

## DIANESIA, A NEW GENUS OF RIODINIDAE FROM THE WEST INDIES

DONALD J. HARVEY

Division of Biological Sciences, University of Texas, Austin, Texas 78712

AND

HARRY K. CLENCH<sup>1</sup>

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

**ABSTRACT.** *Dianesia*, gen. n., is proposed for the riodinid 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 metalmark *Charis carteri* from specimens collected on New Providence Island, Bahamas. Ten years later, Skinner (1912) described *Mesosemia ramsdeni* from La Yberia, Cuba. Stichel (1911: 290) provisionally transferred *carteri* to the genus *Apodemia* Felder & Felder, an action accepted by subsequent authors (e.g. Bates, 1935; Rindge, 1952; West, 1966; Riley, 1975). We agree with Riley (loc. cit.) in considering *ramsdeni* to be a subspecies of *carteri*. These two taxa represent the only members of the Riodinidae 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 1970's. 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.

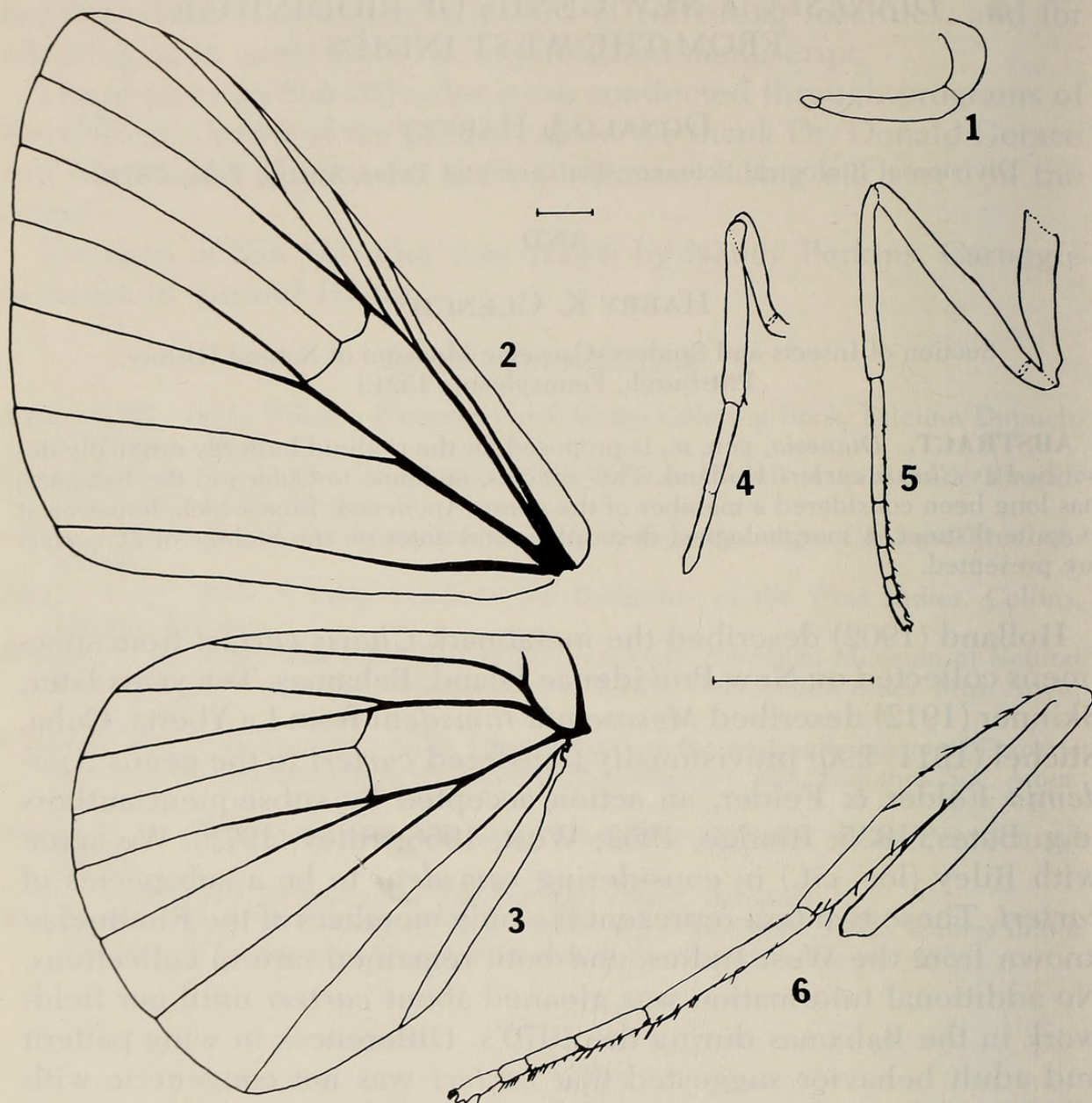
### **Dianesia** Harvey and Clench, new genus

Type species: *Charis carteri* Holland (nominate subspecies).

