

News and Views.

AN extraordinary general assembly of the International Research Council was held at Brussels on Tuesday, June 29. After agreeing unanimously, on the motion of the Executive Committee, to omit from the statutes words which have limited membership to allies and neutrals, the following motion proposed by the president of the Royal Society was passed unanimously. "That this meeting of the extraordinary general assembly of the International Research Council decides to invite Germany, Austria, Hungary and Bulgaria to join the International Research Council and the Unions attached to it and, in doing so, to indicate the institution which will act as adhering body."

THE second reading of the Public Health (Smoke Abatement) Bill was moved in the House of Commons last week by Mr. Chamberlain. So far as it goes, the Bill is a step in the right direction. The provisions of the 1875 Act are amended to include other kinds of smoke besides black smoke; temporary exemption is to be allowed for certain processes for the present; the power of local authorities to regulate the emission of noxious smoke is to be extended. No provision is, however, made for reducing smoke from private dwelling-houses, which in many places are the greatest sinners. While the time may not be ripe for compulsory prevention of smoke from private houses, this does not appear sufficient reason for not making some provision to bring about improvement by encouragement instead of penalty, such as by empowering local authorities to make a rebate on the rates for users of smokeless methods only. In the debate, several speakers referred to the advantage of the open fire—a pleasant radiant heat and plenty of ventilation. If these can be combined with smokelessness it will be the best solution. There is in the Bill no provision for standards of permissible smoke emission, and it is doubtful if much useful result will follow until such are set up. As Mr. Chamberlain admits, it is rather on the administration that we shall have to rely for improvement of the conditions of the atmosphere, a reliance scarcely justified by our past experience. It would give more hope of improvement if the Bill empowered the Minister of Health to fix standards of industrial smoke emission from time to time; but the necessary preliminary must be the finding of a reasonably accurate method of measurement. The natural sequence would then be: (a) Find a suitable method of measuring smoke from chimneys; (b) fixed standards of emission based on (a); (c) enforce such standards legally.

THE Office d'Information scientifique et technique of Paris, the initiation of which was noted in our issue for June 12, has favoured us with copies of two recent news bulletins, which are interesting to compare with similar issues of the allied Science Service in Washington. The French material has been well selected, and is of real scientific interest; the language is plain and the treatment straightforward, but its somewhat educational tone raises a doubt as to

whether the presentation is sufficiently attractive to appeal to editors and readers of the popular Press; it may be, however, that the intellectual standard in France is higher than elsewhere. In the United States and England, it is the practice to attract the reader by one or more glaring headlines, to convey the gist of the information (which should contain news) in a short initial paragraph, and then to proceed with details and embellishment. The French procedure, as displayed in these bulletins, is more logical: the headlines are distinctly sober and lacking in 'pep'; the article begins with an explanatory or historical preamble, and the news is reserved for a later stage. Although this method will be preferred by the student, it is less effective in attracting the lay reader than the more sensational style of approach.

THE 'news' element of the bulletins is not strongly represented in the specimens before us, and in a few cases, for example, the articles on telegraphic reception and the nature of X-rays, the explanations given may convey little to the uninitiated. In about one-half of the items the information comes from the United States, and the remainder from France; when the Service gets better under way one may expect material from other countries to be included. The news appears to have been culled mainly from periodical literature—which must always constitute an important source—but it is to be hoped that first-hand news obtained from research workers and inventors will later become available; in this respect the American Service has been singularly successful. It is of happy augury that the French organisation is starting with high ideals: it will not try to serve both science and mammon; commercial profit is outside its scope and there will be no traffic with the advertiser; and it will preserve a rigid independence of all parties, groups and factions. Its sole aim is the prompt diffusion of scientific and technical knowledge in a way that will neither 'mystify the crowd' nor promote sophistry and error by over-indulgence in 'purple patches.'

WE are glad to direct attention to the letter on p. 10 of this issue referring to the proposed widening of the activities of the Universities' Library for Central Europe. The original letter in NATURE of May 22 relating to the disposal of scientific journals brought responses from scientific institutions, research workers and others, from which it was evident, as we suspected, that although of no commercial value, back numbers of scientific journals and similar publications would be of very real use if they could be distributed in the right quarters. Such a central distributing organisation already exists in the Universities' Library, and we trust that sufficient support will quickly be forthcoming to enable it to undertake the new function which it is now proposing to assume.

