

# The Systematic Study on the Freshwater Rotifera of Korea

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The rotifers collected from various freshwater habitats, such as rivers, streams, lakes, ponds, and rice paddies at twenty-four different sites in Korea were investigated. Eleven species and/or subspecies in three families of monogonont freshwater rotifers were identified, of which two species, *Notholca marina* and *Lecane (Monostyla) stenroosi stenroosi* were new to Korea. A key is presented for the twenty-two Korean species and/or subspecies which have been described by the previous taxonomic reports and the present study.

**KEY WORDS:** Taxonomy, Freshwater Rotifera, Korea.

Since Hada (1936) reported fourteen species of Korean rotifers, total 140 species of rotifers from Korea have been recorded so far. There is, however, practically lack of useful information to identify Korean specimens because only twenty species of monogonont rotifers among them were described by the recent taxonomic works of Song (1989), Song & Kim (1989) and Chung *et al.* (1990), and most of the others have been reported by the limnological or ecological studies without descriptions. To carry out a taxonomic research of rotifers from Korea, specimens collected at different sites in this country (Fig. 1) were examined. This investigation brought to eleven species and/or subspecies of rotifers, of which two species, *Notholca marina* and *Lecane (Monostyla) stenroosi stenroosi* were new to Korea. The newly known species and three other reported species of rotifers from Korea are redescribed and illustrated. The identified species in the present study were all cosmopolitan. A key is presented for the twenty-two species and/or subspecies of Korean freshwater rotifers which have been described by the previous taxonomic reports and the present study.

## Key to the Species or Subspecies and Genus of Korean Freshwater Rotifera

1. Lorica present ..... 2  
Lorica absent. Body subcylindrical. Integument divided anteriorly and posteriorly by transverse folds. Corona long and oblique, almost ventral. Two toes sword-shaped. Two frontal eyespots .....  
..... GENUS *Dicranophorus*  
Corona slightly shorter than 1/3 of body length excluding toes. Uncus of three long teeth ..... *D. epicharis*
- 2 (1). Lorica dorsoventrally flattened or not flattened ..... 3  
Lorica laterally flattened with dorsal cleft. Spines at posterior end or all corners of lorica ..... GENUS *Mytilina*  
..... 18
- 3 (2). Foot present ..... 4  
Foot absent. Lorica with six anterior spines of almost equal length. Dorsal surface usually with longitudinal lines .....  
..... GENUS *Notholca*  
..... 21
- 4 (3). Foot with toes ..... 5  
Foot without toes. Lorica circular or oval. Foot opening ventral .....  
..... GENUS *Testudinella*  
..... 6

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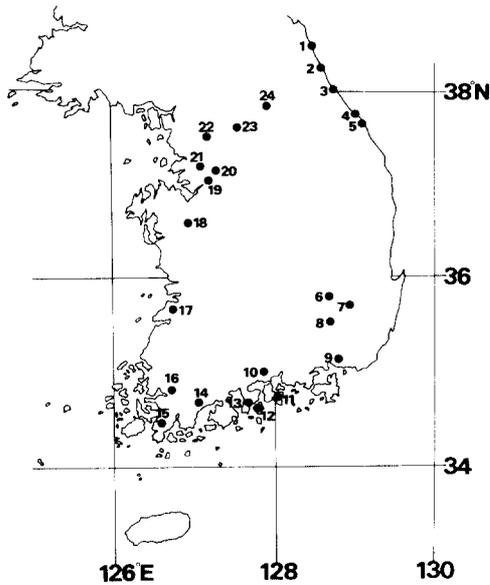


