Similar temperature data have been obtained in various human joints. A 19-gauge hypodermic needle was inserted into the knee joint space. The catheter was threaded through the needle and the needle withdrawn, leaving the thermistor unit in place within the joint. The knee joint temperatures of two normal adult males were found to be 90.3° and 91.2° F respectively, while the surface or skin temperatures were 84° F.

References

1. Drummeter, L. F., Jr., and Fastie, W. G. *Science*, 1947, **105**, 73.
2. Horvath, S. M., and Hollander, J. L. In press.
3. Williams, R. J., and Thompson, R. C. *Science*, 1948, **103**, 90.

A Comparative Study of Oyster Condition[1]

Robert M. Ingle[2]

Marine Laboratory, University of Miami

The necessity of providing an objective evaluation of the condition of oysters in ecological investigations has long been recognized by workers in this field. The condition index originally proposed by Hopkins (*1*), which depends upon the measurement of the ratio of dry meat weight to internal shell volume has not been entirely satisfactory for this purpose. Many workers have found considerable variation in this index among oysters from the same region, even where the condition of meat by visual comparison appeared to be relatively constant.

For this reason later workers have adopted the measurement of glycogen content as a supplementary method of evaluation (*2–4*). Since this method appears to yield more consistent results, a study was carried out to determine correlation between condition index and glycogen content.

In all, 30 samples of oysters from various habitats of the Louisiana oyster bayous and four samples from the outside tanks of the U. S. Fisheries Station, Pensacola, Florida, were taken, and each sample was analyzed by both methods.

In arriving at condition index a 10-g aliquot of the ground oyster tissue from 10 oysters was dried at 80° C for 48 hr and weighed. After 15 min in the air it was again dried and weighed to constant weight ±.005 g. The dried weight of the 10 oysters was then calculated and entered into the formula:

$$\frac{\text{Total dry weight in g} \times 100}{\text{Shell cavity volume}} = \text{Index of condition.}$$

Shell cavity volume was obtained by water displacement.

Five to 10 g of the same sample of ground oyster meats was digested and the glycogen was hydrolyzed by the Calderwood-Armstrong method (*5*). The Hagendorn-Jensen technique (*6*) for the quantitative determination of glucose followed. To insure against enzymatic action, not more than 3 min was permitted to elapse between grinding the meats in a Waring blender and the digestion of the aliquot in sodium hydroxide.

Fig. 1 shows the correlation between the findings of the two methods. Closer correlation appears to exist among animals of the higher glycogen content and presumably greater vigor. In fact, the correlation coefficient of .69 for the entire group is reduced to .38 if the three samples highest in glycogen are omitted.

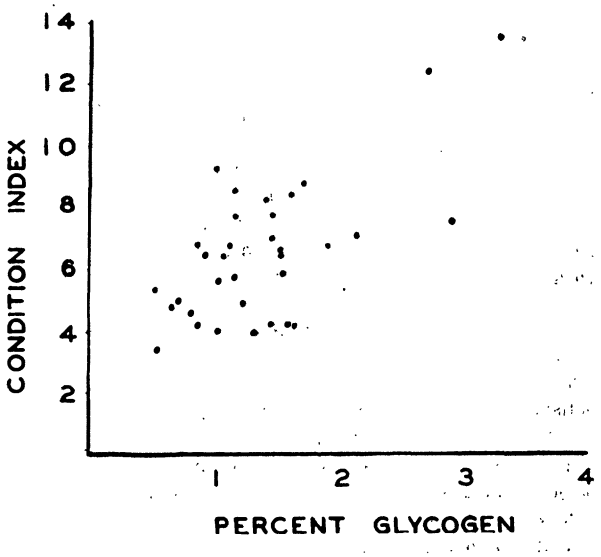

Fig. 1.

It is concluded from these preliminary studies that the poor correlation between the two methods in oysters of low vigor is probably due to dependence of the condition index upon water content, absolute size of meats, and other factors. Because of this, it is believed that glycogen analysis is the most suitable method for the comparison of work carried out by independent investigators on low quality oysters. Further work is under way to determine if a significant correlation exists between the two methods in high quality oysters.

References

1. Calderwood, H. N. and Armstrong, A. R. *J. A. O. A. C.*, 1941. Feb., pp. 154–165.
2. Galtsoff, Paul S., *et al.* *Fishery Bull. of the Fish and Wildlife Service*, 1947, **53**, No. 43.
3. Galtsoff, Paul S., *et al.* *Bull. of Bur. Fisheries*, 1935, **47**, No. 18.
4. Hagendorn, H. C. and Jensen, N. B. *Biochem. Z.*, 1923, **135**, 46–58.
5. Higgins, Elmer *Progress in Biol. Inquiries*, 1937. Appendix 1 to the Report of Commissioner of Fisheries for 1938, 1–70.
6. *Methods of analysis*, A. O. A. C., 1935, p. 358.

[1] Facilities and support for this investigation were supplied by the Department of Wildlife and Fisheries of the State of Louisiana.

[2] The author is indebted to Drs. F. G. Walton Smith and H. Malcolm Owen for advice and to Louis A. Bregan, Jr., for technical assistance.