

*Oaxacanthaxia viridis*, a new genus and species  
(Coleoptera: Buprestidae) from Mexico  
with Old World affinities

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### Abstract

A new genus and species, *Oaxacanthaxia viridis*, is described from the Mexican state of Oaxaca. The genus is distinguished in a key to the related taxa from Mesoamerica and tabularly from the Old World *Philanthaxia*, its putative sister genus. A brief discussion is given towards placing this new genus within the tribe Anthaxiini *sensu* Holynski. *Philanthaxia* Holynski is reduced to junior synonymy of *Thomassetiina* Bellamy, *stat. nov.*

### Introduction

The diverse genera and tribes of the nominate subfamily of Buprestidae are in need of a complete phylogenetic reevaluation to establish the relationships in a global perspective. Fortunately, such a work is in preparation (B. Levey, *in litt.*) and widely anticipated. However, a recent paper by Holynski (1988), while commenting upon another perceived problem, has also made some speculative proposals regarding the higher classification of the family, seemingly in passing, since six new subtribes are erected based solely on characters used in a diagnostic key. Following the descriptive portion of this work, I will comment more fully on what I view as the weak points of Holynski's thesis.

The discovery of an undescribed buprestine genus and species from southern Mexico, which apparently has its closest relationships with several eastern hemisphere genera, can foreseeably have a profound affect on the polarization of character states within any eventual cladistic study. Therefore, these descriptions are present-

ed at this time to make this genus and its character states available for inclusion.

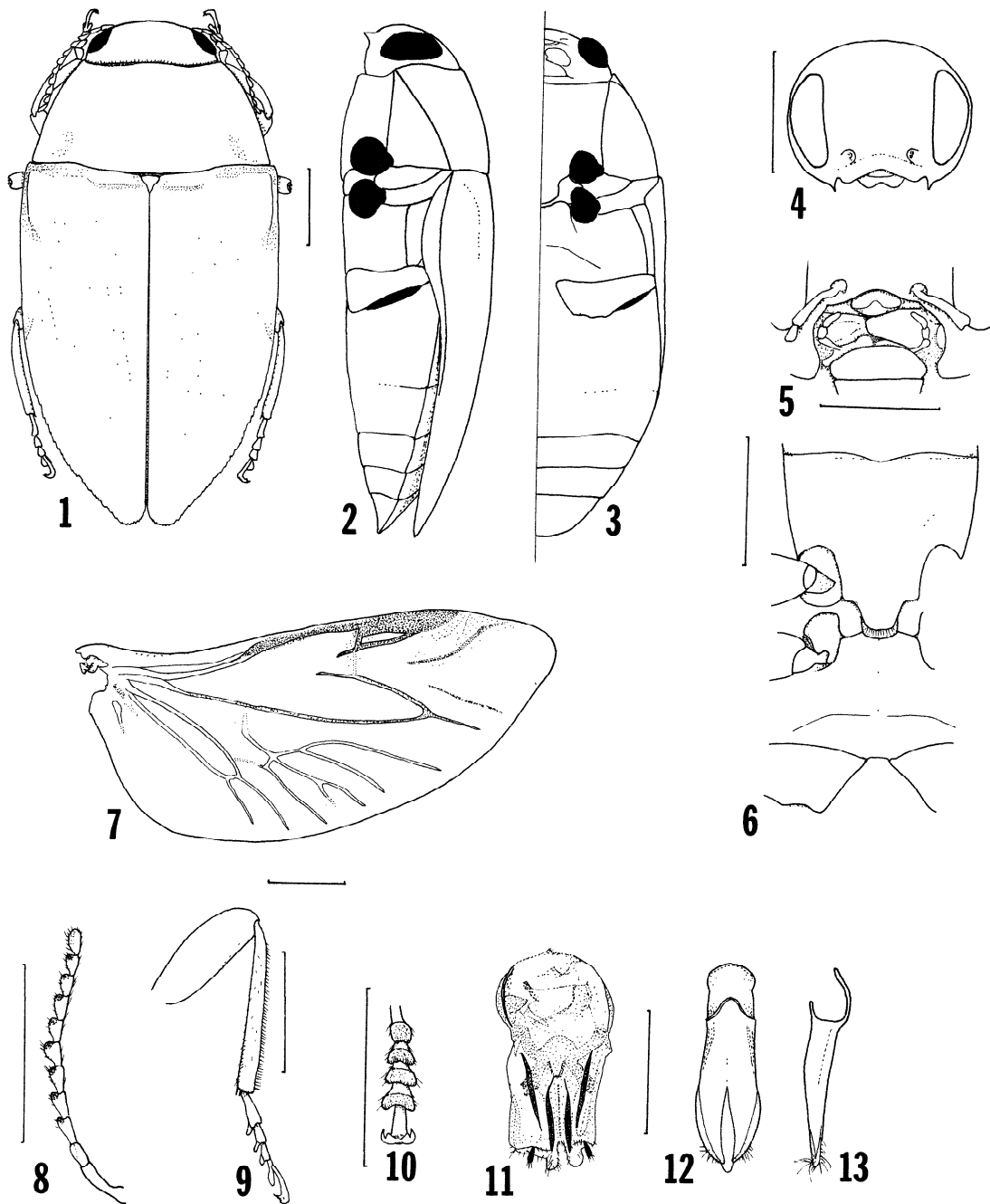
The following abbreviations are used for those collections who will receive specimens from the type series: BMNH = British Museum (Natural History), London; CLBC = my research collection; GHNC = G. Nelson collection; NMPC = National Museum, Prague; RLWE = R. L. Westcott collection; USNM = National Museum of Natural History, Smithsonian Institution, Washington, D.C.

