Checklist of Recent Mollusca of Wyoming, USA

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CHECKLIST OF RECENT MOLLUSCA OF WYOMING, USA

Dorothy E. Beetle1

ABSTRACT.— Wyoming lacks a rich molluscan fauna due to its considerable elevation, extremes of temperature, the short period between killing frosts, scanty moisture, and intermittent creeks. Recent mollusks found in the state total 42 genera (109 species), including 6 genera (23 species) of bivalves, 15 genera (42 species) of freshwater gastropods, and 21 genera (44 species) of land gastropods. Synonymy, the counties in which each species was collected, and habitat notes are given.

The state of Wyoming stretches across the Continental Divide. Mountain ranges jut skyward along its western border and run diagonally northwest to southeast across the state. The highest point, Gannett Peak, crowns the Wind River Range at 13,504 feet. The lowest elevation, 3,125 feet, is in the northeast corner of the state in Crook County.

Rivers that flow from these mountains eventually reach the Pacific Ocean or the gulf of California and Mexico. The Snake River, which flows through Grand Teton National Park, reaches the Pacific Ocean via the Columbia River. The Green River and its tributaries empty into the Colorado River en route to the Gulf of California. Rivers in central and eastern Wyoming eventually join the Missouri River on its way to the Gulf of Mexico.

The climate is rather harsh, with severe winters and mild summers. Minimum winter temperatures may drop to between −40 F and −60 F. Summer days may have comfortable temperatures in the 70s and 80s, but they can go 10 or more degrees higher. Nights are cool. The growing season is restricted, depending upon the elevation, with killing frosts occurring even in May and September on the plains.

Moisture, in the form of rain or snow, is light, ranging from under 22 inches annually in the mountains to 4–6 inches in the Red Desert and along the eastern side of the state. Frost and snow may occur in the mountains even in summer months.

Although it ranks tenth in size among the states, Wyoming lacks a rich molluscan fauna. The extremes of temperature, the short period between killing frosts, the scanty moisture, and intermittent creeks make the state inhospitable to mollusks. Limited habitat is offered on the plains by cottonwoods and willows bordering creeks and ponds, and on steep sedimentary slopes by shrubs. Many of the intermittent creeks disappear in the desert soil. A good many ponds are simply depressions filled by meltwater and are subject to seasonal drying, limiting habitat for freshwater mollusks. Damming of major rivers has changed habitat availability, particularly for bivalves.

Land mollusks occur in greatest abundance and largest number of species in the mountain ranges from the foothills to above timberline. Here moist meadows, aspen stands, willows and shrubs bordering ponds and creeks, and mixed coniferous-deciduous forests offer favorable habitats.

This checklist of Recent Wyoming mollusks gives the counties in which each species was collected as well as habitat data. A total of 42 genera encompassing 109 species and subspecies is listed for the state, including 6 genera (23 species) of bivalves, 15 genera (42 species) of freshwater gastropods, and 21 genera (44 species) of land gastropods. Figure 1 shows the counties outlined in thick lines, the major river drainages indicated by thin lines, and the position of mountain ranges designated by clusters of dots.

Most of the specimens studied were collected on various trips by me between 1948 and 1988 and are in my personal collection. Additional material and/or records were obtained from Stephan L. Welty, Dr. Dwight W. Taylor, Wyoming Game and Fish Commission, Yellowstone National Park biologists,

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**Class Bivalvia**
Subclass Eulamellibranchia
Order Schizodonta

**Family Margaritiferidae**

*Margaritifera falcata* (Gould, 1850)
County records: Lincoln, Sublette, Teton, Uinta.
Habitat: Streams with sand and cobble bottoms; usually cold water; altitude 6,000–7,000 feet.

**Family Unionidae**

*Anodontoides ferrusacianus* (Lea, 1834)
County records: Goshen, Laramie, Platte.
Habitat: North Platte River and its tributaries in sand, silt, and mud; altitude 4,000–6,000 feet.

*Anodonta californiensis* Lea, 1852
County records: Uinta.
Habitat: Bear River; sand and gravel bottoms.

*Lampsilis radiata siliquoides* (Barnes, 1832)
*Lampsilis ventricosa* (Barnes, 1823)
County records: Converse, Fremont, Natrona, Platte.
Habitat: Sand, gravel and cobble bars in fairly swift water; also silty mud at dams.

