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BULLETIN

OF THE

Illinois State Laboratory

OF

NATURAL HISTORY.

CHAMPAIGN, ILLINOIS.

VOLUME II.

ARTICLE V.—LIST OF THE DESCRIBED SPECIES OF FRESH
WATER CRUSTACEA FROM AMERICA, NORTH
OF MEXICO.

BY LUCIEN M. UNDERWOOD, PH. D.

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J. W. FRANKS & SONS, PRINTERS AND BINDERS.

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ARTICLE V.—*List of the Described Species of Fresh Water Crustacea from America, North of Mexico.* By LUCIEN M. UNDERWOOD, PH.D.

INTRODUCTORY.

The economic relations of the fresh water Crustacea are rapidly calling them into general notice, since their importance as the natural food supply of many of our most valuable fishes is established beyond question. It has seemed desirable that our scattered literature on this subject should be indexed and made available to students. The following preliminary list is not intended as a complete arrangement of genera and species. A thorough revision of many of these groups must precede any permanent arrangement, and this is not possible at present. It is, therefore, merely an index to the described species, with such references to American and foreign literature as will place the student in a position to make use at once of all that pertains to each species. In case a full synonymy is given in standard works, like those of Leydig, Claus, P. E. Müller, Brady, etc., it has not been thought desirable to repeat this synonymy, but merely to refer to the author giving it in full. For this reason *all* the European papers are not repeated for all the species they describe. In the American literature, however, it has seemed desirable to give every reference to each species, even at the risk of too great repetition.

The study of our fresh water Crustacea, with that of their marine congeners, commenced with Thomas Say, and has since attracted the attention of over thirty different writers, nearly all of whom have added one or more new species to our lists. Certain groups, like the *Phyllopoda* and *Astacida*, have been carefully monographed, and furnish a literature of great value; in others sufficient work has been accomplished to furnish a broad, if not a substantial, basis for further study; while in

several others the ground has scarcely been broken, save by the brief and miscellaneous descriptions of new species. As in all such miscellaneous work there has been much looseness of definition and probably partial or complete re-description, many of the species as given in the following list will ultimately be reduced to synonyms or otherwise disappear from sight. While we deplore this looseness we cannot wholly ignore work because it has been poorly performed, as some of our recent carcinologists have been prone to do.

The species of fresh water Crustacea, as given herein, comprise 313 names, distributed in 88 genera and 29 families, as follows :

	Families.	Genera.	Species.
COPEPODA	8	14	66
OSTRACODA	1	4	15
CLADOCERA	8	29	82
PHYLLOPODA.....	3	13	34
AMPHIPODA.....	3	4	16
ISOPODA	2	18	41
DECAPODA	4	6	59
	29	88	313

As to the relative abundance in the different sections of the country, too little is now known of the range of individual species to form any satisfactory conclusions. The following geographic table will, therefore, show the comparative amount of attention each group has received in different sections rather than an exact representation of geographic distribution:

TABLE OF DISTRIBUTION OF SPECIES AS KNOWN AT THE PRESENT TIME.

	Copepoda.	Ostracoda.	Cladocera.	Phyllopoda.	Amphipoda.	Isopoda.	Decapoda.	Totals.
Alabama	7	.....	13	.....	.....	.....	12	32
Arkansas .....	.....	.....	.....	.....	.....	1	.....	1
California	1	.....	.....	1	.....	9	2	13
Colorado	1	3	2	4	3	.....	.....	13
Connecticut	1	.....	.....	2	3	3	.....	9
Dakota .....	.....	.....	.....	1	.....	.....	2	3
District of Columbia.....	.....	.....	.....	.....	.....	.....	1	1
Florida.....	.....	1	.....	1	1	.....	5	8
Georgia.....	.....	1	.....	.....	1	1	13	16
Idaho .....	.....	.....	.....	.....	.....	.....	1	1
Illinois	6	.....	2	2	5	6	9	30
Indiana	1	.....	.....	1	3	4	11	20
Iowa .....	.....	.....	.....	1	.....	.....	6	7
Kansas .....	.....	.....	.....	11	.....	.....	7	18
Kentucky	4	.....	3	1	1	1	7	17
Louisiana	3	.....	.....	.....	.....	.....	5	8
Maine.....	1	.....	.....	.....	2	.....	1	4
Maryland .....	.....	.....	.....	.....	.....	.....	4	4
Massachusetts	11	1	24	4	1	6	1	48
Michigan.....	4	.....	.....	.....	3	2	4	13
Minnesota.....	24	5	50	1	.....	.....	2	82
Mississippi .....	.....	.....	3	.....	1	.....	9	13
Missouri .....	.....	.....	.....	.....	.....	1	7	8
Montana .....	.....	.....	.....	2	.....	.....	1	3
Nebraska.....	.....	.....	.....	.....	.....	.....	1	1
New Hampshire.....	.....	.....	.....	1	.....	.....	.....	1
New Jersey.....	.....	1	.....	1	.....	2	4	8
New Mexico.....	.....	.....	.....	1	.....	.....	.....	1
New York.....	4	1	1	4	1	6	6	23
North Carolina .....	.....	.....	.....	.....	.....	.....	4	4
Ohio	1	.....	.....	3	.....	.....	4	8
Oregon .....	.....	.....	.....	.....	.....	.....	2	2
Pennsylvania.....	.....	4	2	3	1	4	2	16
Rhode Island.....	.....	.....	.....	2	.....	.....	.....	2
South Carolina .....	.....	.....	.....	.....	.....	1	10	11
Tennessee .....	.....	.....	.....	.....	1	1	12	14
Texas .....	.....	.....	.....	5	.....	.....	4	9
Utah .....	.....	.....	.....	3	.....	.....	1	4
Vermont .....	.....	.....	.....	.....	.....	.....	1	1
Virginia .....	.....	.....	.....	.....	.....	1	4	5
Washington	1	.....	.....	.....	.....	2	4	7
West Virginia.....	.....	.....	.....	.....	.....	.....	2	2
Wisconsin.....	1	.....	24	1	2	.....	6	34
Wyoming .....	.....	.....	.....	1	.....	.....	3	4
Lake Superior	2	.....	5	.....	4	1	5	17
Lake Michigan	4	.....	8	.....	2	.....	1	15
Lake Huron.....	.....	.....	.....	.....	1	1	.....	2
Lake Erie	1	.....	.....	.....	.....	.....	1	2
Lake Ontario.....	1	.....	.....	.....	.....	.....	.....	1
British America	3	.....	.....	1	.....	7	6	17
Arctic America .....	.....	.....	.....	3	.....	1	.....	4

In the above numbers Minnesota takes the lead with 82 species, owing to the extended study of the microscopic forms by Prof. C. L. Herriek. Massachusetts with 48 and Wisconsin with 34 owe much to the study of the Cladocera by Prof. E. A. Birge. Illinois with 30, to which might properly be added most of the 15 of Lake Michigan, shows the careful research of Prof. S. A. Forbes. Other states owe their relatively high rank to the elaborate monograph of the Astacidae, by Dr. Faxon, that has recently appeared. The contrast between the States above mentioned and others shows the nature of the work for future investigators. When we consider that *twenty-seven* of the above States and territories do not exceed *ten* species (seventeen not exceeding five), and add Delaware, Nevada, Arizona, and Indian Territory, from which no species have been reported, we can begin to realize how meagrely the group has been studied. There ought to be a response by some one, or by many, from all these neglected regions.

Of the seven orders the *Copepoda*,* *Ostracoda* and *Cladocera*, including all the microscopic forms, have been studied only in the eastern half of the United States, if we except six species reported from Colorado by Chambers. In sharp contrast with this, 20 of the 34 *Phyllopoda* are known only west of the Mississippi River. Of the 17 *Amphipoda* four extend to Colorado, five to the Southern States, while the remainder seem confined to northern waters. The *Isopoda* and *Decapoda* are more uniformly distributed, and with the *Phyllopoda* extend to the Pacific coast.

The largest genera are *Cambarus*, with 50 species, *Cyclops* with 21 species, *Daphnia* with 15 species, *Porcellio* with 15 species, *Cypris* with 11 species, all the rest falling below 10. Forty-one of the 88 genera are represented by a single species.

In the preparation of this list the compiler has been greatly aided by kind-hearted zoölogists who have furnished copies of their papers, cited references, corrected synonymies, and otherwise contributed to the completeness of the list. Their generosity entitles them to public thanks by the compiler and by all who may use this list when published. Their names

*This remark does not properly apply to the parasitic forms, as some species have been reported from the Pacific coast.

need not be mentioned here, for they comprise the entire number of living American writers, whose names appear in the following pages.

SYRACUSE UNIVERSITY, *April 1, 1886.*

I. LIST OF THE SPECIES.

ORDER COPEPODA.

FAMILY CALANIDÆ.

I. DIAPTOMUS WESTW.

1. *D. ARMATUS* Herrick. 10th Rep. Geol. Minn. 233 (1882); Final Report, 139 (1884).

Hab.—Minnesota (*Herrick*).

2. *D. KENTUCKYENSIS* Chambers. Jour. Cincinnati Soc. Nat. Hist. iv, 48 (1881).

Hab.—Kentucky (*Chambers*).

3. *D. LEPTOPUS* Forbes. Amer. Nat. xvi., 646 (1882).

D. longicornis, var. *leptopus* Herrick. Final Report, 140, 186 (1884).

Hab.—Massachusetts and Illinois (*Forbes*).

4. *D. LONGICORNIS* Herrick. 7th Rep. Geol. Minn. 90 (1879); Final Report, 140, 141 (1884).

D. castor Herrick. 10th Rep. Geol. Minn. 221 (1882); Amer. Nat. xiii, 624 (1879).

Hab.—Minnesota (*Herrick*).

5. *D. MINNETONKA* Herrick. Final Report, 138 (1884).

Hab.—Minnesota (*Herrick*).

6. *D. PALLIDUS* Herrick. 7th Rep. Geol. Minn. 91 (1879); Amer. Nat. xiii, 383 (1879); Final Report, 142 (1884).

Hab.—Minnesota (*Herrick*).

7. *D. SANGUINEUS* Forbes. Bull. Ill. Lab. Nat. Hist., No. 1, 15 (1876); Amer. Nat. xvi, 647 (1882). — *Gissler*. Amer. Nat. xv, 689 (1881). — *Herrick*. Amer. Nat. xvii, 382 (1883); Final Report, 138 (1884).

Hab.—Illinois (*Forbes*), New York (*Gissler*), Alabama and Minnesota (*Herrick*).

8. *D. SICILIS* Forbes. Amer. Nat. xvi, 645 (1882).

D. pallidus, var. *sicilis* Herrick. Final Report, 142 (1884).
Hab.—Lake Michigan (*Forbes*), Minnesota (*Herrick*).

9. *D. STAGNALIS* Forbes. Amer. Nat. xvi, 645 (1882). — *Herrick*. Final Report, 139 (1884).

D. giganteus Herrick. 10th Rep. Geol. Minn. 222 (1882).
Hab.—Illinois (*Forbes*), Minnesota (*Herrick*).

II. EPISCHURA FORBES.

1. *E. FLUVIATILIS* Herrick. Amer. Nat. xvii, 384 (1883); Final Report, 133 (1884).

Hab.—Alabama (*Herrick*).

2. *E. LACUSTRIS* Forbes. Amer. Nat. xvi, 648 (1882). — *Herrick*. Final Report, 131 (1884).

?*Scopiphora vagans* Pickering MS. in DeKay. Nat. Hist. N. Y. vi, 62 (1844).

Hab.—Lake Michigan (*Forbes*), L. Ontario (*Pickering*).

III. LIMNOCALANUS SARS.

1. *L. MACRURUS* Sars. Oversigt af de indenlandske Ferskvands Copepoder (1862). — *Forbes*. Amer. Nat. xvi, 648 (1882). — *Herrick*. Final Report, 134 (1884).

Hab.—Lake Michigan (*Forbes*).

IV. OSPHRANTICUM FORBES.

1. *O. LABRONECTUM* Forbes. Amer. Nat. xvi, 645 (1882). — *Herrick*. Final Report, 134 (1884).

Potamoichetor fucosus Herrick. 10th Rep. Geol. Minn. 224 (1882).

Hab.—Illinois (*Forbes*), Minnesota (*Herrick*).

FAMILY CYCLOPIDÆ.

I. CYCLOPS MÜLL.

1. *C. AGILIS* Koch. Deutschlands Crustaceen h. xxi, t., 11 (1838).—*Forbes*. Amer. Nat. xvi, 649 (1882).
Hab.—Illinois (*Forbes*).
2. *C. ATER* Herrick. 10th Rep. Geol. Minn. 228 (1882); Final Report, 145 (1884).
Hab.—Minnesota (*Herrick*).
3. *C. BREVISPINOSUS* Herrick. Final Report, 148 (1884).
Hab.—Minnesota (*Herrick*).
4. *C. DIAPHANUS* Fischer. Bulletin de la Soc. Imp. de Moscow, xxvi, 93 (1853).—*Herrick*. Final Report, 160 (1884).
Hab.—Minnesota (*Herrick*).
5. *C. ELONGATUS* Claus. Die freilebenden Copepoden, 97, t. xi, figs. 1, 2 (1863).—*Cragin*. Trans. Kansas Acad. Science (1883).—*Herrick*. Final Report, 144 (1884).
Hab.—Massachusetts (*Cragin*).
6. *C. FIMBRIATUS* Fischer. Bulletin de la Soc. Imp. de Moscow, xxvi, 94 (1853).—*Herrick*. Final Report, 162 (1884).
C. crassicornis Herrick. 10th Rep. Geol. Minn. 232 (1882).
Hab.—Minnesota (*Herrick*).
7. *C. FLUVIATILIS* Herrick. 10th Rep. Geol. Minn. 231 (1882); Final Report, 159 (1884).
C. magnocarpus Cragin. Trans. Kansas Acad. Science (1883).
Hab.—Massachusetts (*Cragin*), Minnesota (*Herrick*).
8. *C. INSECTUS* Forbes. Amer. Nat. xvi, 649 (1882).—*Herrick*. Final Report, 152 (1884).
Hab.—Illinois (*Forbes*), Minnesota (*Herrick*).
9. *C. MODESTUS* Herrick. Amer. Nat. xvii, 500 (1883); Final Report, 154 (1884).
Hab.—Alabama (*Herrick*).

