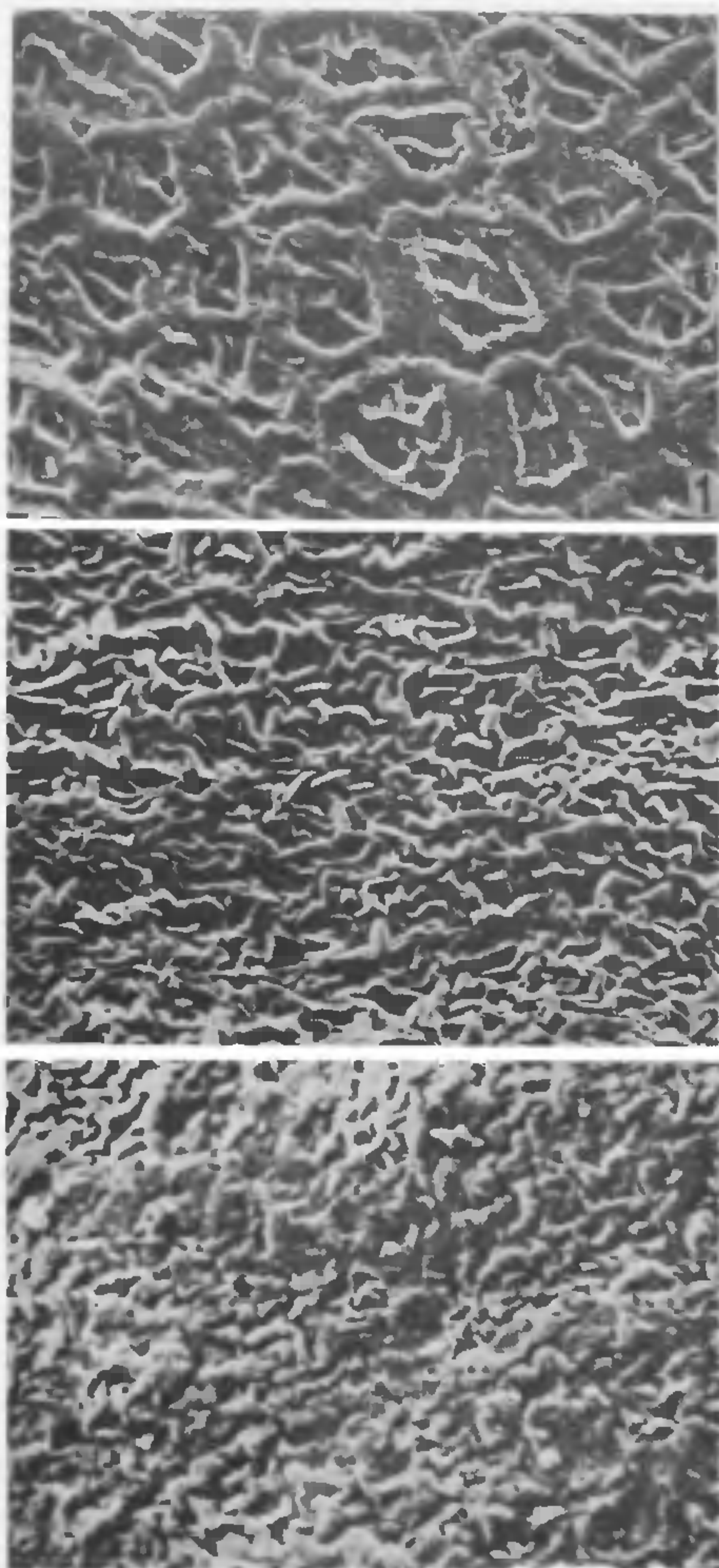


this pattern is more distinct and the rugae are smooth, while in *S. aegyptiaca* (Fig. 3) the rugae are less distinct and have some deposition, which makes them rough. Presumably, the basic spermoderm pattern does not differ from place to place but the amount of deposition does vary<sup>5</sup>.



FIGS. 1-3. Spermoderm of (1) *Sesbania grandiflora*, (2), *S. aculeata* and (3) *S. aegyptiaca* (All  $\times 4500$ ).

