
Littorina sitkana (= rudis, sitchana, saxatalis)

The Sitka littorine (Philippi, 1845)

Phylum: Mollusca

Class: Gastropoda, Prosobranchia

Order: Mesogastropoda

Family: Littorinidae

Description

Size—to 15 mm (Kozloff 1974a); but usually under 12.5 mm (Ricketts and Calvin 1971); Coos Bay specimens: 4-9 mm, average about 7 mm.

Color—rough variety (fig. 1) can be solid colored: plain buff or gray. A smoother variety (figs. 2, 3), has strong spiral sculpture appearing as horizontal bands, especially on the largest whorl—brown to yellow or orange: these bands can be visible inside aperture and are usually fainter on upper whorls. Animal white, with black on tentacles and snout (fig. 4).

Shell Shape—turbinate, thick, pointed, few-whorled (3-4); aperture rounded, outer lip acute: genus *Littorina* (Oldroyd 1924). This species stout, globose, almost as wide as high (in contrast to *L. scutulata*, for instance).

Operculum—oval (paucispiral); a solid, horny, trap door (fig. 1).

Columella—rather flattened inner lip, not perforated: genus *Littorina*; rounded, upper columella is flush with fourth whorl (fig. 2a): no gap between columella and whorl: genus *Littorina*.

Animal—white, with cephalic tentacles only (fig. 4), no nietapodial, or foot tentacles (see *Lacuna porrecta*, fig. 5).

Possible Misidentifications

Littorines are turbinate, thick, pointed and few-whorled, with a rounded aperture and an acute outer lip. The columella is rather flattened but flush (appressed) with fourth whorl, and lacks a columellar groove. There are three other species of genus which might be confused with *L. sitkana* in Oregon estuaries:

Littorina scutulata is taller than wide, with a purple interior and often with a checkerboard pattern on its whorls (never with a strong spiral sculpture). It is found on rack : and but rarely in saltmarshes, where *L. sitkana* predominates.

Littorina planaxis is stout, like *L. sitkana*, and usually quite a bit bigger; its surface is plain, without spiral sculpture; it has a white band inside the aperture, and a characteristic flat, roughened area between the columella and the fourth whorl. It is an outer coast, rocky shore species.

The introduced European periwinkle, *Littorina littorea*, has been found in San Francisco and Trinidad Bays. It is thick shelled, smooth, dark brown to black, with many very fine horizontal lines.

Littorina (Algamorda) newcombiana belongs to an unusual subgenus with a simple chink between the columella and the largest whorl. It is very small: to 6 mm, but averaging 3.5 mm, tall, with a smooth shiny surface covered with a brown periostracum. Its color

is tan or white, with brown or black horizontal stripes at times on the largest whorl. Small specimens of *L. sitkana* can look very like *L. (A.) newcombiana*; the important differences are the simple chink next to the columella, the taller profile, small size and lighter base color of *L. (A.) newcombiana*. This latter, like *L. sitkana*, is a salt marsh inhabitant, although it is found very high in the tidal zone.

Another similar genus is *Lacuna*, the chink snail, quite tiny (2-4 mm) and distinguished from *Littorina* sp. chiefly by a definite groove or gutter between the columella and the whorl. Two species, *L. porrecta* (which see) and *L. marmorata*, have been found in our area, but usually in eelgrass, not in *Salicornia* marshes.

Ecological Information

Range—southern limit seems to be about Cape Arago, near Coos Bay. North to Bering Sea (Oldroyd 1924). Not included in California keys.

Local Distribution—Coos Bay: South Slough.

Habitat—quiet areas of *Salicornia* marshes under debris and marsh weed. Seems to need less protection than other thinner snails (Matthews 1979). In Puget Sound, found with barnacle/mussel association on or under rocks, as well as in marshes (Kozloff 1974a).

Salinity—Littorinidae generally can withstand salinity changes well (Keen and Doty 1942): conditions that can prevail in salt marshes. Prefers salinity of 24 0/00 or saltier; found at 23-30 o/oo (Matthews 1979).

