DIANESIA, A NEW GENUS OF BIODINIDAE FROM THE WEST INDIES

DONALD J. HARVEY
Division of Biological Sciences, University of Texas, Austin, Texas 78712

AND

HARRY K. MCLECH1

Section of Insects and Spiders, Carnegie Museum of Natural History, Pittsburgh, Pennsylvania 15213

ABSTRACT. Dianesia, gen. n., is proposed for the rodinid butterfly originally described as Charis carteri Holland. This species, endemic to Cuba and the Bahamas, has long been considered a member of the genus Apodemia, from which, however, it is quite distinct. A morphological description and notes on the biology of D. carteri are presented.

Holland (1902) described the butterfly Charis carteri from specimens collected on New Providence Island, Bahamas. Ten years later, Skinner (1912) described Mesobagris ramdeni from La Yerba, Cuba. Stichel (1911: 390) provisionally transferred carteri to the genus Apodemia Felder & Felder, an action accepted by subsequent authors (e.g. Bates, 1935; Ringge, 1952; West, 1960; Riley, 1975). We agree with Riley (loc. cit.) in considering ramdeni to be a subspecies of carteri. These two taxa represent the only members of the Rodinididae known from the West Indies, and both remained rare in collections. No additional information was gleaned about carteri until our fieldwork in the Bahamas during the 1970s. Differences in wing pattern and adult behavior suggested that carteri was not congeneric with North and Central American Apodemia, and this suspicion was confirmed by comparisons of their appendages and genitalia. We therefore propose the following new genus.

Dianesia Harvey & Mclech, new genus

Type species: Charis carteri Holland (nominate subspecies).

Description. Eyes naked, yellow-green in life. Palpi (Fig. 1) slender, apressed to head, not extending beyond frontal sutures, third segment stubby, one-seventh (male) to one-fifth (female) length of second (in Apodemia ratio one-third to almost one-half). Antennae slender, seven-tenths length of forewing costa, comprised of 26–39 segments, the terminal 13 forming a weak club. Forewing (Fig. 2) and hindwing (Fig. 3) not differing consistently in any one character from the range of variation present in Apodemia1. Male Isorhachis (Fig. 4) very slender; tibia with a single spine (absent in Apodemia); tarsus apparently dimorphic, equal in length to tibia. Female

1 Dedicated, 1 April 1979.
Fig. 1-6. Dianasia cartersi. 1, △ palpus; 2, △ forewing venation; 3, △ hindwing venation; 4, △ foreleg; 5, △ foreleg; 6, △ hindleg. Scale lines = 1 mm (upper line for Figs. 2, 3, lower line for Figs. 1, 4-6).

foreleg (Fig. 5) slender, tarsal subsegments with short spines. Male and female mid- and hindlegs lack tibial spurs, although spines are present. Male and female hindleg (Fig. 6) with dorsal spines on tibia (absent in Apodemia).

Male genitalia (Figs. 7-9). Uncus weakly lobed, each lobe with a bluntly pointed tooth (absent in Apodemia). vinculum in lateral view with an abrupt angle above middle and therefore interiorly concave (nearly straight or anteriorly convex in Apodemia). valva simple (filiform in Apodemia), posterior edge lightly scutellated, becoming membranous towards attachment to vinculum, free ventrally, joined dorsally over the aedeagus by a lightly sclerotized band; sacculus reduced, shallowly rounded, aedeagus eonulate and slender, slightly curved (best 45 to 90 degrees in Apodemia).^'

^ Species examined also those listed in Penrose, in addition to male and female with Edwards, chironomus Foaminus and Hypaphera Geminus &indh. (male only).
Figs. 7-12. Genitalia of Diamesia carteri. 7, 8, lateral view, setae on right side omitted; 9, dorsal view of uncus, tegumen and vinculum; left flagellum and setae on right side omitted; 10, 11, dorsal view—posterior end; 12, dorsal view—posterior end. Scale line = 1 mm.

Female genitalia (Figs. 10-12). Eighth sternite punctate, lacking ridges and not sclerotized near ostium bursae (weak ridges present, sclerotized in Apodemia except multiplygus); ostium bursae dorsoventrally compressed, narrowing towards sclerotized antrum; lamella antevaginalis spatulate and heavily sclerotized, barely covering ostium bursae; lamella postvaginalis weakly sclerotized; ductus seminalis enters dorsally, duct...
the bursae very narrow, very lightly sclerotized, straight (usually heavily sclerotized, with a sharp to slight bend in Apodemia\textsuperscript{2}), surface punctate, with irregular folds, opening widely into corpus bursae; corpus bursae dux-ventrally flattened, surface uniformly punctate, with surface folds around junction with ductus bursae.