**Family Sphaeriidae**

*Sphaerium lacustre* (Muller, 1774)
*Sphaerium lacustre ryckholti* Normand, 1844
*Sphaerium (Musculium) raymondi* Cooper, 1892
County records: Albany, Carbon, Fremont, Natrona, Sublette, Teton.
Habitat: In the mud and silt of ponds, small lakes, sloughs, with heavy vegetative growth, or creeks with sandy bottoms; altitude 5,000–9,000 feet.

*Sphaerium occidentale* (Prime, 1853)
County records: Fremont, Teton.
Habitat: Shallow muddy ponds, depression in a meadow; one occurrence in *Sphagnum* moss edging a bog; altitude 7,000–9,000 feet.

*Sphaerium securis* (Prime, 1851)
County records: Fremont.
Habitat: Creeks, gravel and mud bottoms with many aquatic plants.

*Sphaerium simile* (Say, 1816)
County records: Johnson, Sheridan.
Habitat: Perennial bodies of water, usually with a mud or sand bottom and thick aquatic growth.

*Sphaerium striatinum* (Lamarck, 1818)
*Sphaerium tumidum* (Baird, 1863)
Pisidium centricosum Prime, 1851
County records: Sublette, Teton, Uinta.
Habitat: Ponds, marshes that do not dry completely.

Class Gastropoda

Subclass Prosobranchia

Order Mesogastropoda

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Family Valvatidae

Valvata humeralis Say, 1829
Valvata humeralis californica Pilsbry, 1908
County records: Teton.
Habitat: Lakes, ponds, marsh; mud bottom with thick plant growth.

Valvata sincera Say, 1824
Valvata levisi Currier, 1868
Valvata levisi helicoidea Dall, 1905
Valvata sincera helicoidea Dall, 1905
County records: Albany, Teton.
Habitat: Mountain lakes, ponds, a vernal pond, creeks, a bog with thick tan ooze bottom, and heavily vegetated mud bottoms; usually with abundant aquatic vegetation.

Family Hydropodidae

Lithoglyphus columbianus (Hemphill, 1899)
Fluminicola columbianus (Hemphill, 1899)
County records: Teton.
Habitat: Backwaters of the Snake River.

Lithoglyphus hindisi (Baird, 1863)
Fluminicola fusca (Haldeman, 1847)
Fluminicola coloradoense (Morrison, 1940)
County records: Lincoln, Sublette, Sweetwater, Teton, Uinta.
Habitat: Snake and Green River drainages, on rocks.

Lithoglyphus cirrus (Lea, 1838)
County records: Lincoln.
Habitat: Rivers, creeks, and irrigation ditches.

Fonticella robusta Gregg & Taylor, 1905
Annulicola robusta (Walker, 1906)
County records: Lincoln, Teton.
Habitat: Rivers, creeks; on rocks, sticks.

Annulicola greggi Pilsbry, 1935
County records: Lincoln, Sublette, Teton, Yellowstone National Park.
Habitat: Cool springs, spring-fed ponds, on cobbles in river.

Annulicola limosa (Say, 1817)
County records: Teton.
Habitat: Cold spring-fed pond; on silt, gravel, and plants.

Subclass Pulmonata

Order Basommatophora

Family Lymnaeidae

Lymnaea (Fossaria) medicella Say, 1825
Lymnaea humilis rustica (Lea, 1841)
Lymnaea humilis medicella Jay, 1852
County records: Albany, Platte, Sheridan, Teton, Yellowstone National Park.
Habitat: Along water's edge or in shallow water of ditches, swales, creeks; often on mud or moss.

Lymnaea (Fossaria) obrussa Say, 1825
County records: Albany, Big Horn, Converse, Fremont, Goshen, Hot Springs, Johnson, Laramie, Platte, Sublette, Teton, Washakie.

County records: Albany, Carbon, Goshen, Laramie, Lincoln, Sheridan, Sweetwater, Sublette, Teton, Uinta.
Habitat: Creeks, beaver ponds, small lakes, in mud and vegetation along shore; altitude approximately 4,200–5,000 feet.

Pisidium adamsi Prime, 1852
County records: Teton.
Habitat: In muck of cold, spring-fed pond at 9,650 feet that is briefly ice-free during the summer; in silt and thick plant growth.

Pisidium casertanum (Poli, 1791)
Pisidium concinnum Sterki, 1906
Pisidium occidentale Newcomb, 1865
Pisidium lucidum Sterki, 1923
County records: Abundant statewide.
Habitat: Ponds, vernal pools, sloughs, marshes, bogs, mud flats, small creeks, and backwaters of rivers; often among roots of plants; in mud; dredged at 35 feet in Lake Marie in the Medicine Bow Mountains, altitude 9,600 feet.

