

## Current Topics and Events.

THE Conjoint Board of Scientific Societies was dissolved by a resolution passed at a meeting of the Board held at the Royal Society on March 22. The Royal Society took the initiative in the formation of the Board in 1916; and when a few months ago the council decided that the society no longer desired to remain in this federation, whether under the original constitution, or the new one proposed, there was little hope for the continued vitality of a body so sharply truncated. The chief scientific and technical societies—about sixty in all—in the British Isles were represented on the Board, and the special committees appointed from time to time have produced a number of notable reports. Among such committees may be mentioned those on the water power of the British Empire, glue and other adhesives, national instruction in technical optics, timber for aeroplane construction, and the application of science to agriculture. A couple of years ago the Board appointed a committee to arrange for the publication of a world-list of scientific serials, with indications of libraries in the chief centres of Great Britain where such periodicals could be consulted. It is gratifying to know that the interests of the Board in the list, towards the publication of which the Carnegie United Kingdom Trust made a grant of 1000*l.*, have been vested in three trustees, so that notwithstanding the dissolution of the Board the issue of the list is assured. For this provision thanks are due largely to Dr. P. Chalmers Mitchell. In its early years the Board owed much to Sir Joseph Thomson, who, as president of the Royal Society, was president also of it. Sir Arthur Schuster and Sir Herbert Jackson were associated with the Board throughout its existence, and did invaluable work for it, while the devoted service rendered by the Secretary, Prof. W. W. Watts, created a sense of indebtedness which can never be adequately expressed. It is impossible not to regret that a federation of such early promise should have had so short a life.

SIR FREDERICK MOTT, pathologist to the mental hospitals of the London County Council for twenty-seven years, and director of the Council's pathological laboratory, is retiring from the service at the end of this month. By his own researches and by stimulating and encouraging the spirit of investigation in others, he has brilliantly discharged the difficult task of establishing the tradition that it is the business of the authority having control over asylums for the insane, not only to see to the security and comfort of the inmates, but also to secure that progressive work on the nature and causes of mental diseases shall be directed towards their prevention and cure. His demonstration that general paralysis of the insane is in fact a late manifestation of syphilis in the nervous system is perhaps the most conspicuous piece of his personal work among patients and in the laboratory, and it has entirely altered our conception of the disease. The *Archives of Neurology* and other journals show the quantity of good work which came

from the laboratory at Claybury—the more remarkable when we remember that Sir Frederick was also a busy general physician attached to Charing Cross Hospital. Two of the plans in which he was much interested have now matured in the moving of the central laboratory to a more accessible site in London, and in the establishment of the Maudsley Hospital at Denmark Hill for the study of the early stages of mental derangement. The solid foundation which he has laid should do much to secure success for the new arrangements.

AMONG the important centenaries of scientific interest this year is that of the birth of Sir William Siemens, who was born in Lenthe, Hanover, on April 4, 1823, and died in this country on November 19, 1883. Siemens took up his residence in England in 1844, and from 1859 was a naturalised Englishman. It would be difficult to measure the value of his services to our industries, for he was one of the foremost electrical engineers of his day, while as a metallurgist his name is connected with the introduction of the regenerative furnace and the manufacture of open-hearth steel. His scientific knowledge was no less noteworthy than his inventive ingenuity, while above all he was a man of affairs. The first president of the Society of Telegraph Engineers, he also served as president of the Mechanical Engineers and of the Iron and Steel Institute. It was in his address to the latter body that he threw out the pregnant suggestion of utilising some of the power of the Niagara Falls and transmitting it long distances by electric conductors. In much of his work he was associated with his brothers Werner, Carl, and Friedrich. In the issue of *NATURE* for November 29, 1883, Lord Kelvin gave an account of Siemens's scientific career and work as a contribution to our series of Scientific Worthies.

