

ments by means of a valved thermometrical sounding lead, on the temperature of the ocean, and on the decrement of caloric in the successive strata of water. The thermometer on the bank, and near the surface, was from 12.5° to 13.3° centigrades, while in deep water it constantly marked 15° or 15.3° , the air being at 12.8° . The celebrated Franklin and Mr. Jonathan Williams* were the first to invite the attention of naturalists to the phenomena of the temperature of the Atlantic over shoals, and in that zone of tepid and flowing waters which runs from the gulf of Mexico to the banks of Newfoundland and the northern coasts of Europe. The observation, that the proximity of a sand-bank is indicated by a rapid descent of the temperature of the sea at its surface, is not only interesting to the naturalist, but may become also very important for the safety of navigators. The use of the thermometer ought certainly not to lead us to neglect the use of the lead; but experiments sufficiently prove, that variations of temperature, sensible to the most imperfect instruments, indicate danger long before the vessel reaches the shoals. In such cases, the frigidity of the water may induce the pilot to heave the lead in places where he thought himself in the most perfect safety. The waters which cover the shoals owe in a great measure the diminution of their temperature to their mixture with the lower strata of water, which rise towards the surface on the edge of the banks.

The moment of leaving Europe for the first time is attended with a solemn feeling. We in vain summon to our minds the frequency of the communication between the two worlds; we in vain reflect on the great facility with which, from the improved state of navigation, we traverse the Atlantic, which compared to the Pacific is but a larger arm of the sea; the sentiment we feel when we first undertake so distant a voyage is not the less accompanied by a deep emotion, unlike any other impression we have hitherto felt. Separated from the objects of our dearest affections, entering in some sort on a new state of existence, we are forced to fall back on our own thoughts, and we feel within ourselves a dreariness we have never known before. Among the letters which, at the time of our embarking, I wrote to friends in

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