THE first number of the *British Journal of Psychological Research*, the editorial address of which is 16 Queens-

berry Place, South Kensington, S.W. 7, merits mention in this column owing to the claim made in a foreword by the editor that one of its objects is "to deal with ascertained facts in a strictly scientific manner." It is a fine ideal to start out with, but one very difficult of attainment, apparently, in this particular subject. The account of the "Model Psychic Laboratory" on pp. 11-20, with photographic illustrations, is the best article in the number. The laboratory in question is the National Laboratory of Psychical Research at Queensberry Place, and the article is very helpful in giving a clear idea of the arrangements and apparatus in use there. We note that future numbers will contain accounts of experiments with a young psychic known as Miss Stella C., whose portrait forms the frontispiece of this number. There is also a very full account of the first case of alleged mediumship which has come up for investigation before the officers of the Laboratory. This is dealt with by Mr. Harry Price under the title of "Pseudopsychic Manifestations due to Self-induced Hysteria." The conclusion that the phenomena were all due to evident hysteria appears to cover quite fully all the facts noted. The same author, in a shorter article entitled "A Plea for Accuracy," makes some very caustic comments on an article by an American investigator, who, in dealing with the problem of so-called psychic photography, makes the remark (in italics) that "*the plates never left my hand until the negative was developed in the dark room,*" but innocently publishes alongside this statement the resulting photograph, showing a "psychic extra" on a photograph of himself in which his hands are clearly visible, and therefore could not have been holding the plate! The editor having thus set a high standard, both of accuracy in his own articles and of very candid criticisms of inaccuracies in those of other journals, we may express the hope that future numbers will worthily uphold his ideals.

THE Australasian Association for the Advancement of Science will hold its eighteenth meeting in Perth, Western Australia, during the week commencing Monday, August 23 next. Owing chiefly to the long and costly journey from other parts of Australasia, no previous meeting of the Association has been held in Perth; consequently Western Australia is making special efforts to secure a good attendance of members from other States and from New Zealand. Private hospitality in Perth during the meeting is being offered to all visiting members. The State Government has granted 1200*l.* towards defraying the cost of printing and publishing, and is giving free transit to visiting members over the W.A. Government Railways, whilst the Australian Commonwealth Government has granted for the Perth meeting the sum of 750*l.*, out of which travelling allowances will be made to members coming by the Transcontinental Railway. As the various countries bordering on the Indian Ocean have many scientific problems in common, the Perth local committee has sent invitations to representative scientific men in those countries to attend the meeting, hoping thus to make

it an informal Indian Ocean Science Congress, and thereby to inaugurate closer intellectual co-operation amongst the Indian Ocean peoples. To anthropologists, botanists, geologists and zoologists, Western Australia offers features which are unique, even for Australia; and a series of excursions has been arranged to enable visitors to study these as well as the economic resources of the State in mining, agriculture, fruit-growing, forestry, etc.

THE retiring president of the Association is Lieutenant-General Sir John Monash, whilst the president-elect is Prof. Edward H. Rennie, of the University of Adelaide, who has chosen as the title of his presidential address "The Chemical Exploitation, Past, Present and Future, of Australian Plants." The chairman of the local committee is the Hon. P. Collier, Premier of Western Australia. The presidents of sections and the titles of their addresses are as follow: *A (Astronomy, Mathematics, and Physics)*, Prof. Kerr Grant, "Atomic Transformation"; *B (Chemistry)*, Prof. James Kenner, "Some Aspects of the Problem of Molecular Structure"; *B 2 (Pharmacy)*, Mr. A. T. S. Sissons, "The Indebtedness of Pharmacy to Organic Chemistry"; *C (Geology and Mineralogy)*, Sir Douglas Mawson, "The Igneous Rocks of South Australia—a brief survey of present knowledge relating thereto"; *D (Zoology)*, Prof. Launcelot Harrison, "The Composition and Origins of the Australian Fauna, with special reference to the Wegener Hypothesis"; *E (Geography and History)*, Prof. Ernest Scott, "The Discoveries of the Western Australian Coast, with especial reference to Dampier and D'Entrecasteaux"; *F (Ethnology and Anthropology)*, Prof. F. Wood Jones, "The Claims of the Australian Aboriginal"; *G (Social and Statistical Science)*, Major L. F. Giblin, "Federation and Finance—an Examination of the Financial Relations of States to a Federal Commonwealth"; *H (Engineering and Architecture)*, Sir John Sulman, "Town Planning"; *I (Sanitary Science and Hygiene)*, Mr. F. S. Hone; *J (Mental Science and Education)*, Mr. P. Board, "Social and Economic Values in Education"; *K (Agriculture and Forestry)*, Mr. C. E. Lane Poole, "Forestry and Land Settlement"; *L (Veterinary Science)*, Prof. J. Douglas Stewart, "The Relationship of Veterinary Science to the Prosperity of the State"; *M (Botany)*, Prof. A. J. Ewart, "Past and Future Development of Botanical Science"; *N (Physiology and Experimental Biology)*, Prof. W. A. Osborne, "The Study of the Reflex." The hon. local secretaries for Western Australia are Mr. A. Gibb Maitland, Geological Survey, Perth, and Prof. N. T. M. Wilsmore, University, Perth, W.A.

