

A SYNOPSIS OF THE MARINE PROSOBRANCH GASTROPOD
AND BIVALVE MOLLUSKS IN ALASKAN WATERS

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A SYNOPSIS OF THE MARINE PROSOBRANCH GASTROPOD
AND BIVALVE MOLLUSKS IN ALASKAN WATERS

A

THESIS

Presented to the Faculty of the
University of Alaska in Partial Fulfillment
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Abstract

This study presents information on the taxonomy and distribution of the marine prosobranch gastropod and bivalve mollusks from the waters surrounding Alaska. Three hundred fifty-two species of prosobranch gastropods and 202 species of bivalves are reported from these waters. Over 5,000 lots of specimens, representing 330 species and literature sources form the basis of this study. References, synonymy, geographic and bathymetric ranges are provided for each species. Characteristics used to identify the species of 66 genera are presented in tabular form. The greatest number of species is reported from the southern Bering Sea, the fewest from the Beaufort Sea. Most of the species have wide ranges in the eastern or western Pacific. New collecting records reported here extend the known ranges of 27 species. Eight species were previously unknown from Alaskan waters.

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Family Columbellidae

*Amphissa**Amphissa columbiana* Dall, 1916

Amphissa columbiana Dall, 1916, *Nautilus* 30(3):27. New name for *Buccinum corrugatum*, Reeve, 1846, not Brocchi, 1814. (Boss, Rosewater, Ruhoff, 1968)

Amphissa columbiana, Dall, 1921:105; pl. 6, fig. 5; pl. 11, fig. 9.

Amphissa columbiana, Oldroyd, 1921, part 1:280; pl. 16, fig. 1.

Amphissa columbiana, Abbott, 1974:203, figs. 2181, 2182.

Type locality: Puget Sound, Washington.

Range: Chiachi Islands, Alaska to San Pedro, California. (Dall, 1921)

Depth: intertidal to 50 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: 59°33'N, 152°24'W, 59 m (1). Tutka Bay, intertidal (1).

Southeast: Murphy Cove, intertidal (1). Hole-in-the-wall, Prince of Wales Island (1). Homestead Beach, Ketchikan (1). Sitka (1).

Amphissa reticulata Dall, 1916

Amphissa versicolor reticulata Dall, 1916, *Nautilus* 30(3):27.
(Boss, Rosewater, Ruhoff, 1968)

Amphissa reticulata, Dall, 1921:105.

Amphissa reticulata, Oldroyd, 1927, part 1:283.

Type locality: none specified. Port Althorp, Alaska to San Diego, California.

Range: Port Althorp, Alaska to San Diego, California. (Dall, 1921)

Depth: 20 to 150 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: 59°05.5'N, 146°34'W, 48 m (1). 59°33'N, 146°54'W (1).
59°46'N, 146°31'W, 69 m (1).

Amphissa
reticulata

Size - height	15.0
diameter	7.3
aperture	6.8
Number of whorls	7
Axial sculpture	prominent ribs extend below perifery
Radial sculpture	narrow round-topped ribs, slightly beaded
Color	pale brownish

TABLE 34

Amphissa

Amphissa
columbiana

26.9

12.0

12.6

6

low narrow folds, fade
near aperture and below perifery

narrow round-topped ribs
not beaded

varigated brown on buff
or greenish ground

*Mitrella**Mitrella carinata* (Hinds, 1844)

Columbella carinata Hinds, 1844, Zool. Voy. Sulphur, Mollusca part 2:39; pl. 10, figs. 15, 16. (Keen, 1966b)

Columbella gauspata Gould, 1850, Boston Soc. Nat. Hist., Proc. 3:170. (Johnson, 1964)

Columbella californiana Gaskoin, 1852, Zool. Soc. London, Proc. p. 12. (Grant and Gale, 1931)

Columbella (Alia) carinata and ssp. *Californiana*, Dall, 1921:104.

Columbella (Alia) gauspata, Dall, 1921:104.

Columbella (Alia) carinata, Oldroyd, 1927, part 1:272.

Columbella (Alia) gauspata, Oldroyd, 1927, part 1:273.

Nitidella (Alia) carinata, Abbott, 1974:198, fig. 2104.

Type locality: of *Columbella carinata*, California coast north of San Francisco and San Diego, California.

of *Columbella gauspata*, Puget Sound, Washington.

Range: Port Etches, Alaska to Salina Cruz, Mexico. (Dall, 1921)

Depth: intertidal to 5 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: Port Etches (1) and Zaikof Bay (1), Prince William Sound.

Southeast: Hole-in-the-Wall, Prince of Wales Island (1).

Mitrella gouldi (Carpenter, 1857)

Nitidella gouldi Carpenter, in Gould and Carpenter, 1857, Zool. Soc. London, Proc. p. 209. (Palmer, 1958)

Nitidella gouldii, Dall, 1921:104.

Nitidella gouldi, Oldroyd, 1927, part 1:277.

Nitidella gouldi, Abbott, 1974:198, fig. 2103.

Type locality: Santa Barbara, California.

Range: Kodiak, Alaska to San Diego, California. (Dall, 1921)

Depth: 5 to 100 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: 59°46'N, 152°23'W, 90 m (1).

Eastern Gulf: Port Valdez (3). 59 to 60°N and 144 to 146°W (3).

Mitrella rosacea (Gould, 1839)

Buccinum rosaceum Gould, 1839, *Silliman's Amer. J. Sci.* ser. 1, 38, fig. 189. (Johnson, 1964)

Columbella (Astyris) permodesata Dall, 1890, *Proc. U.S. Nat. Mus.* 12:327; pl. 5, fig. 4.

Astyris amiantis Dall, 1919, *Proc. U.S. Nat. Mus.* 56:331.

Columbella (Astyris) rosacea, Dall, 1921:104.

Columbella (Astyris) amiantis, Dall, 1921:104.

Columbella (Astyris) permodesata, Dall, 1921:104.

Columbella (Astyris) rosacea, Oldroyd, 1927, part 1:274.

Columbella (Astyris) amiantis, Oldroyd, 1927, part 1:275.

Columbella (Astyris) permodesata, Oldroyd, 1927, part 1:275.

Buccinum rosaceum, Johnson, 1964:141; pl. 11, fig. 3.

Astyris rosacea, Macpherson, 1971:64; pl. 2, fig. 15.

Astyris amiantis, Kosuge, 1973; pl. 9, fig. 2.

Mitrella (Astyris) rosacea, Abbott, 1974:199, fig. 2113.

Type locality: of *Buccinum rosaceum*, from fish off Cohasset, Massachusetts.

of *Columbella permodesata*, Albatross Sta. 2840, off Santa Barbara Islands, California.

of *Astyris amiantis*, Kiska Harbor, Kiska Island, Aleutia Islands.

Range: Arctic Canada. Labrador to Cape Cod. East and West Greenland. Faroe Islands. Spitzbergen. Finnmark to Novaya Zemlya. Icy Cape, Arctic Ocean. Bering Sea. Aleutian Islands to San Diego, California (deep water). (Dall, 1921; Macpherson, 1971)

Depth: 1 to 178 m. (Macpherson, 1971)

mud and rock. (Macpherson, 1971)

Mitrella rosacea (Continued)

Localities:

Southern Bering: Chapel Cove, Adak Island, intertidal (1). Eider Point, Unalaska Island (1). Bristol Bay, off Izembek Lagoon (1).

Northern Bering: Norton Sound, 22 to 30 m (2).

Mitrella tuberosa (Carpenter, 1864)

Amycla tuberosa Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 537, 539, 628, 662. (Palmer, 1958)

Columbella (Alia) tuberosa, Dall, 1921:103.

Columbella tuberosa, Oldroyd, 1927, part 1:271.

Mitrella tuberosa, Palmer, 1958:210; pl. 26, figs. 9-12.

Type locality: Santa Barbara, California.

Range: Elrington Island, Prince William Sound, Alaska (Eyerdam, 1938) to
Gulf of California. (Dall, 1921)

not seen.

TABLE 35

Mitrella

	<i>Mitrella gouldi</i>	<i>Mitrella carinata</i>	<i>Mitrella rosacea</i>	<i>Mitrella tuberosa</i>
Size - height	12.5	10.0	10.0	8
diameter	5.7	4.8	4.6	3.8
aperture	5	4.3	3.8	
Number of whorls	7-8	7-8	7	8-9
Nuclear whorls	(usually eroded) minute	minute	bulbous	tumid
Whorl shape	nearly flat	flattened, slightly shouldered near aperture	smoothly rounded	nearly flat
Sutures	adpressed, very narrowly channeled	very narrowly channeled	slightly adpressed	distinct
Axial sculpture	none	none	low folds on 2nd and 3rd whorls	none
Radial sculpture	incised lines on pillar only	fine rounded threads on pillar, microscopic threads over rest of shell	very low ribs on pillar	very low ribs on pillar

TABLE 35
Continued

	<i>Mitrella gouldi</i>	<i>Mitrella carinata</i>	<i>Mitrella rosacea</i>	<i>Mitrella tuberosa</i>
Outer lip	thin, smooth	thickened, with approximately 8 tubercles	thin	
Columella	slightly flattened, thickened, small tooth	slightly flattened, obscure tooth with 4 denticles	not thickened	
Periostracum	fibrous, light brown	fibrous, yellow-green	not seen	
Color	off white and orangish, rough- ly checked	brown-orange or purple-brown	off white, yellowish to pinkish	

from Palmer, 1958

Family Nassariidae

Nassarius

Nassarius mendicus (Gould, 1850)

Nassa mendica Gould, 1850, *Boston Soc. Nat. Hist.*, Proc. 3:155.
(Johnson, 1964)

Alectrion (Scizopyga) mendica, Dall, 1921:102.

Alectrion (Scizopyga) mendicus, Oldroyd, 1927, part 1:265; pl. 26,
figs. 6, 14.

Nassarius (Demondia) mendicus, Abbott, 1974:225, fig. 2462.

Type locality: Puget Sound, Washington.

Range: Kodiak Island, Alaska to Magdalena Bay, Baja California. (Dall,
1921)

Depth: intertidal to 10 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: Port Valdez (3).

Southeast: Halibut Point (1). Hole-in-the-wall, Prince of Wales
Island (1).

Family Volutidae

*Arctomelon**Arctomelon stearnsii* (Dall, 1872)

Voluta (Scaphella) stearnsii Dall, 1872, Calif. Acad. Sci., Proc. 4:270; pl. 1, fig. 1. (Boss, Rosewater, Ruhoff, 1968)

Scaphella stearnsii, Dall, 1902:517; pl. 35, fig. 4.

Fulgoraria (Boreomelon) stearnsii, Dall, 1921:86.

Fulgoraria (Boreomelon) stearnsii, Oldroyd, 1927, part 1:167; pl. 23, fig. 4.

Voluta (Scaphella) stearnsii, Kosuge, 1973; pl. 29, fig. 2.

Arctomelon stearnsii, Abbott, 1974:245, fig. 2674.

Type locality: Gull Rocks, Akutan Pass and West Side, Amaknak Island, Captain's Bay, Unalaska, Alaska.

Range: Pribiloff, Aleutian and Shumagin Islands, Alaska. (Dall, 1921)

Depth: 60 to 250 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: near Unimak Pass (2). near Pribiloff Islands, 137 to 214 m (1).

Eastern Gulf: 58 to 60°N and 140 to 145°W, 140 to 175 m (14).

Family Volumitridae

*Volumitra**Volumitra alaskana* Dall, 1902

Volumitra alaskana Dall, 1902, *Nautilus* 15(19):103. (Boss, Rosewater, Ruhoff, 1968)

Volumitra alaskana, Dall, 1921:87; pl. 11, fig. 3.

Volumitra alaskana, Oldroyd, 1927, part 1:173.

Volumitra alaskana, Kosuge, 1973; pl. 29, fig. 1.

Volumitra alaskana, Abbott, 1974:240, fig. 2640.

Type locality: eastern Bering Sea, 60 to 85 fms.

Range: Pribiloff Islands, Bering Sea to off San Diego, California, 822 fms. (Dall, 1921) 48 to 57°N. (Bernard, 1970) coast of Asia, 39 to 57°N. (Kuroda and Habe, 1952)

Depth: 150 to 400 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: 59°46'N, 152°34'W, 35 m (1).

Eastern Gulf: 59 to 61°N and 141 to 146°W (3).

Family Turbinellidae

Ptychatractus

Ptychatractus occidentalis Stearns, 1871,

Ptychatractus occidentalis, Stearns, 1871, *Conchol. Memor.* 7:1.
(MacGinitie, 1959)

Ptychatractus occidentalis, Dall, 1921:87; pl. 6, fig. 8.

Ptychatractus occidentalis, Oldroyd, 1927, part 1:175; pl. 7,
fig. 1.

Ptychatractus occidentalis, MacGinitie, 1958:129; pl. 5, fig. 10.

Ptychatractus occidentalis, Abbott, 1974:242, fig. 2651.

Type locality: near the Shumagin Islands.

Range: Pt. Barrow, Alaska. Shumagin Islands. Bering Island. Iliuliuk,
Unalaska Island, Alaska. (MacGinitie, 1959)

not seen.

Family Olividae

Olivella

Olivella baetica Marrat in Sowerby, 1871

Olivella baetica Marrat in Sowerby, 1871, *Thes. Conch.* 4:35;
pl. 350, figs. 409, 410. (Palmer, 1958)

Olivella boetica "Carpenter, 1863," Dall, 1921:85; pl. 15, fig. 1.

Olivella boetica "Carpenter, 1863," Oldroyd, 1927, part 1:163;
pl. 26, figs. 19, 19a, 22, 22a.

Olivella baetica, Palmer, 1958:217; pl. 24, figs. 2-4, 6-8.

Olivella (Callianax) baetica, Abbott, 1974:235, fig. 2564; color
plate 11, fig. 2564.

Type locality: Strait of Juan de Fuca.

Range: Kodiak Island, Alaska to Cape San Lucas, Baja California. (Dall,
1921)

Depth: subtidal to 30 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: approximately 57°40'N, 165°W, 60 m (1).

Western Gulf: Lower Cook Inlet (2).

Eastern Gulf: Resurrection Bay (1). Port Valdez (empty) (1).

Southeast: Halibut Point, Baranof Island (1).

Olivella biplicata (Sowerby, 1825)

Olivia biplicata Sowerby, 1825, *Tankerville Cat. App.* p. 33.
(Grant and Gale, 1931)

Olivella biplicata, Dall, 1921:85.

Olivella biplicata, Oldroyd, 1927, part 1:160; pl. 26, figs. 20,
20a.

Olivella (Callianax) biplicata, Abbott, 1974:235; color plate 13,
fig. 2562.

Type locality: Monterey, California.

Range: Vancouver Island, British Columbia to Magdalena Bay, Baja
California, 25°N to 54°N. (Dall, 1921; Bernard, 1970)

Depth: intertidal. (Bernard, 1970)

Localities:

Southeast: Kruzof Island, Shelikof Bay (1). Hole-in-the-Wall,
Prince of Wales Island (1). Sitka (1).

Family Marginellidae

*Granulina**Granulina margaritula* (Carpenter, 1857)

Marginella margaritula Carpenter, 1857, Catalogue of the Reigen Collection of Mazatlan Mollusca in the British Museum p. 462-463. (Palmer, 1958)

Volvutella pyriformis Carpenter, 1864, Rept. Brit. Assoc. Adv. Sci. p. 661. (Palmer, 1958)

Meronia pyriformis, Dall, 1921:86.

Cypraeolina pyriformis, Oldroyd, 1927, part 1:166.

Gibberulina pyriformis, Palmer, 1958:220; pl. 24, figs. 13-16.

Granulina margaritula, Keen, 1971:638, fig. 1417.

Type locality: of *Marginella margaritula*, Mazatlan, Mexico.

of *Volvutella pyriformis*, San Diego, California.

Range: Izhut Bay, Afognak Island, Alaska. (Eyerdam, 1938) along the west coast, through the Gulf of California, to Panama and the Galapagos Islands. (Palmer, 1958; Keen, 1971)

Depth: intertidal to 110 m. (Keen, 1971)

on nullipores. (Eyerdam, 1938)

Family Cancellariidae

Admete

Admete couthouyi (Jay, 1839)

Cancellaria couthouyi Jay, 1839, Catalogue of the shells in the collection of John C. Jay, M.D. with descriptions... Ed. 3, p. 77. (MacGinitie, 1958)

Cancellaria viridula laevior Leche, 1878, Kongl. Svenska Vetensk.-Akad. Handl. new series 16(2):48. (MacGinitie, 1958)

Admete middendorffiana Dall, 1885, Proc. U.S. Nat. Mus. 7:524, new name for *Admete viridula*, Middendorff, not Fabricius.

Cancellaria middendorffiana, Dall, 1902:516. pl. 38, fig. 6.

Admete couthouyi and ssp. *laevior*, Dall, 1921:84; pl. 16, fig. 7.

Admete middendorffiana, Dall, 1921:84.

Admete couthouyi, Oldroyd, 1927, part 1:157,158; pl. 16, fig. 2.

Admete middendorffiana, Oldroyd, 1927, part 1:156.

Admete couthouyi, MacGinitie, 1958:129; pl. 2, figs. 1-3.

Admete couthouyi, Macpherson, 1971:107; pl. 3, fig. 14.

Admete middendorffiana, Kosuge, 1973; pl. 28, fig. 9.

Admete couthouyi, Abbott, 1974:248, fig. 2705.

Type locality: of *Cancellaria couthouyi*, Massachusetts Bay.

Range: Arctic Seas of Alaska, Canada, Europe and Siberia. Alaska to Japan and to southern California. Baffin Bay to New England. Spitzbergen to the Faroes. (MacGinitie, 1958)

Depth: 10 to 200 m. (Petrov, 1966)

sand and silt. (Petrov, 1966)

Admete couthouyi (Continued)

Localities:

Chukchi: 70 to 72°N and 155 to 176°W, 24 to 150 m (10).

Northern Bering: Bering Strait (2). St. Lawrence Island vicinity (3). Norton Sound, 16-42 m (4).

Southern Bering: 57 to 61°N and 162 to 173°W, 35 to 111 m (20).

Western Gulf: Lower Cook Inlet (1).

Eastern Gulf: Prince William Sound (1).

Southeast: Bartlett Cove (1).

Admete regina Dall, 1911

Admete regina Dall, 1911, *Nautilus* 25(2):20. (Boss, Rosewater, Ruhoff, 1968)

Admete regina, Dall, 1921:84.

Admete regina, Oldroyd, 1927, part 1:156.

Admete regina, MacGinitie, 1959:131; pl. 5, fig. 1.

Admete regina, Kosuge, 1973; pl. 29, fig. 4.

Type locality: Plover Bay, Bering Sea.

Range: Arctic coast of Alaska to Bristol Bay, Bering Sea. (Dall, 1921)

Localities:

Chukchi: $70^{\circ}50'N$, $164^{\circ}57.1'W$, 60 m (1).

Northern Bering: $61^{\circ}15'N$, $174^{\circ}02'W$, 90 m (1).

Southern Bering: $57^{\circ}39.3'N$, $164^{\circ}57.1'W$, 60 m (1).

TABLE 36

Admete

<i>Admete <u>couthouyi</u></i>	
Size - height	22.5
diameter	11.6
aperture	10.6
Number of whorls	5 to 7
Spire	elongate to very low
Whorl shape	rounded, slightly tabulate
Axial sculpture	narrow, low to prominent folds fading below periphery or below shoulder
Radial sculpture	flat-topped cords, with narrow interspaces
Umbilicus	absent

Admete
regina

38.0

21.5

20.2

5-6 (apex usually worn)

elongate

shouldered, slightly carinate

lines of growth

narrow shallow grooves

present

*Neadmete**Neadmete circumcincta* (Dall, 1873)*Cancellaria (Trigonostoma) circumcincta* Dall, 1873, Calif. Acad. Sci., Proc. 5:59, pl. 2, fig. 2.*Cancellaria (Sveltia) circumcincta*, Dall, 1921:84.*Cancellaria (Sveltia) circumcincta*, Oldroyd, 1927, part 1:155.*Cancellaria (Trigonostoma) circumcincta*, Kosuge, 1973; pl. 29, fig. 5.

Type locality: Popoff Strait, Shumagin Islands, 10 fms.

Range: Unalaska, Aleutian Islands to Port Etches, Alaska. (Dall, 1921)
54 to 60°N. (Bernard, 1970)

Depth: 50 to 500 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: Lower Cook Inlet, 59°15.4'N, 153°33'W (empty) (1).
Tutka Bay, intertidal (1).

Neadmete modesta (Carpenter, 1864)

Cancellaria modesta Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 628, 660. (Palmer, 1958)

Cancellaria (Trigonostoma) unalashkensis Dall, 1873, *Calif. Acad. Sci., Proc.* 5:58; pl. 2, fig. 1.

Cancellaria (Sveltia) modesta, Dall, 1921:84.

Cancellaria (Sveltia) unalashkensis, Dall, 1921:84.

Cancellaria (Sveltia) modesta, Oldroyd, 1927, part 1:154.

Cancellaria (Sveltia) unalaskensis, Oldroyd, 1927, part 1:155.

Admete modesta, Palmer, 1958:224; pl. 24, figs. 17, 18.

Cancellaria unalaskensis, Kosuge, 1973; pl. 29, fig. 3.

Type locality: of *Cancellaria modesta*, Neah Bay, Washington.

of *Cancellaria unalashkensis*, Captain's Harbor, Unalaska Island,
Alaska.

Range: Aleutian Islands to Cape Blanco, Oregon. (Dall, 1921)

Localities:

Southern Bering: 55°01'N, 166°06.5'W, 142 m (empty) (1).

Neadmete
modesta

Size - height	29.7
diameter	12.6
aperture	11.7
Number of whorls	6
Whorl outline	rounded, slightly should- ered
Axial sculpture	none observed
Radial sculpture	squarish ribs
Numbers of cords or ribs	8-10 on body whorl 4 on penultimate whorl
Outer lip	crenulate within

TABLE 37

Neadmete

Neadmete
circumcincta

26.5

11.5

11.3

7

rounded, slightly shouldered

incremental lines, coarser,
almost varix-like lines
of growth near aperture

angular cords

11 on body whorl

4 on penultimate whorl

thickened, weakly crenulate within

Family Turridae

Aforia

Aforia circinata (Dall, 1873)

Pleurotoma circinata Dall, 1873, *Calif. Acad. Sci., Proc.* 5:61; pl. 2, fig. 5.

Pleurotoma circinata, Dall, 1902:515; pl. 36, fig. 1.

Aforia circinata, Dall, 1921:68; pl. 11, fig. 6.

Aforia circinata, Oldroyd, 1927, part 1:63; pl. 4, fig. 1.

Aforia circinata, Abbott, 1974:265, fig. 2927.

Type locality: Nateekin Bay, Captain's Bay, Unalaska, Aleutian Islands.

Range: Bering Sea (62° N) to Straits of Juan de Fuca. (Dall, 1921)

Depth: 600 to 900 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: 55 to 58° N and 166 to 170° W, 96 to 146 m (8).

Eastern Gulf: 59 to 60° N and 141 to 142° W (empty) (3).

Antiplanes bulimoides Dall, 1919

Antiplanes bulimoides Dall, 1919, Proc. U.S. Nat. Mus. 56:34;
pl. 11, fig 7.

Antiplanes bulimoides, Dall, 1921:72.

Antiplanes bulimoides, Dall, 1925:4; pl. 31, fig. 2.

Antiplanes bulimoides, Oldroyd, 1927, part 1:86.

Type locality: U.S.F.C. Sta. 4772, Bower's Bank, Bering Sea.

Range: Bower's Bank, Bering Sea, 334 fms. (Dall, 1921)

not seen.

Antiplanes perversa (Gabb, 1865)

Pleurotoma (Surcula) perversa Gabb, 1865, *Calif. Acad. Sci., Proc.* ser. 1, 3:183. (Grant and Gale, 1931)

Antiplanes perversa, Dall, 1921:71.

Antiplanes perversa, Dall, 1902:513; pl. 34, fig. 8.

Antiplanes perversa, Oldroyd, 1927, part 1:82; pl. 11, fig. 9; pl. 28, fig. 8.

Spirotropis (Antiplanes) perversa, Grant and Gale, 1931:553; pl. 26, figs. 22, 23a-b.

Type locality: San Pedro, California, Post-Pleistocene.

Range: Forrester Island, Alaska to San Diego and Cortez Bank, California.
(Dall, 1921)

Antiplanes piona (Dall, 1902)

Pleurotoma (Antiplanes) piona Dall, 1902, Proc. U.S. Nat. Mus. 24:514.

Antiplanes piona, Dall, 1925:4; pl. 21, fig. 5.

Antiplanes piona, Abbott, 1974:267, fig. 2965.

Type locality: Albatross Sta. 3644, southern Bering Sea.

Range: southern Bering Sea, and south of the Alaska Peninsula. (Dall, 1902)

Depth: 41 to 110 fms. (Dall, 1902)

Localities:

Southern Bering: $58^{\circ}30'N$, $169^{\circ}40'W$, 68 m (1).

Antiplanes thalaea (Dall, 1902)

Pleurotoma (Antiplanes) thalaea Dall, 1902, *Proc. U.S. Nat. Mus.* 24:514.

Antiplanes thalaea, Dall, 1919a:38; pl. 11, fig. 6.

Antiplanes thalaea, Dall, 1921:72; pl. 1, fig. 8, not fig. 9 (*A. santarosana*).

Antiplanes thalaea, Dall, 1925:4; pl. 22, fig. 1.

Antiplanes thalaea, Oldroyd, 1927, part 1:85; pl. 6, fig. 1, not pl. 3, fig. 8 (*A. santarosana*).

Type locality: Albatross Sta. 3195, off San Luis Obispo, California, 252 fms.

Range: Unimak Pass, Aleutian Islands, to San Diego, California. (Dall, 1921)

not seen.

*Antiplanes**Antiplanes beringi* (Aurivillius, 1885)

Pleurotoma beringi Aurivillius, 1885, *Vega Exped. Zool. Arb.*
4:354; pl. 13, fig. 3. (Grant and Gale, 1931)

Antiplanes beringi, Dall, 1921:72.

Antiplanes beringi, Oldroyd, 1927, part 1:87.

Type locality: Bering Sea, possibly.

Range: Bering Sea, north of St. Lawrence Island to the Aleutian and
Shumagin Islands. (Dall, 1921)

not seen.

Antiplanes vinosa (Dall, 1874)

Pleurotoma vinosa Dall, 1874, Calif. Acad. Sci., Proc. 5:253.
(Boss, Rosewater, Ruhoff, 1968)

Pleurotoma (Antiplanes) vinosa, Dall, 1902:514; pl. 34, fig. 4.

Antiplanes vinosa, Dall, 1921:71.

Antiplanes vinosa, Oldroyd, 1927, part 1:82; pl. 28, fig. 4.

Type locality: Kiska Harbor, Aleutian Islands, 17 fms.

Range: Bering Sea to San Diego, California. (Dall, 1921)

not seen.

Antiplanes willetti Berry, 1953

Antiplanes (Rectiplanes) willetti Berry, 1953, San Diego Soc. Nat. Hist., Trans. 11(16):419; pl. 29, fig. 2.

Type locality: off Forrester Island, Alaska, 50 fms.

Range: off Forrester Island, Alaska. (Berry, 1953)

not seen.

*Oenopota**Oenopota alaskensis* (Dall, 1871)*Mangelia ? alaskensis* Dall, 1871, Amer. J. Conchol. 7(2):98.*Bela alaskensis*, Dall, 1886:299; pl. 4, fig. 3.*Lora alaskensis*, Dall, 1921:78.*Lora alaskensis*, Oldroyd, 1927, part 1:122.*Lora alaskensis*, Grant and Gale, 1931:526.

Type locality: North Harbor, Unga Island, Shumagin Islands, 4 fms.

Range: Bering Sea to Puget Sound. (Dall, 1921)

Localities:

Western Gulf: Tutka Bay (empty) (1).

Oenopota albrechti (Krause, 1886)

Bela albrechti Krause, 1886, *Archiv. f. Naturg.* 51:276; pl. 18,
figs. 3, 11. (Oldroyd, 1927)

Lora albrechti, Dall, 1921:75.

Lora albrechti, Oldroyd, 1927, part 1:106; pl. 11, fig. 5.

Lora albrechti, Grant and Gale, 1931:541 (in synonymy with *Lora expansa* Sars, 1878).

Type locality: Plover Bay, Bering Strait.

Range: Plover Bay, Bering Strait to Port Etches, Alaska. (Dall, 1921)

not seen.

Oenopota aleutica (Dall, 1871)

Mangilia aleutica Dall, 1871, Amer. J. Conchol. 7(2):99.

Mangilia ? aleutica, Dall, 1886:299; pl. 3, fig. 6.

Mangilia aleutica, Dall, 1921:80.

Lora aleutica, Oldroyd, 1927, part 1:132.

Lora aleutica, Grant and Gale, 1931:527.

Type locality: Unga Island, Shumagin Islands.

Range: Cape Sabine, Arctic Ocean to Puget Sound. (Dall, 1921)

not seen.

Oenopota alitakensis (Dall, 1919)

Lora alitakensis Dall, 1919, Proc. U.S. Nat. Mus. 56:43; pl. 15,
fig. 7.

Lora alitakensis, Dall, 1921:77.

Lora alitakensis, Oldroyd, 1927, part 1:116.

Lora alitakensis, Grant and Gale, 1931:525.

Type locality: Unimak Island, Aleutian Islands.

Range: Unimak Island, Aleutians to Alitak Bay, Kodiak Island. (Dall, 1921) Arctic Sea to Labrador and Martha's Vinyard. (Grant and Gale, 1931)

Localities:

Eastern Gulf: $59^{\circ}24.5'N$, $149^{\circ}05'W$, 200 m (empty) (1).

Southeast: Stephen's Passage, south of Douglas Island (empty) (1).

Oenopota althorpi (Dall, 1919)

Mangilia althorpi Dall, 1919, *Proc. U. S. Nat. Mus.* 56:68; pl. 19,
fig. 9.

Mangilia althorpi, Dall, 1921:80.

Mangilia althorpi, Oldroyd, 1927, part 1:135.

Mangilia althorpi, Grant and Gale, 1931:518, as a possible
synonym of *Lora turricula* (Montagu) var. *schneideri* (Harmer).

Type locality: Granite Cove, Port Althorp, Alaska.

Range: Granite Cove, Port Althorp. (Dall, 1921)

Localities:

Southeast: Bartlett Cove (1).

Oenopota arctica (A. Adams, 1855)

Bela arctica A. Adams, 1855, Zool. Soc. London, Proc. p. 121.
(Grant and Gale, 1931)

Lora arctica, Dall, 1921:78.

Lora arctica, Oldroyd, 1927, part 1:284.

Lora arctica, Grant and Gale, 1931:533; pl. 32, figs. 44, 45
(including *Lora tenuilirata cymata* Dall, 1919).

Oenopota arctica, Macpherson, 1971:111; pl. 7, figs. 2a, b.

Type locality: Arctic seas.

Range: Shumagin Islands to Chirikoff Island, Alaska. (Dall, 1921)
Arctic Canada. Norway. West Greenland. between Norway and
Spitzbergen. (Macpherson, 1971)

Depth: 3 to 15-40 m. (Macpherson, 1971)

not seen.

Oenopota bicarinata (Couthouy, 1838)

Pleurotoma bicarinata Couthouy, 1838, *Boston J. Nat. Hist.* 2:104; pl. 1, fig. 11. (Johnson, 1946)

Lora bicarinata, Dall, 1921:76.

Lora bicarinata, Oldroyd, 1927, part 1:110.

Lora bicarinata and subspecies, Grant and Gale, 1931:538-540.

Oenopota bicarinata, Macpherson, 1971:113; pl. 7, fig. 6.

Oenopota bicarinata, Abbott, 1974:286, fig. 3388.

Type locality: east of Nahant, Massachusetts, from the stomach of a haddock.

Range: Bering Sea near St. Lawrence Island. Arctic Ocean north of Bering Strait. (Dall, 1921) New England to Labrador. North Atlantic to Spitzbergen. Soviet Arctic. British Columbia. (Macpherson, 1971)

Depth: 0 to 1447 m. (Macpherson, 1971)

Localities:

Northern Bering: north of St. Lawrence Island (1). Norton Sound south of Nome (2).

Southern Bering: 58 to 59°N and 161 to 169°W, 41 to 53 m (3).

Eastern Gulf: Port Valdez, 234 m (1).

Southeast: Bartlett Cove (1).

Oenopota chiachiana (Dall, 1919)

Lora chiachiana Dall, 1919, Proc. U.S. Nat. Mus. 56:43; pl. 14,
fig. 7.

Lora chiachiana, Dall, 1921:77.

Lora chiachiana, Oldroyd, 1927, part 1:119.

Lora chiachiana, Grant and Gale, 1931:529 (in synonymy with *L. declivis* (Loven, 1846))

Type locality: Chiachi Island, Aleutian Islands.

Range: Arctic Ocean to Chiachi Island to Port Althorp, Alaska. (Dall, 1921)

not seen.

Oenopota crebricostata (Carpenter, 1864)

Mangelia crebricostata Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.* p. 628. (Palmer, 1958)

Mangilia newcombei Dall, 1919, *Proc. U.S. Nat. Mus.* 56:71; pl. 21, fig. 4.

Mangilia crebricostata, Dall, 1921:82.

Mangilia newcombei, Dall, 1921:81.

Mangilia crebricostata, Oldroyd, 1927, part 1:145, part 2; pl. 15, fig. 3.

Mangilia newcombei, Oldroyd, 1927, part 1:141.

Mangelia (Bela) crebricostata, Grant and Gale, 1931:593.

Mangelia crebricostata, Palmer, 1958:229.

Type locality: of *Mangelia crebricostata*, Neah Bay, Washington.
of *Mangelia newcombei*, Clayoquot, Vancouver Island, British Columbia.

Range: Alaska (57° N) (Bernard, 1970) to Puget Sound, Washington. (Palmer, 1958)

Depth: intertidal to 30 m (British Columbia). (Bernard, 1970)

not seen.

Oenopota decussata (Couthouy, 1839)

Pleurotoma decussata Couthouy, 1839, *Boston J. Nat. Hist.* 2:183; pl. 4, fig. 8. (Johnson, 1946)

Bela decussata var. *inflata* Posselt, 1898, *Meddel. om Gronland* 23:154; pl. 1, fig. 4. new name for *Bela tenuilirata*, Krause, 1886, not Dall, 1871. (Grant and Gale, 1931)

Lora lawrenciana Dall, 1919, *Proc. U. S. Nat. Mus.* 56:43; pl. 15, fig. 6.

Lora nazanensis Dall, 1919 *Proc. U. S. Nat. Mus.* 56; pl. 15, fig. 8.

Lora lawrenciana, Dall, 1921:78.

Lora nazanensis, Dall, 1921:76.

Lora lawrenciana, Oldroyd, 1927, part 1:124.

Lora nazanensis, Oldroyd, 1927, part 1:112.

Lora inflata, Grant and Gale, 1931:534.

Oenopota nazanensis, MacGinitie, 1959:134; pl. 16, fig. 3.

Oenopota decussata, Macpherson, 1971:115; pl. 7, fig. 9 (includes *Bela tenuicostata* M. Sars, 1868, in synonymy).

Type locality: of *Pleurotoma decussata*, off Barnstable, Cape Cod, from a haddock stomach.

of *Bela decussata* var. *inflata*, Greenland.

of *Lora nazanensis*, Nazan Bay, Atka Island, Aleutian Islands.

Range: Arctic Canada. (Macpherson, 1971) Point Barrow, Alaska to Queen Charlotte Islands, British Columbia. (MacGinitie, 1959) Circumboreal, Atlantic to Norway and Greenland. (Grant and Gale, 1931)

Depth: 19 to 40 and 34 to 53 m (Arctic Canada). (Macpherson, 1971)

Localities:

Arctic: $71^{\circ}03'N$, $164^{\circ}57'W$, 45 m (empty) (1). $71^{\circ}16.5'N$, $151^{\circ}33'W$, 50 m (1).

Northern Bering: Norton Sound south of Nome, 22 m (1).

Eastern Gulf: $59^{\circ}55'N$, $142^{\circ}40'W$, 135 m (empty) (1).

Oenopota elegans (Möller, 1842)

Defrancia elegans Möller, 1842, *Index Molluscorum Groenlandiae* p. 13.
(Grant and Gale, 1931)

Lora elegans, Dall, 1921:76.

Lora elegans, Oldroyd, 1927, part 1:111.

Lora elegans, Grant and Gale, 1931:521 (includes several species
as synonyms).

"*Oenopota*" *elegans*, MacGinitie, 1959:135; pl. 16, figs. 7, 8.

Oenopota elegans, Macpherson, 1971:117; pl. 7, fig. 7.

Type locality: Greenland.

Range: Point Barrow, Alaska to St. Lawrence Island, Bering Sea. (Dall,
1921) New England. West Greenland and Iceland. Norway. Barents
Sea to Bering Sea. Hudson Strait, Herschel Island and Ungava Bay,
Canada. (Macpherson, 1971)

Depth: 45 to 1203 m. (Macpherson, 1971)

Localities:

Northern Bering: $65^{\circ}08'N$, $168^{\circ}53'W$, 48 m (1). $64^{\circ}30'N$, $165^{\circ}58'W$,
22 m (1).

Oenopota excurvata (Carpenter, 1864)

Bela excurvata Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*, p. 603, 658, 683. (Palmer, 1958)

Lora excurvata, Dall, 1919a:46; pl. 14, fig. 5.

Lora excurvata, Dall, 1921:78.

Lora excurvata, Oldroyd, 1927, part 1:123.

Lora excurvata, Grant and Gale, 1931:532 (includes *Bela incisula* Verrill, 1884 as synonym).

Granotoma excurvata, Palmer, 1958:234.

Type locality: Puget Sound, Washington.

Range: Bristol Bay, Bering Sea to Puget Sound, Washington. (Dall, 1921)

not seen.

Oenopota granitica (Dall, 1919)

Mangilia granitica Dall, 1919, Proc. U.S. Nat. Mus. 56:67.

Mangilia granitica, Dall, 1921:80.

Mangilia granitica, Oldroyd, 1927, part 1:134.

Mangilia granitica, Grant and Gale, 1931:518 (in synonymy with *Lora turricula* var. *schniederi*).

Type locality: Granite Cove, Port Althorp, Alaska.

Range: Granite Cove, Port Althorp, Alaska. (Dall, 1921)

not seen.

Oenopota harpa (Dall, 1885)

Bela harpa Dall, 1885, *Proc. U.S. Nat. Mus.* 7:523.

Bela harpa, Dall, 1887:300; pl. 4, fig. 2.

Lora harpa, Dall, 1921:75.

Lora harpa, Oldroyd, 1927, part 1:106.

Lora harpa, Grant and Gale, 1931:531.

Oenopota harpa, MacGinitie, 1959:134; pl. 16, figs. 5, 6.

Type locality: none specified. Nunivak Island. Point Barrow 10 miles west of Point Franklin.

Range: Point Barrow, Alaska to the Queen Charlotte Islands, British Columbia (Dall, 1921) to 50°N. (Bernard, 1970)

Depth: 200 to 400 m (British Columbia). (Bernard, 1970)

149 to 420 ft (Point Barrow). (MacGinitie, 1959)

Localities:

Arctic: 70 to 71°N and 141 to 168°W, 37 to 56 m (8).

Northern Bering: Bering Strait (1).

Southern Bering: 56 to 59°N and 161 to 165°W (3).

Oenopota harpularia (Couthouy, 1838)

Fusus harpularius Couthouy, 1838, *Boston J. Nat. Hist.* 2:106;
pl. 1, fig. 10. (Johnson, 1946)

Lora harpularia, Dall, 1921:76.

Lora harpularia, Oldroyd, 1927, part 1:112.

Lora harpularia, Grant and Gale, 1931:524.

"*Oenopota*" *harpularia*, MacGinitie, 1959:135; pl. 16, fig. 9.

Oenopota harpularia, Abbott, 1974:286, fig. 3386.

Type locality: off Phillips Point, Massachusetts, from a cod.

Range: Arctic: West Greenland. Soviet Arctic to Point Barrow, Alaska.
(Macpherson, 1971)

Atlantic: Grinnell Land to Labrador, Newfoundland and Cape Cod.
Iceland and Norway.

Pacific: Point Barrow to Puget Sound. (MacGinitie, 1959)

Localities:

Northern Bering: 63°28.5'N, 169°01'W (empty) (1).

Southern Bering: 56 to 60°N and 161 to 169°W (empty) (3).

Eastern Gulf: 59 to 60°N and 143 to 147 m (4).

Oenopota healyi (Dall, 1919)

Lora healyi Dall, 1919, *Proc. U.S. Nat. Mus.* 56:42; pl. 16, fig. 8.

Lora healyi, Dall, 1921:77.

Lora healyi, Oldroyd, 1927:118.

Lora healyi, Grant and Gale, 1931:536.

Type locality: Arctic Ocean north of Bering Strait.

Range: Arctic Ocean north of Bering Strait. (Dall, 1921)

not seen.

Oenopota impressa (Beck in Mörch, 1869)

Pleurotoma (Bela) impressa Beck in Mörch, 1869, Soc. Malac. Belgique, Proc. 4:21. (MacGinitie, 1959)

Lora impressa, Dall, 1921:73.

Lora impressa, Oldroyd, 1927, part 1:95.

Lora impressa, Grant and Gale, 1931 (in part).

Nodotoma impressa, Bartsch, 1941:5; pl. 1, fig. 2.

Nodotoma impressa, MacGinitie, 1959:137; pl. 16, figs. 14, 15.

Type locality: Spitzbergen.

Range: Point Barrow and Sea Horse Islands, Alaska to Kodiak, Island, Alaska. Spitzbergen. (MacGinitie, 1959)

Depth: 216 to 477 ft (Point Barrow). (MacGinitie, 1959)

Localities:

Arctic: $70^{\circ}29'N$, $163^{\circ}35'W$, 35 m (1). $71^{\circ}20'N$, $168^{\circ}55'W$, 51 m (1).

Oenopota incisula (Verrill, 1882)

Bela incisula Verrill, 1882, Conn. Acad. Sci., Trans. 5:461; pl. 43, fig. 12; pl. 57, fig. 14. (Grant and Gale, 1931)

Lora incisula, Dall, 1921:75.

Lora incisula, Oldroyd, 1927, part 1:108.

Lora incisula, Grant and Gale, 1931:532 (in synonymy with *L. excurvata* Carpenter, 1864).

Oenopota incisula, Macpherson, 1971:118; pl. 7, fig. 8.

Oenopota incisula, Abbott, 1974:286, fig. 3390.

Type locality: Labrador.

Range: Newfoundland to Martha's Vineyard. West Greenland. Bering Strait and Arctic Canada. (Macpherson, 1971)

Depth: 6-7 m to 916 m. (Macpherson, 1971)

Localities:

Southern Bering: $57^{\circ}40'N$, $166^{\circ}06'W$ (1).

Eastern Gulf: Port Valdez, 176 to 235 m (8).

Southeast: Stephens Passage, south of Douglas Island (empty) (1).

Oenopota krausei (Dall, 1886)

Bela krausei Dall, 1886, Proc. U.S. Nat. Mus. 9:301; pl. 4, fig. 4.

Lora krausei, Dall, 1919a:46; pl. 15, fig. 3.

Lora lotta Dall, 1919, Proc. U.S. Nat. Mus. 56:46; pl. 14, fig. 4.

Lora lutkeni Dall, 1919, Proc. U.S. Nat. Mus. 56:48; pl. 16, fig. 5.

Lora krausei, Dall, 1921:75.

Lora lotta, Dall, 1921:75.