Temperature—intertidal saltmarsh temperatures can vary greatly: *L. sitkana* adapts well.

Tidal Level—near the high-tide mark (Kozloff 1974a).

Associates—sphaeromid isopods, amphipod *Traskorchestia traskiana*, pulmonate snail *Ovatella myosotis*, tiny snail *Assimineia californica*, other littorines, *L. scutulata*, *L. (A.) newcombiana*. On rocks (Puget Sound): *Balanus*, *Mytilus*.

Quantitative Information

Abundance—often the dominant small gastropod in salt marshes.

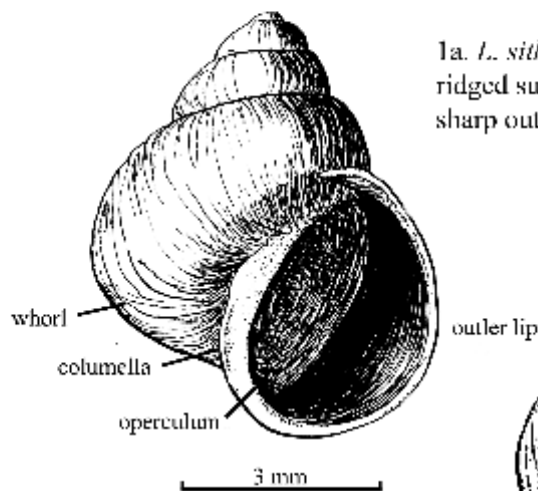
Life History Information

Reproduction—dioecious (separate sexes); small egg capsules can be seen about one month after copulation (*Littorina* sp.) (Ricketts and Calvin 1971).

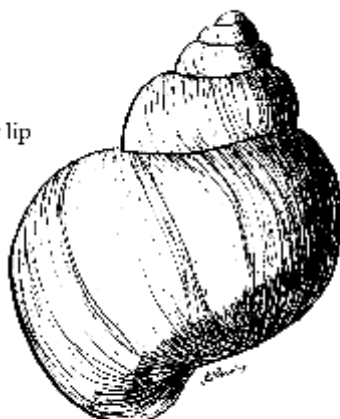
Food—herbivorous; scrapes algae from substrate with radula.

1. *Littorina sitkana* (H: 6mm, W: 5mm) x10:
solid, rough variety, almost as high as wide

Littorina sitkana

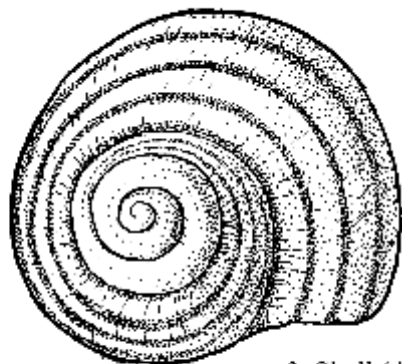


1a. *L. sitkana* (anterior view): solid color, ridged surf, rounded aperture; oval operculum; sharp outer lip; columella oppressed to fourth whorl

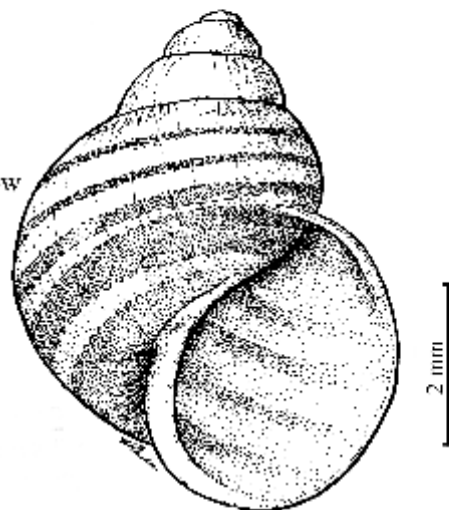


1b. *L. sitkana* (posterior view): shell thick, turbinate, 3-4 whorls

2. Smooth variety x12:
strong brown and yellow lines visible on inside



3. Shell (dorsal view)



4. Animal (dorsal view)

2a. Columella x30:
whorl and columella flush, no gap

