Proceedings of the Iowa Academy of Science

Volume 55 | Annual Issue Article 51

1948

A List of Iowa Ostracods with Descriptions of Three New Species

William Danforth
State University of Iowa

A List of Iowa Ostracods with Descriptions of Three New Species

WILLIAM DANFORTH

The Ostracoda, together with the Copepoda and Cladocera, make up what is probably the most plentiful group of metazoan fauna in ponds, lakes, and, to a lesser extent, in streams. In spite of their numerical importance, no survey of ostracod species has been made for Iowa, although Gerhardt (1940) recorded *Cypridopsis vidua* and *Cyprinotus pellucidus* as occuring in Iowa.

The following list of twenty-seven species represents the results of extensive collection in nine Iowa counties (Buena Vista, Clay, Cerro Gordo, Dickinson, Hamilton, Iowa, Johnson, Mitchell, and Muscatine) between July, 1946, and October, 1947.

Fam. Cytheridae

Limnocythere iowensis n. sp.

Fam. Cypridae

Candona simpsoni Sharpe 1897
Candona albicans Brady 1864
Candona distincta Furtos 1933
Candona crogmaniana Turner 1894
Candona elliptica Furtos 1933
Candona truncata Furtos 1933
Candona sigmoides (?) Sharpe 1897
Candona stagnalis Sars 1890 var. longisetosa Furtos 1933
Candona sp. 1
Candona sp. 2
Candona sp. 3
Candona sp. 4
Cyclocypris sharpei Furtos 1933
Cypria ophthalmica (Jurine 1820) Brady and Norman 1889
Cypria maculata Hoff 1942
Cypria turneri Hoff 1942
Physocypria pustulosa (Sharpe 1897) G. W. Miller 1912
Ilyocypris gibba Brady and Norman 1889
Ilyocypris bradyi Sars 1890
Cypridopsis vidua (O. F. Müller 1776) Brady 1867
Potamocypris smaragdina (Vavra 1891) Daday 1900
Cypricercus reticulatus (Zaddach 1844) Sars 1928
Cyprinotus incongruens (Ramdohr 1808) Turner 1895
Cyprinotus pellucidus (?) Sharpe 1897 (Reported by Gerhardt 1940)
Cypretta reticulata n. sp.
Candonocypris sarsi n. sp.

The collecting localities were so chosen as to give rather complete coverage of the state, with the exception of the southwest portion. The results showed rather significant differences in distribution among the various species. These results are tabulated below.

Found in all areas:

Cypridopsis vidua	*Candona albicans*
Potamocypris smaragdina	*Physocypria pustulosa*

Found in southeast area only:

Cypria maculata	*Ilyocypris gibba*
Cypria turneri	*Ilyocypris bradi*
Cypria ophthalmica	

Found in northwest area only:

Candonocypris sarsi	*Limnocythere iowensis*
Cypretta reticulata	

Found in northeast and southeast areas only:

Cyprinotus incongruens

Other species were found to be so rare or so uneven in seasonal distribution that collecting data were not considered significant. As has been noted for many other forms, there is a definite differentiation between the ostracods found in the eastern portion of the state and those from the western portion: the species from the east are prairie forms, while those from the west are typical of the great plains and the western United States. The ostracods found only in the northeast and/or southeast areas were also found by Furtos (1933) in Ohio and by Hoff (1942) in Illinois. Those found only in the northwest area, on the other hand, were not reported by either of these writers. *Candonocypris sarsi* has been reported (Sars 1926) from Alberta, Canada, while the other two species represent new records, as might be expected, since almost no work has been done on the ostracods of the great plains region. The discovery of *Cypretta reticulata* in Iowa is particularly interesting, since this genus is, for the most part, subtropical in distribution, the only previous record from the northern United States being the report of Sharpe (1910 *Cypris globulus*) of a species which is evidently *Cypretta globulus* Sars from a tub in a greenhouse at the University of Wisconsin.

DESCRIPTIONS OF NEW SPECIES

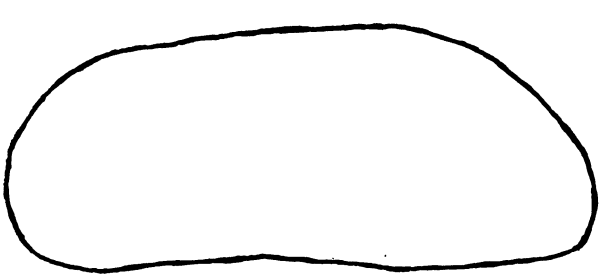
Candonocypris sarsi n. sp.

Type Locality. Pond in Dewey's Pasture, Clay County, Iowa.

