

"Neotenie und Albinismus bei *Triturus vulgaris vulgaris*"; Hehuda L. Werner, "Über die israelischen Geckos der Gattung *Ptyodactylus* und ihre Biologie"; "Leuchtsflammen-Gro Lux in der Reptilienpflege", by John Merhtens; "Gegen *Strongyloides-Infektionen* bei Reptilien", by Dieter Backhaus; and "Zur Biologie der Rassen von *Echis carinatus* (Schneider) 1801", by Othmar Stemmler-Gyger. The journal is mailed only to members of the Society Deutsche Gesellschaft für Herpetologie und Terrarienkunde e V. Membership of the Society is open to all interested individuals, other societies and institutions. Annual subscriptions are DM 12 (plus DM 2 for entrance fees) within Europe, and 4 dollars (plus 0.5 dollar for entrance fee) abroad. Further information can be obtained from Dr. D. Backhaus, 6 Frankfurt/Main-Niederrad, Gerauer Strade 69b, or from Alfred A. Schmidt, 6 Bergen-Enkheim bei Frankfurt/Main, Muhlbachstrade 5.

### Freshwater Habitats of *Culex pipiens fatigans* in Rangoon

C. H. FERNANDO, of the Department of Zoology, University of Singapore, investigated twenty-one freshwater habitats in Rangoon during February 1963 in relation to the ecology of *Culex pipiens fatigans* (Wiedemann) (*Ceylon Journal of Medical Science*, 13; December 1964). Ten habitats were positive and eleven negative at the time of the investigation. They represent a fair range of freshwater habitats in Rangoon and show a range of pollution conditions. The fauna and flora show an overall reduction with increase of pollution and, among the fauna, a high proportion of 'pan South-East Asian' species occur in polluted habitats. The bacterial flora was studied very cursorily and needs more detailed investigation. In *C. fatigans* the tolerance for most natural organic and inorganic materials is high, though physical factors may influence densities. Oviposition sites may be of considerable importance for high densities of *C. fatigans*. High densities of this insect are associated with decaying organic matter, unsuitability for other fauna and flora in general and the accompanying reduction of predatory animals, especially insects. The Notopectidae are perhaps the most important predators of *C. fatigans* and these penetrate into polluted waters also. In the most heavily polluted habitats, *Armigeres* might well prove a competitor and even a predator of *C. fatigans*.

### Microwaves in Action

MANY phenomena affecting our everyday life are manifest in the form of radiant energy or electromagnetic waves. These vary greatly in length and in frequency of vibration; the longest are more than 6,000 miles from crest to crest with vibration only 30 times per sec; at the other extreme are cosmic rays as short as  $1.5 \times 10^{-8}$  in., with vibrations more than  $30 \times 10^{21}$  times per sec. An informative chart in colour and entitled "The Radiant Energy Spectrum", covering the full range of wavelengths and frequencies, is featured in *Vectors*, a quarterly publication of the Hughes Aircraft Company of California (7, No. 3; third quarter, 1965. Hughes Aircraft Co., Culver City, California). Selected in this issue for special discussion are the micro-waves, and in an account of their uses and potentialities, in an article entitled "Microwaves in Action", some interesting details of their place in the radiant energy spectrum and in industry are given. The microwave region is now generally considered to span waves from about 30 cm down to about 0.1 mm in length, with frequencies between 1,000 and  $5 \times 10^6$  megacycles; the part below 1 cm wave-length is known as the millimetre-wave region.

Among some of the valuable properties of microwaves are that they can penetrate fog or haze; this form of radiation can be sent out and controlled like a searchlight beam, and if part of that beam strikes an object, it is reflected back; this is the basis of the ranging and detecting devices called 'radar'. Microwaves are well

adapted for communications work; they can be transmitted in a line-of-sight pencil beam from one place to another, and in this application they permit many simultaneous channels of communication. A more recent application of microwaves—one destined to grow in importance—is for cooking foods; here the waves penetrate the food, which absorbs them in the form of heat. They are used not only for roasting, but for drying, defrosting and frying. In industry, microwaves find many outlets, such as control of materials, including moisture content; in printing they are used for drying inks in colour lithography, reducing delays of hours to a matter of minutes. Diathermy has long been used for the relief of pain by dielectric heating of body tissue, frequencies for this purpose being about 10 Mc/s; it has been found, however, that microwaves of 2,400 to 2,500 Mc/s may be more efficient because they can be directed to specific areas of the body without contact. It is predicted that microwaves have a brilliant future; microwave receivers in homes and schools receiving television direct from *Early Bird* satellites is one of the most exciting possibilities suggested.

### Concrete Staved Silos for storing High-moisture Barley

AMONG its many and varied activities, the Agricultural Research Council sponsors an Experimental Farm Buildings Scheme which provides for co-operation with farmers in investigations of experimental farm buildings and of experimental ideas affecting buildings. Grants are made towards the capital cost of these buildings and in return farmers provide data for a limited period about the buildings and generally about the operations conducted therein. The practical application of this scheme is well illustrated by the publication of a recent report entitled: "The Use of Concrete Staved Silos for Storing High-Moisture Barley" (*Experimental Farm Buildings—Report No. 4*. By H. J. M. Messer, J. M. Hill, Dr. R. Whittenbury and Dr. J. Lacey. Pp. 24. London: Agricultural Research Council. Obtainable from H.M.S.O., 1965. 3s. 6d. net). This report is in three parts; (a) effect on grain temperature, nutrient content, pH value and the composition of the intergranular air, by H. J. M. Messer; (b) microbiological changes in ensiled grain, by R. Whittenbury; and (c) interim report on the micro flora of airborne dust from moist-stored barley grain, by J. Lacey. In summary, seven concrete staved silos designed for unloading from the top were filled with damp barley from the 1964 harvest. Records of harvesting, filling, unloading and rolling the barley were kept throughout the experiment; changes in the stored grain and in the atmosphere in the silos were determined. It was found that conditions in the silos were sufficiently anaerobic to prevent serious deterioration of the grain so long as it was removed to a greater depth than 3 in. each day. No difficulties were experienced with unloading from the top. Trials of feeding and digestibility with dairy cows indicated that there was no significant nutritional difference between this barley and conventionally dried barley. From the biological point of view, it was found that yeasts and lactic acid bacteria were the dominant micro-organisms in anaerobically stored barley carrying 18–40 per cent moisture. Potentially pathogenic fungi and actinomycetes were found in all silos, but their numbers were minimized by efficient top sealing and by using the barley at a sufficiently fast rate to avoid self-heating. A precautionary measure is noted: efficient dust respirators should be worn when entering silos containing high-moisture grain.

### Royal Society of South Africa

THE following have been elected Fellows of the Royal Society of South Africa: Dr. L. H. Ahrens, Dr. D. H. Davies, Dr. V. Fitzsimons, Dr. E. S. W. Simpson and Dr. E. M. van Zinderen Bakker.