

Figure 19. Shells of species of Onoba. A, G, Onoba erugata n. sp.; A, paratype, length 1.52 mm; G, holotype, length 1.49 mm. B–D, Onoba georgiana (Pfeffer); B, Sta. 75-49, length 1.79 mm; C, Sta. 75-49, length 1.86 mm; D, Sta. 75-48, length 1.86 mm. E, Onoba subincisa n. sp., holotype, length 1.79 mm. F, Onoba protofimbriata n. sp., holotype, length 1.90 mm. H, Onoba cf. macra (Watson), DE 399, length 1.75 mm. Scale bars: 500 μm.

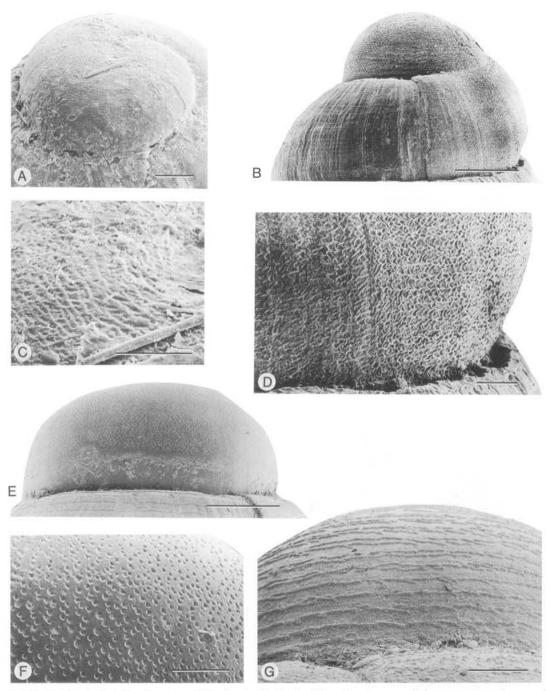


Figure 20. Detail of shells of species of Onoba. A, C, Onoba? lacuniformis n. sp., holotype; A, lateral view of protoconch; C, protoconch microsculpture. B, D, Onoba protofimbriata n. sp., holotype; B, lateral view of protoconch; D, protoconch microsculpture. E, F, Onoba sulcula n. sp., holotype; E, lateral view of protoconch; F, protoconch microsculpture. G, "Onoba" algida n. sp., holotype, protoconch microsculpture. Scale bars: A, B, E, 100 μm; C, G, 50 μm; D, F, 20 μm.

1.2 whorls, sculptured with very fine, sharp, irregular, curved axial lamellae interlocking to give a tessellated pattern showing basically spiral pattern. Aperture oval, angled posteriorly. Inner lip narrow, detached from parietal wall; outer lip orthocline with moderate apertural varix immediately behind lip. Umbilical chink narrow groove. Periostracum not observed. Color white.

Dimensions.

			SL/		SL/					
	SL	SW	SW	AL	ΑĹ	TW	PW	PD	PS	BS
Holotype	1.90	0.99	1.91	0.72	2.66	2.8	1.2	0.35	8	13
Paratypes	1.98	0.99	1.99	0.74	2.68	2.8	1.2	0.37	9	14
	1.85	1.03	1.80	0.78	2.37	2.7	1.1	0.35	8	13
	2.01	1.04	1.94	0.77	2.61	2.9	1.1	0.38	8	13
	2.18	1.05	2.09	0.77	2.83	3.1	1.1	0.37	8	13
	2.11	0.91	2.12	0.76	2.35	3.1	1.1	0.39	8	13

Operculum, radula and animal unknown.

REMARKS. This species is somewhat similar to O. subincisa n. sp. described below, but the shell has stronger sculpture and sharper ribs with wider interspaces. The spiral ribs on the shell are much finer in O. fimbriata than in O. fuegoensis (Strebel, 1908), although some forms of the latter species are otherwise somewhat similar in shell shape. The distinctive protoconch microsculpture, from which this species obtains its name, is not seen in any other South American species, although it it is similar, but more weakly developed, in O. georgiana (Fig. 21B, D, F). Onoba protofimbriata resembles two New Zealand taxa in teleoconch characters: O. fallai (Powell, 1955) from the New Zealand sub-Antarctic is similar in size and in the number of spiral cords but differs in having linear interspaces between the cords (not wider than the cords); O. moriora (Powell, 1933) from the Chatham Islands is very similar to O. fallai but has the interspaces about equal to the cords.

