

Current Topics and Events.

A CONFERENCE arranged at the British Empire Exhibition by the Royal Society for the Protection of Birds took place on June 26. The subjects for discussion were legislation for bird protection in different parts of the British Empire, the oil menace, and the formation of Nature reserves and bird sanctuaries. Overseas representatives described the conditions in their respective countries. In some of these the question of the preservation of bird life is a very urgent problem: on the one hand the changes within recent years—owing to the rapid increase of human population and all that it implies—are very obvious, while on the other hand the need for counteracting insect pests is particularly great. In some parts of the Empire, legislation on the subject is ahead of that in Great Britain, but although high penalties are imposed, enforcement of the law is often difficult. One is glad to see this subject discussed in its wider aspects, even although foreign countries were on this particular occasion not included. Owing to the seasonal movements of birds from one country to another, international co-operation in protective measures is highly desirable, and we were told at this conference how much the Migratory Birds Treaty with the United States has done for the Canadian summer avifauna. The oil menace also requires international handling, because the waste oil which nowadays causes so much cruel and unnecessary destruction of birds, as well as of fishes and other marine animals and of seaside amenities, is as a rule originally discharged at sea outside territorial limits.

At the close of the current session, Prof. J. B. Cohen will retire from the chair of organic chemistry in the University of Leeds, severing a connexion which dates back to 1891. In that year, after some experience in the works of the Clayton Aniline Company and in the Chemistry Department at the Owens College, Manchester, he was appointed lecturer in organic chemistry and afterwards became the first occupant of the chair of organic chemistry established in 1904. To the advancement of organic chemistry Prof. Cohen has contributed very substantially in many ways. His original work has centred, for the most part, in problems connected with substitution in aromatic compounds, with the relation between optical activity and position isomerism and with the influence of chemical constitution on the antiseptic properties of organic compounds. His success as a University teacher has been in no small measure due to his faculty for lucid exposition, to his constant attention to the routine laboratory work of his students, and to his never-failing interest in the difficulties of the beginner. To large numbers of organic chemists, his name is particularly familiar as the author of widely read text-books which have played no small part in attracting students to the study of the subject. As a member of Government Committees dealing with the question of smoke abatement, Prof. Cohen has been able to supply valuable data from first-hand observations on the deleterious effects of smoke. Much of his leisure has been given up to social work, and as president of the

University Working Men's Club at Leeds, he has, with much success, laboured to bring University students into contact with young working men, to their mutual advantage. In recognition of his services the funds necessary for the establishment of an annual University prize are in course of being provided by Prof. Cohen's colleagues, friends, and past students. To his colleagues, the approaching retirement is an event rendered less regrettable by the knowledge that arrangements will probably be made for him to continue his experimental work in one of the University laboratories.

A most interesting appreciation of Lord Kelvin, the centenary of whose birth has just been celebrated, appears from the pen of Sir Oliver Lodge in a recent number of the *Observer*. As a physicist who can enter into the spirit of Kelvin's work in a way that few others can, Sir Oliver sums up the scientific career and genius of the great pioneer with a wonderful sense of proportion. Attention is directed not only to the vast mathematical power and knowledge that he possessed and applied with such notable results to the foundations of thermodynamic and electromagnetic theory, but also to his all-compelling enthusiasm and his remarkable originality and independence of thought. "Many a German professor and some English professors," writes Sir Oliver, "were more learned than Lord Kelvin, but none were so original. . . . His métier was not to follow but to lead." This independence of thought sometimes brought him into avenues from which he was obliged to retreat. The writer pays great tribute to the practical results of Kelvin's labours. His navigational and electrical instruments are household words to-day, and many of his theories have had unexpectedly far-reaching results. He was, however, not always a good judge of his own work. Sometimes he lost his way and floundered. He was an inspiring rather than a safe and secure guide. "But," concludes Sir Oliver, "he has written his name large on the history of physical science, and all the world marvels at his genius and is thankful that he lived."

