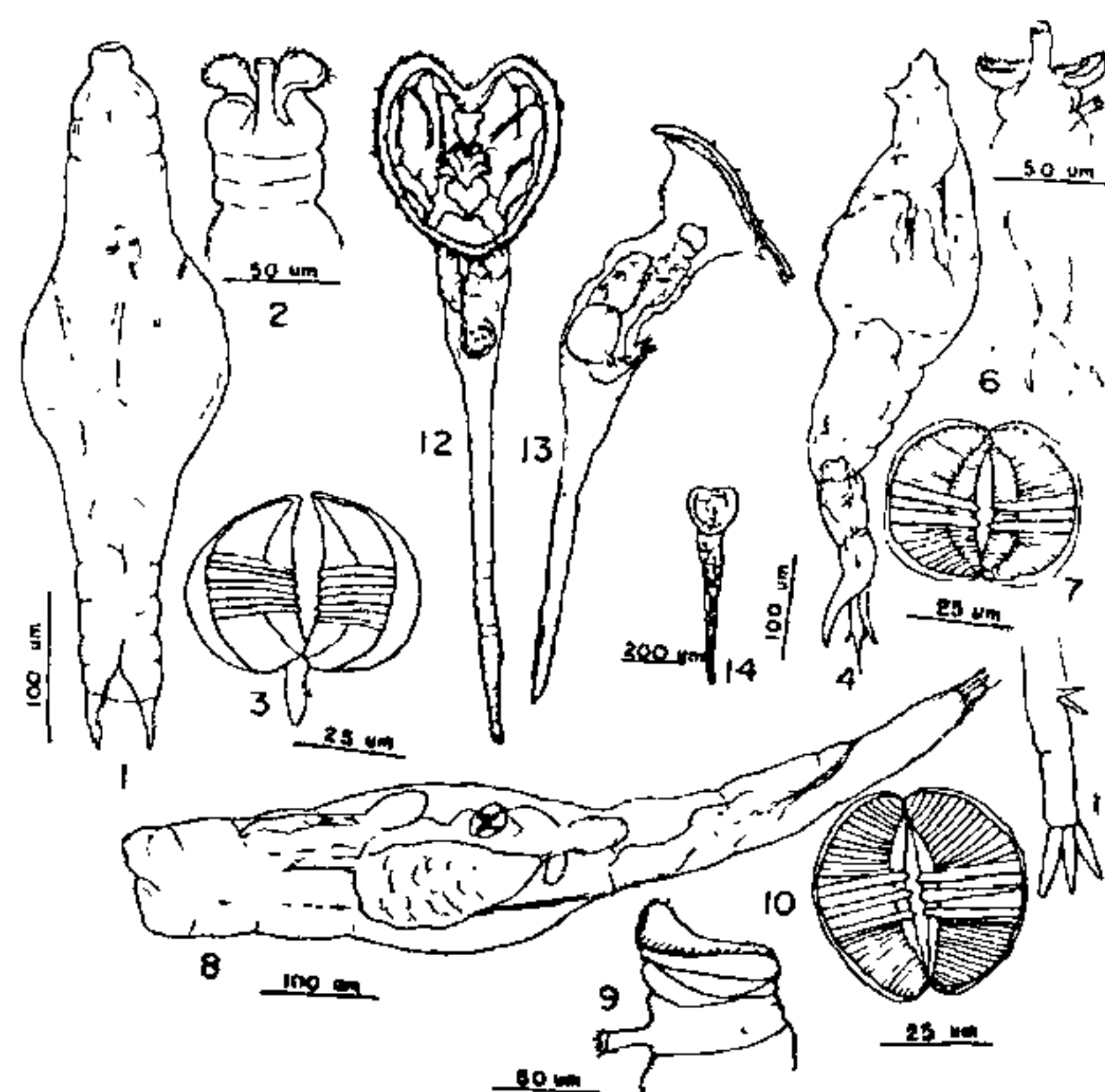


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Figures 1-14. 1. *Callidina bidens* Gosse, contracted, L.V. 2. Anterior part, expanded D.V. 3. Trophi, D.V. 4. *Rotifer tardus* Ehrenberg, contracted, L.V. 5. Anterior part, expanded D.V. 6. Foot expanded, L.V. 7. Trophi, D.V. 8. *Rotatoria neptunia* Ehrenberg, contracted, D.V. 9. Anterior part, expanded, D.V. 10. Trophi, D.V. 11. Foot expanded, L.V. 12. *Lacinularia socialis* Ehrenberg, D.V. 13. *L. socialis*, L.V. 14. *L. socialis*, contracted. (D.V.= Dorsal view, L.V.= Lateral view)

## NEW RECORDS OF ILLORICATE ROTIFERS FROM INDIA

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LITTLE is known about bdelloid rotifers of India; only 8 species are known to occur in the country<sup>1</sup>. Three species, *Callidina bidens*, *Rotifer tardus* of the Order Bdelloid and *Lacinularia socialis* of the Order Rhizota, reported here, are new to India. Besides, a bdelloid rotifer, *Rotatoria neptunia*, recorded earlier<sup>2,3</sup> is also found to occur in Dharwar.

