

## THE TOTORA IN COLTA LAKE; AN OBJECT LESSON ON RAPID CULTURAL CHANGE

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Archaeologists, and to varying degrees other cultural anthropologists also, are frequently interested in questions of the diffusion, introduction and cultural integration of innovations and novel objects and cultural practices. These general questions in turn raise more specific ones about how new items and complexes are discovered, how they are introduced into a local cultural inventory, how quickly and by what processes novel objects and practices are integrated with existing habits and a natural environment, the duration of items of material culture and of cultural practices, and the role of individuals in the introduction and integration of innovations. For archaeologists, situations of cultural change are of special interest when they occur as results of indigenous motivation, information and material, rather than being caused or shaped by Western, industrial contact.

In this paper, I will present briefly an example of the introduction, by local residents, of a novelty into a community of Quechua-speaking Indian farmers in the central highlands of Ecuador. Although this example is taken from recent history, it may be of use to archaeologists who use analogies from the present as one method of understanding the past.

## Totora and Its Uses

Colta Lake is a body of fresh water approximately 2 km. long by 0.3 km. wide. It occupies a valley bottom at about 3300 m. above sea level, at approximately 1°40' S, 79° W, in central Ecuador. Colta Lake supports a heavy growth of totorá, a tall reed (Scirpus sp.). All of the shallower portions of the lake are covered with totora; it starts growing at a meter or so from the shore and extends from 2 to 5 m. or more toward the center of the lake, forming a broad band around the lake's circumference.

A dozen villages, ranging in size from about 20 to over 200 households, border all sides of the lake. Most of these communities have access to some totora, which is harvested by the inhabitants of the valley on a year-round basis. Use of totora is thoroughly integrated into the economy and politics of the lakeside villages and specific practices and tools are associated with its harvest and utilization.

Today (i.e., in 1971, when I did this research) totora is harvested in the following manner. An individual (usually an adult man) uses a raft, made of three balsa logs lashed together (about 2 m. long and 0.75 m. wide) to enter the lake. (Most families in the village I know best own one of these balsa rafts. The logs for them are purchased on the coast or from people who have brought them up from the coastal lowlands.) The raft is pushed into the shallow water at the edge of the lake amid the totora and the harvester stands on the raft, bending to

cut the reeds. An hoz (a sicklelike tool with wooden handle and a curved blade about 30 cm. long) is employed to cut the totora, a handful at a time. Cut reeds are gathered by the harvester into bunches, 25 to 35 cm. in diameter, bound with a few of the flexible stalks. These bunches are floated while the harvester works and are then dragged to the household by burros or people. The cut reeds range in length from about 1.5 to 3 m.

Adequate pasture is very scarce in the area around Colta Lake. Therefore, one of the major uses of totora is as fodder for cattle and burros. When used as fodder, totora is fed to livestock within a short time of cutting, before it is completely dried.

Many of the families in the valley use totora to make woven mats — called esteras — which they use themselves for such purposes as sleeping mats, room dividers, work surfaces (e.g., for winnowing grain), and grain storage (in the form of squat cylinders, open at top and bottom, placed in a corner of the house), and which they sell in nearby markets for cash. Most estereras are about 2 m., or a little less, square. In 1971, a typically sized estera sold for 8 sucres (about 32¢ U.S.).

Esteras are woven by both men and women; weaving may be done by one or two people at a time. The procedure involves, first, drying a batch of reeds, by spreading them in the patio or inside the house. Next, the reeds to be used for a given mat are selected: they must be completely dry, not bent, broken or cut open, and of about the same length. The warp reeds are laid out on the ground, with the weft reeds in a pile nearby. Seated on the ground, the weaver begins work at the center of the weft and bottom of the warp. Selecting weft reeds one or two at a time, the weaver works from the center of the weft alternately toward both sides, employing a simple one-by-one or two-by-two weave. After each under-and-over cross, the newly-woven section of the estera is struck with a flat stone, to flatten the reeds at that point, and perhaps also to tighten the weave. When the main portion of the estera is completed, the edges are woven closed all around in a kind of continuous braid which involves turning the ends under. Finally, the ends of the reeds, which are exposed on the underneath side of the mat, are trimmed evenly with a knife.

