

PRELIMINARY CHECKLIST OF LAKE BONNEVILLE MOLLUSCA

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The existence of an ancient lake in the Bonneville Basin of western Utah was first recognized, on physical evidence alone, by Howard Stansbury in 1849. Some ten years later the first observation on fossil mollusks from deposits of this lake was made by Henry Engelmann although publication of his observations was delayed until 1876. In the meantime, F. V. Hayden made a small collection and prepared an account of it for his report of 1872, thus getting credit for the first published report of Bonneville fossil mollusks.

Intensive investigation of the Bonneville problem began with G. K. Gilbert whose studies culminated in the classic monograph on Lake Bonneville published by the U. S. Geological Survey in 1890. The molluscan material obtained by Gilbert was submitted to R. E. Call for identification. Call's studies on the Bonneville fossils were included in a report on the Pleistocene and Recent mollusks of the entire Great Basin published by the U. S. Geological Survey in 1884. There has been no review of the Bonneville fauna since that date.

I am indebted to Dr. Dwight W. Taylor, U. S. Geological Survey, for critical reading of the manuscript and for information on certain forms not reported in the literature but present in the Survey collection in Washington, D. C. Both Dr. Taylor and I are cognizant of the tentative nature of some of these determinations; responsibility for inclusion in the present list rests solely with the author. Its chief value will probably lie in the consolidation of the widely scattered literature. Criticisms and suggestions are earnestly solicited from all interested persons.

The checklist is arranged in general accordance with the plan outlined by La Rocque in a previous number (*Sterkiana*, 1: 19-22). References are given only to those papers in which Lake Bonneville mollusks are reported. Synonymy is not given here but can be reconstructed from the references cited.

1. NAIADES

Margaritiferidae

1. MARGARITIFERA MARGARITIFERA (Linne) 1758. Call 1884: 14; Henderson 1924: 88-89; Chamberlin and Jones 1929: 29.

Unionidae

72. ANODONTA CALIFORNIENSIS Lea 1852. Henderson 1931b: 109-113.

3. ANODONTA NUTT ALLIANA Lea 1838. Call 1884: 14-15; ?Hannibal 1912: 126, 197, 203; Henderson 1924: 85; Chamberlin and Jones 1929: 19, 23, 26; Henderson 1936: 82; Christensen 1950: 107.

4. ANODONTA OREGONENSIS Lea 1838. ?Hannibal 1912: 126, 197, 203; Chamberlin and Jones 1929: 23-25; Henderson 1936: 82.

5. ANODONTA (SP.). Eardley and Gvosdetsky 1960: 1336-1338.

2. SPHAERIIDAE

6. FISIDIUM COMPRESSUM Prime 1851. Henderson 1931b: 109-113; Herrington and Roscoe 1953: 98.

7. FISIDIUM (SP.). Eardley and Gvosdetsky 1960: 1336-1338.

78. SPHAERIUM DENTATUM (Haldeman) 1841. Call 1884: 15; Henderson 1924: 91.

9. SPHAERIUM PILSBRYANUM Sterki 1909. Sterki 1909: 141; Sterki 1916: 437; Chamberlin and Jones 1929: 32; Henderson 1931b: 109-113; Berry and Crawford 1932: 53-54; Hunt, Varnes, and Thomas 1953: 25.

10. SPHAERIUM STRIATINUM (Lamarck) 1818. Boutwell 1904: 471-472; Eardley and Gvosdetsky 1960: 1336-1338.

11. SPHAERIUM (SP.). Engelmann, in Simpson 1876: 313; Eardley and Gvosdetsky 1960: 1336-1338.

3. FRESHWATER PULMONATA

Physidae

12. APLEXA HYPNORUM (Linne) 1758. U. S. C. S. collections.

713. PHYSA AMPULLACEA Gould 1885. Henderson and Daniels 1917: 58; Chamberlin and Jones 1929: 159-162; Henderson 1931b: 109-113; Berry and Crawford 1932: 53-54; Hunt, Varnes, and Thomas 1953: 25.

