

the Differential Equations of Mathematical Physics" recently published by the Russian Academy of Sciences in two volumes. The complete list of his scientific papers contains about 120 items. These papers are published mostly in French, in the *Memoirs of the Russian Academy of Sciences*, the *Annales de l'École Normale Supérieure*, the *Annales de l'Académie de Toulouse*, and others.

As a lecturer Steklov was widely known while he was professor in the higher branches of theoretical mechanics and mathematics, first at Kharkov and then at St. Petersburg (now Leningrad).

Steklov was elected a member of the Russian Academy of Sciences in 1910, and in 1919 became vice-president of the Academy. The task of the vice-president was at that time a most difficult one. The vice-president is responsible for all the administrative work of the Academy and of its numerous institutions; he has to control the yearly expenditure and to superintend the proper use of the funds. Steklov proved to be just as able an administrator as a man of science: with open mind, sound judgment and firm hand, he steered the Academy safely through the hardships of the years 1919-22.

A. KRILOFF.

WE regret to announce the following deaths:

Miss Gertrude Bell, oriental secretary to the High Commissioner of the Iraq, Baghdad, since 1920, and distinguished for her travels in and knowledge of the peoples of Arabia, on July 11.

Mr. A. G. Charleton, past president of the Institution of Mining and Metallurgy, and author of numerous works on ore-mining and treatment, on July 7, aged sixty-eight years.

Mr. W. Temple Franks, C.B., lately H.M. Comptroller-General of Patents, Designs, and Trade Marks, on July 4, aged sixty-three years.

Mr. F. Harrison Glew, M.B.E., a pioneer in the utilisation of radium and its salts for the preparation of luminous paint and other purposes, on July 10, aged sixty-eight years.

Sir Peter Scott Lang, emeritus professor of mathematics in the United College at the University of St. Andrews, on July 5, aged seventy-five years.

Dr. George R. Lyman, dean of the West Virginia College of Agriculture at Morgantown and previously pathologist in the Bureau of Plant Industry at Washington, D.C., on June 7, aged fifty-five years.

Rev. T. R. R. Stebbing, F.R.S., the distinguished naturalist and worker on Crustacea, on July 8, aged ninety-one years.

News and Views.

ON July 7, in the presence of a large and representative gathering in a spacious marquee, Mr. Neville Chamberlain laid the foundation stone of the new London School of Hygiene and Tropical Medicine, the result of a gift of 2,000,000 dollars from the trustees of the Rockefeller Foundation. The chairman of the Board of Management, Sir Alfred Mond, in introducing Mr. Neville Chamberlain, reviewed the steps which had led to the foundation of the School. He pointed out that the former Chancellor of the Exchequer, Sir Robert Horne, had recognised the great importance of such an institution and had agreed that the British Government should make itself responsible for its maintenance. As a result of representations made by Mr. Neville Chamberlain to the present Chancellor of the Exchequer the building was being expedited, a grant of 5000*l.* per annum being made by the University Grants Committee and one of 4000*l.* per annum from the Rockefeller trustees for immediate developments. He was able to announce that though Sir Cooper Perry is retiring from the post of Principal Officer of the University of London, his services are being retained on the Board of Management of the School, of which he has consented to be vice-chairman. Mr. Ormsby-Gore, Under-Secretary for the Colonies, in a most lucid and convincing manner, spoke of his recent experiences on a tour of the colonies and his conviction that hygiene and sanitation are the most vital of all the problems connected with the future development of the vast territories under the charge of Great Britain. The importance of a school like that being founded in London could not be overestimated.

