

the time in England. It was illustrated with many beautiful coloured plates, drawn, some by himself and others by Mrs. Crookshank. He was elected at about this time to a professorship of bacteriology in King's College, London, and founded there the first laboratory of bacteriology to be established in Great Britain.

Crookshank now devoted himself to research and educational work. He studied photomicrography, and in 1887 published a volume entitled "Photography of Bacteria." Many of his photomicrographs of this early period are excellent, and scarcely to be bettered now. In 1885 and 1886 he was studying the malaria parasite and trypanosomes. He was one of the first to recognise and confirm Laveran's work on the malaria parasite, and also confirmed the work of Evans on the trypanosome of surra, a disease of horses; and he published a paper in the *Journal of the Royal Microscopical Society* (1886) on the trypanosome of the rat, and his study of this parasite left little for later investigators to describe as regards its morphology and structure. Crookshank now in quick succession undertook researches on behalf of the Government, and furnished reports to the Agricultural Department of the Privy Council on scarlet fever and the Hendon cow disease (1887); anthrax, particularly in swine (1888); tuberculosis and actinomycosis in cattle (1888). His investigation of the Hendon outbreak of disease in cows, also of a similar outbreak in Wiltshire, proved that the condition was one of cow-pox.

This doubtless directed Crookshank's attention to smallpox and vaccination, with the result that he published in 1889 a considerable work in two large volumes on the "History and Pathology of Vaccination." He surveyed the earlier literature, and for this purpose the old book shops of Leipzig and elsewhere were searched for early and rare tracts and treatises, of which he acquired a unique collection. His views on the subject were decidedly heterodox, and at the time gained few adherents, though his criticism of some of the then popular conceptions would now be admitted as sound. He also studied the bacterial flora of calf-lymph, and while isolating numerous species from it, definitely asserted that not one of them is peculiar to vaccine

lymph, and that the nature of the contagion is unknown.

With the exception of two papers on the chemistry of Koch's old tuberculin, this was Crookshank's last work of scientific importance, and in 1901 he resigned his professorship, being elected emeritus professor, and retired to his estate near East Grinstead. Here, while taking his share in local interests and becoming a Justice of the Peace, he maintained to the last a keen interest in scientific work and took a deep and active interest in the Royal Veterinary College, where he had lectured in early years, and of which he was a governor for nearly forty years, and had much to do with the recent developments in that institution.

Crookshank travelled much, was a keen fisherman, a good shot, and a skilled hunter of big game. Within the last year he had the good fortune to find and excavate some interesting Roman remains on his estate.

R. T. HEWLETT.

As a result of a motor-cycle accident near Aberdeen on July 2, Mr. Alexander Reid has died at the early age of twenty-two years. A young man of great personal charm and scientific promise, he took his degree with honours in mathematics and natural philosophy two years ago at the University of Aberdeen. Since then he has been engaged in teaching and research. His work on the diffraction of cathode rays through thin films of celluloid, a preliminary account of which appeared in NATURE a year ago, has attracted wide interest. By a melancholy coincidence his definitive paper appeared in the *Proceedings of the Royal Society* within a day or two of his death. His remarkable success in the short time allowed him makes his early death peculiarly tragic, and his lovable nature had endeared him to all who knew him.

WE regret to announce the following deaths:—

Sir Frank Sly, K.C.S.I., formerly Governor of the Central Provinces, who took a prominent part in the development of agricultural research in India, on July 16, aged sixty-two years.

Sir George Wills, Bart., president of the Imperial Tobacco Company, a munificent benefactor of the University of Bristol and of the Bristol Museum and Art Gallery, on July 11, aged seventy-four years.

News and Views.

