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Department of Botany, V. BHASKAR.
Univ. of Mysore, B. A. RAZI.
Mysore, India, *April* 3, 1973.

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Original not seen.

SHORT SCIENTIFIC NOTES

A Note on a Collection of Two-Tagged ? Gar Fish, *Ablennes hians* (Valenciennes) (Belonidae : Pisces) from Vizhinjam, South-West Coast of India

While observing fish landings at Vizhinjam on 18-11-1972, two-tagged ? specimens of *Ablennes hians* (Valenciennes) were collected from the shore seine catch out of several specimens. The specimens were identified based on Munro (1955) and Smith (1961).

The tags ? found on the specimens are of different types, the bigger specimen, 800 mm total length with a polythene ring and the smaller specimen 739 mm total length with nylon threads. The tags ? did not show any information about the releaser.

The specimens are deposited in the museum of Marine Survey Station, Vizhinjam and any person interested may please contact us.

Directorate of Fisheries, A. I. GEORGE.
Kerala, Trivandrum-10, M. S. NAZIR AHMED.
June 6, 1973.

Lepidopterous Pests of Ragi (*Eleusine coracana* Gaertn.) Earhead in Mysore State

Several species of Lepidopterous caterpillars attack ragi earheads. Fletcher (1921) listed three caterpillar pests attacking ragi ears at Pusa. David *et al.* (1962) listed an additional five species and gave an account of the earhead pests of ragi from Coimbatore.

The earhead pests of ragi reported previously from Mysore State are *Cacoecia epicyrta* Meyr. (Puttarudriah and ChannaBasavanna, 1950), *Stenachroia elongella* Hampson (Usman, 1954) and *Cryptoblabes angustipennella* Hampson (Veeresh and ChannaBasavanna, 1966).

During the year 1971-72 four species of Lepidopterous caterpillars, *viz.*, *Diacrisia obliqua* Walker (Arctiidae), *Creotonotus gangis* Linn. (Arctiidae), *Pseudalatia separata* Walker (Noctudiae) and *Heliothis armigera* Huebner (Noctuidae) were found attacking ragi earheads around Bangalore. The damage by the caterpillars was characterized by the presence of excretory pellets and white grains at the centre of the earheads which resulted from the feeding acitvity of the caterpillars. The Noctuid larvae were more predominant than the Arctiids.

Though *Heliothes armigera* has been recorded on ragi earheads at Pusa (Fletcher, 1921) and Coimbatore (David *et al.*, 1962), all the four species listed are recorded here in Mysore State for the first time on ragi earheads and are considered as potential pests.

Regional Research Station, P. S. RAI.
University of Agricultural Sciences,
Mandya, Mysore State,
June 14, 1973.

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Record of *Paraclepsis praedatrix*, Harding, 1924 and *Glossiphonia weberi* Blanchard, 1897 (Annelida : Hirudinea), from a New Host, *Rana limnocharis* Wiegman

While undertaking a faunistic survey of Nahan and its vicinity (Sirmour District, H.P.) during January 1973, we collected some frogs, *i.e.*, *Rana limnocharis* Wiegman by dredging from the bottom of a ditch. While those animals were fixed in preservatives, a few examples of leeches were found attached on the body of the frogs. The parasites were identified as *Paraclepsis praedatrix* Harding and *Glossiphonia weberi* Blanchard. From available literature it was revealed that there are only two records of parasitization of *P. praedatrix, i.e.,* from *Lissemys punctata granosa* (Schoepff) and *Natrix piscator* (Schneider) and in the case of *Glossiphonia weberi,* the reported parasitization is from gastropods (*Ampullaria Paludina,* and Limnea). Dr. S. Kemp has reported from the body of Dytiscidae a species of *Hydrophilus.* The other species of leeches so far recorded from amphibian host are *Helobdella stagnalis* Linn. and *Placobdella ceylanica* Harding.

Thus this is a first record of these species from the amphibian host and addition to few rare records of parasitization of those species.

Shilli Road, Solan, H.P., May 23, 1973.
M. CHANDRA.
R. N. MUKHARJEE.

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Compensation Effect in Semiconducting Metal-Organic Systems

A linear relationship between activation energy (E_a)' and log σ_0 has been shown to exist for amino-acids[1], proteins[2], and various classes of synthetic polymers[3] and their pyrolysed products[4]. We find that such a relation also exists for chelate polymers. The relation is

$$E_a = A + B \log_{10}\sigma_0$$

where A and B are constants. Our studies include the chelate polymers of cobalt (II), nickel (II) and copper (II) with 1, 5-dihydroxy *p*-benzoquinone (*a*), 1, 4-dihydroxynaphthoquinone (*b*), 1, 4-dihydroxy-anthraquinone (*c*), 1, 5-dihydroxyanthraquinone (*d*), 1, 5-diamino 2, 6-dihydroxynphthalene (*e*), dioxime of 1, 5-diacetyl 2, 6-dihydroxynaphthalene (*f*) and 5, 8-dihydroxy quinoxaline (*g*)[5]. We find that for cobalt and nickel chelate polymers two lines are obtained: for the chelate polymers of (*a*) and (*d*), A = 1 and B = 0·074 and for the chelate polymers of (*b*), (*c*), (*e*), (*f*) and (*g*), A = 0·95 and B = 0·014. The points for the chelate polymers of copper lie scattered around the two lines. The results indicate that the compensation between E_a and σ_0 is independent of the nature of the metal atom in the case of cobalt and nickel chelate polymers but is dependent on the nature of the metal atom in the case of copper chelate polymers.

