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Wilmatte P. Cockerell

University of Colorado

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COLLECTING BEES AT GUALAN, GUATEMALA.

BY WILMATE P. COCKERELL, BOULDER, COLORADO.

In going from Quirigua to Guatemala City, we passed through a desert region—a place of curious forms of cacti, but especially interesting because of the trees and shrubs, at that time of the year, late February, covered with splendid blossoms, and usually without leaves. One tree (Gliricidia maculata H. B. K.) was very common and with its delicate pink flowers reminded one of the peach of the temperate zone, but inspection showed it to have a papilionaceous flower. This, I thought, would be a wonderland for bees, since bees are peculiarly adapted to desert areas.

When we returned to Quirigua, I determined to spend two or three days at Gualan, and I anxiously inquired of every one whether there was some one in the village who would befriend me, a missionary perhaps, a priest, an American who owned a coffee finca or a hotel-keeper who spoke English; and at last I found a young man who sometimes went to Gualan to buy rattles for the commissary of the United Fruit Company, and he said there was a hotel and that the negro-French proprietor did speak English, but that the place was usually full of drunken natives and was absolutely impossible for an American lady. That settled the hotel question, but I could at least go up between trains, though even for so short a time it was not considered wise for me to go alone. Mr. Earl Morris was detailed to go with me. There was much joking about the biological altar needing a sacrifice, for my friends at Quirigua were archaeologists and were uncovering one of the wonderful old Maya temple cities, and bees looked very small to eyes focused for forty feet doorways. But Mr. Morris was a splendid assistant, and helped in every way, even if in his heart he was sighing for sculptured walls and ornate pottery. The train left Quirigua at ten o'clock and arrived at Gualan at eleven-thirty, the down train picked us up at two-thirty. It was a wonderful three hours! The lovely pink and white blossoms of Gliricidia maculata were visited by great Carpenter bees (Xylocopa), but unfortunately the flowers were so high, and the bees flew so swiftly that I secured only a few specimens.

The best catch of that day was a very small bee belonging to the genus Perdita, and if you saw it I am afraid you would agree with the Indians who said, "So small bugs can be of no use." The Perditas are among the smallest of bees, and yet the finding of one on Cordia alba, a yellow flowered tree, at Gualan, was a distinctly dramatic and interesting thing to me. Years ago my husband described seventy of these small bees which he had collected in New September, 1912.
Mexico, and half a dozen have been found in Northern Mexico, and I had often wondered whether the little bees were in Central America if some one who was interested in finding them would only look. And there it was, a new species that extended the distribution of the genus *Perdita* a thousand and more miles, and I had added a tiny fact to the everlasting why of the universe.

A few hundred yards below the village there was a number of trees covered with cardinal flowers, and I was especially anxious to collect from them, but we were beguiled into chasing butterflies, and the yellow-flowered trees had other bees than the *Perdita tropicalis*, so that it was time for the train, and we had seen only the glow of the cardinal tree from a distance.

Another trip was imperative, and on that day I had an amusing experience. The conductor of the train, a rather interesting Guatemaltecan brought me a Ladies' Home Journal and a little note which said that if I were English he would lend me the magazine; what did I do with my veil (net) and did I, like other strangers, think them savages to be conquered?

Judging that he wrote English better than he spoke it, and read better than he understood, I wrote that I was grateful for the magazine (and really, even the Ladies' Home Journal looked good to me; that I had the net to catch bees, because my husband studied bees from all parts of the world. He answered: "Thanks. Good for him and the world. Hope that he finds the Bee that carries the strength—like they do honey. So that the wise live long to be learned, and the fools long enough to learn."

There was more correspondence about the duty of one nation to another, the books that would give a Guatemaltecan an idea of the United States, all of which is too lengthy to record here, but just before we reached Gualan he wrote: "Guess I tire you, I like to write English to get acquainted with. Excuse me—My wish that the bees won't bite you while searching for flowers. That they sometimes on the mountains sing you a chorus. Remembering you of God, the father of all peoples."

