

A NEW PANAMANIAN CLEARWING MOTH
(SESIIDAE: SESIINAE)

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ABSTRACT. A new species of Sesiidae from Panama, *Carmenta foraseminis* Eichlin, is described and illustrated. Host plant information and collecting localities are provided. A complex of related species, *C. guyanensis* (Le Cerf), *C. theobromae* (Busck), and *C. surinamensis* (Möschler), is discussed. The name *corporalis* (Meyrick) is synonymized under *surinamensis*.

Additional key words: types, genitalia, Lecythidaceae, Fabaceae, Sterculiaceae.

I am describing the following species to make the name available for a subsequent paper in this same issue (see Harms & Aiello 1995: 43). These researchers forwarded to me for identification a series of specimens they reared from seeds of *Gustavia superba* (H.B.K.) Berg (Lecythidaceae) from Barro Colorado Island, Panama. The thrust of their report is to document the apparent unusual behavior of seed boring by larvae of clearwing moths (Sesiidae).

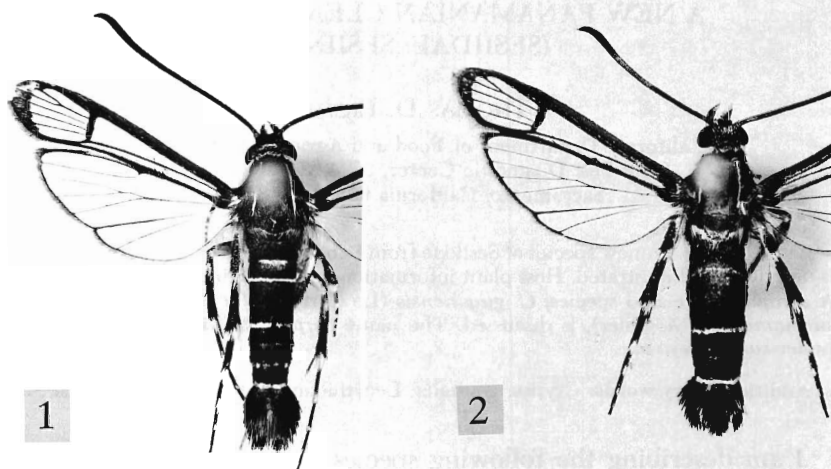
From material accumulated for ongoing revisionary studies of the clearwing moths of the Western Hemisphere (Eichlin 1986, 1989, Eichlin & Duckworth 1988), I discovered several more specimens of the unknown borer from this same and other localities and some on different hosts. Also, upon further examination, I learned that the undescribed species is but one of a complex of similar appearing species, separable mainly on the basis of male genitalic features.

Carmenta foraseminis Eichlin, new species

(Figs. 1–4)

Male (Fig. 1). Head with vertex brown-black; front brown-black medially, white laterally; occipital fringe dorsally brown-black, laterally white; antenna brown-black, usually with pale yellow on apical third; labial palpus smooth and somewhat flattened ventrally, mostly brown-black laterally, often with some white or pale yellow at base of second segment, white ventrally, perhaps with a hint of pale yellow. Thorax brown-black, yellow patch beneath wing, narrow yellow, subdorsal, longitudinal stripe, yellow on dorsoanterior half of metathorax. Abdomen brown-black, dorsally with narrow yellow bands on segments 2, 4, 6, and 7, or on all segments for some specimens (Venezuela); ventrally strongly banded pale yellow or white on 4–7, variously on other segments. Legs brown-black, white on forecoxa, white on tibial tufts and at joints of tarsi. Forewing with narrow margins and discal spot brown-black; ventrally with some pale yellow powdering. Hindwing hyaline, no discal spot. Wing length of both sexes 8–9 mm. Genitalia as in Fig. 3, with gnathose/tegumen area somewhat complex; crista sacculi structure complex; saccus elongate, nearly half as long as ventral margin of valvae; socii elongate.

Female (Fig. 2). Same as male, except less white ventrally on palpus and forecoxa;



FIGS. 1–2. Adults of *Carmenta foraseminis*. 1, Holotype male (wing length 8 mm); 2, Allotype female (wing length 8.5 mm).

abdomen dorsally with narrow yellow bands on segments 2, 4, and 6, ventrally with wide pale yellow to white bands on 4–6. Genitalia as in Fig. 4.

Types. *Holotype* ♂ (NMNH): PANAMA: Is. Barro Colorado, emerged 14–19 Jul. 1993, from *Gustavia* seeds, Kyle Harms.

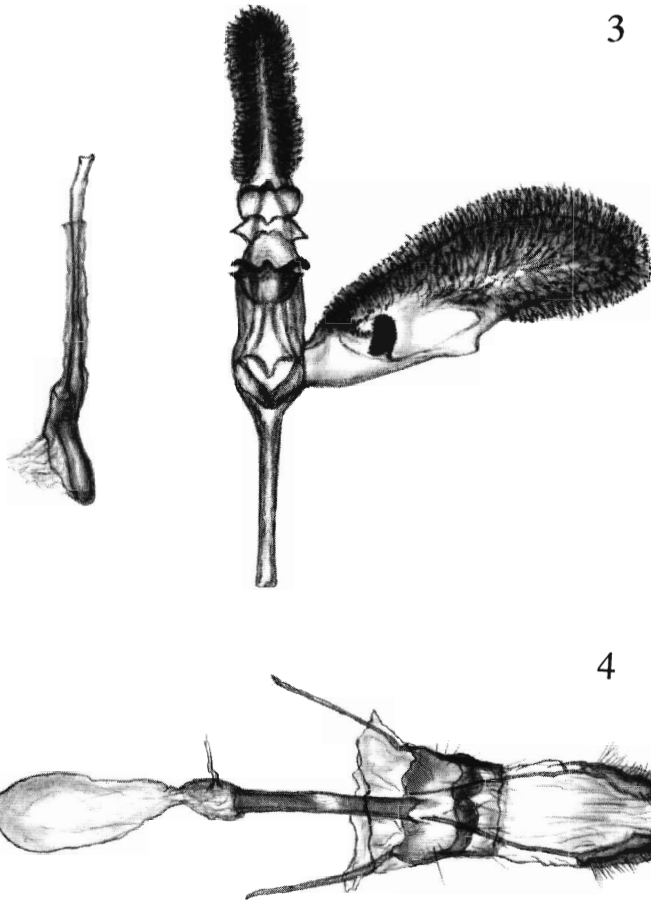
Allotype ♀ (NMNH): same data as holotype, except emerged 8 Aug. 1993.

