

Polynesian Navigation and Logic

from Andrew Sharp

D. H. LEWIS, in his article 'Ara Moana: Stars of the Sea Road' in the July 1964 issue of the *Journal of the Institute of Navigation* (pp. 278–88), speculates on how the Polynesians could have navigated to known distant destinations, but does not explain how the knowledge of the distant destinations on which he relies for his theories was gained by the supposed navigators. Before anybody can navigate to somewhere, someone must first have gone there and come back. Lewis does not tell us how the Polynesians gained their knowledge of the existence, location and size of New Zealand and Hawaii, and of the currents on these courses, on their outward voyages of discovery, and then used this knowledge to get home again. His statement that 'it seems probable that the Polynesians steered by horizon stars until the zenith star showed that they had reached the right latitude, and then turned east or west', obviously has no application to voyages of discovery which by definition were made without prior knowledge of the existence, latitude or size of the objectives. The alternative supposition that the discoverers were able to keep account of their courses from bearings on stars which were reputedly aligned with the destinations and the home islands overlooks the fact that such star bearings gave no clue whatever to longitudinal displacement. There was no practicable method whereby the discoverers could have known the longitudinal relationships of their discoveries and their home islands. The trial voyages which Lewis thinks would be appropriate as a modern test would have no applicability to the circumstances of prehistoric discovery, because they would be made with prior knowledge of the existence and location of the objectives. The diagrams used by Lewis are taken straight from modern European maps and therefore have no relevance to the circumstances attending prehistoric discovery. The notion that prehistoric explorers would have gone on for hundreds and indeed thousands of miles in order to find islands which they did not know existed, knowing that if they did not find them they would have to try to get home again without rest or re-fit, is not a little ridiculous in itself.

The illogicalities which underlie Lewis's contentions are shared by him with a long line of predecessors, including a number of the authorities cited by him in his article.

Southerly Error in Early Explorers' Latitudes in the South Pacific

from Andrew Sharp

I HAVE read with interest Colin Jack-Hinton's article 'The Use of Apparent Consistency in Errors of Latitude in the Identification of 16th and 17th Century Pacific Islands Discoveries' in the July 1964 issue of the *Journal of the Institute of Navigation* (pp. 311–13). Jack-Hinton takes as his main target the two instances in my book *The Discovery of the Pacific Islands* in which I used persistent or steady

southerly error as an aid to or basis for differentiations between atolls situated north and south of each other, namely Mendaña's Los Bajos de la Candellaria in reference to Roncador Reef and Ontong Java, and the first atoll seen by Le Maire after leaving the Horne Islands in relation to Ontong Java and Nukumanu. It is natural enough that Jack-Hinton should pick on these for special attention because his work for his doctorate at Australian National University was concerned with the Solomons and the two discoveries referred to above come within this area. He makes passing reference to Helen Wallis's statement in her Oxford thesis that numbers of early Spanish latitudes of identifiable points showed a southerly error varying from 10' to a degree. A persistent southerly error in early Dutch latitudes in the South Pacific also applies, as Wallis and R. P. Meyjes, cited by Wallis, pointed out. If some of the identifications of known points made by Wallis and Meyjes are dubious, this does not dispose of the statistical significance of their data, because the majority of their identifications stand up to examination. Nor does the fact that there was variation in the determination of latitudes by pilots as stated by Quiros justify a conclusion that these variations did not show a persistent southerly error but ranged north and south of the true latitudes. Furthermore it is surely beside the point to contend that to have validity the cause or causes of something must be clearly explained and demonstrated. Cancer and rheumatic disorders are accepted facts although no clear and generally accepted explanation has been found for them.

I do not think that either southerly or northerly error can be invoked when a latitude was calculated by dead reckoning from a previous observed latitude, because there are numbers of instances in logs and journals including those of Cook and Flinders where a latitude obtained by dead reckoning from a previous observed latitude proved to be considerably in error when checked against a contemporaneous observed latitude. In view of the general tenor of his article and the relative uncertainty of dead reckoning Jack-Hinton cannot logically say that because the Le Maire latitude for the Tauu Islands exhibited a small southing by dead reckoning from the previous latitude for Ontong Java or Nukumanu this indicates that Ontong Java is the more likely identification. If he does not wish to take notice of usual southerly error then he should leave it open whether the atoll was Ontong Java or Nukumanu. But as compared with the Le Maire latitude of $4^{\circ} 47'$, Ontong Java lies between $5^{\circ} 10'$ and $5^{\circ} 30'$. I find it difficult to believe that, because an occasional early latitude was 10' too far north, the usual southerly error in the Le Maire latitudes was so far departed from in this instance as to bring Ontong Java into the picture when the Le Maire latitude is 23' north of the northernmost part of Ontong Java whereas Nukumanu is close to the Le Maire latitude.

Jack-Hinton prefers Roncador Reef to Ontong Java for Mendaña's La Candellaria, and so did I in the first draft of my book, because the nearness of La Candellaria to Mendaña's subsequent landfall on Santa Ysabel appeared to point to Roncador Reef. The reason I changed my preference to Ontong Java, while still leaving Roncador Reef as a possibility, was because Ontong Java appeared to fit in better with the persistent southerly error in the latitudes of Mendaña's chief pilot Gallego, his latitude being almost precisely that of Roncador Reef, and because of references to islands among the reefs. I can well believe, however, that an objective referee, after considering the present exchange between Jack-Hinton and myself, might prefer to think it an open question whether La Candellaria was Roncador Reef or Ontong Java.