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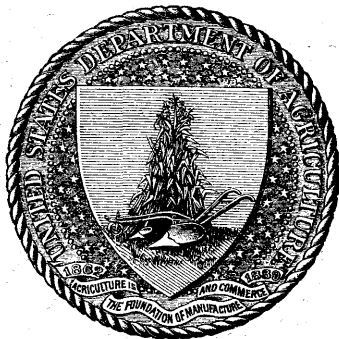
NOTES ON THE CRUSTACEA OF THE
TRES MARIAS ISLANDS

BY

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NOTES ON THE CRUSTACEA OF THE TRES MARIAS ISLANDS.

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Of the four species of crustacea taken by E. W. Nelson and E. A. Goldman on the Tres Marias Islands in May, 1897, two are identical with forms inhabiting Lower California, one is found in all the warm countries of the world, while the fourth, a fresh-water shrimp, is distributed throughout tropical America.

Gecarcinus digneti Bouvier.

Gecarcinus digneti Bouvier, Bull. Mus. Hist. Nat., Paris, I, 8, 1895.

Maria Cleofa Island. May 30. One large male (Collectors' No. 717).

The type and only specimen hitherto collected is from Lower California, and is in the Paris Museum. This species differs from others found on the Pacific coast in its wider carapace, narrower front, longer legs, and in the form of the abdomen of the male.

Measurements.

Specimen.	Length.	Width.	Exorbital width.	Inferior width of front.	Length of merus of second ambulatory leg.	Width of same.	Length of carpus.	Width of same.	Length of propodus.	Width of same.	Length of dactylus.	Width of same.
Type, ♂, Lower California.....	46.3	69	25	9	33	9.7	16	8	17	7.3	24.2	3.7
♂, Maria Cleofa Island..	70	104	37.5	13	46.3	13.4	22.5	11.5	21.5	10	33.5	5

The measurements of the legs are exclusive of the large spines, and the length given is that of the anterior or superior margin. The penultimate segment of the abdomen of the male is very wide. Length and distal width, 12 mm.; proximal width, 21.5.

Mr. Nelson says of these crabs:

On the Tres Marias we found them only on Maria Cleofa, where they were very numerous above high-water mark on the sandy beaches of the low eastern part of the island. They were also living very abundantly in burrows in the soft soil almost everywhere on the slopes of Isabel Island. They are nocturnal in habits, and caused

some annoyance by walking over us at night while we were camped in their haunts. They began to come out of their burrows as soon as it became twilight in the evening. In both localities most of their burrows were found among the scrubby bushes. On Isabel Island they were often seen during the day sitting in the burrows a foot or so from the entrance, but scuttled back to a safe depth when I approached.

Ocypode¹ occidentalis Stimpson.

Ocypoda occidentalis Stimpson, Ann. Lyc. Nat. Hist. N. Y., VII, 229, 1860.

Maria Magdalena Island. May 28. One female (No. 689).

Maria Cleofa Island. May 30. One male (No. 699).

This much neglected species is distinct, it seems to me, from *O. kuhlii* de Haan, of which Miers made it a variety. According to the description of *O. kuhlii* given by de Man (Notes Leyden Mus., III, 250, 1881), who had the type before him, *O. occidentalis* differs from it in having a narrower carapace, in the outer orbital angle directed inward and not outward, in the shorter hand, the length of the upper margin of the palm being less than the width, and in having from 18 to 21 tubercles in the stridulating ridge (de Man gives 8 or 10 for *kuhlii*, while Miers figures 17). The form of the abdomen of the male furnishes excellent characters for the determination of the species of *Ocypode*. In *O. occidentalis* the penultimate segment is much wider at its middle than at its proximal end.

It is singular that this species is not mentioned in the revisions of the genus by Kingsley, 1880, or by Ortmann, 1897.

Dimensions of a type specimen, U. S. National Museum.—Male: Length, 40.5 mm.; epibranchial width, 48; exorbital width, 41; length of superior margin of palm, 22.8; entire length of propodus, 43.5; greatest width, 24.

Range.—Type locality, Cape St. Lucas. Also taken at Turtle Bay and San Jose del Cabo, Lower California, by Mr. A. W. Anthony, in 1896 and 1897.

Grapsus grapsus (Linnaeus).

"This crab was very abundant on the rocks along the water's edge on the Tres Marias as well as on Isabel Island." (Nelson.)

The species is distributed throughout the tropics.

Bithynis jamaicensis (Herbst).

Maria Magdalena Island. May 27. One adult, 7 young (No. 709).

Maria Cleofa Island. May 30. One adult, 3 young (No. 710).

"These shrimps were very numerous in a small stream among the hills in the interior of Maria Magdalena, and were also numerous in streams flowing through the hilly parts of the adjacent mainland." (Nelson.)

The species is found on the Pacific slope of the continent from Lower California to Ecuador, and on the Atlantic slope from Texas to Rio de Janeiro. The following localities, not before recorded, are represented by specimens in the U. S. National Museum: On the Pacific

¹*Ocypode*, not *Ocypoda*, Fabricius, Entom. Sys., Suppl., 312 and 47, 1798; also Entom. Sys., emend. et auct., IV, index, 115, 1796.

coast, La Paz, Lower California; Rio Presidio, Sinaloa; Rio de Alica, Tepic; Barranca Ibarra, Rio Santiago, Jalisco, and Rio Armeria, Colima, Mexico; Rio de los Platanales and Quebrada Chavarria Golfito (both tributary to the Gulf of Dulce), Costa Rica; River David, Chiriqui, United States of Colombia, 4,000 feet elevation; Guayaquil, Ecuador. On the Atlantic coast, San Antonio, Tex.; Las Moras Creek, Kinney County, Tex.; Brownsville, near mouth of Rio Grande, Tex.; Amixtlan, and Zacatlan, Puebla, Mexico; Escondido River, 50 miles from Bluefields, Nicaragua; Port Castries, St. Lucia, West Indies.

The west African form, *B. vollenhovenii* (Herklots) is no more than a subspecies of *B. jamaicensis*. It differs only in the slenderer second pair of feet, the carpal and meral joints of which are subequal. The relative lengths of the rostrum and the antennal scales and peduncles agree with those in some specimens of *jamaicensis*. The two forms are considered identical by Dr. Ortmann.

According to Dr Edward Palmer, *B. jamaicensis* is much eaten at Colima, and is offered in the market there as a choice article of food, especially on Fridays and Sundays.