UC Berkeley

Anthropology Faculty Publications

Title

Indigenous Apiculture among the Popoluca of Veracruz

Permalink

<https://escholarship.org/uc/item/6dq9d0bp>

Journal

American Anthropologist, 44(3)

Author

Foster, George M.

Publication Date

1942-09-01

Peer reviewed

INDIGENOUS APICULTURE AMONG THE POPOLUCA OF VERACRUZ

In an article published in 1929 the late Baron Erland Nordenskiöld called attention to the general lack of knowledge of practices and beliefs pertaining to indigenous apiculture in the New World, and summarized his data up to that time.¹ Twelve groups scattered from the Chaco to Jalisco are listed as practising, or having practised—for some of the references are from the 16th century—some type of indigenous bee culture. Apparently eight of them can be said truly to have domesticated the bee. Data published since 1929 suggest that the status of indigenous bee-keeping among the New World Indians often verges on true domestication, but that the final step, the propagation of new colonies, is but rarely taken. The present paper describes apiculture among the Popoloca of Veracruz, where this is the case. Drawing upon Nordenskiöld's data as well as that of later authors, the possible steps by which the New World bee may have been domesticated are discussed.

I

In the spring of 1940 when passing through the territory of the Popoloca of southern Veracruz I observed a number of hollow log *colmenas* suspended beneath the eaves of houses, and in another publication I briefly noted the custom of removing sections of trees occupied by the stingless bee from the forest to the home of the finder.² In the spring of 1941 I spent a longer period among the Popoloca, principally in the town of Soteapan, and found this practise to be quite common, though in terms of quantity of honey produced probably secondary in importance to the keeping of the European bee. Though no record was kept of the villages in which *colmenas* were seen, I believe the practise is universal in the twenty or twenty-five villages and rancherías inhabited by the 10,000 Popoloca who live on the southern and eastern slopes of the Tuxtla mountains, and who comprise the Sierra group of Popoloca. In the towns of Texistepec, Oluta and Sayula, where three distinct Popoloca idioms are spoken, I did not see *colmenas*, and failed to ask specifically about them. Since there is relatively little wooded country surrounding these pueblos, there is little opportunity to discover bee trees, and, if known at all, the custom of keeping the indigenous bee must be very rare. I believe the practise is known, however, to the Aztec-speaking inhabitants of the towns of Mecayapan and Tatahuicapan, which are located in the mountains adjacent to the Sierra Popoloca territory.

Among the Sierra Popoloca when a man discovers a tree inhabited by the native bee, the *abeja real*, he removes the hollow section, sprinkles water on the cut ends to ensure good production on the part of the bees, and takes the *colmena* to his home, where it is hung beneath the eaves of the house, or in any other shady spot, perhaps under the roof of a hog or chicken shelter. Here the honey is removed from one or both ends, and the holes, as large as the hollow itself, are sealed with clay in which grass has been mixed. March, April or May (the dry season) is best for subsequent openings of the *colmena*. Honey at other times of the year is said to be soft and watery. Before opening a hive, the owner observes continence for seven nights (seven is the mystic number of

¹ Erland Nordenskiöld, *L'Apiculture Indienne*, (Journal de la Société des Américanistes de Paris, Vol. 29 1929) pp. 169-182.

² George M. Foster, Jr., *Notes on the Popoloca of Veracruz* (Mexico, D. F.: Instituto Panamericano de Geografía e Historia, Pub. Núm. 51, 1940).

the Popoluca), then arises before dawn, smokes the hive with copal which burns in a small clay pot, and removes the honey before breakfast. After a second smoking with copal the ends are sealed, to remain for another year. (One informant stated that a hive opened early in March could again be opened in May. At first I suspected this information to be erroneous, but Redfield and Villa's statement that in Chan Kom a hive is opened in March, April and May as well as November makes it seem more credible.³)

The production of honey of the *abeja real* is slight, and the liquid is kept in a bottle, occasionally to be used as food or for magical purposes (see below) but more often to be used as an unguent on wounds, cracked lips and various types of skin infections. Honey of the European bee is usually consumed as soon as the hive is opened. Pieces of comb are sucked like candy, and the wax spat in a dish, later to be used in making tapers for church fiestas.

In December the bees *lloran*—make a loud, angry buzzing—because it is the end of the year, and to be pacified they must be smoked with copal. The *abeja real* is easily offended, and if certain rules and rituals are not closely followed it will desert a *colmena* in favor of the forest. If there is continual bickering in a house, the swarm will leave. In view of this belief it is not difficult to understand that a man with two or more wives rarely is successful with the *abeja real*. The European bee, which is normally kept in hives made of boxes used for packing kerosene tins, is much less sensitive to its social environment, and can be successfully kept by men who have no luck with the native bee.

