

Protohistoric rafts of the Society Islands

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Polynesian navigators, famed for their navigational techniques and for the performance of their sailing canoes, also constructed more modest craft--adapted perfectly to the needs of daily life. These are rafts--floating platforms constructed of parallel logs and intended to transport men and merchandise on various rivers and seas.

Of universal form, Polynesian rafts elicited only faint interest in the eyes of European voyagers who plowed the Pacific in the 17th and 18th centuries. These observers were more fascinated by the ocean-going canoes, whose

constructed from round logs or from bamboo which, assembled parallel formed a platform that was more or less rectangular in shape. Sometimes the builders tied the trunks in a fashion so that the ends were pointed. They were possibly looking to give a more hydrodynamic form. Cross ties consolidated the ensemble.

Sometimes a log deck was attached to the platform, thus protecting passengers and cargo from contact with the water (Handy 1932:57-9). A covering of braided leaves (coconut or pandanus) could be installed on the deck. These amenities prove that the raft was considered a true form of transportation.

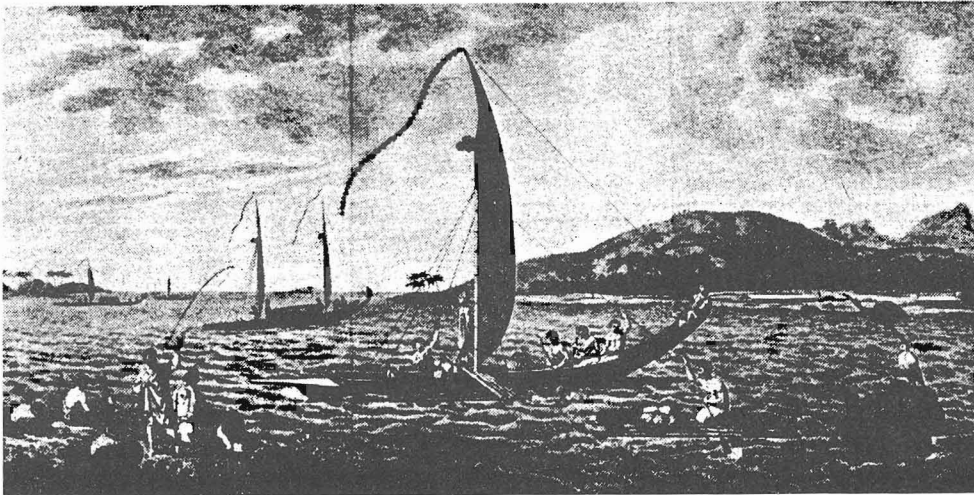
Information on the size of rafts in the Societies is rare or non-existent. Therefore the precise calculations given by Ellis (1972:104) are precious: in Tahiti, these crafts measured from 4.5 to 7 meters long and 2 to 2.5 meters wide.

Rafts were propelled on rivers, lakes or lagoons with the aid of simple poles and paddles which enabled them to be maneuvered. For large rafts, it was necessary to use a sail and a steering paddle. The most unexpected means of propulsion is, without doubt, the use of kites for sails. Handy (1932:57-8) reported that the district of Vairao, having a debt of revenge to pay Varai (now Papeari) lying across a large bay, sent rafts full of food across the bay

on rafts propelled by kites. This gratuitous act led the Papeari people to come unarmed to Vairao with a return gift. The ruse succeeded and the people of Vairao had their revenge.

The use of kites as a means of hauling was noted also by Corney (1915:324): "Kites have been used for towing rafts of timber and bamboos at this part of the coast-Mataeai and Papeari."

Technically, this original means of propulsion (not restricted only to Polynesia)¹ is reasonable. Indeed certain Tahitian texts mention, in regard to making kites, that many men were involved in maintaining them in flight (T. Henry 1962:279). These 'sails', of truly large dimension, could therefore serve as aerial sails and their manipulation undoubtedly posed no difficulty in the sea for the masters of the knowledge and use of winds. The use of this procedure in traditional navigation is equally demonstrated by a legend concerning the double canoe of Maui (the great navigator and fisher of islands) which was pulled by a kite (Poignant 1969:66).



A view of the island of Otaheite, with several vessels of that island. Engraved by E. Rooker, Hawkesworth (1773) II, pl.4 (p.184)

construction was strange to Western minds of the time. Raised only a short distance above the surface of the water, the canoes were made with two hulls whereas European ships possessed only one large hull. In consequence, ethnohistoric documentation says little on the subject of rafts. Rafts are little studied in ethno-archaeological studies regarding traditional Polynesian navigation.