### Genus *Oaxacanthaxia*, gen. nov.

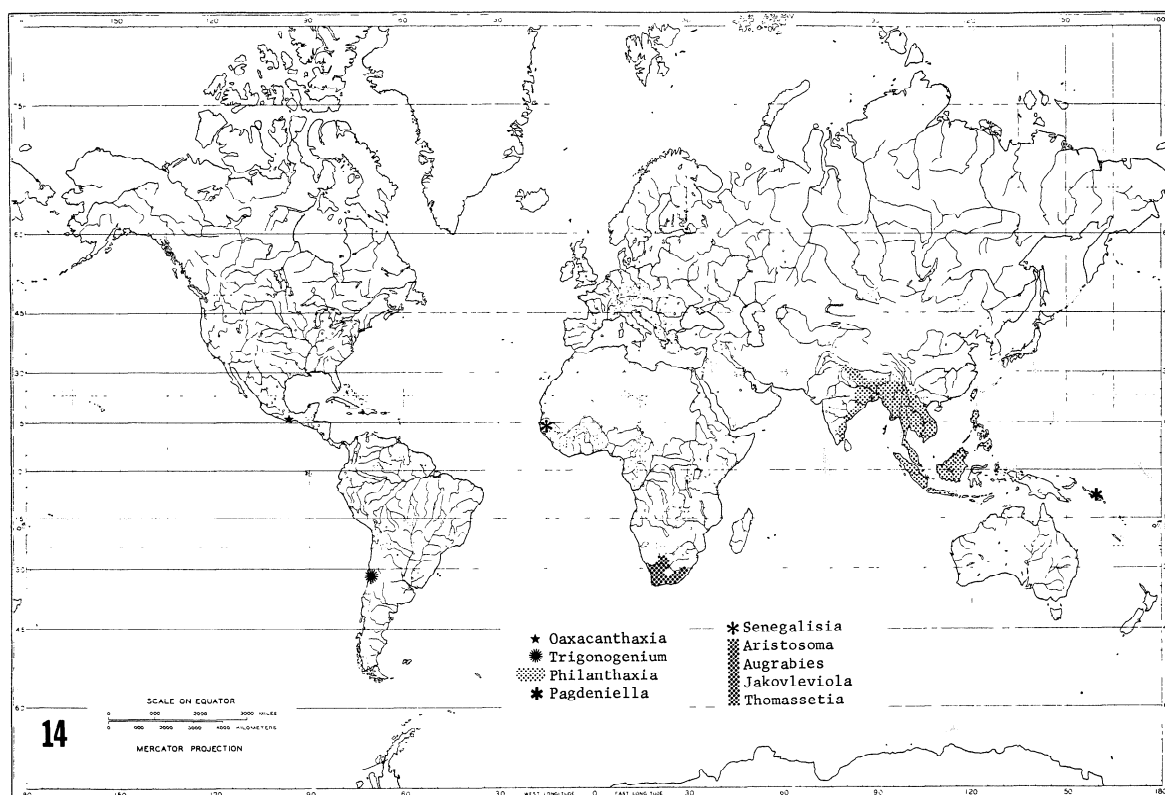
Type-species: *Oaxacanthaxia viridis*, spec. nov. (present designation)

