

# 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.

---

1886.

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



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 *Astacidae*, 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.	Phylophoda.	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. Herrick. 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 Astacidæ, 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 zoologists 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. DIAPTONUS 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. magnocellaris* 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. Forhandlinger Videnskabs-Silskabeh, 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. PULCELLUS* 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. *fasciacornis* 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.

### I. 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*).

## 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 *Centrarchidae* (*Wright*).

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

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

## FAMILY CALIGIDÆ,

### I. LEPEOPHTHEIRUS NORDM.

1. *L. SALMONIS* Kroyer. 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. ALOSAE* 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. STIZOSTETHII 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 macropterus*.

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. EDWARDSSI Olsson. Prodrom. 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.

I. 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. HOLOPEDIUM 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).

- ? *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 Moscau, xxii (1849).

*Hab.*—Wisconsin (*Birge*).

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

*Daphnia mucronata* Müller. Entomostracea, 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 vetula*, 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 Stifter, 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 Hafss, 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 Christiania 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.

### 1. 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 Entomostraea, 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. Entomostraea, 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 Entomostraea, 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. Entomostraea, 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. **EURYCERCUS** 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 Entomostraea, 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).

*Lynceus macrurus* Müller. Entomostraea, 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).

*Lynceus acanthocercoides* Fischer. Bull. Soc. Nat. de Moscon, 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 Entomostraea*, 131, t. xvi, fig. 4 (1859).—*Herrick*. *Final Report*, 97 (1884).

*Lynceus quadrangularis* Müller. *Entomostraea*, 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).

*Lynceus excisus* Fischer.

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

2. A. PULCELLA *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. sphæricus* 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. Zoöl. 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. Entomosstraken, 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 texana* 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.

#### I. APUS SCHÄFF.

1. A. EQUALIS 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. COCESII* 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., xlvi, 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., xlvi, 248 (1869).

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

*A. utahensis* Lockington. Monthly Micros. Jour. 1876, 137, *sive* 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. grænlandica* Verrill. Amer. Jour. Science, 2d ser., xlvi, 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., xlvi, 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.

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

*Hab.*—Wisconsin (Forbes). •

2. *B. SERRATUS* Forbes.

*Eubranchipus 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., xlvi. 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 KRÖYER.

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. microcephalu* 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. MANCASELLUS 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. Scien. ee, 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*).

---

\* A few forms of *Oniscidae* 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).—*Sturberg*. *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).—*Stuxberg*. 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).—*Stuxberg*. 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 Agrie. Soc.* 1854, 825; *First and Second Report on Insects*, 121 (1856).—*Stuxberg*. *Öfversigt af Vetensk.-Akad. Förhandl.* 1875, No. 2, 58.

*Oniscus asellus* Linnæus. *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 Agrie. 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).—*Stuxberg*. 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).

?*A. Oregonus* 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. Astacidæ, pl. iii, fig. 164, pl. viii (1870).—Faxon. Proc. Amer. Acad. xx, 140 (1884); Revision of Astacidæ, 54 (1885).

C. Carolinus Hagen. Monog. Astacidæ, 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. Astacidæ, 60, pl. i, figs. 19-22, 84, 85, pl. iii, fig. 152, pl. v (1870).—Faxon. Proc. Amer. Acad. xx, 146 (1884); Revision of Astacidæ, 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 Astacidæ, 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 Astacidæ, 35, pl. i, fig. 1, pl. viii, figs. 2, 2' (1885).

*Hab.*—Florida.

6. C. ANGUSTATUS Hagen. Monog. Astacidæ, 50, pl. i, figs. 65-67, pl. iii, fig. 146 (1870).—Faxon. Proc. Amer. Acad. xx, 137 (1884); Revision of Astacidæ, 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 Astacidæ, 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 Astacidæ, 54 (1885).

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

*Hab.*—South Carolina.

11. *C. CLARKII* Girard, Proc. Phila. Acad. vi, 91 (1852).

