STERKIANA

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FRONTISPIECE. DR. VICTOR STERKI. Pen and ink portrait by William Bruden, Museum of Zoology, University of Michigan. Drawn from a photograph reproduced in Annals of the Carnegie Museum, vol. XXII, No. 1, March 6, 1934.

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ANNOUNCEMENT

STERKIANA is named after Dr. Victor Sterki (1846-1933) of New Philadelphia, Ohio, famed for his work on the Sphaeriidae, Pupillidae, and Valloniidae. It is fitting that this serial should bear his name both because of his association with the Midwest and his lifelong interest in non-marine Mollusca.

The purpose of STERKIANA is to serve malacologists and paleontologists interested in the living and fossil non-marine Mollusca of North and South America by disseminating information in that special field. Since its resources are modest, STERKIANA is not printed by conventional means. Costs are kept at a minimum by utilizing various talents and services available to the Editor. Subscription and reprint prices are based on cost of paper and mailing charges.

STERKIANA accepts articles dealing with non-marine Mollusca of the Americas in English, French, or Spanish, the three official languages of North America. Contributors are requested to avoid descriptions of new species or higher taxa in this serial as the limited distribution of STERKIANA would probably prevent recognition of such taxa as validly published. Papers on distribution, ecology, and revised checklists for particular areas or formations are especially welcome but those on any aspect of non-marine Mollusca will be considered.

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PRECIO: 50¢ el número.

NOTES ON THE BONNEVILLE BASIN QUATERNARY MOLLUSCA COLLECTED BY RICHARD ELLSWORTH CALL IN THE U. S. GEOLOGICAL SURVEY-U. S. NATIONAL MUSEUM COLLECTIONS

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INTRODUCTION

In his "Quaternary and Recent Mollusca of the Great Basin" [1] R. E. Call [2] stated that "The material herein reported upon was derived in part from collections made by the Great Basin Division of the United States Geological Survey and in part from personal collections made under the auspices of the same organization." Dates of collection and collector are not indicated in Call's paper, and in many cases locality data are rather vague by modern standards.

Through the courtesy of Dr. Dwight W. Taylor, U.S. Geological Survey, I was able to spend a few hours studying some[3] of the Call material in Washington in June 1961. Examination of the original field labels partially clears up some of the ambiguity in the Call report.

BACKGROUND OF THE CALL REPORT

Before discussing the "Call Collection" itself it will be advantageous to present such background as can be pieced together from the Survey's annual reports for the period involved.

The Division of the Great Basin was established by the Survey in 1880 with G.K. Gilbert in charge.[4] At this time the Survey was engaged in studies on the Pleistocene of the midwest. Gilbert believed that the study of the ancient lakes of the Great Basin, which he had investigated during his tenure with the Wheeler and Powell surveys of the 70's, would throw independent light on the problem of climatal change during the Quaternary. He accordingly made the history of these ancient lakes a major subject for investigation by his Division.

Gilbert early recognized that the fauna of these lakes might contribute valuable data and collected samples of mollusks from the Basin sediments whenever possible. These specimens were submitted to R. E. Call for identification and study. "The questions suggested by his report," wrote Gilbert,[5] "are of such nature as to indicate that the invertebrate faunas of Lakes Bonneville and Lahontan should be studied together, and in connection with the modern fauna of the region and this study he has consented to prosecute . . . spending a few weeks in the field to familiarize himself with the geologic relations of the fossiliferous strata."

Gilbert's suggestion that the fossil faunas should be compared with the modern (Holocene) ones, and the submission of the specimens to an experienced field malacologist who would be made familiar with the stratigraphic condition reveals an insight far in advance of his time.

The Great Basin Division was in existence only between 1880 and 1883.[6] Some office work was done in Washington in 1884-85, devoted

to the preparation of final reports.(7) All field work was done within the period indicated above. A Divisional office was established in Salt Lake City in 1880, staffed by Gilbert, I.C. Russell, H.A. Wheeler, Gilbert Thompson, Albert L. Webster, R.E. Gill, and Frederick D. Owen. The field work for 1880, divided between two parties, involved sites in Jordan, Utah, Rush, Cedar, Tooele valleys, part of the overland stage road to Old River Bed, the north shore of Sevier Lake, Preuss valley, and the Escalante Desert. Later in the year Russell, Wheeler and Webster visited localities in Cache valley and examined deltas at Logan, Box Elder, and Ogden rivers. Russell visited the point of overflow of Lake Bonneville at Red Rock Pass, while Thompson did work in the vicinity of Drum Mt., House Range, Deep Creek settlement, Tecoma, Terrace Station, Kelton, and Cache and Gentile valleys.(8) Field work in 1881 and 1882 was largely confined to Nevada.(9) In July 1883, the final year of the Division, Gilbert and Call spent some time in the Bonneville Basin together.(10)

THE CALL COLLECTION

The material here referred to as the "Call Collection" consists of two drawers of specimens labeled "Call's Types" housed among the Survey collections in Dr. Taylor's office in the Natural History building of the National Museum. Despite the label no primary type material is present.(11) Most of the lots in the collection bear printed labels reading as follows:

Field Label
United States Geological Survey
Division of the Great Basin
No_____ Date_____ 188_
Locality_____
Collector_____

A few lots bear labels of the Powell Survey, reading:

United States Geological and Geographical Survey
of the Colorado River
J. W. Powell in charge

Dates are not always filled in, and there are a number of the lots which do not indicate the name of the collector. It is possible that much, if not all, of this latter material was obtained by Call himself, perhaps during the 1883 trip with Gilbert.

The following notes follow the systematic arrangement of Call's 1884 report. Only the Bonneville Basin material is included as time did not permit a study of the Lahontan specimens. Data not included by Call are indicated by special brackets: ⌈ ⌉.

MARGARITANA MARGARITIFERA L. (= Margaritifera margaritifera L.)
⌈ Smithsonian No. 102560. Port Neuf River, Idaho. ⌉ No date or collector. The specimen is Holocene.

ANODONTA NUTTALLIANA Lea
⌈ Smithsonian No. 102558. Sevier River, Utah. ⌈I I.C.⌉ ⌈Russell.⌉ No date. Specimen is Holocene.

⌈ Smithsonian No. 111557. Sevier River, Utah. ⌈I.C.⌉ Russell, 1881. Specimen is Holocene.

Call remarks that specimens were dredged in Utah Lake in August 1883, but none of these are present in the Survey material.

SPHAERIUM DENTATUM Haldeman (probably = S. striatinum Lamarck)
⌈ Smithsonian No. 111670⌉ Two lots bear this number:
(a). Sevier Desert ⌈G.K.⌉ ⌈ Gilbert.⌉ No date. Post-Bonneville.
(b). Sevier Desert, ⌈ 10 mi. west of Deseret. H. A. Wheeler. ⌉ No date. Post-Bonneville.

= Smithsonian No. 111671. Banks of Sevier River, 5 mi. west of Deseret. ⊨ [G. K.]Gilbert. No date. Post-Bonneville.

HELISOMA TRIVOLVIS Say (= H. subcrenatum (Carpenter)
= Smithsonian No. 111668. ⊨ Three lots bear this number:
(a). Sevier Desert, = 10 mi. west of Deseret. H. A. Wheeler, 1880 ⊨ Post-Bonneville.
(b). Sevier Desert [I. C.] = Russell. ⊨ No date. Post-Bonneville.
(c). Sevier Desert = G. K. Gilbert. ⊨ No date. Post-Bonneville.
= Smithsonian No. 111706. Banks of Sevier River, 5 mi. west of Deseret. ⊨ [H. A.] =Wheeler, 1880 ⊨ Post-Bonneville.
= Smithsonian No. 111713 ⊨ Near Salt Spring Creek. [G. K.] = Gilbert ⊨ No date. Upper Bonneville.

GYRAULUS PARVUS (Say)
= Smithsonian No. 111681. Sevier Desert. G. K. Gilbert. ⊨ No date. Post-Bonneville.
= Smithsonian No. 111697. ⊨ Same data.
= Smithsonian No. 111705. ⊨ Same data.
In the text Call (p. 370) cites this species as from a single locality, "living in a small pond at Fort Douglas, near Salt Lake City," but in his table 3 (p. 378) he cites it as "Post-Bonneville, semi-fossil."

LIMNAEA STAGNALIS L. (Lymnaea stagnalis L.).
= Smithsonian No. 111743. ⊨Sevier Desert, = 10 mi. west of Deseret. ⊨ No date or collector. Post-Bonneville.

LIMNOPHYSA PALUSTRIS Müller (= Lymnaea palustris (Müller))
= Smithsonian No. 102574. Brackish springs near Saylow I spelling? I Ranch, Promontory, Utah. ⊨ [G. K.] = Gilbert. ⊨ No date.
= Smithsonian No. 102575. Skeen's Ranch, Promontory, Utah. ⊨ [G. K.] = Gilbert. ⊨ No date.
= Smithsonian No. 111673. ⊨ Two lots bear this number:
(a). Sevier Desert, Utah. [I. C.] = Russell ⊨ No date. Post-Bonneville.
(b). Sevier Desert, = 10 mi. west of Deseret. [H. A.] Wheeler, 1880. ⊨ Post-Bonneville.
= Smithsonian No. 111712. ⊨ Near Salt Spring, Utah. [G. K.] = Gilbert. ⊨ No date. Upper Bonneville.
= Smithsonian No. 111737. Banks of Sevier River, 5 mi. west of Deseret. H. A. Wheeler, 1881. ⊨ Post-Bonneville.

LIMNOPHYSA BONNEVILLENSIS Call (= Lymnaea bonnevillensis (Call))
= Smithsonian No. 111675. ⊨ Near Willow Springs, Utah. = G. K. Gilbert. ⊨ No date. Upper Bonneville.
= Smithsonian No. 111682. Mouth of Judd Creek [Utah or Nevada?] G.K. Gilbert. ⊨
= Smithsonian No. 111683. Matlan Pass [Nev.?] G. K. Gilbert. ⊨ No date. Upper Bonneville?
= Smithsonian No. 111686. ⊨ Kelton, Utah. [G. K.] Gilbert ⊨ No date. [Topotypes]. Upper Bonneville.
= Smithsonian No. 111696. ⊨ Utah. = G. K. Gilbert. ⊨ No date. Upper Bonneville.
= Smithsonian No. 111698. Station Butte, Utah. [G. K.] Gilbert. ⊨ No date. Bonneville tufa.
= Smithsonian No. 111700. Base of Lava bed, Hot Springs, Utah. [G. K.] Gilbert. ⊨ Upper Bonneville.
= Smithsonian No. 111704. ⊨ Fish Spring Valley, Utah, = from top of "Yellow Clay" near Center Butte. [G. K.] Gilbert, Dec. 16, 1879. ⊨ Upper Bonneville. [Label is of Powell Survey.]
= Smithsonian No. 11707. Near Willow Creek, Utah. = G. K. Gilbert. ⊨ No date. Upper Bonneville.

PHYSA GYRINA Say
= Smithsonian No. 102576. Brackish Springs, Promontory, Utah. [G. K.] Gilbert. ⊨ No date.

⊣ Smithsonian No. 102577. Skeen's Ranch, Promontory, Utah. G. K. Gilbert. ⊢ No date.

⊣ Smithsonian No. 111711. ⊢ Near Salt Springs, Utah. [G. K.] Gilbert. No date. Upper Bonneville.

PHYSA HETEROSTROPHA Say

⊣ Smithsonian No. 111690. Near Willow Springs, Utah. [G. K.] Gilbert. ⊢ No date.

⊣ Smithsonian No. 111751. ⊢ Sevier Desert, ⊣ 10 mi. west of Deseret. ⊢ [H. A.] Wheeler. No date. Post-Bonneville.

PHYSA LORDI Baird

⊣ Smithsonian No. 111732. ⊢ Sevier Desert, Utah. [I. C.] Russell. No date. Post-Bonneville.

VALVATA VIRENS Tryon (= V. humeralis (Say))

⊣ Smithsonian No. 111672. ⊢ Sevier Desert, Utah. ⊣ G. K. Gilbert ⊢ No date. Post-Bonneville.

⊣ Smithsonian No. 111678. ⊢ Sevier Desert, Utah. No date or collector. Post-Bonneville.

⊣ Smithsonian No. 111693. ⊢ Sevier Desert, Utah. G. K. Gilbert. No date. Post-Bonneville. [Original label reads Valvata sincera Say].

VALVATA SINCERA var. UTAHENSIS Call (= V. utahensis Call).

⊣ Smithsonian No. 111703. Sevier Desert, Utah. G. K. Gilbert. ⊢ No date. Post-Bonneville. [Original label reads Valvata virens var. utahensis. Call].

In addition to the above there are also 45 lots of unidentified and uncataloged material. Some of these carry field numbers or the designation "Section _____ No. _____". The following 7 lots are from the Bonneville Basin.

[Carinifex.] Rush Valley surface, near Warm Springs.

[Lymnaea.] White Marl below P.B. [Provo Bench?] G. [Gilbert?] Sept. 7, 1880.

[Lymnaea.] Lake beds of bars NN Preuss Valley. G. K. G [ilbert]. Sept. 7, 1880.

[Lymnaea.] Old River Bed, near mouth of Judd Creek. No date or collector.

[Amnicola.] White marl below P. B. [Provo Bench?] G. [ilbert?] Sept. 7, 1880.

[Amnicola.] Field No. 5304. Old River Bed above purple volcanic sand. G. K. G. [ilbert]. No date.

[Valvata.] Field No. 5304. 3 vials. Old River Bed near mouth of Judd Creek. No date or collector.

REFERENCES AND NOTES

(1) U. S. Geol. Survey, Bull. 11, 1884, pp. 355-419.

(2) It is regrettable that so few biographical data are seemingly available on Call. He did pioneer work on the mollusks of Indiana, Iowa, and Kansas. His work in Iowa constituted the first on the molluscan fauna of the extensive loess deposits in that state. From Stephen S. Visher's "Indiana Scientists" (Ind. Acad. Sci., 1951) I have obtained the following data.

Born Brooklyn, N. Y., May 13, 1856, died 1917. A. B., Indiana 1890; A. M., 1891; M. D., Hospital College of Medicine, Louisville, Ky., 1893; Ph. D. Ohio (Athens), 1895. Supt. schools, Lawrenceburg, Indiana, 1895-98; N. Y. city high schools, 1898-1917.

From Call's published work it becomes evident that he was largely interested in mollusks as living organisms in their natural environment. More than once he speaks out against the "closet naturalist," mentioning in particular the "Philadelphia school," perhaps a distant rumbling of the Cope-Marsh-Hayden feud. Call's systematic work seems on the conservative side, probably the result of his being well aware of the contrast in variation as encountered in the field and in selected museum lots. Nothing is apparently known as to Gilbert's reasons for the selection of Call to study the Bonneville material. There may be correspondence in the U.S.G.S. files

which would throw light on this point.

(3) Most of the Call Collection is now at the Museum of Comparative Zoology, Harvard University (W. J. Clench, personal communication). According to D. W. Taylor (personal communication, Oct. 4, 1963) there is "in more than one case a holotype in Cambridge and a holotype in Washington for the same species." How much Pleistocene Great Basin material is present at MCZ is unknown to me at this writing.

(4) Second Annual Report for 1880-81 (1882).

(5) Fourth Annual Report for 1882-83 (1884).

(6) Fifth Annual Report for 1883-84 (1885).

(7) Sixth Annual Report for 1884-85 (1885).

(8) Second Annual Report for 1880-81 (1882).

(9) Third and 4th Annual Reports for 1881-82 (1883) and 1882-83 (1884).

(10) Fifth Annual Report for 1883-84 (1885).

(11) Call's primary type material is apparently distributed between the National Museum and the MCZ. Cf. Note 3. In U.S.G.S. Bull. 11 Call described four new taxa from the Great Basin. In volume 5 of the Proceedings of the Davenport Academy of Natural Sciences he redescribed these forms, elevating two to full specific rank.

Bull. 11 (1884)	Davenport Acad. (1886)
Valvata sincera var. utahensis nov. var.	Valvata utahensis sp. nov.
Amnicola dalli sp. nov.	Amnicola dalli sp. nov.
Radix ampla var. utahensis var. nov.	Radix utahensis sp. nov.
Limnophysa bonnevillensis sp. nov.	Limnophysa bonnevillensis sp. nov.

BIBLIOGRAPHIC ABBREVIATIONS, A SUGGESTION

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The abbreviated citation of periodicals and books in scientific literature has developed into a jargon which few of us can understand completely. All writers who must cite literature have had some difficulty in concocting understandable abbreviations, but not with uniform success. Various style books and bibliographic publications have attempted to standardize abbreviations but they are far from general agreement. This state of affairs results in a number of inconveniences which it should be possible to eliminate; to name but a few: (1) waste of authors' time in checking abbreviations to fit the style of the publication to which they intend to submit a paper; (2) waste of editors' time in standardizing abbreviations in manuscripts submitted; (3) puzzlement of the reader who tries to decipher such cryptic messages as: "Moscow, Gosudar. Nauch.-Tekh. Izd. Neft. i Gorno-Topliv. Lit."; (4) difficulties in tracing a paper in libraries when a citation is incomplete or faulty - especially when a paper is sought on interlibrary loan; (5) the unnecessarily large amount of space needed to list references, even in abbreviated form, in scientific papers.

Most scientists would agree that when a title is cited it must be given in full. On the other hand, we have been truncating the names of periodicals for so long and with such impunity that we might be ready to accept the even more radical method proposed here.

The principle of this method is extremely simple: All abbreviations of books and periodicals shall consist of four capital letters followed by volume or part number, a colon, and citations of pages and illustrations.

For example, instead of "Abh. Archiv f. Molluskenk., 2: 1-20" we would write "AAFM 2: 1-20" and refer to a list of abbreviations for the full meaning of "AAFM."

