

of gene-banks for conservation of haploids and other germplasm of important plant species.

Institut für Pflanzenphysiologie Y. P. S. BAJAJ.*
und Zellbiologie,
Freie Universität, Berlin,
1-Berlin 33, Germany,
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* Present address: 6/12 Punjab Agricultural University, Ludhiana, India.

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INTERSEXUALITY IN THE FRESH WATER TELEOST, *HETEROPNEUSTES FOSSILIS*

ALTHOUGH the teleost fishes have been recognised as unisexual yet spontaneous intersexuality or hermaphroditism is known to occur in a few teleosts (Atz¹, 1964). The degree of intermingling of the ovarian and testicular tissues varies in different fishes. James³ (1946) observed, one half of the ovotestis as testicular and the other half as ovarian in *Huro salmoides*. D'Ancona² (1950) noticed the gradual inversion in the gold fish *Sparus auratus*. Sathyanesan⁵ (1957) reported the presence of a single oocyte in the intertubular space in the adult testis of *Barbus stigma* while Krishnamurthy *et al.*⁴ (1970) observed the immature oocytes scattered within the testicular tissues of *Rasbora daniconius* and also grouped together in well-defined areas.

A careful study of the serial sections of the gonad of *Heteropneustes fossilis* by the authors revealed that the gonad in this fish is an ovotestis. The presence of ovotestis in this fish is very uncommon. The ovotestis (Fig. 1) is found to contain, isolated, one or two immature and mature oocytes lying attached to one side of the adult testis. The immature oocytes are characterised by a clear homogeneous cytoplasm and a big nucleus with numerous small nucleoli. The matured oocytes show the presence of well-developed yolk globules of different sizes with a shapeless nucleus. The testis showed normal features.

The present observations point out a few similarities and dissimilarities with the findings of other workers. The occurrence of oocytes only on one side of the

adult testis is in contrast with the findings of Sathyanesan⁵ (1957) and Krishnamurthy⁴ (1970). Intermingling of the oocytes within the testicular tissues has not been noticed in the ovotestis of *H. fossilis*. The presence of both immature and matured oocytes are again in contrast with the explanations of Krishnamurthy *et al.*⁴ (1970) who have observed only immature oocytes scattered within the testicular tissues of *Rasbora daniconius*.

