

A NEW SPECIES OF *PHLEGETHONTIUS* (SPHINGIDÆ)
FROM HISPANIOLA

by MARGARET M. CARY

In conjunction with my studies on Antillean Sphingidæ I have had the opportunity to collect personally in some of the islands of the Greater Antilles, including the island of Hispaniola. A Catholic priest, Brother DOROTHÉE, has collected Sphingidæ for me in Cap Haitien, in Jérémie, and in Petite Goave, all of which are located in the Republic of Haiti, western Hispaniola. JOHN G. COURTSIS, a graduate student at Yale University, did some additional collecting of Sphingidæ for me in 1955, mostly near Port-au-Prince, Haiti.

In the summer of 1956 I was fortunate in securing again the services of Mr. COURTSIS to collect Sphingidæ for me in Hispaniola, Puerto Rico, and in St. John of the American Virgin Islands. In September of 1956 Mr. COURTSIS went to a town named Savanette, situated on a plateau in the center of the Republic of Haiti. This plateau is a coffee-growing region, wooded, hot and humid. There is practically no electricity here, and the light traps had to be attached to a generator loaned by the Brierre coffee power plant, located near the town. Mr. COURTSIS collected here a series of nine male specimens of a *Phlegethontius* he had never before seen. These moths have a yellowish green tinge on the upperside of their forewings, and when he wrote this to me about them I supposed they were *Phlegethontius afflictus* Grote. My supposition was based on the facts that *afflictus* was the only known *Phlegethontius* from the Antilles having a yellowish green tinge, and that BOISDUVAL had recorded *afflictus* from Haiti (see below).

A preliminary study of the *Phlegethontius* specimens from Savanette revealed that these specimens are more closely related to *afflictus* than to any other known species of the genus. Thus, my final decision about the species status of the Savanette series was based on the results I obtained by comparing these moths to a series of six male *afflictus* from Cuba. Differences between the specimens from Savanette and the series of *afflictus* became evident after my having considered and compared the following: a) color and markings of the dorsum of the head, thorax, and abdomen; b) color and markings on the upperside of the forewings; c) color and markings on the upperside of the hindwings; d) male genitalia; e) average length of forewing.

The extent of the differences between the Savanette series and the *afflictus* specimens has convinced me that the former represent a valid new species, which I take pleasure in naming for its collector, JOHN G. COURTSIS.

For ease of comparison, the contrasting characters of *afflictus* are given in parentheses after each character of *johanni*.

Phlegethontius johanni Cary, sp. n.

Head: the antenna brown, its base surrounded by white scaling, sometimes the left and right white areas bridged by white scaling; the top of the head and the palpi

pale gray (*afflictus* — the antenna, the top of the head, and the palpi as in *johanni*, but the scaling around the antennal bases concolorous with the rest of the head, not white).

Thorax: the dorsum anteriorly broadly black, with a narrow median caudad extension of the black scaling (*afflictus* — the black collar marking absent).

Abdomen: the five pairs of dorso-lateral spots orange-yellow (*afflictus* — these spots much paler in fresh specimens).

Upperside of forewing: variegated, with dark yellowish green tinge present (*afflictus* — less variegated, yellowish green tinge lighter, even in fresh specimens); at the apex

