



Eva Crane Trust

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Part II: Mexico introduction and Yucatan

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### MEXICO : INTRODUCTION

Mexico is quite unlike any other country I have been to, and certainly the most exciting. Few readers of *Bee World* will be familiar with the country and its inhabitants, and it may be useful to pass on some of the information in my possession before I went there.

Mexico is almost entirely mountainous, but at its short southern border with Guatemala, a flat jungle-covered peninsula stretches out towards Cuba and Florida, between the Gulf of Mexico and the Caribbean Sea. This peninsula, Yucatán (about the size of England), was my first destination in Mexico ; it was the home of the ancient Maya civilization.

The Mayas were among the greatest scientists of all ancient peoples. Three or four centuries before Christ their priests devised a numerical system, including numeration by position and the conception and use of zero, which neither the ancient Greeks nor the Romans were able to do. At the time of the Spanish Conquest the Mayas were better astronomers than any in Europe, and as competent mathematicians (Linton, 1956). They had made highly exact determinations of the lengths of the tropical year and the lunar month, and were able to predict eclipses and conjunctions of the stars with great accuracy. (One curious fact is that, unlike most other great early civilizations, those in America failed to make use of the principle of the wheel.)

More than this—Central America was the cradle of beekeeping of the Western Hemisphere, not with *Apis* but with stingless bees (Meliponins). Here, as in Europe, there is a tradition of beekeeping which goes back

without interruption to the time before recorded history ; here also, as in Europe, honey was the only sweetening material before the introduction of sugar cane in the sixteenth century ; here, too, honey was important in medicine, and beeswax in various crafts (Schwarz, 1948 ; *A.A.* 3/52). This presents a great contrast to North America, where beekeeping did not exist until the early settlers took bees with them from Europe in the seventeenth century.

When Columbus landed on Cuba on his first voyage to the New World in 1492, he noted ' a variety of honey ' among the natural assets of the island ; Schwarz (1948) believes that this must have been from *Melipona beecheii* v. *fulvipes*, the only stingless bee in Cuba. It may well have been wild honey, but some of the ' sundry kinds ' of honey encountered by Hernando Cortés and his *conquistadores* in Mexico in the 1520s were almost certainly from ' domesticated ' bees of the same species. They found a well established honey production, which was surprisingly large in view of the tiny surplus obtained from each colony. Fifty years later Bishop Diego de Landa reported that the Mayas (probably the greatest beekeepers of all the central Americans) were paying tributes of beeswax both from their hives and from wild colonies they sought out in the jungle.

In 1562 this same Bishop had collected and burned in the Plaza at Mérida hundreds of Maya books on history, astronomy and mathematics, in an attempt to stamp out their learning. Among the few Maya manuscripts which he did not destroy, and which have come down to us, are the Codices Troano, Tro-Cortesianus and Mendoza, which provide interesting evidence of pre-Columbian Maya beekeeping. Hilda Ransome (1937) reproduces some of the hieroglyphs and figures, which show bees, honeycomb, honey jars, and vigorously fermenting mead. The word *acan* was used both for the mead and for the god of mead. The bees had their own gods in the shape of large bees, who looked after them in all their activities. Representations of these gods can still be seen. In the British Museum is a Totanec vase from the Isla de los Sacrificios near Vera Cruz, whose decoration appears to be a very benign bee god ; in the Museum at Mérida (Willson, 1953) is what appears to be a Maya bee god, complete with log hives and honeycomb. The ancient Maya beekeepers held two special feasts. One was in the fifth month *Tzec* [October/November], with the object of increasing the honey crop ; this ceremony ended with a great drinking of honey wine. The other was in the eighth month *Mol* [December/January] to persuade the gods to provide flowers for the bees.

Beekeeping was more important to the Mayas in Yucatán than to any other of the peoples of ancient Mexico. It was however practised (also with stingless bees) in many parts of the country, and honey and beeswax were valued commodities to the Aztecs, who collected them as tribute from subservient tribes in neighbouring regions. The Aztec civilisation flourished in the high plateaux and mountains of central Mexico, and when Cortés arrived there in 1519, he found honey and beeswax on sale in the markets. Several species besides *Melipona beecheii* are known to have been kept in hives in different parts of Mexico, and when honeybees (*Apis mellifera*) were introduced, they too flourished there.