ON April 7 occurs the centenary of the death of the French physicist Jacques Alexandré Cesar Charles, the pioneer of scientific ballooning. Born in 1746, Charles began life as a clerk in the Ministry of Finance. He devoted his leisure to scientific pursuits and he became known as a lecturer and experimenter. In 1783, a few months after the brothers Montgolfier had made their first experiments with the hot-air balloon, Charles conceived the idea of filling a balloon with hydrogen. His first important demonstration was made in December 1, 1783, when Charles and his companion, Francis Robert, rose from the gardens of the Tuileries to a height of 9000 feet. Charles made his hydrogen by the action of iron on sulphuric acid. To him is due the invention of the valve, the car, the use of ballast, and the employment of rubber for rendering the silken envelope gas-tight. He was also the first to use the barometer in a balloon. Very great interest was excited by the work of Montgolfier and Charles, and Lavoisier was instructed by the Paris Academy of Sciences to draw up a report as to the value of the discovery. Charles was admitted to the Academy

in 1785, received a pension from Louis XVI., and, after the Revolution, occupied a post at the Conservatoire des Arts et Métiers. He is buried in the Pere-Lachaise cemetery.

THANKS to the generosity of the Spanish Government the Science Museum, South Kensington, now possesses a model of the flagship of Columbus, the *Santa Maria*, in which, accompanied by the *Pinta* and *Nina*, he made his famous voyage of discovery in 1492. The model is a copy of one in the Naval Museum, Madrid, and has been made under the supervision of the director, Capt. Don Antonio de la Reyna y Pidal. From time to time many inquiries have been made regarding the details of the *Santa Maria*, and for the Chicago Exhibition of 1893 a replica was constructed and sailed across the Atlantic by a Spanish crew under Capt. Concas, the course followed being that travelled by Columbus. The *Pinta* and *Nina* were small vessels of about 40 or 50 tons, but the *Santa Maria* had a displacement of 233 tons. She was 95 feet long over all, carried a complement of 52 men, and mounted eight guns for firing stone shot. Another of the existing models of the *Santa Maria* is that made by Capt. Terry, who searched Southern Europe for information; this model is illustrated in Chatterton's well-known "Sailing Ships and their Story."

MR. STANLEY BALDWIN, Chancellor of the Exchequer, announced in the House of Commons on March 22 that he had decided to withdraw the proposal to charge fees for admission to the British Museum, Bloomsbury, and the Natural History Museum. The announcement followed a statement by Major Boyd-Carpenter, Parliamentary Secretary to the Ministry of Labour, that the cost of equipping the British Museum and the Natural History Museum with turnstiles for the collection of admission fees had been estimated at £500, and that possibly one extra attendant would be required.

A CONVENTIONAL distinction is often drawn between science and art, but in their finest developments they have much in common. In an address before the Circle of Scientific, Technical, and Trade Journalists on March 20, Prof. Beresford Pite defined the artist as one who found his pleasure in his work—a definition that surely applies equally well to the researcher in pure science. He also pointed out that the full development of architecture requires the stimulus of contact with other countries. The Elizabethan period was one of poverty in architectural effort, though literature flourished, a condition attributed to the isolation of this country from the Continent, owing to religious differences. This again applies to science, for the crippling effect of lack of intercourse with men of science in other countries is well recognised. Perhaps a third point of similarity might be found in his claim that the architect, like the man of science, does much work without prospect of reward. He is not paid for what he "rubs out," neither is the experimenter proportionately rewarded for the many fruitless experiments that usually precede a genuine discovery. In the course of the discussion the Press,

the influence of which in directing public attention to the claims of science has already been invited at previous meetings, was given an opportunity of hearing a masterly lecture on the ideals of architecture.

THE annual meeting of the National Institute of Industrial Psychology was held on March 20 at the rooms of the Royal Society. Mr. H. J. Welch, chairman of the Institute, presided. Lord Balfour was the principal speaker, and he pointed out how mistaken is the idea that science has nothing to do with practical life. As a nation we are too apt to think that science exists for men of science, and that it can have no interest for practical men. He wished to bring together men of science, capitalists, leaders of labour—all the forces of society—in order to further the work of uniting science and practice. By the application of physiology and psychology Lord Balfour expressed the hope that the labours of the wage-earners may be made easier and smoother, so that work, instead of being a kind of torture, may become a pleasure. He quoted Francis Bacon to the effect that the object of science is the relief of man's estate. The next speaker, Sir Charles Sherrington, president of the Royal Society, described the changes which have taken place during his lifetime in the position of psychology. The early pioneers in experimental psychology occupied themselves with problems which seemed quite remote from any practical application; now, many of these early researches are recognised as of far-reaching practical importance. Sir Charles made a special plea for adequate support for, and sympathy with, that part of the work of the Institute which is known as vocational selection. Most boys have no chance whatever of getting into an occupation that suits them best; unguided, they drift into any trade. Both Sir Lynden Macassey and Mr. A. Pugh showed from different points of view that there is more waste in industry owing to indifferent management than to indifferent workmanship. Industrial managers are more equipped, as a rule, for controlling machines than for controlling men. Dr. C. Myers, director of the Institute, gave some details of the actual work of the Institute.