Fig. 1. Map showing the collection sites. 1, Hwajin-p'ŏ; 2, Songji-ho; 3, Yŏngrang-ho; 4, Ŭiam-ho; 5, Sach'ŏn-myŏn (Myŏngju-gun); 6, Kyŏngp'ŏ-ho; 7, P'al-gong-san; 8, Wach'on-myŏn (Kyŏngsan-gŭn); 9, Up'ŏ-nŭp; 10, Chunam-ji; 11, Kojŏn-myŏn (Hadong-gun); 12, Sŏlch'ŏn-myŏn (Namhae-gun); 13, Seguji (Tolsan-ŭp); 14, Musam-dong (Yŏch'on-gun); 15, Mundŏk-myŏn (Posŏng-gun); 16, Songho-ri (Haenam-gun); 17, Naedong reservoir (Yŏngam-gun); 18, Hasŏ-myŏn (Puan-gun); 19, Chisŏk-ri (Yesan-gun); 20, Shindae-dong (P'yŏngt'aek-gun); 21, Kŭmgang reservoir (Ansŏng-gun); 22, Toil reservoir (Towŏn-dong, Songt'an-shi); 23, Ch'angnŭng-ch'ŏn (Seoul); 24, P'aldang-ho (Kyŏnggi-do) (-ho & -p'ŏ: lake; -nŭp & -ji: swamp; -ch'ŏn: stream. The detailed habitats of the species are indicated in the material examined section).

- 5 (4). Foot long, wrinkled and flexible; without segments. Anterior end of lorica with 2, 4, or 6 spines. Posterior end rounded, angled, or with 1 or 2 spines ..... GENUS *Brachionus* ..... 7
- Foot short, not wrinkled. With 1-4 segments ..... 10
- 6 (4). Anterodorsal margin with tri-lobed broad bulgings, of which central bulging tallest ..... *T. patina* f. *trilobata*
- Anterodorsal margin with one sharp, triangular median projection but without broad bulgings .....

- ..... *T. mucronata hauerensis*
- 7 (5). Anterodorsal margin of lorica with 4 spines ..... *B. forficular forficular*
- Anterodorsal margin of lorica with 6 spines ..... 8
- 8 (7). Two posterolateral spines very long, about 1/3 of total body length .....
- ..... *B. quadridentatus quadridentatus*
- Two posterolateral spines rather short or absent ..... 9
- 9 (8). Posterolateral spines present, often of different length. Lorica firm, subrectangular and granulated .....
- ..... *B. patulus patulus*
- Posterolateral spines absent. Lorica somewhat rounded posterolaterally .....
- ..... *B. urceolaris urceolaris*
- 10 (5). Lorica rather cylindrical with one or two striated dorsal ridges of varying height. Left toe very long .....
- ..... GENUS *Trichocerca* .....
- ..... 11
- 11(10). Lorica with two high dorsal ridges passing backward from anterior end to over 2/3 of lorica length .....
- ..... *T. bicristata bicristata*
- Lorica with one high dorsal ridge passing backward from anterior end to about 2/3 of lorica length ..... *T. rattus* f. *carinata*
- 12(10). Lorica covered with tiny spinelets; foot of 3 segments ..... GENUS *Platyias*
- Two spines on mid-anterior part of lorica blunt. Posterior end of lorica with two short stout, parallel spines. With three pentagonal facets on dorsal surface .....
- ..... *P. quadricornis*
- Lorica not covered with tiny spinelets. Foot of one or more segments ..... 13
- 13(12). Lorica of two pieces of dorsal and ventral plate. Anterior opening of lorica broad and shallow. Foot with 1 or 2 segments, very short. Two (or fused to one) toes long with bi- or tridentate end. One eye .....
- ..... GENUS *Lecane* .....
- ..... 14
- Lorica of one piece. Anterior opening of lorica rather narrow and semi-circular. Foot with 3 or 4 segments. Foot opening deeply incised. Two toes short, with