DISTRIBUTION. Southern Chile, Tierra del Fuego, and (possibly) Falkland Islands (see Part 2). Known mainly from dead shells from intertidal to 50 m. One similar shell from E. 740, 340–490 m, may be a different species. Uncommon.

Onoba subincisa n. sp. Figures 19E, 22A-D, 23B, D, 24I

ETYMOLOGY. Sub—Latin. Somewhat, less than. Incisa—Latin. Cut. Refers to the teleoconch microsculpture.

MATERIAL EXAMINED. Types. Holotype, LACM 2682, 37 paratypes, LACM 2683; 4 paratypes, AMS C.167424. 24 75-48. Punta Santa Ana, Fuerte Bulnes, Brunswick Peninsula, Strait of Magellan, Chile. 53°38'S, 70°54.5'W, intertidal, Sta. 38, J.H. McLean, 16 Nov. 1975.

Additional Material Examined. Southern Chile: 24 75-48[2]; 75-49 [6(d)]. Tierra del Fuego: 28 71-270 [2(d)]. 31B 71-276 [1(d)]; 71-277 [1(d)]. 32A 71-273 [5(d)]. 32G 71-311 [2(d)]. 33G 73-66 [10(d)]. 33J 71-264 [1(d)]. (All material LACM unless otherwise indicated.)

DIAGNOSIS. Shell (Figs. 19E, 22A–D). Minute (maximum length 2 mm), elongate-conic, thin, translucent, with 2.2–3.1 teleoconch whorls. Spire with lightly convex outlines, whorls lightly convex; periphery of last whorl rounded. Sutures impressed, simple. Teleconch with broad, flat spiral cords separated by narrow grooves; 7–9 on penultimate whorl, 11–14 on last whorl and base; spiral cords may be very faint, especially on upper whorls. Fine,

well-spaced spiral threads over whole surface, especially in interspaces. Protoconch (Fig. 22A–C) of 1.0–1.2 whorls, sculptured with fine, close-set spiral wrinkles linked with irregular axial threads creating impression of irregular, spirally arranged shallow pits. Aperture oval, rather strongly angled posteriorly. Inner lip narrow, separated from parietal wall in lower half; outer lip orthocline with weak apertural varix immediately behind lip. Umbilical chink minute to absent. Periostracum very thin, transparent. Color white.

Dimensions.

	SL	sw	SL/ SW		SL/ AL	TW	PW	PD	PS	BS
Holotype	1.79	0.83	2.15	0.75	2.40	2.2	1.2	0.33	9	14
Paratypes	1.69	0.90	1.87	0.66	2.57	2.6	1.1	0.33	9	12
	1.71	0.86	1.99	0.67	2.56	2.7	1.1	0.32	9	13
	1.85	0.69	2.07	0.69	2.69	2.9	1.1	0.37	8	13
	1.86	0.95	1.95	0.69	2.70	2.7	1.2	0.39	9	14
	1.73	0.88	1.96	0.67	2.58	2.7	1.2	0.38	9	13
	1.72	0.95	1.82	0.77	2.24	2.5	1.1	0.35	9	14
	1.85	0.97	1.91	0.71	2.61	2.4	1.2	0.39	_	_
	1.73	0.96	1.81	0.64	2.40	2.7	1.1	0.35	9	14
	1.62	0.87	1.82	0.69	2.36	2.4	1.2	0.38	7	12
	1.77	0.87	2.04	0.69	2.58	2.2	1.2	0.34	8	13
Sta. 73-66	1.78	0.88	2.02	0.65	2.72	2.9	1.1	0.37	8	12
	1.68	0.88	1.91	0.66	2.53	2.7	1.1	0.35	8	11
	1.73	0.86	2.02	0.67	2.57	2.7	1.1	0.35	9	13
Sta. 75-49	2.00	0.95	2.10	0.72	2.79	3.1	1.0	0.38	8	13
	2.00	0.97	2.05	0.78	2.56	3.0	1.1	0.35	9	13
	1.77	0.94	1.87	0.72	2.46	2.6	1.2	0.38	8	13

Operculum (Fig. 24I). Yellow, thin, horny, paucispiral, oval with strongly convex outer edge and moderately convex inner edge. Weakly angled posteriorly, rounded anteriorly.