However, the use of this type of craft may be very ancient in the Pacific. Indeed, southern Australia has been occupied for more than 40,000 years. In order to reach this continent, southeast Asian people had to cross arms of the sea at least 70 km wide. A rudimentary craft like a raft would perhaps suffice. An assessment by Edwin Doran after ethnohistoric documentation shows that the raft was present, on the whole, in Oceanic archipelagoes from New Guinea to the Gambiers and especially in the Society Islands.

A Universal Form of the craft.

Rafts used by the inhabitants of the Society Islands were

In this connection, it is interesting to note that, from a symbolic view, the kite established a link between the world of the ocean (raft or canoe) and the world of the sky. This rapport is always present in Polynesian cosmology, where travel to another group of islands equaled travel towards another sky. The canoe is the means of transport on the sea but equally has the ability to 'fly', to move about in space. It is by means of the canoe *Te Apori* that the eminent Hina (protector of voyagers) settled on the moon (after T. Henry 1962:482). At the beginning of the creation of the universe it is canoes that installed the stars in their respective places in the sky (ibid:368-372).

In order to determine the route of arrival to a good port, Polynesian navigators constantly referred to the stars, sun and moon. From the relation that exists between the sky world and the double voyaging canoe where the two protagonists provide mutual service: the canoes placed the stars and the stars guide the navigators. This coherence assures between them the success of a voyage.

The association of kites (objects of the air) and a raft or canoe (objects of water) confirms this coherence and importance of the ties uniting these two worlds in the Polynesian conception of the universe.

Materials of Construction

The species of wood cited in the ethnohistoric literature for the construction of platforms and for the cross-members of rafts are the following: bamboo (*Schizostachium glaucifolium*), *purau* (*Hibiscus tiliaceus*), the trunk of the coconut palm, and thatch from mountain banana trees. The ties were surely from the bark of the *purau* and perhaps also from cords of fiber made from coconut hair, for this material was employed to assemble numerous canoe parts such as planking, pieces of the prow and stern, and the balancing cross beams. The sails were made of woven pandanus leaves (*Pandanus sp.*), like those for canoes. For the kites, Ellis (1972:155-6) says "... léger tissu indigène en guise de papier" and Davies (1988:193) gives the following definition of the term *pauma* (kite): a paper or cloth kite. These descriptions therefore seem to designate *tapa*.

A Means of Ideal Transport on Lakes and Lagoon

The platform of a raft presents a flat surface that assures it's floatability and stability for carrying passengers and various kinds of cargo, particularly that which is of considerable weight. According to Haddon and Hornell (1938, III:14), this quality was exploited in several islands of the Pacific from Tonga and Samoa (according to tradition) as well as Micronesia where the stone disks used as 'money' in

Yap were fashioned on one of the small islands of Palau (Babelthuap), located more than 600 km away. The smaller disks (with a diameter between 3 and 3.65 meters) were taken out by canoes whereas the larger, or considerable weight, were taken on rafts. "... but also on river rapids."



Society Islands raft. "Art of Captain Cook Voyages" vol. I, Joppien and Smith, plate 28, 1985.

The raft is a craft generally used in calm waters (rivers, lakes lagoons). Thus for traveling from one bank of lake Vaihiria to the other, Tahitians used rafts of banana tree trunks (T. Henry 1962:82; Morrison 1966:132). Another place of such transport was in lagoons. During the first voyage of Cook to the Society Islands, the draftsman Parkinson noted the use of this craft in the lagoon at Taha and, at the beginning of the century, Handy (1932:57) assisted in the transport of blocks of coral on rafts in the lagoon at Raiatea.

As for navigating in rapids, the suppleness of construction permitted rafts to descend rivers with strong currents, such as the Papeno'o in Tahiti. This example is evoked in a passage of text written by Tavana Teriieroo A Teriieroo i te Rai of Papeno'o:²

Ote anavai anai teie, e tapaepae hia, te mau tauihaa, ete mau maa no te peho, mai roto mai ite faa, e e nania mai i taua paepae ra, te tere mai, na uta mai, e te tia nei, te taata i ma ite paepae- ete noonei, no te faatere ite paepaea eiohaia fifi - inia ite mau ofai - mato ete mau raau ite hiti anavai - i parau hiai e "Vainoo".

This text shows that cargo and crops from the Papeno'o valley were taken down the valley by rafts. Standing on the raft with a steering paddle, one person directed the raft in order to avoid the risk of a collision with rocks and branches situated near the banks. This extract confirms the use of rafts on the risky journey necessitating a craft of great floatability, maneuvered by a person steering who had perfect knowledge of the difficult passage.

