YARROW (H. C.)

CHAPTER XV.

REPORT

UPON

THE COLLECTIONS

OF

TERRESTRIAL AND FLUVIATILE MOLLUSCA

MADE IN PORTIONS OF

COLORADO, UTAH, NEW MEXICO, AND ARIZONA,

DURING

THE YEARS 1872, 1873, AND 1874.

BY

Dr. H. C. YARROW.

CHAPTER XV.

The collections upon which the following report and list are based were placed in the hands of Mr. George W. Tryon, jr., Mr. W. G. Binney, Mr. Temple Prime, and Dr. James Lewis for determination, and it is to their kindness that we are indebted, not only for the identifications given, but for valuable notes in regard to the different species. To the latter gentleman our thanks are due for a criticism and revision of the manuscript of this report.

A communication made by Mr. Tryon to the Academy of Natural Sciences in regard to the collection of 1872 is by his permission appended to the report, and it will be seen that some valuable facts in regard to the distribution of various genera have been evolved by this series of shells, small though it may be.

The collection of 1872 was made in Utah and Nevada, principally by Mr. H. W. Henshaw and Dr. H. C. Yarrow, with the kind assistance of different members of the expedition; that of 1873, for the most part in Colorado Territory, by Dr. J. T. Rothrock and Mr John Wolf, the botanists of the expedition; and that of 1874, in Colorado, New Mexico, and Arizona, by collectors of the expedition.

Although we are able to chronicle but few discoveries, the report is thought to possess a certain degree of value with regard to the limits advanced of range and distribution.

A tolerably abundant synonymy has been given, compiled from various works on conchology, the principal of which are those of Messrs. Binney, Bland, and Tryon.

The classification adopted is substantially in accordance with Prof. Theodore Gill's "Arrangement of the Families of Mollusks", published by the Smithsonian Institution in February, 1871, and to this gentlemen thanks are also due for assistance and advice.

CLASS GASTEROPODA.

SUBCLASS PULMONIFERA.

ORDER PULMONATA

SUBORDER GEOPHILA.

FAM. HELICIDAE.

Subfamily PUPINÆ.

Genus PUPA.

Subgenus Leucochila.

A number of specimens of this genus were found, and probably belong to the first following species.

PUPA FALLAX, Say.

Cyclostoma marginata, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 172.—SAY, Conch., Binney's ed., 22.

Bulimus marginatus, PFEIFFER, Mal. Blatt, 1194.—*Id.*, Mon. Hel. Viv., 414.—W. G. BINNEY, Terr. Moll., iv, 136.

Bulimus fallax, GOULD, Terr. Moll., ii, 288, pl. lii, f. 1.

Pupa fallax, SAY, Jour. Acad. Nat. Sci. Phila., v, 1825, 121.—SAY, Conch., Binney's ed., 28.—GOULD, Invertebrat., 1841, 192, f. 123 (excl. syn. *Placida*).—*Id.*, Bost. Jour. Nat. Hist., 1843, iv, 357, pl. xvi, f. 15.—DEKAY, N. Y., Moll. 1843, 51, pl. 35, f. 331.—PFEIFFER, Mon. Hel. Viv., ii, 309; iii, 333.—CHEMNITZ, ed. 1844, 2, 58, pl. xii, figs. 20, 21.—BINNEY & BLAND, Land & Fresh Water Shells N A., 1867, 239.—BINNEY, Bul. Mus. Comp. Zoöl., iii, No. 9, 194.

Pupa parraiana, D'ORBIGNY, Moll. Cuba, 1853, 181, pl. xii, figs. 9–11.

Pupa albilabris, ADAMS, Verm. Moll., 1842, 158.—*Id.*, Amer. Jour. Sci. & Arts, xl, 271.

Pupilla fallax, MORSE, Am. Nat., 1868, 609, f. 53.

Paludina turrita, MENKE?, Syn. Méth., 40.

Common throughout the entire Eastern Province, which comprises all that remaining portion of the continent north of Mexico not included in the Pacific or Central Provinces.

No.	Locality.	Date.	Collector.
C	South Park, Colo	July, 1873	J. Wolf.
L	Twin Lakes, Colo	Aug., 1873	Do.
271 A 1	Pagosa, Colo	Sept., 1874	Dr. H. C. Yarrow.

Subgenus **Pupilla**.

PUPA MUSCORUM, Linn.

Pupa badia, ADAMS, Bost. Jour. Nat. Hist., iii, 331, pl. iii, f. 18.—*Id.*, Verm. Moll., 157.—GOULD, Bost. Jour. Nat. Hist., iii, 404, iv, 360.—DEKAY, N. Y. Moll., 49, pl. iv, f. 45.—CHEMNITZ, ed. 2, 117, pl. xv, figs. 25–29.—BINNEY, Terr. Moll., 323, pl. lxx, f. 3.—W. G. BINNEY, Terr. Moll., iv, 142.

Pupa muscorum, LINN., *part.* PFEIFFER, Mon. Hel. Viv., iv, 666, &c.

Pupilla badia, MORSE, Jour. Port. Soc., i, 1864, 37, figs. 89, 91, pl. x, f. 92.—*Id.*, Am. Nat., i, 1868, 609, f. 52.

Has been found in the islands of the Gulf of Saint Lawrence, and in Maine; Vermont; Crown Point, New York (Binney); also in Colorado. Is also widely distributed in Europe. The specimens secured by the expedition were found at an altitude of 9,500 feet, on wet ground.

No.	Locality.	Date.	Collector.
Z	Twin Lakes, Colo.....	Aug. 5, 1873	J. Wolf.

PUPA BLANDI, Morse.

Pupilla blandi, MORSE, Ann. N. Y. Lyc., Nov., 1865, viii, 211, f. 8.

Pupa blandi, W. G. BINNEY, Exp. Neb., Ex. Doc. 25th Congress 2d Session, ii, pt. 2, 1859, 725 (no description).

Collected by expedition in the vicinity of Twin Lakes, Colorado, at an altitude of over 9,000 feet.

No.	Locality.	Date.	Collector.
16	Twin Lakes, Colo.....	Aug., 1873	J. Wolf.

Genus VERTIGO, Müller.

Subgenus **Isthmia**, Gray.

VERTIGO OVATA, Say.

Vertigo ovata, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1822, 375.—SAY, Conch., Binney's ed., 26.—BINNEY, Terr. Moll., ii, 334, pl. lxxi, f. 4.—W. G. BINNEY, Terr. Moll., iv, 148.—MORSE, Am. Nat., i, 1868, 668, figs. 57, 58.—BINNEY & BLAND, Land & Fresh Water Shells N. A., 1869, 252.—BINNEY, Bull. Mus. Comp. Zoöl., iii, No. 9, 195.

Pupa ovata, GOULD, Bost. Jour. Nat. Hist., iv, 1843, 350, pl. xvi, figs. 7, 8.—DEKAY, N. Y. Moll., 1843, 50, pl. iv, f. 50.—ADAMS, Verm. Moll., 1842, 157.—*Id.*, Am. Jour. Sci. & Arts, xl, 271.—KÜSTER, in Chemnitz, ed. 2, 118, pl. xiv, figs. 1, 2; pl. xv, figs. 35–38.—PFEIFFER, Mon. Hel. Viv., ii, 360.—*Id.*, Symbolæ, ii, 54.

Pupa modesta, SAY, Long's Exped. Rocky Mts., 1824, ii, 25, pl. xv, f. 5.—*Id.*, Binney's ed., 32, pl. lxiv, f. 5.—GOULD, Inverteb., 1841, 188, f. 119.

Pupa ovulum, PFEIFFER, Olim, Symbolæ, i, 46.

Isthmia ovata, MORSE, Jour. Port. Soc., i, 1864, 38, f. 93, pl. x, f. 94.

Belongs to the Interior Region of the Eastern Province, and is widely distributed from Maine to Mexico, and still farther north and west, and in Cuba.

No.	Locality.	Date.	Collector.
L 3 L	Twin Lakes, Colo	Aug., 1873	J. Wolf.
Z	do	Sept., 1873	Do.
N	Saguache, Col	do	Do.

Two remaining sets of specimens have not yet been identified. They were found at an altitude of 9,000 feet in moist, wet, boggy ground.

VERTIGO SIMPLEX, Gould.

Pupa simplex, GOULD, Bost. Jour. Nat. Hist., iii, 1840, 403, pl. iii, f. 21.—*Id.*, *ib.*, iv, 1843, 359.—*Id.*, Inverteb., 1841, 190, f. 121.—PFEIFFER, Mon. Hel. Viv., ii, 302.—DEKAY, N. Y. Moll., 1843, 52, pl. xxxvi, f. 347.—BINNEY, Terr. Moll., ii, 343, pl. lxxii, f. 3.

Vertigo simplex, STIMPSON, Shells N. E., 53 (no description).—W. G. BINNEY, Terr. Moll., iv, 148.—MORSE, Am. Nat., i, 1868, 670, figs. 67, 68.

Found in Canada and New England (Binney); also in Colorado, in boggy ground.

No.	Locality.	Date.	Collector.
J 3	South Park, Colo	Aug., 1873	J. Wolf.
L	Twin Lakes, Colo	do	Do.

Subfamily HELICINAE.