Radula (Fig. 23B, D). Central teeth with cusp formula 4-5+1+4-5, median cusp narrow, sharp; cutting edge triangular; single pair of well-developed basal denticles. Lateral teeth with cusp formula 4-5+1+4-7, primary cusp narrowly triangular, sharp. Inner marginal teeth with about 16-20 sharp cusps on outer side, inner side obscured in mounts. Outer marginal teeth with 9-10 cusps on inner side, outer side simple (based on 3 radulae).

Animal. Unpigmented.

REMARKS. The characters that distinguish O. subincisa from O. protofimbriata, O. striola n. sp., and O. sulcula n. sp. are discussed in the remarks under those species. There are no other known South American elongate-conic Onoba species with finely spirally sculptured shells. The protoconch microsculpture is similar to that of O. georgiana, but the shell of that species has only subobsolete spirals and is broader.

Onoba macra (Watson, 1886) from Tristan da Cunha is similar to O. subincisa but differs in being larger with more and wider whorls. A few shells of a smaller undescribed species very similar to O. macra were available for SEM examination. This undescribed species, which was obtained from off Gough Island, near Tristan da Cunha, is figured here

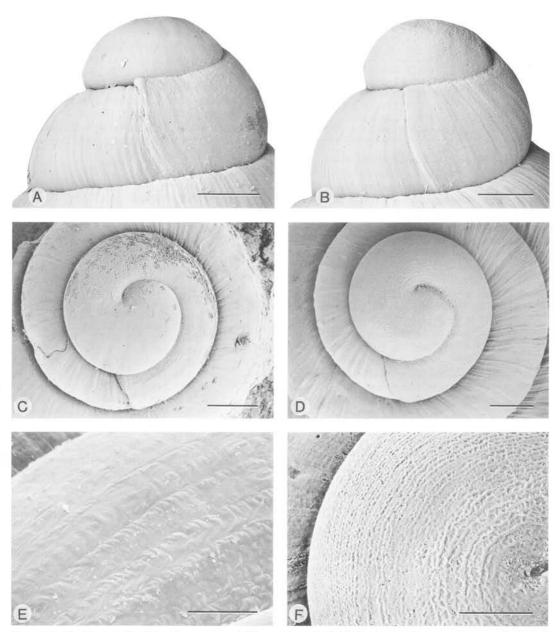
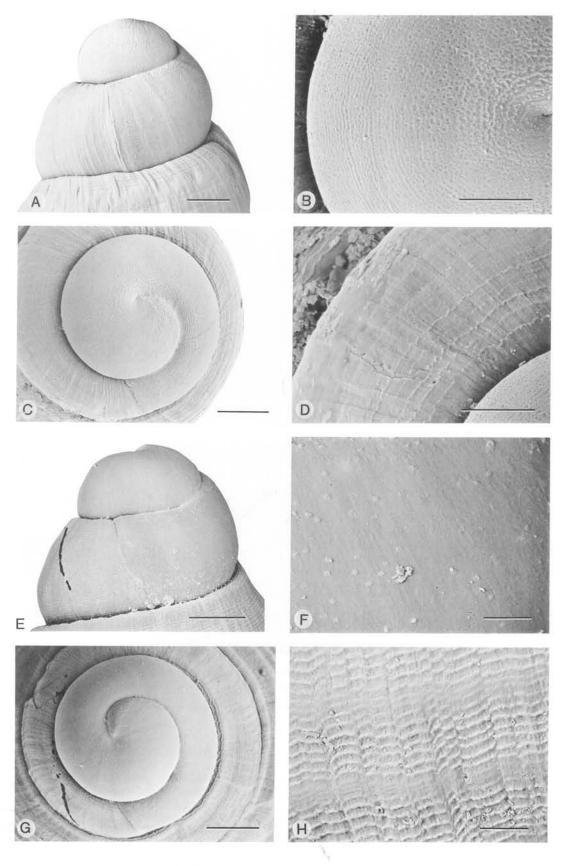


Figure 21. Details of shells of *Onoba erugata* and *O. georgiana*. A, C, E, *Onoba erugata* n. sp., paratypes; A, lateral view of protoconch; C, apical view of protoconch microsculpture. B, D, F, *Onoba georgiana* (Pfeffer), Sta. 75-48; B, lateral view of protoconch; D, apical view of protoconch; F, protoconch microsculpture. Scale bars: A–D, 100 μm; E, 20 μm; F, 50 μm.