When *elotes* (maize roasting ears) are ripe in the milpa, the usual Popoluca custom is for a man to cut seven ears, make seven tamales, and eat them with his wife before more *elotes* can be consumed as a part of the daily diet. One informant in Soteapan, an *abeja real* keeper, stated that those individuals fortunate enough to have a *colmena* often cut seven *elotes*, cook them, cut the grains off the cobs, mix them with honey and eat the resulting dish in place of tamales. He believes that anciently the custom was more common than now.

All this data suggests that the *abeja real* at one time was of considerable religious significance. Probably at one time there was a God of bees, but if so memory of his name and nature has been forgotten. Today both San Isidro and Christ are considered to be patrons of the stingless bee.

Not all men are fortunate enough to find bee trees in the forest, and ability to do so is to a slight degree indicative of divine favor. No special techniques are used in locating trees, and sharp eyes coupled with sheer luck appear to be the most important assets a man may have. Often, when cutting trees in clearing milpas, farmers will observe bees that come seeking some element in the sap from the fresh cuts, and can follow them to their tree.

Through a lucky incident a Popoluca of Soteapan once located a fine tree. While walking along a well-traveled trail, he felt on his neck an insect, which upon examination proved to be an *abeja real*. Looking around he presently saw other bees hovering about a hole fifteen feet above the ground in a tree near the trail. Since he could not return for several days, he blazed a tree on the opposite side of the trail, a clever device

³ Robert Redfield and Alfonso Villa, *Chan Kom: A Mexican Village* (Carnegie Institution of Washington, Pub. No. 448, 1934), p. 49.

to prevent any one else from profiting by his discovery. Later he felled the tree, carried the *colmena* to his house, and in 1941 had enjoyed seven successive seasons of honey. Dozens of men had passed the tree each day, and only this lucky chance revealed its presence.

One characteristic of the *abeja real* is worthy of mention. All inmates of a *colmena* pass through a small opening in the side of the log large enough to permit passage of one bee only. During all daylight hours one bee stands guard at this entrance, regularly backing up to let others in or out. It is said that his duty is to prevent the entrance of any bee returning without pollen. Whether this explanation is true or not, it is a fact that a small percentage of returning bees are refused entrance.

Among the Popoluca no attempt is made to start new hives by placing a piece of comb containing a queen in another log or a wooden box, though this custom is usual with the European bee. On this point hinges the question as to how nearly domesticated is the Popoluca indigenous bee. The commonly accepted criterion of domestication is the "ability to reproduce in captivity" as contrasted to "taming" of wild animals to do useful tasks for man. Illustrative of the latter is the use of elephants in southeastern Asia, the supply of which must be continually replenished by the capture of individuals born in a wild state. Ability to reproduce in captivity means more than an occasional captive birth, as any circus animal keeper will testify. It means the ability of the group to maintain and increase its size without additions from any outside source whatsoever. Any species of animal kept by man which requires periodic additions of captured and tamed individuals to maintain the size of the group cannot be said to be truly domesticated.

The case of the native bee among the Popoluca partakes of the nature of both domestication and taming in a manner not duplicated perhaps by any other known example. A particular *colmena* is occupied for an indefinite number of years, and during this period the size of the swarm apparently is maintained entirely by additions from within, i.e., individuals born in captivity. At first glance the criterion for a domesticated species is fully satisfied. But eventually—and for what reason I do not know—a *colmena* will be deserted, and since no attempt has been made to start new swarms from the original, the owner must seek a new tree in the forest. Thus, without the periodic addition of new *colmenas* discovered in a wild state and brought to the village the culture of the indigenous bee would die out. Viewed from this angle the indigenous bee is nothing more than a tamed species.

II

From a theoretical viewpoint it appears that the first step in the domestication of the bee is the casual utilization of wild honey found by accident. Nordenskiöld speaks of the "happy chance" which sometimes leads to discovery of a bee tree in South America⁴ and Hendrichs tells of examples from the state of Guerrero, Mexico, calling it scarcely more than "a pastime of farmers and muleteers."⁵ The tree is opened with a few blows of an ax and the honey is consumed on the spot; no attempt is made to save the wax.

⁴ Nordenskiöld, *op. cit.*, p. 171.

⁵ P. R. Hendrichs, *El Cultivo de Abejas Indígenas en el Estado de Guerrero*, (El México Antiguo, Tomo V. Dic., 1941), p. 365.

