NOTES ON A TRIP TO THE BAHAMA ISLANDS.

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Comparatively little is known of the insect fauna of the Bahama Islands, since most of the collectors who have gone to the West Indies have confined their attention chiefly to larger and better settled members of this great group, and as a consequence we have a tolerably fair knowledge of such of them as Cuba, Jamaica, Porto Rico, and Guadaloupe, with scarcely any records from the little rocky islets of which the Bahamas proper are composed. Late researches on the coast of Florida have shown a close affinity between the fauna of that region and of the Antilles, so that the study of the insects of the latter has now a direct bearing on that of those of our own domain. The short sketch which follows is intended merely as a preliminary account of a collecting trip to certain points in the British West Indies, and no more is hoped for than to give the reader a general idea of the coleopterous fauna of these at the time of year during which the collections were made. Only occasionally was it possible to land and work the country for insects, as the main object of the expedition, of which the writer was a member, was the study and collection of the marine invertebrata, and most of the time was necessarily devoted to them.

Regarding the general characters of the Bahama Islands, it may be enough to say that they are British possessions, having been first settled in 1629 by that people, but frequently changing hands until 1783; since that time they have remained under English control, and are populated largely by descendants of that nationality, with a very considerable admixture of negroes, who, indeed, predominate on some of the islands, almost to the exclusion of the whites. Excepting the very small rocky islets, all are inhabited, but the soil is so light and stony that its productive powers are limited, and hence we find the principal exports to be fruit, especially pineapples and cocoanuts. Aside from these, some of the larger islands export brazilleto, yellow-wood, lignum-vitæ and fustic, and at one time cotton was an article of considerable commercial importance, but is now little grown. The citrus fruits flourish, but are apparently not exported to any great extent. The uncultivated portions of the surface, which include the greater part of the whole area, are covered in the main by tangled thickets of various shrubs and vines difficult of penetration, and hard to work in. Owing to the broken nature of the islands, farming can only be carried on in small patches and in the most primitive manner.

The geographical features are rather remarkable: the group forms an irregular triangle, the sides of which are about 720, 600 and 200 miles long. They lie within the influence of the trade winds, and inside the zone of hurricanes, which often do much damage, as the islands are mostly small and low, usually under 100 feet above tide level, the loftiest not over 400, while often they lie almost even with the water. In composition they are chiefly white sandstone or coral rock more or less disintegrated, often with sand beaches of dazzling whiteness. Situated on the edges of coral banks, often of a most dangerous character, and with so little of commercial attractiveness, we find most of the trade between the Bahamas and United States to consist of "fruiting," which is carried on in small schooners of from 150 to 200 tons burthen, plying chiefly between the island ports and Baltimore.

With this rather extended preliminary account, attention may now be directed towards the insect fauna. The first researches we made in this direction were on Egg Island, May 12th. This is a small wooded islet about a mile in length and 67 feet high; on the topmost point is situated a lighthouse, while the beach along the harbour is adorned with an extensive cocoanut grove. Arriving about six o'clock in the evening, a short trip was made ashore, one of the objects in view being the capture of fireflies, which could be seen flitting around in the thickets. Only one could be captured, however, and this proved to be a Pyrophorus, a genus of Elaterid beetle in which the light is emitted from two whitish spots, one on each side near the hind angles of the prothorax. This light is under the control of the insect to some extent, since two or three of the beetles that were knocked down became at once invisible, when they could certainly have been seen had the light continued. It was found later that in such cases the Pyrophorus could often be taken by carefully feeling in the dark for it-placing the palm of the hand flat on the ground over the spot where it was thought the specimen had fallen, and its presence would then be betrayed by its "snapping" in the manner of most elaters when pressure is applied.