Figure 22. Details of shells of Onoba subincisa and O. cf. macra. A–D, Onoba subincisa n. sp., paratypes; A, lateral view of protoconch; B, protoconch microsculpture; C, apical view of protoconch; D, teleoconch microsculpture. E–H, Onoba cf. macra Discovery Expedition Sta. 399; E, lateral view of protoconch; F, protoconch microsculpture; G, apical view of protoconch; H, teleoconch microsculpture. Scale bars: A, C, E, G, 100 μm; B, D, 50 μm; F, 20 μm; H, 200 μm.



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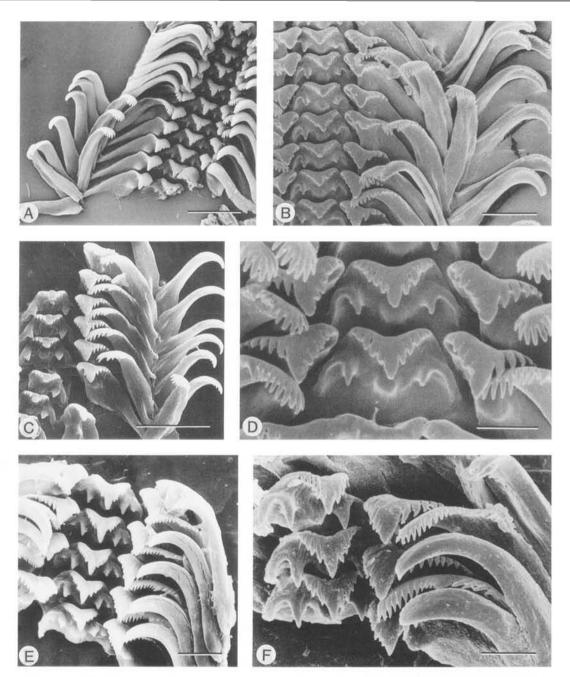


Figure 23. Radulae of species of Onoba. A, C, Onoba scythei (Philippi); A, Sta. TW3; C, Sta. 75-49. B, D, Onoba subincisa n. sp., paratypes. E, F, Onoba fuegoensis (Strebel); E, Sta. 71-262; F, Sta. 71-344. Scale bars: A, 20 μm; B, E, 10 μm; C, 25 μm; D, F, 5 μm.

for comparison with O. *subincisa* (Figs. 19H, 22E–H) but is not described because the small amount of available material is poor.

Onoba subincisa has a shell somewhat similar to that of the New Zealand O. fumata (Suter, 1898), but the aperture extends much more markedly forward (i.e., more opisthocline outer lip) in the New Zealand species. In addition, there are more spiral

cords (9-11 on the penultimate whorl of O. fu-mata), and the cords are narrower and flatter with narrower interspaces in O. subincisa. The New Zealand sub-Antarctic species O. fallai is usually slightly larger, with stronger spiral cords, and has a distinct apertural varix. Another New Zealand species, Onoba inornata (Powell, 1933), is somewhat similar in sculptural details but has a similar

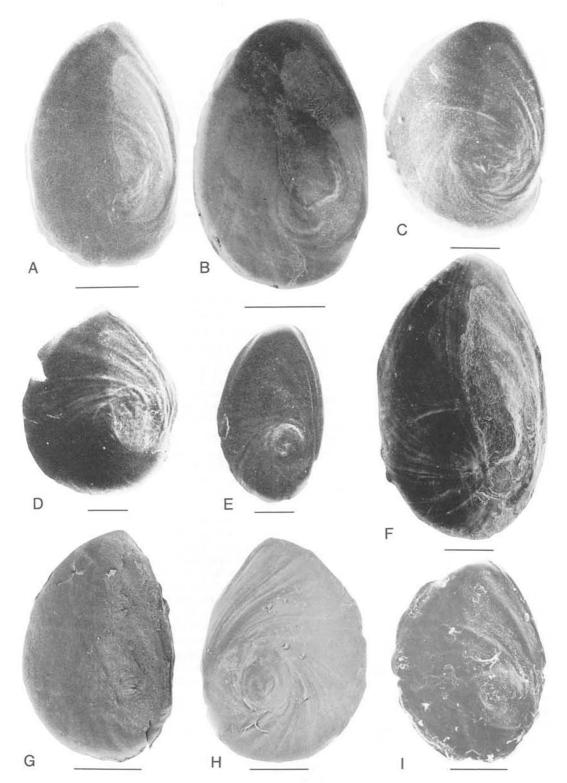


Figure 24. Opercula of species of Rissoidae. All views inner side unless otherwise indicated. A–C, Onoba fuegoensis (Strebel); A, Sta. 71-342; B, Sta. 71-344; C, Sta. 71-262. D, H, Onoba scythei (Phillippi); D, Sta. 75-45; H, Sta. TW3, outer side. E, Onoba striola n. sp., paratype. F, Onoba erugata n. sp., paratype. G, Onoba georgiana (Pfeffer), Sta. 75-49. I, Onoba subincisa n. sp., paratype. Scale bars: 200 μm.

