

appearance of the lakes proceed more slowly in the alpine than in the Baltic lake-area, and are most probably due more to the material carried along by the rivers, which is mainly inorganic, than to the organic material produced in the lakes. It appears, however, from Böhm's records, that the alpine lakes also disappear, that in the Tirol 118 alpine lakes have disappeared since 1774; and from Walser's, that of 149 lakes in North-East Switzerland 75 smaller ones have quite disappeared and 16 have been greatly reduced since 1668, in the course of about 250 years (*vide* Huber, 1905, p. 1; see also Früh and Schröter, 1904, p. 20). The influence of man on the filling up of the lakes and on the chemical quality of the water is probably hardly so great as in the Baltic lakes.

It appears from the foregoing that the alpine lakes present much greater similarities with the North European and arctic lakes than with the lakes of the Central European lowland; a detailed demonstration of this is quite superfluous. A great many phenomena which we have been able to record from the alpine lakes may certainly also be pointed out in the North European and arctic lakes, but have not been dealt with here, as we do not know anything as to their transparency or colour. The agreement of the physical conditions in the high alpine lakes with those in the arctic lakes has sufficiently often been advanced, recently by Zschokke; in most regards they also present quite the same appearance. Still, in one regard which has hitherto probably not been sufficiently emphasised they differ greatly, *viz.* in *light*. The long dark arctic winter night is not paralleled by anything in the high alpine lakes: the yearly quantity of light received by the alpine lakes is many times greater than that of the arctic region. In those cases where the high alpine lakes are covered with ice but free from snow, or where the snow does not cover the whole surface, this much greater quantity of light will, at any rate for the phytoplankton, be a principal factor in rendering active life possible where it is impossible in arctic regions.

TROPICAL LAKES

Omitting the Mediterranean lakes, since only future investigations can show whether these are to be regarded as a special type, we may briefly deal with the tropical lakes.

We may first of all mention the enormous quantity of light which penetrates the surface of the water, and also that the amount of light as compared with that in higher latitudes is not subject to such great and regular annual variations as is the case in the temperate and especially the arctic regions. Further, it must be remembered that the annual range of temperature variation is probably relatively slight—