Working List of Wisconsin Ostracods (Seed Shrimp)
Summary: This report provides a working list of approximately 55 species of ostracods (Crustacea: Ostracoda: Podocopida) that have been reported from Wisconsin waters. Technical literature, museum specimens, and online databases provide the basis for records. This contribution represents a first attempt at a comprehensive list of the free-living and commensal ostracods in the state and can serve as a baseline for conservation planning.

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Cover Illustration: A representative ostracod, drawn by Carie Nixon for the Illinois Natural History Survey; see wwx.inhs.illinois.edu/outreach/animals/crustaceans.

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Introduction

Approximately 300 species of free-living and about 190 species of parasitic/commensal ostracods\(^1\) (Class Ostracoda: Order Podocopida) occur in North American freshwater habitats. These minute (0.5-3 mm in length) crustaceans comprise a significant part of zooplankton, benthic, and periphytic communities where they feed primarily on algae and detritus (Smith et al. 2015). A small number of species are carnivorous, attacking and eating other invertebrates and the eggs, larvae, and soft tissues of mollusks (Wilkinson et al. 2007). At least four species have been reported as predators of frog eggs (Gray et al. 2010). Various invertebrates feed on ostracods (Johnson 1995, Lancaster and Robertson 1995), and they provide an important food source for predatory fishes and birds (Wojcik et al. 1986, Mischke et al. 2003, MacDonald et al. 2012, Panek and Weis 2013). Some ostracods live in the branchiae of crayfish as commensals (Hart and Hart 1974, Mestre et al. 2014). Others serve as the intermediate hosts for helminth parasites of vertebrates (Haukos and Neaville 2003, Stigge and Bolek 2015). Ostracod occurrences reflect the environmental properties of the waters they inhabit. The valves of their carapaces are commonly preserved in lacustrine (lake), paludal (marsh), and fine-grained fluvial (river) sediments. Their presence, absence, and community composition can be used to reconstruct past environments, assess ecosystem health, and monitor environmental changes over time. For example, the ratios of oxygen-18 to oxygen-16 (δ\(^{18}\)O) and magnesium to calcium (Ma/Ca) in ostracod valves provide indications of past hydrological regimes, global ice volume, and water temperatures (Boomer et al. 2003, Forester et al. 1994). In spite of their ecological significance and our state’s rich limnological history, ostracods have not, for the most part, been subject to systematic study in Wisconsin waters. As a result, we know relatively little about the occurrence, distribution, and habits of these crustaceans in our area.

Early reports of Wisconsin ostracods include Marshall’s (1903) description of a commensal species from streams near Madison, Juday’s (1908) brief report of a species of *Candona* encountered in anaerobic mud in Lake Mendota, Sharp’s (1910) description of a free-living species collected in a Madison area greenhouse aquarium, and Sharp’s (1918) record of *Eucypris virens* from “Wisconsin,” with no other details. Tressler’s (1947) tabulation of North American species included records of five additional species from the state and one from Lake Superior. Hobbs and Walton (1966) described an additional commensal species collected with crayfishes in Dane County. Kitchell and Clark (1979) added 18 species, including one newly described species, to the state list based on their work in Lake Mendota. They described the distribution and ecological parameters for each species from that lake. Burke (1987), Colman et al. (1990), and Forester et al. (1994) reported a handful of species from Lake Michigan sediments and documented changes in community composition resulting from historic lake level fluctuations and water chemistry changes. Smith (1997) and Miller et al. (2000) investigated the fauna in the sediments of Lake Winnebago and Europe Lake (Door County), respectively. Dodson et al. (2009) reported three species in their assessment of the effects of lake characteristics on zooplankton communities of northern Wisconsin lakes. Allen and Dodson (2011) identified 23 species from 12 lakes in southeastern Wisconsin and assessed various factors thought to affect community structure at different spatial scales. Ostracods are mentioned in many other studies of zooplankton and benthic organisms, but most publications simply refer to “ostracods” or occasionally to specimens identified only to the genus level. A consolidated Wisconsin species checklist has not been prepared previously. Thus, the working list presented here represents a first attempt to document our state’s entire ostracod fauna.

