

### Our common Leopard Dorid Nudibranch has been separated into two species

by Linda Schroeder

The Leopard Dorid is yet another nudibranch to have been separated into more than one species (Lindsay, 2016). This is just the latest in a series of revisions among the nudibranchs in recent years. With the ongoing molecular studies of mollusk species, changing names and splitting of species is becoming routine. In this instance, both species are present in our region. It has been determined that the species we find intertidally is *Diaulula odonoghuei* Steinberg, 1963, rather than *Diaulula sandiegensis* (Cooper, 1863). However, both are present subtidally.

So, how do we tell them apart? Rings and spots are a starting point. *D. odonoghuei* is predominantly spotted and *D. sandiegensis* is predominantly ringed. The "spotted form" is described as having many irregularly shaped, chocolate-brown dorsal spots which are generally solid but may infrequently be ring-shaped, and most importantly, these spots extend onto the mantle margin. The "ringed form" has a small number of chocolate-brown rings which are occasionally solid, but they do not extend onto the mantle margin. Background body color is less an identifying feature. While *D. odonoghuei* tends to be darker on average, more medium to dark brown, and *D. sandiegensis* tends to be more white to light brown, both species can range from white to yellow-orange to shades of brown.

Location is another way to help separate the species. The study found that *D. odonoghuei* ranges across the north Pacific from Alaska to northern California (Bodega Bay) and from Korea to Onagawa, Japan and southern Russia. Along the North American coast it would seem to be found intertidally across its range and subtidally in bay habitats.



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Spotted Leopard Dorid, *Diaulula odonoghuei* - numerous solid spots which extend onto the mantle margin. Specimen was photographed just east of Port Angeles, WA.



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Ringed Dorid, *Diaulula sandiegensis* - mostly rings rather than solid spots, which are few in number and do not extend onto the mantle margin. Specimen was photographed in Barkley Sound, BC.

*D. sandiegensis* ranges from the outer coast of Baja California to southern British Columbia (at least to Barkley Sound) and seems to stay primarily along the outer coast. It is rare to find it intertidally or in bay habitats until you are south of the range of *D. odonoghuei* where it then occupies all of the habitats. As with a number of nudibranch species, and some shelled mollusks, *D. sandiegensis* is uncommon to find from northern California to Washington. Ocean currents seem to sweep them past this stretch of coastline, only to land again around Tatoosh Island in northern Washington and into southern BC.

Naturally there will be some specimens where it will be hard to make a determination of species. Juveniles, as always, may be difficult, as their spotting pattern may still be somewhat ambiguous. In the field studies, mating between the species was observed, although quite infrequently, so the possibility of hybrids also exists. The size range between the two species seems to be similar. Further observations will help determine the full geographic and depth range of each of the two species.

#### Reference:

Lindsay T., Kelly J., Chichvarkhin A., Craig S., Kajihara H., Mackie J., Valdes, A. (2016). "Changing spots: pseudocryptic speciation in the North Pacific dorid nudibranch *Diaulula sandiegensis* (Cooper, 1863) (Gastropoda: Heterobranchia)". *Journal of Molluscan Studies* (2016): 1-11.