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AND *PSEUDACANTHUS*

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NOTES ON SOME MESOAMERICAN PASSALIDAE  
(COLEOPTERA): *PETREJOIDES* AND  
*PSEUDACANTHUS*

PEDRO REYES-CASTILLO<sup>1</sup> AND JACK C. SCHUSTER<sup>2</sup>

ABSTRACT

A new species of *Petrejoides* is described from the mountains of western Guatemala above 2,400 meters altitude. Another species from southern Mexico and western Guatemala is transferred from *Passalus* to *Pseudacanthus*.

RESUMEN

Se describe una nueva especie de *Petrejoides* de las montañas del oeste de Guatemala arriba de 2,400 metros sobre el nivel del mar. Otra especie del sur de México y el oeste de Guatemala se transfiere de *Passalus* a *Pseudacanthus*.

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*Petrejoides* includes 2 Costa Rican species, *P. subrecticornis* (Kuwert) from lower altitudes and *P. tenuis* Kuwert from higher areas. Five montane Mexican species of *Petrejoides* are also known: *P. jalapensis* (Bates), *P. laticornis* (Truqui), *P. orizabae* (Kuwert), *P. recticornis* (Burmeister), and *P. imbellis* (Casey), from the Sierra Madre Oriental (Reyes-Castillo 1970, Castillo & Reyes-Castillo 1980). The genus is not represented in the Central American Nuclear Area, southern Mexico to northern Nicaragua.

Recently, Schuster collected a series of specimens from Guatemala belonging to an undescribed species of *Petrejoides*. The presence of this species in Guatemala helps to fill in the gap in the continuity of the genus between the highlands northeast of the Isthmus of Tehuantepec and those of Costa Rica and Panama.

We also propose a new nomenclatorial combination for a species described from Guatemala in *Passalus* that should be transferred to *Pseudacanthus*.

*Petrejoides guatemalae* nov. sp.<sup>3</sup>  
(Figs. 1-4)

*Head.* Anterior border of labrum concave, anterior angles rounded. Clypeus trapezoidal and inclined, anterior border sublinear, anterior angles sharp and directed downward, anterior margin smooth and brilliant, the remainder rough, and opaque. Frontoclypeal suture in form of an open trapezoid, wide and well marked on the sides, often interrupted or weakly marked in the center. External tubercles large, rounded and directed forward.

Frontal area short, without frontal ridges or internal tubercles. Frontal fossae glabrous

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<sup>3</sup> For specialized terminology see Reyes-Castillo (1970).

or with less than 6 setae each. The median frontal structure of the "falsus" type with its base wide, rounded and bulging, without a median longitudinal groove; center horn elongate with pointed apex reaching the clypeus; lateral ridges situated at right angles to longitudinal body axis, with terminal tubercles rounded directly slightly forward and as tall as the supraorbital ridges. Occipital groove well marked, concave or biconcave and terminating in the frontal fossa.

Anterior half of supraorbital ridge bituberculate, anterior tubercle larger than the posterior tubercle; posterior half bifurcate. Anterior cephalic angle rounded or slightly protruding. Canthus swollen distally with apex rounded, protruding slightly beyond the lateral border of the eye. Eyes small, their dorsal width 1/12 the head width.

Ligula between insertions of labial palps wide, flat and pubescent. Lateral lobes of mentum with anterior external border rounded or sublinear, whole surface pubescent. Medial basal part of mentum with setae more abundant on posterior margin, anterior border usually biconvex, lateral border straight. Hipostomal process narrow, without lateral depression. Infraorbital ridge long, smooth, glabrous and widened anteriorly.

Superior and median apical teeth of mandible protruding beyond the inferior tooth. Dorsal tooth occupies more than half the length of mandible. Internal tooth of left mandible bifid.

*Thorax.* Lateral area of pronotum without punctations or with light punctations (less than 6). Pronotum with marginal groove narrow; dorsal groove not reaching the anterior margin; lateral fossa not distinct and sometimes with 1-4 setae; anterior angles rounded. Prosternum rhomboidal with posterior apex truncated.

Wide lateral margins of mesosternum opaque. Mesosternal shield generally with setigerous punctations.

