

twenty to seventy miles a day, is, roughly, the fourth degree of north latitude—a little to the southward of this parallel toward the coast of Africa, considerably to the northward, about 35° W. longitude, where it approaches its bifurcation off Cape San Roque.

Occupying a band approximately between the parallels of 4° and 8° N., there is a tolerably constant current to the eastward, the equatorial counter-current, averaging, in the summer and autumn months, when it attains its maximum, a rate of twenty to forty miles a day. The causes of this current are not well known; it occupies a portion of the ever-varying space between the north-east and the south-east trades, and it seems probable that it may be a current induced in an opposite direction, in the "zone of calms," by the rapid removal of surface-water to the westward by the permanent easterly wind-belts. Opposite Cape Verde this easterly current takes a southward direction; it is joined by a portion of the southern reflux of the Gulf-stream; and, under the name of the "Guinea Current," courses along the African coast as far south as the Bights of Benin and Biafra, where it disappears.

The Guinea or "African" Current is a stream of warm water, averaging from 250 to 300 miles in width, with an average rate of from twenty to fifty miles a day. Its greatest concentration and force are opposite Cape Palmas, where it is jammed in by the northern edge of the equatorial current; its width is there reduced to a little over a hundred miles, and it attains a maximum speed of one hundred miles a day. There seems to be no doubt that this current must be regarded as a continuation of, and as being almost entirely derived from, the equatorial counter-current. It is evident that a great part of the surface-water must have an equatorial origin, for when we took our observations, nearly at the hottest time of the year, the surface-temperature was equal to the mean maximum temperature of the air, and one degree above its mean minimum