DEPARTMENT OF THE NAVAL SERVICE

BATHYMETRIC RANGE.

There is but little information on the depth to which Teredo can work below low tide level in Canadian waters beyond Murphy's' photograph of a piece of bored spruce which was submerged two years, four feet below low water at Pictou, N.S. At Woods Hole, Mass., it has been found living at a depth of 13 fathoms² and in New York harbour at 25 fathoms.³ Three well-known rock and elay-boring molluses are found in the same general region with Teredo navalis. These are :---

Petricola pholadiformis.

Zirfaea crispata.

Saxicava arctica.

P. pholadiformis appoars to be most common near the inter-tidal zone, but it has been dredged at a depth of 30 fathoms in St. Marys hay by Dr. A. G. Huntsman. The recorded range of Z. crispata is from low tide to 70 fathoms in Canadian waters. Off the Maine coast it is recorded by Verrill⁴ at from 22 to 44 fathoms. At Woods Hole it also occurs at a considerable depth below low tide. Saxicava arctica is another rock boring shell which has a considerable range below the tide line. On the Iceland coast it is found between tide marks⁵ while off the Labrador coast it is common at 10 to 50 fathoms.6

Honeyman reported limestone boulders bored by Saxicava which were found at a depth of 65 fathoms off the Nova Scotia coast.7

The rock-boring habit gives to molluses which practise it a special geological significance, as pointed out by Barrows.8 The rock cells of such molluscs gradually expand as the rock is entered from the small aperture on the surface drilled by the very young shell into chambers corresponding to the size of the adult molluscs which thus leave no avenue of escape for the shell even after its death. The improbability of the removal of boring shells by current action to waters deeper or shallower than the living animal occupied permits the fossil molluscan rock-boring shells to yield information which is precise within the limits of their vertical range concerning the depth of the sea in which they lived.

DISTRIBUTION.

The genus Teredo has a wide distribution around the coasts of the North Atlantic. None of its several species however belong properly to the Boreal fauna although there are outlying colonies of some species which are surrounded by the boreal fauna. T. norvegica, which is the prevailing indigenous species on the eastern side of the North Atlantic, affords in its European distribution an interesting example of such discontinuous distribution toward the northern limits of its range. This species ranges through the Mediterranean and up the west coast of Europe into the waters of S.W. Norway. But G. O. Sars⁹ states that "the only place inside of the Arctic

and vicinity. Bur. of Fisheries, Buil. 1913, Vol. XXXI, Part II, Sec. III, p. 702. 3 Proc. and Trans. N.S. Inst. of Nat. Sci., Vol. V, 1881, p. 376, fig. 14. 4 Am. Jour. Sci., Vol. 7, 1874, p. 503. 5 Johansen, A. C. On the Molinaus between tide marks at the coasts of Iceland. Videnska-belige Middelaler fra den Naturinfstöriske Foresig I. Kjobenhaon, 1902, p. 386. 8 Mem. Bos. Soc. Nat. Hist., Vol. I, p. 582. 7 Honsyman, Dr. D. Giaslal Houlders of Our Fisheries and Invertebrates, Attached and Detached. Trans. Nava Scotian Institute of Natural Science, Vol. VIII. Part III (1888-89), p. 310.

⁵ Bairows, A. L. The Geologic Significance of Fossil Rock-Boring Animals (read before the Paissontological Society of America). Bull, Pal. Soc. Amer., Vol. 28, 1917. ⁹ Molliust's regions Arctics: Norvagies, p. 98, Christiana, 1878.

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¹ Proc. and Trans. N.S. Inst. Nat. Sci., Vol. 5, 1881, p. 376, fig. 4. ² Summer, F. B. Osbutn, R.C., Cole, L. J. A Biological Survey of the Waters of Woods Hole and vicinity. Bur. of Fisheries, Buil. 1915, Vol. XXXI, Part II, Scc. III, p. 702.