—*Hagen.* Monog. Astacidæ, 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 Astacidæ, 26 (1885).

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

12. *C. COMPRESSUS* Faxon. Proc. Amer. Acad. xx, 127, 146 (1884); Revision of Astacidæ. 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 Astacidæ, 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 Astacidæ, 71 (1885).

*C. obesus* Hagen. Monog. Astacidæ, 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 Astacidæ, 70, pl. iv, fig. 3, pl. viii, figs. 7, 7' (1885).

*Hab.*—Virginia, West Virginia, Tennessee.

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

*Hab.*—Georgia.

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

*Hab.*—Florida.

18. C. FORCEPS *Faxon.* Proc. Amer. Acad. xx, 133, 148 (1884); Revision of Astacidæ, 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 Astacidæ, 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 Astacidæ, 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 Astacidæ, 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 Astacidæ, 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 Astacidæ, 24, pl. i, fig. 4, pl. vii, figs. 3, 3', 3a, 3a' (1885).

*Hab.*—Mississippi.

24. C. IMMUNIS Hagen. Monog. Astacidæ, 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 Astacidæ, 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 Astacidæ, 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 Astacidæ, 83, pl. iii, fig. 3 (1885).

*Hab.*—Georgia.

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

*Hab.*—Mississippi.

27. *C. LATIMANUS* Hagen. Monog. Astacidæ, 83, pl. i, figs. 43–46, pl. iii, fig. 162 (1870).—*Faxon.* Proc. Amer. Acad. xx, 144 (1884); Revision of Astacidæ, 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. Astacidæ, 47, pl. i, figs. 15–18, pl. iii, fig. 145 (1870).—*Faxon.* Proc. Amer. Acad. xx, 137 (1884); Revision of Astacidæ, 29, pl. ii, fig. 2 (1885).

*Hab.*—Georgia, Alabama.

29. *C. MANICULATUS* Hagen. Monog. Astacidæ, 52 (1870).—*Faxon.* Proc. Amer. Acad. xx, 137 (1884); Revision of Astacidæ, 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 Astacidæ, 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 Astacidæ, 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. Astacidæ, 83 (1870).—*Faxon.* Proc. Amer. Acad. xx, 145 (1884); Revision of Astacidæ, 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 Astacidæ, 103, pl. iii, fig. 6, pl. x, figs. 5a, 5a' (1885).

36. C. PELLUCIDUS Girard. Proc. Phila. Acad. vi, 87 (1852).—*Hagen.* Monog. Astacidæ, 55, pl. i, figs. 68–71, pl. iii, fig. 148, pl. vi (1870).—*Faxon.* Proc. Amer. Acad. xx, 139 (1884); Revision of Astacidæ, 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. Astacidæ, 53, pl. i, figs. 93, 94 [95, 96?] pl. iii, fig. 149 (1870).—*Faxon.* Proc. Amer. Acad. xx, 138 (1884); Revision of Astacidæ, 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. Astacidæ, 67, pl. i, figs. 34–38, pl. iii, fig. 153 (1870).—*Faxon.* Proc. Amer. Acad. xx, 147 (1884); Revision of Astacidæ, 91 (1885).

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

Var. SANBORNII Faxon. Revision of Astacidæ, 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 Astacidæ, 92 (1885).

*C. obscurus* Hagen. Monog. Astacidæ, 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 Astacidæ, 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 Astacidæ, 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. Astacidæ, 71, pl. i, figs. 80–83, pl. iii, fig. 161 (1870).—*Faxon.* Proc. Amer. Acad. xx, 148 (1884); Revision of Astacidæ, 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. H., 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 Astacidæ, 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 Astacidæ, 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 Astacidæ, 86, pl. iv, fig. 5, pl. x, figs. 1, 1', 1a, 1a' (1885).

*Hab.*—Indiana, Kentucky.

