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STUDIES ON FRESHWATER ROTIFERS FROM VISAKHAPATNAM, INDIA.

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(With 1 Text-figure)

INTRODUCTION

The present paper is based on the material collected from different bodies of water comprising of lakes, tanks, ponds and monsoon fed streams located in and around Visakhapatnam during July 1973 to July 1975. In the present paper seven species of the genus *Lecane* Nitzsch and four of the genus *Monostyla* Ehrenberg are described.

Studies on Indian species of these two genera include those of Edmondson and Hutchinson (1934), Hauer (1936), Pasha (1961), Arora (1965), Wulfert (1966), Vasisht & Gupta (1967), Nayar (1968), Vasisht & Battish (1971), Dhanapathi (1976), and Sharma (1978).

Edmondson (1935) proposed to combine these two genera. His suggestion was based on the observations of Hauer (1929) who had recorded certain species having the characters of both *Monostyla* and *Lecane*. In these species the toes are fused to some extent although they are distinctly two in number.

Voigt (1957) recognised Edmondson's argument and includes the species of the genus *Monostyla* in the genus *Lecane* but for the sake of convenience divided the species of the genus Lecane into three groups : A, B and C. In group A forms are having free toes which are far apart, group B includes forms with toes fused to varying extent while in group C forms are with a single toe (*Monostyla*). Bartos (1959) proposed a genus *Hemimonostyla* to include species of *Lecane* included by Voigt under his group B. Sudzuki (1964) accepted Voigt's reasoning but commented that his arguments were based on characters of females only. However he considered the structure of toes as generically important and treated the genera *Lecane* and *Monostyla* seperately. Sharma (1978) considered the character of toes not sufficient to warrant

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establishment in different genera. However he accepted the structure of toes as sub-generic character which has been done by Chengalath & Fernando (1973), Chengalath, Fernando & Koste (1974) and Chengalath & Mulamoottil (1974).

Out of the 11 species described here six fall into group A, four into group C and one into group B. As the information in inter-grading forms between the genera *Lecane* and *Monostyla is* inadequate, they are treated here seperately. Out of these eleven species seven species are being reported for the first time from Andhra Pradesh.

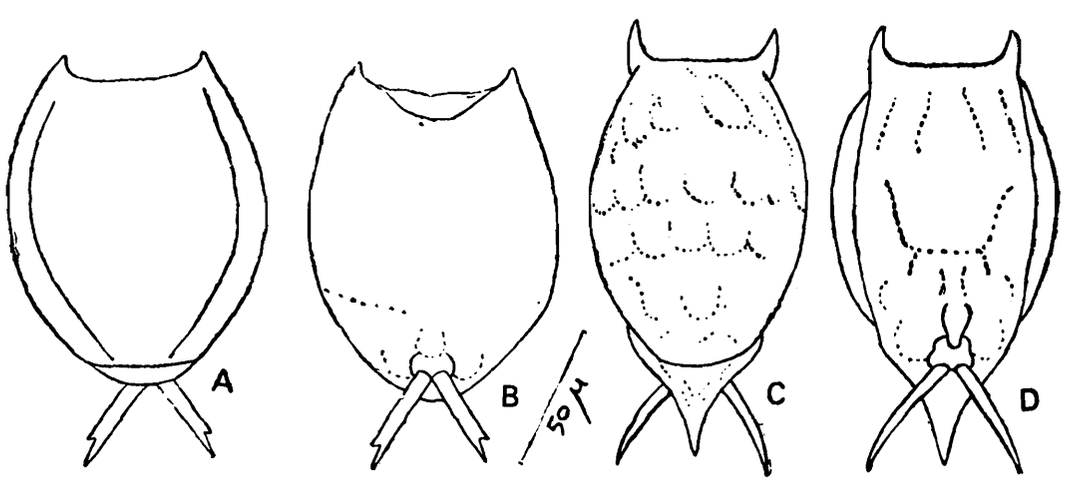
Material and Methods

Water in the vicinity of aquatic plants was stirred and was passed through a sieve to arrest the dead decaying leaves and other floating matter. Water then was passed through a plankton net of bolting silk (mesh size 70 μm). 10 percent formalin was added to the concentrate so as the soft parts shrink considerably leaving a clear outline of the lorica. Forms with soft lorica were narcotized with 5 percent procaine hydrochloride and then fixed in Schaudinn's fluid.

Lecane ludwigii (Eckstein) 1883, Harring 1913

(Text-fig. 1C, D)

The outline of the lorica is oval, the anterior margines coincident and slightly concave. There are two fairly long anterior spines at the external angles. The dorsal plate is oval and truncate posteriorly and



Text-fig. 1. (A & B) *Lecane acronycha* Harring & Myers ; (C & D) *Lecane ludwigi* (Eckstein).

marked with four transverse rows of prominent coarse tesselations. The ventral plate is slightly pyriform in outline, narrower than the dorsal and marked with few longitudinal ridges. The lateral sulci are deep. The posterior segment is semicircular and is produced as a long

triangular pointed spine. The coxal plates are large and rounded posteriorly. The first foot joint is narrow and overlaps the trapezoidal second joint as a lobate projection. The toes are long ending in acute conical points without claw.

Total length 155 μm, length of dorsal plate 104 μm, of ventral plate 152 μm, width of dorsal plate 76 μm, of ventral plate 62 μm, width of anterior margin 48 μm and length of toes 46 μm.