Yucatán has seen a spectacular rise to importance as a honey-producing area since the end of the war, and already produces and exports several thousand tons of honey a year. At no time, from the days of the Aztecs onwards, was the area round Mexico City regarded as the best bee country

in Mexico, but fifteen years ago it began to be a centre of great beekeeping activity. In 1942 two Germans living there, A. Wulfrath and Dr. J. J. Speck, bought a few hives of bees. They knew no beekeeping, but learned so fast that they were operating a thousand colonies five years later, and ten thousand by 1953. The only person I knew who had visited this fabulous beekeeping enterprise was Mr. R. B. Willson [A.A.69/56], and his stories—some of which I found hard to believe—made me determined to find out for myself what was going on.

These were my reasons for visiting Mexico : to see some of the remains of the ancient Maya civilization, to see beekeeping with stingless bees and with honeybees in the Yucatán jungle, and to see for myself what was happening in Cuernavaca south of Mexico City, where there was reported to be the 'biggest bee business in the world'.

#### MEXICO : YUCATÁN

I flew south-east from Havana to Mérida, the largest town in Yucatán, on 28th March. I was met by Lorenzo Cámara Peón, a young lawyer who also owns Miel y Cera, one of the several honey-exporting businesses in Mérida. As soon as we left the airport, I felt I was in another world. In Mr. Cámara's office lay a magnificent jaguar skin; he had shot the jaguar in the neighbouring jungle. And as I went round his honey-processing plant and met the staff, I realized that most of them were Mayas.

In the jungle within a few hundred yards of Mr. Cámara's house we found twenty or more bee plants—the third completely new flora I had encountered in less than a week. I realized now how lightly I had been let down in Florida, where plants had English names, and even in Cuba where they had Spanish ones : here many of them had only Maya names. (It is remarkable that the Mayas still retain their own language, very little changed even after four centuries of contact with the Spanish (Morley, 1956) ; many Maya words are however used in Spanish in Yucatán.) There was *tah*, the romerillo de Costa of Cuba, and *ts'its'il-che'* (*Gymnopodium antigonoides*), the most important bee plant of all in Yucatán. It is one of the Poligoneaceae, a small tree with small pale yellowish green flowers ; it was already blooming for the second time this year, because of early rains. Another tree, with purple flowers, was *ha'bin* (*Piscidia piscipula*), very similar to the Jamaican dogwood. Although many of the plants I saw have been described and documented [e.g., A.A.27, 240/52, 342/57], I formed the impression that the bee plants of Yucatán (and elsewhere in Mexico) have been relatively little studied, and that they offer a wealth of material to some future bee botanist. They have the added interest that the honeybees and the stingless bees (with shorter tongues) tend to work different species. I think also that the two bees do not produce identical honeys from the same species ; this is not unreasonable in view of the part played by enzymes in determining the composition of honey. I doubt if anything is yet known about the digestive enzymes of stingless bees.

My chance of seeing beekeeping with stingless bees hung on a hair's breadth from the beginning. Beekeeping with *Apis mellifera*, being much more profitable, is continually ousting the older type of beekeeping, and there seemed to be only one apiary accessible by car from Mérida—about 90 miles east, beyond Valladolid. Only Lorenzo Cámara knew where to find this Maya beekeeper, and Lorenzo was about to become a father for the second time, and might be called to the hospital at any

moment. Nature favoured the excursion, however, and we set off one morning along one of the few roads through the jungle—straight, dusty and almost entirely without mechanized traffic. We passed ruined *haciendas*—houses which belonged to the owners of the henequen (sisal) plantations, burned down in the revolution. We passed through a few small towns, each with its Spanish houses and beautiful sixteenth-century Spanish church. The rest was jungle, which I felt was ready and waiting to re-cover any clearing left untended for a short time. This was the home of the Mayas. It was extraordinary to see in the flesh the characteristic features familiar from pictures of carvings made many centuries ago—the short thick body, broad head and big nose. Straight black hair and a copper-colour skin completed the exotic impression. The life of the Mayas still goes on substantially as it has for the past two thousand years or more. The people live in thatched huts, and their pigs and chickens with them. They carry their loads as their ancestors did, the men using a band across the forehead to support a load on the back, and the women carrying their loads on their heads, including water drawn from the village well. The well is still the centre of social life ; here the women come and draw their water, and gossip. There are no surface rivers in Yucatán ; water is obtained from underground streams which here and there form a *cenote*—a pool accessible from the surface, although much below ground level. In one of these, in a cave, I saw the ‘ blind fish ’ which inhabit them ; these are the axolotl, a species of salamander which in these waters lives its entire life, and breeds, in the larval state.

I had always thought of the Mayas as belonging to the past. But here in Yucatán I continually found the past still living in the present, and for the first time on the American continent I realized that it had not only a history but a continuous history, going back several thousand years before its discovery by Europeans.