45. *C. SPICULIFER* Hagen. Monog. Astacidæ, 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 Astacidæ, 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, 3 (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 Astacidæ, 45 (1885).

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

47. *C. TROGLODYTES* Hagen. Monog. Astacidæ, 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 Astacidæ, 77, pl. viii, figs. 8, 8', 8a, 8a (1885).

*Hab.*—Maryland.

49. *C. VERSUTUS* Hagen. Monog. Astacidæ, 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. Astacidæ. 63, pl. i, figs. 23–28, pl. ii, figs. 128–132, pl. iii, fig. 155, pl. viii (1870).—*Herrick*. 10th Rep. Geol. Minn. 253 (1882).—*Faxon*. Proc. Amer. Acad. 147 (1884); Revision of Astacidæ, 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.

## II. BIBLIOGRAPHY.

The following papers, which include the principal works relating to the Fresh Water Crustacea in general, contain references to species known to inhabit North America. It will be seen to include numerous papers by Americans from Say's time to the present.

- BAIRD** (William). *Natural History of the British Entomos-traca.* With 36 plates. London (1850).
- *Monograph of the Family Limniadæ, a Family of Ento-mostraceous Crustacea.* *Proceedings of the Zoölogical Society of London,* xvii, 84-90, (1849).
- *Monograph of the Family Branchiopodidæ, with a De-scription of a New Genus, etc.* *Proceedings of the Zoö-logical Society of London,* xx, 18-31 (1852).
- *Monograph of the Family Apodidæ, a Family of Crusta-ceans belonging to the Entomostraca.* *Proceedings of the Zoölogical Society of London,* xx, 1-8 (1852).
- BIRGE** (Edward A.) *Notes on Cladocera.* *Trans. Wisconsin Acad. Science,* iv, 77-109. 2 plates (1877).
- *Notes on Crustacea in Chicago Water Supply, with Re-marks on the Formation of the Carapace.* *Chicago Med. Jour. and Examiner,* xvi, 584-590, double plate (Dec. 1881).
- BRADY** (George S.) *Monograph of the Recent British Ostra-coda.* With 19 plates. *Trans. Linnaean Society,* xxvi (1868).
- *Monograph of the Free and Semi-parasitic Copepoda of the British Islands.* 3 vols., with 96 plates. London (1878-1880).
- BRANDT** (J. F.) *Conspectus Oniscodorum* (1833).
- BUDDE-LUND** (G.) *Danmarks Isopoda.* In *Naturhistorisk Tidsskrift,* 3d series, vii (1860).
- BUNDY** (William F.) *On the Cambri of Northern Indiana.* *Proc. Phila. Acad.,* 1877, 171-177.

- 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).
- COPE** (Edward D.) On the Fauna of the Wyandotte Cave. *Proc. Phila. Acad. of Science* (1871).
- On the Wyandotte Cave and its Fauna. *Amer. Naturalist*, vi, 406–422 (1872).
- Report on the Wyandotte Cave and its Fauna. Third and Fourth Report of the Geol. Survey of Indiana, 152–182 (1872).
- COPE** (E. D.) and **PACKARD** (A. S., Jr.) The Fauna of the Nickajack Cave. *Amer. Naturalist*, xv, 872–882 (1881).
- 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.
- DANA** (James D.) Conspectus Crustaceorum, etc. *Proc. Phila. Acad. Science*, vi, 6–28 (1852).
- United States Exploring Expedition, under the command of Charles Wilkes, U. S. N., Vol. xiii, Crustacea. Parts i and ii, and folio Atlas (1852).
- Catalogue and Descriptions of Crustacea Collected in California by Dr. John L. Le Conte. *Proc. Phila. Acad. Science*, vii (1854).
- DANA** (James D.) and **HERRICK** (E. C.) A New Species of Argulus. Notice in *Amer. Jour. of Science and Arts*, 1st series, xxx, 388–389 (1836).