During the past few years, I have experimented off and on with this system and have found it quite practical. It is similar, of course, to such systems as that used to designate libraries in the "Union Catalogue of Serial Publications" and to library call numbers.

As an example of how this would work in our field, the appended list of abbreviations may be of interest. It is far from complete but it covers many of the periodicals frequently cited in malacological literature. I have compiled a much more extensive list which I plan to publish elsewhere later.

LIST OF ABBREVIATIONS FOR MALACOLOGICAL PERIODICALS

AAFM: Abhandlungen des Archivs für Molluskenkunde. Frankfurt-am-Main.

ADMP: Annales de Malacologie, Paris.

AFMK: Archiv für Molluskenkunde. Frankfurt-am-Main.

AGMM: American Geologist.

AGPG: Annales de Géologie et de Paléontologie, publiées sous la direction du Marquis Antoine de Gregorio. Palermo.

AINT: Albany Institute, Transactions. Albany, N.Y.

AJOC: American Journal of Conchology. Philadelphia.

AJSY: American Journal of Science. New Haven, Conn.

(CONTINUED ON PAGE 18)

SOME PLEISTOCENE LAND SNAIL RECORDS FROM MISSOURI AND ILLINOIS

LESLIE HUBRICHT

3235 - 23rd Ave., Meridian, Mississippi 39303

The records listed here are based on collections made between 1933 and 1940 while the author was a resident of St. Louis, Missouri. The numbers following the species names are the number of specimens collected. These numbers are available only for some localities.

The talus deposits have been largely ignored in the past. The conchologists have not collected the fossils because they were dead shells, and the paleontologists have not collected them because the formation could not be accurately dated. With modern C-14 dating techniques this latter objection is no longer valid. Talus deposits provide a history of species of snails whose habitat requirements prevented them from being preserved in loess. Talus also provides a record of species in areas in which there is no loess. It is only through talus deposits that we know that Hendersonia occulta (Say) lived in central Kentucky and Tennessee during Pleistocene time.

Fifty species were found in the loess and 67 species found in the talus in the vicinity of St. Louis, a total of 71 species (excluding the Fox Creek Gap locality). Sixteen of these species are not found in the vicinity of St. Louis at the present time. Of these, 3 are extinct or not recognizable, 3 are now found only at high elevations in the Rocky Mountains, the remaining species are living in the northern United States and southern Canada. Most of the species which are still living in the vicinity of St. Louis today range farther north, in most cases at least into southern Michigan. From these data it is concluded that the climate at the time these deposits were laid down was colder than at present, probably about like the climate of southern Michigan today.

MISSOURI

1. BOONE CO.: talus, Providence.
Stenotrema barbatum (Clapp)
Stenotrema stenotrema (Pfeiffer)
Stenotrema leai aliciae (Pilsbry)
Stenotrema fraternum fraternum (Say)
Mesodon thyroidus (Say)
Mesodon clausus (Say)
M. pennsylvanicus (Green)
M. elevatus (Say)
M. inflectus (Say)
Triodopsis fosteri fosteri (F.C. Baker)
T. alleni (Wetherby)
Allogona profunda (Say)
Haplotrema concavum (Say)
Glyphyalinia indentata (Say)
Paravitrea significans (Bland)
Zonitoides arboreus (Say)
Anguispira alternata alternata (Say)

Anguispira kochi kochi (Pfeiffer)
Discus patulus patulus (Deshayes)
Helicodiscus notius notius (Hubricht)
H. jacksoni Hubricht
H. singleyanus (Pilsbry)
Strobilops labyrinthica (Say)
Gastrocopta armifera armifera (Say)
G. contracta contracta (Say)
G. holzingeri agna (Pilsbry)
G. pentodon (Say)
G. procera procera (Gould)
Pupoides albilabris (C. B. Adams)
Vertigo milium (Gould)
Vallonia parvula Sterki
V. gracilicosta Reinhardt
Carychium exile H. C. Lea

2. CALLAWAY CO.: talus, 1 mile north of Cedar City.
Stenotrema leai leai (Ward)
Mesodon thyroidus (Say)
M. elevatus (Say)
M. inflectus (Say)
Triodopsis fosteri fosteri (F. C. Baker)
Haplotrema concavum (Say)
Glyphyalinia indentata (Say)
Zonitoides arboreus (Say)
Anguispira alternata alternata (Say)
A. kochi kochi (Pfeiffer)
Helicodiscus parallelus (Say)
Strobilops labyrinthica (Say)

3. ST. CHARLES CO.: talus, 3 miles south of Harvester.
Polygyra dorfeuilliana Lea
Stenotrema barbatum (Clapp)
S. fraternum fraternum (Say)
Mesodon clausus (Say)
M. pennsylvanicus (Green)
M. elevatus (Say)
M. inflectus (Say)
Triodopsis fosteri fosteri (F.C. Baker)
T. alleni (Wetherby)
T. multilineata (Say)
Allogona profunda (Say)
Haplotrema concavum (Say)
Nesovitrea electrina (Gould)
Glyphyalinia indentata (Say)
Ventridens ligerus (Say)
Zonitoides arboreus (Say)
Anguispira alternata alternata (Say)
A. kochi kochi (Pfeiffer)
Discus patulus patulus (Deshayes)
Helicodiscus notius notius Hubricht
Gastrocopta armifera armifera (Say)
Vallonia parvula Sterki
Hendersonia occulta (Say)

4. ST. CHARLES CO.: loess, 2.5 miles northwest of St. Charles.
Stenotrema barbatum (Clapp)
Triodopsis multilineata (Say)
Haplotrema concavum (Say)
Glyphyalinia indentata (Say)
Euconulus fulvus fulvus (Müller)
Hawaiia minuscula minuscula (Binney)
Anguispira alternata alternata (Say)
Discus cronkhitei (Newcomb)
D. shimeki (Pilsbry)
D. macclintocki (F. C. Baker)
Succinea ovalis pleistocenica F.C.B.
Gastrocopta armifera armifera (Say)
Pupilla muscorum muscorum (Linné)
Vertigo hubrichti Pilsbry
V. modesta modesta (Say)
Columella alticola (Ingersoll)
Vallonia gracilicosta Reinhardt
Hendersonia occulta (Say)
Snail eggs (Discus).

5. St. CHARLES CO.: talus, 1 mile west of St. Charles.

Polygyra dorfeuilliana Lea	7
Stenotrema fraternum fraternum (Say)	1
Mesodon clausus (Say)	1
M. elevatus (Say)	88
M. inflectus (Say)	14
Triodopsis fosteri fosteri (FCB)	46
T. multilineata (Say)	18
Allogona profunda (Say)	12
Haplotrema concavum (Say)	3
Glyphyalinia indentata (Say)	4
Ventridens ligerus (Say)	1
Zonitoides arboreus (Say)	2

Zonitoides limatulus (Ward)	2
Anguispira alternata alternata (Say)	20
A. kochi kochi (Pfeiffer)	19
Helicodiscus parallelus (Say)	2
H. singleyanus (Pilsbry)	1
Gastrocopta armifera armifera (Say)	3
G. contracta contracta (Say)	1
Carychium exile H. C. Lea	1
Hendersonia occulta (Say)	1

6. FRANKLIN CO.: talus, 1 mile south-southwest of St. Albans.

Polygyra dorfeuilliana Lea
Stenotrema barbatum (Clapp)
Discus cronkhitei (Newcomb)
D. shimeki (Pilsbry)
D. macclintocki (F. C. Baker)
Hendersonia occulta (Say)

7. FRANKLIN CO.: talus, 1 mile southwest of Port Royal.

Stenotrema barbatum (Clapp)
S. fraternum fraternum (Say)
Mesodon inflectus (Say)
Triodopsis fosteri fosteri (F.C. Baker)
T. alleni (Wetherby)
Allogona profunda (Say)
Haplotrema concavum (Say)
Glyphyalinia indentata (Say)
Ventridens ligerus (Say)
Anguispira alternata alternata (Say)
Helicodiscus parallelus (Say)
Gastrocopta armifera armifera (Say)
Vallonia parvula Sterki
Cionella lubrica (Müller)
Hendersonia occulta (Say)

8. ST. LOUIS CO.: loess, Chesterfield.

Stenotrema barbatum (Clapp)
S. leai leai (Ward)
Mesodon elevatus (Say)
Triodopsis fosteri hubrichti (F.C.B.)
T. multilineata (Say)
Allogona profunda (Say)
Haplotrema concavum (Say)
Euconulus fulvus fulvus (Müller)
Nesovitrea electrina (Gould)
Zonitoides arboreus (Say)
Anguispira alternata alternata (Say)
Discus cronkhitei (Newcomb)
D. shimeki (Pilsbry)
D. macclintocki (F. C. Baker)
Helicodiscus parallelus (Say)
H. intermedius Morrison
Punctum minutissimum (Lea)
Succinea ovalis pleistocenica F.C.B.
Catinella gelida (F. C. Baker)
Gastrocopta tappaniana (C. B. Adams)
Pupilla muscorum muscorum (Linné)
Vertigo hubrichti Pilsbry
V. modesta modesta (Say)
Columella alticola (Ingersoll)
Vallonia gracilicosta Reinhardt
Hendersonia occulta (Say)
Snail eggs (Discus)

9. ST. LOUIS CO.: loess 3.3 miles east of Chesterfield.

Stenotrema barbatum (Clapp)
Triodopsis fosteri fosteri (F. C. Baker)
T. multilineata (Say)
Allogona profunda (Say)
Anguispira alternata alternata (Say)
Succinea bakeri Hubricht
Catinella gelida (F. C. Baker)
Hendersonia occulta (Say)

10. ST. LOUIS CO.: loess, on Lower Bottom Road, 1 mile east of Hine (formerly Mona).

Stenotrema barbatum (Clapp)	26
S. leai leai (Ward)	3
Triodopsis multilineata (Say)	6
Allogona profunda (Say)	2
Haplotrema concavum (Say)	8
Euconulus fulvus fulvus (Müller)	21
Nesovitrea electrina (Gould)	14
Zonitoides arboreus (Say)	16
Deroceras laeve (Müller)	2
Anguispira alternata alternata (Say)	5

Anguispira kochi kochi (Pfeiffer)	3
Discus cronkhitei (Newcomb)	85
D. shimeki (Pilsbry)	9
D. macclintocki (F. C. Baker)	100
Helicodiscus notius notius Hubricht	4
H. singleyanus (Pilsbry)	8
H. intermedius Morrison	3
Punctum minutissimum (Lea)	19
Succinea bakeri Hubricht	6
S. ovalis pleistocenica F.C. Baker	107
Catinella gelida (F. C. Baker)	19
Vertigo hubrichti Pilsbry	38
V. modesta modesta (Say)	305
Columella alticola (Ingersoll)	32
Vallonia gracilicosta Reinhardt	179
Carychium exile H. C. Lea	9
Hendersonia occulta (Say)	124
Snail eggs (Discus)	75
Snail egg (Anguispira or Haplotrema)	1

Fossil seeds of three species of borage were also found at this locality: Krynitzia coroniformis Elias, Biorbia fossilis Elias, and an unidentified species.

This is the type locality for Vertigo gouldi hubrichti Pilsbry which is here treated as a full species rather than a subspecies of V. gouldi (Binney). It was found with V. gouldi at two talus localities and could be readily distinguished, not only by the teeth, but by its smaller size and more slender form. The V. gouldi complex is much in need of study.

11. ST. LOUIS CO.: talus, 1 mile east of Hine.

Stenotrema barbatum (Clapp)	13
S. leai leai (Ward)	5
Mesodon thyroidus (Say)	2
M. clausus (Say)	6
M. pennsylvanicus (Green)	5
M. zaletus (Binney)	7
M. elevatus (Say)	15
M. inflectus (Say)	13
Triodopsis fosteri fosteri (F.C.B.)	29
T. alleni (Wetherby)	2
T. multilineata (Say)	1
Allogona profunda (Say)	20
Haplotrema concavum (Say)	9
Euconulus fulvus fulvus (Müller)	1
Nesovitrea electrina (Gould)	4
Glyphyalinia wheatleyi (Bland)	1
G. indentata (Say)	5
Paravitrea significans (Bland)	1
Ventridens ligerus (Say)	11
Zonitoides arboreus (Say)	5
Anguispira alternata alternata (Say)	1
A. kochi kochi (Pfeiffer)	12
Discus patulus patulus (Deshayes)	7
Helicodiscus parallelus (Say)	10
Succinea ovalis ovalis Say	1
Hendersonia occulta (Say)	9

12. ST. LOUIS CO.: loess, 0.5 mile south of Gumbo.

Discus cronkhitei (Newcomb)
D. macclintocki (F. C. Baker)
Succinea ovalis pleistocenica (F.C.B.)
Catinella gelida (F. C. Baker)
Vertigo hubrichti Pilsbry
V. modesta modesta (Say)
Hendersonia occulta (Say)

13. ST. LOUIS CO.: loess, 3.5 miles west of Pattonville.

Discus cronkhitei (Newcomb)
Succinea ovalis pleistocenica (F.C.B.)
Vertigo hubrichti Pilsbry
V. modesta modesta (Say)
Vallonia gracilicosta Reinhardt
Hendersonia occulta (Say)

14. ST. LOUIS CO.: loess, Garrett Road, 6 miles west of Florissant.

Stenotrema barbatum (Clapp)	4
Triodopsis multilineata (Say)	1
Haplotrema concavum (Say)	1
Euconulus fulvus fulvus (Müller)	2
Anguispira alternata alternata (Say)	6
Discus cronkhitei (Newcomb)	1
Succinea ovalis pleistocenica F. C. Baker	7
Hendersonia occulta (Say)	6

15. ST. LOUIS CO.: loess, Charbonnier Road, 3.5 miles west of Florissant.

Stenotrema barbatum (Clapp)	4
Triodopsis multilineata (Say)	2
Allogona profunda (Say)	1
Haplotrema concavum (Say)	2
Nesovitrea electrina (Gould)	1
Anguispira alternata alternata (Say)	6
Discus cronkhitei (Newcomb)	3
D. macclintocki (F. C. Baker)	5
Helicodiscus notius notius Hubricht	2
Succinea ovalis pleistocenica F. C. Baker	10
S. bakeri Hubricht	7
Vertigo hubrichti Pilsbry	7
V. modesta modesta (Say)	9
Columella alticola (Ingersoll)	1
Vallonia gracilicosta Reinhardt	2
Hendersonia occulta (Say)	16

16. ST. LOUIS CO.: loess, Charbonnier Road, 4 miles west of Florissant. At this locality there is a layer of fossil wood in the loess. The shells were collected just above this layer.

Triodopsis multilineata (Say)	fragments
Haplotrema concavum (Say)	2
Deroceras laeve (Müller)	1
Carychium exile H. C. Lea	3
Hendersonia occulta (Say)	3
Pomatiopsis lapidaria (Say)	16

17. ST. LOUIS CO.: loess, Musicks Ferry.

Stenotrema barbatum (Clapp)	46
S. leai leai (Ward)	28
Triodopsis multilineata (Say)	39
Allogona profunda (Say)	69
Haplotrema concavum (Say)	35
Euconulus fulvus fulvus (Müller)	7
Nesovitrea electrina (Gould)	4
Glyphyalinia indentata (Say)	1
Zonitoides arboreus (Say)	5
Deroceras laeve (Müller)	1
Anguispira alternata alternata (Say)	68
A. kochi kochi (Pfeiffer)	2
Discus cronkhitei (Newcomb)	31
D. shimeki (Pilsbry)	3
D. macclintocki (F.C. Baker)	41
Helicodiscus notius notius Hubricht	7
H. singleyanus (Pilsbry)	3
H. intermedius Morrison	2
Punctum minutissimum (Lea)	7
Succinea ovalis pleistocenica F. C. Baker	5
S. bakeri Hubricht	171
Catinella gelida (F. C. Baker)	14
Vertigo hubrichti Pilsbry	12
V. modesta modesta (Say)	162
Columella alticola (Ingersoll)	22
Vallonia gracilicosta Reinhardt	41
Hendersonia occulta (Say)	231
Snail eggs (Discus)	6
Snail eggs (Haplotrema or Anguispira)	2

18. ST. LOUIS CO.: talus, Musicks Ferry.

Stenotrema fraternum fraternum (Say)	8
Mesodon thyroidus (Say)	2
M. clausus (Say)	16
M. zaletus (Binney)	11
M. elevatus (Say)	15
M. inflectus (Say)	102
Triodopsis fosteri fosteri (F.C.B.)	8
T. alleni (Wetherby)	16
Allogona profunda (Say)	3
Haplotrema concavum (Say)	12
Glyphyalinia indentata (Say)	32
Mesomphix friabilis (W.G. Binney)	1
Paravitrea significans (Bland)	7
Ventridens ligerus (Say)	7
Zonitoides arboreus (Say)	5
Striatura meridionalis (Pilsbry & Ferriss)	5
Anguispira alternata alternata (Say)	54
A. kochi kochi (Pfeiffer)	36
Discus patulus patulus (Deshayes)	5
Helicodiscus notius notius Hubricht	50
H. singleyanus (Pilsbry)	15
H. intermedius Morrison	3
H. jacksoni Hubricht	7
Punctum minutissimum (Lea)	4

Succinea ovalis ovalis (Say)	1
Catinella gelida (F.C. Baker)	1
Strobilops labyrinthica (Say)	23
S. aenea Pilsbry	1
Gastrocopta armifera armifera (Say)	39
G. contracta contracta (Say)	65
G. pentodon (Say)	2
G. procera procera (Gould)	2
G. corticaria (Say)	1
Vertigo hubrichti Pilsbry	1
Carychium exile H. C. Lea	11

19. ST. LOUIS CO.: silt, Mill Creek, 3 miles east of Musicks Ferry.

Stenotrema barbatum (Clapp)	4
Mesodon elevatus (Say)	1
Triodopsis fosteri fosteri (F.C.B.)	10
T. alleni (Wetherby)	10
Allogona profunda (Say)	6
Haplotrema concavum (Say)	4
Nesovitrea electrina (Gould)	7
Zonitoides arboreus (Say)	2
Anguispira alternata alternata (Say)	1
Discus cronkhitei (Newcomb)	1
Helicodiscus notius notius Hubricht	3
Oxyloma retusa (Lea)	2
Catinella gelida (F. C. Baker)	5
Gastrocopta contracta contracta (Say)	1
Vertigo hubrichti Pilsbry	3
V. modesta modesta (Say)	5
Hendersonia occulta (Say)	15
Pomatiopsis lapidaria (Say)	25

The following freshwater species were found at this locality.

