

Current Topics and Events.

DURING the past week there have appeared articles upon a method of permanently moth-proofing wool, by the use of a substance of undisclosed composition, the product of a German dye firm. These were supplemented by a lecture given at Australia House on Friday, January 23, in which the merits of this process were elaborated. The tests made were on wool and furs, large quantities of eggs of the clothes moth being employed upon treated and untreated material under identical conditions. Two forms of treatment are used—one a water-soluble material for goods that can be treated with water; the second, soluble in benzene and suitable for the dry-cleaning process. It is claimed that after the water process, dry cleaning will not affect the goods; but dry-cleaning articles already treated by the dry-cleaning method will remove the protective substance. Prof. H. Maxwell Lefroy has been good enough to favour us with the following comments upon the process: "The nature of the water-soluble substance has been actually known in England for more than a year: tests have been carried out in London with this material for eighteen months, and two new classes of moth-proofing substance have been discovered, which have all the merits of this material and in addition are far less costly and far simpler to apply. As these are the result of inquiry instigated by commercial interests, it is not possible to disclose their composition; but it is unfortunate that the columns of reputable daily papers should be available for a description of a secret preparation under the guise of 'news,' made by a foreign firm. In this particular instance, scientific research in England appears to be ahead of that in Germany but, as usual, has not been backed by resources in any degree comparable to those employed by the firm in Germany now vigorously exploiting a method that has already been superseded. One may anticipate the adoption of the German substance in view of the vigorous publicity and the greater commercial enterprise in such chemical production."

A COMPREHENSIVE scheme for the publication of abstracts of biological research on an international scale has been developed in the United States and has received general support from scientific institutions in that country. The proposals were put before the British Association at Toronto last summer, and a committee of the Royal Society is also considering the matter. The subject was discussed at a representative meeting of British zoologists held in the rooms of the Zoological Society of London on January 10, when the following resolution was passed unanimously:—"This meeting of British zoologists is of opinion that it is in the highest degree desirable that an effort should be made to extend the system of publishing comprehensive abstracts of zoological literature, and we desire to place on record our great appreciation of the work that has been done to this end by the American Committee for *Biological Abstracts*. We are, however, also of opinion that the scheme that has recently been submitted for our

approval is open to serious objection in various directions. Only some of these need here be mentioned, namely: (1) The magnitude of the work involved appears to have been under-estimated. (2) The financial arrangements so far made public are obviously quite inadequate for the purpose, which is a most serious point; it would be folly to assume that any publication of abstracts in pure science can be made self-supporting, and no scheme of this kind should be put into operation until satisfactory arrangements have been made for some permanent endowment. (3) The proposal to publish the abstracts of the whole of biological literature in a single journal is unsatisfactory; such a journal would be extremely cumbersome and highly inconvenient for all classes of workers. Bearing in mind the probable great increase of literature in the future, a much sounder plan would be to institute separate journals dealing with convenient sections of scientific work. (4) The abstracts will be very much shorter than those now being published in this country, and this brevity will seriously detract from their value to most workers. (5) The estimates for indexing are entirely inadequate. (6) No provision has been made for the utilisation or co-ordination of the various biological abstracting organisations that already exist in this country and deal adequately with several branches of science; apparently it is proposed to reduplicate their work, but in a less useful form. In the circumstances we consider that this scheme requires drastic revision."

THE application of science to problems connected with the cotton industry formed the subject of Dr. A. W. Crossley's discourse at the Royal Institution on Friday, January 23. Nearly every branch of science has its bearing on the cotton industry. Botanically, much work is being done on the structure of the cotton hair itself and its relation to the various processes, such as spinning, that it goes through during manufacture. From an engineering point of view, it is extraordinary that no great invention has been made in regard to cotton machinery for more than fifty years, and the British Cotton Industry Research Association has already under consideration important modifications in one machine. At the Shirley Institute laboratories, too, new light has been thrown on mercerisation, for which it has been found there is a definite limiting botanical factor. Much valuable work has just been carried out on problems connected with bleachings. Cotton well bleached should be white, but should not have suffered any deep-seated chemical changes such as would affect its physical properties or lower its strength; also bleaching is carried out by means of oxidising agents, and great care has to be taken as they attack the cellulose to form oxycelluloses. Uneven dyeing may be a result. The chemical tests that are used for determining the extent of this attack have been investigated, and it has been discovered that the slightest change of acidity or alkalinity of the liquor plays an important part. The application of physics has produced a number