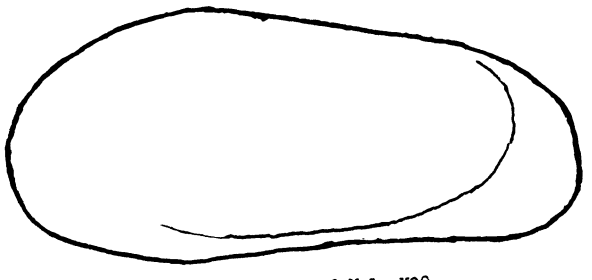
Description of the female. Shell, from the side: oblong, broadly rounded anteriorly, posteriorly sloping obliquely; posterior ventral corner narrowly rounded. Greatest height in posterior third. Measurements of several mature females are as follows:

length	height
3.38 mm.	1.60 mm.
3.42	1.62
3.55	1.60

Shell, from above: narrow; greatest width anterior to the middle and less than one-third the length. Anterior end narrowly rounded; posterior end pointed. Color pale bluish. Valves thin, translucent, hairy, with scattered minute pits. Antennule slender; distal four podomeres about equal in length; apical setae plomose near tips. Swimming



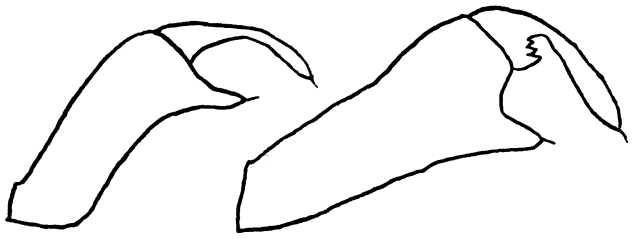
Left Valve of Female X20



Right Valve of Male X20

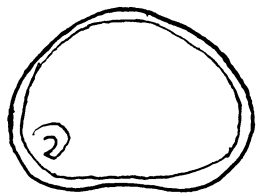
Distal Segment of
Mandibular Palp
Female X85

Furca of Male X85

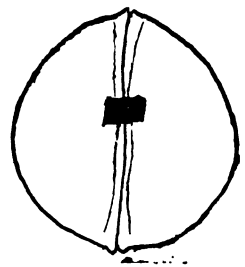


Prehensile Palps of Male X85

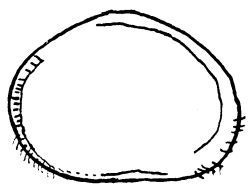
Plate I. *Candonocypris sarsi* n. sp.



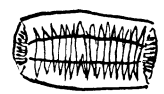
Right Valve of Female
X30



Dorsal View X30



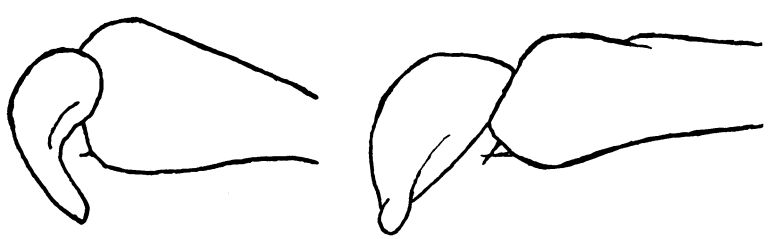
Left Valve of Male
X30



Ejaculatory Duct
X85

Furca of Male X370

Distal Portion of
Third Leg
Female X370



Prehensile Palps of Male
X370

Plate II. *Cypriconcha barbata* Sars 1926
(*non Cypris bardatus* Forbes 1938)

setae of antenna extend over about three-fourths the length of the terminal claws. Terminal claws of antenna toothed. Distal podomere of mandibular palp conical; breadth at distal end about four-seventh length; breadth at basal end about five-sevenths length. Spines of outer chewing process of maxilla smooth. Claw of second leg toothed, a fifth again as long as the sum of the lengths of the three distal podomeres of the leg. Longer distal seta of third leg slightly less than two-thirds length of penultimate podomere, straight. Shorter distal seta hooked. Furca almost straight; width at narrowest point less than one-twentieth length of ventral margin. Dorsal margin set with seven or eight combs of short spines. Terminal claw about half the length of ventral margin of ramus, slender, almost straight, pectinate in distal two-thirds. Subterminal claw pectinate, slightly more than one-half length of terminal claw. Terminal seta weak, about one-sixth length of terminal claw. Dorsal seta slightly more than one-half length of subterminal claw.

