

Length of the branching form often $\frac{1}{2}$ inch (12 or 13 mm.); diameter of radiate specimens somewhat less.

I entirely agree with the Rev. A. M. Norman in regarding the deep-water *Astrorhiza* as something quite distinct from the *Astrorhiza limicola* of Sandahl, to which species it had been assigned by Profs. M. and G. O. Sars and Dr. Carpenter; and have adopted the name which he has suggested for it in his Report on some of the Invertebrata collected during the cruise of the "Valorous" in 1875 (*loc. cit.*). In point of fact *Astrorhiza limicola* and *Astrorhiza arenaria* differ from each other as much in the minute characters of the test as in general form. In external contour *Astrorhiza arenaria* is either compressed and stellate, with the rays short and rounded, or it consists of branching cervicorn masses, and the walls are composed of uniform fine sand loosely aggregated; whilst *Astrorhiza limicola* is typically stellate, the rays assuming the form of long slender tubes often subdivided at the extremities into finer tubuli, and the walls are built of indiscriminate mud. The one inhabits the sea-bottom at depths never less than 150 fathoms or thereabouts, the other is found in shallows seldom much exceeding 20 or 30 fathoms. *Astrorhiza arenaria* has the apertures in the rounded ends of the rays or terminal branches filled with loosely packed sand, so as to be scarcely distinguishable from the ordinary surface of the test; whilst in *Astrorhiza limicola* the simple or divided extremities of the tubular arms serve the same office.

Astrorhiza arenaria occurs on the coast of Norway (M. and G. O. Sars), in Kars Fiord, 180 fathoms (Norman), and in the Farøe Channel at several points ranging in depth from 530 fathoms to 650 fathoms (Carpenter, Brady). A single fine-branched specimen is the sole representative of the species amongst the Challenger dredgings, its habitat being Station 142, off the Cape of Good Hope, 150 fathoms.

Astrorhiza crassatina, H. B. Brady (Pl. XX. figs. 1-9).

Astrorhiza crassatina, Brady, 1881, Quart. Journ. Micr. Sci., vol. xxi. N. S., p. 47.

Test elongate, subcylindrical or irregular, extremities rounded; consisting of a tube of uneven diameter, sometimes exhibiting a tendency to incipient segmentation, open at the two ends; walls thick and friable, similar in composition and texture to *Astrorhiza arenaria*. Length, $\frac{4}{10}$ th inch (10 mm.).

There are many points of affinity between *Astrorhiza crassatina* and *Astrorhiza arenaria*. The general characters of the test, the material selected for its construction, and the mode in which it is employed are alike in the two species, and the frequent presence of a swollen cavity in the former, resembling central chamber of *Astrorhiza arenaria* is a further point of analogy. When there is no such chamber the tubular