THE work of William Pengelly as a geologist and as the explorer of Kent's Cavern will always be remembered by scientific workers, and some of his papers must ever figure among the classics of geological literature. The celebration last month of the jubilee of the foundation of the Museum of the Torquay Natural History Society is a reminder of the way in which he has left a mark in the town which will keep his memory ever fresh in the minds of all who know Torquay. In 1844, Pengelly, Dr. Battersby, Mr. E. Vivian and some fifteen kindred spirits founded the Society, but it was not until 1874 that the foundation stone of the Museum was laid by the Rev. T. R. R. Stebbing, president for the year, who is still with us. In March 1894, Pengelly died and a good lecture hall was added to the building as a monument to his memory. For many years the building has been a worthy focus for the scientific thought and work of the Torquay district, a region peculiarly rich in opportunities for

research. Mr. Harford J. Lowe, the honorary secretary, speaking at a garden party held at Torre Abbey, said: "The life of the Society must be credited in a very large measure to the incomparable work, during many years, of Mr. Pengelly, who through his excavations in Kent's Cavern provided the mainstay of the Society and gave it world-wide notability." This note was echoed at a garden party given by Pengelly's daughter, Mrs. H. Forbes Julian, on the following day, and again by an account she gave to the Society of her father's work. "A man," she said, "is best judged by the work he has done, the influence he has exercised during his lifetime, and the results he has left behind for the use of posterity."

TAKING the weather records at Greenwich Observatory as a fair representation of Midland and South-east England, a consideration of the meteorological results for the first six months of the current year shows a prevalence of dull and rainy weather. The mean temperature for the six months is $0^{\circ}.15$ F. above the normal for the past 35 years, and whilst January, May, and June were warmer than the normal, the months of February, March, and April were colder than the normal. In May, the shade temperature was above 70° on 8 days, the highest reading being 79° ; the temperature in the sun's rays was 130° or above on 14 days, the highest reading being 150° . In June, the shade temperature was above 70° on 16 days, and on 2 days it was slightly above 80° ; the solar radiation temperature was 130° or above on 16 days, and the highest reading was 149° . The rainfall was in excess of the normal in all of the six months except February and March, yielding a total excess of 2.41 in.; the latter half of June was generally dry, rain only falling on 3 days after June 13. Bright sunshine was deficient in all the six months except January and March, the deficiency for the whole period averaging about a quarter of an hour per day; in April the bright sunshine was 1.66 hours per day less than the normal. Although the weather has continued somewhat unsettled there has fortunately been no recurrence of late of the abnormal conditions which continued with such persistence during the winter and early spring.

IN the *Times* of July 2, Mr. Richard O. Marsh publishes an amplified account of the previously reported discovery of "white Indians" in the district of Darien in Panama. The expedition of which Mr. Marsh was leader made friends with the Indians of the district by rendering medical aid in an epidemic of small-pox. They were then induced by an offer of the assistance of the white man against the surrounding "negroid" tribes to end their feud with the "white Indians," who, as the story goes, were either killed or driven to the mountains at the time of the Spanish occupation (1512-1517) owing to the hatred of all white people which had been aroused by the cruelties of the Spaniards. Notwithstanding a ban on their marriage and an order that all their children should be killed, the type has survived ever since. As a result of Mr. Marsh's intervention, the "white Indians" have been re-admitted to full tribal rights. Dr. Breder of the American Museum of Natural

History says in a telegraphic despatch that the three "white Indians," whom Mr. Marsh hopes to bring back with him to the United States, have golden hair, blue eyes and white skins, though two have "liver spots," while their skulls are unusual, being round and quite unlike the San Blas Indian type.

To the *Empire Review* for July, Mr. Hugo Hirst contributes a thoughtful paper on the World Power Conference. He points out that power schemes require capital, and this capital can only be obtained by international co-operation. The Conference attacks this problem, and the many papers contributed by authors will be a help in finding a solution. Recent developments in the industrial world will probably determine the course of the economic reconstruction of the world. In the author's opinion, this reconstruction can already be seen to be slowly emerging. Increased international co-operation is wanted in science, in engineering, and in research. Modern industry is based entirely on science, and its continuous development is only possible through research. The great inventions such as those made by Watt and Faraday are essentially simple. To put them into practice, however, requires the expenditure of capital, and only large firms can face this expenditure. To the manufacturer, research is an economic proposition. In Great Britain the question of coal conservation becomes more pressing every year. Our easily worked reserves of coal are diminishing, and so the price of coal is increasing. The cost of fuel is a greater burden on industry than ever it has been before. The many papers read at the Conference showing how other countries are attempting to solve the problem will be of permanent value to every engineer.

