

ROTATORIA OF LOS ANGELES, CALIFORNIA, AND VICINITY, WITH DESCRIPTIONS OF A NEW SPECIES.

BY FRANK J. MYERS,
Of Bethlehem, Pennsylvania.

INTRODUCTION.

The collections upon which this report is based were made by the writer from January to May, 1916. While the number of species listed is not large, the record is interesting in view of the fact that nothing is known of the Rotatoria of California; it is hoped that local students may take up the subject and extend the list.

Los Angeles is situated on a narrow, level plain intervening between the foot of the San Gabriel Mountains and the Pacific Ocean. The Los Angeles River, which passes through the city, has the usual characteristics of mountain streams; at times it is torrential and at other times its bed is practically dry.

On account of the narrowness of the level plain no large lakes exist, and as there are but two seasons, a rainy and a dry one, permanent pools and ponds are not numerous. The majority of the collections are consequently from artificial reservoirs and ornamental pools in and around the city. Through the kindness of Mr. Willi Mulholland I obtained access to the various storage reservoirs from which the water supply of the city is obtained.

Mr. H. K. Harring, of the United States National Museum, has cooperated in the determination of some of the species and added a note on *Pleurotrocha daphnicola*.

For convenience the different localities at which collections were made are referred to by numbers, as follows:

1. Permanent pool, about 1 acre in area, formed by surface drainage and overflow from a small artificial lake in East Lake Park, Los Angeles.

2. Slowly running water in Ballona Creek, a very small stream about 4 miles west of Los Angeles.

3. From service pipe of the city water supply.

4. Nigger Slough, a large body of water about 11 miles south of Los Angeles, supplied by surface drainage and melted snow from the San Gabriel Mountains.

5. Edge of a swamp north of the town of Riverside.
6. Ornamental pool on alligator farm, near East Lake Park, Los Angeles.
7. Pool formed by the Los Angeles River at a point about 14 miles south of the city, on highway to Long Beach.
8. Artificial lake in West Lake Park, Los Angeles.
9. Artificial lake in Echo Park, Los Angeles.
10. Silver Spring reservoir, eastern section of Los Angeles, near Sunset Boulevard.
11. Buena Vista reservoir, Elysian Park, Los Angeles.
12. Ornamental fountain in St. James Place, Los Angeles.

LIST OF THE SPECIES COLLECTED.

- Notommata cerberus* (Gosse), 12.
Notommata pachyura (Gosse) = *Copeus pachyurus* Gosse, 11.
Notommata tripus Ehrenberg, 10.
Taphrocampa annulosa Gosse, 1, 3, 6, 12.
Proales decipiens (Ehrenberg), 1, 6.
Pleurotrocha petromyzon Ehrenberg, 1, 3, 4, 5, 7.
Pleurotrocha daphnicola (Thompson) = *Proales daphnicola* Thompson, 4.
Eosphora najas Ehrenberg, 7. Not previously recorded from the United States.
Cephalodella catellina (Müller) = *Diglena catellina* (Müller), 1, 2, 6, 11.
Cephalodella forficula (Ehrenberg) = *Furcularia forficula* Ehrenberg, 1, 2, 3, 6, 8, 12.
Diaschiza auriculata (Müller) = *Diaschiza lacinulata* (Müller), 1, 10.
Diaschiza forficata (Ehrenberg) = *Diaschiza caeca* Gosse, 2, 6.
Diaschiza gibba (Ehrenberg), 1, 2, 3, 4, 6, 9, 11, 12.
Diaschiza globata Gosse, 6.
Diaschiza gracilis (Ehrenberg), 5, 6.
Diaschiza hoodii Gosse, 1, 5, 6, 10. Not previously recorded from the United States.
Diaschiza tenuior Gosse, 1, 6, 10, 11.
Monommata orbis (Müller) = *Furcularia longiseta* (Müller), 5.
Dicranophorus forcipatus (Müller) = *Diglena forcipata* (Müller), 1, 2, 3, 6, 11.
Encentrum felis (Müller) = *Proales felis* (Müller), 5.
Epiphanes senta (Müller) = *Hydatina senta* (Müller), 1.
Brachionus angularis Gosse, 1, 8, 9.
Brachionus angularis caudatus Barrois and Daday, 4, 8, 9.
Brachionus calyciflorus Pallas = *Brachionus pala* Ehrenberg, form *dorcas* Gosse, 1; form *amphicerus* Ehrenberg, 1, 4.
Brachionus capsuliflorus Pallas; form *bakeri* Ehrenberg, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12; form *urceolaris* Müller, 1, 5, 9.