THE Central Mining-Rand Mines premium of 25*l.* has been awarded by the South African Institution of Engineers to Mr. W. J. Horne, organiser of technical education, Transvaal, for his paper on "Technical Education for Trades," read at Johannesburg.

AT the ordinary scientific meeting of the Chemical Society held on March 1, Prof. Bohuslav Brauner, Prof. Ernst Cohen, Prof. Gilbert N. Lewis, Prof. Charles Moureu, Prof. Amé Pictet, and Prof. Theodor Svedberg were elected honorary fellows.

THE King and Queen have consented to lay the foundation-stones of the new buildings for medical research at University College Hospital, London. These buildings, it will be remembered, have been made possible by a munificent gift of 1,250,000*l.* from the Rockefeller Foundation, announced some three years ago. It is probable that the ceremony will take place towards the end of May.

THE annual general meeting of the Society of Chemical Industry will be held at Cambridge on June 21-23. Dr. E. F. Armstrong will deliver his presidential address on the first day of the meeting. On June 22, the Society's medal will be presented to Dr. C. C. Carpenter, and later in the same day Dr. F. W. Aston will deliver an address on "Isotopes." During the early part of the same week, it will be remembered, the International Union of Pure and Applied Chemistry is also meeting at Cambridge.

AT the annual general meeting of the Chemical Society, held on March 22, Sir James Walker, the retiring president, delivered his presidential address entitled "Symbols and Formulæ." The following elections were afterwards declared: Prof. W. P. Wynne as president; Prof. J. F. Thorpe as treasurer; new vice-presidents, Dr. J. T. Hewitt, Prof. G. T. Morgan, Sir William J. Pope, Prof. J. M. Thomson, and Sir James Walker; new members of council, Dr. E. F. Armstrong, Prof. W. N. Haworth, Dr. C. K. Ingold, Dr. H. McCombie, Dr. G. W. Monier-Williams, and Dr. J. Reilly.

IN Great Britain the period of Summer Time will begin this year at 2 A.M., G.M.T., on Sunday, April 22, and will continue until 2 A.M., G.M.T., on Sunday, September 16. In Belgium, Summer Time begins after midnight on March 31. The Paris correspondent of the *Times* states that, in order to meet the opposition to Summer Time from representatives of agriculture in the Chamber of Deputies, the French Government has decided to substitute for it the time of Strasbourg, which is about thirty-five minutes in advance of Greenwich time.

WITH reference to the letter published in *NATURE* of February 17, p. 222, describing a remarkable mirage observed at Cape Wrath on December 5, 1922, a letter has been received from Mr. Albert Tarn of Thornton Heath, who describes a somewhat similar occurrence at Oban in August 1885. Mr. Tarn states that he was sleeping in a bedroom at the back of a house adjoining the Waverley Hotel, so that the room faced inland. During the course of the night he awoke, and on looking out of the window saw what appeared to be a view of Oban Bay with the moon shining on the water. The date is not given, and no observations are available to decide whether the circumstances resembled those at Cape Wrath.

THE report of the National Museum of Wales for 1921-22 announces the completion of the western section of the new building and of the western portion of the entrance-hall. A fumigating chamber has been installed to rid specimens of insects and other pests. Among the many interesting accessions we note a beaker of early Bronze Age type from Glamorganshire, which contained the remains of a child's skull showing symptoms of rickets, the earliest recorded instance of this disease in Great Britain or perhaps in the world. Several thousand specimens of fossil plants most carefully collected from the successive beds in the Coal Measures of

Gilfach Coch and Clydach Vale by Mr. David Davies, and the basis of his recent paper before the Geological Society, have been presented by him and will be preserved in cabinets given for the purpose by local bodies interested in the coal industry.