MR. NEVILLE CHAMBERLAIN said that the building, the foundation stone of which he was to lay, was a result of co-operation between the two great English-

speaking nations. It had been noted that the teaching of public health in London is carried on in a number of separate institutions, and it was realised that its concentration in one school would undoubtedly conduce to greater efficiency in teaching and research work. It was further realised that public health is not only necessary in the British Isles, but is of even greater importance in the tropical possessions of Great Britain. It was this fact which led to the incorporation of the London School of Tropical Medicine, founded in 1899 by Mr. Joseph Chamberlain. The new School would deal with hygiene in its widest applications, and before it lies a future in which it would not only be of national but also of imperial and even world-wide importance. It is probably destined to be famous as the greatest centre in the world for research and instruction on one of the most beneficent of all the activities of the human race. Reviewing the departments of the new School, Mr. Chamberlain said these would comprise: (1) Physiology; (2) chemistry and bio-chemistry; (3) bacteriology and immunology; (4) epidemiology and vital statistics; (5) medical biology; (6) sanitary science and public health in general. The School would be fitted with the latest types of apparatus and equipment, and would develop a great teaching museum in graphic form, intended not only for the student of hygiene but also for those of the general public who would care to visit it. With this programme before it there is every prospect that post-graduate students would gather from all parts of the world, and there can be little question that men and women will receive the best possible instruction in the methods of disease prevention. After the foundation stone had been laid Dr. Andrew Balfour, Director of the School, presented Mr. Neville Chamberlain and Mr. Ormsby-Gore with seals as mementoes of the

important occasion, the success of which they had so ably ensured.

At 29 Great Pulteney Street, Bath, a corporation committee, under the chairmanship of Mr. T. Sturge Cotterell, has erected the forty-second mural tablet in commemoration of distinguished people definitely connected with the city. This last one states that "In this house William Smith, the Father of English Geology, dictated 'The Order of the Strata,' December 11th, 1799." The house was that of the Rev. Joseph Townsend, and it was the Rev. Benjamin Richardson who held the pen. This, the first written statement of Smith's ideas, was distributed in many copies to geologists at home and abroad. The tablet was unveiled on July 10 by the president of the Geological Society of London, Dr. F. A. Bather, in the presence of the mayor and a company that included many leading geologists. The chief guests were entertained to lunch at the Guildhall by the mayor (Mr. Cedric Chivers) and mayoress (Madame Sarah Grand), after which a meeting at the Royal Literary and Scientific Institution was addressed by Dr. Bather.

DR. BATHER showed in his address how the conclusions of William Smith flowed naturally from his surveying work in the neighbourhood of Bath, and how the society of the city afforded a fertile field for their reception. Smith's leading ideas, a revelation to his contemporaries, formed the starting-point and the necessary foundation of all tectonic and all historical geology; they have been the only sure guide in the great industries of coal-mining and oil-getting; and they alone have afforded the proofs without which evolution would have remained an ineffective dream. Prof. W. B. Scott, of Princeton, emphasised some of these thoughts by reminding the company that Hutton himself had not conceived the possibility of an historical geology, and that among those who failed to understand the principles of William Smith even Herbert Spencer could be reckoned. Among other speakers were Profs. S. H. Reynolds and H. L. Hawkins, and the chairman, Mr. P. E. Martineau, who is doing so much to revive the geological museum of the Institution.

MATHEMATICIANS usually look to the British Association only to satisfy their curiosity as to progress in other subjects than their own, but for this year's meeting at Oxford an attempt is being made to provide a broad platform for expression among themselves. On three mornings Section A will divide, mathematics separating from astronomy and physics, and several speakers have undertaken to describe in terms intelligible to mathematicians generally, not merely to experts in one branch or another, recent lines of advance and outstanding problems that are being attacked in mathematics itself. Subjects are found in mathematical logic and in rational dynamics as well as in the central regions of analysis, and every problem is to be expounded by some one who is at work upon it. It rests with the mathematicians of Great Britain, amateur as well as professional, from the schools as well as from the universities, to prove by their attendance that an effort to give in simple

language some idea of the present vitality of mathematics appeals to a genuine interest. Only a fraction of the possible subjects can be touched at one meeting, and if this year's experiment is successful, the British Association will have discovered a function which can be continued beyond the circle surrounding its present origin and may even be found to be regular almost everywhere.