MANY scientific workers will remember the disappointment caused at the Oxford meeting of the British Association by the exclusion of a film of Chilian and Peruvian birds with which Mr. R. C. Murphy, of the American Museum of Natural History, had intended to illustrate a lecture. This year two similar incidents have occurred. Mr. Beebe, the eminent naturalist, was obliged to pay full duty on a film of a microscopical subject which he introduced for the purpose of exhibition to a learned society, and Mr. Wright, the distinguished American astronomer, who wished to use a film to illustrate a lecture before the Royal Astronomical Society, not only had to pay duty on his film, but was also put to a good

deal of trouble by the Customs authorities. On hearing of Mr. Beebe's experience, the Association of Scientific Workers communicated with the Financial Secretary of the Treasury asking, either that special concessions should be granted as a matter of courtesy to accredited scientific workers wishing to introduce such films from abroad, or that the Finance Act be so amended as to allow for their importation without payment of duty. Independently, Captain Ian Fraser moved an amendment to the Finance Act of 1925 in the House of Commons on July 3 to the same effect. No decision has yet been reached, but, replying in the House of Commons to a question put by Sir Harry Brittain, the Financial Secretary to the Treasury

stated that his attention had been directed to the case of a distinguished American astronomer being subjected to considerable inconvenience and trouble in passing through the Customs two cinematograph films showing the successive phases of the planet Jupiter during its rotation, one for the purpose of illustrating a lecture, and the other for presentation to the Royal Astronomical Society. Some of the difficulties experienced were due to the importation of the films in passengers' baggage, necessitating their removal from Victoria to the Endell Street bonded film store. In view of this case, however, the possibility of shortening the procedure as regards films of a non-commercial character was being examined. Furthermore, the Chancellor of the Exchequer had promised that the practicability of an exemption for scientific films would be further considered.

SINCE the leading article in this week's issue on "The Origin and Progress of Mankind" was written, we have received Prof. H. F. Osborn's latest contribution to the discussion on the ancestry of man, an article entitled "The Influence of Bodily Locomotion in separating Man from the Monkeys and Apes," in the May number of the *Scientific Monthly*. By quotations from the writings of Darwin, he shows how closely that far-seeing naturalist's views coincide with the opinions, based on the vast amount of evidence since accumulated, of "the highest British authority (Sir Arthur Keith) and the highest American authority (Dr. W. K. Gregory)," that man's descent is to be traced to a primitive ape-like form more closely resembling the chimpanzee than man, but less specialised in ape-like habits than the orang. He proceeds to analyse the influence of bodily locomotion in changing the proportions of arms and legs relatively to the body, and in altering the characteristics of hands and feet, and is able to group this development in a series of "progressive arboreal stages." A close study of these stages leads him to the conclusion that while "the theory of arboreal ancestry of the human type is well established, both by the proportion of the limbs and possibly by the inturning of the soles of the feet, also to a less degree by the spread of the big toe," yet "the structure and proportions of the limbs, the hands and feet, taken together, do not harmonise with the brachiating ape theory, but to my mind suggest rather the taking off of the human stock from the second progressive arboreal stage, namely, arboreo-limb-walking stage." That is to say, Osborn regards the ancestral form of man as belonging to the type of creature which, while habitually terrestrial in habit, yet sought its food in trees and developed a tree-walking habit. "Derived from this stage, the pro-Dawn Man would conserve all the potentiality of future application of the hand to flint-making and, ultimately, to the arts and industries by which man has arisen."

EIGHT of the crew of sixteen of the wrecked airship *Italia* have been rescued, and two, Dr. Malmgren, the Swedish meteorologist, and Signor Pomella, an Italian engineer, are believed to be dead. Apart from General Nobile, who was rescued by a Swedish aero-

plane on June 23, the survivors owe their safety to the Soviet ice-breaker *Krassin*, which found them on July 12. They include Majors Zappi and Mariano, who with Dr. Malmgren had left the wrecked party to walk westward towards the relief ships, and Lieut. Viglieri, who remained in charge after General Nobile's rescue. There is no news of the six men who were carried away in the wreck of the airship, and the likelihood of their being alive is small. It is reported that the *Krassin* will continue the search. She has already picked up her airmen, who damaged their machine after discovering the position of Majors Mariano and Zappi. At the time of writing there was no news of Capt. Amundsen, Lieut. Dietrichsen, and Com. Guilbaud, who left Tromsø in a seaplane on June 18. It is possible that they have found the missing Italians and are encamped with them awaiting a ship. Several aeroplanes are searching for them. Aeroplanes have picked up two men who were trying with dog sledges to reach Lieut. Viglieri's party, and the third member of this search party has reached the *Braganza* safely.