**Description:** Small, slightly elongate ovoid; transversely convex; iridescent; punctate; sparsely setose.

**Head:** frontovertex convex between eyes; inner margins of eyes slightly sinuate, subparallel; frontoclypeus feebly constricted between widely separated antennal cavities; distal margin concave; anteclypeus partially visible; labrum feebly bilobed distally; mandibles robust, recurved, acuminate distally; maxillary palpi elongate, palpomere 2 shorter than either 1 or 3, 3 slightly curved, apex round; mentum broadly rounded trapezoid; antennae serrate from antennomere 3; sensory pores concentrated in single apicolateral fovea on ventral surface.



**Figures 1 - 13.** *Oaxacanthaxia viridis*, gen. et spec. nov. 1) dorsal aspect; 2) lateral aspect; 3) half ventral aspect; 4) head, frontal aspect; 5) head and buccal cavity, ventral aspect; 6) thoracic sternites, ventral aspect; 7) metathoracic wing, dorsal aspect; 8) antenna, ventral aspect; 9) hind leg, ventral aspect; 10) protarsus, ventral aspect; 11) ovipositor, dorsal aspect; 12-13) male genitalia, dorsal and lateral aspects (scale lines = 1 mm).



**Figure 14.** Distribution of *Oaxacanthaxia* and its putative relatives; distribution for *Philanthaxia* generalized from listing of spp. (Obenberger 1930); distribution for southern African genera generalized from Bellamy, *et al.* (1987); copyright 1961 by University of Chicago, Department of Geography.

**Pronotum:** wider than long, widest at base; posterior margin bisinuate; lateral margins carinate, feebly arcuate, entire from base to apex; disc convex; scutellum small, triangular.

**Elytra:** wider than pronotal base, widest beyond a point opposite humeri; humeri small, moderately elevated; lateral margins carinate, explanate dorsad epipleura, arcuate in basal 1/2, attenuate in apical 1/2, serrate from before apical 1/3; apices separately rounded; disc with feeble longitudinal costae; pygidium not visible past elytral apex.

**Underside:** prosternum compressed laterally, process with sides subparallel between procoxae, apex with truncate medial lobe between mesosternal lobes; metacoxal plates with posterior margin oblique on lateral 1/2, feebly

dilated; sutures between abdominal sternites transverse, medially.

**Legs:** femora fusiform; tibiae straight, with two apical spines; metatibiae with setal comb along outer edge; tarsomeres 1 - 4 with ventral pulvilli, 1st pulvillus only on apical 1/2; 5 with claws appendiculate.

**Wing** (Fig. 7): radial cell (R) small, elongate; radiomedial crossvein (R-M) extends from basal crossvein of R to medial vein; 1st, 2nd, 3rd anal veins (A) all apparently attached basally; anal cell absent.