*S. grandiflora* is a medium sized short lived tree, while *S. aegyptiaca* and *S. aculeata* are shrubs. Our studies show that the spermoderm pattern of

*S. aegyptiaca* and *S. aculeata* show greater similarity compared to that of *S. grandiflora*, which is totally different. Though all the three are distinct from each other, we believe that these differences in spermoderm pattern are specific and characteristic of each species of plant.

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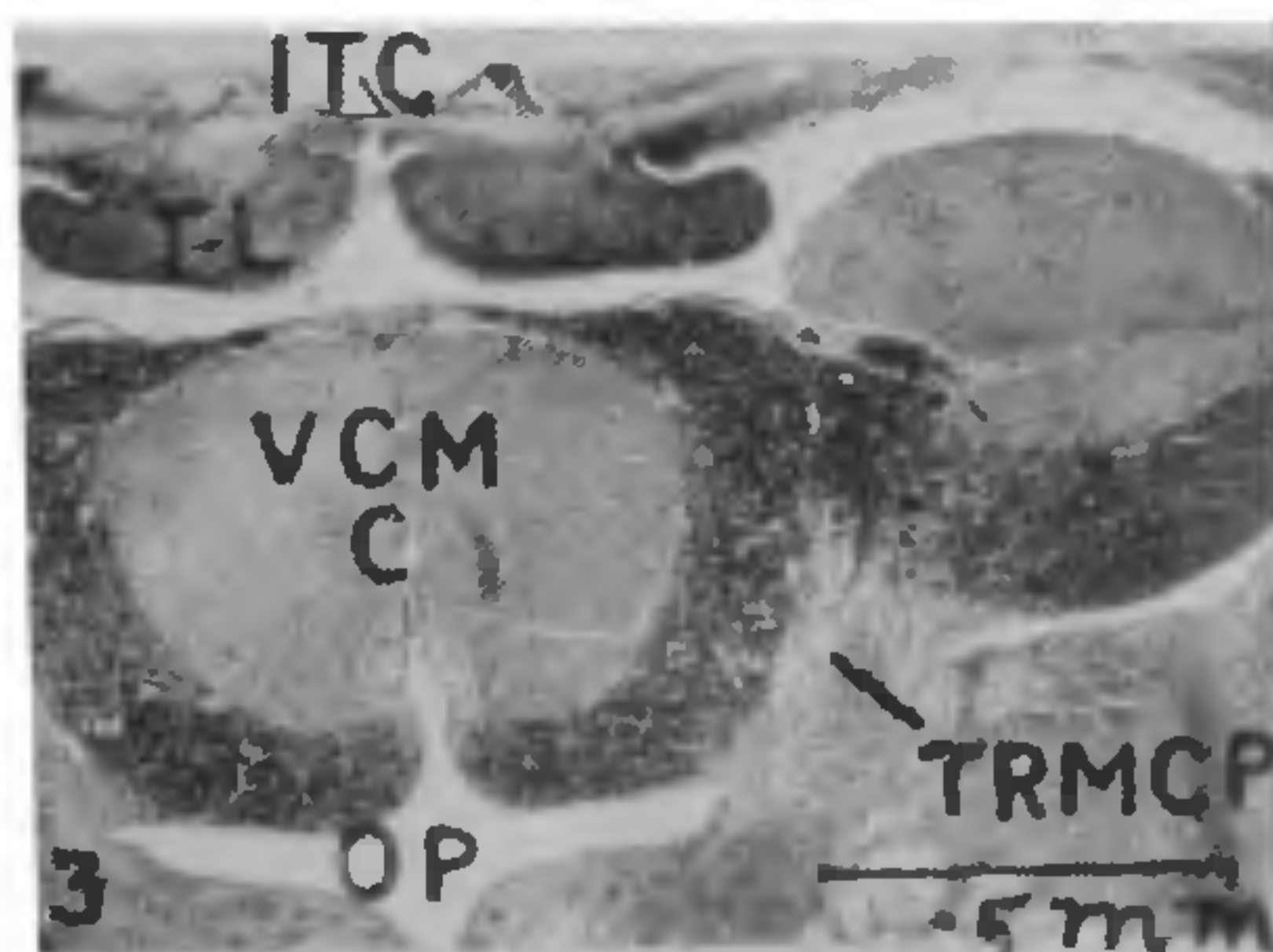
