

New Zealand in London to act as a liaison between the Department of Scientific and Industrial Research and the new department in the Dominion.

The universities, the New Zealand Institute, and the Cawthron Research Institute all find places in the scheme, as well as the Department of Industry and Commerce. The Advisory Council is to be constituted much as in the Commonwealth, with this important exception, namely, that in view of the smaller distances to be travelled in New Zealand as compared with Australia, the meetings of the council are to be held monthly, the executive being left in the hands of the secretary of the council, a well-trained man of science, Dr. E. Marsden, until recently assistant director of education, formerly a fellow of the University of

Manchester and professor of physics at Victoria College, University of New Zealand. A bill to give statutory effect to the above recommendation has recently been carried by the New Zealand House of Representatives.

Thus, in New Zealand, as in Australia, in the future application of science to the development of industry, the watchword is 'team-work,' as for the nations around the Pacific who meet triennially in the Pan-Pacific Science Congress, no less than for the League of Nations. For any work worth the doing the first essential is to find the man, and surely in the selected teams of Australia, and in the leader of the New Zealand Councils for Scientific and Industrial Research, the men have been found.

### News and Views.

THE preliminary programme of the third Pan-Pacific Science Congress, which is to be held at Tokyo from Saturday, October 30, until Thursday, November 11, contains a provisional scheme and time-table of the work of the congress, a list of the excursions which have been arranged, lists of sailings, and other matter useful to those who propose to attend the meeting or to contribute to its proceedings. His Imperial Highness Prince Kotohito of Kan-in has consented to act as patron, and H.E. the Prime Minister of Japan will be president of the congress. There is a long and distinguished list of honorary vice-presidents, which includes the diplomatic representatives of the chief Powers, a number of the Japanese Ministers of State, and heads of universities. The arrangements for the meetings have been in the hands of an organising committee appointed by the Japanese National Research Council, under the auspices of which the congress is held. A change has been made in the organisation of the meeting itself to promote solidarity of feeling and action. There is no doubt that the change will also greatly facilitate the conduct of business in a congress covering so wide a field. The different branches of science have been classified into two broad divisions, the physical sciences and the biological sciences, instead of into sections and sub-sections for each branch of science as in previous congresses. Divisional meetings and joint divisional meetings will take the place of the sectional meetings. At these, discussions will take place between allied branches of science on subjects of more or less common interest, in other words on border-line problems. Sectional meetings will continue to be held, but taking quite a subordinate place—for the contributions of a special nature which from their scope are unsuitable for discussion at a divisional meeting.

THE character of the discussions at the congress must, to a great extent, depend upon the number and nature of the communications offered, but the organising committee has drawn up a provisional list of subjects. In the joint divisional meetings it is proposed to hold a symposium on certain plans for international co-operation in the study of the more important scientific problems of the Pacific, and,

secondly, to survey the present state of knowledge of the physical and biological oceanography of the Pacific. The subjects suggested for divisional or sectional discussion cover a wide range in all branches of science, from astronomy to economic geography, agriculture, and medicine, in all cases with special reference to the Pacific. It is noticeable that there is a considerable bias in favour of topics which have a practical application. In the physical section meteorology, earthquakes, and the study of volcanoes take a prominent place. In the biological sciences the fauna and flora of the Pacific are to be discussed in relation to distribution, as well as from the practical point of view of protection, and, where appropriate, in relation to economic development. Anthropology is well represented in the discussion of the antiquity of man in the Pacific, the anthropometry of races of the Pacific, the study of Ainu, Papuans, and pygmies, the culture of the East Indies in relation to the question of 'diffusion,' and the relation of food, clothing, and houses to climate. A series of excursions has been arranged to suit the special interests of members of the congress extending from October 18 until November 19, which will include visits to Aizu villages, the famous shrine and temple at Nikko, Hakone volcano, Fuji, coal and copper mines, hot springs, cretaceous, tertiary, pliocene, and other geological formations in various localities, the old Imperial Palace and the University at Kyoto, as well as other places of importance for the study of the fauna and flora or the commercial and industrial activities of Japan. After the official excursions are over, facilities will be afforded for a longer stay if desired.