Pisidium compressum Prime, 1851
County records: Albany, Carbon, Goshen, Laramie, Lincoln, Sheridan, Sublette, Sweetwater, Teton, Uinta.
Habitat: Shallow creeks, river and lake margins, sloughs with silt and mud bottoms.

Pisidium contortum Prime, 1851
County records: Albany, Lincoln, Sublette, Sweetwater, Teton, Uinta.
Habitat: Creek margins, ponds; muddy bottom with plants.

Pisidium ferrugineum Prime, 1852
County records: Albany.
Habitat: In muck of beaver pond; altitude 9,100 feet.

Pisidium idahoense Roper, 1890
County records: Teton.
Habitat: Mountain lakes.

Pisidium insignis Gabb, 1868
County records: Lincoln, Sublette, Teton.
Habitat: In mud and plants of overflow from seeps and springs.

Pisidium milium Held, 1836
County records: Fremont, Yellowstone National Park.
Habitat: Small lakes, quiet areas of creeks; mud bottom with plants.

Pisidium nitidum Jenyns, 1832
County records: Big Horn, Carbon.
Habitat: Shallow ponds, sloughs with thick plant growth.

Pisidium obtusale Pfeiffer, 1821
Pisidium obtusale rotundatum Prime, 1851
County records: Sublette, Teton, Uinta.
Habitat: Ponds, sloughs; on mud and roots of aquatic plants.

Pisidium pauperulum Sterki, 1896
County records: Teton.
Habitat: Mountain lake.

Pisidium subtruncatum Malm, 1855
County records: Crook, Lincoln, Sublette, Teton.
Habitat: Shoreline vegetation and mud of creeks, marshes.

Pisidium variabile Prime, 1852
County records: Albany, Carbon, Fremont, Laramie, Sublette, Teton, Uinta, Yellowstone National Park.
Habitat: On plants and mud of ponds and creeks; altitude up to 9,000 feet.
Habitat: Sloughs, marshes, lake edge, ponds that may be temporary, on caracareous algae in warm water spring, cold spring overflow; on mud, silt, gravel, cobbles.

*Lymnaea (Fossaria) parva* Lea, 1841

County records: Big Horn, Johnson, Lincoln, Sheridan, Sublette, Sweetwater, Teton, Uinta, Washakie, Yellowstone National Park.

Habitat: Sloughs, wet meadows on grass or moss, on wall of moss-lined cave with tiny creek running through it, creek borders in leaves; on sticks and rocks.

*Lymnaea (Bakerilymnaea) cockerelli* Pilsky & Ferriss, 1906

County records: Albany, Hot Springs, Laramie, Natrona, Niobrara, Weston.

Habitat: Shallow lakes and ponds that may be temporary, alkali flats around a lake, carbonate crust with algae in overflow from a hot pool.

*Lymnaea (Bakerilymnaea) dalli* Baker, 1907

County records: Albany, Big Horn, Sheridan.

Habitat: Mountain lakes, cold spring-fed pond; on plants.

*Lymnaea (Bakerilymnaea) techella* Haldeman, 1867

*Lymnaea doddsii* Baker, 1911

County records: Albany, Big Horn, Carbon, Fremont, Natrona, Sublette, Sweetwater, Uinta, Washakie.

Habitat: Shallow ponds, slowly flowing creeks; mud, sand, clay bottoms; often with thick algal and plant growth.

*Lymnaea (Radix) auricularia* (Linnaeus, 1758)

County records: Laramie, Teton.

Habitat: On stones and mud of delta of Arizona Creek.

*Lymnaea apressa* Say, 1821

*Lymnaea stagnalis jugularis* Say, 1817

County records: Albany, Lincoln, Sublette, Teton, Uinta, Yellowstone National Park.

Habitat: Ponds (some vernal), stock ponds, lakes, creek margins; mud and salt crust, usually thick vegetation; altitude 3,000–7,300 feet.

*Lymnaea (Hinkleyia) caperata* (Say, 1829)

*Lymnaea caperata scarthi* (Baker, 1923)

County records: Widely distributed over the state.

Habitat: Usually occurring in shallow water of vernal ponds, ditches, wet meadows, slowly flowing creeks, and runoff of springs; mud, sand, or clay bottoms; altitude 3,900–9,200 feet.