THE Australian National Research Council has commenced the publication at Sydney of a quarterly journal under the editorship of Dr. A. B. Walkom, which is to give short abstracts of papers written by Australian scientific workers—even when they appear in periodicals not published in Australia. The price of the journal is 4s. per annum. The first four numbers of the journal have already appeared, and extend to 32 pages. The abstracts are arranged in sections according to the branches of science represented on the Research Council, and the 245 which constitute the first year's total are distributed among the sections as follows: agriculture 70, botany 31, chemistry 14, engineering 1, geography 1, geology 18, mathematics 1, mining and metallurgy 0, pathology 13, physics 1, physiology 4, veterinary science 3, zoology 88. Cross references are given so that an abstract of interest in a section other than that in which it appears can readily be found. The distribution of the abstracts among the sections is interesting as evidence of the extent to which science is being brought to bear on the special problems which a developing colony presents to its Government.

MR. J. REID MOIR is publishing through Mr. W. E. Harrison, the Ancient House, Ipswich, under the title of "The Great Flint Implements of Cromer, Norfolk," an account of his discoveries in 1921 of a large and remarkable series of flint implements and flakes, to which attention has already been directed in the columns of *NATURE*. The forthcoming volume will contain a number of illustrations by E. T. Lingwood.

WE have received from Messrs. Watson and Sons Parker Street, Kingsway, Bulletin 50.S., containing descriptions of some new X-ray accessories. A new mercury interrupter with a rotary rectifier designed for continuous work under heavy loads is illustrated, also an automatic time-switch for exposures ranging from one-sixteenth of a second to thirty seconds. The extensive use of X-rays for therapeutic purposes has led to great improvements in the design of suitable stands which serve the double purpose of holding the X-ray tube and allowing it to be manipulated at any angle. The new stand illustrated here has some good constructional features, and the tube itself is almost completely enclosed by protective material which has an absorption equivalent of 3 mm. of lead. This protective shield is provided with an arrangement which permits of forced air cooling during the working of the tube.

THE 1922 Year-Book of the Franklin Institute, Philadelphia, contains some interesting facts from the history of the Institute. It was organised in 1824 for "the discovery of physical and natural laws and their application to increase the well-being and comfort of mankind," and duly installed in its own house

two years later. It is noteworthy that in 1831 a joint committee of the Institute and the American Philosophical Society began systematic meteorological observations in aid of agricultural and other interests, and eight years later the Pennsylvania legislature made a grant of 4000 dollars for the purchase of instruments at the discretion of the Institute; this is stated to be the earliest instance on record of the appropriation, in any country, of public funds for the collection of facts relating to the weather. The Institute awards medals, of which the best known is the Franklin medal, for distinguished work in advancing physical science or its applications; it was founded

in 1914, and among its recipients have been Sir James Dewar and Sir J. J. Thomson. Other awards made are: the Elliott Cresson medal, for research and invention; the Howard N. Potts medal, for distinguished work in science or the arts and for papers presented to the Institute; the Edward Longstreth medal, for meritorious work in science or the arts; and the Boyden premium of 1000 dollars, to any resident of N. America who shall determine by experiment whether all rays of light and other physical rays are or are not transmitted with the same velocity; an award was made in 1907 for a solution dealing with the visible and ultra-violet parts of the spectrum.

### Our Astronomical Column.

**METEORS IN APRIL.**—Meteors are seldom abundant in April, but there are a number of interesting showers visible, including the Lyrids, which are connected with the first comet of 1861. This display usually attains a maximum on April 21, and the conditions will be rather favourable this year, as the moon will be visible only as a crescent in the evening sky. The Lyrids exhibit a radiant which moves eastwards about 1 degree per day, and we require more evidence on this point. The shower, however, is of very short duration in its active stage, and meteors belonging to it are rarely seen two or three days before or after the date of maximum.