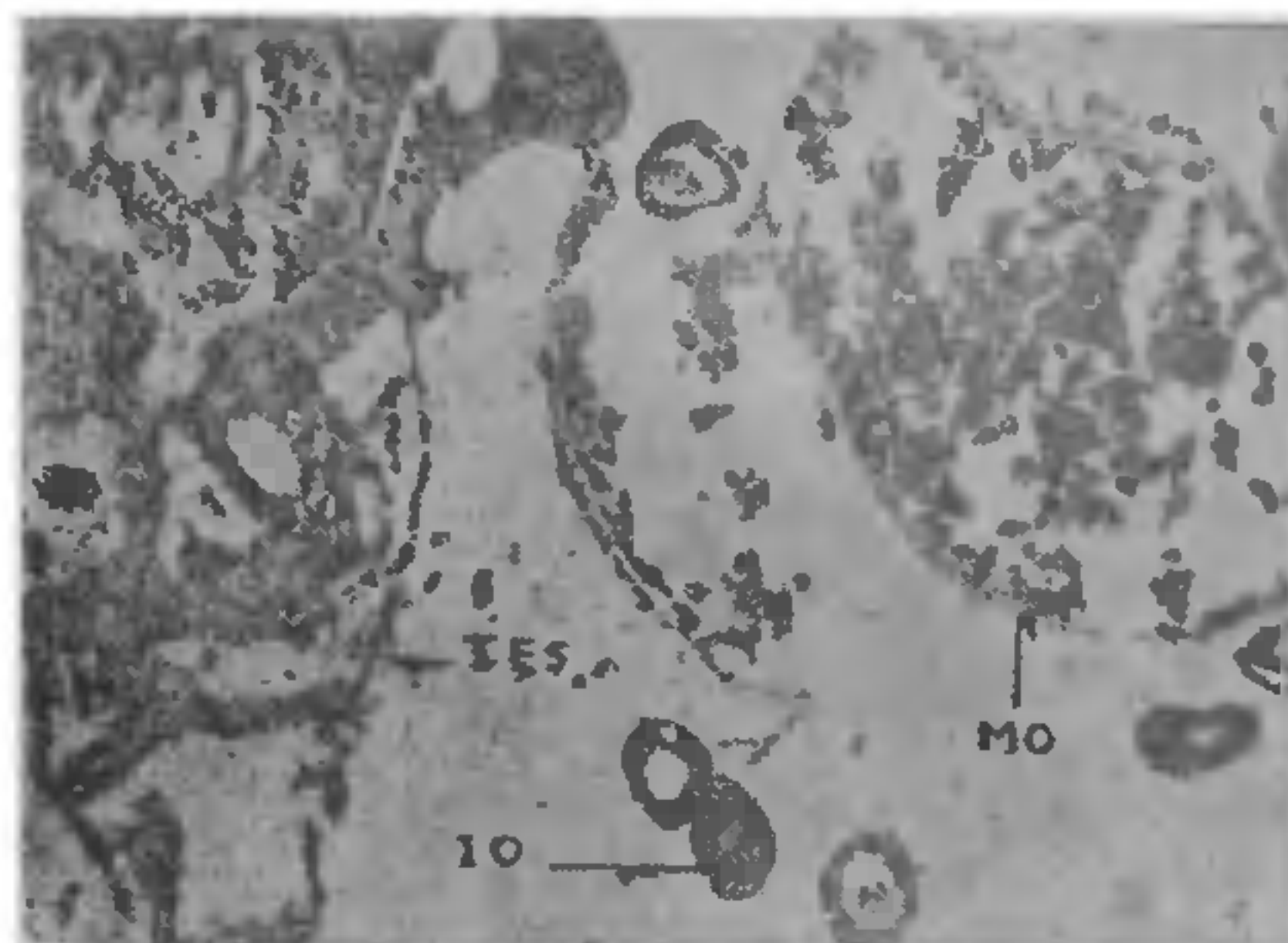


FIG. 1. Section of the Ovotestis of *Heteropneustes fossilis*. Zenker/Iron haematoxylin, $\times 300$.

(TES, Testis; IO, Immature oocyte; OM, Mature oocyte.

The occurrence of ovotestis in *H. fossilis* cannot be stated at this stage as the phenomenon of hermaphroditism or sex reversal as this fact needs further investigation and elaboration.

Zoology Research Laboratories,
Multanil Modi College,
Modinagar 201 204, India,
February 21, 1977.

O. P. SAXENA.
H. K. BHATIA.

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PELTOTRACHELUS COGNATUS MSIL, (CURCULIONIDAE: COLEOPTERA) A NEW PEST OF ORCHARD CROPS

THE genus *Peltotrachelus* is represented by three species in India and the adults are known to be the defoliators of tree hosts. *Peltotrachelus juvenis* Fst., *P. pubes* Fst., and *P. albus* Poscoe have been reported infesting *Acacia catechu* W. and A., *Citrus aurantium* L., *Tectona grandis* L.f., and *Zizipus jujuba* Lam. in India¹⁻³ and *P. isabellinus* Boh. infesting cacao in Java⁴.

TABLE I

Incidence of *Peltotrachelus cognatus* on *M. indica* grafts at Main Research Station, Hebbal, Karnataka

Month	Old growth (Bottom whorl)		New growth (Top whorl)		No. of weevils observed	
	No. of leaves*	No. of leaves* damaged	No. of leaves*	No. of leaves* damaged	<i>P. cognatus</i>	<i>M. undecimpustulatus</i> var. <i>maculosus</i>
September						
Total	128	14	320	150	26	6
Average	10.66	1.16	26.66	12.50	2.16	0.50
Per cent damage		10.70		46.70		
October						
Total	98	22	306	180	24	4
Average	8.16	1.80	25.5	15.00	2	0.33
Per cent damage		22.44		58.80		

* Observation on 12 plants.

The adults were observed of *P. cognatus* infesting leaves of orchard crops namely *Achras sapota* L., *Anacardium occidentale* L., *Mangifera indica* L., *Prunus avium* L., *P. domestica* L., *P. persica* Benth. and Hook., *Psidium guajava* L., *Pyrus communis* L., *Pyrus malus* L., *Punica granatum* L., and other tree hosts namely *Diospyros montana* Roxb., *Holoptelia integrifolia* Planch., *Dalbergia lanceolaria* L.f., and *Morus alba* L. for the first time in India. The weevils were found to feed from leaf margin proceeding inward leaving the thick veins and midrib in an irregular fashion (Fig. 1). The adults appeared in large numbers on the above hosts in May and remained on them till November. They were observed congregating on the underside of the leaves during the sunny hours and scattered themselves during cool hours.

During September and October 1976, *M. indica* grafts were found heavily damaged by *P. cognatus* at Main Research Station, Hebbal. A perusal of Table I indicates that the damage was more on the leaves of new growth (46.7 and 58.8%) than on old growth (10.7 and 22.4%). Weevils preferred brittle leaves to very tender ones of new growth. *Peltotrachelus cognatus* and *Mylocerus undecimpustulatus* var. *maculosus* Desb., which occurred together, were both responsible for the damage. However, the numbers of former being four times more than the latter, it can be inferred that *P. cognatus* was responsible for the major portion of the damage (Table I). Observations on *M. indica* grooves around Bangalore also revealed the severity of the damage to the grown-up trees.

The field crops in the vicinity of orchard crops were seldom infested by the species, thus revealing the preference of adults of *P. cognatus* to the orchard crops.

The adults of *P. cognatus* are often mistaken for *M. undecimpustulatus* var. *maculosus* as they look

alike. However, the former can be distinguished by the pale colour with three brown coloured transverse wavy lines on the elytra (Fig. 1).



FIG. 1. Damage to the *M. indica* leaves caused by *P. cognatus*.

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Department of Entomology,
Univ. of Agricultural Sciences,
Hebbal, Bangalore 560 024,
January 27, 1977.

C. SIDDAPPAJI,
S. LINGAPPA,

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