co-operation with other countries, such as Greece. Sir Frederic points out that the great excavators who have made modern archaeological history, have attained the rank of veterans and a younger generation must take their place. Even so, in present conditions, the number which can be absorbed is limited, not because the field is restricted, but because the funds required to carry out the work on a scale which would make archaeology really a profession which would attract are not forthcoming. The same argument applies even more strongly to social anthropology and ethnology. In all branches of the study of man a fund which will provide an assured basis for the systematic prosecution of research in the field is the first and most urgent requisite.

At a joint meeting of the Scottish sections of the Society of Chemical Industry, Institute of Chemistry, and Society of Dyers and Colourists, held in Glasgow on Oct. 19, Dr. H. H. Hodgson, head of the Chemical Department, Technical College, Huddersfield, surveyed recent utterances at public conferences during 1928 from the points of view of the chemist and teacher. "Science and Craftsmanship," by Sir William Bragg, received primary attention. In consequence of the revolution in industry now in progress and the ever-increasing dependence of industry on process and ever-diminishing reliance on manual skill, the importance of humanistic non-vocational studies in our national scheme of education was stressed, since in a democratic age when great issues are decided by a majority vote the necessity for all sections of the population to meet on common ground somewhere becomes self-evident. The work of research associations justifies Sir William Bragg's opinion that "much of our hope for the future is built upon their work." The position of the chemist in industry was considered and a rapid survey made of large-scale operations which have little or no laboratory equivalent; above all, the importance of a knowledge of

costing was emphasised. Lord Melchett's valuable presidential address to the Association of Technical Associations was recommended for reading as a great stimulant for the science teacher; it is difficult to overrate the national importance of contentment in employment brought about by a proper realisation of the underlying interest in all scientific operations. Teachers of experimental science, however, should have research experience, only such men being capable of inspiring pupils both by precept and example.

THE Institute of Physics has arranged a scheme by which any corporate member who wishes to borrow an instrument for research or demonstration purposes may do so from one of the 37 firms of instrument makers who are participating in the scheme. The charge will be £1, 1s., plus 10 per cent of the price of the instrument for the first fortnight, and 5 per cent for each subsequent week. If the loan is continued for 20 weeks, the instrument becomes the borrower's own. The borrower pays carriage both ways, and is responsible for any damage to the instrument in transit or in use, fair wear and tear excepted. Applications for loans should be made to the Institute. The Institute has also announced a further privilege of membership by which, commencing in January 1929, fellows will receive the *Journal of Scientific Instruments* free of charge, and associates receive it at a small charge. The *Journal* is produced by the Institute with the co-operation of the National Physical Laboratory. It was established in 1923, and is now in its fifth volume. The consistently high standard of contributions which has been maintained is reflected in the increasing circulation and improved position which has enabled this scheme of distribution to be undertaken.

A MOVEMENT is on foot for the creation of a Twickenham Museum, to be housed in York House, and to be under the ægis of the local town council. As reported in the *Thames Valley Times* of Oct. 17, a public meeting agreed with enthusiasm to the formation of a museum, and a committee, of which the Mayor-elect, Councillor C. Carus Wilson, was appointed chairman, was elected. The speeches made at the meeting suggest that somewhat vague ideas of the functions of a local museum were entertained by some of the audience, and the statement that amongst the gifts accepted were "spear-heads many feet long" suggests that this museum at its outset may be in danger of encouraging the collection of the world-wide odds-and-ends which have proved the bane of so many local museums. The formation of a local committee, however, should now enable a definite policy of development to be formulated, and no better guide to such a policy could be found than Sir Henry Miers' report to the Carnegie United Kingdom Trustees.

