The Long-Term History of Teti’āroa (Society Islands, French Polynesia): new archaeological and ethnohistorical investigations

Guillaume Molle¹, Aymeric Hermann², Louis Lagarde³, Benoit Stoll⁴

Abstract:

Teti’āroa is the only atoll in the Windward group of the Society Islands, French Polynesia. It has been described in the ethnohistorical record as a secondary place of residence for the Tahitian royal family of Pare in the 18th Century. However, Teti’āroa’s history beyond this remains relatively unknown as the atoll is archaeologically understudied. Here we report the preliminary results of a project, started in 2015, which aims at documenting the long-term occupation of Teti’āroa. We present the survey and mapping of the archaeological remains and discuss the monumental architecture, the relationships with neighbouring and distant communities, and investigations of the historical copra plantation.

Keywords: French Polynesia, Society Islands, atoll

Context of the Project

Teti’āroa is the only atoll of the Windward group in the Society Islands, French Polynesia. It is located 42 km north of Tahiti and Mo’orea (fig.1). The original name of the atoll, Te-tu-roa (’The great Tu’), was changed in the 1780s after the son of Pōmare I took the chiefly title ‘Tu-Nui-e-Na-i-te-Atua’, which led to the prohibition of the name ‘Tu’ for other purposes following the pi‘i custom (Morrison 1966; Robineau 1985: 161). Its geographic location and natural settings probably attracted Tahitian groups early on, but all ethnohistorical accounts and oral traditions agree on the peculiar status of Teti’āroa in the 18th century, as a secondary place of residence for the royal family of Te Porionu’u, which encompassed the modern districts of Pare and Arue on the north coast of Tahiti.

Archaeological research on Teti’āroa did not start until the second half of the 20th century. While renowned anthropologist and archaeologist Kenneth P. Emory recorded a list of Teti’āroa toponyms, fishponds’ names, and one marae ari’i, in the 1930s, he actually never visited the atoll (Emory 1933: 121). In the 1960s, French archaeologist Pierre Vérin, accompanied by amateur Raoul Tessier, first surveyed the atoll and described a number of marae and terraces, as well as an archery platform, the presence of which signals high ranked status (Vérin 1962). As for Tessier, he left some short notes about the traditions and history of the island (Tessier 1962).

American actor Marlon Brando, who acquired the atoll from the heirs of Dr. Walter Williams in 1967, was dedicated to Teti’āroa after he shot ‘Mutiny on the Bounty’ in 1961. Willing to safeguard and develop research on the atoll’s natural resources and cultural heritage, he offered to fund an archaeological project conducted by Yoshihiko Sinoto and Patrick McCoy (Bishop Museum) in 1972 and 1973. The project was further designed as an archaeology field school for Tahitian students from the École Normale. The team surveyed and excavated several sites on the motu (islets) of Onetahi and Rimatu’u. Preliminary results were presented in a brief field report (Sinoto & McCoy 1974).

In 2005, SA Frangipani, the legal owner of the atoll, leased two motu to the Pacific Beachcomber group to build a luxury eco-resort which is the only commercial operation on Teti’āroa. In agreement with Brando’s long vision for the atoll, a non-profit organization was created to protect, manage, and develop research on the natural resources and cultural heritage of the island. Collaboration with the Te-tiaroa Society (TS) started in 2007 during the construction project of The Brando resort. A group of three structures was studied, relocated, and restored in order to avoid their destruction by the extension of the airstrip (Hardy 2008). Later discovery of other archaeological remains, hitherto unknown, including a marae site and a burial location, led TS to contact archaeologists from the International Centre
for Polynesian Archaeological Research (French: CIRAP) in Tahiti to conduct exploratory excavations (Molle 2011; Hermann 2013).

Building on previous successful collaborations with TS, the CIRAP went on to develop a three-phase archaeological project to investigate the settlement process and integration of the atoll in the ancient history of Central-Eastern Polynesia. This research report presents the preliminary results of the first phase of the project, including discussion of the monumental record and interactions with neighbouring groups of islands, and sets up future directions for research.