- DEGEER** (Ch.) *Memoires pour servir a l'Histoire des Insects.* 8 vols. (1752-1776).
- DEKAY** (James E.) *Zoölogy of New York.* Part vi, *Crustacea* (1844).
- ERICHSOHN** (W. F.) *Uebersicht der Arten der Gattung Astacus.* In *Archiv für Naturgeschichte* (1846).
- FAXON** (Walter). *Descriptions of New Species of Cambarus,* etc. *Proc. Amer. Acad. of Arts and Sciences*, xx, 107-158 (1884).
- *A Revision of the Astacidae.* *Memoirs of Museum of Comparative Zoölogy.* pp. 186. With 10 plates (1885).
- *Preliminary Catalogue of the Crayfishes of Kansas.* *Bulletin of the Washburn College Laboratory of Natural History*, i, No. 4, 140-142 (1885).
- *A List of the Astacidae in the United States National Museum.* *Proc. U. S. Nat. Mus.*, 356-361 (1885).
- FISCHER** (S.) *Crustaceen in der Umg. von St. Petersburg aus den Ordungen der Branchiopoden und Entomostraceen* (1848-1850).
- *Neue oder wenig gekannte Daphnien Arten* (1849-1851).
- *Ueber das genus Cypris* (1851).
- *Beiträge zur Kenntniss der Cyclopiden der Umg. von St. Petersburg* (1851-1853).
- FITCH** (Asa). *First Report on Noxious Insects of New York.* *Trans. N. Y. State Agric. Society*, 1854, 705-880. [Description of species of *Porcellio*, pp. 823-825.]
- *First and Second Reports on the Noxious Insects of New York*, 1856. [Description of species of *Porcellio*. pp. 116-121.]
- FORBES** (Stephen A.) *List of Illinois Crustacea, with Descriptions of New Species.* *Bulletin of the State Laboratory of Natural History*, i, No. 1, 3-25 (1876).
- *On some Entomostracea of Lake Michigan and Adjacent Waters.* *American Naturalist*, xvi, 537-542, 640-650 (1882).
- GIBBES** (Lewis R.) *On the Carcinological Collections of the United States.* *Proc. Amer. Association for the Advancement of Science*, iii, 167-201 (1850).

- GIRARD** (Charles). Revision of the North American Astaci, with Observations on their Habits and Geographical Distribution. Proc. Phila. Acad. of Science, vi, 87-91 (1852).
- On a new Entomostracan of the Family Limnadidæ inhabiting the Western Waters. Proc. Phila. Acad. of Science, iv, 3 (1854).
- GISSLER** (Carl F.) Contributions to the Fauna of the New York Croton Water (1872).
- Description of a Hermaphrodite Phyllopod Crustacean. American Naturalist, xv, 136-139 (1881).
- Evidences of the Effect of Chemico-physical Influences in the Evolution of Branchiopod Crustaceans. Amer. Naturalist, xv, 280-282 (1881).
- Variations in a Copepod Crustacean. Amer. Naturalist, xv, 689-698 (1881).
- GOULD** (Augustus A.) Report on the Invertebrata of Massachusetts. Crustacea, pp. 11-23; 321-341 (1841).
- HAGEN** (Hermann A.) Monograph of the North American Astacidæ. Plates i-xi. Illus. Cat. Museum of Comparative Zoölogy, No. 3 (1870).
- The Blind Crayfish. Amer. Naturalist, vi, 494 (1872).
- HALDEMAN** (Samuel S.) Two Species of Cypris. Proc. Phila. Acad. of Science, i, 53 (1841).
- Description of Two New Species of Cypris. Proc. Phila. Acad. of Science, i, 166 (1842).
- Description of Two Species of Entomostraca. Proc. Phila. Acad. of Science, i, 184 (1842).
- Description of a New Species of Cypris. Proc. Phila. Acad. of Science, i, 184 (1842).
- Description of Two New Species of Hydrachna, and One of Daphnia. Proc. Phila. Acad. of Science, i, 196 (1842).
- [Note on Limnadella.] Proc. Phila. Acad. of Science, vii, 34 (1854).
- HARGER** (Oscar). On a New Genus of Asellidæ. Amer. Journal of Science and Arts, 3d series, vii, 601, 602 (1874).