aperture to that in O. fumata. The sub-Antarctic species O. steineni (Strebel, 1908) and O. turqueti (Lamy, 1905) have much larger and broader shells, and O. steineni has stronger sculpture.

DISTRIBUTION. Southern Chile and Tierra del Fuego; intertidal; empty shells to 18 m. Moderately common.

Onoba striola n. sp. Figures 18C, 24E, 25

ETYMOLOGY. Striola—Latin. A little furrow or line. Refers to the teleoconch microsculpture.

MATERIAL EXAMINED. Types. Holotype, LACM 2684, 4 paratypes, LACM 2685; 1 paratype, AMS C.167426. 32H 71-287. Puerto Cook, Isla de los Estados, Tierra del Fuego, Argentina. 54°45.25′S, 64°2.3′W, intertidal, Sta. 71-2-37, USARP-SOSC-R/V Hero Cr.712, 17 May 1971.

DIAGNOSIS. Shell (Fig. 25). Minute (maximum length 2 mm), elongate-conic, thin, translucent, with 2.5-3.4 teleoconch whorls. Spire with straight to lightly convex outlines, whorls moderately convex; periphery of last whorl rounded. Sutures impressed, simple. Teleoconch glossy with faint, slightly opisthocline growth lines and weak, flat-topped spiral cords separated by much narrower grooves; about 8-9 cords on penultimate whorl, 18-20 on last whorl and base, typically very faint and sometimes almost obsolete. Protoconch (Fig. 25B-D) of 1.1-1.3 whorls, with weak, irregular but mostly spirally aligned spiral wrinkles with interconnecting transverse wrinkles giving it finely reticulated appearance. Aperture oval, weakly angled posteriorly, with sharp peristome. Inner lip narrow, separated from parietal wall; outer lip slightly opisthocline with weak apertural varix immediately behind lip. Umbilical chink very narrow to absent. Periostracum very thin, transparent. Color white.

Dimensions.

_	SL	sw		AL		TW	PW	PD	PS BS
Holotype	2.00	1.01	1.97	0.73	2.73	3.4	1.3	0.35	— 21
Paratypes	1.64	0.89	1.84	0.64	2.54	2.5	1.3	0.37	
	1.90	0.98	1.94	0.73	2.62	2.7	1.2	0.41	
	2.02	1.00	2.01	0.71	2.85	3.0	1.3	0.43	9 —
	1.74	0.90	1.93	0.67	2.61	2.7	1.2	0.42	_ _
	2.03	1.00	2.03	0.73	2.80	3.1	1.1	0.39	

Operculum (Fig. 24E). Thin, horny, paucispiral. Elongate-oval with fairly strongly convex outer edge and moderately convex inner edge. Weakly angled posteriorly, rounded anteriorly.

Radula (Fig. 18C). Central teeth with cusp formula 5-6+1+5-6, median cusp long, narrow, pointed; cutting edge triangular; single pair of prominent basal denticles and weak pair of "pseudodenticles" arise from thickened lateral edges. Lateral teeth with cusp formula 7-8+1+7-8, primary cusp narrowly triangular, outer cusps larger and less crowded than inner cusps, inner cusps rather irregular. Inner marginal teeth with about 16

small, rather irregular cusps on outer edge, inner edge obscured in mount. Outer marginal teeth simple on outer side, inner side obscured in mount (single radula examined).

Animal. Unpigmented.

REMARKS. The only species in South America with a similar shell is O. subincisa, which has stronger and coarser teleoconch sculpture. The operculum is narrower in O. striola and the radula has a distinct second pair of basal cusps developed on the lateral edges of the central teeth, and the cutting edge of these teeth is more narrowly triangular than in O. subincisa. The protoconch microscupture is similar to that of O. subincisa and O. georgiana but is more weakly developed.

DISTRIBUTION. Tierra del Fuego; intertidal. Uncommon.