Chemistry Department, M.S. University of Baroda, Baroda, June 4, 1973.
A. M. TALATI.
V. N. MISTRY.

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An Observation on the Digestive System of the Rotifer *Pseudoembata acutipoda* Wycliffe and Michael (1968)

Some significant observations, confirmed on the basis of living and histological studies, have been made on the digestive system of the rotifer, *Pseudoembata acutipoda* (family Philodinidae). The stomach of this form, unlike the stomachs of the rotifers belonging to family Philodinidae (Hyman, 1951) which have a distinct ciliated lumen, resembles the stomachs present in the members of the family Habrotrochidae, *e.g., Habrotrocha* (Haigh, 1963), inasmuch as it is without lumen and possesses food vacuoles. As far as the intestine of *P. acutipoda* is concerned, it is, as in family Philodinidae, ciliated, though in Habrotrochidae it is not. The tentative conclusion, based on the present investigation, therefore, is that *P. acutipoda* forms a connecting link between family Habrotrochidae and family Philodinidae, both of which belong to the same order, *i.e.,* Bdelloidea.

Department of Zoology, Panjab University, Chandigarh, India, June 4, 1973.
H. S. VASISHT.
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Tolerance to Greening Disease in Certain Citrus Species

During the surveys of citrus growing areas of the country it was observed that sweet lime and pummelo, locally known as chakotra, were the least affected with greening disease and die-back and showed field tolerance. The greening pathogen, however, could be isolated on indexing on sweet orange. In addition to these, *Citrus macroptera* growing wild in Assam did not show greening symptoms and greening pathogen could not be isolated from it on indexing. A large number of citrus species were therefore tested by grafting in an attempt to search for sources of resistance or tolerance to the disease and its causal pathogen.

One to one and a half year old seedlings of various citrus species and varieties were raised in an insect-proof glasshouse and inoculated with greening pathogen from an infected grapefruit tree by budding on them with infected buds. About 4–6 plants of each citrus species were tested in this manner and the plants observed for greening symptoms.

It was observed that out of 25 citrus species and varieties tested only three, namely, Sweet lime (*Citrus limmetioides* Tan), Watson pummelo [*C. grandis* (L.) Osbeck] and Adajamir (*C. assumensis* Dutta and Bhatia), a root stock, either did not take infection or showed very mild symptoms.

In another field the best three young sweet lime plants raised in the insect-proof glasshouse were planted in an infected orchard (greening affected) along with three sweet orange and three mandarin plants and exposed to natural infection through psylla. Whereas all the mandarin and sweet orange plants got infected with greening disease within 1 to 1½ years the sweet lime plants remained healthy with very mild symptoms of greening on one plant only. Thus the sweet lime and pummelo show tolerance to the greening disease under field conditions as also on artificial inoculation.

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Chromosome Number and Sex-Determining Mechanism in Fourteen Species of Coleoptera

The present communication deals with the chromosome number and sex chromosome mechanism in fourteen species of polyphagous beetles belonging to six families (Table I) collected from Kurukshetra (Haryana).

TABLE I

Species	Chromosome Number		Male sex chromosome mechanism
	2n	n	
Family—Dermestidae			
1. *Anthrenus fasciatus*	18	9	Xyp
Family—Meloidae			
2. *Mylabris pustulata* Thumb.	22	11	Xyp
3. *Mylabris phalcrata* Pall.	22	11	Xyp
Family—Cantharidae			
4. *Cantharis tenuicollis* Pall.	20	10	Xyp
5. *Cantharis* sp.	20	10	Xyp
Family—Scarabaeidae			
6. *Aphodius moestus* Fabr.	22	11	Xyp
Family—Chrysomelidae			
7. *Glyphocassis trilineata* Hope	18	9	Xyp
8. *Cassida indicola* Duvivier	18	9	Xyp
9. *Cassida circumdata* Hbst.	18	9	Xyp
Family—Curculionidae			
10. *Paramecops farinosis* Wied.	32	16	Xyp
11. *Calandra linieris* (Hbst.)	24	12	Xyp
12. *Echinocnemus* sp.	18	9	Xyp
13. *Hypolixus truncatulus* Bohr.	44	22	Xyp
14. *Coryssomerus* sp.	24	12	Xyp

All the species under present report possess Xyp-type of sex chromosome mechanism, typical of the polyphaga. However, only two cantharids agree with the basic polyphagous karyotype 9 AA + Xyp ♂.

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Department of Zoology,
Kurukshetra University,
Kurukshetra, *April* 23, 1973.

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