Genus STENOTREMA, Raf.

STENCTREMA MONODON, Rackett.

Helix monodon, RACKETT, Linn. Trans., xiii, 1822, 42, pl. v, f. 2.—*Id.*, ed. Chenu., 269, pl. xxvii, f. 5.—WOOD, Ind., suppl., 1828, pl. vii, f. 15; ed. Hanley, 226, f. 15.—BINNEY, Bost. Jour. Nat. Hist., iii, 1840, 360, pl. x, f. 1.—*Id.*, Terr. Moll., ii, 147, pl. xli, lower fig.—GOULD, Inverteb., 1841, 174, f. 113.—ADAMS, Verm. Moll., 1842, 159.—W. G. BINNEY, Terr. Moll., iv, 60.—DEKAY, N. Y. Moll., 1843, 35 (pt. excl. syn.), pl. iii, f. 19 (not f. 21 *a*, *b*).—MRS. GRAY, Fig. Moll. An., pl. cxciii, f. 11 (*ex* Bost. Jour. Nat. Hist., no descr.).—BILLINGS Canadian Nat., ii, 1857, 100, f. 6.—MORSE, Am. Nat., i, 1867, 151, figs. 12, 13.—PFEIFFER, Mon. Hel. Viv., iv, 320.

Helix convexa, CHEMNITZ, *part.* (excl. syn. et tab. lxvi, f. 24–27), pl. x, figs. 17, 18.—PFEIFFER, Mon. Hel. Viv., iii, 268 (excl. β et γ).—DESHAYES, in Lam., viii, 112; 3d ed., iii, 308.—*Id.*, Encycl. Méth., ii, 1830, 253.—*Id.*, in Fer., l. c., i, 144.—REEVE, Con. Icon., 1852, 696 (excl. syn., no., 1854, 717).

Helicodonta hirsuta, *a*, FERUSSAC, Tab. Syst., 101 (no desc.).

Stenotrema monodon, MORSE, Jour. Port. Soc., i, 1864, 10, f. 13; pl. ii, f. 2; pl. iv, f. 14.—TRYON, Am. Jour. Conch., iii, 1867, 56, pl. ix, figs. 18, 20.

Helix monodon var. *cincta*, LEWIS, Proc. Acad. Nat. Sci. Phila., 1874. (This last var. is of unusually compressed form, with a very wide umbilicus, peritreme subcarinate, and often exhibiting a peripheral brown band like the banded var. of *H. elevata*. Found in North Carolina.)

Throughout entire North America, as are also its varieties, viz, var. *fraterna*, Say, and var. *leaii*, Ward.

No.	Locality.	Date.	Collector.
Y 13	Colorado Springs, Colo	July, 1874	John Yarrow.

Genus HELICODISCUS.

HELICODISCUS LINEATUS, Say.

Helix lineata, SAY, Jour. Acad. Nat. Sci. Phila., i, 1817, 18; ii, 1824, 273.—NICH., Encycl., 3d ed., iv, 1819.—SAY, Conch., Binney's ed., 7, 24.—BINNEY, Bost. Jour. Nat. Hist., iii, 1840, 436, pl. xxii, f. 6.—*Id.*, Terr. Moll., ii, 261, pl. xlviii, f. 1.—DEKAY, N. Y. Moll., 1843, 44.—GOULD, Invert., 1841, 179, f. 103.—ADAMS, Ver., Moll., 1842, 161.—FERUSSAC, Tab. Syst., 44.—*Id.*, Hist., pl. lxxix, f. 1.—DESHAYES, in Fer., i, 80.—CHEMNITZ, 2d ed., ii, 203, tab. ci, figs. 13–15.—PFEIFFER, Mon. Hel. Viv., i, 184.—REEVE, Con. Icon., 1852, 724.—W. G. BINNEY, Terr. Moll., iv, 123.—MORSE, Am. Nat., i, 1867, 546, f. 44.

Planorbis parallelus, SAY (?), Proc. Acad. Nat. Sci. Phila., ii, 1821, 164.—SAY, Conch., Binney's ed., C3.

Helicodiscus lineata, MORSE, Jour. Port. Soc., i, 1864, 25, figs. 61, 62, pl.ii, f. 3; pl. viii, f. 63.—TYRON, Am. Jour. Conch., ii, 1866, 264, pl. iv, f. 60.

Range—throughout Eastern North America. Found also on the Rio Chama, New Mexico, and in Arizona.

No.	Locality.	Date.	Collector.
H L 1	Gila River, Ariz	Oct., 1873	Dr. O. Loew.

Genus PATULA, Hald.

PATULA STRIGOSA, Gould.

Helix strigosa, GOULD, Proc. Bost. Soc. Nat. Hist., ii, 1846, 166.—*Id.*, U. S. Exp. Exped., Moll., 1852, 36, f, 41.—*Id.*, Terr. Moll., ii, 210, pl. xxvi, *a*.—PFEIFFER, Mon. Hel. Viv., i, 121; iv, 91.—*Id.*, Mal. Bl., 1857, 321.—W. G. BINNEY, Terr. Mol., iv, 23.—BINNEY & BLAND, Land & Fresh Water Shells N. A., pt. i, 1869, 72.—BINNEY, Bul. Mus. Comp. Zoöl., iii, No. 9, 192.

Anguispira strigosa, TRYON, Am. Jour. Conch., ii, 1866, 261, pl. iv, f. 40.

(*Helix cooperi* should also probably be admitted as a synomyn.)

Binney states the range of this species: "From Rio Piedra, of Western New Mexico, to Bighorn Mountains, Nebraska. It seems to inhabit the Central Basin." And in his more recent paper he gives the following distribution: "This species is peculiar to the 'Central Province', which extends from Mexico to the British possessions, between the Rocky Mountains in the east and the Sierra Nevada and Cascade Mountains in the west, while the succeeding species, *P. striatella*, Anth., is more widely distributed throughout the Pacific Province, which consists of a narrow strip between the Sierra Nevada and Cascade Mountains in the east and the Pacific Ocean in the west. Its southern limit is San Diego, from whence it extends northerly to Alaska. This latter form is abundant in the Sierra Nevada."

Mr. Tryon informs me that, after a careful examination and comparison of many specimens of this shell, he believes it identical with *Helix haydenii*, Gabb, a variety with elevated lines, and with this experience *H. idahoensis* is probably another extreme variety of this protean form.

Dead specimens only secured in elevated localities in Utah.

No.	Locality.	Date.	Collector.
C	Wahsatch Mountains, Utah	July, 1872	H. W. Henshaw.
B	Antelope Springs, Nev	Aug., 1872	Dr. H. C. Yarrow.
A	Beaver, Utah	Sept., 1872	Lieut. W. Mott.
D (var. *minor*).	Fillmore Cañon, Utah	.... do	Dr. H. C. Yarrow.
5	Blue River, Colo	June, 1873	J. Wolf.
19	Saguache, Colo	Sept., 1873	Do.

PATULA STRIATELLA, Anthony.

Helix striatella, ANTHONY, Bost. Jour. Nat. Hist., iii, 1840, 278, pl. iii, f. 2.—BINNEY, Bost. Jour. Nat. Hist., iii, 1840, 432, pl. xxi, f. 5.—*Id.*, Terr. Moll., ii, 217, pl. xxx, f. 2,—GOULD, Invert., 1 1841, 178, f. 112.—ADAMS, Verm. Moll., 1842, 162.—DEKAY, N. Y. Moll., 1843, 43, pl. iii, f. 40.—CHEMNITZ, 2d ed., ii, 115, tab. lxxxv, figs. 36–38.—PFEIFFER, Mon. Hel. Viv., i, 104.—REEVE, Con. Icon., 1853, 727.—W. G. BINNEY, Terr. Moll., iv, 99.—MORSE, Am. Nat., i, 1867, 545, f. 40.

Helix ruderata, ADAMS, Sill. Jour. (1), 40–408 (*nec* Studer).

? Helix cronkheitei, NEWCOMB, Proc. Cal. Acad. Nat. Sci., iii, 1865, 180.

Patula striatella, MORSE, Jour. Port. Soc., i, 1864, 21, f. 48, pl. ii, f. 6; pl. viii, f. 49.

Anguispira striatella, TRYON, Am. Jour. Conch., ii, 1866, 262, pl. iv, f. 51.

Patula cronkheitei, TRYON, Am. Jour. Conch., ii, 1866, 263.

This species is found throughout Northern North America on both the Atlantic and Pacific coasts. Secured as follows:—

No.	Locality.	Date.	Collector.
L 2 L	Mountains near Fort Garland, Colo	May, 1873	H. W. Henshaw.
D 1	Twin Lakes, Colo	July, 1873	J. Wolf.
C 3	South Park, Colo	.... do	Do.
182	Twin Lakes, Colo	Aug., 1873	Dr. J. T. Rothrock.
J 2	South Park, Colo	.... do	J. Wolf.

PATULA PERSPECTIVA, Say.