*Lymnaea (Hinkleyia) montanensis* (Baker, 1913)

County records: Fremont, Lincoln, Sublette, Teton.

Habitat: Seepage from springs, wet meadows, small creeks; on rocks and plants.

*Lymnaea (Stagnicola) catascopium* (Say, 1817)

*Lymnaea apicina* (Lea, 1839)

*Lymnaea binneyi* (Tryon, 1865)

*Lymnaea montana* Elrod, 1902

*Lymnaea jacksonensis* Baker, 1907

*Lymnaea (Stagnicola) elrodiana* Baker, 1935

County records: Fremont, Lincoln, Sublette, Teton, Yellowstone National Park.

Habitat: Clear mountain rivers and lakes, cold water; on rocks and along water’s edge.

*Lymnaea (Stagnicola) elodes* (Say, 1821)

*Lymnaea palustris* (Muller, 1774)

*Lymnaea palustris nuttalliana* Lea, 1841

*Lymnaea proxima* Lea, 1856

*Lymnaea palustris haydeni* (Lea, 1858)

*Lymnaea traski* Tryon, 1863

*Lymnaea palustris wyomingensis* Baker, 1927

*Lymnaea hemphilli* (Baker, 1934)

County records: Abundant statewide.

Habitat: Ponds, sloughs, lakes, in almost any aquatic situation; on mud, silt, rocks, vegetation; burrows into mud of vernal ponds; once found completely covering the bottom of a drying sewage pond, once in a saline pond.

*Lymnaea (Stagnicola) hinkleyi* (Baker, 1906)

County records: Lincoln, Sublette, Sweetwater, Teton, Uinta, Yellowstone National Park.

Habitat: Lakes, rivers.

*Pseudosuccinea columella* (Say, 1817)

County records: Albany.

Habitat: Small pool, abundant aquatic vegetation.

**Family Physidae**

*Physa columbiana* (Hemphill, 1890)

County records: Teton.

Habitat: On rocks in shallow water of the Snake River.

*Physa heterostropha* (Say, 1817)

*Physa gyrina* (Say, 1821)

*Physa gyrina aurea* (Lea, 1838)

*Physa heterostropha aurea* (Lea, 1838)

*Physa sayi* (Tappan, 1839)

*Physa virginea* (Gould, 1847)

*Physa virginiana* (Gould, 1847)

*Physa amplilacea* (Gould, 1854)

*Physa triticea* (Lea, 1856)

*Physa nuttalliana* (Lea, 1864)

*Physa warreniana* (Lea, 1864)

*Physa blaudi* (Lea, 1864)

*Physa forschieri* (Lea, 1864)

*Physa saffordi* (Lea, 1864)

*Physa sayi warreniana* (Lea, 1864)

*Physa coperi* (Tryon, 1865)

*Physa propinqua* (Tryon, 1865)

*Physa wolfiana* (Lea, 1869)

*Physa walkeri* (Crandall, 1901)

*Physa smithiana* (Baker, 1920)

*Physa gyrina smithiana* (Baker, 1920)

*Physa gyrina gouldii* (Clench, 1935)

*Physa warreniana gouldii* (Clench, 1935)

*Physa johnsoni* (Clench, 1936)

County records: Widely distributed over the state.

Habitat: Found in a wide variety of situations, mostly in perennial waters; *Physa heterostropha* and *Lymnaea elodes* appear to be mutually exclusive in that where one species is abundant, the other is present in limited numbers or absent.

*Physa megachlamys* Taylor, 1987

County records: Teton, Yellowstone National Park.

Habitat: Ponds, marshes, lakes with mud substrate and abundant submerged aquatics; on exposed surfaces of logs, stones, and plants.

*Physa skinneri* Taylor, 1954

County records: Fremont, Lincoln, Sublette, Sweetwater, Teton, Uinta, Yellowstone National Park.

Habitat: Ponds, marshes with plants such as *Typha* and *Scirpus*, ditches, slough off river; mud and silt bottoms; Taylor indicates the species is found in ponds in preference to marshes and at higher elevations and further north than *Physa megachlamys*.

*Physa spelunca* Turner & Clench, 1974

County records: Big Horn.
Habitat: Limestone cave, in warm-water stream originating from hot spring 1,000 feet from cave entrance; altitude approximately 3,000 feet.