MAPPI NG TETI’AROA’S HISTORY

The first phase of the project was focused on recording the ancient remains on Teti’aroa in order to create a comprehensive map of the archaeological sites for future excavations and management of the surface sites. The 2015 field season was dedicated to an extensive survey of the islets, in order to complete the preliminary inventories started by Vérin, Sinoto and McCoy, and to produce a more detailed record of surface structures. All motu have been extensively surveyed with the exception of the large motu Ti’araunu where information is only available for a few areas, and
which remains to be studied. Some islets left uninhabited for decades are covered with dense vegetation that probably hides more archaeological remains. In such cases, a fully comprehensive record of all structures is certainly out of reach. However, while focused on the main habitation and marae clusters, our systematic survey covered the whole surface of these islets. For the sake of preserving native species and the vegetation cover in general, the sites were minimally cleared with an effort to cut only the trees presenting a threat to the integrity of the structures.

In 2015, a global Geographical Information System (GIS) database was created for the Tetiaroa Society by the University of French Polynesia. This GIS map includes all available images, including: 1955 aerial photographs, a 2014 high resolution Pleiades satellite image, and 2017 LiDAR data images. It also includes various layers such as the exhaustive mapping of The Brando resort facilities on Onetahi motu, vegetation maps, turtle nests database, and other data. The detailed vector maps of Tetiaroa archaeological sites are also being added into this multi-thematic GIS database (starting with the Williams-Doran plantation, see below). This mapping effort involves GPS measurements in the field in order to precisely record the location of the structures and match them with our detailed maps. A Trimble differential GPS system (courtesy of Te Mana O Te Moana association) consisting of a RTK base station, a RTK receiver and a RTK repeater (in case the RTK signal is too weak on remote islets) generated 2 cm accuracy. Currently, ninety archaeological structures have been recorded (Molle & Hermann 2016), all of which will be included in the GIS.

Most Tetiaroa islets were either permanently inhabited or sporadically occupied. The highest densities of structures are located on Onetahi, Rimatuu and Reiono as previously suggested by ethnohistorical accounts (Morrison 1966). Our survey further demonstrates extensive occupation of Horoatera. With freshwater and space available for both domestic and ritual activities, these larger islets were likely to be more attractive for occupation. Furthermore, we recorded a series of large taro pits typical of the archaeological landscape on the Polynesian atolls (Chazine 1985; Burley et al. 2018). These pits were dug in the ground to reach the freshwater lens in which taro and other crops were cultivated. Such horticultural practices complemented the exploitation of marine resources described in the literature (fishing, shell gathering, turtles catching) and indicate permanent occupations. Smaller islets such as Tavunivi and Auroa lack any sign of occupation. Eddowes has hypothesized that these places were protected by rahui (a traditional practice of restricting access to resources) in order to protect bird species from which feathers were collected for ceremonial purposes (Eddowes 2014:140).

**MONUMENTAL RECORD**

The lack of volcanic outcrops on the atoll naturally constrained ancient construction on Tetiaroa. Common dwellings, such as the ‘few huts’ reported by Capt. Henry Byam Martin in 1847 (1841:129), were probably made only of perishable material and thus left no archaeological trace. Some coral stone foundations have been found, but only associated with structures of importance; including elite archery platforms with typical concave front, round-ended meeting houses (fare potete) and the marae ceremonial grounds. Marae sites which served as places of interaction with deities and ancestors are of particular interest to archaeologists as they shed light on ancient rituals, and reveal the socio-political status and identity of the associated populations. Twenty sites have been securely identified as marae on the atoll so far as they display characteristic features of Polynesian ceremonial architecture.