714. PHYSA GYRINA Say 1821. Call 1884: 18; Stearns 1901: 293; Henderson 1924: 184.

715. PHYSA HETEROSTROPHA (Say) 1817. Gilbert 1875: 100; Yarrow 1875: 938; Call 1884: 18; Stearns 1901: 288; Henderson 1924: 185.

716. PHYSA LORDI Baird 1863. Call 1884: 19; Henderson 1924: 185; Hunt, Varnes, and Thomas 1953: 25.

17. PHYSA (SP.). Eardley and Gvosdetsky 1960: 1336-1338.

Lymnaeidae

718. LYMNAEA AURICULARIA (Linne) 1758. Hannibal 1912: 140-141; Henderson 1924: 163.

19. LYMNAEA BONNEVILLENSIS (Call) 1884. Call 1884: 24, 28; Call 1886: 6; Gilbert 1890: 219, 298; Stearns 1901: 291; Baker 1911: 105; Henderson 1924: 163; Chamberlin and Jones 1929: 135; Henderson 1936: 117; Hasler and Crawford 1938: 25-26; Ives 1946: 185-199; Ives 1951: 787.

20. LYMNAEA CAPERATA Say 1829. Eardley and Gvosdetsky 1960: 1336-1338.

721. LYMNAEA CATASCOPIUM Say 1817. Hayden 1872: 170; Henderson 1924: 163.

22. LYMNAEA COCKERELLI (Pilsbry and Ferriss) 1906. Eardley and Gvosdetsky 1960: 1336-1338.

23. LYMNAEA DALLI (Baker) 1906. Eardley and Gvosdetsky 1960: 1336-1338.

724. LYMNAEA DESIDIOSA Say 1821. Hayden 1872: 170; Gilbert 1875: 99, 100; Yarrow 1875: 994; Henderson 1924: 167.

25. LYMNAEA HUMILIS Say 1822. Stearns 1893: 275; Henderson 1924: 167.

26. *LYMNAEA KINGI* (Meek) 1876. Chamberlin 1933: 97-100; Henderson 1924: 124; Berry and Crawford 1932: 53-54.

27. *LYMNAEA MODICELLA* Say 1825. Chamberlin and Jones 1929: 138.

28. *LYMNAEA OBRUSSA* Say 1825. Chamberlin and Jones 1929: 141-143.

29. *LYMNAEA PALUSTRIS* (Müller) 1774. Call 1884: 17; Gilbert 1875: 100; Yarrow 1875: 943; Henderson 1924: 168-169; Henderson 1931b: 109-113; Chamberlin and Jones 1929: 128-133; Berry and Crawford 1932: 53-54; Eardley and Gvosdetsky 1960: 1336-1338.

30. *LYMNAEA PROXIMA* Lea 1856. Henderson and Daniels 1917: 58.

31. *LYMNAEA STAGNALIS APPRESSA* (Say) 1818. Call 1884: 17; Baker 1911: 146, 147; Hannibal 1912: 140; Henderson 1924: 161; Chamberlin and Jones 1929: 123.

32. *LYMNAEA SUMASSI* Baird 1863. Call 1884: 18; Henderson 1924: 169.

33. *LYMNAEA UTAHENSIS* (Call) 1884. Call 1884: 373, 379, 381; Call 1886: 5; Gilbert 1890: 291; Stearns 1901: 291; Sterki 1909: 142; Baker 1911: 458; Henderson 1924: 173; Chamberlin and Jones 1929: 143-144; Henderson 1931a: 77-79; Henderson 1931b: 109-113; Berry and Crawford 1932: 53-54; Henderson 1936: 124; Hunt, Varnes, and Thomas 1953: 23.

34. *LYMNAEA* (SP. or SPP.). Engelmann, in Simpson 1876: 313; Berry and Crawford 1932: 53-54; Crawford and Chorney 1944: 135-138; Eardley and Gvosdetsky 1960: 1336-1338.