Onoba subaedonis n. sp.

Figure 26B, C

ETYMOLOGY. Has a similar shell to O. aedonis (Watson).

MATERIAL EXAMINED. Types. Holotype, LACM 2686, 33 paratypes, LACM 2687; 5 paratypes, AMS C.167427. 19 73-73. Bahía San Andrés, N of Golfo de Penas, Aisén Prov., Chile. 46°35.3′S, 75°30.6′W, subtidal, P. Dayton (R/V Hero), 23 May 1973.

Additional Material Examined. Southern Chile: 17 73-75 [4(d)]. Tierra del Fuego: 27E BMNH DE 388 [6(d)]. Falkland Islands: AMS C.167499 TW5 [2(d)].

DIAGNOSIS. Shell (Fig. 26B, C). Minute (maximum length 2 mm), ovate-conic, solid, opaque, with 2.7-3.0 teleoconch whorls. Spire with straight outlines, whorls moderately convex; periphery of last whorl rounded. Sutures impressed, simple. Teleoconch with moderately strong, rounded spiral cords with interspaces of equal width; 6-10 cords on penultimate whorl, 12-18 on last whorl and base. Interspaces have extremely fine axial growth lamellae and spiral striae. Very fine irregular axial sculpture on upper spire whorls sometimes present. Protoconch (Fig. 26C) of 1.0-1.3 whorls with closely spaced, fine, irregular spirally aligned wrinkles. Aperture broadly oval, weakly angled posteriorly. Inner lip narrow to moderately broad, attached to parietal wall in upper part only; outer lip orthocline, with very small posterior notch and moderate apertural varix immediately behind lip. Umbilical chink moderate. Periostracum not observed. Color white.

Dimensions.

	SL	sw	SL/ SW	AL	SL/ AL	TW	PW	PD	PS	BS
Holotype	1.80	1.14	1.60	0.71	2.56	3.0	1.3	0.42	_	_
Paratypes	1.92	1.18	1.63	0.73	2.63	3.0	1.1	0.41	7	15
• •	2.02	1.19	1.69	0.76	2.65	3.0	1.0	0.42	6	12
	1.90	1.16	1.64	0.75	2.53	3.0	1.1	0.41	7	13
	1.83	1.12	1.63	0.73	2.50	2.8	1.2	0.42	10	18
	1.85	1.12	1.65	0.74	2.49	2.8	1.0	0.41	7	13
	1.90	1.12	1.70	0.68	2.81	2.9	1.2	0.41	6	_
	1.76	1.11	1.59	0.69	2.56	2.7	1.2	0.43	7	14
	1.85	1.16	1.59	0.75	2.46	2.8	1.2	0.41		

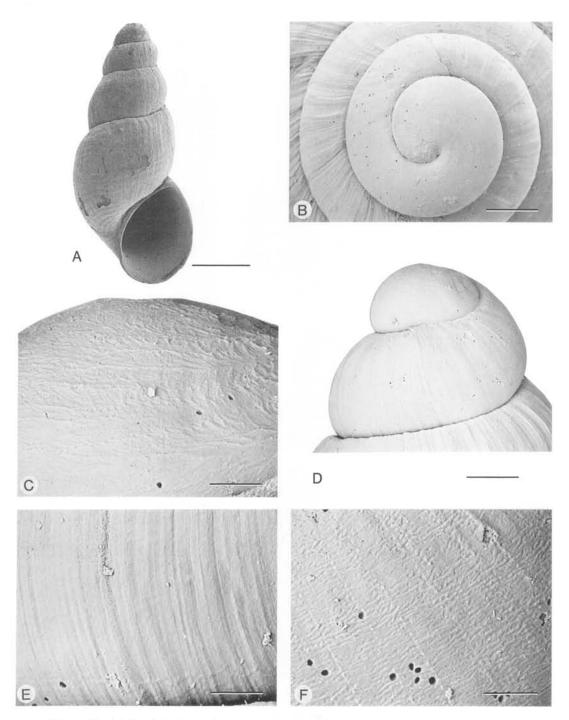


Figure 25. Details of shells of *Onoba striola* n. sp. A, Holotype shell, length 2.00 mm. B, Apical view of protoconch. C, F, Protoconch microsculpture; C, apex; F, last half whorl. D, Lateral view of protoconch. E, Teleoconch microsculpture. Scale bars: A, 500 μ m; B, D, 100 μ m; C, E, F, 25 μ m.