A final use for totora is as fuel for cooking fires. Scraps and broken dried reeds are those utilized for fuel, though generally only when more desirable combustible materials are not available.

The totora in Colta Lake is owned by the villages, in their capacities as comunas (a comuna is a campesino community which has moved formally under the prescriptions of the Estatuto Jurídico de las Comunidades Campesinas and the Ley de Organización y Régimen de las Comunas of Ecuador to become a juridical person and thereby to exert some degree of collective ownership of some of the means of production, such as land, totora or tools). Leaders and members of a comuna divide up the totora pertaining to that comuna into plots to which individual households have usufruct rights.

In the village I know best, most but not all households have

rights to a plot of totora. The plots are measured along the shore line and form blocks extending out into the lake. Although there is some variation in the size of plots, in this one village, most of them measure about 5 m. along the shore. The economic importance of totora at Colta is underlined by the efforts people make to acquire usufruct of a plot for their households and by the disputes that arise among people over boundary lines and theft of reeds.

#### The Introduction of Totora at Colta

For most of the time that I worked in the region of Colta Lake, I simply assumed that totora had "always" been there. I took photographs of people harvesting the reed and making mats; my field notes are full of references to people going to cut totora, weaving esteras, going to market to sell esteras, feeding totora to livestock. I collected information on several disputes concerning totora, and I knew from the literature on the area that there had once been a major law suit between two villages and an hacienda owner over possession of some of the totora. It seemed clear to me that totora was a completely integrated aspect of economic life in these villages, and I assumed that such a high level of cultural integration had to be of long historical basis. I might never have thought otherwise if a friend had not inquired about the balsa rafts.

A few questions quickly established that the balsa log rafts were a relatively recent introduction into the villages and that previously rafts made of totora bundles had been used by harvesters. I promised my friend that I would get someone to make an old-fashioned totora raft, for the Museo del Banco Central, before the craft was lost. In this process, I inquired further into the history of totora in the region.

The villager who agreed to make me a totora raft was about 50 years old. He noted that the balsa log rafts have been in use for 30 or 40 years and that his father had brought in some of the first ones, by burro, from Pallatanga (about 35 km. southwest of Colta). He also expressed his opinion that the balsa rafts represented an improvement over totora rafts which rapidly rotted. Although he had not made a totora raft for many years, this man quickly and easily constructed one for me, mentioning that no one had taught him how to make them, but that he had learned from watching others do so. He further noted that he could not remember a time when there had not been totora in the lake and that it had been brought there in the time of his great-grandparents.

When I related this last information to another informant, I was told that it was erroneous, and was referred to a very old man, Ventura, for the true story.

Ventura, who was about 80 years old in 1971, said that five men were responsible for the introduction of totora to Colta Lake and its neighboring villages. One of them was his father; all were from this same village. These five men had become acquainted with totora in the area of Palmira (approximately 40 km. to the south of Colta), where they traveled occasionally to trade in potatoes. On one trip, one of

them obtained some totora shoots (dug up with roots), brought them back to Colta and planted them in the lake. When the other four saw that this first batch was growing well, they brought back more. However, wild ducks destroyed these first plantings, and new shoots had to be acquired and planted more carefully. This first totora at Colta was considered the property solely of the five men who introduced it.

Ventura said that he was a boy when all this occurred. That would place the time of introduction of totora right around the turn of the century (1900). At that period, the people in Ventura's community did not know anything about the culture of totora. Some people from another village in the region appeared one day to hunt ducks. They constructed totora rafts to hunt from out on the lake. One of the local villagers learned from these hunters how to make the rafts.