- sharply pointed end. Two lateral eyes ...  
 ..... GENUS *Lepadella*  
 Dorsal sinus U-shaped. Ventral sinus large  
 and deep with depth equal to width .....  
 ..... *L. ovalis*
- 14(13). With one toe. SUBGENUS *Monostyla* ...  
 ..... 15  
 With two toes. SUBGENUS *Lecane* ... 17
- 15(14). Anterolateral spines present, somewhat  
 large, triangular and strongly incurved  
 ..... *L. (M.) stenroosi stenroosi*  
 Anterolateral spines absent or small  
 triangular and slightly incurved ..... 16
- 16(15). Anterolateral spines absent. Anterior  
 margin of dorsal and ventral plate with  
 V-shaped sinus. Claws with distinct me-  
 dian line ..... *L. (M) bulla bulla*  
 Anterolateral spines present and small  
 triangular. Anterior margin of ventral plate  
 with V-shaped sinus, but anterodorsal  
 margin flanked by two long stout horn-  
 like spines. Claws without median line ...  
 ..... *L. (M) quadridentata*
- 17(14). Posterior end of dorsal plate much ex-  
 tended making broad and truncated plate.  
 Length of claw about 1/3 of total length  
 of toe ..... *L. (L) ungulata ungulata*  
 Posterior end of dorsal plate slightly ex-  
 tended. Length of claw about 1/6-1/7 of  
 total length of toe .....  
 ..... *L. (L.) curvicornis curvicornis*
- 18 (2). Anterior margin of lorica granulated. Ven-  
 tral portion of lorica without variable pro-  
 jections. Toes short and sword-shaped ...  
 ..... 19  
 Anterior portion of lorica not granulated.  
 Ventral margin of lorica with variable pro-  
 jections. Toes long and slender .....  
 ..... *M. acanthophora*
- 19(18). Anterior margin of lorica with two short  
 dorsolateral and two short ventrolateral  
 spines ..... *M. mucronata mucronata*  
 Anterior margin of lorica with two ventro-  
 lateral spines only ..... 20
- 20(19). Long spine present at posterior end of  
 dorsal cleft .....  
 ..... *M. ventralis* var. *macracantha*  
 Spine absent at posterior end of dorsal  
 cleft ..... *M. ventralis* var. *brevispina*
- 21 (3). Lorica semicircular. Two median spines  
 on anterior margin of dorsal plate short  
 (nearly equal or slightly shorter than two  
 lateral spines; submedian spines shortest)  
 ..... *N. labis labis*  
 Lorica elongated (about two times as long  
 as broad). Two median spines on anterior  
 margin of dorsal plate rather long. Post-  
 erior margin of ventral plate slightly  
 convex ..... *N. marina*

## Systematic Account

### Phylum Rotifera

#### Class Monogononta Plate, 1889

#### Order Ploima Hudson & Gosse, 1886

#### Family Brachionidae Wesenberg-Lund, 1899

#### Genus *Brachionus* Pallas, 1766

#### 1. *Brachionus urceolaris urceolaris* O. F. Müller, 1773

*Brachionus urceolaris* O. F. Müller, 1773 (p. 131); Ahlstrom, 1940 (pp. 171-172, pl. 16, figs 1-11); Gillard, 1948 (pp. 205-207, pl. 4, fig. 2); Yamamoto, 1949 (p. 94, fig. 13); Ruttner-Kolisko, 1974 (p. 65, fig. 32b: 9b); Tan and Perng, 1976 (p. 19, fig. 33); Mamaril and Fernando, 1978 (p. 124, figs 4, 46); Pontin, 1978 (p. 58, fig. 47a, c).

*Brachionus urceolaris urceolaris*: Koste, 1978 (pp. 78-79, T. 9: 3a-e); Koste and Shiel, 1987 (p. 985, fig. 19: 1); Song and Kim, 1989 (pp. 144-145, fig. 4F-G).

**Material Examined.**-7 inds, Toil reservoir, Songt'an-shi, Jul. 7, 1986 (S. M. Yoon); 11 inds, P'al-gong-san (stream), Taegu, Sep. 7, 1990 (S. M. Yoon); 5 inds, Ch'angnŭng-ch'ŏn, Seoul, Aug. 1, 1990 (S. M. Yoon).