Next morning another opportunity was afforded for going ashore, and by beating bushes over an umbrella a good number of additions were made to the collections of Coleoptera, though search along the beach and lagoons yielded no Cicindelidæ nor Carabidæ whatever. It is probable that they are rare on the island, as they seem, in fact, to be in most spots in the

Bahamas. A number of the Staphylinid, Cafius bistriatus, Er., were taken under sea-weed, in just such situations as they frequent along our southern Atlantic coast. On the bushes were found an Olibrus, a number of the widely-distributed Coccinella sanguinea, a little Scymnus, a curious Lathridiid which probably belongs to the genus Monædus, and a number of specimens of a very small Corticaria. A species of Monocrepidius was found occasionally, which looks like our M. lividus. A Hemiptychus obtained here agrees with Dr. Leconte's description of H. similis, which occurs in Florida, while another species of the same genus, together with Catorama and a Petalium, occurred occasionally. The Cerambycidæ were represented by Eburia stigma, Oliv. (duvalii, Chevr.), an Elaphidion of small size and two species belonging to genera not yet identified. The Chrysomelidæ furnished species of Cryptocephalus and Pachybrachys, the former being represented most commonly by what seems to be C. marginicollis or a closely-allied form. Weevils were tolerably plentiful, especially an Artipus, which was everywhere in evidence; more rare were species of Pachnæus and Conotrachelus. Lembodes solitarius, Boh., a very curious weevil, found also in Florida, was beaten from herbage on the hill; it looks very little like a weevil, the posterior end being truncate and emarginate, while the pronotum is long, flattened, and extends quite over the head when the beetle is at rest. The prosternum is deeply excavated for the reception of the rather heavy beak, but the large legs seem not to be closely approximated to the body when the insect feigns death, but rather simply folded. The upper surface of the body is roughly sculptured and heavily scaled—a fringe of the latter around the anterior prothoracic margin giving that part a very strange appearance. The aspect of the beetle when shaken into a net is, on account of its grayish and brownish hues, irregular shape and sculpture, that of a small piece of dead twig, or a withered bud.

During the next week the vessel was cruising on the banks, and no land was touched. All this time, of course, nothing could be done in the line of Entomological work beyond keeping a lookout for such insects as might fly or be blown on the vessel. On the morning of May 18th, while lying some fifteen miles off Riding Rock, and after a heavy squall from that direction the night before, three moths were taken on the deck of the schooner, and also a specimen of *Cicindela tortuosa*. This was the first tiger-beetle our party saw in the Bahamas, though they were found in small numbers later on.

Water Cay, which is on the Salt Cay Bank, far to the westward of the main group of the Bahamas, was the next point at which we landed, and here a hard row of five miles was necessary to reach the shore. Only three hours were afforded for an examination of the place, and thus few insects were found. The main inhabitants were sea birds, which were excessively numerous, and bred in the crannies in the rocks, and hermit crabs (Cenobita diogenes), which occupy the places we are used to think of as belonging to the ground beetles. The rocky surface of the Cay, with its patches of coral sand and occasional hollow filled with black soil, was destitute of the wooded covering such as we saw on Egg Island, and diversified only by a few straggling bushes and herbs. A Polycesta was taken, however, which seems to be velasco, while an Euphoria has been referred with some doubt to E. sepulchralis, from my specimens of which it differs in the darker colour, with less metallic lustre, and more evident white markings, as well as in the somewhat coarser sculpture. The other genera that were recognized are: Scymnus, Saprinus, Catorama, Cryptocephalus, Phaleria, Artipus and Dryotribus; the last probably D. mimeticus, Horn, which has been taken in the Florida Keys.

For several weeks after leaving Water Cay nothing further was done in the Bahamas, the intervening time being spent in the vicinity of Cuba and Florida. Returning, we finally reached Harbor Island, near the northern end of Eleuthera, after a long run from Key West, and were promptly run fast on a sand-bar by a pilot. Landing on the morning of August 9th, the surface of the island was found to resemble that of Egg Island, which is in the immediate vicinity; the webs of two or three large showy spiders were common in the brush, while the song of invisible Cicadas ("singers," the Bahamans call them) filled the air on every side. Butterflies were more numerous than usual, but not being the especial object of search they were neglected for the sake of the favorite Coleoptera, since there was no time to carefully collect both. Turning, therefore, to the beetles, a little Plochionus was beaten from bushes as the sole representative of the Carabidæ. There were plenty of Cafius bistriatus on the beach under sea-weed, while of the Coccinellidæ there were beaten from bushes specimens of C. sanguinea, Psyllobora nana, and a little Scymnus. Several of the Monocrepidius mentioned as occurring on Egg Island were found here, also the Longhorn Spalacopsis filum, Klug. Of Chrysomelidæ there were not many-a Halticid and an Eumolpid being the most showy ones-and of Tenebrionidæ the most notable form was a

Phaleria allied to or identical with our Phaleria longula, but they were of a dark variety, black or brown above, with occasionally one showing a clay-coloured elytral border. Anchonus was found commonly under a drift log, this being the genus described from Southern Florida under the name Gononotus, Leconte. Artipus was extremely common in the brush, and may be found injurious in the Bahamas, as it has of late in Florida—its omnivorous habits rendering it a foe to many different plants.

