

SCIENCE NOTES AND NEWS

The Natural Control of the Potato Tuber Moth

Sri. K. K. Nirula, Central Potato Research Station, P.O. Sahay Nagar, Patna (Bihar), writes:

Lizards *Hemidactylus brooki* Gray and *H. leschenaulti* Dum. and Bibr. were found preying upon the adults and larvæ of the potato tuber moth *Gnorimoschema operculella* Zell., a very serious pest of stored potatoes in the plains of India. The number of adults and larvæ of *G. operculella* caught daily per lizard ranged up to 28.5.

In an underground potato store at Central Potato Research Station, Patna, very high populations of *G. operculella* were considerably reduced by these lizards during the summer months of 1959 and 1960. These lizards appear to be a valuable addition to the already known biological control agents of *G. operculella*.

Hosts of the Root Parasite *Aeginetia indica* Linn.

Sri. K. S. Venkataramani, Dowescroft Cottage, Quail Hill, Coonoor, writes:

In their recent note on the root parasite *Aeginetia indica* Linn. (*Curr. Sci.*, 1961, 30, 191) the authors, Chavan, *et al.*, remark that they have been able to trace only one host plant, *viz.*, *Dioscorea* sp. Last year, while, collecting plant specimens in the Mudumalai forests of the Nilgiris (elevation ca. 1,000 m. above the M.S.L.), I noticed several groups of *A. indica* scattered here and there under bamboo clumps (*Bambusa arundinacea* Willd.). As this root parasite is not a very common one, I availed myself of that opportunity to examine the nature of its parasitism and found that there was organic union between the bamboo roots and the roots of the parasite. Evidently they were parasitic on bamboo roots. The roots of the parasitized bamboo appeared normal, except that a small swelling was noticed at the region of the union. All the specimens I observed were under bamboo clumps, but in one instance the root parasite was seen associated with a root which was undoubtedly not that of a monocot. I, however, failed to trace the origin of the host root. *Dioscorea pentaphylla* Linn. is very commonly seen in the bamboo forests of Mudumalai, but I am not certain whether the unknown host root could have been that of this plant. As Chavan

et al. mention, it seems unlikely that *A. indica* is a cosmopolitan root parasite, but one can never be dogmatic in this until more critical observations are made in several centres.

Low-Cost Reagent for the Extraction of Ascorbic Acid from Potatoes

Messrs. B. M. Gangwar, and K. Swaminathan, Agricultural Chemistry Laboratory, Central Potato Research Station, Patna (Bihar), write:

Metaphosphoric acid is the ideal extractant for ascorbic acid from fruits and vegetables, but its cost prohibits its use for the analysis of large number of samples in a low-budget laboratory. Ponting and Wokes recommended 2% oxalic acid, which is considerably cheaper, as a substitute reagent. It was, however, found to be unsuitable for the extraction of ascorbic acid from potato tubers. This difficulty was overcome by using a mixture of metaphosphoric and oxalic acids.

The minimum proportion of metaphosphoric acid, which on incorporating to a 2% oxalic acid solution would be just sufficient to give clear extracts, was worked out.

It was found that a mixture of 0.25% metaphosphoric acid in 2% oxalic acid would be an efficient low-cost extractant for use with potatoes. Its choice was further justified when recovery studies showed that with this extractant, exactly similar proportion of the ascorbic acid added before extraction was recovered, as with the 10% metaphosphoric acid reagent.

Effect of Boiling Fishing Net Twines

Sri. G. K. Kuriyan and (Miss) P. J. Cecily, Central Fisheries Technological Research Station, Cochin-5, write:

Net materials of vegetable origin, particularly those of Cotton (*Gossypium* sp.), Sunnhemp (*Crotalaria juncea*) and Italian hemp (*Cannabis sativa*), due to their susceptibility to rotting by bacterial and fungal action, are usually treated by Indian fishermen with "tannins" to ensure their longevity. The sources of "tannins" are barks, twigs, leaves and seedcoats of different indigenous plants and trees. They are extracted by boiling the material in water or by exposure of admixture of the material and water to the sun for a few days. The netting fabric is treated in the hot, cold or pre-cooled extract. While some fishermen prefer the 'hot dip' process to obviously accelerate the amount of impregnation

of the preservative, others use a cold dyeing bath under the belief and personal conviction that heat might affect the strength property of the treated twine. To ascertain the possible effect of heat or boiling on the resultant strength, netting twines of cotton, sunnhemp and Italian hemp after determination of their original breaking strength, both in the dry and wet conditions, were immersed in boiling water for periods of 20, 40, 60, 80, 200 and 120 minutes and their strength determined after such exposure. Results showed that there was apparently no effect on the strength of the twines by boiling up to 120 minutes.

