

SPECIES OF FORAMINIFERA OBTAINED BY THE CANADIAN ARCTIC EXPEDITION.

Hyperammina subnodosa H. B. Brady.

(See Plate I, figures 1, 2.)

- Rhabdopleura* species, G. M. Dawson, Ann. Mag. Nat. Hist., ser. 1, vol. 7, 1871, p. 86 fig. 7.
Hyperammina subnodosa H. B. Brady, Rep. Voy. Challenger, Zoology, vol. 9, 1884, p. 259, pl. 23, figs. 11-14.—Awerinzew, Mem. Acad. Imp. Sci. St. Petersburg, ser. 8, vol. 29, No. 3, 1911, p. 12.—Cushman, Bull. 104, U. S. Nat. Mus., pt. 1, 1918, p. 76, pl. 29, figs. 7, 8.

Specimens are abundant from station 43a, and occur at 43b. The largest specimen measures 22 mm. in length, which seems to be a record for the species. The proloculum is well marked, usually slightly greater in diameter than the remainder of the test. The constrictions are well marked and numerous. The wall is composed of rather fine sand grains of nearly uniform size light reddish brown in colour, the apertural end much constricted in perfect specimens, the aperture itself a small, simple, irregularly rounded opening. The tubes usually have specimens of *Tholosina bulla* attached to the exterior.

The finding of this species in abundance is especially interesting, as it is one of the species not found by Kiaer in the material collected by the *Fram* in the second Norwegian Expedition, in the region to the north of that in which the Canadian Arctic Expedition material was collected. Awerinzew in his work has considered *H. subnodosa* as one of the most characteristic species of the Arctic. Along the Arctic coast of Siberia it is one of the commonest species. Schlumberger recorded it from the cold water of the Okhotsk sea, and I have had it from the same locality. Brady in the *Challenger* report mentions that some of the finest specimens he had were from the coast of Greenland. In the Atlantic I have found the species very abundant in very cold water, with bottom temperatures below the freezing point, north of the Grand Banks of Newfoundland. Pearcey records it from the Antarctic, and it is known from deep cold waters in various parts of the ocean basins.

Tholosina bulla (H. B. Brady.)

(Plate I, figures 1, 2.)

- Placopsilina bulla* H. B. Brady, Quart. Journ. Micros. Sci., vol. 21, 1881, p. 51; Rep. Voy. Challenger, Zoology, vol. 9, 1884, p. 315, pl. 35, figs. 16, 17.
Tholosina bulla Rumbler, Nachr. Königl. Ges. Wiss. Göttingen, 1895, p. 82. — Kiaer, Norske Nordhavs Expedition, No. 25, 1899, p. 4. Cushman, Bull. 104, U. S. Nat. Mus., pt. 1, 1918, p. 63, pl. 25, fig. 6.

Specimens are numerous at stations 43a and 43b attached to the outside of the tubes of *Hyperammina subnodosa*, sometimes six or more being attached to a single tube. The walls of *T. bulla* are made up of much finer material than the tubes to which they are attached, showing a definite selective power of the organism, usually of whitish grains, in decided contrast to the darker red colour of the *Hyperammina* tubes. Near the edge are numerous acrose sponge spicules. On the outside, especially near the top, are larger fragments of pebbles or other foraminifera tests. These occur especially on the outside of the largest specimens. In general, the longest diameter is in the direction of the long axis of the tube to which it is attached. The wall is fairly thick, and of nearly uniform texture, except for the points noted. A thin film of light-coloured material covers the attachment, as a floor to the chamber.