Brachionus patulus Müller = *Brachionus militaris* Ehrenberg, 3.

Brachionus plicatilis Müller = *Brachionus mülleri* Ehrenberg, 8.

Brachionus variabilis Hempel, 2, 4.

This species, originally described from the Illinois River, at Havana, Illinois, was found very abundant. It is commensal on *Daphnia longispina* (Müller) and *Ceriodaphnia longispina* (Müller), which appears to have been unknown to Hempel; nearly every Daphnid carried about a number of these no doubt unwelcome guests, attached to the carapace. When swimming about by the action of its own cilia, *Brachionus variabilis* behaves very much as other species of this genus, but when deciding to use a Daphnid for conveyance, it attaches itself with astonishing rapidity, almost jumping upon the host. Some of the numerous varieties are illustrated on plate 40, figures 1-5. The posterior spines are found in all lengths and in individuals of all ages; no evidence was observed that would tend to confirm Hempel's suggestion: that only the young have spines, which with advancing age are absorbed. As nothing similar has ever been reported for other species of the genus, it is probably safe to dismiss it as unfounded.

Brachionus variabilis may be easily recognized by the subquadrate plate projecting over the foot opening; it is therefore evident that the animal figured by Murray in Notes on the Natural History of Bolivia and Peru (p. 26), does not belong to this species, but is no doubt one of the varieties of *Brachionus capsuliflorus* Pallas, probably the form usually called *B. urceolaris*.

Platytias quadricornis (Ehrenberg) = *Noteus quadricornis* Ehrenberg, 3, 4.

Keratella cochlearis (Gosse) = *Anuraea cochlearis* Gosse, 1, 4, 7, 9, 12.

Keratella quadrata (Müller) = *Anuraea aculeata* Ehrenberg, normal form, 1, 3, 4, 7, 8, 10; form *valga* Ehrenberg, 1, 2, 3, 4, 7, 9.

Notholca striata (Müller), 1, 2, 3, 10.

Mytilina mucronata (Müller) = *Salpina mucronata* (Müller), 1, 6.

Mytilina ventralis (Ehrenberg) = *Salpina ventralis* Ehrenberg, normal form and form *brevispina* Ehrenberg, 11.

Euchlanis deflexa Gosse, 1, 3, 5, 6, 7, 10, 11.

Euchlanis dilatata Ehrenberg, 1, 2, 5, 6, 11.

Euchlanis lyra Hudson, 3, 10. Not previously recorded from the United States.

Euchlanis plicata Levander, 11.

As the figure accompanying the original description is somewhat diagrammatic, this apparently rare species has been illustrated on plate 41, figures 1-3. It has not previously been found in the United States.

Euchlanis pyriformis Gosse, 11.

Euchlanis triquetra Ehrenberg, 3, 5.

LECANE ASPASIA, new species.

Plate 40, figs. 6-8.

The lorica is broadly oval and nearly parallel-sided anteriorly. The anterior dorsal and ventral edges are coincident and slightly convex; at the lateral edges they are produced as two small spines. The dorsal plate is ovate and its anterior margin slightly narrower than the ventral plate; its markings are moderately prominent and fairly regular. The ventral plate is at its widest point of the same width as the dorsal plate; it has a well-marked transverse fold some distance in front of the foot. The longitudinal markings are rather faint. The posterior segment of the body is broadly rounded posteriorly and projects slightly beyond the dorsal plate. The first foot joint is nearly parallel-sided and projects over the movable joint with a minute median rounded lobe. The movable joint is broad, rounded anteriorly and sharply constricted immediately in front of the toes. The coxal plates are approximately triangular. The toes are long, slender, and parallel-sided, ending in acutely pointed claws. The body is of more than average depth.