The present specimen differs from the description given by Harring & Myers (1926) in having the toes which are slightly incurved. Recorded earlier by Dhanapathi (1976) from Andhra Pradesh and by Sharma (1978) from West Bengal.

Lecane acronycha Harring & Myers 1926

(Text-fig. 1 A, B)

The outline of the lorica is moderately elongate oval, the anterior dorsal margin almost straight projecting slightly infront of the ventral margin. The dorsal plate is narrower than the ventral and its edges do not reach anterior margin. There is a transverse ridge infront of the foot joint on the ventral plate. The posterior segment is small. The coxal plates are small and obtusely pointed. The first foot joint is indistinct and the second moderately large and trapezoidal in form. The toes are short and fairly robust ending in a short claw.

Total length 138 μ m, length of dorsal plate 100 μ m, of ventral plate 118 μ m, width of dorsal plate 72 μ m, of ventral plate 90 μ m, of anterior ventral margin 52 μ m, length of toes without claw 28 μ m, claw 8 μ m.

The specimens in our collection are relatively smaller than those recorded by Harring & Myers (1926).

Lecane tryphema Harring & Myers 1926

Very few specimens of this species were obtained in the collections from the Municipal Tank at Mudasarlova. Nayar (1968) reported this species from Rajasthan.

Total length 90 μ m, length of dorsal plate 60 μ m, of ventral plate —70 μ m, width of dorsal plate 60 μ m, of ventral plate 56 μ m, of anterior dorsal margin 44 μ m, length of toes 26 μ m.

Lecane curvicornis var. **padespares** Arora 1965

Few specimens of this species were obtained from a pond near Bhimili. This species has earlier been reported from Nagpur by Arora

(1965). The forms in our collection agree with the form described by Arora except that they are having longer anterior spines.

Total length 186 μ m, length of dorsal plate 112 μ m, of ventral plate 126 μ m, width of dorsal plate 82 μ m, of ventral plate 92 μ m, length of toes without claw 56 μ m, claw 6 μ m.

Lecane crepida Harring 1914

This species obtained from the collections of Municipal Tank at Mudasarlova. Pasha (1961) reported this species from Madras and Sharma (1978) from West Bengal.

Total length 138 μ m, length of dorsal plate 88 μ m, of ventral plate 100 μ m, width of dorsal plate 64 μ m, of ventral plate 72 μ m, of anterior spines 70 μ m, length of toes without claw 22 μ m, claw 12 μ m. The animal differs from the description given by Harring & Myers (1926) in having shorter anterior spines.

Lecane papuana (Murray) 1913

This species is common in the collections and agrees with the description given by Harring & Myers (1926). Edmondson & Hutchinson (1934) reported this species from Kashmir, Pasha (1961) from Madras, Nayar (1968) from Rajasthan, Dhanapathi (1976) from Andhra Pradesh and Sharma (1978) from West Bengal.

Total length 160 μ m, length of dorsal plate 106 μ m, of ventral plate 112 μ m, width of dorsal plate 92 μ m, length of toes 44 μ m, claw 9 μ m.

Lecane (Hemimonostyla) sp.

A single specimen of the genus *Lecane* was obtained from the sample collected from a stream near Dairy Farm. In this species the toes are partly fused at their base. The form does not agree to any one of the known species of the genus *Lecane*. Possibly a new species but more specimens of this form will have to be studied before assigning to it the status of a new species.

Monostyla bulla (Gosse) 1851

This species is common in our collections. Reported earlier by Anderson (1889) from Calcutta, Edmondson & Hutchinson (1934) from Kashmir and Punjab, Pasha (1961) from Madras, Arora (1965) from Nagpur, Vasisht & Gupta (1967) from Chandigarah, Nayar (1968), from

Rajasthan, Vasisht & Battish (1971) from N. W. India, Dhanapathi (1976) from Andhra Pradesh and Sharma (1978) from West Bengal.

Total length 160 μ m, length of dorsal plate 94 μ m, of ventral plate 106 μ m, width of lorica 70 μ m, toe 56 μ m, claw 16 μ m.

Monostyla closterocerca Schmarda 1859

Few specimens of this species were collected from Bhimili pond. Nayar (1968) reported this species from Rajasthan, Vasisht & Battish (1971) from N. W. India and Sharma (1978) from West Bengal.

Total length 130 μ m, length of dorsal plate 98 μ m, of ventral plate 106 μ m, width of dorsal plate 100 μ m, of ventral plate 90 μ m, of anterior margin 52 μ m, toe 14 μ m.

Monostyla lunaris (Ehrenberg) 1838

This is a common species in the collections from Dairy Farm stream. Edmondson & Hutchinson (1934) reported this species from Kashmir and Ladakh and Sharma (1978) from West Bengal.

Total length 144 μ m, length of dorsal plate 80 μ m, of ventral plate 99 μ m, width of dorsal plate 70 μ m, of ventral plate 56 μ m, toe 48 μ m, claw 6 μ m.

Monostyla unguitata (Fadeew) 1925

This has been collected from a small garden pond in Andhra University Campus. Wulfert (1966) reported this species from Baroda and Sharma (1978) from West Bengal.

Total length 132 μ m, length of dorsal plate 94 μ m, of ventral plate 106 μ m, width of dorsal plate 88 μ m, of ventral plate 92 μ m, toe 32 μ m.

SUMMARY

Eleven species of rotifers belonging to two genera Lecane and *Monostyla* were described. Out of these seven species are being reported for the first time from Andhra Pradesh.

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