In April there are a large number of feeble showers which it is desirable to investigate further. These include positions near  $\alpha$  Persei,  $\beta$  Ursæ Majoris,  $\alpha$  Cygni,  $\alpha$  Cephei, etc. In Hercules, Corona, Boötes, and Ophiuchus there are a few well-pronounced displays which apparently recur annually.

**THE ECLIPSE OF SEPTEMBER 1922 IN QUEENSLAND.**—Mr. J. C. Russell, of Brisbane, sends some notes on his observations of this eclipse made at Stanthorpe, a favourite summer resort, nearly 3000 feet above sea-level. The N.S.W. Branch of the B.A.A. were also stationed here. There was an extensive view over the plain to the west, and the moon's shadow was seen approaching, a little in front of the horizon line, and therefore about 10 miles distant, looking like a local rain squall. Shadow bands were observed at the same time. The central dark bands were 12 or 15 inches apart, about 4 inches wide, fringed with an equal width of half-tone on each side, and a bright strip between them. They passed at the rate of 10 per second. Their least distance from his eye was 8 feet. They were followed to a distance of 30 or 50 feet, where they appeared fainter but 3 or 5 times wider than when nearest. He ascribes them to compressional waves in the air caused by the cooling effect of the shadow cone, which was passing at a rate exceeding that of sound. Mr. Russell also makes the plausible suggestion that the shapes of the bands as seen are largely modified by the phenomenon of persistence of vision. He thinks the apparent enlargement at a distance was a (partly mental) effect due to this cause.

During totality the shadow covered most of the sky, but near the horizon to north and south there was a red glow, due to distant regions of the atmosphere beyond the shadow. (This effect was also seen in Norway in 1896.) The shadow was 120 miles wide, and the observer 9 miles north of the centre.

The corona was seen with direct vision to a distance

of  $\frac{3}{4}$  diameter from the limb, being very bright: with averted vision two faint extensions were seen, one to N.W., the other in the upper part, each 5 minutes wide and reaching to  $1\frac{1}{2}$  diameters from the limb; they gave the corona the appearance of a wind-vane, a simile used on former occasions. Mr. Russell's description of the corona mentions three immense "spearheads" of white light, one to the zenith, the other two on the lower side, the left-hand one being the larger; these formed "as it were a great forked beard." A ruby spot, doubtless a prominence, was seen on the low left hand.

A few stars were seen during totality, but they were not specified. An account in B.A.A. Journ. (Jan.) by Dr. A. F. Turner states that six were seen, of which Venus, Mercury, Jupiter, and Spica were identified; two that were seen far to the south may have been  $\alpha$  and  $\beta$  Centauri.

**PROBLEMS OF THE NEBULÆ.**—The Rev. H. Macpherson contributes an article on the nebulæ to *Discovery* (March). The numerous and rapid changes of view that have taken place with regard to them illustrate the difficulty of knowing where to place them in schemes of stellar cosmogony. The "island universe" theory of the spirals was received back into general favour ten years ago, but Mr. van Maanen's detection of perceptible rotatory movements in several of them, in combination with the spectroscopic determination of radial velocities, enables hypothetical parallaxes to be estimated. These correspond to distances of a few thousand light years, so that they appear to be within the limits of our own universe. Dr. Jeans regards the luminous knots on the rims of these spirals as giant stars in process of formation at the rate of one every few centuries.

There is another difficulty not felt at the time when stellar types O, B, A were supposed to be the earliest in the spectral sequence, which the "Giant and Dwarf" theory renders puzzling: this is the frequent association of these types with planetary nebulæ in the case of O, and with bright diffused nebulæ in the cases of B, A (Orion and the Pleiades). It would seem that these nebulæ can scarcely be regarded as the parents of the stars that they surround, since, if such were the case, they would be much more in evidence round giant stars of type M. The conclusion appears to be that the natural condition of nebulosity is dark, but that it may become bright either by simple reflection, as appears to be the case with the nebulæ in the Pleiades, or by selective excitation, which causes some of its gases to glow. Prof. Russell compares this to the excitation that occurs in a comet when near perihelion.