**Description.** **Eyes** naked, yellow-green in life. **Palpi** (Fig. 1) slender, appressed to head, not extending beyond frontal vestiture; third segment stubby, one-seventh (male) to one-fifth (female) length of second (in *Apodemia*<sup>2</sup> ratio one-third to almost one-half). **Antennae** slender, seven-tenths length of forewing costa; comprised of 38-39 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 *Apodemia*<sup>2</sup>. **Male foreleg** (Fig. 4) very slender; tibia with a single spine (absent in *Apodemia*<sup>2</sup>); tarsus apparently dimerous, equal in length to tibia. **Female**

<sup>1</sup> Deceased, 1 April 1979.

<sup>2</sup> Species examined: male and female *m. mormo* Felder & Felder, *palmeri* Edwards, *walkeri* Godman & Salvin, *multiplaga* Schaus, and *hypoglauca* Godman & Salvin.

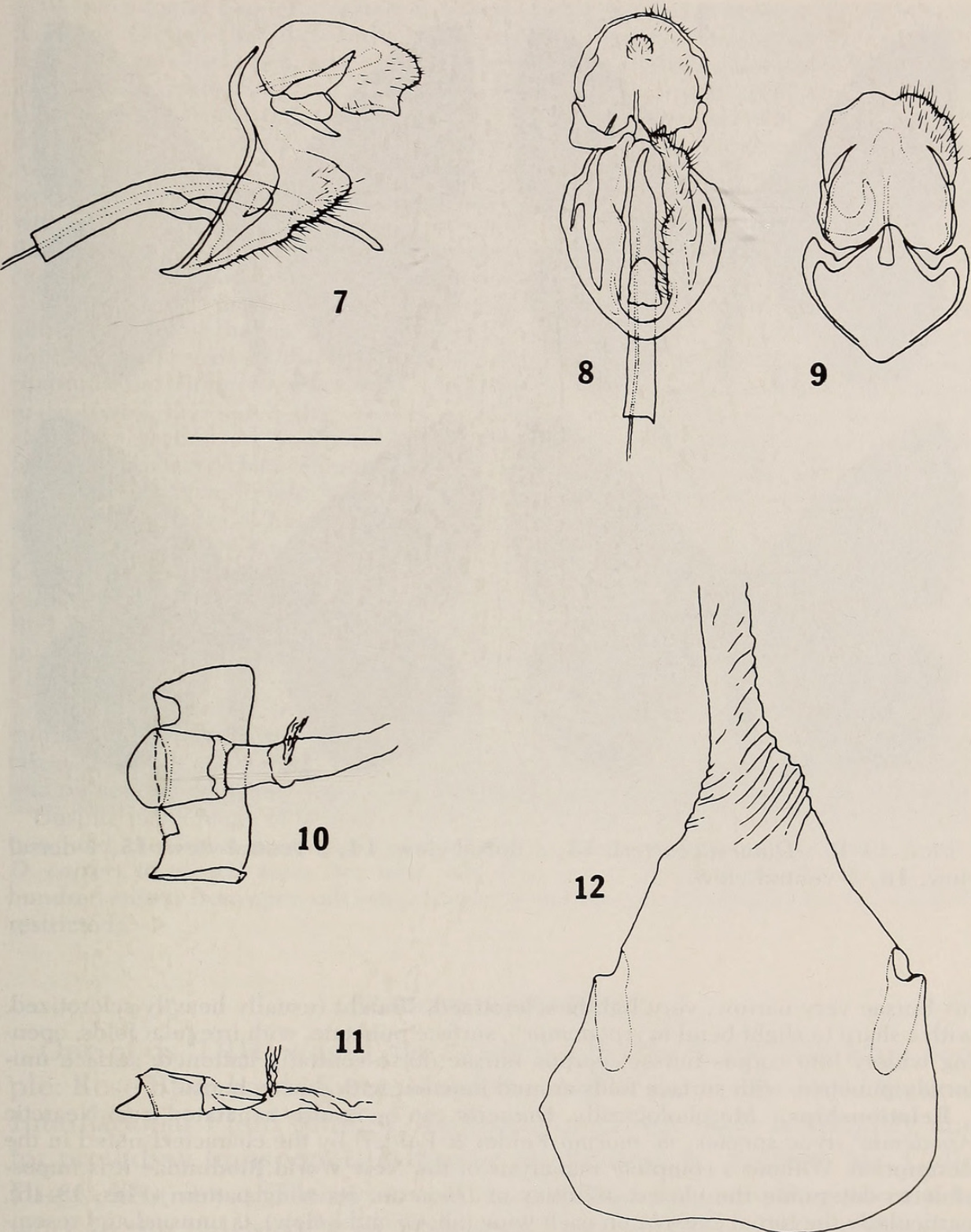


FIGS. 1-6. *Dianesia carteri*. 1, ♂ palpus; 2, ♂ forewing venation; 3, ♂ hindwing venation; 4, ♂ foreleg; 5, ♀ foreleg; 6, ♀ hindleg. Scale lines = 1 mm (upper line for Figs. 2, 3; lower line for Figs. 1, 4-6).

