

Notes on *Mya arenaria* Linnaeus, 1758 and New Canadian Records of *Mya japonica* Jay, 1857 from Haida Gwaii, B.C.

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The Atlantic clam, *Mya arenaria*, is common in our waters and is known by a number of common names, the Softshell clam, Sand gaper, Steamer, Longneck and a favourite, Nanny-nose.

The occurrence of *M. arenaria* is from a combination of natural dispersal from areas where Atlantic oysters were introduced and a series of intentional plantings along the coast from California to Alaska. The first report of *M. arenaria* was from San Francisco Bay, California, in 1874 (Stearns, 1881). This softshell clam was later introduced intentionally with plantings in Puget Sound in 1888-1889 (Smith, 1895), and soon after, in 1890, it was found in Victoria, BC by Taylor (1895). The Victoria population likely spread from Puget Sound.

There has long been confusion about the occurrence in the NE Pacific of *M. arenaria* and *M. japonica*, which can only be distinguished genetically. The latest paper by Zhang, et al. (2018) concluded that the two species are distinct and valid. The shell features of both are variable and cannot conclusively separate the two species. It is possible that the siphon “shows” are different for the two species. The siphon show of a known *M. arenaria* is shown in

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*Mya arenaria* from Ladysmith Harbour

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*Mya arenaria* siphon

Figure 1.

I have found what I presumed to be *M. arenaria* in Ladysmith Harbour on Vancouver Island, BC, a species common there (Fig. 2). George Holm and I assisted a team from Fisheries and Oceans Canada (DFO) in the collections of introduced molluscs in Boundary Bay in April 2014 and the resulting DNA sequence confirmed the identification of *M. arenaria* (Fig. 3) [https://v3.boldsystems.org/index.php/Public\\_RecordView?processid=CAPBS508-17](https://v3.boldsystems.org/index.php/Public_RecordView?processid=CAPBS508-17)). Samples of *M. arenaria* were also successfully sequenced from Port Hardy, collected by DFO in 2012.

Expecting to find only *M. arenaria*, only two samples were collected intertidally in Haida Gwaii, BC, 2011-06-15 (Fig. 4), and

later sequenced. Surprising results found the specimens to be *Mya japonica*. The shell lengths of these specimens (RBCM 011-00221-01) were 90 mm and 92 mm (Fig. 5). Although the two specimens of *M. japonica* were identified in Haida Gwaii, British Columbia, the distribution of this species on the West Coast is unknown (Zhang et al. 2018). DNA sequencing confirms *M. arenaria* in Alaska, British Columbia, Washington and south to California, as expected from this well-established species.

#### REFERENCES

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*Mya arenaria* from Boundary Bay

Stearns, R.E.C. 1881. *Mya arenaria* in San Francisco Bay. *American Naturalist* 15 (5):362-366.

Taylor G. W. 1895. Preliminary catalogue of the marine mollusca of the Pacific Coast of Canada with notes upon their distribution. *Proceedings and Transactions of the Royal Society of Canada* 2 Ser. 1 (Sect. 4):17-100.

Zhang J., Yurchenko O. V., Konstantin A., Kalachev A. V., Nekhaev I. O., Aguilar R., Zhan Z. O., Matthew B. 2018 A tale of two soft-shell clams: an integrative taxonomic analysis confirms *Mya japonica* as a valid species distinct from *Mya arenaria* (Bivalvia: Myidae), *Zoological Journal of the Linnean Society* 184: 605-622



Left - *Mya japonica* from Haida Gwaii

Below - The Haida Gwaii specimens in the Royal British Columbia Museum

