

other two, for there is high and extensive land between the meridians of 55° and 65° west, in 65° south latitude; and the warm current, already led far to the southward by the American coast, appears to bifurcate upon Graham Land, and to produce another bight in 90° west longitude, a little to the west of the southern point of South America. In this bight, Cook, in 1771, and Bellingshausen, in 1821, pushed nearly to the seventieth parallel of south latitude.

I have already referred (vol. ii., p. 75) to the principal temperature phenomenon of the eastern portion of the South Atlantic—the equatorial counter-current, and its extension as the Guinea Current. The cause of the counter-current to the eastward in the zone of calms is somewhat obscure, as the only obvious explanation—that it is a current in an opposite direction induced in the space between the current of the north-east and south-east trades to supply the water removed by them—seems scarcely sufficient to account for its volume and permanence.

The comparative thinness of the belt of warm surface-water in the equatorial region is at first sight remarkable, and has given rise to a good deal of speculation; but it will be seen by comparing the distribution of temperature at Station CXII. (Fig. 54), nearly on the line, with that at Station CCCXXVII., (Fig. 56), in the latitude of Tristan d'Acunha, that the positions of the isothermobaths of 4° and 5° C. are nearly the same: the slight difference apparently depends upon the latter station being within the influence of the Brazil Current. The phenomenon is thus essentially a continuation to the north of the equator of southern conditions, and the small effect of the vertical sun in raising the temperature to any depth below the surface is doubtless due to the removal of the heated layer as soon as it is formed by the trade-winds and their counter-currents, and to the rapid abstraction of heat in the formation of watery vapor.

One of the best-marked and most important phenomena of the distribution of temperature in the upper layers of the