The next step is represented by conscious attempts to locate bee trees, to collect the honey, and to return home with it. In parts of South America the Indians cover great distances to find honey, observing carefully the flights of bees to locate both the tree itself and the hollow section containing the comb.⁶ Lengua men and boys gather honey—comb, larvae, young bees and all—in skin bags to bring home.⁷ Among the Chorti of Guatemala honey gathering almost approaches a profession, and a number of families supply the market of Jocotan with wild honey.⁸ An elaborate cooperative undertaking is reported from the Rio Balsas region of Guerrero, Mexico, where men often band together in groups up to ten during the dry season, organizing true expeditions to collect honey and wax of wild bees. These men are called *mieleros*, “and can be considered as professionals because they work in a systematic manner.”⁹ For weeks on end they live in uninhabited mountain regions, each man having a burro loaded with food, axes, bottles and other necessities. The *colmenas* are destroyed by the fall of the trees, and the honey, with all impurities, is poured in the bottles.

A possible third step is described by Nordenskiöld, quoting Ambrosetti, for the Canguá. Instead of destroying the tree and taking all of the honey they leave a part, so that the bees will not abandon the tree, and are particularly careful to repair the hole made in removing the honey. This makes possible periodic returns to secure more honey.¹⁰ Such a practise implies, of course, a strict sense of property rights and scrupulous honesty on the part of all persons living in the area.

Fear of theft of the honey of such a tree, or perhaps the desire to have the source more conveniently located might lead to the next phase of domestication, typical of Popoluca practise, where the *colmena* is removed to the owner's home. This custom is known to the Mahuna of northwest Brazil, the Apapocúva-Guaraní of southern Brazil,¹¹ the Aztec-speaking peoples of the Rio Balsas, Guerrero,¹² and the Chorti of Guatemala.¹³ This step almost certainly is the prelude to complete domestication, because it is hard to see how swarms could have been lured from their forest homes in the first place and transplanted to hives of foreign material without this intermediate stage. In areas where hollow logs are stated to be especially prepared as hives, it is reasonable to assume that at least some of them were first found in a wild state. On the island of Cozumel and in Campeche log hives were noted by the expeditions of Cortés and Grijalva,¹⁴ and at the present time in Chan Kom the same type is used, both for the indigenous and the imported European varieties.¹⁵ Hollow log hives in great numbers were recorded by Oviedo in Jalisco,¹⁶ and Whiffen states that the Menimehe of the Rio Yapura make hives of hollow logs for bees to swarm in.¹⁷

Apparently the final step in domestication, the artificial propagation of new colonies,

⁶ Nordenskiöld, *op. cit.*, p. 171.

⁷ W. Barbrooke Grubb, *An Unknown People in an Unknown Land* (Philadelphia: J. P. Lippincott, 1911), p. 57.

⁸ Charles Wisdom, *The Chorti Indians of Guatemala* (The University of Chicago Press, 1940), p. 68.

⁹ Hendrichs, *op. cit.*, pp. 366–367.

¹⁰ Nordenskiöld, *op. cit.*, p. 172.

¹¹ *Ibid.*, p. 172.

¹² Hendrichs, *op. cit.*, pp. 367–368.

¹³ Wisdom, *op. cit.*, p. 69.

¹⁴ Nordenskiöld, *op. cit.*, p. 174.

¹⁵ Redfield and Villa, *op. cit.*, pp. 48–50.

¹⁶ Nordenskiöld, *op. cit.*, p. 175.

¹⁷ Thomas Whiffen, *The Northwest Amazons* (London: Constable and Co., 1915), p. 51.

is more difficult than one might imagine, as evidenced by the reluctance of the Popoluca to transfer this technique from the European bee to the native bee. In addition to the three areas where this has been done, using hollow logs, Nordenskiöld lists five occurrences where hives of completely foreign material are, or were, known.¹⁸ Among the Paressi of the Matto-Grosso, unspecified groups in Venezuela, and the Aztecs of San Salvador, hollow calabashes have been used. Clay hives were observed in great profusion about 1590 in Columbia, but no examples from modern times, or archaeological specimens, are known. Hives constructed of sticks wrapped in matting are reported by Starr for the Mixtecs of Oaxaca, Mexico. Since some of these accounts of the artificial propagation of new colonies in hives especially prepared date from the sixteenth century, Nordenskiöld assumes, justifiably, I believe, that the practise is not due to Spanish contact.

On the basis of distribution of known occurrences of bee keeping, Nordenskiöld feels that the bee was first domesticated in Central America, from where the custom spread to South America. The proclivity for the keeping of tamed pets by a number of Amazon tribes may be suggested as an alternate or additional key to first domestication. Peoples to whom the presence of varied forms of jungle life in their houses is a commonplace might well be more inclined to add a *colmena* of wild bees than would be groups who do not have such close contact with wild forms. Indeed, assuming the practise of exploiting the honey of wild bees to be common to wide areas in South and Central America, it is certainly within the bounds of reason to suggest that domestication or near-domestication of the wild bee may have occurred independently in two or more places, following in general form the steps outlined in this paper.

GEORGE M. FOSTER

SYRACUSE UNIVERSITY

¹⁸ Nordenskiöld, *op. cit.*, pp. 172-176.