Metasternum glabrous with a small group of punctations (less than 35 each side) delimiting the latero-posterior sides of disc; marginal fossa very narrow, glabrous or with scarce, short setae and weak punctations.

Anterior elytral profile convex; elytral striations marked uniformly with small, light punctations; junction of striations 1 and 10 with a single file of punctations. Wings reduced.

*Legs.* Femur I with antero-ventral groove lightly marked or absent, posterior half of ventral face pubescent; dorsal ridge extends total length of tibia II, with 2 rows of setae longer than that of the lateral border.

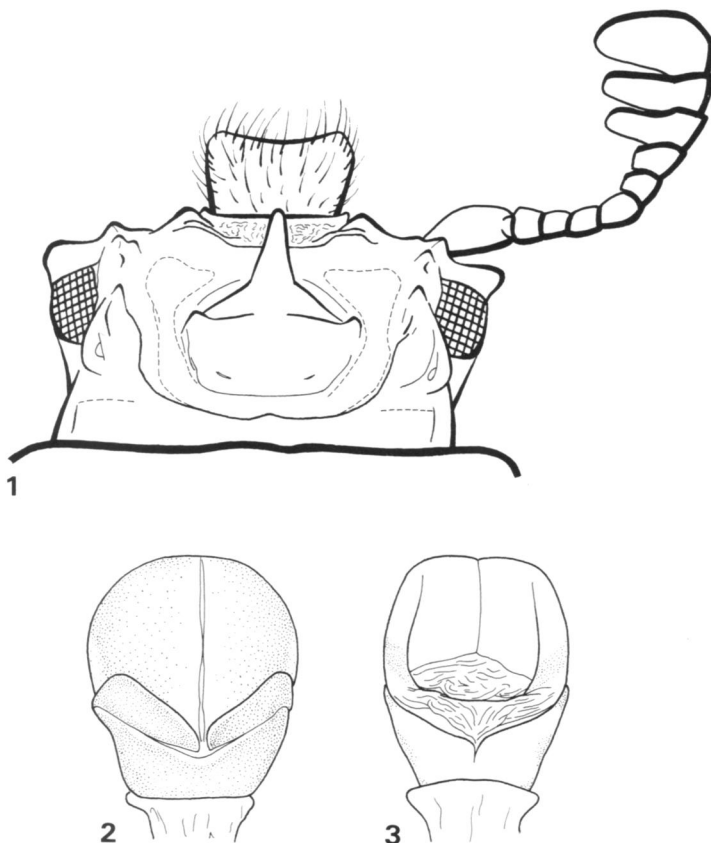
*Abdomen.* Marginal groove occupies only median of last sternite. Form and coloring of aedeagus given in Figs. 2-3.

*Dimensions.* Total length, mandibles to tip of elytra 24½-32 mm, males 24½-30 mm, females 26-30 mm (sex unknown for largest specimen); elytral length 11.8-19.2 mm; pronotal length 5.7-7.8 mm; head width 5.5-6.5 mm; pronotal width 7.7-10.0 mm; humeral width 7.9-10.0 mm.

*Material examined.* Sixteen whole adult specimens plus 1 head and prothorax. In some cases, larvae were collected with the adults. These were described as *Petrejoides* n. sp. #2 by Schuster & Reyes-Castillo (1981). Adults include 4 males, 11 females and 2 of undetermined sex, with data as follows:

*Holotype:* male—GUATEMALA, Huehuetenango Dept., 11 mi. S. of San Juan Ixcay. 9-IV-1977. Altitude 3,270 m. J. Schuster collector. In pine forest. With female in log. Deposited in Museo de Historia Natural de la Ciudad de Mexico.