THE interesting lecture given by Mr. C. F. Elwell on May 5 to the Royal Society of Arts on the past, present, and future of radio is published in the June number of the Society's journal. He divides the subject into radio telegraphy, telephony, and miscellaneous applications. He points out that it is possible to talk to ships at sea by an ordinary subscriber's telephone. Such relaying of wire line telephony has even been done after the speech has been transmitted 5500 miles. The rapid progress of broadcasting is due to the demand for it. There are already two million receiving sets in use in Great Britain, and five million in the United States. There is a field for the transmission of speech by radio over electric light wires and transmission lines. Considerable progress has already been made in this direction in Italy, Germany, and the United States. It will do much to relieve the overcrowded ether. The three-electrode valve has already cheapened the cost and considerably extended the field of telephony. A few years ago, conductors weighing 150 lb. per mile were necessary for long-distance transmission. Better speech is now possible over greater distances with conductors of only one-fifth the weight. Considering that millions of miles of telephone circuits are in existence and that extensive developments are in progress, the value of the copper that is being saved is very large. A picture of a cheque has been sent across the Atlantic by radio and has been honoured within an hour of its receipt. It is possible that picture films may be sent by radio. In the art of television notable progress is being made by J. L. Baird, and developments may be expected. Many problems in connexion with the prevention of collisions at sea and between aeroplanes in the air still remain to be solved. A solution of one of these problems would probably also be applicable to the other. Even in competition with submarine telegraphy, radio is making progress. Radio telegraphy carries 30 per cent of the message traffic across the Atlantic.

ACCORDING to a telegram of July 6 from The Hague (printed in the *Times* for July 7), another serious earthquake since June 28 has occurred on the west coast of Sumatra, but the date is not given. The epicentre is said to lie between Fort de Kock and Solok—that is, some miles to the north or north-east of Padang. The brick houses that withstood the earlier shock were destroyed and the number of lives lost is placed at 400. The recent shocks occurred in a district lying many miles to the north-west of that visited by the great earthquake of June 12, 1893, but in a part of the island disturbed from time to time by destructive earthquakes, one of the most important being that of May 17, 1892. This latter

earthquake is of interest, as it was the earliest in which crust-movements were measured by a repeated triangulation of the district. Prof. H. F. Reid, from a study of the displacements (*Bull. Seis. Soc. Amer.*, vol. 3, 1913, pp. 72-79), infers that the movements took place horizontally along a N.N.W.—S.S.E. fault 150 or 200 km. in length, the west side moving to the N.N.W. and the east side to the S.S.E., the total relative slip being 3.5 or 4 metres. The movements, both in nature and amount, bear a close resemblance to those which took place along the San Andreas fault at the time of the Californian earthquake of 1906.

REPLYING to a question in the House of Commons on July 12, Mr. Ormsby-Gore, Under-Secretary for the Colonies, said that arrangements have been made by the Department of Scientific and Industrial Research for communicating regularly published and other information as to the work done under its auspices to Dominion Government research organisations, to the principal unofficial research centres, and to the Governments of India and the Colonies. In return, valuable information is being received by the Department from the oversea parts of the Empire. Similar arrangements for the exchange of information on agricultural research are in force; and it is proposed that a conference on the subject of inter-Imperial co-operation in agricultural research shall be held in the autumn of 1927. Invitations to this conference were issued last year to the Governments of the Dominions, Colonies, and Protectorates.