Lora lutkeni, Dall, 1921:75.

Lora krausei, Oldroyd, 1927, part 1:107; pl. 7, fig. 7.

Lora lotta, Oldroyd, 1927, part 1:104.

Lora lutkeni, Oldroyd, 1927, part 1:107.

Lora krausei, Grant and Gale, 1931:537.

Type locality: of *Bela krausei*, Port Etches, Alaska, 15 fms.

of *Lora lotta*, Queen Charlotte Islands, British Columbia.

of *Lora lutkeni*, Port Etches, Alaska.

Range: Port Etches, Alaska to Queen Charlotte Islands, British Columbia.

not seen.

Oenopota kyskana (Dall, 1919)

Lora kyskana Dall, 1919, *Proc. U.S. Nat. Mus.* 56:47; pl. 14, fig. 3.

Lora kyskana, Dall, 1921:73.

Lora kyskana, Oldroyd, 1927, part 1:97; pl. 7, fig. 11; pl. 18, fig. 2.

Lora kyskana, Grant and Gale, 1931:519 (in synonymy with *L. turricula* (Montagu, 1803) var. *popovia* Dall, 1919)

Type locality: none specified. Aleutian Islands to Puget Sound. (Boss, Rosewater, Ruhoff, 1968) Kyska Island, Aleutian Islands. (Grant and Gale, 1931)

Range: Kyska Island, Aleutian Islands to Puget Sound, Washington. (Dall, 1921)

not seen.

Oenopota levidensis (Carpenter, 1864)

Mangelia levidensis Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 603, 658. (Palmer, 1958)

Mangelia funebrale Dall, 1871, *Amer. J. Conchol.* 7(2):100.

Mangilia (Clathromangilia) levidensis, Dall, 1919a:62; pl. 21, fig. 1.

Mangilia levidensis, Dall, 1921:82.

Mangilia levidensis, Oldroyd, 1927, part 1:144; pl. 2, fig. 21.

Lora levidensis, Grant and Gale, 1931:526.

"*Mangilia*" *levidensis*, Palmer, 1958:230.

Type locality: of *Mangelia levidensis*, Puget Sound, Washington.

of *Mangelia funebrale*, Sitka, Alaska.

Range: Bering Strait to Puget Sound. (Palmer, 1958)

Depth: 20 to 150 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: Lower Cook Inlet, $59^{\circ}33'N$, $153^{\circ}24'W$, 25 m (empty) (1).

Southeast: Redoubt Bay Cove (1).

Oenopota lutkeana (Krause, 1886)

Bela lutkeana Krause, 1886, *Archiv. f. Naturg.* 51(1):281; pl. 18,
figs. 6, 16. (Grant and Gale, 1931)

Lora lutkeana, Dall, 1921:75.

Lora lutkeana, Oldroyd, 1927, part 1:108; pl. 11, fig. 10.

Lora lutkeana, Grant and Gale, 1931:541 (includes *L. albrechti*
"Krause" Dall, 1886, in synonymy).

Type locality: St. Lawrence Bay, Bering Strait.

Range: St. Lawrence Bay, Bering Strait. (Dall, 1921)

not seen.

Oenopota murdochiana (Dall, 1885)

Bela murdochiana Dall, 1885, Proc. U.S. Nat. Mus. 7:524; pl. 2, fig. 8.

Lora murdochiana, Dall, 1921:77.

Lora murdochiana, Oldroyd, 1927, part 1:119.

Lora murdochiana, Grant and Gale, 1931:535 (in synonymy with
Lora laevigata var. *tenuilirata* (Dall, 1871)).

Type locality: Cape Smyth, Alaska.

Range: Point Barrow to Pribiloff Islands. (Dall, 1921)

not seen.

Oenopota novajasemliensis (Leche, 1878)

Pleurotoma novaja-semliensis Leche, 1878, Kongl. Svenska Vetensk-Akad. Handl. 16(2):52; pl. 1, fig. 15. (Macpherson, 1971)

Lora novajasemliensis, Dall, 1921:76.

Lora novajasemliensis, Oldroyd, 1927, part 1:111.

Pleurotoma novaja-semliensis, Grant and Gale, 1931:521 (in synonymy with *Lora impressa* (Beck in Mørch, 1869)).

Oenopota novajasemliensis, Macpherson, 1971:119; pl. 7, fig. 14.

Type locality: Novaja Zemlya.

Range: Arctic: Laptev Sea. Siberian Arctic north of Bering Strait.
Arctic Canada. (Macpherson, 1971)

Depth: 6 m to 164 m. (Macpherson, 1971)

Localities:

Arctic: Colville River Delta (1).

Oenopota pavlova (Dall, 1919)

Lora pavlova Dall, 1919, *Proc. U.S. Nat. Mus.* 56:43; pl. 14, fig. 9.

Lora pavlova, Dall, 1921:77.

Lora pavlova, Oldroyd, 1927:115.

Lora pavlova, Grant and Gale, 1931:524 (in synonymy with *L. harpularia* (Couthouy, 1838)).

Type locality: Albatross Sta. 3607, off Pribiloff Islands, Bering Sea, 987 fms.

Range: off Pribiloff Islands, Bering Sea. (Dall, 1921)

Oenopota pleurotomaria (Couthouy, 1838)

Fusus pleurotomaria Couthouy, 1838, *Boston J. Nat. Hist.* 2:107; pl. 1, fig. 9. (Johnson, 1946)

Lora pleurotomaria, Dall, 1921:74.

Lora pleurotomaria, Oldroyd, 1927:100.

Lora pleurotomaria, Grant and Gale, 1931:528 (in synonymy with *O. pyramidalis* (Strom, 1788)).

Type locality: near Lynn, Massachusetts, from the stomach of a cod.

Range: East Pacific: Nunivak Island, Bering Sea to Puget Sound. (Dall, 1921)

West Atlantic: Labrador to Martha's Vinyard, Massachusetts. (La Rocque, 1953)

Depth: 5 to 255 fms. (La Rocque, 1953)

Localities:

Eastern Gulf: $59^{\circ}45'N$, $149^{\circ}31'W$, 179 m (empty) (1). tentative identification.

Oenopota popovia (Dall, 1919)

Lora popovia Dall, 1919, Proc. U.S. Nat. Mus. 56:42; pl. 14,
fig. 8.

Lora popovia, Dall, 1921:77.

Lora popovia, Oldroyd, 1927, part 1:117.

Lora turricula var. *popovia*, Grant and Gale, 1931:519.

Type locality: none specified. Bristol Bay. Bering Strait.

Range: Bristol Bay. Bering Strait to Point Pinos, California.
(Dall, 1921)

not seen.

Oenopota pyramidalis (Strom, 1788)

Buccinum pyramidale Strom, 1788, *K. Dansk. Vid. Selsk. Skrift.*
3:297, fig. 22. (Grant and Gale, 1931)

Lora pyramidalis, Grant and Gale, 1931:528 (in part).

"*Oenopota*" *pyramidalis* and varieties, MacGinitie, 1959:136; pl. 16,
figs. 1-3; pl. 17, figs. 6, 7 (in part).

Oenopota pyramidalis, Macpherson, 1971:121; pl. 7, fig. 12.

Type locality: none given.

Range: Point Barrow, Alaska to Friday Harbor, Washington. Arctic Canada
to Bay of Fundy. West Greenland. Arctic Ocean from the North
Atlantic to Bering Strait. Norway. (MacGinitie, 1959; Macpherson, 1971)

Depth: 3 to 13-30 m (Arctic Canada). (Macpherson, 1971)

Oenopota quadra (Dall, 1919)

Lora quadra Dall, 1919, *Proc. U.S. Nat. Mus.* 56:46; pl. 15, fig. 2.

Lora quadra, Dall, 1921:73.

Lora quadra, Oldroyd, 1927, part 1:97; pl. 7, fig. 12; pl. 18, fig. 6.

Lora quadra, Grant and Gale, 1931:532.

Type locality: Unalaska Island, Aleutian Islands.

Range: Unalaska to Puget Sound. (Dall, 1921)

not seen.

Oenopota reticulata (Brown, 1827)

Pleurotoma reticulata Brown, 1844, *Ill. Rec. Conch. Gt. Brit. and Ire.*, Ed. 1; pl. 48, figs. 29, 30. (Grant and Gale, 1931)

Lora surana Dall, 1919, *Proc. U.S. Nat. Mus.* 56:45; pl. 14, fig. 6.

Lora calponica Dall, 1919, *Proc. U.S. Nat. Mus.* 56:50; pl. 16, fig. 2.

Lora pitysa Dall, 1919, *Proc. U.S. Nat. Mus.* 56:40; pl. 16, fig. 7.

Lora diegensis Dall, 1919, *Proc. U.S. Nat. Mus.* 56:46; pl. 16, fig. 10.

Lora surana, Oldroyd, 1927, part 1:114.

Lora pitysa, Oldroyd, 1927, part 1:98.

Lora calponica, Oldroyd, 1927, part 1:104.

Lora diegensis, Oldroyd, 1927, part 1:114.

Lora reticulata, Grant and Gale, 1931:522.

Oenopota reticulata, Macpherson, 1971:121; pl. 7, fig. 13.

Type locality: of *Pleurotoma reticulata*, Greenock, Scotland.

of *Lora surana*, Point Sur, California.

of *Lora calponica*, Tillamook, Oregon.

of *Lora pitysa*, Point Pinos, California.

of *Lora diegensis*, San Diego, California.

Range: Arctic Canada. New England to West Greenland. Barents Sea.
Arctic Ocean. North Greenland Sea. (Macpherson, 1971) Bering Sea
to San Diego, California. (Dall, 1921)

not seen.

Oenopota rosea (M. Sars in Lovén, 1846)

Tritonium roseum M. Sars in Lovén, 1846, Kongl. Svenska. Vetensk.-Akad. Handl. 3:84. (Grant and Gale, 1931)

Lora rosea, Dall, 1921:77.

Lora rosea, Oldroyd, 1927, part 1:120.

Lora turricula var. *rosea*, Grant and Gale, 1931:518.

Type locality: Norwegian coast.

Range: Circumboreal. Atlantic: to Norway and Great Britain. (La Rocque, 1953)

Pacific: Shumagin Islands, Alaska to San Juan Islands, Washington. (Dall, 1921)

not seen.

Oenopota rugulata (Möller in Troschel, 1866)

Bela rugulata Möller in Troschel, 1866, *Geb. der Schnecken* 2:44;
pl. 4, fig. 6. (Dall, 1919a)

Bela rugulata, Dall, 1919a:50; pl. 13, fig. 6.

Bela rugulata, Grant and Gale, 1931:515 (in synonymy with
Lora turricula (Montagu, 1803)).

Type locality: Arctic. (Grant and Gale, 1931)

Range: Norway and Spitzbergen. Bering Sea. Plover Bay to the Aleutian Islands. Port Althorp, Alaska. (Dall, 1919)

Localities:

Northern Bering: North of St. Lawrence Island (1).

Southern Bering: $57^{\circ}55'N$, $160^{\circ}08'W$ (1). $57^{\circ}21'N$, $167^{\circ}23'W$ (1).

Eastern Gulf: $60^{\circ}04.5'N$, $146^{\circ}43'W$, 117 m (1). Port Valdez (2).

Southeast: Stephens Passage, south of Douglas Island (1).

Oenopota simplex (Middendorff, 1849)

Pleurotoma simplex Middendorff, 1849, *Mem. Acad. Imp. Sci. St. Petersbourg*, ser. 6, vol. 6, part 2, p. 119. (Grant and Gale, 1931)

Bela ? laevigata Dall, 1871, *Amer. J. Conchol.* 7(2):98; pl. 16, fig. 7.

Bela laevigata, Dall, 1887:300; pl. 3, fig. 7.

Lora laevigata, Dall, 1921:78.

Lora simplex, Dall, 1921:77.

Lora laevigata, Oldroyd, 1927, part 1:121.

Lora simplex, Oldroyd, 1927, part 1:120.

Lora laevigata, Grant and Gale, 1931:535.

Lora simplex, Grant and Gale, 1931:536.

Obesotoma simplex, MacGinitie, 1959:133; pl. 16, fig. 2.

Type locality: of *Pleurotoma simplex*, Okhotsk Sea.

of *Bela laevigata*, Norton Sound.

Range: Norway. (La Rocque, 1953) Kotzebue and Norton Sounds, Bering Sea to Chirikoff Island, Alaska. (Dall, 1919)

Localities:

Northern Bering: Cape Denbigh, Norton Sound (empty) (1).

Southern Bering: 56 to 59°N and 159 to 171°W (10).

Oenopota solida Dall, 1887

Bela solida Dall, 1887, *Proc. U.S. Nat. Mus.* 9:301; pl. 3, fig. 4.

Lora solida, Dall, 1921:77.

Lora solida, Oldroyd, 1927, part 1:116.

Lora solida, Grant and Gale, 1931:535.

Type locality: Kiska Harbor, Aleutian Islands.

Range: Bering Sea to Puget Sound. (Dall, 1921)

not seen.

Oenopota tabulata (Carpenter, 1864)

Mangelia tabulata Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 628, 658. (Palmer, 1958)

Lora tabulata, Dall, 1919a:45; pl. 14, fig. 1.

Lora tabulata, Dall, 1921:74.

Lora tabulata, Oldroyd, 1927, part 1:101; pl. 7, fig. 13; pl. 18,
fig. 5.

Lora tabulata, Grant and Gale, 1931:520 (includes *Lora miona* Dall,
1919 in synonymy).

Propebela tabulata, Palmer, 1958:234; pl. 25, figs. 7-11.

Type locality: Neah Bay, Washington.

Range: Sitka, Alaska to Puget Sound, Washington. (Palmer, 1958)

Depth: 25 to 80 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: Low Cape, Kodiak Island (empty) (1).

Oenopota tenuicostata (G. Sars, 1878)

Bela tenuicostata G. Sars, 1878, *Mollusca regionis arcticae Norvegiae* p. 237; pl. 17, figs. 1a-b. (MacGinitie, 1959)

Lora tenuicostata, Dall, 1921:74.

Lora tenuicostata, Oldroyd, 1927, part 1:103.

Lora tenuicostata, Grant and Gale, 1931:540.

Oenopota tenuicostata, MacGinitie, 1959:134; pl. 16, fig. 4.

Type locality: Vadso, Norway.

Range: St. Lawrence Island, Bering Sea to Safety Cove, Alaska. (Dall, 1921) Point Barrow, Alaska. (MacGinitie, 1959) Atlantic, to Maine. (La Rocque, 1953) east and west Greenland, Iceland, Jan Mayen, Spitzbergen and Norway. (Thorson, 1944)

Localities:

Chukchi: 71 to 72°N and 163 to 171°W, 20 to 45 m (3).

Northern Bering: North of St. Lawrence Island, 43 m (1).

Southern Bering: 58°29'N, 172°07'W, 110 m (1).

Oenopota tenuilirata (Dall, 1871)

Bela ? laevigata (var.?) *tenuilirata* Dall, 1871, Amer. J. Conchol. 7(2):98.

Lora tenuilirata, Dall, 1919a:42; pl. 15, fig. 4.

Lora tenuilirata, Dall, 1921:77.

Lora tenuilirata, Oldroyd, 1927, part 1:118.

Lora laevigata var. *tenuilirata*, Grant and Gale, 1931:535.

Obesitoma tenuilirata, MacGinitie, 1959:132; pl. 16, fig. 1.

Type locality: Fort St. Michael, Norton Sound, Alaska.

Range: Point Barrow, Alaska to Hagemeister Island and Unimak Island, Bering Sea. (MacGinitie, 1959) Arctic Ocean to Norway and Rhode Island. (Grant and Gale, 1931)

Oenopota turricula (Montagu, 1803)

Murex turricula Montagu, 1803, *Testacea Britannica* p. 262; pl. 9,
fig. 1. (Grant and Gale, 1931)

Lora turricula, Dall, 1921:76.

Lora turricula, Oldroyd, 1927, part 1:115.

Lora turricula, Grant and Gale, 1931:515; pl. 32, figs. 42, 43
(includes many synonyms and varieties).

Oenopota turricula, Macpherson, 1971:123; pl. 7, fig. 11.

Propebela turricula, Abbott, 1974:284, fig. 3315.

Type locality: Sandwich, Kent, England.

Range: Icy Cape, Alaska to Puget Sound, Washington. (Dall, 1921)
Soviet Arctic to Bering Sea. Nova Scotia. Labrador. Greenland.
Faroe Islands. (Macpherson, 1971) England. Ireland. Iceland.
(Oldroyd, 1927)

Localities:

Arctic: $71^{\circ}59'N$, $155^{\circ}42'W$, 150 m (1).

Northern Bering: Norton Sound to Cape Romanzof, 18-23 m (3).

Southern Bering: 56 to $59^{\circ}N$ and 160 to $170^{\circ}W$ (10).

Western Gulf: Lower Cook Inlet, 31 m (1). Tuxedni Bay (empty) (1).

Oenopota viridula (Fabricius, 1780)

Tritonium viridulum Fabricius, 1780, *Fauna Groenlandica* p. 402.
(Grant and Gale, 1931)

Lora viridula, Grant and Gale, 1931:514; pl. 32, figs. 39-41
(includes many synonyms).

Type locality: Greenland.

Range: Circumboreal. to Norway and Labrador in the Atlantic. Pacific,
to Monterey, California. (Grant and Gale, 1931)

Localities:

Western Gulf: Lower Cook Inlet, $59^{\circ}22'N$, $152^{\circ}22'W$, 82 m (1).
MacDonald Spit, Kasitsna Bay (empty) (1).

Eastern Gulf: Blue Fiord (empty) (1).

Southeast: Bartlett Cove (1). Stephens Passage (1).

TABLE 38a

Oenopota

	<i>Oenopota alaskensis</i>	<i>Oenopota alitakensis</i>	<i>Oenopota bicarinata</i>	<i>Oenopota decussata</i>
Relative proportions	spire greater than aperture	spire greater than aperture	variable	aperture greater than spire
Overall shape	tall, slender	tall, fusiform	fusiform	short, inflated
Whorl outline	slightly convex	shouldered	convex to slightly shouldered	short, convex
Nuclear whorls	eroded, not seen	3 prominent radial keels	2 low radial ribs, narrow axial threads	eroded, not seen
Axial sculpture	low folds	angular folds	lines of growth, sometimes showing as beads on radials	low narrow folds
Axial interspaces	equal to folds	equal to folds		narrow, about equal to folds

TABLE 38a

Continued

	<i>Oenopota alaskensis</i>	<i>Oenopota alitakensis</i>	<i>Oenopota bicarinata</i>	<i>Oenopota decussata</i>
Curving of the axials	slightly curved fading on penultimate and body whorl	sigmoid, fading on base		slightly curved, fading just below shoulder
Radial sculpture	unevenly spaced low narrow ribs, shallow, narrow interspaces, coarser on base	on the spire, 3 prominent ribs finer threads between; on the body whorl, 1 rib marking periphery finer threads, becoming stronger on the base	low rounded ribs, shallow, narrow interspaces, 2 or 3 ribs are more prominent	low rounded cords, narrow incised interspaces
Anal notch	broad, moderately deep near suture	broken, not observed	wide, shallow, just below suture	deep, between suture and periphery

TABLE 38b

Oenopota

	<i>Oenopota harpa</i>	<i>Oenopota harpularia</i>	<i>Oenopota impressa</i>	<i>Oenopota simplex</i>
Relative proportions	aperture greater than spire	variable	aperture greater than spire (eroded)	short spire
Overall shape	variable, fusiform to short fusiform	fusiform	short, fusiform	squat
Whorl outline	convex to slightly shouldered	rounded-tabulate	rounded, shouldered	short, rounded
Nuclear whorls	eroded, not seen	2 or 3 low rounded slightly beaded radials, low axial riblets	eroded, not seen	eroded, not seen
Axial sculpture	high, narrow ribs	low folds	narrowly flat-topped ribs	lines of growth

TABLE 38b

Continued

	<i>Oenopota harpa</i>	<i>Oenopota harpularia</i>	<i>Oenopota impressa</i>	<i>Oenopota simplex</i>
Axial interspaces	about equal to ribs, deep	about equal	widely spaced deep, angular grooves	
Curving of the axials	sigmoid, strong to base	nearly straight	nearly straight	
Radial sculpture	incised lines, becoming much deeper and more widely spaced on base	on slope, rounded threads; below, riblets with interspaces, 1/2 to equal to riblet width	narrow incised lines, wide, flat interspaces	usually eroded, fine wavy threads
Anal notch	broad, shallow, near suture	at the shoulder, obscure	shallow, at shoulder	shallow, just below suture

TABLE 38c

Oenopota

	<i>Oenopota levidensis</i>	<i>Oenopota incisula</i>	<i>Oenopota novajasemliensis</i>	<i>Oenopota rugulata</i>
Relative proportions	spire greater than aperture	variable, aperture greater	spire shorter than aperture	aperture about equal to spire
Overall shape	tall, slender	inflated, short	short, inflated fusiform	fusiform
Whorl outline	slightly convex	narrowly, strongly tabulate	strongly tabulate	angular tabulate
Nuclear whorls	with 2 or 3 broad keels	with many fine radials, fine axial s	eroded, not seen	eroded, not seen
Axial sculpture	wide folds	low flat ribs	lines of growth, few obscure ribs	narrow, angular folds
Axial interspaces	about equal to folds	about equal to folds		broad, deep, rounded
Curving of the axials	straight	slanted (protractive) strongest, nodose at angle, fading at aperture level		straight, forming nobs on shoulder, extended nearly to base

TABLE 38c

Continued

	<i>Oenopota <u>levidensis</u></i>	<i>Oenopota <u>incisula</u></i>	<i>Oenopota <u>novajasemliensis</u></i>	<i>Oenopota <u>rugulata</u></i>
Radial sculpture	rounded riblets, approximately equal inter- spaces	widely spaces incised lines	narrow flat riblets, wide (2 to 3 times width) interspaces	keel, topped with 3 threads at the shoulder; rounded riblets equal inter- spaces
Anal notch	obscure	wide, deep at angle	wide, deep, between shallow, at suture and angle	angle

TABLE 38d

Oenopota

	<i>Oenopota tabulata</i>	<i>Oenopota temuicostata</i>	<i>Oenopota turricula</i>	<i>Oenopota viridula</i>
Relative proportions	spire greater than aperture	aperture greater than spire	aperture about equal to spire	aperture equal to or slightly shorter than spire
Overall shape	fusiform	rounded fusiform	fusiform	fusiform
Whorl outline	narrowly tabulate	short, convex, rounded	angular, tabulate	rounded, narrowly tabulate
Nuclear whorls	eroded, not seen	fine reticulate sculpture	2 radial keels traces of axial sculpture	eroded
Axial sculpture	flat ribs	low flat ribs	angular folds	narrow low folds
Axial interspaces	about equal, squarish, deep	sharply incised narrow grooves	broad, rounded	equal, rounded
Curving of the axials	straight, fading at aperture level	curved, strong to base	straight, extend-straight, faded nearly to base, forming low nobs at shoulder	below level of aperture

TABLE 38d

Continued

	<i>Oenopota tabulata</i>	<i>Oenopota tenuicostata</i>	<i>Oenopota turricula</i>	<i>Oenopota viridula</i>
Radial sculpture	narrow ribs, equal, impressed interspaces	incised lines, slightly finer than axials	strong keel on shoulder; between suture and shoulder, narrow even threads; below, broader rib- lets with equal inter- spaces	flat riblets, impressed, about equal inter- spaces
Anal notch	at shoulder, obscure	wide, deep, just below suture	shallow, at angle	shallow, at angle

TABLE 38e

*Oenopota**Oenopota*
althorpi

Relative proportions	aperture about equal to spire
Overall shape	tall, fusiform
Whorl outline	shouldered, angular
Nuclear whorls	with 2 radial cords
Axial sculpture	high, angular folds
Axial interspaces	deep, equal to folds
Curving of the axials	straight
Radial sculpture	wide, flat ribs, narrow grooves between
Anal notch	broad, shallow

Oenopota
elegans

aperture about equal to spire

tall, fusiform

shouldered

eroded, not seen

angular ribs, beginning
at the shoulder

deep, equal to ribs

sigmoid

eroded, not seen

at the shoulder, broad
shallow

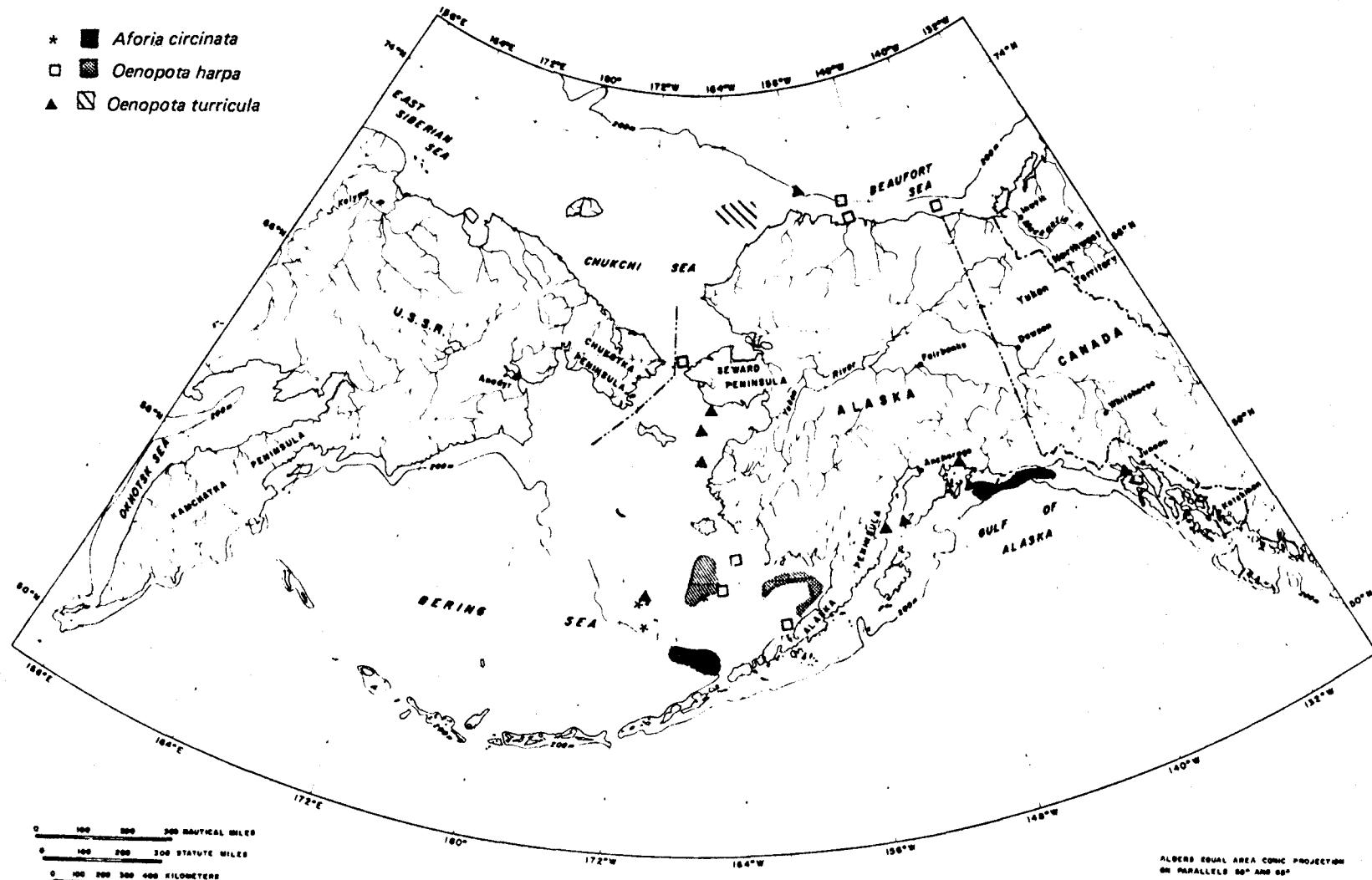


Figure 9. Localities for specimens of *Aforia*, *Oenopota*.

Suavodrillia

Suavodrillia kennicotti (Dall, 1871)

Drillia kennicotti Dall, 1871, Amer. J. Conchol. 7(2):102;
pl. 16, fig. 2.

Clathrodrillia (Suavodrillia) kennicottii, Dall, 1921:69; pl. 11,
fig. 7.

Clathrodrillia (Suavodrillia) kennicottii, Oldroyd, 1927, part 1:71;
pl. 6, fig. 5.

Suavodrillia kennicottii, Abbott, 1974:274, fig. 3085.

Type locality: North Harbor, Unga Island, Shumagin Islands.

Range: Bering Strait to Aleutian Islands. (Dall, 1921)

Localities:

Northern Bering: $64^{\circ}42'N$, $168^{\circ}03'W$, 35 m (1).

Southern Bering: $59^{\circ}19'N$, $175^{\circ}50'W$, 139 m (1).

Eastern Gulf: $59^{\circ}50'N$, $142^{\circ}04'W$, 80 m (1).

Suavodrillia willetti Dall, 1919

Suavodrillia willetti Dall, 1919, *Proc. U.S. Nat. Mus.* 56:29.

Clathrodrillia (?*Suavodrillia*) *willetti*, Dall, 1921:69.

Clathrodrillia (*Suavodrillia*) *willetti*, Oldroyd, 1927, part 1:71.

Type locality: Forrester Island, Alaska.

Range: Forrester Island, Alaska. (Dall, 1921)

Localities:

Southern Bering: $59^{\circ}43'N$, $166^{\circ}24'W$ (empty) (1).

Eastern Gulf: 59 to $60^{\circ}N$ and 141 to $147^{\circ}W$, 97 to 179 m (3).

TABLE 39
Suavodrillia

<u><i>Suavodrillia kennicottii</i></u>	
Size - height	34.6
diameter	15
aperture	16
Number of whorls	7
Whorl outline	shouldered
Sutures	adpressed
Axial sculpture	incremental lines
Radial sculpture on spire	1 prominent, angular keel, at perifery
Radial sculpture on body whorl	periferal keel and around 6 low rounded ribs
Anal notch	deep, narrow, just above periferal keel

Suavodrillia
willetti

8.0

3.5

3.0

5-6

shouldered

adpressed

low ribs, prominent at the
radials, much curved by the
anal fasciole

prominent keel at the perifery,
narrower rib below it

prominent periferal keel
high, narrow ribs with
wider interspaces on base

broken, not observed

Taranis

Taranis strongi (Arnold, 1903)

Mangilia (Taranis) strongi Arnold, 1903, *Calif. Acad. Sci., Mem.* 3:215; pl. 9, fig. 7. (Grant and Gale, 1931)

Taranis strongi, Dall, 1921:83.

Taranis strongi, Oldroyd, 1927, part 1:151.

Taranis strongi, Grant and Gale, 1931:572; pl. 26, fig. 37.

Type locality: Deadman Island, California, Pleistocene.

Range: Alaska (55° N) (Bernard, 1970) to San Diego, California. (Dall, 1921)

Depth: 120 to 480 m (British Columbia). (Bernard, 1970)

not seen.

Bivalves

Family Nuculidae

Acila

Acila castrensis (Hinds, 1843)

Nucula castrensis Hinds, 1843, Zool. Soc. London, Proc.
p. 98. (Keen, 1966b)

Nucula (Acila) castrensis, Dall, 1921:10.

Nucula (Acila) castrensis, Oldroyd, 1924:14; pl. 5, fig. 11;
pl. 37, figs. 1, 2.

Acila (Truncacila) castrensis, Abbott, 1974:411, fig. 4811.

Type locality: Sitka, Alaska, 7 fms.

Range: Bering Sea to San Diego, California (Dall, 1921) to Baja
California. (Abbott, 1974; Bernard, 1970)

Depth: 100 to 800 m (British Columbia). (Bernard, 1970)

Localities:

Southeast: Katlian Bay, 150 m (1). Rudyerd Bay (1).

*Nucula**Nucula tenuis* (Montagu, 1808)

Arca tenuis Montagu, 1808, *Test. Brit. Suppl.* p. 56; pl. 29,
fig. 1. (Schench, 1939)

Nucula tenuis, Dall, 1921:9.

Nucula tenuis Oldroyd, 1924:13; pl. 5, fig. 12, not pl. 37, fig. 4.

Nucula (Ennucula) tenuis, Schench, 1939:33; pl. 8, figs. 1-4, 9,
12, 14, 15.

Nucula tenuis var. *expansa*, MacGinitie, 1959:149; pl. 18, fig. 4.

Nucula tenuis, Abbott, 1974:411, fig. 4794.

Type locality: shore near Dunbar, south side of Frith of Forth,
Scotland.

Range: East Atlantic: Arctic to the Mediterranean Sea.

West Atlantic: Arctic to North Carolina.

East Pacific: Arctic to southern California. (MacGinitie, 1959)

West Pacific: Coast of Asia, 36 to 46°N. (Kuroda and Habe, 1952)

Depth: 2 to 1255 m. (Clarke, 1962)

silt-sand. (Scarlato, 1955; Rowland, 1973) mud. (MacGinitie, 1959)

clay and sand, with mud and gravel. (Ockelmann, 1958)

Localities:

Arctic: 70 to 71°N and 142 to 156°W, 31 to 120 m (7).

Chukchi: 67 to 70°N and 160 to 168°W, 35 to 50 m (7).

Northern Bering: Bering Strait, Norton Sound, St. Lawrence Island
vicinity (8).

Southern Bering: Bristol Bay, 57 to 63°N and 159 to 175°W, 27 to
90 m (14).

Eastern Gulf: Port Valdez, 224 and 234 m (2).

Southeast: Icy Strait, 148 m (1). Bartlett Cove (1).

Family Nuculanidae

Malletia

Malletia cuneata Jeffreys, 1876

Malletia cuneata Jeffreys, 1876, Ann. Mag. Nat. Hist. 4 ser. 18: 435. (Knudsen, 1970)

Malletia (Ieilo) fiora Dall, 1916, Proc. U.S. Nat. Mus. 52:400.

Malletia fiora, Dall, 1921:14.

Malletia fiora, Oldroyd, 1924:37.

Malletia cuneata, Knudsen, 1970:64, text figs. 42, 43; pl. 6, fig. 13.

Type locality: of *Malletia cuneata*, Valorous Sta. 9, northwest Atlantic.

of *Malletia fiora*, U.S.F.C. Sta. 2857, southeast of Sitka, Alaska, 15 to 69 fms.

Range: Atlantic, Indian, west and east Pacific, Arctic, and Antarctic Oceans. (Knudsen, 1970)

Depth: 2365 to 6156 m. (Knudsen, 1970)

various bottom types, Globigerina ooze, clay, sandy clay, clay with stones. (Knudsen, 1970)

not seen.

Malletia pacifica Dall, 1897

Malletia pacifica Dall, 1897, *Nat. Hist. Soc. Brit. Colum., Bull.* 2:11; pl. 2, fig. 11.

Malletia pacifica, Dall, 1921:14.

Malletia pacifica, Oldroyd, 1924:37; pl. 13, fig. 17.

Type locality: Clarence Strait and others.

Range: Chignik Bay, Alaska to Monterey, California. (Dall, 1921)

Depth: 1500 to 2000 m (British Columbia). (Bernard, 1970)

not seen.

Malletia talana Dall, 1916

Malletia (Minormalletia) talana Dall, 1916, Proc. U.S. Nat. Mus.
52:400.

Malletia talana, Dall, 1921:14.

Malletia talana, Oldroyd, 1924:36.

Type locality: U.S.F.C. Sta. 3606, off Pribilof Islands, Bering Sea,
1771 fms.

Range: Bering Sea to Oregon. (Dall, 1921)

Depth: 1771 fms. (Bering Sea). (Dall, 1921)

not seen.

*Neilonella**Neilonella brunnea* (Dall, 1916)*Tindaria brunnea* Dall, 1916, Proc. U.S. Nat. Mus. 52:401.*Tindaria brunnea*, Dall, 1921:15.*Tindaria brunnea*, Oldroyd, 1924:38; pl. 3, fig. 4.*Neilonella brunnea*, Knudsen, 1970:57, text fig. 38A; pl. 5, fig. 1; pl. 6, fig. 5.

Type locality: U.S.F.C. Sta. 3604, Bering Sea, 1401 fms.

Range: Bering Sea to Tillamook, Oregon. (Dall, 1921) north Pacific Basin.
(Knudsen, 1970)

Depth: 2562 m (Knudsen, 1970)

not seen.

*Nuculana**Nuculana buccata* (Steenstrup, 1842)*Leda buccata* Steenstrup, 1842, *Index Molluscorum Groenlandiae* 17.
(Richards, 1962)*Leda buccata*, Dall, 1921:11.*Leda buccata*, Oldroyd, 1924:25.*Nuculana buccata*, Richards, 1962:51; pl. 1, figs. 21, 22.*Leda buccata*, Petrov, 1966:184; pl. 10, figs. 9, 10.

Type locality: Greenland.

Range: Arctic seas. Bering Sea. shores of Greenland. (Petrov, 1966)

Localities:

Southern Bering: near Pribilof Islands, 71 to 105 m (4).

Nuculana conceptionis (Dall, 1896)

Leda conceptionis Dall, 1896, *Nautilus* 10(1):2. (Boss, Rosewater, Ruhoff, 1968)

Leda conceptionis, Dall, 1897:7; pl. 2, fig. 1.

Leda conceptionis, Dall, 1921:12.

Leda conceptionis, Oldroyd, 1924:21; pl. 39, fig. 1.

Type locality: none specified. Sanak Island, Aleutian Islands to Santa Barbara, California. especially off Point Conception, California.

Range: Aleutian Islands to San Diego, California. (Dall, 1921)

Depth: 200 to 400 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: 59°26'N, 141°45'W, 179 m (1). 59°26.5'N, 40°17'W, 243 m (1).

Nuculana extenuata (Dall, 1897)

Leda extenuata Dall, 1897, *Nat. Hist. Soc. Brit. Colum., Bull.* 2:8; pl. 2, fig. 2.

Leda extenuata, Dall, 1921:12.

Leda extenuata, Oldroyd, 1924:22; pl. 28, fig. 3.

Type locality: off Dixon Entrance, British Columbia, 1569 fms.

Range: Pacific, 55 to 60°N. (Bernard, 1970)

Depth: 2000 to 3000 m (British Columbia). (Bernard, 1970)

not seen.

Nuculana fossa (Baird, 1863)

Leda fossa Baird, 1863, *Zool. Soc. London, Proc.* p. 71. (Dall, 1921)

Leda fossa, Dall, 1897; pl. 2, figs. 3, 13.

Leda fossa and var. *curtulosa*, *sculpta* and *vaginata*, Dall, 1916:396.

Leda fossa and subspecies, Dall, 1921:11.

Leda fossa and subspecies, Oldroyd, 1924:19; pl. 5, fig. 6.

Nuculana fossa, Abbott, 1974:414, fig. 4852.

Type locality: Vancouver Island, British Columbia.

Range: Kotzebue Sound, Alaska to Puget Sound, Washington. (Dall, 1921)

Depth: 40 to 400 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: 59 to 60°N and 140 to 144°W (5). Port Valdez (4).

Southeast: Katlian Bay, 160 m (1). Turner Bay, 60 m (1). Stephens Passage, 34-40 m (1). Bartlett Cove (1).

Nuculana hindsii (Hanley, 1860)

Leda acuta "Conrad, 1831," Dall, 1921:10.

Nuculana (Saccella) hindsii, Abbott, 1974:415.

Nuculana (Saccella) hindsii, Keen, 1971:29, fig. 25.

Type locality: Gulf of Nicoya, Costa Rica.

Range: Nazan Bay, Atka Island, Aleutian Islands (Dall, 1921) to Panama.
(Keen, 1971)

not seen.

Nuculana liogona (Dall, 1916)

Leda liogona Dall, 1916, *Proc. U.S. Nat. Mus.* 52:396.

Leda liogona, Dall, 1921:11.

Leda liogona, Oldroyd, 1924:18.

Nuculana (Thestyleda) liogona, Habe and Ito, 1974:105; pl. 34, fig. 11.

Type locality: U.S.F.C. Sta. 3604, Bering Sea, 1401 fms.

Range: North Pacific Basin, 1401 fms. (Clarke, 1962)

not seen.

Nuculana minuta (Fabricius, 1776)

Arca minuta Fabricius, 1776, *Fauna Groenlandiae Lipsiae*, p. 414.
(MacGinitie, 1959)

Leda minuta, Dall, 1921:10.

Leda minuta, Oldroyd, 1924:15; pl. 5, fig. 9; pl. 19, figs. 2, 2a.

Leda minuta, Ockelmann, 1958:19; pl. 1, fig. 10.

Nuculana minuta, MacGinitie, 1959:150; pl. 18, fig. 3.

Type locality: Greenland.

Range: East Atlantic: southeast Greenland. Jan Mayen. Spitzbergen.
Finmark and White Seas. Iceland. the Faroes. Norwegian Coast.
Denmark.

West Atlantic: West Greenland. Grinnell Land. Baffinland.
Labrador. Nova Scotia. Bay of Fundy.

East Pacific: Beaufort, Chukchi and Bering Seas to San Diego,
California.

West Pacific: Bering Strait to northern Japan. (Ockelmann, 1958)

Depth: 4 to 1900 m. (Ockelmann, 1958) shallow coastal waters to 100 m.
(Petrov, 1966)

clay, mod, and sand or clay and gravel. (Ockelmann, 1958) silt,
sandy-silt. (Petrov, 1966)

Localities:

Arctic: 71°10'N, 151°24'W, 31 m (1).

Nucularia pernula (Müller, 1779)

Arca pernula Müller, 1779, *Beschaft Naturf. Freunde Zu Berlin*, 4:55.
(Rowland, 1973)

Leda pernula, Dall, 1921:11.

Leda pernula, Oldroyd, 1924:19; pl. 19, figs. 7, 7a.

Leda pernula costigera, Ockelmann, 1958:15; pl. 1, fig. 2.

Type locality: North Sea.

Range: Soviet and Canadian Arctic. Northern Bering Sea.

East Atlantic: Greenland to England and Denmark.

West Atlantic: Greenland to Massachusetts Bay. (Petrov, 1966)

Depth: to 100 m. (Petrov, 1966) 2-3 to 210 m (Greenland) to 1275 m
(Jan Mayen). (Ockelmann, 1958)

silt, sandy-silt. (Petrov, 1966)

Localities:

Arctic: 70 to 72°N and 142 to 152°W, 31 to 150 m (12).

Nuculana radiata (Krause, 1855)

Leda permula var. *radiata* Krause, 1855, Arch. f. Naturg. 51(1):23; pl. 3, figs. 2a-c. (MacGinitie, 1959)

Leda radiata, Dall, 1921:11.

Leda radiata, Oldroyd, 1924:25.

Nuculana radiata, MacGinitie, 1959:151; pl. 18, fig. 2.

Type locality: Emmahafen, Plover Bay, Bering Strait.

Range: Okhotsk, Bering, Beaufort and Chukchi Seas. (Petrov, 1966)

Depth: 20 to 218 m (Okhotsk Sea). (Petrov, 1966)

silt. (Petrov, 1966)

Localities:

Chukchi: 69 to 72°N and 165 to 176°W, 51 to 56 m, fine silt (10).

Northern Bering: 61 to 62°N and 171 to 175°W, 22 to 86 m, fine silt (6).

Southern Bering: 58°59'N, 163°22'W, 22 m (1).