PROF. R. RUGGLES GATES, who has just returned to London after a visit to Russia, gives us some interesting information as to the position of some scientific work and institutions there. In the course of his letter he says that much valuable work is being done in the various plant-breeding stations which he visited. These included Tammisto, near Helsingfors, Finland, as well as Khibiny in Russian Lapland, north of the Arctic circle, which is devoted chiefly to the production of northern vegetables and oats for fodder; Peterhof and Desto Selo, near

Leningrad, where extensive genetical, biometric, cytological, and physiological investigations are being carried on, especially with cereals, under the direction of Profs. Philiptschenko, Vavilov, and Levitsky, and Drs. Pissarev and Karpetschenko; Petrovsky-Razoumovsky, where extensive experiments, particularly with oat-breeding, are being made by Dr. Schegalov; and Saratov, where the greatest interest attaches to a series of unique wheat-rye hybrids of Prof. Meister, and where Dr. Plachek is improving the varieties of sunflowers, which are extensively grown as a crop in Southern Russia.

IN Moscow, the Institute of Experimental Biology is one of several laboratories under the direction of Prof. Koltzoff, in which a great range of genetical and cytological as well as other experimental work in animal biology is being done. The genetical section is in charge of Prof. Tschetverikoff. Much eugenical work is also being done in Moscow and Leningrad, especially in the collection of pedigrees, and a *Russian Journal of Eugenics* is edited by Profs. Koltzoff, Liublinsky and Philiptschenko. The Timiriazev Institute in Moscow, under the direction of Prof. Navashin, is chiefly devoted to research in plant cytology and genetics. Prof. Gates also visited the Botanical Gardens in Leningrad, Tiflis, and Batoum, the chief interest of the Tiflis garden being its large collection of Caucasus plants. A study was made of the tundra vegetation in the far north and the steppe region in Southern Russia and the Caucasus. While in Moscow Prof. Gates was present at the opening of a small museum of Metchnikoff relics in the Institute of Experimental Pathology. Madame Metchnikoff came from Paris for the occasion.

CONSIDERABLE interest has been aroused among archaeologists by discoveries at Glozel, on the right bank of a rivulet called Le Vareille, about twenty miles south-east of Vichy, of which little had been heard in England until attention was directed to them by Prof. S. Reinach in a letter to the *Times* of September 27, in which he referred to their bearing upon the date of the Magdalenian culture. The excavations, which began in 1924 and were carried out by Dr. Morlet, assisted by a young peasant Émile Fradin, yielded last summer a curious combination of objects in association which is at least puzzling. The objects were of stone, bone, and more or less baked clay, without a particle of metal or Celtic or Roman pottery. They consisted of (1) a few polished axes and small flints (there is no flint in the neighbourhood); (2) very thick hand-made vases, one of them decorated with a human head (eyes and nose but no mouth), a fiddle-shaped figurine representing a woman, without a mouth and recalling the so-called owl-vases of Troy; (3) pebbles engraved with outlines of animals or inscriptions or both, in the most degraded Magdalenian style; (4) a large number of clay tablets covered with inscriptions, some long and well engraved. Of these inscriptions some are described as being like the Phœnician, but the greater number are quite different.

INSCRIPTIONS from so remote a period are not known if we except some of Piette's earlier painted pebbles

from the Mas d'Azil and a few (apparent) graffiti on reindeer horn. The only similar inscriptions of anything like so early a date were found in Portugal in 1894; but these aroused some suspicion and have not been universally accepted. Prof. Reinach, to whom we are indebted for these details of the find, is of the opinion that we have here a religious deposit of early neolithic age associated with a degenerate Magdalenian culture which is thus brought down so late as 4000-3000 B.C., he holds that it points to the western origin of writing. Prof. Elliot Smith, in his presidential address to the Anthropological Society of University College, London, on October 15, referred to this curious association in one deposit of neolithic objects with Cretan affinities, Magdalenian objects, and a linear script. He suggested that if the neolithic phase did not begin in western Europe until the second millennium B.C., there was nothing inherently improbable in the association; but it necessitated cutting off one millennium from the dating on Prof. Reinach's view, that the close of the Magdalenian period might have been so late as 3000 B.C. Further, if the Ægean origin of the pottery was admitted, the claim for the western origin of writing was unjustifiable.