At the World Power Conference at the British Empire Exhibition, papers by Mr. J. W. T. Walsh, Mr. L. Gaster and Mr. C. W. Sully dealing with illumination were read on July 4. As Dr. C. H. Sharp, a delegate from the United States, remarked in opening the discussion, it seems an anomaly that out of the very large number of contributions to this conference only three should deal with lighting. For it is estimated that quite half of the total electrical energy produced is applied in the lighting field. Mr. Walsh's paper was concerned chiefly with the activities of the International Illumination Commission, whilst Mr. Gaster showed how these are linked to other organisations concerned with illumination from the national point of view. Mr. Sully's paper was largely statistical. He showed how the average candlepower of lamps used has progressively increased during recent years, and gave some illustrations of the great opportunities for developments in lighting. There is of course every inducement to companies concerned with the manufacture of lamps or the supply of electricity to encourage the study of illumination. But one is glad to note that this interest is not confined to the purely commercial side. It is essential that the views of experts, especially those concerned with the hygienic aspects of lighting, should be heard and that the subject should be developed on scientific lines.

THE value of the agricultural exhibit (Ministry of Agriculture) in the Government Pavilion at the British Empire Exhibition, Wembley, has been considerably enhanced by the issue of a descriptive guide-book providing a short explanation of most of the exhibits. More than a score of research institutes have co-operated in working out a definite scheme, starting with an exposition of soil problems and conditions, leading through a demonstration of methods of plant and animal improvement to problems of nutrition and pathology, and concluding with the economic aspects under the headings of Horticulture and Farming and Agricultural Economics. The guide-book does not attempt to describe each exhibit individually, but gives a short, general outline pointing out what each case is intended to demonstrate. In some instances, as in connexion with wheat breeding, virus diseases and spraying with insecticides, the principles upon which the research is based are given in some detail, to render the object of the work intelligible to the public. In other cases, as with the life histories of insect pests and the section devoted to farm machinery, attention is specially directed to the results already obtained and their application in practice. A further useful purpose served by the publication is to indicate the interdependence of the various branches of agriculture, and to demonstrate the wide range of interests involved and the widely spread efforts that are being directed towards the improvement of this great national industry.

THE Meteorological Office has an exhibit of its work in the Government Pavilion at the British Empire Exhibition, Wembley, and an account of the exhibits appears in the *Meteorological Magazine* for June. The entrance to the meteorological section is at the back of the Government Pavilion. Numerous instruments necessary for weather records and weather forecasting are on view. A continuous record is given of the direction and speed of the wind over the building obtained from a Dines pressure tube anemograph, and the intensity of the rainfall is recorded by an autographic rain gauge. A balloon meteorograph is exhibited, and there is a large working model of this to show how the results are obtained. The instrument records temperature correctly to 1° C. and pressure correctly to within a few millimetres. The walls are hung with specially prepared diagrams illustrating different branches of the work. The preparation of forecasts is demonstrated by members of the office staff and data are collected by a wireless installation from a great part of the Northern Hemisphere. There can also be seen the meteorological log kept on board H.M.S. *Thrush* when His Majesty as Prince George was in command. The importance of meteorology is evidently being increasingly acknowledged.

In an article in the issue of *Science* for May 2, Prof. F. Cajori of the University of California disposes of some of the more or less popular legends which have grown up with regard to Sir Isaac Newton and his work. The delay of twenty years in the publication of the law of gravitation was not due to his taking 60 instead of 69 miles as a degree of latitude, but to

his uncertainty as to how a sphere attracted a particle outside it. The delay of the Royal Society in publishing the "Principia" was not due to the absence of any reference in it to Hooke's previous statement of the inverse square law, but to Newton's desire to stop publication. He did not believe as Cotes, the editor of the second edition of the "Principia" did, in action at a distance, but postulated a medium requiring time to act. He did not reject the wave theory of light in favour of the corpuscular theory, but made use of the idea of ether vibrations wherever it seemed the more suitable. The authoritative works of Brewster, Horsley, and Rosenberger provide no support for these legends, but this cannot be said of the "Encyclopædia Britannica" article on Newton.