Lymnaea stagnalis (Linné)		2
L. parva (Say)		2
Helisoma anceps (Menke)		8
H. campanulatum (Say)		2
Gyraulus altissimus (F. C. Baker)		74
Physa gyrina (Say) ?		3
Valvata tricarinata (Say)		58
V. sincera (Say) ?		1
Sphaerium simile (Say)	(valves)	14
Pisidium spp.	(valves)	75

20. ST. LOUIS CO.: talus, Fox Creek Gap, 1 mile west of Allenton. This is probably the oldest deposit recorded here. The rock fragments are much eroded without sharp edges. It contains several species of southern distribution not found in other deposits. Three of the species have not been found elsewhere in eastern Missouri. These species are: Triodopsis vulgata (all other records for this species are based on Triodopsis discoidea), Stenotrema stenotrema nudum, and Helicina orbiculata orbiculata.

Polygyra leporina (Gould)	1
P. dorfeuilliana Lea	271
Stenotrema stenotrema nudum (Pilsbry)	2
S. leai aliciae (Pilsbry)	25
Mesodon thyroidus (Say)	1
M. elevatus (Say)	1
M. inflectus (Say)	33
Triodopsis vulgata Pilsbry	3
T. fosteri fosteri (F. C. Baker)	1
Allogona profunda (Say)	2
Bulimulus dealbatus dealbatus (Say)	20
Haplotrema concavum (Say)	3
Glyphyalinia wheatleyi (Bland)	4
G. indentata (Say)	3
Mesomphix friabilis (W.G. Binney)	6
Zonitoides limatulus (Ward)	1
Anguispira alternata alternata (Say)	1
Discus patulus patulus (Deshayes)	1
Helicodiscus notius notius Hubricht	36
H. intermedius Morrison	1
Succinea ovalis ovalis Say	1
Catinella gelida (F.C. Baker)	2
Strobilops labyrinthica (Say)	1
Gastrocopta armifera armifera (Say)	11
G. contracta contracta (Say)	8
Pupoides albilabris (C.B. Adams)	1
Hendersonia occulta (Say)	1
Helicina orbiculata orbiculata (Say)	4

21. ST. LOUIS CO.: talus, near Fern Glen.

Polygyra dorfeuilliana Lea	8
Stenotrema barbatum (Clapp)	10
S. leai aliciae (Pilsbry)	2
Mesodon thyroidus (Say)	8
M. clausus (Say)	8
M. pennsylvanicus (Green)	12
M. zaletus (Binney)	5
M. elevatus (Say)	5
M. inflectus (Say)	2
Triodopsis discoidea (Pilsbry)	246
T. fosteri fosteri (F. C. Baker)	145
T. alleni (Wetherby)	9
Allogona profunda (Say)	29
Haplotrema concavum (Say)	56
Guppya sterkii (Dall)	3
Euconulus fulvus fulvus (Müller)	3
Glyphyalinia wheatleyi (Bland)	27
G. indentata (Say)	115
Mesomphix friabilis (W.G. Binney)	27
Paravitrea significans (Bland)	7
Ventridens ligerus (Say)	1
Zonitoides arboreus (Say)	17
Z. limatulus (Ward)	30
Anguispira alternata alternata (Say)	60
A. kochi kochi (Pfeiffer)	83
Discus patulus patulus (Deshayes)	2
D. macclintocki (F. C. Baker)	31
Helicodiscus parallelus (Say)	ca. 500
H. singleyanus (Pilsbry)	295
H. intermedius Morrison	20
H. jacksoni Hubricht	14
Punctum minutissimum (Lea)	308
Succinea ovalis ovalis Say	5
Catinella gelida (F. C. Baker)	16
Strobilops labyrinthica (Say)	30
S. aenea Pilsbry	2
Gastrocopta armifera armifera (Say)	ca. 500
G. contracta contracta (Say)	ca. 500
G. holzingeri agna (Pilsbry)	ca. 4000
G. pentodon (Say)	ca. 850
G. procera procera (Gould)	30
G. corticaria (Say)	13
Pupoides albilabris (C.B. Adams)	44
Pupilla muscorum muscorum (Linné)	1
Vertigo tridentata (Wolf)	28
V. ventricosa Morse	47
V. gouldi (Binney)	25
V. hubrichti Pilsbry	4
V. modesta modesta (Say)	1
Vallonia parvula Sterki	ca. 1350
V. gracilicosta Reinhardt	5
Carychium exile H. C. Lea	ca. 1700
Hendersonia occulta (Say)	44
Snail eggs (Discus)	5
Snail egg (Anguispira or Haplotrema)	1

22. ST. LOUIS CO.: talus, near Cliff Cave.

Stenotrema barbatum (Clapp)	62
S. fraternum fraternum (Say)	11
Mesodon thyroidus (Say)	57
M. clausus (Say)	12
M. pennsylvanicus (Green)	19
M. zaletus (Binney)	38
M. elevatus (Say)	79
M. inflectus (Say) (1 sinistral)	175
Triodopsis fosteri fosteri (F. C. Baker)	206
T. alleni (Wetherby)	139
T. multilineata (Say)	9
Allogona profunda (Say)	30
Haplotrema concavum (Say)	75
Euconulus chersinus chersinus (Say)	6
Nesovitrea electrina (Gould)	8
Glyphyalinia indentata (Say)	46
Mesomphix friabilis (W.G. Binney)	32
Paravitrea significans (Bland)	6
Ventridens ligerus (Say)	8
Zonitoides limatulus (Ward)	5
Anguispira alternata alternata (Say)	127
A. kochi kochi (Pfeiffer)	85
Discus patulus patulus (Deshayes)	1
Helicodiscus notius notius Hubricht	30
H. singleyanus Pilsbry	19
H. intermedius Morrison	1
H. jacksoni Hubricht	12
Punctum minutissimum (Lea)	20
Succinea bakeri Hubricht	2
Strobilops labyrinthica (Say)	230

Strobilops aenea Pilsbry	1
Gastrocopta armifera armifera (Say)	52
G. contracta contracta (Say)	113
G. holzingeri agna (Pilsbry)	25
G. pentodon (Say)	77
G. procera procera (Gould)	29
G. corticaria (Say)	13
Pupoides albilabris (C. B. Adams)	43
Vertigo milium (Gould)	12
V. tridentata (Wolf)	20
V. gouldi (Binney)	4
V. hubrichti Pilsbry	3
Columella edentula (Draparnaud)	2
Vallonia parvula Sterki	32
V. gracilicosta Reinhardt	11
Carychium exile H. C. Lea	42
Snail eggs (Anguispira kochi)	2

23. JEFFERSON Co.: talus, 2 miles southeast of Selma.

Stenotrema barbatum (Clapp)
S. fraternum fraternum (Say)
Mesodon thyroidus (Say)
M. zaletus (Say)
M. inflectus (Say)
Triodopsis discoidea (Pilsbry)
T. fosteri fosteri (F. C. Baker)
Allogona profunda (Say)
Haplotrema concavum (Say)
Glyphyalinia indentata (Say)
Ventridens ligerus (Say)
Discus patulus patulus (Deshayes)

ILLINOIS

24. MADISON CO.: talus, 2 miles northwest of Alton.

Stenotrema barbatum (Clapp)
Mesodon thyroidus (Say)
M. pennsylvanicus (Green)
M. elevatus (Say)
M. inflectus (Say)
Triodopsis fosteri fosteri (F. C. Baker)
T. alleni (Wetherby)
Allogona profunda (Say)
Haplotrema concavum (Say)
Guppya sterkii (Dall)
Glyphyalinia indentata (Say)
Paravitrea significans (Bland)
Hawaiia minuscula (Binney)
Zonitoides arboreus (Say)
Z. limatulus (Ward)
Anguispira alternata alternata (Say)
Helicodiscus notius notius Hubricht
H. singleyanus (Pilsbry)
H. intermedius Morrison
H. jacksoni Hubricht
Punctum minutissimum (Lea)
Catinella gelida (F. C. Baker)
Strobilops labyrinthica (Say)
Gastrocopta armifera armifera (Say)
G. contracta contracta (Say)
G. holzingeri agna (Pilsbry)
G. pentodon (Say)
G. corticaria (Say)
G. procera procera (Gould)
Pupoides albilabris (C. B. Adams)
Vertigo tridentata (Wolf)
Vallonia perspectiva Sterki
Carychium exile H. C. Lea
Hendersonia occulta (Say)
Snail eggs (Discus)

25. MADISON CO.: silt, 1 mile northeast of Collinsville.

Mesodon elevatus (Say)	2
Glyphyalinia indentata (Say)	1
Zonitoides arboreus (Say)	4
Anguispira alternata alternata (Say)	1
Discus cronkhitei (Newcomb)	2
D. macclintocki (F. C. Baker)	2
Helicodiscus parallelus (Say)	19
H. singleyanus (Pilsbry)	25
H. roundyi (Morrison)	3
Succinea bakeri Hubricht	15
Catinella gelida (F. C. Baker)	2
Gastrocopta armifera armifera (Say)	16
G. contracta contracta (Say)	3
G. procera procera (Gould)	26
Pupoides albilabris (C.B. Adams)	80

26. MADISON CO.: loess, near Collinsville.

Stenotrema barbatum (Clapp)	117
S. leai leai (Ward)	31
S. fraternum fraternum (Say)	4
Mesodon pennsylvanicus (Green)	1
M. elevatus (Say)	4
Triodopsis fosteri fosteri (F.C.B.)	3
T. multilineata (Say)	90
Allogona profunda (Say)	137
Haplotrema concavum (Say)	9
Euconulus fulvus fulvus (Müller)	19
Nesovitrea electrina (Gould)	53
Glyphyalinia indentata (Say)	3
Mesomphix friabilis (W.G. Binney)	1
Ventridens ligerus (Say)	4
Zonitoides arboreus (Say)	3
Striatura milium (Morse)	17
Deroceras laeve (Müller)	3
Anguispira alternata alternata (Say)	163
A. kochi kochi (Pfeiffer)	27
Discus cronkhitei (Newcomb)	32
D. macclintocki (F. C. Baker)	285
Helicodiscus notius notius Hubr.	16
H. singleyanus (Pilsbry)	11
H. intermedius Morrison	3
Punctum minutissimum (Lea)	1
Succinea ovalis pleistocenica F. C. Baker	2
Succinea bakeri Hubricht	ca. 200
Catinella gelida (F. C. Baker)	28
Strobilops labyrinthica (Say)	27
Gastrocopta armifera armifera (Say)	10
G. contracta contracta (Say)	2
G. holzingeri agna (Pilsbry)	1
G. procera procera (Gould)	1
G. tappaniana (C. B. Adams)	14
Pupoides albilabris (C. B. Adams)	9
Vertigo elatior Sterki	ca. 200
V. hubrichti Pilsbry	5
V. modesta modesta (Say)	93
Columella alticola (Ingersoll)	84
Vallonia gracilicosta Reinhardt	7
Cionella lubrica (Müller)	2
Carychium exile H. C. Lea	90
Hendersonia occulta (Say)	359
Pomatiopsis lapidaria (Say)	10
Snail eggs (Discus)	4
Snail eggs (Anguispira or Haplotrema)	2

27. ST. CLAIR CO.: loess, near Centerville: At this locality there is a stratum of fossiliferous limestone from one to two inches thick in the loess. The fossils are the same as those in the loess.

Stenotrema barbatum (Clapp)	37
S. leai leai (Ward)	11
Triodopsis fosteri fosteri (F. C. Baker)	3
T. multilineata (Say)	28
Allogona profunda (Say)	34
Haplotrema concavum (Say)	7
Euconulus fulvus fulvus (Müller)	11
Nesovitrea electrina (Gould)	31
Ventridens ligerus (Say)	1
Striatura milium (Morse)	9
Deroceras laeve (Müller)	10
Anguispira alternata alternata (Say)	32
A. kochi kochi (Pfeiffer)	5
Discus cronkhitei (Newcomb)	15
D. macclintocki (F. C. Baker)	47
Helicodiscus notius notius Hubr.	5
H. intermedius Morrison	2
Punctum minutissimum (Lea)	4
Succinea ovalis pleistocenica F. C. Baker	49
S. bakeri Hubricht	1
Catinella gelida (F. C. Baker)	4
Gastrocopta armifera armifera (Say)	1
G. tappaniana (C. B. Adams)	2
Pupoides albilabris (C. B. Adams)	1
Vertigo elatior Sterki	47
V. hubrichti Pilsbry	12
V. modesta modesta (Say)	27
Columella alticola (Ingersoll)	3
Vallonia gracilicosta Reinhardt	5
Carychium exile H. C. Lea	20
Hendersonia occulta (Say)	34
Pomatiopsis lapidaria (Say)	22
Snail eggs (Discus)	3

28. ST. CLAIR CO.: silt, small creek, 1 mile east of Centerville.
Stenotrema barbatum (Clapp)
Mesodon clausus (Say)
M. pennsylvanicus (Green)
M. elevatus (Say)
Allogona profunda (Say)
Haplotrema concavum (Say)
Glyphyalinia indentata (Say)
Hendersonia occulta (Say)
Pomatiopsis lapidaria (Say)

29. ST. CLAIR CO.: loess, near Edgemont.

Stenotrema barbatum (Say)	3
S. leai leai (Ward)	2
S. fraternum fraternum (Say)	3
Triodopsis fosteri fosteri (F.C.B.)	5
T. multilineata (Say)	8
Allogona profunda (Say)	8
Haplotrema concavum (Say)	1
Euconulus fulvus fulvus (Müller)	2
Nesovitrea electrina (Gould)	2
Ventridens ligerus (Say)	1
Zonitoides arboreus (Say)	2
Deroceras laeve (Müller)	3
Anguispira alternata alternata (Say)	18
Discus cronkhitei (Newcomb)	9
D. macclintocki (F. C. Baker)	80
Helicodiscus notius notius Hubr.	5
H. jacksoni Hubricht	5
Punctum minutissimum (Lea)	10
Succinea ovalis pleistocenica F. C. Baker	112
S. bakeri Hubricht	3
Catinella gelida (F. C. Baker)	1
Strobilops labyrinthica (Say)	4
Gastrocopta armifera armifera (Say)	53
Pupoides albilabris (C. B. Adams)	1
Vertigo elatior Sterki	3
V. hubrichti Pilsbry	7
V. modesta modesta (Say)	52
Columella alticola (Ingersoll)	3
Vallonia perspectiva Sterki	2
V. gracilicosta Reinhardt	16
Cionella lubrica (Müller)	1
Hendersonia occulta (Say)	106
Snail eggs (Discus)	

30. ST. CLAIR CO.: loess, Stolle.
Triodopsis multilineata (Say)
Zonitoides arboreus (Say)
Anguispira alternata alternata (Say)
Discus cronkhitei (Newcomb)
D. shimeki (Pilsbry)
D. macclintocki (F. C. Baker)
Helicodiscus parallelus (Say)
Succinea bakeri Hubricht
Vertigo hubrichti Pilsbry
V. modesta modesta (Say)
Columella alticola (Ingersoll)
Vallonia gracilicosta Reinhardt
Hendersonia occulta (Say)
Snail eggs (Discus)

31. MONROE CO.: loess, above quarry, Valmeyer.

Stenotrema barbatum (Clapp)	7
S. leai leai (Ward)	2
Mesodon clausus (Say)	3
M. pennsylvanicus (Green)	2
Triodopsis fosteri hubrichti (F. C. Baker)	50
T. multilineata (Say)	33
Allogona profunda (Say)	248
Haplotrema concavum (Say)	3
Euconulus fulvus fulvus (Müller)	6
Nesovitrea electrina (Gould)	13
Mesomphix friabilis (W.G. Binney)	6
Zonitoides arboreus (Say)	2
Anguispira alternata alternata (Say)	11
A. kochi kochi (Pfeiffer)	2
Discus cronkhitei (Newcomb)	8
D. shimeki (Pilsbry)	3
D. macclintocki (F. C. Baker)	2
Helicodiscus notius notius Hubr.	3
Punctum minutissimum (Lea)	3
Succinea bakeri Hubricht	10
Catinella gelida (F. C. Baker)	1
Vertigo hubrichti Pilsbry	2
V. modesta modesta (Say)	7
Vallonia gracilicosta Reinhardt	3

Carychium exile H. C. Lea 1
Hendersonia occulta (Say) 13

32. UNION CO.: talus, just south of McCann School, 2 miles northeast of Aldridge.
Stenotrema barbatum (Clapp)
S. hubrichti Pilsbry
Mesodon thyroidus (Say)
M. zaletus (Binney)
Triodopsis discoidea (Pilsbry)
T. fosteri fosteri (F. C. Baker)
Haplotrema concavum (Say)
Guppya sterkii (Dall)
Nesovitrea electrina (Gould)
Mesomphix friabilis (W. G. Binney)
Anguispira alternata alternata (Say)
Helicodiscus parallelus (Say)
H. singleyanus (Pilsbry)
H. jacksoni Hubricht
Punctum minutissimum (Lea)
Gastrocopta armifera armifera (Say)
G. contracta contracta (Say)
G. holzingeri agna (Pilsbry)
G. pentodon (Say)
G. procera procera (Gould)
Pupoides albilabris (C. B. Adams)
Vallonia perspectiva Sterki
Pomatiopsis lapidaria (Say)

CURRENT LITERATURE ON NON-MARINE OSTRACODES, SECOND NOTE

Frank L. Staplin, now with Imperial Oil Limited, Calgary, Alberta, Canada, continues his study of Pleistocene Ostracoda of Illinois in the Journal of Paleontology for November, 1963 (vol. 37, No. 6, pp. 1164-1203, pls. 159-160, 1 text-fig.). The full title of his paper is appended. Earlier work on Pleistocene Ostracoda was noted in STERKIANA 12: 7, December, 1963. Other papers in this field will be noticed here as they come to my attention.