of important instruments for testing the regularity of yarns, their resistance to wear and to oscillating tensions, as well as their tension in the loom. In a special regularity tester, the irregularities in a yarn are magnified 18,000 times by a shoe riding over it and a system of indicators and mirrors which produce on a moving bromide strip a photographic record of every minute change of twist and so act as an index to the action of the spinning machinery on the yarn. The doubling twist can also be measured by the instrument. Here another important achievement has been attained, for in conjunction with a special photometer which compares degrees of brightness, the right doubling twist that should be given to a singles yarn to produce the most lustrous effect has been discovered.

AN interesting exhibition of photographs, paintings, and drawings from the third Everest Expedition is now being held at the Alpine Club Gallery, Mill Street, W. In addition to views of Everest, the photographs by Capt. J. B. L. Noel show something of the interesting country through which the expedition passed. Among them is a photograph of a gigantic figure of Buddha, more than forty feet high, from the Shekar Monastery. It is said that within this figure there are stored many thousands of precious stones and other treasures. The oil paintings and drawings by Mr. Francis Helps, apart from their artistic merit, which is considerable, are of scientific value as a record of racial types and costume. They depict Lepchas, Tibetans, and Sikimese. A portrait of the Maharanee of Sikkim and of a lady in full Tibetan dress are both very effective. The latter wears the full Tibetan head-dress with false hair. A painting of a Lepcha woman has the old costume, now discarded, although the traditional dress of the men, also shown, is retained. There is a very fine representation of a Red Lama in ceremonial dress with striking and strongly marked features. A Bhutia girl with pronounced Mongolian characteristics, while not in itself unpleasing, in the heaviness of the type serves as a foil to the other female heads. The artist has shown great skill in catching the differences in type and expression of the various races.

A DISPATCH from the Cairo correspondent of the *Times* in the issue of January 20 records some noteworthy results obtained by the members of the Boston-Harvard Expedition this season in their excavations on the limestone plateau east of the pyramid of Cheops at Giza. In clearing the Royal Cemetery of the Fourth Dynasty, boat-shaped cuttings were found in the rock foundation of the chapel of Cheops which had served as receptacles for the funereal boats of the dead king and his queens. In one which has been uncovered, the bottom was made to fit the shape of the boat, and one of the slabs of the covering is still in position. The most important find consisted of two small tombs of the Sixth Dynasty belonging to two priests, Qa'ar and Iduw, his son. In the tomb of the former the entrance leads into a hall in which stand five figures each representing Qa'ar in one of his official capacities, with a little figure of his son Iduw. This tomb is of an entirely new type. The

tomb of Iduw also contains six life-sized figures, five of Iduw himself and one of his son. On the walls are skilfully carved reliefs which include four scenes of men and women mourning, a subject rare at this period. What is described as the gem of the whole find is a stele of limestone, coloured to represent granite, on the right-hand wall. Starting high up on the wall, it reaches only half-way to the ground. The rock beneath the lower edges has been hollowed out to form a rectangular niche in which the upper part of Iduw's body is carved life-size, as if emerging from the rock, with outstretched arms, palms upward, as though in readiness to receive the offerings the priests placed on the offering stone which lies in front. It is an astonishing break from the formalism of Egyptian art, remarkable in the Old Empire.