SOME details about General Nobile's first flight in May of this year are given by a *Daily News Bulletin* issued by Science Service of Washington, D.C. The aim on that occasion was to explore Nicholas or Northern Land, or at any rate to determine its western limit. The course of the *Italia* was north of Spitsbergen and Franz Josef Land, reaching about lat. 82° N. in long. 70° E. From there the course was south-eastward to lat. 79° 16' N., long. 91° 40' E. No new land was sighted and the western end of Nicholas Land was not seen, but the nature of the pack in the vicinity of the easternmost position reached is said to have led General Nobile to believe that land was not far distant. The return course to Spitsbergen was via the north of Novaya Zemlya and then across North-East Land. The course of the *Italia* on its way eastward crossed the reputed position of Gillis or Giles Island, reported so long ago as 1707. No sign of that land was seen. It has, however, long been supposed that Giles's discovery is identical with White Island in about 80° N., and that it was misplaced at a comparatively recent date.

THE direction of the prevailing wind in the North Atlantic is east or north-east above latitude 30° and south or south-west below latitude 30°, a fact known and applied by sailing-ships since the voyage of Columbus. Its importance for trans-Atlantic flights is even more vital, as appears from the series of successful easterly flights and the disastrous record of the westerly attempts by the northern route. The Italian pilots, Captain Arturo Ferrarin and Major del Prete, in their flight starting on July 3 from Rome to Brazil, in establishing a new record of geographical distance covered in a single stage, no doubt took intelligent advantage of the elementary principle involved. For strict comparison of these geographical flights, an accurate knowledge of the velocity of the wind, from point to point during the flight, is required, but making full allowance for favourable winds, a flight of 8000 kilometres from Rome to Brazil is a great feat of skill and endurance, and a severe test of engine and aeroplane design.

A PLEA for regional planning in the Lake district, with the view of preserving its scenic features, is made in a pamphlet entitled "Safeguarding Lakeland," by Mr. E. J. L. James (*Whitehaven News*, Ltd., price 1s.). The danger that threatens the Lake district is the outcome of the use of the motor-car. There, as elsewhere, the motor-car leads to ribbons of urban growth spreading along the great roads, and to the construction of new roads for the same purpose. Ill-designed and badly placed houses are liable to spoil scenic features, while the straggling and unregulated growth increases the difficulty and cost of public services. Mr. James pleads for preparation without delay of a regional plan for the whole of the area, and embodies his suggestions in a map which shows that such a plan is under way only in the southern part of the Lake district, where several authorities have it in hand. He discusses at length the advantages of such a survey and the urgent need of some action if this unique part of England is to be preserved. It is a proposal which deserves to receive wide support. An appendix gives a list of the properties in the Lake district owned by the National Trust.

NOTICE has been recently directed to the valuable Benmore estate, situated six miles from Dunoon, on the Firth of Clyde, in Argyllshire, by a further gift to the nation by Mr. Harry G. Younger. In 1925, Mr. Younger presented the Benmore estate to the Forestry Commission on behalf of the nation, reserving the mansion house and certain other properties to himself. The estate thus donated covers an area of 10,000 acres and includes considerable areas of woods and plantations, containing a variety of conifers, thus forming a very valuable centre for the conduct of forestry research work. It is also proposed to utilise it as a practical training centre for forestry students. The latter objects have become practicable by the recent gift by Mr. Younger of the mansion house and the residue of the estate, with the exception of Eckford House, the River Eachaig, and certain villages. It is now hoped that the Forestry Commissioners will be able to provide accommodation for research workers and students on the estate itself. The forestry value of Benmore is very considerable; but it has also botanical values of no mean order. Soil, climate, and shelter are all excellent, as is well shown in the arboretum and gardens, where the owners have experimented for more than half a century with a variety of exotic timber trees, especially conifers and herbaceous plants. The arboretum is said to be the largest in Britain; it is believed that there is a proposal to make Benmore, in time, the national botanic garden of Scotland. A memorial to the late Sir Isaac Bayley Balfour, of the University of Edinburgh, and King's Botanist in Scotland, has been under preparation in Puck's Glen. A rest house is being erected, which will be formally opened to the public on the occasion of the visit to Benmore of the British Association at the Glasgow meeting in September next.