It is only a few hours' run from Harbour Island to Spanish Wells, at the northern end of Eleuthera, so when some of the party came on deck next morning they were not surprised to find the vessel skimming along the rocky coast of that island, which, from its size and wooded surface, seemed to offer the most favourable conditions for collecting insects of any of the Bahamas that we had seen. About sixty miles in length, though very narrow, this island supports a larger population than most of its neighbours, and is said to be particularly adapted to the cultivation of the pineapple, while oranges, bananas and sapodillas are raised in some quantity. There are also large cocoanut groves on the beaches, the nuts being exported in greater or less numbers.

Here were found the first specimens of tiger-beetles that we had seen on the islands, two species, Cicindela marginata and C. tortuosa, being taken, the former the more commonly. It was rather too warm in the sunshine to make chasing them a particularly agreeable task, so a few examples were made to fill our wants. Of Carabidæ we took, or purchased, specimens of a Scarites, which, though probably subterraneus, is smaller than any of these that we have seen elsewhere, Plochionus pallens and Apenes opaca. The same Staphylinidæ and Coccinellidæ were captured as already given for Harbour Island, while in some of the succeeding families Eleuthera seemed much richer. A large Pyrophorus was common in the cocoanut groves, the lights gleaming for a moment and then disappearing in a way very provoking to one not familiar with the ground, and likely at any moment to run into a tree or fall over a log in the chase in the dark. The native children, however, were glad to catch them for us at the rate of a half-penny each, and in this way a good series was obtained with little trouble. The Buprestidæ were represented by Acmæodera cubæcola, Duval, and Gyascutus carolinensis, Horn; the Ptinidæ by species of Hemiptychus, Catorama and Sinoxylon, while Longicorns were numerous in specimens, though not many species were

seen. Of these, Elateropsis rugosus, Gahan, seems worthy of special note, as it has been very rare in collections, and only since our taking it on Eleuthera has the exact habitat been known. In both sexes the upper surface is extremely roughly sculptured, forming rugosities on the disk of the thorax and elytra, and to a lesser degree on the head. The antennæ are brown or black, the legs reddish, but the sexes differ widely in the colour of the upper surface, which, in the males, is uniform brown or blackish, while in the females there is a broad stripe of white pubescence on the head, and three (one median, two lateral) on the prothorax, while the elvtra have each a broad dorsal and narrow lateral stripe. In perfectly fresh examples the thorax has also an incomplete transverse basal band. A series of over forty specimens shows that the males vary in length from 16 to 32 mm., while the females run from 21 to 35 mm. A fine Elaphidion occurred on the island, also specimens of Eburia stigma, Plectromerus dentipes, and a Cyllene. An example of Spalacopsis I refer to S. filum, Klug, of which specimens are known from Porto Rico, Cuba, Haiti, and Florida. It is a curious insect, with a general resemblance to Dorcasta cinerea, and having the antennæ clothed with hairs in much the same manner, but the body is much more elongate, and when the beetle is beaten into a net it assumes a position of perfect rigidity, in which condition it can scarcely be distinguished from a bit of stick. Several Chrysomelidæ were obtained, all small and belonging chiefly to the Eumolpini and Halticini. Further, there are species of Bruchus, Hymenorus, Oxacis and Anthicus, but as usual the chief development seems to be in the Rhynchophora, where the following genera have been thus far recognized: Artipus, Pachnæus, Anthonomus, Conotrachelus, Chalcodermus, Macrancylus and Dryotribus. There are also several which are yet unknown, and may remain so for some time, since the Coleopterous fauna of these little islands has received no particular attention, and has formed the subject of no special memoirs. It is hoped, however, that the labours of the British West Indian Committee will result in the publication of a long series of papers similar to those lately published through their instrumentality, and in the clearing up of the questions surrounding the affinities and origin of the fauna of this group, which has evidently a close relationship with some portions of our own.



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