This surprising new taxon is all the more important to our understanding of the subfamilial classification because of its apparent closest relationship to the Old World genus *Philanthaxia* Deyrolle. *Philanthaxia* has species described from across eastern Asia from India,

| <i>Philanthaxia</i>                                   | <i>Oaxacanthaxia</i>                                 |
|---|--|
| Elongate  | Ovoid  |
| Lateral pronotal margins not reaching anterior margin | Lateral pronotal margin entire                       |
| Anteromedial portion of pronotal disc more convex     | Pronotal disc more flattened                         |
| Prosternal process attenuate                          | Prosternal process trilobed                          |
| Tibiae slender  | Tibiae more robust                                   |
| Tarsal claws simple                                   | Tarsal claws appendiculate                           |
| Wing with R-M connection more basad; 1st A free       | Wing with R-M connection more distad; 1st A attached |
| Old World   | New World  |

Nepal, the Andaman Islands, Malaysia, Indonesia to the Philippines (e.g. Fig. 14).

I have compared the new taxon with Fisher's types (USNM) of *P. cumingi* var. *basalis*, *P. cyanescens*, *P. elongata*, *P. obscura*, and *P. cupricauda* Kerremans. These two genera can be separated in Table 1.

Wider generic affinities are with the Chilean *Trigonogenium* Gemminger & Harold, placed in its own tribe, Trigonogeniini, by Cobos (1956); the South African *Aristosoma* Saunders; the four Afrotropical genera placed in Thomassetiini Bellamy, *Thomassetia* Théry, *Jakovleviola* Obenberger, *Senegalisia* and *Augrabies*, both Bellamy (Bellamy, *et al.* 1987); and *Pagdeniella* Théry from the Solomon Islands. The generalized distribution of these taxa is illustrated in Fig. 14. and is obviously relictual. Unfortunately, Holynski (1988) did not consider Thomassetiini in his work but rather erected Philanthaxiina. This omission is corrected as follows.

Thomassetiina, *stat. nov.*

Thomassetiini Bellamy, *in*: Bellamy *et al.* 1987: 223.

Philanthaxiina Holynski, 1988:51. *syn. nov.*

While it still requires much elaboration, the key to the tribes and subtribes presented by Holynski (1988) is an ample starting point with which to place *Oaxacanthaxia* in conjunction to the related taxa. *Oaxacanthaxia* keys to Philanthaxiina which confirms an earlier speculation that *Philanthaxia* may be related to the Thomassetiini (Bellamy, *et al.* 1987). *Oaxacanthaxia*

may be separated from other regional genera as indicated in the following key.

#### Key to certain Mesoamerican Buprestine Genera

1. Inner margins of eyes distinctly converging dorsally ..... 2
- 1'. Inner margins of eyes parallel or nearly so ..... 3
2. Body generally subcylindrical; first metatarsomere longer than second; lowland forest, tropical thorn scrub ..... *Spectralia* Casey
- 2'. Body generally flattened; first metatarsomere not longer than second; upland forest, chaparral ..... *Dicerca* Eschscholtz
3. Pronotum with three more or less deep depressions or pits along base ..... 4
- 3'. Pronotum without basal depressions or pits ..... 5
4. Body subcylindrical; pronotum widest at basolateral angles; elytra punctatosulcate; tropical forest, angiosperm hosts ..... *Mixochlorus* Waterhouse
- 4'. Body flattened; pronotum distinctly widest at middle; elytra rugose with small irregular asperate areas; montane forests, gymnosperm hosts ..... *Trachykele* Marsuel

5. Body elongate; pronotal disc generally with medial longitudinal sulcus; elytra generally costate; larger, 15 - 30 mm; montane forest . . . *Buprestis* Linnaeus
- 5'. Body ovoid; pronotal disc entire; elytra costulate; smaller,  $\leq 8$  mm; tropical thorn forest *Oaxacanthaxia*, gen. nov.

*Oaxacanthaxia viridis*,

spec. nov.