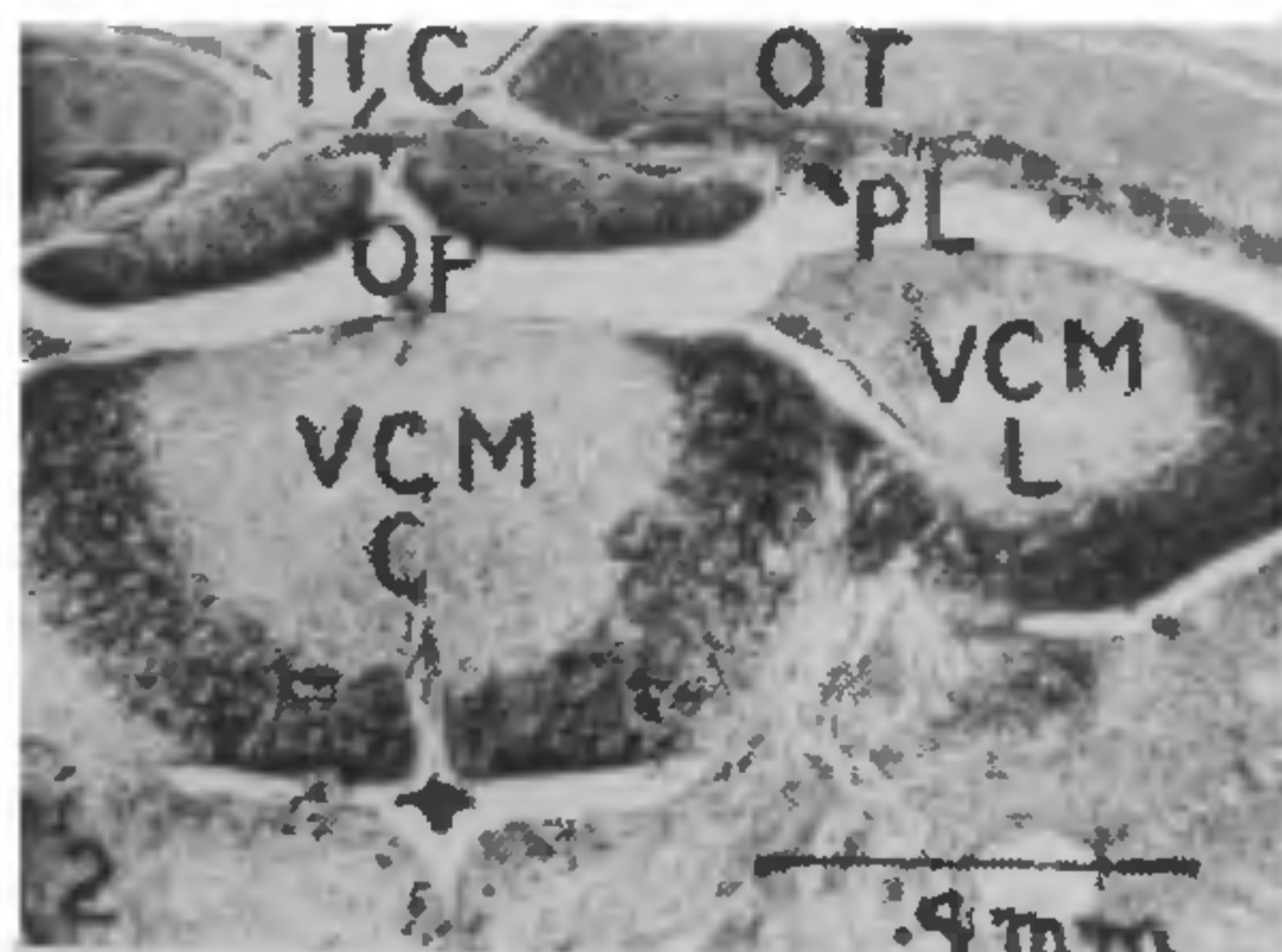
#### TORI LONGITUDINALES AND VALVULA CEREBELLI AS THE BASIS OF IDENTIFICATION IN FISHES

TORI longitudinales arise from the central gray zone of the optic tectum. The two tecta are connected by an intertectal commissure which passes over the tori and some fibres of this commissure may terminate in the mass of tori. The tori hang in the optocoele. The configuration of the tori varies in the species of *Barilius* under report.

