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PRELIMINARY NOTE ON THE RATE OF DECAY OF FISH MUSCLE

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HALIFAX, 1929.

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BIOLOGICAL BOARD OF CANADA

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Author

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Preliminary Note on the Rate of Decay of Fish Muscle

By G.G. Langstroth, D.LeB.Cooper, H.Tarr.

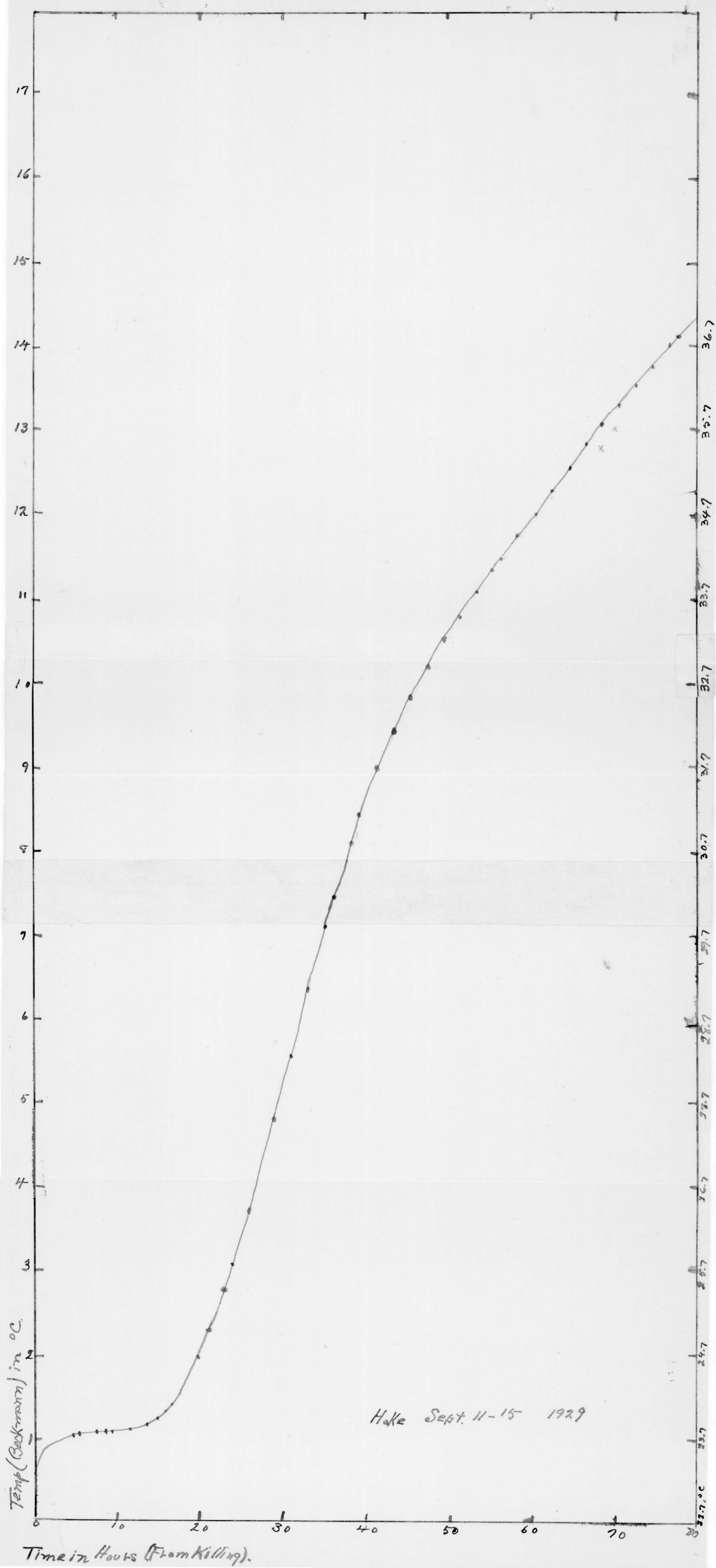
The temperature rise, due to the heat of the reactions which go on in fish muscle from the time of killing to putrefaction, was measured at frequent intervals and the resulting time-temperature curve is shown in Fig. 1. The slope of the curve at any point gives a measure of the rate at which the reactions were progressing (as a whole) at that point. Only one sample was carried through, at a fairly high temperature (22.7° - 36.7° C).

The apparatus used was a Richard's adiabatic calorimeter, and the sample was placed directly in the calorimeter without mincing. One junction of the thermocouple was inserted directly into the fish and the other into the bath in the usual way. The apparatus was then manipulated in the usual way and the temperature was read from a Beckmann in the outer bath. Absolute temperatures were read from a one degree thermometer in the bath.

The fish used was a Hake which was killed and filleted, and placed in the calorimeter in less than an hour. When removed from the calorimeter the sample had become nearly entirely liquid.

The attached curve shows clearly the progress of the reaction.

NOTE - No water was used in calorimeter proper.


Temp (Beckmann) in °C.
Time in Hours (From Killing).
Hake Sept. 11-15 1929
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
10
20
30
40
50
60
70
80
36.7
35.7
34.7
33.7
32.7
31.7
30.7
29.7
28.7
27.7
26.7
25.7
24.7
23.7
22.7
21.7
20.7
19.7
18.7
17.7
16.7
15.7
14.7
13.7
12.7
11.7
10.7
9.7
8.7
7.7
6.7
5.7
4.7
3.7
2.7
1.7
0.7
32.7°C