	<i>Nuculana</i> <u>conceptionis</u>	<i>Nuculana</i> <u>minuta</u>
Size - length	27.5	13.6
height	10.5	7.4
thickness	4.5 (type)*	5.7
Anterior length		
Inflation	very thin, not inflated,	rather thin slightly inflated
Escutcheon	bladelike	flat, set off by a sharp ridge
Posterior - dorsal margin	long, straight	straight
Rostrum	obliquely truncate	obliquely truncate

*U of A specimen
is broken

TABLE 40a

Nuculana

<i>Nuculana</i> <u><i>pernula</i></u>	<i>Nuculana</i> <u><i>fossa</i></u>	<i>Nuculana</i> <u><i>radiata</i></u>
26.0	26.9	26
11	13.2	13.4
8.0	8.0	5.6
10	10.2	9.4
thin, slightly inflated	moderately inflated	moderately to much inflated
bladelike	broad, flat set off by a low ridge	bladelike
straight to concave	concave	straight
upturned, truncate	pointed, obliquely truncate	broadly truncate, sinuous below

	<i>Nuculana</i> <u>conceptionis</u>	<i>Nuculana</i> <u>minuta</u>
Concentric sculpture	growth lines only	evenly spaced ribs
Periostracum	glossy	dull

TABLE 40a

Continued

<u><i>Nuculana</i></u> <u><i>pernula</i></u>	<u><i>Nuculana</i></u> <u><i>fossa</i></u>	<u><i>Nuculana</i></u> <u><i>radiata</i></u>
fine ridges	irregular lines of growth, coarser, more regular ribs near umbo	strong to very weak ridges
smooth, dehiscent shiny	smooth, adherent	dull, with raised, puckered lines

	<i>Nuculana</i> <u>buccata</u>	<i>Nuculana</i> <u>liogona</u>
Size - length	17.6	9
height	10.2	5.3
thickness	7.0	3.0
Anterior length	10.0	
Inflation	moderate	
Escutcheon	broad, flat slightly raised in the middle	strongly impressed
Posterior - dorsal margin	straight	straight
Rostrum	truncate, slightly sinuous below	abruptly truncate
Concentric sculpture	growth lines, slightly stronger in anterior	prominent ridges
Periostracum	dull	smooth
		from Dall,

TABLE 40b

*Nuculana**Nuculana
extenuata*

17
6
3

very short

*Nuculana
hindsii*

well inflated

flat ridge indented, set
 off by a heavy
 ridge

concave

elongate,
obliquely
truncate narrow, pointed

delicate
ridges ridges

1916 from Dall, 1897 from Keen, 1971

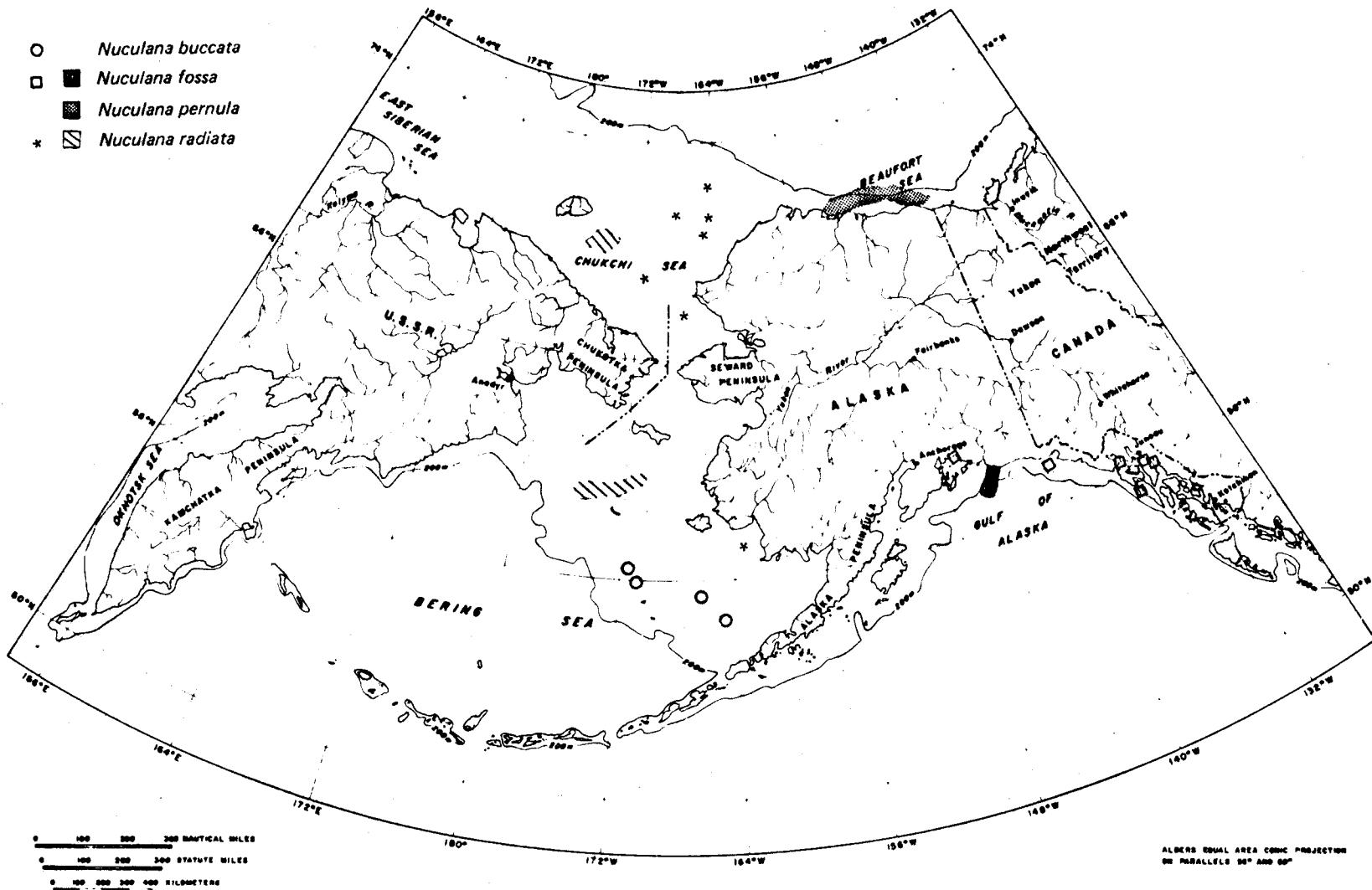


Figure 10. Localities for specimens of *Nuculana*.

*Portlandia**Portlandia arctica* (Gray, 1819)*Nucula arctica* Gray, 1819, Appendix, Parry's Voyage p. 241. (Dall, 1921)*Nucula siliqua* Reeve in Belcher, 1855, Last of the Arctic Voyages Vol. 2, p. 396; pl. 33, fig. 3. (Dall, 1921)*Leda (Portlandia) collinsoni* Dall, 1919, Rept. Can. Arctic Exped. part A, p. 19A; pl. 2, figs. 3, 4.*Leda collinsoni*, Dall, 1921:12.*Leda arctica*, Dall, 1921:12.*Yoldia siliqua*, Dall, 1921:14.*Leda arctica*, Oldroyd, 1924:26; pl. 19, figs. 6, 6a.*Leda collinsoni*, Oldroyd, 1924:26; pl. 40, figs. 4, 5.*Yoldia siliqua*, Oldroyd, 1924:35.*Yoldia arctica*, MacGinitie, 1958:151; pl. 18, fig. 8.*Yoldia arctica*, Hulsemann, 1962:70.Type locality: of *Nucula arctica*, Arctic.of *Leda collinsoni*, off Point Collinson, Alaskan Arctic Coast.of *Nucula siliqua*, Arctic Ocean.

Range: High Arctic circumpolar. Atlantic to Northern Norway and Hudson's Bay. East Greenland to 68°N. (Ockelmann, 1958; Petrov, 1966) Collinson Point and Point Barrow, Alaska. (MacGinitie, 1959) Norton Sound, 50 miles east of Nome, Alaska. (Rowland, 1973)

Depth: 2-3 to 339 m. most common 10 to 50. m (Ockelmann, 1958; Petrov, 1966)

silt or clay, somewhat lower salinities. (Ockelmann, 1958)

Localities:

Arctic: Colville River Delta (1). Simpson Lagoon (1).

Portlandia cecinella (Dall, 1916)

Yoldia cecinella Dall, 1916, Proc. U. S. Nat. Mus. 52:399.

Yoldia cecinella, Dall, 1921:14.

Yoldia cecinella, Oldroyd, 1924:34.

Yoldia (Yoldiella) cecinella, Keen, 1971:36, fig. 60.

Type locality: U.S.F.C. Sta. 2823, off La Paz, Gulf of California, 26 fms.

Range: Aleutian Islands to Gulf of California. (Keen, 1971)

Depth: 48 m or more. (Keen, 1971)

not seen.

Portlandia dalli Krause, 1885

Portlandia dalli Krause, 1885, *Archiv. f. Naturg.* 51:27. (LaRocque, 1953)

Leda dalli, Dall, 1921:12.

Leda dalli, Oldroyd, 1924:24, pl. 13, figs 1, 3.

Type locality: Bering Sea.

Range: Unalaska, Aleutian Islands. (Dall, 1921)

not seen.

Portlandia intermedia (M. Sars, 1865)

Yoldia intermedia M. Sars, *Om de i Norge forekommende fossile Drytelevininger fra quatoerperioden* p. 38, figs. 92-96. (Ockelmann, 1958)

Yoldia intermedia, Dall, 1921:14.

Yoldia intermedia, Oldroyd, 1924:35; pl. 1, figs. 7, 10.

Portlandia intermedia, Ockelmann, 1958:27; pl. 1, fig. 12.

Type locality: Vadso, Norway.

Range: Arctic, circumpolar. Greenland. Spitzbergen. Iceland. Shetland Islands. Barents, Kara and Siberian Ice Seas. Bering Strait. Chukchi Sea. (Petrov, 1966; Ockelmann, 1958)

Depth: 7 to 9 m (Siberian Ice Sea) to 1150 m (Shetland Islands). (Ockelmann, 1958)

soft silt and clay. clay or mud occasionally with sand and gravel. (Ockelmann, 1958)

not seen.

Portlandia oleacina Dall, 1916

Yoldia oleacina Dall, 1916, Proc. U.S. Nat. Mus. 52:398.

Yoldia oleacina, Dall, 1921:14.

Yoldia oleacina, Oldroyd, 1924:33.

Type locality: Arctic Ocean north of Bering Strait.

Range: Arctic Ocean north of Bering Strait. (Dall, 1921)

not seen.

Portlandia sanesia (Dall, 1916)

Yoldia sanesia Dall, 1916, Proc. U.S. Nat. Mus. 52:399.

Yoldia sanesia, Dall, 1921:14.

Yoldia sanesia, Oldroyd, 1924:34.

Type locality: Albatross Sta. 4224, Boca de Quadra, Alaska.

Range: Boca de Quadra, Alaska to Point Conception, California.
(Dall, 1921)

not seen.

*Spinula**Spinula calcar* (Dall, 1908)

Leda (Spinula) calcar Dall, 1908, *Bull. Mus. Comp. Zool.*, *Bull.* 43(6): 378; pl. 10, figs. 1, 10.

Spinula calcar, Knudsen, 1970:37, text figs. 19, 20A; pl. 2, figs. 8, 11.

Spinula calcar, Keen, 1971:35, fig. 51.

Type locality: Albatross Sta. 4658, off the Peruvian Coast.

Range: North Pacific to Peru. (Keen, 1971)

North to West Pacific: off the Kurile Islands and Japan.

East Pacific: off Peru.

Southwest Pacific: Kermodec Region. (Knudsen, 1970)

Depth: 4063 to 6096 m. (Knudsen, 1970)

not seen.

*Tindaria**Tindaria kennerleyi* (Dall, 1897)

Malletia (Tindaria) kennerleyi Dall, 1897, *Nat. Hist. Soc. Brit. Colum.*, *Bull.* 2:11; pl. 2, fig. 9.

Tindaria kennerleyi, Dall, 1921:15.

Tindaria kennerleyi, Oldroyd, 1924:41; pl. 1, fig. 6.

Type locality: off the coast of Washington, 559 fms.

Range: off Sitka, Alaska to Santa Barbara Islands, California in deep water. (Dall, 1921)

not seen.

Yoldia (Cnesterium)

Yoldia (Cnesterium) scissurata Dall, 1897

Yoldia scissurata Dall, 1897, *Nat. Hist. Soc. Brit. Colum., Bull.* 2:8, new name for *Yoldia arctica*, Broderip and Sowerby, 1829, not Gray, 1824.

Yoldia ensifera Dall, 1897, *Nat. Hist. Soc. Brit. Colum., Bull.* 2:9; pl. 2, fig. 4.

Yoldia scissurata, Dall, 1921:13.

Yoldia ensifera, Dall, 1921:13.

Yoldia scissurata, Oldroyd, 1924:31; pl. 5, fig. 2.

Yoldia ensifera, Oldroyd, 1924:32; pl. 5, fig. 3; pl. 37, fig. 6.

Yoldia scissurata, MacGinitie, 1959:154.

Type locality: of *Y. scissurata*, none specified

of *Y. ensifera*, none specified.

Range: Point Barrow, Alaska to Monterey Bay, California. (MacGinitie, 1959) Okhotsk Sea and Western Bering Sea, 52 to 72°N. (Kuroda and Habe, 1952)

Depth: 27 to 42 m (Northern Bering Sea). (Rowland, 1973)

40 to 400 m (British Columbia). (Bernard, 1970)

silty sand. (Rowland, 1973)

Localities:

Chukchi: 70°34'N, 163°16'W, 36 m (1).

Northern Bering: 63 to 65°N and 167 to 172°W, 27 to 47 m (9).

Southern Bering: 58°28'N, 159°39'W, 27 m (1).

Yoldia (Cnesterium) seminuda Dall, 1871

Yoldia seminuda Dall, 1871, Amer. J. Conchol. 7(2):153.

Yoldia seminuda, Dall, 1921:13.

Yoldia seminuda, Oldroyd, 1924:31.

Type locality: St. Paul Harbor, Kodiak Island, Alaska, 17 fms.

Range: St. Paul Harbor, Kodiak Island to Victoria and Comox, British Columbia. (Dall, 1897) Okhotsk and Bering Seas to Sitka, Alaska. (Dall, 1921)

Localities:

Southern Bering: Bristol Bay, off Izembek Lagoon (1).

Eastern Gulf: $59^{\circ}44'N$, $141^{\circ}28'W$, 68 m (1). $59^{\circ}50'N$, $141^{\circ}42'W$, 58 m (1).

Yoldia (Megayoldia)

Yoldia (Megayoldia) beringiana Dall, 1916

Yoldia beringiana Dall, 1916, Proc. U.S. Nat. Mus. 52:399.

Yoldia beringiana, Dall, 1921:13.

Yoldia beringiana, Oldroyd, 1924:28, not pl. 5, fig. 4 (*Yoldia martyria* ?)

Portlandella beringii, Habe and Ito, 1974:102; pl. 35, fig. 11.

Type locality: Bering Sea off Pribilof Islands, 987 fms.

Range: Bering Sea to Anacopa Island, California. (Dall, 1921)

not seen.

Yoldia (Megayoldia) martyria Dall, 1897

Yoldia martyria Dall, 1897, *Nat. Hist. Soc. Brit. Colum., Bill.* 2:9; pl. 2, fig. 15.

Yoldia martyria, Dall, 1921:13.

Yoldia martyria, Oldroyd, 1924:29; pl. 39, fig. 11.

Yoldia martyria, Keen, 1971:35, fig. 58.

Type locality: off San Pedro Martir Island, Gulf of California.

Range: Kasaan Bay, Alaska to Gulf of California. (Keen, 1971)

Depth: 200 to 300 m (British Columbia). (Bernard, 1970) 65 to 250 m. (Keen, 1971)

Localities:

Eastern Gulf: Resurrection Bay, 286 and 259 m (3). Fish Bay, Port Fidalgo, Prince William Sound (1).

Southeast: Katlian Bay (2).

Yoldia (Megayoldia) montereyensis Dall, 1893

Yoldia montereyensis Dall, 1893, *Nautilus* 7(3):29.

Yoldia montereyensis, Dall, 1897:9; pl. 2, fig. 16.

Yoldia montereyensis, Dall, 1921:13.

Yoldia montereyensis, Oldroyd, 1924:28; pl. 2⁸, fig. 4.

Type locality: U.S.F.C. Sta. 3202, Monterey Bay, California, 382 fms.

Range: Chirikof Island, Alaska to San Diego, California. (Dall, 1921)

Localities:

Southern Bering: east of Pribilof Islands, 78 m (4).

Eastern Gulf: Prince William Sound, 235 to 237 m (5). 59°-59°32'N
and 141 to 149°W, 170 to 227 m (4).

Yoldia (Megayoldia) thraciaformis (Storer, 1838)

Nucula thraciaformis Storer, 1838, *Boston J. Nat. Hist.* 2:122.
(Oldroyd, 1924)

Yoldia secunda Dall, 1916, *Proc. U.S. Nat. Mus.* 52:398.

Yoldia thraciaformis, Dall, 1921:13.

Yoldia secunda, Dall, 1921:13.

Yoldia thraciaformis, Oldroyd, 1924:27; pl. 5, fig. 1.

Yoldia secunda, Oldroyd, 1924:28.

Yoldia (Megayoldia) thraciaformis, Ockelmann, 1958:22; pl. 1, fig. 1.

Yoldia (Megayoldia) thraciaformis, Abbott, 1974:417, fig. 4918.

Type locality: of *Yoldia thraciaformis*, off Point Race, Atlantic.

of *Yoldia secunda*, Albatross Sta. 3077, Clarence Strait, Alaska.

Range: West Atlantic: Greenland to Massachusetts.

East Pacific: Arctic Ocean to Oregon. (La Rocque, 1953)

Depth: 19 m (New England) to 790 m (Davis Strait). (Ockelmann, 1958)

clay and clay with gravel. (Ockelmann, 1958)

Localities:

Northern Bering: north and west of St Matthew Island, fine silt (3).

Eastern Gulf: Port Valdez, 234 m (3). Sheep Bay, 60 m (1). Fish Bay, Port Fidalgo (1). Galena Bay (1).

Southeast: Auke Bay, 42 m (2). Taku Inlet, 212. m (1). Katlian Bay (1).

*Yoldia (Yoldia)**Yoldia (Yoldia) amygdalea* Valenciennes, 1846

Yoldia amygdalea Valenciennes, in Abel du Petit-Thouars, 1846,
Voyage Autour du monde de la Frégate Venus pl. 23, fig. 6. (Cowan,
1968)

Yoldia amygdalea, Cowan, 1968:58; pl. 5, figs. 1-5.

Type locality: Kamchatka.

Range: East Atlantic: Iceland, Norway.

West Atlantic: $40^{\circ}29'N$ to Gulf of St. Lawrence.

East Pacific: Northern Bering Sea (Rowland, 1973) to San Juan Island Washington, and Northern California. (Cowan, 1968)

Localities:

Chukchi: $67^{\circ}44'N$, $167^{\circ}42'W$, 37 m (1). (tentative identification)

Bering Sea: 57 to $63^{\circ}N$ and 165 to $173^{\circ}W$, 45 to 95 m (18). (tentative identification)

Eastern Gulf: Fish Bay, Port Fidalgo, 200 m (1). Port Valdez (1).

Southeast: Bartlett Cove, 154 m (1). Stephens Passage, 68-80 m (1). Auke Bay, 40 and 98 m (2).

Yoldia (Yoldia) hyperborea Loven in Torell, 1859

Yoldia hyperborea Loven in Torell, 1859, *Bridrag till Spitzbergens Molluskenfauna* p. 149; pl. 2, figs. 6 a-b. (MacGinitie, 1959)

Yoldia hyperborea, Ockelmann, 1954:8; pl. 1, fig. 1; pl. 2, figs. 3, 4.

Yoldia hyperborea, MacGinitie, 1959:152; pl. 18, fig. 5.

Yoldia hyperborea, Cowan, 1968:58; pl. 5, figs. 6, 7.

Type locality: Spitzbergen.

Range: Novaya Zemlya. Spitzbergen. Greenland. Eastern Canadian Arctic.
Point Barrow, Alaska. (Cowan, 1968)

Depth: 3 to 677 m (West Greenland). (Ockelmann, 1958)

clay or clay with gravel and sand. (Ockelmann, 1958)

Localities:

Chukchi: 71 to 72°N and 160 to 169°W, 48 to 75 m (4).

Yoldia (Yoldia) myalis (Couthouy, 1838)

Nucula myalis Couthouy, 1838, Boston J. Nat. Hist. 2:62; pl. 3,
fig. 7. (Johnson, 1946)

Yoldia myalis, Dall, 1921:13.

Yoldia myalis, Oldroyd, 1924:30; pl. 5, fig. 8.

Yoldia myalis, Ockelmann, 1954:18; pl. 1, fig. 5; pl. 2, figs.
5, 10.

Yoldia myalis, MacGinitie, 1959:152; pl. 18, fig. 1.

Yoldia myalis, Abbott, 1974:417, fig. 4911.

Type locality: Massachusetts Bay, from a cod stomach.

Range: West Atlantic: Hudson Strait to Massachusetts.

East Pacific: Point Barrow to Puget Sound. (Ockelmann, 1954)

West Pacific: Okhotsk and Bering Sea. (Petrov, 1966)

Depth: 8 to 84 m (Okhotsk Sea). (Petrov, 1966) 13.4 to 30 m (Northern
Bering Sea). (Rowland, 1973) 72 to 453 ft (off Point Barrow).
(MacGinitie, 1959)

silt, sand and mud. (Rowland, 1973)

silt, sand and some pebbles. (Petrov, 1966)

Localities:

Arctic: $71^{\circ}10'N$, $151^{\circ}24'W$, 31 m (1).

Northern Bering: Norton Sound. Bering Strait. 62 to $65^{\circ}N$ and 167
to $170^{\circ}W$ (14).

Southern Bering: north of Unimak Island, off Izembek Lagoon, 6 and
95 m (2).

Western Gulf: Lower Cook Inlet, 31 and 152 m (2).

Southeast: Bartlett Cove (1). Auke Bay (1). Katlian Bay (1).

TABLE 41a
Yoldia (*Yoldia*), *Yoldia* (*Cnesterium*)

	<i>Yoldia</i> <u>seminuda</u>	<i>Yoldia</i> <u>scissurata</u>	<i>Yoldia</i> <u>myalis</u>	<i>Yoldia</i> <u>hyperborea</u>	<i>Yoldia</i> <u>amygdalea</u>
Size - length	28.7	43	45	33.5	41.0
height	17.3	20.4	21.8	16.8	19.3
thickness (1 value)	2.8	4.6	5.6	4.3	4.8
Anterior length	17.3	25.7	25.8	17.8	23.6
Escutcheon	short, blade like	long, high, bladelike	wide, high	not distinct, moderately low	elevated
Posterior - dorsal margin	concave	slightly concave	slightly concave	straight to convex	straight to convex
Rostrum	narrow, blunt	narrow, blunt	rounded, narrow, slightly up turned	rounded - quadrate	obliquely truncate
Posterior - ventral margin	not indented	not indented	not indented	shallow indentation	shallow indentation
Periostracum color	yellow	yellow to olive	olive	olive-yellow- brown band-	olive-yellow brown band- ed
texture	glossy smooth	glossy smooth	dull	glossy smooth	glossy smooth

TABLE 41a

Continued

	<i>Yoldia seminuda</i>	<i>Yoldia scissurata</i>	<i>Yoldia myalis</i>	<i>Yoldia hyperborea</i>	<i>Yoldia amygdalea</i>
Sculpture	parallel oblique incised lines from rostrum to center of of shell	parallel oblique incised lines from rostrum to anterior dorsal margin	minute con- centric wrinkles	growth lines	growth lines

TABLE 41b
Yoldia (*Megayoldia*)

	<i>Yoldia</i> <u><i>martyria</i></u>	<i>Yoldia</i> <u><i>montereyensis</i></u>	<i>Yoldia</i> <u><i>beringiana</i></u>	<i>Yoldia</i> <u><i>thraciaformis</i></u>
Size - length	31.0	19.8	40	46.9
height	20.5	12.0	22	28.5
thickness (1 value)	7.5	4.5		8.2
Anterior length	15.3	9.0		26.3
Escutcheon	high, wide	narrow, low	narrow, striated	small, impressed, bladelike toward center
Posterior - dorsal margin	concave	straight	straight	concave, rising above level of umbo
Rostrum	pointed	slightly pointed	round	wide, flared

TABLE 4lb

Continued

	<u><i>Yoldia martyria</i></u>	<u><i>Yoldia montereyensis</i></u>	<u><i>Yoldia beringiana</i></u>	<u><i>Yoldia thraciaformis</i></u>
Posterior - ventral margin	slightly indented	slightly indented		straight
Periostracum				
texture	smooth, shiny or dull	smooth, shiny or dull	smooth, polished	smooth, shining to dull
color	olive yellow	olive yellow- brown	yellow-brown	olive yellow- brown
Sculpture	growth lines	growth lines		growth lines

from Dall, 1916

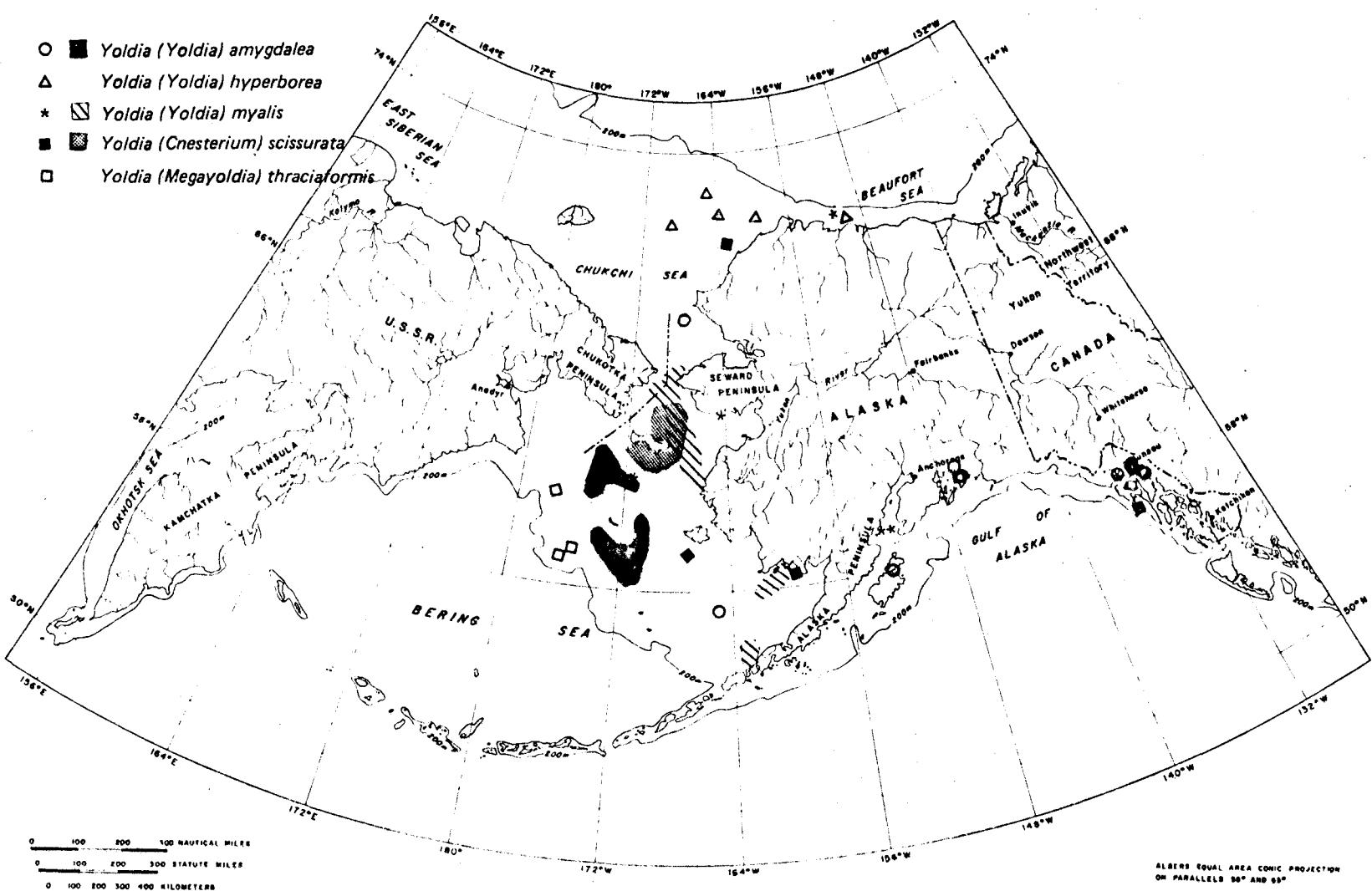


Figure 11. Localities for specimens of *Yoldia*.

Family Arcidae

*Bathyarca**Bathyarca glacialis* (Gray, 1824)*Arca glacialis* Gray, 1824, Appendix, *Parry's Voyage* p. 244. (Soot-Ryen, 1932)*Arca (Bathyarca) glacialis*, Soot-Ryen, 1932:8; pl. 1, fig. 12.*Arca (Bathyarca) glacialis*, Ockelmann, 1958:44; pl. 1, fig. 18.

Type locality: Arctic.

Range: Barents, Kara, East Siberian and Laptev Seas. (Petrov, 1966)
Greenland. Jan Mayen. Spitzbergen. Barents Sea. Novaya Zemlya.
Kara Sea. Siberian Ice Sea. Murman Coast. Eastern Finnmark. Iceland.
the Faroes. the Shetlands. Union Strait. Gulf of St. Lawrence.
(Ockelmann, 1958)

Depth: 5 to 573 m. (Ockelmann, 1958)

clay with stones and gravel. (Ockelmann, 1958)

Localities:

Arctic: 70 to 71°N and 141 to 146°W, 50 to 130 m (12).

Family Limopsidae

*Limopsis**Limopsis akutanica* Dall, 1916*Limopsis akutanica* Dall, 1916, Proc. U.S. Nat. Mus. 52:403.*Limopsis akutanica*, Dall, 1921:16.*Limopsis akutanica*, Oldroyd, 1924:43.

Type locality: U.S.F.C. Sta. 2842, off Akutan Island, Aleutian Islands,
72 fms.

Range: off Akutan Island, Aleutian Islands. (Dall, 1921)

not seen.

Limopsis skenia Dall, 1916

Limopsis skenia Dall, 1916, Proc. U.S. Nat. Mus. 52:402.

Limopsis skenia, Dall, 1921:16.

Limopsis skenia, Oldroyd, 1924:43.

Type locality: U.S.F.C. Sta. 4471, Bower's Bank, Bering Sea, 30 fms.

Range: Bower's Bank, Bering Sea. (Dall, 1921)

not seen.

Limopsis vaginalis Dall, 1891

Limopsis vaginalis Dall, 1891, Proc. U.S. Nat. Mus. 14:190.

Limopsis vaginalis, Dall, 1895:713; pl. 25, figs. 3, 6, 7.

Limopsis vaginalis, Dall, 1921:16.

Limopsis vaginalis, Oldroyd, 1924:44; pl. 14, figs. 2, 3.

Limopsis (Empleconia) vaginalis, Abbott, 1974:426, fig. 5014.

Type locality: Albatross Sta. 3330, off Unalaska Island, Bering Sea and South of Unimak Island.

Range: Bering Sea and Aleutian Islands (Dall, 1921) to 55°N. (Bernard, 1970)

Depth: 80 to 351 fms. (Dall, 1921) 800 to 2000 m (British Columbia). (Bernard, 1970)

not seen.

Family Glycymerididae

Glycymeris

Glycymeris keenae Willett, 1943

Glycimeris keenae Willett, 1943, So. Calif. Acad. Sci., Bull. 42(3):
114; pl. 12, figs. 4-7.

Type locality: Forrester Island, Alaska.

Range: Forrester Island, Alaska. (Willett, 1943)

not seen.

Glycymeris subobsoleta (Carpenter, 1864)

Axinaea (septentrionalis, Midd. var.) subobsoleta Carpenter, 1864,
Rept. Brit. Assoc. Adv. Sci. p. 644. (Palmer, 1958)

Glycymeris subobsoleta, Dall, 1921:15.

Glycymeris subobsoleta, Oldroyd, 1924:42; pl. 40, figs. 8, 9.

Glycimeris subobsoleta, Willett, 1943:111; pl. 12, figs. 1, 3.

Glycymeris subobsoleta, Palmer, 1958:63; pl. 1, figs. 8, 10.

Type locality: Neah Bay, Washington.

Range: Aleutian Islands to Baja California. (Willett, 1943)

Depth: near low tide to 40 fms. (Willett, 1943)

Localities:

Western Gulf: Lower Cook Inlet, 37 to 68 m (3). Kasitsna Bay,
low tide (1).

Family Philobryidae

*Philobrya**Philobrya setosa* (Carpenter, 1864)

Bryophila setosa Carpenter, 1864, *Ann. Mag. Nat. Hist.* ser. 3, 13:314. (Palmer, 1958)

Philobrya setosa, Dall, 1921:17.

Philobrya setosa, Oldroyd, 1924:49; pl. 54, figs. 32, 35.

Philobrya setosa, Palmer, 1958:65; pl. 1, figs. 11-16.

Philobrya setosa, Keen, 1971:57, fig. 118.

Philobrya setosa, Abbott, 1974:428, fig. 5034.

Type locality: Cape San Lucas, Baja California.

Range: Forrester Island, Alaska to Gulf of California. (Dall, 1921)

Depth: intertidal to 10 m. (Bernard, 1970)

not seen.

Family Mytilidae

*Crenella**Crenella decussata* (Montagu, 1808)

Mytilus decussatus Montagu, 1808, *Testacea Britannica*, Suppl. p. 69.
(Soot-Ryen, 1955)

Crenella decussata, Dall, 1921:24.

Crenella decussata, Oldroyd, 1924:79.

Crenella decussata, Soot-Ryen, 1955:81; pl. 8, figs. 43, 45.

Crenella decussata, Abbott, 1974:430, fig. 5052.

Type locality: Scottish Coast.

Range: East Atlantic: Greenland and Spitzbergen to the British Isles.

West Atlantic: Greenland to Cape Hatteras.

Pacific: Bering Sea to San Clemente Island, California and to Korea.
(Ockelmann, 1959; Soot-Ryen, 1955)

Depth: 5 to 144 fms. (Soot-Ryen, 1955)

sand and mud. (Soot-Ryen, 1955)

Localities:

Eastern Gulf: 59 to 60°N and 145 to 148°W, 64 to 130 m (4).

Crenella grisea Dall, 1907

Crenella grisea Dall, 1907, Smithsonian Misc. Coll. 50(2):171.

Crenella grisea, Dall, 1921:24.

Crenella grisea, Oldroyd, 1924:80; pl. 3, fig. 1.

Type locality: Albatross Stats. 4782, 4784, off east end of Attu Island, Aleutian Islands.

Range: Bering Sea to Sitka, Alaska. (Dall, 1921)

not seen.

Crenella leana Dall, 1897

Crenella leana Dall, 1897, Nat. Hist. Soc. Brit. Colum., Bull. 2:4;
pl. 1, figs. 6, 7.

Crenella leana, Dall, 1921:24.

Crenella leana, Oldroyd, 1924:80.

Type locality: near Middleton Island, Alaska and others.

Range: Aleutian Islands to Middleton Island, Alaska. (Dall, 1921)
not seen.

TABLE 42
Crenella, Megacrenella

	<i>Crenella decussata</i>	<i>Crenella leana</i>	<i>Crenella grisea</i>	<i>Megacrenella columbiana</i>
Size - length	3.0	5.0	12	9.0
width	2.8	3.5	8.5	7.5
thickness	1.8 (2 values)	3.0	7.0	6.0
Overall shape	oval	plump, ovate	oblique rounded quadrate	oval
Hinge	thickened, denticulate	thickened, denticulate	minutely denticulate	thin, minutely denticulate
Ligament	long, straight, internal	inconspicuous. sub-internal	narrow, elongate, internal	thick, long deep-seated external
Concentric sculpture	expressed only as beading	delicate lines		minute incremental lines
Radial sculpture	fine divaricate threads	obsolete striae nearly smooth overall	obscure striations	fine divaricate threads
External color or texture	translucent yellow	brilliant polished	polished greenish olivaceous with lighter and darker zones	translucent yellow
Internal color	thin nacreous layer	obcurely pearly	bluish, porceleaneous	pearly
		from Dall, 1897	from Dall, 1907	

*Dacrydium**Dacrydium pacificum* Dall, 1916.*Dacrydium pacificum* Dall, 1916, Proc. U.S. Nat. Mus. 52:405.*Dacrydium pacificum*, Dall, 1921:22.*Dacrydium pacificum*, Oldroyd, 1924:72.*Dacrydium pacificum*, Knudsen, 1970:89, fig. 52 c-e.Type locality: Bering Sea, $54^{\circ}54'N$, $168^{\circ}59'W$.Range: Bering Sea, $54^{\circ}54'N$, $168^{\circ}59'W$, 2564 m. (Knudsen, 1970)

not seen.

Dacrydium vitreum (Möller, 1842)

Modiala vitrea Möller, 1842, Index Molluscorum Groenlandiae, p. 92.

Dacrydium vitreum, Ockelmann, 1958:48; pl. 1, fig. 19.

Dacrydium vitreum, Knudsen, 1970:89, figs. 52 a, b.

Dacrydium vitreum, Abbott, 1974:436, fig. 5102.

Type locality: Greenland.

Range: North Atlantic: Baffinland. Greenland. Barents, White and Kara Seas. Iceland. (Ockelmann, 1958)

Depth: 6 to 2434 fms. (Clarke, 1962)

clay or mud with stones, sand, and gravel. (Ockelmann, 1958)

Localities:

Southern Bering: 56°29'N, 165°50'W (1).

Eastern Gulf: 59° to 60°N and 140 to 146°W, 20 to 124 m (5). Valdez Arm, 382 m (empty) (1).

*Megacrenella**Megacrenella columbiana* (Dall, 1897)*Crenella columbiana* Dall, 1897, *Nat. Hist. Soc. Brit. Colum.*, *Bull. 2:4*; pl. 1, figs. 3, 5.*Crenella rotundata* Dall, 1916, *Proc. U.S. Nat. Mus.* 52:406.*Crenella columbiana*, Dall, 1921:24.*Crenella rotundata*, Dall, 1921:24.*Crenella columbiana*, Oldroyd, 1924:80.*Crenella rotundata*, Oldroyd, 1924:81.*Solamen columbianum*, Soot-Ryen, 1955:82; pl. 8, fig. 46, text figs. 66-68.*Megacrenella columbiana*, Keen, 1971:67, fig. 137.

Type locality: of *Crenella columbiana*, Port Orchard, Puget Sound, Washington.

of *Crenella rotundata*, U.S.F.C. Sta. 2849, off Santa Cruz Island, California, 155 fms.

Range: Aleutian Islands to Panama. (Keen, 1971)

Depth: 16 to 290 fms. (Soot-Ryen, 1955)

mud, sand, occasionally gravel. (Soot-Ryen, 1955)

Localities:

Eastern Gulf: $59^{\circ}55.2'N$, $146^{\circ}36.8'W$, 64 m (1).

Modiolus

Modiolus modiolus (Linnaeus, 1758)

Mytilus modiolus Linnaeus, 1758, *Systema Naturae* Ed. 10, p. 705.
(Soot-Ryen, 1955)

Modiolus modiolus, Dall, 1921:21.

Modiolus modiolus, Oldroyd, 1924:68.

Modiolus modiolus, Soot-Ryen, 1955:66, text figs. 47, 48, 52.

Modiolus modiolus, Abbott, 1974:434, fig. 5088.

Type locality: Mediterranean.

Range: Pacific: Arctic Ocean to Monterey, California. Japan.

Atlantic: Arctic Ocean to Florida. Mediterranean. (Soot-Ryen, 1955).

Depth: "few fathoms" to 100 fms. (Soot-Ryen, 1955)
fastened to rocks

Localities:

Southern Bering: 56 to 57°N, 160 to 170°W, 35 to 82 m (3).
Bristol Bay off Izembek Lagoon (1).

Western Gulf: Tuxedni Bay (1) Kasitsna Bay (1). intertidal.

Eastern Gulf: LaTouche Point, intertidal (1). 59°46.3'N, 152°
34.2'W, 35 m (1). 59°57'N, 146°45'W, 64 m (1).

*Musculus**Musculus corrugatus* (Stimpson, 1851)*Mytilus corrugatus* Stimpson, 1851, *Shells of New England* p. 12.
(MacGinitie, 1959)*Musculus corrugatus*, Dall, 1921:23.*Modiolaria corrugata*, Oldroyd, 1924:77; pl. 14, figs. 8, 9.*Musculus corrugatus*, MacGinitie, 1959:158; pl. 4, fig. 11; pl. 18, fig. 7; pl. 21, fig. 4.

Type locality: Massachusetts.

Range: Arctic Ocean to Puget Sound and Greenland to North Carolina.
(La Rocque, 1954)

Depth: 2-100 fms. (La Rocque, 1953)

Localities:

Chukchi: 67°50'N, 170°22'W, 56 m (1).

Northern Bering: Norton Sound, southeast of Nome (1). 62°05'N,
171°20'W, 48 m (1).

Southern Bering: 59°29'N, 165°50'W (1).

Musculus discors (Linnaeus, 1767)

Mytilus discors Linnaeus, 1767, *Systema Naturae* Ed. 12, p. 1159.
(MacGinitie, 1959)

Modiola substriata Gray, 1824, *Appendix, Parry's Voyage*, p. 245.
(MacGinitie, 1959)

Modiola substriata var. *laevigata* Gray, 1824, *Appendix, Parry's Voyage*, p. 245. (MacGinitie, 1959)

Musculus substriatus, Dall, 1921:23.

Modiolaria substriata, Oldroyd, 1924:76.

Musculus discors var. *laevigata* and forma *substriatus*, MacGinitie, 1959:159; pl. 18, fig. 10; pl. 21, fig. 5.

Musculus discors, Abbott, 1974:432, fig. 5065.

Type locality: none given.

Range: Pacific: Arctic to Japan and Puget Sound.

Atlantic: Arctic to New York and Madiera. (MacGinitie, 1959)

Depth: 0 to 374 m (Barents Sea). (Ockelmann, 1955)

Localities:

Chukchi: $68^{\circ}58'N$, $166^{\circ}20'W$, 20 m (1).

Northern Bering: Norton Sound, off Nome, 23 m (1).

Southern Bering: 56 to $60^{\circ}N$ and 164 to $171^{\circ}W$, 42 to 73 m (10).

Eastern Gulf: Tutka Bay, intertidal (1). Valdez Arm, low intertidal (1).

Musculus impressus (Dall, 1907)

Modiolaria impressa Dall, 1907, *Smithsonian Misc. Coll.* 50(2): 172.

Musculus impressus, Dall, 1921:23; pl. 3, figs. 6, 7.

Modiolaria impressa, Oldroyd, 1924:75; pl. 11, figs. 4, 5.

Type locality: Albatross Sta. 4677, Bering Sea, 52 fms.

Range: Peterel Bank, Bering Sea. (Dall, 1921)

not seen.

Musculus niger (Gray, 1824)

Modiola nigra Gray, 1824, Appendix, Parry's Voyage p. 244.
(MacGinitie, 1959)

Musculus niger var. *protractus* Dall, 1916, Proc. U.S. Nat. Mus. 52:405.

Musculus niger var. *obesus* Dall, 1916, Proc. U.S. Nat. Mus. 52:408.

Musculus niger and var. *obesus*, Dall, 1921:23.

Musculus protractus, Dall, 1921:23.

Modiolaria nigra and var. *obesa*, Oldroyd, 1924:74; pl. 13, fig. 21; pl. 39, fig. 9.

Modiolaria protracta, Oldroyd, 1924:75; pl. 3, fig. 2.