Helix perspectiva, SAY, Jour. Acad. Nat. Sci. Phila., i, 1817, 18.—NICH., Encycl., iv, 3d ed., 1819; Say, Conch., Binney's ed., 9.—BINNEY, Bost. Jour. Nat. Hist., iii, 1840, 430, pl. xxi, f. 4.—*Id.*, Terr. Moll., ii, 256, pl. xxx, f. 1.—DEKAY, N. Y. Moll., 1843, 42, pl. iii, f. 38.—FERUSSAC, Tab. Syst., 44.—*Id.*, Hist. Nat. des Moll., pl. lxxix, f. 7.—DESHAYES, in Lam., viii, 130; 3d ed., iii, 315.—*Id.*, in Fer., i, 81.—CHEMNITZ, 2d ed., ii, 114, tab. lxxxv, figs. 30–32.—PFEIFFER, Mon. Hel. Viv., i, 103; iii, 99 (excl. *Helix filiola*).—REEVE, Con. Icon., 695.—W. G. BINNEY, Terr. Moll., iv, 122.—LEIDY, T. M. U. S., i, 1851, 153, pl. vii, figs. 4–7 (anat.).

Helix patula, DESHAYES, Encycl. Méth., ii, 1830, 217.
Anguispira perspectiva, TRYON, Am. Jour. Conch., ii, 1866, 262, pl. iv, f. 50.

Distributed throughout the whole of Eastern North America. Taken in New Mexico by expedition.

No.	Locality.	Date.	Collector.
166 G	San Ildefonso, N. Mex	Aug., 1874	Dr. H. C. Yarrow.

Genus VALLONIA, Risso.

VALLONIA PULCHELLA, Müll.

Helix pulchella, MÜLL, Verm., 30.—PFEIFFER, Mon. Hel. Viv., i, 365.—BINNEY, Bost. Jour. Nat. Hist., iii, 1840, 375, pl. 9, f. 2.—*Id.*, Terr. Moll., ii, 175, 17, f. 1.—GOULD, Invert., 1841, 176, f. 102.—ADAMS, Verm. Moll., 1842, 159.—LEIDY, T. M. U. S., i, 1851, 26, pl. ix, figs. 7–9.—BINNEY & BLAND, Land & Fresh Water Shells N. A., 1869, pl. 157.—BINNEY, Cat. Terr. Moll., Bull. Mus. Comp. Zoöl., iii, No. 9, 194.

Helix minuta, SAY, Jour. Acad. Nat. Sci. Phila., i, 1817, 123.—NICH., Encycl., 3d ed., 1819; Binney's ed., 3.—DEKAY, N. Y. Moll., 1843, 40, pl. 3, f. 33.—MORSE, Am. Nat., i, 1867, 544, f. 39.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Helix costata, MÜLLER, *vide* PFEIFFER, Mon. Hel. Viv., i, 366.

Vallonia minuta, MORSE, Port. Soc., 1864, 21, figs. 54–56, pl. 8, f. 57.—TRYON, Am. Jour. Conch., iii, 1867, 36, pl. 8, f. 20.

A widely distributed form from Canada to Florida; also found throughout Europe, Siberia, Thibet, Madeira, Azores, &c. Belongs more particularly to the northern region of the Central Province.

No.	Locality.	Date.	Collector.
C 3	South Park, Colo	July, 1873	J. Wolf.

FAM. VITRINIDAE.

Genus VITRINA, Drapr.

VITRINA PFEIFFERI, Newcomb.

Vitrina pfeifferi, NEWCOMB, Proc. Cal. Acad. Nat. Sci., ii, 1861, 92.—TRYON, Am. Jour. Conch., ii, 1866, 244, pl. iii, f. 3.—BINNEY, Bul. Mus. Comp. Zoöl., iii, No. 13, 192–198.

An exclusively western form, found from 37° to 42° latitude, from

Rocky Mountains to Pacific Ocean. Twin Lakes, Colorado, is the most easterly locality now known.

No.	Locality.	Date.	Collector.
L 1	Fort Garland, Colo	May, 1873	H. W. Henshaw.
E	Twin Lakes, Colo	Aug. 5, 1873	J. Wolf.

VITRINA LIMPIDA, Gould.

Vitrina pellucida, DEKAY, N. Y. Moll., 1843, 25, pl. iii, f. 42 (*nec* Müller).—ADAMS, Verm. Moll., 1842, 162.—BINNEY, Terr. Moll., ii, 58, pl. lxvii, *a*, f. 1.

Vitrina americana, PFEIFFER, 1852, Proc. Zoöl. Soc., Dec., 156.—CHEMNITZ, ed. 2, 1854, 9, pl. i, figs, 22–25.

Vitrina limpida, GOULD, in Agassiz's Lake Superior, 1850, 243; Terr. Moll., l. c.—PFEIFFER, Malac. Blatt, 1856, ii, 10.—*Id.*, Mon. Hel. Viv., iv, 798.—W. G. BINNEY, Terr. Moll., 33.—REEVE, Con. Icon., 62.—MORSE, Jour. Port. Soc., i, 1864, p. ii, pl. v, f. 17.—*Id.*, in Am. Nat., i, 1867, 314, f. 20.—TRYON, Am. Jour. Conch., ii, 1866, 243, pl. iii, f. 1.

Found in Northeastern States and northwest of Lake Superior, by the expedition in Colorado.

No.	Locality.	Date.	Collector.
J 4	South Park, Colo	Aug., 1873	J. Wolf.

Genus ZONITES, Montf.

Subgenus Hyalina (Fér.) Gray.

ZONITES ARBOREUS, Say.

This and the succeeding species are widely distributed, being found throughout Eastern North America, and in fact all over the northern portion of the continent where the mountains have ceased to be barriers to distribution.

No.	Locality.	Date.	Collector.
C 2	South Park, Colo	July, 1873	J. Wolf.
D	Twin Lakes, Colo	Aug., 1873	Do.

ZONITES MINUSCULUS, Binney.

No.	Locality.	Date.	Collector.
L 1 L	Mountains near Fort Garland, Colo	May, 1873	H. W. Henshaw.

ZONITES VIRIDULUS, Menke.

Collected by the expedition in Colorado.

No.	Locality.	Date.	Collector.
J 7	South Park, Colo	Aug., 1873	J. Wolf.

Subgenus Conulus, (Fitz.) Moq.-Tand.

ZONITES FULVUS, Drapr.

Helix chersina, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 156.—SAY, Conch., Binney's ed. 18, 81.—BINNEY, Bost. Jour. Nat. Hist., iii, 1840, 416, pl. xxvi, f. 3.—*Id.*, Terr., Moll., ii, 243, pl. xvii, f. 4.—GOULD, Invert., 1841, 185, f. 105.—ADAMS, Ver., Moll., 1842, 162.—*Id.*, Silliman's Jour. (i), xl, 273.—DEKAY, N. Y. Moll., 1843, 44, pl. xxxv, f. 338.—W. G. BINNEY, Terr. Moll., iv, 119.—MORSE, Am. Nat., i, 1867, 544, f. 38.

Helix egena, SAY, Jour. Acad. Nat. Sci. Phila., v, 1825, 120.—SAY, Conch., Binney's ed., 30.—DEKAY, N. Y. Moll., 1843, 45.—CHEMNITZ, ed. 2, i, 1846, 237, pl. xxx, figs. 19–21 (?).—REEVE, Con. Icon., No. 1263, 1854.—PFEIFFER, Mon. Hel. Viv., i, 31 (not of Gould in Terr. Moll.).

Helix fulva, DRAPARNAUD, *teste* MIGHELS (Bost. Jour. Nat. Hist., iv, 333), CHEMNITZ, PFEIFFER (Mon. Hel., i, 30), REEVE, FORBES, & HANLEY.

Conulus chersinus, MORSE, Jour. Port. Soc., i, 1864, 19, figs. 44, 46, pl. ii, f. 4; pl. vii, f. 45.

Conulus chersina, TRYON, Am. Jour. Conch., ii, 1866, 256, pl. iv, f. 37.

Widely distributed throughout North America, and in the circumpolar regions of Asia and Europe. Found by the expedition in following locality:—

No.	Locality.	Date.	Collector.
C 1	South Park, Colo	July, 1873	J. Wolf.
G	Twin Lakes, Colo	Aug. 4, 1873	Do.
182, 1	..... do	Aug., 1873	Do.
J 1	South Park, Colo	Aug., 1873	Do.

FAM. SUCCINIDAE.

Genus SUCCINEA.

Subgenus Succinea, Drapr.

SUCCINEA AVARA, Say.

Succinea avara, SAY, Long's Exped. Rocky Mts., ii, 1822, 260, pl. xv, f. 6.—SAY, Conch., Binney's ed., 32, pl. lxxiv, f. 6.—GOULD, Invert., 1841, 196, f. 127.—ADAMS, Verm. Moll., 1842, 156.—DEKAY, N. Y. Moll., 1843, 54, pl. iv, f. 55.—PFEIFFER, Symbol., ii, 56.—*Id.*, Mon. Hel. Viv., ii, 525.—*Id.*, Chemnitz, ed., 1854, ii, 51, pl. v, figs. 18–20.—BINNEY, Terr. Mol., iv, 35.—MORSE, Jour. Port. Soc., i, 1864, 29, f. 75, pl. iv, f. 76.—*Id.*, Am. Nat., i, 1868, 607, f. 47.—TRYON, Am. Jour. Conch., ii, 1866, 233, pl. ii, figs. 11, 12.—BINNEY & BLAND, Land & Fresh Water Shells N. A., pt. i, 1869, 262.—BINNEY, Bul. Mus. Comp. Zoöl., iii, No. 9, 195.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Succinea wardiana, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 31.—*Id.*, Trans., ix, 3.—*Id.*, Obs., iv, 1844, 3.—PFEIFFER, Mon. Hel. Viv., ii, 525.

