

Letters to the Editor

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A supposed Submarine Ridge along the South-East Coast of Greenland

DURING marine biological work in the Denmark Strait with the Danish Research Ship *Dana* in August 1933, it was possible to proceed quite close to the coast of East Greenland south of Angmagssalik; practically no ice was met with during this year. For the purpose of the biological work on the drift of cod larvæ from Iceland to Greenland with the west-going branch of the Irminger Current, four sections were made from the coast out to deep water. During these sections, as also on the whole cruise, the echo sounding apparatus was constantly used and the soundings revealed—so far as it was possible to carry out the investigations during the time available—that a submarine ridge seems to follow the East

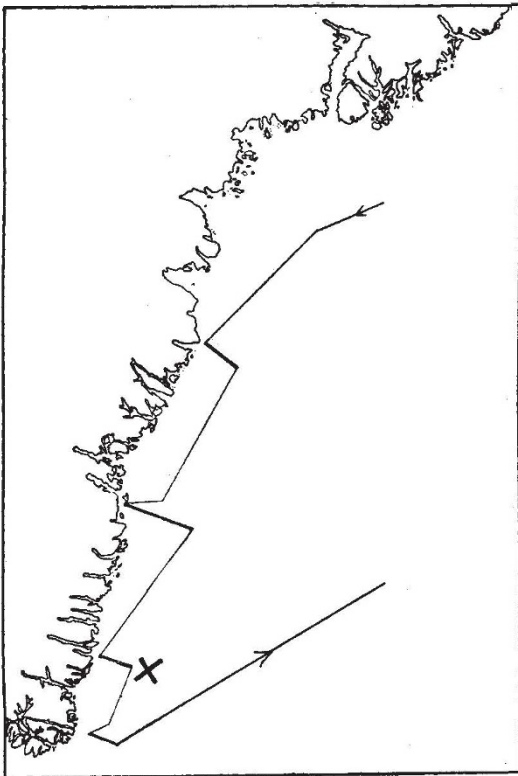


FIG. 1. Course of the *Dana* off the south-east coast of Greenland.

Greenland coast, at any rate from about Lat. 64° N. to Cape Farewell (lat. 60° N.).

Our work during the cruise was, as mentioned above, mainly marine biology, and it was impossible to go further into the studies of the relief of the sea bottom last summer. The matter is, however, of importance in several respects, and I wish therefore to announce our observation of this supposed ridge that other ships may possibly have the opportunity

of making further soundings there and thus eventually prove or disprove the existence of this supposed submarine ridge in these remote waters. Our soundings point to a continuous ridge, but more close investigations are however necessary, as breaks may possibly be found in the ridge off the deeper fjords.

In Fig. 1 is given a rough sketch of the coast of East Greenland south of Angmagssalik showing the route of the *Dana*. Fig. 2 shows the bottom relief on one of the sections (marked with a cross in Fig. 1);

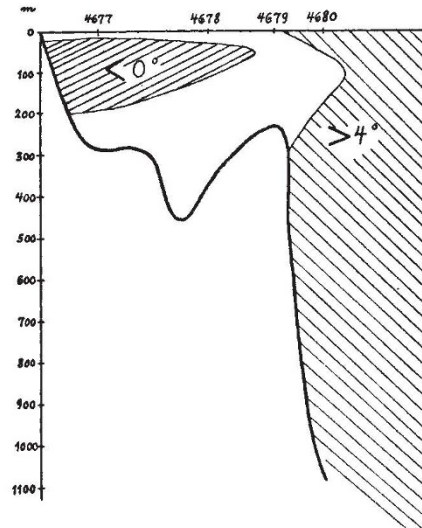


FIG. 2. Section at X in Fig. 1, showing submarine ridge and temperature of the bodies of water on each side of it.

the other sections show, however, on the whole, much the same conditions. It will be seen that the submarine ridge is about 230 metres below the surface in the section in Fig. 2 and it is about 20 miles off the coast line. Farther north the ridge is more than 20 miles from the coast-line (going up to about 30 miles). The greatest depth measured inside the ridge where the depths are rather variable is about 600 metres; outside the ridge the depth increases very rapidly to more than 1,500 metres. On the ridge itself we obtained depths of 170–240 metres, most often 200–240 metres. In the trough formed by the ridge along the coast we have the ice-cold East Greenland Current; outside or over the ridge we met with the warm Atlantic water with temperatures up to 8° C.; between these water masses we have mixed water layers.

During recent years the late Prof. Johs. Schmidt succeeded in showing that there is an interchange of the stock of cod in Icelandic and Greenlandic waters. In 1933 the migrations of cod from West Greenland to Iceland were even greater than in preceding years in which investigations were undertaken. Probably it will be possible in the future to show that the cod migrating from one of the areas mentioned to the other follow the ridge in question, where 'cod temperatures' will probably prevail during most years. We shall then be able to understand how the cod find the path from West Greenland to Iceland and vice versa.

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