

ON SOME SPECIES OF THE FAMILY NOTOMMATIDAE (EUROTATORIA :
MONOGONONTA) FROM NORTH-EASTERN INDIA.

By

B. K. SHARMA

Department of Zoology, North-Eastern Hill University, Shillong.

AND

SUMITA SHARMA

Eastern Regional Station, Zoological Survey of India, Shillong

ABSTRACT

This communication deals with nine species, belonging to three genera, of the family Notommatidae Remane 1933 (*partim*) from North-Eastern India. Amongst these, the genus *Monommata* Bartsch 1870 is being reported for the first time from this country. In addition, four species represent new records from India while eight species are new to this region. All the reported taxa are described and illustrated. Remarks are made on the ecology and distribution of the documented species.

INTRODUCTION

Notommatidae is one of the largest families of the monogonont rotifers. It is divided into two subfamilies and includes twenty genera (Koste 1978). Our knowledge about Indian representatives of this family is fragmentary. Various previous related contributions are those of Anderson (1889), Edmondson & Hutchinson (1934), Wulfert (1966), Dhanapathi (1975) and Sharma (1979)

The present contribution is a part of the investigations on the rotifer fauna of North-Eastern India and it deals with nine species, spread over three genera, of the family Notommatidae. Genus *Monommata* is not

recorded so far from India and this sub-continent as well. Further, four species comprise new reports from this country while eight are new to North-Eastern region. Various presently examined species are described and illustrated. Remarks are made on the ecology and distribution of the different species.

MATERIAL AND METHODS

This study is based on the samples collected from the different freshwater bodies in North-Eastern India (Sharma & Sharma 1987). Specimens mounted in Polyvinyl-lectophenol are examined for taxonomic details. All the drawings are made using a

camera lucida and the measurements are given in micrometers (μm).

SYSTEMATIC ACCOUNT

- Class : ROTIFERA
 Subclass : EUROTATORIA
 BARTOS 1959
 Super-order : MONOGONONTA
 WESENBERG-LUND 1889
 Order : PLOIMIDA DELAGE
 1897
 Family : NOTOMMATIDAE
 REMANE 1933 (*partim*)
 Genus : **Cephalodella** Bory
 De St. Vincent 1826

Body cylindrical, slightly curved, cuticle somewhat stiffened; with a dorsal and a ventral plate. Foot short; toes slightly curved, usually sharply pointed. Corona with a simple circumapical band of cilia and with a ventral buccal field. Mastax large, with virgate trophi.

Type species : *Cephalodella catellina* (O. F. Müller 1786)

Cephalodella spp. are mostly benthic, living in the macrophytes or above the sediments; only rarely found in the plankton samples. It is an exceptionally large genus and includes over 200 species. Presently, it is represented by only seven species.

Cephalodella catellina (O. F. Müller 1786)

(Figs. 1-3)

Material examined : Meghalaya.

Diagnosis : Body short, about and gibbous; projecting posteriorly over the foot. Lorica flexible, plates indistinct; lateral clefts parallel-sided. Foot small, ventrally

located. Toes short, stout, curved, parallel-sided for about $\frac{1}{2}$ of their length and then gradually tapering to acute points. Rami with symmetrical alulae. Manubrium terminal with a loop. Fulcrum without basal apophysis.

Measurements : Total length 90-102; toes 18-20; trophi 32.

Distribution : INDIA-Kashmir, Ladak and West Bengal; elsewhere-Cosmopolitan.

Cephalodella forficata (Ehrenberg 1832)

(Figs. 4-5)

Material Examined : Meghalaya.

Diagnosis : Body thin and cylindrical. Foot small; toes short, spindle-shaped, curved and tapering to acute points. Rami with symmetrical alulae. Free end of fulcrum broadened. Free ends of manubria curved.

The present specimens are smaller than those reported by Koste (1978).

Measurements : Total length 115-120; toes 30-32; trophi 26.

Distribution : INDIA—represents a new record; elsewhere-Cosmopolitan.