At the invitation of the Gas, Light and Coke Company, a large and distinguished scientific audience assembled on June 24 in the Company's offices in Horseferry Road, Westminster, to hear Prof. W. A. Bone lecture on "New Experiments on the Combustion of Carbonic Oxide." The experiments described, and in many cases beautifully reproduced, form part of researches which Prof. Bone and his

collaborators have been carrying out during the past three years at the Imperial College of Science, South Kensington, aided by fellowships given by the Gas, Light and Coke Co. and Radiation, Ltd., and described in detail in recent numbers of the *Proceedings of the Royal Society* (e.g. in the issue for April 1, pp. 615-44, 1926 [A]). The outstanding result of this work is that, contrary to former belief, carbon monoxide will, under suitable conditions, combine with oxygen in the absence of moisture. Mixed in the volumetric ratio of 2 : 1, at atmospheric pressure, these gases ignite with increasing difficulty as they are progressively purified from water vapour, but even after six months' drying over phosphoric oxide, they can be exploded by means of a sufficiently powerful condenser discharge. The union is facilitated by increasing the original pressure of the gaseous mixture, although it appears to reach a limiting value of about 98 per cent.

PROF. BONE stated that spectrograms obtained on exploding carbon monoxide with air, under 25 atmospheres pressure, showed the complete absence of 'steam lines,' thus proving that the presence of steam is not essential to the reaction, although under ordinary conditions it undoubtedly plays an intermediary rôle. High pressure increases the direct oxidation of carbon monoxide, whilst the presence of hydrogen, as in water gas, favours the indirect oxidation. All previous explanations of the mechanism of the combustion of carbon monoxide have assumed the continuous decomposition and regeneration of steam. Prof. Bone's 'ugly' fact destroys this 'beautiful' hypothesis, and although he has no definite substitute to advance, he believes that precedent ionisation of the combining gases is the most probable explanation. A pleasing feature of an excellent lecture was the manner in which Prof. Bone gave credit to his collaborators, Messrs. F. R. Weston, R. P. Fraser, and D. M. Newitt.

AMONG the items which are to be dealt with at the forty-fifth annual meeting of the Society of Chemical Industry in London, a session of outstanding interest will be that on Tuesday, July 20, when a symposium will be held on "Corrosion." In view of the fact that this symposium is a joint meeting of the British Chemical Plant Manufacturers' Association, the Institute of Metals, the Institution of Chemical Engineers and the Chemical Engineering Group, it cannot fail to be of very general interest. British contributions will be described by a group of recognised authorities, including Mr. Ulick R. Evans, who will deal with "The Fundamental Principles of Corrosion," Mr. P. Parrish, who will speak on "Corrosion and Erosion," and Dr. W. H. Hatfield and Messrs. T. G. Elliott and G. B. Willey, who will discuss "Chemically Resistant Steels." Possibly in no branch of metallurgy has there been such great advancement, both during and since the War, as in connexion with the production of resistant steels and acid-resisting irons. Novel methods of manufacture and the alloying of some of the less common metals with iron and steel have produced alloys of a chemical

resistance quite unprecedented, and the steels which are to-day being produced to withstand corrosion are far in advance of the earlier forms of stainless steels, which are chiefly martensitic. The newer corrosion-resisting steels are austenitic, *i.e.* they are softened by quenching from a high temperature, as in the case of manganese steel, whilst the acid-resisting irons have been also greatly improved recently, both from the point of view of homogeneity and toughness, resultant upon careful methods of heat treatment. Another joint meeting on the same date, of the London Section of the Society of Chemical Industry and the Biochemical Society, is on "The Scientific and Industrial Problems presented by the Hormones—the Natural Drugs of the Body," to be opened by Dr. H. H. Dale.