Aurèle La Rocque

STAPLIN, Frank L. (1963) Pleistocene Ostracoda of Illinois Part II. Subfamilies Cyclocyprinae, Cypridopinae, Ilyocyprinae; Families Darwinulidae and Cytheridae. Stratigraphic ranges and assemblage patterns. — Journal of Paleontology 37: 1164-1203, pls. 159-160, 1 text-fig.

AMNB: American Museum of Natural History, Bulletin. New York.
AMNH: Annals and Magazine of Natural History. London.
AMNP: American Naturalist. Philadelphia.
AMUB: American Malacological Union, Annual Report and Bulletin. Philadelphia, etc.
ANPJ: Academy of Natural Sciences of Philadelphia, Journal. Philadelphia.
ANPP: Academy of Natural Sciences of Philadelphia, Proceedings. Philadelphia.
APAL: Annales de Paléontologie. Paris.
APGB: American Association of Petroleum Geologists, Bulletin. Tulsa.
APSP: American Philosophical Society, Proceedings. Philadelphia.
APST: American Philosophical Society, Transactions. Philadelphia.
ASLT: Academy of Science of St. Louis, Transactions. St. Louis, Mo.
ASZP: Annales des Sciences naturelles. Zoölogie et Paléontologie. Paris.
BAPI: Bulletins of American Paleontology. Ithaca, N.Y.
BAST: Basteria. Lisse, Netherlands.
BCAL: Biologia Centrali-Americana. London.
BCBL: Biologisches Centralblatt. Leipzig.
BCCB: Brooklyn Conchological Club, Bulletin. Brooklyn, N.Y.
BEIS: Bulletin of the Essex Institute. Salem, Mass.
BBMO: Bernice Pauahi Bishop Museum, Occasional Papers. Honolulu.
BIMP: Bulletino malacologico italiano. Pisa.
BJNH: Boston Journal of Natural History. Boston, Mass.
BRNA: The British Naturalist. London.
BSNB: Buffalo Society of Natural Sciences, Bulletin. Buffalo, N.Y.
BSNM: Boston Society of Natural History, Memoirs. Boston, Mass.
BSNP: Boston Society of Natural History, Proceedings. Boston, Mass.
BSOP: Boston Society of Natural History, Occasional Papers. Boston, Mass.
BSWP: Biological Society of Washington, Proceedings. Washington, D.C.
BWLN: Bulletin of the Washburn Laboratory of Natural History. Topeka, Kansas.
CAFN: Canadian Field-Naturalist. Ottawa (Formerly OTNA).
CAMR: Connecticut Academy of Arts and Sciences, Memoirs. New Haven, Conn.
CASM: California Academy of Sciences, Memoirs. San Francisco, Calif.
CASO: California Academy of Sciences, Occasional Papers. San Francisco, Calif.
CASP: California Academy of Sciences, Proceedings, Zoology. San Francisco, Calif.
CAST: Connecticut Academy of Arts and Sciences, Transactions. New Haven, Conn.
CHAB: Chicago Academy of Sciences: Bulletin. Chicago, Illinois.
CHAG: Chicago Academy of Sciences: Geological and Natural History Survey Bulletin. Later: CHAN.
CHAN: Chicago Academy of Sciences: Natural History Survey Bulletin. Formerly: CHAG.
CIZO: Congrès International de Zoölogie. Published in various countries.
CMKJ: Conchological Magazine. Kyoto, Japan.
CMPA: Carnegie Museum, Annals. Pittsburgh, Pa.
CMPM: Carnegie Museum, Memoirs. Pittsburgh, Pa.
CNGP: Canadian Naturalist and Geologist and Proceedings of the Natural History Society of Montreal. Montreal, Que.
COEP: The Conchologist's Exchange. Philadelphia, Pa.
CONL: The Conchologist. London.
COUS: Colorado, University of, Studies. Boulder.
CRNH: Canadian Record of Natural History and Geology. Montreal, Que.
CRSP: The Canadian Record of Science, including the Proceedings of the Natural History Society of Montreal. Montreal, Que.
CSNJ: Cincinnati Society of Natural History, Journal. Cincinnati, Ohio.
DANP: Davenport Academy of Natural Sciences, Proceedings. Davenport, Iowa

(CONTINUED ON PAGE 22)

LIST OF THE SPHAERIIDAE KNOWN FROM OKLAHOMA

BRANLEY A. BRANSON

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Few parts of the United States are less poorly known, as regards sphaeriid clams, than Oklahoma. There have been no concentrated efforts to make extensive collections in this state, primarily because of the difficulty in effecting diagnoses. Herrington's (1962) heuristic work has at least partially alleviated this stumbling block.

In the list that follows, all known published records are included, with several new sites being recorded. Specimens in the Stovall Museum, University of Oklahoma, are followed by the accession numbers of that museum. I wish to thank Dr. Carl D. Riggs, Director, Oklahoma Biological Survey, for making these specimens available.

Genus Sphaerium

Previous records: "Oklahoma City" (Ferriss, 1906).

Sphaerium striatinum Lamarck

Previous records: Chikaskia R., Tonkawa, Kay Co., (as S. simile Say) (Baker, 1915); Bar M Local Fauna (Illinoian, Pleistocene), Harper Co. (Taylor and Hibbard, 1955; Herrington and Taylor, 1958); Caddo Local Fauna (Pleistocene), Canadian Co. (Branson, Taylor and Taylor, 1962).

New records: 1 live, Sand Cr., Osage Hills State Park, Osage Co., 27:VIII:1963; 4 live, Gates Cr., Fort Towson, Choctaw Co., 29:V:1948; 1 live, Lake Carl Blackwell, Payne Co., 16:VIII:1946; 2 live, 1.5 mi. above mouth Mt. Fork R., McCurtain Co., 24:VII:1960; 1 live, Blue R., Connorville, Johnston Co., 9:VII:1961; 1 valve, Pennington Cr., U.S. Fish Hatchery, Tishimingo, Johnston Co., OU No. 1084, 12:VII:1955; 1 valve, North Fork, Red R., near Carter, Beckham Co., OU No. 1127, 3:IV:1955; 10 live, cr., 10 mi. west of east border, Beaver Co., 28:V:1953.

Sphaerium transversum (Say)

Previous records: Red Rock Cr., near Billings, Noble Co. (Walker, 1915); Shoofly Cr., Williston, Grant Co. (Baker, 1915); "Oklahoma" (Herrington, 1962); Caddo Local Fauna (Pleistocene), Canadian and Caddo counties (Branson, Taylor and Taylor, 1962).

New records: 55 live (some with embryos), Blue R., Connorsville, Johnston Co., 3:VI and 20:VII:1961; 1 live, large farm pond, east of Highway 99, south Madill, Marshall Co., 28:VII:1961; 5 live, Hickory Cr., 4 mi. west Univ. Okla. Biol. Sta., Willis, Marshall Co., 29:VI:1961; 8 live, Sand Cr., Osage Hills State Park, Osage Co., 27:VIII:1963; very abundant, Briar Cr., Lake Texoma, Marshall Co., 20:VII:1960; 19 live, Pennington Cr., U.S. Fish Hatchery, Tishimingo, Johnston Co., OU No. 1123, 12:VII:1955; 4 valves, small cr., 3.3 mi. north Jet, Highway 69, Mayes Co., OU No. 768,

26:III:1949; 1 live and 1 valve, Gates Cr., Fort Towson, Choctaw Co., 16:VIII:1946; 2 dead, small cr., 416 mi. north junction of highways 283 and 60, Ellis Co., OU No. 908, 7:VII:1948.

Sphaerium partumeium (Say)

Previous records: Chikaskia R., Tonkawa, Kay Co. (Baker, 1915); "Oklahoma" (Herrington, 1962).

New records: 3 dead, Sand Cr., Osage Hills State Park, Osage Co., 27:VIII:1963; 5 dead and 1 valve, 1 mi. west of east border, Highway 5, Cotton Co., 20:III:1953; 1 dead, pond, 2 mi. north Stillwater, Payne Co., 1:VIII:1953; 4 live, Stillwater Cr., Noble Co., 15:IX:1958; 58 live, Boomer Cr., Stillwater, Payne Co., 3:V:1952; 29 live, Blue R., Connorville, Johnston Co., 29:VI:1960; 1 live, Muddy Boggy Cr., 1 mi. north Jessie, Pontotoc Co., 28:VI:1960; 3 live, Pennington Cr., 5 mi. north Tishimingo, Johnston Co., 18:VII:1958; small cr., 1.3 west of eastern edge, Cherokee Co., Highway 62, OU No. 895, no date; cr., 3.25 south, 0.75 east Tom, McCurtain Co., 23:VI:1948; 5 dead, Bluff Cr., Grant Co., OU No. 1246, Aug., 1911; 3 live, 0.8 mi. south Jay, Delaware Co., OU No. 2, 6:IV:1945.

Sphaerium lavernense Herrington

Previous records: known only from Laverne Formation (Pliocene), Beaver Co. (Herrington and Taylor, 1958).

Sphaerium hibbardi Herrington

Previous records: known only from Laverne Formation (Pliocene), Beaver Co. (Herrington and Taylor, 1958).

Sphaerium securis Prime

Previous records: none.

New records: 7 live, 6 mi. above mouth, Mt. Fork R., McCurtain Co., 16:IX:1955.

Genus Pisidium

Previous records: "Oklahoma City" (Ferriss, 1906); backwater swamps, near mouth, Mt. Fork R., McCurtain Co., summer, 1961 (Branson, 1963).

New records: 3 live, Lake Carl Blackwell, Payne Co., 16:VIII:1953.

Pisidium casertanum (Poli)

Previous records: Blue Cr., Wichita Mts., Comanche Co. (as P. friersoni Sterki) (Walker, 1915); Laverne Formation (Pliocene) (as P. abditum Haldeman and P. noveboracense Prime, Leonard and Franzen, 1944) (Taylor, 1960); Bar M Local Fauna (Pleistocene), Harper Co. (Taylor and Hibbard, 1955; Herrington and Taylor, 1958); Caddo Local Fauna (Pleistocene), Canadian and Caddo counties (Branson, Taylor and Taylor, 1962); "Oklahoma" (Herrington, 1962).

New records: 4 live (1 with 6 embryos), Blue R., Connorville, Johnston Co., 21:VI:1961.

Pisidium compressum Prime

Previous records: Bar M Local Fauna (Pleistocene), Harper Co. (Taylor and Hibbard, 1955; Herrington and Taylor, 1958); Caddo Local Fauna (Pleistocene), Canadian Co. (Branson, Taylor and Taylor, 1962).

New records: 61 live, Casche Cr., 1.5 mi. east Walters, Cotton Co., 14:VI:1961.

Pisidium nitidum Jenyns

Previous records: Bar M Local Fauna (Pleistocene), Harper Co. (Taylor and Hibbard, 1955; Herrington and Taylor, 1958); Caddo Local Fauna (Pleistocene) (Branson, Taylor and Taylor, 1962).

Genus Eupera

Eupera singleyi Pilsbry

Previous record: 30 live, Briar Cr., near Willis, Marshall Co., 10:VII:1961 (Branson, in press).

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TAYLOR, D. W. and C. W. HIBBARD (1955) A new Pleistocene fauna from Harper County, Oklahoma. -- Okla. Geol. Survey, Circ. 37: 1-23.

WALKER, B. (1915) A list of shells collected in Arizona, New Mexico, Texas and Oklahoma by Dr. E. C. Case. -- Occ. Papers, Mus. Zool. Univ. Michigan, 15: 1-11.

DMGJ: Deutschen Malakozoölogischen Gesellschaft, Jahrbücher. Frankfort-am-Main.
GAOI: Gastropodia. Ohio, Ill., and elsewhere.
GDMP: Giornale di Malacologia. Pavia.
GEOM: The Geological Magazine, or Monthly Journal of Geology; with which is incorporated, "The Geologist." London.
GSAB: Geological Society of America, Bulletin. New York.
GSAM: Geological Society of America, Memoirs. New York.
GSAS: Geological Society of America, Special Papers. New York.
GSCM: Geological Survey of Canada, Memoirs. Ottawa, Ont.
GSCR: Geological Survey of Canada, Annual Report. Montreal and Ottawa.
GSCS: Geological Survey of Canada, Summary Report. Ottawa.
GSCU: Geological Survey of Canada, Museum Bulletin. Ottawa.
HAJP: Hamilton Association, Journal and Proceedings. Hamilton, Ont.
HALN: Halifax Naturalist and Record of the Scientific Society. Halifax, N.S.
JDCP: Journal de Conchyliologie. Paris.
JEMS: Journal of the Elisha Mitchell Scientific Society. Raleigh, N.C.
JJOM: Japanese Journal of Malacology. Mukaisima, Fukuyama, Japan.
JMBA: Journal of the Marine Biological Association of the United Kingdom. Plymouth.
JMLB: Journal of Marine Zoology and Microscopy. Jersey.
JOCL: Journal of Conchology. London.
JOCM: Johnsonia. Cambridge, Mass.
JOZO: Journal de Zoölogie. Paris.
LIMR: Leaflets in Malacology. Redlands, Calif.
LSLP: Linnean Society of London, Proceedings.
LSLT: Linnean Society, Zoology, Journal. London.
MABL: Malakozoölogische Blätter. Cassel and Berlin.
MACM: The Malacological and Conchological Magazine. London.
MCSC: Minutes of the Conchological Club of Southern California, Los Angeles, Calif.
MCZB: Museum of Comparative Zoology at Harvard College, Bulletin. Cambridge, Mass.
MCZM: Museum of Comparative Zoology at Harvard College, Memoirs. Cambridge, Mass.
MEDG: Meddelelser om Grönland, etc. Copenhagen.
MHBA: Musée royal d'Histoire naturelle de Belgique, Annales. Bruxelles.
MHBB: Ibid., Bulletin. Bruxelles.
MHBM: Ibid., Mémoires. Bruxelles.
MHPA: Muséum national d'Histoire naturelle, Annales. Paris.
MHPB: Ibid., Bulletin. Paris.
MHPN: Ibid., Nouvelles Archives. Paris.
MLPA: Museo de La Plata, Anales. Buenos Aires.
MSAJ: Malacological Society of Australia, Journal. Melbourne.
MSLP: Malacological Society of London, Proceedings. London.
MUZUM: Michigan, University of, Museum of Zoology, Miscellaneous Publications. Ann Arbor.
MUZO: Ibid., Occasional Papers. Ann Arbor.
NACA: Le Naturaliste Canadien. Chicoutimi, Que., and Québec, Que.
NASM: National Academy of Sciences, Memoirs. Washington, D.C.
NATL: Le Naturaliste. Paris.
NATR: La Nature. Revue des Sciences. Paris.
NAUT: The Nautilus. Philadelphia.
NMNC: Nyt Magazin for Naturvidenskaberne. Christiania.
NVSS: Det Kongelige Norske Videnskabers Selskabs Skrifter. Trondhjem.
NYAA: New York Academy of Sciences, Annals. New York.
NYAM: Ibid., Memoirs. New York.
NYAT: Ibid., Transactions. New York.
NYCA: New York State Cabinet of Natural History, Annual Report of the Regents of the University. Albany, N.Y.

(CONTINUED ON PAGE 54)

LATE CENOZOIC NON-MARINE MOLLUSCAN ASSOCIATIONS IN EASTERN NORTH AMERICA

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(Continued from STERKIANA 12: 60)

OHIO - 38 (Cont.)
Physa gyrina
Pseudosuccinea columella
Land Gastropods:
Deroceras reticulatum

OHIO - 39. Portage County, a willow swamp. (Dexter, 1953: 31).
Sphaeriidae:
Sphaerium sp.
Freshwater lung-breathing Gastropods:
Promenetus exacuous
Land Gastropods:
Deroceras laeve
D. reticulatum
Oxyloma retusa

OHIO - 40. Portage County, a woodland pond. (Dexter, 1953: 31).
Sphaeriidae:
Sphaerium, 2 sp.
Freshwater lung-breathing Gastropods:
Fossaria obrussa
Gyraulus parvus
Physa gyrina

OHIO - 41. Portage County, a floodplain pond. (Dexter, 1953: 31).
Sphaeriidae:
Sphaerium, 2 sp.

OHIO - 41 (cont.)
Freshwater lung-breathing Gastropods:
Fossaria obrussa
Gyraulus parvus
Physa gyrina
Promenetus exacuous
Stagnicola palustris

OHIO - 42. Portage County, another floodplain pond. (Dexter, 1953: 31).
Sphaeriidae:
Sphaerium, 2 sp.
Frehswater lung-breathing Gastropods:
Fossaria obrussa
Gyraulus parvus
Helisoma trivolvis
Physa gyrina
Stagnicola palustris
Land Gastropods:
Deroceras reticulatum

OHIO - 43. Tuscarawas County. Sterki's list, an example of what may be expected in an Ohio county in an unglaciated area with Pennsylvanian bedrock. The list for pre-Wisconsin time may have been considerably shorter, especially before the establishment of the present Ohio River drainage but the land snail assemblage may have been just as numerous, with the exception of the introduced species, which are few. The list is

[1] The page number in parentheses is that of the complete paper; the one to the right of it is that of this number of STERKIANA

OHIO - 43 (cont.)

given in the same order as the original by Sterki (1899).