AN appeal is being made for contributions towards the fund to supplement the money which the Trustees of the British Museum have been able, out of the

moneys supplied by Parliament, to provide for the exploration of the deposits in Tanganyika Territory and other parts of East Africa containing the fossil remains of dinosaurs. The Trustees have been able to maintain an expedition for four years, but now find themselves compelled to close it down on Dec. 31, unless the present appeal meets with substantial success. A beginning was made in 1924 with the collection of specimens at Tendaguru, under the leadership of Mr. W. E. Cutler. He was accompanied by Mr. L. S. B. Leakey, who had to return to England the following November in order to resume his studies at Cambridge. At his own request, Mr. Cutler continued the work alone, and unhappily contracted malaria from which he died on Aug. 30, 1925. The work was carried on by Mr. F. W. H. Migeod with the assistance of Major T. Deacon until the close of 1926, when they returned to England. Early in 1927, Dr. John Parkinson was appointed leader, and he left for Tendaguru accompanied by Major Deacon. During the rainy season in Tanganyika, Dr. Parkinson visited various sites in Kenya. He has, unfortunately, contracted amoebiasis and has to return to England for treatment. Major Deacon has been left in charge of the operations at Tendaguru. As the result of the expedition upwards of 500 cases of specimens have reached the Museum, but there has not been time to work out many of the specimens or even to unpack them all. The fund for which the appeal is now made is under the management of Lord Rothschild, Mr. C. Tate Regan, Dr. W. D. Lang, and Dr. G. F. Herbert Smith (honorary secretary), to whom contributions should be sent at the British Museum (Natural History), South Kensington, S.W.7.

THE following elections to Beit Memorial Fellowships for medical research have been made, the place of research being given in brackets:—*Senior Fellowships* (£700 per annum): Fourth year fellows elected to Senior Fellowships: Dr. A. S. Parkes (Department of Physiology and Biochemistry, University College, London), on the proportion of the sexes; Dr. Honor Bridget Fell (partly in laboratories on the Continent and in the United States), for experimental studies on the differentiation and dedifferentiation of animal tissues.—*Junior Fellowships* (£400 per annum): Dr. J. H. Quastel (The Biochemical Laboratory, University of Cambridge), for (1) extension of work on the chemistry of bacteria, with special reference (a) to pathogenic bacteria, (b) to the correlation of variations in antigenic properties of bacteria by changes in environment; (2) a revision and extension of work on the chemistry of complement fixation, attempting to define the nature of the complement of blood. Dr. P. W. Clutterbuck (The Lister Institute of Preventive Medicine), for the continuation of investigations of the nature and function of the succinoxidase system of muscle; investigation of the enzymic systems concerned in carbohydrate metabolism (a) by variation of the conditions, (b) by separation of the enzymes by means of adsorption and similar methods, (c) by isolation and examination of final and intermediate products. Mr. B. H. C. Matthews (Physiological Laboratory, Cambridge), to study (a) conduction in