#### 2. *Brachionus quadridentatus quadridentatus* Herman, 1783

*Brachionus quadridentatus* Herman, 1783 (p. 47, T. 2, fig. 9); Ahlstrom, 1940 (pp. 165-167, pl. 11, fig. 9; pl. 12, figs 1-9; pl. 13, fig. 3); Gillard, 1948 (pp. 203-205, pl. , fig. 3a-c); Yamamoto, 1949 (p. 93, fig. 11a-f); Ruttner-Kolisko, 1974 (p. 66, fig. 32c: 18); Tan and Perng, 1976 (p. 19, figs 31-32); Mamaril and Fernando, 1978 (pp. 123-124, figs 44-45); Pontin, 1978 (p. 54, fig. 44); Koste and Shiel, 1987 (p. 977, figs 12, 16).

*Brachionus quadridentatus quadridentatus*: Koste, 1978 (p. 73, T. 11: 4a-b); Song and Kim, 1989 (pp. 145-146, fig. 5A-C).

**Material Examined.**—5 inds, Toil reservoir, Song-t'an-shi, Jul. 7, 1986 (S. M. Yoon).

### Genus *Notholca* Gosse, 1886

#### 3. *Notholca labis labis* Gosse, 1887 (Fig. 2)

*Notholca labis* Gosse, 1887c (p. 871, fig. 15); Koste and Shiel, 1987 (p. 1013, fig. 33: 6a-b).

*Notholca (Labis) labis*: Gillard, 1948 (p. 187, pl. II, fig. 11).

*Notholca labis labis*: Pejler, 1957 (pp. 18-23); Bjorklund, 1972 (pp. 45-47, figs 1A-E, t. 2D); Ruttner-Kolisko, 1974 (p. 78); Koste, 1978 (p. 121, t. 28, figs 2A-E).

**Material Examined.**—10 inds., Yöngrang-ho, Apr. 22, 1989 (S. M. Yoon, M. O. Song); 4 inds, Up'o-nüþ, Jan. 16, 1989 (M. O. Song); 5 inds, Hwajin-p'o, Apr. 21, 1989 (S. M. Yoon, M. O. Song); 2 inds, Kümgang reservoir, Ansöng-gun, Jul. 21, 1986 (S. M. Yoon); 1 ind, Musam-dong (reservoir), Yöch'ön-gun, Apr. 25, 1990 (S. M. Yoon); 3 inds, Naedong reservoir, Yöngam-gun, Jul. 28, 1988 (C. Y. Chang); 2 inds, Mundök-myön (pool), Posöng-gun, Jul. 19, 1990 (S. M. Yoon).

**Description.**—Length of lorica 135-155  $\mu\text{m}$  (except caudal extension), about 1.3 times as long as broad. Lorica subcircular; posterior part rather broader than anterior part; dorsoventrally flattened. Dorsal plate of lorica with 6 short spines on anterior margin and one short caudal extension at posterior margin. Two median spines on anterior

margin (10-12  $\mu\text{m}$ ) nearly equal to or slightly shorter than two lateral spines on anterior margin (12-15  $\mu\text{m}$ ); two submedian spines on anterior margin shortest (6-9  $\mu\text{m}$ ). Lateral spines rather outwardly curved; median and submedian spines rather straight. Anterior margin of ventral plate shaped two connected hills of gentle slope with two tops gently concave centrally. Posterior margin of ventral plate almost straight. One short blunt caudal extension of dorsal plate present. Length and width of caudal extension somewhat variable (Fig. 2A, B); length about 3-5  $\mu\text{m}$ , width about 5-6  $\mu\text{m}$ . Posterior extension of dorsal plate discontinuously set off from rest of lorica. Posterior margin of caudal extension straightly cut off or slightly rounded, which parallel or narrower ended.

#### 4. *Notholca marina* Focke, 1961 (Fig. 3A, B)

*Notholca acuminata marina* Focke, 1961 (p. 195).

*Notholca marina*: Bjorklund, 1972 (p. 38-44, figs 2G-X, t. 2B); Ridder, 1972 (p. 28-29); Ruttner-Kolisko, 1974 (p. 78); Koste, 1978 (p. 120, t. 26, figs G-X).