Cephalodella forficula (Ehrenberg 1832)

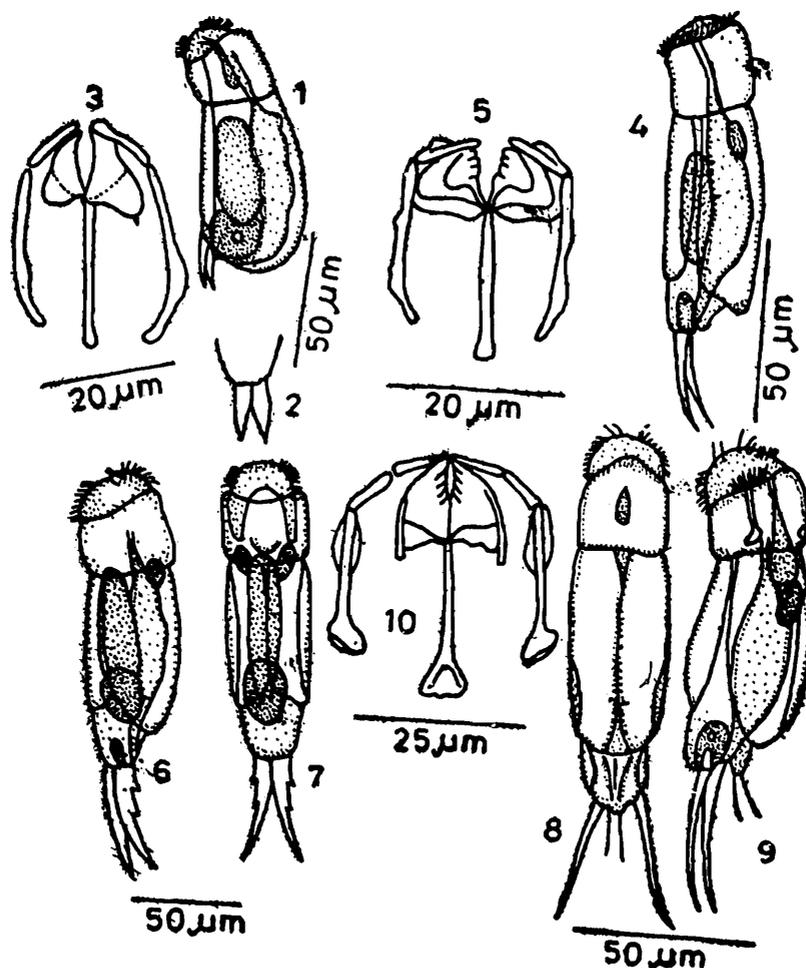
(Figs. 6-7)

Material examined : Meghalaya.

Diagnosis : Body fairly long, slender and spindle-shaped. Head relatively large and oblique anteriorly. Trunk cylindrical and narrow posteriorly. Toes short, stout, curved and acutely pointed; with a characteristic knob-like basal spine and another small spine. Sub-unci fan shaped. Frontal part of unci with rings.

It appears to be a variable species (Koste 1978). The present specimens are longer than those reported from West Bengal (Sharma 1979) but agree with the measurements given by Harring & Myers (1924).

Diagnosis : Body transparent, slender and cylindrical. Toes distinctly long and curved, widely separated at their bases and gradually tapering to acutely pointed spines. Rami symmetrical, with small alulae. Fulcrum



Figs. 1-10 : *Cephalaodella catellina* (Müller) : Figs. 1. lateral view ; 2. posterior end ; 3. trophi ;
Cephalaodella forficata (Ehrenberg) : Figs. 4. lateral view ; 5. trophi ;
Cephalaodella forficula (Ehrenberg) : Figs. 6. lateral view ; 7. dorsal view ;
Cephalaodella intuta (Myers) : Figs. 8. dorsal view ; 9. lateral view ; 10. trophi.

Measurements : Total length 175-180 ; toes 30-35.

Distribution : INDIA—West Bengal and Andhra Pradesh ; elsewhere-Cosmopolitan.

***Cephalaodella intuta* Myers 1934**

(Figs. 8-10)

Material examined : Meghalaya.

with basal apophysis. Retrocerebral sac rounded.

Measurements : Total length 140-145 ; toes 38-40 ; trophi 35.

Distribution : INDIA—represents a new record ; elsewhere-Cosmopolitan.

Cephalodella gibba (Ehrenberg 1832)

(Figs. 11-12)

Material examined: Meghalaya, Assam, Nagaland.

Diagnosis: Body elongated, lorica firm and with distinct plates; lateral clefts narrow anteriorly and widening posteriorly. Foot small; toes long, curved, gradually tapering and with conical tips. Rami asymmetrical, manubria with curved free ends.

