

A NEW SPECIES OF *ZEUGOPHORA* KUNZE FROM JAVA (COLEOPTERA: CHRYSOMELIDAE: MEGALOPODINAE)

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SUMMARY

Zeugophora javana sp. n. is described from West Java and placed in the subgenus *Pedrillia*. Diagnostic characters are given to separate *Z. javana* from other species in Australia.

INTRODUCTION

The chrysomelid subfamily Megalopodinae includes three tribes, Megalopodini, Palophagini and Zeugophorini (Lawrence and Britton 1991). The tribe Zeugophorini includes a single genus, *Zeugophora* Kunze (Monros 1959), comprising about 70 species with small adults and arboreal leaf-mining larvae. There are two subgenera. All south and south-east Asian and Australasian species belong to sg. *Pedrillia* Westwood.

Hitherto, three species have been described from mainland south-east Asia, one from the Philippines, one from Sumatra, two from New Guinea and three from Australia (Gressitt and Kimoto 1961; Gressitt 1965; Kimoto 1984; Reid 1989). However, there is evidence that present knowledge of *Zeugophora* in the Australasian region represents only a fraction of the fauna. For example, since I revised the Australian species in 1989, three further undescribed species have been discovered in Australia, all represented by a single specimen. The relative rarity of the adults may be due to short adult life-span, scarcity of food-plants, or their restriction to the forest canopy.

The species described here is the first recorded from Java. The erection of a new species based upon a single specimen is considered justified because it represents a significant range extension of the tribe Zeugophorini. The recent collection of this specimen also indicates that the chrysomelid faunas of the small fragments of native forest remaining in Java are as yet poorly known.

METHODS

Drawings were made with the aid of drawing tube attachments. The genitalia were prepared by soaking the whole beetle in water, removing the abdomen, and clearing it in cold 10% KOH for 2-3 hours.

The abdomen and its contents were then washed, examined and placed in glycerol in a microvial.

Nomenclature of the female genitalia follows Reid (1989).

Genus *Zeugophora* Kunze

Zeugophora Kunze, 1818, p. 71.

Auchenia Thunberg, 1792 (suppressed, ICZN Opinion no. 1382, *Bull. zool. Nom.* 43:45)

Diagnosis

In the south-east Asian region members of the genus *Zeugophora* are most similar to Megalopodini. The following adult attributes distinguish *Zeugophora* from Megalopodini and other Chrysomelidae (Crowson 1946; Monros 1959; Gressitt and Kimoto 1961): length less than 5 mm; dorsal surface pubescent; head with prominent eyes and narrow neck; antennal insertions close to eyes; frontoclypeal suture distinct; mandibles bifid at apex and with strong internal tooth or teeth; pronotum without lateral border, broadest in front of middle and constricted in front of hind angles; procoxae conical, prominent and approximate; femora not toothed and hind pair not greatly enlarged; tibiae with two apical spurs; claws appendiculate; abdomen not modified in either sex, all sternites free not fused. The larvae of *Zeugophora* are leaf-miners (Medvedev and Zaitsev 1978).

All south-east Asian species of *Zeugophora* belong to subgenus *Pedrillia*.

Subgenus *Pedrillia* Westwood

Pedrillia Westwood, 1864, p.280.

Type species: *Pedrillia longicornis* Westwood, 1864, p.280, by monotypy.

Diagnosis

The subgenera *Pedrillia* and *Zeugophora* s. str. have not been consistently defined. Here I follow Crowson (1946), who distinguished *Pedrillia* by the more deeply emarginate inner eye-margin, the lack of an extra groove on the frons and the presence of a strongly convex tubercle armed with 2-4 stiff setae at each hind angle of the pronotum. This definition includes the species of the subcontinent described under *Zeugophora* s. str. by Jacoby (1908). The definition of *Pedrillia* based on eye shape given for south-east Asian species by Kimoto and Gressitt (1979), is erroneous because they have confused the eye shapes of the

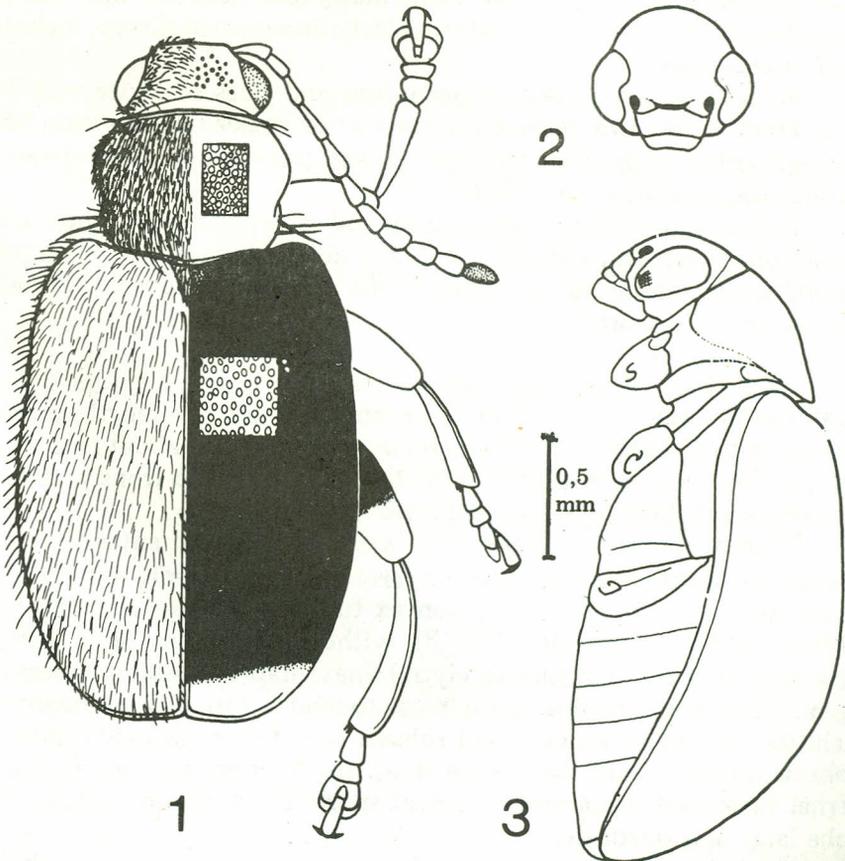
two subgenera (*Pedrillia* is described as having feebly emarginate eyes). Eye emargination is probably not a useful character on its own because it is a continuous variable and the degree of emargination is weakly defined. The new species described below has weakly emarginate eyes, but otherwise has the attributes of subgenus *Pedrillia*.