Land Gastropods:

1. Triodopsis albolabris
2. Mesodon thyroidus
3. Triodopsis multilineata
4. Allogona profunda
5. Mesodon mitchellianus
6. Mesodon pennsylvanicus
7. Triodopsis tridentata
8. T. fraudulenta vulgata
9. T. denotata
10. Mesodon inflectus
11. Stenotrema leai
12. S. hirsutum
13. Vallonia pulchella
14. V. excentrica
15. Anguispira kochi
16. A. alternata
17. Discus patulus
18. D. cronkhitei
19. Helicodiscus parallelus
20. Punctum minutissimum
21. Columella edentula
22. Strobilops labyrinthica
23. S. virgo
24. Pupoides albilabris
25. Gastrocopta corticaria
26. G. armifera
27. G. contracta
28. G. pentodon ("Bifidaria curvidens")
29. G. pentodon
30. Vertigo gouldii
31. V. ovata
32. V. ventricosa
00. Vallonia costata Müller; not rare. (Added at bottom of page 4, in Sterki's handwriting in my copy of his paper.)
00. Vertigo elatior
33. V. tridentata
34. V. milium
35. Cionella lubrica
36. Haplotrema concavum
37. Mesomphix cupreus
38. Nesovitrea electrina

OHIO - 43 (cont.)

39. Retinella wheatleyi
40. Retinella (?) sp. ("Hyalinia --- ?")
41. R. indentata
42. Striatura ferrea
43. Striatura milium
44. S. exigua
45. Hawaiia minuscula
46. Helicodiscus singleyanus
47. Zonitoides nitidus
48. Zonitoides arboreus
49. Ventridens intertextus
50. V. ligera
51. V. suppressus
52. Paravitrea multidentata
53. Euconulus fulvus
54. Guppya sterkii
55. Deroceras laeve
56. Philomycus carolinianus
57. Pallifera dorsalis
58. Oxyloma retusa
59. Succinea? (MS: ovalis Say).
60. S. avara
61. Carychium exiguum
62. C. exile

Freshwater lung-breathing Gastropods:

63. Pseudosuccinea columella
64. Stagnicola palustris
65. S. desidiosa
66. Fossaria humilis
67. "Limnaea? very rare."
68. Helisoma trivolvis
69. "Planorbis lentus Say" (= H. trivolvis)
70. Helisoma anceps
71. H. campanulatum
72. Promenetus dilatatus
73. Gyraulus deflectus (? in MS)
74. Promenetus umbilicatellus
75. Promenetus exacuous
76. P. rubellus
77. Gyraulus parvus
78. G. circumstriatus
79. G. hirsutus
80. Planorbula armigera
81. Ferrissia meekiana
82. F. (?) shimeki (shimeki Pils. added in MS)

OHIO - 43 (cont.)

83. Laevapex diaphanus
84. Ferrissia tarda
00. Ferrissia kirklandi (added in MS)
85. F. rivularis
86. "Ancylus --- ?" (A. pumilus in MS. = F. meekiana, No. 81).
87. Aplexa hypnorum
88. Physa heterostropha
88a. Physa gyrina (added in MS)
89. "Physa --- ?"
90. "Physa (?ancillaria)" (P. integra substituted in MS).
91. "Physa --- ?" (P. aplectoides substituted in MS).

Freshwater gill-breathing Gastropods:

92. Campeloma integrum
93. Somatogyrus subglobosus isogonus
94. Amnicola limosa
95. "A. orbiculata" (= A. limosa)
96. "A. parva" (= A. limosa)
00. Amnicola lustrica (added in MS, "not rare")
00. Amnicola walkeri (added in MS)
97. Amnicola lacustris
98. Pomatiopsis lapidaria
99. "Bithynella obtusa Say" (= A. lacustris, No. 97).
100. Pleurocera "labiatum Lea"
101. Goniobasis livescens
102. G. livescens gracilior
103. Lithasia obovata
104. Valvata tricarinata

Naiades:

105. Actinonaias carinata
106. Ligumia recta latissima
107. Lampsilis radiata siliquoidea
108. L. ventricosa
109. L. fasciola
110. Villosa iris
111. V. iris "novi-eloraci Lea" (= V. iris)
112. V. fabalis
113. Dysnomia torulosa rangiana
114. Truncilla triquetra
115. Carunculina parva
116. Obovaria subrotunda

OHIO - 43 (cont.)

117. Tritogonia tuberculata
118. Amblema costata
119. Quadrula pustulosa
120. Cyclonaias tuberculata
121. Pleurobema cordatum
121a P. cordatum coccineum
122. P. cordatum pyramidatum
123. Fusconaia flava
124. F. subrotunda
000. F. subrotunda kirtlandiana
125. Plethobasus cyphyus
126. Pleurobema clava
127. Elliptio dilatatus
128. E. complanatus
129. Quadrula cylindrica
130. Q. metanevra wardii
131. Ptychobranchus fasciolare
132. Cyprogenia irrorata
133. Lasmigona compressa
134. L. costata
135. L. complanata
136. Alasmidonta marginata
137. A. calceolus
138. Simpsoniconcha ambigua
139. Lastena lata
140. Strophitus undulatus
141. Anodontoides ferussacianus
142. Anodonta grandis
143. Anodonta "salmonea"
144. A. "decora"
145. A. imbecillis

Sphaeriidae:

146. Sphaerium sulcatum
147. S. striatinum
148. S. striatinum stamineum
000. S. striatinum solidulum (added in MS)
149. S. fabale
150. S. rhomboideum
151. S. occidentale
152. S. transversum
153. S. partumeium
154. S. securis
155. Pisidium compressum
156. P. fallax
157. P. cruciatum

OHIO - 43 (cont.)
158. P. punctiferum
159. P. variabile
160. P. casertanum
161. P. adamsi
162. P. walkeri
163. P. casertanum ("abditum Hald.")
164. P. casertanum ("politum Sterki")
165. P. nitidum

ONTARIO - 1. Carleton County, Ottawa River, Duck Island, a few miles below the city of Ottawa. The island is a sandbank high enough to support deciduous trees and much scrub vegetation. It is underlain by Ordovician dolomite and limestone. Here the water is shallow and flows swiftly. Naiades and other mollusks are abundant in the sand and in the roots of vegetation near shore. The remarkable abundance of mollusks here may be due in no small part to the fact that sewage from the city of Ottawa is abundant but sufficiently diluted to obviate pollution. The locality has been a favorite collecting place since the days of Latchford (1880-1935). The list given here has been compiled from several papers by Latchford and Poirier and personal collecting by the writer and several associates.

Naiades:
Alasmidonta undulata
Anodonta "cataracta"
A. grandis
Anodontoides ferussacianus
Elliptio dilatatus
E. complanatus
Lampsilis radiata "borealis"
L. ventricosa
Leptodea fragilis
Ligumia recta latissima
Obovaria olivaria
Proptera alata
Strophitus undulatus

Sphaeriidae:
Pisidium dubium
Sphaerium partumeium
S. rhomboideum
S. striatinum
S. transversum

Freshwater gill-breathing Gastropods:
Bulimus tentaculatus
Campeloma decisum
Somatogyrus subglobosus

Freshwater lung-breathing Gastropods:
Helisoma trivolvis
Lymnaea stagnalis jugularis

ONTARIO - 2. Carleton County: Woods between St. Louis Dam and Experimental Farm, Ottawa. (Taylor and Latchford, 1890:52). The woods have long since disappeared but similar woods still existed around 1930 in Dow's Swamp (see Ontario - 3). The writer and George E. Fairbairn obtained from dried moss similar assemblages of land snails. This kind of habitat commonly exists in the near vicinity of a marl lake and this explains the presence of some of these species in minor numbers, in a good many marl deposits.

Land Gastropods:
Columella edentula
Gastrocopta contracta
G. pentodon
Striatura exigua
S. milium
Vertigo bollesiana
V. gouldii
V. ovata

ONTARIO - 3. Carleton County: Dow's Swamp and Lake, Ottawa. Until some ten years ago, Dow's Lake was an enlargement of the Rideau Canal just inside the city of Ottawa. It was crossed by a causeway and dammed at the south end. The dam was once called St. Louis dam. The north half of the lake has been filled in and the old causeway has been demolished. Much of the area of Dow's Swamp south of St. Louis dam has now been filled in, cut over, and part of it has become the campus of Carleton University. The lake in the swamp, not much more than a

ONTARIO - 3 (cont.)
large pond, had a large molluscan fauna and the swamp a good variety of land snails. In the lists below several collections by Latchford and Taylor, G. E. Fairbairn, and the writer have been combined. The following abbreviations are used: S, swamp; L, Dow's Lake; P, lake in Dow's Swamp; M, species from moss in Dow's Swamp.

Sphaeriidae:	
Pisidium casertanum	P
P. obtusale	P
Sphaerium partumeium	P
S. rhomboideum	L
S. securis	L P
Freshwater gill-breathing Gastropods:	
Amnicola limosa	P
Bulimus tentaculatus	L
Freshwater lung-breathing Gastropods:	
Armiger crista	P
Gyraulus deflectus	P
Helisoma trivolvis	L P
Physa "ancillaria"	L
Promenetus exacuous	L
Stagnicola palustris	L P
Land Gastropods:	
Carychium exile	S
Cionella lubrica	S
Columella edentula	M
Gastrocopta contracta	S
G. corticaria	S
Helicodiscus parallelus	M
Planogyra asteriscus	M
Punctum minutissimum	M
Striatura exigua	M
S. milium	M
Vertigo ovata	M
Zonitoides nitidus	M

ONTARIO - 4. Carleton County: Rideau River at Rifle Range (now built over) just upstream from Strathcona Park, Ottawa. In a short stretch of the river there is a radical change of environment from deep, muddy pools to rapids running over exposures of Ordovician shales strewn with glacial erratics. The following species live in the rapids or just below them.

ONTARIO - 4 (cont.)
Naiades:
Lasmigona compressa
Sphaeriidae:
Sphaerium striatinum
Freshwater gill-breathing Gastropods:
Goniobasis livescens (concentrated just below a small riffle produced by a ledge in the stream)
Freshwater lung-breathing Gastropods:
Fossaria umbilicata
Stagnicola emarginata

ONTARIO - 5. Carleton County: Rideau River at Billings Bridge. The village of Billings Bridge has been swallowed up in the expansion of the city of Ottawa but a bridge which gave it its name still exists. Just above the bridge, the river is rather wide and obstructed by two islands, one of which has since been removed. Two distinct habitats, not more than 25 feet away from each other, may be distinguished. The first of these is listed below, the second under Ontario - 6. The lists are compiled from Latchford's several papers on this locality and the writer's personal collections. Habitat 1. Backwater above rapids; water quiet, vegetation abundant, depth of water 1 to 4 feet; bottom of mud with occasional glacial boulders, someof which may be quite large.
Naiades:
Alasmidonta marginata
Lampsilis radiata siliquoidea
Lasmigona costata
Ligumia recta latissima
Strophitus undulatus
Sphaeriidae:
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum
Valvata lewisi
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Helisoma anceps "sayi"
H. campanulatum
H. trivolvis "infracarinatum"
Lymnaea stagnalis jugularis
Physa "ancillaria"
P. "integra"

ONTARIO - 6. Carleton County, same locality as Ontario - 5, but: Habitat 2: small rapids (formerly between the two islands), bottom bouldery, current strong, water 1-2 feet deep, no vegetation except algae on rocks.

Sphaeriidae:
- Sphaerium striatinum
- S. transversum

Freshwater gill-breathing Gastropods:
- Goniobasis livescens

Freshwater lung-breathing Gastropods:
- Physa "billingsi" (type locality)
- Stagnicola emarginata

ONTARIO - 7. Russell County: Woods near Casselman. Freshwater species from ponds and streams in the vicinity of the town, some of them perhaps from the Nation River nearby. This appears to be the northernmost locality for Triodopsis denotata. (Latchford, 1895: 156).

Naiades:
- Anodonta "fluviatilis"
- Elliptio complanatus
- Lampsilis radiata siliquoidea

Sphaeriidae:
- Pisidium casertanum
- Sphaerium occidentale
- S. sulcatum

Freshwater gill-breathing Gastropods:
- Campeloma decisum
- Goniobasis livescens

Freshwater lung-breathing Gastropods:
- Ferrissia parallela
- Gyraulus parvus
- Helisoma anceps
- H. trivolvis
- Physa "billingsi"
- P. heterostropha
- Stagnicola caperata
- S. palustris

Land Gastropods:
- Anguispira alternata
- Deroceras laeve
- Discus cronkhitei
- Euconulus fulvus
- Haplotrema concavum

ONTARIO - 7 (cont.)
- Mesodon dentiferus
- M. sayanus
- Nesovitrea electrina
- N. binneyana
- Oxyloma retusa
- Philomycus carolinianus
- Stenotrema leai
- Succinea ovalis
- Triodopsis albolabris
- T. denotata
- Vallonia pulchella
- Vertigo ovata
- Vitrina limpida
- Zonitoides arboreus
- Z. nitidus

ONTARIO - 8. Carleton County: Land snails from open deciduous woods growing on marl bed of former McKay Lake (earlier known as Hemlock Lake). Land snails here are notably abundant, probably because of the exceptionally favorable conditions of the site. This assemblage gives an idea of conditions obtaining when a lake is drained and its bed is invaded by vegetation without the intervention of a boggy stage and therefore without the formation of a peat layer. Lists combined from Latchford and Poirier (1884) and personal collecting.

Land Gastropods:
- Anguispira alternata
- Cionella lubrica
- Discus cronkhitei
- Euconulus fulvus
- Haplotrema concavum
- Helicodiscus parallelus
- Mesodon sayanus
- Mesomphix inornatus
- Nesovitrea electrina
- Oxyloma retusa
- Stenotrema leaii
- Succinea ovalis
- Triodopsis albolabris
- Zonitoides arboreus

ONTARIO - 9. Carleton County: McKay Lake, Ottawa. It has been studied by Whittaker and Kindle from the standpoint of sediments and fauna. The following are species living in the lake.

ONTARIO - 9 (cont.)
Combined lists of Latchford and Poirier (1884), Kindle (MSS), Whittaker (1918) and personal collecting.
Naiades:
Anodonta "cataracta"
A. grandis
Lampsilis radiata
L. radiata siliquoidea
Sphaeriidae:
Pisidium casertanum
P. compressum
Sphaerium rhomboideum
S. simile
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma decisum
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
G. hirsutus
G. parvus
Helisoma anceps
H. campanulatum
H. trivolvis
Lymnaea stagnalis jugularis
Physa heterostropha
Promenetus exacuous
Stagnicola desidiosa

ONTARIO - 10. Renfrew Co.: Mohr's Wharf, Chats Falls, Ottawa River. Land snails from woods at the same locality. (Latchford and Poirier, 1884). The freshwater species are notable as they are above the Chaudière Falls, an effective barrier to migration upstream along the Ottawa River; the list suggests that at least the Naiades have been brought here from the Lake Huron drainage and Georgian Bay through the Pleistocene Georgian Bay outlet of the Great Lakes.
Naiades:
Anodontoides ferussacianus
Elliptio complanatus
Lampsilis radiata
Lasmigona costata

ONTARIO - 10 (cont.)
Strophitus rugosus
Freshwater lung-breathing Gastropods:
Helisoma trivolvis
Stagnicola caperata
S. catascopium
Land Gastropods:
Discus cronkhitei
Euconulus fulvus
Gastrocopta contracta
Nesovitrea electrina
Oxyloma retusa
Philomycus carolinianus
Retinella indentata
Strobilops labyrinthica
Succinea ovalis
Triodopsis albolabris
Zonitoides arboreus

ONTARIO - 11. Middle Island, Lake Erie. Goodrich lists few snails because of the presence of chickens and turkeys on this island. (Goodrich, 1916: 530).
Land Gastropods:
Allogona profunda
Anguispira alternata
A. kochi
A. kochi roseo-apicata
Gastrocopta armifera
G. contracta
G. corticaria
Haplotrema concavum
Hawaiia minuscula
Mesodon inflectus
M. zaletus
Stenotrema fraternum
Succinea avara
Triodopsis fraudulenta
T. notata
Vallonia parvula
Zonitoides arboreus

ONTARIO - 12. Middle Sister Island, Lake Erie. Goodrich lists snails plentiful, the island uninhabited, no chickens. (Goodrich, 1916: 531).

ONTARIO - 12 (cont.)
Land Gastropods:
Allogona profunda strontiana
Anguispira alternata eriensis
A. kochi strontiana
Gastrocopta contracta
Haplotrema concavum
Helicodiscus parallelus
Mesodon inflectus
M. thyroidus
M. zaletus
Succinea avara
Triodopsis albolabris goodrichi
T. fraudulenta

ONTARIO - 13. North Harbor Island, Lake Erie. Goodrich reports this to be a rookery for terns; snails in fair abundance, but less than Middle Sister (Ont. -12, above). (Goodrich, 1916: 531).
Land Gastropods:
Allogona profunda strontiana
Anguispira alternata eriensis
A. kochi roseo-apicata
Haplotrema concavum
Mesodon inflectus
Triodopsis albolabris goodrichi
T. fraudulenta

ONTARIO - 14. East Sister Island, Lake Erie. Goodrich reports few snails. (Goodrich, 1916: 531).
Land Gastropods:
Allogona profunda
Anguispira alternata
A. kochi roseo-apicata
Deroceras laeve
Gastrocopta contracta
Mesodon inflectus
M. zaletus
Nesovitrea electrina
Succinea avara
Vallonia parvula
Zonitoides arboreus

QUEBEC - 1. Gatineau County: Meach Lake. This is the lowest of three lakes in a chain, Philippe, Harrington, and Meach, in a glacial valley gouged out in Precambrian rock and dammed at the foot of Meach Lake. I have studied in detail the molluscan fauna of this lake (La Rocque, 1935) and the following summary indicates only the three main habitats.

