

the ice had retired. All these fresh waters have probably been populated by the same, at all seasons almost invariable, common races which even nowadays predominate in those parts of the globe where an Ice Age still prevails, or are close to the boundaries of the ice. As the temperature rose the lakes became differentiated, and lake-types with different biological conditions came into existence; the race primarily common to all lakes was split up into various small races. Through selection, those mother-animals which produced resting-eggs disappeared; the loss of resting-stages was followed by isolation of the colonies and fixation of the races. *The result was a very distinct local variation.* With the improvement in the climatic conditions the necessity for increased powers of floating was modified in proportion as the specific gravity and viscosity changed. As the temperature rose and the bearing power of the fresh water in the summer diminished, the plankton organisms had only one of two things to do: either to accommodate themselves to the claims for increased floating power, or perish. By increasing and developing such processes as counteracted the increasing rate of sinking, *the seasonal variations arose.* *The deeper basis of the causal connection between the variations in the plankton organisms and those in the bearing power of fresh water is therefore to be sought for in the amelioration of the climatic conditions which began after the Glacial Age, the consequent higher temperature of the water, and at the same time the continually increasing rate of sinking.* As a concomitant of the amelioration of the conditions may also be emphasised better nourishment. My opinion is partly based on the fact that all seasonal and local variation is absent, or at any rate is not conspicuous, in the arctic region, partly on the fact that all southern local races fall back upon the same winter race, which of all races is that which is nearest related to the present arctic race of the species concerned. *This winter race is therefore to be regarded as a reminiscence preserved from periods remote in the development of our races of the present day.*

Just as in the course of a year we see those modifications brought about which have been developed in the course of the thousands of years which separate us from the remote periods when our waters were inhabited only by the poorly equipped arctic races of the present day, so we can probably observe quite the same development when we study, lake by lake, locality by locality, the conditions in a country which reaches the temperate zone in the south and the region of eternal snow in the north.

According to this view, the local variations of the plankton organisms may be said to be arranged in *series of forms* (*Formenreihen*, Sarasin, Plate, Neumayer, etc.). The causes of the origin of these