The larvae of Asian species of *Pedrillia* are leaf-miners of Sapindaceae and Celastraceae (Medvedev and Zaitsev 1978; Lee 1990), but host plants are unknown for the Australasian species.

Zeugophora (Pedrillia) Javana sp.n.

(Figs 1-4)

Whole body with a strongly convex profile (Fig. 3); prothorax much broader than head (Fig. 1); elytra rounded at sides. Length 2.8 mm. Width head 0.7 mm; prothorax 0.85 mm; elytra across shoulders 1.4 mm.



Figures 1-3. *Zeugophora javana* sp. n. 1, dorsum, flattened to give shape of pronotum; 2, head, anterior view; 3, lateral. Scale = 0.5mm.

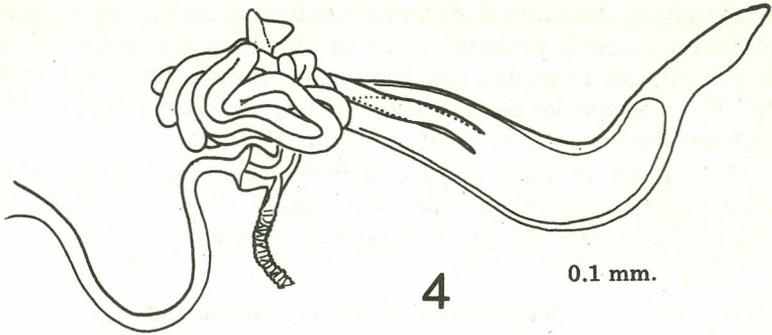


Figure 4. *Zeugophora javana* sp. n. spermatheca. Scale = 0.1mm.

Colour (Fig. 1): head including mouthparts and antennae, prothorax, apical 1/5 of elytra, legs (except base of hind femora) and abdomen reddish-orange or pale yellowish-orange (appendages); last segment of antennae, scutellum and mesosternum dusky red; basal half hind femora, metasternum and basal 4/5 of elytra black; pubescence silvery, including stiff lateral setae.

Setae (Fig. 1): angles of pronotum and sides of elytra with long stiff erect setae, two setae on the posterior angles of pronotum being longest; entire body covered in recumbent pubescence, most dense on pronotum, scutellum and tibiae.

Punctuation (Fig. 1): pronotum and elytra strongly punctured, dense on pronotum, sparser on elytra; head finely and sparsely punctured; metasternum fairly strongly but sparsely punctured; all interspaces finely microreticulate.

Head (Fig. 2): antennae almost 1/2 body length, all segments elongate; eyes large, separated by approximately one eye length, internal margin with shallow c. 110° emargination occupying about half length of eye; face convex in profile; junction of clypeus and frons with deep transverse pit; base of vertex bordered.

Thorax: pronotum transverse, broadest 1/3 from anterior angles, convex in profile, front and base clearly bordered, deeply indented 1/3 from base with oblique evenly convex tubercle between this and base; elytra convex in profile (Fig. 3), without striae, but with sutural groove from base of suture to elytral apex; epipleura evenly tapered to apex; front coxae conical and almost touching; fore tibiae straight and delicate, mid tibiae straight and robust, hind tibiae strongly curved and robust; mid and hind tibiae with sharp finely crenulate carina along external face; each tibia with 2 apical spurs; claws appendiculate, basal lobe large and quadrate.

Genitalia: ovipositor with weakly differentiated sclerites, including short broad vaginal palpi and paraprocts and long spiculum (not illustrated but similar to ovipositor of *Z. vitinea*: Reid, 1989, fig. 10); sper-

mathecal retinaculum (Fig. 4) strongly curved, with long medially grooved appendix at apex for muscle attachment and basal trifurcation leading into tightly knotted region of tubules which includes exerted conical valve; spermathecal gland extremely long (more than 5 times length of retinaculum) and gland duct corrugated; spermathecal duct short and simple.

Holotype ♀, Gn Gede-Pangrango NP, W. Java, c. 6k SW Cipanas, under leaves of trees and shrubs, 1450-1600 m, 14-16.x.1991, C. Reid, D. Subasli [deposited in Museum Zoologicum Bogoriense, Bogor].

The following features of *Zeugophora javana* distinguish it from *Z. sumatrana* Jacoby (1896): entirely pale front and middle legs, predominantly black elytra and a strongly and densely punctured pronotum. *Zeugophora sumatrana* is apparently endemic to Sumatra. In addition to the distinctive colour pattern, the strongly convex body profile and rounded outline of the elytra distinguishes *Z. javana* from all species in New Guinea and Australia.

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