**Material Examined.**—12 inds, Kyöngp'o-ho, Apr. 22, 1989 (S. M. Yoon; M. O. Song); 3 inds, Yöngrang-ho, Apr. 22, 1989 (S. M. Yoon; M. O. Song); 35 inds, Songji-ho, Apr. 21, 1989 (S. M. Yoon; M. O. Song).

**Description.**—Length of lorica 180-230  $\mu\text{m}$  (except caudal extension). Lorica elongate, about two times as long as broad; dorsoventrally flattened. Dorsal plate of lorica with 6 sharp spines on anterior margin and one caudal extension at posterior margin: two median spines longest (22-26  $\mu\text{m}$ ), two submedian spines shortest (8-9  $\mu\text{m}$ ) and two lateral spines of middle length (18-20  $\mu\text{m}$ ). Lateral spines rather outwardly curved; median and submedian spines rather straight. Anterior margin of ventral plate somewhat largely concave centrally and rather bumpy laterally. Posterior margin of ventral plate slightly convex. Length and width of caudal extension of lorica variable with length about 20-35  $\mu\text{m}$  and width about 9-15  $\mu\text{m}$ . Posterior extension of dorsal plate rather discontinuously set off from rest of lorica. Posterior margin of caudal extension slightly rounded, which parallel ended.

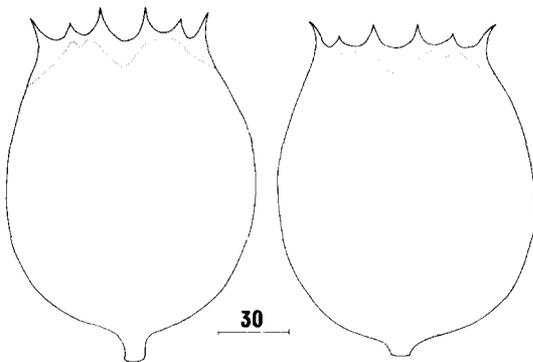


Fig. 2. *Notholca labis labis* (scale in  $\mu\text{m}$ ).

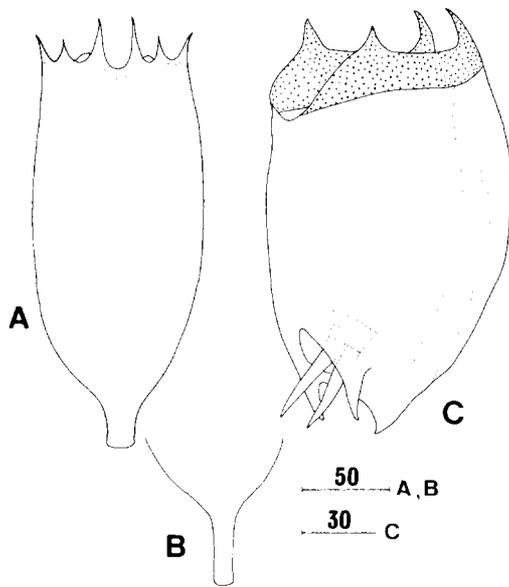


Fig. 3. *Nitholca marina*, A (dorsal view) and B (posterior part); *Mytilina mucronata mucronata*, C (lateral view) (scales in  $\mu\text{m}$ ).

### Genus *Platyias* Harring, 1913

#### 5. *Platyias quadricornis* (Ehrenberg, 1832)

*Noteus quadricornis* Ehrenberg, 1832 (p. 143, t. 4: 5); Hudson and Gosse, 1886 (vol. 2, pp. 121-122, pl. 28, fig. 5).

*Noteus stuhlmanni* Collin, 1897 (p. 8, fig. 9).

*Platyias quadricornis*: Harring, 1913 (p. 84); Ahlstrom, 1940 (p. 174, pl. 18, figs 6-9); Gillard, 1948 (pp. 194-195, pl. 3, fig. 1); Yamamoto, 1949 (p. 141, fig. 21a-c); Tan and Perng, 1976 (p. 16, fig. 21); Koste, 1978 (pp. 63-64, t. 6: 1-2; t. 7: 1-2); Mamaril and Fernando, 1978 (p. 125, fig. 49); Song and Kim, 1989 (pp. 142-143, fig. 3).