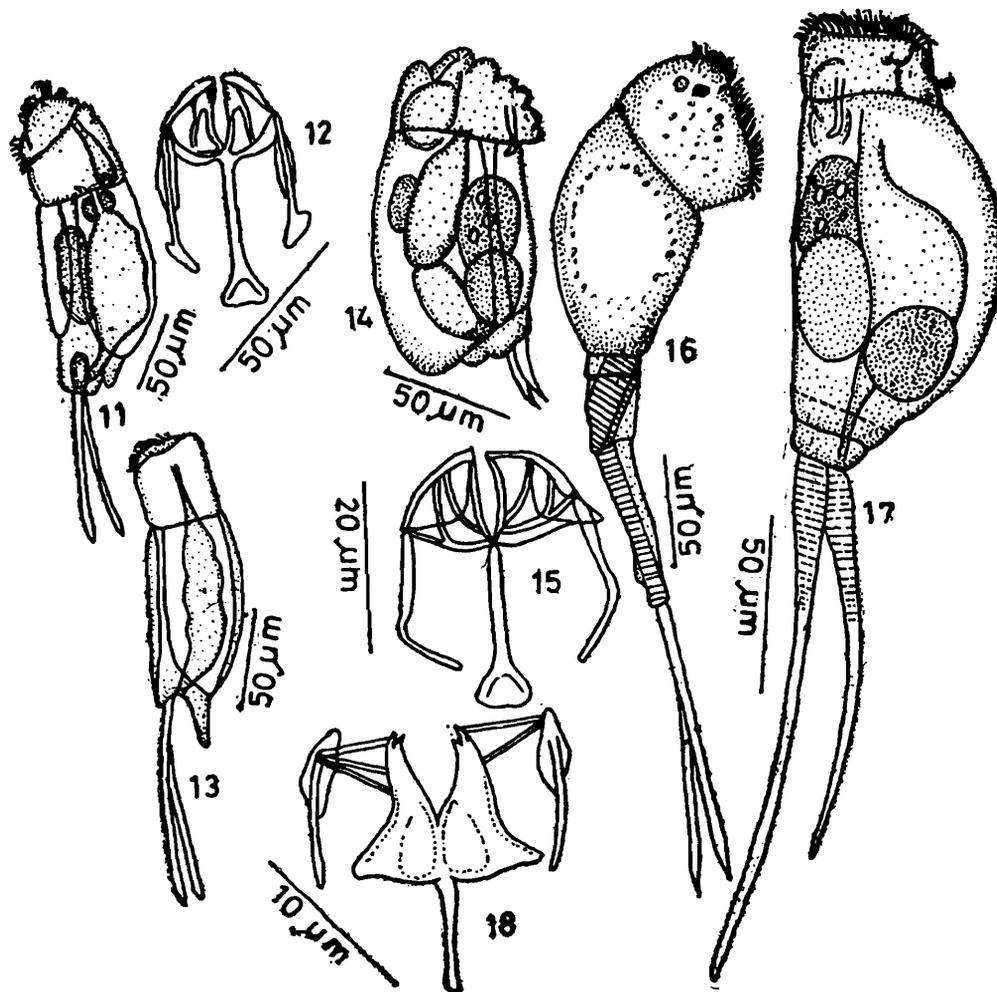
Measurements: Total length 280-300; toes 85-90; trophi 64.

Distribution: INDIA—Kashmir, Ladak, Gujarat and West Bengal; elsewhere-Cosmopolitan.

Cephalodella mucronata Myers 1924

(Fig. 13)

Material examined: Meghalaya.



Figs. 11-18: *Cephalodella gibba* (Ehrenberg): Figs. 11. lateral view; 12. trophi;
Cephalodella mucronata Myers: Fig. 13. lateral view;
Cephalodella ventripes Dixon-Nuttall: Figs. 14. lateral view; 15. trophi;
Scaridium longicaudum (Müller): Fig. 16. lateral view;
Monommata longiseta (Müller): Figs. 17. lateral view; 18. trophi.

Diagnosis : Body elongated, cylindrical ; lorica rigid and extending over foot into a projection of variable length. Toes almost as long as body, curved and tapering to acute points. Rami symmetrical.