* *Succinea vermeta*, SAY, *teste* GOULD (see doubtful species, p. 271).—TRYON, Am. Jour. Conch., ii, 1866, 233, pl. ii, f. 10.

Inhabiting the whole Eastern Province. First discovered by Long's expedition to the Rocky Mountains.

No.	Locality.	Date.	Collector.
6	South Park, Colo	July, 1873	J. Wolf.
J 5	do	Aug., 1873	Do.
182 A	Twin Lakes, Colo.	do	Do.
F	do	do	Do.
G 1	do	do	Dr. J. T. Rothrock.
181	do	do	Do.
20 H	Fairplay, Colo	do	Do.
R	do	Oct., 1873	Do.
P	Loma, Colo	do	Do.

The sets numbered respectively 182 A and 181 were found in clear, running, cold mountain streams, and were probably driven into them by storms or by a sudden rise of the waters; that marked R at an altitude of 10,000 feet.

*Dr. Lewis considers the large form referred by Binney and Bland to *Succinea avara* var. *major* to be a good species. The name *vermeta* seems to be discredited in its application to that form. If Messrs. Binney and Bland are correct in refusing to apply the name *vermeta* to the form in question, it remains for some future writer to give the species a proper place.

SUCCINEA LINEATA Binney.

Succinea lineata, W. G. BINNEY, Proc. Acad. Nat. Sci. Phila., 1857, 19.—BINNEY, Proc. Bost. Soc. Nat. Hist., vi, 1857, 155.—*Id.*, Terr. Moll., iv, 38, pl. lxxx, f. 5.—TRYON, Am. Jour. Conch., ii, 1866, 235, pl. ii, f. 16.—BINNEY & BLAND, Land & Fresh Water Shells N. A., pt. i, 1869, 262.—BINNEY, Bul. Mus. Comp. Zoöl., iii, No. 9, 195.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

This species is extensively distributed throughout the "Interior Region" of W. G. Binney, having entered it probably from the Northern. First chronicled from Nebraska.

No.	Locality.	Date.	Collector.
49 A B	Eastern Utah	July, 1872	Dr. H. C. Yarrow.

SUCCINEA STRETCHIANA, Bland.

Succinea stretchiana, BLAND, Ann. N. Y. Lyc., viii, 1865, 168, f. 16.—TRYON, Am. Jour. Conch., ii, 1866, 231, pl. ii, f. 5.

Described from a specimen found in Washoe County, Nevada.

Found in Colorado and New Mexico by the expedition. The specimens from Colorado are extremely large for this species; but Dr. James Lewis informs me they are identical with the type, although some are nearly twice the size of it.

No.	Locality.	Date.	Collector.
271 A	Pagosa, Colo	Sept. 18, 1874	Dr. H. C. Yarrow.
246 A	Tierra Amarilla, N. Mex	do	Do.
234 I	do	do	W. G. Shedd.

SUBORDER BASOMMATOPHORA.

SUPERFAMILY LIMNOPHILA.

FAMILY PHYSIDAE.

Genus PHYSA, Drap.

PHYSA GYRINA, Say.

Physa gyrina, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 171.—SAY, Conch., Binney's ed., 67.—HALD., Mon., 1843, 32, pl. iii, figs. 1–6.—(?)DEKAY, N. Y. Moll., 1843, 79, pl. v, f. 87.—CHEMNITZ, ed. 2, 20, pl. v, figs. 7–10.—ADAMS, Verm. Moll., 1842, 154.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 77.

Physa elliptica, LEA, Trans. Am. Phil. Soc. Phila., v, 1837, 115, pl..—*Id.*, Obs., i, 227.—DEKAY, N. Y. Moll., 1843, 77 (excl. syn. *cylindrica*, err. typ.).—CHEMNITZ, ed. 2, 22, pl. iii, figs. 20, 22.

* *Physa hildrethiana*, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 32.—*Id.*, Trans., ix, 1844, 7.—*Id.*, Obs., iv, 7.

Widely distributed throughout the United States.

Collected as follows:—

No.	Locality.	Date.	Collector.
20	Rio Grande, Colo	Sept., 1873	J. Wolf.

PHYSA ELLIPTICA, Lea.

Physa elliptica, LEA, Trans. Am. Phil. Soc. Phila., v, 1837, 115.
Physa oleacea, TRYON, Am. Jour. Conch., ii, 6.

This species is widely distributed; the extreme points, as far as known, being Vermont, San Francisco, Michigan, Georgia, Louisiana, and Utah, and it is also believed to exist in Eastern Nevada and Northern Arizona. Some of the specimens secured were from the Virgin River in Southern Utah, not more than seven or eight miles from the Arizona border, which would seem to indicate an extreme southern limit, beyond our present knowledge.

NOTE.—Dr. Lewis informs me that he has specimens referable to this species, but does not confound them with the less solid and more slender *elliptica*.

No.	Locality.	Date.	Collector.
(?)	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
(?)	Beaver, Utah	Sept., 1872	Do.
(?)	Rush Lake, Utah	.... do	H. W. Henshaw.
(?)	Virgin River, Utah	Oct., 1872	Dr. H. C. Yarrow and H. W. Henshaw.

* It may be said, in regard to this species, that Mr. Lea upholds it tenaciously; and it is but fair to state, if it is not distinct from *Physa gyrina*, it is a very strongly marked variety.

PHYSA HETEROSTROPHA, Say.

Limnæa heterostropha, SAY., Am. ed. Nich. Encycl., 1817–19, pl. 1, f. 6.—SAY, Conch., Binney's ed., 46, pl. lxix, f. 6.

Physa heterostropha, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 172.—SAY, Conch., Binney's ed., 68.—HALD., Mon., 1843, 23, pl. ii, figs. 1–9.—GOULD, Invert. Mass., 1841, 211, f. 141.—ADAMS, Verm. Moll., 1842, 154.—DESHAYES, in Lamarck, An. sans Ver., viii, 402; ed. 2, iii, 412.—DEKAY, N. Y. Moll., 1843, 76, pl. v, f. 82.—CHEMNITZ, ed. 2, 7, pl. 1, figs. 7, 8.—MRS. GRAY, Fig. Moll. An., pl. cccx, f. 9.—POTIEZ & MICHAUD, Gal. des Moll., i, 224, pl. xiii, figs. 15, 16.—ANON., Can. Nat., ii, 1857, 209, f. —.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 84.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Physa fontana, HALD., Mon., pt. ii, 1841, p. 3 of cover.

Physa cylindrica, NEWCOMB, in DeKay, N. Y. Moll., 1843, 77, pl. v, f. 82.

Physa aurea, LEA, Trans. Am. Phil. Soc. Phila., vi, 1839, 18, pl. xxiii, f. 106.—*Id.*, Obs., ii, 1839, 18.—DEKAY, N. Y. Moll., 1843, 80, pl. v, f. 89.

Physa plicata, DEKAY, N. Y. Moll., 1843, 78, pl. v, f. 85.

Physa osculans, HALD., Mon. Part., figs. 11, 12.

Physa striata, MENKE, Syn. Méth., ed. 2, 1830, 132, *teste* HALDEMAN.

Physa subarata, MENKE, *loc. cit.*, *teste* HALDEMAN.

Physa charpentieri, KÜSTER, in Chemnitz, ed. 2, 23, pl. 14, figs. 4–6.

Physa philippi, KÜSTER, *loc. cit.*, 19, pl. iii, figs. 3–6.

Physa inflata, LEA, Proc. Am. Phil. Soc. Phila., ii, 32.—*Id.*, Trans., ix, 7.—*Id.*, Obs., iv, 7.

Helix heterostrophus, EATON, Zoöl. Text-Book, 1866, 195.

Bulla crassula, DILLWYN, Conch., tab. 1, 487, No. 36 (=*fontinalis*).—CHEMNITZ, Conch., ix, 33, pl. ciii, figs. 879, 880, var. 3.—GMEL., Syst. Nat., 3407.—SCHROTER, Einl. I., 261, *Helix*, No. 84.

Cochlea neritoides, LISTER, Conch., pl. cxxxv, f. 34.

This species is represented in the collection by a few individuals brought from the shores of Lake Sevier, forty miles from Fillmore, Utah, by Mr. G. K. Gilbert, geologist of the survey. No living shells were found, and the probabilities are that the shells collected were washed from the Sevier River, which is fresh water, into the briny waters of the lake, and there perished. It is rather curious that a shell so common, and with such a wide range of distribution, should have been met with in but one locality in Utah.

No.	Locality.	Date.	Collector.
(?)	Sevier Lake, Utah	Aug., 1872	G. K. Gilbert.
362 B	Pueblo, Colo	Oct., 1874	C. E. Aiken.

PHYSA ALTONENSIS, Lea.

Physa altonensis, LEA, Proc. Acad. Nat. Sci. Phila., 1864, 114.

