

The vegetable forms also of the torrid zone, the arborescent ferns, and the orchideous parasites, advance towards 38° and 42° of south latitude. The small quantity of land in the southern hemisphere, contributes not only to equalise the seasons, but also to diminish absolutely the annual temperature of that part of the globe. The cause is, I think, much more active than the small eccentricity of the earth's orbit. The continents, during summer, radiate more heat than the seas; and the ascending current, which carries the air of the equinoctial and temperate zones towards the circumpolar regions, acts less in the southern than in the northern hemisphere. That cap of ice which surrounds the pole to the 71° and 68° of south latitude, advances more towards the equator whenever it meets a free sea, that is, whenever the pyramidal extremities of the great continents are not opposite to it. There is reason to believe, that this want of dry land would produce an effect still more sensible, if the division of the continents were as unequal in the equinoctial as in the temperate zones."

TEMPERATURE OF THE SEA.

Upon this subject we must also refer to Humboldt, the almost only authority we have upon the question of surface temperature. "The sea," he says, "radiates less absolute heat than continents; the air resting upon it is cooled by the process of evaporation, and the surface is heated or cooled by the currents directed from the equator to the poles, or by the mixture of the superior and inferior strata on the sides of banks. It is from these causes combined, that, between the tropics, and perhaps as far as 30° of latitude, the mean temperatures of the air resting upon the sea, are $3^{\circ} 6'$ or $5^{\circ} 4'$ lower than that of the continental air. Under high latitudes, and in climates where the atmosphere is coolest in winter, much below the freezing point, the isothermal lines rise again towards the poles, or become convex when the continents pass below the seas."

With respect to the temperature of the ocean, we must distinguish between four very different phenomena. 1st The temperature of the water at the surface corresponding to different latitudes, the ocean being considered at rest, and destitute of shallows and currents. 2d. The decrease of heat in the superimposed strata of water. 3d. The effect