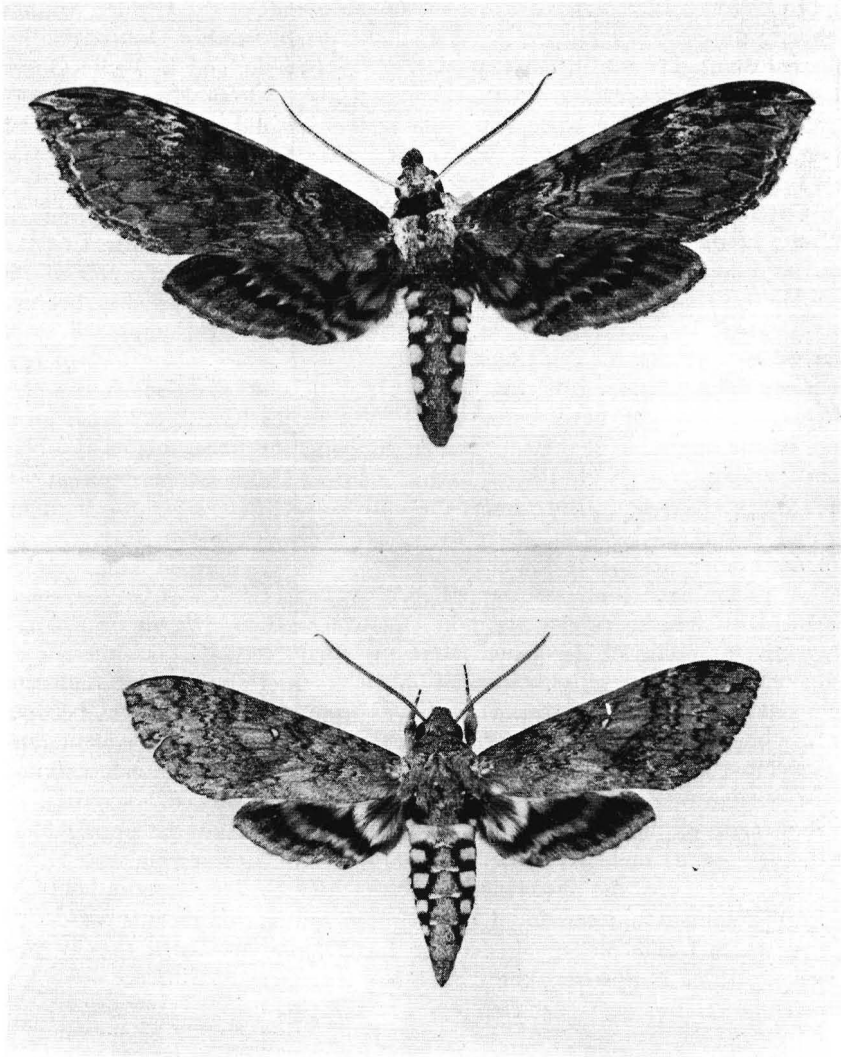


Fig. 1 (above). *Phlegethontius johanni*, HOLOTYPE ♂.

Fig. 2 (below). *Phlegethontius afflictus*, Cuban ♂.

there is a white dash, partially lined beneath with black (*afflictus* — the white dash is absent); the white dash at the apex continues on as a scalloped white line, running close and parallel to the outer margin and ending at the inner margin, traces of black lining present at the distal side of the white scalloped line (*afflictus* — the white scalloped line is absent); several white zigzag lines extending from the costal margin a short distance towards the middle of the wing (*afflictus* — these lines absent); a set of black, rather heavy transverse lines (*afflictus* — black transverse lines present, but not as heavy); fringes containing some white (*afflictus* — white of fringes better defined).

Upperside of hindwing: three dark bands present, separated by light bands, the contrast between the light and dark bands not very strong (*afflictus* — only two dark bands present, the contrast between the light bands and dark bands strong); the dark band nearest the body forked, the elements of the fork equal in width with each other (*afflictus* — the dark band nearest body also forked, but the elements of the fork not equal in width with each other); the dark band nearest the outer margin scalloped basally (*afflictus* — this dark band smooth basally); the dark band second nearest the body scalloped both basally and distally (*afflictus* — this band absent, probably fused with the dark band nearest the body); the outer margin pale gray edged with black (*afflictus* — the outer margin yellowish); the fringes contain traces of white (*afflictus* — the white in the fringes better defined).