- Description of *Mancasellus brachyurus*, a New Fresh-water Isopod. Amer. Journal of Science and Arts, 3d series, xi, 304, 305 (1876).
- Description of New Genera and Species of Isopoda from New England and Adjacent Waters. Amer. Journal of Science and Arts, 3d series, xv, 373–379 (1878).
- Notes on New England Isopoda. Proc. U. S. National Museum, ii, 157–165 (1879).
- Report on the Marine Isopoda of New England and Adjacent Waters. Report of U. S. Commission on Fish and Fisheries for 1878, 297–462, Plates i–xiii.
- HARLAN** (Richard). Description of Three Species of the Genus *Astacus* inhabiting the United States. Medical and Physical Researches, 229 (1835).
- HAY** (Oliver P.) Description of a New Species of *Asellus*. Bulletin Illinois State Laboratory of Natural History, i, No. 2, 90–92 (1878).
- Notes on some Fresh Water Crustacea, together with descriptions of two new species. Amer. Naturalist, xvii, 143–146, 241–243 (1882).
- HERRICK** (Clarence L.) A New Cyclops. 5th Report on the Geology of Minnesota, 238, 239 (1877).
- Fresh Water Entomostraca. Amer. Naturalist, xiii, 620–624 (1879).
- Microscopic Entomostraca. Appendix B to the Report on the Geology of Minnesota, 81–123, Plates i–xxi (1879).
- Papers on the Crustacea of the Fresh Waters of Minnesota. 10th Report on the Geology of Minnesota, 219–254, Plates i–xi (1882).
- A New Genus and Species of the Crustacean Family *Lyncodaphnidæ*. Amer. Naturalist, xvi, 1006–1007 (1882).
- Heterogenetic Development in *Diaptomus*. Amer. Naturalist, xvii, 381–389, 499–505 (1883).
- A Final Report on the Crustacea of Minnesota, included in the Orders Cladocera and Copepoda. 12th Annual Report of the Geological Survey of Minnesota (1884).
- Mud-Inhabiting Crustacea. Bull. Scientific Lab. of Denison University, i, 37–42. Plate ix (1885).

- Metamorphosis and Morphology of Certain Phyllopod Crustacea. Bull. Scientific Lab. of Denison University, i, 16-24. Plates v-viii (1885).
- HUBBARD** (Henry G.) Two Days' Collecting in the Mammoth Cave, with Contributions to a Study of its Fauna. Amer. Entomologist, new series, i, 34-40, 79-80 (1880).
- JAMES** (Edwin). Note 7 [on the Appearance of Crustacea] to Long's Expedition from Pittsburg to the Rocky Mountains, ii, 336 (1823).
- JOHNSSON** (A.) Sveriges Oniscider. Upsala (1858).
- JURINE** (L.) Histoire des Monocles aux environs de Geneve. With 22 plates. Geneva (1820).
- KELLICOTT** (David S.) Description of a New Species of *Argulus* (*A lepidostei*). Bull. Buffalo Soc. of Nat. Science, iii, 214-216 (1877), also published in Amer. Journal of Microscopy, iii, 1-3 (1878).
- On Certain Crustacea Parasitic on Fishes from the Great Lakes. Proc. Amer. Soc. of Microscopists, i, 53-57; 3 plates (1879).
- Observations on *Lernaeocera cruciata*. Proc. Amer. Soc. of Microscopists, i, 64-68 (1879).
- *Argulus lepidostei*, male. Amer. Journal of Microscopy, iv, 153-155 (1879).
- A larval *Argulus*. North Amer. Entomologist, i, 57 (1880).
- *Argulus stizostethii* n. s. Amer. Jour. of Microscopy, v, 53-58; plate (1880).
- *Lernaeocera tortua* n. s. Proc. Amer. Soc. of Microscopists, ii, 41 (1880).
- On Certain Crustaceous Parasites of Fresh Water Fishes. Proc. Amer. Soc. of Microscopists, iv, 75-78 (1882).
- KINGSLEY** (John S.) Notes on the North American Caridea in the Museum of the Peabody Academy of Science at Salem, Mass. Proc. Phila. Acad. of Science, 1878, 89.
- List of the North American Crustacea belonging to the sub-order Caridea. Bull. Essex Institute, x, 53-71.
- KOCH** (C. L.) Deutschlands Crustaceen, Arachniden, und Myriapoden. Regensburg (1835-1844).

