since they give us the depth and volume of the mass of water which is heated above its normal temperature, and which we must regard as the softener of the winds blowing on the coasts of Europe. Referring to Fig. 60, in the Bay of Biscay, after passing through a shallow band superheated by direct radiation, a zone of warm water extends to the depth of 800 fathoms, succeeded by cold water to a depth of nearly two miles. In the Rockall channel (Fig. 59) the warm layer has nearly the same thickness, and the cold underlying water is 500 fathoms deep. Off the Butt of the Lews (Fig. 56) the bottom temperature is 5°·2 C. at 767 fathoms, so that there the warm layer evidently reaches to the bottom. In the Fäeroe channel (Fig. 55) the warm water forms a surface layer, and the cold water underlies it, commencing at a depth of 200 fathoms,—567 fathoms above the level of the bottom of the warm water off the Butt of the Lews. The cold water abuts against the warm—there is no barrier between them. Part of the warm water flows over the cold indraught, and forms the upper layer in the Fäeroe channel. What prevents the cold water from slipping, by virtue of its greater weight, under the warm water off the Butt of the Lews? It is quite evident that there must be some force at work keeping the warm water in that particular position, or, if it be moving, compelling it to follow that particular course. The comparatively high temperature from 100 fathoms to 900 fathoms I have always attributed to the northern accumulation of the water of the Gulf-stream. The amount of heat derived directly from the sun by the water as it