\(^1\) Also sometimes referred to as ‘ostracodes’ or ‘seed shrimp.’
Methods

I reviewed the primary peer-reviewed literature pertaining to ostracods and tabulated records from Wisconsin. Applicable works were identified through key word searches of electronic databases/indexes covering the period 1864-2016: Biological Abstracts, Web of Science, Zoological Record, and Google Scholar. Searches employed various combinations of taxa, geographic, and author terms. I then reviewed the works cited in each source that contained Wisconsin records for additional likely references. Online collections databases from various museum collections yielded a small number of additional specimen records. Finally, I examined the distribution maps included on the North American Non-Marine Ostracode Database (NANODe) and Global Biodiversity Information Facility (GBIF) websites² to supplement these records.

Annotated Working List of Wisconsin Ostracods

What follows is a list of all known ostracod species reported from Wisconsin. While the list is comprehensive in scope, it is certainly not complete and reflects only a work in progress. Thus, it is a ‘working list’ rather than a regional ‘checklist.’ Nomenclature follows Hart and Hart (1974), Martens and Savatelalinton (2011), and Martens et al. (2013), and the Integrated Taxonomic Information System (ITIS) and Freshwater Animal Diversity Assessment (FADA) websites³. Families, genera, and species are listed alphabetically. Literature and database sources for Wisconsin records follow each species chronologically along with notations on location and other comments. Paleontological and fossil records are generally excluded from the working list, but in cases where paleontological works refer to Recent species, I include records from those sources. I exclude records identified to the genus level only, with a few exceptions where the records are of zoogeographic, ecological, or taxonomic interest. To aid future researchers in understanding and using these records, taxonomic synonyms for each species (i.e. the different names used by the authors of the references cited within the working list) are provided in the Appendix (page 13).

Class Ostracoda Latreille, 1806
Order Podocopida Sars, 1866

Superfamily Cypridoidea Baird, 1845

Family Candonidae Kaufmann, 1900

*Candona acuta* Hoff, 1942

Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Colman et al. (1990), in sediment cores in southwestern Lake Michigan; Allen and Dodson (2011), in three lakes in southeastern Wisconsin; NANODe, a small number of locations in southern Wisconsin.

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² The NANODe website provides images, maps, and graphs depicting information about the modern distribution of 89 species of ostracods from 600 sites in North America. See [www.personal.kent.edu/~alisonjs/nanode/](http://www.personal.kent.edu/~alisonjs/nanode/). The GBIF website provides data on diverse taxonomic groups, including ostracods. See [www.gbif.org/](http://www.gbif.org/).

**Candona acutula** Delorme, 1967  
Source: Kitchell and Clark (1979), moderately abundant in Lake Mendota.

**Candona candida** (O.F. Muller, 1776)  
Source: Newman (2001), in sediment core, Gail Stone archaeological site, Trempealeau County; NANODe, one or two locations in southern Wisconsin.

**Candona crogmaniana** Turner, 1894  
Sources: Tressler (1947), Wisconsin; Kitchell and Clark (1979), moderately abundant in Lake Mendota; Burke (1987), in Lake Michigan sediments; Colman et al. (1990), in sediment cores in southwestern Lake Michigan; Forester et al. (1994), in sediment cores in southern Lake Michigan; Anonymous (2010), Richland County in Pop’s Cave, Mill Creek or a spring; Allen and Dodson (2011), in six lakes in southeastern Wisconsin; NANODe, several locations throughout Wisconsin.

**Candona cf. C. crogmaniana** Turner, 1894  

**Candona decora** Furtos, 1933  
Sources: Allen and Dodson (2011), in two lakes in southeastern Wisconsin; NANODe, a small number of locations in southern Wisconsin.

**Candona faba** nom. dub.  
Source: Baker (1987) listed *C. faba* from Lake Michigan sediments. I have been unable to verify the validity of this species name and consider it to be a *nomen dubium*. Perhaps the record refers to *Nannocandona faba* Ekman, 1914 or *Fabaeformiscandona fabaeformis* (Fischer, 1851).

**Candona inopinata** Furtos, 1933  
Sources: Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in six lakes in southeastern Wisconsin⁴; NANODe, several locations throughout Wisconsin.

**Candona lactea** Baird, 1850  
Source: Kitchell and Clark (1979), relatively rare in Lake Mendota; Anonymous (2010), Richland County in Pop’s Cave, Mill Creek or a spring.

