

June 22, 1964

AIR MAIL

Dr. Gunnar Thorson  
Marine Biological Laboratory  
Elsinore, Denmark

Dear Dr. Thorson:

Your article on larval transport by ocean currents in *Oceanography* (1961) has been read and reread by me with great interest. I happen to have been working on the possibilities of dispersal of oyster species for several months before I found your article. There is an oyster species, commonly called *Pycnodonte hyotic* (Linné, 1758), which has a very large range, from the heads of the Red Sea and Persian Gulf to southwestern Japan and the Tuamotu Islands. Unfortunately, nothing is known about the duration of its planktonic larval stage. It is generally associated with coral reefs and coral islands. Other oyster species have similar geographic distributions. There must be some way by which these oysters can spread so far.

A recent paper on the velocity of the Gulf Stream (Worthington, 1954) gives perhaps the best and most reliable figures on actual velocities (not average velocities). It gives the velocity as 200 to 250 cm per second; which equals to 216 Km a day. In about six days a larva could be carried for 1037 to 1296 Km. For a planktonic larval period of 12 or 18 days, which is not unusual for oysters, and some assistance from wind storms these travel distances could be easily doubled, tripled, or quadrupled. Such distances would be sufficient to spread an oyster species that is able to live in enhaline waters from island to island over most of the Indo-Pacific region. As you pointed out in your article we need information on the maximal sustained velocity of ocean movements.

Your comments will be appreciated.

Very truly yours,

H. B. Stenzel

HBS:pl

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