

Limpet look-alikes, the False Limpet, *Siphonaria thersites* Carpenter, 1864 and the Northwest Onchidella, *Onchidella borealis* Dall, 1871.

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There are two limpet-like creatures on our shores that are in fact pulmonates, air-breathers, at the high tide margin and are more closely related to land snails than to the gill-bearing, water-breathing limpets. The Northwest Onchidella or the “Leather limpet”, *Onchidella borealis* Dall, 1871 appears to be more common than Carpenter’s false limpet, *Siphonaria thersites* Carpenter, 1864.

1. Carpenter’s False Limpet, *Siphonaria thersites* Carpenter, 1864

Type locality: Neah Bay. Type Specimen: USNM 11852, Holotype.

Distribution: Kurile Islands, Russia; Alaska to Neah Bay, Washington

Size: 7 to 10 mm length.

Habitat: Common in crevices and on shore rocks; often in rockweed *Fucus* (**Fig. 1**) and sea lettuce. Retreats under algae during low tide. Beaches with some protection on open ocean shore environments.

Description: Subconical, apex is asymmetrical and to the left side. Shell smooth with a few ribs and a strong siphonal groove that extends out from the edge of the shell. Shell exterior dark reddish brown; interior dark brown with a light margin. The body is much larger than the shell and cannot be completely retracted (**Fig. 2** Karen Johnson)



Fig. 1 *Siphonaria thersites* on intertidal rockweed, *Fucus*. Neah Bay, WA (R. Harbo image).



Fig. 2 *Siphonaria thersites*. Alaska (Karen I. Johnson image).

Comments: Most northerly siphonariid known. Type specimen collected by James Swan at Neah Bay, Washington (Carpenter, 1864). Also collected at Fort Simpson, B.C. (Stearns 1868) and at San Juan Island, WA (Yonge 1960; Strathmann 1987). Various records, 1969 to 2014 for Graham Island, Haida Gwaii; the Estevan Group of Islands; Hecate Strait; Hope I.; and Tofino (RBCM collections) and Borde Island, central coast BC (Merilees collection).

Genetic Sequences

There are 10 published sequences of *Siphonaria thersites* from Alaska on BOLD (Bar Code of Life Data Systems; 2021) and 7 specimens sequenced from Haida Gwaii, B.C. (M. Frey, RBCM, unpublished; BOLD, 2021)

Egg masses of *Siphonaria thersites*

Erin McKittrick, in Alaska, was observant and photographed clumps of false limpets and their egg masses in June of 2017 and again in June 2018. “Crazy that such a small creature lays such large egg masses!” Erin’s images of *Siphonaria thersites* (**Fig. 3**) show large, ovoid gelatinous egg masses that contain numerous yellow eggs that are each invested with a delicate egg capsule within the gelatinous matrix. The eggs develop into crawl-away juveniles. Our thanks to Dr. Louise Page of the University of Victoria for her assistance in describing the egg masses.

The egg masses and development were described by Strathmann (1987) and Nagy (1984) from observations at San Juan Island, Washington. The egg masses contained an average of 28 capsules, each about 1.6 x 1.2 mm and containing a single egg approx 155 microns in diameter. Juveniles hatched after 34 days at 10 degrees C.

Fig. 3 Egg masses of *Siphonaria thersites* June 24, 2017 (E. McKittrick image).



2. Northwest Onchidella or Leather Limpet, *Onchidella borealis* Dall, 1871

Found in similar habitats, the Leather Limpet or Northwest Onchidella, *Onchidella borealis* (**Fig. 4**) appears to be slightly higher on the tide and more common than Carpenter's false limpet, *Siphonaria thersites*. Both species frequent transition to open coast shores. The species, *O. borealis*, has a much greater documented geographical distribution.

It appears that the leather limpet was first described by Binney (1860, not 1861) as *Onchidium carpenteri*, but his nomenclature, now *Onchidella carpenteri* (W.H. Binney, 1861) has been designated as "nomen dubium" on the World Registry of Marine species (WORMS; accessed November 14, 2021).

Type locality: Sitka, Alaska (Possibly the Strait of Juan de Fuca, in Binney, 1860)

Distribution: Aleutian Islands, Alaska to San Luis Obispo County, California.

Size: To 10 mm length.

Habitat: Common in crevices and on shore rocks; in rockweed *Fucus* (**Fig. 1**). Upper to mid-tide zone on open ocean shores, Strait of Juan de Fuca, Puget Sound, southern San Juan and

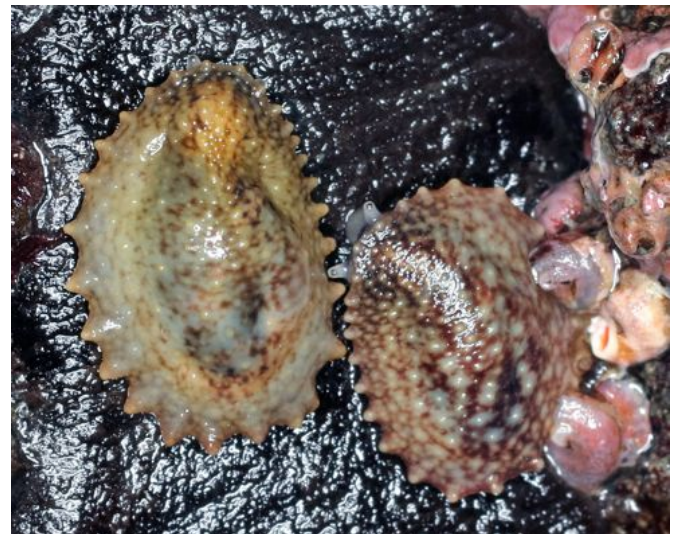


Fig. 4 Northwest Onchidella, *Onchidella borealis*, Alaska (E. McKittrick image)

Gulf Islands.

Description: No shell; smooth to granulose, arched dorsal surface, surrounded by tubercles. Dark green, gray or brown, with white marginal papillae (20-24); white foot, white eye stalks.

Comments: Lays a gelatinous egg mass with 6 to 40 encapsulated eggs. Direct developers, crawl-away juveniles. (Nagy 1974).

Genetic sequences of *Onchidella borealis*

There are 11 samples sequenced of *O. borealis* from Bamfield, west coast of Vancouver Island, B.C. and additional samples from Cook Inlet, Alaska (BOLD, accessed Nov. 15, 2021).

A unique defence mechanism of *O. borealis*

Young et al. (1986) described secretions from the marginal papillae that deter predators, especially the six-ray sea star, *Leptasterias hexactis*. The secretions may also deter shore crabs.

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