**Candona mendotaensis** Kitchell and Clark, 1979  
Source: Kitchell and Clark (1979), newly described species, found relatively rare at depths of 46’ to 60’ in Lake Mendota.

**Candona ohioensis** Furtos, 1933  
Sources: Kitchell and Clark (1979), abundant in Lake Mendota; Smith (1997), in Lake Winnebago sediments; Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Newman (2001), in sediment core, Gail Stone archaeological site, Trempealeau County; Allen and Dodson (2011), in three lakes in southeastern Wisconsin; NANODe, throughout Wisconsin.

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⁴ Allen and Dodson’s (2011) records for *Candona inopinata* may actually represent two species: *Candona indigena* Hoff, 1945 and *C. truncata* Furtos, 1933.
**Candona paraohioensis** Staplin, 1963  
Sources: Miller et al. (2000), in bottom sediments in Europe Lake, Door County; NANODe, several locations throughout Wisconsin.

**Candona subtriangulata** Benson and MacDonald, 1963  

**Candona truncata** Furtos, 1933  
Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Burke (1987), in Lake Michigan sediments.

**Cyclocypris ampla** Furtos, 1933  
Sources: Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in one lake in southeastern Wisconsin; NANODe, several locations throughout Wisconsin.

**Cyclocypris frobesi** Sharpe, 1897  
Sources: Kitchell and Clark (1979), relatively rare in Lake Mendota; Allen and Dodson (2011), in three lakes in southeastern Wisconsin.

**Cyclocypris laevis** (O.F. Müller, 1776)  
Source: NANODe, several locations throughout Wisconsin.

**Cyclocypris ovum** (Jurine, 1820)  
Sources: Miller et al. (2000), in bottom sediments in Europe Lake, Door County; NANODe, several locations throughout Wisconsin.

**Cyclocypris serena** (Koch, 1838)  
Source: Dodson et al. (2009), in fewer than five lakes in Vials County.

**Cyclocypris sharpei** Furtos, 1933  
Sources: Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in three lakes in southeastern Wisconsin.

**Cypria ophtalmica** (Jurine, 1820)  
Sources: Tressler (1947), Wisconsin; Staplin (1963), Wisconsin; Dodson et al. (2009), in fewer than five lakes in Vials County; Allen and Dodson (2011), in 11 lakes in southeastern Wisconsin; NANODe, several locations throughout Wisconsin.

**Fabaeformiscandona caudata** (Kaufmann, 1900)  
Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Allen and Dodson (2011), in four lakes in southeastern Wisconsin; NANODe, a small number of locations in southern Wisconsin.

**Fabaeformiscandona distincta** (Furtos, 1933)  
Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Colman et al. (1990), in sediment cores in southwestern Lake Michigan;
Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in four lakes in southeastern Wisconsin; NANODe, several locations throughout Wisconsin.

_Fabaformiscandona hyalina_ (Brady and Robertson, 1870)  
Source: Tressler (1947), Lake Superior.

_Fabaformiscandona obtusa_ (Bronshtein, 1947)  
Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Burke (1987), in Lake Michigan sediments; Colman et al. (1990), in sediment cores in southwestern Lake Michigan; Forester et al. (1994), in sediment cores in southern Lake Michigan; Smith (1997), in Lake Winnebago sediments; Allen and Dodson (2011), in one lake in southeastern Wisconsin; NANODe, one location in northwestern Wisconsin.

_Paracandona euplectella_ (Robertson, 1889)  
Source: NANODe, possibly one site in northwestern Wisconsin.

_Physocypria pustulosa_ (Sharpe, 1897)  
Sources: Kitchell and Clark (1979), abundant in Lake Mendota; Burke (1987), in Lake Michigan sediments; Smith (1997), in Lake Winnebago sediments; Allen and Dodson (2011), in 11 lakes in southeastern Wisconsin. Specimens collected in Wisconsin and labeled "Cypria globulosa Sharp" and "Cypria globulus Sharpe," the lectotypes and paralectotypes, respectively, are available in the USNM collection (Catalog nos. 39514 and 139854); NANODe, several locations throughout Wisconsin.

_Physocypria spp._  
Source: Miller et al. (2000), in bottom sediments in Europe Lake, Door County.

