MARSHALL ISLANDS STICK CHART

by
E. H. Bryan, Jr.

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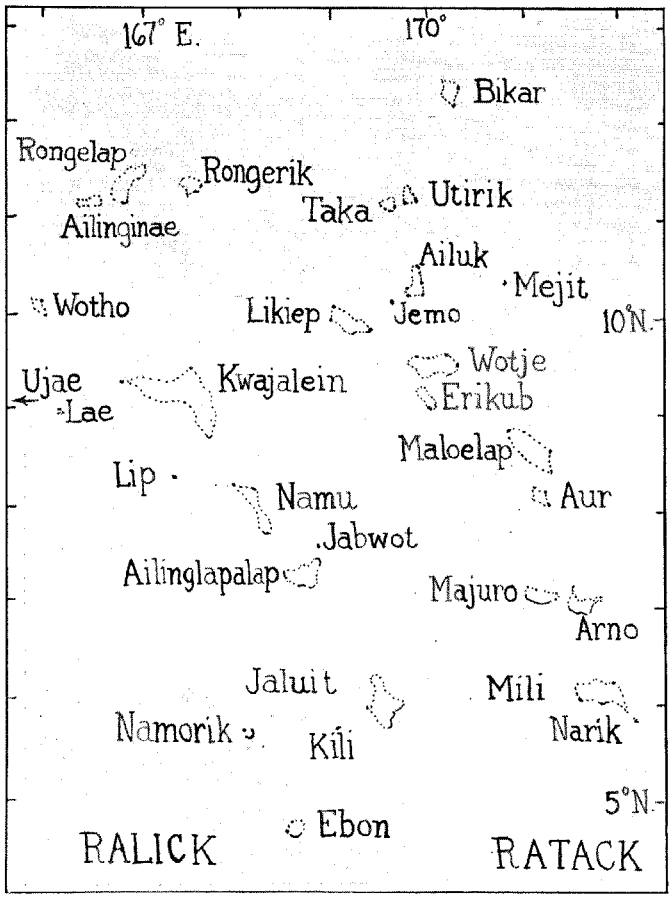
By E. H. Bryan, Jr

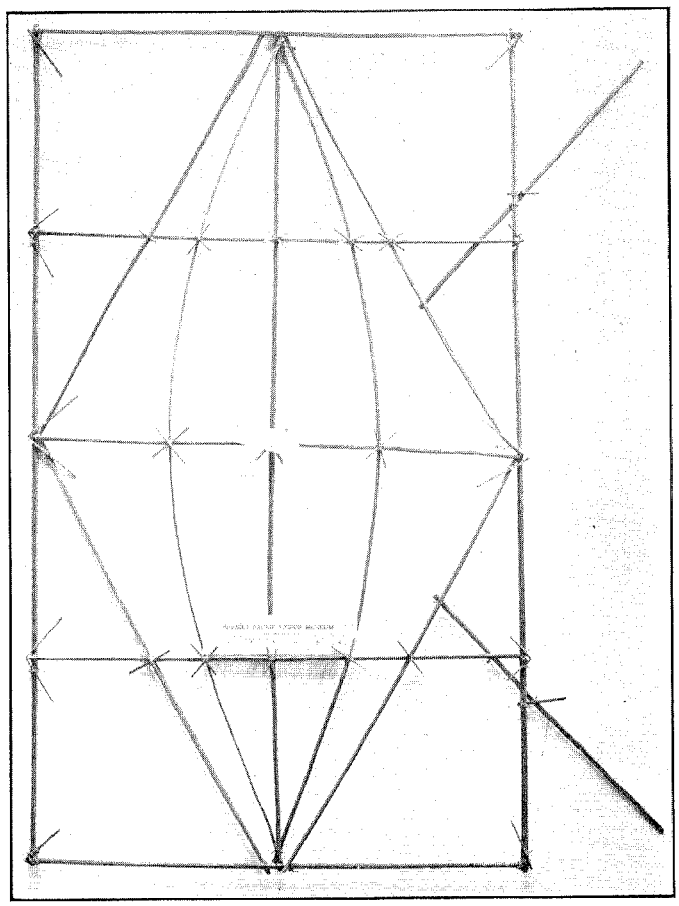
MOST everyone is willing to admit that there were romance and adventure in the long voyages of the Pacific islanders. But few people are able to appreciate what skill and hardihood it must have taken to sail canoes for thousands, or even hundreds, of miles across uncertain seas to reach safely a desired destination.