IN a lecture given in the Royal Exchange on January 20 on the Evolution of the Steamship, to the members of Lloyds' Students' Society, Eng.-Capt. Edgar C. Smith, now the official guide lecturer at the Science Museum, South Kensington, suggested that if the members should be ever in need of technical information they could not do better than visit the Science Museum, where they would find models and diagrams in profusion and, moreover, the best technical library in Great Britain. In the course of his lecture, Capt. Smith said that the Science Museum deserves the support of every shipbuilder, shipowner and engineer in the country. It is much more than a museum; it is the nation's permanent Palace of Engineering. As compared with similar institutions, the Science Museum may be said to show how men have made their fortunes while the art galleries show how they have spent them. It was Sir Richard Tangye, whose first success came with the construction of the hydraulic jacks used to push the *Great Eastern* into the Thames, who gave Birmingham its beautiful picture gallery, while it was Samson Fox, the inventor of the corrugated flue used in marine boilers, who built the Royal College of Music at South Kensington. Bessemer, Hughes, Mond and many others had left large fortunes, but in the matter of legacies the Science Museum had been treated like a spendthrift and cut off without a shilling. Though the engineering exhibits at the Museum are in a fair way to be properly housed, the same remark does not apply to the naval collections, and what is wanted now at the Museum is a National Gallery of Ships and Shipping worthy of the greatest port in the world, of the nation itself, and of our glorious heritage of the sea.

THE presidential address to the Royal Meteorological Society was delivered on January 21 by Mr. C. J. P. Cave, who took as his subject, "The Present Position of Meteorology and Meteorological Knowledge." The Royal Meteorological Society celebrates its seventy-fifth anniversary this year. In looking back Mr. Cave stated that great progress has been made in the past 25 years, largely stimulated by upper air research. Meteorology is at a disadvantage compared with other sciences; the number of posts open to meteorologists is very limited; and support for the Society has to come largely from amateurs.

The Society ought to encourage education in meteorological science. But it is not only elementary meteorology that should be encouraged; there is a vast scope for research in the science; forecasting is only one of its branches, and except in the matter of forecasting, meteorology in Great Britain is the worst endowed of all the sciences. Is it too much to hope that some great company or some public-spirited individual may come forward to endow a chair of meteorology in one of our universities and to make provision for research. The Royal Meteorological Society is, so to speak, in a position of trust for meteorology, being the only independent body in the country especially devoted to that science. It is true that there is the Meteorological Office, but its position at the present time is an unfortunate one; its future is uncertain. In the past the Meteorological Office was directly under the Meteorological Committee, which administered a Government grant. Soon after the War, the Office was placed under the Air Ministry. It seems a grave anomaly that the Meteorological Office, which deals with problems of the greatest importance to many Government departments and to many public bodies, should be solely under the direction of the Air Ministry, more especially when there is in the Department of Scientific and Industrial Research a very suitable body under which it might have been placed.

SENATOR MARCONI has been elected an honorary member of the Institution of Civil Engineers.

DR. J. H. JEANS will deliver the sixteenth Kelvin Lecture of the Institution of Electrical Engineers on Thursday, February 5, at 6 o'clock. The title of the lecture will be "Electrical Forces and Quanta." At the beginning of the meeting a statuette of the late Sir Joseph Wilson Swan will be presented to the Institution by Mr. R. K. Morcom.

APPLICATIONS are invited by the Scottish Society for Research in Plant-breeding for the directorship of research, in succession to Mr. J. M. F. Drummond, who was recently appointed Regius professor of botany in the University of Glasgow. The applications, with statements of qualifications and experience (in each case seven copies), must reach the Secretary, 3 George IV. Bridge, Edinburgh, by March 14, at latest.

THE British Non-Ferrous Metals Research Association, 71 Temple Row, Birmingham, is inviting applications for three junior research posts, namely, a physical chemist or metallurgist (for work on atmospheric corrosion), a metallurgist or chemist (for the study of the wastage of copper locomotive fire-box stay rods), and a metallurgist with good physics training (for the study of zinc and high-zinc alloys and their workability). The latest date for the receipt of applications is February 9.