_Pseudocandona albicans_ (Brady, 1864)  
Sources: Kitchell and Clark (1979), rare in Lake Mendota; Allen and Dodson (2011), in two lakes in southeastern Wisconsin; NANODe, possibly one location in northwestern Wisconsin.

_Pseudocandona elliptica_ (Furtos, 1933)  
Sources: Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in two lakes in southeastern Wisconsin; NANODe, several locations throughout Wisconsin.

_Pseudocandona punctata_ (Furtos, 1933)  
Sources: Allen and Dodson (2011), in three lakes in southeastern Wisconsin; NANODe, several locations throughout Wisconsin.

_Pseudocandona stagnalis_ (Sars, 1890)  
Source: NANODe, one location in southern Wisconsin and possibly one location in northwestern Wisconsin.
Family Cyprididae Baird, 1845

*Bradylestrandesia reticulata* (Zaddach, 1844)
Sources: Kitchell and Clark (1979), rare in Lake Mendota; Allen and Dodson (2011), in one lake in southeastern Wisconsin.

*Cavernocypris wardi* Marmonier and Meisch and Danielopol, 1989
Source: NANODe, possibly one location in southern Wisconsin.

*Cypretta globulosa* (Sharpe, 1910)
Source: Sharp (1910) described this species based on specimens collected in an aquarium in a greenhouse on the University of Wisconsin campus. I have found no records of it in Wisconsin waterways. The type specimens are reportedly in the USNM (catalog no. 39514).

*Cypridopsis vidua* (O.F. Müller, 1776)
Sources: Tressler (1947), Wisconsin; Kitchell and Clark (1979), most common species, abundant in Lake Mendota; Havel and Hebert (1989), Lake Monona; Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Dodson et al. (2009), in fewer than five lakes in Vials County; Allen and Dodson (2011), in 11 lakes in southeastern Wisconsin; NANODe, multiple locations throughout Wisconsin.

*Cypridopsis* sp.
Source: Anonymous (2010), Richland County in Pop’s Cave, Mill Creek or a spring.

*Dolerocypris fasciata* (O.F. Müller, 1776)
Source: NANODe, one location in northern Wisconsin.

*Eucypris virens* (Jurine, 1820)
Sources: Sharp (1918), Wisconsin; Furtos (1933), Wisconsin; Tressler (1947), Wisconsin.

*Heterocypris incongruens* (Ramdohr, 1808)
Source: Tressler (1947), Wisconsin.

*Potamocypris smaragdina* (Vávra, 1891)
Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in three lakes in southeastern Wisconsin; NANODe, several locations in southern Wisconsin.

*Potamocypris unicaudata* Schäfer, 1943
Source: NANODe, one location in southern Wisconsin.
Family Ilyocyprididae Kaufmann, 1900

*Ilyocypris bradyi* Sars, 1890  
Sources: Tressler (1947), Wisconsin; Burke (1987), in Lake Michigan sediments.

*Ilyocypris gibba* (Ramdohr, 1808)  

Superfamily Cytheroidea Baird, 1850

Family Cytherideidae Sars, 1925

*Cytherissa lacustris lacustris* (Sars, 1863)  
Sources: Kitchell and Clark (1979), abundant in one sample in Lake Mendota; Burke (1987), in Lake Michigan sediments; Colman et al. (1990), in sediment cores in southwestern Lake Michigan; Forester et al. (1994), in sediment cores in southern Lake Michigan; Smith (1997), in Lake Winnebago sediments.

Family Entocytheridae Hoff, 1942

*Ankylocythere copiosa* (Hoff, 1942)  
Source: Hart and Hart (1974), Jefferson County on *Orconectes propinquus*.

*Entocythere cambaria* (Marshall, 1903)  
Sources: originally described by Marshall (1903) as a parasite from the branchiae of "different species of Cambarus" collected "from the vicinity of Madison;" Sharpe (1918), Wisconsin; Tressler (1947), Wisconsin; Hart (1962), streams near Madison, Dane County; Hobbs and Walton (1966), Yahara River near Sun Prairie where it crosses Route 19, Dane County, on *Orconectes p. propinquus* (Girard) and in association with "Thermastroycthera hartii;" Hart and Hart (1974), neotype designated from the Yahara River near Sun Prairie, Dane County, on *Orconectes propinquus*.