Description of the male. Shell similar in size to that of the female, but differing in that the posterior margin is evenly and broadly rounded, and the anterior margin is somewhat more broadly rounded than is the case with the female. Prehensile palps similar in shape; the right somewhat larger. Dactylus of right palp having three tooth-like processes on the inner side of the base. Ejaculatory ducts slender, having about sixty rows of radiating spines. Furca of male similar to that of female.

Distribution. Found in shallow, weedy ponds in Dickinson and Clay Counties. Alberta, Canada, (Sars, 1926). The writer's specimens were found in August.

Remarks. This is evidently the species described by Sars (1926) as *Cypriconcha barbarta* Forbes. Sars, using Forbes' description of the female *Cypriconcha barbata,* considered his single male specimen as belonging to the same species. However, Turner (1899) describes a *Cypriconcha barbata* (called *Erpetocypris barbatus* by Turner) male which differs significantly from the specimens of Sars and the present writer. Turner states that among his specimens were females which agreed with Forbes' material, while the females in the present writer's collections differ from those described by Forbes.

Candonocypris sarsi n. sp. can be distinguished from *C. barbata* Forbes by the color of the shell, which is bluish in the former and yellowsh-brown (in alcohol) in the latter, by the character of the prehensile palps, which are similar in shape in the former, and strongly dissimilar in the latter, and by the shorter subterminal furcal claw of the former. It differs from *C. macra* Blake in that the inner shell margin of *C. sarsi* is evenly rounded anteroventrally, while that of *C. macra* is angulated anteroventrally.

The generic name *Candonocypris* is used to include both the former genera Candonocypris Sars 1895 and Cypriconcha Sars 1926, following Furtos (1936).

Type specimens. Holotype and allotype will be deposited with the U. S. National museum. Paratypes are in the writer's collection.

Cypretta reticulata n. sp.

Type Locality. Big Kettle Hole, Dickinson County, Iowa.

Description of the female. Shell, from the side: boldly arched; ventral margin of right valve sinuated; ventral margin of left valve almost straight. Radiating septa on valves inconspicuous or missing. From above: almost circular in outline; anterior ends of valves forming a blunt point, left valve slightly the longer anteriorly. Breadth equal to length. Color a uniform pale green, lighter in ocular area. Surface valves reticulated, somewhat hairy, with small, scattered, cylindrical projections. Measurements of several mature females are as follows:

length	height
.84 mm.	.63 mm.
.85	.65

Antennule short and stout, with natatory setae extending beyond the tip of the appendage by about twice its length. Spines on outer maxillary process smooth. Second leg stout; terminal claw thick, toothed, and brownish in color, slightly shorter than the sum of the lengths of the three terminal podomeres of the leg. Terminal claw of the third leg sharply hooked near tip, about one-third the length of the penultimate podomere of the leg. Longer terminal seta of third leg slightly more than two-thirds the length of the penultimate podomere. Furca slender; length of ventral margin eighteen or nineteen times least width. Length of terminal claw slgihtly less than two thirds length of ventral margin. Length of terminal seta about equal to least width or ramus. Subterminal claw slightly more than one-half the length of terminal claw. Dorsal seta similar in size and shape to subterminal claw.

Description of the male. Similar in size and shape to the female. Testes coiled in posterior half of the shell. Ejaculatory spines. Prehensile palps dissimilar, dactylus of small falciform, dactylus of larger inflated, almost semicircular. Present in about equal numbers with the females.

Distribution. Big Kettle Hole and collecting locality B, Iowa Lakeside Laboratory region, Dickinson County.

Remarks. This species can be distinguished from all others by the great width of the shell.

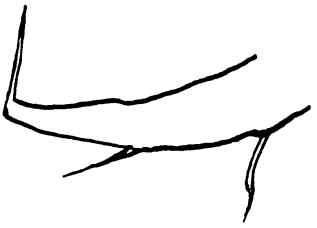
Type specimens. Holotype and allotype will be deposited in the U. S. National Museum. Paratypes are in the writer's collection.

Limnocythere iowensis n. sp.

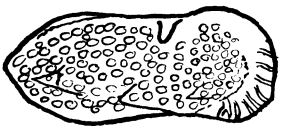
Type Locality. Trumbull Lake, Clay County, Iowa.