Fixtures of Rafts for Fishing

For the Society Islands, a particular kind of raft was used for catching a fish called *au*.³ Made from *purau* branches, the craft measured 4.5 to 6 meters long and between 1.8 and 2.5 meters wide. Attached to vertical staffs which were placed at short distances along the extremity of the raft, was a screen made of horizontal poles. At the time of fishing, men were installed on 20 or 30 rafts, assembled in a circle. A canoe advanced toward the middle of the enclosed area and men directed the fish by beating the surface of the water. The *au*, bounding and leaping from the water before the rafts, collided with the frontal screen. It remained only for the fishermen to spear them (Ellis 1972:104-5).

Conclusion

The raft is an unspectacular craft but nevertheless presents qualities that conferred it a place of choice in the sea world of the Polynesian: it is easy and fast to construct; it is stable and flexible which permitted it to be adapted to different situations; its elementary form (a simple platform⁴) was amenable for many different uses; and its buoyancy made it the best means of transport for heavy cargo—preferable even to a canoe.

The example of traditional rafts in the Gambiers illustrates perfectly the interest that Polynesians had in this kind of craft for a long time. Tradition shows that, for a very long time, only rafts were used for navigating through a large portion of this archipelago. A king, wishing to end a local war, could stop production of double canoes and not authorize the use of rafts, thus excluding the possibility of a surprise attack. This means of transport, perfected over a course of time and at times rigged with a sail situated before, could attain 17 meters in length and could transport in the neighborhood of a score of persons (Neyret 1974:31).

The presence of fishing fleets of rafts constitutes an interesting fact. In effect, it is a question of the reflection of a society that adapted to different aquatic conditions, diversified its uses and made them complimentary. It is therefore essential now to reckon this type of craft in all studies on the traditional nautical patrimony of the Pacific Islands, for the raft is the same image of a society which conducted these multiple and complex nautical activities.



Easter Island Foundation Fundación Rapanui

In Chile the summer months of January and February are slow for libraries, and the time has been used to begin the immense task of cataloging the thousands of photographs in the Mulloy Library collection. This job will be followed by re-jacketing all the prints and negatives in archival plastic sleeves, and re-processing those that are beginning to yellow with time. Meanwhile the search for larger quarters for the Mulloy Library in Vina del Mar continues, and the bureaucratic procedures are underway to allow us to establish a Mulloy Library on Rapa Nui in the existing 'gift shop' building next to the Sebastian Englert Museum.

One of the summer visitors to the library was Phineas Mulloy Kelly, grandson of William Mulloy who bicycled with his friend Chris Jenkins all the way from Laramie, Wyoming, to Vina—and then on to their final destination, Santiago. They celebrated by attending, along with 50,000 others, a concert of the Rolling Stones on February 19th.

William Liller, CEO

REQUEST FOR PROPOSALS

Rapanuiphile Ben Baldanza has donated a 386 computer to the Foundation. Due to problems involved in shipping it to Chile, the EIF has decided to award the equipment to a deserving student or researcher who has a special interest in Rapa Nui. If you are interested, please submit a brief proposal telling why you should be awarded the computer. Include information about your area of interest in Easter Island, current research projects, or other Rapanui-related work.

Send your proposal to Barbara Hinton, Easter Island Foundation, 4928 Feagan Street, Houston, TX 77007. Due to shipping, customs and other complications, we must limit the award to U.S. residents or visitors to the U.S. Deadline for applications: June 15, 1995.

Computer specifications: an early model 20 megahertz 386 with 80 meg hard drive/color monitor/2 floppy drives: 5 1/4 and 3 1/2/ Windows software.

MEMORIAL GIFTS

You can honor and remember others through a Memorial Gift to the Easter Island Foundation. A Memorial Gift is a special way to pay tribute to the memory of a loved one. By providing support for the Foundation and its programs, such as scholarship for islanders, your gift can live on into the future.

Recent Memorial Gifts to the Foundation have been received from Mrs. A.R. Bennett in memory of Dr. and Mrs. Joe Howard, Dr. Gilbert M. Hogaboom, and Mr. George W. Ware. Please send Memorial Gifts to the Easter Island Foundation, Attn: Barbara Hinton, 4928 Feagan Street, Houston, TX 77007.

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Footnotes

- 1 In the Banda sea (southeast of Indonesia), bamboo rafts were noted with kites made of braided palm leaves (Bidault 1945:73).
 2 This text was sent to me by the late son of the author Raymond Teriimara Marua Te Po Teriieroo A Teriieroo I Te Rai Graffe, for which I am very grateful.
 3 Probably a small snouted fish of the family *Exocoetidae*, or an *arguilette* of the family *Belonidae*.
 4 It is interesting to note the difference in conception between the canoe structure which is raised above the water and the raft which is only on the surface. The existence of these two types of craft show that the Polynesians possessed a varied and complementary nautical fleet.