Musculus niger, MacGinitie, 1959:157; pl. 18, fig. 6; pl. 21, fig. 6.

Musculus niger, Abbott, 1974:732, fig. 5064.

Type locality: of *Modiola nigra*, Orsund Bay, Sweden.

of *Musculus niger protractus*, north of Nunivak Island,
Bering Sea.

Range: Pacific: Arctic Seas to Monterey, California. (Soot-Ryen, 1955)

Atlantic: Arctic to Cape Hatteras and to Scotland. (MacGinitie, 1959)

Depth: 3 m (Novaya Zemlya) to 376m (Greenland). (Ockelmann, 1950)
intertidal to 100 m (British Columbia). (Bernard, 1970)

Localities:

Arctic: Prudhoe Bay (empty) (1). 71 to 72°N and 174 to 175°W, 54 and 65 m (2).

Bering Sea: Norton Sound, off Nome, 20 m (1). 57 to 62°N and 164 to 170°W, 35 to 88 m (10).

Eastern Gulf: 59°29'N, 140°28'W (1).

Southeast: Bartlett Cove (1).

Musculus olivaceous Dall, 1916

Musculus olivaceous Dall, 1916, *Proc. U.S. Nat. Mus.* 52:405.

Musculus olivaceous, Dall, 1921:23.

Modiolaria olivacea, Oldroyd, 1924:75.

Musculus olivaceous, Soot-Ryen, 1955:75; pl. 8, fig. 39.

Type locality: off Bering Island, Bering Sea, 10 fms.

Range: Bering Sea to Catalina Island, California. (Soot-Ryen, 1955)

Localities:

Southern Bering: Akun Island (1). Eider Point, Unalaska Island, intertidal (1).

Western Gulf: Ugaiuskak Island, intertidal (1).

Musculus phenax Dall, 1915

Musculus phenax Dall, 1915, *Nautilus* 28(12):138. (Boss, Rosewater, Ruhoff, 1968)

Musculus phenax, Dall, 1921:24.

Modiolaria phenax, Oldroyd, 1924:78.

Type locality: St. George Island, Pribilof Islands, Bering Sea.

Range: St. George Island, Pribilof Islands. (Dall, 1921)

not seen.

Musculus seminudus (Dall, 1897)

Modiolaria seminuda Dall, 1897, *Nat. Hist. Soc. Brit. Colum.*,
Bull. 2:5; pl. 1, fig. 1.

Musculus seminudus, Dall, 1921:24.

Modiolaria seminuda, Oldroyd, 1924:78; pl. 28, fig. 1.

Type locality: Markoffski Bay, Unalaska Island and off Sanak Island,
Alaska.

Range: Bering Sea to Forrester Island, Alaska. (Dall, 1921)

Localities:

Eastern Gulf: Near Kodiak Island (empty) (1).

Southeast: Near Porpoise Island (1).

Musculus vernicosus (Middendorff, 1849)

Modiolaria vernicosz Middendorff, 1849, *Malacozool.* Ross. 3:20.
(La Rocque, 1953)

Musculus vernicosus, Dall, 1921:23.

Modiolaria vernicosz, Oldroyd, 1924:78; pl. 28, fig. 11.

Type locality: not known.

Range: Pribilof Islands, Bering Sea to Sitka, Alaska. Sea of Okhotsk.
(Dall, 1921) Forrester Island. (Willett, 1918) Prince William
Sound. (Eyerdam, 1924)

Localities:

Southern Bering: Cold Bay (1).

Eastern Gulf: Port Etches (1). Off Kodiak Island (locality not
specified), 20 m (1).

Southeast: Snipe Bay, intertidal (1).

TABLE 43a

Musculus

	<i>Musculus niger</i>	<i>Musculus olivaceous</i>	<i>Musculus corrugatus</i>	<i>Musculus discors</i>
Size - length	69	16.7	22.1	29.0
width	34.8	9.8	14.5	18.6
thickness	18.6	7.6	11.0	12.4
Ventral margin	straight	indented near posterior	indented near posterior	indented near posterior
Sculpture anterior	14-20 round threads	9 very low rounded ribs, wide interspaces	around 18 low threads	few, ill-defined ribs near ventral edge
middle	wrinkled	smooth	wrinkled	smooth
posterior	many narrow, beaded threads	low rounded threads	many narrow, beaded threads	smooth
Posterior area	not raised	raised	raised	raised
Periostracum	dull	smooth	dull	smooth
Color	pale olive to black	olive-yellow	dark brown-black	pale olive yellow to dark brown

TABLE 43b

Musculus

	<i>Musculus vernicosus</i>	<i>Musculus seminudus</i>	<i>Musculus impressus</i>	<i>Musculus phenax</i>
Size - length	14.8	11.0	10	7.7
width	12.0	8.8	19	4.5
thickness	7.4	9.0	9	4
Ventral margin	rounded	rounded	excavated sinuous	rounded
Sculpture anterior	around 8 obscure ribs	around 15 low threads	6 strong radial riblets	2-3 impressed sulchi
middle	very smooth	minutely wrinkled	impressed, polished	
posterior	obscure sculpture seen as fine rays	fine low threads	minute striations nearly smooth	
Posterior	not raised	not raised	raised	
Periostracum	polished	smooth		polished
Color	olive yellow to reddish	yellowish	olive green or brownish	
			from Dall, 1907	from Dall, 1915 in Oldroyd, 1924

Mytilus

Mytilus californianus Conrad, 1837

Mytilus californianus Conrad, 1837, *J. Acad. Nat. Sci. Phila.*
7:242; pl. 18, fig. 15. (Soot-Ryen, 1955)

Mytilus californianus, Dall, 1921:21.

Mytilus californianus, Oldroyd, 1924:66; pl. 27, fig. 2.

Mytilus californianus, Soot-Ryen, 1955:22; pl. 1, figs. 3, 4, text
figs. 3, 12.

Mytilus californianus, Abbott, 1974:429, fig. 5042.

Type locality: San Diego, California.

Range: Unalaska, Aleutian Islands (Burch, 1944-46) to Isla Socorro,
Mexico. (Soot-Ryen, 1955)

Exposed coasts, intertidal to 25 fms. (Soot-Ryen, 1955)

Localities:

Southeast: Sitka (1). Snipe Bay (1). Kruzof Island (1). Intertidal.

Mytilus edulis Linnaeus, 1758

Mytilus edulis Linnaeus, 1758, *Systema Naturae*, Ed. 10 p. 705.
(Soot-Ryen, 1955)

Mytilus edulis, Dall, 1921:21.

Mytilus edulis, Oldroyd, 1924:66; pl. 27, fig. 4.

Mytilus edulis, Soot-Ryen, 1955:19; pl. 1, figs. 1, 2, text figs. 1, 2, 10, 11.

Mytilus edulis, Ockelmann, 1958:61; pl. 3, fig. 11.

Mytilus edulis, Abbott, 1974:428; fig. 5039.

Type locality: North Atlantic

Range: East Atlantic. White Sea to the Mediterranean.

West Atlantic: West Greenland to North Carolina.

East Pacific: Arctic Ocean to Cabo San Lucas, Baja California.
(Soot-Ryen, 1955)

West Pacific: Bering Strait to Japan. (Ockelmann, 1958)

Depth: intertidal to 10-20 fms. (Soot-Ryen, 1955) rarely below 50 m.
(Ockelmann, 1958) attached to stones, rocks, pilings.

Localities:

Arctic: Point Hope (empty) (1).

Northern Bering: Cape Woolley, Seward Peninsula (empty) (1).

Southern Bering: 57 to 59°N and 160 to 165°W, 22 to 56 m (3).
Namvak Bay, intertidal (1).

Western Gulf: Cold Bay, intertidal (1). Ugaiuskak Island, intertidal (1).

Eastern Gulf: 59°43'N, 144°37'W (1). Prince William Sound (1).
Resurrection Bay, intertidal (1).

Southeast: Glacier Bay, intertidal (1).

TABLE 44

Mytilus

	<i>Mytilus</i> <u><i>edulis</i></u>	<i>Mytilus</i> <u><i>californianus</i></u>
Size - length	68	130
width	33	56
thickness	25	60
Ventral margin	slightly concave to straight	straight
Sculpture	concentric lines of growth	concentric lines of growth and radial ribs
Anterior adductor position	anterior ventral	extreme anterior

Family Pectinidae***Chlamys***

Chlamys albida (Dall, 1906)

Pecten (Chlamys) hastatus var. *albidus* Dall In Arnold, 1906,
U.S. Geol. Survey Prof. Paper 47:136; pl. 52, figs. 2, 2a.
(MacNeil, 1967)

Pecten (Chlamys) erythrocomatus Dall, 1907, Smithsonian Misc. Coll.
50(2):170.

Pecten (Chlamys) (hericius var.) *albidus*, Dall, 1921:18.

Pecten (hericius var.) *albidus*, Oldroyd, 1924:52; pl. 12, figs.
8, 9.

Chlamys islandica albida, Grau, 1959:72; pl. 23, fig. 1.

Chlamys (Chlamys) islandica erythrocomata, MacNeil, 1967:36; pl.
21, figs. 8, 9.

Chlamys (Chlamys) islandica albida, MacNeil, 1967:36.

Type locality: of *Pecten erythrocomata*, Albatross Sta. 5021, Okhotsk
Sea.

of *Pecten hastatus* var. *albidus*, Iliuliuk Harbor, Unalaska Island,
Aleutian Islands.

Range: Bering Sea. Aleutian Islands. Okhotsk Sea. Kurile Islands
to Japan. (Grau, 1959)

Depth: 50 to 100 fms. (Grau, 1959)

Localities:

Southern Bering: $56^{\circ}28'N$, $171^{\circ}25'W$, 180 m (1).

Chlamys beringiana (Middendorff, 1849)

Pecten islandicus var. *behringiana* Middendorff, 1849, *Malacozool.* Ross. p. 528; pl. 13, figs. 1, 3. (MacNeil, 1967)

Chlamys (Chlamys) beringiana, MacNeil, 1967:24; pl. 20, fig. 2; pl. 21, figs. 2, 5-7; pl. 23, figs. 3, 6; pl. 24, figs. 2, 3.

Type locality: Bering Sea.

Range: between Pribilof Islands and Point Barrow. (MacNeil, 1967)

Depth: 25 to 140 m. (Scarlato in Pavlovskii, 1966)
silt-sand and pebble bottom. (Scarlato in Pavlovskii, 1966)

Localities:

Northern Bering: $64^{\circ}03'N$, $172^{\circ}02'W$ (1).

Southern Bering: $56^{\circ}12.5'N$, $169^{\circ}15.5'W$ (1).

Chlamys hastata hericia (Gould, 1850)

Pecten hericius Gould, 1850, *Boston Soc. Nat. Hist., Proc.* 3:345. (MacNeil, 1967)

Chlamys hastata hericia, Grau, 1959:87; pl. 29.

Chlamys ("Chlamys") hastata hericius, MacNeil, 1967:14; pl. 21, figs. 1, 3.

Type locality: Strait of Juan de Fuca, Washington.

Range: Gulf of Alaska to Santa Barbara, California. (Grau, 1959)

Depth: minus tide to 80 fms. (Grau, 1959)

rock, shale, sand, or mud. (Grau, 1959)

Localities:

Southeast: off Sitka, 10 m (1).

Chlamys hindsii (Carpenter, 1864)

Pecten (var.) hindsii Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 645. (MacNeil, 1967)

Chlamys rubida jordani, Grau, 1959:79; pl. 25.

Chlamys (Chlamys) rubida hindsii, MacNeil, 1967:23; pl. 18, figs.
4, 6; pl. 19, figs. 1, 3, 4, 6; pl. 20, figs. 5, 6; pl. 21, fig. 4;
pl. 22, figs. 1, 2; pl. 24, figs. 1, 8, 9.

Type locality: Vancouver, British Columbia.

Range: Northern Gulf of Alaska to Puget Sound. (MacNeil, 1967;
Grau, 1959)

Depth: 25 to 60 fms. (Grau, 1959)
off rocky shores. (Grau, 1959)

Localities:

Eastern Gulf: off Kodiak Island (unspecified) (1). 59 to 60°N
and 146 to 152°W (4). Olsen Bay (1). Port Valdez (1). Fidalgo
Head (1).

Southeast: Lituya Bay (1). Hobart Bay Cove (1).

Chlamys pugetensis (Oldroyd, 1920)

Pecten islandicus pugetensis Oldroyd, 1920, *Nutilus* 33:136; pl. 4, figs. 5, 6. (MacNeil, 1967)

Pecten (Chlamys) islandicus pugetensis, Oldroyd, 1924:55; pl. 12, figs. 4, 5.

Chlamys hastata pugetensis, Grau, 1959:90; pl. 30.

Chlamys ("Chlamys") pugetensis, MacNeil, 1967:15; pl. 22, figs. 4, 5.

Type locality: San Juan Island, Puget Sound, Washington.

Range: Sitkalidak Island, Alaska to Newport Bay, California. (MacNeil, 1967)

Depth: minus tide to 40 fms. (Grau, 1959)

rocks or rocky, muddy, or sandy bottoms. (Grau, 1959)

Localities:

Eastern Gulf: McLeod Harbor, Montague Island, 30 to 35 m (1).

Southeast: Redoubt Bay Cove, Baranof Island, subtidal (1).

Chlamys pseudislandica MacNeil, 1967

Chlamys islandica, MacGinitie, 1959:155; pl. 19, fig. 4.

Chlamys (Chlamys) pseudislandica MacNeil, 1967:31; pl. 19, fig. 7; pl. 20, fig. 8; pl. 23, figs. 1, 2.

Type locality: off Point Barrow, Alaska.

Range: Point Barrow, Alaska to Saint Lawrence Island, Bering Sea.
(MacNeil, 1967)
gravel substrates. (Rowland, 1973)

Localities:

Arctic: $71^{\circ}16.5'N$, $151^{\circ}33'W$, 50 m (1).

Chlamys rubida (Hinds, 1845)

Pecten rubidus Hinds, 1845, *Zool. Voyage Sulphur, Mollusca*
part 3:61; pl. 17, fig. 5. (MacNeil, 1967)

Chlamys rubida, Grau, 1959:76; pl. 24.

Chlamys rubida, MacNeil, 1967:21; pl. 20, figs. 7, 9; pl. 22,
figs. 7, 8.

Type locality: Alaska.

Range: Bering Sea to Monterey, California. (MacNeil, 1967)

Depth: low tide level to 100 fms, off rocky shores. (Grau, 1959)

Localities:

Southern Bering: 56 to 57°N and 168 to 171°W, 145 to 150 m (3).
54°01'N, 163°42'W, 108 m (1).

Eastern Gulf: 59 to 60°N and 146 to 152°W, 64 to 67 m (3).
Kasitsna Bay (1). Northeast of Kodiak Island (1). Port Fidalgo
(1). Olsen Bay (1).

Chlamys wainrightensis MacNeil, 1967

Chlamys (Chlamys) wainrightensis MacNeil, 1967:27; pl. 18, fig. 3; pl. 19, figs. 8, 9; pl. 23, figs. 4, 5.

Type locality: Point Hope, Alaska.

Range: Point Hope and Wainright, Alaska. (MacNeil, 1967)

not seen.

Chlamys
hastata hericia

Size - height	61
width	59
thickness	20
Inflation	moderate
Disk shape	slightly higher than wide
Lengths of dorsal margins	about equal
Length of auricles	more than 1/2 disk width
Byssal notch	wide, deep
Base sculpture	broken radial lines
Left valve sculpture	primary up to 20 angular pliations imbricate at the top
secondary	low imbricate threads

TABLE 45a

Chlamys

<i>Chlamys</i> <u>pugetensis</u>	<i>Chlamys</i> <u>albida</u>
59	42
55	40
17.5	15
moderate	moderate
slightly higher than wide	slightly higher than wide
about equal	anterior shorter than posterior
more than 1/2 disk width	less than 1/2 disk width
wide, deep	shallow, narrow
reticulate	broken radial lines
around 20 angular plications sometimes imbricate at the top	few, poorly defined low plications
obsolete threads near margin only	distinct, imbricate threads

TABLE 45a

Continued

	<i>Chlamys hastata hericia</i>	<i>Chlamys pugetensis</i>	<i>Chlamys albida</i>
Right valve sculpture			
primary	up to 20 low rounded plications	around 20 angular plications	low plications
secondary	low imbricated threads	obsolete threads	distinct imbricated threads
Color			
left valve	pink	orange-red	white
right valve	white	paler orange-red	pink

TABLE 45b

Chlamys

	<i>Chlamys rubida</i>	<i>Chlamys hindssii</i>	<i>Chlamys beringiana</i>
Size - height	57	41.5	63
width	55	40	58
thickness	19	14	28
Inflation	left valve more inflated than right	left valve more inflated than right	left valve more inflated than right
Disk shape	slightly higher than wide	slightly higher than wide	slightly higher than wide
Lengths of dorsal margins	about equal	about equal	anterior margin slightly longer
Length of auricles	less than 1/2 disk width	about 1/2 disk width	more than 1/2 disk width
Byssal notch	wide, moderately deep	wide, moderately deep	wide, moderately deep
Base sculpture	reticulate	reticulate	reticulate

Chlamys
rubida

Left valve	
sculpture	
primary	20-30 ribs split evenly into fasicles of 2-3
secondary	2-3 imbricate threads
Right valve	
sculpture	
primary	20-30 ribs, split into fasicles of 2-3 smooth riblets
secondary	fine imbricate threads
Color	
left valve	yellow to pink
right valve	paler

TABLE 45b

Continued

Chlamys
*hindsi**Chlamys*
beringiana

20-30 ribs,
split only
near margins
not imbricate

20-30 or more very
strong ribs, split
irregularly

with or without
obsolete imbricate
threads

low, imbricate threads
in widest interspaces

20-30 ribs
split into 2-3
only near the
ventral margin

20-30 or more very
strong ribs, split
irregularly

riblets near
margin, only

low, imbricate
threads in widest
interspaces

yellow to pink

pink to red

paler

white

TABLE 45c

Chlamys

<i>Chlamys</i> <u>wainrightensis</u>	
Size - height	69
width	61
thickness	
Inflation	left valve much inflated right valve less inflated
Disk shape	higher than wide
Lengths of dorsal margins	anterior margin longer
Lengths of auricles	
Basal notch	
Base sculpture	reticulate
Left valve radial sculpture, primary	high, sharp ribs, split occasionally
secondary	occasionally present

Chlamys
pseudislandica

73
69.5 (type)*

slight

slightly higher than wide

anterior margin slightly
shorter

more than 1/2 disk width

narrow, angulate

reticulate

over 20 low, flat ribs,
evenly split in adult stage

moderately strong riblet

*U. A. specimen is a juvenile

TABLE 45c

Continued

	<i>Chlamys</i> <u>wainrightensis</u>	<i>Chlamys</i> <u>pseudislandica</u>
Right valve sculpture		
primary	low rounded ribs, split evenly or unevenly	same as right valve, with 3 stronger, paler ribs
secondary	riblet occasionally present	
Color		
left valve	dark reddish-purple	dark red-purple
right valve	alternating orange and white bands	white
	from MacNeil, 1967	

*Cyclopecten**Cyclopecten greenlandicus* (Sowerby, 1842)

Pecten greenlandicus Sowerby, 1842, *Thesaurus Conchyliorum*
part 2, p. 57; pl. 13, fig. 40. (Grau, 1959)

Pseudamusium andersoni Dall, 1919, *Rept. Can. Arctic Exped.*
part A, p. 19A; pl. 2, figs. 7, 8.

Pecten (Pseudamusium) andersoni, Dall, 1921:20.

Pecten (Pseudamusium) binominatus, Hanna, 1924, *Calif. Acad. Sci., Proc.* 4(13):175, new name for *Pecten andersoni*, Dall, 1919, not *P. andersoni*, Arnold, 1906. (Oldroyd, 1924)

Pecten (Pseudamusium) binomenatus, Oldroyd, 1924:61.

Propeamusium (Arctinula) groenlandicum, Ockelmann, 1958:68; pl. 2, fig. 2.

Cyclopecten (Delectopecten) greenlandicus, Grau, 1959:53; pl. 20.

Type locality: of *Pecten greenlandicus*, Greenland.

of *Pseudamusium andersoni*, Dolphin and Union Strait, Arctic Canada.

Range: Arctic Ocean (except Chukchi and Beaufort Seas).

Atlantic: Arctic to northwest Africa and Gulf of St. Lawrence.
(Grau, 1959)

Depth: 2 to 2080 fms. (Clarke, 1962)
mud. (Grau, 1959) clay with mud, stones, gravel, shells.
(Ockelmann, 1959)

Localities:

Arctic: 70 to 72°N and 141 to 156°W, 31 to 50 m (8).

*Delectopecten**Delectopecten randolphi* (Dall, 1897)

Pecten randolphi Dall, 1897, *Nauticus* 8(11):86.

Pecten randolphi, Dall, 1902:559; pl. 40, fig. 2.

Pecten (Pseudamusium) randolphi, Dall, 1921:19.

Pecten (Pseudamusium) randolphi, Oldroyd, 1924:59, not plate 14, figs. 5, 6 (*Propeamuseum davidsoni*).

Cyclopecten (Delectopecten) randolphi, Grau, 1959:44; pl. 16, figs. 4, 5.

Delectopecten randolphi, Keen, 1971:91.

Type locality: off Destruction Island, northwest Washington.

Range: Bering Sea to Guaymas, Mexico (Gulf of California). (Grau, 1959)

Depth: 10 to 1064 fms. (Grau, 1959)

mud. (Grau, 1959)

Localities:

Eastern Gulf: Port Valdez (1). Ester Passage, Prince William Sound (1). Gulf of Alaska, outside Prince William Sound (1).

Southeast: Near Sitka (1).

Delectopecten tillamookensis (Arnold, 1906)

Pecten (Pseudamusium) randolphi var. *tillamookensis* Arnold, 1906,
U.S. Geol. Surv. Prof. Paper 47:139; pl. 48, figs. 3, 3a. (Grau,
1959)

Pecten (Pseudamusium) arces Dall, 1913, *Proc. U.S. Nat. Mus.*
45:592. (Grau, 1959)

Pecten (Pseudamusium) tillamokense, Dall, 1921:20.

Pseudamusium arces, Dall, 1925:24; pl. 27, fig. 4.

Pecten (Pseudamusium) tillamokense, Oldroyd, 1924:59.

Cyclopecten (Delectopecten) randolphi tillamookensis, Grau,
1959:45; pl. 17.

Type locality: of *Pecten tillamookensis*, off Tillamook Bay, Oregon.

of *Pecten arces*, off Santa Barbara, California.

Range: Pribilof Islands, Bering Sea (Dall, 1921) to Cedros Island,
Baja California. (Grau, 1959)

Depth: 30 to 1100 fms, rarely less than 30 fms. (Grau, 1959)

400 to 1000 m (British Columbia). (Bernard, 1970)

mud bottoms. (Grau, 1959)

Delectopecten vancouverensis (Whiteaves, 1893)

Pecten (Pseudamusium) vancouverensis Whiteaves, 1893, Ottawa Naturalist 7:133; pl. 1, figs. 1, 1a.

Pecten (Pseudamusium) vancouverense, Dall, 1921:20; pl. 1, figs. 4, 5.

Pecten (Pseudamusium) vancouverensis, Oldroyd, 1924:60; pl. 12, figs. 6, 7.

Cyclopecten (Delectopecten) vancouverensis, Grau, 1959:40; pl. 15.

Type locality: Forward Inlet, Quatsino Sound, Vancouver Island, British Columbia.

Range: Bering Sea to southern Baja California and to San Ildefonso Island, Gulf of California. (Grau, 1959)

Depth: 10 to 210 fms. (Grau, 1959)

mud or sand, occasionally rock, shale or gravel. (Grau, 1959)

not seen.

TABLE 46
Delectopecten

	<i>Delectopecten randolphi</i>	<i>Delectopecten tillamookensis</i>	<i>Delectopecten vancouverensis</i>
Size - height	21.5	30.3	7.5
width	20.5	30.0	7.75
Disk shape	slightly oblique	slightly oblique	sub circular
Right valve sculpture	irregular concentric folds	over 50 spinose threads	60 or more spinose threads
Left valve sculpture	same as right valve	same as right valve	same as right valve
Anterior auricles	long, narrow	long, narrow	long (proportionally longer than in <i>D. tillamookensis</i>)
Posterior auricles	not well defined	not differentiated	not well defined
Byssal notch	deep, wide	wide, deep specimen from off Eureka, California	deep, angular from Whiteaves, 1893; Grau, 1959

*Hinnites**Hinnites giganteus* (Gray, 1825)*Lima gigantea* Gray, 1825, *Ann. Philos.* 9(2):139. (Grau, 1959)*Hinnites giganteus*, Dall, 1921:20.*Hinnites giganteus*, Oldroyd, 1924:63; pl. 25, figs. 1, a-b.*Pecten (Chlamys) multirugosus* Gale, 1928, *San Diego Soc. Nat. Hist., Trans.* 5:92, unnecessary new name for *Lima gigantea*, Gray, 1825, not *Plagiostoma gigantea* Sowerby, 1814. (Roth and Coan, 1978)*Hinnites multirugosus*, Grau, 1959:134; pls. 45-49.*Hinnites multirugosus*, Abbott, 1974:444, fig. 4141.

Type locality: Strait of Juan de Fuca.

Range: Aleutian Islands to Magdalena Bay, Baja California. (Grau, 1959)

Depth: low tide to 30 fms. (Grau, 1959)

subtidal to 30 m (British Columbia). (Bernard, 1970)

free-living juveniles on gravel, adults cemented to fixed objects. (Grau, 1959)

*Pecten**Pecten caurinus* (Gould, 1850)

Pectin caurinus Gould, 1850, *Boston Soc. Nat. Hist., Proc.*
3:345. (Johnson, 1964)

Pecten (Chlamys) caurinus, Dall, 1921:19.

Pecten caurinus, Oldroyd, 1924:57; pl. 6, fig. 1; pl. 4, fig. 1.

Pecten (Patinopecten) caurinus, Grau, 1959:145; pl. 54.

Pecten (Patinopecten) caurinus, Abbott, 1974:422, fig. 5132.

Type locality: Port Townsend, Puget Sound, Washington.

Range: Afognak Island, Alaska (Eyerdam, 1960) to Point Reyes, California. (Grau, 1959)

Depth: 5 to 150 m (British Columbia). (Bernard, 1970)

20 to 100 fms. (Grau. 1959)

sand or mud bottoms. (Grau, 1959)

Localities:

Southern Bering: near Unimak Island, 54 to 56°N and 163 to 165°W,
64 to 93 m (4).

Eastern Gulf: 59 to 60°N and 140 to 147°W (15). Kasitsna Bay (1).

*Propeamussium**Propeamussium alaskensis* (Dall, 1871)

Pecten (Pseudamusium) alaskensis Dall, 1871, Amer. J. Conchol. 7(2):55; pl. 16, fig. 4.

Pecten (Propeamusium) alaskense, Dall, 1921:20; pl. 1, fig. 2.

Pecten (Propeamusium) alaskensis, Oldroyd, 1924:62; pl. 12, fig. 3; pl. 38, fig. 6.

Propeamussium (Parvamussium) alaskense, Grau, 1959:18; pl. 3.

Type locality: Port Etches, Alaska.

Range: Bering Sea and Aleutian Islands to Magdalena Bay, western Baja California. Northern Korea and Japan. (Grau, 1959)

Depth: 10 to 200 fms. (Grau, 1959)

100 to 500 m (British Columbia). (Bernard, 1970)

Localities:

Bering Sea: 54 to 58°N and 159 to 170°W, 137 to 214 m (3).

Eastern Gulf: 59°02'N, 151°59'W, 140 m, hard sand (1).
59 to 60'N and 146 to 147°W, 151 and 179 m (4). Prince William Sound (1).

Propeamussium davidsoni (Dall, 1897)

Pecten davidsoni Dall, 1897, *Nautilus* 11(8):86.

Pecten davidsoni, Dall, 1902:559; pl. 40, figs. 5, 6.

Pecten (Pseudamusium) davidsoni, Dall, 1921:20.

Pecten (Pseudamusium) davidsoni, Oldroyd, 1924:61; pl. 14, figs. 5, 6. (as "Pecten randolphi")

Propeamussium (Parvamussium) davidsoni, Grau, 1959:20; pl. 4.

Type locality: Davidson Bank, Bering Sea.

Range: Bering Sea. (Grau, 1959)

Depth: 274 to 351 fms. (Grau, 1959)

sand or mud. (Grau, 1959)

not seen.

TABLE 47
Propeamussium

	<i>Propeamussium alaskense</i>	<i>Propeamussium davidsoni</i>
Size - height	17.8	14
width	17.8	14
Disk shape	round	round
Right valve sculpture	faint concentric lines	faint concentric lines fine scaly riblets near margin
Left valve sculpture	about 12 ribs, finer ribs between	about 21 very low ribs
Byssal notch	shallow, angular	deep, angular
Interior	around 30 narrow ribs, extending from muscle scar to near margin	smooth
		from Dall, 1897; Grau, 1959

Family Limidae

Limatula

Limatula attenuata Dall, 1916

Limatula attenuata Dall, 1916, Proc. U.S. Nat. Mus. 52:404.

Limatula attenuata, Dall, 1921:20.

Limatula attenuata, Oldroyd, 1924:64.

Type locality: Nazan Bay, Atka Island, Aleutian Islands.

Range: Southern Bering Sea and Aleutian Islands to the Shumagin Islands, Alaska. (Dall, 1921)

not seen.

Limatula subauriculata (Montagu, 1808)

Lima subauriculata Montagu, 1808, *Testacea Britannica Suppl.* p. 63. (Dall, 1921)

Lima (Limatula) subauriculata, Dall, 1921:20.

Lima (Limatula) subauriculata, Oldroyd, 1924:64; pl. 5, fig. 10.

Type locality: Great Britain.

Range: East Atlantic: Southeast Greenland. Iceland. the Murman Coast. West Finmarck to the Canary Islands. Mediterranean.

West Atlantic: West Greenland ($72^{\circ}47'N$) to Labrador to the Strait of Florida.

East Pacific: Bering Sea to Baja California. (Ockelmann, 1958)

West Pacific: Northern Japan to $51^{\circ}N$. (Kuroda and Habe, 1952)

Depth: 40 to 500 m (British Columbia). (Bernard, 1970)

7 to 300 m. (Ockelmann, 1958)

Localities:

Bering Sea: $55^{\circ}33'N$, $163^{\circ}49'W$ (1).

Eastern Gulf: 50 to $60^{\circ}N$ and 140 to $147^{\circ}W$, 64 to 236 m (4).

Southeast: Icy Strait between Porpoise and Pleasant Islands (1).

Family Anomiidae

Pododesmus

Pododesmus macrochisma (Deshayes, 1839)

Anomia macrochisma Deshayes, 1839, Rev. Zool. Soc. Cuvierienne 2:359. (Grant and Gale, 1931)

Pododesmus (Monia) macrochisma, Dall, 1921:21.

Pododesmus macrochisma, Oldroyd, 1924:65; pl. 26, fig. 1a,b.

Type locality: Kamchatka.

Range: southern Coast of Seward Peninsula, Alaska and North Coast of St. Lawrence Island, Alaska (Rowland, 1973) to Japan and the Okhotsk Sea (Dall, 1921) to California (35° N). (Bernard, 1970)

Depth: intertidal to 20 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: Bristol Bay, $56^{\circ}23'N$, $160^{\circ}30'W$, 34 m, on worn *Neptunea* shell (1).

Western Gulf: Cold Bay, interidal (1). Ugaiuskak Island, intertidal (1).

Eastern Gulf: Tonsina Point, Resurrection Bay (1).

Southeast: Hobart Bay Cove (1). Hole-in-the-wall, Prince of Wales Island (1). Ketchikan (1).

Family Astartidae

Astarte (*Astarte*)

Astarte (*Astarte*) *compacta* Carpenter, 1864

Astarte compacta Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 640, 612. (Palmer, 1958)

Astarte compacta, Dall, 1903b:944; pl. 63, fig. 8.

Astarte compacta, Dall, 1921:29.

Astarte compacta, Oldroyd, 1924:104; pl. 2, fig. 4.

Astarte compacta, Palmer, 1958:80; pl. 7, figs. 13-15a.

Type locality: Puget Sound, Washington.

Range: Forrester Island, Alaska to Puget Sound, Washington. (Dall,
1921)

Depth: 20 to 200 m (British Columbia). (Bernard, 1970)

not seen.

Astarte (Astarte) crenata Gray, 1824

Astarte crenata Gray, 1824, Appendix, Parry's Voyage p. 242.
(La Rocque, 1953)

Astarte crenata, Dall, 1903b:939.

Astarte crenata crenata and other subspecies, Ockelmann, 1958:
90; pl. 1, fig. 20.

Type locality: none given.

Range: Greenland. Barents, Kara, and Siberian Ice Seas.

West Atlantic: Greenland. Baffinland. Hudson Bay to Maine.

East Atlantic: to the Hebrides and Norway north of Lofoten.
(Ockelmann, 1959)

Depth: 4 m (Spitzbergen), to 1275 m (Jan Mayen). (Ockelmann, 1959)

Localities:

Beaufort Sea: 70 to 72°N and 142 to 158°W, 31 to 110 m (14).

Astarte (Astarte) polaris Dall, 1903

Astarte polaris Dall, 1903, *Proc. U.S. Nat. Mus.* 26:939; pl. 63,
fig. 5.

Astarte polaris, Dall, 1921:29.

Astarte polaris, Oldroyd, 1924:104.

Type locality: near Shumagin Islands, Alaska.

Range: Aleutian and Shumagin Islands, Alaska. (Dall, 1921)

Localities:

Western Gulf: Lower Cook Inlet, 35 to 151 m (3).

Eastern Gulf: 59 to 60°N and 141 to 147°W, 64 to 182 m (14).
Port Valdez (5).

Southeast: Auke Bay, 127 m (1).

Astarte (Astarte) willetti Dall, 1917

Astarte willetti Dall, 1917, *Nautilus* 31(1):11. (Boss, Rosewater,
Ruhoff, 1968)

Astarte willetti, Dall, 1921:30.

Astarte willetti, Oldroyd, 1924:105.

Type locality: Forrester Island, Alaska.

Range: Forrester Island, Alaska. (Dall, 1921)

not seen.

*Astarte (Tridonta)**Astarte (Tridonta) alaskensis* Dall, 1903*Astarte alaskensis* Dall, 1903, Proc. U.S. Nat. Mus. 26:946;
pl. 63, fig. 2.*Astarte alaskensis*, Dall, 1921:30.*Astarte alaskensis*, Oldroyd, 1924:106; pl. 13, fig. 20.*Astarte alaskensis*, Abbott, 1974:480, fig. 5520.

Type locality: Southern Bering Sea, northwest of Unimak Island.

Range: East Pacific: Bering Sea to Puget Sound.

West Pacific: Bering Sea to Paramushir Island. (Petrov, 1966)

Depth: 94 to 342 m (Bering and Okhotsk Seas and Kamchatka). 18 to
127 m (North America). (Petrov, 1966)

sand and silt. (Petrov, 1966)

Localities:

Southern Bering: near Unimak Island (1).

Western Gulf: Lower Cook Inlet, 59 and 152 m (2).

Eastern Gulf: Valdez Arm, 150 and 219 m (2).

Southeast: Icy Strait (1).

Astarte (Tridonta) bennettii Dall, 1903

Astarte bennettii Dall, 1903, *Proc. U.S. Nat. Mus.* 26:945; pl. 63, fig. 6.

Astarte bennettii, Dall, 1921:30.

Astarte bennettii, Oldroyd, 1924:107.

Type locality: Polar Sea at Bennett Island, also Bering Sea 5 mi. west of Nunivak Island.

Range: Bennett Island to Nunivak Island. (Dall, 1921)

not seen.

Astarte (Tridonta) borealis Schumacher, 1817

Astarte borealis Schumacher, 1817, *Essai Nouv. Sys. Hab. vers Test.* p. 47; pl. 17, fig. 1. (MacGinitie, 1959)

Astarte arctica Gray, 1824, *Appendix, Parry's Voyage* p. 243. (Rowland, 1973)

Astarte borealis, Dall, 1903b:944.

Astarte arctica, Dall, 1903b:940.

Astarte borealis, Oldroyd, 1924:106.

Astarte arctica, Oldroyd, 1924:106.

Astarte borealis, MacGinitie, 1959:165; pl. 22, figs. 1-6.

Astarte (Tridonta) borealis, Abbott, 1974:480, fig. 5515.

Type locality: of *Astarte arctica*, "Northern Seas."

of *Astarte borealis*, not known.

Range: East Atlantic: Novaya Zemlya. Greenland. Iceland to Bergen, Norway.

West Atlantic: Greenland to Massachusetts and Rhode Island.

West Pacific: McFarlane Bay, mouth of MacKenzie River, Canada to Point Barrow. Aleutian Islands and Prince William Sound.

West Pacific: Sea of Okhotsk and Northern Japan. (MacGinitie, 1959)

Depth: 0-1 to 463 m, less than 100 m preferred. (Petrov, 1966)

pebbly to clay bottoms, soft sand and silt preferred. (Petrov, 1966)

Localities:

Arctic: 69 to 71°N and 142 to 160°W, 40 to 62 m (8). Prudhoe Bay (empty) (1). Point Barrow (empty) (1).

Chukchi: Kotzebue (empty) (1).

Northern Bering: Norton Sound southeast of Nome (1). Bering Strait (1). north of St. Lawrence Island, 35 to 58 m, fine sand (5).

Astarte (Tridonta) montagui (Dillwyn, 1817)

Venus montagui Dillwyn, 1817, *A Descriptive Catalogue of Recent Shells...* p. 167. (MacGinitie, 1959)

Astarte montagui, Ockelmann, 1958:80.

Astarte montagui, MacGinitie, 1959:167; pl. 22, figs. 11-16.

Type locality:

Range: all Arctic Seas. (Petrov, 1966)

Atlantic: Arctic to Massachusetts and Bay of Biscay.

Pacific: Arctic to British Columbia. (MacGinitie, 1959)

Okhotsk Sea. (Petrov, 1966)

Depth: 2 to 445 m. (Ockelmann, 1958)

sand and silt. (Petrov, 1966)

silty sand, sand, mud. (Rowland, 1973)

Localities:

Arctic: 70 to 72°N and 142 to 163°W, 43 to 150 m (9).

Chukchi Sea: 66 to 72°N and 163 to 176°W, 30 to 50 m (9).

Northern Bering: Norton Sound southeast of Nome (1).
Off St. Lawrence Island (2).

Southern Bering: south of St. Matthew Island (1). Bristol Bay (1).

Astarte (Tridonta) rollandi Bernardi, 1859

Astarte rollandi Bernardi, 1859, *J. Conchyl.* 7:386; pl. 13,
fig. 4. (Dall, 1903b)

Astarte rollandi, Dall, 1903b:943.

Astarte rollandi loxia Dall, 1903b:943.

Astarte rollandi and spp. *Loxia*, Dall, 1921:30.

Astarte rollandi, Oldroyd, 1924:105; pl. 53, fig. 2.

Astarte rollandi loxia, Oldroyd, 1924:106.

Type locality: Petropavloski, Kamchatka.

Range: Avatcha Bay, Kamchatka. Aleutian and Pribilof Islands to
Prince William Sound. (Dall, 1903)

Localities:

Western Gulf: Izembek Lagoon (1). Lower Cook Inlet, $59^{\circ}33'N$,
 $152^{\circ}24'W$, 59 m (1). Kasitsna Bay (1).

Astarte (Tridonta) vernicosa Dall, 1903

Astarte vernicosa Dall, 1903, Proc. U.S. Nat. Mus. 26:945; pl. 61, fig. 1.

Astarte vernicosa, Dall, 1921:30.

Astarte vernicosa, Oldroyd, 1924:107.

Astarte (Tridonta) vernicosa, Abbott, 1974:481, fig. 5534.

Type locality: off Icy Cape, Alaska.

Range: Arctic and Bering Seas. Attu to Atka Island, Aleutian Islands.
(Dall, 1921)

not seen.

Astarte (Rictomya)

Astarte (Rictomya) esquimaulti (Baird, 1863)

Crassetella esquimaulti Baird, 1863, Zool. Soc. London, Proc.
p. 70.

Rictomya mirabilis Dall, 1871, Amer. J. Conchol. 7(2):151; pl.
14, fig. 6.

Astarte esquimaulti, Dall, 1903b:945; pl. 63, figs. 11, 12.

Astarte esquimaulti, Dall, 1921:30.

Astarte esquimaulti, Oldroyd, 1924:108; pl. 13, fig. 19.

Type locality: of *Crassetella esquimaulti*, Esquimalt Harbor, Vancouver
Island, British.

of *Rictomya mirabilis*, North Harbor, Unga Island, Shumagin Islands,
Alaska.

Range: East Pacific, 60°N (Bernard, 1970) to Puget Sound, Washington.
(Dall, 1921)

Depth: 5 to 50 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: 55°31'N, 163°49'W, 100 m (1).

Western Gulf: Lower Cook Inlet, 31 to 167 m (3).

Eastern Gulf: Port Valdez, 150 m (1). Port Gravina (1). 59 to
60°N and 141 to 146°W, 64 to 124 m (4).