*Thermastroycthera riojai* (Hoff, 1943)  
Sources: Hobbs and Walton (1966), Six Mile Creek near Waunakee, Dane County, on *Orconectes p. propinquus* (Girard) and *O. virilis* (Hagen); small stream, 13 miles west of Madison, Dane County, on *O. p. propinquus* and *O. virilis*; and Yahara River near Sun Prairie where it crosses Route 19, Dane County, on *O. p. propinquus* and in association with *Entocythere cambaria*; Hart and Hart (1974), Chippewa, Columbia, Dane, Douglas, Jefferson, Lincoln, Taylor, and Washburn counties on *Orconectes propinquus* and *O. virilis*.

*Uncinocythere stubbsi* Hobbs & Walton, 1966  
Source: Hart and Hart (1974), Columbia and Oconto counties on *Orconectes propinquus* and *O. virilis*. 
Family Limnocytheridae Klie, 1938

*Limnocythere friabilis* Benson and MacDonald, 1963
Sources: Burke (1987), in Lake Michigan sediments; Colman et al. (1990), in sediment cores in southwestern Lake Michigan; Forester et al. (1994), in sediment cores in southern Lake Michigan.

*Limnocytherina itasca* (Cole, 1949)
Sources: Colman et al. (1990), in sediment cores in southwestern Lake Michigan; NANODe, possibly one location in southern Wisconsin.

*Limnocytherina paraornata* Delorme, 1967
Source: NANODe, several locations in southern Wisconsin.

*Limnocytherina varia* Staplin 1963
Sources: Burke (1987), in Lake Michigan sediments; Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in five lakes in southeastern Wisconsin.

*Limnocytherina verrucosa* (Hoff, 1942)
Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Smith (1997), in Lake Winnebago sediments; Newman (2001), in sediment core, Gail Stone archaeological site, Trempealeau County; NANODe, several locations throughout Wisconsin.

Superfamily Darwinuloidea Brady and Norman, 1889

Family Darwinulidae Brady and Norman, 1889

*Darwinula stevensoni* (Brady and Robinson, 1890)
Sources: Kitchell and Clark (1979), moderately abundant in Lake Mendota; Miller et al. (2000), in bottom sediments in Europe Lake, Door County; Allen and Dodson (2011), in six lakes in southeastern Wisconsin; NANODe, several locations across Wisconsin.
Conclusions

About 55 nominal ostracod species have been reported from a very small number (<50) of Wisconsin lakes. No significant efforts have been made to investigate the state’s groundwater, riverine, wetland, or cave habitats for these crustaceans (but see Dodson and Lillie [2001] and Anonymous [2010]). Some freshwater ostracods have cosmopolitan distributions, but most species are regionally or locally endemic (Martens et al. 2008, Smith et al. 2015). This suggests ostracods have low rates of dispersal, limited success in colonizing new sites, or a combination of these or other factors. Nonetheless, additional species will likely be found in the state with further investigation. Species documented in surrounding states (e.g., *Rhadinocythere serrata* [Hoff, 1944] on *Cambarus d. diogenes*) might also be expected to occur here. Smith et al. (2015) provide guidelines for collecting, culturing, and specimen preparation.

Identification of ostracod species relies on morphological features of the carapace valves, appendages, and reproductive system. Dissection of appendages and soft tissues—a task that requires concerted efforts and considerable practice—is recommended for generic and species level identification. Unfortunately, comprehensive identification guides for freshwater ostracods are currently unavailable. Consultation with original species descriptions is often necessary, but these may be difficult to locate/obtain. The keys and species descriptions available in Furtos (1933), Hoff (1942), Delorme (1967, 1970a, 1970b, 1970d, 1971), Nuttal and Fernando (1971), Hart and Hart (1974), Kitchell and Clark (1979), and Karanovic (2006) provide valuable starting points.

Ostracod taxonomy continues to evolve, with new interpretations of species relationships and resulting name changes. Martens and Savatenalinton (2011), Martens et al. (2013), Mestre et al. (2014), and the Freshwater Animal Diversity Assessment (FADA) website provide the most current accepted generic and specific names. The appendix which follows lists synonyms used in the works cited within the working list.

