(4–6 times/min) and carbaryl (3–5 times/min) over control fish (2–3 times/min). This increase in the frequency of surfacing in pesticide medium might either be due to hypoxic condition in the medium, or difficulty to respire in the medium[4].

(d) The rate of opercular movement was also reduced significantly under pesticide and the decrease was greater under C+P exposure confirming its higher impact. The reduction in the rate of opercular movement may be regarded as a protective mechanism to minimize gill damage[5,6]

The organophosphate (Phenthoate) and carbamate (Carbaryl) pesticides are known to inhibit acetylcholinesterase, a neurotransmitter enzyme and causes hyper excitability[7,8], which in turn might also influence behavioural patterns. Though the behavioural patterns, mostly neurological, are also influenced by other metabolic changes, the sum total of all these neurological, physiological and biochemical changes at the tissue level contributes to the abnormal behaviour of the fish which is greater under C+P combination than under individual exposures. This shows that this combination has an additive effect on the physical, morphological conditions and behavioural patterns of the fish. In a way, the abnormal behaviour exhibited by the fish can be taken as a useful parameter in assessing the extent of pollution by pesticides, because, the fish serves as a bio-indicator of aquatic pollution. Thus, behavioural studies need much emphasis in understanding changes in the animal's habitat, because an altered environmental condition manifests stress on the animal.

21 October 1986

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A RECORD OF A MERMITHID FROM MAIZE BORER, *CHILO PARTELLUS* (SWINHOE) (PYRALIDAE: LEPIDOPTERA)

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MERMITHIDS are important nematode parasites of agricultural pests. Tent caterpillar, *Malacosoma americanum* (Fab) has been reported as a host of *Hexamermis* sp in USA[1]. This species has been found in *Spodoptera frugiperda* (J. E. Smith), a pest of maize in Nicaragua[2]. *Heliothis* spp have also been reported as hosts of *Hexamermis*[3]. Up to 25% parasitism of shoot borer, *Hypsipyla grandella* was noticed in Costa Rica[4].

Maize borer, *Chilo partellus* (Swinhoe) is an important pest of maize in Pakistan. It is commonly found in all the maize growing areas of the country[5].

A survey of the maize fields in Swat, Pakistan was conducted during 1978 from March to July for nematode parasitism in larvae of *C. partellus* by dissecting infested plants at random. Larval parasitism by *Hexamermis* sp nr *albicans* ranged from 0.3 to 3.0%. Parasitism was extremely localized. The nematodes emerged through the intersegemental membrane of the host and killed the larvae upon emergence. Only one nematode per larva was observed.

Most of the Mermithids spend a part of their life in soil to moult after emergence from the host. During 1979 pits of 40 cm diameter were dug in the fields from January to December to find out vertical distribution of nematodes in the soil. Pits were dug at random in the fields in which infestation was found in 1978. Nematodes were found coiled in the soil from soil surface to a depth of 60 cm. The number of parasites was recorded for every 10 cm depth from the surface. The highest number (19) was found at a depth of 21–30 cm and the lowest (2) at 51–60 cm. The number of nematodes increased from 1–10 to 21–30 cm and then decreased up to 51–60 cm from the soil surface.

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NEWS

THIRD NATIONAL CONFERENCE ON SURFACTANTS, EMULSIONS AND BIOCOLLOIDS

The Third National Conference on Surfactants, Emulsions and Biocolloids will be held during December 28–30, 1987, under the auspices of the Indian Society for Surface Science and Technology and organised by Aligarh Muslim University, Aligarh.

The Conference will provide an opportunity to technologist and experts from Academic and Research Institutions and Industries to assemble on a common platform to exchange views and discuss developments related to latest findings from active researchers. The discussion and interaction will widen the perspectives of research and development and provide an opportunity for scientits, technologists and experts engaged in the area of fundamental and applied aspects of Surface Science in the Academic Institutes and Industries to come together for a meaningful co-operation.

The technical sessions shall include invited lectures, presentation of papers (oral/poster) and symposia.

Details can be ascertained from: Dr H. N. Singh, Organising Secretary, Third National Conference on Surfactants, Emulsions and Biocolloids, Department of Chemistry, Aligarh Muslim University, Aligarh 202 001.

ORGANIC COMPOUNDS ACCUMULATING SOLAR ENERGY

Organic compounds to accumulate solar energy and supply it at the will of the experimenter have been developed by the staff members of the Institute of Chemistry of the Bashkirian branch of the USSR Academy of Sciences. The products of petrochemical synthesis make the basis of these substances. Under the influence of solar light, chemical transformations take place in them resulting in a new product which can keep the accumulated heat. Prof. Genrikh Tolstikov, one of the authors of this project, said that one kilogram of such product can accumulate 300 kilo-calories sufficient to heat a few dozen litres of water to the boiling point. In order to release thermal energy, it is necessary to affect the compound with a special catalyst. If needed, the substance-accumulator can be charged from solar rays practically for an unlimited number of times.

It is hoped that in future the new compounds will replace portable power stations at the places which are far from energy sources. (*Sovet features*, Vol. XXVI, No. 4, p. 5, 1987; Information Department, USSR Embassy in India, P.B. No. 241, Barakhamba Road, New Delhi 110 001).