Physa virgata (Gould, 1855)
Physa integra (Haldeman, 1841)
Physa humerosa (Gould, 1855)
Physa anatina (Lea, 1864)
Physa traski (Lea, 1864)
Physa virgata anatina (Lea, 1864)
Physa virgata traski (Lea, 1864)
Physa virgata berendli (Fischer & Crosse, 1886)
Physa utahensis (Clench, 1925)
Physa virgata concolor morph Burch. 1980
County records: South and eastern part of Wyoming.
Habitat: Usually in perennial water such as springs, creeks, and rivers, rather than in lotic situations.

Aplexa elongata (Say, 1821)
Aplexa hypnorum (Linnaeus, 1758)
County records: Albany, Carbon, Converse, Fremont, Platte, Sheridan, Sublette, Sweetwater, Teton, Uinta, Yellowstone National Park.
Habitat: On moss in swampy pastures, adjacent to rivers, sloughs, ponds, (some vernal), ditches with Typha, runoff from warm spring; on mud and plants.

FAMILY PLANORBIDAE

Gyraulus circumstriatus (Tryon, 1866)
County records: Albany, Fremont, Lincoln, Platte, Sheridan, Sublette, Teton, Uinta.
Habitat: Ponds, marshes, small lakes, bogs (some drying seasonally), creeks; on wood, rocks, and plants; altitude up to 9,200 feet.

Gyraulus parcus (Say, 1816)
County records: Albany, Big Horn, Campbell, Converse, Fremont, Goshen, Johnson, Laramie, Sheridan, Sublette, Teton (misidentified as Gyraulus similis at mouth of Flat Creek, and as Gyraulus verniculatus north of Moran [original site of Moran, at foot of Jackson Lake dam]).
Habitat: Ponds, sloughs, creeks, shallow lakes; usually in heavy vegetation and on stones; mud bottoms.

Armiger cristia (Linnaeus, 1758)
County records: Teton, Yellowstone National Park.
Habitat: Seasonal ponds, bog; thick vegetation.

Promenetus excavatus (Say, 1821)
County records: Lincoln, Teton, Yellowstone National Park.
Habitat: Vernal ponds, ditches, small creeks, bogs (one with tan ooze bottom); on waterlilies, Sphagnum moss, and other plants; usually a mud bottom; altitude 6,000–7,000 feet.

Promenetus umbilicatellus (Cockerell, 1887)
County records: Albany, Goshen, Johnson, Lincoln, Platte, Teton (specimen from Leigh Lake misidentified as Gyraulus articulatus). Washakie, Yellowstone National Park.
Habitat: Seasonal ponds, sloughs, along stream margins; on plants and rocks, usually a mud bottom; altitude 4,300–8,500 feet.

Planorbula campestris (Dawson, 1875)
Planorbula christyi (Dall, 1905)
County records: Teton.
Habitat: Vernal ponds, bog with tan ooze bottom; thick plant growth.

Helisoma anceps (Menke, 1830)
Helisoma antrosa (Conrad, 1834)
County records: Carbon, Laramie, Platte, Sheridan.
Habitat: Creeks, ditches, ponds; usually a muddy bottom.

Helisoma newberryi (Lea, 1855)
Carinifex jacksonensis (Henderson, 1932)
County records: Teton.
Habitat: Known live only from Jackson Lake; on gravel and silt in shallow water.

Helisoma subcrenatum (Carpenter, 1857)
Helisoma tricolor tricolor subcrenatum (Carpenter, 1857)
Helisoma subcrenatum disjectum (Cooper, 1890)
Helisoma subcrenatum perdisjectum (Baker, 1945)
County records: Fremont, Sublette, Teton, Washakie, Yellowstone National Park.
Habitat: Ponds (some having either cool or warm springs), shallow embayments of lakes, marshes, bogs, small creeks; usually mud substrate with thick aquatic plant growth; burrows into mud of vernal ponds.

Helisoma tricolor (Say, 1817)
Helisoma tricolor macrostomum (Whiteaves, 1863)
County records: Carbon, Goshen, Laramie, Niobrara, Teton, Washakie, Yellowstone National Park.
Habitat: Ponds, lakes; usually mud substrate with abundant aquatic plants.

Planorbella duryi (Weatherby, 1879)
County records: Teton.
Habitat: Kelly Warm Spring; temperature 52 F, approximately 100 by 50 feet in size and 4 feet deep. The spring has apparently been the site of release of several species of unwanted tropical fish and snails. The abundance of these animals and the several size classes attest to their successful colonization of the spring.