Total length 132 μ ; length of lorica 94 μ ; width of anterior spines 63 μ , length of spines 4 μ ; length of dorsal plate 82 μ , width at widest point 73 μ , width of anterior edge 54 μ ; width of ventral plate 75 μ ; length of toes without claw 30 μ , length of claw 8 μ ; depth of body 50 μ .

Type.—Cat. No. 16832, U.S.N.M., is from a pool on alligator farm, near East Lake Park, Los Angeles.

With the large number of species belonging to this genus, differing only in minor details, comparisons are of little value; the present species has some resemblance to *Lecane arcula* Haring, but is broader and stouter, as well as being considerably larger.

Lecane curvicornis (Murray) = *Cathypna curvicornis* Murray, 7. Not previously recorded for the United States.

Lecane hornemanni (Ehrenberg) = *Cathypna hornemanni* (Ehrenberg), 11.

Lecane luna (Müller) = *Cathypna luna* (Müller), 1, 2, 6, 10, 11, 12.

Monostyla bulla Gosse, 3, 5, 7, 12.

Monostyla closterocerca Schmarda, 1, 3, 5, 12.

Monostyla cornuta (Müller), 4.

Monostyla hamata Stokes, 3.

Monostyla lunaris Ehrenberg, 4, 10.

Monostyla quadridentata Ehrenberg, 4, 10.

Monostyla stenroosi Meissner = *Monostyla bicornis* Stenroos, not of Daday. 3, 5. Not previously recorded for the United States.

Lepadella acuminata (Ehrenberg), 1, 11.

Lepadella patella (Müller), 1, 3, 5, 6, 7.

Lepadella rhomboides (Gosse), 1, 3.

- Lepadella triptera* Ehrenberg, 6.
Colurella obtusa (Gosse), 1, 4, 5, 7, 9, 12.
Colurella uncinata (Müller), 3.
Squatinella mutica (Ehrenberg) = *Stephanops muticus* Ehrenberg, 3, 5, 6, 12.
Trichotria pocillum (Müller) = *Dinocharis pocillum* (Müller), 1, 5, 6, 10.
Trichotria tetractis (Ehrenberg) = *Dinocharis tetractis* Ehrenberg, 2, 5, 6, 7, 10.
Volga spinifera (Western) = *Distyla spinifera* Western, 4.
Lophocharis oxysternon (Gosse) = *Metopidia oxysternon* Gosse, 1, 3, 6.
Macrochaetus collinsii (Gosse) = *Dinocharis collinsii* Gosse, 5.
Scaridium longicaudum (Müller), 1, 3, 5, 8.
Trichocerca longiseta (Schrank) = *Rattulus longiseta* (Schrank), 5.
Trichocerca scipio (Gosse) = *Rattulus scipio* (Gosse), 5.
Diurella brachyura (Gosse), 1, 6.
Diurella tigris (Müller), 1.
Diurella tenuior (Gosse), 1, 6, 11, 12.
Diurella weberi Jennings, 1, 2, 6.
Synchaeta oblonga Ehrenberg, 6, 10.
Synchaeta pectinata Ehrenberg, 1, 4, 8, 10.
Synchaeta stylata Wierzejski, 8.
Synchaeta tremula (Müller), 1, 2, 3, 5, 9, 10, 12.
Polyarthra trigla Ehrenberg = *Polyarthra platyptera* Ehrenberg, 1, 2, 4, 6, 7, 8, 9, 11, 12.
Asplanchna brightwellii Gosse, 1, 2, 4, 9.
Asplanchna priodonta Gosse, 1, 4.
Asplanchnopus multiceps (Schrank), 4.
Testudinella patina (Hermann) = *Pterodina patina* (Hermann), 3.
Pedalia mira (Hudson) = *Pedalion mirum* Hudson, 3, 4.
Filinia longiseta (Ehrenberg) = *Triarthra longiseta* Ehrenberg, 8.
Floscularia ringens (Linnaeus) = *Melicerta ringens* (Linnaeus), 1, 5, 6, 10, 12.
Ptygura crystallina (Ehrenberg) = *Oecistes crystallinus* Ehrenberg, 6, 12.
Ptygura mucicola (Kellicott) = *Oecistes mucicola* Kellicott, 12.
Ptygura longipes (Wills) = *Oecistes umbella* Hudson, 6. Not previously found in the United States.
Ptygura velata (Gosse) = *Oecistes velatus* Gosse, 6, 10.
Collotheca cornuta (Dobie) = *Floscularia cornuta* Dobie, 1, 6.
Collotheca coronetta (Cubitt) = *Floscularia coronetta* Cubitt, 1, 6.
Collotheca ornata (Ehrenberg) = *Floscularia ornata* Ehrenberg, 6.
 No study was made of the Bdelloida.