**Material Examined.**-15 inds, Kojön-myön (rice field), Hadong-gun, Jul. 18, 1990 (S. M. Yoon).

### Genus *Mytilina* Bory de St. Vincent, 1836

#### 6. *Mytilina mucronata mucronata* (O. F. Muller, 1773) (Fig. 3C)

*Brachionus mucronatus* Muller, 1773 (p. 134).

*Salpina mucronata* Ehrenberg, 1830 (p. 46).

*Salpina marina* Gosse, 1887a (p. 6, pl. 2, fig. 19)

*Mytilina mucronata*: Harring, 1913 (pp. 74-75); Mashiko, 1953 (p. 67, fig. 7p); Chengalath *et al.*, 1973 (p. 45, fig. 67); Koste and Shiel, 1989 (p. 99, fig. 11: 1).

*Mytilina mucronata mucronata*: Koste, 1978 (p. 146, t. 41, fig. 7).

**Material Examined.**-2 inds, Chunam-ji, Jan. 14, 1989 (M. O. Song); 9 inds, Kyöngp'o-ho, Apr. 22, 1989 (S. M. Yoon, M. O. Song).

**Description.**-Length of lorica 140-200  $\mu\text{m}$ . Lorica stout, with anterior portion densely granulated; somewhat laterally flattened. Anterior part of lorica wider than posterior part. Both ends of lorica with stout spines. Anterior margin of lorica with two short dorsolateral and two short ventrolateral spines; ventrolateral spines of anterior margin slightly shorter than dorsolateral spines of anterior margin; posterior margin of lorica with two long and strong ventrolateral spines curving backward, which nearly equal to or slightly shorter than dorsolateral spines of anterior margin. Lorica with dorsal cleft ending in very short hook. Top of lorica with V-shaped depression dorsally. Cross section of lorica pentagon shaped. Foot opening somewhat large. Foot short with two stout, sword-shaped toes bearing pointed ends. Length of toe about 2/5 of lorica length.

**Remarks.**-*M. mucronata mucronata* is similar to *M. ventralis* var. *brevispina*. The main separating feature between these two species is that the present species has two dorsolateral spines at anterior margin of lorica while *M. ventralis* var. *brevispina* has no dorsolateral spines. The present species is found in various freshwater habitats but also often in brackish waters.

#### 7. *Mytilina ventralis macracantha* (Gosse, 1886)

*Salpina macracantha* Gosse, 1866 [In: Hudson and Gosse, 1886 (vol. 2, pp. 84-85, pl. 12, fig. 6)]

*Mytilina macracantha*: Collin *et al.*, 1912 (p. 157, fig. 307).

*Mytilina ventralis* var. *macracantha*: Koste, 1978 (p. 147, t. 42; 6a-b); Song and Kim, 1989 (pp. 147-148, fig. 7).

**Material Examined.**-5 inds, Wach'on-myön (swamp), Kyöngsan-gun, Sep. 7, 1990 (S. M. Yoon).

**Genus *Lepadella* Bory de St. Vincent, 1826**

**8. *Lepadella ovalis* (O. F. Müller, 1786) (Fig. 4B, C)**

*Brachionus ovalis* O. F. Müller, 1786 (p. 345, t. XLIX: 1-3).

*Mytilina lepidura* Bory de St. Vincent, 1826 (p. 87).

*Metopidia lepadella* Ehrenberg, 1832 (p. 136).

*Metopidia solidus* Gosse, 1851 (p. 201)

*Metopidia ovalis*: Hudson and Gosse, 1889 (p. 46, pl. 34, fig. 2).

*Lepadella ovalis*: Hudson, 1889 (p. 46, pl. XXXIV, fig. 2); Haring, 1913 (p. 64); Haring, 1916 (pp. 537-539, pl. 89, figs. 4-10); Chengalath *et al.*, 1973 (p. 51, fig. 97); Chengalath, 1976 (p. 904, figs 21-25); Koste, 1978 (p. 182, t. 60, fig. 1a-c); Mamaril and Fernando, 1978 (p. 125, fig. 53).

