ened, had grown in an irregular manner toward the shaft, and on the shaft side showed the finer metaplastic or degenerative changes found in human rickets. Calcification was either deficient or entirely lacking. The trabeculæ showed well-marked osteoid borders.

The foremost significance of these experiments seems to us to lie in the possibility that they present of modifying, independently, a number of factors that may influence the abnormal metabolism of the bones. The rôle of ions other than phosphate can be tested. The debated importance of carbohydrate in the genesis of rickets, the comparative importance of light versus the organic and inorganic factors, the calorie intake, the possible contributory significance of the protein element—these and other influences can perhaps better be evaluated experimentally in this way. We are engaged in the applications of the method to the problems suggested.

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On the feeding habits of oysters.

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Studies of the feeding habits of oysters have been in progress since the spring of 1919 to determine: (1) the duration of active filtration of water, and (2) the effects of salinity, temperature, light, food content, and turbidity of the water upon the rate and the extent of feeding. The animals were studied while lying on an oyster reef in their natural environment. By means of recording apparatus continuous kymograph records of all shell movements of the oysters for over 2 months were obtained. Water samples were taken at regular intervals of time and tide, and in addition whenever the animals closed completely or opened after a period of closure in excess of 2 minutes.[1]

[1] Preliminary reports of the writer in *Anat. Rec.*, 1921, xx, 181; *Reports of the Department of Biology, N. J. Experiment Station* for 1920, p. 333, and for 1921, p. 293.

The investigations have been carried on in several different environments, under widely varying conditions, and warrant the following conclusions:

1. With the water temperatures of late spring, summer, and early fall oysters are active throughout most of the day and part of the night. At temperatures above 20° C. New Jersey natural oysters are actively passing water through the gills for an average of over 20 hours out of the 24.

2. A sudden drop in temperature may result in temporary decrease in the daily number of hours of activity.

3. Between 4°-6° C. there is a sharp decrease in the ciliary activity of oysters. Normal feeding occurs above this range, while almost no food is taken when the temperature of the water is below 4° C. Round[2] found active elimination from oysters at 9° C. but no reduction in the number of bacteria at 5° C. until after a period of 5 days.

4. The rate of filtration of water during any given period of time, as deduced from the rapidity and the extent of ejections of accumulated sediment from the mantle cavity, may vary widely independently of the temperature and the turbidity of the water.

5. Oysters do not necessarily feed at all times when water containing food particles is passing over the gills. Relatively little food is taken on the ebb tide and during the latter part of the night and the early morning.

From 60-70 per cent of the hours of inactivity (closure) of the oyster occur during darkness.

7. For oysters which have been living in water of fairly constant saline content there is a definite minimum salinity below which the bivalves become inactive. This minimum salinity is lower for oysters grown in brackish water than for those matured in waters of higher salt content.

8. No correlation could be shown between the food content of the water and the periods of inactivity of the oyster.

9. The effects of turbidity were observed under natural conditions and when the water was made to carry varying loads of silt up to the maximum. Oysters continued to feed in waters of maximum turbidity (T = 1000+), the effect of the heightened load of silt being evident in the increased rate and depth of contraction of the adductor muscle to effect ejection of accumulated mud.

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2 Round, L. A., Contributions to the bacteriology of the oyster. 1914—*Report, R. I. Com. Shellfisheries,* Providence.