

A NEW SPECIES, A NEW COMBINATION AND RELATED SPECIES IN *HYDROSERA*.

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We found several differently shaped diatoms belonging to the genus *Hydrosera* attached to *Bostrychia simpliciuscula* Harvey ex J. Agardh (Rhodophyta) from southern islands in Japan. We observed these specimens using light microscopy and scanning electron microscopy. As a result, we decided to describe a new species, *H. stellata*, and make a new combination, *H. hexagona* (Hustedt) comb. nov.

Hydrosera stellata sp. nov. was collected from a freshwater stream in Iriomote-jima island, which is located in the southernmost part of Japan. Valves are five-angled, about 200 µm in diameter in valve view, and rectangular in girdle view. The cells form chains by mucilage pads secreted from pseudocelli. The valve face is flat, but bears numerous tiny projections, except in the central area. Internally, the valve has a conspicuous rimoportula with S-shaped lips, which lies near the base of one of the indentations separating the angular projections; it opens to the external surface as a slit. The pseudosepta extend across the bases of the five projections. Internally the valve surface is covered with scale-like plates with pores, which are a characteristic feature of this genus that has previously been overlooked.

Hydrosera hexagona (Hustedt) comb. nov. was collected from Amami-oshima island. The valves are six-angled and 90–104 µm in diameter; again, the cells form chains. The poles are rounded and bear pseudocelli and the pseudosepta extend across the bases of the six projections. In LM valves appear sometimes lack one or two pseudocelli and pseudosepta. This diversity is caused by variation in the size of the pseudocelli (sometimes very small or perhaps absent altogether) and in the degree of development of one or more of the pseudosepta (which are sometimes so undeveloped that they are only detectable in SEM as plain strips internally). A rimoportula with S-shaped lips is located near the base of one of the indentations separating the angular projections, or sometimes near the valve centre. The small area with three cavities (pores) and a short ridge characteristic of *H. triquetra* Wallich is absent in *hexagona* valves; therefore we made a new combination from *H. triquetra* var. *hexagona*. Scale-like plates were also found in this taxon.

In addition to the two taxa mentioned above, we will also discuss related species.