

**A New Species of *Pyrophorus* (Coleoptera, fam. Elateridae)
From Guatemala, Recently Introduced into Hawaii**

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(Presented at the meeting of July 11, 1935)

George C. Champion in the *Biologia Centrali-Americana* (Coleoptera, vol. 3, pt. 1, p. 464, 1897) stated that: "No *Pyrophorus* has been noticed as yet on the Pacific slope of Guatemala." This seeming lack of a genus usually conspicuous in the habitat where it occurs, can now be filled by a species, apparently new and unusually secretive in its adult habits, recently found by Mr. F. A. Bianchi near Escuintla, Guatemala, some 30 miles inland from the Pacific coast, on the lower edge of the coffee belt, at an elevation of about 1,100 feet.

***Pyrophorus bellamyi* n. sp.**

Twenty-two to 31 mm. long. Piceous to dark rufous; covered with fine, recumbent, tawny pubescence somewhat modifying the basic color of the insect. Front excavate; coarsely punctate. Antennae not quite attaining the tips of the posterior angles of the prothorax in the female, or exceeding the tips by about one segment in the male; 3rd joint slightly longer than the 2nd, the two together shorter than the 4th; 4th longer than any of the succeeding joints except the terminal one; joints 4-10 more or less serrate, especially in the male, not quite twice as long as wide; terminal joint with a false segment, more pronounced in the male than in the female.

Prothorax about as long as wide; its upper surface coarsely and closely, but not umbilicately, punctate; more sparsely so on disc; a vague median impunctate line running sometimes the full length of the pronotum. Prothorax strongly rounded on the sides in the female, less so in the male; the posterior angles moderately divergent, feebly unicarinate; luminous vesicles nearer the lateral than the posterior margin, suboval, well-defined, not prominent; a small median tubercle at the base of the pronotum, more acute and conical in the female, less prominent in the male.

Scutellum coarsely punctate, roughly pentagonal, more or less flattened on the posterior half, with the posterior angle rather prominent.

Elytra slightly wider at base than the prothorax (female) or as wide (male); sides parallel for about two-thirds their length (female), or narrowed from the humeri (males); apex conjointly rounded, with sutural angle finely mucronate in most specimens. Striae consisting of rows of rather coarse, deeply impressed punctures; intervals coarsely punctulate, especially toward the base.

Underside with coarse, closely placed punctations, becoming much finer on the abdomen. The luminous vesicles plainly visible from below, where they are more extensive than on the pronotal surface. The sides of the mucral cavity are sub-horizontal posteriorly, but are not prominent.

Aedeagus (fig. 1) very similar to that of *P. radians* Champion, but with the outer sides of the lateral lobes more sloping and less abruptly rounded than in that species.

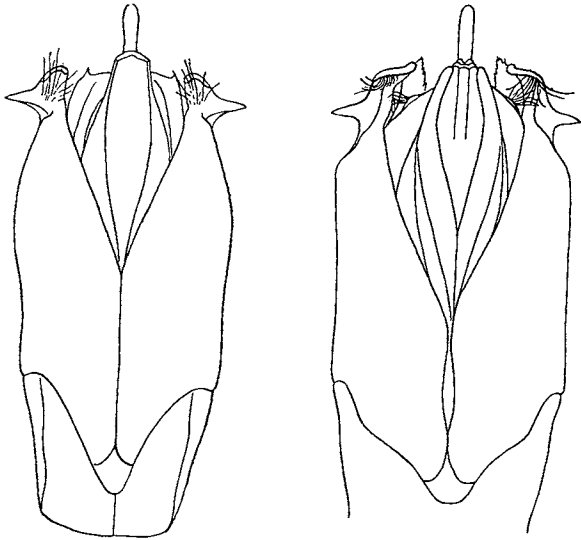


Fig. 1. At left, *Pyrophorus bellamyi*, aedeagus.
At right, *Pyrophorus radians*, aedeagus.

Described from six specimens (females): 1 specimen (allotype), El Salto, Escuintla, Guatemala, reared, March 1935, F. A. Bianchi and F. X. Williams; 1 specimen, same locality, reared, March 1933, F. A. Bianchi; 2 specimens, same locality, reared, April, 1933, F. A. Bianchi; (males): 1 specimen (holotype) same locality, reared, April 17, 1933, F. A. Bianchi; 1 specimen, reared in Honolulu, from larva collected at El Salto, May 1935, F. A. Bianchi and F. X. Williams. The type material is in the type collection of the Hawaiian Entomological Society.

Named in appreciation of the assistance given Messrs. Bianchi and Williams in their work for the Experiment Station of the Hawaiian Sugar Planters' Association, by Mr. J. C. Bellamy, the manager of El Salto plantation.

This species runs in Champion's table (l. c., p. 465) to *P. physoderus* Germar, from which it can be separated by its more convex and robust form, and by its coarser punctation; in addition, Hyslop has shown¹ that the true *physoderus*, as well as his *atlanticus*, has no pronotal tubercle in front of the scutellum. As for Hyslop's other two North American species, *arizonicus* has the aedeagus distinctly different from that of *bellamyi*, while that of *texanus*, although similar to that of the species here described, has the median lobe much wider in proportion to its length. Furthermore, in *texanus* the luminous vesicles are as near to the posterior margin of the pronotum as to the lateral margins, whereas in *bellamyi* they are plainly nearer the lateral margin.

From *radians* the present species can be separated by its coarser punctation throughout, and especially by the structure of the mucral cavity; in *bellamyi*, although the sides of the cavity are sub-horizontal posteriorly, they are not prominent, whereas in *radians*² they are horizontal and definitely outstanding at the rear, then incline suddenly forward. I have not seen specimens of *stella* Candèze, but the aedeagus, as figured by Champion,³ is distinct from that of *bellamyi*.

Pyrophorus bellamyi was introduced into the Hawaiian Islands from the vicinity of Escuintla, Guatemala, by Messrs. Bianchi and Williams in 1934 and 1935, as an addition to the natural enemies of white grubs in these Islands. A total of 446 living *Pyrophorus* larvae were received from them in Honolulu between June 1934 and April 1935. From these have been reared to date, some 150 adults, which, after mating, were released in sugar cane fields in the Pearl Harbor district and in Manoa valley on Oahu. In addition, some 1,000 second-generation larvae, hatched in the laboratory, were also released in the same localities.

Mr. Bianchi and Dr. Williams state that *Pyrophorus* was unknown to residents in the vicinity of Escuintla prior to its discovery in 1933, and that during their stay of some two years in that region, they never observed *Pyrophorus* adults in flight, either by day or by night. In fact the only adult of *P. bellamyi* obtained other than by rearing from larvae, was one taken by Dr. Wil-

¹ Proceedings Entomological Society of Washington, vol. 19, pp. 2-12, 1917.

² Through the courtesy of the officials of the British Museum I have seen both sexes of *radians*, identified by Champion, from Vera Cruz.

³ Biologia Centrali-Americana, Coleoptera, vol. 3, pt. 1, pl. 20, fig. 32, 1897.

liams at El Salto on the morning of June 16, on the young terminal growth of a glandular composite, apparently allied to *Helianthus*, where it occurred in company with other adult elaterid species (among them *Aptopus vicinus* Champion), meliponine bees, honeybees, *Campsomeris tolteca* (Saussure), etc. Adults of *P. radians*, on the other hand, they found, during a brief visit to eastern Guatemala, flying commonly at night, and conspicuous by reason of their luminescence. The predacious larvae of *bellamyi* were found at Escuintla at comparatively shallow depths, often in dust-dry soil.