TABLE 48a
Astarte (*Astarte*)

	<i>Astarte crenata</i>	<i>Astarte polaris</i>	<i>Astarte villetti</i>	<i>Astarte compacta</i>
Size - length	24.2	30.5	14.0	.4 in
height	19.9	26.9	16	.33 in
thickness	13.4	14.0	9	
Anterior length	11.4	13.5		
Umbo	rather low, eroded	prosogyrate		
Overall shape	rounded-trigonal	rounded-trigonal	rounded-trigonal	trigonal
Lunule	broad, impressed	broad, impress- ed		
Escuton	impressed	impressed		
Anterior	narrowly rounded	narrowly round- ed		
Posterior	ovate-quadrata	ovate-quadrata		
Ventral	curved	curved to rather straight		
Concentric sculpture	narrow ribs fading toward ventral and posterior	even ribs fading slightly toward posterior	small regular waves	regularly accuate uniform ribs

TABLE 48a

Continued

	<i>Astarte crenata</i>	<i>Astarte polaris</i>	<i>Astarte willetti</i>	<i>Astarte compacta</i>
Interior margin	crenate	crenate	crenate	crenate
Hinge	narrow,	rather broad	wide	
Hinge teeth	small	rather heavy	strong	
Color	yellow-olive	yellow-olive to brown	yellow-brown	
		from Dall, 1917 in Oldroyd, 1924	from Carpenter, 1864 in Oldroyd, 1924 Palmer, 1958	

TABLE 48b
Astarte (*Tridonta*)

	<i>Astarte</i> <u><i>rollandi</i></u>	<i>Astarte</i> <u><i>borealis</i></u>	<i>Astarte</i> <u><i>montegui</i></u>	<i>Astarte</i> <u><i>alaskensis</i></u>
Size - length	35.7	41.4	19	22.0
height	34.0	40.8	15.0	16.0
thickness	16.8	19.0	7.4	15.0
Anterior length	15.9	16.9	9.0	7.4
Umbo	high, slightly prosogyrate	prosogyrate, usually eroded	prosogyrate	high, overhanging
Overall shape	suborbicular	variable, sub-orbicular to oval	elongate - ovate to trigonal	rounded trigonal
Lunule	relatively narrow, shallow	wide, deep	deep	deep, wide
Escutcheon	short, narrow	long, deep	flat, narrow	flat, narrow
Anterior	rounded	broadly rounded	rounded	narrowly rounded
Posterior	rounded	rounded to narrowly rounded	rounded	rounded
Ventral	rounded	rounded to flatish	flat	rather straight

TABLE 48b

Continued

	<i>Astarte rollandi</i>	<i>Astarte borealis</i>	<i>Astarte montegui</i>	<i>Astarte alaskensis</i>
Sculpture	smooth, lines of growth only	regular ribs in beak area, fading to irregular ribs or nearly smooth ventrally	regular narrow very broad ribs near beak, ribs, with fading vent- rally	very broad broad inter- spaces
Interior ventral margin	smooth	smooth	smooth	smooth
Hinge	thick, wide	thick, wide,	narrow	narrow
Hinge teeth	heavy	heavy	small	small
Color	glossy smooth when young, dull when older olive-chestnut black	dark brown- black	straw yellow to dark red- dish brown	chestnut to dark brown

TABLE 48c
Astarte (Tridonta), *Astarte (Rictomya)*

	<i>Astarte bennetti</i>	<i>Astarte vernicosa</i>	<i>Astarte esquimaulti</i>
Size - length	10.5	17.0	13.0
height	11.5	5.8	11.6
thickness	5.0	6.7	7.4
Anterior length	5.0		6.5
Beak	high, slightly prosogyrate	high	high, slightly prosogyrate
Overall shape	oval-trigonal		rounded-trigonal
Lunule	narrow	narrow, impressed	rather narrow, deep
Escutcheon	narrow		narrow, flat
Anterior	longer, more sloping	rounded	narrowly rounded
Posterior	short, bluntly rounded	more produced	truncate
Ventral	evenly rounded	arcuate	rounded to straight
Sculpture	fine ribs, even throughout	fine, even ribs	broken ribs

TABLE 48c

Continued

	<i>Astarte <u>bennetti</u></i>	<i>Astarte <u>vernicosa</u></i>
Interior margin	smooth	smooth
Hinge	delicate	
Teeth		
Color	polished olivaceous	olivaceous brown
	from Dall, 1903	from Dall, 1903

Astarte
esquimaulti

smooth

short, narrow

small

pale yellow to
dark brown

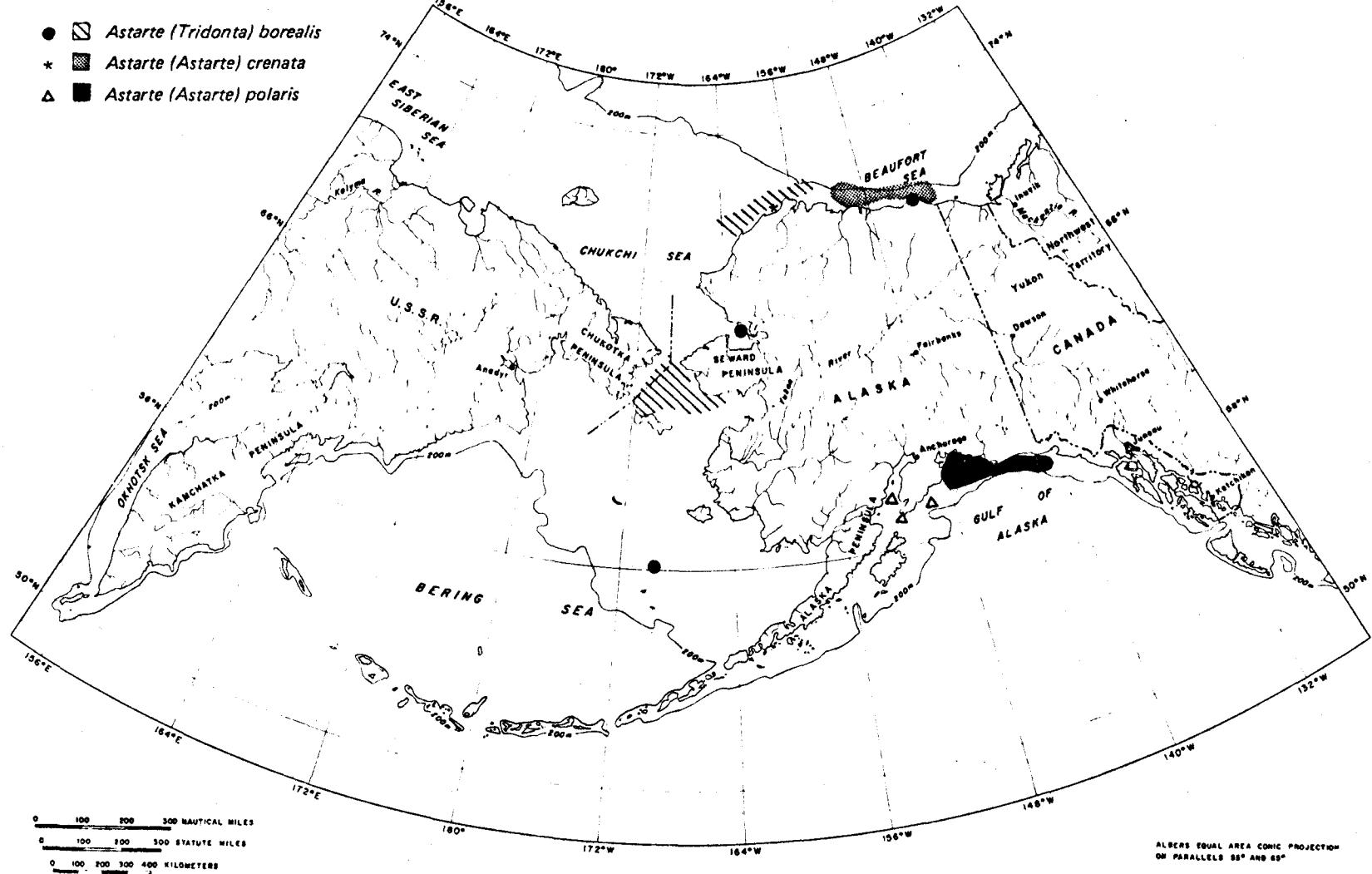


Figure 12. Localities for specimens of *Astarte*.

- *Astarte (Tridonta) alaskensis*
- * *Astarte (Rictomyia) esquimalti*
- ■ *Astarte (Tridonta) montegui*
- △ *Astarte (Tridonta) rollandi*

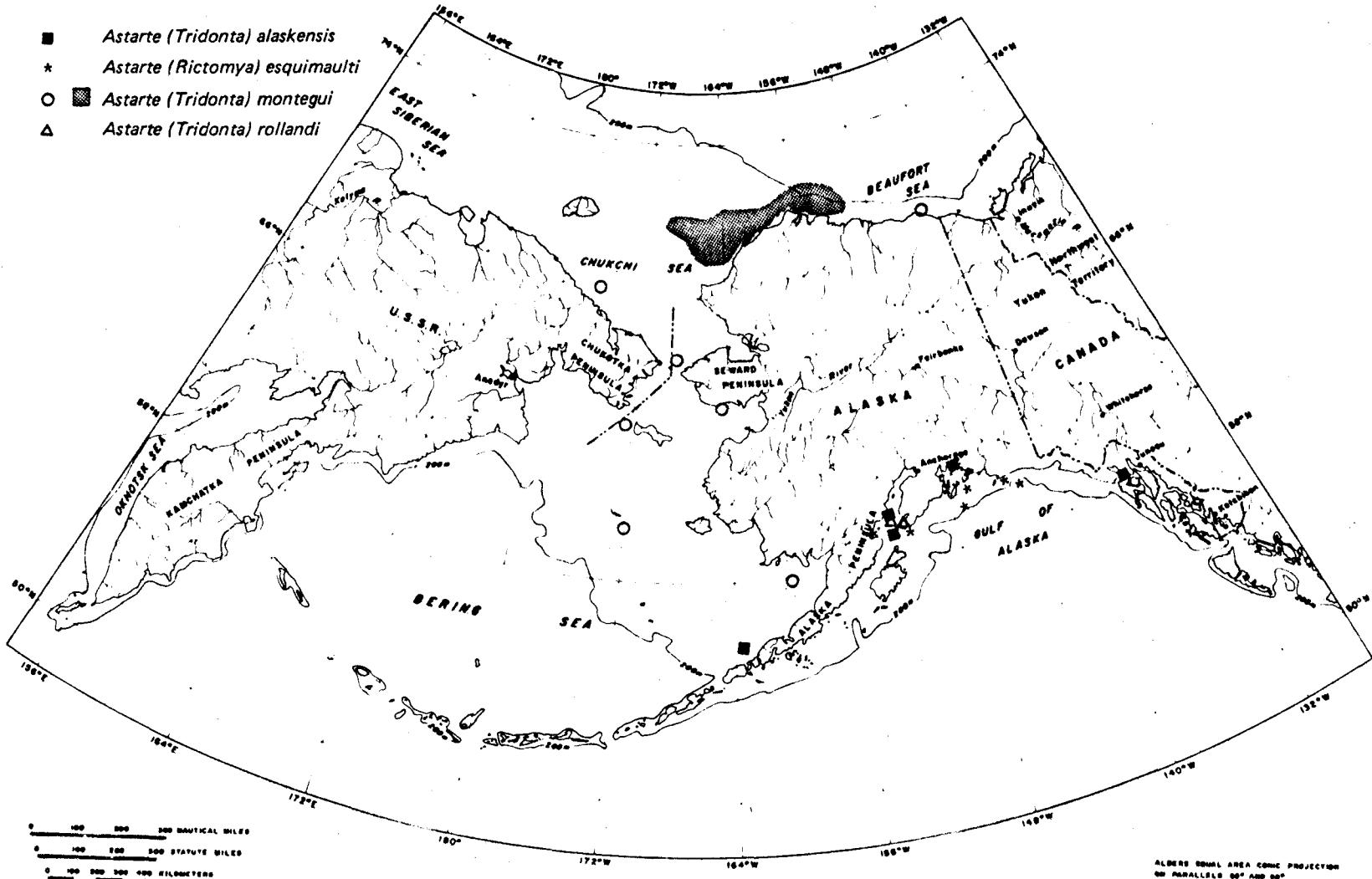


Figure 13. Localities for specimens of *Astarte*.

Family Carditidae

*Cyclocardia**Cyclocardia crassidens* (Broderip and Sowerby, 1829)*Astarte crassidens* Broderip and Sowerby, 1829, *Zool. J.* 4(15):365.
(Coan, 1977)*Cardita borealis* var. *paucicostata* Krause, 1885, *Arch. f. Naturg.* 51(1)(1):30; pl. 3, fig. 5. (Coan, 1977)*Venericardia crassidens*, Dall, 1903b:949; pl. 63, fig. 9.*Venericardia paucicostata*, Dall, 1921:31.*Venericardia crassidens*, Dall, 1921:32.*Venericardia crassidens*, Oldroyd, 1924:113.*Venericardia paucicostata*, Oldroyd, 1924:112; pl. 13, fig. 13.*Cardita crassidens*, MacGinitie, 1959:170; pl. 22, fig. 7-10.*Cyclocardia crassidens*, Coan, 1977:347, figs. 3-5.Type locality: of *Astarte crassidens*, Icy Cape, Arctic Coast, Alaska.of *Cardita borealis* var. *paucicostata*, Emma Harbor, Plover Bay, Siberia.

Range: Cape Simpson, Alaskan Arctic Coast. Bering Sea and Aleutian Islands to Queen Charlotte Island, British Columbia. (Coan, 1977) southeast Chukchi Sea. coast of Asia to Japan. (Petrov, 1966)

Depth: 1 to 155 m. (Coan, 1977)

hard sand with pebbles. (Petrov, 1966)

gravel or sandy gravel. (Rowland, 1973)

Localities:

Arctic: 70 to 72°N and 141 to 163°W, 40 to 102 m (6).

Northern Bering: Bering Strait, 37 m (1). near Northeast Cape, St. Lawrence Island, 42 m, coarse gravel (1).

Southern Bering: north of Pribilof Islands, 137 to 214 m (1). near Unimak Island, 108 m (1).

Cyclocardia crebricostata (Krause, 1885)

Cardita borealis var. *crebricostata* Krause, 1885, Arch. f. Naturg. 51(1):30; pl. 3, fig. 4. (Coan, 1977)

Venericardia (Cyclocardia) alaskana Dall, 1903, Acad. Nat. Sci. Phil., Proc. 54(4):710.

Venericardia alaskana, Dall, 1903b; pl. 63, fig. 7.

Venericardia crebricostata, Dall, 1921:31.

Venericardia crebricostata, Oldroyd, 1924:114; pl. 13, fig. 12.

Cyclocardia crebricostata, Coan, 1977:378, figs. 6, 7.

Type locality: of *Cardita borealis* var. *crebricostata*, St. Paul Island, Bering Sea.

of *Venericardia (Cyclocardia) alaskana*, Nunivak Island, Bering Sea.

Range: Dease Inlet, Alaska. Bering Sea and Aleutian Islands to Prince William Sound, Alaska. (Coan, 1977) southeast Chukchi Sea to Japan. (Petrov, 1966)

Depth: 14 to 200 m. (Coan, 1977)

sand and mud. (Coan, 1977; Petrov, 1966)

Localities:

Chukchi: $70^{\circ}23'N$, $162^{\circ}24'W$, 24 m (1). $71^{\circ}06'N$, $158^{\circ}31'W$, 24 m (1).

Northern Bering: north of St. Lawrence Island (3).

Southern Bering: 55 to $60^{\circ}N$ and 163 to $170^{\circ}W$, 22 to 80 m (13). off Izembek Lagoon (1).

Cyclocardia incisa (Dall, 1903)

Venericardia (Cyclocardia) incisa Dall, 1903, *Acad. Nat. Sci. Phila.*, Proc. 54(4):710, 714.

Venericardia incisa, Dall, 1903b; pl. 63, fig. 4.

Venericardia incisa, Dall, 1921:32.

Venericardia incisa, Oldroyd, 1924:115.

Cyclocardia incisa, Coan, 1977:379, fig. 9.

Type locality: Unalaska Island, Aleutian Islands.

Range: Nazan Bay, Atka Island, Aleutian Islands to Woody Island, Alaska. (Coan, 1977) Sea of Japan. Southern Sea of Okhotsk. southern Kurile Islands. (Scarlato in Pavlovskii, 1955)

Depth: 1 to 135 m. (Scarlato in Pavlovskii, 1955)

sand, pebbles, rocks. (Scarlato in Pavlovskii, 1955)

not seen.

Cyclocardia rjabininae (Scarlato, 1955)

Venericardia granulata rjabininae Scarlato in Pavlovskii, 1955: 261; pl. 51, fig. 6.

Venericardia granulata rjabininae, Tiba, 1972:136; pl. 16, figs. 8, 9.

Cyclocardia sp., Coan, 1977:379, fig. 10.

Type locality: not known.

Range: Bering Sea near Pribilof Islands. Amchitka to Kodiak Island, Alaska. Bering Sea coast of Chuckotsk Peninsula. Okhotsk Sea to Sakhalin Island. (Coan, 1977)

Depth: 18 to 572 m. (Coan, 1977)

10 to 414 m. (Scarlato in Pavlovskii, 1955)

sand and mud. (Coan, 1977)

Localities:

Chukchi: $68^{\circ}38.5'N$, $178^{\circ}08'W$, 50 m (1). 70 to $72^{\circ}N$ and 160 to $164^{\circ}W$, 38 to 50 m (8).

Cyclocardia umnaka (Willett, 1932)

Cardita umnaka Willett, 1932, *San Diego Soc. Nat. Hist., Trans.* 9:87; pl. 5, figs. 1, 2.

Cyclocardia umnaka, Coan, 1977:380, fig. 11.

Type locality: Umnak Island, Aleutian Islands.

Range: Umnak and Unalaska Island, Aleutian Islands (Coan, 1977)
not seen.

Cyclocardia ventricosa (Gould, 1850)

Cardita ventricosa Gould, 1850, *Boston Soc. Nat. Hist., Proc.* 3:276. (Johnson, 1964)

Venericardia (Cyclocardia) steamsii Dall, 1903, *Acad. Nat. Sci. Phila., Proc.* 54(4):709.

Venericardia ventricosa, Dall, 1921:32.

Venericardia steamsii, Dall, 1921:31.

Venericardia ventricosa, Oldroyd, 1924:114.

Venericardia steamsii, Oldroyd, 1924:112.

Cyclocardia ventricosa, Abbott, 1974:478, fig. 5495.

Cyclocardia ventricosa ventricosa, Coan, 1977:380, figs. 12, 13.

Type locality: of *Cardita ventricosa*, Puget Sound, Washington.

of *Venericardia steamsii*, Puget Sound, Washington.

Range: Kasitsna Bay, Alaska to Puget Sound, Washington. northern California. (Coan, 1977)

Depth: 20 to 200 m (British Columbia). (Bernard, 1970)

sand or mud. (Coan, 1977)

Localities:

Southern Bering: 59°20'N, 175°50'W, 34 m (1). 56°41'N, 170°2'W, 115 m (1).

Western Gulf: 59°40'N, 152°00'W, 34 m (1). 59°00'N, 152°40'W, 151 m (1).

Eastern Gulf: 59 to 60°N and 142 to 143°W (3). Fish Bay, Port Fidalgo, Prince William Sound (1).

Southeast: Icy Strait, between Porpoise and Pleasant Islands (1).

TABLE 49a
Cyclocardia

	<i>Cyclocardia crebricostata</i>	<i>Cyclocardia ventricosa</i>	<i>Cyclocardia rjabininae</i>
Size - length	35.0	17.7	26.5
height	32.0	12.4	23.4
thickness	15.8	10.8	14.0
Overall shape	sub-circular to elongate-oval	oval	elongate-oval
Umbo	central	slightly anterior	central
Lunule	not defined	not defined	not defined
Number of ribs	23-25	16-20	13-15
Shape of ribs	rounded	rounded	rounded
Periostracum	thick, velvety, olive to dark brown	thick, velvety olive	thick, velvety dark
Hinge	long, narrow	short, broad	short, narrow

TABLE 49b

Cyclocardia

	<i>Cyclocardia incisa</i>	<i>Cyclocardia ummaka</i>	<i>Cyclocardia crassidens</i>
Size - length	9.5	10.3	39.5
height	10	10.7	39.8
thickness	5.3	6.6	22.4
Overall shape		slightly oblique	rounded - quadrate
Umbo	moderately high slightly anterior		near anterior, overhanging
Lunule	almost obsolete		very short, deep
Number of ribs	18-20	40	12-13
Shape of ribs	flat with linear incised sulci and concentric sulci	raised, cordlike	rounded
Periostracum	polished olive green	heavy brown, obscuring ribs	thick, nearly smooth
Hinge	delicate		thick, broad
	from Dall, 1903	from Willett, 1932	

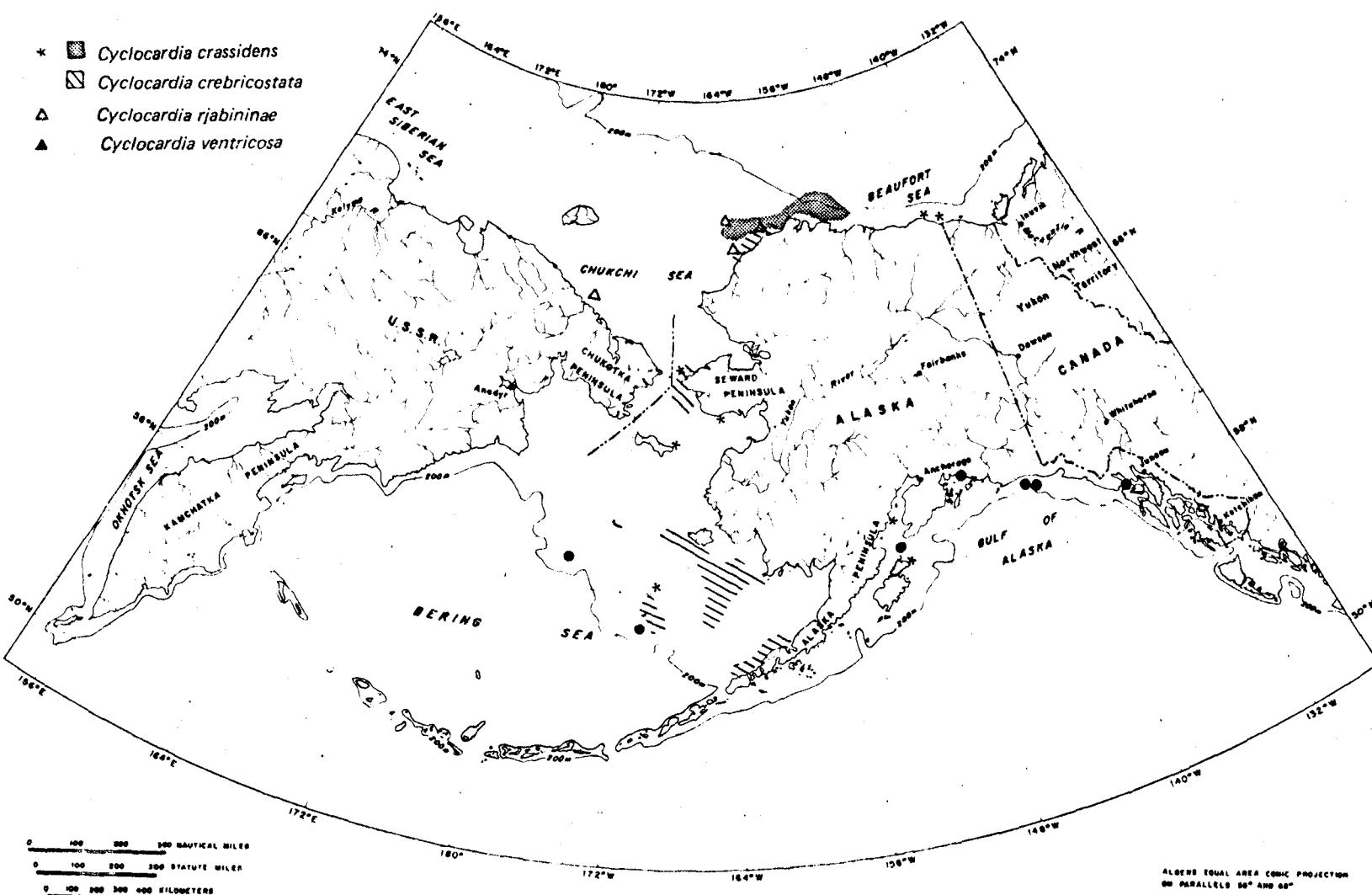


Figure 14. Localities for specimens of *Cyclocardia*.

*Miodontiscus**Miodontiscus prolongatus* (Carpenter, 1864)*Miodon prolongatus* Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 611, 627, 642, 682. (Palmer, 1958)*Miodontiscus* (*Miodontiscus*) *prolongatus*, Dall, 1921:32.*Venericardia* (*Miodontiscus*) *prolongata*, Oldroyd, 1924:115; pl. 2,
figs. 5, 6.*Miodontiscus prolongatus*, Palmer, 1958:83; pl. 8, figs. 1-7.*Miodontiscus prolongatus*, Abbott, 1974:477, fig. 5487.*Miodontiscus prolongatus*, Coan, 1977:383, figs. 17-19.

Type locality: Neah Bay, Washington.

Range: Shuyak Strait, Alaska to off Point Loma, southern California.
(Coan, 1977)

Depth: 5 to 210 m. (Coan, 1977)

subtidal to 50 m (British Columbia). (Bernard, 1970)

sand and rock. (Coan, 1977)

not seen.

Family Vesicomyidae

Calyptogena

Calyptogena pacifica Dall, 1891.

Calyptogena pacifica Dall, 1891, Proc. U.S. Nat. Mus. 14:190.

Calyptogena pacifica, Dall, 1895:713; pl. 25, figs. 4, 5.

Calyptogena pacifica, Dall, 1921:32.

Calyptogena pacifica, Oldroyd, 1925:116.

Type locality: Albatross Sta. 3077, off Dixon Entrance, 322 fms.

Range: Clarence Strait, Alaska to Santa Barbara Channel, California.
(Dall, 1921)

Depth: 500 to 900 m (British Columbia). (Bernard, 1970)

not seen.

Family Lucinidae

Lucinoma

Lucinoma annulata (Reeve, 1850)

Lucina annulata Reeve, 1850, *Conchol. Icon.* 6; pl. 4, fig. 17.
(Grant and Gale, 1931)

Phacoides (Lucinoma) annulatus, Dall, 1901:813; pl. 40, fig. 10.

Phacoides (Lucinoma) annulata, Dall, 1921:35.

Phocoides (Lucinoma) annulatus, Oldroyd, 1924:126; pl. 33, figs.
5a-b.

Lucinoma annulata, Keen, 1971:126, fig. 289.

Lucinoma annulata, Abbott, 1974:461, fig. 5320.

Type locality: California.

Range: Port Althrop, Alaska (Dall, 1921) to Gulf of California. (Keen,
1971)

Depth: 15 to 100 m (British Columbia). (Bernard, 1970)

Localities:

Southeast: Point Bridget, Berners Bay (empty) (1).

Parvilucina

Parvilucina tenuisculpta (Carpenter, 1864)

Lucina tenuisculpta Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 611, 642. (Palmer, 1958)

Phacoides (Parvilucina) tenuisculpta, Dall, 1921:35.

Phacoides (Parvilucina) tenuisculptus, Oldroyd, 1924:128; pl. 15,
fig. 6; pl. 33, figs. 1a-b.

Lucina (Parvilucina) tenuisculpta, Palmer, 1958:86; pl. 8, fig.
8-12.

Parvilucina tenuisculpta, Abbott, 1974:459, fig. 5291.

Type locality: Vancouver Island, British Columbia.

Range: Nunivak Island, Bering Sea to Coronado Islands, Baja California.
(Dall, 1921)

Depth: 15 to 100 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: 61°05'N, 146°34'W, 180 m (empty) (1).

Southeast: Torch Bay (2).

Family Thyasiridae

Axinopsida

Axinopsida orbiculata (G. Sars, 1878)

Axinopsis orbiculata G. Sars, 1878, *Mollusca Regionis Arcticae Norvegiae* p. 63; pl. 19, figs. 11a-d. (MacGinitie, 1959)

Axinopsis orbiculatus, Ockelmann, 1958:111; pl. 2, figs. 7-8.

Axinopsida orbiculata, MacGinitie, 1959:172; pl. 20, fig. 2.

Type locality: Vadso, Norway.

Range: Arctic and east coast of North America to Cape Cod. western Europe to Lofoten Norway. Norway and the Hebrides. Pt. Barrow, Alaska. (MacGinitie, 1959) Bering Strait to Peter the Great Bay. (Petrov, 1966)

Depth: 2-3 to 944 m. (Ockelmann, 1958)

clay mixed with sand. (Ockelmann, 1958)

Localities:

Arctic: Simpson Lagoon (1).

Axinopsida serricata (Carpenter, 1864)

Cryptodon serricata Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 643. (Palmer, 1958)

Axinopsis serricata, Dall, 1901:789, 819; pl. 40, fig. 2.

Axinopsis serricatus, Dall, 1921:34.

Axinopsis serricatus, Oldroyd, 1924:123; pl. 4, fig. 4.

Axinopsida serricata, Palmer, 1958:84; pl. 7, figs. 16-18.

Type locality: Catalina Island, California.

Range: Aleutian Islands to Puget Sound and Catalina Island, California.
(Dall, 1921)

Localities:

Southern Bering: 56 to 60°N and 162 to 166°W (3). southwest of
St. Lawrence Island, 63°29'N, 171°54'W, 29 m (1).

Western Gulf: Kasitsna Bay (1).

Southeast: Bartlett Cove (1).

Axinopsida viridis (Dall, 1901)

Axinopsis viridis Dall, 1901, Proc. U.S. Nat. Mus. 23:791, 819;
pl. 42, fig. 1.

Axinopsis viridis, Dall, 1921:34.

Axinopsis viridis, Oldroyd, 1924:123.

Type locality: Iliuliuk, Unalaska, Aleutian Islands.

Range: Bering Strait to northern Japan and to Catalina Island, California. (Dall, 1901)

Depth: 5 to 167 fms. (Dall, 1901)

mud or sand. (Dall, 1901)

Localities:

Southern Bering: 56 to 58°N and 172 to 173°W, 110 to 117 m (5).

Eastern Gulf: Port Valdez, 59 to 232 m (2).

Axinopsida
orbiculata

Size - height	4.0
width	3.5
thickness	2.4
Prodissoconch	large
Lunule	distinct, impressed, cordate
Posterior dorsal slope	short, steep rounded
Posterior	short, broadly rounded

TABLE 50

Axinopsida

<i>Axinopsida</i> <u>serricata</u>	<i>Axinopsida</i> <u>viridis</u>
4.2	4.0
4.2	4.2
2.5	3.0
small	small
indistinct	indistinct
longer, rounded	longer, straight
broadly rounded	angular

Thyasira (Conchocele)

Thyasira (Conchocele) bisecta (Conrad, 1849)

Venus bisecta Conrad, 1849, U.S. Expl. Rept. 10:724; pl. 17, figs. 10, 10a. (Bernard, 1972)

Thyasira bisecta, Bernard, 1972:368, figs. 3, 4, 9.

Type locality: Astoria, Oregon, Miocene.

Range: East Pacific, 40 to 54° N. (Bernard, 1970, 1972)

Depth: 200 to 400 m (British Columbia). (Bernard, 1970)

not seen.

Thyasira (Conchocele) disjuncta (Gabb, 1866)

Conchele disjuncta Gabb, 1866, *Paleontol. Surv. Calif.* p. 27;
pl. 7, figs. 48a-b. (Bernard, 1972)

Thyasira disjuncta, Bernard, 1972; 372, figs. 1, 2, 11, 13.

Type locality: Deadman Island, California, Pliocene.

Range: 40 to 55°N, Alaska to Oregon. Caribbean Sea. Japan. (Bernard, 1970, 1972)

Depth: 150 to 750 m. (Bernard, 1972)

Localities:

Southeast: off Katlian Bay, Baranof Island (1).

Thyasira (Leptaxinus)

Thyasira (Leptaxinus) ferruginea Winkworth, 1932

Thyasira (Axinulus) ferruginosa, Dall, 1901:787.

Thyasira (Axinulus) ferruginosus, Dall, 1921:34.

Thyasira (Axinulus) ferruginosus, Oldroyd, 1924:122.

Thyasira ferruginea, Winkworth, 1932:251, new name for *Lucina ferruginosa*, Forbes, 1843, not Morris, 1843.

Thyasira (Axinulus) ferruginea, Abbott, 1974:463, fig. 5347.

Type locality: not known.

Range: Aleutian Islands. (Krause in Dall, 1901) Arctic Greenland to North Carolina. (La Rocque, 1953) North Canadian, North Eurasian, Norway, Western Europe, and Mediterranean Basins. Possible for Angola, Cape, Atlantic and Indian - Antarctic Basins. Mid Atlantic. (Clarke, 1962)

Depth: 20 to 1640 fms. (Clarke, 1962)

not seen.

Thyasira (Thyasira)

Thyasira (Thyasira) cygnus Dall, 1916

Thyasira cygnus Dall, 1916, Proc. U.S. Nat. Mus. 52:409.

Thyasira cygnus, Dall, 1921:33.

Thyasira cygnus, Oldroyd, 1924:121; pl. 3, fig. 10.

Thyasira cygnus, Bernard, 1972:270, figs. 7, 8, 10.

Type locality: Cygnet Inlet, Boca de Quadra, Alaska.

Range: Southeast Alaska (Dall, 1921) to Vancouver Island, British Columbia. (Bernard, 1972)

Depth: 290 to 1537 m. (Bernard, 1972)

not seen.

Thyasira (Thyasira) flexuosa (Montagu, 1803)

Tellina flexuosa Montagu, 1803, *Pestacea Britannica* 1:73.
(Bernard, 1972)

Thyasira flexuosa, Bernard, 1972: 382, figs. 5, 6, 12 (includes
T. gouldi in synonymy).

Type locality: south and east coasts of Britain.

Range: "Boreal - Lusitanian, absent from Arctic waters". (Ockelmann,
1958)

Localities:

Southern Bering: 54°53'N, 166°44'W (1).

Eastern Gulf: Sheep Bay, Prince William Sound, 142 m (1).
Port Valdez, 232 m (1).

Thyasira (Thyasira) gouldi (Philippi, 1845)

Lucina gouldii Philippi, 1845, *Zeitschr. Malacozool.* 2:75; pl. 2,
fig. 7. (Bernard, 1972)

Thyasira gouldii, Oldroyd, 1924:120; not pl. 34, fig. 5 (*T. flexu-*
osa?).

Thyasira gouldi, Ockelmann, 1958:100; pl. 2, figs. 4, 5.

Thyasira flexuosa var. *sarsi*, MacGinitie, 1959:171; pl. 4, fig. 12.

Thyasira gouldi, Rowland, 1973:36.

Type locality: Massachusetts Bay.

Range: Arctic, Circumpolar.

West Atlantic: east of North America to North Carolina.

East Atlantic: Greenland. Iceland to the Faroes and western
Norway.

East Pacific: Bering Sea to Queen Charlotte Islands, British
Columbia.

West Pacific: Bering Sea to Korea. (Ockelmann, 1958; Petrov, 1966)

Depth: 2-3 m to 385 m (East Greenland). (Ockelmann, 1958)

22 to 47 m (Okhotsk Sea). (Petrov, 1966)

silty sand. (Petrov, 1966; Rowland, 1973)

Localities:

Chukchi: 71°14'N, 157°22'W, 58 m (1). 69°53'N, 164°58'W, 38 m
(1).

Northern Bering: 63 to 65°N and 159 to 173°W, 33 to 56 m, firm
sand (6).

Southern Bering: 54 to 59°N and 159 to 169°W, 20 to 27 m (8).

TABLE 5la
Thyasira (Conchocele)

	<i>Thyasira</i> <u><i>disjuncta</i></u>	<i>Thyasira</i> <u><i>bisecta</i></u>
Size - length	69.2	72
height	73.3	65
thickness	23.7	45
Umbo	overhanging	overhanging, more prominent
Lunule	broad, flat, cordate, slightly convex	slightly concave
Anterior slope	nearly straight with a weak flexure	
Ventral margin	rounded	same
Flexure in posterior ventral margin	very deep	same
Posterior dorsal sulchi	very deep, broad	same
Keels	angular, overhanging	

from Conrad, 1849
in Bernard, 1972

Thyasira
gouldi

Size - length	7.3
height	7.4
thickness	5.8
Umbo	overhanging
Lunule	short, wide cordate
Anterior slope	slightly concave
Ventral margin	rounded
Flexure in posterior ventral margin	weak
Posterior dorsal sulci	broad, shallow
Keels	low, broad

TABLE 51b

Thyasira (*Thyasira*)

<i>Thyasira</i>	<i>Thyasira</i>
<u>flexousa</u>	<u>cygnus</u>

9.9	14
9.9	13.5
5.8	8.5

overhanging	overhanging
-------------	-------------

long, wide, cordate	large, cordate
---------------------	----------------

concave	concave
---------	---------

rounded, angular	rounded
------------------	---------

deep, angular	
---------------	--

broad, deep	sharply compressed, long narrow escuton
-------------	--

low, angular	sharp
--------------	-------

from Dall, 1916
Bernard, 1972

- *Thyasira flexuosa*
- *Thyasira gouldi*
- * *Odontogena borealis*

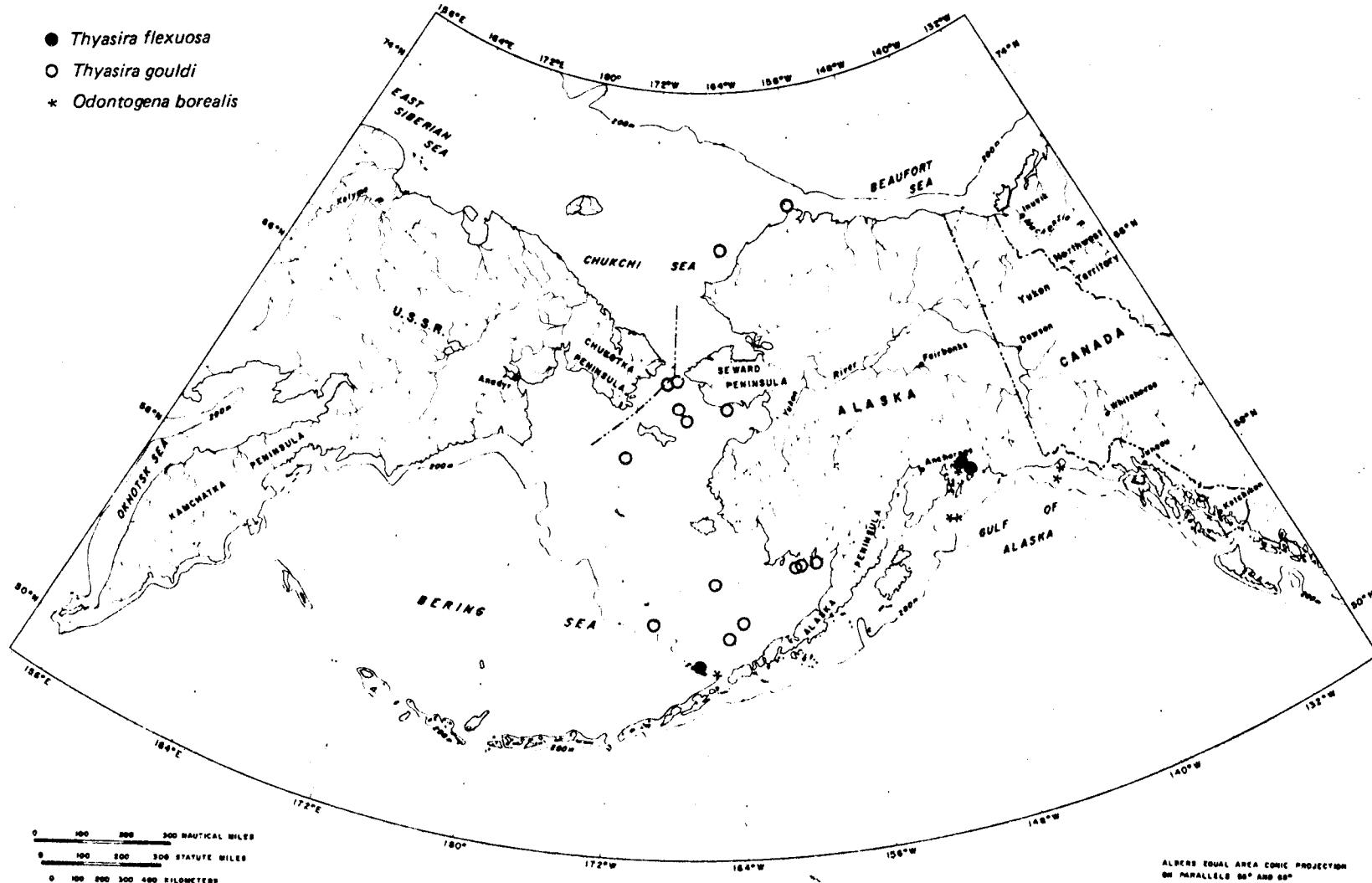


Figure 15. Localities for specimens of *Thyasira*, *Odontogena*.

Family Ungulinidae

Diplodonta

Diplodonta aleutica Dall, 1901

Diplodonta torelli var.? *aleutica* Dall, 1901, Proc. U.S. Nat. Mus. 23:820; pl. 42, fig. 3.

Diplodonta aleutica, Dall, 1921:34.

Diplodonta aleutica, Oldroyd, 1924:124.

Type locality: Kiska Harbor, Aleutian Islands.

Range: Point Barrow. (MacGinitie, 1959) Cape Lisburne to Sitka, Alaska. (Dall, 1921)

Localities:

Northern Bering: Cape Woolley, Seward Peninsula (empty) (1). St. Lawrence Island vicinity, 41 to 44 m (4).

Southern Bering: 57 to 60°N and 160 to 170°W (3).

Diplodonta impolita Berry, 1953

Diplodonta impolita Berry, 1953, *San Diego Soc. Nat. Hist., Proc.* 11(6):409; pl. 28, figs. 3, 4, text fig. 2.

Diplodonta orbella impolita, Abbott, 1974:465, fig. 5367.

Type locality: off Forrester Island, Alaska.

Range: (as *D. orbella*) Izhut Bay, Afognak Island. Prince William Sound. Sitka, Ketchikan, and Forrester Island, Alaska. (Burch, 1944-46)

Localities:

Western Gulf: Kasitsna Bay, intertidal (2).

Eastern Gulf: Perry Island (1). Port Valdez (1).

TABLE 52

*Diplodonta**Diplodonta*
impolita

Size - length	24.2
height	22.5
thickness	16.0
Anterior length	10.7
Umbo	high, slightly overhanging
Dorsal margin	slightly concave
Anterior	rounded-quadratae
Posterior	rounded
External sculpture	wrinkled with heavy lines of growth
Periostracum	dark, adherent, worn

Diplodonta
aleutica

25.0

22.0

6.0

10.5

low, eroded

straight

slightly convex quadrate

rounded quadrate

heavy, but not wrinkled
lines of growth

dark, silky, dehiscent

Family Erycinidae

Lasaea

Lasaea rubra (Montagu, 1804)

Cardium rubrum Montagu, 1804, *Testacea Britannica*, p. 83; pl. 27,
fig. 4. (Grant and Gale, 1931)

Lasaea rubra, Dall, 1921:38.

Lasaea rubra, Oldroyd, 1924:138.

Type locality: British Coast.

Range: East Pacific: 30 to 54°N. (Bernard, 1970)

not seen.

Family Kelliidae

Kellia

Kellia laperousii (Deshayes, 1839)

Chironia laperousii Deshayes, 1839, *Rev. Zool. Soc. Cuvierienne* 2:357. (Grant and Gale, 1931)

Kellia laperousii, Dall, 1921:36.

Kellia laperousei, Oldroyd, 1924:131; pl. 10, fig. 2; pl. 33, fig. 4.

Kellia laperousii, Abbott, 1974:368, fig. 5411.

Type locality: none given.

Range: Bering and Pribilof Islands, Bering Sea to San Diego, California. (Dall, 1921)

Depth: 10 to 50 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: 59°33'N, 152°24'W, 59 m (empty) (1).
MacDonald Spit, Tutka Bay, intertidal (1).

Eastern Gulf: Resurrection Bay, on *Macrocystis* holdfast (1).

Kellia suborbicularis (Montagu, 1803)

Mya suborbicularis Montagu, 1803, *Testacea Britannica* p. 39,
564; pl. 26, fig 6. (Grant and Gale, 1931)

Kellia suborbicularis, Dall, 1921:36.

Kellia suborbicularis, Oldroyd, 1924:131.

Kellia suborbicularis, Keen, 1971:137, fig. 312.

Kellia suborbicularis, Abbott, 1974:469, fig. 5412.

Type locality: Plymouth, England.

Range: Gulf of Alaska, 54°N (Bernard, 1970) to Peru. also Atlantic.
(Keen, 1971).

Depth: intertidal (British Columbia). (Bernard, 1970)

not seen.

*Neaeromya**Neaeromya compressa* (Dall, 1899)*Ericina (Pseudopythina) compressa* Dall, 1899, Proc. U.S. Nat. Mus. 21:888; pl. 87, figs. 1, 8.*Pseudopythina compressa*, Dall, 1921:38.*Pseudopythina compressa*, Oldroyd, 1924:136, not pl. 11, fig. 11 (*P. rugifera*)*Pseudopythina compressa*, MacGinitie, 1959:173; pl. 19, figs. 2, 3, 5.*Neaeromya compressa*, Abbott, 1974:473, fig. 5436.

Type locality: Bering Sea south of Nunivak Island.

Range: Point Barrow, Alaska to Bering Sea to British Columbia.
off the Columbia River, Oregon. southern California. Baja California. (MacGinitie, 1959)

Depth: intertidal to 10 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: 57°42'N, 162°52'W, 46 m (empty) (1).