As previously highlighted by Sinoto and McCoy (1974:29), marae on Tetiaroa’s are undoubtedly characterized by a high degree of monumental variability of both dimension and structure (specifically, varied combinations of marae features–ahu platform, upright stones, and walled enclosures). Interestingly, our surface recordings reveal structural similarities with known marae types in both Windward and Leeward groups, and in the Tuamotus (Cochrane 1998; Emory 1933; Green et al. 1967; Kahn & Kirch 2015; Molle 2016; Wallin 1993).

Three main types of marae can be distinguished exclusively by their court enclosure systems. First, open court marae (type 1) show an ahu, upright stones and cists grouped within an area where boundaries are no longer visible today but might have been made of vegetal fences. Second, more simple enclosures (type 2), rectangular or trapezoidal, exhibit a court delimited by a single line of coral slabs set on edge. Finally, double-walled enclosures (type 3) display a more elaborate architecture. This is found only with the largest marae. More criteria will be considered once our inventory is complete, in order to grasp the complexity of ceremonial monuments forms and functions on the atoll.

**RIM-10** is the largest type 1 marae on the atoll with a surface area of approximately 1770 m². The platform, 55 metres long and 6 metres wide, is the only pyramidal ahu documented on Tetiaroa. Both the complex arrangement of the platform and the dimensions of the court indicate a high status site and allow us to hypothesize that it may have been built and used by Tahitian chief Pōmare I at the turn of the 19th Century (see also Sinoto & McCoy, 1974:30). Another type 1 marae site, ONE-6, exhibits a typical Leeward island style – large coral slabs set on edge, forming the main monumental ahu (fig.2). The labour put into these larger marae constructions indicates both extensive investment and social cohesion among their users.

In addition to the function of larger architectural features, the presence of small-scale ritual features such as small marae and independent cists demonstrates the existence of various ritual activities that operated at different levels within the communities. Some sites exhibit unique layouts which may have served a possibly funerary ritual
function. This is the case of HOR-07, which consists of three juxtaposed low paved platforms of decreasing dimensions. Such structures do not fit within existing typologies of marae and thus call for future investigations.

Variations in ceremonial architecture reflect both the diversity of ritual functions and the socio-political scale of use. Teuira Henry wrote that Pa’umotu commoners from the Tuamotus used to live on the atoll and exploited resources for the Pōmare royal family (Henry 2000[1928]). One would thus hypothesize that various marae elaborations identified on Teti’aroa may further reflect the diversity of origins and social identities of the people who inhabited the island. It is also possible that hybrids or new forms of coral monuments emerged on the atoll as an adaptive response to the lack of basalt stone of which the typical Tahitian marae are made.

A more detailed classification based on both surface features and sub-surface deposits will be necessary to assess the position of Teti’aroa marae in existing sub-regional typologies of ceremonial sites (Green et al. 1967; Kahn & Kirch 2015; Molle 2016). Documenting the ceremonial activities at these sites will also provide further insights into socio-ecological interactions between communities and the atoll environment through the scope of ritual spaces.

A SATELLITE ISLAND IN CENTRAL-EASTERN POLYNESIA

The emerging archaeological picture of the occupation of Teti’aroa reflects a more complex history than the one described in ethnohistorical accounts. The exploitation of the atoll resources may have been an attraction to sub-regional communities, perhaps since the initial occupation in the Society Islands now documented around the 11th century A.D. (Kahn 2012). However, most of the available archaeological and ethnographic data about Teti’aroa relate to a more recent period of occupation. By the late 18th century and the rise of Pōmare I, permanent communities lived on the atoll, exploiting various resources on behalf of the chiefs of the Te Porionui’u district (Pare-Arue) in Tahiti, who claimed exclusive rights to the lands. Various accounts attest of the abundance of fish in the lagoon and around Teti’aroa, which was sent to Tahiti and exchanged for breadfruit, and potentially basalt stone tools (see Cook 2003; Ellis 1972 vol.1: 41; Morrison 1966: 167). James Morrison (1966) also mentioned coconut oil and taiero (or taioro, a preparation made of fermented coconut) as one of the ‘exports’ from Teti’aroa. In addition, one could also hypothesize the extraction of turtles, bird feathers, and pearl-shell material and artefacts.