Male genitalia: on the valva, the dorsal cephalad process (marked "1" in fig. 3) short and wide-angled, the dorsal outline of the valva rather straight ("2" in fig. 3), the internal medio-ventral process of the valva with its caudad arm ("3") broad-tipped and serrate, the area shown at "4" bare (*afflictus* — the dorsal cephalad process ("1" of fig. 4) long and narrow-angled, the dorsal outline of the valva distinctly concave, the arm at "3" slender and relatively smooth — tapered to an acute point, the area shown at "4" in fig. 4 with a dense group of short spicules); the superuncus (fig. 5) is slender and distally straight and undivided (*afflictus* — the superuncus (fig. 6) is stouter and at the tip is bifid and strongly down-curved).

Forewing length of Holotype 51.5 mm.; average of Holotype and 5 Paratypes measured 52 mm.; largest 55.5 mm.; smallest 44.5 mm. (average of 6 Cuban *afflictus* 44.5 mm.; largest 46 mm.; smallest 43 mm.).

The description is based on nine male specimens collected from 7 to 13 September 1956, at Savanette (Republic of Haiti), Hispaniola. All specimens were taken at light. The male HOLOTYPE and the PARATYPE used for the genitalic dissection are in the Peabody Museum of Natural History of Yale University. One PARATYPE is being deposited in each of the four following collections: Rothschild Collection of the British Museum, at Tring; Academy of Natural Sciences, in Philadelphia; Carnegie Museum, in Pittsburgh; collection of WILLIAM E. SIEKER, of Madison, Wisconsin. The remaining three PARATYPES are retained in the Cary Collection, which will eventually go to the Yale Peabody Museum. All six Cuban *afflictus* specimens used for drawing comparisons between the two species are males in my collection. Mr. COUTSIS made the genitalic comparisons and prepared the figures of the genitalia with the aid of a *camera lucida*.

P. johanni is easily distinguishable from all other Antillean *Pblegethontius* (*sextus*, *afflictus*, *rusticus*, *brontes*, and *caribbeus*) in its contrastingly black anterior dorsum of the thoracic vestiture (fig. 1); the other species have the entire dorsum uniform (e.g., fig. 2), either light gray or dark (all available specimens of *P. sextus* from the Bahamas and one from Petite Goave, Haiti, show a trace of anterior darkening, as does *P. brontes*). The three dark bands of the upperside of the hindwing of *P. johanni* are also present in *P. sextus* and

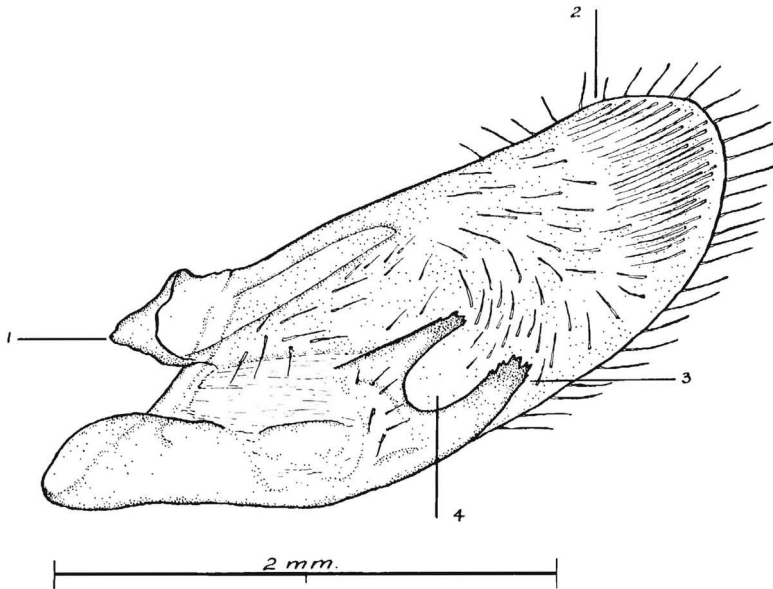


Fig. 3. *Pblegethontius jobanni*, PARATYPE ♂, internal structures of left valva; pointers indicate distinctive characters.