Relationships. Morphologically, *Dianemia* can be readily separated from Neanocic Apodemia\textsuperscript{2} (type species: *m. morris* Felder & Felder) by the characters noted in the description. Without a complete reanalysis of the New World Riodinidae it is impossible to determine the closest affinities of *Dianemia*. Its wing pattern (Figs. 13-16), particularly the tornal eye spot on each wing (above and below), is unusual and resembles that of no other rodent known to us except, perhaps, for a few vague similarities in some mainland Neotropical species (*Lemania* ziegii Hübner, *Colopara luxuna* (Fabricius), *Euphaedra thelephus* (Cramer)). Genitalic comparisons, however, reveal no close relation to these species. Two South American species attributed to Apodemia, *stalaktoides* Butler and *astilporus* Prévost, were also examined. Differences in genitalia and appendages indicate that they are not congeneric with North and Central American Apodemia. Their correct generic assignment is under study.

Natural History. Biological observations on *Dianemia carteri* in the Bahamas have been published elsewhere (Gleason, 1967, 1972a, b). During May-June 1978, Harvey made additional observations at two N. Andros localities, which, together with the above references, form the basis for the following account.
We have found Dionea cartteri in several types of habitat. At West Bay, Little San Salvador, Cleanch (1977b) found a single female in sparse, open scrub averaging 2 m high. This area had open, sandy ground between the shrubs, which included both fan and sargent palms, Squirrup (Courcellea wenderi), and a small banded chum on which the specimen was found. On both N. and S. Andros, Cleanch (1976, 1977a) found it living in stunted, virgin palmetto with few scattered shrubs near the coast. On N. Andros, Harvey found D. cartteri relatively common at Stafford Creek. Mort adults seen were perched along a path that runs through a small "cuppice," an area of hardwoods with a diverse flora. At Red Bay, a small colony was discovered at a spot near shrubs that bordered the road from the settlement to the public dock. In all instances, D. cartteri appeared to be very localized, and was usually rare.

Adults perched on the underside of leaves, assuming a characteristic posture: wings almost flat against the leaf, antennae held close together and extended dorsal at a slight angle from the axis of the thorax. This posture resembles that of most Neotropical mudpans, but differs from Neotropical Aedes, which perch on the upper side of leaves or on stems. The perch sites chosen varied from less than 20 cm to more than 2 m above the ground. At Stafford Creek, certain perch sites appeared to be especially favored by males. When removed from these sites, they were usually replaced by other males in less than 30 min, and certain sites were almost invariably occupied during almost three weeks of intermittent observation.

When visiting flowers, the wings were held outspread. Flowers utilized near Stafford Creek included Lantana indica (Cleanch, 1977a), Berberis simaruba, and Courcellea wenderi. The latter two also attracted other butterflies, particularly lycaenids. At Red Bay, the flowers of Cordia bahamensis were visited, and one female was seen shortly after having been caught at the flowers by a species of Phymate (Hemiptera: Phymatidae).

Flight activity of D. cartteri extended throughout the daylight hours, beginning and ending when most butterflies were inactive. The female from Little San Salvador was taken at 07:30 h. At Stafford Creek, males were observed perching as early as 06:30 h, and on several occasions we were visiting Berberis flowers around 05:30 h.

Despite many hours of field observation, we observed neither courtship nor copulation, and the larval hostplant and immature remains unknown. The restriction of D. cartteri to coastal areas (we have not seen any at distances greater than several hundred meters from open salt water) suggests that the larval hostplant may be similarly restricted.

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A RECORD OF ITAME ABRUPTATA (GEOMETRIDAE) FROM NEW YORK

During a preliminary survey of the insects associated with ninebark, Physocarpus opulifolius (L.) Maxim. (Rosaceae), I reared a small lepidopterous larva, collected in a state park in the Finger Lakes Region of New York, to the adult stage. It proved to be the eosin-mine geometrid Itame abruptata (Walker). This is apparently the first record of this species from New York. The identification was made by John G. Franchement, Cornell University, Ithaca, N.Y. This reared specimen is in the personal collection of Dr. Franchement, and bears these labels: "N.Y.: Taughannock Falls State Park, US 89 at bridge, 8 mi. N. of Ithaca, Tompkins County, E. R. Hoeseke & M. E. Carter ES: Physocarpus opulifolius larva coll. May 16, 1976, pupated by May 27; adult emergence June 7."

Itame abruptata is known to occur from northern Ontario south to western Pennsylvania and west to eastern Minnesota and Missouri (McGinlin 1977, J. Lepid. Soc. 31: 299-274), but appears to be only locally abundant in certain areas of its range. Additional collections of larvae of I. abruptata have been made from ninebark in the south-central region of Pennsylvania (Harrisburg and environs) by A.G. Wheeler, Jr. (Pa. Dept. Agric., Harrisburg, Pa.) These reared specimens are in the collections of Cornell University and the Pennsylvania Department of Agriculture. This species is not well represented in North American collections.

E. RICHARD HOEBEKE, Department of Entomology, Cornell University, Ithaca, New York 14853.