sensory nerve fibres, with special reference to specific 'pain' fibres; (b) the characteristics of sensory end organs by observations on action potential recorded by means of an oscillograph system invented and made by himself. Mr. D. R. McCullagh (Sir William Dunn Institute of Biochemistry, University of Cambridge), for studies in carbohydrate metabolism, with the view of discovering the nature, distribution, and physiological significance of this factor and its effects on the alcoholic and lactic fermentations of glucose by the unicellular organisms, and to study the variations in the fat content of muscle under various conditions. Dr. W. R. Aykroyd (Lister Institute; also in Newfoundland, by personal investigations among settlements and inquiries among doctors), for an inquiry into deficiency diseases and their relation to diet, to investigate social and other factors which may account for the relative immunity of women and children to beri-beri in Newfoundland, to see if infantile beri-beri exists there, and to determine the relation to diet and vitamins of functional stomach disorders widespread among Newfoundlanders.

MRS. WALCOTT has given to the National Academy of Sciences, Washington, the sum of 5000 dollars to provide an honorarium and medal in memory of her husband, the late Dr. Charles Doolittle Walcott. The award is to be made every five years from 1932 onwards to a person of any nationality of either sex, between the ages of twenty-one and forty-eight years, who shall be deemed to have published important contributions to knowledge of Precambrian life. If there appears to be no worthy candidate at any period, the fund shall accumulate to be given at the next award. The selection of recipients will be made by five trustees, of whom two are to be members of the National Academy of Sciences, the third will be the Secretary of the Smithsonian Institution, and the others will represent the Institute of France and the Royal Society of London respectively. Geologists will welcome this valuable encouragement to the continuation of the important researches of the late Dr. Walcott, to whom we owe the greater part of our knowledge of Precambrian life.

A DISCOVERY of considerable interest, announced in the *New York Times* of July 5, has been made by the McCracken-Stoll expedition to the Aleutian Isles. At the top of almost unscalable cliffs, which it took five hours' hard climbing to reach, the party discovered a burial containing the bodies, with funerary furniture, of three adults and one child which, owing to climatic conditions, had been perfectly preserved. They were in a wooden vault fashioned of well-shaped and mortised drift logs fastened together by bone nails. The vault was lined with well-cured otter skins. All the bodies were wrapped, but one, evidently that of a person of importance, was more elaborately covered than the others, in tanned sea otter skins over a shirt of bird skins, with a cere-cloth of skins, and a further covering of artistically woven grass fabric. Over all was sea lion intestine sewn with animal sinew. The upright method of interment, the situation, and the possible high antiquity of the remains, make this a

find of considerable interest to ethnologists. It may indeed be, as Dr. Clark Wissler is said to have suggested, a vestige of a migration of Mongoloids, hitherto untraced. For discussion of this and other questions of moment we must await a further and expert examination of the remains.

THE international and dominion delegates to the International Conference on Cancer, numbering 110 and representing eighteen foreign countries and six British Dominions, were received by the King at Buckingham Palace on Monday, July 16. In replying to the address presented by Sir John Bland-Sutton, past president of the Royal College of Surgeons and president of the Conference, His Majesty welcomed the delegates and said: "This large and distinguished assembly is a happy omen for the final success of the Campaign, for they will have opportunity of looking from every angle at this great and complex problem, of contributing to the general knowledge any light upon the subject gained by individual experience and of discussing and comparing the various practical methods for combating the disease. In struggling against so powerful and insidious an enemy, there is need for the most efficient staff work and the closest co-operation between all arms of our forces." Several members of the Grand Council of the British Empire Cancer Campaign, which convened the Conference, were also received by the King. The remainder of the week was devoted mainly to the discussion and examination of scientific and technical work on causes and cure of cancer.