Western Gulf: Eagle River flats, Cook Inlet (1).

Eastern Gulf: Port Valdez, 200 m (empty) (1). Boswell Bay, intertidal (1).

Southeast: Bartlett Cove (2). Flat Point, Taku Inlet, intertidal (1).

Family Montacutidae

Montacuta

Montacuta sovaliki (MacGinitie, 1959)

Mysella sovaliki MacGinitie, 1959, Proc. U.S. Nat. Mus. 109:173;
pl. 4, fig. 10.

Type locality: off Point Barrow, Alaska.

Range: Point Barrow, Alaska. Greenland. (MacGinitie, 1959)

Localities:

Arctic: $70^{\circ}56'N$, $153^{\circ}13'W$, 5 m (1).

*Mysella**Mysella aleutica* Dall, 1899*Mysella aleutica* Dall, 1899, Proc. U.S. Nat. Mus. 21:892; pl. 87, fig. 6.*Rochefortia aleutica*, Dall, 1921:37.*Rochefortia aleutica*, Oldroyd, 1924:133.

Type locality: Kiska Harbor, Aleutian Islands.

Range: Bering Sea (Dall, 1921) to California (32° N). (Bernard, 1970)

Depth: 15 to 200 m (British Columbia). (Bernard, 1970)

not seen.

Mysella beringensis (Dall, 1916)

Rochefortia beringensis Dall, 1916, Proc. U.S. Nat. Mus. 52:411.

Rochefortia beringensis, Dall, 1921:37.

Rochefortia beringensis, Oldroyd, 1924:133.

Type locality: Bering Island, Bering Sea.

Range: Bering Island, Bering Sea. (Dall, 1921)

not seen.

Mysella planata (Dall in Krause, 1885)

Tellimya planata Dall in Krause, 1885, *Arch. f. Naturg.* 51(1): 34, pl. 3, figs. 6a-d. (Boss, Rosewater, Ruhoff, 1968)

Mysella planata, Dall, 1899:892; pl. 88, fig. 12.

Rochefortia planata, Dall, 1921:37.

Rochefortia planata, Oldroyd, 1924:132.

Montacuta planata, MacGinitie, 1959:174; pl. 20, figs. 1, 3-7, 9-11.

Mysella planata, Abbott, 1974:474; fig. 5456.

Type locality: Nytschigane Point, Bering Sea.

Range: eastern Siberia and Point Barrow to the Shumagin Islands.
Greenland. Spitzbergen. Novaya Zemlya. (MacGinitie, 1959)

Depth: 216 to 714 ft (Point Barrow). (MacGinitie, 1959)

Localities:

Chukchi: $71^{\circ}20'N$, $168^{\circ}55'W$, 50 m (1). $71^{\circ}14'N$, $157^{\circ}22'W$ (1).
 $69^{\circ}59'N$, $163^{\circ}17'W$ (1).

Northern Bering: $63^{\circ}43'N$, $170^{\circ}20'W$ (1).

Southern Bering: $57^{\circ}29'N$, $170^{\circ}08'W$ (1).

tentative identification.

Mysella tumida (Carpenter, 1864)

Tellimya tumida Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 129, 643. (Palmer, 1958)

Mysella tumida, Dall, 1899:892; pl. 87, fig. 7.

Rochefortia tumida, Dall, 1921:37.

Mysella tumida, Oldroyd, 1924:132; pl. 54, figs. 11-14.

Mysella tumida, Palmer, 1958:88; pl. 7, figs. 8-12.

Mysella tumida, Abbott, 1974:473, fig. 5447.

Type locality: Vancouver Island, British Columbia.

Range: Shumagin Islands, Alaska to San Pedro, California. (Dall, 1921)

Depth: 20 to 30 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: 56 to 59°N and 161 to 171°W (6).

Eastern Gulf: Hartney Bay, Orca Inlet, Prince William Sound (1).
LaTouche Point (1).

*Odontogena**Odontogena borealis* (Cowan, 1964)*Aligena (Odontogena) borealis* Cowan, 1964, *Veliger* 7(7):108; pl. 20, figs. 1, 2.*Odontogena borealis*, Harry, 1969:179, figs. 38-40.*Aligena (Odontogena) borealis*, Abbott, 1974:470, fig. 5432.

Type locality: Strait of Georgia, British Columbia.

Range: Strait of Georgia, $49^{\circ}15'N$, $124^{\circ}15'W$. (Cowan, 1964)

Depth: 350 m. (Cowan, 1964)

very soft, fine textured muddy silt. (Cowan, 1964)

Localities:

Southern Bering: near Unimak Pass, $54^{\circ}39'N$, $165^{\circ}25'W$ (1).Eastern Gulf: 59 to $60^{\circ}N$ and 140 to $148^{\circ}W$, 68 to 239 m (4).
Outside Tatitlek Narrows, Prince William Sound (1). Port Valdez,
244 to 248 m (2).

Family Turtoniidae

Turtonia

Turtonia occidentalis Dall, 1871

Turtonia occidentalis Dall, 1871, Amer. J. Conchol. 7(2):150;
pl. 14, figs. 12, 13.

Turtonia occidentalis, Dall, 1921:38.

Turtonia occidentalis, Oldroyd, 1924:139.

Turtonia occidentalis, Abbott, 1974:475, fig. 5466.

Type locality: Plover Bay, eastern Siberia.

Range : Bering Strait to Magdalena Bay, Baja California. (Dall, 1921)

Depth: subtidal to 20 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf : Izembek Lagoon (1).

Eastern Gulf: Zapadni Point (1), Spruce Island (1). Port Valdez (1). LaTouche Point (1).

Southeast: Lagoon Island, Glacier Bay (1). Near Sitka (1).

intertidal.

Family Cardiidae

Clinocardium

Clinocardium californiense (Deshayes, 1839)

Cardium californiense Deshayes, 1839, *Rev. Zool. Soc. Cuvierienne* 2:360. (Grant and Gale, 1931)

Cardium (Cerastoderma) californiense, Dall, 1921:39; pl. 14, fig. 8.

Cardium (Cerastoderma) californiense, Oldroyd, 1924:143; pl. 2, fig. 3.

Clinocardium californiense, Keen in Burch, 1944, no. 41, p. 24.

Type locality: Kamchatka.

Range: Japan and Bering Sea eastward to Sitka, Alaska. (Burch, 1944)

Depth: 2 to 72 m. (Petrov, 1966)

various bottom types - silt to pebbly or rocky. (Petrov, 1966)

Localities:

Northern Bering: Norton Sound south of Nome (1). Cape Wolley, Seward Peninsula (empty) (1).

Western Gulf: MacDonald Spit, Cook Inlet (1).

Clinocardium fucanum (Dall, 1907)

Cardium (Cerastoderma) fucanum Dall, 1907, *Nautilus* 20(10):112.
(Boss, Rose water, Ruhoff, 1968).

Cardium (Cerastoderma) fucanum, Dall, 1921:39.

Cardium (Cerastoderma) fucanum, Oldroyd, 1924:143.

Clinocardium fucanum, Keen in Burch, 1944 no. 41, p. 24.

Type locality: none given, Bering Sea to Monterey, California.

Range: Sitka, Alaska to Monterey, California. (Keen in Burch, 1944).

Clinocardium ciliatum (Fabricius, 1780)

Cardium ciliatum Fabricius, 1780, *Fauna Groenlandica* p. 410.
(MacGinitie, 1959)

Cardium (Cerastoderma) ciliatum, Dall, 1921:39.

Cardium (Cerastoderma) ciliatum, Oldroyd, 1924:142; pl. 19, figs. 8, 8a.

Clinocardium ciliatum, MacGinitie, 1959:176; pl. 26, fig. 5.

Clinocardium ciliatum, Abbott, 1974:487, fig. 5583.

Type locality: Greenland.

Range: Arctic Seas. East Atlantic: to northern Norway.

West Atlantic: East Greenland to Massachusetts.

East Pacific: to Puget Sound.

West Pacific: to Peter the Great Bay and the Pacific side of central Honshu. (Petrov, 1966)

Depth: 2 to 677 m (Greenland). (Ockelmann, 1958)

60 to 100 m (British Columbia). (Bernard, 1970)

30 to 180 m (USSR - Far East Seas). (Petrov, 1966)

silt, silty sand, sand. (Petrov, 1966)

clay or mud (Greenland). (Ockelmann, 1958)

Localities:

Arctic: 70 to 72°N and 153 to 174°W, 43 to 58 m (7).

Bering Sea: Bering Strait (2). Norton Sound (2). 56 to 61°N and 164 to 172°W, 37 to 113 m (21).

Western Gulf: Lower Cook Inlet, 35 m (1).

Eastern Gulf: 59 to 60°N and 140 to 142°W (3). Resurrection Bay (1). Fish Bay, Port Fidalgo, Prince William Sound (1). Port Valdez (2).

Clinocardium nuttallii (Conrad, 1839)

Cardium nuttallii Conrad, 1839, *J. Acad. Nat. Sci. Phila.* 6:229; pl. 17, fig. 3. (Keen, 1936)

Cardium (Cerastoderma) corbis "Martyn, 1784", Dall, 1921:39.

Cardium (Cerastoderma) corbis "Martyn, 1784", Oldroyd, 1924:142; pl. 34, figs. 1a, b.

Clinocardium nuttallii, Keen, 1936:120.

Clinocardium nuttallii, Abbott, 1974:487, fig. 5584.

Type locality: a few miles from the estuary of the Columbia River.

Range: Nunivak, Pribilof and Commander Islands, Bering Sea. south to Hakodate, Japan and San Diego, California. (Dall, 1921)

Depth: intertidal to 10 m. (Bernard, 1970)

Localities:

Southern Bering: Namvak Bay (1). Izembek Lagoon (3).

Western Gulf: Sadie Cove, Kachemak Bay (1).

Eastern Gulf: Tonsina Point, Resurrection Bay (1).

Southeast: Berners Bay (1).

TABLE 53
Clinocardium

	<i>Clinocardium ciliatum</i>	<i>Clinocardium nuttalli</i>	<i>Clinocardium californiense</i>	<i>Clinocardium fucanum</i>
Size - length	37.4	74.9	54.9	33
height	35.7	73.5	46.0	33
thickness	22.0	54.8	27.0	18
Relative thickness	thin	thick, heavy	thin	solid
Number of ribs	around 36	around 35	around 45	40-58 (average 50)
Outline of ribs	triangular topped with row of hairs from periostracum	flat topped often eroded, topped with crescent-shaped lines of growth	round-flattish	low, flat squarish
Posterior slope	not furrowed	not furrowed	with a furrow	not furrowed

from Dall, 1907
in Oldroyd, 1924
Burch, 1944

*Nemocardium**Nemocardium centifilosum* (Carpenter, 1864)

Cardium centifilosum Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 611, 642. (Palmer, 1958)

Protocardia centifilosa richardsonii Whiteaves, 1878, *Can. Nat.*
2(8):469. (Dall, 1921)

Protocardia centifilosa and var. *richardsonii*, Dall, 1921:40;
pl. 2, fig. 3.

Protocardia centifilosa and var. *richardsonii*, Oldroyd, 1924:146;
pl. 2, fig. 7; pl. 34, figs. 2a, d.

Nemocardium (Keenaea) centifilosum, Palmer, 1958:91; pl. 10,
figs. 7-11.

Nemocardium (Keenaea) centifilosum, Abbott, 1974:485, fig. 5567.

Type locality: Monterey, California.

Range: Izhut Bay, Afognak Island, Alaska (Burch, 1944) to Baja California
(30°N). (Bernard, 1970)

Depth: 30 to 60 m (British Columbia). (Bernard, 1970)

*Serripes**Serripes groenlandicus* (Bruguière, 1789)

Cardium gronlandicum Bruguière, 1789, *Histoire naturelle des vers* vol. 1, p. 222. (MacGinitie, 1959)

Serripes gronlandicus, Dall, 1921:40.

Serripes groenlandicus, Oldroyd, 1924:145; pl. 8, fig. 3.

Serripes groenlandicus, MacGinitie, 1959:176; pl. 26, fig. 5.

Serripes groenlandicus, Abbott, 1974:487, fig. 5582.

Type locality: coast of Greenland.

Range: all Arctic seas. East Atlantic: to Northern Norway.

West Atlantic: to Massachusetts Bay.

East Pacific: to Puget Sound.

West Pacific: to Peter the Great Bay and Hokkaido. (Petrov, 1966)

Depth: 1 m (Iceland) to 303 m (Greenland). (Ockelmann, 1958)

subtidal to 50 m (British Columbia). (Bernard, 1970)

50 to 420 ft (Point Barrow). (MacGinitie, 1959)

20 to 130 m (West Pacific - Soviet Arctic). (Petrov, 1966)

gravel, sand, mud, sand or sandy clay preferred. (Ockelmann, 1958)
silt or silty sand. (Petrov, 1966)

Localities:

Arctic: Point Barrow (1). Prudhoe Bay (1). 70 to 72°N and 153 to 163°W (2).

Northern Bering: Norton Sound (2).

Southern Bering: 55 to 60°N and 160 to 170°W, 35 to 113 m (20).

Western Gulf: Sadie Cove, Kachemak Bay (1).

Eastern Gulf: Resurrection Bay (1). Fish Bay, Port Fidalgo, Prince William Sound (1). Port Gravina (1). 49°44'N, 146°24'W (1). 59°57'N, 146°59'W (1).

Serripes laperousii Deshayes, 1839

Cardium laperousii Deshayes, 1839, *Rev. Zool. Soc. Cuvierienne* 2:360. (Grant and Gale, 1931)

Serripes laperousii, Dall, 1921:40.

Serripes laperousii, Oldroyd, 1924:145.

Serripes laperousi, Rowland, 1973:44.

Type locality: "Mers de California."

Range: Bering Strait to Hakodate, Japan and Sitka, Alaska. (Dall, 1921)
cobble and gravel. (Rowland, 1973)

Localities:

Northern Bering: $63^{\circ}52'N$, $171^{\circ}45'W$, 25 m (1).

Southern Bering: $55^{\circ}30'N$, $162^{\circ}44'W$, 31 m (empty) (1).

Western Gulf: Unalaska (empty) (1).

Eastern Gulf: Tonsina Point, Resurrection Bay (empty) (1).

TABLE 54

Serripes

	<i>Serripes</i> <u>groenlandicus</u>	<i>Serripes</i> <u>laperousii</u>
Size - length	60.4	58.6
height	55.9	43.6
thickness	39.6	28.0
Overall shape	oval, subcircular	elongate oval
Beak	high, prominent overhanging	low, slightly prosogyrate
Hinge teeth	prominent	inconspicuous

Family Veneridae

Compsomyax

Compsomyax subdiaphana (Carpenter, 1864)

? *Clementia subdiaphana* Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.* p. 602, 607, 640. (Palmer, 1958)

Marcia subdiaphana, Dall, 1921:42.

Marcia subdiaphana, Oldroyd, 1924:155; pl. 38, fig. 1; pl. 33, fig. 3.

Compsomyax subdiaphana, Palmer, 1958:93; pl. 10, figs. 1-6.

Compsomyax subdiaphana, Keen, 1971:182, fig. 437.

Compsomyax subdiaphana, Abbott, 1974:534, fig. 5970.

Type locality: San Diego, California.

Range: Sanak Island, Aleutians to Santa Barbara Islands, California.
(Dall, 1921) northern head, Gulf of California. (Keen, 1971)

Localities:

Eastern Gulf: Izhut Bay, Afognak Island (1). $59^{\circ}51'N$, $142^{\circ}03'W$
(1).

Humilaria

Humilaria kennerleyi (Carpenter in Reeve, 1868)

Venus kennerleyi Carpenter in Reeve, 1868, *Conch. Icon.* 14; pl. 12, fig. 41. (Palmer, 1958)

Marcia kennerleyi, Dall, 1921:42.

Marcia kennerleyi, Oldroyd, 1924:155; pl. 8, fig. 4.

Humilaria kennerleyi, Palmer, 1958:95; pl. 9, figs. 14, 15.

Humilaria kennerleyi, Abbott, 1974:527, fig. 5899.

Type locality: Vancouver Island, British Columbia.

Range: Kodiak Island, Alaska to Carmel Bay, California. (Dall, 1921)

Depth: intertidal to 50 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: Lower Cook Inlet, $59^{\circ}46'N$, $152^{\circ}46'W$, 58 m (1).
MacDonald Spit, Kasitsna Bay, intertidal (1).

Eastern Gulf: Montague Island (1). $59^{\circ}55'W$, $146^{\circ}37'W$, 64 m (1).

*Liocyma**Liocyma fluctuosa* (Gould, 1841)*Venus (Tapes) fluctuosa* Gould, 1841, *Invert. Mass.* p. 87, fig. 50.
(Johnson, 1964)*Liocyma beckii* Dall, 1870, *Boston Soc. Nat. Hist., Proc.* 13:259.
(Boss, Rosewater, Ruhoff, 1968)*Liocyma scammoni* Dall, 1871, *Amer. J. Conchol.* 7(2):145; pl. 14, fig. 8.*Liocyma viridis* Dall, 1871, *Amer. J. Conchol.* 7(2):145; pl. 14, fig. 8.*Liocyma beckii*, Dall, 1921:43.*Liocyma scammoni*, Dall, 1921:43.*Liocyma viridis*, Dall, 1921:43.*Liocyma schefferi* Bartsch and Rehder, 1939, *Nautilus* 52(4):111;
pl. 8, figs. 1, 1b.*Liocyma beckii*, Oldroyd, 1924:158.*Liocyma scammoni*, Oldroyd, 1924:159; pl. 6, fig. 7.*Liocyma viridis*, Oldroyd, 1924:159; pl. 1, fig. 3.*Gophina (Liocyma) fluctuosa*, Ockelmann, 1958:123; pl. 2, fig. 9.*Liocyma fluctuosa*, MacGinitie, 1959:177; pl. 23, fig. 1-8.Type locality: of *Venus fluctuosa*, Grand Banks off Nova Scotia.of *Liocyma beckii*, Plover Bay, eastern Siberia.of *Liocyma scammoni*, Fort Simpson, British Columbia.of *Liocyma schefferi*, Chuginadak Island, Aleutian Islands.of *Liocyma viridis*, Arctic Ocean.

Range: Arctic Seas, except White Sea.

East Atlantic: east Greenland and east Iceland. (Ockelmann, 1958)

West Atlantic: Greenland to Maine.

Liocyma fluctuosa (Continued)

Range (Continued):

East Pacific: Bering Sea. Izhut Bay, Afognak Island. Prince William Sound. Hinchinbrook Island (Burch, 1945)

West Pacific: Peter the Great Bay and Hokkaido. (Petrov, 1966)

Depth: 0 to 418 m (Okhotsk Sea). (Petrov, 1966)

5 to 30 m (east Greenland). (Ockelmann, 1958)

sand. (Petrov, 1966; Ockelmann, 1958)

Localities:

Arctic: Colville River Delta (1). Simpson Lagoon, 2.4 m (1).
71°16.5'N, 151°33'W, 50 m (1).

Chukchi: 67 to 70°N and 163 to 171°W, 35 to 56 m (4).

Bering Sea: 57 to 65°N and 165 to 171°W, 28 to 56 m, fine sand (8).

Western Gulf: Tuxedni Bay (1).

*Psephidia**Psephidia lordi* (Baird, 1863)*Chione lordi* Baird, 1863, Zool Soc. London, Proc. p. 69. (Grant and Gale, 1931)*Psephidia lordi*, Dall, 1921:44.*Psephidia lordi*, Oldroyd, 1924:161.*Psephidia lordi*, Abbott, 1974:527, fig. 5901.

Type locality: Esquimault Harbor, Vancouver Island, British Columbia.

Range: Unalaska, Aleutian Islands (Dall, 1921) to California (33° N).
(Bernard, 1970)

Depth: intertidal to 100 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: Port Valdez, 18 and 60 m (2).

Southeast: Bartlett Cove (1).

*Protothaca**Protothaca staminea* (Conrad, 1837)

Venus staminea Conrad, 1837, *J. Acad. Nat. Sci. Phila.* 7:250;
pl. 19, fig. 15. (Keen, 1966a)

Paphia (Protothaca) staminea and subspecies, Dall, 1921:43.

Paphia (Protothaca) staminea and subspecies, Oldroyd, 1924:156;
pl. 35, figs. 1a, b; pl. 33, fig. 6.

Protothaca staminea, Abbott, 1974:526, fig. 5891.

Type locality: Santa Barbara, California.

Range: Aleutian Islands to Cabo San Lucas, Baja California. (Dall, 1921)

Depth: intertidal (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: Casco Cove, Attu Island (1). Unalaska Island (1).

Western Gulf: Izembek Lagoon (1). Ugaiushak Island (1). MacDonald Spit (1). Sadie Cove (1).

Eastern Gulf: Tonsina Point (1). Montague Island (1). Simpson Bay (1).

Southeast: Bartlett Cove (1). Berners Bay (1). Yamani Cove (1).

intertidal.

*Saxidomus**Saxidomus giganteus* (Deshayes, 1839)

Venerupis gigantea Deshayes, 1839, *Rev. Zool. Soc. Cuvierienne*
2:359. (Grant and Gale, 1931)

Saxidomus giganteus, Dall, 1921:42.

Saxidomus giganteus, Oldroyd, 1924:153.

Saxidomus giganteus, Abbott, 1974:533, fig. 5958.

Type locality: not known.

Range: Attu Island, Aleutians to Monterey, California. (Dall, 1921)

Depth: intertidal to 20 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: MacDonald Spit (1).

Western Gulf: Resurrection Bay (1). Port Etches (1).

Southeast: Bartlett Cove (1). Berners Bay (1). Yamani Cove (1).

intertidal.

*Transennella**Transennella tantilla* Gould, 1853

Venus tantilla Gould, 1853, *Boston J. Nat. Hist.* 6:406; pl. 15,
fig. 10. (Johnson, 1964)

Transennella tantilla, Dall, 1921:41.

Transennella tantilla, Oldroyd, 1924:150.

Transenella tantilla, Abbott, 1974:529, fig. 5921.

Type locality: Santa Barbara, California.

Range: Sitka, Alaska to Baja California. (Dall, 1921)

Depth: subtidal to 30 m (British Columbia). (Bernard, 1970)

not seen.

Family Petricolidae

Petricola

Petricola carditoides (Conrad, 1837)

Saxicava carditoides Conrad, 1837, *J. Acad. Nat. Sci. Phila.* 7:255;
pl. 20, fig. 8. (Keen, 1966a)

Petricola carditoides, Dall, 1921:44.

Petricola carditoides, Oldroyd, 1924:163; pl. 34, figs. 6a, b.

Rupellaria carditoides, Abbott, 1974:535, fig. 5978.

Type locality: near Santa Barbara, California.

Range: Vancouver Island to Magdalena Bay, Baja California. (Dall, 1921)

Depth: intertidal to 10 m. (Bernard, 1970)

Localities:

Southeast: White Cliff Island (1).

Family Mactridae

Spisula

Spisula polynyma (Stimpson, 1860)

Mactra polynyma Stimpson, 1860, *Smithsonian Misc. Coll.* 2, p. 3,
new name for *Mactra ovalis* Gould, 1840. (Grant and Gale, 1931)

Spisula voyi Gabb, 1866, *Calif. Geol. Surv., Paleontology*
2(1)(1):24; pl. 5, fig. 41. (Grant and Gale, 1931)

Spisula (Hemimactra) polynyma var. *alaskana* Dall, 1921:51.

Spisula alaskana, Oldroyd, 1924:193; pl. 15, fig. 12.

Spisula voyi, Oldroyd, 1924:193; pl. 23, figs. 1, 2.

Spisula polynyma, Chamberlain and Stearns, 1963:1.

Spisula polynyma, Abbott, 1974:490, fig. 5597.

Type locality: of *Mactra polynyma*, none given.

of *Spisula voyi*, California, Miocene or Pliocene.

Range: Pacific: Commander Islands. Skakhalin Island. Point Barrow,
Alaska to Icy Cape. eastern Bering Sea. Alaska Peninsula to Neah
Bay, Washington.

Atlantic: Strait of Belle Isle. Grand Banks. Gulf of St. Lawrence.
off Nova Scotia. Gulf of Maine to the mid-Atlantic Shelf, off Long
Island. (Chamberlain and Stearns, 1963)

Depth: 20 to 100 m (British Columbia). (Bernard, 1970)

sand, gravel and sand-gravel mixture. (Chamberlain and Stearns, 1963)

Localities:

Northern Bering: Cape Woolley, Seward Peninsula (empty) (1).

Southern Bering: 54-59°N, 160 to 165°W (16). Izembek Lagoon (1).

Western Gulf: MacDonald Spit, intertidal (1).

Eastern Gulf: Montague Island (1).

Southeast: Bartlett Cove (1).

*Tresus**Tresus capax* (Gould, 1850)*Lutraria capax* Gould, 1850, *Boston Soc. Nat. Hist., Proc.* 3:217.
(Johnson, 1964)*Schizothaerus nuttallii capax*, Dall, 1921:52.*Schizothaerus nuttallii capax*, Oldroyd, 1924:196.*Tresus capax*, Abbott, 1974:491, fig. 5609.

Type locality: Puget Sound, Washington.

Range: Kodiak Island, Alaska (Dall, 1921) to California (35° N). (Bernard, 1970)

Depth: intertidal. (Bernard, 1970)

Localities:

Western Gulf: MacDonald Spit. Kasitsna Bay, intertidal (1).

Family Tellinidae

*Macoma**Macoma balthica* (Linnaeus, 1758)*Tellina balthica* Linnaeus, 1758, *Systema Naturae* Ed. 10, p. 677.
(Coan, 1971)*Tellina inconspicua* Broderip and Sowerby, 1829, *Zool. J.*
4(15):363. (Coan, 1971)*Macoma balthica*, Dall, 1921:47.*Macoma balthica*, Oldroyd, 1924:172; pl. 44, figs. 1, 2, 9.*Macoma inconspicua*, Dunnill and Ellis, 1969:20, figs. 6-3 a-d.*Macoma balthica*, Coan, 1971:44; pl. 11, fig. 65; pl. 12, figs. 66-69, text fig. 30.Type locality: of *Tellina balthica*, Baltic Sea.of *Tellina inconspicua*, Icy Cape, Alaska.

Range: Arctic: southern Barents Sea. Kara, White, and Laptev Seas.

East Atlantic: Arctic to the Mediterranean.

West Atlantic: Greenland to Georgia.

East Pacific: Arctic Coast of Alaska to San Diego, California.

West Pacific: Bering Strait to Peter the Great Bay and Hokkaido.
(Petrov, 1966)Depth: upper intertidal in bays to 37 m offshore. (Coan, 1971)
brackish water, silt. (Coan, 1971)

Localities:

Northern Bering: Golovin Bay (1). Cape Romanzof (1). Hooper Bay (1).

Southern Bering: Naskonat Peninsula (1). Kipnuk sand bar (1).
Izembek Lagoon (1).

Western Gulf: Cold Bay (1). Ugaiushak Island (1).

Eastern Gulf: Port Valdez (1). Tonsina Point, Resurrection Bay (1).

Southeast: Halibut Point (1). near Portage Glacier (1).
Ketchikan (1). intertidal.

Macoma brota Dall, 1916

Macoma brota Dall, 1916, *Proc. U.S. Nat. Mus.* 52:413.

Macoma brota, Dall, 1921:46.

Macoma brota, Oldroyd, 1924:170; pl. 9, fig. 2.

Macoma brota, Dunnill and Ellis, 1969:8, figs. 3-2 a-d, 9a.

Macoma (Macoma) brota, Coan, 1971:23; pl. 5, figs. 27, 28, text fig. 11.

Macoma brota, Abbott, 1974:506, fig. 5719.

Type locality: Bering Strait.

Range: Bathurst Inlet, Mackenzie, Arctic Canada. Bering Sea. Aleutian Islands to Puget Sound. (Coan, 1971) Asian coast to Sea of Japan. (Petrov, 1966)

Depth: 14-260 m, most common over 35 m. (Coan, 1971)

silt to sand. (Coan, 1971)

silt. (Petrov, 1966)

Localities:

Arctic: Point Barrow (1)

Chuckchi: $69^{\circ}59'N$, $163^{\circ}17'W$, 30 m (1).

Northern Bering: Norton Sound south of Nome (1). Nunivak Island (1).

Southern Bering: 56 to $59^{\circ}N$ and 163 to $168^{\circ}W$ (1). Izembek Lagoon (1). Kuskokwim Bay (1).

Western Gulf: Kasitsna Bay (1).

Eastern Gulf: Anderson Bay (1). Port Etches (1). Port Valdez (1).

Southeast: Auke Bay (1).

Macoma calcarea (Gmelin, 1791)

Tellina calcarea Gmelin, 1791, *Systema Naturae*, Ed. 13 1(6):3236.
(Coan, 1971)

Macoma sitkana Dall, 1900, *Proc. U.S. Nat. Mus.* 23:323; pl. 4,
figs. 6, 7.

Macoma calcarea, Dall, 1921:47.

Macoma sitkana, Dall, 1921:46.

Macoma calcarea, Oldroyd, 1924:173, not pl. 42, fig. 5 (*M. brota*).

Macoma sitkana, Oldroyd, 1924:171.

Macoma calcarea, Ockelmann, 1958:125; pl. 2, fig. 10.

Macoma calcarea, MacGinitie, 1959:181; pl. 24, figs. 5-7; pl. 26,
figs. 6-9.

Macoma calcarea, Dunnill and Ellis, 1969:10; figs. 4-1 a-d.

Macoma (Macoma) calcarea, Coan, 1971:20; pl. 3, fig. 20; pl. 4,
figs. 21-24; pl. 5, fig. 25, text fig. 9.

Macoma calcarea, Abbott, 1974:505; fig. 5711.

Type locality: of *Tellina calcarea*, Iceland and Faeroe Islands.

of *Macoma sitkana*, Sitka Harbor, Alaska.

Range: all Arctic seas.

East Atlantic: to Iceland, England and the Baltic Sea.

West Atlantic: to Long Island Sound. (Petrov, 1966)

East Pacific: Arctic Coast to Vancouver Island, British Columbia.
(Coan, 1971)

West Pacific: to Peter the Great Bay and Hokkaido. (Petrov, 1966)

Depth: 2-3 to 591 m. (Petrov, 1966)

most common over 50 m. (Coan, 1971)

mixed sand and silt. (Coan, 1971; Rowland, 1973; Petrov, 1966)

clay or mud with sand, gravel or stones. (Ockelmann, 1958)

Macoma calcarea (Continued)

Localities:

Arctic: Point Barrow (1).

Chukchi: 68 to 72°N, 154 to 178°W, sand and silt (8).

Northern Bering: north of St. Lawrence Island, 45 m (3). 61 to 64°N and 168 to 175°W, 31 to 86 m (9).

Southern Bering: 58°22'N, 171°27'W, 92 m (1). 57°59'N, 158°56'W, 38 m (1).

Western Gulf: Anderson Bay (1). Port Etches (1). Port Valdez (1).

Southeast: Auke Bay (1).

Macoma carlottensis Whiteaves, 1880

Macoma carlottensis Whiteaves, 1880, *Rept. Geol. Surv. Can.*
Appendix C p. 196B, 197B, text fig. 1. (Coan, 1971)

Macoma inflatula Dall, 1897, *Nat. Hist. Soc. Brit. Colum., Bull.*
2(1):11; pl. 1, figs. 19, 20.

Macoma quadrana Dall, 1916, *Proc. U.S. Nat. Mus.* 52:414.

Macoma carlottensis, Dall, 1921:47.

Macoma inflatula, Dall, 1921:47.

Macoma quadrana, Dall, 1921:47.

Macoma carlottensis, Oldroyd, 1924:175.

Macoma inflatula, Oldroyd, 1924:174; pl. 1, figs. 2, 4; pl. 13,
fig. 15.

Macoma quadrana, Oldroyd, 1924:175; pl. 3, fig. 6.

Macoma carlottensis, Dunnill and Ellis, 1969:13; figs. 6-1 a-b, 9-k.

Macoma (?Psammacoma) carlottensis, Coan, 1971:35; pl. 9, figs. 49-
51, text fig. 23.

Macoma (?Psammacoma) carlottensis, Keen, 1971:227, fig. 561.

Macoma carlottensis, Abbott, 1974:506, fig. 5718.

Type locality: of *Macoma carlottensis*, Virago Sound, Graham Island,
British Columbia.

of *Macoma inflatula*, Captain's Bay, Unalaska, Alaska.

of *Macoma quadrana*, off Point Conception, California.

Range: Adak Island, Aleutians. coast of Alaska to Islas los Coronados,
Baja California and Islas los Animas, Gulf of California. (Coan,
1971)

Depth: 5 to 1547 m. (Coan, 1971)

30 to 200 m (British Columbia). (Bernard, 1970)

Macoma carlottensis (Continued)

Depth (Continued):

1490 to 1550 m (Gulf of California). (Keen, 1971)

silt to fine sand. (Coan, 1971)

Localities:

Eastern Gulf: Izhut Bay, Afognak Island (1).

Southeast: Icy Strait (1).

Macoma crassula Deshayes, 1855

Macoma crassula Deshayes, 1855, Zool. Soc. London, Proc. p. 354.
(Coan, 1971)

Tella (Macoma) torelli Jensen, 1905, Kjobenh. Videnskak. Meddel.
57(6)(7):34-38; pl. 1, figs. 3a-i. (Coan, 1971)

Macoma torelli, Ockelmann, 1958:134; pl. 2, fig. 12.

Macoma (Macoma) crassula, Coan, 1971:30; pl. 7, figs. 39, 40; pl. 8,
fig. 41, text fig. 18.

Type locality: of *Macoma crassula*, "Northern Ocean."

of *Macoma torelli*, west Greenland.

Range: Jones Sound, west Greenland. east Greenland. Spitzbergen.
Kara Sea. (Ockelmann, 1959) Point Barrow and north end of Nunivak
Island. (Coan, 1971) northern Bering Sea. (Rowland, 1973)

Depth: 16 to 161 m. (Coan, 1971)

gravel. (Coan, 1971)

sand-silt. (Rowland, 1973)

Localities:

Northern Bering: north and east of St. Lawrence Island (2). south
of St. Matthew Island, 39 to 41 m (1).

Macoma dexioptera Baxter, 1977

Macoma dexioptera Baxter, 1977, *Veliger* 19(3):273, figs. 1, 2, 7, 8, 10, 12.

Type locality: MacLeod Harbor, Montague Island, Prince William Sound, Alaska.

Range: MacLeod Harbor and off Icy Cape, $57^{\circ}57'N$, $141^{\circ}50'W$, from flounder stomach.

low intertidal and subtidal probable habitat.

clean sand, semi-protected beaches probable habitat. (Baxter, 1977)

Localities:

Western Gulf: MacLeod Harbor (paratype) (1). off Icy Cape (1).

Macoma elimata Dunnill and Coan, 1969

Macoma elimata Dunnill and Coan, 1969, *Nat. Mus. Can. Nat. Hist. Paper* 43:1, figs. 2 a-e, 3.

Macoma elimata, Dunnill and Ellis, 1969:15, figs. 4-2 a-d, 9f.

Macoma (Macoma) elimata, Coan, 1971:22; pl. 5, fig. 26, text fig. 10.

Type locality: north end Moresby Island, Satellite Channel, Vancouver Island, British Columbia.

Range: Craig and Ketchikan, Alaska to Redondo Beach, California. (Coan, 1971)

Depth: 9 to 435 m. (Coan, 1971)

silty sand to sand. (Coan, 1971)

Localities:

Eastern Gulf: Prince William Sound, 52 to 66 m (4).

Macoma expansa Carpenter, 1864

Macoma ? var. *expansa* Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.* p. 602, 639. (Palmer, 1958)

Macoma liotricha Dall, 1897, *Nat. Hist. Soc. Brit. Colum., Bull.* 2(1):12; pl. 1, fig. 21.

Macoma expansa, Dall, 1921:48.

Macoma liotricha, Dall, 1921:47.

Macoma expansa, Oldroyd, 1924:176.

Macoma liotricha, Oldroyd, 1924:176; pl. 22, fig. 8.

Macoma expansa, Palmer, 1958:108; pl. 13, figs. 1-3.

Macoma expansa, Dunnill and Ellis, 1969:16, figs. 5-1 a-d, 9g.

Macoma (Rexithaerus) expansa, Coan, 1971:40; pl. 10, figs. 58, 59, text fig. 27.

Type locality: of *Macoma expansa*, Puget Sound, Washington.
of *Macoma liotricha*, Korovin Bay, Atka Island, Aleutians.

Range: Attu Island, Aleutians to Oceano, California. (Coan, 1971)

Depth: intertidal in protected areas just below surf zone to 27 m along exposed coasts. (Coan, 1971)

sand. (Coan, 1971)

Localities:

Western Gulf: MacDonald Spit, Kasitsna Bay (1).

Eastern Gulf: Nuka Island, off Kenai Peninsula (1).

Macoma inquinata (Deshayes, 1855)

Tellina inquinata Deshayes, 1855, Zool. Soc. London, Proc., p. 357. (Coan, 1971)

Macoma inquinata arnheimi Dall, 1916, Proc. U.S. Nat. Mus. 52:414.

Macoma inquinata and ssp. *arnheimi*, Dall, 1921:47.

Macoma inquinata and ssp. *arnheimi*, Oldroyd, 1924:172; pl. 45, figs. 2a-b, 3a-b, not pl. 42, fig. 9 (*Macoma obliqua*).

Macoma inquinata, Dunnill and Ellis, 1969:23, figs. 7, 9d.

Macoma inquinata, Coan, 1971:42; pl. 11, figs. 63, 64, text fig. 29.

Macoma inquinata, Abbott, 1974:507, fig. 5722.

Type locality: near mouth of Columbia River.

Range: Siberia. Atka Island, Aleutians. Alaskan coast to San Pedro, California. (Coan, 1971)

Depth: intertidal in bays to 48 m offshore. (Coan, 1971)

silt. (Coan, 1971)

Localities:

Southern Bering: Unalaska Island (1).

Western Gulf: Izembek Lagoon (1). Kasitsna Bay (1). Sadie Cove (1).

Eastern Gulf: Port Dick (1). Nuka Island (1). Montague Island (1). Orca Inlet (1). Port Valdez (1).

Southeast: Berners Bay (1).

Macoma lama Bartsch, 1929

Macoma lama Bartsch, 1929, *Inst. Hydrol. Expl. Mers URSS* 10:133;
pl. 2, figs. 8-14. (Ruhoff, 1973)

Macoma (Macoma) lama, Coan, 1971:32; pl. 8, figs. 44, 45, text fig.
20.

Macoma lama, Abbott, 1974:506, fig. 5720.

Type locality: near Vladivostok.

Range: East Pacific: Dease Inlet, Arctic Alaska. coast of Alaska
to northern end of Queen Charlotte Island, British Columbia.

West Pacific: Kamchatka to Vladivostok. (Coan, 1971)

Depth: intertidal to 183 m. (Coan, 1971)

exposed coasts, sand. (Coan, 1971)

Localities:

Chukchi: Kotzebue (empty) (1). $70^{\circ}18'N$, $164^{\circ}41'W$, 43 m (1).

Northern Bering: Cape Woolley (1). Nome (1). Moses Point (1).
Wales (1). between Cape Romanzof and St. Lawrence Island (1).
Nunivak Island (1). Kipnuk Sandbar (1). Kuskokwim Bay (1).
Izembek Lagoon (1).

Western Gulf: MacDonald Spit (1).

Macoma lipara Dall, 1916

Macoma brota var. *lipara* Dall, 1916, Proc. U.S. Nat. Mus. 52:414.

Macoma brota lipara, Dall, 1921:46.

Macoma brota lipara, Oldroyd, 1924:171; pl. 42, fig. 6.

Macoma lipara, Dunnill and Ellis, 1969:24; fig. 3-1 a-d.

Macoma (Macoma) lipara, Coan, 1971:24; pl. 6, fig. 29, text fig. 12.

Type locality: off Fort Rupert, Queen Charlotte Strait, British Columbia.

Range: southeast Bering Sea. Port Etches, Alaska to Eureka, California.
(Coan, 1971)

Depth: 26 to 259 m, especially over 40 m. (Coan, 1971)

silt to firm sand. (Coan, 1971)

Localities:

Eastern Gulf: Port Wells, Prince William Sound (1).

Southeast: Katlian Bay, Baranof Island (1).

Macoma loveni (Jensen, 1905)

Tellina (Macoma) loveni Jensen, 1905, *Kjobenh. Videnskab. Meddel.* 57(7):45-52; pl. 1, figs. 5a, b. (Coan, 1971)

Macoma loveni, Ockelmann, 1958:132; pl. 2, fig. 11.

Macoma (Macoma) loveni, Coan, 1971:31; pl. 8, figs. 42, 43, text fig. 19.

Type locality: Asaby, northern Denmark, Pleistocene.

Range: Arctic: east and west Greenland. Sptizbergen. the Kara Sea. Jones Sound. Baffinland. (Ockelmann, 1958)

West Atlantic: Gulf of St. Lawrence. off Northeast America. (Ockelmann, 1958)

Pacific: near Point Barrow, Alaska. Possiet Bay, Siberia. northern Japan. (Coan, 1971)

Depth: 4 to 816 m. (Coan, 1971)

clay, mud, gravel, stones. (Ockelmann, 1958)

Localities:

Chukchi: 71°19'N, 160°01'W, 65 m (1).

Macoma middendorffii Dall, 1884

Macoma edentula middendorffii Dall, 1884, Proc. U.S. Nat. Mus. 7:347.

Macoma middendorffii, Dall, 1921:46.

Macoma middendorffii, Oldroyd, 1924:170; pl. 53, fig. 1.

Macoma (Macoma) middendorffii, Coan, 1971:25; pl. 6, fig. 30, text fig. 13.

Type locality: Bering Island, Bering Sea.

Range: Point Barrow, Alaska. Bering Sea. Aleutian Islands. Siberia.
(Coan, 1971)

Depth: 27 to 32 m. (Coan, 1971)

sand. (Coan, 1971)

Localities:

Southern Bering: 55°13'N, 168°17'W, 194 m (1). Kuskokwim Bay (1).

Macoma moesta alaskana Dall, 1900

Macoma alaskana Dall, 1900, Proc. U.S. Nat. Mus. 23:232; pl. 3,
fig. 5.

Macoma alaskana, Dall, 1921:48.

Macoma alaskana, Oldroyd, 1924:177; pl. 13, fig. 14.

Macoma alaskana, Dunnill and Ellis, 1969:6, fig. 2-2 a-d.

Macoma (Macoma) moesta alaskana, Coan, 1971:29; pl. 7, fig. 38,
text fig. 17.

Type locality: Lituya Bay, Alaska.

Range: Kodiak Island area, Alaska to Tofino, outer coast of Vancouver
Island, British Columbia and Seattle, Washington. (Coan, 1971)

Depth: 1 to 260 m, most common below 50 m. (Coan, 1971)

Localities:

Western Gulf: 59°40'N, 152°00'W, 34 m (1). 59°22'W, 152°22'W,
82 m (1).

Eastern Gulf: Port Valdez (1).

Southeast: Bartlett Cove (1).

Macoma moesta moesta (Deshayes, 1855)

Tellina moesta Deshayes, 1855, Zool. Soc. London, Proc. p. 361.
(Coan, 1971)

Macoma krausei Dall, 1900, Proc. U.S. Nat. Mus. 23:322; pl. 4,
fig. 8.

Macoma oneilli Dall, 1919, Res. Can. Arctic Exped. 8, part A
p. 20A; pl. 2, fig. 1.

Macoma moesta, Dall, 1921:47.