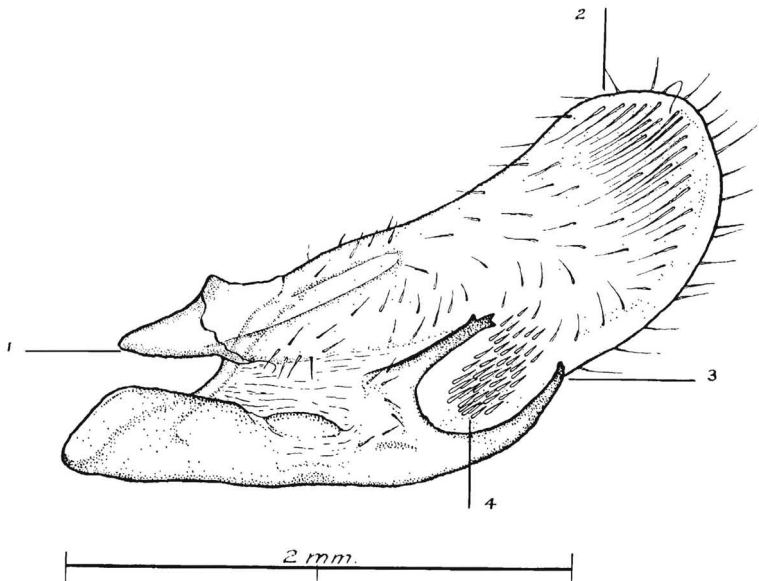


Fig. 4. *Pblegethontius afflictus*, Cuban ♂, internal structures of left valva; compare with Fig. 3.

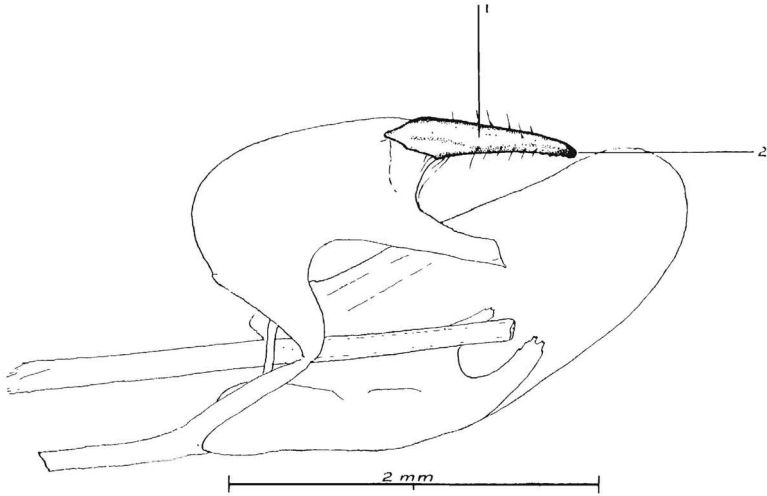


Fig. 5. *Pblegethontius johanni*, PARATYPE ♂, lateral view of genitalia, with right valva removed and showing details of superuncus; pointers indicate distinctive characters. Same specimen as for Fig. 3.