THE University of Liverpool continues to be a growing and active centre of tidal research and computation through the work of Drs. Proudman and Doodson, Director and Secretary of the Tidal Institute (University of Liverpool. Tidal Institute, Ninth Annual Report, 1928). Besides the publication of theoretical researches, analyses of tidal observations for seven

ports have been made, for the Admiralty, Australia, and the Crown Agents for the Colonies; predictions have been prepared for fifty-one ports. A special feature of the year's work was the investigation of the circumstances that resulted in the disastrous Thames floods of Jan. 6-7, 1928. Dr. Doodson made a detailed study of the variations of sea-level all round the North Sea for intervals including four great storms, and it is stated that some remarkable sequences were revealed. He has also further developed the methods of analysing tidal observations, and a short account of some of his methods is included in the "Instructions for Analysing Tidal Observations," published as a small pamphlet by the Hydrographic Department of the Admiralty (price 9d. net).

M. HENRI BERGSON, the distinguished French philosopher whose name is associated with the theory of creative evolution, has been awarded the Nobel prize for literature for 1927. The Nobel prizes for chemistry for 1927 and 1928 have been awarded to Prof. H. Wieland of Munich, for his work on gall acids, and to Prof. A. Windaus of Göttingen, for his work on the stearines and their relation to vitamins, respectively.

DR. H. DESLANDRES, director of the Paris Observatories at Meudon, has been elected an honorary member of the American Astronomical Society. Only one such election annually is permitted by the constitution of the Society, and there are only seven other living honorary members.

THE following have been elected officers for the session 1928-29 of the Philosophical Society of the University of Durham: *President*, Sir Charles A. Parsons; *Vice-Presidents*, Dr. G. R. Clemo, Mr. Wilfred Hall, Mr. H. J. Huthehens, Dr. J. Irvine Masson, Sir Theodore Morison, Dr. John Morrow; *Hon. General Secretary*, Dr. D. A. Allan; *Hon. Treasurer*, Mr. J. W. Bullerwell.

THE annual general meeting of the Mineralogical Society was held on Nov. 6, and the following officers were elected: *President*, Dr. G. T. Prior; *Vice-Presidents*, Sir J. S. Flett and Dr. J. W. Evans; *Treasurer*, Mr. F. N. Ashcroft; *General Secretary*, Mr. W. Campbell Smith (Natural History Museum, South Kensington, S.W.7); *Foreign Secretary*, Dr. J. W. Evans; *Editor*, Dr. L. J. Spencer.

AT the annual general meeting of the Cambridge Philosophical Society, held on Oct. 29, the following were elected officers of the Society for the ensuing session: *President*, Mr. G. U. Yule; *Vice-Presidents*, Prof. G. I. Taylor, Dr. H. Lamb, Prof. S. J. Hickson; *Treasurer*, Mr. F. A. Potts; *Secretaries*, Mr. F. P. White, Mr. F. T. Brooks, Dr. D. R. Hartree; *New Members of the Council*, Prof. A. Hutchinson, Mr. R. H. Fowler, Mr. J. T. Saunders, Mr. S. W. P. Steen.

THE following officers and new members of council of the London Mathematical Society were elected at the annual general meeting held on Nov. 8: *President*, Prof. E. T. Whittaker; *Vice-Presidents*, Mr. R. H. Fowler, Prof. E. H. Neville, Mr. E. C. Titchmarsh; *Treasurer*, Dr. A. E. Western; *Librarian*, Prof. H.

Hilton; *Secretaries*, Prof. G. N. Watson, Mr. F. P. White; *New Members of Council*, Prof. O. Veblen, Mr. T. L. Wren.

"THE Culture Value of Natural History" is the title of the fourth annual Norman Lockyer Lecture, to be given under the auspices of the British Science Guild by Prof. J. Arthur Thomson, Regius professor of natural history in the University of Aberdeen, on Wednesday, Nov. 28, at 4.30 P.M. in the Goldsmiths' Hall, Foster Lane, E.C.2 (by permission of the Goldsmiths' Company). A few tickets for the lecture are still available and are obtainable on application to the Secretary, British Science Guild, 6 John Street, Adelphi, London, W.C.2.