PLEUROTROCHA DAPHNICOLA (Thompson).¹

Plate 41, figs. 4-9.

- Proales daphnicola* THOMPSON, Science Gossip, vol. 28, 1892, p. 220, text figure.—
 MURRAY, Trans. Royal Soc. Edinburgh, vol. 45, 1906, p. 179, pl. 6, fig. 26.
 ?*Pleurotrocha sigmoidea* SKORIKOV, Trav. Soc. Nat. Kharkow, vol. 30, 1896, p. 284,
 pl. 7, fig. 8.

Thompson's original description is very good and there is but little to add to Mr. Myers's figures of the animal, plate 41, figures 4 and 5; Thompson calls attention to the "remarkably long" foot glands with "their ducts plainly opening as projecting tubules at the extremity of the large, swollen toes." At the base of the toe there is a fairly large mucus reservoir.

The trophi, figures 6 to 9, present an interesting modification of the virgate or "pumping" type. The rami are approximately hemispherical, cuplike structures, functioning as the cylinder of the "pump"; of the usual transverse ridges only the basal one is present, taking the form of a prominent, hornlike process. On the inner surfaces of the rami, from the tip of the horn to the posterior or dorsal point, there is a series of close-set, needlelike teeth, shown in figure 8. These teeth obviously play no part in the mastication of the food, but they explain fully how the animal attaches itself to the skin of worms, as reported by Murray in the paper cited above. The unci rest on the dorsal portions of the rami, in the sinus behind the ventral horn. Each uncus has five teeth, two ventral, pointed, and three dorsal, with rounded, knoblike tips.

EXPLANATION OF PLATES.

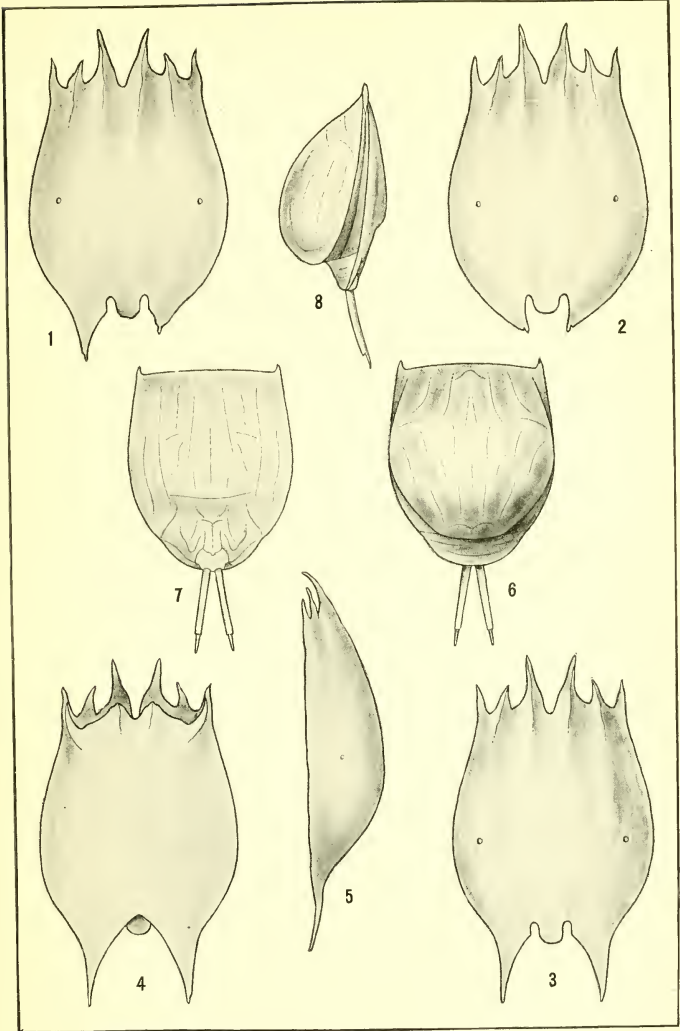
PLATE 40.