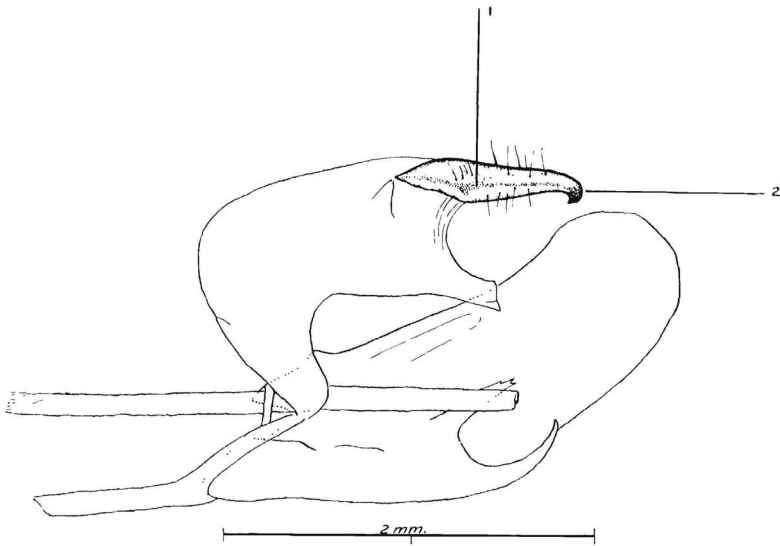


Fig. 6. *Pblegethontius afflictus*, Cuban ♂ shown in Fig. 4; same structures as in Fig. 5, for comparison with *P. johanni*. All drawings by JOHN G. COUTSIS.

P. caribbeus, both of which have completely different markings of the forewing and thorax; in *P. brontes* and *P. rusticus* the hindwing is dark and lacks bands above. As noted above, only *P. afflictus* and *P. jobanni* have a yellowish green tinge on the forewing. No non-Antillean *Pblegethontius* shares the characters of *jobanni*.

Notes Concerning the Localities for *Pblegethontius afflictus*

In ROTHSCHILD and JORDAN'S "A Revision of the Lepidopterous Family Sphingidæ" (*Nov. Zool.*, vol.9, Suppl.; 1903) it was stated that *P. afflictus* is found in Cuba, but also in Haiti and South America. BOISDUVAL recorded *afflictus* from Haiti. B. PRESTON CLARK, in his description of *Pblegethontius afflictus babamensis* (*Proc. New England Zool. Club*, vol.6: pp.39-50; 1916), wrote of having compared *babamensis* with a series of *afflictus* from Cuba and South America. I had Mr. H. K. CLENCH look up the long series of *afflictus* at the Carnegie Museum, and he found no *afflictus* except from Cuba. I myself looked over the *afflictus* specimens in the American Museum of Natural History in New York and also went to Washington where I looked over those in the U.S. National Museum. All *afflictus* were from Cuba and Cuba only. Then I asked Dr. W. T. M. FORBES to examine the *afflictus* specimens of the Museum of Comparative Zoology at Harvard University, since this series would be the most likely place for CLARK to have seen a South American *afflictus*. Dr. FORBES found approximately twenty *afflictus* specimens, all from Cuba and none from South America. Thus, Dr. FORBES wonders whether CLARK did not find a slightly green *Pblegethontius petuniæ* (?) and absent-mindedly mistook it for *afflictus*. Neither the extensive collection of *afflictus* specimens in the Academy of Natural Sciences in Philadelphia nor my own collection includes *afflictus* from localities other than Cuba.

Supplementary Note

After this manuscript had been accepted for publication, two relevant captures were made in 1957. On 20 August Mr. COUTSIS caught a true *Pblegethontius afflictus* at Hotel Montana, La Vega, Dominican Republic. In September Brother DOROTHÉE took one male of *P. jobanni* at Petite Goave, Haiti, and this specimen is hereby added to the PARATYPE series; it appears to agree with the Savanette series in all essential characters but has a forewing of 58.5 mm. This confirms the presence of *P. afflictus* on Hispaniola and shows that it is essentially sympatric with *P. jobanni*. The La Vega specimen, a male, is extremely interesting. As with my single specimen of *P. afflictus babamensis* and CLARK'S excellent colored figure of the type of *babamensis*, the forewing has the discal area heavily shaded with dark markings and has submarginal whitening. The underside of the forewing of the La Vega male has the space between the two postmedian dark lines heavily shaded, whereas Cuban *afflictus* have these two lines very distinct and unshaded. The La Vega male is distinctly smaller (forewing length 44.5 mm.) than my Bahamian specimen. One specimen is too few for safe assumptions, but the Hispaniolan population of *afflictus* appears to be much more closely related to the Bahamian race than to Cuban *afflictus*.