development to a 5-celled stage. The cultures, however, had to be abandoned before the production of antheridia and oogonia could be demonstrated. Satisfactory methods were worked out for the culture of the gametophytes, which should lead to results quite promptly when this study can be resumed.

NOTE ON THE BEHAVIOR OF THE BARNACLE

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Attempts to use the barnacle, *Balanus balanoides,* for studies on stimulation during the summer of 1933 were unsuccessful due to the almost continuous irregularity of the cirral movements. Previous work has shown that irregularity is caused by mild stimulating agents in the sea water, and that some substances are very effective in extremely low concentrations. Similar irregularity has been encountered in past years at certain times during the summer, especially after the middle of August, but it has never continued for more than a week or two. Preliminary experiments designed to identify the causes of the irregularity clearly showed that some constituent of the sea water was responsible. Shaking the water with charcoal and filtering through paper resulted in a marked improvement of the cirral movements. Filtering through paper only gave a temporary improvement which was just noticeable. These and other experiments seem to indicate that the factor responsible for irregularity is some substance in solution in the sea water, perhaps contributed by the disintegration of micro-organisms. Systematic studies on the fluctuations of the micro-organic population, of the hydrogen ion concentration, of the specific gravity and of the chemical composition of the sea water correlated with the behavior of the barnacle will be necessary before the problem can be solved.

STUDIES ON STIMULATION BY HYDROCHLORIC, SULFURIC AND NITRIC ACIDS AND THEIR SODIUM SALTS IN *FUNDULUS**

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The investigation of chemical stimulation in aquatic organisms was continued during the summer of 1933 by testing the stimulating efficiencies of hydrochloric, sulfuric and nitric acids, and the corresponding sodium salts in *Fundulus heteroclitus.* The experimental procedure was the same as that described in previous reports. The temperature was 17.6 $\pm$ 0.2°C. Each solution was tested 10 times on each of two fish. The hydrogen ion concentrations of the solutions

* A correction should be made to the research summary on stimulation of Fundulus by hydrochloric acid and by fatty acids published on page 30 in the 1933 report. The sentence, beginning on line 11 of paragraph 1 should read: "To give a reaction time of approximately 10 seconds, the following hydrogen ion concentrations were necessary for each acid: caproic, 1.123×10^{-1}; heptylic, 2.188×10^{-1}; valeric, 2.692×10^{-1}; butyric 6.457×10^{-1}; propionic, 8.318×10^{-1}; acetic, 11.23×10^{-1}; formic and hydrochloric, 15.15×10^{-1}."