Planorbella scalaris (Jay, 1839)
County records: Teton.
Habitat: Kelly Warm Spring; see note under Planorbella duryi.

FAMILY ANCYLIDAE

Ferrisia virgata (Say, 1817)
County records: Albany, Carbon, Converse, Fremont, Platte.
Habitat: On rocks and plants (particularly on Typha and Nuphar stems and leaves), or on dead branches in quiet areas of rivers, creeks, and ponds.

Order Stylommatophora

FAMILY OREOHELICIDAE

Oreohelix carinifera Pilsbry, 1912
County records: Park.
Habitat: Dry slope.

Oreohelix pygmaea Pilsbry, 1913
Oreohelix strigosa berryi Pilsbry, 1915
Oreohelix pygmaea maculata Henderson, 1921
County records: Big Horn, Fremont, Johnson, Sheridan, Washakie, Yellowstone National Park.
Habitat: A mountain species predominantly occupying areas of limestone and sandstone rocks in moist meadows, along creeks under aspen and willow, also under rocks on canyon slopes with sparse stands of shrubs, conifers, and grass; altitude approximately 4,200–8,500 feet.

Oreohelix subradis (Pfeiffer in Reeve, 1854)
Oreohelix cooperi (Binney, in part, 1869)
Oreohelix subradis maxima Pilsbry, 1916
Oreohelix subradis obscura Henderson, 1918
County records: Found in the mountains throughout the state.
Habitat: Preferentially occupies limestone and sandstone areas in aspen, willow, sagebrush, mixed hardwood and conifer stands, in both moist and rather dry places up to timberline.

**Oreohelix yasumaii extenuatissis** Pilsbry & Ferriss, 1911
*Oreohelix yasumaii magnicorda* Pilsbry, 1916
County records: Big Horn, Hot Springs, Teton, Washakie.
Habitat: Limestone and sandstone talus, rather dry situations at base of cliffs, under shrubs and grass clumps, occasionally in cottonwood and willow litter in canyons.

**Family Sagdidae**

*Microphysula ingersoli* (Bland, 1874)
County records: Albany, Fremont, Sublette, Teton.
Habitat: Aspen and willow leaf litter, on spruce logs in damp places in the mountains.

**Family Zonitidae**

*Eucolus fulus* (Muller, 1774)
*Eucolus fulus alaskensis* (Pilsbry, 1899)
County records: Albany, Big Horn, Fremont, Johnson, Laramie, Natrona, Park, Sheridan, Sublette, Teton, Uinta, Washakie, Yellowstone National Park.
Habitat: In litter of aspen, willow, cottonwood, or conifer and moss at seeps and springs; often under dead logs in damp places; an abundant snail of the mountains.

*Retinella (Nesovitrea) binemiana* (Morse, 1864)
*Retinella binemiana occidentalis* (Baker, 1930)
County records: Albany, Fremont, Johnson, Sheridan, Sublette, Teton, Washakie.
Habitat: Leaf litter of hardwoods and conifers; edge ponds, creeks, seeps, under limestone rocks in the mountains.

*Retinella (Nesovitrea) electrina* (Gould, 1841)
County records: Albany, Big Horn, Teton, Uinta, Yellowstone National Park.
Habitat: Leaf litter of willow, cottonwoods, aspen, among seeps; in damp places around sloughs, ponds, and creeks.

*Hucavia minuscula* (Binney, 1840)
County records: Albany, Goshen, Laramie, Platte.
Habitat: Under limestone and sandstone rocks on cliffs with sparse juniper and grass; once in willow litter; altitude 4,400–8,500 feet.

**Zonitoides arboreus** (Say, 1816)
County records: Widely distributed over the state.
Habitat: One of the most abundant land snails, found wherever favorable conditions exist for mudskips; occurs from the base of the foothills to timberline.

*Vitrina alaskana* Dall, 1905
County records: Found in the mountains throughout Wyoming.
Habitat: In litter of such hardwoods as aspen and willow; in conifer stands; under limestone and sandstone rocks; under logs in moist areas, but also on dry canyon slopes with shrubs and grass from the foothills to timberline at 10,000 feet.

**Family Limacidae**

*Deroceras laccex* (Muller, 1774)
*Deroceras laccex gracile* (Rafinesque, 1820)
County records: Albany, Big Horn, Fremont, Johnson, Sheridan, Sublette, Teton.
Habitat: Mainly in aspen and willow litter, in moss, around ponds and damp places.