Description of the female. Shell, from the side: subrectangular; posterior margin sloping; anterior marginal zone broad. From above, wedge-shaped anteriorly, rounded posteriorly, with a prominent dersolateral furrow in each valve near the ocular region, and two conspicuous lateral projections ending in backward-directed spines on each valve; the more anterior of these projections in about the

Right Valve of Female
X30



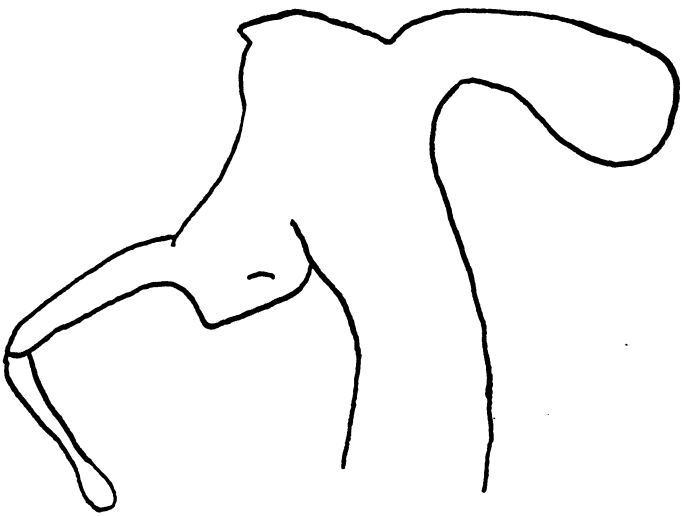
Furca of Male X370



Right Valve of Male
X30

Genital Lobe of Female
X370

Furca of Female X370



Penis of Male X370

Plate III. *Sinocythere iowensis* n. sp.

middle of the shell; the other in the posterior third. Shell surface covered, except in the ocular region and at the margins, with polygonal depressions. Color brownish-grey. Measurements of the valves of several mature females are as follows:

length	height
.72 mm.	.38 mm.
.74	.39
.74	.39
.72	.40

Antennule five-segmented; length of terminal segment about six times its least width. Terminal setae of antennule fused for about one-half the length of the longer seta. Exopodite of the antenna reaching beyond the base of the terminal claws by about one-third the length of the claws. Length of terminal claw of first leg about equal to the sum of the lengths of the two distal podomeres of the leg. Terminal claw of third leg almost straight, about as long as the sum of the lengths of the three distal podomeres of the leg. Furca short, armed with two setae; one terminal; one dorsal near base. Genital lobes pear-shaped, with finger-like processes extending from the narrower distal ends.

Description of the male. Shell, from the side: longer and lower than that of the female, posteriorly sloping dorsally and ventrally, forming a blunt point. Measurements of several mature males are as follows:

length	height
.81 mm.	.36 mm.
.80	.37

Furca elongate, bearing three setae; one terminal, two on the dorsal margin. Ventral process of penis roughly T-shaped.

Distribution. Trumbull Lake, Clay County, Iowa, a shallow, muddy lake. Found among filamentous algae.

Remarks. *Limnocythere iowensis* n. sp. closely resembles *L. ornata* Furtos 1933 in the shape of the shell and the character of the male furca and genital apparatus. It differs, however, in the character of the female furca, which in *L. ornata* resembles that of the male, and in having a shorter antennal exopodite.

Type specimens. Holotype and allotype will be deposited in the U. S. National Museum. Paratypes are in the writer's collection.

DEPARTMENT OF ZOOLOGY,
STATE UNIVERSITY OF IOWA.

REFERENCES

Blake, Charles H. 1931. Two freshwater ostracods from North America Bull. Mus. Comp. Zool. Harvard. 72:279-292.

Dobbin, Catherine N. 1941. Fresh-water Ostracoda from Washington and other western localities. Univ. Wash. Pub. Biology. 4:174-246.

Forbes, S. A. 1893. A preliminary report on the aquatic invertebrate fauna of the Yellowstone National Park, Wyoming, and of the

Flathead region of Montana. Bull. U. S. Fish Com. 1891. 11:207-258.
Furtos, Norma C. 1933. The Ostracoda of Ohio. Ohio Biol. Surv. Bull. 5:411-524.
..... 1936. Fresh-water Ostracoda from Florida and North Carolina. Amer. Midland Natural. 17:491-522.
Gerhardt, Charles E. 1940. An ecological survey of a large kettle-hole. Unpublished thesis. State University of Iowa.
Hoff, C. Clayton. 1942. The Ostracoda of Illinois. Ill. Biol. Monographs. 19(1-2):1-196.
Sars, G. O. 1926. Report of Canad. Arctic Exp. 7(1):1-22.
Sharpe, R. W. 1910. On some Ostracoda, mostly new, in the collection of the United States National Museum. Proc. U. S. Natnl. Mus. 38:335-341.
..... 1918. The Ostracoda. Ward and Whipple. Fresh-water Biology. John Wiley and Sons, Inc., New York. 790-827.
Turner, C. H. 1899. A male *Erpetocypris barbatus* Forbes. Zool. bull. Boston. 2:199-202.