AT the Imperial College, South Kensington, on October 13, Dr. W. H. Keesom, professor of physics and director of the Cryogenic Laboratory in the University of Leyden, described the experiments by which he succeeded in solidifying helium in June and July last. The methods of refrigeration employed by the late Dr. Kamerlingh Onnes made it possible to attain a temperature of less than one degree above the absolute zero, and by applying great pressure at this temperature, Dr. Keesom found it possible to reduce helium to the solid state. Under the most favourable conditions a pressure of the order of 100 atmospheres was sufficient for the purpose. In the earliest experiments, in which the use of much higher pressures was contemplated, the solidification took place in a German silver tube, and was demonstrated by the indications of a differential manometer showing that the tubes had become blocked. In later experiments a glass vessel was employed, so that the solid helium could be seen. It was not distinguishable from the liquid to the eye, having apparently the same refractive index and density, but the existence of the solid was proved by the fact that a metal stirrer immersed in the substance became fixed. By means of a simple device for melting the helium in immediate contact with the stirrer, the latter was released, and could be hammered against the unmelted solid a short distance away. A curve of melting-point against pressure was drawn, and it was found that, unlike the corresponding curve for other substances, it did not meet the vapour pressure curve, and there was therefore no triple point. By extrapolation the melting-point curve was shown to become parallel to the axis of temperature at the absolute zero, in accordance with Nernst's heat theorem.

RECENTLY the International Education Board, founded by Mr. John D. Rockefeller in 1923, made an offer of 30,000*l.* towards the cost of erection,

equipment, and endowment of new premises for the Department of Animal Breeding in the University of Edinburgh, on condition that a similar sum was obtained in Britain. It was announced by the Principal of the University, Sir Alfred Ewing, on Thursday last that Lord Woolavington had given a sum of 10,000*l.* towards the endowment of a chair of animal breeding in the University, and that the Development Commission would make a substantial grant, so that the condition laid down by the International Education Board might now be regarded as fulfilled.

THE Board of Agriculture first suggested in 1913 that research in animal breeding should be undertaken in Edinburgh, and a joint committee, representative of the University and the College of Agriculture, was appointed to consider the matter in conjunction with the Board and the Development Commission. The organisation of the work was interrupted by the outbreak of the War, but was resumed in 1919, and towards the end of 1920 the Department of Animal Breeding was established with Dr. F. A. E. Crew as director. It was first housed in the immediate neighbourhood of the Old College, but for the last two years has occupied laboratories in the new Department of Chemistry at West Mains, adjacent to which ten acres of pasture belonging to the University have been made available. The financial arrangements now announced will enable the Department to be provided with premises specially equipped for work on animal breeding, and as a site at West Mains is available, it is anticipated that the building of the new Department will soon be undertaken.

AT a meeting of the Society for the Study of Inebriety on October 12, Dr. J. D. Rolleston read a paper on alcoholism in classical antiquity in which he stated that, in view of the fact that the scientific study of inebriety dates only from the middle of the nineteenth century, very little is to be gleaned from contemporary medical writers as to the prevalence and effects of alcoholism in ancient Greece and Rome. The main sources of information are the poets, especially the gnomic writers and satirists, philosophers, moralists, and encyclopædists such as Pliny the elder and Athenæus. Though there is some indication of the existence of chronic alcoholism, as is shown by passages in Pliny and Seneca, alcoholism in classical antiquity was mainly of a convivial character, and industrial alcoholism, apart from that associated with prostitution, was unknown. Dr. Rolleston quoted numerous passages from the classical writers dealing with the dysgenic influence of alcohol and other evil effects of drink on the community and the individual, especially the relation of inebriety to insanity, crime and poverty, and the measures, often of a fanciful character, recommended by the ancients for the prevention and treatment of drunkenness. In conclusion, Dr. Rolleston pointed out that the alcoholism of classical antiquity differed from that of to-day by its predominance among the upper classes, the lack of legislative control, the absence of distilled liquors and the non-existence of syphilis, which is now

often contracted as the result of alcoholic indulgence and runs a severe course in alcoholic subjects.