*Paratypes:* 15, all, except isolated head and prothorax, from GUATEMALA, Huehuetenango Dept. J. Schuster collector except as noted below. *Female:* in log with holotype. *Female ?:* near San Juan Ixcay 8VII77 3,200 m. M. Dix, collector, in pine log. *Females, 2:* 15 km S. of San Juan Ixcay, early VII77 3,240 m. *Female:* 10 km S. of San Juan Ixcay 8VII77 2,830 m. *Male & female:* 9 mi. S. of San Juan Ixcay 5IV77 3080 m, dicot log in pine forest. *Female:* km 363 on rd. S. of San Mateo Ixtatán 7VII77 M. Dix, collector. *Female:* 4 km S.W. of San Mateo Ixtatán 7VII77 2,800-2,855 m, transition area between pine and oak cloud forest. *Male:* 10 mi. S.W. of San Mateo Ixtatán 8IV77 2,990 m, in oak cloud forest. *Male & female:* 6 mi. S.W. of San Mateo Ixtatán 8IV77 3,060 m, pine forest, female in pine log, male in dicot log. *Females, 3:* 13 mi. S. of San Mateo Ixtatán 6IV77 2,820 m, hard dicot log in oak cloud forest. *Head & prothorax:*



Figs. 1-3. *Petrojoides guatemalae* n. sp., holotype: 1, cephalic dorsal view; 2, aedeagus, ventral view; 3, aedeagus, dorsal view.

GUATEMALA, Sololá Dept., 18 mi. S.W. of Los Encuentros 91V77 2,400 m, in stump in pine, oak, cypress forest.

Paratypes, presently in use for other studies will be deposited in Museo de Historia Natural de la Ciudad de Mexico; Florida State Collection of Arthropods, Gainesville; U.S.N.M. and private collection of J. Schuster.

*Variability.* The length and distribution of labral setae and the degree of lateral protrusion of the eyes vary with the specimen. The external tubercles are usually large but are less notable in some specimens. Slight variation exists in specimens from the vicinity of San Mateo Ixtatán. In general they are smaller (24½–30 mm vs. 27–32 mm) and have pronounced median indentation in the anterior clypeal border. The fronto-clypeal suture is well marked in 5 of the 7 specimens. The anterior smooth area of the clypeus in some specimens is wider, covering approximately ½ the clypeal area. The tubercles of the transverse ridges of the frontal mass are more marked and 1 specimen has 3–4 setae on the transverse ridges on each side of the frontal mass. Two San Mateo Ixtatán specimens have more punctations (40–45/side) delimiting the lateroposterior

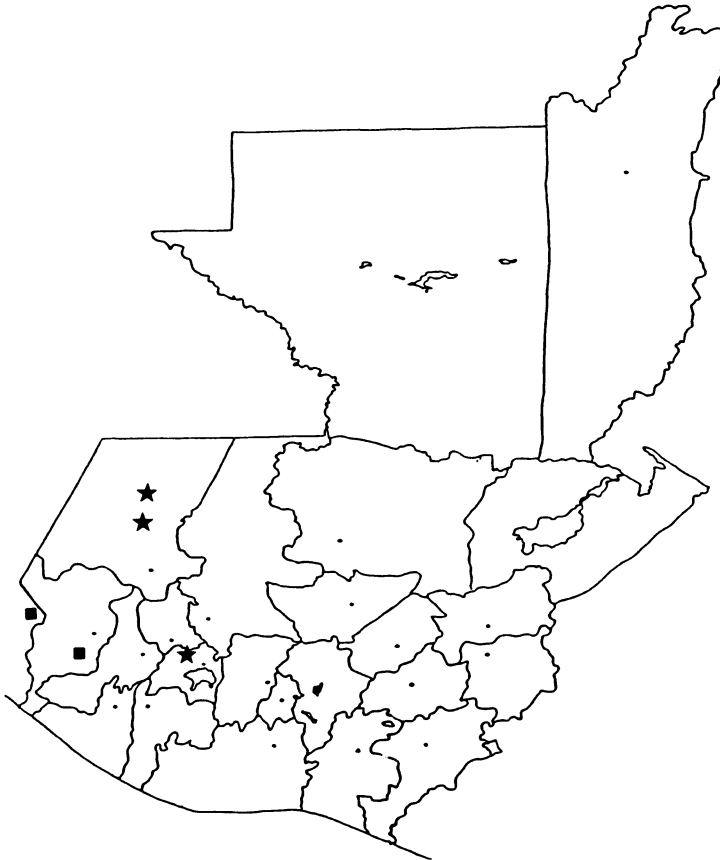


Fig. 4. Map of the Guatemalan region showing the localities of *Petrojoides guatemalae* (stars) and *Pseudacanthus nigidioides* (squares).

sides of the metasternal disc. Two San Mateo Ixtatán specimens have 1–4 heavy punctations in the lateral prothoracic fossa.

