

be sufficient to prove the influence of locality upon the tides ; and we might have mentioned the effect of wind, increasing or restraining the rise, according to circumstances.

CURRENTS.

We must now advance to a consideration of the third kind of motion to which the sea is subject,—that produced by currents. These currents have been sometimes arranged in classes, according to the circumstances which regulate their motion, some being constant, some periodical, and others temporary ; but it will not be necessary that we should confine our remarks in this general sketch to the classification here marked out. In relation to their cause, we must speak much less decidedly than we did in the description we gave of the tides ; but we may imagine several agents to assist in their production. The difference of temperature or saltness occasioning a difference of specific gravity—the action of the air in violent motion—the periodical melting of the polar ice, or unequal evaporation, may occasion a current, or two or more of these causes may act together to effect the same result. It is extremely difficult, in the present state of our knowledge, to assign either one of these causes as the positive origin of a current ; the state of our information on this subject is rather negative than positive ; it is often possible to say what is not a cause, when the cause itself cannot be ascertained. We shall, however, only attempt to trace the direction of one of the most important, constant, and periodical currents affecting the ocean.

The Florida, or Gulf Stream, is one of the most singular phenomena in hydrography ;—it is a perpetual current of water, rising in the Gulf of Mexico, and flowing in a curved line into the Northern Atlantic. The direction of this current is, in a great measure, to be attributed to the obstacles thrown into the way of the various and universal movements to which the water is periodically subject. This will appear evident if we trace the motion of the sea, and the direction it takes. It is proved, by the masses of ice and other substances floated from the polar regions towards the equator, that there is a general movement of the ocean in that direction ; and, it will be remembered, that it was this current that caused the failure of Captain Parry's last attempt to approach the North Pole, the current driving his vessel more