	Rock	Sand	Mud
Naiades:			
Anodonta marginata	-	-	x
Elliptio complanatus	x	x	-
Sphaeriidae:			
Pisidium sp.	-	x	-
Sphaerium lacustre	-	x	-
Freshwater gill-breathing Gastropods:			
Amnicola limosa	-	x	x
Campeloma cf. C. decisum	-	x	-
Freshwater lung-breathing Gastropods:			
Bulimnea megasoma	x	-	-
Ferrissia parallela	-	-	x
Gyraulus parvus	-	-	x
Helisoma anceps latchfordi	x	x	x
H. campanulatum wisconsinense	-	x	x
H. trivolvis pilsbryi	x	-	x
Lymnaea stagnalis lillianae	x	x	x
Physa parkeri latchfordi	x	x	x
P. gyrina	-	-	x
Pseudosuccinea columella	-	-	x
Land Gastropods:			
Oxyloma retusa	-	-	x

QUEBEC - 2. Gatineau County: Gauvreau Lake, Gatineau River drainage. The lake is about the same size as Meach Lake but is differently shaped. It does not have thepeculiar forms noted for that lake. No marl is in evidence around the margins of the lake but it may be forming in the deeper, central parts of it. The following list combines personal collecting with the list of Latchford and Poirier (1884:265).
Naiades:
Anodonta cataracta
Elliptio complanatus
Lampsilis siliquoidea

QUEBEC - 2 (cont.)
Sphaeriidae:
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
Helisoma campanulatum wisconsinense
H. infracarinatum
Stagnicola desidiosa, var.

QUEBEC - 3. Gatineau County: Chilcott Lake. A shallow lake, deeper at the center, invaded by vegetation along its margins. The lake bottom is almost exclusively marl with a small proportion of black mud and organic debris. The following list is compiled from data by Latchford (1926) and La Rocque (1932).
Naiades:
Alasmidonta undulata
Anodonta marginata
Elliptio complanatus
Lasmigona costata
Sphaeriidae:
Pisidium compressum
Sphaerium sulcatum
Sphaerium ("Musculium") sp.
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Freshwater lung-breathing Gastropods:
Gyraulus sp.
Helisoma anceps
H. campanulatum wisconsinense
H. trivolvis
Lymnaea stagnalis jugularis
Physa parkeri latchfordi
Pseudosuccinea columella
Stagnicola emarginata canadensis
Land Gastropods:
Oxyloma retusa

QUEBEC - 4. Gatineau County: Bernard Lake, a lake of medium size, very similar to Meach Lake in that it has fine sandy beaches and muddy bays, with here and there an exposure of bare Precambrian rock, but unlike it in shape. The following list, which is probably incomplete, is from personal collections.
Naiades:
Alasmidonta undulata
Anodonta marginata
Elliptio complanatus
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Helisoma anceps sayi
H. campanulatum wisconsinense
Lymnaea stagnalis lillianae
Physa sp.

QUEBEC - 5. Gatineau County: Blue Sea Lake: a large lake with many bays and islands, connected with Grant Lake by Ellard Creek. Four habitats are listed from personal collecting, some of which have been published before (La Rocque, 1936).
Habitat 1: Blue Sea Lake proper, rocky, gravelly, and sandy shores, water 1-4 feet deep, little vegetation.
Naiades:
Anodonta grandis
Elliptio complanatus
Lampsilis siliquoidea
Freshwater lung-breathing Gastropods:
Lymnaea stagnalis jugularis

QUEBEC - 6. Gatineau County: Blue Sea Lake, Habitat 2: Big Island, a large island with many summer cottages, but still untouched except in the vicinity of the cottages. Land snails from moss.
Land Gastropods:
Discus cronkhitei
Haplotrema concavum
Helicodiscus parallelus
Punctum pygmaeum
Retinella sp.
Stenotrema leaii
Striatura exigua
S. ferrea
S. milium

QUEBEC - 6 (cont.)
Strobilops labyrinthica
Vertigo sp.
Zonitoides sp.

QUEBEC - 7. Gatineau County: Blue Sea Lake, Habitat 3: Ellard Creek, bottom blue clay, with floating duckweed and water lilies; water 0-4 feet deep, clear and cold, no perceptible current.
Naiades:
Anodonta marginata
Elliptio complanatus
Lampsilis siliquoidea
Freshwater lung-breathing Gastropods:
Bulimnea megasoma, abundant near shore on sticks, stones, weeds, and bottom, some almost out of water, all covered with a thin coating of gray clay.

QUEBEC - 8. Gatineau County: Blue Sea Lake area, Habitat 4: Grant Lake, a small lake connected with Blue Sea Lake by Ellard Creek. Bottom blue clay, some stretches of sand and gravel, and a few bays with deep, soft, black mud. The following species are from the blue clay bottom:
Naiades:
Elliptio complanatus
Lampsilis radiata siliquoidea
Freshwater gill-breathing Gastropods:
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Helisoma anceps
H. campanulatum wisconsinense
H. trivolvis
Lymnaea stagnalis jugularis
Physa sp.

WISCONSIN - 1. Tomahawk Lake, Oneida and Vilas counties. Species living on sandy shore subject more or less to rough water. (Baker, 1911: 219). No abundance data.
Naiades:
Anodonta grandis footiana
A. marginata
Lampsilis siliquoidea

WIS-1 (cont.)
Sphaeriidae:
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps striatum
H. "binneyi"
H. campanulatum
Lymnaea stagnalis lillianae
L. stagnalis "wisconsinensis"

WISCONSIN - 2. Tomahawk Lake, Oneida and Vilas counties. Species living in enclosed or sheltered bays which are connected with the open lake and in which the water never becomes stagnant. (Baker, 1911: 219). No abundance data.
Naiades:
Anodonta grandis footiana
A. marginata
Freshwater lung-breathing Gastropods:
Helisoma anceps striatum
H. "binneyi"
H. campanulatum
Lymnaea stagnalis lillianae
Physa ancillaria
Stagnicola lanceata

WISCONSIN - 3. Tomahawk Lake, Oneida and Vilas counties. Species living on Castalia - Nymphaea society in clear water of creek or in enclosed bay. (Baker, 1911: 220).
Freshwater gill-breathing Gastropods:
Amnicola cincinnatiensis
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Gyraulus parvus
G. hirsutus
Helisoma campanulatum
Physa ancillaria
Pseudosuccinea columella

WISCONSIN - 4. Tomahawk Lake, Oneida and Vilas counties. Species living in swampy ponds or in Typha plant societies where the water is more or less stagnant. (Baker, 1911: 220).

WISCONSIN - 4 (cont.)
Sphaeriidae:
Pisidium casertanum
Sphaerium occidentale
S. partumeium
S. securis
Freshwater lung-breathing Gastropods:
Aplexa hypnorum
Bulimnea megasoma
Ferrissia parallela
Fossaria obrussa
Gyraulus hirsutus
Helisoma anceps
H. "binneyi"
H. trivolvis
Lymnaea stagnalis jugularis
Physa gyrina
Planorbula armigera
Pseudosuccinea columella
Stagnicola lanceata

WISCONSIN - 5. Tomahawk Lake, Oneida and Vilas counties. Species living in swales. (Baker, 1911: 220).
Sphaeriidae:
Pisidium casertanum
Sphaerium lacustre
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Gyraulus parvus

WISCONSIN - 6. Tomahawk Lake, Oneida and Vilas counties. Species living in river with swift current. (Baker, 1911: 221).
Naiades:
Actinonaias carinata
Amblema plicata
Lampsilis radiata siliquoidea
L. ventricosa
Ligumia recta
Sphaeriidae:
Pisidium dubium
Sphaerium striatinum
Freshwater lung-breathing Gastropods:
Campeloma decisum

WISCONSIN - 7. Tomahawk Lake, Oneida and Vilas counties. Species living in creek with sandy bottom and clear, cold water; current swift. (Baker, 1911: 221).
Naiades:
Actinonaias carinata
Anodonta grandis footiana
A. implicata
A. marginata
Lampsilis radiata siliquoidea
L. ventricosa
Lasmigona compressa
L. costata
Strophitus rugosus
Freshwater gill-breathing Gastropods:
Campeloma decisum

WISCONSIN - 8. Lake Superior drainage: Anna Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Freshwater lung-breathing Gastropods:
Helisoma anceps cahni
Pseudosuccinea columella

WISCONSIN - 9. Lake Superior drainage: Armour Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Lampsilis radiata siliquoidea
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
Helisoma anceps cahni
H. campanulatum wisconsinense
Physa laphami
Stagnicola lanceata

WISCONSIN - 10. Lake Superior drainage: Black Oak Lake. (Morrison, 1932).
Sphaeriidae:
Sphaerium securis
Freshwater lung-breathing Gastropods:
Helisoma trivolvis

WISCONSIN - 11. Lake Superior drainage:
Harris Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Acella haldemani
Physa laphami

WISCONSIN - 12. Lake Superior drainage:
Horsehead Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Lampsilis radiata siliquoidea

WISCONSIN - 13. Lake Superior drainage:
Katinka Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium lilljeborgi
P. obtusale

WISCONSIN - 14. Lake Superior drainage:
Montreal River at Pine Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Anodontoides ferussacianus
Lasmigona compressa
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Fossaria exigua
Gyraulus deflectus obliquus
G. parvus
Helisoma anceps
Physa laphami

WISCONSIN - 15. Lake Superior drainage:
Palmer Lake. (Morrison, 1932).
Naiades:
Anodonta kennicottii
Sphaeriidae:
Pisidium adamsi
P. compressum
P. lilljeborgi
P. nitidum
P. variabile
Sphaerium fallax

WISCONSIN - 15 (cont.)
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Valvata lewisi
V. tricarinata
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Gyraulus deflectus obliquus
Helisoma anceps
H. campanulatum
H. trivolvis
Physa sayii
Promenetus exacuous

WISCONSIN - 16. Lake Superior drainage:
Presque Isle Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
A. kennicottii
A. marginata
Lampsilis radiata rosacea
Sphaeriidae:
Pisidium compressum
P. nitidum
P. variabile
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
G. parvus
Helisoma anceps cahni
H. campanulatum wisconsinense
Lymnaea stagnalis jugularis
Physa laphami
Stagnicola emarginata

WISCONSIN - 17. Lake Superior drainage:
South Branch, Presque Isle River at Winegar.
(Morrison, 1932).
Naiades:
Anodonta grandis plana
Anodontoides birgei
Lampsilis radiata siliquoidea
Lasmigona compressa

WISCONSIN - 17 (cont.)
Sphaeriidae:
Pisidium compressum
Sphaerium striatinum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Freshwater lung-breathing Gastropods:
Physa integra

WISCONSIN - 18. Lake Superior drainage: Pond near Presque Isle River at Winegar. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Gyraulus parvus
Stagnicola palustris elodes

WISCONSIN - 19. Green Bay drainage: Butternut Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps
H. campanulatum
Lymnaea stagnalis sanctaemariae

WISCONSIN - 20. Green Bay drainage: Kentuck Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Freshwater lung-breathing Gastropods:
Helisoma anceps unicarinatum
H. campanulatum

WISCONSIN - 21. Green Bay drainage: Pools in lumber slashings, 4 miles east of Butternut Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium casertanum
P. obtusale
Sphaerium occidentale

WISCONSIN - 22. Flambeau drainage: Adelaide Lake. (Morrison, 1932).
WISCONSIN - 22 (cont.)
Naiades:
Anodonta grandis footiana
A. marginata

WISCONSIN - 23. Flambeau drainage: Allequash Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Lampsilis radiata siliquoidea
Sphaeriidae:
Sphaerium securis
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
Helisoma campanulatum
H. campanulatum wisconsinense
H. trivolvis
Physa sayii

WISCONSIN - 24. Flambeau drainage: Ballard Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Physa sayii

WISCONSIN - 25. Flambeau drainage: Big Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
Lampsilis radiata siliquoidea
L. ventricosa lurida
Sphaeriidae:
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps
Lymnaea stagnalis lillianae
Physa laphami

WISCONSIN - 26. Flambeau drainage: Big Lake, inlet. (Morrison, 1932)
Naiades:
Lampsilis ventricosa lurida

WISCONSIN - 27. Flambeau drainage: Big Lake, outlet. (Morrison, 1932).
Naiades:
Actinonaias carinata

WISCONSIN - 27 (cont.)
Anodonta grandis plana
A. marginata
Elliptio dilatatus delicatus
Fusconaia flava
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona compressa
L. costata
Strophitus edentulus
Sphaeriidae:
Pisidium adamsi
P. compressum
P. lilljeborgi
Sphaerium striatinum stamineum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Gyraulus parvus
Helisoma anceps
Lymnaea stagnalis jugularis
Physa michiganensis

WISCONSIN - 28. Flambeau drainage: Big Muskellunge Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Sphaeriidae:
Pisidium compressum
P. nitidum
P. variabile
Sphaerium lacustre
S. sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
A. walkeri
Campeloma milesii
Freshwater lung-breathing Gastropods:
Gyraulus parvus
Helisoma anceps
H. anceps sayi
H. anceps unicarinatum
H. campanulatum
H. campanulatum wisconsinense
Physa sayii
Promenetus exacuous megas
Stagnicola emarginata vilasensis

WISCONSIN - 29. Flambeau drainage: Boulder Lake. (Morrison, 1932).
Naiades:
Lampsilis radiata siliquoidea rosacea
Sphaeriidae:
Pisidium compressum
P. lilljeborgi
P. nitidum
P. variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma milesii
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Gyraulus hirsutus
G. parvus
Helisoma anceps
H. campanulatum
H. pilsbryi

WISCONSIN - 30. Flambeau drainage: Catfish Lake. (Morrison, 1932).
Sphaeriidae:
Sphaerium partumeium
Freshwater lung-breathing Gastropods:
Helisoma campanulatum
Physa sayii

WISCONSIN - 31. Flambeau drainage: Channel between Fishtrap and High lakes. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Acella haldemani
Bulimnea megasoma
Helisoma anceps unicarinatum
Pseudosuccinea columella

WISCONSIN - 32. Flambeau drainage: Clear Crooked Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa

WISCONSIN - 33. Flambeau drainage: Constance Lake. (Morrison, 1932).
Naiades:

WISCONSIN - 33 (cont.)
Anodonta marginata
Freshwater gill-breathing Gastropods:
Campeloma milesii

WISCONSIN - 34. Flambeau drainage: Cranberry Lake. (Morrison, 1932).
Naiades:
Anodonta marginata

WISCONSIN - 35. Flambeau drainage: Crooked Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Campeloma milesii

WISCONSIN - 36. Flambeau drainage: Crystal Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Physa sayii

WISCONSIN - 37. Flambeau drainage: Dead Pike Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lungbreathing Gastropods:
Gyraulus deflectus
Physa sayii

WISCONSIN - 38. Flambeau drainage: Diamond Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Freshwater lung-breathing Gastropods:
Physa sayii

(WISCONSIN - 39: omitted by error)

WISCONSIN - 40. Flambeau drainage: Duck Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Helisoma trivolvis

WISCONSIN - 41. Flambeau drainage: Favil Lake. (Morrison, 1932).
Naiades:
Anodonta marginata

WISCONSIN - 42. Flambeau drainage: Fish-trap Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
A. marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea rosacea
L. ventricosa lurida
Sphaeriidae:
Pisidium adamsi
P. variabile
Sphaerium partumeium
S. rhomboideum
S. sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. walkeri
Campeloma decisum
Freshwater lung-breathing Gastropods:
Acella haldemani
Bulimnea megasoma
Ferrissia parallela
Gyraulus deflectus
G. deflectus obliquus
H. anceps sayi
H. anceps unicarinatum
H. campanulatum
H. trivolvis
H. trivolvis pilsbryi
Lymnaea stagnalis lillianae
Physa sayii
Promenetus exacuous
Stagnicola exilis

WISCONSIN - 43. Flambeau drainage: Forest Ponds, 10 miles northeast of Boulder Junction. (Morrison, 1932).
Sphaeriidae:
Pisidium casertanum
P. obtusale
Sphaerium occidentale
S. securis

WISCONSIN - 43 (cont.)
Freshwater lung-breathing Gastropods:
Gyraulus circumstriatus

WISCONSIN - 44. Flambeau drainage: Lake George. (Morrison, 1932).
Naiades:
Anodonta marginata
Freshwater lung-breathing Gastropods:
Helisoma anceps

WISCONSIN - 45. Flambeau drainage: Harvey Lake. (Morrison, 1932).
Sphaeriidae:
Sphaerium partumeium
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Physa sayii

WISCONSIN - 46. Flambeau drainage: Helen Lake. (Morrison, 1932).
Sphaeriidae:
Sphaerium securis
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps

WISCONSIN - 47. Flambeau drainage: High Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea rosacea
L. ventricosa lurida
Sphaeriidae:
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma decisum
Freshwater lung-breathing Gastropods:
Acella haldemani
Bulimnea megasoma
Ferrissia parallela

WISCONSIN - 47 (cont.)
Gyraulus deflectus
Helisoma anceps
H. campanulatum
H. campanulatum wisconsinense
H. trivolvis
H. pilsbryi
Lymnaea stagnalis lillianae
Physa laphami
Stagnicola exilis
S. lanceata

WISCONSIN - 48. Flambeau drainage: Ike Walton Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma milesii
Freshwater lung-breathing Gastropods:
Fossaria obrussa

WISCONSIN - 49. Flambeau drainage: Irving Lake, outlet. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Anodontoides ferussacianus subcylindraceus
Sphaeriidae:
Pisidium adamsi
P. compressum
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Campeloma milesii
Freshwater lung-breathing Gastropods:
Helisoma trivolvis

WISCONSIN - 50. Flambeau drainage: Island Lake. (Morrison, 1932).
Sphaeriidae:
Sphaerium sulcatum
Freshwater lung-breathing Gastropods:
Helisoma campanulatum ferrissii
Physa sayii

WISCONSIN - 51. Flambeau drainage: Laura Lake. (Morrison, 1932).
Naiades:
Anodonta marginata

WISCONSIN - 51 (cont.)
Sphaeriidae:
Pisidium ferrugineum
P. nitidum
Sphaerium lacustre
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Gyraulus parvus
Helisoma pseudotrivolvis

WISCONSIN - 52. Flambeau drainage: Little Crooked Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica

WISCONSIN - 53. Flambeau drainage: Little Long Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
A. marginata
Sphaeriidae:
Sphaerium securis
Freshwater gill-breathing Gastropods:
Campeloma decisum

WISCONSIN - 54. Flambeau drainage: Little Rice Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Anodontoides ferussacianus
Lampsilis radiata siliquoidea
Sphaeriidae:
Pisidium compressum
P. nitidum
P. variabile
Sphaerium lacustre
S. sulcatum
Freshwater gill-breathing Gastropods:
Amnicola lustrica
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Fossaria obrussa

WISCONSIN - 54 (cont.)
Gyraulus parvus
Helisoma trivolvis
Physa sayii
Promenetus exacuous

WISCONSIN - 55. Flambeau drainage: Little White Birch Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Sphaeriidae:
Pisidium adamsi
P. compressum
P. lilljeborgi
P. nitidum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma milesii
Freshwater lung-breathing Gastropods:
Fossaria obrussa decampi
Gyraulus hirsutus
G. parvus

WISCONSIN - 56. Flambeau drainage: Lost Canoe Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
A. marginata
Sphaeriidae:
Pisidium compressum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma milesii
Freshwater lung-breathing Gastropods:
Helisoma anceps
H. campanulatum wisconsinense
Physa laphami

WISCONSIN - 57. Flambeau drainage: Lower Gresham Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Campeloma milesii

WISCONSIN - 58. Flambeau drainage: Manitowish River. (Morrison, 1932).