THE annual report of the British Institute of Philosophical Studies has just been issued in connexion with the third annual general meeting held on July 16 under the presidency of the Earl of Balfour. The chairman of the Council, Prof. L. T. Hobhouse, in a foreword on the policy of the Institute, describes how special attention has been paid during the past year to the question of making the Institute a link between philosophic specialists and the general public. He maintains that a reasonable statement of the problems at issue and their implications is to be attempted, rather than a popular exposition of any one philosophical research. By way of illustration, he mentions the problem of induction, and he shows how it concerns everyone interested in science and everyone who accepts scientific authority. Reference is also made to the still deeper issue of perception and our relation to a reality external to ourselves. Prof. Hobhouse believes that, in its ideal, philosophy is synthetic, and that the constructions of physics, as of other sciences, should be integral to its fullest development. The members of the Council are very representative of those who are acknowledged authorities in various fields, and we welcome the work that the Institute is undertaking with regard to the relation of philosophy to modern thought and research. The membership roll now stands at about 1730, and during the past year 331 new members have been enrolled.

THE second session of the Institute of Chemistry of the American Chemical Society is being held at Evanston, Illinois, on July 23-Aug. 18. The pro-

gramme includes a long list of interesting addresses and discussions, and the names of the speakers are such as to offer promise of valuable first-hand information. Thus, to mention but a few examples, Dr. Gustav Egloff will discuss oil emulsions; Dr. C. L. Gabriel, vice-president of the Commercial Solvents Corporation, will discuss the large-scale fermentation process for producing acetone and butyl alcohol; Dr. H. E. Howe will consider "Chemistry in the New Competition"; and Dr. J. G. Lipman will discuss the influence of elements other than nitrogen, phosphorus, potassium, and calcium in plant nutrition. Of special interest is a series of lectures by Mr. Lloyd Van Doren on the rôle of patents in the industrial system, and the drafting of specifications and claims. Dr. C. E. K. Mees will give an illustrated lecture on the photographic image, Prof. H. N. Holmes will deliver a course of lectures on colloid chemistry, whilst Dr. H. A. Curtis will speak on the world nitrogen situation. Prof. B. S. Hopkins will direct a course of lectures on the methods of teaching and the content of elementary chemistry courses, and will in addition deliver a series of addresses on the discovery of the elements. Sir James Irvine will also take an active part in the proceedings. Between seventy and eighty scientific workers, prominent in one or other of the many branches of academic or industrial chemistry, are contributing their services, so that the success of the meetings should be unquestionably assured. The Institute held its first session last summer at the State College, Pennsylvania.

THE Physical Society held a provincial meeting in Bristol on Saturday, July 7, at the invitation of Prof. A. M. Tyndall. This took place in the new Henry Herbert Wills Physical Laboratory, and was attended by more than a hundred physicists from all parts of the country. The papers read at the meeting consisted of accounts of research work which is now being carried out at Bristol on the mobility of ions, magnetic properties of crystals, X-ray analysis of fatty acids, distribution of photo electrons from a nickel crystal, developments of statistical mechanics, etc. At the conclusion of the meeting the visitors had an opportunity, which was greatly appreciated, of inspecting the laboratory and witnessing various demonstrations which had been referred to in the papers. Prior to the meeting, the party was conducted to the Suspension Bridge, the Downs, Shirehampton, and the Avon Gorge; they also visited the main University buildings in Queen's Road. The president of the Society, Dr. W. H. Eccles, in thanking Prof. Tyndall, and through him the authorities of the University, for their courtesy and hospitality, referred to the gifts of the Wills family to the University. He expressed the opinion that the new buildings constitute one of the most striking contributions of industry to learning in the history of Great Britain.

A NATIONAL conference on maternity and infant welfare was held at the Guildhall, London, on July 4-6, under the auspices of the Central Council for Infant and Child Welfare. A long session was devoted to

discussions on maternal mortality, one of the saddest causes of death, which has shown little diminution, and averages in Great Britain some 5 deaths of mothers per 1000 births. In some European countries, notably Holland and Sweden, it is much less, being less than 3 per 1000. There was a general consensus of opinion that a reduction of maternal mortality might be obtained by better training of nurse-midwives, and by more efficient antenatal supervision of expectant mothers, with provision of panels of obstetric specialists for the help of practitioners in complicated cases. Prof. Beckwith Whitehouse, of Birmingham, referred to the low maternal mortality rate of 1.3 per 1000 births attained by the Queen's nurses in nearly 56,000 cases during 1927, obtained, he believed, by good training of the midwives, antenatal supervision, and surgical cleanliness. Dr. Eardley Holland, of London, said that in Sweden, where the maternal mortality is 2.5, the medical curriculum lasts nine years and the students receive four months' residential training in midwifery, and the midwives two years' training in a maternity hospital.