**Material Examined.**—5 inds, Sölch'on-myön (reservoir), Namhae-gun, Jul. 20, 1990 (S. M. Yoon); 1 ind., Chunam-ji, Jan. 14, 1989 (M. O. Song); 2

inds, Kyöngp'o-ho, Apr. 22, 1989 (S. M. Yoon, M. O. Song).

**Description.**—Length of lorica 130-147  $\mu$ m, about 1.3 times as long as broad. Lorica broadly oval in outline; slightly convex dorsally and almost flat ventrally. Anterior margin of lorica U-shaped dorsally, V-shaped ventrally; ventral margin somewhat large and deeper than that of dorsal margin. Width of anterior margin about 1/5 of lorica length. Stippled collar present on anterior margin dorsally and ventrally; ventral collar rounded with constant width along anterior margin; dorsal collar rather angled, wider than ventral collar but tapered narrower laterally. Foot opening deeply incised, 45-47  $\mu$ m long by 29-31  $\mu$ m wide, about 1.6 times as long as broad, and parallel-sided. Two toes sharp and pointed, tapering straightly and about 1/5 of lorica length.

**Family Lecanidae Bartos, 1959**

**Genus *Lecane* Nitzsch, 1827**

**9. *Lecane (Monostyla) stenroosi stenroosi* (Meissner, 1908) (Fig. 4A)**

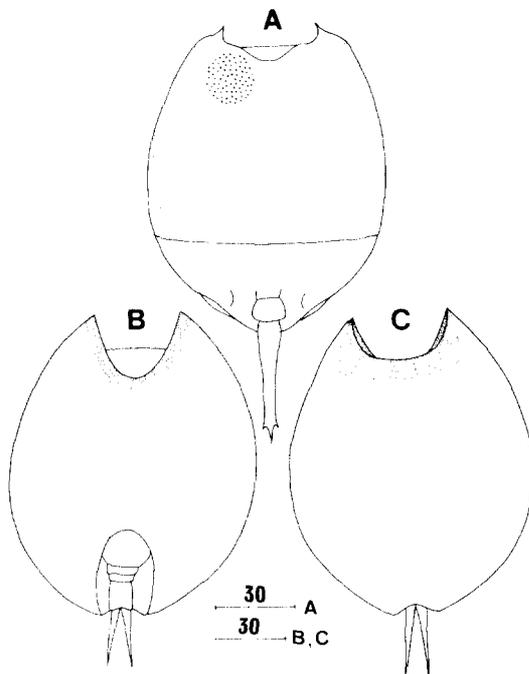
*Monostyla stenroosi*: Tan and Perng, 1976 (p. 23, fig. 41).

*Lecane (Monostyla) stenroosi*: Chengalath and Fernando, 1973 (p. 25, figs 45-50).

*Lecane (Monostyla) stenroosi stenroosi*: Koste, 1978 (p. 247, t. 80, figs 7a-b).

**Material Examined.**—1 ind., Up'o-nüp, Feb. 24, 1988 (M. O. Song); 10 inds, Kyöngp'o-ho, Apr. 22, 1988 (S. M. Yoon; M. O. Song); 5 inds, Hasö-myön (pool), Puan-gun, Jul. 19, 1990 (S. M. Yoon); 1 ind., Sach'ön (reservoir), Kangwön-do, Oct. 21, 1989 (S. M. Yoon); 1 ind., Shindae-dong (rice field), P'yöngt'aek-gun, Sep. 3, 1989 (K. S. Min).