In the Sololá specimen (isolated head and prothorax), the fronto-clypeal suture is not as well marked as it is in San Mateo Ixtatán specimens, but the anterior smooth area of the clypeus does cover approximately  $\frac{1}{2}$  the clypeal area. There is a slight median indentation in the anterior clypeal border. A strong groove runs from the anterior edge of each lateral tubercle of the frontal mass toward the median horn, abruptly curving posteriorly ( $45\text{--}90^\circ$ ) on reaching the base of the horn. This characteristic was not seen in other specimens. The lateral tubercles are very prominent.

*Distribution.* Known only from high montane forest in the Cuchumatán Mtns. (2,800–3,270 m) and the Sierra de María Tecún (2,400 m) of Guatemala (Fig. 4). The beetles live in both rotting pine and dicotyledonous logs, although probably are more abundant in the latter. They occur in pine, pine-fir-cypress, pine-oak-cypress, and oak cloud forests. *Pseudacanthus subopacus* (Bates) was

the only passalid found in the same log with this *Petrejoides*. In other logs of the oak cloud forest, however, were species of *Vindex*, *Ogyges*, and *Chondrocephalus*.

*Affinities.* *P. guatemalae* nov. sp. shows clear morphological affinities with *P. orizabae*, *P. tenuis*, and *P. jalapensis*, species that Castillo & Reyes-Castillo (1980) consider in the "tenuis" group. It is the only species of this group with reduced wings. It has more characteristics in common with *P. jalapensis*, although the structure of the aedeagus and the median frontal structure are very similar to those of *P. orizabae*. Within the "tenuis" group, *P. guatemalae* can be identified with our following key:

1. Posterior half of clypeus roughened. Latero-posterior border of metasternal disc delimited by groups of punctations. Frontal fossae usually glabrous. Body length, anterior border of labrum to tip of elytra, 23.9–30.4 mm. (GUATEMALA) ..... *guatemalae* nov. sp.
- 1' Posterior half of clypeus smooth. Latero-posterior border of metasternal disc not delimited by groups of punctations, area smooth. Frontal fossae always with setae. Body length less than 27 mm ..... 2
- 2(1') Internal tooth of left mandible trifold. Median basal part of mentum with setae. (Length 17.8–22.0 mm, MEXICO: Sierra Madre Oriental) ..... *orizabae* Kuwert
- 2' Internal tooth of left mandible bifid. Median basal part of mentum glabrous ..... 3
- 3(2') Eyes small,  $\frac{1}{12}$  the head width. Lateral fossa of metasternum with scarce setae in anterior  $\frac{1}{3}$ , glabrous posteriorly. (Length 24.0–26.5 mm, MEXICO: Sierra Madre del Sur) ..... *jalapensis* (Bates)
- 3'. Eyes large,  $\frac{1}{6}$  the head width. Lateral fossa of metasternum with abundant setae along whole length. (Length 18.7–20.9 mm, COSTA RICA) ..... *tenuis* Kuwert

*Pseudacanthus nigidioides* (Hincks) nov. comb.

Hincks (1949:62–63, Figs. 1–2) describes this taxon as belonging to *Passalus* (*Phoroneus*) based on 2 specimens from La Conquista, San Marcos Dept., Guatemala. Reyes-Castillo had the opportunity to examine these specimens, at present deposited in the Manchester Museum, England. Our study indicates that *nigidioides* should be included in *Pseudacanthus* Kaup, following Reyes-Castillo's (1970) revision of passalid genera. We also examined a series of *nigidioides* in the collection of P. Reyes-Castillo (Museum of Natural History, Mexico City) from 2 localities on the south slope of Tacaná Volcano, Chiapas, Mexico, that agree in the majority of their characteristics with the types of Hincks. The 2 localities are: Rosario Izapa and Finca Las Nubes.

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