

evidence as to the migration of whales. With the aid of Captain Sørensen I obtained the two harpoons or bomb-lances which in the years 1888 and 1898 were found in the bodies of blue whales (*Balænoptera musculus*) killed in the Barents Sea (see Fig. 512). Such harpoons were never used there, being employed only by the whalers of the Atlantic, for instance, off the coast of North America, and they bear the stamp of the American patent-holder, testifying to their American origin. They must, therefore, be considered as proving enormous migrations on the part of the whales in which they were found.

G. O. Sars attempted to show that some migrations were undertaken in order to obtain food, and others for the purpose of reproduction, and he thus distinguishes between feeding-migrations and spawning-migrations. When the capelan gather in millions on the coast banks of Finmark, when countless numbers of cod approach the banks of Lofoten, and when the herrings flock to western Norway, they migrate to spawn. The fat-herring collecting off the coast of Nordland, and the cod gathering around the shoals of capelan in the Barents Sea, are examples of feeding-migrations. Such were the ideas of Sars. A more detailed discussion could only be given by reviewing the whole natural history of each species.

An attempt at explaining a vast migration of fishes by means of mechanical laws has recently been made by Otto Pettersson.¹ Each year during late autumn large numbers of herrings gather off the island belt at Bohuslän

Effect of
submarine
waves.

¹ Otto Pettersson, *Studien über die Bewegungen des Tiefenwassers und ihren Einfluss auf die Wanderungen der Heringe*, Fischerbote, 1911.

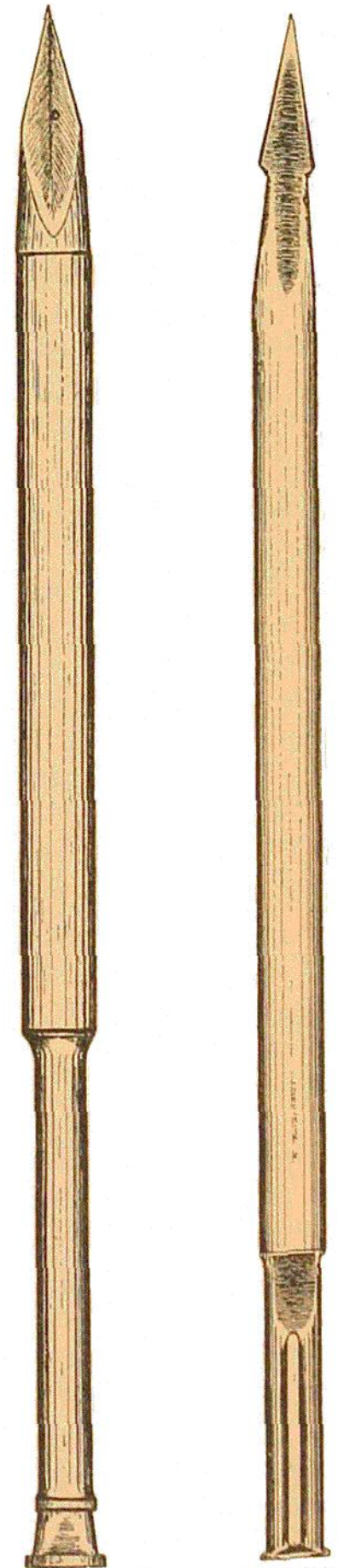


FIG. 512.—AMERICAN "BOMB-LANCES" TAKEN IN BLUE WHALES IN NORTHERN NORWAY, FINMARK, 1888 AND 1898.