10. *C. NAVICULARIS* Say. Jour. Phila. Acad. i, 441 (1817).—*DeKay*. Nat. Hist. N. Y. vi, 62 (1844).—*Herrick*. Final Report, 163 (1884).

Hab.—Southern States (*Say*).

11. *C. NAVUS* Herrick. 10th Rep. Geol. Minn. 229 (1882); Final Report, 152 (1884).

Hab.—Minnesota (*Herrick*).

12. *C. OITHONOIDES* Sars. Forhandlingar Videnskabs-Selskabet, 1862, 241.—*Herrick*. Final Report, 150 (1884).

?*C. tenuissimus* Herrick. Amer. Nat. xvii, 64 (1883).

Hab.—Kentucky, Alabama, Minnesota (*Herrick*).

13. *C. PARCUS* Herrick. 10th Rep. Geol. Minn. 229 (1882); Final Report, 148 (1884).

Hab.—Minnesota (*Herrick*).

14. *C. PECTINATUS* Herrick. Amer. Nat. xvii, 499 (1883).

Hab.—Alabama (*Herrick*).

15. *C. PHALERATUS* Koch. Deutschlands Crustaceen h. xxi, t. 9 (1838).—*Herrick*. Final Report, 161 (1884).

C. adolescens Herrick. 10th Rep. Geol. Minn. 231 (1882).

C. perarmatus Cragin. Trans. Kansas Acad. Science (1883).

Hab.—Massachusetts (*Cragin*), Minnesota (*Herrick*).

16. *C. PULCHELLUS* Koch. Deutschlands Crustaceen, h. xxi, t. 2 (1838).—*Cragin*. Trans. Kansas Acad. Science (1883).

Hab.—Massachusetts (*Cragin*).

17. *C. SERRULATUS* Fischer. Bulletin de la Soc. Imp. des Nat. de Moscow, xxiv, 423 (1851).—*Herrick*. 10th Rep. Geol. Minn. 230 (1882); Final Report, 157, 163 (1884).

C. pectinifer Cragin. Trans. Kansas Acad. Science (1883).

?*C. setosus* Haldeman Jour. Phila. Acad. viii, 331.

Hab.—Massachusetts (*Cragin*), Minnesota (*Herrick*).

18. *C. TENUICORNIS* Claus. Archiv. für Naturgeschichte 1857, 31, Tab. iii, figs. 1–11.—*Herrick*. 10th Rep. Geol. Minn. 227 (1882); Final Report, 153 (1884).

C. signatus, var. *fasciicornis* Cragin. Trans. Kansas Acad. Science (1883).

Hab.—Massachusetts (*Cragin*), Alabama and Minnesota (*Herrick*).

19. *C. THOMASI* Forbes. Amer. Nat. xvi, 649 (1882).
—*Cragin*. Trans. Kansas Acad. Science (1883).—*Herrick*.
Final Report, 153 (1884).

Hab.—Massachusetts (*Cragin*), Lake Michigan (*Forbes*).

20. *C. UNIANGULATUS* Cragin. Trans. Kansas Acad. Science (1883).—*Herrick*. Final Report, 149 (1884).

Hab.—Massachusetts (*Cragin*).

21. *C. VIRIDIS* Fischer. Bull. de la Soc. Imp. des Nat. de Moscow, xxiv 412, t. ix, figs. 1–11 (1851).—*Cragin*. Trans. Kansas Acad. Science (1883).—*Herrick*. Final Report, 145 (1884).

C. ingens Herrick. 10th Rep. Geol. Minn. 228 (1882); Amer. Nat. xvii, 499 (1883).

Hab.—Massachusetts (*Cragin*), Alabama and Minnesota (*Herrick*).

FAMILY HARPACTIDÆ.

1. *CANTHOCAMPTUS* WESTW.

1. *C. CAVERNARUM* Packard. Zoölogy, 298 (figure only).
Hab.—Kentucky (*Packard*).

2. *C. ILLINOISENSIS* Forbes. Bull. Ill. St. Lab. Nat. Hist., No. 1, 14 (1876).—*Herrick*. Final Report, 170 (1884).
Hab.—Illinois (*Forbes*).

3. *C. MINUTUS* Baird. British Entomostraca, 204, tab. xxv, figs. 4–8, xxx, fig. 3 (1850).—*Herrick*. Final Report, 170 (1884).

C. minutus, var. *occidentalis* Herrick. 7th Rep. Geol. Minn. 95 (1879).

Hab.—Minnesota (*Herrick*).

4. *C. MINNESOTENSIS* Herrick. Final Report, 173 (1884).
Hab.—Minnesota (*Herrick*).

5. *C. NORTHUMBRICUS* Brady, var. *AMERICANUS*. Herrick. Final Report, 170 (1884).

Hab.—Minnesota (*Herrick*).

ERRATA.

On page 333 after *Tachidius* read Lilljeb.

On page 338, under *Daphnella brachyura* insert *Hab.*—
Massachusetts (*Birge*), Minnesota (*Herrick*).

On page 340, for *Scapaoleberis* read *Scapholeberis*.

II. TACHIDIUS.

1. T. FONTICOLA Chambers. Jour. Cincinnati Soc. Nat. Hist. iv, 47 (1881).

Hab.—Kentucky (*Chambers*).

FAMILY ERGASILIDÆ.

I. ERGASILUS NORDM.

1. E. CENTRARCHIDARUM Wright. Proc. Canadian Inst. i, 243 (1882).

Hab.—Canada; on various *Centrarchidæ* (*Wright*).

2. E. FUNDULI Krøyer. Naturhistorisk Tidsskrift, ii, 228, 238, pl. 11, fig. 1 (1863).

Hab.—Louisiana; parasitic on *Fundulus finbratus* (*Krøyer*).

FAMILY CALIGIDÆ,

I. LEPEOPHTHEIRUS NORDM.

1. L. SALMONIS Krøyer. Naturhistorisk Tidsskrift, ii, 137, pl. 17, fig. 1 (1863).—*Smith*. Rep. U.S. Fish Com. for 1882-83, 662.

Hab.—Eastern U.S.; parasitic on the salmon.

FAMILY ARGULIDÆ.

I. ARGULUS MÜLL.

1. A. ALOSÆ Gould. Invert. Mass., 340 (1841).

Hab.—Massachusetts; parasitic on alewife (*Gould*).

2. A. CATOSTOMI Dana and Herrick. Amer. Jour. Science, 1st series, xxx, 388 (1836).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 662.

Hab.—Connecticut; parasitic on *Catostomus* sp. (*Dana*).

3. A. FUNDULI Kroyer. *Naturhistorisk Tidsskrift*, ii, 20, pl. 2, fig. 1 (1863).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 662.

Hab.—Louisiana; parasitic on *Fundulus limbatus* (Kroyer).

4. A. LEPIDOSTEI Kellicott. *Bull. Buff. Soc. Nat. Sciences* iii, 214 (1877); *Amer. Jour. Micros.* iii, 1 (1878); iv, 153, (1879).

Hab.—Niagara River (Kellicott).

5. A. PUGETENSIS Dana. *Crustacea*, 1351 (1852).

Hab.—Washington Territory (Dana).

6. A. STIZOSTETHI Kellicott. *Amer. Jour. Micros.* v, 53 (1880); *N. A. Entomologist*, i, 57 (1880).

Hab.—Niagara River (Kellicott).

FAMILY LERNÆOCERIDÆ.

I. LERNÆOCERA BLAINV.

1. L. CRUCIATA Le Sueur. *Jour. Phil. Acad.* iii, 286 (1824). *DeKay*. *Nat. Hist. N. Y.* vi, 59 (1844).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 665.—*Kellicott*. *Proc. Amer. Soc. Micros.* i, 64 (1879).

Hab.—Lake Erie (Le Sueur), Michigan (Kellicott). On *Centrarchus ancus*.

2. L. CATOSTOMI Kroyer. *Naturhistorisk Tidsskrift*, ii, 321, pl. 18, fig. 4 (1863).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 665.

Hab.—Mississippi River (Kroyer). On *Catostomus macrolepidotus*.

3. L. PECTORALIS Kellicott. *Proc. Amer. Soc. Micros.* iv, 77 (1882).

Hab.—Michigan (Kellicott).

4. L. POMOTIDIS Kroyer. *Naturhistorisk Tidsskrift*, ii, 323, pl. xv, fig. 5 (1863).

Hab.—Louisiana (Kroyer). On *Pomotis* sp.

5. L. TORTUA Kellicott. *Proc. Amer. Soc. Micros.* ii, 41 (1880).

Hab.—Tributaries of Lake Ontario, New York (Kellicott).

FAMILY LERNÆOPODIDÆ.

I. ACHTHERES NORDM.

1. *A. AMBLYOPLITIS* Kellicott. Proc. Amer. Soc. Micros. iv, 76 (1882).

Hab.—Michigan (*Kellicott*).

2. *A. CARPENTERI* Packard. 7th Rep. U. S. Geol. Survey (Hayden), 611 (1874).

Hab.—Colorado (*Packard*).

3. *A. CORPULENTUS* Kellicott, Proc. Amer. Soc. Micros. iv, 75 (1882).

Hab.—Michigan (*Kellicott*).

4. *A. LACÆ* Kroyer. Naturhistorisk Tidsskrift, ii, 274, pl. 17, fig. 6 (1863).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 663.

Hab.—North America (*Kroyer*).

5. *A. MICROPTERI* Wright. Proc. Canadian Institute, i, 249 (1883).

Hab.—Canada (*Wright*).

6. *A. PIMELODI* Kroyer. Naturhistorisk Tidsskrift, ii, 272, pl. 17, fig. 5 (1863).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 662.

Hab.—Ohio River (*Kroyer*). On *Pimelodus maculatus*.

II. CAULOXENUS COPE.

1. *C. STYGIUS* Cope. Proc. Phila. Acad. 1871, 297; Amer. Nat. vi, 411 (1872); Third and Fourth Rep. Geol. Indiana, 167 (1872).—*Packard*. Fifth Rep. Peabody Acad. Sci. 94 (1873). *Smith*. Rep. U. S. Fish Com. for 1872-73, 665.

Hab.—Indiana (*Cope*).

III. LERNÆOPODA KROYER.

1. *L. CALIFORNIENSIS* Dana. Crustacea, 1379 (1852).

Hab.—California (*Dana*). On salmon.

2. L. COREGONI Smith. Rep. U. S. Fish Com. for 1872-73, 664, 697.

Hab.—Lake Superior (*Smith*). On *Coregonus albus*.

3. L. EDWARDSII Olsson. Prodröm. fauna Copepodarum parasit. Scand., 36 (1868).—*Wright*. Proc. Canadian Inst. i, 246 (1883).

Hab.—Canada (*Wright*).

4. L. FONTINALIS Smith. Rep. U. S. Fish Com. for 1872-73, 663.

Hab.—Maine (*Smith*). On *Salmo fontinalis*.

5. L. SISCOWET Smith. Rep. U. S. Fish Com. for 1872-73, 664, 697.

Hab.—Lake Superior (*Smith*). On *Salmo siscowet*.

ORDER OSTRACODA.

FAMILY CYPRIDIDÆ.

I. CANDONA BAIRD.

1. C. ELONGATA Herrick. 7th Rep. Geol. Minn. 113, (1879).

Hab.—Minnesota (*Herrick*).

2. C. ORNATA Herrick. 7th Rep. Geol. Minn. 113 (1879).

Hab.—Minnesota (*Herrick*).

II. CYPRIS MÜLL.

1. C. AGILIS Haldeman. Proc. Phila. Acad. 1841, 53.—*DeKay*. Nat. Hist. N.Y. vi, 65 (1844).

Hab.—Pennsylvania (*Haldeman*).

2. C. ALTISSIMUS Chambers. Bull. U.S. Geol. Survey (Hayden) iii, 152 (1877).

Hab.—Colorado (*Chambers*).

3. C. DISCOLOR Haldeman. Proc. Phila. Acad. 1842, 166.

Hab.—Pennsylvania (*Haldeman*).

4. *C. GRANDIS* Chambers. Bull. U. S. Geol. Survey (Hayden) iii, 151 (1877).

Hab.—Colorado (*Chambers*).

5. *C. HISPIDA* DeKay. Nat. Hist. N. Y. vi, 64 (1844).

Hab.—New York and New Jersey (*DeKay*).

6. *C. MONS* Chambers. Bull. U. S. Geol. Survey (Hayden) iii, 153 (1877).

Hab.—Colorado (*Chambers*).

7. *C. NEGLECTA* Herrick. 7th Rep. Geol. Minn. 112 (1879).

Hab.—Minnesota (*Herrick*).

8. *C. SCABRA* Haldeman. Proc. Phila. Acad. 1842, 184.

Hab.—Massachusetts (*Haldeman*).

9. *C. SIMPLEX* Haldeman. Proc. Phila. Acad. 1841, 53.—*DeKay*. Nat. Hist. N. Y. vi, 65 (1844).

Hab.—Pennsylvania (*Haldeman*).

10. *C. VIDUA* Müller. Zoöl. Dan. Prod. No. 2384 (1776): Entomostraca 55, t. 4, figs. 7-9 (1785).—*Herrick*. 7th Rep. Geol. Minn. 112 (1879).

Hab.—Minnesota (*Herrick*).

11. *C. VITREA* Haldeman. Proc. Phila. Acad. 1842, 166.

Hab.—Pennsylvania (*Haldeman*).

III. NOTADROMUS LILLJEB.

1. *N. MONACHUS* Lilljeborg. De Crustaceis ex. ord. tribus, 95, t. viii, figs. 1-15 (1853).—*Herrick*. 10th Rep. Geol. Minn. 252 (1882).

Cypris monachus Müller. Entomostraca, 60, t. 5, figs. 6-8, (1785).

Hab.—Minnesota (*Herrick*).

IV. CYTHERINA LAM.

1. *C. BIFASCIATA* Say. Jour. Phila. Acad. i, 439 (1817). *DeKay*. Nat. Hist. N. Y. vi, 65 (1844).

Hab.—Georgia and Florida (*Say*).

ORDER CLADOCERA.

FAMILY SIDIDÆ.

I. SIDA STRAUSS.

1. *S. CRYSTALLINA* Strauss. Mem. du Museum, t. vi (1820).—*Birge*. Trans. Wis. Acad. iv, 78 (1877).—*Herrick*. 7th Rep. Geol. Minn. 99 (1879); 10th Rep. Geol. Minn. 235 (1882); Final Report, 20 (1884).