Type found at Alton, Ill.

Found by the collectors of the expedition as follows:—

No.	Locality.	Date.	Collector.
500 O	Pescao, N. Mex	July, 1873	H. W. Henshaw.
500 B	..... do	.... do	Do.
575 B	White Mountains, Ariz	Aug., 1873	Do.
A 16	Near Camp Apache, Ariz	.... do	G. M. Keasbey.
1176	..... do	July, 1874	Jas. M. Rutter.

The two last numbers represent a variety differing in some essential points from the type.

PHYSA ANCILLARIA, Say.

Physa ancillaria, SAY, Jour. Acad. Nat. Sci. Phila., v, 1825, 124.—SAY, Conch., Binney' ed., 114.—BINNEY & BLAND, Land & Fresh Water Shells N. A., ii, 1869, 81, f. 139.—HALD., Mon., 1843, 27, pl, iii, figs. 1–10.—GOULD, Invert., 1841, 213, f. 142.—ADAMS, Verm. Moll., 1842, 154.—DEKAY, N. Y. Moll., 1843, 78 pl. v, 90.—CHEMNITZ, 2d ed., 20, pl. xii, figs. 12, 13.—CHENU., Man. de Conch., ii, 480, f. 3550.—ANON., Can. Nat., ii, 1857, 211, fig.

Physa obesa, DEKAY, N. Y. Moll., 1843, 78, pl. v, f. 86.

Is distributed from New England to Louisiana southward and to New Mexico westward. Taken as follows:—

No.	Locality.	Date.	Collector.
1337	San Ildefonso, N. Mex	Aug., 1874	Dr. H. C. Yarrow.
Y 18	..... do	.... do	Do.
166 G	..... do	.... do	Do.

The last enumerated is a variety.

PHYSA LORDI, Bd.

Physa lordi, BD., Proc. Zoöl. Soc. London, 1863, 68.—W. G. BINNEY, Land & Fresh Water Shells N. A., 1865, 76.

Is a characteristic shell of the higher grounds of the Rocky Mountains, according to Baird. The specimen secured differs slightly from the type, and is considered a variety by Dr. Lewis.

It is thought by Mr. Wheatley that *sayii*, *ampullacea*, *lordi*, and *parkerii* are one species; if this be so, the synonymy will have to be headed by *P. sayii*, to which Dr. Lewis assents.

Secured as follows:—

No.	Locality.	Date.	Collector.
H L 1	Gila River, N. Mex	—, 1873	Dr. O. Loew.

PHYSA HAWNII, Lea.

Physa hawnii, LEA, Proc. Acad. Nat. Sci. Phila., ii, 1864, 8, 115.

HAB.—Verdigris River, Kansas (F. Hawn).

Found at the following locality:—

No.	Locality.	Date.	Collector.
70 A	White Mountains, Ariz	Aug., 1873	G. K. Gilbert.

PHYSA TRASKII, Lea.

Physa traskii, LEA, Proc. Acad. Nat. Sci. Phila., 1864, ii, 8, 115.

HAB.—Rio Los Angeles, Cal.

Taken at the following locality:—

No.	Locality.	Date.	Collector.
R 4	Santa Fé, N. Mex	July, 1873	Dr. O. Loew.

? PHYSA D'ORBIGNIANA, Lea.

No.	Locality.	Date.	Collector.
500 R	Arizona	—, 1873	H. W. Henshaw.
L 44 A	Abiquiu, N. Mex	Sept., 1874	Dr. O. Loew.

The latter number represents a very small variety, which is placed provisionally under this head. Further investigations may prove it to be a new species.

PHYSA WARRENIANA, Lea.

Physa warreniana, LEA, Proc. Acad. Nat. Sci. Phila., 1864, ii, 8, 115.

HAB.—Loup Fork of the Platte River; Milwaukee, Wis.; Grand Rapids, Mich. Taken only at the following locality:—

No.	Locality.	Date.	Collector.
L 18	Abiquiu, N. Mex.....	Sept., 1874	Dr. O. Loew.

PHYSA SMITHSONIANA, Lea.

Physa smithsoniana, LEA, Proc. Acad. Nat. Sci. Phila., 1864, ii, 8, 115.

HAB.—Loup Fork of the Platte River.

Secured by the expedition as follows:—

No.	Locality.	Date.	Collector.
L 42	Southwestern New Mexico.....	Sept., 1874	Dr. O. Loew.

FAM. LIMNAEIDAE.

Genus LIMNAEA, Lam.

LIMNAEA STAGNALIS, Linn.

Limnæa jugularis, SAY, Mich. Encycl., 1817–19.—SAY, Conch., Binney's ed., 46.—HALD., Mon., 1841, 16, pl. iv.—DEKAY, N. Y. Moll., 1843, 74, pl. v, f. 41.—KÜSTER, Chemnitz ed., 2, 3, pl. i. f. 7.

Limnæa appressa, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1818, 168; Binney's ed., 66.—HALD., Mon., 1842, 18, pl. v.—ADAMS, Verm., Moll., 1842, 115, (Pamph. 3).—DEKAY, N. Y. Moll., 1843, 74.—KÜSTER, Chemnitz ed. 2, 4, pl. i, figs. 8, 9.

Limnæa stagnalis, LINN., Syst. Nat., &c., Sheppard, 1829.—*Id.*, Tr. Lit. Hist. Soc. Quebec, i, 196.—KIRTLAND, Am. Jour. Sci. & Arts (1), xxxi, 35, f. 10.—*Id.*, Ohio Rep., 200.—ANON., Can. Nat., ii, 1857, 196, figs. 1, 2.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 25.

Limnæa speciosa, ZIEGLER OF ROSSMASSLER, Icon., pt. ii, 1835, 96, f. 50.

Widely distributed from Vermont to Northwestern States; to Pacific Ocean (Lea); Oregon; Southern Utah; numerous in British America, and probably in Alaska.

Taken by the expedition in the following localities:—

No.	Locality.	Date.	Collector.
(?)	Utah Lake, Utah	July, 1872	H. W. Henshaw and Dr. H. C. Yarrow.
(?)	Ditches near Salt Lake City, Utah	do	Dr. H. C. Yarrow.
(?)	Panquitch Lake, Utah	Oct., 1872	Do.
21	Loma, Colo	Sept., 1873	J. Wolf.
B	Rio Grande, Colo.	Oct., 1873	Do.
B 1	Del Norte, Colo	do	Do.

LIMNAEA REFLEXA, Say.

Limneus reflexus, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 167.—*Id.*, Am. Conch., iv, 1832, pl. xxi, f. 2.—*Id.*, Binney's ed., 65, 188, pl. xxxi, f. 2.—*Id.*, Chemnitz's ed., 44, pl. vii, f. 4.—KÜSTER, in Chemnitz, ed. 2, 41, pl. vii, figs. 11, 12.

Limnæa reflexa, HALD., Mon., 1842, 26, pl. viii.—DEKAY, N. Y. Moll., 1843, 71, pl. iv, figs. 65–72.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 39.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Limneus elongatus, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 167.—*Id.*, Long's Exped. Rocky Mts., ii, 1823, 263.—SAY, Conch., Binney's ed., 65, 130; Chemnitz ed., 43, pl. vii, f. 5.

Limneus umbrosus, SAY, Am. Conch., iv, 1832, pl. xxxi, f. 2.—*Id.*, Binney's ed., 187, pl. xxxi, f. 2.—HALD., Mon., 1842, 24, pl. vii.—DEKAY, N. Y. Moll., 1843, 68, pl. iv, f. 76.—KÜSTER, in Chemnitz, ed. 2, 41, pl. vii, figs. 13–16.

Limnæa exilis, LEA, Trans. Am. Phil. Soc. Phila., v, 1837, 114, pl. xix, f. 82.—*Id.*, Obs., i, 226.—KÜSTER (*Limnæus*), in Chemnitz, ed. 2, 40, pl. vii, f. 9.

Limnæus palustris var. *distortus*, ROSSMASSLER, Icon., i, 1835, 97, pl. ii, f. 52.

Limnophysa reflexa, CHEMNITZ, Man. de Conch., ii, 480, f. 3544.

Observed from northern tier of States, from New York to the Pacific, and in Canada. It extends more to the southward in the western portions of its area, having been found in Kansas, Utah, and Colorado, and in the Columbia and Sacramento Rivers (Binney).

Secured by the expedition at the following locality:—

No.	Locality.	Date.	Collector.
O	Loma, Colo	Oct., 1873	Dr. J. T. Rothrock.

LIMNAEA PALUSTRIS, Müller.

Helix palustris, MÜLLER, Syn. Nov. Gen., 1834, p. —.—RACKETT, Trans. Linn. Soc., xiii, 1822, 42.

**Limnæus elodes*, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 169.—*Id.*, Am. Conch., iv, 1832, pl. xxxi, f. 3.—*Id.*, Binney's ed., 66, 188, pl. xxxi, f. 3.—*Id.*, Chemnitz's ed., 44, pl. viii, f. 3.—KÜSTER, in Chemnitz, ed. 2, 42, pl. vii, figs. 17–21.