THE Innwerk Aluminium Co. has built an electric power station at Töging in Germany in order to utilise the various falls on the river Inn. It is the largest hydro-electric power station in Germany. It is estimated that the annual average output will be 465 million kilowatt-hours. A description of the equipment of this station appears in the July number of *AEG Progress*. A peculiarity of the scheme is that no provision is made for storage. The hydraulic energy is immediately converted into electrical energy. There is never waste due to water flowing uselessly over the weir. The amount of power available is so large that it cannot always be utilised for power and lighting. At the time the station was built it was doubtful whether it would be more economical to manufacture aluminium or nitrogen. Hence the electrical equipment was designed so that either direct current or alternating current could be obtained. At the Töging station there are 15 nine-thousand horse-power turbines. The first eight of these machines drive three-phase generators, whilst the other seven drive direct current dynamos, the output of which is used for the manufacture of aluminium, the furnace rooms for which are near the station. The alternating current is carried on overhead wires at 100 kilovolts pressure to the Hart carbide factory, which is ten miles away. Special precautions have been taken to prevent the pole wheel from bursting should a turbine 'run away.' They are made of steel cast in one piece, and two rings of Siemens Martin steel are shrunk on to them. The strength of this steel is 78,000 lb. per square inch.

THE fiftieth annual meeting of the Conchological Society of Great Britain and Ireland was held at the City Museum at Leeds on October 16 under the presidency of Mr. J. W. Taylor, the doyen of the Society. There was a large gathering of members, and a number of delegates from related societies attended with messages of congratulation and good wishes. The president in his address dealt with the evolution of the Mollusca, and there were various exhibits of interest, including the Stubbs Collection which has been recently acquired by the Museum. The Society was founded in Leeds fifty years ago within a few days by Messrs. W. Nelson, W. D. Roebuck, H. Crowther, and J. W. Taylor, and the last two were happily present at the jubilee, which was appropriately celebrated at Leeds, though the Society has had its headquarters at the Manchester Museum for some years past. Mr. Hugh Watson, of Cambridge, was elected president for the ensuing year.

THE newly-created Society of British Foresters held its inaugural meeting during the recent meeting of the British Association at Oxford. The object of this Society is to help in the technical development of forestry in Great Britain. Forestry is coming more and more into prominence, and it is felt that the time has now arrived for the establishment of an

association of those engaged in it and in allied sciences. A journal will be published, and this will provide a place for the publication of the results of forestry investigation and practice in Great Britain, and for the dissemination of results obtained elsewhere. The officers of the Society are: *President*, Mr. R. L. Robinson; *Vice-President*, Prof. R. S. Troup; *Members of Council*, Mr. C. O. Hanson, Major F. M. Oliphant, Mr. R. S. Pearson, Mr. Frank Scott, Mr. J. D. Sutherland, Dr. Malcolm Wilson; *Editor of Journal*, Dr. H. M. Steven; *Business Editor*, Mr. J. Lyford Pike; *Secretary and Treasurer*, Mr. R. Angus Galloway, 8 Rutland Square, Edinburgh.

THE following courses of lectures have been arranged at the Royal Institution during November and December. The Tyndall Lectures will be delivered by Dr. G. W. C. Kaye, who will commence a course of three lectures on the acoustics of public buildings on Tuesday, November 2, at 5.15; and on Tuesday, November 23, Sir William Bragg begins a course of four lectures on the imperfect crystallisation of common things. On Thursday afternoons, beginning on November 4, there will be two lectures by Sir Edgeworth David on Antarctic exploration of the past and future; three by Dr. R. R. Marett on the archaeology of the Channel Islands; and two by Sir Squire Sprigge on (1) early medical literature and (2) medical literature in relation to journalism. On Saturday afternoons, November 27 and December 4, at three o'clock, Dr. G. C. Simpson will give two lectures on atmospheric electricity. The Juvenile Lectures this year, the hundred and first course, will be delivered by Prof. A. V. Hill on nerves and muscles, how we move and feel: (1) Nerves and the messages they carry (Dec. 28); (2) muscles and how they move (Dec. 30); (3) the heart and some other muscles (Jan. 1); (4) the lungs and blood (Jan. 4); (5) nerves and muscles working together (Jan. 6); (6) speed, strength, and endurance (Jan. 8).