It took about 15 years for the totora to fill the periphery of the lake. During this period, the five original planters claimed sole rights to the reed and tried to keep others from harvesting any. However, their neighbors and residents of other villages increasingly helped themselves to totora.

In 1935, a local hacendado began claiming that all the totora in front of his hacienda was his own, and punishing villagers who attempted to harvest it. This claim included much of the original area planted in the reed and much of the totora used by the villages on either side of the hacienda. In response, the villagers collectively initiated a lengthy and expensive law suit, trying to void the hacendado's claim; but they lost and he won. The hacienda continued to control access to a large portion of totora until 1964, when the hacienda was divided up by the national land reform program.

When Ventura's village was created a comuna in 1942, the totora available to the villagers became communal property. It was then divided, into usufruct plots, among the households. After the neighboring hacendado legally acquired claim to more of the totora, the villagers redivided their remaining share to approximately equalize the plots again. Household plots were redivided once more after the land reform had been carried out.

As the population of the valley grew, and as the control over totora became more fixed by village, some people found themselves without access to the reed. In one community, some inhabitants responded to this lack of totora from the lake by developing a means to cultivate it. Cultivated totora is grown in pits, 1 to 2 m. in diameter, dug 0.5 to 1 m. deep in lowlying areas near the lake. Apparently cultivation of totora in pits began after the availability of the reed from the lake was reduced by the hacendado's claims.

Until the 1930's, the villagers used totora only for livestock fodder (and perhaps for cooking fuel). At about the same time as the law suit, one man learned to make esteras, and gradually thereafter others learned this craft and began to engage in this use of the reed.

### Conclusion

This example, I believe, illustrates several points about the processes and rapidity of cultural change.

First, it reemphasizes the fact that sudden introduction and quick acceptance and integration of innovations need not be caused by contact with an industrial, cosmopolitan or "alien" society. The introduction of totora to Colta Lake communities is an instance of innovation and change brought about by and among members of indigenous local groups, utilizing indigenous information and materials. Neither external cultural pressures nor significant differences in technological levels came into play in the Colta situation.

Second, the Colta example points up the innovative impact of individuals who are acting in a deliberate manner. In this case, those individuals include not only the men who originally brought the totora to plant in Colta Lake, but also the people who learned to make totora rafts, who introduced balsa log rafts, who pioneered the weaving of esteras and who initiated the cultivation of totora in pits. Had more detail on the process of introduction been available, the list of individual innovators might have been extended to include others such as the people who figured out the best tool for harvesting the reed, the most convenient size for bunches of cut reeds, and the like. I say that these innovators were acting in a deliberate manner because their behaviors appear to me to be based on problem-solving thought, whether the problem was a more general need they had (e.g., for livestock fodder) or a more specific difficulty (e.g., totora rafts rot quickly).

Third, the example illustrates that well-known fact that diffusion can account for the introduction of new cultural materials to a group. But it also goes further to show that a novel cultural complex need not diffuse as a unitary phenomenon. In this instance, different features of the exploitation of totora were acquired by the inhabitants of the valley at Colta from various other local groups and individuals and at distinct times over a period of about 40 years. Chance occurrences, as well as deliberate individual behavior, influenced the rate and course of these introductions. At a given point in time, we have to view the existing cultural complex as the product of accumulated changes, rather than as a fixed and unitary fabric to traits.

Fourth, the case of the Colta totora illustrates the relative rapidity with which an introduction, or series of introductions, may be accepted by members of a local group into their cultural repertoire and thoroughly integrated with other aspects of their social and cultural life. Each new practice associated with totora seems to have spread very quickly among the inhabitants of all the villages in the valley after its introduction.

Fifth, this example also shows how quickly an item of a cultural inventory can be discarded. The use of totora rafts lasted only about 30 years at Colta.

Finally, the totora example points out how rapidly people can forget about the origins of some aspects of their culture, and how foolhardy it may be for the anthropologist to make assumptions about change and continuity on the basis of what appears to be a well-integrated and unitary cultural complex in a given situation and time.

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