REMARKS. This species is very similar to Rissoa (Onoba) aedonis Watson, 1886, from Tristan da

Cunha. Comparison of the South American material with the types of O. aedonis shows that the former material is slightly smaller and has more compact coiling, less convex whorls, and a slightly shorter spire. Unfortunately, no material of O. ae-

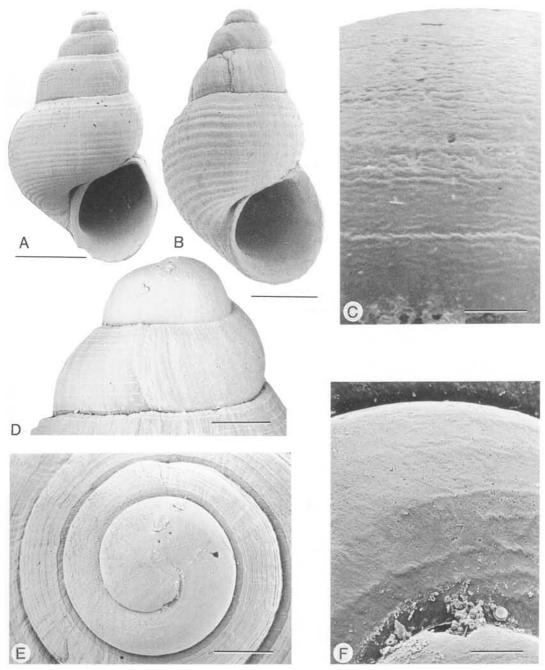


Figure 26. Detail of shells of *Onoba subaedonis* and O. *glaphyra*. A, D-F, *Onoba glaphyra* (Watson), Discovery Expedition Sta. 399; A, shell, length 1.75 mm; D, lateral view of protoconch; E, apical view of protoconch; F, protoconch microsculpture. B, C, *Onoba subaedonis* n. sp., holotype; B, shell, length 1.80 mm; C, protoconch microsculpture. Scale bars: A, B, 500 μm; C, F, 20 μm; D, E, 100 μm.

donis was available for examination with the SEM. Rissoa (Ceratia) qlaphyra Watson, 1886, another species of Onoba from Tristan da Cunha, has a thinner shell that is more finely sculptured. A specimen from nearby Gough Island is figured for comparison (Fig. 26A, D-F).

Compared with other similar South American species, O. subaedonis has a smaller shell than O. scythei (Philippi) and more numerous spiral cords, always with the interspaces narrower than the ribs (unlike O. scythei). The shell of O. subaedonis has a shorter spire than any other South American Ono-

ba. There is also some resemblance to *Powellisetia* microlirata n. sp., but that species has a smaller, more finely sculptured shell.

Although somewhat similar to O. beta (Powell, 1955) from the New Zealand sub-Antartic, the shell of O. subaedonis is much smaller, broader, and with relatively much coarser spiral cords. It also resembles the New Zealand O. foveauxana (Suter, 1898), but the latter species is larger and often has heavier spirals. The New Zealand species of Onoba tend to have the outer edge of the shell aperture inclined forward (i.e., the lip is opisthocline) whereas it is more nearly orthocline in O. subaedonis.

A few shells from a beach collection at the Falkland Islands are essentially indistinguishable from the South American material and are tentatively recorded as this species.

DISTRIBUTION. Southern Chile and Tierra del Fuego. Known only from empty shells from subtidal to 80 m. Uncommon. Beach specimens, probably this species, from Falkland Islands.

Onoba sulcula n. sp.

Figures 20E, F, 27C

ETYMOLOGY. Sulculus—Latin. Little furrow. Refers to the teleoconch microsculpture.

MATERIAL EXAMINED. Types. Holotype, LACM 2688, 1 paratype, LACM 2689; 30I 71-329. 8 km S Punta Ventana, S side Isla de los Estados, Tierra del Fuego, Argentina. 54°54.5′S, 63°56′W, 771-903 m, Sta. 875, USARP-SOSC-R/V Hero Cr.715, 27 Oct. 1971. 10 Paratypes, LACM; 1, AMS C.167672. BMNH 27E DE 388. Off Cape Horn, Chile. 56°19.3′S, 67°09.45′W, 121 m, Discovery Expedition, 16 Apr. 1930.

Additional Material Examined. Tierra del Fuego: 35 NMW, SNAE 346 [2(d)]?.