The Polynesians and Micronesians were skilled navigators. They sailed their course by watching the movements of the heavenly bodies, the currents, the winds, and the flight of birds. Cloud formations also told them when they were near land. Such wisdom was possessed by all good native navigators. One group of Micronesians, the Marshall islanders, however, did their cousins one better by developing a system of charts made from strips of split coconut leaf midrib and other straight, tough wood, tied together in patterns to represent the courses between their ports.

It may have been easier for them to do this than for other Pacific islanders because of the nature of their group of islands. The Marshall islands consist of two nearly parallel chains of atolls, stretching from northwest to southeast. The western or leeward series, called the Ralick chain, consists of 16 atolls or single isolated islands, with two more somewhat out of line a little distance to the northwest; the eastern or windward series, called the Ratack chain, consists of 15 unit atolls or islets, the northernmost being somewhat removed from the rest of the group. With the three exceptions noted, most of the atolls are comparatively close together, the longer intervals being only about 60 to 75 miles. As the islands are very low, this distance leaves the voyager out of sight of land during much of each passage. Most of the year a rather uniform current runs through the group, and the wind is generally from the east-northeast.

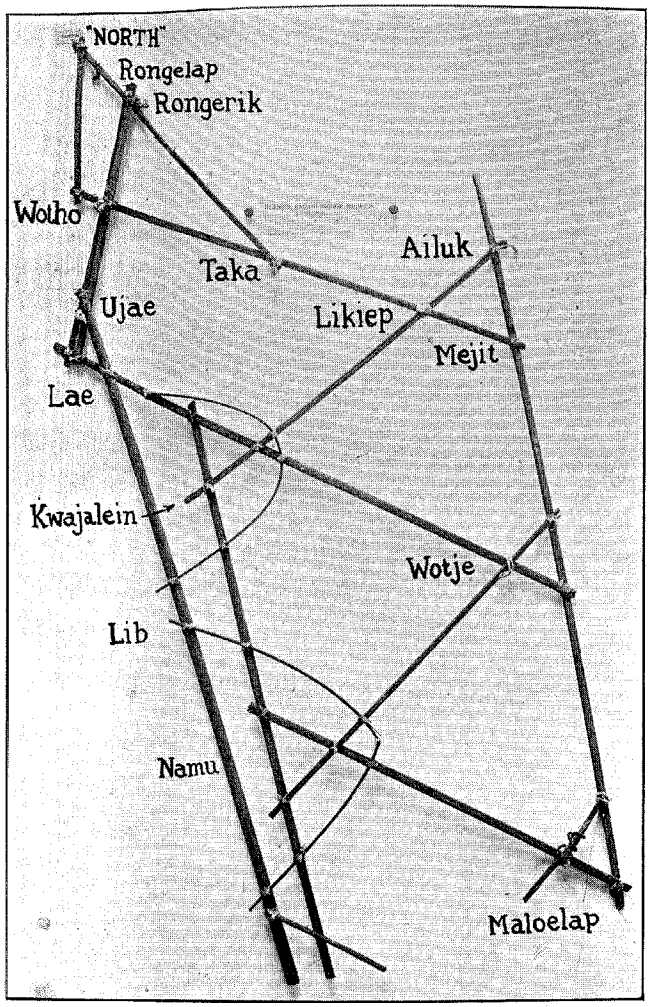


Marshall Islands—*Drawn by E. H. Bryan, Jr.*



Compass with Stick Chart—*Courtesy Bishop Museum*

The uniform trade wind and current played a large part in the successful use of these stick charts. Picking a course from a chart is only possible when one can properly orient the vessel with reference to the chart. The Marshall islanders knew the direction of sunrise and sunset; they doubtless knew the star (Polaris) which did not move about, but kept one position low in their northern sky. But they had no compass such as that by which modern navigators steer their ships. However, the wind generally blew from some direction between east and northeast, so that gave them a good idea of direction. On those rare occasions when the wind was not blowing, they had little to worry about, for they were not likely to make much headway on their course either. Approaching land, use was made of the current. Any seaman will tell you cannot "see" a



Northern Half, Marshall Group—*Courtesy Bishop Museum*

current at sea. Did the Marshall islands navigators have some sixth sense? Not at all; they simply were taught to use their eyes to make out very slight natural phenomena which, being very uniform, could be relied upon.