IN his address to the Royal Geographical Society at the anniversary meeting on June 21, Dr. D. G. Hogarth pointed out how mistaken is the impression that no important work in geographical exploration remains to be done. Apart from polar regions, southern Arabia, and central Australia, where large virgin tracts of territory exist, there still remains a great deal to do in many parts of the world in the regions intervening between known and charted routes. For intensive surveys in topography alone there is still a great field, and an even greater one for specialists in various sciences. Dr. Hogarth commented on the ever-present appetite for the sensational which tends to divert public interest and available funds from serious work to spectacular achievements. Each air dash to the Pole probably absorbs the interests, energies, and funds sufficient to furnish a dozen expeditions which would bring a hundred times more copious and valuable returns to geographical science. As a subsidiary aid to land exploration, aircraft have proved valuable; and prolonged flights are no doubt of value in the development of aerial navigation, but they can add little of importance to geographical science. The work that is required to-day is not spectacular, but it is important and varied enough to absorb all the explorers and funds available.

THAT gold exists in sea-water is a well-known fact: that it can be profitably extracted is a belief that has enabled many a company promoter to batten upon a credulous public. This belief has now received another blow. At the annual general meeting of the Verein Deutscher Chemiker, held in Kiel on May 26-30 last, Prof. F. Haber communicated the results of a research which he and Dr. J. Jaenicke have been prosecuting for several years. Whereas earlier investigators found the gold-content of sea-water to be 5-10 mgm. per metric ton, their work on 5000 samples collected from many seas and from different depths has shown that the amount present is far smaller. Water from the South Atlantic contained less than 0.01 mgm. per ton, water from the bay of San Francisco a little more, and samples from the Polar seas four or five times this quantity. Melted ice from the Polar seas was often considerably richer in gold. The form in which the gold occurs in sea-water is not, as

previously supposed, as dissolved aurichloride, but as a mineral slime or as a constituent of the plankton organisms. Its separation is effected quantitatively by adding a minute amount of alkali polysulphide and a trace of copper, and then filtering through fine sand charged with sulphur. This process, however, would not be practicable on an industrial scale. Although there may be localities comparatively rich in gold, the attempt to discover them would resemble the task of hunting for a hypothetical needle in a haystack.

VISITORS to the Natural History Museum at South Kensington should find much to interest them in the greatly augmented series of enlarged models of disease-carrying insects and ticks, which has just been arranged for their benefit in the Central Hall of that institution, and of which a demonstration was given to representatives of the press on the afternoon of June 23. Initiated more than a quarter of a century ago by Sir Ray Lankester, with models of the then best known of the tsetse-flies, and of two typical mosquitos, and somewhat extended in more recent years, the series, with the latest additions, now embraces no fewer than eleven species of insects and three arachnids. The new models among the insects include representations of the internal anatomy of an infected malarial mosquito; the common household mosquito of the tropics, a carrier of the causal agent of Filariasis; the preliminary stages of the yellow fever mosquito; the tiny, midge-like transmitter of sand-fly fever, with its larva and pupa; a small West African horse-fly, which conveys the cause of Calabar swelling; the preliminary stages of one of the tsetse-fly carriers of sleeping sickness; the eggs and mouth-parts of the body-louse; and the preliminary stages and adult female of the tropical rat-flea, the most important carrier of plague. An addition to the models of ticks is a colossal representation of the transmitter of tropical African relapsing fever. Under the supervision of members of the Museum staff, the models have been executed with remarkable skill and attention to detail by Mrs. E. D. Blackman, Miss Grace Edwards, and Mr. A. J. Engel Terzi. Now that the importance of insect-borne disease to the British Empire and the world at large is receiving ever wider recognition on the part of administrators, it is well that the matter should be brought to the notice of the general public. To this end no better means than that afforded by this striking collection of models could possibly have been devised.