Measurements : Total length 240-248 ; toes 115-120.

Distribution : INDIA—West Bengal ; elsewhere—Pantropical and subtropical.

Cephalodella ventripes Dixon-Nuttall 1901

(Figs. 14-15)

Material examined : Meghalaya

Diagnosis : Body gibbous, short, transparent and projecting dorsally over the foot. Foot ventrally located. Toes ventrally curved and ending into acute points. Rami symmetrical. Manubria with distal half semi-circular. Fulcrum with broad apophysis.

Measurements : Total length 138 ; toes 28 ; trophi 30,

Distribution : INDIA—represents a new record ; elsewhere—USA, USSR and West Germany.

Genus : *Scaridium* Ehrenberg 1830

Body cylindrical or spindle-shaped ; lorica thin. Foot very long, 3-segmented, terminal foot-segment longest ; segments with striated muscles. Toes long. Corona simple, with ventral ciliated zone. Trophi virgate.

Type species : *Scaridium longicaudum* (O.F. Müller 1786)

It lives amongst macrophytes in the littoral zone. This genus includes only two known species. Of these, *S. longicaudum* is present in the examined material.

Scaridium longicaudum (O. F. Müller 1786)
(Fig. 16)

Material examined : Meghalaya, Assam, Mizoram and Nagaland.

Diagnosis : Lorica thin, more or less cylindrical. Foot 3-segmented ; toes long and with blunt distal ends. Trophi modified virgate, unci broad.

It differs from *S. bostjani* Daems & Dumont 1974 in its total length and the shape of the unci.

Measurements Total length 370-380 ; foot 115-120 ; toes 128-130.

Distribution : INDIA—Gujarat, Punjab and West Bengal ; elsewhere—Cosmopolitan.

Genus : *Monommata* Bartsch 1870

Body cylindrical or spindle-shaped ; trunk with thin and flexible cuticle. Foot short and plumpy, 2-or 3-segmented ; with long and unequal toes, with striated muscles. Corona with ventral buccal field. Mastax not very conspicuous, trophi virgate and variable in shape.

Little is known about the conditions of life and reproduction of this genus (Ruttner-Kolisko 1974). It occurs mostly in boggy waters and is occasionally a migrant in the plankton. Presently this genus is represented by only one species.

Monommata longiseta (O. F. Müller 1786)
(Figs. 17-18)

Material examined : Meghalaya.

Diagnosis : Body transparent. Foot indistinctly 2-segmented ; toes unequal and of variable length. Inner end of each ramus

with a spine. Left uncus with two and right uncus with three rod-shaped teeth. Fulcrum without basal apophysis. Retrocerebral sac and subcerebral gland small.

Measurements : Total length 270-280 ; right toe 150-115 ; trophi 15.

Distribution : INDIA—represents a new report ; elsewhere—Cosmopolitan.

REMARKS

Previous Indian literature reflects lack of attention on the notommatid rotifers in particular and littoral, benthic and periphytic forms in general. So far only eighteen species, belonging to five genera, of the family Notommatidae are reported from this country. *Cephalodella wiszniewskii* n. n. proposed by Edmondson & Hutchinson (1934) is a synonym (refer Kutikova 1970) of *Cephalodella catellina* (Müller).

The present observations from North-Eastern India add four species to the earlier list. *Cephalodella catellina*, *C. forficata*, *C. forficula*, *C. intuta*, *C. ventripes* and *Monommata longiseta* are collected only from the state of Meghalaya. *Cephalodella gibba*, *C. mucronata* and *Scaridium longicaudum* show a relatively wider distribution in this region and India as well. Genus *Monommata* comprises a rare and interesting element in the rotifer fauna of this country. *M. longiseta*, though restricted in its occurrence, is common in the samples from paddy-fields in the Jaintia Hills (Meghalaya State). *Cephalodella forficata*, *C. intuta*, *C. catellina* and *C. ventripes* are very rare in the examined

material. *Cephalodella mucronata* and *Scaridium longicaudum* represent warm-stenothermous forms and are presently collected at temperatures between 15-20°C. *Monommata longiseta* is found at temperatures between 0-17.3°C (Koste 1978) ; recorded in the present collections between 12-14.8°C. Further, various species from Meghalaya State are found in acidic to slightly alkaline waters (pH 5.2-7.2).

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