Macoma oneilli, Dall, 1921:47.

Macoma moesta, Oldroyd, 1924:173.

Macoma oneilli, Oldroyd, 1924:173; pl. 40, fig. 7.

Macoma moesta, Ockelmann, 1958:129; pl. 2, fig. 13.

Macoma moesta, MacGinitie, 1959:182; pl. 21, figs. 1-3; pl. 23,
fig. 10; pl. 24, figs. 1-3.

Macoma (Macoma) moesta moesta, Coan, 1971:28; pl. 7, figs. 35-37,
text fig. 16.

Type locality: of *Tellina moesta*, "northern ocean."

of *Macoma krausei*, Icy Cape, Arctic Alaska.

of *Macoma oneilli*, Dolphin and Union Strait, Arctic Canada.

Range: Arctic: Greenland. Spitzbergen. Novaya Zemlya. the Kara Sea.
Siberian Ice Sea. Jones Sound and Baffinland. (Ockelmann, 1958)

Pacific: arctic and west coasts of Alaska. Aleutian Islands to
Chignik Bay, Alaska Peninsula. Kamchatka. (Coan, 1971)

Depth: 2 to 260 m. (Coan, 1971)

soft clay, sandy clay, mud, sand, gravel and stones. (Ockelmann,
1958)

Localities:

Arctic: Point Barrow (1). 70 to 72°N and 142 to 153°W, 30 to
120 m (5).

Macoma moesta moesta (Continued)

Localities (Continued):

Chukchi: 68 to 70°N and 164 to 167°W, 38 to 50 m (4).

Northern Bering: north of Nunivak Island (1).

Macoma nasuta (Conrad, 1837)

Macoma nasuta Conrad, 1837, *Acad. Nat. Sci. Phil.* 7(2):258.
(Coan, 1971)

Macoma nasuta, Dall, 1921:47.

Macoma nasuta, Oldroyd, 1924:174; pl. 45, figs. 1a-d.

Macoma nasuta, Dunnill and Ellis, 1969:27; fig. 8-1 a-d.

Macoma nasuta, Coan, 1971:41; pl. 11, figs. 60-62, text fig. 28.

Type locality: near San Diego, California.

Range: Sitkalidak Island, Alaska to Cabo San Lucas, Baja California.
(Coan, 1971)

Depth: intertidal in bays and below wave line on more open coasts.
(Coan, 1971)

sandy silt. (Coan, 1971)

Localities:

Eastern Gulf: Orca Inlet, Prince William Sound (1).

Southeast: Funter Bay (1). Echo Cove, Berners Bay (1).

Macoma obliqua (Sowerby, 1817)

Tellina obliqua Sowerby, 1817, Zool. Captain Beechey's Voyage... p. 137; pl. 161, fig. 1. (Coan, 1971).

Macoma incongrua "von Martens, 1865," Dall, 1900:306.

Macoma incongrua, Dall, 1921:46.

Macoma incongrua, Oldroyd, 1924:170; pl. 42, fig. 10.

Macoma incongrua, Dunnill and Ellis, 1969:18, figs. 6-2 a-d, 9 m.

Macoma (Macoma) obliqua, Coan, 1971:26; pl. 6, fig. 31; pl. 7, fig. 33, text fig. 14.

Type locality: Red Crag, Suffolk, England, Pleistocene.

Range: East Pacific: Point Barrow, Alaska. west coast of Alaska. Aleutian Islands to the outer coast of Washington. (Coan, 1971)

West Pacific: Asian coast from Bering Strait to the Yellow Sea and Honshu Island. (Petrov, 1966)

Depth: over 50 m. (Coan, 1971)

20 to 200 m (British Columbia). (Bernard, 1970)

lowest littoral and highest sub-littoral (southern Okhotsk Sea and southern Kurile Islands). (Petrov, 1966)

gravel to sand. (Coan, 1971)

Localities:

Northern Bering: Norton Sound. south of Nome (1).

Southern Bering: Grant Point, Izembek Lagoon (2). Bristol Bay, 58°46'N, 160°12'W, 25 m (1).

Western Gulf: 59 to 60°N and 152 to 153°W, 59 to 167 m (4). Kasitsna Bay (1). MacDonald Spit (1).

Eastern Gulf: Port Etches (1). Montague Island (1). Port Valdez (1).

Southeast: Halibut Point (1). Bartlett Cove (1).

Macoma yoldiformis Carpenter, 1864

Macoma yoldiformis Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 611, 639. (Palmer, 1958)

Macoma yoldiformis, Dall, 1921:48.

Macoma yoldiformis, Oldroyd, 1924:177; pl. 44, fig. 6.

Macoma yoldiformis, Palmer, 1958:108; pl. 14, figs. 2-4.

Macoma yoldiformis, Dunnill and Ellis, 1969:30, figs. 2-1, a-d,
9 j.

Macoma (Psammacoma) yoldiformis, Coan, 1971:33; pl. 8, fig. 48,
text fig. 21.

Type locality: Neah Bay, Washington.

Range: Afognak Island, Alaska. (Eyerdam, 1960) west coast of America
to Bahia San Bartolome, Baja California. (Coan, 1971)

Depth: intertidal to 93 m. (Coan, 1971)

silt to sand, bays and offshore. (Coan, 1971)

TABLE 55a

Macoma

	<i>Macoma balthica</i>	<i>Macoma brotia</i>	<i>Macoma calcarea</i>	<i>Macoma carlottensis</i>
Size - length	19.2	53.1	45.0	22.6
height	15.0	48.4	33.4	17.0
thickness	7.2	15.6	16.6	9.0
Anterior length	8.0	33.5	24.4	12.2
Overall shape	ovate	broadly ovate	elongate ovate	ovate
Relative degree of inflation	moderate	moderate	moderate	well inflated
Posterior flexure	not flexed	flexed to right	flexed to right	not flexed
Escutcheon	none	none	none	none
Anterior dorsal margin	no overlap	no overlap	no overlap	no overlap
Posterior	pointed	squarely truncate	prolonged, slightly pointed	narrowly rounded

TABLE 55a

Continued

	<i>Macoma balthica</i>	<i>Macoma brota</i>	<i>Macoma calcarea</i>	<i>Macoma carlottensis</i>
Pallial sinuses	equal	deeper in left valve	deeper in left valve	deeper in left valve
Pallial sinus and line	confluent	detached for 1/2 length	detatched	detatched
Periostracum	gray, worn pinkish shell	slightly shiny, worn grayish	dull, reddish adhering only	shiny, adherent straw to pinkish near margins

TABLE 55b

Macoma

	<i>Macoma</i> <u>dexioptera</u>	<i>Macoma</i> <u>elimata</u>	<i>Macoma</i> <u>crassula</u>	<i>Macoma</i> <u>expansa</u>
Size - length	27.3	23.8	18.7	37.2
height	18.3	17.4	14.8	28.0
thickness	8.0	7.2	7.4	22.0
Anterior length	14.6	14.8	10.0	17.5
Overall shape	ovate	ovate	sub-quadrata	oval
Relative inflation	slight	moderate	moderate	well inflated
Posterior flexure	slight	slight	not flexed	not flexed
Escutcheon	none	conspicuous	none	none
Anterior dorsal margin	right valve overlaps left slightly	no overlap	no overlap	no overlap
Posterior	evenly, sharply pointed	narrowly, squarely truncate	short, broadly truncate	produced, bluntly pointed

TABLE 55b

Continued

	<i>Macoma dexioptera</i>	<i>Macoma elimata</i>	<i>Macoma crassula</i>	<i>Macoma expansa</i>
Pallial sinuses	about equal	deeper in left valve	slightly deeper in left valve	equal
Pallial line and sinus	detached for a short distance, confluent	detached for 1/2 length	detached	confluent
Periostracum	smooth, adherent, white	thin, adherent, gray-green	thin, adherent, ruddy	shiny, adherent gray-green

	<i>Macoma inquinata</i>	<i>Macoma l coma</i>
Size - length	45.4	29.0
height	33.2	21.6
thickness	17.0	10.2
Anterior length	18.9	14.2
Overall shape	rounded ovate	ovate
Relative inflation	well inflated	slight
Posterior flexure	not flexed	slightly flexed
Escutcheon	none	none
Anterior dorsal margin	no overlap	no overlap
Posterior	produced, pointed indented below	slightly produced, pointed

TABLE 55c

*Macoma**Macoma*
lipara

67.3	13.7
57.0	9.6
28.0	5.8
38.0	9.4

Macoma
loveni

ovate	broadly ovate, subquadrate
moderate	well inflated
slightly flexed	not flexed
none	none
no overlap	no overlap
short, blunt	short, broadly rounded

TABLE 55c

Continued

	<i>Macoma <u>inquinata</u></i>	<i>Macoma <u>lama</u></i>	<i>Macoma <u>lipara</u></i>	<i>Macoma <u>loveni</u></i>
Pallial sinuses	approximately equal	deeper in left valve	deeper in left valve	deeper in left valve
Pallial sinus and line	confluent	detached for 1/2 length	detached for 1/2 length	detached for 1/2 length
Periostracum	worn, dark	adherent, shining white	worn, dark	adherent, slightly shiny brown

TABLE 55d

Macoma

	<i>Macoma middendorffii</i>	<i>Macoma moesta moesta</i>	<i>Macoma moesta alaskana</i>	<i>Macoma obliqua</i>
Size - length	61.5	25.9	13.3	35.3
height	56.0	19.6	8.8	31.0
thickness	23.0	7.0	3.7	26.2
Anterior length	30.5	15.0	9.0	19.0
Overall shape	trigonal	ovate	ovate quadrate	oval
Relative inflation	slight	slight	slight	well inflated
Posterior flexure	not flexed	not flexed	not flexed	much flexed to the right
Anterior dorsal margin	no overlap	no overlap	no overlap	no overlap
Posterior	short, round-ed	short, round-ed	short, obliquely truncate	short, narrow, obliquely truncate

TABLE 55d

Continued

	<i>Macoma <u>middendorffii</u></i>	<i>Macoma <u>moesta</u></i>	<i>Macoma <u>moesta</u></i>	<i>Macoma <u>alaskana</u></i>	<i>Macoma <u>obliqua</u></i>
Pallial sinuses	deeper in left valve	deeper in left valve	deeper in left valve	deeper in left valve	
Pallial sinus and line	detached for 1/2 length	detached for 1/2 length	detached for 1/2 length	left valve - confluent right valve - detached for 1/2 length	
Periostracum	worn away	thin shiny, white to pinkish	thin shiny, white	dull, dark, adherent near margin	

Macoma
nasuta

Size - length	62.0
height	46.2
thickness	22.6
Anterior length	24.2
Overall shape	elongate - ovate
Relative inflation	moderate
Posterior flexure	much flexed
Escutcheon	none
Anterior dorsal margin	no overlap
Posterior	long, obliquely truncate

TABLE 55e

*Macoma**Macoma*
obliqua

35.5	up to 25 mm
31.0	
26.2	
19.0	

ovate	elongate
-------	----------

well inflated	moderate
---------------	----------

much flexed	not flexed
-------------	------------

none	none
------	------

no overlap	no overlap
------------	------------

short, narrow, slightly pointed	rostrate, pointed
------------------------------------	-------------------

Macoma
nasuta

Pallial sinuses	deeper in left valve
Pallial sinus and line	confluent
Periostracum	dull, dark adherent at margins

TABLE 55e

Continued

<i>Macoma</i> <u>obliqua</u>	<i>Macoma</i> <u>yoldiformis</u>
deeper in left valve	about equal
confluent	partially detached
dull, dark, adherent at margins	shiny, adherent

from Coan, 1971.

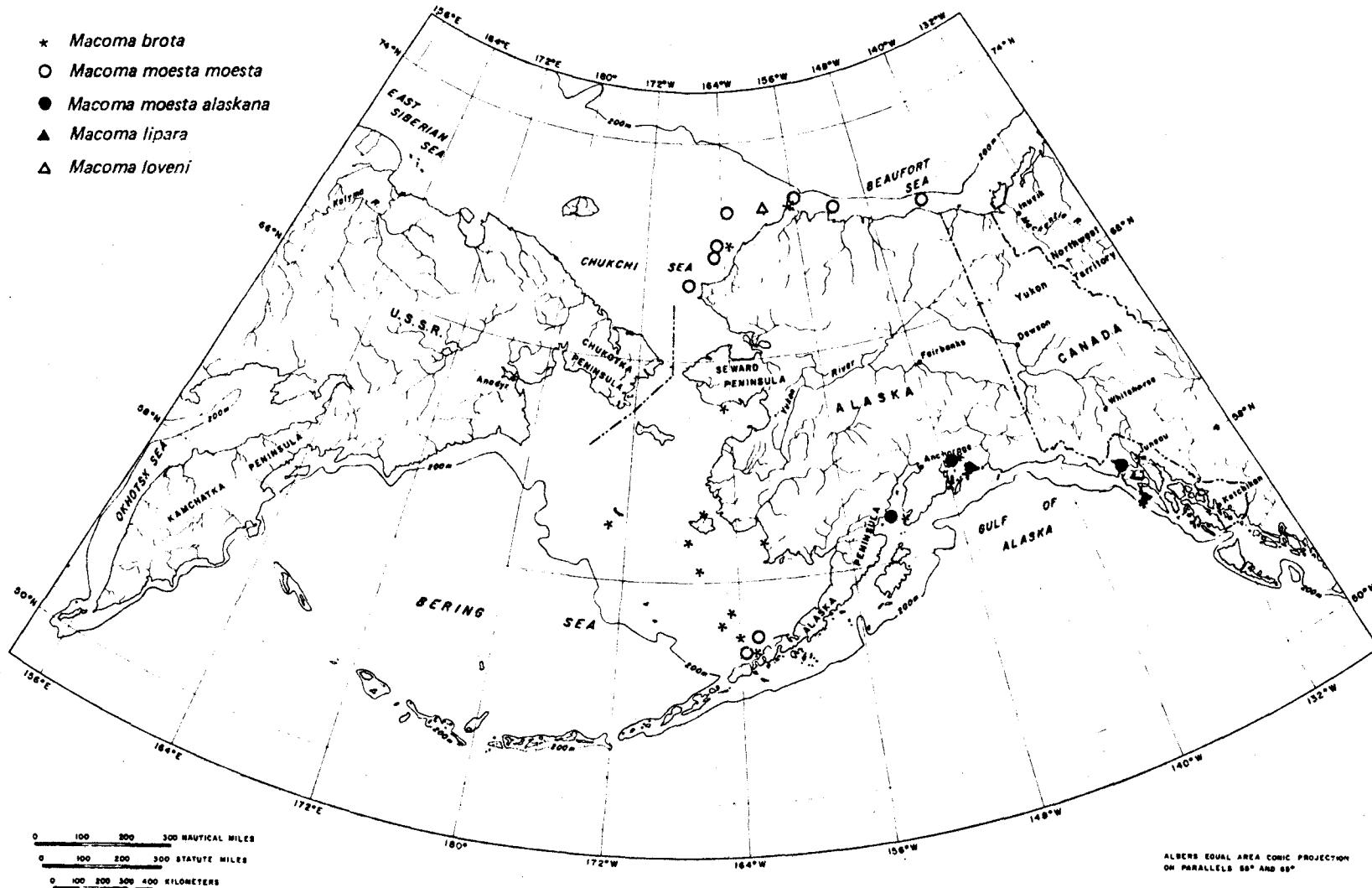


Figure 16. Localities for specimens of *Macoma*.

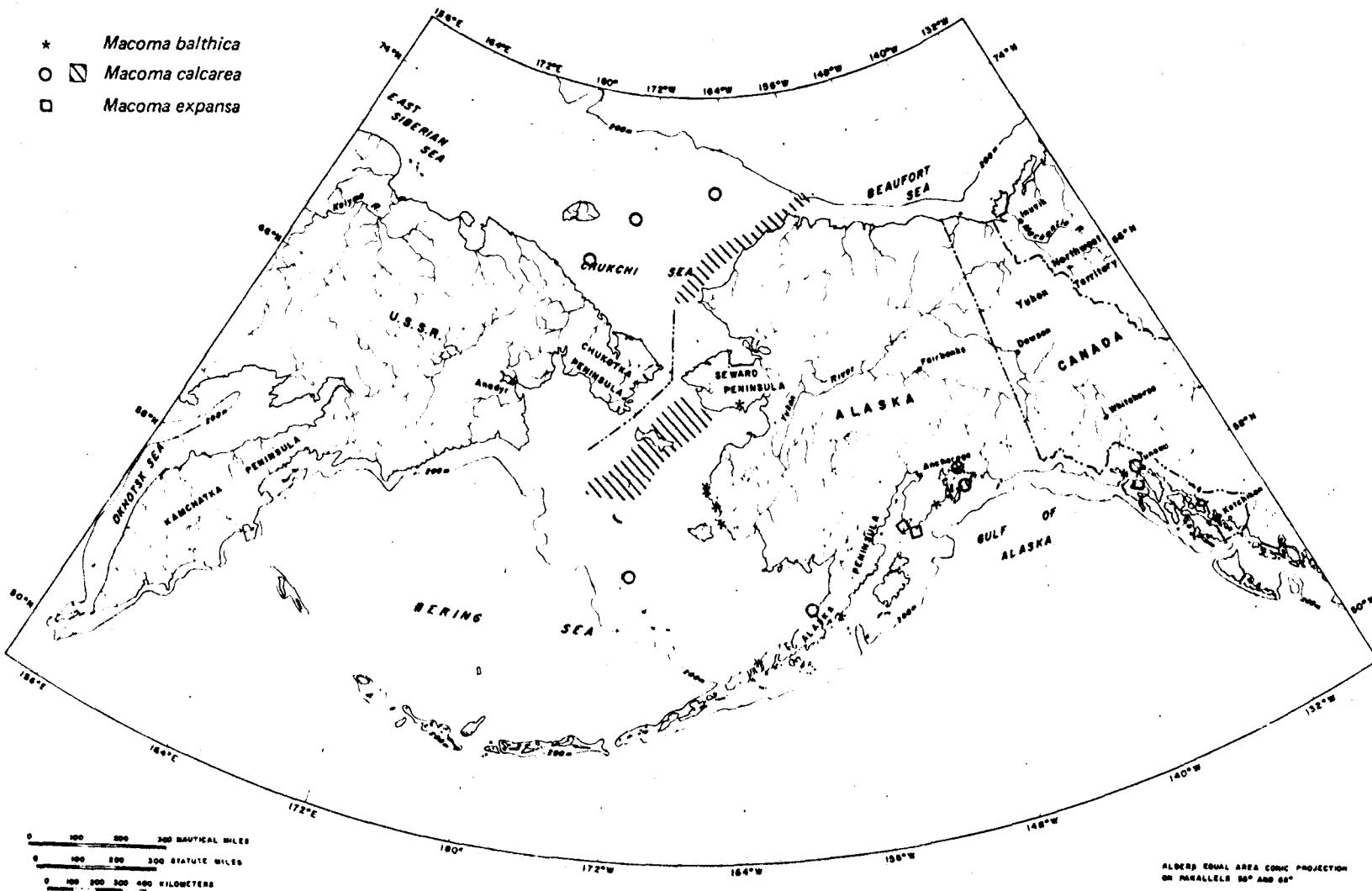


Figure 17. Localities for specimens of *Macoma*.

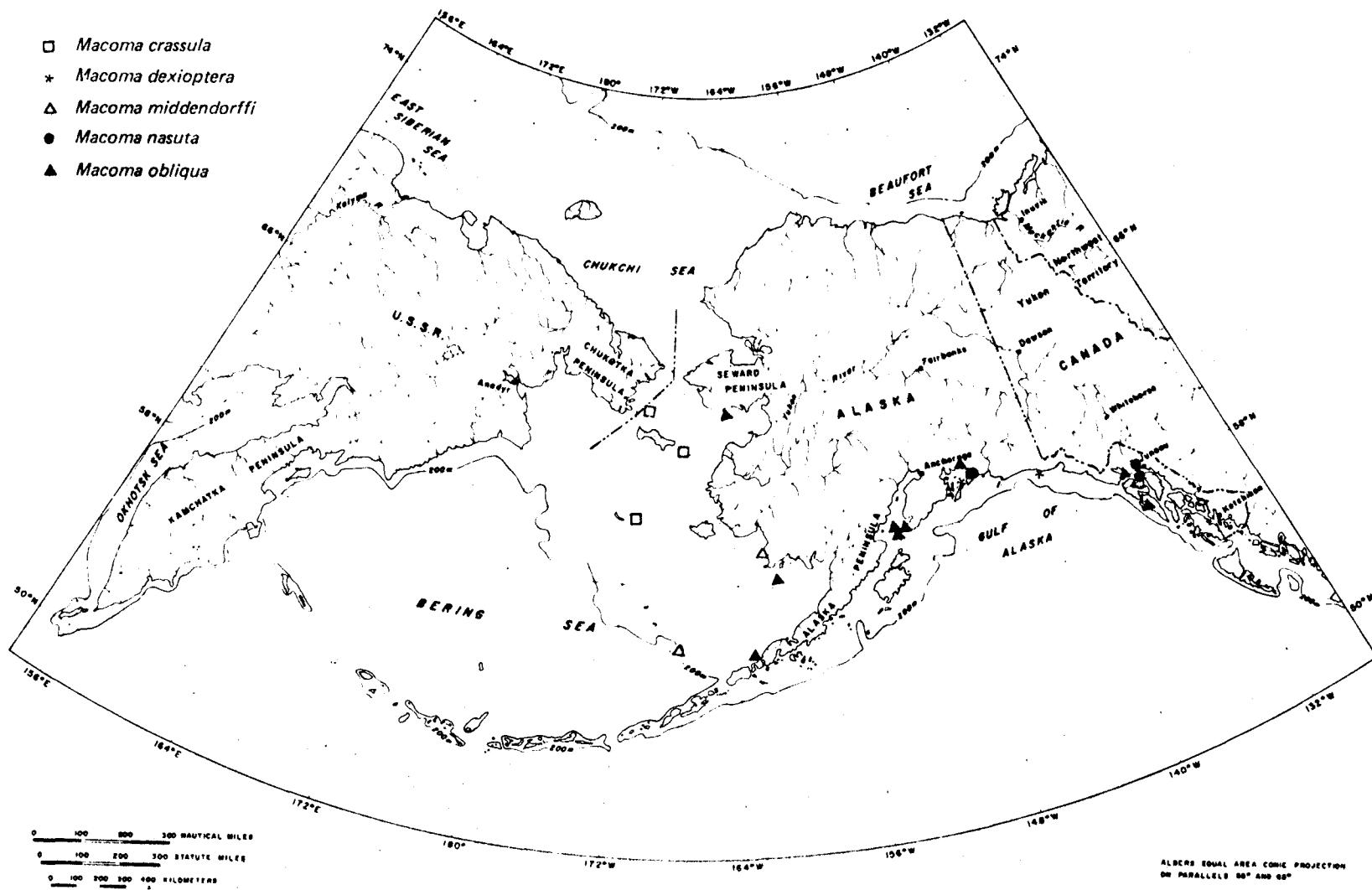


Figure 18. Localities for specimens of *Macoma*.

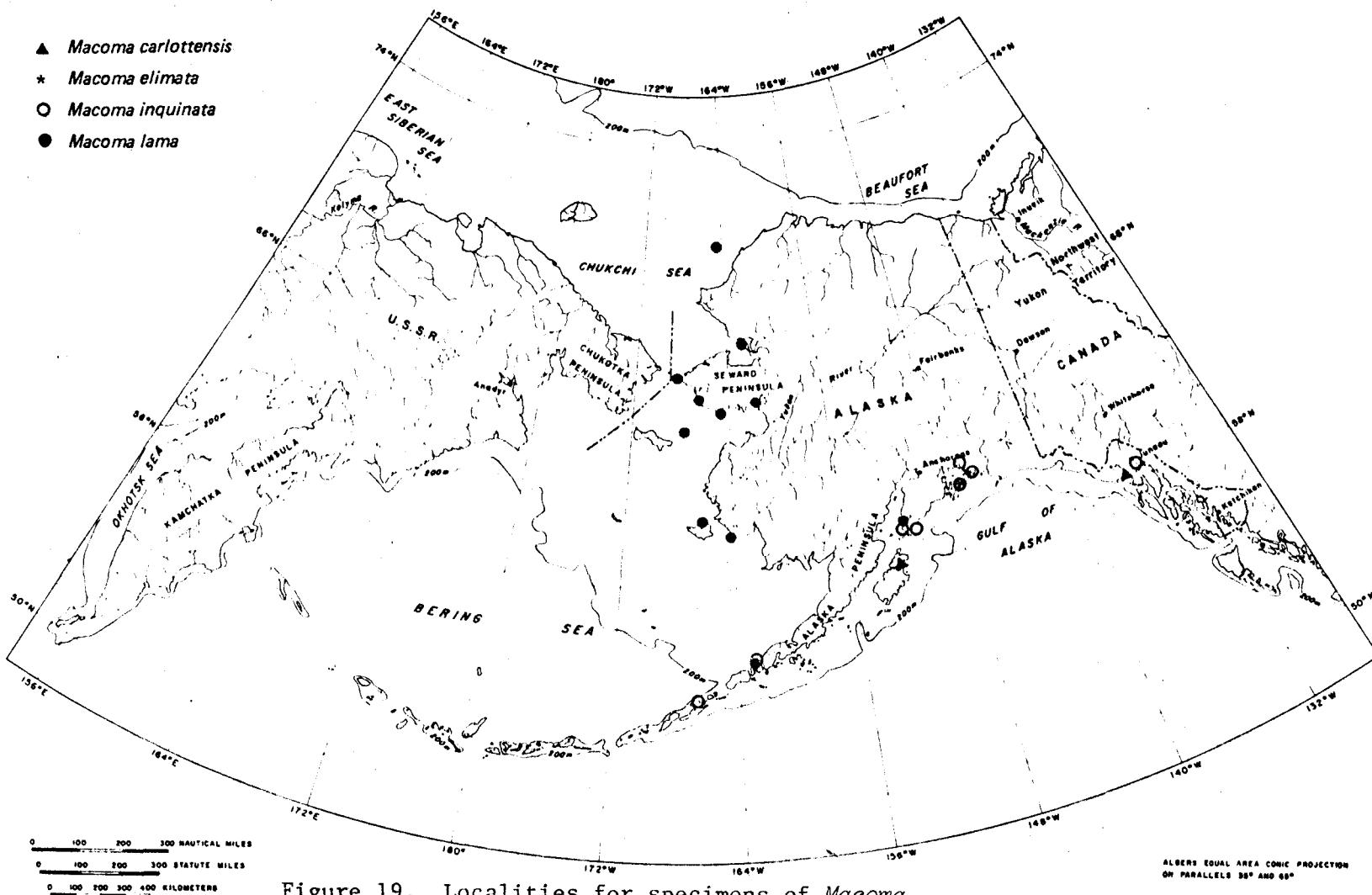


Figure 19. Localities for specimens of *Macoma*.

*Tellina**Tellina carpenteri* Dall, 1900

Tellina (Angulus) carpenteri Dall, 1900, Proc. U.S. Nat. Mus. 23: 320, new name for *Angulus variegatus*, Carpenter, 1864, not *Tellina variegata*, Gmelin, 1791.

Tellina (Angulus) carpenteri, Dall, 1921:45.

Tellina (Angulus) carpenteri, Oldroyd, 1924:166; pl. 44, figs. 10a-b; pl. 29, fig. 2.

Tellina (Moerella) carpenteri, Palmer, 1958:104; pl. 13, figs. 12-16.

Tellina (Angulus) carpenteri, Coan, 1971:15; pl. 2, figs. 12, 13, text fig. 6.

Tellina (Angulus) carpenteri, Keen, 1971:211, fig. 509.

Tellina (Angulus) carpenteri, Abbott, 1974:502, fig. 5692.

Type locality: of *Angulus variegatus*, Catalina Island, California or Neah Bay, Washington.

Range: Ketchikan, Alaska to Baja California. Gulf of California to Panama. (Coan, 1971)

Depth: intertidal in bays to 441 m offshore. (Coan, 1971)

Tellina lutea alternidentata Broderip and Sowerby, 1829

Tellina alternidentata Broderip and Sowerby, 1829, Zool. J. 4(15): 363. (Coan, 1971)

Tellina lutea "Wood, 1828," Dall, 1900:322; pl. 5, figs. 15, 16.

Tellina (Peronidia) lutea and ssp. *venulosa*, Dall, 1921:46.

Tellina (Peronidia) lutea and ssp. *venulosa*, Oldroyd, 1924:169; pl. 1, fig. 9, 11.

Tellina (Peronidia) lutea alternidentata, Coan, 1971:8; pl. 1, figs. 1-3, text fig. 1.

Tellina (Peronidia) lutea, Abbott, 1974:502, fig. 5694.

Type locality: of *Tellina alternidentata*, Icy Cape, Arctic Alaska.

of *Tellina lutea*, Japan - possibly.

Range: arctic coast of Canada. arctic coast of Alaska. Bering Sea. Aleutian Islands. to Kanatak, Cook Inlet, Alaska. West Pacific to Hokkaido. (Coan, 1971)

Depth: intertidal to 84 m. (Coan, 1971)

exposed coasts, sand. (Coan, 1971)

clean sand (Bering Sea). (Rowland, 1973)

Localities:

Northern Bering: Cape Woolley (empty) (1). Kooloolik, St. Lawrence Island (empty) (1). Norton Sound south of Nome (1). 58 to 60° and 162 to 168°W (8).

Southern Bering: Izembek Lagoon (4). Ugashik Bay (1).

Western Gulf: MacDonald Spit (1).

Tellina nuculoides (Reeve, 1854)

Donax nuculoides Reeve, 1854, *Conch. Icon.* 8; pl. 8, fig. 59.
(Coan, 1971)

Maera salmonaea Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 627, 639. (Palmer, 1958)

Tellina (Moerella) salmonex, Dall, 1921:45.

Tellina (Moerella) salmonex, Oldroyd, 1924:165; pl. 44, figs. 3a,
b.

Tellina (Moerella) salmonex, Palmer, 1958:105; pl. 13, figs. 17-19.

Tellina (Cadella) nuculoides, Coan, 1971:12; pl. 2, figs. 7, 8,
text fig. 4.

Tellina nuculoides, Abbott, 1974:502, fig. 5691.

Type locality: of *Donax nuculoides*, Bodega Bay, California.

of *Maera salmonea*, either Vancouver Island, British Columbia or
Neah Bay, Washington.

Range: St. George Island, Pribilofs. Aleutian Islands to Islas los
Coronados, Baja California. (Coan, 1971)

Depth: intertidal to 73 m. (Coan, 1971)

protected areas. rock, gravel, sand, mud. most common on coarse
sand. (Coan, 1971)

Localities:

Southern Bering: Agattu Island, Aleutians (1).

Western Gulf: Kasitsna Bay (1). Lower Cook Inlet, 25 to 80 m,
hard sand and shell (3).

Tellina modesta (Carpenter, 1864)

Angulus modestus Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 639, 681. (Palmer, 1958)

Tellina (Oudaria) buttoni Dall, 1900, *Proc. U.S. Nat. Mus.* 23:320;
pl. 4, figs. 12, 13, new name for *Tellina modesta obtusa* (Carpenter,
1864, not *T. obtusa*, Sowerby, 1817).

Tellina (Angulus) modestus, Dall, 1921:45.

Tellina (Oudaria) buttoni, Dall, 1921:46.

Tellina (Angulus) modesta, Oldroyd, 1924:167.

Tellina (Oudaria) buttoni, Oldroyd, 1924:167; pl. 44, figs. 7a, b.

Tellina (Angulus) modesta, Palmer, 1958:103; pl. 13, figs. 4-9.

Tellina (Oudaria) buttoni, Palmer, 1958:103; pl. 13, figs. 10, 11.

Tellina (Angulus) modesta, Coan, 1971:16; pl. 3, figs. 14-16,
text fig. 7.

Tellina (Angulus) modesta, Abbott, 1974:502, fig. 5690.

Type locality: of *Augulus modestus*, Puget Sound, Washington.

of *Angulus modestus obtusus*, San Pedro, California.

Range: Montague Island, Alaska to Bahia San Bartolome, Baja California
Sur. (Coan, 1971)

Depth: intertidal to 10 m in bays.

below wave level to 91 m on more exposed coasts. (Coan, 1971)

silty sand to fine sand. (Coan, 1971)

Localities:

Southern Bering: Bristol Bay off Izembek Lagoon (1).

Western Gulf: Kasitsna Bay, Cook Inlet (1).

TABLE 56

Tellina

	<i>Tellina lutea</i>	<i>Tellina modesta</i>	<i>Tellina carpenteri</i>	<i>Tellina nuculoides</i>
Size - length	93.0	18.4	15.9	14.4
height	52.0	11.4	9.0	12.0
thickness	22.4	4.6	4.4	5.2
Anterior length	43.3	11.8	10.2	8.5
Inflation	not inflated, left valve more convex	slight, right valve more convex	slight left valve more convex flexed to right	moderate left left valve
Anterior	evenly rounded	elongate, rounded	elongate, rounded	long, sloping, rounded
Posterior	twisted to right angular, truncate	not twisted angular, truncate	twisted to right, round- ed	not twisted, very short, rounded
Lateral teeth	short, weak	weak	small but prominent	prominent
Internal rib	present, wide, low	well defined	not present	slight
External color	shiny, gray-green periostracum	shining white	shining white	gray-green and yellow alternating bands

TABLE 56

Continued

	<i>Tellina <u>lutea</u></i>	<i>Tellina <u>modesta</u></i>	<i>Tellina <u>carpenteri</u></i>	<i>Tellina <u>nuculoides</u></i>
Internal color	pink and yellow	white	white	pink-orange

specimen from
British Columbia

Family Psammobiidae

*Gari**Gari californica* (Conrad, 1848)

Psammobia californicus Conrad, 1848, *J. Acad. Nat. Sci. Phil.* 7; pl. 19, fig. 4. (Grant and Gale, 1931)

Psammobia (Gobraeus) californicus, Dall, 1921:49.

Psammobia californica, Oldroyd, 1924:185; pl. 43, fig. 5.

Psammobia californica, Abbott, 1974:512, fig. 5774.

Type locality: California.

Range: Japan to 38°N. (Kuroda and Habe, 1952) Kamchatka. the Aleutian Islands. (Dall, 1921) to Magdalena Bay, Baja California. (McLean, 1969)

Depth: intertidal to 10 m (British Columbia). (Bernard, 1970)

Localities:

Southeast: Yamani Cove, Baranof Island (empty) (1). Berry Island off Sitka (empty) (1).

Family Semelidae

*Semele**Semele rubropicta* Dall, 1871

Semele rubropicta Dall, 1871, Amer. J. Conchol. 7(2):144; pl. 14,
fig. 10.

Semele rubropicta, Dall, 1921:48.

Semele rubropicta, Oldroyd, 1924:180; pl. 43, fig. 10.

Semele rubropicta, Abbott, 1974:512, fig. 5784.

Type locality: beach at Soquel, Monterey Bay, California.

Range: Forrester Island, Alaska (Dall, 1921) to Baja California (25° N).
(Bernard, 1970)

Depth: intertidal to 20 m (British Columbia). (Bernard, 1970)

Localities:

Southeast: Yamani Cove, Baranof Island (empty) (1).

Family Solenidae

*Siliqua**Siliqua alta* (Broderip and Sowerby, 1827)

Solen altus Broderip and Sowerby, 1827, Zool. J. 4(15):362.
(Hertlein, 1961)

Siliqua media "Gray, 1839," Dall, 1871, Amer. J. Conchol. 7(2):
141; pl. 14, fig. 11.

Siliqua patula alta, Dall, 1921:51.

Siliqua media, Dall, 1921:51.

Siliqua patula alta, Oldroyd, 1924:190; pl. 47, figs. 1, 2.

Siliqua alta, Grant and Gale, 1931:389; pl. 21, fig. 1.

Siliqua alta, Abbott, 1974:494, fig. 5625.

Type locality: Arctic Ocean.

Range: Bering Strait to Unalaska to Kodiak Island, Alaska. (Dall, 1921)

Localities:

Southern Bering: 56 to 59°N and 162 to 169°W, 22 to 89 m (9).
Izembek Lagoon (1).

Siliqua patula (Dixon, 1788)

Solen patulus Dixon, 1788, *Voyage Round the World* p. 355, fig. 2.
(Hertlein, 1961)

Solecurtus nuttallii Conrad, 1837, *J. Acad. Nat. Sci. Phila.*
7:232; pl. 17, fig. 9. (Grant and Gale, 1931)

Siliqua patula and ssp. *nuttallii*, Dall, 1921:51.

Siliqua patula and ssp. *nuttallii*, Oldroyd, 1924:190; pl. 18,
figs. 2a, b; pl. 48, fig. 1; pl. 52, fig. 1.

Siliqua patula, Abbott, 1974:494, fig. 5624.

Type locality: of *Solen patulus*, "mouth of Cook's River," Cook Inlet,
Alaska.

of *Solecurtus nuttallii*, Point Adams, estuary of the Columbia River.

Range: Okhotsk Sea. (Dall, 1921) 60°N (Bernard, 1970) to Monterey Bay,
California. (La Rocque, 1953)

Depth: intertidal to 40 m (British Columbia). (Bernard, 1970)

Localities:

Southern Bering: Attu Island, Aleutian Islands (empty) (1).
Izembek Lagoon (empty) (1).

Western Gulf: Clam Gulch, Cook Inlet (1).

Siliqua sloati Hertlein, 1961

Siliqua sloati Hertlein, 1961, *So. Calif. Acad. Sci., Bull.*
60(1):14; pl. 5, figs. 1, 2.

Siliqua sloati, Abbott, 1974:494.

Type locality: 2.8 mi. off Laguna Point, California.

Range: Portage Bay, Alaska to Marin County, California. (Hertlein, 1961)

Depth: 18 to 157 m. (Hertlein, 1961)

Localities:

Eastern Gulf: 59°50'N, 141°42'W, 58 m (1). 59°44'N, 141°28'W,
43 m (1).

Siliqua
patula

Size - length	133
height	48
thickness	46
Anterior length	46
Posterior margin	rounded-quadratae
Internal rib	sloping toward the anterior
External color	dark shining olive green
Internal color	white-purplish

TABLE 57

Siliqua

<i>Siliqua</i> <u>alta</u>	<i>Siliqua</i> <u>sloati</u>
112	41.0
50	13.5
25	10.6
29.5	11.5
rounded	narrowly rounded
vertical	vertical
dark shining olive green and brown	concentric bands cream and purplish brown
white-purplish brown	white, purplish-brown bands

Family Myidae

Cryptomya

Cryptomya californica (Conrad, 1837)

Sphaenia californica Conrad, 1837, *J. Acad. Nat. Sci. Phila.*
7:234; pl. 17, fig. 11. (Grant and Gale, 1931)

Cryptomya californica, Dall, 1921:53.

Cryptomya californica, Oldroyd, 1924:199.

Cryptomya californica, Keen, 1971:263, fig. 671.

Type locality: Santa Barbara, California.

Range: Chichagoff Island, Alaska to Topobampo, Mexico (Dall, 1921) to
northern Peru. (Keen, 1971)

Depth: intertidal. (Bernard, 1970)

burrowing shallowly in sand. (Keen, 1971)

not seen.

*Mya (Arenomya)**Mya (Arenomya) arenaria* Linnaeus, 1758*Mya arenaria* Linnaeus, 1758, *Systema Naturae*, Ed. 10 p. 670.
(MacNeil, 1965)*Mya arenaria*, Dall, 1921:53.*Mya arenaria*, Oldroyd, 1924:198; pl. 32, figs. 1a, b.*Mya (Arenomya) arenaria*, MacNeil, 1965:33; pl. 5, figs. 2-12;
pl. 6, figs. 1-15, 17, 18.*Mya arenaria*, Abbott, 1974:536, fig. 5983.

Type locality: mouth of Scheldt River, Netherlands.

Range: Pacific: Monterey, California to southeastern Alaska. (MacNeil, 1965)

Atlantic: Labrador to North Carolina. northern Europe to southern Bay of Biscay. (MacNeil, 1965)

Depth: intertidal (British Columbia). (Bernard, 1970)

littoral and upper sub-littoral. (Petrov, 1966)

sand and silt. (Petrov, 1966)

Localities:

Eastern Gulf: Mineral Creek, Port Valdez (1). north side, Port Valdez (1). Boswell Bay, Hinchinbrook Island (1).

Southeast: Adams Cove, Muir Inlet (1). St. James Bay, Lynn Canal (1). Funter Bay (1). Echo Cove, Berners Bay (1). Admiralty Cove, Admiralty Island (1).

Mya (Arenomya) elegans (Eichwald, 1871)

Anatina elegans Eichwald, 1871, *Geognostisch-palaeontologische
Bemerkungen über die Habinsel Mangischalk und die Aleutischen
Inseln* p. 119. (MacNeil, 1965)

Mya intermedia, Dall, 1898, *Trans. Wagner Free Inst. Sci.* 3(4):857.
(Boss, Rosewater, Ruhoff, 1968)

Mya intermedia, Dall, 1921:52, pl. 4.

Mya intermedia, Oldroyd, 1924:199; pl. 15, fig. 5.

Mya japonica, MacGinitie, 1959, pl. 19, fig. 6.

Mya (?Arenomya) elegans, MacNeil, 1965:29; pl. 2, figs. 3, 4, 12;
pl. 3, figs. 1, 4.

Type locality: of *Anatina elegans*, Alaskan Peninsula. (Neotype, MacNeil,
1965)

of *Mya intermedia*, Recent and Miocene of Unga Island, Alaska.
Pleistocene of Alaska. (Boss, Rosewater, Ruhoff, 1968)

Range: Pribilof Islands, Bering Sea. Kuskokwim Bay. Bristol Bay,
Chignik Bay and Shelikof Strait, Alaska. (MacNeil, 1965)

Localities:

Southern Bering: $55^{\circ}31'N$, $168^{\circ}18'W$, 194 m (empty) (1).

Western Gulf: Popov Island, Shumagin Islands (empty) (1).

Mya (Arenomya) japonica Jay, 1856

Mya japonica Jay, 1856, *Narrative of the Expedition of an American Squadron to the China Sea and Japan...* vol. 2, p. 292; pl. 1, figs. 7, 10. (MacNeil, 1965)

Mya japonica, MacGinitie, 1959:187; pl. 19, figs. 8.

Mya (Arenomya) japonica, MacNeil, 1965:31; pl. 31, figs. 7, 8, 10; pl. 4, figs. 1-11; pl. 6, fig. 16.

Type locality: not known.

Range: West Pacific: southern Hokkaido to Amakusa Island. off south-central Kyusu, Japan. Gulf of Chihli, China. Okhotsk Sea.

East Pacific: Kotzebue Sound and Nome, Alaska. Akutan Island, Aleutians (MacNeil, 1965) Port Moller, Alaska Peninsula. (Corgan, 1966)

Localities:

Northern Bering: Cape Nome (empty) (1).

Southern Bering: Naskanok Peninsula, Hazen Bay, 8 to 16 in. deep in sand flats (1). Namvak Bay (1).

Mya (Mya)

Mya (Mya) priapus Tilesius, 1822

Mya priapus (Steller ms) Tilesius, 1822, Acad. Sci. St. Petersburg, Mem. 8:295; pl. 9, fig. 1. (MacNeil, 1965)

Mya (Mya) priapus, MacNeil, 1965:40; pl. 10, figs. 1-7; pl. 11, figs. 1-8, 10, 13-15.

Type locality: mouth of the Bolshaya River southwestern Kamchatka.

Range: southern Hokkaido to northern Bering Sea. St. Lawrence Island. Port Clarence to Unalaska and to Kachemak Bay. (MacNeil, 1965)

Localities:

Northern Bering: Cape Woolley (empty) (1). $63^{\circ}29'N$, $171^{\circ}54'W$, 27 m (1).