Limnæa elodes, GOULD, Invert. Mass., 1841, 221, figs. 146, 147.—ADAMS, Verm. Moll., in Thom's Hist., 1842, 153.—ANON., Can. Nat., ii, 1857, 199.

Limnæa fragilis (not of Linnæus), HALD., Mon., 1842, 20, pls. vi–xv, f. 1; 53, pl. xiv, f. 1.—DEKAY, N. Y. Moll., 1843, 68, pl. iv, f. 68.

Limnæa palustris, MÜLLER (*Buccinum*), &c.—SHEPPARD, Trans. Lit. Hist. Soc. Quebec, i, 1829, 196.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 45.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Limnæa nuttaliana, LEA, Proc. Acad. Nat. Sci. Phila., ii, 1841, 33.—*Id.*, Trans. Am. Phil. Soc. Phila., ix, 1844, 9.—*Id.*, Obs., ii, 9.—KÜSTER (*Limnæus*), in Chemnitz, ed. 2, 38, pl. vii, f. 5.

Limnæa plebeia, GOULD (?).

Limnæa expansa, HALD., Mon., 1842, 29, pl. ix, figs. 6–8.—*Id.*, Suppl. to pt. i, 1840, 3.—DEKAY, N. Y. Moll., 1843, 75, pl. xxxvi, f. 348.—KÜSTER (*Limnæus*), in Chemnitz, ed. 2, 39, pl. vii, figs. 6, 7.

Ranging from New England through Pennsylvania and Kansas to California and Oregon. Very numerous in British America (Binney). No living specimens found in Utah; very abundant on the mud flats of the Sevier, and at Panquitch Lake, with *Planorbis trivolvis*.

Found in following localities:—

No.	Locality.	Date.	Collector.
(?)	Mud flats, near Sink of Sevier River, Utah...	Sept., 1872	Dr. H. C. Yarrow.
(?)	Shores of Sevier Lake, Utah.....	.... do	G. K. Gilbert.
(?)	Panquitch Lake, Utah	Oct., 1872	Dr. H. C. Yarrow.
(?)	Southern Utah.....	.... do	Dr. H. C. Yarrow and H. W. Henshaw.
2	Georgetown, Colo.....	June, 1873	Dr. J. T. Rothrock.
2 A	..... do	.... do	Do.
4	South Park, Colo	July 1873	J. Wolf.
A	Twin Lakes, Colo.....	Aug., 1873	Do.
17 A	..... do	.... do	Do.
N 1	Saguache, Colo	Sept., 1873	Do.
22	Loma, Colo	.... do	Do.

* Probably future researches will replace *elodes*.

† Dr. Lewis states that "excellent reasons exist why *Limnæus elodes* should be retained. In all probability, our shell is distinct. I am sure that *catascopium* gives birth to *elodes* by proper change of station. The European *peregeer* is by no means identical with *catascopium*, though it may be presumed to stand in the same relation to the European *palustris* that *catascopium* does to the American *elodes*."

LIMNAEA DESIDIOSA, Say.

Limnæa desidiosa, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1821, 169.—*Id.*, Long's Exped. Rocky Mts., ii, 1823, 263.—*Id.*, Am. Conch., vi, pl. i, f. 5.—*Id.*, Binney's ed., 66, pl. lv, f. 3.—ADAMS, Verm. Moll., 1842, 154.—DEKAY, N. Y. Moll., 1843, 73, pl. v, f. 78.—KÜSTER, Chemnitz, ed. 2, 47, pl. viii, figs. 22–26 (*Limnæus*).—GOULD, Invert. Mass., 1841, 219, f. 150.—HALD., Mon., 1842, 31, pl. x; 48, pl. xiii, figs. 16–18.—ANON., Can. Nat., ii, 1857, 198, f. —.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 48.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Limnæa acuta, LEA, Trans. Am. Phil. Soc. Phila., v, 1837, 114, pl. xix, f. 81.—*Id.*, Obs., i, 226.

Limnæa obrussa, SAY, Jour. Acad. Nat. Sci. Phila., sec. v, 1825, 123.—SAY, Conch., Binney's ed., 113.—DEKAY, N. Y. Moll., 1843, 75.

Limnæa philadelphica, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 32.—*Id.*, Trans., ix, 1844, 8.—*Id.*, Obs., iv, 8.

Limnæa fusiformis, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33.—*Id.*, Trans., ix, 1844, 10.—*Id.*, Obs., iv, 10.

According to Mr. Binney, the western range of this species is Kansas, extending from New England; but Professor Hayden found it during his Yellowstone expedition. It was found, also, to be very abundant in the locality below indicated, and was not seen elsewhere. Occurs in some of the mountain passes westward.

No.	Locality.	Date.	Collector.
(?)	Shores of Lake Sevier, Utah	Sept., 1872	G. K. Gilbert.

LIMNAEA CAPERATA, Say.

Limnæus caperatus, SAY, New Harm. Diss., ii, 1829, 230; descr., 23.—SAY, Conch., Binney's ed., 148.—KÜSTER, in Chemnitz, ed. 2, 47, pl. viii, figs. 27–30.

Limnæa caperata, HALD., Mon., 1842, pl. xi, figs. 1–9.—ADAMS, Ver. Moll., 1842, 154.—DEKAY, N. Y. Moll., 1843, 69, pl. iv, figs. 66–69; pl. v, f. 79.—MRS. GRAY, Fig. Moll. An., pl. cccx, f. 8.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 56.

Limnæa umbilicata, ADAMS, Am. Jour. Sci. & Arts [1], xxxix, 1840, 374.—*Id.*, Bost, Jour. Nat. Hist., iii, 1840, 325, pl. iii, f. 14.—GOULD, Invert. Mass., 1841. 218, f. 149.

This species is found in the British possessions as far north as Hudson's Bay, and through the northern tier of States from New England to Lake Superior (Binney) and westward.

Secured as follows:—

No.	Locality.	Date.	Collector.
7	Trout Creek, Colo	July, 1873	J. Wolf.

LIMNAEA HUMILIS, Say.

Limnæa humilis, SAY, Jour. Acad. Nat. Sci. Phila., ii, 1822, 378.—SAY, Conch., Binney's ed., 110.—HALD., Mon., 1842, 41, pl. xiii, figs. 1–8.—DEKAY, N. Y. Moll., 1843, 71, pl. iv, f. 71.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 63.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Limnæus modicellus, SAY, Jour. Acad. Nat. Sci. Phila., v, 1825, 122.—SAY, Conch., Binney's ed., 113.—GOULD, Invert. Mass., 1841, 218, f. 151.

Limnæa linsleyi, DEKAY, N. Y. Moll., 1843, 72, pl. iv, f. 74.—LINSLEY, Shells Conn., Am. Jour. Sci. & Arts (1), xlviii, 1845, 282.

Limnæa parva, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33.—*Id.*, Trans., ix, 1844, 11.—*Id.*, Obs., iv, p. ii.

Limnæa plica, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33.—*Id.*, Trans., ix, 10.—*Id.*, Obs., ix, 1844, 10.

Limnæa griffithiana, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33; ix, 1844, 8.—*Id.*, Obs., iv, 8.

Limnæa planulata, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33; ix, 1844, 9.—*Id.*, Obs., iv, 9.

Limnæa rustica, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33; ix, 1844, 10.—*Id.*, Obs., iv, 10.

Limnæa exigna, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33; ix, 1844, 9.—*Id.*, Obs., ix, 10.

Limnæa curta, LEA, Proc. Am. Phil. Soc. Phila., ii, 1841, 33; ix, 1844, 11.—*Id.*, Obs., iv, 2.

Ranges from Maine to Georgia and from Kansas and Colorado to Lake Superior.

Specimens collected as follows:—

No.	Locality.	Date.	Collector.
1	Denver, Colo	—, 1873	J. Wolf.
8	South Park, Colo	July 15, 1873	Do.

Genus CARINIFEX, W. G. Binney.

CARINIFEX NEWBERRYI, Lea.

Planorbis newberryi, LEA, Proc. Acad. Nat. Sci. Phila., 1858, 41.

Carinifex newberryi, BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 74.

Heretofore this species, according to Binney, has been discovered in

Oregon and California only. My friend Mr. G. W. Tryon considers the presence of it in Utah as a valuable fact—indicating a much greater distribution than was formerly known.

No.	Locality.	Date.	Collector.
(?)	Shores of Lake Sevier, Utah	Sept., 1872	G. K. Gilbert.

FAM. PLANORBIDAE.

Genus PLANORBIS, Guettard.

Subgenus Helisoma, Swainson.

PLANORBIS TRIVOLVIS, Say.

Planorbis trivolvis, SAY, Nich. Encycl., 1817–19, pl. ii, f. 2.—*Id.*, Am. Conch., pt. vi, 1834, pl. liv, f. 2.—*Id.*, Binney's ed., 44, pl. lxx, f. 2; pl. liv, f. 2.—DEKAY, N. Y. Moll., 1843, pl. iv, f. 59 *a*, *b*.—GOULD, Invert. Mass., 1841, 201, f. 131.—HALD., Mon., 1844, 13, pl. ii, figs. 4–7.—ADAMS, Verm. Moll., 1842, 154.—KÜSTER, Chemnitz, ed. 2, 53, pl. v, figs. 4–6; pl. vi, figs. 1–6, 20–25.—POTIEZ & MICHAUD, Gal. des Moll., i, 214, pl. xxi, figs. 19–21.—ANON., Can. Nat., ii, 1857, 202, f. —.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 116.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Bulla fluviatilis, SAY, Jour. Acad. Nat. Sci. Phila., ii, 178.—SAY, Conch., Binney's ed., 71.