A MEMORIAL tablet has been placed in the Dominion Archives building, Ottawa, in memory of sixteen members of the Canadian Arctic Expedition, 1913-18, who perished during the expedition in widely separated sections of the Arctic. In addition to the inscription "in memory of those who perished, Canadian Arctic Expedition, 1913-18," and the names in alphabetical order with the ranking of each, there is an inscription at the foot of the tablet: "for Canada and for Science—pour la patrie et pour la science." Of the five members of the scientific staff who are thus commemorated, one is a Canadian, son of the late Dr. A. E. Malloch, of Hamilton, Ontario, and a member of the Geological Survey of Canada. Henri Beuchat, anthropologist, was a distinguished writer on American archæology and ethnology from Paris. Bjarne Mamen, topographer of Oslo, Norway, had served on the Norwegian-Spitsbergen Expedition before taking part in the Canadian expedition. James Murray, oceanographer, and Alister Forbes Mackay, surgeon, were from Scotland, and had been with Shackleton in the Antarctic. Peter Bernard, master of the *Mary Sachs*, a native of Prince Edward Island, lost his life, as did Charles Thompson, seaman, while crossing Banks Island in the winter of 1916-17. André Norem, Daniel Wallace Blue and John Jones were buried on the north coast of Alaska, Baillie Island and Victoria Island, N.W.T. After the sinking of the *D. G. S. Karluk*, north of Siberia, in January 1914, four men were lost attempting to reach Wrangel Island over the sea ice: James Murray, Alister Forbes Mackay, Henri Beuchat, and a seaman, Stanley

Morris. Another party of four, led by First Mate Alexander Anderson, consisting of Charles Barker, John Brady and Edmund Golightly, seamen, succeeded in reaching Herald Island, but their fate was not known until a whaling vessel calling at the island in 1924 discovered the relics of the party on the beach. George Breddy, seaman, died on Wrangel Island, as the result of an accidental gunshot wound, and George Malloch and Bjarne Mamen, perished from scurvy at Rodger's Harbour, Wrangel Island, in May 1914.

SIR J. C. BOSE, of Calcutta, has been giving lectures and demonstrations recently in Great Britain on plant stimulus and response. This is a subject to which he has devoted his energies for many years, and he has devised various delicate instruments for magnifying the minute responses of the plant to stimuli. Plant physiologists have not hastened to take up the use of such instruments, which would surely by their delicacy yield interesting results in the hands of any skilled experimenter. There is still much to learn about plant response, and Sir Jagadis has done useful work in directing attention to the delicacy of the plant as a responding mechanism. In a recent lecture at the Royal Society of Arts he referred to the sensitiveness of the plant to ether vibrations, not only to visible light but also to the ultra-violet and to octaves of long invisible waves. He also referred to the death spasm accompanied by an electric discharge, which he believes to take place when the plant dies but before it begins to droop and wither.

THE memory of Benjamin Harrison and his life-long devotion to archæology, and particularly to the study of the evidence of man's earliest handiwork in the form of stone implements, will be appropriately preserved as a result of the efforts of the promoters of the "Benjamin Harrison Memorial Fund." On Saturday last, July 10, a tablet to his memory was unveiled in Ightham Church, and as part of the memorial ceremony the title-deeds of the Coldrum Stone Circle at Trottscliffe, Kent, which has been purchased out of the contributions to the Fund, were handed over to the National Trust. Admirers of Benjamin Harrison, who are many, will be gratified that the preservation of this most interesting relic of early man should be assured, and that it should be associated with the memory of one of the most devoted of the pioneers in archæological studies in England.

A LETTER from Lord Onslow appears in the July issue of *Man*, putting forward a plea for the preservation of specimens of ethnographical interest in Great Britain at present in private hands. It is pointed out that the nineteenth century being primarily a century of settlement, as opposed to the two preceding centuries which constituted the age of discovery, it was pre-eminently the century of the collector, and there must remain in private hands a large number of ethnographical objects which were acquired before their use among primitive peoples had been superseded by articles of European manufacture. If immediate steps are taken, it should be possible to preserve a large number of objects of great ethno-

graphical and historic value, and in many cases to record their history and provenance. The Council of the Royal Anthropological Institute has appointed a committee to explore the possibilities of the situation. Lord Onslow has consented to act as chairman of the Committee.