These slight indication may become clearer if we describe a stick compass which was frequently used with one of the *meddo* or charts, or in learning how to use them. They consist of a rectangular frame upon which curved sticks are tied. The center of the frame represents the island; a curved stick on the right hand side, called *rilib* by the natives, represents the manner in which the current, in coming against an island or atoll rim, is arrested or turned aside at some little distance off shore, causing the water to be just perceptibly heaped up or riffled; the left hand curve, called *kaelib*, represents the lee riffle. To the north and south of the island, where these curved sticks come together, there are lines of nodes where the riffles come together. To the practiced eye all of these signs on the water become apparent, and the navigator is able to orient his compass then his chart, and finally his canoe, in order to maintain a certain course.

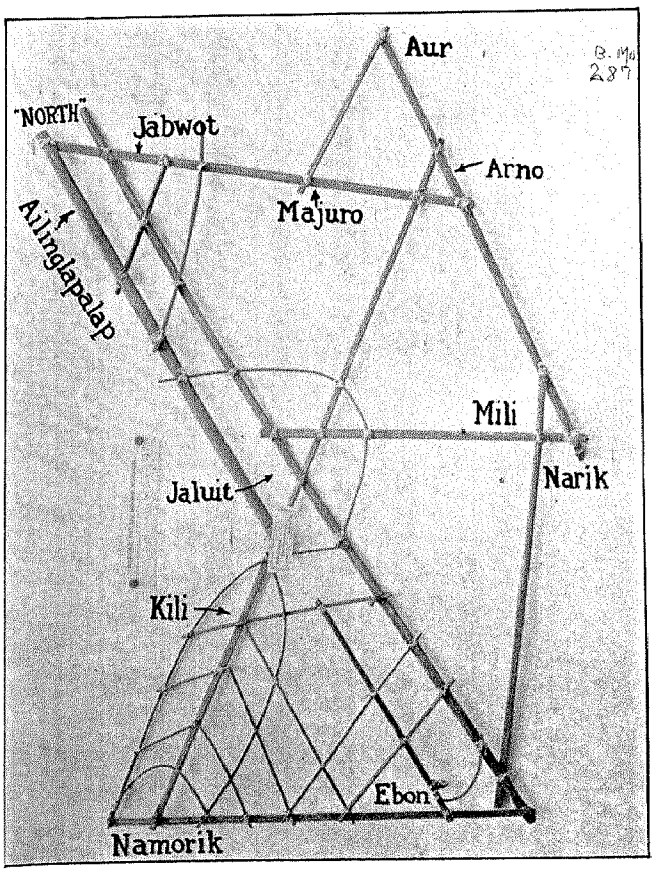
There are but few informative accounts of Marshall islands stick charts. One of the best was written by Captain Winkler of the German navy. First published in 1898 in the Marine-Rundschau, Berlin, a translation was published in the Annual Report of the Smithsonian Institution for 1899, pages 497 to 508, with several plates and diagrams. Captain Winkler distinguished three kinds of stick diagrams: those which represented charts of the entire group, called *rebbelib;* those that represented small parts of the group, called *meddo;* and those which serve only for general instruction without reference to any particular island, called *mattang.*

There are three stick charts in the collection of B. P. Bishop Museum. One of these, the gift of the Rev. C. M. Hyde, D. D., is labelled as being a "compass, used with the *mede* (meddo) or charts." It does not exactly agree with any of the instruction charts illustrated in the Smithsonian Annual Report, but it is obviously of a general nature and does not refer to any particular island.

The other two arrangements of sticks, frameworks of split bamboo (?) about four feet long by two to two and a half feet wide, together make up a chart of the greater part of the Marshall group. These were the gift to the Museum of the Hawaiian Board of Missions. Someone, perhaps the original collector, has written on the framework near little bits of shell, which are tied on to represent islands or atolls, the names of some of the corresponding islands. On the accompanying pictures of the charts the writer has written the corresponding names, as now used by the U. S. Hydrographic Office. Comparison with a map of the Marshall group will show that while the distances have in some cases been shortened, the directions for the most part hold good.

Shaving the Curbs

Automobiles that shave the curbs in making right-hand turns at high speed around corners are menaces to life and limb.



Southern Half, Marshall Group—*Courtesy Bishop Museum*