- KROYER (Henrik). *Apus glacialis.* Naturhistorisk Tidskrift, 2d series, ii, 431-435 (1847).
- *Bidrag til Kundskab om Snylekrebsene.* Naturhistorisk Tidsskrift, 3d series, ii, Plates i-xviii (1863).
- KURZ (W.). *Dodekas neuer Cladoceren.* Wien (1874).
- LE CONTE (John L.) *Description of a New Species of Apus.* Annals of New York Lyceum of Natural History, iv, 155 (1845).
- *Description of New Species of Astaens from Georgia.* Proc. Phila. Acad. of Science, vii, 400 (1855).
- LEREBOULLET (Auguste). *Memoire sur les Crustaces de la famille des Cloportides.* 10 plates. Strasburg (1853).
- LESUEUR (Charles A.) *On Three New Species of Parasitic Vermes, belonging to the Linnaean Genus Lernaea.* Jour. of the Phila. Acad. of Science, iii, 286 (1824).
- LEYDIG (Franz). *Naturgeschichte der Daphniden.* 10 plates. Tübingen (1860).
- LIEVIN (—). *Die Branchiopoden der Danziger Gegend.* 11 plates. Danzig (1848).
- LILLGEBORG (Wilhelm). *De Crustaceis ex ordinibus tribus Cladocera, Ostracoda et Copepoda in Scania occur.* 27 plates. Lund (1853).
- *Leptodora hyalina.* Öfversigt af Vetensk.-Akad. Förhandl. 1860, 265, pl. vii.
- LINNÉ (Carl von). *Systema Natura, Tomus i,* 12th edition. Stockholm (1766-1767).
- LOVEN (S.). *Om nagra i Vettern och Venern fauna Crustacee.* Öfversigt af Vetensk.-Akad. Förhandl., 1861, 285.
- MILNE-EDWARDS (Henri). *Histoire Naturelle des Crustaces.* 3 vols. and Atlas (1838-1840).
- MORSE (Edward S.) [Note on the Mode of Growth of a New Entomostracous Crustacean]. Proc. Boston Society of Nat. Hist., xi, 404 (1868).
- MÜLLER (O. Fr.) *Entomostraca, seu Insecta Testacea in aquis Daniae et Norvegiae reperta.* 25 plates. Lipsiae (1785).
- MÜLLER (P. E.) *Danmarks Cladocera.* Copenhagen (1868).
- OLSSON (P.) *Prodromus Faunae Copepodarum parasit. Scandin.* Lund (1869).