Planorbidae

35. *ARMIGER CRISTATA* (Linne) 1758. Eardley and Gvosdetsky 1960: 1336-1338.

36. *CARINIFEX ATOPUS* Chamberlin and Jones 1929. Chamberlin and Jones 1929: 156-157; Henderson 1931: 77-79.

37. *CARINIFEX NEWBERRYI* (Lea) 1858. Gilbert 1875: 100; Yarrow 1875: 946; Ingersoll 1877: 132; Stearns 1883: 277; Sterki 1909: 142; Henderson 1924: 181; Chamberlin and Jones 1929: 155-156; Henderson 1931a: 44-79; Henderson 1931b: 109-113; Hunt, Varnes, and Thomas 1953: 25.

38. *CARINIFEX* (SP.). Berry and Crawford 1932: 53-54.

39. *GYRAULUS CIRCUMSTRIATUS* (Tryon) 1866. Eardley and Gvosdetsky 1960: 1336-1338.

40. *GYRAULUS PARVUS* (Say) 1817. Henderson and Daniels 1917: 50; Eardley and Gvosdetsky 1960: 1336-1338.

41. *GYRAULUS VERMICULARIS* (Gould) 1847. Henderson 1931b: 109-113; Berry and Crawford 1932: 53-54.

42. *GYRAULUS* (SP.). Eardley and Gvosdetsky 1960: 1336-1338.

43. *HELISOMA SUBCRENATUM* (Carpenter) 1856. U. S. G. S. collections.

44. *HELISOMA TRIVOLVIS* (Say) 1817. Yarrow 1875: 947; Call 1884: 16; Henderson 1924: 174; Chamberlin and Jones 1929: 146-147; Berry and Crawford 1932: 53-54.

45. *HELISOMA* (SP.). Crawford and Chorney 1944: 135-138; Eardley and Gvosdetsky 1960: 1336-1338.

46. *POMPHOLOPSIS WHITEI* Call 1888. Hunt, Varnes, and Thomas 1953: 25.

47. *PROMENETUS EXACUOUS* (Say) 1821. Henderson 1931b: 109-113; Eardley and Gvosdetsky 1960: 1336-1338.

48. *PROMENETUS UMBILICATELLUS* (Cockerell) 1887. Eardley and Gvosdetsky 1960: 1336-1338.

Ancyliidae

49. *FERRISSIA* (SP.). Eardley and Gvosdetsky 1960: 1336-1338.

4. FRESHWATER OPERCULATES

Hydrobiidae

50. *AMNICOLA CINCINNATIENSIS* (Anthony) 1840. Hayden 1872: 170; Call 1884: 20-21; Gilbert 1875: 99; Pilsbry 1899: 122; Hannibal 1912: 101; Henderson and Daniels 1917: 77; Henderson 1924: 190; Chamberlin and Jones 1929: 175-176; Berry and Crawford 1932: 53-54; Wimber and Crawford 1931: 61;

Henderson 1936: 138; Hasler and Crawford 1938: 25-26; Jones 1940: 40.

51. *AMNICOLA INTEGRATA* (Say) 1840. Baily and Baily 1951: 47.

52. *AMNICOLA LIMOSA* (Say) 1817. Hayden 1872: 170; Hannibal 1912: 185; Henderson 1924: 190; Chamberlin and Jones 1929: 173-174; Berry and Crawford 1932: 53-54.

53. *AMNICOLA LONGINOVA* Gould 1855. Cooper 1888: 288; Cooper 1892: 23; Henderson 1931b: 109-113; Henderson 1936: 137; Ives 1946: 195-196; Ives 1951: 787; Hunt, Varnes, and Thomas 1953: 23.

54. *AMNICOLA PORATA* (Say) 1821. Call 1884: 21; Stearns 1893: 278; Henderson 1924: 190.

55. *AMNICOLA* (SP.). Engelmann, in Simpson 1876: 313; Hague, Arnold, and Emmons 1877: 454; Hunt, Varnes, and Thomas 1953: 25; Eardley and Gvosdetsky 1960: 1336-1338.

