

— to say nothing of the establishment of liquid currents within the body, — are all related to osmotic pressure. The forces involved in such processes are large, and osmotic phenomena assume a special importance wherever colloidal systems occur. It appears to be certain that osmotic pressure is now securely established as one of the fundamental factors in the physico-chemical organization of the living mechanism, and one of the constant conditions, like concentration of the several constituents, alkalinity, temperature, etc., whose preservation is of vital importance.

## II

### THE CIRCULATION OF WATER

There are a number of causes which bring about ocean currents. In the tropics high temperature causes a far greater evaporation of water than can be offset by rainfall and the flow of rivers; near the poles this relation is reversed. Hence water must steadily flow from high to low latitudes, there to evaporate and complete the cycle in the atmosphere and on the land. In polar regions the cold water sinks and penetrates along the bottom of the sea in great deep currents to the tropics.