ENG.-VICE-ADMIRAL SIR ROBERT B. DIXON, Engineer-in-Chief of the Fleet, has accepted the presidency of the Junior Institution of Engineers for the year 1926-1927 in succession to Mr. J. S. Highfield.

MAJOR-GENERAL SIR MATTHEW H. G. FELL, K.C.B., C.M.G., has been appointed Director-General, Army Medical Services, in succession to the late Lieutenant-General Sir William B. Leishman, K.C.B., K.C.M.G.

PROF. PAUL SABATIER, For. Mem. R. S., of the University of Toulouse, has been awarded the Albert Medal

for 1926 of the Royal Society of Arts, in recognition of his distinguished work in science and of the services to industry rendered by his researches in physics and chemistry, which laid the foundation of important industrial processes.

MR. G. S. W. MARLOW has been released by the Association of British Chemical Manufacturers to devote part of his time to the appointment of secretary and editor of the Faraday Society and secretary of the Institute of Physics, pending the completion of final arrangements for carrying on the official work of these bodies. Mr. Marlow was assistant secretary to the Institute of Chemistry from 1919 until 1925.

AN earthquake of unusual violence and long duration occurred in the eastern Mediterranean at about 10 P.M. on June 26. Much damage to property was caused in Crete, and apparently, to a less extent, in Rhodes. The principal shock, as in so many of its predecessors in south-eastern Europe, was felt over a very wide area, from the Ionian Islands and Greece to Cairo and so far east as Jerusalem. The disturbed area cannot be less than 1200 miles long from north-west to south-west, and about 800 miles wide, the total area being about 750,000 square miles. The epicentre was probably near Crete and between that island and Rhodes.

IN view of the enormous amount of scientific and other special information now available in periodicals and libraries, an association—The Association of Special Libraries and Information Bureaux—was formed to assist in making such information available to all who wish to use it. With the assistance of the Carnegie United Kingdom Trust the Association has undertaken, as one of its first activities, the compilation of a directory of sources of specialised information in Great Britain and Ireland. The general editorship of this work has been entrusted to Mr. G. F. Barwick, formerly Keeper of Printed Books at the British Museum.

PROGRESS is being made towards uniformity in the issue of wireless time signals. We learn that the signal from the Cape is now to be brought into line with the modified Onogo system recommended at the meeting of the International Time Commission in July 1925 and issued from the French stations since the beginning of this year. This signal is emitted from the Slangkop Wireless Station and originates at the Royal Observatory, Cape of Good Hope. The change requires the introduction of a new transmitting apparatus, the cost of which is to be defrayed by the Union Government. Multiplicity in the form of time signals is nothing but a disadvantage, and the change will be a great satisfaction to users of the signal and especially to mariners. It is expected to come into operation early in 1927.

THE Royal Sanitary Institute is celebrating its jubilee by holding an Imperial Congress at the Central Hall, Westminster, on July 5-10, under the presidency of the Minister of Health, the Right Hon. Neville Chamberlain. More than 1000 delegates have been appointed to attend by Government Departments,

including the Ministries of Health of England, Scotland, and Northern Ireland, the Ministry of Agriculture, H.M. Office of Works, the Home Office, War Office, Board of Control, and the Air Ministry. Many foreign governments, and municipal authorities, learned societies, and universities throughout the United Kingdom will also be represented. In connexion with the celebrations a handbook has been prepared recording the history and activities of the Institute, together with special articles dealing with sanitary progress during the fifty years 1876-1926, from the medical, engineering, architectural, parliamentary, legal, public administration, colonial, military, and naval aspects.

THE American Chemical Society, which was founded in 1876, celebrates its fiftieth anniversary in Philadelphia, Pennsylvania, U.S.A., on September 6-11 next. It is anticipated that some 3500 chemists from all parts of the world will be present. The Society will meet in eighteen divisional gatherings, dealing with various branches of pure and applied chemistry. Many of the divisions will hold special symposia of papers and addresses of importance from authorities in their respective fields. In addition, there will be two general meetings of the whole Society. No direct invitations or requests for the appointment of special delegates are being sent out; all non-American chemists are invited to attend and take part in the meeting on the same basis and under the same con-

ditions as members of the Society. Foreign chemists expecting to attend the meeting should, if possible, communicate with Charles L. Parsons, Secretary, Mills Building, Washington, D.C., U.S.A.