Daphnia crystallina Müller. Entomostraca, 96, t. 14, figs. 1-4 (1785).

Hab.—Massachusetts, Lake Michigan, and Wisconsin (*Birge*); Minnesota (*Herrick*).

II. PSEUDO-SIDA HERRICK.

1. *P. BIDENTATA* Herrick. Final Report, 20 (1884).

Hab.—Alabama (*Herrick*).

III. DAPHNELLA BAIRD.

1. *D. BRACHYURA* Baird. British Entomostraca, 109 (1850).—*Herrick*. 10th Rep. Geol. Minn. 236 (1850); Final Report, 21 (1884).

D. winchelli Herrick. 7th Rep. Geol. Minn. 122 (1879).

? *D. exspinosa* Birge. Trans. Wis. Acad. iv, 79 (1877).

Sida brachyura Lievin. Branchiopoden der Danziger Umgegend, 20, t. iv, figs. 3-9 (1848).

IV. LATONA STRAUSS.

1. *L. SETIFERA* Strauss. Mem. de Museum, v, (1820).—*Birge*. Chicago Med. Jour. and Ex. xvi, 585 (1881).—*Herrick*. Final Report, 22 (1884).

Daphnia setifera Müller. Entomostraca, 98, t. 14, figs. 5-7 (1785).

Hab.—Massachusetts and Lake Michigan (*Birge*).

FAMILY HOLOPEDIDÆ.

I. HOLOPEDIDIUM ZADD.

1. *H. GIBBERUM* Zaddach. Archiv. für Naturgeschichte, 1855, 159, t. viii, ix.—*Forbes*. Amer. Nat. xvi, 641 (1882).—*Herrick*. Final Report, 22 (1884).

Hab.—Lake Michigan (*Forbes*).

FAMILY DAPHNIDÆ.

I. MOINA BAIRD.

1. *M. RECTIROSTRIS* Baird. British Entomostraca, 101, t. xi, figs. 1, 2 (1850).—*Birge*. Trans. Wis. Acad. iv, 79 (1877). *Herrick*. 10th Rep. Geol. Minn. 237 (1882); Final Report, 34 (1884).

M. brachiata Baird l.c. 102, t. ix, figs. 1, 2.

- Daphnia rectirostris* Müller. Entomostraca, 92, t. 12, figs. 1, 2 (1785).

Hab.—Alabama and Minnesota (*Herrick*); Wisconsin (*Birge*).

II. CERIODAPHNIA DANA.

1. *C. ALABAMENSIS* Herrick. Amer. Nat. xvii, 503 (1883); Final Report, 38 (1884).

Hab.—Alabama (*Herrick*).

2. *C. CONSORS* Birge. Trans. Wis. Acad. iv, 81 (1877).—*Herrick*. Final Report, 40 (1884).

Hab.—Wisconsin (*Birge*).

3. *C. CRISTATA* Birge. Trans. Wis. Acad. iv, 82 (1877). *Herrick*. Final Report, 38 (1884).

4. ? *Daphnia reticulata* Herrick. 7th Rep. Geol. Minn. 104 (1879).

Hab.—Massachusetts and Wisconsin (*Birge*); Minnesota (*Herrick*).

5. *C. LATICAUDATA* P. E. Müller. Dänmarks Cladocera, 130, t. i, fig. 19 (1868).—*Herrick*. Final Report, 39 (1884).

Hab.—Minnesota (*Herrick*).

6. *C. PARVA* Herrick. Amer. Nat. xvii, 504 (1883).
Hab.—Minnesota (*Herrick*).

7. *C. SCITULA* Herrick. Final Report, 40 (1884).
Hab.—Minnesota (*Herrick*).

III. *SCAPAOLEBERIS* SCHÖDL.

1. *S. ANGULATA* Herrick. Amer. Nat. xvii, 502 (1883);
 Final Report, 44 (1884).
Hab.—Mississippi and Alabama (*Herrick*).

2. *S. ARMATA* Herrick. 10th Rep. Geol. Minn. 243 (1882);
 Final Report, 43 (1884).
Hab.—Alabama and Minnesota (*Herrick*).

3. *S. AURITA* Birge in Herrick's Final Report, 175 (1884).
S. nasuta Birge. Trans. Wis. Acad. iv, 85 (1877).—*Herrick*.
 Final Report, 43 (1884).

Daphnia aurita Fischer. Bull. Naturforsch. Gesellsch. in
 Moskau, xxii (1849).
Hab.—Wisconsin (*Birge*).

4. *S. MACRONATA* Schödl. Branchiopoden der Umge-
 gend von Berlin, 23 (1858).—*Birge*. Trans. Wis. Acad. iv, 84
 (1877).—*Herrick*. 10th Rep. Geol. Minn. 241 (1882); Final
 Report, 42 (1884).

Daphnia macronata Müller. Entomostraca, 94, t. xiii, figs.
 6, 7 (1785).—*Herrick*. 7th Rep. Geol. Minn. 104 (1879).
Hab.—Eastern United States.

IV. *SIMOCEPHALUS* SCHÖDL.

1. *S. AMERICANUS* Birge. Trans. Wis. Acad. iv, 82 (1877).
 —*Herrick*. Final Report, 47, 49 (1884).
Hab.—Mississippi and Minnesota (*Herrick*); Wisconsin (*Birge*).

2. *S. DAPHNOIDES* Herrick. Amer. Nat. xvii, 503 (1883);
 Final Report, 48 (1884).
Hab.—Alabama (*Herrick*).

3. *S. ROSTRATUS* Herrick. Final Report, 47 (1883).
Hab.—Mississippi (*Herrick*).

4. *S. VETULUS* Schödler. Branchiopoden der Umgegend von Berlin, 18 (1858).—*Birge*. Trans. Wis. Acad. iv, 82 (1877).—*Herrick*. 7th Rep. Geol. Minn. 103 (1879); Final Report, 46 (1884).

Daphne retula, Müller. Zoöl. Dan. Prod. No. 2399 (1776).
Hab.—Wisconsin (*Birge*), Minnesota (*Herrick*).

V. DAPHNIA MÜLL.

1. *D. ABRUPTA* Haldeman. Proc. Phila. Acad. 1842, 184.
Hab.—Pennsylvania (*Haldeman*).

2. *D. ANGULATA* Say. Jour. Phila. Acad. i, 440 (1817).
DeKay. Nat. Hist. N.Y. vi, 65 (1844).
Hab.—Southern States (*Say*).

3. *D. BREVICAUDA* Chambers. Bull. U. S. Geol. Survey (Hayden) iii, 154 (1877).

Hab.—Kentucky and Colorado (*Chambers*).

4. *D. DUBIA* Herrick. Amer. Nat. xvii, 501 (1883); Final Report, 61 (1884).
Hab.—Minnesota (*Herrick*).

5. *D. GALEATA* Sars. Om en Sommeren 1862, foretagen zoologisk Reise i Christianias og Trondhjems Stiftor, 21 (1863).
P. E. Müller. Naturhistorisk Tidsskrift, v, 117, pl. i, fig. 6 (1868).—*Smith*. Rep. U.S. Fish Com. for 1872-73, 695.—*Herrick*. Final Report, 61 (1884).

Hab.—Minnesota (*Herrick*); Lake Superior (*Smith*).

6. *D. HYALINA* Leydig. Naturgeschichte der Daphniden, 151, t. i, figs. 8-10 (1860).—*Forbes*. Amer. Nat. xvi, 642 (1882).—*Herrick*. Final Report, 60 (1884).

D. longispina Herrick. Amer. Nat. xvii, 501 (1883).

D. pellucida P. E. Müller. Naturhistorisk Tidsskrift, v, 116, pl. 1, fig. 5 (1868).—*Smith*. Rep. U.S. Fish Com. 1872-73, 696.

Hab.—Kentucky and Minnesota (*Herrick*), Illinois and Lake Michigan (*Forbes*), Lake Superior (*Smith*).

7. *D. KALBERGENSIS* Schödler. Die Cladocera des frischen Haffs, 18 t. i, figs. 1-3 (1863).—*Herrick*. Final Report, 63 (1884).

Hab.—Minnesota (*Herrick*).

8. *D. KERUSSES* Cox. Amer. Monthly Micros. Jour. iv, 88 (1883).—*Kellicott*. Proc. Amer. Soc. Micros. vi, 129 (1884).

Hab.—Wisconsin (*Cox*), New York (*Kellicott*).

9. *D. MAGNICEPS* Herrick. Final Report, 64 (1884).

Hab.—Minnesota (*Herrick*).

10. *D. MINNEHAHA* Herrick. Final Report, 59 (1884).

Hab.—Minnesota (*Herrick*).

11. *D. PULEX* Claus. Mem. de Museum, vii, 158 (1820).—*Smith*. Rep. U.S. Fish Com. for 1872-73, 696.—*Birge*. Trans. Wis. Acad. iv, 87 (1877).—*Herrick*. 7th Rep. Geol. Minn. 101 (1879); 10th Rep. Geol. Minn. 238 (1882); Amer. Nat. xvii, 501 (1883); Final Report, 56 (1884).

Hab.—Massachusetts and Wisconsin (*Birge*), Alabama and Minnesota (*Herrick*), Lake Superior (*Smith*).

12. *D. RETICULATA* Haldeman. Proc. Phila. Acad. 1843, 196.

Hab.—Pennsylvania (*Haldeman*).

13. *D. RETROCURVA* Forbes. Amer. Nat. xvi, 642 (1882).

Hab.—Illinois (*Forbes*).

14. *D. ROSEA* Sars. Om de i Omegn. af Christania forekom. Cladocera, 268 (1862).—*Herrick*. Final Report, 59 (1884).

Hab.—Minnesota (*Herrick*).

15. *D. ROTUNDATA* Say. Jour. Phila. Acad. i, 440 (1817).—*DeKay*. Nat. Hist. N. Y. vi, 65 (1844).

Hab.—Southern States (*Say*).

FAMILY BOSMINIDÆ.

I. BOSMINA BAIRD.

1. *A. CORNUTA* Baird. Trans. Berwick Nat. Club, ii, 149 (—).—*Birge*. Trans. Wis. Acad. iv, 91 (1887).—*Herrick*. 10th Rep. Geol. Minn. 244 (1882).

Monoculus cornutus Jurine. Hist. d. Monocles qui se trouvent aux environs de Geneve, 142, t. xiv, figs. 8-10 (1820).

Hab.—Massachusetts (*Birge*), Minnesota (*Herrick*).

2. *B. LONGIROSTRIS* Baird. Ann. and Mag. Nat. Hist. xvii, 412 (—); British Entomostraca, 105, t. xv, fig. 3 (1850).—*Birge*. Trans. Wis. Acad. iv, 91 (1876).—*Herrick*. 7th Rep. Geol. Minn. 109 (1878); 10th Rep. Geol. Minn. 244 (1882).

Lynceus longirostris Müller. Entomostraca, 76, t. x, figs. 7, 8 (1785).

Hab.—Massachusetts and Wisconsin (*Birge*), Minnesota (*Herrick*).

3. *B. STRIATA* Herrick. 10th Rep. Geol. Minn. 32 (1882); Final Report, 66 (1884).

Hab.—Minnesota (*Herrick*).

FAMILY LYNCODAPHNIDÆ.

I. MACROTHRIX BAIRD.

1. *M. PAUPER* Herrick. 10th Rep. Geol. Minn. 245 (1882); Final Report, 70 (1884).

Hab.—Minnesota (*Herrick*).

2. *M. ROSEA* Baird. Trans. Berwick Nat. Club, ii, 149 (—); British Entomostraca, 104 (1850).—*Birge*. Trans. Wis. Acad. iv, 90 (1877).—*Herrick*. Final Report, 69 (1884).

Hab.—Wisconsin (*Birge*).

3. *M. TENUICORNIS* Kurz. Dodekas neuer Cladocera, 26, t. iii, fig. 1 (1874).—*Herrick*. 10th Rep. Geol. Minn. 245 (1882); Final Report, 70 (1884).

M. agilis Herrick. 7th Rep. Geol. Minn. 106 (1879).

Hab.—Minnesota (*Herrick*).

II. LATHONURA LILLJEB.

1. *L. RECTIROSTRIS* Lilljeborg. De Crustaceis ex ordinis tribus, 57, t. iv, figs. 8-11, t. v, fig. 2, t. xxiii, figs. 12-13 (1853).—*Birge*. Trans. Wis. Acad. iv, 89 (1877).—*Herrick*. Final Report, 71 (1884).

Daphnia rectirostris Müller. Entomostraca, 92, t. xii, figs. 1-3 (1785).

Hab.—Minnesota (*Herrick*).

III. LYNCODAPHNIA HERRICK.

1. *L. MACROTHROIDES* Herrick. Amer. Nat. xvi, 1007 (1882); 10th Rep. Geol. Minn. 247 (1882); Final Report, 75 (1884).

Hab.—Minnesota (*Herrick*).

IV. ILIOCRYPTUS SARS.

1. *I. SPINIFER* Herrick. 10th Rep. Geol. Minn. 246 (1882); Final Report, 77 (1884). Bull. Scientific Lab. Denison University, i, 39 (1885).

Hab.—Minnesota (*Herrick*).

FAMILY LYNCEIDÆ.

I. EURYCERUS BAIRD.

1. *E. LAMELLATUS* Baird. Ann. and Mag. Nat. Hist. ii, 88, t. ii, figs. 1-8 (1843); British Entomostraca, 124, t. xv, fig. 1 (1850).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 696.—*Birge*. Trans. Wis. Acad. iv, 92 (1877).—*Herrick*. 7th Rep. Geol. Minn. 122 (1879); 10th Rep. Geol. Minn. 248 (1882); Final Report, 80 (1884).

Lynceus lamellatus Müller. Entomostraca, 73, t. ix, figs. 4-6 (1785).

Hab.—Minnesota (*Herrick*), Lake Superior (*Smith*).

II. ACROPERUS BAIRD.

1. *A. LEUCOCEPHALUS* Schödler. Neue Beiträge zur Naturgeschichte der Cladoceren, 30, t. i, figs. 11-16 (1863).—*Birge*. Trans. Wis. Acad. iv, 109 (1877).—*Herrick*. Final Report, 81 (1884).