- PACKARD** (Alpheus S., Jr.) On the Crustacea and Insects of the Mammoth Cave. *Amer. Naturalist*, v, 744-761 (1871).
- Preliminary Notice of New North American Phyllopod Crustaceans. *Amer. Journal of Science and Arts*, 3d series, ii, 108 (1871).
- On the Cave Fauna of Indiana. 5th Report of the Peabody Academy of Science, 93-97 (1873).
- Descriptions of New North American Phyllopoda. 6th Report of the Peabody Academy of Science, 54 (1874).
- Description of a Lernæan Crustacean obtained by Lieut. W. L. Carpenter in 1873, in Colorado. *Report of Geological Survey of Territories*, 1874 (Hayden), 612.
- Synopsis of the Fresh Water Phyllopod Crustacea of North America. *Report of Geological Survey of Territories*, 1874 (Hayden), 613-622, Plates i-iv.
- New Phyllopod Crustaceans. *Amer. Naturalist*, ix, 311 (1875).
- Descriptions of new Phyllopod Crustacea from the West. *Bulletin of the United States Geological Survey* (Hayden), iii, 171-179 (1877).
- Notes on Phyllopod Crustacea. *Amer. Naturalist*, xiv, 53 (1880).
- A Monograph of the Phyllopod Crustacea of North America, with remarks on the Order Phyllocarida. 12th Report of the Geological Survey of the Territories (Hayden), ii, 295-593, Plates i-xxxix (1883).
- RANDALL** (J. W.) Catalogue of Crustacea Brought by Thomas Nuttall and J. K. Townsend from the West Coast of America, etc. *Jour. of the Phila. Academy of Science*, viii, 106-147, Plates iii-vii (1839).
- RYDER** (John A.) Description of a New Species of Chirocephalus (Ch. Holmani). *Proc. Phila. Acad. of Science*, 1879, 148-149.
- Description of a new Branchipod. *Proc. Phila. Acad. of Science*, 1879, 200-202.
- SARS** (G. O.) *Öfversigt af de indenlandske Ferskvands Copépoder* (1862).
- Om en i Sommeren 1862, foretagen zoölogisk Reise i Christianias og Trondhjems stiftor (1863).

- SAY** (Thomas). An Account of the Crustacea of the United States. *Journal of the Philadelphia Academy of Science*, i, 57-63, 65-80, 97-101, 155-169, 235-253, 313-319, 374-401, 423-458 (1817).
- SCHÖDLER** (J. E.) *De Branchiopoden der Umgegend von Berlin.* Berlin (1858).
- *Ueber der Lynceiden und Polypheiden der Umgegend von Berlin* (1862).
- *Neue Beiträge zur Naturgeschichte der Cladoceren* (1863).
- *Cladoceren des Frischen Hoffs* (1863).
- *Zur Naturgeschichte der Daphniden* (1877).
- SMITH** (Sidney I.) *Prof. Cope's Cave Crustaceans.* Amer. Naturalist, vii, 245 (1873).
- *The Crustacea of the Fresh Waters of the Northern United States.* Report of the U. S. Commissioner on Fish and Fisheries for 1872-73, 637-665, Plates i-iii.
- *Sketch of the Invertebrate Fauna of Lake Superior.* Report of the U. S. Commissioner of Fish and Fisheries for 1872-73, 690-707.
- *Report on the Amphipod Crustaceans [collected by Lieut. W. L. Carpenter in 1873, in Colorado].* Seventh Report of U. S. Geological Survey of the Territories (Hayden), 608-611, 2 plates (1874).
- *The Crustaceans of the Caves of Kentucky and Indiana.* Amer. Journal of Science and Arts, 3d series, ix, 476, 477 (1875).
- SMITH** (S. I.) and **VERRILL** (A. E.) *Notice of Invertebrata dredged in Lake Superior in 1871.* Amer. Journal of Science and Arts, 3d series, ii, 448 (1871).
- STIMPSON** (William). *Notes on North American Crustacea,* No. I. *Annals of New York Lyceum of Natural History*, vii, 40-93, Plate i. No. II, l. c. vii, 176-246, Plate ii. No. III, l. c. x, 92-136.
- *On the Crustacea and Echinodermata of the Pacific Shores of North America.* Boston Journal of Natural History, vi, 444-532, Plates xviii-xxiii (1857). Also Abstract in *Proceedings Boston Society of Natural History*, vi, 84 (1857).