IN our issue of June 28 we recorded the tragic death of two members of the Mount Everest Expedition, Mr. G. L. Mallory and Mr. A. C. Irvine. The information then available was a brief telegram; a dispatch which tells us all that is likely to be known has since appeared in the *Times* of July 5. From Lieut.-Col. E. F. Norton's message it appears that the surviving members of the party were to leave the base camp on June 15 for the Rongshar Valley, there to rest for a short period before starting on the homeward march. All the party were suffering from the effects of the high altitude work, and no further attempt to scale Everest will be made this season. Mr. Odell, who was the last to see the two lost climbers, takes up the story and describes the events leading up to the final attempt. On June 6, Mallory and Irvine left the North Col Camp for Camp V. (25,000 ft.), and the next day they went on to Camp VI. (27,000 ft.), which had been established by Norton and Somervell a few days before. The same day Odell arrived in support at Camp V. On June 8, Mallory and Irvine appear to have started on the last stage of the journey to the summit, and at 12.50, in the course of making a survey of the mountain face between Camps V. and VI., Odell observed two figures moving on the mountain above him, a comparatively short distance from the summit. Odell then returned to the North Col, and with Hazard kept watch for the return of the climbers. As they had not returned on the following day, Odell climbed again to Camp V., proceeding to Camp VI. on the next day, but no trace was found of the missing men. To search further was impossible, and the party had to withdraw. The position in which Mallory and Irvine were last seen was determined by theodolite as 28,227 ft. Odell is of opinion that they achieved success but were overtaken by darkness on the return journey, and with this conjecture it seems we must be content.

IN connexion with an article in our issue of April 12 on foot-and-mouth disease, the statement was made that "no one believes that the disease arises *de novo*." M. C. D. Perrine, of Cordoba, Argentine, writes to ask why this belief is held when it must be supposed that diseases must at one time have originated on the earth. This is no doubt true if one is not limited to time. It is a certainty that diseases like smallpox, leprosy, plague and consumption have existed as long

as we have any historical knowledge, and probably for a much longer time. Syphilis is a disease which was formerly believed to have originated *de novo* or was brought to Spain in 1493. The more modern study of original documents has shown that this is most improbable, and there is an accumulating bulk of evidence that syphilis also is an ancient disease. The more rigorously infective diseases are studied, the more easily can it be proved that they are transmitted in succession through a long series of generations.

At a time when there are signs of an increasing interest in algæ, algologists in all parts of the world will welcome the appearance of a new periodical devoted entirely to their science. The *Revue Algologique* is edited by Dr. P. Allorge and M. G. Hamel, of the Museum d'Histoire Naturelle, Paris, and these French algologists are to be congratulated on their energy and enthusiasm in launching a new journal. The *Revue* is published quarterly, and is obtainable from M. Gontran Hamel, Laboratoire de Cryptogamie, 63 rue de Buffon, Paris 5^e; price in France 25 fr., outside France 35 fr. It will contain reviews of all algological papers, commencing with 1923, and is open for original contributions. The first part now issued is well got up and consists of 96 pages. There are several original articles in French and English.

A REPORT recently issued by the Board of Education deals with the progress of the Science Museum during the years 1921 and 1922. The Museum appears to have been much hindered by lack of accommodation, part of the collections (and particularly that relating to fishery) being stored away; while the task of transferring about half of these to new quarters gave the staff plenty of occupation, new (but inadequate) buildings having been put in hand in 1922 so as to become available in instalments in lieu of space ceded to the Imperial War Museum. In spite of these difficulties, creditable progress was made: a number of new exhibits were incorporated, including a historical collection of electrical apparatus lent by the Institution of Electrical Engineers and one illustrating the history of cinematography lent by Mr. W. Day, the series relating to light road transport and to wireless communication were specially developed, an improved system of indexing was introduced and completed, catalogues were published for the sections dealing with textile machinery, aeronautics and meteorology, and much repairing and preparation of models was carried out in the workshops. A minor piece of work of some importance was that undertaken in connexion with the Eötvös torsion balance in the Museum. To the Science Library more than 5000 volumes and 15,000 parts and pamphlets were added, and a new classification scheme was put into effect. The number of readers averaged less than forty a day. The smallness of this number is doubtless due to the fact that the library is less known to scientific workers than it should be.