THE result of the ballot for officers for the year 1928-29 of the Institution of Electrical Engineers is as follows: *President*, Lieut.-Col. K. Edgecombe; *Vice-presidents*, Mr. P. V. Hunter, Dr. A. H. Railing; *Hon. Treasurer*, Lieut.-Col. F. A. Cortez Leigh.

RECENT appointments to the scientific and technical departments made by the Secretary of State for the Colonies include Mr. A. S. Walford, to be agriculturist, Jeanes School, Kenya Colony, and Mr. H. Earnshaw, to be schoolmaster, Agricultural School, Nigeria. Mr. M. T. Dawe, who has for some years been Commissioner of Lands and Forests, Sierra Leone, has been appointed Director of Agriculture, Cyprus.

DR. G. T. BENNETT, Emmanuel College, Cambridge, writing with reference to the letter entitled "Square Roots and the Decimal System" in NATURE of July 7, p. 15, states that the square-root and cube-root formulæ given by Mr. C. E. Wolff are only special cases of Newton's rule for approximating to any root of any equation.

ARISING out of Sir J. A. Ewing's James Forrest lecture entitled "A Century of Inventions," published in NATURE of June 16, p. 947, and the subsequent correspondence (July 14, p. 56), Mr. E. Wyndham Hulme writes stating that the first work which mentions the steam engine on its title-page is D'Acre's "The Elements of Water-Drawing . . . with a philosophical discourse, and a new discovery of drawing water out of great deeps by fier." London [1660]. Sm. 4to. There were two issues of this work, probably in the same year.

APPLICATIONS are invited by the Secretaries of the Royal Society for the Mackinnon and Moseley research studentships, each tenable for two years, with a possible extension, and each of the annual value of £300. The Mackinnon studentship is awarded for the purpose of furthering natural and physical science,

including geology and astronomy, and original research and investigation in pathology. The Moseley studentship is awarded for the furtherance of experimental research in pathology, physics, and chemistry, or other branches of science, but not in pure mathematics, astronomy, or any branch of science which aims merely at describing, cataloguing, or systematising. Forms of application, which must be returned by Oct. 8, are to be had from the Assistant Secretary of the Royal Society, Burlington House, W.1.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—A graduate assistant to teach in the Junior Technical School, and senior course evening classes of the Technical College, Barrow-in-Furness—The Director of Education, Town Hall, Barrow-in-Furness (July 23). A graduate assistant master, with special qualifications in electrical engineering, to take electrical and mechanical engineering subjects, and some mathematics, at the Dartford Technical College—The Principal, Technical College, Dartford, Kent (July 25). An assistant lecturer and demonstrator in mechanical engineering in the Faculty of Engineering of the University of Bristol—The Registrar, Merchant Venturers' Technical College, Bristol (July 26). A graduate assistant master for geography at the Smethwick Junior Technical School—The Director

of Education, Education Offices, 215 High Street, Smethwick (Aug. 4). An assistant lecturer and demonstrator in botany at the University College of South Wales and Monmouthshire—The Registrar, University College, Cardiff (Aug. 4). An assistant lecturer in the Department of Electrical Engineering of the University of Birmingham—The Secretary, University, Birmingham (Aug. 11). A lecturer in physics at Auckland University College, New Zealand—The High Commissioner for New Zealand, 415 Strand, W.C.2 (Sept. 15); The Registrar, Auckland University College, New Zealand (Nov. 1). The Alfred Jones professorship of tropical medicine in the University of Liverpool—The Registrar, University, Liverpool (Oct. 1). A lecturer in agricultural chemistry and an advisory entomologist, in the University of Reading—The Registrar, University, Reading. An entomologist for service in India—"India," c/o Richardson and Co., 26 King Street, St. James's, S.W.1. A principal of the Chadacre Agricultural Institute, near Bury St. Edmunds, Suffolk—The Earl of Iveagh, 11 St. James's Square, S.W.1. A senior mathematical master at the Cheadle Hulme School, Cheshire—The Headmaster, Cheadle Hulme School, Cheshire. An aeronautical examiner, Air Ministry, Kidbrooke—The Secretary (I.G.), Air Ministry, Kingsway, W.C.2.