WISCONSIN-58 (cont.)
Naiades:
Alasmidonta marginata variabilis
Amblema costata
Anodonta grandis plana
A. imbecillis
A. marginata
Anodontoides ferussacianus subcylindraceus
Elliptio dilatatus
E. dilatatus delicatus
Fusconaia flava
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona compressa
L. costata
Ligumia recta latissima
Pleurobema cordatum coccineum
Strophitus rugosus
Sphaeriidae:
Pisidium adamsi
Sphaerium striatinum
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps
H. trivolvis winslowi
Physa sayii
Promenetus exacuous

WISCONSIN - 59. Flambeau drainage: Mann Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea rosacea
Sphaeriidae:
Pisidium variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Fossaria exigua
F. obrussa
Gyraulus arcticus
G. deflectus obliquus
Helisoma anceps sayi

WISCONSIN-59 (cont.)
H. campanulatum wisconsinense
H. trivolvis
H. trivolvis pilsbryi
Physa gyrina
Promenetus exacuous megas

WISCONSIN - 60. Flambeau drainage: Mann Lake, outlet. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Sphaeriidae:
Pisidium compressum
P. variabile
Sphaerium partumeium
S. securis
S. striatinum
S. sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Ferrissia parallela
Gyraulus deflectus
Helisoma anceps sayi
H. trivolvis

WISCONSIN - 61. Flambeau drainage: Pond along Mann Lake outlet. (Morrison, 1932).
Sphaeriidae:
Pisidium "pusillum"
Sphaerium securis
Freshwater lung-breathing Gastropods:
Fossaria obrussa
Gyraulus deflectus
Promenetus exacuous

WISCONSIN - 62. Flambeau drainage: Marion Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Sphaeriidae:
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum

WISCONSIN - 62 (cont.)
Freshwater lung-breathing Gastropods:
Physa sayi

WISCONSIN - 63. Flambeau drainage: Mary Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium adamsi
Sphaerium securis
S. truncatum
Freshwater gill-breathing Gastropods:
Campeloma milesii
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Helisoma anceps unicarinatum

WISCONSIN - 64. Flambeau drainage: Mud Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Ferrissia parallela

WISCONSIN - 65. Flambeau drainage: Nebish Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa

WISCONSIN - 66. Flambeau drainage: Nelson Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Gyraulus hirsutus
Physa gyrina

WISCONSIN - 67. Flambeau drainage: Nixon Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Helisoma anceps sayi
H. campanulatum wisconsinense
Physa sayii

WISCONSIN - 68. Flambeau drainage: Nixon Lake, outlet. (Morrison, 1932).
Naiades:
Anodonta marginata
Sphaeriidae:
Pisidium casertanum
P. variabile
Sphaerium lacustre

WISCONSIN - 68 (cont.)
S. rhomboideum
S. sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Gyraulus parvus
Helisoma anceps unicarinatum
H. campanulatum
H. trivolvis
Promenetus exacuous megas

WISCONSIN - 69. Flambeau drainage: Papoose Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
Valvata lewisii
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Helisoma campanulatum

WISCONSIN - 70. Flambeau drainage: Partridge Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Gyraulus hirsutus

WISCONSIN - 71. Flambeau drainage: Pauto Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium variabile

WISCONSIN - 72. Flambeau drainage: Pike Lake, inlet (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Helisoma trivolvis

WISCONSIN - 73. Flambeau drainage: Rest Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps
Stagnicola emarginata

WISCONSIN - 74. Flambeau drainage: Roadside spring, 3 miles northwest of Winchester. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Physa obrussoides

WISCONSIN - 75. Flambeau drainage: Silver Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Anodontoides ferussacianus subcylindraceus
Freshwater gill-breathing Gastropods:
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Gyraulus parvus
Physa sayii

WISCONSIN - 76. Flambeau drainage: South Fork Flambeau River. (Morrison, 1932).
Naiades:
Actinonaias carinata
Alasmidonta marginata variabilis
Elliptio dilatatus delicatus
Fusconaia flava
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona compressa
L. costata
Ligumia recta latissima
Strophitus undulatus
Sphaeriidae:
Sphaerium striatinum
Freshwater gill-breathing Gastropods:
Campeloma decisum

WISCONSIN - 77. Flambeau drainage: Tamarac Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana

WISCONSIN - 78. Flambeau drainage: Tamarac Lake, outlet. (Morrison, 1932).
Naiades:
Anodonta marginata
Lampsilis radiata siliquoidea
Sphaeriidae:
Pisidium variabile
WISCONSIN - 78 (cont.)
Sphaerium lacustre
S. sulcatum

WISCONSIN - 79. Flambeau drainage: Trout Lake. (Morrison, 1932).
Naiades:
Actinonaias carinata
Anodonta grandis
A. marginata
Lampsilis radiata siliquoidea rosacea
L. ventricosa lurida
Strophitus undulatus
Sphaeriidae:
Pisidium adamsi
P. casertanum
P. compressum
P. ferrugineum
P. lilljeborgi
P. nitidum
P. obtusale
P. variabile
Sphaerium lacustre
S. striatinum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma decisum
C. milesii
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Fossaria obrussa
F. obrussa decampi
Gyraulus circumstriatus
G. deflectus obliquus
G. hirsutus
G. parvus
Helisoma anceps
H. campanulatum
H. trivolvis
Lymnaea stagnalis lillianae
Physa gyrina elliptica
Promenetus exacuous
P. exacuous megas
Stagnicola catascopium

WISCONSIN - 80. Flambeau drainage: Trout Lake, inlet. (Morrison, 1932).
Naiades:
Actinonaias carinata
Anodonta marginata
Lampsilis radiata siliquoidea
L. ventricosa lurida
Lasmigona costata
Strophitus undulatus
Sphaeriidae:
Pisidium compressum
P. "fallax septentrionale"
Sphaerium striatinum
S. sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
G. deflectus obliquus
Helisoma trivolvis
Lymnaea stagnalis jugularis

WISCONSIN - 81. Flambeau drainage: Trout River at Trout Lake. (Morrison, 1932).
Naiades:
Amblema costata
Anodonta grandis plana
A. marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona compressa
L. costata
Strophitus undulatus
Sphaeriidae:
Pisidium adamsi
Sphaerium striatinum
Freshwater gill-breathing Gastropods:
Amnicola walkeri
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps
H. trivolvis
Lymnaea stagnalis lillianae
Physa obrussoides

WISCONSIN - 82. Flambeau drainage: Turtle Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
A. marginata
Elliptio dilatatus sterkii
Fusconaia flava
Lampsilis radiata siliquoidea rosacea
Lasmigona compressa
Ligumia recta

WISCONSIN - 83. Flambeau drainage: Turtle River. (Morrison, 1932).
Naiades:
Actinonaias carinata
Amblema costata
Anodonta grandis plana
A. imbecillis
A. marginata
Anodontoides ferussacianus subcylindraceus
Elliptio dilatatus delicatus
Fusconaia flava
Lampsilis radiata siliquoidea
L. ventricosa
Lasmigona compressa
L. costata
Ligumia recta latissima
Pleurobema cordatum coccineum
Strophitus undulatus
Sphaeriidae:
Sphaerium striatinum
S. sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum
C. milesii
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Ferrissia parallela
Helisoma campanulatum wisconsinense
H. trivolvis
Stagnicola exilis

WISCONSIN - 84. Flambeau drainage: Upper Gresham Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium compressum
P. variabile

WISCONSIN - 84 (cont.)
Freshwater gill-breathing Gastropods:
Amnicola lustrica
Valvata lewisii
Freshwater lung-breathing Gastropods:
Fossaria obrussa decampi
Gyraulus parvus

WISCONSIN - 85. Flambeau drainage: Whitefish Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea rosacea
Sphaeriidae:
Pisidium adamsi
P. compressum
P. lilljeborgi
P. variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma milesii
Valvata lewisii
Freshwater lung-breathing Gastropods:
Fossaria obrussa decampi
Gyraulus circumstriatus
G. deflectus
G. deflectus obliquus
G. parvus
Helisoma anceps
H. campanulatum

WISCONSIN - 86. Flambeau drainage: White Sand Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana
Lampsilis radiata siliquoidea rosacea
Sphaeriidae:
Pisidium compressum
P. variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma milesii
Valvata lewisii
V. tricarinata

WISCONSIN - 86 (cont.)
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Gyraulus deflectus obliquus
G. parvus
Helisoma anceps sayi
H. campanulatum wisconsinense
H. trivolvis
Laevapex fuscus

WISCONSIN - 87. Flambeau drainage: White Sand Lake, inlet. (Morrison, 1932).
Naiades:
Anodonta imbecillis
A. marginata
Anodontoides ferussacianus subcylindraceus
Lasmigona compressa
L. costata
Strophitus undulatus
Sphaeriidae:
Pisidium "fallax septentrionale"
Sphaerium "steinii"
S. striatinum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
C. milesii
Freshwater lung-breathing Gastropods:
Helisoma anceps unicarinatum
H. campanulatum
H. trivolvis

WISCONSIN - 88. Flambeau drainage: Whitney Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Freshwater lung-breathing Gastropods:
Physa laphami

WISCONSIN - 89. Flambeau drainage: Wildcat Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
A. marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea rosacea

WISCONSIN - 89 (cont.)
Sphaeriidae:
Pisidium casertanum
P. compressum
P. variabile
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
G. hirsutus
G. parvus
Helisoma anceps
H. campanulatum
H. trivolvis
Lymnaea stagnalis lillianae

WISCONSIN - 90. Flambeau drainage: Wolf Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Helisoma campanulatum

WISCONSIN - 91. Tomahawk drainage: Big Arbor Vitae Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Helisoma campanulatum wisconsinense
H. trivolvis winslowi

WISCONSIN - 92. Tomahawk drainage: Blue Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa

WISCONSIN - 93. Tomahawk drainage: Brandy Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea rosacea

WISCONSIN - 93 (cont.)
Sphaeriidae:
Pisidium compressum
P. nitidum
P. variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma milesii
Valvata lewisii
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Helisoma anceps
H. campanulatum
H. trivolvis pilsbryi
Lymnaea stagnalis jugularis
Physa sayii

WISCONSIN - 94. Tomahawk drainage: Carroll Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
G. parvus
Helisoma campanulatum
Lymnaea stagnalis jugularis

WISCONSIN - 95. Tomahawk drainage: Clear Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Sphaeriidae:
Pisidium adamsi
P. casertanum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Gyraulus circumstriatus
G. deflectus
Physa laphami
Pseudosuccinea columella

WISCONSIN - 96. Tomahawk drainage: Johnson Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata

WISCONSIN - 96 (cont.)
Freshwater gill-breathing Gastropods:
Campeloma milesii
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Helisoma campanulatum
Lymnaea stagnalis jugularis
Physa sayii

WISCONSIN - 97. Tomahawk drainage: Kawaguesaga Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium compressum
P. variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Helisoma campanulatum
Promenetus exacuous megas
Stagnicola emarginata

WISCONSIN - 98. Tomahawk drainage: Little Arbor Vitae Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium ferrugineum
P. lilljeborgi
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
A. walkeri
Valvata sincera nylanderi
V. tricarinata
Freshwater lung-breathing Gastropods:
Ferrissia kirklandi
Gyraulus deflectus obliquus
G. hirsutus
Helisoma anceps sayi
H. campanulatum wisconsinense
H. trivolvis winslowi
Lymnaea stagnalis sanctaemariae
Physa sayii
Promenetus exacuous
Stagnicola emarginata wisconsinensis

WISCONSIN - 99. Tomahawk drainage: Little Rice River. (Morrison, 1932).

WISCONSIN - 99 (cont.)
Sphaeriidae:
Sphaerium partumeium
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
Helisoma anceps unicarinatum
Stagnicola lanceata

WISCONSIN - 100. Tomahawk drainage: Little Star Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Helisoma anceps
H. campanulatum
Physa laphami
Stagnicola exilis

WISCONSIN - 101. Tomahawk drainage: Madeline Creek near Woodruff. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Helisoma campanulatum wisconsinense

WISCONSIN - 102. Tomahawk drainage: Pond near State Fish Hatchery Ponds at Woodruff. (Morrison, 1932).
Sphaeriidae:
Pisidium casertanum
Sphaerium lacustre
S. securis
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Helisoma anceps unicarinatum
Lymnaea stagnalis sanctaemariae
Physa laphami

WISCONSIN - 103. Tomahawk drainage: Skunk Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Campeloma milesii
Freshwater lung-breathing Gastropods:
Helisoma anceps

WISCONSIN - 104. Tomahawk drainage: Stream 10 miles southwest of Hazelhurst. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Gyraulus parvus
Helisoma anceps
Physa gyrina

WISCONSIN - 105. Tomahawk drainage: Stream at State Fish Hatchery, Woodruff. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Lampsilis radiata siliquoidea
Freshwater lung-breathing Gastropods:
Lymnaea stagnalis sanctaemariae

WISCONSIN - 106. Tomahawk drainage: Tomahawk Lake. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Lampsilis radiata siliquoidea rosacea
Sphaeriidae:
Pisidium casertanum
Sphaerium securis
S. sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma milesii
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Ferrissia parallela
Fossaria obrussa
Gyraulus hirsutus
G. parvus
Helisoma anceps sayi
H. anceps unicarinatum
H. campanulatum wisconsinense
H. trivolvis
H. trivolvis pilsbryi
Lymnaea stagnalis jugularis
L. stagnalis lillianae
Physa sayii

WISCONSIN - 106 (cont.)
Planorbula armigera
Pseudosuccinea columella
Stagnicola emarginata wisconsinensis
S. lanceata

WISCONSIN - 107. Tomahawk drainage: Kettle hole ponds near Tomahawk Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium casertanum
Sphaerium lacustre
S. securis
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Gyraulus parvus
Planorbula armigera

WISCONSIN - 108. Tomahawk drainage: Tomahawk River, 4 miles west of Minocqua. (Morrison, 1932).
Naiades:
Actinonaias carinata
Alasmidonta marginata
Anodontoides ferussacianus subcylindraceus
Elliptio dilatatus delicatus
Fusconaia flava
Lampsilis ventricosa occidens
Lasmigona compressa
L. costata
Ligumia recta latissima
Pleurobema cordatum coccineum
Strophitus undulatus
Sphaeriidae:
Sphaerium striatinum
Freshwater gill-breathing Gastropods:
Campeloma milesii
Freshwater lung-breathing Gastropods:
Ferrissia tarda

WISCONSIN - 109. Tomahawk drainage: Trilby Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium casertanum
P. variabile

WISCONSIN - 110. Tomahawk drainage: Walker Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium idahoense

WISCONSIN - 111. Tomahawk drainage: Weber Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Campeloma milesii
Freshwater lung-breathing Gastropods:
Helisoma anceps unicarinatum

WISCONSIN - 112. Tomahawk drainage: Willow River Flowage, 14 miles southwest of Hazelhurst. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Gyraulus deflectus
Helisoma anceps
H. campanulatum
H. trivolvis
Planorbula armigera

WISCONSIN - 113. Wisconsin drainage: Bragonier Lake. (Morrison, 1932).
Freshwater gill-breathing Gastropods:
Amnicola limosa
Freshwater lung-breathing Gastropods:
Gyraulus deflectus

WISCONSIN - 114. Wisconsin drainage: Clear Water Lake Creek. (Morrison, 1932).
Naiades:
Actinonaias carinata
Lampsilis radiata siliquoidea
L. ventricosa occidens

WISCONSIN - 115. Wisconsin drainage: Clear Water Lake. (Morrison, 1932).
Naiades:
Amblema costata
Fusconaia flava

