

**Juvenile piddocks- another flip of the Flap-tip piddock, *Penitella penita***

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This is a follow-up to the enjoyable article about the many common names of the piddock, *Penitella penita* (Conrad, 1837) by Bill Merilees 2020.



Fig. 1

**Fig. 1.** Juvenile Flap-tip piddock, without flaps and anterior shell “callum” absent. The foot is exposed. Shell length to 6 cm. False Narrows, Gabriola Island, BC May 25, 2013.



Fig. 2

**Fig. 2.** Callum (shell) forming over the exposed foot, juvenile Flap-tip piddock. False Narrows, Gabriola Island, BC May 25, 2013.

Juvenile molluscs (and other animals) are often quite different in morphology than their adult stage and have been initially described as unique species. The juvenile form of *Penitella penita* (Conrad, 1837) was described as a different species, *Pholadidea penita sagitta* Dall, 1916 (Holotype USNM 63312). It is now accepted as a synonym of *Penitella penita* (MolluscaBase 2020). The adult form has a fully formed “callum”, or accessory plate, that forms over the foot as the adult matures and ceases boring. The juvenile forms look quite different, often without flaps, without the anterior shell “callum”, and they have a large exposed foot (Figs. 1,2) to actively aid in the boring process. The siphons of *P. penita* are smooth and white, with some maroon - red coloration at the tip. The siphons can be completely withdrawn, a



Fig. 3

**Fig. 3.** Adult Flap-tip piddock, with posterior flaps and an anterior bulbous shell “callum”. Elongated shells greater than 6 cm, to 9.5 cm. N. Pender Island, June 23, 2013.

characteristic of our *Penitella* spp. In contrast, the siphons of the larger Rough piddock, *Zirfaea pilsbryi* Lowe, 1931, cannot be completely withdrawn.

Intermediate forms of *P. penita* were found during our 2012 and 2013 explorations at False Narrows, Gabriola Island, B.C. The anterior flaps and the posterior callum were beginning to form on some individuals (**Fig. 3**). Subsequent genetic sequences of samples collected by the Royal BC Museum confirmed that the smaller piddocks sampled were indeed juveniles of *P. penita* and not a separate species (pers. comm. K. Layton; M. Frey). On occasion, small adults are found in hard substrates. Unlike the juveniles, they have fully formed siphon flaps and a fully formed callum.

Images of *Penitella penita* (Conrad, 1837), both juvenile (**Fig. 1 to 3**) and mature adult (**Fig. 4**) forms, have been added to the World Registry of Marine Species (WoRMS). An excellent illustrated account of *Penitella penita* is presented by Hiebert 2015.

## References

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- MolluscaBase eds. (2020). MolluscaBase. *Pholadidea penita sagitta* Dall, 1916. Accessed through: World Register of Marine Species at: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=542727> on 2020-11-03

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