THE Report of the International Air Congress held in June 1923 has recently been issued as a portentous volume of nearly 1000 pages, edited for the Committee

by Lieut.-Colonel W. Lockwood Marsh (London: Royal Aeronautical Society, 1923. 25s.). It embodies a mass of papers and discussion on every field of aeronautical interest, aerodynamics and meteorology, engines and fuels, strength of construction, commercial aviation, legal questions, and medical problems arising out of aeronautical accidents. It is a wonderful record of achievement in so youthful a science. There were gathered together 551 representatives of 21 different nations, but the ex-enemy countries were conspicuous by their absence. This is the more to be deplored since some of the more recent and fundamental advances have been developed by the latter. An international discussion on aerodynamics without Prandtl is like relativity without Einstein. The report demonstrates the useful purpose served in effecting comparisons between the experimental methods pursued in different countries, and stresses the value of standard comparative tests in all existing wind tunnels. Contributors included members of the staffs of the National Physical Laboratory, Royal Aircraft Establishment and of the corresponding institutes in France, Holland, Italy, and the United States. The volume may be taken in fact as the most recent authoritative statement of the present position of aeronautical science both on the theoretical and on the experimental sides. The report is unfortunately marred by a number of misprints in formulæ.

SIR NAPIER SHAW, professor of meteorology in the Imperial College of Science and Technology and formerly director of the Meteorological Office, has been elected a foreign member of the Royal Swedish Academy of Science in respect of his "masterly researches on the domain of meteorology."

A SUPERINTENDENT of Fishery Investigations is required for the purpose of organising a new department of fishery research in the Straits Settlements and Malay States. Particulars of the duties of the post and forms of application may be obtained from the Private Secretary (Appointments), Colonial Office, S.W.I.

APPLICATIONS are invited for two appointments in the Department of Agriculture, Nairobi, Kenya Colony, namely, an agricultural assistant with experience in agricultural practice and ability to carry out crop experiments and to render itinerant and advisory services, and an agricultural chemist able to take charge of the chemical branch and to initiate and undertake research. Applications, upon a prescribed form, must be received before July 15 by the Private Secretary (Appointments), Colonial Office, S.W.I.

THE second annual corporate meeting of the Institution of Chemical Engineers will be held at the Hotel Cecil on Wednesday, July 16, when the president, Sir Arthur Duckham, will deliver his presidential address. During the afternoon session Sir Frederic Nathan will review the work of the Education Committee on "The Training of a Chemical Engineer." The meeting will conclude with a visit to the British Empire Exhibition, and a tour of the Chemical Hall will be made under the guidance of Mr. W. J. U. Woolcock.

THREE Agricultural Inspectors are required for the Agricultural Department, Iraq. Candidates should be honours graduates of a British university, holding a diploma in agriculture, or possessing similar qualifications. The persons appointed will be responsible for work mainly in connexion with cotton development, and there are opportunities for original research in agricultural economics. One of the selected candidates may be appointed Assistant Director of Agriculture at headquarters. It is therefore desirable that at least one of the candidates appointed should have had experience of editorial work in addition to other qualifications required.

MISS C. F. ELAM has been appointed to the research fellowship in metallurgy, of the value of 500*l.* a year for five years, given by the Worshipful Company of Armourers and Brasiers in the City of London, and awarded through the Royal Society. Miss Elam was a student of Newnham College, Cambridge, and has been engaged in research work on the properties of metallic crystals with Prof. H. C. H. Carpenter at the Royal School of Mines for the past few years. She also investigated the method of distortion of aluminium crystals in tension, in conjunction with Prof. G. I. Taylor, at the Cavendish Laboratory, Cambridge,

and the results of this investigation formed the subject of the Bakerian Lecture of the Royal Society for 1923.