**Description.**—Length of lorica 120-130  $\mu$ m. Lorica oval, about 1.3 times as long as broad; densely granulated. Ventral plate of lorica rather flat and dorsal plate rather convex. Lorica laterally sulcate, appearing divided into dorsal and ventral plate. Horizontal sulci on lorica located at distance of 1/3 of lorica length from posterior margin. Anterior margin of lorica wide, reaching to 3/5 of lorica width. Anterior margin of dorsal plate rather straight. Anterior margin of ventral plate shallowly concave, but somewhat domed laterally and rather



**Fig. 4.** *Lecane (Monostyla) stenroosi stenroosi*, A (ventral view); *Lepadella ovalis*, B (ventral view) and C (dorsal view) (scales in  $\mu$ m).

deeply grooved centrally, where getting lower than anterodorsal margin. Two anterolateral edges with small stout, strongly incurved triangular spines. Ventral plate somewhat narrower laterally than dorsal plate and slightly extended over dorsal margin posteriorly. Foot short, not retractable. Toe trident-shaped terminally, tapering from distance of about 1/10 of total length, and almost parallel in posterior half. Length of toe about 1/3 of lorica length.

**10. *Lecane (Lecane) ungulata ungulata* (Gosse, 1887)**

*Cathypna ungulata* Gosse, 1887b (p. 361, pl. 8, fig. 1)

*Cathypna glandulosa* Stoke, 1897 (pp. 632-633, pl. 15, figs 8-10).

*Cathypna magna* Stenroos, 1898 (p. 161, T. II: 21-22); Lucks, 1912 (p. 109, fig. 32).

*Lecane ungulata*: Haring, 1913 (p. 62); Haring and Myers, 1926 (pp. 323-324, pl. 9, figs 3-4); Koch-Althaus, 1963 (p. 420).

*Lecane ungulata ungulata*: Koste, 1978 (p. 225, t. 74: 6a-g); Song and Kim, 1989 (pp. 150-151, fig. 9: B-D).

*Lecane (Lecane) ungulata*: Mamaril and Fernando, 1978 (p. 119, figs 2, 21).

**Material Examined.**-11 inds, P'aldang-ho, Kyönggi-do, Sep. 3, 1988 (K. S. Min); 2 inds, Üiam-ho, Nov. 4, 1983 (C. Y. Chang).

**Family Trichocercidae Remane, 1933**

**Genus *Trichocerca***

**11. *Trichocerca bicristata bicristata* (Gosse, 1887)**

*Mastigocerca bicristata* Gosse, 1887a (p. 2, pl. 1, fig. 5); Hudson and Gosse, 1886 (p. 35, pl. 31, fig. 27).

*Rattulus bicristatus*: Jennings, 1903 (pp. 330-331, pl. 9, figs 77-80).

*Trichocerca bicristata*: Yamamoto, 1952 (p. 84, fig. 99); Pontin, 1978 (p. 88, fig. 72b).

*Trichocerca bicristata bicristata*: Koste, 1978 (pp. 395-396, t. 137: 3a-m); Song and Kim, 1989 (pp. 151-152, fig. 10A E).

**Material Examined.**-2 inds, Songho-ri (rice field), Haenam-gun, May 2, 1990 (S. M. Yoon); 3 inds,

Saeguji (swamp), Tolsan-üp, Apr. 26, 1990 (S. M. Yoon); 1 ind., Chisök-ri (rice-field), Yesan-gun, Jul. 2, 1988 (J. S. Shin).

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**한국산 담수 유행동물의 계통분류학적 연구**

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1986년부터 1990년 사이에 전국 24개 지점의 다양한 담수역에서 채집된 유행동물(Rotifera)을 조사한 결과 11종(3종, 8아종)이 확인되었는 바, 이 중 *Notholca marina*와 *Lecane*(*Monostyla*) *stenroosi* *stenroosi*는 본 연구에 의하여 한국에서 처음으로 보고된다. 본 한국 미기록종을 포함한 6종(3종, 3아종)의 유행동물에 대한 기재 및 도판을 작성하였고, 아울러 국내에서 현재까지 보고된 유행동물 중 충분히 기재된 종들과 본 연구에서 확인된 종들이 포함된 한국 담수산 유행동물 22종/아종에 대하여 검색표를 작성하였다.