When we reached Gualan, we went at once to the Cardinal Tree, and found it even more wonderful than we had thought. Imagine a great tree, fifty to seventy-five feet high, with branches literally covered with fragrant cardinal flowers, and the flowers swarming with wasps and bees, and on the branches great gaily colored birds assembled to eat the insects. I too wanted to collect insects, but the lowest branches were just out of reach. Mr. Morris offered to climb up and collect for me. Many Indians gathered in the path just below us, and called out to Mr. Morris.
Northern Mexico, and there in Central America it would only look.

The distribution of Perdita we had seen only the day I had an amusing excursion interesting Guatamal and a little note to end me the magazine; like other strangers, he spoke it, and read the Journal looked good because my husband spoke English, and she generously kept me at her house one night, thus, giving me the better part of two days for collecting.

The excavations at the ruins became daily more interesting, and I could not ask Mr. Morris to spend more time with me, but most fortunately I learned that the station agent's wife spoke English, and she generously kept me at her house one night, thus, giving me the better part of two days for collecting.

I found the walls around one of the patios, here a place for chickens and turkey-buzzards instead of ferns and orchids as in Guatemala City, alive with red woolly Centris (C. tarsata Smith) nesting—there were literally thousands of them, and I spent the most of one afternoon getting specimens of these bees—and the bees (Mesocheira bicolor Fabr.) that are parasitic in their nests.

Then, too, there were some Megachiles(M. gualanensis n. sp.), leaf-cutting bees, nesting in the same wall, and they had interesting parasites (Coelioxys sanguinosus n. sp.). Dozens of small Indian boys watched me, and occasionally begged to be allowed to use the net. Some native teachers came out to drive the boys into school, but stayed to watch the strange 'Inglese' catching musca.

"For what does she want the little bugs," they inquired of my hostess, "Does she make medicine of them?" Not such a strange supposition, since they grind up all sorts of insects and use them as medicine.

"The Senora does not gather them for medicine," they were told, but the fame of the medicine-maker spread, and a woman brought a little child with a terrible sore on his neck, and begged me to give her the fly that could cure her baby. It was pitiful!

*Ptyllacarpus n. sp.; the genus previously known only from a single species occurring in Brazil.
A more amusing incident followed. A larger boy asked which made the best medicine, and I begged Senora Caldero to explain that the bees were for study. "How can you explain that to such ignorance," she asked, but I begged her to try, and the boy said that he understood, but a few minutes later he was telling a young girl that the little black bees were for pains in the stomach—the red ones for pains in the legs. When reproached, he excused himself by saying: "The other is much too difficult for a girl to know." The inferiority of woman serves its purpose the world over.

My adventures did not end with the day, for in the middle of the night I was awakened by a great ringing of bells, and the light from a burning house lighted my room. "Get up! Get up!" my hostess called, "there is a terrible fire. Do not try to save anything but come quickly." Fortunately I had lain down with my clothes on, so that I was ready in a minute, carrying with me my precious box of bees. I found my hostess and her children wrapped in blankets, and we all hurried out into the street. The fire was only a few doors from our house, and with a brisk wind blowing it looked as though nothing could save any house in the village. Some way in the crowd I was separated from Senora Caldero and her family, and I found myself in the middle of the road surrounded by people wailing and crying to the saints. It was a weird moment! The men had formed a chain from the fountain and passed water in every sort of jar and pan, but they worked effectively, and I soon saw that the fire would be conquered. I thought I would be safer in the house; for I did not like being in the midst of that excited crowd, so I crept back into the dark house, still holding jealously my little box of bees.

It was not long before my host came up from the office where he slept, and the family was brought home. There was much embracing and much excited talk, and more wine and whiskey offered to everyone in the good Latin-American fashion, and the daylight was almost upon us before the village became quiet again.

The next morning a horse and a moso were ordered for seven o'clock, and came at eight, the usual custom of the country. Until two o'clock I rode along the river collecting here and there, and enjoying the bright-hued birds, and the beautiful plants. Two plants stand out in the memory of that forenoon: Antigonon guatemalense Meissn., a vine with great racemes of most exquisite pink flowers; the other (Adenocalymna macrocarpa Donn. Smith)* a bush with great violet-purple bells, like a glorified pentstemon.