WISCONSIN - 116. Wisconsin drainage: Crescent Lake. (Morrison, 1932).
Naiades:
Anodonta marginata

WISCONSIN - 116 (cont.)
Sphaeriidae:
Pisidium adamsi
P. ferrugineum
P. lilljeborgi
P. nitidum
P. variabile
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma milesii
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Helisoma anceps
H. campanulatum
H. trivolvis
Physa laphami
Promenetus exacuous

WISCONSIN - 117. Wisconsin drainage: Deerskin River, six miles south of Phelps. (Morrison, 1932).
Naiades:
Anodonta grandis plana
A. marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea
Sphaeriidae:
Sphaerium striatinum
S. sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Helisoma anceps
H. trivolvis
Physa sayii

WISCONSIN - 118. Wisconsin drainage: Finley Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium casertanum
Freshwater gill-breathing Gastropods:
Campeloma decisum

WISCONSIN - 119. Wisconsin drainage: Found Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
Freshwater lung-breathing Gastropods:
Fossaria obrussa
Gyraulus hirsutus
Helisoma anceps sayii
H. campanulatum wisconsinense

WISCONSIN - 120. Wisconsin drainage: Gilmore Creek and Wisconsin River, northeast of Tomahawk Lake. (Morrison, 1932).
Naiades:
Actinonaias carinata
Anodonta grandis plana
A. marginata
Lampsilis radiata siliquoidea
L. ventricosa
Lasmigona compressa
L. costata
Strophitus undulatus
Freshwater gill-breathing Gastropods:
Campeloma decisum

WISCONSIN - 121. Wisconsin drainage: Little St. Germain River. (Morrison, 1932).
Naiades:
Actinonaias carinata
Alasmidonta marginata variabilis
Anodonta marginata
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona complanata
L. costata
Ligumia recta latissima
Strophitus undulatus
Sphaeriidae:
Pisidium adamsi
P. compressum
P. ferrugineum

WISCONSIN - 122. Wisconsin drainage: Plum Creek. (Morrison, 1932).
Naiades:
Anodonta grandis plana
Lampsilis radiata siliquoidea rosacea

WISCONSIN - 122 (cont.)
Lasmigona costata
Strophitus undulatus
Sphaeriidae:
Sphaerium striatinum

WISCONSIN - 123. Wisconsin drainage: Plum Lake. (Morrison, 1932).
Naiades:
Anodonta grandis footiana
A. marginata
Anodontoides ferussacianus subcylindraceus
Lampsilis radiata siliquoidea rosacea
Lasmigona compressa
Sphaeriidae:
Pisidium adamsi
P. compressum
P. dubium
P. lilljeborgi
P. nitidum
P. variabile
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Amnicola limosa
A. lustrica
Campeloma decisum
C. milesii
Valvata lewisii
V. tricarinata
Freshwater lung-breathing Gastropods:
Bulimnea megasoma
Ferrissia parallela
Fossaria obrussa decampi
Gyraulus circumstriatus
G. deflectus obliquus
G. hirsutus
G. parvus
Helisoma anceps
H. anceps sayii
H. campanulatum
H. campanulatum wisconsinense
H. trivolvis
Physa sayii
Stagnicola emarginata
S. lanceata

WISCONSIN - 124. Wisconsin drainage: Razorback Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Sphaeriidae:
Pisidium variabile
Freshwater gill-breathing Gastropods:
Amnicola walkeri
Campeloma milesii
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Ferrissia parallela
Gyraulus deflectus obliquus
G. parvus
Helisoma anceps unicarinatum
H. campanulatum
Physa sayii

WISCONSIN - 125. Wisconsin drainage: Rice Creek, near Plum Lake. (Morrison, 1932).
Sphaeriidae:
Sphaerium sulcatum
Freshwater lung-breathing Gastropods:
Helisoma trivolvis
Physa gyrina

WISCONSIN - 126. Wisconsin drainage: St. Germain Lakes. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Helisoma campanulatum wisconsinense

WISCONSIN - 127. Wisconsin drainage: St. Germain River. (Morrison, 1932).
Naiades:
Actinonaias carinata
Anodonta grandis
A. marginata
Fusconaia flava
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona complanata
L. costata
Strophitus undulatus
Freshwater lung-breathing Gastropods:
Helisoma anceps

WISCONSIN - 128. Wisconsin drainage: Star Lake. (Morrison, 1932).
Naiades:
Anodonta marginata
Sphaeriidae:
Pisidium adamsi
P. compressum
P. ferrugineum
P. lilljeborgi
P. nitidum
P. variabile
Freshwater gill-breathing Gastropods:
Amnicola lustrica
Campeloma milesii
Valvata tricarinata
Freshwater lung-breathing Gastropods:
Fossaria obrussa
Gyraulus hirsutus
Helisoma anceps
H. anceps unicarinatum
H. campanulatum
Lymnaea stagnalis lillianae
Physa sayii

WISCONSIN - 129. Wisconsin drainage: Sterrett Lake. (Morrison, 1932).
Sphaeriidae:
Pisidium nitidum
Freshwater gill-breathing Gastropods:
Campeloma milesii

WISCONSIN - 130. Wisconsin drainage: Wisconsin River at Lac Vieux Desert. (Morrison, 1932).
Naiades:
Actinonaias carinata
Anodonta grandis plana
A. marginata
Anodontoides ferussacianus subcylindraceus
Fusconaia flava
Lampsilis radiata siliquoidea
L. ventricosa
Lasmigona complanata
L. compressa
Strophitus undulatus

WISCONSIN - 130 (cont.)
Sphaeriidae:
Pisidium adamsi
Sphaerium sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum

WISCONSIN - 131. Wisconsin drainage: Wisconsin River, 5 miles below Lac Vieux Desert. (Morrison, 1932).
Naiades:
Actinonaias carinata
Amblema costata
Anodonta grandis plana
Anodontoides ferussacianus subcylindraceus
Elliptio dilatatus
Fusconaia flava
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona complanata
L. compressa
L. costata
Pleurobema cordatum coccineum
Sphaeriidae:
Sphaerium striatinum
Freshwater gill-breathing Gastropods:
Campeloma milesii

WISCONSIN - 132. Wisconsin drainage: Wisconsin River at Otter Rapids, 5 miles west of Eagle River. (Morrison, 1932).
Naiades:
Actinonaias carinata
Alasmidonta marginata
Amblema costata
Anodonta grandis plana
Lampsilis radiata siliquoidea
L. ventricosa occidens
Lasmigona complanata
L. costata
Ligumia recta latissima
Sphaeriidae:
Sphaerium striatinum
S. sulcatum
Freshwater gill-breathing Gastropods:
Campeloma decisum
Somatogyrus tryoni

WISCONSIN - 133. Wisconsin drainage: Wisconsin River at Rainbow Rapids, southeast of Lake Tomahawk. (Morrison, 1932).
Naiades:
Actinonaias carinata
Lampsilis radiata siliquoidea
L. ventricosa occidens
Sphaeriidae:
Pisidium adamsi
P. compressum
P. dubium
P. nitidum
P. punctiferum
P. variabile
Sphaerium securis
S. striatinum
Freshwater gill-breathing Gastropods:
Amnicola limosa
Campeloma decisum
Somatogyrus tryoni
Freshwater lung-breathing Gastropods:
Helisoma anceps
Physa latchfordi

WISCONSIN - 134. Wisconsin drainage: Wisconsin River, 4 miles northeast of Lake Tomahawk. (Morrison, 1932).
Sphaeriidae:
Pisidium casertanum
Sphaerium striatinum
Freshwater lung-breathing Gastropods:
Fossaria modicella

WISCONSIN - 135. Wisconsin drainage: Shore pool, Wisconsin River, 4 miles northeast of Tomahawk Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Gyraulus deflectus obliquus
Physa gyrina

WISCONSIN - 136. Wisconsin drainage: Ponds in swamp along Wisconsin River, 4 miles northeast of Tomahawk Lake. (Morrison, 1932).
Sphaeriidae:
Sphaerium occidentale
S. partumeium

WISCONSIN - 136 (cont.)
Freshwater lung-breathing Gastropods:
Aplexa hypnorum
Planorbula armigera

WISCONSIN - 137. Wisconsin drainage: Slough along Wisconsin River, northeast of Tomahawk Lake. (Morrison, 1932).
Freshwater lung-breathing Gastropods:
Bulimnea megasoma

WISCONSIN - 138. Crawford County: Floodplain of the Kickapoo River, near the mouth of Trout Creek. Snails were found dead in the drift and alive under drift logs and in the finer portions of the drift. The river is rather deep, with high banks, and most of the drift is found a small distance away from the river where the floodplain is wider. (Morrison, 1929: 42, 43, his Station I).

A. Living species
Freshwater gill-breathing Gastropods:
Pomatiopsis lapidaria
Land Gastropods:
Anguispira alternata
Deroceras laeve
Discus cronkhitei
Oxyloma retusa
Stenotrema fraternum
Succinea avara
S. ovalis
Zonitoides arboreus

B. Dead in the drift
Sphaeriidae:
Sphaerium partumeium
Freshwater gill-breathing Gastropods:
Campeloma rufum
Freshwater lung-breathing Gastropods:
Fossaria parva
Gyraulus parvus
Helisoma trivolvis
Physa gyrina "elliptica"
Planorbula armigera
Stagnicola caperata
S. exilis

WISCONSIN - 138 (cont.)
Land Gastropods:
Helicodiscus parallelus

WISCONSIN - 139. Crawford County: The lower portion of the floodplain of Trout Creek that is subject to overflow. Not very much drift is found here; the soil shows a layer of very fine silt as a result of its flooding. Snails were found under logs and in the scanty leaf mold. (Morrison, 1929: 42-43, his Station II).
Land Gastropods:
Anguispira alternata
Deroceras laeve
Discus cronkhitei
Helicodiscus parallelus
Nesovitrea electrina
Stenotrema fraternum
Succinea ovalis
Vallonia pulchella

WISCONSIN - 140. Crawford County: That portion of the floodplain of Trout Creek that is above the reach of ordinary high waters. This station includes the very mesophytic slopes of the sides of the creek valley that are rather heavily overgrown with brush and small trees. The snails were found under small logs (not drift logs) and in the leaf mold. (Morrison, 1929: 43, his Station III).
Freshwater gill-breathing Gastropods:
Pomatiopsis lapidaria
Land Gastropods:
Allogona profunda
Anguispira alternata
Carychium exile
Cionella lubrica
Deroceras laeve
Discus cronkhitei
Euconulus fulvus
Gastrocopta contracta
Helicodiscus parallelus
Hendersonia occulta
Mesodon clausus
Pallifera dorsalis? (immature)
Retinella indentata

WISCONSIN - 140 (cont.)
Stenotrema fraternum
S. hirsutum
Strobilops affinis
Succinea avara
S. ovalis
Vallonia costata
Zonitoides limatulus

WISCONSIN - 141. Crawford County: Wooded portions of the ravines that branch off Trout Creek Valley; the exposure of the slopes studied (on the Himley Farm) was mostly to the northeast. The ravine studied in detail is about one mile up from the mouth of Trout Creek, and nearly two miles out of town. (Morrison, 1929: 43-44, his Station IV).
Land Gastropods:
Allogona profunda
Anguispira alternata
Carychium exile
Discus cronkhitei
Euconulus fulvus
Helicodiscus parallelus
Hendersonia occulta
Mesodon thyroidus
Nesovitrea electrina
Stenotrema fraternum
Strobilops affinis

WISCONSIN - 142. Crawford County: Slopes of northern exposure in the valley of the Kickapoo. These were studied on Asper Heims Hill, which is an outlier, just to the west of the town. The slope here is very steep, and heavily wooded, with a good many fallen logs. Snails were collected from the leaf mold and from under the logs, which were mostly in stage three of decay, with the inner, heart-wood still solid. (Morrison, 1929: 44, his Station V).
Land Gastropods:
Allogona profunda
Anguispira alternata
Gastrocopta contracta
Helicodiscus parallelus

WISCONSIN - 142 (cont.)
Hendersonia occulta
Stenotrema fraternum
Strobilops affinis
Zonitoides limatulus

WISCONSIN - 143. Crawford County: Smaller ravines branching directly off the valley of the river. These ravines have no permanent streams in them; they are covered with rather open woods and brush. The exposure is to the north. Snails were found under logs, under rocks, and in the rather dry and loose leaf mold. (Morrison, 1929: 44, his Station VI).
Land Gastropods:
Anguispira alternata
Carychium exile
Cionella lubrica
Euconulus fulvus
Gastrocopta armifera
G. contracta
G. pentodon
Nesovitrea electrina
Philomycus carolinianus
Strobilops affinis

WISCONSIN - 144. Crawford County: Slopes of southern exposure in the valley of the Kickapoo. These also were studied on Asper Heims Hill. This portion of the hill is under pasturage, and represents perhaps the most unfavorable habitat for snails, of all. The ground is bare except for grass and a few small herbs; there are many flat limestone rocks, under which the snails were found. (Morrison, 1929: 44, his Station VII).
Land Gastropods:
Deroceras laeve
Gastrocopta armifera
Helicodiscus parallelus
Pupoides albilabris
Succinea avara
Vallonia pulchella
Zonitoides arboreus

(TO BE CONTINUED IN A FUTURE NUMBER OF STERKIANA)

NYLA: Lyceum of Natural History of New York, Annals. Albany.
NYLP: Ibid., Proceedings.
NYMB: New York State Museum, Bulletin. Albany.
NYMM: Ibid., Memoirs.
NYMR: Ibid., University of the State of New York, Annual Report of the Regents. Albany.
OASA: Ohio State Academy of Science, Annual Report. Columbus.
OASP: Ohio State Academy of Science, Proceedings. Columbus.
OASS: Ibid., Special Papers.
OHJS: Ohio Journal of Science. Columbus.
OHNA: Ohio Naturalist, Ohio State University. Columbus. Later OHJS.
OPMC: Occasional Papers on Mollusks. Cambridge, Mass.
OTFT: Ottawa Field-Naturalists' Club, Transactions. Ottawa.
OTNA: The Ottawa Naturalist. Ottawa. Later CAFN.
QJGS: Quarterly Journal of the Geological Society. London.
QJOC: Quarterly Journal of Conchology. London.
RSCT: Royal Society of Canada, Proceedings and Transactions. Ottawa.
RSEP: Royal Society of Edinburgh, Proceedings. Edinburgh.
RSET: Ibid., Transactions.
RSLP: Royal Society of London, Proceedings. London.
RSLT: Ibid., Philosophical Transactions.
SAMA: South African Museum, Annals. Cape Town.
SCGO: Science-Gossip, an illustrated monthly record of Nature and country-lore. London.
SCAB: Southern California Academy of Sciences, Bulletin. Los Angeles.
SCIE: Science, a weekly journal. New series. New York.
SGFB: Société géologique de France, Bulletin (incl. Compte-rendu). Paris.
SGFM: Ibid., Mémoires.
SGPM: Ibid., Mémoires, Paléontologie.
SMBA: Société royale malacologique de Belgique, Annales. Bruxelles.
SMBB: Société royale malacologique de Belgique, Bulletin des séances. Bruxelles.
SMBP: Ibid., procès-verbaux des séances. Reappears later, with a different number to the volume, as SMBB.
SMCK: Smithsonian Contributions to Knowledge. Washington, D.C.
SMCW: Smithsonian Miscellaneous Collections. Washington, D.C.
SMFB: Société malacologique de France, Bulletin. Paris.
SMFR: Ibid., revue biographique. Paris.
SMIB: Società malacologica italiana. Pisa.
SNBA: Senckenbergiana. Frankfurt-am-Main.
STER: Sterkiana. Columbus, Ohio.
SZFB: Société zoölogique de France, Bulletin. Paris.
SZFM: Ibid., Mémoires. Paris.
TIPA: Treatise on Invertebrate Paleontology, Part A. Lawrence, Kansas and New York, N.Y. (TIPB, TIPC, etc. for all other parts to TIPZ).
UFCF: United States Fish Commission, Bulletin. Washington, D.C.
UFCR: Ibid., Report of the Commissioner.
UGSB: United States Geological Survey, Bulletin. Washington, D.C.
UGSM: Ibid., Monographs. Washington, D.C.
UGSP: Ibid., Professional Papers.
UNMB: United States National Museum, Bulletin. Washington, D.C.
UNMP: Ibid., Proceedings.
UNMR: Ibid., Annual Report of the Board of Regents of the Smithsonian Institution.
VELI: The Veliger. Berkeley, Calif.
VENU: The Venus. Kyoto, Japan.
WAMS: The West American Scientist. Los Angeles, etc.
WASJ: Washington Academy of Sciecnes. Journal. Washington, D.C.
WASP: Ibid., Proceedings.
WAST: Wisconsin Academy of Sciences, Arts, and Letters, Transactions. Madison, Wis.
WFIT: Wagner Free Institute of Science of Philadelphia, Transactions. Philadelphia.
WGNB: Wisconsin Geological Survey, Geology of Wisconsin. Later, Wis. Geol. and Nat.

WGNB (cont.) History Survey, Bulletin. Madison, Wis.
ZBML: Zeitschrift für Biologie. München and Leipzig.
ZFMH: Zeitschrift für Malakozoölogie. Hannover, etc. Later MABL.
ZRML: The Zoological Record, Mollusca. London.
ZSLP: Zoological Society of London, Proceedings of the Scientific Meetings. London.
ZSLT: Ibid., Transactions. London.

AUTHOR INDEX

TO THE

NAUTILUS

VOLUMES 3-75 AND ITS PREDECESSOR THE

CONCHOLOGISTS' EXCHANGE

VOLUMES 1 AND 2

COMPILED BY

AURÈLE LA ROCQUE

COLUMBUS, OHIO
1963