1777. July. I can aſſign no reaſon why the variation is ſo much leſs at, and near, Annamooka, than at either of the other two places. I can only ſay, that there is no fault in the obſervations; and that the variation ought to be more at Annamooka than the above, as it has been found to be ſo to the Northward, Southward, Eaſtward, and Weſtward of it. But diſagreements in the variation, greater than this, even in the ſame needle, have been often obſerved. And I ſhould not have taken notice of this inſtance, but from a belief that the cauſe, whatever it is, exiſts in the place, and not in the needles; for Mr. Bayly found the ſame, or rather more difference.

The tides are more conſiderable at theſe iſlands, than at any other of my diſcoveries in this ocean, that lie within the tropics. At Annamooka it is high water, on the full and change days, nearly at ſix o'clock; and the tide riſes and falls there, upon a perpendicular, about ſix feet. In the harbour of Tongataboo, it is high water, on the full and change days, at fifty minutes paſt ſix. The tide riſes and falls, on thoſe days, four feet nine inches; and three feet ſix inches at the Quadratures. In the channels between the iſlands, which lie in this harbour, it flows near tide and half tide; that is, the flood continues to run up near three hours, after it is high water by the ſhore; and the ebb continues to run down, after it is flood by the ſhore. It is only in theſe channels, and in a few other places near the ſhores, that the motion of the water or tide is perceivable; ſo that I can only gueſs at the quarter from which the flood comes. In the road of Annamooka, it ſets Weſt South Weſt, and the ebb the contrary; but it falls into the harbour of Tongataboo from the North Weſt,

paſſes