Paratypes (59): 4 ♂♂, 1 ♀ (NMNH): Same data as holotype. 1 ♀ (NMNH): PANAMA: Is. Barro Colorado, emerged 11 Jul. 1993 from *Gustavia* seeds, col 26 Jun., Kyle Harms. 1 ♀ (NMNH): PANAMA: Arraijan, flew inside car, 12 Aug. 1984, A. Aiello. 1 ♂, 1 ♀ (CDFA): same data as holotype, except CDFG genitalia slides #856 and #857 (respectively) by S. A. Kinnee. 3 ♀♀ (AMNH): T. Hallinan, Balboa, C. Z., Panama, 26 Jun. 1914; A.C. 5690. 1 ♂ (AMNH): T. Hallinan, Culebra, C. Z., Panama, 4 Mar. 1914; A.C. 5690; genitalia slide #854 by S. A. Kinnee. 1 ♀ (AMNH): Balboa, C. Z., 11 Nov. 1914; A.C. 5690. 1 ♂, 1 ♀ (CDFA): Boca d Pauarando, Sambu Vy., S. Darien, Pan., H. Pittier; ex. seeds of *Eschweilera* sp., H. Pittier, ♂—genitalia slide #855 by S. A. Kinnee. 10 ♂♂, 6 ♀♀ (NMNH, CAS): Z-2143, seeds of membrillo, *Gustavia angustifolia*; Chinilla River, C. Z., 8 Jun. 1923, J. Zetek. 5 ♂♂, 14 ♀♀ (NMNH, LACM, CDFG): Z-3176, Barro Colorado, Canal Zone, on *Gustavia superba*, Zetek, collector. 7 ♂♂, 1 ♀ (NMNH, CDFG): AV cacao pod, A. P. Trocones, 5 May 1938 (6 ♂♂—emerged June 4, 9(2), 15, 21, 22, 24), Municipio Ureña, Estado de Tachira, Venez., C. H. Ballou; and San Felipe, Venez., C. H. Ballou (1 ♂, 1 ♀—emerged 24 May 1938).

Host plants. *Gustavia angustifolia* Benth., *G. superba*, *Eschweilera* sp. (all Lecythidaceae), and *Theobroma cacao* L. (Sterculiaceae) (see this issue—Harms & Aiello 1995:43).

Distribution. Panama, Colombia, Venezuela, and probably Brazil (see Discussion below).

Etymology. The specific name *foraseminis* is derived from the Latin *foro* (to bore) and *seminis* (seed). The name refers to the seed boring behavior of the larvae.



FIGS. 3-4. Genitalia of *Carmenta foraseminis*. 3, Male (aedeagus detached); 4, Female.

Discussion. Five female specimens—labeled Bahia, Brazil, May 1931, reared from seeds of *Gustavia augusta*—may be *C. foraseminis*. However, males are necessary to precisely identify related species. The female genitalia are like those of a similar species, *C. guyanensis* (Le Cerf), of which I have identified male specimens labeled Huytanahan, Rio Purus, Brazil, December 1921. Additional localities for *C. guyanensis* are in French Guiana, Bolivia, and Peru, but no host plants are recorded.

Also included in this complex of similar species is *C. surinamensis* (Möschler, 1878), a borer in seeds of certain legumes (Harms & Aiello 1995). This research revealed that *C. corporalis* (Meyrick, 1930), de-

scribed from Taperinha, Brazil, is a synonym of *C. surinamensis* (Möschler) [**new synonymy**]. The species *C. surinamensis* is now known from Brazil, Surinam, Guyana, Trinidad, Panama, and Costa Rica.

Another species of this complex, *C. theobromae* (Busck), from Colombia and Venezuela, was obtained from young plants and pods of cacao. During continuing studies of neotropical Sesiidae, I expect to discover additional species belonging in this group.

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LITERATURE CITED

- HARMS, K. E. & A. AIELLO. 1995. Seed-boring by tropical clearwing moths (Sesiidae): Aberrant behavior or widespread habit? *J. Lepid. Soc.* 49:43-48.
- EICHLIN, T. D. 1986. Western Hemisphere clearwing moths of the subfamily Tinthiinae (Lepidoptera: Sesiidae). *Entomography* 4:315-378.
- . 1989. Western Hemisphere clearwing moths of the subfamily Paranthreninae (Lepidoptera: Sesiidae). *Entomography* 6:159-212.
- EICHLIN, T. D. & W. D. DUCKWORTH. 1988. Sesiioidea: Sesiidae. *In* Dominick, R. B. et al. (eds.), *The moths of North America north of Mexico*, fasc. 5.1:1-176.

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