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David C. Hawks
University of California, Riverside, California

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**Plusiotis alfredolaui**, a new sibling species of *P. badeni* Boucard
(Coleoptera: Scarabaeidae: Rutelinae)

David C. Hawks
Department of Entomology
University of California
Riverside, California, 92521

**Abstract:** *Plusiotis alfredolaui* is described from the vicinity of Fortín de las Flores, Veracruz, Mexico. It is very closely related to *P. badeni* Boucard, and is nearly indistinguishable externally. The male and female genitalia, however, are very different from those of *P. badeni*.

Key Words: Scarabaeidae, *Plusiotis*, new species.

**Introduction**

During the past thirteen years or more, Mr. Terry W. Taylor and Mr. Alfred D. Lau have collected occasional specimens of a *Plusiotis* species presumed to be *P. badeni* Boucard in the vicinity of Fortín de las Flores, Veracruz, Mexico. Several of these specimens were presented to me in 1993, and upon dissection of the male and female terminalia it was apparent that they represent a heretofore undescribed sibling species of *P. badeni*.

Morón (1990) included *P. badeni* in his “lacordairei group” which, at that time, consisted of 11 species. Although he describes this group as homogeneous, he does not provide defining characters. In a preliminary evaluation of the “lacordairei group” I was unable to find definitive characters to distinguish it within the genus. A key to the approximately 80 presently recognized species of *Plusiotis* does not exist, and it is beyond the scope of the present work to include such a key. However, *P. badeni*, its new sibling species, *P. alfredolaui* (together referred to as the badeni species group), and *P. turckheimi* Ohaus, which may represent the sister taxon of the badeni species group, may readily be distinguished from all other known species of *Plusiotis* by the following combination of characters: relatively small (20-26 mm in length); iridescent green dorsally, with pink, purple or pinkish-brown band along lateral margins of pronotum; male parameres subspatulate, slightly to considerably asymmetrical.

**Key to the species of the badeni species group and to *P. turckheimi***

1. Apical calla rounded, metallic golden; parameres slightly to strongly asymmetrical, weakly or not notched at apex; east-central Mexico. (*badeni* species group) .......................................................... 2
2. Apical calla semiconical, greenish-golden; parameres strongly asymmetrical, conspicuously notched at apex; southern Chiapas, Mexico and western Guatemala ..................... *turckheimi* Ohaus

1. Ventral surface of body metallic silvery green; parameres strongly asymmetrical without conspicuous ventral “keel”; female genital plates with smoothly rounded basal margins; Hidalgo, Puebla, and Veracruz(?), Mexico ............................ *badeni* Boucard

In the description of the new species, wherever applicable, I refer to the characters Morón (1990) used throughout his monograph. All measurements are rounded to the nearest 0.5 mm.

**Genus *Plusiotis* Burmeister**


Type-species: *Plusiotis victorina* (Hope).
**Plusiotis alfredolaui** Hawks, new species

*Figures 2-6.*

**Male** (Fig. 2): Length 22.24 mm (holotype = 23.5 mm) (n = 9). Dorsal surface of head, pronotum, elytra, and pygidium mostly iridescent yellowish-green; clypeus and pronotum edged with band of pinkish-purple; apical calls golden; ventral surface of body iridescent green, in some specimens slightly pinkish; femora iridescent green; tibiae pinkish-purple; inner surfaces of meso- and metathoracic tibiae paler; antennal scape iridescent pinkish-yellow to coppery; antennal club iridescent pinkish-yellow to purplish; antennal setae very pale tan, fine, sparse; dorso-lateral surface of mandible with small golden patch; remainder of mandible brown with black edges.

Dorsolateral border of mandibles slightly sinuately lobed, right mandible more irregularly lobed than left. Anterior border of labium slightly sinuate, notched at center. Clypeus semicircular in profile. Ratio of interocular distance to width of pronotum at base = 1: 2.4. Ratio of antennal club length to interocular distance = 1: 1.8. Dorsal surface of head with extremely fine punctures, visible only with magnification.

Pronotal basal margin absent in central region adjacent to scutellum. Pronotal surface like that of head. Mesosternal process moderately long, slightly dorso-ventrally compressed, rounded at apex.

Each elytron with 8 or 9 distinct striae, 1st, 3rd, 5th and 7th interstriae weakly punctate, punctures forming faint longitudinal lines; epipleural fold narrow, terminating just posterior to first abdominal sternite.

