
SCIENCE NOTES AND NEWS

Wax Plates for Reconstruction of Models from Serial Sections

Shri. H. Swarup, Zoological Laboratories, Saugar University, Saugar, writes as follows: Among the substances used for the reconstruction of models from serial sections, a mixture of bees' wax and paraffin wax (m.p. 58°-60° C.) in equal proportions was found most satisfactory. This mixture is heated till it begins to boil and is then poured over a clean sheet of glass, the surface of which has been coated with a very thin layer of glycerine. The glass plate is kept cool by a layer of cold water below it. While pouring the boiling wax, the following precautions are necessary: (1) The glass plate should be kept on a perfectly horizontal and smooth surface; (2) The same quantity of boiling wax should be poured on the glass plate every time; (3) Each time the boiling wax is poured, care should be taken that it spreads uniformly on a measured area of the glass plate. For a plate 1 mm. thickness and area of 300 sq. cm., 28 g. of wax was found necessary. *Camera lucida* sketches of sections are drawn directly on the wax plates and subsequently cut out with the help of a warmed needle. The cut out sections, after being placed one above the other, can be cemented by passing a hot scalpel round the cut edges. In this way, excellent, true-to-scale models can be prepared easily.

Absorption of Moisture by Plants from Dew and Fog

In a research report read at the meeting of UNESCO's Advisory Committee on Arid Zone Research which opened in Paris on May 11, Dr. F. W. Went, Director of the Earhart Plant Research Laboratory of the California Institute of Technology, reported the discovery that dew is an effective source of moisture and can be stored in the soil by certain plants. Working under a grant from UNESCO, Dr. Went and Mr. S. Duvdevani, of Israel, found that a plant that has wilted from lack of soil moisture can not only absorb sufficient water at night through the leaves to sustain it through a succeeding hot and dry day, but can actually excrete water through the roots into the soil and thus use the soil as a reservoir for moisture. With tomatoes, peas, sugar beats, squash and mint the amount of water thus passed to the soil in a

single night occasionally exceeds the weight of the plant itself. Studies are now continuing on other plant varieties to measure their relative efficiency. This discovery offers the possibility of successful vegetable growth in semi-arid areas that are subject to night fogs and dew, as is the case in some parts of Morocco. Dr. Went has recommended an intensive survey of the frequency and the amount of dew in all the semi-arid areas of the world, in order to test the efficacy of food production under dew.

Magnets from Superfine Iron Powder

Under the name Gecalloy, the General Electric Co., England, has developed a technique for making magnets from iron powder (1/1,000th the diameter of the finest radio iron powder). Gecalloy micropowder magnets can be made in a variety of shapes by the use of special press tools and power presses. Strength for strength, a Gecalloy magnet weighs only approximately half as much as a conventional steel magnet. The ability to mould magnets by processes akin to those used in plastic moulding, therefore, opens up the way for entirely new conception for electrical machines. As every individual particle can be insulated from its neighbour, the Gecalloy is in effect an insulator. There are thus no eddy currents when it is used in an inductive device.

Film on Dental Cement

A 16 mm. film produced by the National Bureau of Standards and the Council on Dental Research of the American Dental Association demonstrates a new method of mixing silicate cements in a closed container whereby the maximum amount of powder is incorporated into a given quantity of liquid independent of atmospheric conditions. Actual restorations in the mouth demonstrate the value of these findings in dental practice.

This film may be obtained on loan or purchase by application to the Office of Scientific Publications, National Bureau of Standards, Washington-25, D.C., or the American Dental Association, 222, East Superior Street, Chicago 11, Illinois.

Molybdenum Disulphide as Lubricant

Pure molybdenum disulphide is being recommended for use as a dry lubricant since it is

capable of withstanding extremely high pressures without galling or seizing. In addition it is suitable for work at both high and low temperatures, at high speeds and in a vacuum. Unlike many other lubricants, it has good chemical and thermal stability and the lubricating properties appear to be unaffected in the range between -40°F. to 70°F. The values of the coefficient of friction of molybdenum disulphide fall between 0.05 to 0.095 while the corresponding values for graphite are 0.11 to 0.19.

Standard for Analysis of Iron and Steel

The Indian Standards Institution has brought out a standard, prescribing the analytical procedures for determining carbon, silicon, manganese, sulphur and phosphorus in iron and steel. In preparing this standard, the ISI Committee has kept in view the facilities available in the country for the necessary chemical analysis as also the technological methods followed in this field.

Radio-Telescope for Manchester

The world's largest radio-telescope is being erected at Manchester University's experimental station at Jodrell Bank, Cheshire. The telescope, which is expected to be ready for use by next year, is automatically provisioned to follow the course of the stars and may well be instrumental in compiling a new map of the heavens.

National Botanical Garden, Lucknow

The Council of Scientific and Industrial Research has taken over the Sikandrabad Botanical Garden of the U.P. Government at Lucknow, for developing it as a National Garden. Prof. K. N. Kaul, Professor of Botany, Government Agricultural College, Kanpur, has been appointed as its Director.

Light Ray to Lure Fish

Fish are known to be attracted by light, and the new combined sinker and lure represents the first attempt to exploit this attraction for commercial fishing. The device is in the form of a hollow brass sinker with a small chamber for a dry battery and bulb. There are two

apertures through which the light is beamed for a distance of several yards. It can function at a depth of up to about 400'. It was first tested during the Lofoten fisheries last spring with very encouraging results, reports the Norwegian Export Council. The cost of the light-ray fishing sinker is 30 shillings.

Institution of Chemists, India

An examination for the Associateship of the Institution of Chemists (India), Group A (Analytical Chemistry), will be held in November 1953. The last date for receiving applications for admission to the Associateship Examination is 31st July 1953. Further enquiries may be made to the Honorary Secretaries, Institution of Chemists (India), Chemical Department, Medical College, Calcutta-12.

Botanical Society of Bengal

At the Seventeenth Annual General Meeting of the Botanical Society held recently, the following Office-bearers were elected for the year 1953-54: *President*: Dr. J. C. Sen Gupta; *Vice-Presidents*: Dr. K. P. Biswas and Prof. P. C. Sarbadhikari; *Hon. Secretary*: Sjt. Mridula Datta.

Indian Dairy Science Association

At the Sixth Annual General Body Meeting of the Association held recently, the following Office-bearers were elected for 1953: *President*: Sardar Bahadur Sir Datar Singh; *Vice-Presidents*: Dr. K. C. Sen and Mr. H. Holck-Larsen; *Joint Secretaries*: Dr. H. Laxminarayana and Mr. M. K. Sastry; and *Editor*: Dr. K. C. Sen.

In the essay competition held in 1952 (Subject: Production and Marketing of Ghee in India) Sri. K. P. Sinha and Sri. B. S. Baliga were awarded gold and silver medals (donated by Sri G. W. Chandiramani, M/s. Sheile & Co., Bangalore), respectively for their essays.

Dr. Harold Lyons

Dr. Harold Lyons, Research Director, National Bureau of Standards, U.S.A., was recently honoured by the Washington Academy of Sciences, for his invention of the atomic clock, which is accurate to within 1 in 10^{10} .