Valvula cerebelli is a characteristic feature of bony fishes and assumes a definite configuration at the level where the tractus mesencephalo-cerebellaris posterior establishes a full connection with the granular area of valvula. The molecular valvula by this time has differentiated itself into right and left lateral and a central molecular area surrounded by granular area in a feature characteristic of each species.

*Barilius bola* (Ham.), *B. vagra* (Ham.) and *B. bendelisis* (Ham.) were examined. In *B. bola*, the tori are partitioned medially by a long narrow zone of the optocoele except at the dorsal end (Fig. 1). The tori abut against the periventricular layer (stratum fibrosum periventriculare). Each torus is a massive structure and the optocoele between the tori and the central molecular valvula is very narrow because of

the excessive development of the valvula cerebelli. The central molecular valvula is almost rectangular, the breadth of the rectangle towards the tori being more



FIGS. 1-3. T.S. mesencephalon through the tractus mesencephalo-cerebellaris posterior of 1. *Barilius bola*, 2. *B. vagra*, 3. *B. bendelisis*.

ITC = Intertectal commissure; OP = Optocoele; OT = Optic tectum; PL = Periventricular layer (stratum fibrosum periventriculare); TL = Torus longitudinalis; TRMCP = Tractus mesencephalo-cerebellaris posterior; VCG = Granular area of valvula cerebelli; VCM C = Central molecular area of valvula cerebelli; VCM L = Lateral molecular area of valvula cerebelli.

than that of the opposite end. The intertectal commissure is very thin.

In *B. vagra*, the tori are partitioned medially by a short triangular zone of the optocoele except at the dorsal end. The tori are separated from the periventricular layer by a prominent intertectal commissure (Fig. 2). Each torus is a long, narrow bean shaped mass and the optocoele between the tori and the central molecular valvula is quite spacious. The central molecular valvula is in the form of an inverted triangle with round edges.

In *B. bendelisis*, the optocoele between the tori is in the form of a triangle. Dorsally the two tori are connected with each other. The lateral end of each torus, facing the lateral molecular valvula, is blunt and drawn towards the periventricular layer (Fig. 3). Each torus is like a foot imprint. The optocoele between the tori and the central molecular valvula is intermediate between that of *B. bola* and *B. vagra*. The central molecular valvula has more or less elliptical appearance like an egg. The intertectal commissure is very thick.

It is, thus evident that these histological features provide a means for correlating the extent of development of vision and acoustico lateralis system and are of some taxonomic value.

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#### SOME OBSERVATIONS ON THE HISTOLOGY OF TERMINAL FILAMENT, OVARIOLE SHEATHS AND INTERFOLLICULAR PLUGS OF A COMMON PLANT BUG *ODONTOPUS NIGRICORNIS* STÅL.

THE ovary of *Odontopus nigricornis* like other heteropteran bugs is telotropic. Earlier work on this type of ovary by Bonhag and Wick<sup>1</sup> and Brunt<sup>2</sup> gives an excellent account of histology. A fresh probe in the same topic taking *Odontopus* as an example revealed interesting information, particularly with regard to the terminal filament, ovariole sheaths and the interfollicular plugs. This communication presents this information.

Adult bugs were collected from Empress garden, Pune, and were reared in small cages. They were fed on fig fruits and other vegetable matter. Female bugs were dissected alive in saline (6% sodium chloride). Ovaries were quickly removed and placed in freshly prepared fixatives for 24 hours at 4°C. Bouin's (aqua) calcium formal and Carnoy were tested. Carnoy's fixative proved to be the best. Tissues were dehydrated in alcohol, cleared in benzene and embedded in paraffin wax (M.P. 52-54°C). They were sectioned