Lynceus leucocephalus Koch. Deutschlands Crustaceen, h. 36, pl. x (1838).

Hab.—Massachusetts and Wisconsin (*Birge*).

III. CAMPTOCERCUS BAIRD.

1. *C. MACRURUS* Baird. Ann. and Mag. Nat. Hist. ii, 91, t. 3, figs. 5, 6 (1843); British Entomostraca, 128, t. xvi, fig. 9 (1850).—*Birge*. Trans. Wis. Acad. iv, 109 (1877).—*Herrick*. 7th Rep. Geol. Minn. 107 (1879); 10th Rep. Geol. Minn. 249 (1882); Final Report, 84 (1884).

Lyneus macrurus Müller. Entomostraca, 77, t. 10, figs. 1-3 (1785).

Hab.—Massachusetts, Wisconsin, and Lake Michigan (*Birge*), Minnesota (*Herrick*).

2. *C. ROTUNDUS* Herrick. 10th Rep. Geol. Minn. 249 (1882); Final Report, 84 (1884).

Hab.—Minnesota (*Herrick*).

IV. ALONOPSIS SARS.

1. *A. LATISSIMA* Kurz. Dodekas neuer Cladoceren, 40, t. ii, figs. 13-15 (1874).—*Herrick*. Final Report, 86 (1884).

Hab.—Minnesota (*Herrick*).

2. *A. MEDIA* Birge. Trans. Wis. Acad. iv, 108 (1877).—*Herrick*. Final Report, 86 (1884).

Hab.—Minnesota (*Herrick*).

V. LEYDIGIA KURZ.

1. *L. ACANTHOCERCOIDES* Kurz. Dodekas neuer Cladoceren, 53 (1874).—*Herrick*. Final Report, 89 (1884).

L. quadrangularis Herrick. 10th Rep. Geol. Minn. 248 (1882).

Lyneus acanthocercoides Fischer. Bull. Soc. Nat. de Moscou, 1854, 431, t. iii, figs. 21-25.

Hab.—Minnesota (*Herrick*).

2. *L. QUADRANGULARIS* Kurz. Dodekas neuer Cladoceren, 52, t. ii, fig. 1 (1874).—*Herrick*. Final Report, 88 (1884).

Hab.—Alabama (*Herrick*).

VI. GRAPTOLEBERIS SARS.

1. *G. TESTUDINARIA* Kurz. Dodekas neuer Cladoceren, 54, t. ii, figs. 11, 12 (1874).—*Herrick*. Final Report, 90 (1884).

G. inermis Birge. Trans. Wis. Acad. iv, 102 (1877).—*Herrick*. 10th Rep. Geol. Minn. 250 (1882).

Lynceus testudinarius Fischer. Bull. Soc. Nat. de Moscou, 1854, t. ix, figs. 1, 2.

Hab.—Massachusetts and Wisconsin (*Birge*), Minnesota (*Herrick*).

VII. CREPIDOCERCUS BIRGE.

1. *C. SETIGER* Birge. Trans. Wis. Acad. iv, 102 (1877).—*Herrick*. 10th Rep. Geol. Minn. 250 (1882); Final Report, 91 (1884).

Hab.—Wisconsin (*Birge*), Minnesota (*Herrick*).

VIII. ALONA BAIRD.

1. *A. AFFINIS* Schödler. Neue Beiträge zur Naturgeschichte der Cladoceren, 19 (1883).—*Herrick*. Final Report, 98 (1884).

Lynceus affinis Leydig. Naturgeschichte der Daphniden, 223, t. ix, figs. 68, 69 (1860).

Hab.—Minnesota (*Herrick*).

2. *A. ANGULATA* Birge. Trans. Wis. Acad. iv, 104 (1877).—*Herrick*. Final Report, 95 (1884).

Hab.—Massachusetts (*Birge*).

3. *A. GLACIALIS* Birge. Trans. Wis. Acad. iv, 106 (1877).—*Herrick*. Final Report, 100 (1884).

Hab.—Massachusetts (*Birge*).

4. *A. LINEATA* Schödler. Neue Beiträge zur Naturgeschichte der Cladoceren, 20, t. i, fig. 23 (1863).—*Herrick*. Final Report, 96 (1884).

Lynceus lineatus Fischer. Bull. Soc. Nat. de Moscou, 1854, 429, t. iii, figs. 15, 16.

Hab.—Minnesota (*Herrick*).

5. *A. OBLONGA* P. E. Müller. Naturhistorisk Tidsskrift, v, 175, pl. iii, figs. 22, 23 (1868).—*Birge*. Trans. Wis. Acad. iv, 107 (1877).—*Herrick*. 10th Rep. Geol. Minn. 250 (1882): Final Report, 97 (1884).

Hab.—Wisconsin (*Birge*), Minnesota (*Herrick*).

6. *A. PARVULA*, var. *TUBERCULATA* Herrick. Final Report, 100 (1884).

A. tuberculata Kurz. Dodekas neuer Cladoceren, 51, t. ii, fig. 3 (1874).

Hab.—Massachusetts (*Herrick*).

7. *A. PORRECTA* Birge. Trans. Wis. Acad. iv, 105 (1877).—*Herrick*. Final Report, 99 (1884).

Hab.—Massachusetts and Wisconsin (*Birge*).

8. *A. QUADRANGULARIS* Baird. Ann. and Mag. Nat. Hist. ii, 92, t. 3, figs. 9–11 (1843); British Entomostraca, 131, t. xvi, fig. 4 (1859).—*Herrick*. Final Report, 97 (1884).

Lyneus quadrangularis Müller. Entomostraca, 72, t. ix, figs. 1–3.—*Herrick*. 7th Rep. Geol. Minn. 107 (1879).

Hab.—Minnesota (*Herrick*).

9. *A. SANGUINEA* P. E. Müller. Naturhistorisk Tidsskrift, v, 177 (1868).—*Herrick*. Final Report, 95 (1884).

Hab.—Minnesota (*Herrick*).

10. *A. SPINIFERA* Schödler. Neue Beiträge zur Naturgeschichte der Cladoceren, 18, pl. i, figs. 17–22 (1863).—*Birge*. Trans. Wis. Acad. iv, 107 (1877).—*Herrick*. Final Report, 99 (1884).

Hab.—Massachusetts and Wisconsin (*Birge*).

IX. ALONELLA Sars.

1. *A. EXCISA* Kurz. Dodekas neuer Cladoceren, 59 (1874).—*Herrick*. Final Report, 103 (1884).

?*Pleuroxus insculptus* Birge. Trans. Wis. Acad. iv, 95 (1877).

Lyneus excisus Fischer.

Hab.—Massachusetts and Wisconsin? (*Birge*), Minnesota (*Herrick*).

2. *A. PULCHELLA* Herrick. Final Report, 103 (1884).

Hab.—Minnesota (*Herrick*).

3. A. PYGMÆA Kurz. Dodekas neuer Cladoceren. 61, t. iii, fig. 7 (1874).—*Herrick*. Final Report, 105 (1884).
Hab.—Minnesota? (*Herrick*).

X. PLEUROXUS BAIRD.

1. P. ACUTIROSTRIS Birge. Trans. Wis. Acad. iv, 99 (1877).—*Herrick*. Final Report, 109 (1884).
Hab.—Massachusetts (*Birge*).
2. P. AFFINIS *Herrick*. Final Report, 111 (1884).
Hab.—Alabama (*Herrick*).
3. P. DENTICULATUS Birge. Trans. Wis. Acad. iv, 98, (1877).—*Herrick*. Final Report, 110 (1884).
Hab.—Massachusetts, Lake Michigan, and Wisconsin (*Birge*), Minnesota and Alabama (*Herrick*).
4. P. HAMATUS Birge. Trans. Wis. Acad. iv, 98 (1877).—*Herrick*. Final Report, 110 (1884).
Hab.—Massachusetts (*Birge*), Alabama (*Herrick*).
5. P. PROCURVUS Birge. Trans. Wis. Acad. iv, 92 (1877).—*Herrick*. 10th Rep. Geol. Minn. 250 (1882); Final Report, 113 (1884).
Hab.—Massachusetts and Wisconsin (*Birge*), Minnesota (*Herrick*).
6. P. STRAMINEUS Birge. Trans. Wis. Acad. iv, 94 (1877).—*Herrick*. Final Report, 108 (1884).
Hab.—Massachusetts (*Birge*).
7. P. UNIDENS Birge. Trans. Wis. Acad. iv, 97 (1877).—*Herrick*. 10th Rep. Geol. Minn. 250 (1882); Final Report, 111 (1884).
Hab.—Wisconsin (*Birge*), Minnesota and Alabama (*Herrick*).

XI. CHYDORUS LEACH.

1. C. CÆLATUS Schödler. Neue Beiträge zur Naturgeschichte der Cladoceren, 15, t. ii, fig. 44 (1863).—*Herrick*. Final Report, 117 (1884).
Hab.—Minnesota (*Herrick*).

2. *C. GLOBOSUS* Baird. Ann. and Mag. Nat. Hist. ii, 90, t. 3, figs. 1-4 (1843); British Entomostraca, 127, t. xvi. fig. 7, (1850).—*Birge*. Trans. Wis. Acad. iv, 100 (1877).—*Herrick*. Final Report, 116 (1884).

Hab.—Wisconsin (*Birge*), Minnesota (*Herrick*).

3. *C. SPHERICUS* Baird. Ann. and Mag. Nat. Hist. ii, 89, t. 2, figs. 11-13 (1843); British Entomostraca, 126, t. xvi. fig. 8 (1850).—*Birge*. Trans. Wis. Acad. iv, 99 (1877).—*Chambers*. Bull. U.S. Geol. Survey (Hayden), iii, 155 (1877).—*Herrick*. 7th Rep. Geol. Minn. 108 (1879); Final Report, 116 (1884).

Hab.—Massachusetts, Lake Michigan, and Wisconsin (*Birge*), Minnesota (*Herrick*), Kentucky and Colorado (*Chambers*).

XII. MONOSPILUS Sars.

1. *M. DISPAR* Sars. Crust. Cladoc. i Omgn. af Christiana, 165 (1862).—*Herrick*. Final Report, 119 (1884); Bull. Scientific Lab. Denison Univ. i, 38 (1885).

Hab.—Minnesota (*Herrick*).

FAMILY POLYPHEMIDÆ.

I. POLYPHEMUS MÜLL.

1. *P. PEDICULUS* De Geer. Mem. pour serv. a l'histoire Ins. vii, 467, t. 28, figs. 9-13 (1778).—*Birge*. Trans. Wis. Acad. iv, 109 (1877).—*Herrick*. 10th Rep. Geol. Minn. 251 (1882); Final Report, 121 (1884).

Monoculus pediculus Linnaeus. Syst. Nat. (12th Ed.) i, 1058 (1767).

Polyphemus oculus Müller. Entomostraca, 119, t. 20, figs. 1-5 (1785).

P. occidentalis Herrick. 7th Rep. Geol. Minn. 122 (1879).

Hab.—Massachusetts (*Birge*), Minnesota (*Herrick*).

2. *P. STAGNALIS* Herrick. Final Report, 122 (1884).

Hab.—Minnesota? (*Herrick*).

FAMILY LEPTODORIDÆ.

I. LEPTODORA LILLJEB.

1. *L. HYALINA* Lilljeborg. Ofversigt af Vetens.-Akad. Förhandl., 1860, 265, pl. vii, figs. 1-22.—*Smith*. Rep. U. S. Fish Com. for 1872-73, 696.—*Forbes*. Amer. Nat. xvi, 641 (1882).—*Herrick*. Final Report, 123 (1884).

Hab.—Lake Michigan (*Forbes*), Lake Superior (*Smith*).

ORDER PHYLLOPODA.

FAMILY LIMNADIDÆ.

I. LIMNETIS LOVEN.

1. *L. BREVIFRONS* Packard. Bull. U. S. Geol. Survey (Hayden), iii, 172 (1877); 12th Rep. U. S. Geol. Survey (Hayden), ii, 301 (1883).

Hab.—Kansas.

2. *L. GOULDII* Baird. Ann. and Mag. Nat. Hist. 3d ser., x, 393 (1862).—*Packard*. 7th Rep. U. S. Geol. Survey (Hayden), 618 (1874); Bull. U. S. Geol. Survey (Hayden), iii, 173 (1877); 12th Rep. U. S. Geol. Survey (Hayden), ii, 299 (1883).—*Herrick*.

Hab.—New Hampshire, Massachusetts, Rhode Island, New York, Illinois, Canada.

3. *L. GRACILICORNIS* Packard. Amer. Jour. Science, 3d ser., ii, 113 (1871); 7th Rep. U. S. Geol. Survey (Hayden), 618 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 302 (1883).

Hab.—Texas.

4. *L. MUCRONATUS* Packard. Amer. Nat. ix, 312 (1875); Bull. U. S. Geol. Survey (Hayden), iii, 172 (1877); 12th Rep. U. S. Geol. Survey (Hayden), ii, 300 (1883).

Hab.—Kansas, Montana.

II. ESTHERIA Rüpp.

1. *E. BELFRAGEI* Packard. Amer. Jour. Science, 3d. ser., ii, 112 (1871); 7th Rep. U. S. Geol. Survey (Hayden), 619 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 309 (1883).

Hab.—Texas.

2. *E. CALIFORNICA* Packard. 6th Rep. Peabody Acad. Science, 55 (1874); 7th Rep. U. S. Geol. Survey (Hayden), 618 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 304 (1883).

Hab.—California.

3. *E. COMPLEXIMANUS* Packard. 12th Rep. U. S. Geol. Survey (Hayden), ii, 305 (1883).

Eulimnadia compleximanus Packard. Bull. U. S. Geol. Survey (Hayden), iii, 174 (1877).

Hab.—Kansas.

4. *E. JONESII* Baird. Proc. Zool. Soc. London, 147, pl. xv, figs. 1a, 1b, 1c, 1d (1862).—*Packard*. 7th Rep. U. S. Geol. Survey (Hayden), 619 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 310 (1883).

Hab.—Southern States? Cuba.

5. *E. MEXICANA* Claus. Beiträge zur Kennt. d. Entomotraken, t. iii, iv, figs. 33–54 (1860).—*Packard*. 12th Rep. U. S. Geol. Survey (Hayden), ii, 306 (1883).