*Deroceras reticulatum* (Muller, 1774)
County records: Albany, Carbon, Hot Springs, Laramie, Natrona, Sheridan, Washakie.
Habitat: Usually near cultivated places such as gardens, greenhouses, fish hatcheries; in leaf litter and under boards and rocks.

**Family Endodontidae**

*Discus crookhitei* (Newcombe, 1865)
*Goniopatius crookhitei anthonyi* (Pilsbry & Ferris, 1906)
County records: Albany, Big Horn, Carbon, Converse, Fremont, Johnson, Lincoln, Natrona, Park, Sheridan, Sublette, Teton, Washakie, Yellowstone National Park.
Habitat: Abundant in the mountains at 6,000–10,000 feet, particularly in aspen, willow, and mixed associations of lodgepole or limber pine and cottonwood, present in damp situations in Sphagnum moss of bogs and seeps; under limestone rocks; in leaves and under logs.

*Discus shumeki* (Pilsbry, 1890)
*Discus shumeki rockerelli* (Pilsbry, 1898)
County records: Albany, Big Horn, Fremont, Johnson, Sheridan, Sublette, Teton.
Habitat: Common in mountain canyons, often on the shaded north side in spruce and pine; in willow and meadows along creeks, damp places under logs.

*Punctum minutissimum* (Lea, 1841)
County records: Albany, Carbon, Natrona, Teton.
Habitat: In the mountains in willow and aspen or spruce in damp places under decaying logs and leaves.

**Family Succinidae**

Possibly several species of the genera *Oxyloma*, *Succinea*, and *Cattinella* exist in Wyoming, but further anatomical work is needed before specific limits can be established. Species previously published by various authors as being present in the state are:

*Oxyloma retusa* (Lea, 1834)
*Oxyloma haydeni* (Binney, 1858)
*Oxyloma decamapi gouldii* (Pilsbry, 1948)
*Succinea avata* (Say, 1824)
*Succinea grossenori* (Lea, 1857)
*Succinea stretchiana* (Bland, 1865)
*Cattinella avata* (Say, 1824)
*Cattinella wadiae* (Webb, 1933)

Succinids are found at the edge of ditches, marshes, sloughs, springs, on Sphagnum moss of bogs, in leaf and wood debris of willow and aspen. The species that may be *Cattinella avata* not only occurs in damp places but has also been found frequently under talus and in crevices of limestone and sandstone cliffs or around the base of shrubs and grass on open slopes. *Succinea grossenori* has been reported from areas of sparse vegetation, but where the ground may remain somewhat damp.

Succinids have been found in all but four counties in Wyoming: Campbell, Carbon, Park, and Sweetwater.

**Family Pupillidae**

*Gastrocopta armifera* (Say, 1821)
County records: Platte.
Habitat: Sandstone and limestone cliffs edging Green Lake Reservoir, under pine and juniper logs; very dry.

*Pupoides bordaceus* (Gabb, 1866)
County records: Platte.
Habitat: Sandstone and limestone cliffs edging Guernsey Reservoir, under pine and juniper logs; very dry.

**Pupilla blanda** Morse, 1865
County records: Albany, Converse, Fremont, Goshen, Hot Springs, Johnson, Laramie, Lincoln, Sheridan, Teton, Uinta.
Habitat: In aspen, willow, cottonwood, and pine stands in leaf debris or under sedimentary rocks; common in foothills and mountains; altitude 4,200–9,000 feet.

**Pupilla hebes** (Ancey, 1881)
County records: Albany, Big Horn, Fremont, Johnson, Sheridan, Teton, Washakie.
Habitat: Common in canyons, often under limestone and sandstone rocks; in rock cavities, around the base of shrubs and conifers; also in leaf debris of willow, aspen, and cottonwood; altitude 5,000–9,500 feet.

**Pupilla muscorum** (Linnaeus, 1758)
**Pupilla muscorum xerabia** Pilsbry, 1914
County records: Albany, Big Horn, Fremont, Hot Springs (misidentified as *Pupilla synaeus dextroversa*), Johnson, Teton, Washakie.
Habitat: Around decaying logs; in damp leaves; under rocks in aspen, willow, and cottonwood in the mountains; altitude 6,000–9,000 feet.

**Vertigo concinna** Cockerell, 1897
County records: Albany, Big Horn, Johnson, Lincoln, Sheridan, Sublette, Teton.
Habitat: Mountains up to 9,000 feet, in aspen and willow thickets along creeks; in moss of swales; under logs in spruce stands on north-facing slopes.