**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*<sup>3</sup>).

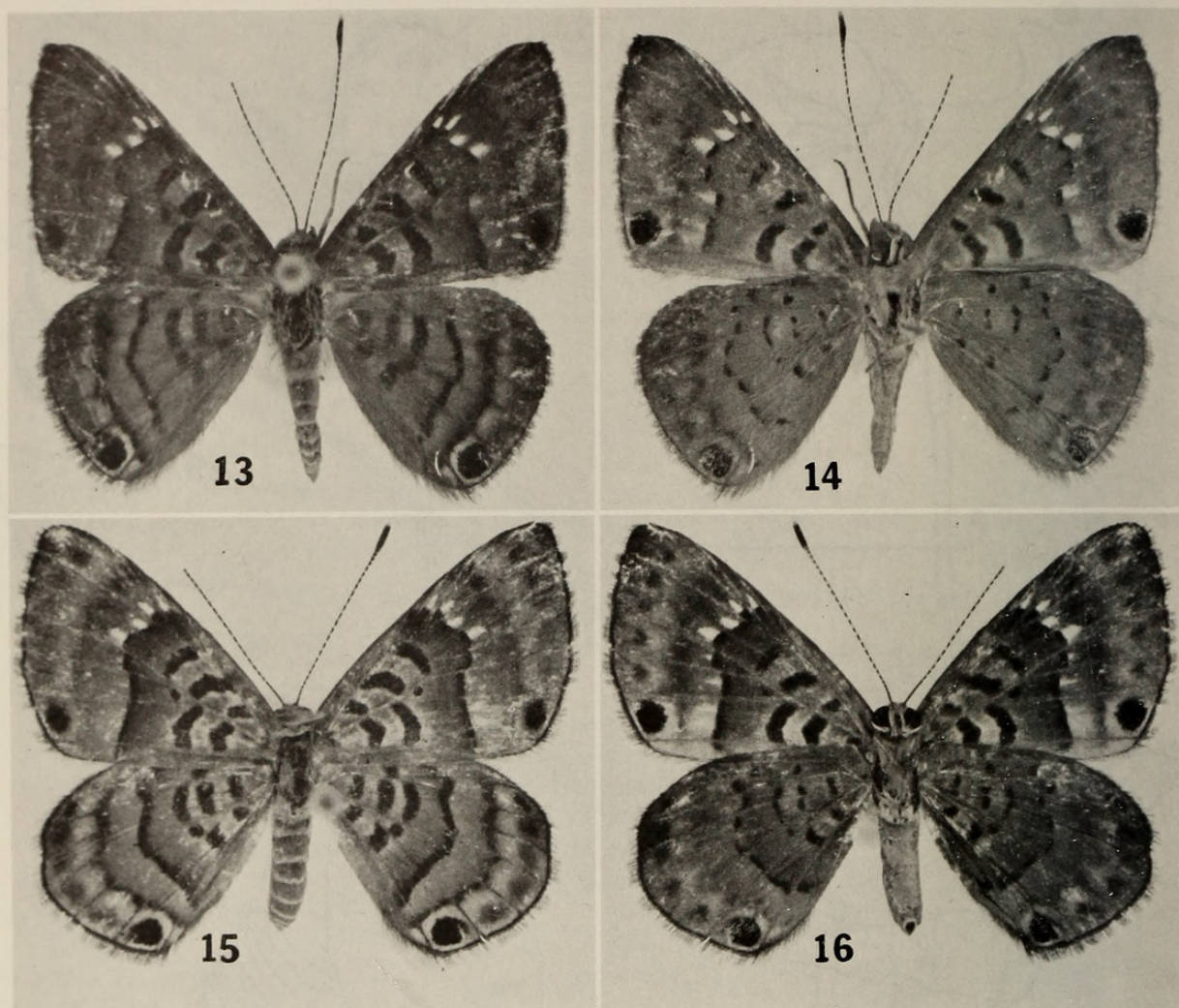
**Male genitalia** (Figs. 7-9). Uncus weakly lobed, each lobe with a bluntly pointed tooth (absent in *Apodemia*<sup>3</sup>); vinculum in lateral view with an abrupt angle above middle and therefore anteriorly concave (nearly straight or anteriorly convex in *Apodemia*<sup>3</sup>); valvae simple (bifurcate in *Apodemia*<sup>3</sup>), posterior edge lightly sclerotized, becoming membranous towards attachment to vinculum, free ventrally, joined dorsally over the aedeagus by a lightly sclerotized band; saccus reduced, shallowly rounded; aedeagus elongate and slender, slightly curved (bent 45 to 90 degrees in *Apodemia*<sup>3</sup>).