THE four-hundredth anniversary of the death of Vasco da Gama, who was the first to reach India by the Cape route, and died on Christmas Eve, 1524, is being celebrated at Lisbon. The *Times* correspondent reports that at a reception held at the Palace of Belem

on January 24, representatives of twenty-six governments presented their credentials. On January 25 there was a service at Belem Cathedral, and the blessing of the sea at the place whence da Gama sailed.

SIR JOSEPH J. THOMSON has been awarded the Faraday Medal by the Council of the Institution of Electrical Engineers. This medal is awarded not more frequently than once a year, either for notable scientific or industrial achievement in electrical engineering or for conspicuous service rendered to the advancement of electrical science, without restriction as regards nationality, country of residence, or membership of the Institution. The present award is the fourth which has been made.

THE Buchan prize of the Royal Meteorological Society was awarded to Mr. W. H. Dines, at the annual general meeting held on January 21. The prize, now awarded for the first time, was recently founded to commemorate the late Dr. Alexander Buchan, who did much to advance the interest of meteorology in Scotland and was intimately associated with the work done on Ben Nevis. The award was made to Mr. W. H. Dines for his recent papers on radiation read before the Society. Mr. C. J. P. Cave, the president of the Society, in making the award, recalled the pioneer work which Mr. Dines had done in the investigation of the upper air before he turned his attention to the problems of radiation.

THE Gold Medal of the Royal Astronomical Society has been awarded by the Council to Sir Frank Dyson, Astronomer Royal, for his general contributions to astronomy, and in particular for his researches on the proper motions of stars. The medal will probably be presented at the ordinary meeting of the Society on June 12. At the annual meeting, to be held on February 13, Prof. Eddington, Dr. Jackson, Mrs. Maunder, and Prof. Milne will speak on the progress of astronomy during the past year; Prof. Fowler and Prof. Newall will speak on the forthcoming meeting of the International Astronomical Union at Cambridge; and Dr. Dreyer will give a short account of Tycho Brahe's observations, methods, and results.

THE National Institute of Agricultural Botany is now prepared to accept entries for its fourth series of yield and quality trials of new varieties of potatoes from breeders who are willing to entrust the Institute with the marketing of their productions on a profit-sharing basis. The trials are planned to last for five years, at first in Scotland only, but in the later years also in the English potato districts. Only those varieties which do sufficiently well in the trials will be placed on the market. Full particulars of the conditions of the trials can be obtained from the Secretary, National Institute of Agricultural Botany, Huntingdon Road, Cambridge. Applications should be made not later than February 28.

SCHOLARSHIPS, each of the annual value of 300/., are being offered by the Grocers' Company for the encouragement of original research in sanitary science. There will also be an allowance to meet the cost of

apparatus and other expenses in connexion with the work. The tenure of the scholarships is one year, with possible renewal for a second or third year. Applications must be sent before April 1 to the Clerk of the Grocers' Company, Grocers' Hall, London, E.C.2, from whom a form of application and further information may be obtained.

CERTAIN of the members of the staff of the Rothamsted Experimental Station, Harpenden, Hertford, are available for a limited number of lectures to Chambers of Agriculture and Horticulture, Farmers' Clubs, Agricultural Societies, Farm Workers' Associations, and similar bodies, on the work being carried on at the Station. The subjects include various aspects of manuring and agricultural chemistry, physics and botany, the use of insecticides and fungicides, bee-keeping, and so on. All communications regarding lectures should be addressed to the Secretary of Rothamsted Experimental Station.

ACCORDING to the Report of the Council of the Zoological Society of London for December, the number of visitors to the Society's Gardens in Regent's

Park during the year 1924 reached the total of 2,057,146—the largest number in the history of the Society, and an increase of 444,021 as compared with the previous year. The number of visitors to the Society's Aquarium since its opening in April reached the total of 567,936. The number of fellows elected and readmitted during the year 1924 was 876, an increase of 374 as compared with the previous year, and a record never before reached in the history of the Society.

THE collection of antique microscopes, about 400 in number, formed by the late Sir Frank Crisp, Bart., is to be offered for sale by auction at Stevens's Auction Rooms, Ltd., 38 King Street, Covent Garden, W.C.2, on Tuesday, February 17. Catalogues can be had from the auctioneers.