E. clarkii Packard. 6th Rep. Peabody Acad. Science, 55, (1874); 7th Rep. U. S. Geol. Survey (Hayden), 619 (1874).

Hab.—Lake Winnepeg, Kentucky, Ohio, Kansas, New Mexico, Mexico.

6. *E. MORSEI* Packard. Amer. Jour. Science, 3d ser., ii, 113 (1871); 6th Rep. Peabody Acad. Science, 56 (1874); 7th Rep. U. S. Geol. Survey (Hayden), 619 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 308 (1883).

Hab.—Iowa, Dakota.

III. EULIMNADIA PACKARD.

1. *E. AGASSIZII* Packard. 6th Rep. Peabody Acad. Science, 54 (1874); 7th Rep. U. S. Geol. Survey (Hayden), 618 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 311 (1883).

Hab.—Penikese Island (Massachusetts).

2. *E. TEXANA* Packard. 12th Rep. U. S. Geol. Survey (Hayden), ii, 312 (1883).

Limnadia terana Packard. Amer. Jour. Science, 3d ser., ii, 111 (1871); 7th Rep. U. S. Geol. Survey (Hayden), 618 (1874).

Hab.—Kansas, Texas.

IV. *LIMNADELLA* GIRARD.

1. *L. CORIACEA* Haldeman. Proc. Phila. Acad. 1842, 184; Ibid. 1854, 34.—*Packard*. 7th Rep. U. S. Geol. Survey (Hayden), 618 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 313 (1883).

Unrecognizable from description.

Hab.—Pennsylvania (*Haldeman*).

2. *L. KITEI* Girard. Proc. Phila. Acad. 1854, 3.—*Packard*. 12th Rep. U. S. Geol. Survey, ii, 311 (1883).

Unrecognizable from description.

Hab.—Ohio (*Girard*).

V. *LIMNADIA* BRONG.

1. *L. AMERICANA* Morse. Proc. Boston Soc. N. H., xi, 404 (1868).—*Packard*. 7th Rep. U. S. Geol. Survey (Hayden), 618 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 311 (1883).

Hab.—Massachusetts.

FAMILY APODIDÆ.

1. *APUS* SCHÄFF.

1. *A. ÆQUALIS* Packard. Amer. Jour. Science, 3d ser., ii, 110 (1871); 7th Rep. U. S. Geol. Survey (Hayden), 620 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 320 (1883).

Hab.—Kansas, Texas, Colorado?

2. *A. LONGICAUDATUS* Le Conte. Annals N. Y. Lyceum, iv, 155 (1845).—*Packard*. 12th Rep. U. S. Geol. Survey (Hayden), ii, 324 (1883).

A. obtusus James. Long's Expedition, ii, 336 (1823).—*Packard*. 7th Rep. U. S. Geol. Survey (Hayden), 620 (1874).

Hab.—Colorado, Wyoming, Kansas.

3. *A. LUCASANUS* Packard. Amer. Jour. Science, 3d ser., ii, 109 (1871); 7th Rep. U. S. Geol. Survey (Hayden), 620 (1874); Bull. U. S. Geol. Survey (Hayden), iii, 179 (1877); 12th Rep. U. S. Geol. Survey (Hayden), ii, 321 (1883).

Hab.—Kansas, Lower California.

4. *A. NEWBERRYI* Packard. Amer. Jour. Science, 3d ser., ii, 109 (1871); 7th Rep. U. S. Geol. Survey (Hayden), 620 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 321 (1883).

Hab.—Utah.

II. *LEPIDURUS* LEACH.

1. *L. BILOBATUS* Packard. Bull. U. S. Geol. Survey (Hayden), iii, 178 (1877); 12th Rep. U. S. Geol. Survey (Hayden), ii, 318 (1883).

Hab.—Colorado.

2. *L. COUESII* Packard. Amer. Nat. ix, 311 (1875); Bull. U. S. Geol. Survey (Hayden), iii, 177 (1877); 12th Rep. U. S. Geol. Survey (Hayden), ii, 317 (1883).

Hab.—Utah, Montana.

3. *L. GLACIALIS* Kroyer. Naturhistorisk Tidsskrift, 2d ser., ii, 431 (1847).—*Packard.* 7th Rep. U. S. Geol. Survey (Hayden), 619 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 316 (1883).

Hab.—Arctic America, Greenland.

FAMILY BRANCHIPODIDÆ.

I. *ARTEMIA* LEACH.

1. *A. GRACILIS* Verrill. Amer. Jour. Science, 2d ser., xlviii, 248, 249, 430 (1869); Proc. A. A. A. S. for 1869, 235, 238.—*Packard.* 7th Rep. U. S. Geol. Survey (Hayden), 620, 621 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 330 (1883).

A. monica Verrill. Amer. Jour. Science, 2d ser., xlviii, 248 (1869).

A. fertilis Verrill. Amer. Jour. Science, 2d series., xlviii, 248 (1869).

A. utahensis Lockington. Monthly Micros. Jour. 1876, 137, *vide* Packard.

Hab.—Connecticut, Utah.

II. BRANCHINECTA VERRILL.

1. *B. COLORADENSIS* Packard. 7th Rep. U. S. Geol. Survey (Hayden), 621 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 338 (1883).

Hab.—Colorado.

2. *B. LINDAHLI* Packard. 12th Rep. U. S. Geol. Survey (Hayden), ii, 339 (1883).

Hab.—Kansas.

3. *B. PALUDOSA* Packard. 12th Rep. U. S. Geol. Survey (Hayden), ii, 336 (1883).

B. grønlandica Verrill. Amer. Jour. Science, 2d ser., xlviii, 253 (1869); Proc. A. A. A. S. for 1869, 244.—*Packard*. 7th Rep. Geol. Survey (Hayden), 621 (1874).

B. arctica Verrill. Amer. Jour. Science, 2d ser., xlviii, 253 (1869); Proc. A. A. A. S. for 1869, 244.—*Packard*. 6th Rep. U. S. Geol. Survey (Hayden), 621 (1874).

Branchipus paludosus Müller.

Hab.—Labrador, Arctic America, Greenland.

III. BRANCHIPUS SCHÄFF.

1. *B. BUNDYI* Forbes.

Eubbranchipus bundyi Forbes. Bull. Ill. St. Lab. N. H., i, 25 (1876).

Hab.—Wisconsin (*Forbes*).

2. *B. SERRATUS* Forbes.

Eubbranchipus serratus Forbes. Bull. Ill. St. Lab. N. H., i, 13 (1876).—*Packard*. 12th Rep. U. S. Geol. Survey (Hayden), ii, 343 (1883).

Hab.—Illinois (*Forbes*).

3. *B. VERNALIS* Verrill. Amer. Jour. Science, 2d ser., xlviii, 25 (1869); Proc. A. A. S. for 1869, 622.—*Packard*. 7th Rep. U. S. Geol. Survey (Hayden), 622 (1874); 12th Rep. U. S. Geol. Survey (Hayden), ii, 342 (1883).—*Gissler*. Amer. Nat. xv, 136 (1881).—*Hay*. Amer. Nat. xvi, 242 (1882).

Hab.—Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Ohio, Indiana.

IV. *CHIROCEPHALUS* PREVOST.

1. *C. HOLMANI* Ryder. Proc. Phila. Acad. 1879, 148.—*Packard*. 12th Rep. U. S. Geol. Survey (Hayden), ii, 351 (1883).—*Herrick*. Bull. Scientific Lab. Denison Univ. i, 19 (1885).

Hab.—New York, Pennsylvania, Minnesota.

V. *STREPTOCEPHALUS* BAIRD.

1. *S. FLORIDANUS* Packard. Amer. Nat. xiv, 53 (1880); 12th Rep. U. S. Geol. Survey (Hayden), ii, 350 (1883).

Hab.—Florida.

2. *S. SEALII* Ryder. Proc. Phila. Acad. 1879, 200.—*Packard*. 12th Rep. U. S. Geol. Survey (Hayden), ii, 348 (1883).

Hab.—New York, New Jersey.

3. *S. TEXANUS* Packard. Amer. Jour. Science, 3rd ser., ii, 111 (1871); 7th Rep. U.S. Geol. Survey (Hayden), 622 (1874); 12th Rep. U.S. Geol. Survey (Hayden), ii, 345 (1883).

S. Watsoni Packard. Bull. U. S. Geol. Survey (Hayden), iii, 176 (1877).

Hab.—Kansas, Texas.

VI. *THAMNOCEPHALUS* PACKARD.

1. *T. PLATYURUS* Packard. Bull. U.S. Geol. Survey (Hayden), iii, 175 (1877); 12th Rep. U. S. Geol. Survey (Hayden), ii, 353 (1883).

Hab.—Kansas.

ORDER AMPHIPODA.

FAMILY GAMMARIDÆ.

I. CRANGONYX BATE.

1. *C. ANTENNATUM* Packard. Amer. Nat. xv, 880 (1881).
Hab.—Tennessee (*Packard*).
2. *C. BIFURCUS* Hay. Amer. Nat. xvi, 144 (1882).
Hab.—Mississippi (*Hay*).
3. *C. GRACILIS* Smith. Amer. Jour. Science, 3rd ser., ii, 453 (1871); Rep. U. S. Fish Com. for 1872-73, 654, 694.—*Forbes*. Bull. Ill. State Lab. N. H. No. 1, 6 (1876).—*Hay*. Amer. Nat. xvi, 241 (1882).
Hab.—Indiana (*Hay*), Illinois (*Forbes*), Lake Superior and Lake Huron (*Smith*).
4. *C. LUCIFUGUS* Hay. Amer. Nat. xvi, 144 (1882).
Hab.—Illinois (*Hay*).
5. *C. MUCRONATUS* Forbes. Bull. Ill. State Lab. N. H., No. 1, 6 (1876).—*Hay*. Amer. Nat. xvi, 241 (1882).
Hab.—Indiana (*Hay*), Illinois (*Forbes*).
6. *C. PACKARDII* Smith. Amer. Jour. Science, 3rd ser., ix, 476-7 (1875).
C. vitreus Packard. 5th Rep. Peabody Acad. Science, 95 (1873).
Hab.—Indiana (*Packard*).
7. *C. TENUIS* Smith. Rep. U. S. Fish Com. for 1872-73, 656.
Hab.—Connecticut (*Smith*).
8. *C. VITREUS* Smith. Rep. U. S. Fish Com. for 1872-73, 656; Amer. Jour. Science, 3rd ser., ix, 476-7 (1875).
Stygobromus vitreus Cope. Amer. Nat. vi, 422 (1872); 3rd and 4th Rep. Geol. Indiana, 181 (1872).
Hab.—Mammoth Cave, Kentucky (*Cope*).

II. GAMMARUS FABR.

1. *G. APPENDICULATUS* Say. Jour. Phila. Acad. i, 379 (1817).—*DeKay*. Nat. Hist. N. Y., vi, 37 (1844).
Hab.—Georgia (*Say*).

2. *G. FASCIATUS* Say. Jour. Phila. Acad. i, 379 (1817).—*DeKay*. Nat. Hist. N. Y. vi, 37 (1844).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 653.—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 6 (1876).

Hab.—Maine (*Verrill*), Connecticut (*Smith*), Pennsylvania (*Say*), Illinois (*Forbes*), Michigan (*Milner*), Wisconsin (*Verrill*).

3. *G. LIMNÆUS* Smith. Rep. U. S. Fish Com. for 1872-73, 651, 694; 7th Rep. U. S. Geol. Survey (Hayden), 609 (1874).

G. lacustris Smith. Amer. Jour. Science, 3rd ser., ii, 453 (1871).

Hab.—Michigan, Lake Superior and Colorado (*Smith*).

4. *G. MINUS* Say. Jour. Phila. Acad. i, 374 (1817).—*DeKay*. Nat. Hist. N. Y. vi, 37 (1844).—*Gould*. Invertebrata of Massachusetts, 334 (1841).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 654.

Hab.—New York(?).

5. *G. ROBUSTUS* Smith. 7th Rep. U. S. Geol. Survey (Hayden), 610 (1874).

Hab.—Colorado (*Smith*).

FAMILY LYSIANASSIDÆ.

I. PONTOPOREIA KRÜYER.

1. *P. FILICORNIS* Smith. Rep. U. S. Fish Com. for 1872-83, 649.—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 20 (1876).

Gammarus filicornis Stimpson MSS.

Hab.—Lake Michigan (*Stimpson*).

2. *P. HOYI* Smith. Rep. U. S. Fish Com. for 1872-73, 647, 694.—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 20 (1876).

P. affinis Smith. Amer. Jour. Science, 3rd ser., ii, 452 (1871).

Gammarus Hoyi Stimpson MSS.

Gammarus brevistylus Stimpson MSS.

Hab.—Lake Michigan (*Stimpson*), Lake Superior (*Smith*).

FAMILY ORCHESTIDÆ.

I. ALLORCHESTES HELLER.

1. *A. DENTATUS* Faxon. Bull. Mus. Comp. Zoöl., iii, 373, (1876).

Hyalella dentata Smith. Rep. U. S. Fish Com. for 1872-73, 645, 694; 7th Rep. U. S. Geol. Survey (Hayden), 611 (1874).—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 5 (1876).

?*Amphitæ Aztecus* Saussure. Mem. sur divers Crust. nouv. du Mexique et des Antilles, 58 (1858).

?*Allorchestes Knickerbockeri* Bate. Cat. Amphip. Crust. Brit. Mus., 36 (1862).

Hab.—Maine, Massachusetts, Connecticut, Florida, Illinois, Wisconsin, Iowa, Michigan, Nebraska, Colorado, Oregon, Lake Superior.

Var. *INERMIS* Faxon. Bull. Mus. Comp. Zoöl., iii, 373 (1876).

Hyalella inermis Smith. 7th Rep. U. S. Geol. Survey (Hayden), 610 (1874).

Hab.—Colorado (*Smith*).

ORDER ISOPODA.

FAMILY ASELLIDÆ.

I. ASELLUS GEOFF.

1. *A. BREVICAUDA* Forbes. Bull. Ill. State Lab. N. H., No. 1, 8 (1876).

Hab.—Illinois (*Forbes*).

2. *A. COMMUNIS* Say. Jour. Phila. Acad., i, 428 (1817).—*DeKay*. Nat. Hist. N. Y., vi, 49 (1844).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 657.—*Hay*. Amer. Nat. xvi, 241 (1882).

?*A. vulgaris* Gould. Invertebrata of Massachusetts, 337 (1841).