Because basalt does not occur naturally on atolls, it follows that basalt material found on Teti’aroa originated from other high volcanic islands. Provenance analysis using geochemical methods will provide hard evidence for such interisland transfers and will therefore help to define the position of the atoll within an extended network of interisland relations in Central-Eastern Polynesia. Recovered basalt samples came from various contexts and include marae foundation stones and upright slabs, vesicular stones for earth ovens, adzes, cores, anddebitage (Molle & Her-
mann 2016). Preliminary results from provenance studies suggest that some of these might originate from islands beyond the Windward group (Hermann et al., in prep.). This would indicate a far more intricate situation than the supposedly dual relationship between Tahiti and Teti’aaroa, and could include a ‘down-the-line’ system of exchange with remote chiefdoms. Refining the chronology of these interactions will be critical in understanding how the atoll and its resources eventually came into the control of the ruling chiefs of Arue (fig.3).

Chiefly families accompanied by ‘arioi groups used to visit Teti’aaroa and stay there for temporary periods. Reasons for these visits included recreations, treatment of illness, and ha‘aporī, a practice of fattening famous among Tahitian social elites (Ellis 1972; Morrison 1966; Oliver 1974; Eddowes 2014). It is also reported that the chiefs of Te Porionu’u stayed on Reiono and Rimatu’u. The archaeological structures on these motu indicate a high socio-political rank of the individuals who lived there. The most striking are two round-ended meeting houses (fare pote’e, rei-16 and rei-20) and an archery platform alongside three marae on Reiono. On Rimatu’u, we find the largest marae ari’i (rim-10), and council or dancing platforms (rim-01). The motu Ti’araunu needs to be further investigated: the archery platform found on the lagoon side might indicate at least some visitation of the islet by social elite; however, the archaeological record does not include other significant surface structures on this motu. More intensive survey of the islet is needed, but the existing data suggest that this area was only visited by high-ranked individuals for specific purposes, notably archery performances (see Wallin 1998).

Finally, in the 18th century, Teti’aaroa then became a ‘satellite island’ used by the chiefs of Te Porionu’u for both controlling and acquiring specific resources, and for their private use, as part of their ‘royal domain’, also known locally as patu, or ‘land of the chief’ (Robineau 1985:162).

Figure 3. Representation of exchange relationships between Teti’aaroa and Tahiti by the late 18th Century based on archaeological and ethnographic data.
HISTORICAL ARCHAEOLOGY: THE WILLIAMS-DORAN PLANTATION

The more recent history of the atoll is also of interest. Dr. Walter Williams (1874–1937) acquired the atoll in 1904 from Teri’i-Hino-i-Atua-i-te-Ra’i-ma-te-Ata a Pōmare, also known as Prince Hinoi (1869–1916), after he himself had bought back the majority of the atoll from other members of the Pōmare family. Williams started copra production on the island, which included diverse constructions on motu Rimatu’u (houses, storage facilities, warehouses, hangars, copra dryers, bread oven, etc.). After Williams’ death in 1937, his first wife’s daughter, Marjorie Doran, inherited and managed the plantation until Brando acquired it in the 1960’s. The remains, mostly well preserved because they were still in use half a century ago, are of considerable interest, as they form a coherent inherited ensemble (Lagarde & Molle 2017).

We identified a total of 20 constructions (E-01 to E-20), 19 of which we mapped during the 2017 research mission (Fig. 4). A series of identical norms (same material, width of the walls, windows, doors and sometimes even rooms) were identified for the houses, which testify to a continuous (and probably short) period of construction. Furthermore, the absence of earlier remnants of European-style constructions (which would have been abandoned in favour of more recent ones) testifies that the preserved constructions date back to the early phases of the plantation, possibly in the first two decades of the 20th century. Two structures have received further attention and thorough cleaning during the 2017 fieldwork:

- A bread oven, consisting of a brick masonry structure coated with good quality grey cement. A wooden framework and set of corrugated iron sheets, which once covered the oven, have now come apart. Only the main brick structure survives today, in good general state despite large fissures in the oven’s vaulted ceiling.