It has been suggested recently that Messrs. Oertling, Ltd., are importing parts of German balances and merely assembling them in Great Britain. We understand that this is quite untrue. All Messrs. Oertling's balances are manufactured entirely at the firm's works in Turnmill Street, E.C.1.

Our Astronomical Column.

THE SOLAR ECLIPSE OF JANUARY 24.—Preparations were made at Greenwich for observing the first contact by the Innes method with several instruments, but thick clouds interfered. There were frequent glimpses of the partially eclipsed sun, but nothing could be done except to note the change of illumination and of the colour of daylight. The latter changed markedly near greatest phase, the cause, doubtless, being the absorption of light of short wave-length near the sun's limb. There were some beautiful spectral colours on clouds near the sun.

It is very welcome news that the conditions at the Yale Observatory, Newhaven, and elsewhere on the east coast of the United States, are described as perfect, and the photographs obtained there should be of great interest. The following time determinations of totality are given in the telegrams (the figures are the corrections to the times computed from the almanac data): Yale +4^{sec}, Buffalo -2^{sec}, Ithaca +5^{sec}, Poughkeepsie +3^{sec}, Newhaven +5^{sec}, Long Island +3.6^{sec}. Mean +3^{sec}. The almanacs used a correction of +8.0" to Brown's longitude (corresponding with +7.0" to his mean longitude), but used no correction for the sun, which requires about +1", or +2^{sec} in the time of eclipse. Hence it would appear that the correction applied to the moon was within 1" of the truth, but perhaps slightly too great.

The country round New York was covered with snow, and the passage of the moon's shadow over this white surface, which was clearly seen, must have been a striking sight. On the whole, the weather in the United States seems to have beaten expectations, which were not high owing to the season.

OCCULTATION AND LUNAR ECLIPSE.—It is worth directing attention to the fact that the occultation of Aldebaran on February 2 is the last (at least for the neighbourhood of London) of the series that have been going on for some three years. It will be followed by a blank period of nearly sixteen years. Disappearance is at 23^h 54^m, 4 hours west of the meridian, and reappearance 53 minutes later. In view of Prof. Brown's appeal, and the facilities for

accurate time afforded by wireless, it is hoped that it will be extensively observed.

The lunar eclipse of February 8, lasting from 20^h 8^m to 23^h 15^m, will be favourably visible in Great Britain, the moon being high up. Three-quarters of the moon's diameter will be obscured, and it may be possible to form some idea of the colour and illumination of the portion in the shadow. These are now believed to depend on the meteorological conditions prevailing at the regions where the moon is in the horizon, so that they give a sort of integrated effect of terrestrial weather.

THE NEW WOLF PERIODIC COMET.—Although this object was of mag. 17 on January 13, Prof. M. Wolf was able to make some interesting observations of its physical structure. "It was a small nebulous object of fan or sector shape, $\frac{3}{4}$ ' in width, somewhat less in height, with nuclear condensation in the point of the sector which was towards S.S.E." This structure and the cometary nature of the orbit leave no doubt that it is correctly classed as a comet. The following orbit is by Dr. A. C. D. Crommelin from the photographic positions of December 22, January 13 (Heidelberg), and December 26 (Greenwich):

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|----------|------------------------------------|
| T | 1925, January 23.9624 G.M.T. (new) |
| ω | 184° 8' 27" |
| Ω | 260 36 36 } 1924.0 |
| i | 23 7 9 |
| ϕ | 21 57 47 |
| μ | 472.951" |
| Period | 7.5022 years. |

An ephemeris is of little use, for very few instruments can reach so faint an object.

There is a very near approach of the orbit at aphelion to that of Jupiter. There is no near approach at the next aphelion (nor has there been any in recent revolutions), but there will be a fairly close approach at the next aphelion but one. Similar elements were obtained by Herr Kahrstedt, who gave the period as 7.43 years.