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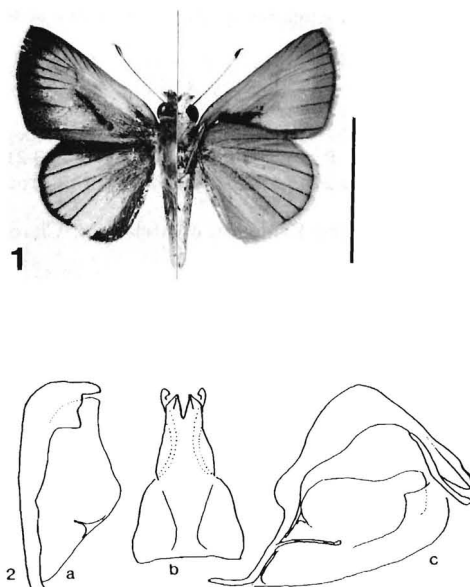
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# FIRST RECORDS OF *PARACHORANTHUS MAGDALIA* (HESPERIIDAE) FROM THE BAHAMAS, AND EXTENSION OF THE BAHAMIAN RANGE OF *BATTUS DEVILLIERS* (PAPILIONIDAE)

**Additional key words:** West Indies, Cuba, dispersal, colonization, biogeography.

The addition of butterfly species to faunal lists in the Bahamas and elsewhere in the West Indies may reflect discovery of long-established but overlooked populations, chance interception of newly arrived vagrants, or discovery of new colonies they have established. Species that are not on the wing throughout the year may readily be missed on islands



FIGS. 1–2. *Parachoranthus magdalia*. 1, Male: left upperside, right underside. Nicholl's Town, North Andros, scale line: 10 mm; 2, Genitalia: a, left valva, inner aspect (setae on outer surface omitted); b, dorsal view of genital capsule; c, lateral view of genital capsule with left valva removed.

surveyed during brief and sporadic visits, and the probability that small numbers of vagrants will be recorded is very low, unless they achieve at least temporary colonizing success. Against this background, we note and discuss two recent Bahamian records of biogeographical interest in the context of inter-island dispersal and colonization, and provide further data on Cuban-Bahamian faunal links.

*Parachoranthus magdalia* (Herrich-Schäffer) (Hesperiidae) has been considered a Cuban endemic species, unknown from the Isle of Pines but widely distributed and locally abundant on the main island. It occurs from the lowlands to the mountains, most frequently in open, grassy habitats, but also along shady forest tracks. Its life history is unknown, but grasses presumably serve as larval foodplants. Between 12 and 28 August 1993, six males were collected (DK) near Nicholl's Town, at the northeastern tip of Andros Island. They were found in two small natural clearings (100 m<sup>2</sup>) in mature hammock forest with trees to 10 m, generally flying swiftly and perching on broad leaves. Nectaring was not observed, and the butterfly was not seen on nearby disturbed, open land. All specimens collected were fresh. The butterflies were sparsely distributed; generally only a single specimen was seen on each visit to the locality in the morning, and perhaps another in the afternoon. Seven more males, most in fresh condition, were collected when the locality was revisited on 17–18 October 1993. No females were found; in Cuban sites when *P. magdalia* is abundant this sex is reclusive, and males greatly predominate in random samples.

The Andros specimens (Fig. 1) are identical in wing pattern to series of males from Soroa, Pinar del Río, and other Cuban localities. They do not differ appreciably in size (Andros: mean forewing length 10.36 mm,  $n = 13$ , range 9.7–11.0 mm; Cuba: 10.40 mm,  $n = 20$ , range 9.5–11.2 mm). The genitalia of Andros specimens (Fig. 2) and Cuban specimens are identical.