We are glad to know that it is proposed to establish a memorial to the late Mr. F. S. Spiers, secretary of the Faraday Society and of the Institute of Physics, to remind future generations of his valuable services to science and human welfare. It is suggested that a memorial lecture, to be paid for out of the interest on the fund subscribed, shall be instituted under the auspices of the Faraday Society. A committee to promote this appeal has been formed, with Sir William Bragg as chairman, and the sum of about 130*l.* has already been subscribed. We are sure that many who have been associated with Mr. Spiers in scientific meetings and the preparation of papers and reports will desire to add to this sum. Contributions should be sent to the assistant honorary secretary, Miss M. Parsons, of the Faraday Society and the Institute of Physics, at 90 Great Russell Street, W.C.1. Cheques should be made payable to Prof. A. W. Porter and crossed "F. S. Spiers Memorial Fund A/c."

ARRANGEMENTS are being made by the Regional Survey Association to hold a meeting at Richmond, Yorkshire, on September 1-10 next. The district, which is rich in historical associations and natural beauty, will be studied from as many points of view as possible—physical, geographical, historical and social. Lectures will be given by specialists in these subjects, and these will be supplemented by practical work and observational excursions in the neighbourhood. The latter will cover Barnard Castle, Muker and Keld, Leyburn in Wensleydale and Catterick Bridge, localities which will afford exceptionally favourable fields for research. Full particulars may be obtained from the Secretary, Leplay House, Belgrave Road, London, S.W.1.

THE report on the Health of the Army for the Year 1924 has recently been issued (London: H.M. Stationery Office, 1926. 3*s.* 6*d.* net). Efforts have been made to expedite issue, with the result that this report appears within about four months of its predecessor. A melancholy interest attaches to it, for it is signed by the late Sir William B. Leishman, Director-General, A.M.S. The improvement in the health of the troops, noted in previous reports, was maintained during 1924, with the exception that the admission ratio shows a fractional increase over 1924, due to influenza. Tonsillitis again caused a large number of admissions to hospital, and middle ear disease heads the list of diseases causing the greatest loss of men through invaliding. Interesting details are given both of the medical measures and equipment employed in the army in the treatment of disease and of the hygienic and other measures now taken to prevent disease and to improve the lot of the soldier.

THE technical programme has now been issued of the sectional meeting of the World Power Conference,

to be held at Basle on August 31-September 8 in the halls of the International Exhibition for Navigation and Utilisation of Hydraulic Power. Five broad subjects of discussion have been arranged: (a) utilisation of water power and inland navigation, (b) exchange of electrical energy between countries, (c) relation between the hydraulic and thermal methods of generating electricity, (d) electricity in agriculture, (e) railway electrification. At the conclusion of the meeting, an official tour of Switzerland will be made, lasting from September 9 until September 12. Communications for the British National Committee should be addressed to the Secretary, World Power Conference, 36 Kingsway, London, W.C.2.

ON May 30, Dr. Truman Michelson, of the Bureau of American Ethnology, left Washington for the reservation of the Fox Indians at Tama, Iowa, where he will study the ritual of the religious ceremonies which are held in the spring and autumn. He will afterwards proceed to Wyoming to study the language of the Arapaho, which appears to be a widely divergent derivative of Algonquin. This is the fifteenth consecutive season that Dr. Michelson has spent among the Fox Indians, from whom he has collected a large amount of anthropological material. Some of this material appears in the latest volume published by the Bureau of American Ethnology, but the greater part awaits publication owing to the lack of funds. This is the more to be regretted as the Fox are a reticent people with an interesting history—they contributed materially to the loss of Canada by the French to the British by breaking up the trade route from Louisiana to Canada—and although they suffered some admixture with European blood in the early days of American colonisation, they have since stubbornly maintained their racial purity.