- On the Deep Water Fauna of Lake Michigan. Amer. Naturalist, iv, 403 (1870).
- STRAUSS** (H. E.) Memoire sur les Daphnia de la classe des Crustaces. Mem. du Mus. d'Hist. Nat., v and vi (1819-1820).
- STREETS** (Thomas Hale). *Cambarus couesi*. Bulletin U. S. Geological Survey of the Territories (Hayden), iii, 803 (1877).
- STUXBERG** (Anton). Om Nord-Amerikas Oniscider. Öfversigt af Vetensk.-Akad. Förhandl., No. 2, 43-63 (1875).
- VERRILL** (Addison E.) Descriptions of Some New American Phyllopod Crustacea. Amer. Journal of Science and Arts, 2d series, xlvi, 244-254 (1869).
- New Localities of Artemia. Amer. Journal of Science and Arts, 2d series, xlvi, 430 (1869).
- Observations on Phyllopod Crustacea of the Family Branchipidae with Descriptions of Some New Genera and Species from America. Proceedings of the Amer. Association for the Advancement of Science for 1869.
- VERRILL** (A. E.), **SMITH** (S. I.), and **HARGER** (O.) Report upon the Invertebrate Animals of Vineyard Sound and the Adjacent Waters. Report of the U.S. Commissioner of Fish and Fisheries for 1871, 295-778, Plates i-xxxviii [i-ix on Crustacea].
- WRIGHT** (R. Ramsay). Notes on American Parasitic Copepoda, No. 1. Proceedings Canadian Institute, n. s. i, No. 3, 243-254.
- On a Parasitic Copepod of the Clam. Amer. Naturalist, xix, 118-124 (1885).
- ZADDACH** (E. G.) *Holopedium gibberum*, ein neues Crust. aus der Familie der Branchiopoden. Archiv für Naturgeschichte, 1855, plates viii, ix.

## 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	Eurycereus .....	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
Calanidae.....	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	PALÆMONIDÆ.....	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	Styloiscus .....	364
ORCHESTIDÆ.....	358	Tachidius.....	333
Osphranticum .....	329	Thamnocephalus.....	355
OSTRACODA .....	336	Trichoniscus .....	364
Palæmon.....	374		

## ERRATA.\*

Page 5, line 3 of table, second column, for 39 read 38 ; line 6, second column for 121 read 120.

Page 9, line 17, for *conjunction* read *conjugation*.

Page 21, line 13, for *Ricciacia* read *Ricciaceæ*.

Page 67, line 17 from bottom, for *fraligifolia* read *fragilifolia*.

Page 123, line 4 from bottom, and page 126, line 1, for *Tricholeæ* read *Trichocoleæ*.

Page 126, line 2, for *Tricholea* read *Trichocolea*.

Page 177, line 16, for *Lecythia* read *Lecythea*.

Page 333, line 1, after *Tachidius* add *Lilljeb.*

Page 338, under *Daphnella brachyura*, line 16, insert *Hab.—Massachusetts (Birge), Minnesota (Herrick).*

Page 340, line 5, for *Scapualeberis* read *Scapholeberis*.

Page 389, line 7 from bottom, for *carpogonium* read *sporocarp* ; lines 9, 12, 15, for *ögonium* read *carpogonum*.

Page 391, line 1, for *Cessatii* read *Cesattii*.

Page 400, line 4, for *Mycelium in conspicuous* read *Mycelium inconspicuous* ; line 14, for *coleosporium* read *Coleosporium*.

Page 401, line 9, for *connatus* read *connata* ; line 12, for *Taraxicnm* read *Taraxacum*.

Page 408, line 15, for *macrocarpa* read *macrospora* ; line 18, for *Hypophyllous* read *Hypophylloous*.

Pages 470 and 471, head of column 11, for *cyprinella* read *cyprinellus*.

Page 503, lines 8, 14, and 17, for *cyprinella* read *cyprinellus*.

---

\* For additional errata see page 247.