THE ninth annual Streatfeild Memorial Lecture will be delivered by Mr. F. C. Robinson at the Institute of Chemistry on Friday, November 19, at 8 P.M. His subject will be "The Chemist in the Non-Ferrous Metallurgical Refinery," and Prof. G. G. Henderson, president of the Institute of Chemistry, will take the chair. Tickets of admission are obtainable on application to the Registrar, Institute of Chemistry, 30 Russell Square, London, W.C.1. Frederick William Streatfeild was on the staff of the City and Guilds Technical College, Finsbury, from its foundation until his death in March 1918, as a teacher of applied chemistry. He won the esteem and affection of several generations of Finsbury students, who established a fund for the provision of an annual memorial lecture to mark their appreciation of his work and worth. Previous Streatfeild Memorial lecturers have been: Sir William Pope (1918), Prof. G. T. Morgan (1919), J. H. Coste (1920), W. P. Dreaper (1921), Prof. C. H. Desch (1922), E. M. Hawkins (1923), Julian L. Baker (1924), and Francis H. Carr (1925). On the closing of Finsbury Technical College, the administration of the Fund and the

arrangements of the lecture were entrusted to the Institute of Chemistry.

FARADAY House Testing Laboratories, Southampton Row, London, W.C.1, have issued a scale of fees for testing mechanical, electrical, and chemical materials, instruments, and machinery. Arrangements are also made for the loan of instruments, workshops, for investigations and reports, and for advice and assistance to inventors.

Two of the best signs of activity and vigour of the optical industry in Great Britain are the number and importance of the scientific papers which are published by optical firms. We have before us a list of fifteen or sixteen publications which have appeared in scientific and technical journals during the last two years from Messrs. Hilger's workshop. Of these, nine were papers read at the recent Optical Convention, two deal with the lens interferometer and its use, two with spectrum analysis and spectrographs, and one with a new measuring micrometer.

WE much regret the appearance of a misprint in Dr. K. R. Ramanathan's letter in NATURE of September 4, p. 337. Observations at Simla referred to near the end show that polarisation for the red reaches values so high as 87 per cent., and not 30 per cent. as printed.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—A lecturer in organic chemistry and an assistant lecturer in geography in the University of Birmingham—The Secretary (October 30). A lecturer in electrical engineering at the Chesterfield Technical College—The Director of Education, S. Mary's Gate, Derby (October 30). A lecturer in agricultural botany at Armstrong College, Newcastle-upon-Tyne—The Registrar (November 6). An assistant lecturer in botany in the University of Birmingham—The Secretary (November 6). A scientific officer for, primarily, research in connexion with electrical ignition appliances at the Royal Aircraft Establishment, South Farnborough—The Chief Superintendent, R.A.E., South Farnborough, Hants (November 10, quoting No. A. 81). A professor of zoology in the University of Birmingham—The Secretary (November 22). An engineer to take charge of the section of wood preservation of the Forest Products Research Laboratory at Princes Risborough—The Secretary, Dept. of Scientific and Industrial Research, 16 Old Queen Street, S.W.1 (December 1). A reader in wireless telegraphy and high-frequency technology at the Indian Institute of Science, Bangalore—Dr. W. H. Eccles, Institution of Electrical Engineers, Savoy Place, W.C.2. A woman B.Sc., biology, physiology, and biochemistry, and preferably physics or mathematics, for work at the Wellcome Physiological Research Laboratories, Beckenham—The Director. An assistant agricultural botanist under the Linen Industry Research Association—The Secretary, Research Institute, Lambeg, Co. Antrim. A head of the physics department of Huddersfield Technical College—The Director of Education, Education Offices, Huddersfield.