AN announcement has been issued of the fifth competition, for 1926, for the Patxot prize, which was instituted in 1922, primarily to stimulate research in Catalonia in the physical sciences and mathematics, by M. Raphaël Patxot i Jubert. The prize for 1926 will be 5000 pesetas (present value about 160*l.*), and the jury of award will consist of two specialists and the founder of the prize, who retains rights of publication. Competing works should be addressed to Rue de la Cucurulla, 1 et 3, Barcelona, and must be received by December 31, 1927. They may be in Catalan, any Latin tongue, or English, and the subject is the meteorology of the western Mediterranean, and more especially of the Catalan coast. One competition for 1924 (10,000 pesetas) for a documented monograph relating to the history of the physical sciences or mathematics in Catalonia in the Middle Ages, closes on December 31, 1928. Another prize for 1924 was not awarded, although three memoirs on physiographic studies of Catalonia were entered, for which minor awards were given. The prize for 1925 (5000 pesetas), which closes on December 31, 1926, is for a monograph in Catalan on atmospheric physics applied to Catalonia.

UPON its title page the *Journal of the Royal Agricultural Society of England* bears the Society's distinctive motto "Practice with Science." In view of the latter epithet it is entitled to notice here. Under the heading "Special Articles" there are in vol. 86 eight papers, of which many of the authors bear well-known names either in 'Practice' or 'Science.' The most arresting contribution is one on the "Use of the Dynamometer in Soil Cultivation Studies" by Dr. Keen, of Rothamsted. This gives a summary of the novel results obtained by the use, for the first time, of an instrument of real precision in measuring the draft of tillage implements, the unexpected result being that draft does not necessarily increase *pro rata* (even in linear dimensions) with speed. In regard to tillage problems, however, one may be permitted to suggest (as Wren Hoskyns believed almost a century ago) that the future of economical tillage lies with a rotary implement rather than with the plough, designed, as the latter is, to suit the slow-moving ox or horse. The Oxford Research Institute in Economics contributes a timely article on the sugar-beet position. For the first time in the rather turgid literature on this subject, attention is directed to the fact that the introduction of this crop on any extensive scale necessarily contracts, in a serious degree, the provision of animal food, and consequently raises questions of fundamental economic importance to British farming, dependent as this is, to a pre-eminent degree, on animal husbandry. The Society has recently established a Research Committee, but judging by its present report its title should be, with greater justice, the Field Investigation Committee; for it is almost wholly concerned with interesting and valuable practical trials in such subjects as green manuring, lucerne growing, malting barley trials, grassland improvement, and so forth.

PROF. A. F. VON EISELSBERG, professor of surgery in the University of Vienna, has been awarded the Lister medal, given by the Royal College of Surgeons of England, for distinguished contributions to surgical science.

THE Council of the National Institute of Agricultural Botany has awarded the Snell Memorial Medal for the year 1925 to Dr. R. N. Salaman. The medal is given annually to mark distinguished work in the sphere of potato husbandry, and has been awarded to Dr. Salaman in recognition of his eminent services in the study of the problems connected with the breeding and the diseases of potatoes. The medal will be presented to Dr. Salaman at the public inspection of the trials at the Potato Testing Station, Ormskirk, on August 19.

PROF. CARL DIENER, professor of palæontology in the University of Vienna, has been elected a foreign member of the Geological Society. The following have been elected foreign associates of the Society: Dr. A. L. Day, of the Geophysical Laboratory, Washington, D.C.; Prof. Otto Jækel, professor of geology and palæontology in the University of Greifswald; Prof. Maximin Lohest, professor of geology and physical geography in the University of

Liège; and Prof. Pierre Pruvost, professor of geology and applied mineralogy in the University of Lille.