DIAGNOSIS. Shell (Figs. 20E, F, 27C). Small (maximum length 2.5 mm), elongate-conic, moderately solid, opaque, with 2.9-3.4 teleoconch whorls. Spire with lightly convex outlines, whorls moderately convex; periphery of last whorl rounded. Sutures impressed, simple. Teleoconch with broad, flat spiral cords with slightly narrower interspaces, 5-7 on penultimate whorl and 10-11 on last whorl and base. Interspaces have crisp axial growth lamellae and very fine spiral striae. Protoconch (Fig. 20E, F) of 1.2-1.5 whorls, smooth except for numerous scattered, minute punctures (Fig. 20F). Aperture oval, angled posteriorly. Inner lip moderately broad, attached to parietal wall except for extreme lower portion; outer lip orthocline, with small posterior sinus and prominent apertural varix immediately behind lip. Each whorl usually bears weak but distinct varix. Umbilical chink absent. Periostracum not observed. Color white.

Dimensions.

SL SW SW AL AL TW PW PD PS BS

Holotype 2.27 1.31 1.74 0.88 2.58 2.9 1.4 0.48 7 11

Paratype 2.43 1.26 1.92 0.87 2.80 2.9 1.2 0.52 7 10 Sta. DE 388 2.50 1.24 2.00 0.83 3.02 — — 6 11 2.33 1.19 1.97 0.80 2.91 3.4 1.5 5 10

Operculum, radula, and animal unknown.

REMARKS. This species has a larger and broader shell than the other South American species of Onoba with elongate-conic shells and has a very distinctive protoconch microsculpture. Of the Antarctic species, O. sulcula most resembles O. steineni in general shell features but is smaller and more conical in shape. It is also somewhat similar to O. protofimbriata but is larger and differs in protoconch microsculpture. Compared with New Zealand taxa, the shell of O. sulcula resembles that of O. sorensoni (Powell, 1955), but the latter species has more numerous, narrower ribs (up to 12 on the penultimate whorl) and flatter whorls. The shell of O. sulcula is about the same size as that of O. beta but has flatter spirals with narrower interspaces.

The protoconch microsculpture suggests that O. *sulcula* might be a member of the genus *Lironoba*, although the teleoconch sculpture and shape are typical of *Onoba*.

DISTRIBUTION. Tierra del Fuego; uncommon, 120-900 m.

Onoba scythei (Philippi, 1868) Figures 23A, C, 24D, H, 28, 29

Rissoa scythei Philippi, 1868: 225 [Holotype (location unknown, presumed lost), ? Strait of Magellan]; Carcelles, 1950: 55; Carcelles and Williamson, 1951: 272.

MATERIAL EXAMINED. Southern Chile: 17 73-75 [4(d)]. 20 73-72 [many(d)]. 23 73-70 [8(d)]. 24 75-48 [3(+2d)]; 75-49 [many]; USNM 212271, St.2778 [27(d)]. Tierra del Fuego: 25 73-69 [20]. BMNH 27E DE 388 [1]. 28 71-270 [1(d)]; 71-271 [1(d)]. 32H 71-287 [1(d)]. 33B 71-267 [many(d)]; 71-347 [many(d)]. 34 USNM E 363 [1(d)]. 37B USNM E 967 [3]. Falkland Islands: USNM 368419, [3 (d)]; SMNH SSPE 39 [6]; AMS C.167496, TW1 [many]; AMS C.167495, TW2 [3]; AMS C.167494, TW4 [2(d)]; AMS C.167493, TW5 [5(d)]. (All material LACM unless otherwise indicated.)

DIAGNOSIS. Shell (Figs. 28, 29). Small (maximum length 2.7 mm), ovate-conic, solid, opaque, with 2.7–3.5 teleoconch whorls. Spire with lightly convex to straight outlines, whorls moderately convex; periphery of last whorl rounded. Sutures impressed, simple. Teleoconch with strong, spiral cords that may be flat with interspaces of equal width to cords or sharp with wider interspaces; number of cords very variable, 3–7 on penultimate whorl, 7–14 on last whorl and base. Interspaces with rather coarse, distinct axial growth lamellae and very fine spiral striae. Irregular axial sculpture may be present on upper whorls. Protoconch (Figs. 28D, E, G, 29A, D, E, G) of 1.0–1.5 whorls, with numerous scattered granules. Aperture oval, angled posteriorly. Inner