*Battus devilliers* (Godart) (Papilionidae) has been known previously as widely distributed throughout Cuba, perhaps more frequent in the west, recently found on the Isle of Pines, and elsewhere known only from southern, central, and northern localities on Andros Island. On 27 June 1993, the authors, with Neil Davies, recorded a worn female of *B. devilliers* near the north-west end of Lake Cunningham, in the north-central region of New Providence Island. Ten days later, other specimens were seen in this locality by Leonard C. Smith, and on 5 August newly emerged adults were recorded by DK in a recently cut-over area of scrub 200 m from the original site. On 20 September we revisited the area and counted 30 specimens in 45 minutes, some fresh and others worn, and added two further sight records the following day at localities up to 5 km to the east. On 3 October it was equally common. The records are concentrated in a disturbed area where young secondary forest was cleared early in 1993 and by summer was covered by low plants, including *Leucaena leucocephala* (Lam.) (Fabaceae), *Stachytarpheta jamaicensis* (L.) (Verbenaceae), *Bidens alba* (L.) (Asteraceae), and species of *Lantana* (Verbenaceae). The butterflies often enter the cleared land from the forest, generally flying swiftly, but making brief nectaring visits to *Stachytarpheta*, *Lantana camara*, and *Bourreria ovata* trees at the cut edge of the forest.

New Providence and Andros islands differ greatly in size, in their terrain, and in the history of documentation of their butterfly faunas. The former is relatively small (207 km<sup>2</sup>), populous, and increasingly damaged by development, and was the first Bahamian island for which lists of butterflies were compiled (Sharpe 1900). Andros is much larger (5960 km<sup>2</sup>), largely covered by pineland in the east. Mature pines were logged extensively about 20 years ago, but the forest is now recovering. The west is fringed with mangrove and includes vast areas of temporarily flooded sawgrass prairie with scattered pine associations, and the small human population is grouped in communities only along the east coast. Much of the island remains virtually inaccessible, and butterflies have been sampled from only a small proportion of the total area of the island. Much of our knowledge of the butterfly fauna is based on the work of Clench (1977) and later records of Harvey and Peacock (1989). These differences may be considered in assessing the two new records.

The arrival of *B. devilliers* on New Providence is perhaps less surprising than the virtual absence of its relative *B. polydamas* from the island. Although the latter was recorded by Sharpe in a collection made at the end of the last century, and West (1966) found it along the north coast in 1945, it seems to have disappeared subsequently, and the senior author recorded it only once during the past thirty years. Other than in the extreme south, *B. polydamas* is distributed widely in the Bahamas, and was abundant on North Andros in August 1993, only 40 km to the west. Its decline and present rarity on New Providence cannot be attributed to lack of larval foodplants: Correl and Corell (1982) record *Aristolochia passiflorifolia* (A. Rich. in Sagra) (Aristolochiaceae) and/or *A. pentandra* (Jacq.) from all the larger Bahamian islands except Cat Island, Great and Little Inagua, and the Turks and Caicos Islands (where *B. polydamas* has been recorded by St. Leger (1991) only as a rare vagrant); both plants are present on Andros and New Providence. The area where *B. devilliers* was first found was visited regularly in the past by DK, and while a very small population may have been maintained for some time, an abundance such as that seen in September and October 1993 could not have gone undetected. If the first record in June was a chance interception of a founder vagrant, then the subsequent population build-up was remarkably rapid. Whenever the initial colonization occurred, it is possible that the absence of larval competition from another *Battus* contributed to the present success of *B. devilliers*.

We can be less confident that *Parachoranthus magdalia* is a recent arrival on Andros than for *B. devilliers* on New Providence. In addition to Clench's stays between 1973 and 1976, field work on the island has been carried out by several visitors including the authors and others, but only for short periods, and it seems to us more probable that this skipper is a long-established but overlooked resident. It is not inconspicuous, but small colonies could have escaped notice among the scattered sites sampled on Andros in the past. Furthermore, one of us (DSS) noted great variation in abundance in Cuban localities, from one year to the next, further stressing the role of chance in recording or missing a resident species. It remains possible that the fresh *P. magdalia* collected were the progeny

of recent immigrants, but they were found in the region of Andros furthest (350 km) from Cuba, almost twice the distance between the southernmost point of Andros and the north Cuban coast.

The recognition of *P. magdalia* on North Andros may stimulate search for it in other localities, perhaps leading to further information on its distribution on the island. Moreover, studies on Cuban and Bahamian populations at the level of molecular genetics might well contribute information on the history of its presence outside its island of origin. Vagrancy with colonization potential, realized or otherwise, is a notable feature of West Indian butterfly faunas; moreover, several instances of faunal exchange between southern Florida and the islands have been recorded in recent decades (Smith et al. 1994). Continued monitoring of *B. devilliers* on New Providence offers an opportunity to follow the fate of a vagrant, in this instance presumably from Andros, that has achieved conspicuous initial success as a colonist.

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