**Vertigo elatior** Sterki, 1894
County records: Teton.
Habitat: Aspen and willow stands, under logs and in leaves; fairly moist.

**Vertigo gouldi** (Binney, 1843)
**Vertigo gouldi coloradensis** (Cockerell, 1891)
**Vertigo gouldi basidens** Pilsbry & Vanatta, 1900
County records: Albany, Fremont, Sheridan, Teton.
Habitat: Under logs in aspen and willow stands; damp meadows; bogs; in moss; under sagebrush.

**Vertigo modesta** (Say, 1824)
**Vertigo modesta parietalis** (Ancey, 1887)
County records: Albany, Big Horn, Carbon, Fremont, Johnson, Sheridan, Teton, Washakie, Yellowstone National Park.
Habitat: A mountain species, altitude 6,000–9,500 feet; under logs, leaf debris in aspen, spruce, and willow; along sloughs, creeks; in moss of seeps; teeth number varies in the same lot, 0–5, one with 6 teeth.

**Vertigo ovata** Say 1822
County records: Albany, Big Horn, Fremont, Teton.
Habitat: Willow and aspen leaf debris along creeks, bogs; altitude 5,000–7,500 feet.

**Colunnella alticola** (Ingersoll, 1875)
County records: Albany, Johnson, Teton, Yellowstone National Park.
Habitat: Spruce and fir, aspen, and willow stands along creeks; in the mountains from about 6,000 to 9,000 feet.

**Colunnella edentula** (Draparnaud, 1805)
County records: Albany, Sheridan.
Habitat: Aspen groves in the mountains; a swale on moss.

**Family Valloniidae**

**Vallonia albula** Sterki, 1893
County records: Albany, Big Horn, Converse, Fremont, Hot Springs, Johnson, Laramie, Park, Platte, Sheridan, Teton, Washakie.
Habitat: Often under limestone or sandstone rocks in canyons; in pine, juniper, aspen, willow, and cottonwood litter; usually rather dry situations; altitude 4,300–9,600 feet.

**Vallonia costata** (Muller, 1774)
**Vallonia costata montana** Sterki, 1892
County records: Albany, Big Horn, Converse, Fremont, Laramie, Lincoln, Park, Sublette, Washakie.
Habitat: In aspen, pine, or juniper stands; under sandstone and limestone rocks; under logs; altitude 4,500–7,000 feet.

**Vallonia cyclophorella** Sterki, 1892
County records: Widespread throughout the state.
Habitat: Usually in rather dry situations; under logs and limestone and sandstone rocks; at the base of cliffs and in open stands of aspen, juniper, cottonwood; occasionally in willows; once in moss at the edge of a bog; altitude up to 9,000 feet.

**Vallonia excentrica** Sterki, 1893
County records: Hot Springs, Sheridan.
Habitat: Around grass roots and under plant debris near human habitation.

**Vallonia gracilicosta** Reinhardt, 1883
County records: Albany, Big Horn, Converse, Goshen, Johnson, Laramie, Natrona, Platte, Sheridan, Teton, Washakie.
Habitat: Dry situations under logs or leaf debris of willow, cottonwood, juniper; aspen; under limestone or sandstone rocks; altitude 4,400–8,000 feet.

**Vallonia pulchella** (Muller, 1774)
County records: Albany, Fremont, Hot Springs, Platte, Sheridan.
Habitat: In grass of lawns; under rocks and cottonwood logs.

**Zoogenetes harpa** (Say, 1824)
County records: Albany, Carbon, Laramie, Park, Sheridan, Teton, Yellowstone National Park.
Habitat: A species of the mountains; under logs and leaves in aspen and willow stands; in moss of bogs.

**Family Cionellidae**

**Cionella lubrica** (Muller, 1774)
County records: Albany, Teton, Yellowstone National Park.
Habitat: In leaves of aspen and willow; in moss in damp places; under logs; altitude 7,000–8,000 feet.

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LITERATURE CITED


Miller, B. B. 1968. Planorbula canestriss (Gastropoda: Planorbidae) from the Cudalhy fatna (Kansan) of Meade County, Kansas, with notes on the status of the subgeneric categories of Planorbula. Mala­co­logia 6: 253–265.


. 1918. A synopsis of the classification of the freshwater Mollusca of North America, north of Mexico, and a catalogue of the more recently described species, with notes. Museum of Zoology, University of Michigan, Miscellaneous Publication 6: 1–213.