

for a long time, though it has been little studied. Outside this belt, again, it has sometimes, but not always, been possible to find a so-called "Grundalgenzone" (Brand, 1896, p. 8). On the vegetation in the Baltic lakes see especially Warming (1897, p. 164), Ostenfeld (1905, p. 377), Baagöe and Kölpin Ravn (1896, p. 288), Carlsson (1902), Brand (1896, p. 1), Klinge (1890, p. 264). In the littoral zone we further find an extremely rich animal life. Many species of Mollusca with an enormous number of individuals are to be found, and enormous quantities of insects are also hatched there.

The lakes of this zone are specially characterised by the important part played by the organic life. It is not here, as in the other zones, the lakes which impose conditions to which the organisms must adapt themselves; it is the organic life which has got the upper hand of the lakes, transforming them through fundamental changes in the shape of the lake basins and in the chemical and physical qualities of the water.

Through the influence of the waves and the ice the material of the littoral zone which decays in autumn undergoes *pulverisation*. The detritus thus formed mixed with the large quantities of clay, lime, and organic material carried in by the rivers, together with the plankton produce precipitation, filling up and transforming the original lake-basins. The lake-bottom is covered by enormous layers of material originally mainly organic, which through the action of the bottom fauna and bacterial flora is transformed into clay and calcareous gytjes. The filling-up process always begins in the primary inlets of the lakes, so that the lakes are rounded and approximate to the circular shape. The result of the filling-up process is the rapid closure of the lake-basins: one lake after another becomes closed; tracts of land rich in lakes become dry plains or give place to peat-bogs and meadows, a process which but rarely goes on so rapidly farther north. Owing to the large quantities of plankton, the nature of the bottom is to a great degree determined by the quality of the plankton (Diatom gytjes, Cyanophyceae gytjes, Chitin gytjes; Wesenberg-Lund, 1901, p. 110).

The rich life of the littoral region further influences to a high degree the *thermic* conditions. The fact that the temperature of our lakes in summer can rise so high is due, I believe, to a very great extent to the organic life in the littoral region. On warm summer days temperatures of 30–35° C. may occur in the dark, warmth-abstracting, and warmth-producing heaps of detritus. Similar temperatures are also found in the *Sphagnum* and *Hypnum* moss-beds often found at the upper ends of the creeks in our large lakes, and also in the dense vegetation of *Myriophyllum*, *Hydrocharis*, and other plants which lie much nearer to the free surface of the water. That these