Southern Bering: $58^{\circ}57'N$, $160^{\circ}26'W$, 6 m (1). Unalaska (empty) (1).

Western Gulf: Cold Bay (empty) (1). Clam Gulch, Cook Inlet (1).

Mya (Mya) pseudoarenaria Schlesch, 1931

Mya pseudoarenaria Schlesch, 1931, Archiv. f. Mollusken-kunde
63:36; pl. 13, figs. 10-12. (MacNeil, 1965)

Mya pseudoarenaria, MacGinitie, 1959:186; pl. 19, fig. 7; pl. 25,
fig. 4.

Mya (Mya) pseudoarenaria, MacNeil, 1965:37; pl. 7, figs. 9-11,
13, 14; pl. 9, fig. 4.

Type locality: western Greenland.

Range: Point Barrow, Alaska. arctic Canada to Dolphin and Union Strait.
west Greenland, Iceland, Spitzbergen and northern Norway.
(MacNeil, 1965) Arctic Seas-U.S.S.R. (Petrov, 1966)

Depth: 10 to 162 ft. (Point Barrow). (MacGinitie, 1959)

Localities:

Arctic: Point Barrow (empty) (1). tentative identification.

Mya (Mya) truncata Linnaeus, 1758

Mya truncata Linnaeus, 1758, *Systema Naturae*, Ed. 10 p. 670.
(MacNeil, 1965)

Mya truncata, Dall, 1921:52.

Mya truncata, Oldroyd, 1924:197; pl. 10, fig. 4.

Mya truncata and var. *uddevalensis*, MacGinitie, 1959:184; pl. 25,
figs. 1-3.

Mya (Mya) truncata, MacNeil, 1965:38; pl. 8, figs. 1-12; pl. 9,
figs. 1-3, 5-20.

Mya (Mya) truncata, Abbott, 1974:537, fig. 5984.

Type locality: Liverpool, England.

Range: nearly all Arctic seas.

East Atlantic: to Bay of Biscay.

West Atlantic: to Massachusetts Bay.

East Pacific: to Puget Sound.

West Pacific: to Japan. (Petrov, 1966; MacNeil, 1965)

Depth: 10-50 m (British Columbia). (Bernard, 1970)

soft silt and silty sand. (Petrov, 1966)

Localities:

Arctic: Point Barrow (empty) (1). Point Hope (empty) (1).

Northern Bering: Cape Woolley (empty) (1).

Western Gulf: Cold Bay (empty)(1). MacDonald Spit, Kasitsna Bay,
intertidal (1). Sadie Cove, intertidal (1).

Eastern Gulf: Tonsia Point, Ressurection Bay (empty)(1). Port
Valdez between Anderson Bay and Sawmill Creek (empty) (1). MacLeod
Harbor, Montague Island (1).

Southeast: Dundas Bay, Lagoon Island, Glacier Bay (1). Porpoise
Island (1).

*Mya
elegans*

Size - length	103
height	87
thickness	54
Anterior length	67
Anterior	narrowly rounded
Posterior	more broadly rounded
Inflation	more inflated toward the anterior
Pallial line and sinus	detached
Anterior adductor	long, narrow
Spoon outline	very thick, heavy, slanted toward anterior

TABLE 58a

Mya (Arenomya)

<i>Mya arenaria</i>	<i>Mya japonica</i>
83	97
48	53
32	34
42	50
pointed	pointed
rounded	rounded
evenly inflated	more inflated toward the anterior
detached	detached
oval	oval
not sloping	straighter ventral margin than <i>M. arenaria</i> sloping toward anterior

*Mya
elegans*

Ligamental callus	none
Anterior sub-umbonal groove	none
Solution pit	deep in left valve
Posterior ridge	long, broad
Posterior furrow	very deep and wide

TABLE 58a

Continued

*Mya
arenaria*

large

none

deep in left
valve

long, narrow

wide, deep

*Mya
japonica*

large

none

deep in left
valve

long, narrow

wide, deep

TABLE 58b

Mya (Mya)

	<i>Mya priapus</i>	<i>Mya pseudoarenaria</i>	<i>Mya truncata</i>
Size - length	70.5	66	63
height	43.0	45	44
thickness	57	27	25
Anterior length	30.0		35
Anterior	rounded to pointed	moderately pointed, wrinkled	broadly square, truncate
Posterior	rounded	high	broadly rounded
Inflation	more inflated toward the posterior	more inflated toward the posterior	more inflated toward the anterior
Pallial line and sinus	confluent	confluent	partially detached
Anterior adductor	long, wider ventrally	moderately narrow	long, narrow
Spoon outline	convex anterior convex to flat posterior	weakly concave anterior weakly convex posterior	flat, straight ventral margin

TABLE 58b

Continued

	<i>Mya priapus</i>	<i>Mya pseudoarenaria</i>	<i>Mya truncata</i>
Ligamental callus	rather large	occasionally present	very small or absent
Anterior sub-umbonal groove	sloping downward from dorsal margin	inclined toward dorsal margin	shallow, narrow, parallel with dorsal margin
Solution pit	very small	none	none
Posterior ridge	low, broad		low, wide
Posterior furrow	broad, deep, long	broad, deep, long	shallow

from MacNeil, 1965

- △ *Mya (Arenomya) arenaria*
- *Mya (Arenomya) elegans*
- ▲ *Mya (Arenomya) japonica*
- *Mya (Mya) priapus*
- *Mya (Mya) pseudoarenaria*
- * *Mya (Mya) truncata*

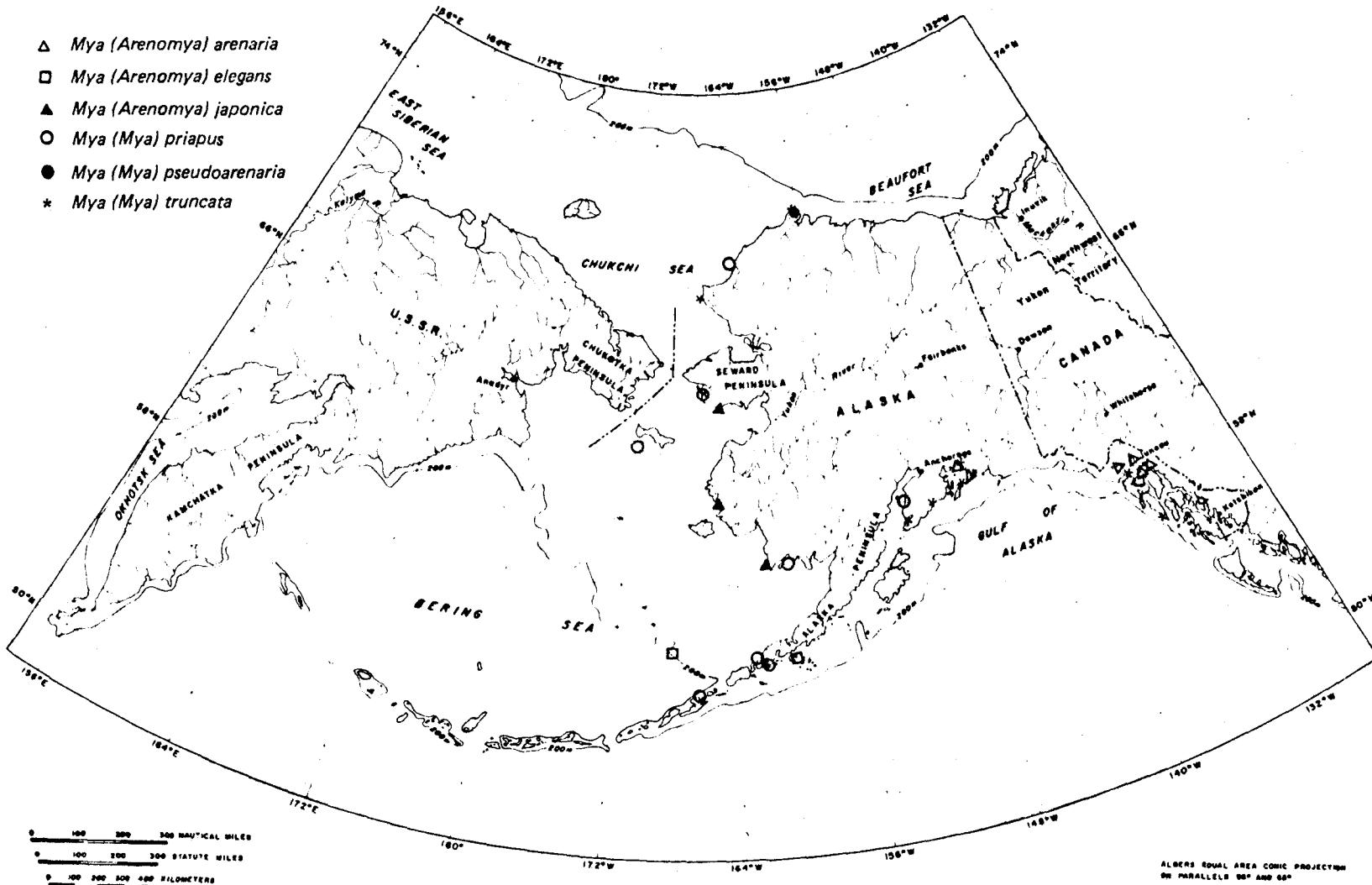


Figure 20. Localities for specimens of *Mya*.

*Sphenia**Sphenia ovoidea* Carpenter, 1864

Sphenia ovoidea Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 637. (Palmer, 1958)

Sphenia ovoidea, Dall, 1921:53.

Sphenia ovoidea, Oldroyd, 1924:200.

Sphenia ovoidea, Palmer, 1958:116; pl. 15, figs. 7-10.

Type locality: Puget Sound, Washington.

Range: East Pacific: 27 to 55°N. (Bernard, 1970) Aleutian Islands to
Puget Sound. (Dall, 1921)

Depth: intertidal to 5 m (British Columbia). (Bernard, 1970)

not seen.

Family Hiatellidae

Cyrtodaria

Cyrtodaria kurriana Dunker, 1862

Cyrtodaria kurriana Dunker, 1862, *Malakozool. Blatter* 8, p. 38.
(LaRocque, 1953)

Cyrtodaria kurriana, Dall, 1921:54.

Cyrtodaria kurriana, Oldroyd, 1924:208.

Cyrtodaria kurriana, Ockelmann, 1958:142; pl. 2, fig. 14.

Type locality: west coast of Greenland.

Range: all arctic seas. northern Bering Sea. east Greenland to 74°30'N.
Hudson Bay and Hudson Strait. Sakhalin Bay, Sea of Okhotsk.
(Ockelmann, 1958) Flaxman Island to Eielson Lagoon, Alaskan arctic
coast. (Hulsemann, 1962)

Depth: 1 to 9.5 m (East Greenland) to 19 to 56 m. (Jan Mayen). (Ockel-
mann, 1958)

shallow brackish water, 50 to 60 m. (Petrov, 1966)

3.6 to 22.8 m. (Hulsemann, 1962)

sandy bottoms. (Petrov, 1966, Ockelmann, 1958)
sand, clay, mud. (Hulsemann, 1962)

Localities:

Arctic: Colville River Delta (1).

*Hiatella**Hiatella arctica* (Linnaeus, 1767)*Mya arctica* Linnaeus, 1767, *Systema Naturae*, ed. 12 p. 1113.
(MacGinitie, 1958)*Saxicava arctica*, Dall, 1921:55.*Saxicava arctica*, Oldroyd, 1924:208; pl. 9, fig. 6; pl. 51, fig. 4.*Hiatella arctica*, MacGinitie, 1959:190; pl. 26, figs. 1-3.*Hiatella arctica*, Keen, 1971:271.*Hiatella arctica*, Abbott, 1974:514, fig. 6019.

Type locality: "Oceano Norvegico" Arctic area of Norway.

Range: all arctic seas.

East Atlantic: to the Mediterranean and Adriatic seas.

West Atlantic: Greenland to the West Indies.

East Pacific: to Panama.

West Pacific: to Japan. (Petrov, 1966)

Depth: primarily shallow (5-10 to 50 m) to 2190 m. (Ockelmann, 1958)

intertidal to 100 m (British Columbia). (Bernard, 1970)

intertidal to 390 m (west coast of North America). (Keen, 1971)

epifaunal or nestling, mixed rocky bottoms. (Petrov, 1966)

Localities:

Arctic: Chukchi Sea, 70 to 72°N and 161 to 163°W, 44 to 50 m (4).
Point Barrow (1).

Northern Bering: Norton Sound south of Nome (1).

Southern Bering: 55 to 60°N and 160 to 169°W, 27 to 167 m (4).
Izembek Lagoon (1).

Western Gulf: Tutka Bay (1). MacDonald Spit (1).

Hiatella arctica (Continued)

Localities (Continued)

Eastern Gulf: 59 to 60°N and 145 to 147°W, 103 to 109 m (3).
Tonsina Point, Resurrection Bay (1).

Southeast: Bartlett Cove (1). Katlian Bay (1). Eagle River (1).
Ketchikan (1). intertidal.

Hiatella pholadis (Linnaeus, 1771)

Mytilus pholadis Linnaeus, 1771, *Mantissa*, vol. 2 p. 548. (Grant and Gale, 1931)

Saxicava pholadis, Dall, 1921:55.

Saxicava pholadis, Oldroyd, 1925:209; pl. 51, fig. 5.

Type locality: Greenland.

Range: East Pacific: Arctic (70° N) to California (35° N). (Bernard, 1970)

Depth: intertidal. (Bernard, 1970)

not seen.

*Panomya**Panomya ampla* Dall, 1898

Panomya ampla Dall, 1896, *Trans. Wagner Free Inst. Sci.* 3(4).
(Boss, Rosewater, Ruhoff, 1968)

Panomya ampla, Dall, 1902:560; pl. 40, figs. 3, 4.

Panomya ampla, Dall, 1921:54.

Panomya ampla, MacGinitie, 1958:189; pl. 25, fig. 7.

Panomya ampla, Abbott, 1974:542; not fig. 6026.

Type locality: Kyska Harbor, Aleutian Islands.

Range: Arctic Ocean north of Bering Straits. (Dall, 1921) Point Barrow, Alaska. Nunivak, Kiska, Unalaska and Kodiak Islands, Alaska. (MacGinitie, 1958) Okhotsk Sea (Dall, 1902) to Victoria, British Columbia. (Dall, 1921)

Depth: 100 to 300 m (British Columbia). (Bernard, 1970)

Localities:

Southeast: Lemesurier Island (1).

Panomya arctica (Lamark, 1818)

Glycimeris arctica Lamark, 1818, *Histoire naturelle des Animaux sans vertebres...*, Ed. 1 vol. 5, p. 458. (MacGinitie, 1959)

Panomya arctica var. *turgida* Dall, 1916, *Proc. U.S. Nat. Mus.* 52:416.

Panomya (arctica var.?) turgida, Dall, 1921:54; pl. 2, fig. 1.

Panomya turgida, Oldroyd, 1924:206.

Panomya arctica, MacGinitie, 1959:189; pl. 19, fig. 1, pl. 25, figs. 6, 8.

Panomya arctica, Habe and Ito, 1974:153; pl. 53, figs. 4, 5.

Panomya arctica, Abbott, 1974:542, fig. 6025.

Type locality: Arctic Ocean, White Sea.

Range: West Pacific: Point Barrow to Unalaska and the Shumagin Islands to Sitkalidak Island, Seldovia and Forrester Island, Alaska. Victoria British Columbia.

East Atlantic: British Isles and northern Europe.

West Atlantic: Arctic Ocean to Chesapeake Bay. (MacGinitie, 1959; Burch, 1945)

Depth: 50 fms. (Forrester Island, Alaska) (Burch, 1945)

25 to 115 fms (Arctic Ocean to George's Bank, Atlantic). (LaRocque, 1953)

Localities:

Northern Bering: St. Lawrence Island (empty) (1).

Eastern Gulf: Port Valdez, 238 m (1).

Panomya beringiana Dall, 1916

Panomya beringiana Dall, 1916, *Proc. U.S. Nat. Mus.* 52:416.

Panomya beringiana, Dall, 1921:54.

Panomya beringiana, Oldroyd, 1924:207.

Panomya beringiana, Habe and Ito, 1974:154; pl. 53, fig. 6.

Type locality: U.S.F.C. Sta. 3529, near Pribilof Islands, Bering Sea,
56 fms.

Range: eastern Bering Sea. (Dall, 1921) Unalaska Island, Aleutians.
(Burch, 1945)

not seen.

*Panopea**Panopea generosa* (Gould, 1850)*Panopaea generosa* Gould, 1850, *Boston Soc. Nat. Hist., Proc.* 3:215.
(Johnson, 1964)*Panope generosa*, Dall, 1921:54.*Panopaea generosa*, Oldroyd, 1924:205; pl. 2, figs. 1, 2.*Panopea generosa*, Abbott, 1974:542, fig. 6028.

Type locality: Puget Sound and mud flats at Nisqually, Washington.

Range: East Pacific: 56°N (Bernard, 1970) to San Diego, California.
(Dall, 1921)

Depth: intertidal to 20 m (British Columbia). (Bernard, 1970)

Localities:

Southeast: Gravina Island, Clarence Strait (1). Vallenar Bay,
Clarence Strait (1).

Family Pholadidae

Nettastomella

Nettastomella japonica (Yokoyama, 1920)

Jouannetia japonica Yokoyama, 1920, *J. Coll. Sci. Imp. Univ. Tokyo* 39(6):106; pl. 7, fig. 1. (Turner, 1962)

Nettastomella japonica, Turner, 1962:292; pl. 47, pl. 48, fig. 2; pl. 50.

Type locality: Yokosuta Zone, lower Musashimo (Pliocene) Otsu, Yokosuka, Honshu, Japan.

Range: Noto Peninsula, Honshu, Japan through the Aleutian Islands.
British Columbia to Puget Sound. (Turner, 1962)

Depth: low tide to 150 fms.

boring into blue clay or friable sandstone. (Tuner, 1962)

not seen.

*Penitella**Penitella gabbi* (Tryon, 1863)*Zirfaea gabbi* Tryon, Acad. Nat. Sci. Phila., Proc. p. 10;
pl. 1, fig. 1. (Turner, 1955)*Penitella gabbi*, Turner, 1955:85; pls. 52-54.*Penitella gabbi*, Abbott, 1974:546, fig. 6044.

Type locality: Monterey Bay, California. (Turner, 1955)

Range: Drier Bay, Prince William Sound, Alaska to San Pedro, California.
(Turner, 1955)

Depth: intertidal to 10 m. (Bernard, 1970)

habitat similar to that of *Penitella penita*. (Turner, 1955)

not seen.

Penitella penita (Conrad, 1837)

Pholas penita Conrad, 1837, *J. Acad. Nat. Sci. Phila.* 7:237;
pl. 98, fig. 7. (Turner, 1955)

Pholadidea penita and subspecies, Dall, 1921:55.

Pholadidea penita and subspecies, Oldroyd, 1924:211, 212; pl. 21,
fig. 10; pl. 51, figs. 3a, b; pl. 22, figs. 4, 5.

Penitella penita, Turner, 1955:80; pls. 5, 47-51.

Penitella penita, Abbott, 1974:545, fig. 6043.

Type locality: San Diego, California.

Range: Bering Island, Bering Sea. Chirikof Island, Alaska to Bahia
San Bartolome, Baja California. (Turner, 1955)

Depth: intertidal to 5 m. (Bernard, 1970)

boring into a variety of substrata: clay, sandstone, cement.
(Turner, 1955)

not seen.

Zirfaea

Zirfaea pilsbryi Lowe, 1931

Zirfaea pilsbryi Lowe, 1931, *Nautilus* 45:53; pl. 3, figs. 1, 2.

Zirfaea pilsbryi, Turner, 1954:58; pls. 30-34.

Zirfaea pilsbryi, Abbott, 1974:544, fig. 6039.

Type locality: Bolinas, California.

Range: Nunivak and Bering Islands, Bering Sea to Bahia San Quentin and Punta Abreojos, Baja California. (Turner, 1954)

Depth: mud and clay banks, wood, sandstone. (Turner, 1954)

Localities:

Chuckchi: $66^{\circ}15'N$, $166^{\circ}05'W$ (empty) (1).

Family Teredinidae

*Bankia**Bankia setacea* (Tryon, 1863)

Xylotrya setacea Tryon, 1863, Acad. Nat. Sci. Phila., Proc. p. 144; pl. 1, figs. 2, 3. (Oldroyd, 1924)

Bankia setacea, Dall, 1921:56.

Bankia setacea, Abbott, 1974:552; fig. 6066.

Type locality: San Francisco Bay, California.

Range: Bering Sea to Baja California (23° N). (Bernard, 1970)

Depth: intertidal to 30 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: 59 to 60° N and 144 to 145'W, 89 to 224 m, in decaying wood (3).

Family Pandoridae

*Pandora**Pandora filosa* (Carpenter, 1864)*Kennerlia filosa* Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 638. (Palmer, 1958)*Pandora (Kennerlia) filosa*, Dall, 1921:26.*Pandora (Kennerlyia) filosa*, Oldroyd, 1924:88; pl. 33, figs. 2a, b.*Pandora (Pandorella) filosa*, Palmer, 1958:77; pl. 6, figs. 9-14.

Type locality: Puget Sound, Washington.

Range: Nunivak Island, Bering Sea to San Pedro, California. (Dall, 1921)

Depth: 20 to 200 m (British Columbia). (Bernard, 1970)

Localities:

Western Gulf: Kasitsna Bay (1).

Eastern Gulf: $59^{\circ}37.5'N$, $145^{\circ}10'W$, 186 m (1).

Southeast: Stephens Passage, 30 m (1).

Pandora glacialis Leach, 1819

Pandora glacialis Leach, 1819, *J. Phys.* 88(6):465. (Oldroyd, 1924)

Pandora (Kennerlia) glacialis eutaenia Dall, 1915, *Proc. U.S. Nat. Mus.* 29:449.

Pandora (Kennerlia) glacialis and ssp. *eutaenia*, Dall, 1921:26.

Pandora (Kennerlyia) glacialis and ssp. *eutaenia*, Oldroyd, 1924:89; pl. 15, fig. 11; pl. 42, figs. 3, 4.

Pandora (Heteroclidis) glacialis, Abbott, 1974:557, fig. 6099.

Type locality: Spitzbergen.

Range: Arctic: Arctic seas of U.S.S.R. (Petrov, 1966) Greenland, Spitzbergen and Novaya Zemlya.

Atlantic: Hudsons Bay. Gulf of St. Lawrence (Ockelmann, 1958) to Massachusetts Bay. (Petrov, 1966)

Pacific: Bering Sea to Strait of Juan de Fuca. (Dall, 1921)

Depth: 2 m (Franz Joseph Land) to 205 m (east Greenland). (Ockelmann, 1958)

100 to 200 m (British Columbia). (Bernard, 1970)

30 to 50 m. (Petrov, 1966)

sand and silty sand, also mud, clay, stones. (Ockelmann, 1958)

Localities:

Arctic: Prudhoe Bay, 2 m (1).

Northern Bering: Norton Sound southeast of Nome, 22 m, rock, gravel, clay (1).

Southern Bering: 56°58'N, 169°01'W (1).

Pandora grandis Dall, 1877

Pandora (Kennerlia) grandis Dall, 1877, Calif. Acad. Sci., Proc., March 19, p. 5. (preprint) Vol. 7 never published). (Boss, Rosewater, Ruhoff, 1968)

Pandora (Kennerlia) forresterensis, Willett, 1918, *Nautilus* 31(4):134.

Pandora (Kennerlia) grandis, Dall, 1921:25.

Pandora (Kennerlia) forresterensis, Dall, 1921:26.

Pandora (Kennerlyia) grandis, Oldroyd, 1924:87; pl. 15, fig. 10;

Pandora (Kennerlyia) forresterensis, Oldroyd, 1924:90; pl. 53, figs. 4, 5.

Type locality: of *Pandora grandis*, near Victoria, British Columbia.

of *Pandora forresterensis*, Forrester Island, 50 fms.

Range: Pribilof Islands, Bering Sea to Siletz Bay, Oregon. (Dall, 1921)

Depth: 100 to 400 m (British Columbia). (Bernard, 1970)

Localities:

Eastern Gulf: near Kodiak Island (1).

Southeast: Katlian Bay (1). Dixon Harbor (1).

Pandora
grandis

Size - length	42.8
height	32.5
thickness	7.3
Overall shape	broadly oval
Posterior dorsal margin	slightly concave
Posterior	broadly rounded
Anterior	separated by an incised line, different texture
Anterior ventral margin indentation	angular
Left anterior cardinal tooth	separate from dorsal margin
Sub-marginal ridge	not present

TABLE 59

Pandora

<u><i>Pandora glacialis</i></u>	<u><i>Pandora filosa</i></u>
21.5	11.0
13.4	6.0
4.6	1.5
oval	elongate
straight	straight
narrowly rounded or slightly rostrate	long, narrow, truncate
separated by an incised line, different texture	not separated
rounded	not indented
fused with dorsal margin	separate from dorsal dorsal margin
not present	present

Family Lyonsiidae

Entodesma

Entodesma saxicola (Baird, 1863)

Lyonsia saxicola Baird, 1863, Proc. Zool. Soc. p. 70. (Oldroyd, 1924)

Lyonsia (Entodesma) saxicola, Dall, 1921:27.

Lyonsia (Entodesma) saxicola, Oldroyd, 1924:93.

Entodesma (Agriodesma) saxicolum, Abbott, 1974:556, fig. 6090.

Type locality: Esquimalt Harbor, Vancouver Island, British Columbia.

Range: Aleutian Islands to San Pedro, California. (La Rocque, 1953)

Depth: intertidal to 20 m (British Columbia). (Bernard, 1970)

Localities:

Southeast: Yamani Cove, Baranof Island (1).

*Lyonsia**Lyonsia arenosa* (Möller, 1842)

Pandorina arenosa Möller, 1842, *Index Molluscorum Groenlandiae*
p. 20. (Oldroyd, 1924)

Lyonsia arenosa, Dall, 1921:26.

Lyonsia arenosa, Oldroyd, 1924:92.

Type locality: Greenland.

Range: all arctic seas. (Petrov, 1966)

East Atlantic: arctic to north and east Iceland. western Finmark.

West Atlantic: arctic coast to Cape Ann, Massachusetts.

East Pacific: Alaskan arctic coast to Kodiak Island.

West Pacific: Sea of Okhotsk to Japan. (Ockelmann, 1958)

Depth: 3.5-4 m to 60-80 m (east Greenland). (Ockelmann, 1958)

3 m (Novaya Zemlya) to 200 m (west Greenland). (Ockelmann, 1958)

various bottoms.

fjords and open sea. (Ockelmann, 1958)

Localities:

Chukchi: 71 to 72°N and 160 to 163°W, 40 to 50 m (3).

Northern Bering: north of St. Lawrence Island (5). Norton Sound
south of Nome, 22 to 52 m (1).

Southern Bering: Bristol Bay, 57°50'N, 162°11'W (1).

Lyonsia bracteata (Gould, 1850)

Osteodesma bracteata Gould, 1850, *Boston Soc. Nat. Hist., Proc.* 3:317. (Johnson, 1964)

Lyonsia pugetensis, Dall, 1913, *Proc. U.S. Nat. Mus.* 45:595.

Lyonsia pugetensis, Dall, 1921:27.

Lyonsia pugetensis, Oldroyd, 1924:91; pl. 28, fig. 2.

Type locality: of *Osteodesma bracteata*, Puget Sound, Washington.

of *Lyonsia pugetensis*, coast of Washington.

Range: Chignik Bay, Alaska to Puget Sound, Washington. (Dall, 1921)

Localities:

Eastern Gulf: 59 to 60°N and 141 to 152°W (3).

TABLE 60

Lyonsia

	<i>Lyonsia bracteata</i>	<i>Lyonsia arenosa</i>
Size - length	25.5	34.6
height	15.1	20.5
thickness	9.3	14.0
Anterior length	9.0	13.5
Anterior	narrowly rounded	broadly rounded
Posterior	obliquely truncate	rounded
Texture	thin, hyaline translucent	slightly chalky, pearly within
Periostracum	with narrow radial ridges, heavy coating of sand	narrow radial ridges, light coating of sand
Color	gray-greenish	pinkish, white where worn, brownish radial ridges

*Mytilimeria**Mytilimeria nuttalli* Conrad, 1837*Mytilimeria nuttallii* Conrad, 1837, *J. Acad. Nat. Sci. Phila.*, Proc. 7:247. (Keen, 1966a)*Mytilimeria nuttallii*, Dall, 1921:27.*Mytilimeria nuttallii*, Oldroyd, 1924:94.*Mytilimeria nuttalli*, Abbott, 1974:556, fig. 6092.

Type locality: coast of California.

Range: Forrester Island, Alaska (Willett, 1918) to San Diego, California.
(Dall, 1921)

Depth: intertidal (British Columbia). (Bernard, 1970)

in compound ascidians.

not seen.

Family Periplomatidae

*Periploma**Periploma alaskana* Williams, 1940

Periploma alaskana Williams, 1940, *Pomona Coll. J. Entomol. Zool.* 23:37; fig. p. 38.

Type locality: 68°37'N, 168°53'W, Chukchi Sea.

Range: type locality and MacLeod Harbor, Montague Island, Prince William Sound. (Williams, 1940) Chukchi Sea. (Mann, 1977)

Depth: 32 fms (Chukchi Sea), 25 fms (Montague Island). (Williams, 1940)

Localities:

Southern Bering: 56 to 58°N and 168 to 173°W, 115 m (5).

Eastern Gulf: east of Montague Island, 240 m (1). Port Valdez, 60 m (empty) (1).

Southeast: Bartlett Cove, 7 m (empty) (1).

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Family Thraciidae

Asthenothaerus

Asthenothaerus adamsi (MacGinitie, 1959)

Thracia (Lampeia) adamsi MacGinitie, 1959, Proc. U.S. Nat. Mus. 109:163; pl. 18, fig. 9; pl. 21, fig. 7; pl. 24, fig. 8.

Asthenothaerus adamsi, Rowland, 1973:83.

Type locality: 2.5 mi. off Point Barrow, Alaska.

Range: Point Barrow. (MacGinitie, 1959) northern Bering Sea. (Rowland, 1973) Chukchi Sea. (Mann, 1977)

Depth: 110 ft. (MacGinitie, 1959)

22 m. (Rowland, 1973)

stones, mud, gravel. (MacGinitie, 1959; Rowland, 1973)

Localities:

Northern Bering: $64^{\circ}18.5'N$, $171^{\circ}08'W$, 41 m, cobbles, gravel, poorly sorted sand (1).

*Thracia**Thracia challisiana* Dall, 1915

Thracia challisiana Dall, 1915, Proc. U.S. Nat. Mus. 49:443. (Boss,
Rosewater, Ruhoff, 1968)

Thracia challisiana, Dall, 1921:25.

Thracia challisiana, Oldroyd, 1924:84; pl. 43, fig. 7.

Type locality: San Juan Island, Gulf of Georgia, Washington and Forrester
Island, Alaska.

Range: Forrester Island, Alaska (Willett, 1918) to 37°N. (Bernard, 1970)

Depth: 30 to 80 m (British Columbia). (Bernard, 1970)

not seen.

Thracia curta Conrad, 1837

Thracia curta Conrad, 1837, *J. Acad. Nat. Sci. Phila.* 7:248; pl. 19,
fig. 8. (Keen, 1966a)

Thracia curta, Dall, 1921:25.

Thracia curta, Oldroyd, 1924:84; pl. 43, fig. 6.

Thracia curta, Abbott, 1974:559, fig. 6111.

Type locality: Santa Barbara, California.

Range: Bering Sea to Cabo San Lucas, Baja California. (Dall, 1921)
Lituya Bay, Alaska and south. (MacGinitie, 1959) Drier Bay, Knight
Island. (Eyerdam, 1924)

Localities:

Western Gulf: Kasitsna Bay (1).

Thracia devexa G. Sars, 1878

Thracia myopsis var. *devexa* G. Sars, 1878, *Mollusca Regionis Arcticae Norvegiae* p. 84; pl. 6, figs. 11a, b. (Soot-Ryen, 1941)

Thracia (Thracia) devexa, Soot-Ryen, 1941:23; pl. 2, figs. 5-10; pl. 6, fig. 4; pl. 9, fig. 5.

Thracia (Thracia) devexa, Ockelmann, 1958:156; pl. 3, fig. 5.

Thracia myopsis, MacGinitie, 1959:162; pl. 23, fig. 9; pl. 24, fig. 4.

Thracia devexa, Rowland, 1973:81.

Type locality: Vadso, Norway.

Range: east Greenland. Spitzbergen. Novaya Zemlya. (Soot-Ryen, 1941)
Point Barrow. (MacGinitie, 1959) northern Bering Sea. (Rowland, 1973)

Depth: 10-15 to 95 m (east Greenland). (Ockelmann, 1958)

cobble sand and cobble silt. (Rowland, 1973)

clay. inner fjords. (Ockelmann, 1958)

Localities:

Southern Bering: 55 to 64°N and 163 to 170°W, 38 to 56 m, fine sand (10).

Thracia beringi Dall, 1915

Thracia beringi Dall, 1915, Proc. U.S. Nat. Mus., 49:442. (Boss,
Rosewater, Ruboff, 1968)

Thracia beringi, Dall, 1921:25.

Thracia beringi, Oldroyd, 1924:65; pl. 43, fig. 4.

Type locality: Commander Islands, Bering Sea.

Range: Bering Sea and Aleutian Islands to Sitka, Alaska. (Dall, 1921)

Localities:

Southern Bering: 57 to 58°N and 161 to 163°W (2).

Western Gulf: MacDonald Spit, Kavitsna Bay (1).

TABLE 61
Thracia

	<i>Thracia</i> <u>beringi</u>	<i>Thracia</i> <u>devexa</u>
Size - length	36.3	14.3
height	26.0	10.1
thickness	13.0	10.9
Anterior	18.3	6.8
Beaks	low, central	rather prominent, central
Anterior	sloping, rounded	sloping, narrowly rounded
Posterior	slightly concave squarely truncate	slightly concave squarely truncate
Resilifer	more than 1/2 posterior dorsal length	less than 1/2 posterior dorsal length
Periostracum	dehiscent, yellowish, fine- ly wrinkled	adherent, pink- ish, granular

Thracia
curta

23.0
12.6
10.7

Tharcia
challisiana

45
33
20
10.2 shorter than
 posterior

inflated,
slightly anterior

sloping, blunt- rounded
ly rounded

sloping blunt, quadrate
truncate

about 1/2 marginal
posterior dorsal inconspicuous
length

worn, yellowish, coarse, imbricat-
finely wrinkled ing granulation

from Dall, 1915
in Oldroyd, 1924

Family Poromyidae

*Poromya**Poromya beringiana* (Dall, 1916)*Dermatomya beringiana* Dall, 1916, Proc. U.S. Nat. Mus. 52:406.*Dermatomya beringiana*, Dall, 1921:27.*Poromya beringiana*, Oldroyd, 1924:95.*Poromya (Dermatomya) beringiana*, Bernard, 1974:87; pl. 24, figs. 1, 2.

Type locality: Bower's Bank, Bering Sea, 557 fms.

Range: British Columbia, 50.5°N to Bower's Bank, Bering Sea. (Bernard, 1974)

Depth: 1019 to 1951 m. (Bernard, 1974)

not seen.

Poromya malespinae (Dall, 1916)

Cetoconcha malespinae Dall, 1916, *Proc. U.S. Nat. Mus.* 52:407.

Cetoconcha malespinae, Dall, 1921:28.

Cetoconcha malespinae, Oldroyd, 1924:96.

Poromya (Cetoconcha) malespinae, Bernard, 1974:81; pl. 21, figs. 2.

Type locality: Albatross Sta. 2859, southwest of Sitka Bay, Alaska, 1569 fms.

Range: Sitka, Alaska to British Columbia (52.9° N). (Bernard, 1974)

Depth: 2104 to 2871 m. (Bernard, 1974)

mud, high H_2S . (Bernard, 1974)

not seen.

Poromya tenuiconcha Dall, 1913

Poromya (Dermatomya) tenuiconcha Dall, 1913, Proc. U.S. Nat. Mus., 45:596. (Boss, Rosewater, Ruhruff, 1968)

Poromya (Dermatomya) tenuiconcha, Dall, 1921:27; pl. 3, fig. 10.

Poromya (Dermatomya) tenuiconcha, Oldroyd, 1924:95; pl. 54, figs. 24-26.

Poromya (Dermatomya) tenuiconcha, Bernard, 1974:95; pl. 23, figs. 3, 10.

Type locality: Albatross Sta. 5699, off Point Sur, California.

Range: Alaska Peninsula to Coronado Island, California. (Dall, 1921)

Depth: 457 to 1572 m. (Bernard, 1974)

Sp. sp.

Family Cuspidariidae

*Cardiomya**Cardiomya beringensis* (Leche, 1883)*Neaera beringensis* Leche, 1883, *Vega-Exped vetensk. iakttag.*
3:438; pl. 32, figs. 1, 2. (Bernard, 1974)*Cuspidaria beringensis*, Dall, 1921:28.*Cuspidaria beringensis*, Oldroyd, 1924:100; pl. 13, figs. 4, 5.*Cardiomya beringensis*, Bernard, 1974:62 (in synonymy with *C. pectinata*)*Cardiomya beringensis*, Habe and Ito, 1974:161; pl. 55, fig. 11.

Type locality: "Bering Sea?" (La Rocque, 1953)

Range: Bering Sea to British Columbia. (Bernard, 1974)

not seen.

Cardiomya curta (Jeffreys, 1881)

Neaera curta Jeffreys, 1881, Zool. Soc. London, Proc. p. 793,
pl. 71. (Bernard, 1974)

Cardiomya curta, Bernard, 1974:55; pl. 17, figs. 7, 8.

Type locality: Porcupine Expedition Sta. 16, 39°55'N, 9°56'W.

Range: cosmopolitan in deep water. east and west Atlantic. Bering Sea
to off British Columbia. (Bernard, 1974)

Depth: 119 fms (Bering Sea).

732 to 2195 m. (Bernard, 1974)

not seen.

Cardiomya pectinata (Carpenter, 1864)

Neaera pectinata Carpenter, 1864, *Rept. Brit. Assoc. Adv. Sci.*
p. 602, 607. (Palmer, 1958)

Cuspidaria pectinata, Dall, 1921:28.

Cuspidaria pectinata, Oldroyd, 1924:101.

Cuspidaria (Cardiomya) pectinata, Palmer, 1958:78; pl. 6, figs. 1-5.

Cardiomya pectinata, Bernard, 1974:62; pl. 16, figs. 4, 7 (includes
Cardiomya beringensis in synonymy).

City: Puget Sound, Washington.

Range: Gulf of Alaska (58° N) (Bernard, 1970) to Cedros Island, Baja California. (Bernard, 1974)

Depth: 5 to 265 m. (Bernard, 1974)

Localities:

Eastern Gulf: 59 to 60° N and 141 to 146° W, 80 to 179 m (7).
Sheep Bay (1). Port Valdez (1).

Cardiomya planetica (Dall, 1908)

Cuspidaria (Cardiomya) planetica Dall, 1908, *Mus. Comp. Zool.*,
Bull. 43(16):433.

Cuspidaria planetica, Dall, 1921:29.

Cuspidaria planetica, Oldroyd, 1924:99.

Cardiomya planetica, Bernard, 1974:64; pl. 18, figs. 1, 2, 8.

Type locality: Albatross Sta. 2925, off San Diego, California, 339 fms.

Range: Cedros Island, Mexico to Bering Sea (58.2° N). (Bernard, 1974)

Depth: 29 to 604 m. (Bernard, 1974)

Localities:

Southern Bering: $59^{\circ}53'N$, $166^{\circ}10'W$, 150 m (1). $56^{\circ}31'N$, $169^{\circ}03.5'W$, 106 m (1).

Eastern Gulf: $59^{\circ}19'N$, $140^{\circ}28'W$, 129 m (1). Port Valdez, 20 m (empty) (1) to 248 m (4).

TABLE 62

Cardiomya

	<i>Cardiomya pectinata</i>	<i>Cardiomya planetica</i>	<i>Cardiomya beringensis</i>	<i>Cardiomya curta</i>
Size - length	5.0	19.0	29	.4 in.
height	3.5	14.2	20	.55 in.
thickness	2.5	10.1	16.5	
Rostrum length	2.0	10.0		
Rostrum ribs	short, thick	long, narrow	short, narrow upturned	very short, upturned
Number of ribs	around 14	over 20	over 20	
Outline of ribs	angular, stronger near posterior line threads between anterior most ribs	fine, thread-like, stronger near posterior	angular, stronger near posterior	striae, becoming sharp ribs near posterior
Hinge	proportionally thick, strong	long, thick, but proportionally weaker	like that of <i>C. pectinata</i>	short, strong triangular

TABLE 62

Continued

	<u>Cardiomya pectinata</u>	<u>Cardiomya planetica</u>	<u>Cardiomya beringensis</u>	<u>Cardiomya curta</u>
Ligament pit	low, small	deep, long	small, circular	small, triangular
			from Oldroyd, 1924; Bernard, 1974	from Jeffreys, 1881 in Bernard, 1974

*Cuspidaria**Cuspidaria apodema* Dall, 1916*Cuspidaria apodema* Dall, 1916, Proc. U.S. Nat. Mus. 52:407.*Cuspidaria apodema*, Dall, 1921:28.*Cuspidaria apodema*, Oldroyd, 1924:98.*Cuspidaria apodema*, Bernard, 1974:30; pl. 12, figs. 5, 6, text figs. 2, 3.

Type locality: Albatross Sta. 2859, southwest of Sitka, Alaska.

Range: Sitka, Alaska to Cape Cook, British Columbia. (Bernard, 1974)

Depth: 1098 to 2871 m. (Bernard, 1974)

not seen.

Cuspidaria glacialis (G. Sars, 1878)

Neaera glacialis G. Sars, 1878, *Mollusca Regionis Arcticac Norvegiae...*
p. 88; pl. 6, fig. 8a-c. (Bernard, 1974)

Cuspidaria glacialis, Oldroyd, 1924:98; pl. 19, figs. 3, 3a; pl. 54,
figs. 27, 28.

Cuspidaria glacialis, Dall, 1926:15; pl. 20, fig. 4.

Cuspidaria glacialis, Ockelmann, 1958:164; pl. 3, fig. 10.

Cuspidaria glacialis, Bernard, 1974:36; pl. 13, figs. 3, 4.

Type locality: Vadso, Norway.

Range: Bering Sea to 55°N. Circumpolar, Atlantic to 51°N. (Bernard, 1974)

Depth: 146 to 183 m. (Bernard, 1974)

71 to 1890 m. (Ockelmann, 1958)

clay bottoms (east Greenland). (Ockelmann, 1958)

Localities:

Arctic: 70°43.8'N, 145°02'W, 110 m (empty) (1).

Family Verticordiidae

Lyonsiella

Lyonsiella alaskana Dall, 1895

Lyonsiella alaskana Dall, 1895, Proc. U.S. Nat. Mus. 17:703; pl. 25,
fig. 2.

Lyonsiella alaskana, Dall, 1921:28.

Lyonsiella alaskana, Oldroyd, 1924:97.

Lyonsiella alaskana, Bernard, 1974:103; pl. 27, figs. 1-4, text fig. 11.

Type locality: Albatross Sta. 2859, southwest of Sitka, Alaska.

Range: Sitka, Alaska to British Columbia (51.9° N) to Santa Catalina Island, California. (Bernard, 1974)

Depth: 805 to 2871 m. (Bernard, 1974)

not seen.

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