TABLE 2

SUMMATIONS OF COLOR EXCITATION VALUES FROM THE SKIN OF NORMAL PERSONS AND IN CERTAIN DISEASES

Case	Classification	Total Red	Total Green	Total Violet
1	Normal blond	2600	2186	1340
2	Addison's disease	1412	1151	650
3	Polycythemia vera	1570	1425	1388
4	Polycythemia vera	1330	1141	1130

(6) In cases of polycythemia vera, the congestive stage of Raynaud's disease and allied conditions there are marked departures from the normal conditions in the values of the dominant wavelengths, purity and percentages of red, green and violet. In these diseases, in which there are generally marked disturbances in the quantity, quality and rates of flow of blood, the dominant wavelength is in the red (605 μ to 640 μ in my findings).

(7) Cyanosis is noticeable in various diseases. Spectrophotometric determinations and analyses in terms of monochromatic radiation show that the summated violet values are higher by percentage in comparison to similar summated values of the violet in normal subjects, and that there is a marked reduction in the summated values of the reds and greens in these diseases as compared with normal persons.

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CILIARY ACTIVITY OF THE OYSTER

IN a recent paper[1] Galtsoff describes an ingenious method for determining the rate and the amount of water passed through an oyster's gills. Since these experiments were conducted in a tank in the laboratory it is of interest to compare Galtsoff's findings with observations of oysters in their natural surroundings.

As was to be expected, following the work of Gray ('23)[2] on the effect of temperature upon ciliary movement in the gills of *Mytilus*, the rate of flow of water through the oyster was found to be a function of the temperature. Unlike Mytilus, however, the cilia of the oyster were seen to come to a standstill at 5° C. with no current produced below 7.6° C.

From examination of the stomach of oysters throughout the year I showed[3] that between 5.6° C. and 7.2° C. lies a "critical temperature" above which active feeding occurs and below which almost no food is taken. Round[4] showed no reduction in numbers of bacteria in oysters at 5° C. until after five days.

Oysters taken during the winter and early spring show active feeding in some individuals at a temperature of 5.6° C., or 2° below the figure given by Galtsoff as the minimum below which no current is produced. Since Galtsoff's observations were made upon oysters adjusted to summer temperatures it is evident that *Ostrea elongata* behaves much like the ctenophore *Mnemiopsis leidyi*[5] with respect to its temperature adjustments. With the slowly falling temperatures of autumn and early winter the oyster becomes adapted to a lower range of temperature, so that although there is a sharp decrease in ciliary movement below 5° C., activity does not entirely cease. Theories of hibernation[6] in the oyster are true therefore in only a relative sense as Round[4] has suggested.

The maximum amount of water filtered by a medium sized oyster was found by Galtsoff to be 3,000 cc. Using a different method[7] I found that when commencing active feeding after a period of closure, oysters three to four inches long may take in between five and six liters of water in an hour. Extended observations of oysters attached to a kymograph while living under natural conditions show that the rate of feeding in the oyster may be subject to wide variations independent of changes in temperature, turbidity, salinity and other environmental conditions. Feeding occurs, for example, much more actively on the flood than during the ebb tide.

Galtsoff found that his oysters living in the laboratory under controlled conditions kept their shells open an average of twenty hours each day. With oysters living under natural conditions, exposed to wide variations in temperature, turbidity, salinity and pH I found[7, 8] that out of each day the oyster remained closed for an average of four hours, most of this period of inactivity occurring at night. The agreement between Galtsoff's findings on oysters in the laboratory with mine on animals living under natural conditions indicates that the period of closure in the oyster represents a minimum of physiological inactivity determined by the needs of the organism. To quote an earlier statement of mine on this subject (7, p. 340), "the writer believes the evidence from all sources indicates that the periods of inactivity which occur under conditions favorable for feeding are to be looked upon as true rest periods."

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[1] SCIENCE, 63, No. 1626.
[2] Proc. Royal Soc., Ser. B., 95, No. 664.
[3] Rep. N. J. Expt. Sta., 1921, p. 293.
[4] Rep. R. I. Com. Shellfisheries for 1914.
[5] *Biol. Bull.*, 48, 92–111.
[6] Gorham, F. P., Rep. R. I. Com. Shellfisheries for 1910, and *J. Am. Publ. Health*, January, 1912.
[7] Rep. N. J. Expt. Sta. for 1920.
[8] Proc. Soc. Exp. Biol. and Med., 21, 91.