A. militaris Hay. Bull. Ill. State Lab. N. H., No. 2, 90 (1878).

Hab.—Connecticut, Massachusetts, New York, Pennsylvania, Indiana, Illinois, Michigan, Mississippi.

3. *A. INTERMEDIUS* Forbes. Bull. Ill. State Lab. N. H., No. 1, 10 (1876).

Hab.—Illinois (*Forbes*).

4. *A. LINEATUS* Say. Jour. Phila. Acad., i, 428 (1817).—*DeKay*. Nat. Hist. N. Y., vi, 50 (1844).

Hab.—South Carolina (*Say*).

5. *A. STYGIUS* Forbes. Bull. Ill. State Lab. N. H., No. 1, 11 (1876).

Cæcidotea stygia Packard. Amer. Nat., v, 751 (1871); 5th Rep. Peabody Acad. Science, 95 (1873).—*Smith*. Rep. U. S. Fish Com. for 1872–73, 661.—*Hubbard*. Amer. Entomologist, n. ser., i, 36, 79 (1880).

C. microcephala Cope. Amer. Nat., vi, 411 (1872); 3rd and 4th Rep. Geol. Indiana, 163 (1872).—*Smith*. Amer. Nat., vii, 244 (1873).

Hab.—Indiana (*Cope*), Illinois (*Forbes*), Kentucky (*Packard*).

II. CÆCIDOTEA PACKARD.

1. *C. NICKAJACKENSIS* Packard. Amer. Nat., xv, 879 (1881).

Hab.—Tennessee (*Packard*).

III. MANCÆSELLUS HARGER.

1. *M. BRACHYURUS* Harger. Amer. Jour. Science, 3rd ser., xi, 304, 305 (1876).

Hab.—Virginia (*Harger*).

2. *M. TENAX* Harger. Amer. Jour. Science, 3rd ser., xi, 304 (1876).—*Hay*. Amer. Nat., xvi, 242 (1882).

Asellus tenax Smith. Amer. Jour. Science, 3rd ser., ii, 453 (1871).

Asellopsis tenax Harger. Amer. Jour. Science, 3rd ser., vii, 601 (1874).—*Smith*. Rep. U. S. Fish Com. for 1872–73, 659, 695.

Hab.—Indiana (*Hay*), Michigan and Lake Huron (*Milner*), Lake Superior (*Smith*).

FAMILY ONISCIDÆ.*

I. ACTONISCUS HARGER.

1. *A. ELLIPTICUS* Harger. Amer. Jour. Science, 3rd ser., xv, 373 (1878); Proc. U. S. Nat. Museum, ii, 157 (1879); Rep. U. S. Fish Com. for 1878, 309.

Hab.—Connecticut (*Harger*).

II. ALLONISCUS DANA.

1. *A. PERCONVEXUS* Dana. Proc. Phila. Acad., vii, 176 (1854).

Hab.—California (*Dana*).

III. ARMADILLO LATR.

1. *A. SPECIOSUS* Stuxberg. Öfversigt af Vetensk.-Akad. Förhandl., 1875, No. 2, 62.

Hab.—California (*Stuxberg*).

IV. ARMADILLIDIUM BRANDT.

1. *A. PILULARE* Stuxberg. Öfversigt af Vetensk.-Akad. Förhandl., 1875, No. 2, 63.

Armadillo pilularis Say. Jour. Phila. Acad., i, 432 (1817).—*Gould*. Invertebrata of Massachusetts, 336 (1841).—*DeKay*. Nat. Hist. N. Y., vi, 54 (1844).

Hab.—Massachusetts (*Gould*), New York (*DeKay*), Pennsylvania (*Say*).

V. LIGIA FABR.

1. *L. DILATATA* Stimpson. Proc. Boston Soc. N. H., vi, 88 (1857); Boston Jour. Nat. Hist., vi, 507 (1857).

Hab.—Washington Territory (*Stimpson*).

2. *L. OCCIDENTALIS* Dana. Crustacea, ii, 742 (1853).

Hab.—California (*Dana*).³

* A few forms of *Oniscide* are found only at or near the sea coast, and should properly take rank among the marine species. The entire family, however, as known from America is indexed here.

3. L. PALLASII Brandt. Conspectus Oniscodorum, 172 (1833).

Hab.—Unalaska (*Brandt*).

VI. LIGIDIUM BRANDT.

1. L. HYPNORUM Budde-Lund. Naturhistorisk Tidsskrift, 3rd ser., vii, 225 (1870).—*Stuxberg*. Öfversigt af Vetensk.-Akad. Förhandl., 1875, No. 2, 48.

Oniscus hypnorum Cuvier (1792).

Hab.—Niagara in Canada, and California (*Eisen*).

VII. ONISCUS L.

1. O. AFFINIS Say. Jour. Phila. Acad., i, 430 (1817).

Hab.—Pennsylvania (*Say*).

2. O. VICARIUS Stuxberg. Öfversigt af Vetensk.-Akad. Förhandl., 1872, No. 9, 3; Ibid. 1875, No. 2, 50.

Hab.—Newfoundland (*Lindahl*), Canada near Niagara (*Eisen*).

VIII. PHILOSCIA LATR.

1. P. SPINOSA Say. Jour. Phila. Acad., i, 429 (1817).—*DeKay*. Nat. Hist. N. Y., vi, 50 (1884).

Hab.—Georgia (*Say*).

2. P. VITTATA Say. Jour. Phila. Acad., i, 429 (1817).—*DeKay*. Nat. Hist. N. Y., vi, 50 (1844).—*Harger*. Rep. U.S. Fish Com. for 1871. 569; Proc. U. S. Nat. Museum, ii, 157 (1879); Rep. U. S. Fish Com. for 1878. 306.

Hab.—New Jersey, Connecticut and Massachusetts (*Harger*).

IX. EUPHILOSCIA PACKARD.

1. E. ELRODII Packard. 5th Rep. Peabody Acad. Science, 97 (1873).—*Smith*. Amer. Jour. Science, 3rd ser., ix, 477 (1875).

Hab.—Indiana (*Packard*).

X. PORCELLIO LATR.

1. P. CONVEXUS Johnsson. Sveriges Oniscider, 32 (1868).—*Sturberg*. Öfversigt af Vetensk.-Akad. Förhandl., 1875, No. 2, 60.

Oniscus convexus DeGeer (1778).

Hab.—Massachusetts, and Canada near Niagara (*Eisen*).

2. P. DUBIUS Brandt. Conspectus Oniscodorum, 178 (1833).

Hab.—? [This species is cited by Stuxberg *loc. cit.* 58.]

3. P. FORMOSUS Stuxberg. Öfversigt af Vetensk.-Akad. Förhandl., 1875, No. 2, 57.

Hab.—California (*Eisen*).

4. P. GEMMULATUS Dana. Crustacea, 725, t. 47, fig. 7 (1853).

Hab.—Washington Territory (*Dana*).

5. P. GLABER Fitch. Trans. N. Y. State Agric. Soc. 1854, 824; First and Second Rep. on Insects, 120 (1856).

Hab.—New York (*Fitch*).

6. P. IMMACULATUS Fitch. Trans. N. Y. State Agric. Soc. 1854, 824; First and Second Rep. on Insects, 120 (1856).

Hab.—Illinois and Arkansas (*Fitch*).

7. P. LIMATUS Fitch. Trans. N. Y. State Agric. Soc. 1854, 824; First and Second Rep. on Insects, 120 (1856).

Hab.—New York (*Fitch*).

8. P. MACULICORNIS Koch. Deutschlands Crustaceen, 34, 16 (1840).—*Sturberg*. Öfversigt af Vetensk.-Akad. Förhandl. 1875, No. 2, 55.

Hab.—California (*Eisen*).

9. P. MIXTUS Fitch. Trans. N. Y. State Agric. Soc. 1854, 824; First and Second Report on Insects, 120 (1856).

Hab.—New York (*Fitch*).

10. P. NIGER Say. Jour. Phila. Acad. i. 432 (1817).—*DeKay*. Nat. Hist. N. Y., vi, 52 (1844).

Hab.—Pennsylvania (*Say*).

11. *P. PICTUS* Brandt. Conspectus Oniscodorum, 176 (1833).—*Stuxberg*. Öfversigt af Vetensk.-Akad. Förhandl., 1875, No. 2, 59.

Hab.—Canada near Niagara (*Eisen*).

12. *P. SCABER* Latreille. Hist. Nat. Crust. et Insectes, vii, 45, in part (1804).—*Fitch*. Trans. N. Y. State Agric. Soc. 1854, 825; First and Second Report on Insects, 121 (1856).—*Stuxberg*. Öfversigt af Vetensk.-Akad. Förhandl. 1875, No. 2, 58.

Oniscus asellus Linnaeus. Syst. Nat., Ed. 10, i, 637 (1758).—*Gould*. Invertebrata of Massachusetts, 326 (1841).—*DeKay*. Nat. Hist. N. Y., vi, 51 (1844).

Hab.—Illinois (*Fitch*), Canada near Niagara, and California (*Eisen*), Newfoundland (*Lindahl*).

13. *P. SPINICORNIS* Say. Jour. Phila. Acad., i, 431 (1817).

Hab.—North America (*Say*).

14. *P. TRILINEATUS* Koch. Deutschlands Crustaceen, 34, 9 (1840).—*Stuxberg*. Öfversigt af Vetensk.-Akad. Förhandl. 1875, No. 2, 59.

Hab.—Massachusetts and Canada near Niagara (*Eisen*).

15. *P. VITTATUS* Fitch. Trans. N. Y. State Agric. Soc. 1854, 814; First and Second Report on Insects, 120 (1856).

Hab.—New York (*Fitch*).

XI. RHINORYCTES STUXBERG.

1. *R. MIRABILIS* Stuxberg. Öfversigt af Vetensk.-Akad. Förhandl. 1875, No. 2, 51.

Hab.—California (*Eisen*).

XII. SCYPHACELLA SMITH.

1. *S. ARENICOLA* Smith. Rep. U. S. Fish Com. for 1871, 568.—*Harger*. Proc. U. S. Nat. Museum, ii, 157 (1879); Rep. U. S. Fish Com. for 1878, 307.

Hab.—Massachusetts and New Jersey (*Harger*).

XIII. SPHÆRILLO DANA.

1. *S. AFFINIS* Dana. Proc. Phila. Acad. vii, 176 (1854).
Hab.—California (*Dana*).

XIV. STYLONISCUS DANA.

1. *S. GRACILIS* Dana. Proc. Phila. Acad. vii, 176 (1854).
Hab.—California (*Dana*).

XV. TRICHONISCUS BRANDT.

1. *T. PUSILLUS* Brandt. Conspectus Oniscodorum, 174 (1833).—*Sturberg*. Öfversigt af Vetensk.-Akad. Förhandl. 1875, No. 2, 49.
Hab.—Canada near Niagara (*Eisen*).

ORDER DECAPODA.

FAMILY MYSIDÆ.

I. MYSIS LATR.

1. *M. RELICTA* Loven. Öfversigt af Vetensk.-Akad. Förhandl. xviii, 285 (1861).—*Smith*. Amer. Jour. Science, 3rd ser., ii, 452 (1872); Rep. U. S. Fish Com. for 1872-73, 642, 694.
—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 20 (1876).

M. diluvianus Stimpson MSS.

Hab.—Lake Michigan (*Stimpson*), Lake Superior (*Smith*).

FAMILY ASTACIDÆ.

I. ASTACUS FABR.

1. *A. GAMBELLII* Agassiz. Proc. Phila. Acad. vi, 375 (1853).
—*Stimpson*. Jour. Boston Soc. N. H., vi, 492 (1857); Proc. Boston Soc. N. H., vi, 87 (1857).—*Hagen*. Monog. Astacidæ, 90, pl. i, figs. 97, 98, pl. iii, fig. 170, pl. xi (1870).—*Faxon*. Proc. Amer. Acad. xx, 152 (1884); Revision of Astacidæ, 136 (1885).

Hab.—Utah, Idaho, Montana, Wyoming? California?

2. *A. KLAMATHENSIS* Stimpson. Proc. Boston Soc. N. H., vi, 87 (1857); Jour. Boston Soc. N. H., vi, 494 (1857).—*Hagen*. Monog. Astacidæ, 93, pl. iii, 169 (1870).—*Faxon*. Proc. Amer. Acad. xx, 151 (1884); Revision of Astacidæ, 131, pl. vi, figs. 1, 2 (1885).

Hab.—Oregon, Washington Territory, British Columbia.

3. *A. LENIUSCULUS* Dana. Proc. Phila. Acad. vi, 20 (1852); Crustacea, i, 524, pl. xxxiii, fig. 1 (1852).—*Stimpson*. Jour. Boston Soc. N. H., vi, 493 (1857); Proc. Boston Soc. N. H. 87 (1857).—*Hagen*. Monog. Astacidæ, 94 (1870).—*Faxon*. Proc. Amer. Acad. xx, 151 (1884); Revision of Astacidæ, 132, pl. vi, fig. 4 (1885).

?4. *Oreganus* Randall. Jour. Phila. Acad. viii, 138, pl. vii (1839).—*Stimpson*. Proc. Boston Soc. N. H., vi, 87 (1852).—*Hagen*. Monog. Astacidæ, 95 (1870).—*Faxon*. Revision of Astacidæ, 133 (1885).

Hab.—Washington Territory

4. *A. NIGRESCENS* Stimpson. Proc. Boston Soc. N. H., vi, 87 (1852); Jour. Boston Soc. N. H., vi, 492 (1852).—*Hagen*. Monog. Astacidæ, 92, pl. iii, fig. 168 (1870).—*Faxon*. Proc. Amer. Acad. xx, 152 (1884); Revision of Astacidæ, 135 (1885).

Hab.—California, Washington Territory.

5. *A. TROWBRIDGII* Stimpson. Proc. Boston Soc. N. H., vi, 87 (1857); Jour. Boston Soc. N. H., vi, 492 (1857).—*Hagen*. Monog. Astacidæ, 93, pl. iii, fig. 171, pl. x, (1870).—*Faxon*. Proc. Amer. Acad. xx, 152 (1884); Revision of Astacidæ, 134, (1885).

Hab.—Oregon, Washington Territory.