- FIG. 1. *Brachionus variabilis*, dorsal view; page 475.
 2. *Brachionus variabilis*, dorsal view.
 3. *Brachionus variabilis*, dorsal view.
 4. *Brachionus variabilis*, ventral view.
 5. *Brachionus variabilis*, lateral view.
 6. *Lecane aspasia*, dorsal view, page 476.
 7. *Lecane aspasia*, ventral view.
 8. *Lecane aspasia*, lateral view.

PLATE 41.

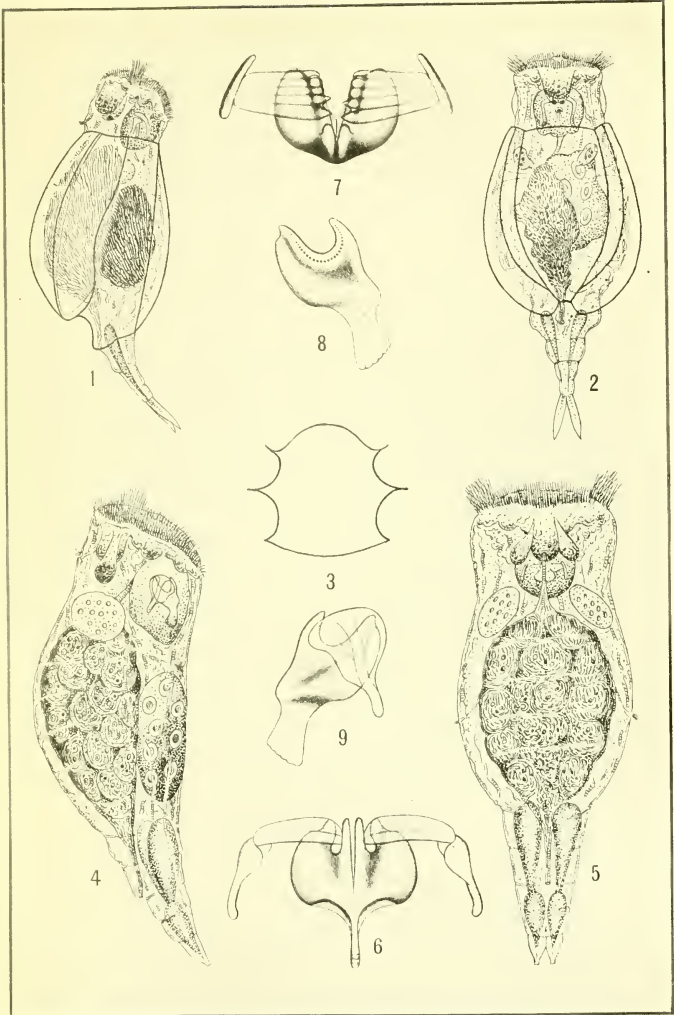
- FIG. 1. *Euchlanis plicata*, lateral view; page 475.
 2. *Euchlanis plicata*, dorsal view.
 3. *Euchlanis plicata*, transverse section of body.
 4. *Pleurotrocha daphnicola*, lateral view; page 478.
 5. *Pleurotrocha daphnicola*, dorsal view.
 6. *Pleurotrocha daphnicola*, trophi, ventral view.
 7. *Pleurotrocha daphnicola*, trophi, anterior view.
 8. *Pleurotrocha daphnicola*, internal surface of left ramus.
 9. *Pleurotrocha daphnicola*, trophi, lateral view.

¹ Note by H. K. Harring, U. S. National Museum.



ROTATORIA FROM LOS ANGELES, CALIFORNIA.

FOR EXPLANATION OF PLATE SEE PAGE 478.



ROTATORIA FROM LOS ANGELES, CALIFORNIA.

FOR EXPLANATION OF PLATE SEE PAGE 478.