- Next to the oven, a small rectangular house (said to be the ‘bakery’) with two doors on its main façade, two windows on the rear façade, and two blind gable walls. The masonry is simple and consists of coral blocks and lime cement, while the construction underwent
significant transformations, as did most buildings on Rimatu’u, throughout the 20th century. For example, its framework was originally lower. It has been considerably elevated, with an important change in the angle of the symmetrical two-slope roof, probably in order to help with interior ventilation. This transformation could have happened during the switch from pandanus roofing to the much hotter corrugated iron sheet roofing.

During the first half of the 20th century, the economy of the Établissements Français de l’Océanie was relying heavily on copra. Thus, understanding the spatial characteristics of the village, such as choices in the location of the buildings, can help us grasp the daily reality of this period. On Rimatu’u, traces of hierarchy or segregation are very clear. The northern part of the village (E-01 to E-05 and E-20), which includes the owners’ and attendants’ lodging, dining room, and food preparation area, show larger houses, with numerous later additions (lavatories, bathrooms, extensions, outdoor stoops), as if this part of the plantation had benefited from the prosperity of the copra exploitation. The central part of the village (E-06–E-13) corresponds to the worker’s quarters, mixing professional use buildings (food or tool storage, bakery) with residences. This part shows very few embellishments and/or additions to the houses. The general harsh conditions which originally applied to everyone thus seem to have been overcome in the northern section but remained in the central one. The southern part was exclusively devoted to daily work: copra storage, dryers, and workers’ kitchen (E-14–E-19). Discussions with Teti’aroa elders who knew the plantation in the 1950s, testify that it was still in production, only a few years before the sale of the atoll to Brando. Therefore, if the southern part is less preserved than its northern areas, it tends to show that the owners prioritized maintenance efforts in the living quarters rather than the modernization of the plantation, perhaps a reflection of the progressive downfall of copra economy in the post-war era.

PERSPECTIVES

This paper serves to summarise the preliminary results of the first survey campaign of the Teti’aroa Archaeological Project that consisted of an exhaustive mapping of about 90 archaeological and historical sites, which will be incorporated into a high-resolution GIS database. A more comprehensive survey of the atoll will be achieved by the end of 2019, with a focus on Ti’araunu islet. The resulting map including all known information related to the cultural heritage of the atoll will serve as a management tool for the TS but will also drive future investigations in subsequent phases of the project. Furthermore, excavations of buried deposits will be undertaken at targeted sites, with a priority on the marae structures, in order to reconstruct their ritual functions and the socio-political organisation of the communities who inhabited the island at different periods. Additionally, we will investigate settlement and subsistence patterns through the excavations of domestic, community, and horticultural sites. This will undoubtedly offer unique perspectives and new questions about the history of the region as a whole, beyond Teti’aroa. Eventually, we aim to reconstruct the long-term history of the Polynesians who settled, occupied, exploited the resources of Teti’aroa, as well as their connections with neighbouring and distant archipelagos.

Historical investigations at the Williams-Doran plantation will be informative due to the outstanding preservation of the site. This level of preservation among plantations in the Pacific is extremely rare. Decent preservation of similar type copra exploitations is scarce throughout the entire Pacific. Most properties in French Polynesia were eventually divided and sold, and ancient constructions were then destroyed, modified or reoccupied. What’s more, an extreme climate of high salinity and humidity has not favoured the preservation of the wood and metal artefacts that were used to construct such sites. There do remain, however, a few examples of abandoned plantations in Micronesia and Vanuatu (Dixon 2004, O’Neill and Spennemann 2001, Lagarde 2016), which will provide valuable comparisons for the Rimatu’u plantation. These comparisons, alongside the one-of-a-kind study afforded by the preservation of Rimatu’u, will lead to unique and wide-reaching perspectives of the colonial era in the Pacific.

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