II. CAMBARUS ERICH.

1. *C. ACUMINATUS* Faxon. Proc. Amer. Acad. xx, 113 (1884); Revision of Astacidæ, 67, pl. iii, fig. 5, pl. viii, fig. 6a, 6a' (1885).

Hab.—North Carolina, South Carolina.

2. *C. ADVENA* Hagen. Monog. Astacidae, pl. iii, fig. 164, pl. viii (1870).—*Faxon*. Proc. Amer. Acad. xx, 140 (1884); Revision of Astacidae, 54 (1885).

C. Carolinus Hagen. Monog. Astacidae, 87, pl. i, figs. 51-54, pl. iii, fig. 165 (1870).

Astacus advena Le Conte. Proc. Phila. Acad. vii, 402 (1885).

Hab.—South Carolina, Georgia, Alabama.

3. *C. AFFINIS* Girard. Proc. Phila. Acad. vi, 81 (1852).—*Hagen*. Monog. Astacidae, 60, pl. i, figs. 19-22, 84, 85, pl. iii, fig. 152, pl. v (1870).—*Faxon*. Proc. Amer. Acad. xx, 146 (1884); Revision of Astacidae, 86 (1885).

C. Pealei Girard, l. c. 87 (1852).

Astacus affinis Say. Jour. Phila. Academy, i, 168 (1817).—*Harlan*. Med. and Phys. Res., 230, fig. 2 (1835).—*DeKay*. Nat. Hist. N. Y., vi, 22 (1844).

Hab.—New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, Lake Erie, Lake Superior.

4. *C. ALABAMENSIS* Faxon. Proc. Amer. Acad. xx, 125, 146 (1884); Revision of Astacidae, 104, pl. iv, fig. 4, pl. x, figs. 3, 3', 3a, 3a' (1885).

Hab.—Alabama.

5. *C. ALLENI* Faxon. Proc. Amer. Acad. xx, 110, 138 (1884); Revision of Astacidae, 35, pl. i, fig. 1, pl. viii, figs. 2, 2' (1885).

Hab.—Florida.

6. *C. ANGUSTATUS* Hagen. Monog. Astacidae, 50, pl. i, figs. 65-67, pl. iii, fig. 146 (1870).—*Faxon*. Proc. Amer. Acad. xx, 137 (1884); Revision of Astacidae, 30 (1885).

Astacus angustatus Le Conte. Proc. Phila. Acad. vii, 401 (1885).

Hab.—Georgia.

7. *C. ARGILLICOLA* Faxon. Proc. Amer. Acad. xx, 115, 144 (1884); Revision of Astacidae, 76, pl. iv, fig. 2 (1885).

Hab.—Ontario, Michigan, Indiana, Louisiana? North Carolina?

8. *C. BARTONII* Girard. Proc. Phila. Acad. vi, 88 (1852).
Hagen. Monog. Astacidae, 75, pl. i, figs. 47-50, pl. ii, figs. 135-139, pl. iii, fig. 166 (1870).—*Faxon*. Proc. Amer. Acad. xx, 142 (1884); Revision of Astacidae, 59 (1885).

C. montanus Girard, l. c. 88 (1852).

?*C. longulus* Girard, l. c. 90 (1852).

?*C. pusillus* Girard, l. c. 90 (1852).

Astacus Bartonii Say. Jour. Phila. Acad. i, 167 (1817).—*Harlan*. Med. and Phys. Res. 230, fig. 3 (1835).—*Gould*. Invertebrata of Massachusetts, 330 (1841).—*Thompson*. History of Vermont, Part I. 170 (1842).—*DeKay*. Nat. Hist. N. Y., vi, 22, pl. viii, fig. 25 (1844).

Hab.—New Brunswick, Province of Quebec? Maine, Vermont, Massachusetts, New York, New Jersey, Maryland, Virginia, West Virginia, North Carolina, Ohio, Indiana, Kentucky, Tennessee, Lake Superior.

Var. ROBUSTA Faxon. Revision of Astacidae, 61 (1885).

C. robustus Girard. Proc. Phila. Acad. vi, 90 (1852).—*Hagen*. Monog. Astacidae, 80, pl. iii, fig. 167 (1870).—*Faxon*. Proc. Amer. Acad. xx, 143 (1884).

Hab.—Province of Ontario, New York, Maryland, Virginia, Illinois.

9. *C. BLANDINGII* Hagen. Monog. Astacidae, 43, pl. i, figs. 63-64, pl. iii, fig. 140 (1870).—*Faxon*. Proc. Amer. Acad. xx, 136 (1884); Revision of Astacidae, 19, pl. vii, fig. 2, 2', 2a, 2a', (1885).

C. acutus, var. B. Hagen, l. c. pl. 36, iii, fig. 144 (1870).

Astacus Blandingii Harlan. Trans. Amer. Philos. Soc. iii, 464 (1830); Med. and Phys. Res. 229, fig. 1 (1835).—?*Le Conte*. Proc. Phila. Acad. vii, 400 (1855).

Hab.—New Jersey, Maryland, Virginia, North Carolina, South Carolina, Georgia.

Var. ACUTA Faxon. Proc. Amer. Acad. xx, 136 (1884); Revision of Astacidae, 20 (1885).

C. acutus Girard. Proc. Phila. Acad. vi, 91 (1852).—*Hagen*. Monog. Astacidae, 35, pl. i, figs. 1-5, pl. ii, figs. 106, 108, 110-114, 116, 118, 120-124, 126, 127, pl. iii, fig. 143 (1870).—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 3, 18 (1876).

C. acutus, var. A. Hagen, l. c. 36, pl. ii, fig. 107, 109, 115, 117, 119, 125 (1870).

C. acutissimus Girard. Proc. Phila. Acad. vi, 91 (1852).

Hab.—Louisiana, Mississippi, Alabama, South Carolina, Tennessee, Missouri, Illinois, Indiana, Iowa, Wisconsin.

10. *C. CAROLINUS* Hagen (type).—*Faxon*. Proc. Amer. Acad. xx, 140 (1844); Revision of Astacidae, 54 (1885).

C. adrena Hagen. Monog. Astacidae. 86, pl. i, figs. 90–92 (1870).

Hab.—South Carolina.

11. *C. CLARKII* Girard, Proc. Phila. Acad. vi, 91 (1852).—*Hagen*. Monog. Astacidae, 39, pl. i, figs. 7–10, 99, 100, pl. ii, figs. 133, 134, pl. iii, fig. 142, pl. iv (1870).—*Faxon*. Proc. Amer. Acad. xx, 136 (1884); Revision of Astacidae, 26 (1885).

Hab.—Texas, Louisiana, Mississippi, Alabama, Florida.

12. *C. COMPRESSUS* Faxon. Proc. Amer. Acad. xx, 127, 146 (1884); Revision of Astacidae. 105, pl. v, fig. 6, pl. x, figs. 2, 2', 2a, 2a' (1885).

Hab.—Alabama.

13. *C. CORNUTUS* Faxon. Proc. Amer. Acad. xx, 120, 145 (1884); Revision of Astacidae, 80, pl. v, figs. 1, 2, pl. ix, figs. 3, 3' (1885).

Hab.—Kentucky.

14. *C. DIOGENES* Girard. Proc. Phila. Acad. vi, 88 (1852).—*Faxon*. Proc. Amer. Acad. xx, 144 (1884); Revision of Astacidae, 71 (1885).

C. obesus Hagen. Monog. Astacidae. 81, pl. i, figs. 39–42, pl. iii, fig. 163, pl. ix (1870).

Hab.—New Jersey, Maryland, District of Columbia, Virginia, North Carolina, Ohio, Indiana, Illinois, Michigan, Wisconsin, Iowa, Missouri, Kansas, Colorado, Wyoming, Arkansas, Kentucky? Mississippi, Louisiana.

15. *C. DUBIUS* Faxon. Proc. Amer. Acad. xx, 114, 145 (1885); Revision of Astacidae, 70, pl. iv, fig. 3, pl. viii, figs. 7, 7' (1885).

Hab.—Virginia, West Virginia, Tennessee.

16. *C. EXTRANEUS* Hagen. Monog. Astacidae, 73, pl. i, figs. 88, 89, pl. iii, fig. 156 (1870).—*Faxon*. Proc. Amer. Acad. xx, 145 (1884); Revision of Astacidae, 84 (1885).

Hab.—Georgia.

17. *C. FALLAX* Hagen. Monog. Astacidae, 45, pl. i, figs. 103-105 (1870).—*Faxon*. Proc. Amer. Acad. xx, 136 (1884); Revision of Astacidae, 23, pl. ii, fig. 4 (1885).

Hab.—Florida.

18. *C. FORCEPS* *Faxon*. Proc. Amer. Acad. xx, 133, 148 (1884); Revision of Astacidae, 119, pl. v, fig. 4, pl. ix, figs. 5, 5', 5a, 5a' (1885).

Hab.—Alabama, Tennessee?

19. *C. GIRARDIANUS* *Faxon*. Proc. Amer. Acad. xx, 117, 145 (1884); Revision of Astacidae, 78, pl. iv, fig. 1, pl. ix, figs. 2a, 2a' (1885).

Hab.—Alabama.

20. *C. GRACILIS* Bundy. Bull. Ill. State Lab. N. H., No. 1, 5 (1876); Trans. Wis. Acad. v, 182 (1882); Geology of Wisconsin, i, 403 (1883).—*Faxon*. Proc. Amer. Acad. xx, 141 (1884); Revision of Astacidae, 56, pl. viii, figs. 4, 4', 4'' (1885); Bull. of Washburn Coll. Lab. N. H., i, 140 (1885).

Hab.—Wisconsin, Iowa, Illinois, Kansas.

21. *C. HAMULATUS* *Faxon*. Proc. Amer. Acad. xx, 145 (1884); Revision of Astacidae, 81, pl. iv, fig. 6, pl. ix, figs. 1, 1a' (1885).

Orconectes hamulatus Cope and Packard. Amer. Nat. xv, 881, pl. vii, figs. 1, 1a, 1b (1881).

Hab.—Nickajack Cave, Tennessee.

22. *C. HARRISONII* *Faxon*. Proc. Amer. Acad. xx, 130, 147 (1884); Revision of Astacidae, 94, pl. iii, fig. 1, pl. ix, figs. 9, 9' (1885).

Hab.—Missouri.

23. *C. HAYI* *Faxon*. Proc. Amer. Acad. xx, 108, 136 (1885); Revision of Astacidae, 24, pl. i, fig. 4, pl. vii, figs. 3, 3', 3a, 3a' (1885).

Hab.—Mississippi.

24. *C. IMMUNIS* Hagen. Monog. Astacidae, 71, pl. i, figs. 101, 102, pl. iii, fig. 160, pl. viii, fig. b (1870).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 639.—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 4, 19 (1876).—*Bundy*. Proc. Phila. Acad. 1877, 171.—*Faxon*. Proc. Amer. Acad. xx, 146 (1884); Revision of Astacidae, 99, pl. x, figs. 6a, 6a' (1885).

C. signifer Herrick. 10th Rep. Geol. Minn. 253 (1882).

Hab.—New York, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Wyoming, Alabama, Mexico.

Var. *SPINIROSTRIS* Faxon. Proc. Amer. Acad. xx, 146 (1884); Revision of Astacidae, 99, pl. 1, fig. 5 (1885); Bull. Washburn Coll. Lab. N. H., i, 140 (1885).

Hab.—Tennessee, Kansas.

25. *C. JORDANI* Faxon. Proc. Amer. Acad. xx, 119, 145 (1884); Revision of Astacidae, 83, pl. iii, fig. 3 (1885).

Hab.—Georgia.

26. *C. LANCIFER* Hagen. Monog. Astacidae, 59, pl. i, figs. 86, 87, pl. iii, fig. 159 (1870).—*Faxon*. Proc. Amer. Acad. xx, 146 (1884); Revision of Astacidae, 86 (1885).

Hab.—Mississippi.

27. *C. LATIMANUS* Hagen. Monog. Astacidae, 83, pl. i, figs. 43–46, pl. iii, fig. 162 (1870).—*Faxon*. Proc. Amer. Acad. xx, 144 (1884); Revision of Astacidae, 69, pl. ii, fig. 3 (1885).

Astacus latimanus Le Conte. Proc. Phila. Acad. vii, 402 (1855).

Hab.—South Carolina, Georgia, Alabama, Mississippi, Tennessee.

28. *C. LE CONTEI* Hagen. Monog. Astacidae, 47, pl. i, figs. 15–18, pl. iii, fig. 145 (1870).—*Faxon*. Proc. Amer. Acad. xx, 137 (1884); Revision of Astacidae, 29, pl. ii, fig. 2 (1885).

Hab.—Georgia, Alabama.

29. *C. MANICULATUS* Hagen. Monog. Astacidae, 52 (1870).—*Faxon*. Proc. Amer. Acad. xx, 137 (1884); Revision of Astacidae, 29 (1885).

Astacus maniculatus Le Conte. Proc. Phila. Acad. vi, 91 (1855).

Hab.—Georgia.

30. *C. MEDIUS* Faxon. Proc. Amer. Acad. xx, 121, 145 (1884); Revision of Astacidae, 107, pl. iii, fig. 4, pl. ix, fig. 4, 4' (1885).

Hab.—Missouri.

31. *C. MISSISSIPPIENSIS* Faxon. Proc. Amer. Acad. 123, 146 (1884); Revision of Astacidae, 101, pl. iii, fig. 2, pl. x, figs. 4, 4', 4a, 4a' (1885).

Hab.—Mississippi.

32. *C. NAIS* Faxon. Bull. Washburn Coll. Lab. N. H., i, 140 (1885).

Hab.—Kansas.

33. *C. NEBRASCENSIS* Girard. Proc. Phila. Acad. vi, 91 (1852).—*Hagen*. Monog. Astacidae, 83 (1870).—*Faxon*. Proc. Amer. Acad. xx, 145 (1884); Revision of Astacidae, 75 (1885).

Hab.—Dakota.

34. *C. NEGLECTUS* Faxon. Bull. Washburn Coll. Lab. N. H., i, 142 (1885).

Hab.—Kansas.

35. *C. PALMERI* Faxon. Proc. Amer. Acad. 124, 146 (1884); Revision of Astacidae, 103, pl. iii, fig. 6, pl. x. figs. 5a, 5a' (1885).