*Capt. Donnell Smith wrote that he was not quite sure of the species of Adenocalymna. More material is needed. The plant belongs to the Bignoniaceae.
A larger boy asked which Senora Caldero to explain that you explain to such a girl to know. He made me understand that it would give me diseases unnumbered, but I insisted, and so far not a single disease has resulted.

The plants collected were all kindly identified by Capt. Donnell Smith. The following list of Gualan bees has been prepared by my husband. The new species are in course of publication in the Annals and Magazine of Natural History.

**BEES OF GUALAN.**

1. *Prosopis quadratifera* n. sp. At flowers of *Iresine paniculata* (L.).
2. *Prosopis gualanica* n. sp. One male.
3. *Halictus hesperus* Smith. 27 females. One at flowers of *Cordia alba*; five at flowers of *Phyllocarpus* n. sp.; the rest at *Vernonia aschenborniana* Schauer, collecting the white pollen.
5. *Augochlora binghami* Ckll. One female.
6. *Augochlora* sp. 1 female.
8. *Agapostemon nasutus* Smith. Seven males, seven females. Six of the males and six females at *Vernonia aschenborniana*; one male at *Calopogonium ceruleum*; one female at *Tithonia diversifolia*.
9. *Agapostemon nasutus gualanensis* n. var. Four males.
10. *Perdita tropicalis* n. sp. At *Cordia alba*.
11. *Centris totonaca* Cresson. One female, "at flowers of yellow vine."
13. *Centris inermis gualanensis* n. subsp. At flowers of *Calopogonium ceruleum*. Also at Quirigua.
14. *Leptergatis toluca* (Cresson). One male at flowers of *Cordia alba*.
15. *Mesoplia asurea guatemalensis* n. subsp. At flowers of *Calopogonium ceruleum*.
17. *Exomalopsis callura* n. sp. At flowers of *Vernonia aschenborniana*.
18. *Exomalopsis similis* Cresson. One female at flowers of *Cordia alba*.

but with a dreadful odor. The little moso who carried my press could hardly be induced to carry a piece. The little moso who carried my press could hardly be induced to carry a piece.
(19.) *Xylocopa wilmatia gualanensis* n. subsp.
(20.) *Xylocopa fimbriata molaguensis* n. var.
(21.) *Xylocopa barbata* (Fabr.). At flowers of *Calopogonium ceruleum*.
(22.) *Ceratina naudulans* Ckll. One female, at flowers of *Vernonia aschenborniana*.
(23.) *Ceratina virescens* Friese. One male.
(24.) *Ceratina regalis* n. sp.
(25.) *Ceratina xanthisoma* n. sp.
(26.) *Ceratina xanthisoma rugipennis* n. var.
(27.) *Coelioxys sanguinosus* n. sp.
(28.) *Megachile gualanensis*. Both sexes.
(29.) *Dianthidium gualanense* n. sp.
(30.) *Englossa cordata* (L.). One male at flowers of *Arthrostemma fragile* Lindl.
(31.) *Melipona fulvipes* Guér. One male.
(32.) *Trigona zexmenia* n. sp. At flowers of *Vernonia aschenborniana*. Also found at Quirigua.
(33.) *Trigona mellaria* Smith. One at flowers of *Calopogonium ceruleum*.
(34.) *Trigona cupira* Smith. Twelve workers, eleven at *Vernonia aschenborniana*.
(35.) *Trigona amalthea* Oliv. Two workers at *Calopogonium ceruleum*.


**BOOK NOTICE.**


In this little book are recorded the observations and reflections of one who pitched his tent, and spent his summer vacation, apart from the haunts of men, living, in gipsy style, upon squirrels, berries, and other woodland supplies.

The author has contrived, by an unusual construction of his sentences, to give an air of quaintness to his work—as in:—

"The prunella, favourite of my summer blossoms, did I find on yesterday," page 86.