

seen in the direction of the trade-winds, monsoons, etc. The rivers of Siberia flowing northwards to the Polar Sea, eat into their eastern beaches as an effect of the rotation of the earth. It is the same influence which directs the course of the great ocean-currents. In the North Atlantic the warm currents from the south bend in general to the right, that is to the east, and the cold currents from the north likewise bend to the right, that is to the west; thus the Gulf Stream flows across to Europe, and the polar currents to Greenland and Labrador. Let us now suppose that we take observations at a couple of stations right across a current. This may be represented roughly by a vertical section, as in Fig. 186; we must here imagine that the motion takes place in the direction from the eye through the paper, that the motion is swiftest at the top, and that we are in the northern hemisphere. The rotation imparts to the water-

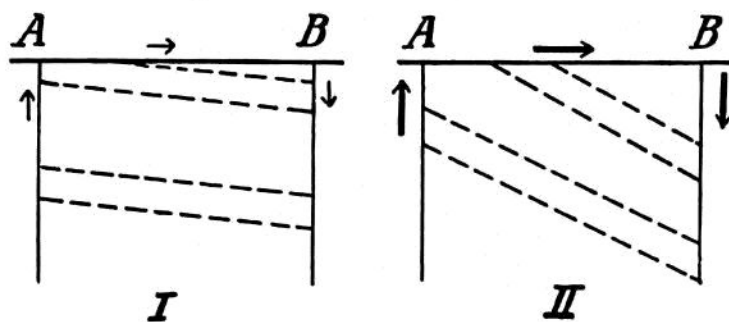


FIG. 186.

By reason of the deflecting influence of the earth's rotation (represented by the horizontal arrows) the water-layers acquire a slanting position, determined by the difference of velocity and density in the different layers.

the broken lines, the incline being slight if the surface-current is slow (I.), and strong if the current is rapid (II.). Consequently the light water will go deep at B, the station situated to the right in the current, while at Station A, on the left, the heavy water from below will come nearer to the surface. Wherever there is a strong current in the upper water-layers the following rule will apply in the northern hemisphere: on the right-hand side the water is comparatively light, on the left-hand side comparatively heavy; the conditions are reversed in the southern hemisphere. There are many examples illustrating this. Off the west coast of Norway the current runs north, and the water to the right, near the coast, is light, while that to the left, in the middle of the Norwegian Sea, is heavy. In the Gulf Stream off the east coast of North America the water is light (warm) on the right side of the current, and cold (heavy) on the left. The southern hemisphere

mass a tendency to move to the right; there will be a pressure in that direction (indicated by the arrows), forcing the layers down at Station B, raising them nearer to the surface at Station A.

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