BY the exploitation of her own resources and the skilful adaptation of Western ideas, Japan has, during the past half-century, left medievalism behind and become a world power of first-class importance. The extent of her development of research in the physical sciences alone was indicated in an article which appeared in our issue of Mar. 12, 1927, p. 407. The recent enthronement at Kyoto of the young Emperor of Japan has therefore been made the occasion for many tributes and congratulations, both official and unofficial, with which we are sure that scientific workers in particular will wish to be associated. In this connexion Sir Robert Hadfield, who is himself a member of the Japanese Order of the Sacred Treasure, has contributed an appreciative message to the *Japan Advertiser*, in which he refers to his own visit to Japan and to his meetings with Japanese leaders, including the present Emperor before his accession to the throne, when on visits to Great Britain.

A MONTHLY magazine for young people, entitled *Friendship* (price 6d.), is published at Ramhurst Manor, Tonbridge. It aims at fostering friendship between the youth of all nations by means of actual travel and a better understanding of the characteristics of various peoples. Each number is devoted to one or more countries in pictures and articles descriptive of national life, traditions, customs, and scenery. The October number treats of Norway, Sweden, and Denmark. The articles are short and interesting, and well illustrated by wood blocks. There is also a large pictorial map of Scandinavia. This kind of map is entertaining and likely to interest children, even if it lacks something in accuracy. There are other features of interest in the magazine, and the whole has a strong savour of the sea.

THE September issue (No. 15) of *Watson's Microscope Record* contains matter that will be of interest to most microscopists. Beginners will find help in Mr. Merlin's article, which deals with the choice of instrument and the importance of tube-length, or if they are taking up photomicrography, in the instructions given for developing the negative. The Rev. Dingley Fuge discusses the structure of a common diatom, Mr. Brown tells us how properly to display the blow-fly's tongue, and Mr. Gray gives some useful hints on mounting-media and on mounting insect parts. In lighter vein is "A Message from Mars"—a fable, and Mr. Offord's

reminiscences of fifty years ago, including his first attendance at the Quekett Club with Huxley as president. 'Notes and Queries' and descriptions of apparatus and instruments complete an interesting number, which may be obtained from Messrs. Watson and Sons, 313 High Holborn, London, W.C.1.

MESSRS. Bowes and Bowes, Cambridge, have just circulated a useful catalogue (No. 444) of second-hand works—1000 in number—ranging over the following branches of science: Scientific biography and travel; agriculture, with gardening and forestry; anthropology and ethnology; chemistry and physics; geology and mineralogy; biology (general), including microscopy; botany; zoology (general); marine and fresh water zoology; entomology; ornithology, and miscellaneous science. The catalogue can be had upon application.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—An experimental biologist at the Middlesex Hospital Medical School, for radiological research bearing on the therapy of malignant disease—The Dean of the Medical School, Middlesex Hospital, W.1 (Nov. 26). A lecturer in civil engineering at Armstrong College, Newcastle-upon-Tyne—The Registrar, Armstrong College, Newcastle-upon-Tyne (Nov. 27). A professor of dental surgery and pathology and superintendent of studies in the Dental School, Cairo—the Dean of the Faculty of Medicine, Egyptian

