

The surface currents of the ocean have a different origin, for they depend upon winds, especially trade winds, etc. Such continuous action of moving air upon water has been theoretically explained by Helmholtz and Zöpperitz. Needless to say, in addition to these principal causes there are a great variety of lesser factors which assist in the formation and preservation of ocean currents.

It is impossible here to undertake an analysis of the phenomenon, but certain it is that into the processes that constantly stir the ocean, beside the rotation of the earth, the eccentricity of its orbit, and the inclination of its axis, the thermal properties of water enter as fundamentally important factors.

The magnitude and the extent of the movements which result from such influences are very considerable. The principal surface currents are oval in form, one in the North Pacific between 10° and 50° north latitude, one in the North Atlantic between 10° and 30° north latitude, one in the South Pacific between 5° and 45° south latitude, one in the South Atlantic between 0° and 40° south latitude, and one in the Indian Ocean between 0° and 40° south latitude. The greatest of these are the Pacific currents. In the far south is an Antarctic current flowing from