THE latest catalogue of Messrs. Heffer and Sons, Ltd., Cambridge, (No. 269) is devoted to second-hand books on physiology, anatomy, medicine, zoology, biology, anthropology, and ethnology. Many of the works listed are from the libraries of the late Sir William Bayliss and Sir Francis Darwin. The publishers offer the catalogue free upon application.

MESSRS. Watts and Co. are about to reissue, in two volumes, Herbert Spencer's "Autobiography," which for some time has been out-of-print. They have also begun a new cheap series of volumes entitled "The Forum." Among future works will be "The Origin of Life," by Sir Edward Sharpey Schafer, and "The Goodness of Gods," by Dr. E. A. Westermarck.

MESSRS. Bernard Quaritch, Ltd., 11 Grafton Street, W.1, have just issued another useful catalogue—No. 400—dealing with some 2000 second-hand works on botany, agriculture, early medicine and surgery, forestry, fruit-culture, gardens and gardening, herbals, modern medicine, and tobacco. It should certainly be seen by all readers interested in these branches of knowledge.

Our Astronomical Column.

THE ATMOSPHERE OF MARS.—In August 1924 Mr. Wright obtained at the Lick Observatory photographs of Mars in ultra-violet, yellow and red light. The former showed a larger image than the others, but gave scarcely any detail on the planet's surface. B. Fessenkoff, of the Moscow Astrophysical Institution, makes some calculations on the subject in *Astr. Nachr.* No. 5450. He concludes that the observed facts are best satisfied by supposing that the upper layers of the planet's atmosphere contain fine dust which is nearly opaque to ultra-violet light, but transparent to red and yellow light. As to the possibility of fine dust at great heights, reference may be made to the Krakatao eruption of 1883. The dust remained suspended in the upper air for more than a year, causing remarkable sunsets all over the world.

THE POLAR COMPRESSION OF URANUS.—An article by C. Wirtz in *Astr. Nach.* No. 5441 gives a new estimate of the oblateness of Uranus by comparison of its brightness at the Uranian equinoxes and solstices. The inclination of the axis is so high that at the solstices, which occurred in 1861 and 1903, the terminator practically coincides with the planet's equator, and the outline appears almost circular; at the equinoxes, which occurred in 1882 and 1924, the poles are on the terminator, the oblateness reaches its maximum and the light a minimum. A discussion of all the available determinations gives the magnitudes as 5.46^m at maximum, 5.67^m at minimum. The light-range is concluded to be between 0.15^m and 0.25^m , from which a compression in the neighbourhood of $\frac{1}{8}$ is deduced. The author concludes that long-continued photometric measures by modern methods would determine the compression more accurately than micrometrical measures of the disc. The range in the values found by the latter method is considerable.

CEPHEID VARIABILITY.—In an article on the δ -Cephei problem, published in the *Atti della Pontificia Accademia delle Scienze (Nuovi Lincei)*, the Rev. J. G. Hagen, S.J., Director of the Vatican Observatory, deprecates the antagonism which has arisen between the two theories which have been advanced to explain the variability of the light emitted by stars of this type. In some papers, especially those in English, the pulsation theory is referred to as the generally accepted theory, while, in a recent publication of the Ottawa Observatory, it is asserted that the ordinary binary theory may almost certainly be definitely ruled out of court. Such statements are scarcely justified in view of the fact that no clear and precise answer has yet been given to the questions: (1) Where does the impulse for the pulsations come from? And, (2) how are the pulsations maintained uniform for centuries? A natural answer is furnished to both of these queries if a δ -Cephei star is regarded as a binary system; the pulsations would then be periodically excited by the approach of the satellite and would last only from one eruption or light maximum to the next. In this way the mathematical theory of pulsations receives the mechanical basis hitherto lacking, and, moreover, the undulations observed in the descending branches of the light curves find their most obvious explanation. On the other hand, no invincible argument against the presence of a satellite has ever been brought forward. So far as analogy with other celestial phenomena is concerned, there is in the entire heavens no well-proven example of periodic changes due solely to the internal forces of a star, especially now that some long-period variables have revealed themselves as binary systems, whilst striking examples of light eruption are provided by comets approaching the sun.