766. *FLUMINICOLA COLORADOENSIS* Morrison 1940. U. S. G. S. collections.

57. *FLUMINICOLA FUSCA* (Halderman) 1847. Hayden 1872: 170; Ingersoll 1877: 133; Call 1884: 21; Stearns 1893: 282; Sterki 1909: 142; Hannibal 1912: 187; Henderson 1924: 192; Chamberlin and Jones 1929: 180-181; Henderson 1931b: 109-113; Berry and Crawford 1932: 53-54; Hunt, Varnes, and Thomas 1953: 23, 25.

58. *PALUDESTRINA PROTEA* (Gould) 1885. Stearns 1901: 277, 279.

59. *POMATIOPSIS LUSTRICA* Say 1821. Gilbert 1875: 99.

60. *TRYONIA EXIGUA* Conrad 1855. Yarrow 1875: 948; Henderson 1924: 191.

Valvatidae

761. *VALVATA CALLI* Hannibal 1910. Hannibal 1910: 104, 107; Henderson 1924: 193.

762. *VALVATA HUMERALIS* (Say) 1829. Eardley and Gvosdetsky 1960: 1336-1338.

63. *VALVATA HUMERALIS CALIFORNICA* Pilsbry 1908. Henderson 1931b: 109-113; Berry and Crawford 1932: 53-54.

64. *VALVATA UTAHENSIS* (Call) 1884. Hayden 1872: 170; Call 1884: 22, 24, 25; Boutwell 1904: 471-472; Hannibal 1910: 23, 104, 106; Henderson 1924: 193; Chamberlin and Jones 1929: 183-184; Henderson 1931b: 109-113; Berry and Crawford 1932: 53-54; Hunt, Varnes, and Thomas 1953: 25; Eardley and Gvosdetsky 1960: 1336-1338.

765. *VALVATA UTAHENSIS HORATHI* Baily and Baily 1951. Baily and Baily 1951: 50.

766. *VALVATA VIRENS* Tryon 1863. Call 1884: 21; Henderson 1924: 193.

5. LAND GASTROPODA

Camaenidae

67. *OREOHELIX PERIPHERICA* (Ancey) 1881. U. S. G. S. collections.

68. *OREOHELIX STRIGOSA DEPRESSA* (Cockerell) 1890. Roscoe 1951: 135-136; Hunt, Varnes, and Thomas 1953: 24.

769. (*OREOHELIX* SP. or SPP.). Engelmann, in Simpson 1876: 313; Hansen and Stokes 1941: 34.

Zonitidae

70. *ZONITOIDES ARBOREUS* (Say) 1816. U. S. G. S. collections.

71. *ZONITOIDES NITIDUS* (Müller) 1774. This specimen, which was determined by me from material submitted by J. H. Feth, cannot be located in the U. S. G. S. collections.

Endodontidae

72. *DISCUS CRONKHITTEI* (Newcomb) 1865. U. S. G. S. collections.

773. *DISCUS CRONKHITTEI ANTHONYI* Pilsbry 1906. Henderson and Daniels 1917: 58; Henderson 1931b: 109-113.

Valloniidae

74. *VALLONIA CYCLOPHORELLA* (Ancey) 1890. U. S. G. S. collections.

Pupillidae

75. PUPILLA MUSCORUM (Linné) 1758. U. S. G. S. collections.

76. VERTIGO OVATA (Say) 1822. Henderson and Daniels 1917: 58.

Succineidae

Because of the difficulty, if not impossibility, of determining species in this family from shell features alone, all records are suspect.

?77. SUCCINEA AVARA Say 1824. Hunt, Varnes, and Thomas 1953: 24.

?78. SUCCINEA LINEATA W. G. Binney 1857. Cooper 1870: 199-219; Gilbert 1875: 99.

79. SUCCINEA (SP. or SPP.). Henderson 1931b: 109-113; Eardley and Gvosdetsky 1960: 1336-1338.

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