Planorbis regularis, LEA, Trans. Am. Phil. Soc. Phila., ix, 6.—*Id.*, *ib.*, Proc., ii, 1841, 32.—*Id.*, *ib.*, Obs., iv, 6.

Planorbis megastoma, DEKAY, N. Y. Moll., 1843, 61, pl. iv, figs. 60, 61.

Physa planorbula, DEKAY, N. Y. Moll., 1843, 76, pl. v, f. 83.

Planorbis corpulentus, DEKAY, N. Y. Moll., 1843, 64, pl. xiii, f. 185.—WHITTEMORE, Am. Jour. Sci. & Arts [1], xxxviii, 193.

? Planorbis proboscideus, POTIEZ & MICHAUD, Gal. des Moll., i, 1838, 213, pl. xxv, figs. 13–15.

Planorbis macrostomus, WHITEAVES, Can. Nat., viii, 1863, 113, f. —.

Planorbis trivolvis var. *fallax*, HALD., Mon., 1844, pl. iii, figs. 1–3.

Planorbis lentus, GOULD, Invert., 1841, 202, f. 132.

Helix trivolvis, EATON, Zoöl. Text-Book, 1826, 194.

Cochlea trium-orbum, LISTER, Conch., pl. cxl, f. 46.—PETIVER, Gazophyl., pl. cvi, f. 16.

A very common species, being found everywhere throughout the United States and Canada. In but one locality in Utah was it found living, viz, the ditches near Salt Lake City.

At Panquitch Lake, Southern Utah, immense numbers of these shells

were found in the washed up grass from the bottom; but, although carefully searched for, no living individuals were secured.

Mr. Tryon informs me our specimens are unusually large, with the margin of the aperture expanded like those from the Saint Lawrence River, described by Mr. Whiteaves as *Planorbis macrostomus*.

Collected by expedition as follows:—

No.	Locality.	Date.	Collector.
(?)	Ditches near Salt Lake City, Utah	July, 1872	Dr. H. C. Yarrow.
(?)	Utah Lake, Utah	.... do	Dr. H. C. Yarrow and H. W. Henshaw.
(?)	Mud flats near Sink of Sevier River, Utah ...	Sept., 1872	Dr. H. C. Yarrow.
(?)	Fillmore Lake, Utah	Oct., 1872	Dr. H. C. Yarrow and H. W. Henshaw.
(?)	Panquitch Lake, Utah	.... do	Dr. H. C. Yarrow.
K	Saguache, Colo	Sept., 1873	J. Wolf.

Subgenus Gyraulus, Agass.

PLANORBIS PARVUS, Say.

Planorbis parvus, SAY, Nich. Encycl. 1817–'19, pl. i, f. 6.—SAY, Conch., Binney's ed., 45, pl. lxix, f. 6.—HALD., Mon., 1844, 27, pl. iv, figs. 19–23.—GOULD, Invert., 1841, 209, f. 139.—ADAMS, Verm. Moll., 1842, 156.—DEKAY, N. Y. Moll., 1843, 63, pl. iv, f. 58.—ANON., Can. Nat., ii, 1857, 208, f. —.—BINNEY, Land & Fresh Water Shells N. A., pt. ii, 1865, 133, figs. 222–224.—ROBERTS, U. S. Geol. Surv. Terr., 1870, 468.

Planorbis concavus, ANTHONY, Shells of Cincinnati (no desc.).

Planorbis elevatus, ANTHONY, Bost. Jour. Nat. Hist., iii, 1840, 327, pl. iii, f. 16.—GOULD, Invert. Mass., 1841, 207.—DEKAY, N. Y. Moll., 1843, 65.

Helix parvus, EATON, Zoöl. Text-Book, 1826, 115.

Abundant throughout the United States.

Collected as follows:—

No.	Locality.	Date.	Collector.
3	South Park, Colo	July, 1873	J. Wolf.
I	..... do	.... do	Do.

FAM. VALVATIDAE.

Genus VALVATA, O. F. Müller.

VALVATA SINCERA, Say.

Valvata sincera, SAY, Long's Exped. Rocky Mts., 1823, 264, pl. xv, f. 11.—SAY, Conch., Binney's ed., 130, pl. lxxiv, f. 11.—HALD., Mon., 6, pl. i, figs. 5–10.—ADAMS, Verm. Moll., 152.—*Id.*, Am. Jour. Sci. & Arts (1), xl, 267.—DEKAY, N. Y. Moll., 119, pl. vi, figs. 127, 128.—BINNEY, Land & Fresh Water Shells N. Y., pt. iii, 1865, 12.

Valvata depressa, pars KÜSTER, in Chemnitz, ed. 2, 1852, 88.—MENKE, Zeit. für Mal., ii, 1845, 122 (including *tricarinata* and *simplex*).

Valvata striata, LEWIS, Proc. Acad. Nat. Sci. Phila., 1856, 260.

Found in same locality as some individuals of the genus *Tryonia*, and is apparently rare in Utah, although found in the northwest rather abundantly.

No.	Locality.	Date.	Collector.
(?)	Near Salt Lake City, Utah	July, 1872	Dr. H. C. Yarrow.

Mr. Tryon has furnished the following three names of species occurring in our collections; but, as there is some doubt on this point, we have preferred to mark them doubtful:—

FAM. VIVIPARIDAE.

Genus CAMPELOMA, Raf,

?CAMPELOMA INTEGRA, Say.

Detroit River; Madeline Island; Lake Superior.

FAM. RISSOIDÆ.

Genus TRYONIA, Stimpson.

?TRYONIA EXIGUA, Conrad.

With regard to this species, Mr. Tryon writes me that a representative of the genus *Tryonia* was found in the same locality as *Carinifex newberryi*, viz, shores of Sevier Lake, Middle Utah. Mr. Tryon informs me this is probably *T. exigua*, Stimp., or else a new species. Unfortunately, not enough specimens were secured to establish the latter. He considers this discovery a valuable one.

Fam. CERIPHASIIDÆ.

Genus CERIPHASIA, Swains.

? CERIPHASIA LIVESCENS, Menke.

A numerous species in the Northwestern States, originally described from Lake Erie, New York, by Menke.

? CERIPHASIA SUBULARE, Lea.

From rivers and creeks of Northwestern States; Detroit River.

Class CONCHIFERA.

Order DIMYARIA.

Superfamily CORBICULACEA.

Family CYRENIDÆ.

Genus SPHAERIUM, Scopoli.

SPHÆRIUM PARTUMEIUM *varietas*, Say.

Cyclas partumeia, Say, Jour. Acad. Nat. Sci. Phila., ii, 1822, 380.
Cyclas cornea, var. 2, Lamarck, An. sans Vert., v, 1818, 558.
Cyclas orbicularia, Barratt, Am. Jour., xlviii, 1845, 276.
Cyclas mirabilis, Prime, Proc. Bost. Soc. Nat. Hist., iv, 1851, 157.
Cyclas cærulea, Prime, *loc. sub cit.*, iv, 1851, 161.
Cyclas eburnea, Anthony, *loc. sub cit.*, iv, 1852, 279.
Sphærium partumeium, Prime, Mon. Am. Corbiculadæ, Smithson, Miscel. Pub., No. 145, 1865, 45.

The specimens collected by the expedition were submitted to Mr. Temple Prime, of New York, who has kindly furnished the following notes:—

"This is a very interesting variety, forming, as it were, the connecting link between *S. partumeium*, of the east, and *S. lenticula*, Gould, of the west coast. It offers many points of resemblance with *partumeium* var. *jayanum*, from the East; it is, however, more transverse than this variety.

"Temple Prime.

"May, 1875."

Note.—Since the above was written, the specimens have been re-examined by Dr. Lewis, who states his belief that the species above indicated is *S. truncatum* Linsby.

Collected as follows:—

No.	Locality.	Date.	Collector.
19	Saguache, Colo	Sept., 1873	J. Wolf.
23	Rio Grande, Colo	do	Do.

Fam. PISIDIIDAE.

Genus PISIDIUM, Pfeiffer.

PISIDIUM ABDITUM, Hald.