Genital capsule (Figs. 3-5): Length 8.5-9.5 mm (holotype = 9.0 mm). Parameres slightly asymmetrical, subspatulate, weakly notched at apex; simuate in lateral view; thin, conspicuous, ventrally-projecting "keel"; ventral plates nearly symmetrical, acute apices curved inward towards base of keel.

**Female**: Length 23-26 mm (allotype = 24.5 mm) (n = 7). Females are virtually identical to males in terms of gross morphological and coloration characteristics. As is common in the genus, the female body is slightly more convex in profile, legs and tarsi are relatively smaller, and the antennal club is shorter.

Ratio of interocular distance to width of pronotum at base = 1: 2.4. Ratio of antennal club length to interocular distance = 1: 2.

Inferior genital plates (Fig. 6) subcircular, strongly convex, irregularly emarginate along apical margin; narrowed proximally into rounded protruberances which extend beyond the base of attachment; sparse, erect, pale tan setae mainly on apical one-third.


Most of the type specimens of *P. alfredolaui* were collected by Terry Taylor and Alfred Lau in the vicinity of Fortin, Veracruz, at an elevation of 1255 meters. According to Mr. Taylor, they were collected during cloudy or light rainy weather.

**Diagnosis.** *Plusiotis alfredolaui* is nearly identical to its only known close relative, *Plusiotis badeni* (figs. 7, 10), with the following exceptions. *P. badeni* tends to be slightly smaller (length, males = 20-24 mm, n = 21; females = 22-25 mm, n = 5), and somewhat more slender when viewed dorsally. The dorsal green coloration often is more yellowish in *badeni*, and the borders of the clypeus and pronotum are a slightly darker purplish. The ventral surface of *badeni* has a conspicuous silvery-metallic shine, while the venter of *alfredolaui* is iridescent. Punctures in the clytral interstriae in *badeni* tend to be smaller and fewer in number, giving *badeni* a
“smoother” appearance. The male genital capsule in \textit{badeni} (figs. 7-9) is shorter (8-8.5 mm), much more asymmetrical, the ventral “keel” is greatly reduced, and the ventral plates are more elongate with crossed apices. The female inferior genital plates in \textit{badeni} (fig. 10) lack the proximal protuberances found in \textit{alfredolaui} and have, instead, smoothly rounded basal margins.

\textit{Plusiotis badeni} has been recorded to occur in the Mexican states of Hidalgo, Puebla, and Veracruz (Morón, 1990). During this study, I examined over 40 specimens of \textit{P. badeni} from several localities in Hidalgo and Puebla; I have not yet seen specimens of true \textit{badeni} from Veracruz. \textit{P. badeni} is not known to be sympatric with \textit{P. alfredolaui}. In fact, no other species of \textit{Plusiotis} is known from the immediate vicinity of Fortín, Veracruz. Ratcliffe, Jameson, and Taylor (1992) indicate that \textit{P. badeni} occurs near Pueblo Calcahualco, Veracruz, which is the type locality of \textit{P. dianae} Ratcliffe and Taylor. Their reference is to the paratype specimen of \textit{P. alfredolaui} listed above.

\textbf{Etymology.} It is with great pleasure that I name this new \textit{Plusiotis} species for Mr. Alfred Lau, a good friend and collecting companion of my friend and fellow \textit{Plusiotis} enthusiast, Terry Taylor. It is especially appropriate to name this species \textit{alfredolaui} since Mr. Lau collected part of the type series and is a resident of the type locality, Fortín, Veracruz.

\textbf{Acknowledgements}

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\textbf{Literature Cited}


\textbf{Figures 1-2: 1. P. badeni, male, dorsal view; 2. P. alfredolaui, male paratype, dorsal view.}
Figure 3: *P. alfredolaui* paratype, male genital capsule, dorsal view.

Figure 4: *P. alfredolaui* paratype, male genital capsule, lateral view.

Figure 5: *P. alfredolaui* paratype, male genital capsule, ventral view.

Figure 6: *P. alfredolaui* paratype, female genital plates, posteroverentral view.

Figure 7: *P. badeni*, male genital capsule, dorsal view.

Figure 8: *P. badeni*, male genital capsule, lateral view.

Figure 9: *P. badeni*, male genital capsule, ventral view.

Figure 10: *P. badeni*, female genital plates, posteroverentral view.