Tenth Anniversary of Turkmenia's Academy of Sciences

Since the establishment of Turkmenia's Academy of Sciences nearly ten years ago, it has become a large scientific centre. It has 22 scientific research institutes, and has provided the republic with scientific workers. Among them are 38 active and corresponding members, more than 150 doctors and candidates to sciences. The Institutes of the Academy are busy with problems which are of great significance for the development of Soviet Turkmenia's economy and culture. These include the solar energy, combined problems connected with the building work and the exploration of the Turkmenian Canal, finding useful deposits, and the study of history, language and folklore of the Turkmenian people.

Several institutes and laboratories are connected with industrial and agricultural enterprises of the republic. Scientists are giving practical assistance to the production workers and are summarising the experiences of the advanced working groups.—(*USSR Information Department, New Delhi.*)

International Conference on the Physics of Semiconductors

The Institute of Physics and the Physical Society on behalf of the International Union of Pure and Applied Physics, and the British National Committee for Physics is arranging an International Conference on 'The Physics of Semiconductors', which will be held at the University of Exeter from 16-20, July, 1962. The Conference is planned to follow the previous sequence of Conferences on the physics of semiconductors, which were held in Reading in 1950, Amsterdam in 1954, Garmisch in 1956, Rochester in 1958 and Prague in 1960.

Accommodation will be provided in Halls of Residence at the University. Further information regarding the Conference may be obtained

from the Administration Assistant, The Institute of Physics, and The Physical Society, 47, Belgrave Square, London, S.W. 1.

Award of Research Degree

Andhra University has awarded the D.Sc. Degree in Physics to Shri K. V. V. Ramana for his thesis entitled "Studies on Ionospheric Drifts and Absorption"; and D.Sc. Degree in Chemistry to Messrs. P. V. R. Subrahmanyam and M. Balankeswara Rao for their theses entitled "Studies on the Nitrogen Changes in Sewage and Sludges" and "Studies in the Photochemical Sensitivity of Uranium (VI)—Carboxylic Acid Mixtures" respectively.

Colloquium on Documentation

A one day colloquium on 'Documentation' was held under the auspices of the Electronics Research and Development Establishment (LRDE), High Grounds, Bangalore-1, on the 28th June 1961. It was presided over by Prof. S. R. Ranganathan, and the delegates, over 60 in number representing about 30 research, scientific and technical organisations from various parts of India, were welcomed by Col. B. M. Chakravarti, the Director of Establishment.

The colloquium discussed the problems encountered in the Technical Information Centre of the LRDE on aspects of 'Storage', Retrieval, and 'Dissemination' of technical and scientific information.

The proceedings of the colloquium, to be brought out shortly, will be available, on request, from the Director.

Crystal Structure of He⁴ and He³

In the course of investigations of the thermal properties of solid He⁴, Dugdale and Simon observed a first order transition whose equilibrium line cut the melting curve at 14.9° K. (*Proc. Roy. Soc.*, 1953, 218 A, 291). As the heat of transition was found to be very small, about 0.8 cal./mole, the transition was assumed to correspond to a change of crystal structure from hexagonal to cubic close-packed.

Whether helium solidifies in the cubic closest packed structure as the other inert gases do has been of theoretical interest. Recently Mills and Schuch (*Phys. Rev. Letters*, 1961, 6, 263) investigated by X-ray diffraction method, the structure of the new phase of He⁴ occurring at temperatures and pressures above 14.9° K. and 1,100 atmosphere. They used the cryostat and camera arrangement, specially adapted to take oscillation photographs, for studying the crystal structure at low temperatures. They found that all the