36. *C. PELLUCIDUS* Girard. Proc. Phila. Acad. vi, 87 (1852).—*Hagen*. Monog. Astacidae, 55, pl. i, figs. 68–71, pl. iii, fig. 148, pl. vi (1870).—*Faxon*. Proc. Amer. Acad. xx, 139 (1884); Revision of Astacidae, 40 (1885).

Astacus pellucidus Tellkampf. Arch. Anat. Physiol. u. Wissensch. Med. 1844, 383.

Astacus (Cambarus) pellucidus Erichson. Archiv für Naturgesch., Jahrg. xii, Bd. i, 95 (1846).

Orconectes pellucidus Cope. Amer. Nat. vi, 410, 419 (1872); 3d and 4th Rep. Geol. Indiana, 162, 173 (1872).

Orconectes inermis Cope. Amer. Nat. vi, 410, 419 (1872); 3d and 4th Rep. Geol. Indiana, 162, 173 (1872).

Hab.—Kentucky, Indiana.

37. *C. PENICILLATUS* Hagen. Monog. Astacidae, 53, pl. i, figs. 93, 94 [95, 96?] pl. iii, fig. 149 (1870).—*Faxon*. Proc. Amer. Acad. xx, 138 (1884); Revision of Astacidae, 36 (1885).

Astacus penicillatus Le Conte. Proc. Phila. Acad. vii, 401 (1855).

Hab.—Georgia, Mississippi? South Carolina?

38. *C. PROPINQUUS* Girard. Proc. Phila. Acad. vi, 88 (1852).—*Hagen*. Monog. Astacidae, 67, pl. i, figs. 34–38, pl. iii, fig. 153 (1870).—*Faxon*. Proc. Amer. Acad. xx, 147 (1884); Revision of Astacidae, 91 (1885).

Hab.—Provinces of Ontario and Quebec, New York, Indiana, Illinois, Michigan, Lake Superior, Wisconsin, Iowa.

Var. *SANBORNI* Faxon. Revision of Astacidae, 91, pl. v, fig. 3, pl. ix, figs. 10, 10', 10a, 10a' (1885).

C. sanborni Faxon. Proc. Amer. Acad. xx, 128, 147 (1884).

Hab.—Kentucky, Ohio.

Var. *OBSCURA* Faxon. Revision of Astacidae, 92 (1885).

C. obscurus Hagen. Monog. Astacidae, 69, pl. i, figs. 72–75, pl. iii, fig. 154 (1870).—*Faxon*. Proc. Amer. Acad. xx, 148 (1884).

Hab.—New York.

39. *C. PUBESCENS* Faxon. Proc. Amer. Acad. xx, 109, 137 (1884); Revision of Astacidae, 31, pl. i, fig. 3, pl. viii, fig. 1a, 1a' (1885).

Hab.—Georgia.

40. *C. PUTNAMI* Faxon. Proc. Amer. Acad. xx, 131, 148 (1884); Revision of Astacidae, 118, pl. v, fig. 5, pl. ix, figs. 6, 6', 6a, 6a' (1885).

Hab.—Kentucky, Tennessee, Indiana?

41. *C. RUSTICUS* Girard. Proc. Phila. Acad. vi, 88 (1852).—*Hagen*. Monog. Astacidae, 71, pl. i, figs. 80–83, pl. iii, fig. 161 (1870).—*Faxon*. Proc. Amer. Acad. xx, 148 (1884); Revision of Astacidae, 108, pl. ix, figs. 8, 8', 8a, 8a' (1885).

C. placidus Hagen. l. c. 65, pl. i, figs. 76–79, pl. iii, fig. 158 (1870).

C. juvenilis Hagen. l. c. 66, pl. i, figs. 29–33, pl. iii, fig. 157 (1870).

C. wisconsinensis Bundy. Bull. Ill. State Lab. N. II., No. 1, 4 (1876); Trans. Wisconsin Acad. v, 181 (1882); Geol. Wisconsin, i, 402 (1883).

Hab.—Pennsylvania, Ohio, Indiana, Illinois, Kentucky, Tennessee, Wisconsin, Iowa, Missouri, Texas, Lake Superior.

42. *C. SHUFELDTII* Faxon. Proc. Amer. Acad. xx, 134, 149 (1884); Revision of Astacidae, 124, pl. vii, fig. 1, pl. x, figs. 8, 8', 8a, 8a' (1885).

Hab.—Louisiana.

43. *C. SIMULANS* Faxon. Proc. Amer. Acad. xx, 112, 140 (1884); Revision of Astacidae, 48, pl. i, fig. 12, pl. viii, fig. 3, 3', 3a, 3a' (1885).

Hab.—Texas, Kansas.

44. *C. SLOANII* Bundy. Bull. Ill. State Lab. N. H., No. 1, 24 (1876); Proc. Phila. Acad. 1877, 172.—*Faxon*. Proc. Amer. Acad. xx, 147 (1884); Revision of Astacidae, 86, pl. iv, fig. 5, pl. x, figs. 1, 1', 1a, 1a' (1885).

Hab.—Indiana, Kentucky.

45. *C. SPICULIFER* Hagen. Monog. Astacidae, 48, pl. i, figs. 59–62, pl. iii, fig. 147 (1870).—*Faxon*. Proc. Amer. Acad. xx, 138 (1884); Revision of Astacidae, 33, pl. ii, fig. 5 (1885).

Astacus spiculifer Le Conte. Proc. Phila. Acad. vii, 401 (1855).

Hab.—Georgia.

46. *C. SPINOSUS* Bundy. Proc. Phila. Acad. 1877, 173.—*Faxon*. Proc. Amer. Acad. xx, 148 (1884); Revision of Astacidae, 115, pl. ix, figs. 7, 7', 7a, 7a' (1885).

Hab.—South Carolina, Georgia, Alabama.

* *C. STYGIUS* Bundy. Bull. Ill. State Lab. N. H., No. 1, 33 (1876); Trans. Wisconsin Acad. v, 180 (1882); Geology of Wisconsin, i, 402 (1883).—*Faxon*. Proc. Amer. Acad. xx, 140 (1874); Revision of Astacidae, 56 (1885).

* *C. TYPHLOBIUS* Faxon. Revision of Astacidae, 45 (1885).

C. stygius Joseph. Berliner Entom. Zeitschr. xxvi (1882).

47. *C. TROGLODYTES* Hagen. Monog. Astacidae, 41, pl. i, figs. 11–14, pl. ii, fig. 141 (1870).—*Faxon*. Proc. Amer. Acad. xx, 136 (1884); Revision of Astacidae 27 (1885).

Astacus troglodytes Le Conte. Proc. Phila. Acad. vii, 400 (1855).

A. fossarum Le Conte, l. c. 401 (1855).

Hab.—Georgia, South Carolina.

48. *C. UHLERI* Faxon. Proc. Amer. Acad. xx, 116, 145 (1884); Revision of Astacidae, 77, pl. viii, figs. 8, 8', 8a, 8a (1885).

Hab.—Maryland.

49. *C. VERSUTUS* Hagen. Monog. Astacidae, 51, pl. i, figs. 55–58, pl. iii, fig. 150 (1870).—*Faxon*. Proc. Amer. Acad. xx, 138 (1884); Revision of Astacidae, 34 (1885).

Hab.—Florida, Alabama.

* These species are doubtful, and hence excluded from the numbered list, in accordance with Faxon's revision.

50. *C. VIRILIS* Hagen. Monog. Astacidae. 63, pl. i, figs. 23-28, pl. ii, figs. 128-132, pl. iii, fig. 155, pl. viii (1870).—*Herriek*. 10th Rep. Geol. Minn. 253 (1882).—*Faxon*. Proc. Amer. Acad. 147 (1884); Revision of Astacidae, 96 (1885).

C. debilis Bundy. Bull. Ill. State Lab. N. H., No. 1, 24 (1876); Trans. Wisconsin Acad. v. 181 (1882); Geology of Wisconsin, i, 403 (1883).

C. conesi Streets. Bull. U. S. Geol. Survey (Hayden), iii, 803 (1877).

Hab.—Canada, Dakota, Minnesota, Wisconsin, Iowa, Nebraska, Wyoming, Kansas, Missouri, Illinois, Indiana, Tennessee, Texas, New York?

FAMILY PALÆMONIDÆ.

I. PALÆMON FABR., STIMPSON.

1. *P. OHIONIS* Smith. Rep. U. S. Fish Com. for 1872-73, 640.—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 5 (1876).—*Hay*. Amer. Nat. xvi, 143 (1882).

Hab.—Indiana, Illinois, Mississippi, Mississippi River.

II. PALÆMONETES HELLER.

1. *P. PALUDOSA* Kingsley. Proc. Phila. Acad. 1878, 97; Bull. Essex Inst. x, 65.

P. exilipes Stimpson. Ann. N. Y. Lyceum N. H., x, 130 (1871).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 641.—*Forbes*. Bull. Ill. State Lab. N. H., No. 1, 5 (1876).—*Hay*. Amer. Nat. xvi, 144 (1882).

Hippolyte paludosa Gibbes. Proc. A. A. A. S., iii, 197 (1850).

Hab.—Ohio, Illinois, Michigan, Tennessee, South Carolina, Florida, Mississippi.

FAMILY PENÆIDÆ.

I. PENÆUS LATR.

1. *P. BRAZILIENSIS* Latr. Nouv. Dict. d'Hist. Nat., 154, t. xxv.—*Milne-Edwards*. Hist. Nat. des Crust. ii, 414 (1837).—*Stimpson*. Ann. N. Y. Lyceum N. H., x, 132 (1871).—*Smith*. Rep. U. S. Fish Com. for 1872-73, 642.

Hab.—New York, New Jersey.

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* ——— Monograph of the Family Limniadæ, a Family of Entomostracous Crustacea. *Proceedings of the Zoölogical Society of London*, xvii, 84-90, (1849).

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- List of the Crustacea of Wisconsin, with Notes on Some New or Little-known Species. *Trans. Wisconsin Acad. Science*, v, 177-184 (1882).
- The Crustacean Fauna of Wisconsin. *Geology of Wisconsin*, i, 402-405 (1883).
- CHAMBERS** (Vactor T.) New Entomostraca from Colorado. *Bull. U. S. Geol. Survey* (Hayden), iii, 151-155. figs. 1-4 (1877).
- Two new species of Entomostraca. *Jour. Cincinnati Soc. Nat. Hist.*, iv, 47, 48, two plates (1881).
- CLAUS** (C.) Das Genus Cyclops, und seiner einheimischen Arten. *Archiv für Naturgeschichte* (1857).
- Beiträge zur Kenntniss der Entomostraken, 1860.
- Die frei-lebenden Copepoden Deutschlands. With 37 plates. Leipzig (1863).
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- CRAGIN** (Francis W.) A Contribution to the History of the Fresh-Water Copepoda. *Trans. Kansas Academy of Science*, viii, plates i-iv (1882). Also separate, pp. 1-15.
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• **FAXON** (Walter). *Descriptions of New Species of Cambarus, etc.* *Proc. Amer. Acad. of Arts and Sciences*, xx, 107-158 (1884).

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INDEX OF GENERA.

(Families in SMALL CAPITALS, orders in CAPITALS.)

Achtheres	335	COPEPODA.....	328
Actoniscus	360	Crangonyx	356
Acroperus.....	344	Crepidocercus	346
Allorchestes.....	358	Cyclops	330
Alloniscus	360	CYCLOPIDÆ.....	330
Alona	346	CYPRIDIDÆ.....	336
Alonella	347	Cypris	336
Alonopsis	345	Cythernia	336
AMPHIPODA.....	356	Daphnella.....	338
APODIDÆ.....	352	Daphnia	341
Apus	352	DAPHNIDÆ.....	339
Argulus	333	DECAPODA.....	364
ARGULIDÆ.....	333	Diaptomus.....	328
Armadillidium.....	360	Epischura	329
Armadillo	360	ERGASILIDÆ.....	333
Artemia.....	353	Estheria	351
ASELLIDÆ.....	358	Eulimnadia	351
Asellus	358	Euphiloscia	361
ASTACIDÆ.....	364	Eurycercus	344
Astacus.....	364	GAMMARIDÆ.....	356
Bosmina	342	Gammarus	356
BOSMINIDÆ.....	342	Graptoleberis	346
Branchinecta	354	HARPACTIDÆ.....	332
BRANCHIPODIDÆ.....	353	HOLOPEDIDÆ.....	339
Branchipus	354	Holopedium.....	339
Cæcidotea	359	Iliocryptus	344
Calanidæ.....	328	ISOPODA	358
CALIGIDÆ.....	333	Lathonura.....	343
Cambarus	365	Latona	338
Camptocercus.....	345	Lernæocera	334
Candona	336	LERNÆOCERIDÆ.....	334
Canthocamptus	332	Lernæopoda	335
Cauloxenus	335	LERNÆOPODIDÆ.....	335
Ceriodaphnia.....	339	Lepeophtheirus	333
Chirocephalus	355	Lepidurus.....	353
Chydorus	348	Leptodora	350
CLADOCERA	338	LEPTODORIDÆ.....	350

Leydigia.....	345	Palæmonetes.....	374
Ligia.....	360	PALEMONIDÆ.....	374
Ligidium.....	361	PENÆIDÆ.....	374
Limnadia.....	352	Penæus.....	374
Limnadella.....	352	Philoscia.....	361
LIMNADIDÆ.....	350	PHYLLOPODA.....	350
Limnetis.....	350	Pleuroxus.....	348
Limnocalanus.....	329	POLYPHEMIDÆ.....	349
LYNCEIDÆ.....	344	Polyphemus.....	349
Lyncodaphnia.....	344	Pontoporeia.....	357
LYNCODAPHNIDÆ.....	343	Porcellio.....	362
LYSIANASSIDÆ.....	357	Pseudo-sida.....	338
Macrothrix.....	343	Rhinoryctes.....	363
Mancasellus.....	359	Scapholeberis.....	340
Moina.....	339	Scyphacella.....	363
Monospilus.....	349	Sida.....	338
MYSIDÆ.....	364	SIDIDÆ.....	338
Mysis.....	364	Simocephalus.....	340
Notadromus.....	337	Sphærillo.....	364
ONISCIDÆ.....	360	Streptocephalus.....	355
Oniscus.....	361	Styloniscus.....	364
ORCHESTIDÆ.....	358	Tachidius.....	333
Osphranticum.....	329	Thamnocephalus.....	355
OSTRACODA.....	336	Trichoniscus.....	364
Palæmon.....	374		