Rotifers were collected from freshwater bodies around Dharwar during 1978-1979 with a plankton hand net of nylon bolting cloth (mesh = 50 μm). Rotifers adhering to weeds were obtained by rinsing the weeds and sieving the water through the net cloth. The individuals were sorted out after fixing the material in 4% formalin. The trophi were studied by treating the animals with 1% KOH for 2-3 min. Camera lucida drawings were made from live specimens and the species were identified from earlier descriptions<sup>4,5</sup>.

Order: Bdelloidea  
Family: Philodinidae  
*Callidina bidens* Gosse (figures 1-3)

The body is spindle shaped and its surface is corrugated. The head when extended, terminates in a thick rounded column with two ciliated wheels. The foot is cylindrical with protrusible lateral toes. Trophi is

ramate with thick fulcrum. Each ramus has 4 distinct teeth. It is collected from weedy regions of tanks.

*Rotifer tardus* Ehrenberg (figures 4-7)

The species is conical and dull brown. The body tapers posteriorly and its anterior part is cylindrical, truncate, having a small proboscis at its tip. The retractile foot ends in 3 toes. Trophi is ramate, without fulcrum and with two distinct teeth in each ramus. It is a sluggish rotifer found in the bottom sediments.

*Rotatoria neptunia* Ehrenberg (figures 8-11)

This species, already reported from Andhra Pradesh<sup>2</sup> and West Bengal<sup>3</sup>, also occurs in Karnataka State.

Order: Rhizota  
Family: Meliceratidae  
*Lacinularia socialis* Ehrenberg (figures 12-14)

It is found in clusters adhering to aquatic weeds. The body is slender with heart shaped corona. The foot, transversely wrinkled and non-retractile, ends in a sucking disc. Trophi is unciniate.

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**THE HAEMOLYMPH PROTEIN PATTERNS OF PERIPLANETA AMERICANA INFECTED WITH CYSTACANTHS OF MONILIFORMIS MONILIFORMIS BREMSER (ACANTHOCEPHALA)**

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STUDIES on haemolymph proteins of the developmental stages of insects are considerable, but the role of insects as intermediate hosts of several species of parasites introduces a new dimension regarding their

influence on the chemical composition of host tissues like haemolymph, fat body and muscles. Species—specific and stage—specific patterns of the haemolymph proteins, in particular, of albumins and globulins through either paper or starch or gel media have been analysed with respect to many insects<sup>1</sup>. In view of the large scale infection of nymphs and adults of both sexes of *Periplaneta americana* by the cystacanths of *Moniliformis moniliformis* which complete their development in the haemocoel of the cockroaches, an attempt has been made to examine qualitative changes in the haemolymph protein patterns in the nymphs and adults of both sexes through paper electrophoresis.

Haemolymph (20 $\mu$ l) of both uninfected and infected *P. americana* was run on Whatman No. 1 filter paper, in vertical paper electrophoresis. The different fractions were characterised by staining in bromophenol blue, and eluted in 0.01 N NaOH and their optical densities were measured in Spekol spectrophotometer (GDR) at 520 nm. The percentage of the relative fractions in the infective specimens, taking the total absorbance values of the control to represent 100, is given in table 1.

In the uninfected female nymph, of all the fractions, the albumin showed high peak of absorbance. Among the globulins three of the fractions (2, 3 and 5) showed comparatively higher peaks of absorbance than the rest. In the female nymph, infected with 78 cystacanths

TABLE I

*Percentage of different protein fractions in the control and infected Periplaneta americana*

Sex and stage of maturity	No. of cystacanths of <i>M. moniliformis</i> (Albumin)	Percentage of Fractions*					
		Fr-1	Fr-2	Fr-3	Fr-4	Fr-5	Fr-6
Uninfected control (adult male)	—	15.63	62.50	3.13	3.12	15.62	—
Uninfected control (adult female)	—	26.32	2.63	10.53	19.74	40.78	—
Infected (adult male)	20	187.50	37.50	93.75	87.50	87.50	—
Infected (adult female)	23	59.21	19.74	19.74	98.68	72.37	—
Uninfected control (Nymph female)	—	33.33	16.66	16.67	6.09	10.58	16.67
Infected (Nymph female)	78	33.33	17.77	5.55	1.11	—	13.33

N.B. \* The percentages of infected individuals are calculated taking the total of control values as 100.  
Fr— Fraction