THE Vienna Academy of Sciences has elected as honorary member Dr. Ernst Fuchs, emeritus professor of ophthalmology in the University of Vienna, and the following as foreign corresponding members: Prof. G. H. Hardy of Oxford, Dr. C. V. L. Charlier of Lund, Dr. S. Ramon y Cajal of Madrid, Dr. O. Richter of Brünn. Prizes have been awarded to Dr. A. Franke for his work on the formation and transformation of glycols, and to Dr. G. Stetter for his work on the determination of the masses of atomic fragments. The prize offered at the instigation of Dr. Hans Vaihinger, president of the Philosophical Society "As-if," for an essay on "Fictions in Mathematics" has been awarded to Dr. C. Betsch of Kannstatt, and Dr. M. Draeger of Chemnitz has been highly commended.

THE publication of the *British Journal of Experimental Biology* has been undertaken by the Cambridge University Press. It is the organ of the Society for Experimental Biology, but contributions are accepted from other than members of that body. It is edited by Mr. J. Gray, with the assistance of Dr. F. A. E. Crew and others.

MESSRS. Dulau and Co., Ltd., 34 Margaret Street, W.1, have just issued a useful catalogue (No. 143) of some 1200 second-hand books on phytopathology and horticulture. It is conveniently arranged under the headings: phyto-pathology, fungi, mosses and hepatics, lichens, diatoms and desmids, algæ and plankton, ferns and lycopods, cryptogamia, botany, floras, gardening, herbals, etc.; and agriculture and economic botany.

ANOTHER of Messrs. H. Sotheran and Co.'s well-known catalogues has just reached us. Its number is 800 (or "Catalogue of Science and Technology," No. III, Part vii.: x. and xi.), and in it are particulars of nearly 4000 second-hand works on chemistry and chemical technology. The classification is as carefully carried out as in earlier parts of the catalogue, and there are the valuable bibliographic details and comments which one looks for in this publication which is of the greatest usefulness to collectors and librarians of scientific publications. Applications for the catalogue should be made to Messrs. H. Sotheran and Co., 140 Strand, W.C.2.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—An assistant lecturer in the Education Department of the University of Leeds with, preferably, qualifications and experience in teaching science or geography—The Registrar (July 19). A demonstrator in mathematics at the Royal College of Science, and a demonstrator in mathematics at the City and Guilds (Engineering) College—The Secretary, Imperial College of Science and Technology, South Kensington, S.W. 7 (July 26). An assistant librarian at the University College of North Wales, Bangor—The Registrar (July 26). A lecturer in physical chemistry in University College, Dundee—The Secretary and Registrar, The Uni-

versity, St. Andrews (August 16). A lecturer in zoology at Armstrong College, Newcastle-upon-Tyne—The Registrar (August 28). A principal of the University College of North Wales, Bangor—The Registrar (October 1). A chief science mistress at the County School for Girls, Beckenham; or a temporary post until Christmas and a permanent post in September or January—The Head Mistress (marked 'Science Post'). Directors of propaganda for calcium cyanamide in India and in Ceylon respectively—The Director of Propaganda for Calcium Cyanamide, Adelaide House, King William Street, E.C.4. An assistant entomologist under the Empire Cotton

Growing Corporation for work on cotton pests in the Union of South Africa—The Secretary, Empire Cotton Growing Corporation, 2 Wood Street, Westminster, S.W.1. An assistant master at Soham Grammar School to take charge of practical instruction in Nature study, horticulture, and the elements of agricultural science—The Secretary for Education, County Hall, Cambridge.

ERRATUM.—In the issue of July 10, p. 64, col. 1, line 21 of paragraph on "Silver Iodide in Gelatin Iodo-bromide Emulsions": for "440 mm." read "440 μ ."

Our Astronomical Column.

FINLAY'S COMET.—Mr. S. Hasunuma, of Tokyo, who has calculated the perturbations of Finlay's comet (*Astr. Nach.* 5453), finds that they delay the perihelion passage until August 7, which is some six weeks later than the approximate value assumed in the B.A.A. Handbook. The effect is to bring the comet into a more favourable position for observation, so that its detection this summer is now quite probable. The following ephemeris for 0^h is based on perihelion August 3^o.