Until thirty or forty years ago, it was almost impossible for white men to live in Yucatán ; they succumbed rapidly to one or other of the diseases (especially yellow fever) common in this hot low-lying country with its underground water supplies. Mérida was full of banners ‘ Queremos agua potable ’ (We want drinking water) ; at present only the very centre of the town has piped water, the rest get it as best they can, and what they get is highly contaminated. Very few Europeans visit Yucatán even now, and I was usually given an extra handshake when anyone discovered I was English.

After some difficulty we found the Indian beekeeper and his apiary. The hives were hollow logs between one and two feet long, lying horizontally ; perhaps fifty of these hives were piled together, rather after the style of Egyptian pipe hives. Both ends of the log are blocked up, the entrance being a hole half-way along it. But to my great disappointment we learned that the little colonies had all absconded when the beekeeper took their honey last. They are very liable to do this, being intolerant of disturbance to their nest. Nor was I even able to see the empty nests—there are too many predators in the jungle for unguarded stores or comb to remain intact for long. We saw stingless bees foraging round the apiary, but no one knew where their nests were.

In a clearing in the jungle not very far away was one of Mr. Cámara’s apiaries, with well kept modern hives. Mr. Cámara explained very frankly that in Yucatán there was little knowledge about different methods of

managing colonies, and none about diseases. Honeybees were introduced into Yucatán only in the present century, but it was soon found that they gave remarkable yields (Willson, 1953). It seems to be the general current experience that apiaries of fifty colonies, even only a kilometre apart from each other and given a minimum of attention, can give a colony average of three hundred pounds surplus honey a year.

Yucatán is without exception the richest honey country I have seen, and I think it must surpass even any other part of Mexico. The two factors which limit the number of apiaries are difficulty of access (apiaries must be close to the few roads which run through the jungle), and the amount of capital required to set up apiaries ; these are usually owned by wealthy people living in the towns, and run by Mayas who, since they cannot read, must learn from experience how to handle honeybees. I felt that the great need was for some beekeeping instructor who had the necessary knowledge to help and advise these beekeepers. For instance it was clear to Mr. Cámara, and to me, from the number of dead bees outside the hives, that the colonies were suffering from some adult bee disease ; it was certainly not poisoning from agricultural sprays, as the local Maya agriculture consists only of clearing patches in the jungle and planting corn there. But there seemed no one in Mexico available even to diagnose the disease. Most of the Government services so many of us take for granted in our own countries do not exist in Mexico. What a wonderful field Yucatán offers to future research workers !

The apiary was near the best-known of all the prehistoric Maya ruins, Chichén-Itzá. This was built and occupied between 400 and 700 A.D., and again at later periods, reaching its zenith in the eleventh and twelfth centuries ; when the Spaniards came it was already abandoned. In this great ceremonial centre one can still see the temples, shrines, and sacred wells or *cenotes*, and the flat-topped pyramids typical of early American civilizations. The circular observatory still has its spiral staircase, and the narrow openings in the walls which fix certain astronomically important lines of sight, such as that of the setting sun at the vernal equinox. In one of the pelota courts, there is still the dais at each end from which the rulers watched the ball games — and were able to talk to those on the opposite dais 150 yards away, because of the clever arrangement of the walls to reflect the sound. Even the stone rings through which the balls — of solid rubber — were thrown are still on the walls. There were beautiful statues ornamented with jade, of gods and men, and of jaguars and other animals. And everywhere walls and pillars were covered with rich and intricate carvings, some even still with their original colouring. I had not thought that such sculptures existed outside the European and Mediterranean civilizations, but the next day at Uxmal I found even more unbelievable things.

I owe my visit to Uxmal to the kindness of Mrs. Ancona ; Mr. Ancona is one of those who has a thousand colonies of bees out in the jungle, and Mrs. Ancona lent me her car and Mexican chauffeur so that I could reach these ruins, about fifty miles west of Mérida. Uxmal was built earlier than Chichén-Itzá (these and a third, Mayapán, were like three Greek city-states), but here were great *buildings*, beautifully proportioned with colonnaded porches, covered with delicate and intricate carvings, and with passages and rooms inside. I understood there why it is said that Mayan sculpture ranks among the great art of all time. The walls were

brilliantly white in the strong sunshine ; martins of some sort flew constantly in and out of the buildings (at Chichén-Itzá it had been birds of paradise), and in the brush between them I found wild cleome growing, and bees foraging. I had these monumental ruins all to myself, except for Antonio the Mexican who walked behind me everywhere like a shadow, and they are among the most vivid and lasting of my Mexican memories.

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*Correction to p. 233* : Dr. Haydak's pollen substitute contains also 1 part dried brewer's yeast.