There remains much to be learned about ostracods in Wisconsin. See Smith et al. (2015) for an overview of the general biology, ecology, and behavior of free-living species and Hart and Hart (1974) for a review of commensal species. Kitchell and Clark (1979) and Dodson and colleagues (e.g., Dodson and Lillie 2001, Dodson et al. 2009, Allen and Dodson 2011, etc.) provide additional insights into the environmental relations, ecology, and life histories of several species. Additional fieldwork and further evaluation of museum collections will allow a better understanding of this group in the state. This current synthesis will hopefully encourage interest in such efforts.

Acknowledgements

Development of this working list was initiated as part of the “Wisconsin’s Species Diversity: The State of Scientific Knowledge” symposium sponsored by the Aldo Leopold Chapter of the Society for Conservation Biology in April 1997. I am indebted to the chapter for providing the push needed to assess our limited knowledge of this group. This report is dedicated to Stanley I. Dodson, a friend and colleague who enthusiastically shared his interest in and extensive knowledge of zooplankton and their natural history and ecology.
Literature Cited


Anonymous. 2010. Pop Caves: A study of freshwater ostracods from Pop's Cave, Mill Creek and a spring in Richland County, Wisconsin. An unpublished study available online. [This reference not actually seen, but cited in Külköylüoğlu et al. (2014).]


Appendix. Synonyms Used in the Wisconsin Literature

Our taxonomic understanding of ostracods continues to evolve. To aid future researchers in understanding and using records included in the working list, synonyms used in the works cited in the species entries are listed below along with an indication of the references where they have been used. For more comprehensive lists of synonyms, see the species accounts in Furos (1933), Hoff (1942), Delorme (1970a, 1970b, 1970c, 1970d, 1971), Hart and Hart (1974), Kitchell and Clark (1979), and Karanovic (2006).

Bradleystrandesia reticulata (Zaddach, 1844)

Cypretta globulosa (Sharpe, 1910)
   Synonym: Cypris globulosa Sharpe, 1910 – Sharp (1910)

Cypria ophtalmica (Jurine, 1820)
   Synonym: Cypria turneri Hoff, 1942 – Tressler (1947), Staplin (1963), Dodson et al. (2009), Allen and Dodson (2011)

Fabaeformiscandona caudata (Kaufmann, 1900)
   Synonym: Candona caudata Kaufmann, 1900 – Kitchell and Clark (1979), Allen and Dodson (2011)

Fabaeformiscandona distincta (Furtos, 1933)
   Synonyms: Candona distincta Furtos, 1933 – Kitchell and Clark (1979), Colman et al. (1990), Miller et al. (2000), NANODe; Eucandona rectangulata (Alm, 1914) – Allen and Dodson (2011)

Fabaeformiscandona hyalina (Brady & Robertson, 1870)
   Synonym: Candona hyalina Brady & Robertson, 1870 – Tressler (1947)

Fabaeformiscandona obtusa (Bronshtein, 1947)

Heterocypris incongruens (Ramdohr, 1808)
   Synonym: Cyprinotis incongruens (Ramdohr, 1808) – Tressler (1947)

Limnocytherina itasca (Cole, 1949)
   Synonym: Limnocythere itasca Cole, 1949 – NANODe

Limnocytherina paraornata (Delorme, 1967)
   Synonym: Limnocythere paraornata Delorme, 1967 – NANODe
**Limnocytherina verrucosa** (Hoff, 1942)

**Physocypria pustulosa** (Sharpe, 1897)
   Synonym: *Physocypria globula* Furtos, 1933 – Allen and Dodson (2011)

**Pseudocandona albicans** (Brady, 1864)
   Synonyms: *Candona albicans* Brady, 1864 – Kitchell and Claek (1979); *Typhlocypris albicans* (Brady, 1864) – Allen and Dodson (2011)

**Pseudocandona elliptica** (Furtos, 1933)
   Synonyms: *Typhlocypris elliptica* (Furtos, 1933) and *Candona elliptica* Furtos, 1933 – Miller et al. (2000), Allen and Dodson (2011), NANODe

**Pseudocandona punctata** (Furtos, 1933)
   Synonyms: *Typhlocypris punctata* (Furtos, 1933) and *Candona punctata* Furtos, 1933 – Allen and Dodson (2011), NANODe

**Thermastrocythere riojai** (Hoff, 1943)