	R.A.	N. Decl.
July 18.	3 ^h 37 ^m	13° 48'
„ 26.	3 40.9	16 38
Aug. 3.	4 16.9	18 56

A change of +4 days in perihelion date diminishes the R.A. by about 10^m and the Decl. by about 90'. The comet must be looked for low in the east just before dawn.

THE COMING PERSEIDS.—The earlier meteors of this famous shower have been perceptible since the opening of July, and it is very interesting to trace the development of the display and the motion of its radiant from night to night through the constellations of Andromeda and Perseus.

This year should provide a shower of more than usually prominent character, for the moon will be new on August 8 and practically invisible at the period of the maximum.

The radiant moves E.S.E. in a line corresponding to 39° north of the ecliptic, and its positions on four dates in July, August, and September are as follow :

	Star near
July 15 . . . 15° + 47°	Psi Andromedæ.
August 1 . . . 31° + 52°	10° N. Gamma Andromedæ.
August 15 . . . 49° + 57½°	8½° N. Alpha Persei.
September 1 . . . 69° + 61½°	2° W. Beta Camelopardalis.

New observations should be applied to test the accuracy of these approximate positions. The Perseids usually leave streaks, and these are occasionally very enduring in the case of the brighter meteors, so that their directions of flight may be recorded with considerable fidelity.

Some hundreds of the Perseids have had their real paths computed, and there seems little necessity for further data of this sort except on nights near the commencement or end of the display, when double observations will give good and certain radiants. It will be interesting, however, to learn more of the minor contemporary showers. Observers, in comparing one year's results with others, should make such allowances as appear to be required respecting the weather, moonlight, etc. The hours of observation are also important as greatly affecting the

altitude of the radiant and the number of meteors distributed.

THE SIMEIS OBSERVATORY REFLECTING TELESCOPE.—The report of the Pulkovo Observatory for 1925 has been published. The most important work done during this year is considered to be the erecting of the 40 inch (1 metre) reflecting telescope at the Simeis Observatory in the Crimea, which is affiliated to the Pulkovo Observatory. The reflector was made at the works of Sir Howard Grubb and Sons, Ltd., and a brief description of it is to be found in NATURE of April 12, 1924 (vol. 113, p. 550).

In the report some interesting details are given relating to the erection of the instrument. The masonry was started on June 6, 1925, and at the beginning of November the mechanical parts of the revolving dome were so far ready that the erection of the reflector could be proceeded with. Finally the large mirror was inserted in its case with great precautions, and was fixed to the tube.

By the end of the year the reflector was mounted, with the exception of the clock-work. Movement of the instrument by hand is easy, although the total weight is 6½ tons. The mechanical parts of the instrument work perfectly, the construction being the highest type of technical achievement.

The programme of research being dependent on the quality of the mirror, a preliminary laboratory test was made during the summer months by Hartmann's method at the centre of curvature of the mirror. The conditions during the test were purposely chosen far from favourable and approximated closely to the average conditions in the dome. Quite apart from the mounting, it is very important to have a thorough knowledge of the shape of the mirror. A series of independent photographs were taken on different days and were examined, in order to get an idea of the mirror's shape. The following details are noteworthy. The results of measurements of different photographs taken on the same day give very nearly the same results. The zonal aberration is exceedingly small, of the same order as the errors of measurement. The average departure in different zones is about 0.03 mm. The accuracy of the configuration of the mirror (departure from a paraboloid) is of the order of 1/10 of a wave-length. According to Hartmann's classification, the mirror may be considered as "hervorragend gut" (exceedingly good). The results of the analysis leave no doubt that the mirror has a perfect shape, and in comparison with data published for other big mirrors it certainly ranks among the best.

Research with such an excellent instrument on both the mechanical and the optical sides is expected to give good results in the various interesting problems for which the instrument is intended to be used.