

(on the west coast of Sweden), and are captured in the deep channel of the Kattegat, or in the fjords of Bohuslän. Pettersson discovered that the regular occurrence of these herrings in several cases coincided with certain large submarine waves which he could register in the Gullmar fjord, and he sets up the hypothesis that there is a certain connection between these two phenomena. Fig. 513 shows curves denoting different salinities in the Gullmar fjord in November and December 1910, and it is seen that the deep salt layers rose several times during November, like huge waves, up towards the surface. Extensive investigations off the coast in the Kattegat proved the occurrence of similar deep-sea waves

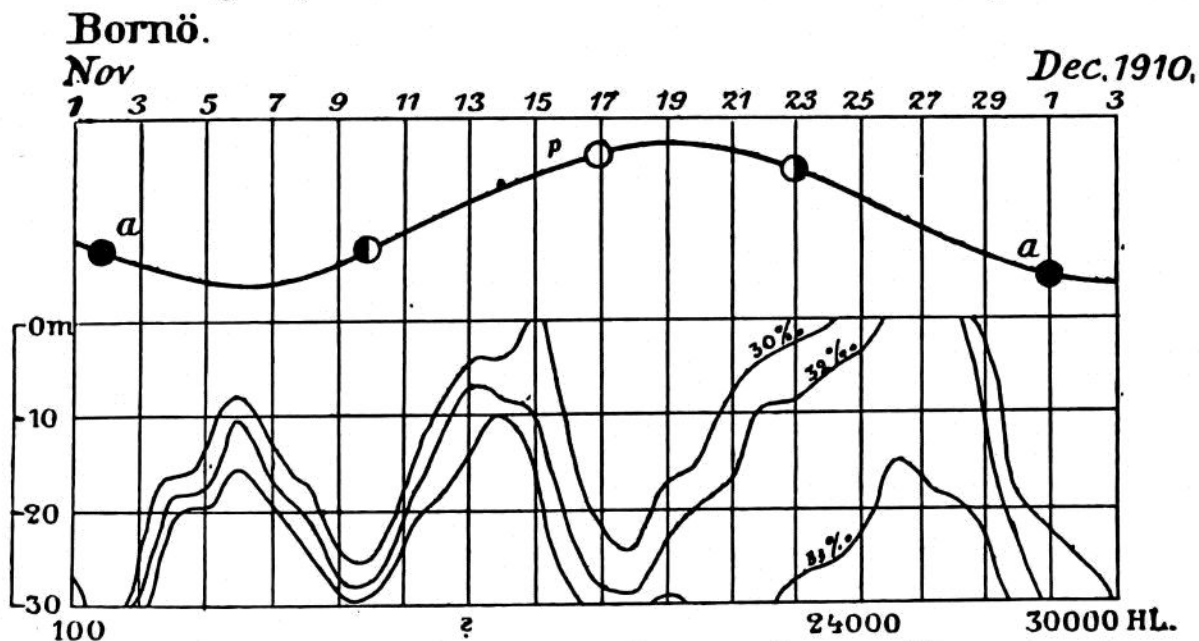


FIG. 513.—SUBMARINE WAVES IN THE GULLMAR FJORD IN NOVEMBER AND DECEMBER 1910. (From Pettersson.)

in the latter locality. These waves, according to Pettersson, carried the water of the Jutland coast banks (bank-water with a salinity of 32 to 34 per thousand) like a torrent into the Kattegat and its fjords, forcing the fresh surface water out. The herring shoals dwelling on the Jutland coast banks were literally, Pettersson says, sucked into the fjords of the Swedish west coast as by an enormous vacuum pump. This inflow, Pettersson points out, takes place periodically and coincides with the phases of the moon (see Fig. 513). One wave, on the 15th of November, occurred at full moon, when the moon was nearest to the earth (perigee), another wave on the 28th of November occurred at new moon, when the moon was farthest from the earth (apogee). Coinciding with the last wave the herring shoals appeared, and between the 23rd and 24th of November 24,000 barrels of herring were taken.