

more easterly than the time-piece, and $1^{\circ} 22'$ more easterly than the observations.

From repeated observations of the variation of the magnetic needle, both by amplitude and azimuth, we found the variation chart of M. Bellin, constructed in 1757, sufficiently exact in the neighbourhood of the line; but by no means so much to be depended on, when at some distance from it.

The discussions between Captain Cook and M. de Monier, on this subject, excited us to the inquiry: in which our results coincided with those of the former navigator; although we could not justly say of our needle as the captain says of his,—that it was excellent.

As soon as we had passed into S. latitude, the winds fixed themselves in the S.E. quarter, drawing however more to the E. than to the S.; which was also observed by Captain D. Joseph Varela, of the Spanish frigate *Santa Catalina*, who, in his voyage from Cadiz to Brasil, in 1777, being obliged to cross the Line far to the W. of the usual point, apprehended he should not be able to make Cape St. Augustine; but he found that, as he advanced in the southern hemisphere, and approached the coast of Brasil, the winds drew more to the E.; so that, although he had fallen so much to leeward, as to be within sight of the island of Fernando Norono, he yet weathered that cape without any difficulty. Cook experienced almost the same favourable change of the wind, as do all our vessels on their return from America to Europe; for which reasons it seems not improper that, in a voyage from Europe to South America, navigators should venture to trust a little to such a change; and therefore to cross the Equinoctial from 15° to 20° from Cadiz, provided the properties of their ships warrant them to make such attempts.

Captain Cook, in consequence of his own experience, lays it down, that from the meridian of Teneriffe to the W., the setting of the waters is constantly to the westward; and, on the E. side of the same meridian, they set to the eastward: that is to say, that they draw always towards the respective coasts of America and Africa. Our experience in this voyage confirmed the former part of the observation, which explains the variety in the accounts of different navigators respecting these currents. Some instances which we had occasion to consult also attest the truth of the remark: for example, Captain D. Philip Gonzalez, of the Spanish man-of-war the *San Lorenzo*, on his passage from Spain to Lima, having crossed the Line to the eastward of the meridian of Teneriffe, found, on his arrival on the coast of Patagonia, a great difference to the eastward between his reckon-