University, Cairo (Nov. 28). A special librarian for the Institute of Metals—The Secretary, Institute of Metals, 13 Members' Mansions, Victoria Street, S.W.1 (Nov. 29). A professor of materia medica and therapeutics at the Royal Veterinary College—The Secretary, Royal Veterinary College, Camden Town, N.W.1 (Nov. 30). A lecturer in biology and chemistry in the chemistry and dyeing department of the Leicester College of Technology—The Registrar, College of Technology, Leicester (Nov. 30). A lecturer in applied mathematics in the Faculty of Science of the Egyptian University, Cairo—The Dean of the Faculty of Science, Egyptian University, Cairo (Dec. 1). A lecturer in physiology in the University of Birmingham—The Secretary, The University, Birmingham (Dec. 3). A physiological botanist for research work on cotton to be carried out at Coimbatore under the Development Department of the Government of Madras—The Secretary to the High Commissioner for India, General Department, 42 Grosvenor Gardens, S.W.1 (Dec. 14). A secretary of the Education Committee of the League of Nations Union—The Secretary, League of Nations Union, 15 Grosvenor Crescent, S.W.1. An assistant to the surveyor of the School of Agriculture Estate Management Branch, University of Cambridge—The Estate Management Branch, School of Agriculture, Cambridge. A lecturer in agricultural biology at the Seale Hayne Agricultural College—The Principal, Seale Hayne Agricultural College, Seale Hayne, Newton Abbot.

### Our Astronomical Column.

A RECENT SUNSPOT.—A large group, typically 'bipolar' in appearance, has recently been under observation. The group was conspicuous on account of the size and regularity of the leader spot, which exceeded 700 millionths of the sun's hemisphere. There was a cluster of spots forming the other extremity of the group 15° of longitude behind the big spot. On Nov. 4, when the group was near the east limb, Mr. Newbegin noticed a bright reversal of the C-line of hydrogen in the preceding part of the umbra of the leader spot, and he also detected dark filaments between it and the cluster of spots in the rear. These latter spots seemed to be associated with a metallic prominence seen at the east limb on Nov. 3. No associated magnetic disturbance was recorded about the time of central meridian passage of the group on Nov. 9, further particulars of which are as follows:

No.	Date on Disc.	Central Meridian Passage.	Latitude.	Area.
10	Nov. 2-15	Nov. 9-4	16° S.	1/1100 of hemisphere.

THE ECLIPSE OF MAY 9, 1929.—*Astr. Nach.*, No. 5589, contains an article by Mr. F. J. M. Stratton on this eclipse, which is the third in the present century in which Sumatra enjoys totality; the others were in 1901 and 1926. On this occasion Siam and the Philippine Islands are also available as stations. The Greenwich and Cambridge party will occupy Alor Sta in Kedah, and Pattani in Siam. The investigation of the Einstein displacement of stars near the sun will be made at both stations; the Greenwich astrographic equatorial will be mounted at Pattani and a coelostat at Alor Sta. The spectrum of the chromosphere and corona will be studied, also polarisation and rotation of the corona.

There will be numerous other parties. German expeditions will be sent from Potsdam, Kiel, Hamburg, and Göttingen. Italian and French expeditions, and two or three American ones, will also be observing the eclipse. The line of stations to be occupied is so long that there is very good prospect that at least some of the parties will have favourable weather conditions.

THE INDEBTEDNESS OF GREEK ASTRONOMY TO BABYLON.—The *Observatory* for October publishes a lecture on this subject, delivered last February by Dr. J. K. Fotheringham. It has been made clear in the present century that much of the knowledge of the motion of the sun and moon that had been supposed to have been deduced by the Greeks from their own observations was derived from Babylonian astronomers, in particular Naburiannu and Kidinnu. To them was due the determination of the length of the synodic month which Ptolemy attributed to Hipparchus. One important discovery still seems to be Hipparchus's own, that is, the precession of the equinoxes. The Babylonians seem to have noticed some anomalies in longitude, but not to have traced them to a motion of the equinox. Dr. Fotheringham is able to fix the year 383 B.C. as that of the adoption of some of Kidinnu's values, and the beginning of the use of the 19-year lunar cycle. Naburiannu's date is about 500 B.C. The extraordinary fact is brought out that Kidinnu's value for the motion of the sun from the node was nearer the truth than that used by Oppolzer in his Canon of Eclipses more than two thousand years later. Kidinnu's value was based on the Babylonian observations of eclipses for the preceding 360 years. His good result is a testimony to the quality of these observations.