Pisidium abditum, Hald., Proc. Acad. Nat. Sci. Phila., i, 1841, 53.—Prime, Mon. Am. Corb., 1865, 68.—Roberts, U. S. Geol. Surv. Terr., 1870, 469.
Cyclas minor, C. B. Adams, Proc. Bost. Soc. Nat. Hist., i, 1841, 48.
Pisidium tenellum, Gould, Agassiz's Lake Sup., 1848, 245.
Pisidium obscurum, Prime, Proc. Bost. Soc. Nat. Hist., iv, 1851, 161.
Pisidium rubellum, Prime, *loc. sub cit.*, iv, 1851, 163.
Pisidium minus, Stimpson, Moll. New England, 1851, 16.
Pisidium kurtzi, Prime, Proc. Bost. Soc. Nat. Hist., iv, 1851, 162.
Pisidium zonatum, Prime, *loc. sub cit.*, iv, 1851, 162.
Pisidium regulare, Prime, Bost. Jour. vi, 1852, 363, pl. xii, figs. 11, 12.
Pisidium notatum, Prime, *loc. sub cit.*, vi, 1852, 365, pl. xii, figs. 20–22.
Pisidium arcuatum, Prime, *loc. sub cit.*, vi, 1852, 364, pl. xii, figs. 14–16.
Pisum abditum, Deshayes, Brit. Mus. Cat., 1854, 282.
Pisum minus, Deshayes, *loc. sub cit.*, 1854, 281.
Pisidium resartum, Ingalls, *in litt.*, 1855.
Pisidium rubrum, Lewis, *in litt.*, 1855.
Pisidium plenum, Lewis, *in litt.*, 1855.
Musculium abditum, Adams, Rec. Gen., ii, 1858, 451.
Musculium minus, Adams, *loc. sub cit.*, ii, 1858, 451.
Musculium rubellum, Adams, *loc. sub cit.*, ii, 1858, 452.
Musculium obscurum, Adams, *loc. sub cit.*, ii, 1858, 452.
Musculium kurtzi, Adams, *loc. sub cit.*, ii, 1858, 451.
Musculium zonatum, Adams, *loc. sub cit.*, ii, 1858, 452.
Pisum obscurum, Adams, *loc. sub cit.*, ii, 1858, 660.
Pisum kurtzi, Adams, *loc. sub cit.*, ii, 1858, 660.
Pisum rubellum, Adams, *loc. sub cit.*, ii, 1858, 660.
Pisum zonatum, Adams, *loc. sub cit.*, ii, 1858, 660.
Pisidium retusum, Prime, Proc. Zoöl., xxviii, 1860, 322.

Hab.—North America: in New England; in the States of New York, New Jersey, Pennsylvania, Ohio, Michigan, South Carolina, and California; Wyoming Territory, Utah Territory; in the Lake Superior region; at Montreal in Canada; and in Honduras.

Dr. Prime states, in his "Monograph" *loc. cit.*, that this species is distributed over such a vast area of country, and varies so much according to the different localities in which it is found, that it is hardly surprising that its numerous varieties should have been mistaken for so many species. It was secured in but one locality inMiddle Utah, viz, on mountain sides near the Beaver River.

No.	Locality.	Date.	Collector.
M 1	Beaver, Utah	Sept., 1872	Dr. H. C. Yarrow.

PISIDIUM VARIABILE, Prime.

Cyclas nitida, MIGHELS, LINSLEY, Am. Jour., xlviii, 1845, 276.
Pisidium variabile, PRIME, Proc. Bost. Soc. Nat. Hist., iv, 1851, 163.
Pisidium grande, WHITTEMORE, *in litt.*, 1855.
Musculium variabile, ADAMS, Rec. Gen., ii, 1858, 452.
Pisum variabile, ADAMS, *loc. sub cit.*, ii, 1858, 660.
Pisidium variabile, PRIME, Mon. Am. Corbiculadæ, Smithson, Miscel. Pub., No. 145, 1865, 66.

According to Prime, this species is distributed throughout North America, in New England, the States of New York, Pennsylvania, and Virginia.

Specimens were found to be abundant in Colorado, near the Rio Grande River.

No.	Locality.	Date.	Collector.
23 A	Rio Grande of Colorado	Sept., 1873	J. Wolf.

FAM. UNIONIDAE

A number of *Anodonta* were collected during the field season of 1872, but, unfortunately, were destroyed or lost in transit to Washington, with the exception of the following species:—

ANODONTA OREGONENSIS, Lea.

Collected from the Sevier River, Utah, by Lieut. Wallace Mott, U. S. A., and Dr. H. C. Yarrow.

ADDENDA.

ANODONTA DEJECTA, Lewis.

In 1874, a new and interesting species was discovered and submitted to Dr. James Lewis, of Mohawk, N. Y., who has kindly furnished the description given in the following addenda:—

"*Description of a new species of Anodonta, by James Lewis, Mohawk, N. Y., May* 27, 1875.

"ANODONTA DEJECTA, *sp. nov.*

"Shell obovate, subcylindrical, inequilateral, slightly disposed to be alate posteriorly, emarginate on the base, posteriorly dilated and somewhat broadly triangular; substance of the shell of moderate thickness, and disposed to be opaque; beaks scarcely elevated above the dorsal margin, having a few minute, irregular undulations at their tips; ligament somewhat long; epidermis yellowish-brown or olivaceous, polished, and without rays; lines of growth coarse and somewhat distant; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices in the cavity of the beak a little removed from the dorsal margin, which is slightly arcuate; nacre white or faintly tinted salmon-color and iridescent.

"Transverse diameter, 2.90 inches; altitude, 1.35 inches; lateral diameter, 1 inch.

"Found in Arkansas River or its tributaries west of the one hundredth meridian, by Dr. H. C. Yarrow, surgeon and zoölogist to expedition for exploration west of the one-hundredth meridan.

"National Museum, Smithsonian Institution.

"A number of shells taken west of the one hundredth meridian were sent to me for identification a short time ago, and among them were specimens of the above described *Anodonta*, which appeared to me to be new, and I referred Dr. Yarrow to Mr. Lea, who requested that the shells be sent back to me for description. The specimens consist of one imperfect shell and fragments of others.

"The most perfect specimen is slightly abnormal, but presents features which are unquestionably characteristic, as they are also indicated in the other (fragmentary) specimens. The form of the shell is somewhat like

that of an arcuate *Margaritana marginata.* The lines of growth indicating the form of the half-grown shell betray its resemblance to a very transverse inflated *Unio tappanianus.* There is no familiar species of *Anodonta* with which this species is comparable."

The following has been furnished me by Mr. Tryon for incorporation in this report:

"*Extract from a verbal communication made by Mr. G. W. Tryon, jr., of the Academy of Natural Sciences of Philadelphia, to the Conchological Section of the Academy, May,* 1873.

"Mr. Tryon called attention to an interesting series of land and fluviatile *Mollusca* from Utah, presented this evening. These shells were collected by the Expedition for explorations west of the one-hundredth meridian, acting under the authority of the United States Engineer Office at Washington.

"The specimens of *Helix strigosa,* Gould, exhibited every variation of form, from the typical shells with depressed rounded whorls and smooth surface, to those with several revolving raised lines and a carinated periphery; in the latter condition, they are identical with *H. hemphillii,* Newcomb (Am. Jour. of Conch., v, 1869, 165, 'White Pine Mining District'). In others, again, the raised lines are more numerous, and sufficiently prominent to be called ribs, and the periphery is not carinated; in this state, they are *H. haydeni,* Gabb (Am. Jour. Conch., v, 1869, 24). This little species has been heretofore considered to belong to a new generic type for America, being the only species having revolving ribs; its nearest relationship was apparently with a small group of Madeira *Helices.* The form of the shell, its external appearance, and the closely approaching extremities of the labrum, connected by a callus upon the parietal wall, reminds one of *Cyclostoma;* but no opercula were obtained with the fifty odd specimens in semi-fossilized condition collected by Prof. F. V. Hayden, in Weber Cañon, Utah. It is extraordinary that any species should be found to vary so much as does *H. strigosa* in those characters which have heretofore been regarded as most persistent and distinctive. It is much easier to imagine the growth lines developed into ribs than a form in which the growth lines

are crossed by revolving ribs. In *H. idahoensis*, Newcomb (*ibid.*, ii, 1866, 1), we find the surface raised into sharp ribs, parallel with the lines of accretion; and as in all other respects this species does not appear to differ from *Strigosa*, it is very probable that *idahoensis* will also prove to be a variety of this protean species.

"Included in the collection are two specimens of the genus *Tryonia*, Stimpson. This curious little genus was heretofore considered restricted to the Colorado desert of Southern California, where, in a fossilized condition, it exists in such numbers as frequently to cover the surface of the ground. Two species have been described, viz: the type *T.* (*Melania*) *exigua*, Conrad (of which *Melania protea*, Gould, is a synonym), and *Tryonia clathrata*, Stimpson. The two Utah specimens are probably *T. exigua*. The genus *Tryonia* is included in a group of very small species of *Amnicolidæ*, having the whorls ornamented by ribs, nodules, or spines; it includes the genera—

"*Paludestrina*, Orb., 1841, West India and South America.

"*Pyrgula*, Crist. and Jan., 1832, Europe.*

"*Potamopyrgus*, Stimp., 1865, New Zealand.

"In addition to the above, the collection includes *Succinea lineata*, W. G. Binney; *Limnæa palustris*, Müll.; *L. stagnalis*, Linn., and *L. desidiosa*, Say; *Physa elliptica*, Lea; and *Planorbis trivolvis*, Say; the latter very large specimen, with the margin of the aperture expanded, like those from the Saint Lawrence River described by Mr. Whiteaves as *P. macrostomus*."

*Mr. John Wolf has described *Pyrgula scalariformis* from the Post Pliocene near Tazwell, Illinois River. Other minute species may be detected hereafter, when our rivers are more carefully explored, as in France a number of new species have rewarded the minute search of recent collectors.