(Figs. 1 - 13)

Holotype, male: 6.20 X 3.13 mm; dorsal surface dark green with aeneous reflections on pronotum, ventral surface black with aeneous or dark green reflections; coarsely shallowly punctate on dorsal surface and most of ventral surface, prosternal disc and process foveolate; head and pronotum with short recumbent white setae, more dense on head; elytral setae extremely fine, barely visible at 45x, most dense along apicolateral portion; ventral setae denser, more stout, especially on abdominal sternites; antennomere 1 elongate, longer than 2 + 3, wider distally; 2 shorter than 3; 3 - 10 serrate; 3 longer than 4; 4 - 10 each decreasing in length; 11 oblong, longer than 10; 3 - 11 moderately setose; pronotum 2.15x wide as long; anterior margin biarcuate, with slight medial convexity; basolateral angles subacute; lateral margins broadly arcuate; disc broadly convex, a slight depression on either side in basolateral area; scutellum almost equilateral; elytra with irregular basal costae; epipleuron broad from past base to opposite metacoxal plate then narrowing and becoming confluent with lateral margin near apical 1/4; prosternum with feebly bilobed anterior margin; abdominal sternite 5 attenuate laterally, broadly rounded apically.

Variation. Males 6.20 - 7.13 X 3.06 - 3.66 mm; genitalia as in Figs. 12, 13; females 6.00 - 7.46 X 2.93 - 3.66 mm; ovipositor as in Fig. 11. The color varies with the smaller specimens not exhibiting the aeneous luster of the holotype and the largest female paratype (GHNC) is dark bluish green on the dorsum.

Type material. Holotype, male (USNM): MEXICO: Oaxaca, 5 km E La Ventosa, 25.VI.89, Jim Cope; allotype, female (USNM):

same data except, 3 m E Juchitan, 8.VII.88; 4 male, 1 female paratypes (BMNH, CLBC, NMPC, RLWE): same data as holotype; 1 female paratype (GHNC): 3 mi W Tehuantepec, 19.VII.1965, G. H. Nelson, on *Cnidoscolus urens* (L.).

The species is named for its greenish dorsal coloration. The collector, Jim Cope, describes (*in litt.*) the adult host as follows: 'beaten from a type of flowering non-leguminous tree with erect spike-like or catkin-like blossoms ... flowers were borne at the end of a terminal woody inflated node, each with a reticulated texture and bore several whorls of young leaves and a flower at the terminal end.

#### Further comments on Holynski (1988)

While I am generally in support of the ideas advanced by Holynski (1988) as well as those more fully developed by Toyama (1987) and Kurosawa (1988), I find that several of Holynski's proposals or conclusions would have benefited by being completely elucidated rather than simply outlined in a key form.

Not only did Holynski fail to include Thomassetiini, as noted above, he also was apparently not aware of the establishment of Xenorhipini by Cobos (1986), which should have priority over Xenorhipina Holynski.

#### Acknowledgments

I would like to thank Jim Cope for returning to Oaxaca after he had collected the first specimen last year (1988); to Gayle Nelson for allowing me to include the single specimen which he had collected many years previous; and to Brian Levey for keeping me informed of his cladistic analysis in preparation.

#### Literature

Bellamy, C. L., D. d'Hotman and E. Holm, 1987. A review of the Afrotropical Buprestinae with the description of a new tribe, genera and species (Coleoptera: Buprestidae). *J. Ent. Soc. Sth. Afr.* 50(1):217-239.

- Cobos, A.** 1956. Cuarta nota sobre Bupréstidos (Ins. Coleoptera) neotropicales. Sobre la posición sistemática del género *Trigonogenium* Gem. et Harold y diversas descripciones de especies nuevas. Arch. Inst. Aclimatacion 5:60-95.
- Cobos, A.** 1986. Fauna Iberica de Coleopteros Buprestidae. Madrid: Consejo Superior de Investigaciones Científicas, 426 pp.
- Holynski, R.** 1988. Remarks on the general classification of Buprestidae Leach as applied to Maoraxiina Hol. Fol. Ent. Hungarica 49:49-54.
- Kurosawa, Y.** 1988. Reorganization of *Buprestis* and its Allies (Coleoptera, Buprestidae). Kontyû 56(2):261-279.
- Toyama, M.** 1987. The Systematic Positions of Some Buprestid Genera (Coleoptera, Buprestidae). Elytra 15(1/2):1-11.