<sup>3</sup> Species examined include those listed in Footnote 2, in addition to male and female *nais* Edwards, *chisosensis* Freeman and *hepburni* Godman & Salvin (male only).



FIGS. 7-12. Genitalia of *Dianesia carteri*. 7, ♂ lateral view; 8, ♂ ventral view, setae on right side omitted; 9, ♂ dorsal view of uncus, tegumen and vinculum; left falx and setae on right side omitted; 10, ♀ dorsal view—posterior end; 11, ♀ right lateral view—posterior end; 12, ♀ corpus bursae. 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*<sup>3</sup> except *multiplaga*); 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; duc-



FIGS. 13-16. *Dianesia carteri*. 13, ♂ dorsal view; 14, ♂ ventral view; 15, ♀ dorsal view; 16, ♀ ventral view.

tus bursae very narrow, very lightly sclerotized, straight (usually heavily sclerotized, with a sharp to slight bend in *Apodemia*<sup>3</sup>), surface punctate, with irregular folds, opening widely into corpus bursae; corpus bursae dorso-ventrally flattened, surface uniformly punctate, with surface folds around junction with ductus bursae.

**Relationships.** Morphologically, *Dianesia* can be readily separated from Nearctic *Apodemia*<sup>3</sup> (type species: *m. mormo* Felder & Felder) by the characters noted in the description. Without a complete reanalysis of the New World Riordinidae it is impossible to determine the closest affinities of *Dianesia*. Its wing pattern (Figs. 13-16), particularly the tornal eyespot on each wing (above and below), is unusual and resembles that of no other riordinid known to us except, perhaps, for a few vague similarities in some mainland Neotropical species (*Lemonias zygia* Hübner, *Calospila luciana* (Fabricius), *Elaphrotis thelephus* (Cramer)). Genitalic comparisons, however, reveal no close relation to these species. Two South American species attributed to *Apodemia*, *stalactioides* Butler and *castanea* Prittwitz, 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 *Dianesia carteri* in the Bahamas have been published elsewhere (Clench, 1967, 1977a, 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 *Dianesia carteri* in several types of habitat. At West Bay, Little San Salvador, Clench (1977b) found a single female in sparse, open scrub averaging 2 m high. The area had open, sandy ground between the shrubs, which included both fan and Sargent palms, Seagrape (*Coccoloba uvifera*), and a small leafed shrub on which the specimen was found. On both N. and S. Andros, Clench (1976, 1977a) found it flying in stunted, virgin pineland with few scattered shrubs near the coast. On N. Andros, Harvey found *D. carteri* relatively common at Stafford Creek. Most adults seen were perched along a path that ran through a small "coppice," an area of hardwoods with a diverse flora. At Red Bay, a small colony was discovered at a short row of shrubs that bordered the road from the settlement to the public dock. In all instances, *D. carteri* 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 dorsad at a slight angle from the axis of the thorax. This posture resembles that of most Neotropical riodinids, but differs from Nearctic *Apodemia*, which perch on the upperside 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 involucrata* (Clench, 1977a), *Bursera simarouba*, and *Coccoloba uvifera*. 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 *Phymata* (Hemiptera: Phymatidae).

Flight activity of *D. carteri* extended throughout the daylight hours, beginning and ending when most butterflies were inactive. The female from Little San Salvador was taken at 0730 h. At Stafford Creek, males were observed perching as early as 0830 h, and on several occasions were seen visiting *Bursera* flowers around sunset (1930 h).

Despite many hours of field observation, we observed neither courtship nor oviposition, and the larval hostplant and immatures remain unknown. The restriction of *D. carteri* 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.

#### ACKNOWLEDGMENTS

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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 ennomine geometrid *Itame abruptata* (Walker). This is apparently the first record of this species from New York. The identification was made by John G. Franclemont, Cornell University, Ithaca, N.Y. This reared specimen is in the personal collection of Dr. Franclemont, and bears these labels: "N.Y.: Taughannock Falls State Park, US 89 at bridge, 8 mi. N. of Ithaca, Tompkins County, E. R. Hoebeke & M. E. Carter/ EX: *Physocarpus opulifolius*/ larva coll. May 16, 1979; 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 (McGuffin 1977, J. Lepid. Soc. 31: 269–274), 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.*



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