THE Council of the Royal Society of Arts has awarded the Society's Silver Medals for papers read before the Society during the past session as follows: (*Ordinary Meetings*)—Sir Frank Baines, "The Preservation of Ancient Monuments and Buildings"; Sir Richard A. S. Paget, Bt., "The History, Development, and Commercial Uses of Fused Silica"; Major-Gen. Sir Fabian Ware, "Building and Decoration of the War Cemeteries"; Mr. Frank Hope-Jones, "The Free Pendulum"; Brig.-Gen. Sir Henry Maybury, "The Victoria Dock District and its Roads"; Mr. T. Thorne Baker, "Photography in Industry, Science and Medicine"; Mrs. Arthur McGrath (Rosita Forbes), "The Position of the Arabs in Art and Literature." (*Indian Section*)—Brig.-Gen. H. A. Young, "The Indian Ordnance Factories and Indian Industries"; Sir Richard M. Dane, "Manufacture of Salt in India." (*Dominions and Colonies Section*)—Prof. C. Gilbert Cullis, "A Sketch of the Geology and Mineral Resources of Cyprus"; Sir Frederick Lugard, "The Mandate System and the British Mandates."

Our Astronomical Column.

ENCKE'S COMET.—This is the best known of all the short-period comets, and has been observed at every return for the last century. L. Matkiewicz has taken charge of the computations regarding it that were carried on for a long period by the late Prof. Backlund. He notes that a marked change in the mean motion took place in 1918, similar to that in 1904. Since observations in 1921 were confined to a fortnight, it is very desirable to observe the comet over a long arc at the present return. Its detection in July is possible, and it should certainly be found before the end of August.

The following elements, which include perturbations by Jupiter only, are from *Astr. Nachr.* 5298:

T	1924 Oct. 31, 429 G.M.T.
ω	184° 43' 43" } 1924.0
Ω	334 37 33
i	12 30 21
ϕ	57 48 28
μ	1074".092

EPHEMERIS FOR GREENWICH MIDNIGHT.

	R. A.	N. Decl.		R. A.	N. Decl.
July 16.	2 ^h 46 ^m 37 ^s	24° 30'	July 28.	3 ^h 14 ^m 57 ^s	27° 9'
"	20. 2 55 46	25 20	Aug. 1.	3 25 16	28 8
"	24. 3 5 10	26 14	"	5. 3 36 17	29 8

Values of $\log r$, $\log \Delta$ on Aug. 1: 0.2294, 0.2268.

The comet is a morning object, rising 5 hours before the sun in mid July.

TOTAL LUNAR ECLIPSES.—An article by W. J. Fisher in Brit. Astron. Assoc. Journal for May gives useful hints on the observation of total lunar eclipses. These phenomena were for long regarded as of little scientific value. Then opportunity was taken to improve our knowledge of the moon's diameter by making numerous observations of occultations at the darkened limb. Afterwards it was recognised that study of the illumination of the eclipsed moon gave useful information on the average transparency of the air in the regions for which the moon was in the horizon. A map of the circumstances of the eclipse of Aug. 14 next (partly visible in England) makes it

easy to locate these regions for every phase of the eclipse. They lie to a considerable extent over Europe, Africa, and South America, so that direct meteorological observations will be available for comparison with those given by the eclipse.

It is suggested that spectroscopic observations with a large lens and short focus might be made during totality; also the use of screens of various colours might enable more exact determinations to be made of the colours of various parts of the disc. The study is an easy and attractive one for amateur observers.

REPORT OF THE BERGEDORF OBSERVATORY.—This Observatory is carrying on an active programme of work in various fields under its director, Prof. R. Schorr. A second appendix to his "Eigenbewegungs-Lexikon" has just appeared, containing 1248 new proper motions, mostly of stars from magnitudes 6 to 9 and Right Ascensions from 0^h to 2^h; the astrographic and other recent catalogues have been used in preparing it.

The meridian work at the Observatory includes the re-observation of stars in Rümker's Catalogue, of which a revision was recently published.

Dr. Baade uses the reflecting telescope for the photography of minor planets and comets; the comet found by him in 1922 was followed until the early months of 1924. The very interesting planet 944, found by him, which travels all the way from the orbit of Mars to that of Saturn, has received the name "Hidalgo," after the Mexican hero; this is in recognition of the warm reception given to the German Eclipse Expedition to Mexico in September 1923. Masculine names are given only to minor planets with exceptional orbits, such as Eros and the Trojans.

Prof. Schorr is further engaged on the great "Geschichte des Fixsternhimmels," which contains a summary of all meridian work on the stars from 1750 to 1900. The first 2 hours have already appeared. This work was begun by Ristenpart at Berlin, but was interrupted by his departure to South America, where he died.