Our Astronomical Column.

MERCURY A MORNING STAR.—Mercury will reach its greatest westerly elongation on July 21 (distance from the sun 20°). During the last ten days of July the planet may possibly be glimpsed near the west-north-west horizon at about $3^h 30^m$ A.M. The elongation is not a very favourable one, as it does not allow Mercury to remain above the horizon longer than about $1^h 35^m$ before the sun rises. The twilight is always very strong at this season of the year, but the planet may be glimpsed on very clear mornings of the period stated by anyone who has fairly good sight and looks in the correct direction. On July 29 the planet's brightness will be equal to -0.5 mag., which is about the same as Procyon, though not so great as that of Vega, Arcturus, or Capella. The disc of Mercury is so small that its light usually fluctuates or 'twinkles' like a fixed star, and this effect is enhanced by the unsteady vapours floating about at the low altitude in which the planet is always observed.

MAGNETIC STORM AND AURORA.—A magnetic storm, accompanied by a display of the aurora borealis, took place during the night of July 7 and morning of July 8. The magnetic disturbance reached a maximum between 1^h and 2^h on July 8, at the time when the aurora was seen at Greenwich to be at its greatest intensity. The range in declination registered at the Greenwich magnetic station at Abinger exceeded 80° , and this range occurred between 1^h and 2^h on July 8. About this time also, the horizontal force and vertical force traces went off the recording sheets. The ranges of these two elements exceeded 500γ during the storm. This magnetic storm is probably the largest recorded at Greenwich since that of May 13-17, 1921—it is certainly the largest since that of Oct. 15-16, 1926.

At the time of this recent storm there was a moderate-sized group of sunspots just past the sun's central meridian. Possibly spectroscopic observa-

tions which may have been made of this group will show it to have been unusual. There was a much larger group on the disc at the time, but this was a considerable distance east of the central meridian. The sun's general activity shown by spots has been increasing during the last few weeks.

A GENERAL CATALOGUE OF STELLAR PARALLAXES.—Prof. F. Schlesinger, who is recognised as one of the leading authorities on the determination of parallaxes by photography, has brought out a useful general catalogue of the parallaxes of 1870 objects, being all for which good determinations were to hand at the end of 1924. The probable errors of the results of various observatories have been rediscussed, and are in general somewhat larger than those given by the observatories themselves. Weighted means were formed, these being the quantities given in the catalogue, but individual values for many stars are given in the notes. There are 23 stars with parallax greater than $0.2''$, and 61 with parallax between $0.1''$ and $0.2''$. The former is probably not far short of the actual number, but the latter must be very incomplete, since we should expect it to be seven times the former. The adopted value for Betelgeuse is $0.017'' \pm 0.004''$; that for Arcturus is $0.080'' \pm 0.005''$; that for Nova Persei (1901) $0.011'' \pm 0.003''$, the trigonometrical value being practically the same as that deduced from the light-time of the illumination of the surrounding nebula. The reduction from relative to absolute parallax has been applied to the printed values, except in a few cases, mentioned in the notes. The reduction was made by the formulæ in Groningen Publications. The parallaxes of Cepheids and clusters are included in the catalogue; they are easily picked out, since they extend beyond the third decimal, and are preceded by a string of zeros. Proper motions are given (total amount and position angle), except for the Cepheids and other remote objects.