

44. SCHIZOPODIDAE LeConte (1861)

By G.H. Nelson and C.L. Bellamy

Common name: The schizopodid beetles

These beetles show some similarities to the Buprestidae, but they can be distinguished from them by the wide metepisternum and deeply bilobed fourth tarsomere (Fig. 4:45). The schizopodines are a small group from western North America. They possess a primitive wing venation compared to buprestids in general and yet the genital structures of both sexes are highly derived. In addition, the few known or putative larvae indicate primitive locomotory structures which suggest a biology of external root feeding as opposed to the majority of buprestids which develop within wood, stems or leaves of various host plants. A relationship to the second major buprestoid lineage, the Old World julodines, is supported by this groups' external plant feeding habits, although no larvae of that group have any locomotory structures. The wing venation in the julodines is more typically buprestid and while the female ovipositor is highly modified for inserting the eggs into the soil, the male genitalia are also typically buprestid.

Description: The body of schizopodids is somewhat to very stout and strongly convex. In color they vary from light brown in some species, green and coppery in other species to the dimorphic *Schizopus laetus* LeConte in which the male is green to blue with orange elytra, tibiae and tarsi, and the female is entirely green or blue to purple. The surface sculpture varies from course in the tribe Schizopodini to smooth and finely punctate in Dystaxiini. In size they vary from 6.2 mm to 18.0 mm in length.

Head with front either flat or slightly convex; eyes slightly emarginate near middle of anterior margin; antennae in the tribe Schizopodini have 11 antennomeres, each thick and transversely triangular with sensory pores diffuse on both surfaces. In the tribe Dystaxiini the antennae have 12 antennomeres that are flattened and elongate triangular with sensory pores in part concentrated in pits.

Thorax roundly trapezoidal; mesosternum forming cavity for prosternal process; metepisternum wide; femora unarmed; tarsi with five tarsomeres, fourth deeply bilobed.

Abdomen with five visible sterna in the female that are entire, six in the male with sterna five and six deeply emarginate; male aedeagus with basal piece and parameres fused into an asymmetrical tubular tegmen, median lobe also asymmetrical; female genitalia with relatively short paraprocts and valvifers and with sclerotized coxites plate-like. The metathoracic wings are characterized by media extending basally, the radial cell being situated more apically, and the radio-medial cross-vein much longer than is characteristic of the Buprestidae. The wings also have a normal hinge system at the end of the radial cell that is lacking in even the most complexly folded buprestid wings.

Larvae have a cylindrical body, sides nearly parallel; head with three well-developed unequal ocelli on each side posterior to and slightly dorsal to base of antennae; thoracic segments legless; abdominal segments 1-8 each with a pair of well-developed prolegs terminating in hoof-shaped structures; mesothoracic, metathoracic, and abdominal segments 1-7 each with a pair of ventral glands, each with a protracted duct.

Ecology: Almost nothing is known of the life history. A short discussion of eggs was given by Nelson, et al. (1996). First instar larvae of *Schizopus s. sallei* Horn, hatched from eggs laid in the laboratory, were described by Rees (1941). Only one other larva has been collected, in California, San Diego Co., 4 mi west of Warner Springs, 16 March 1972. It was found on a hilltop in a mud cell about 4 inches below the soil surface under a clump of grass. The larvae are possibly external root feeders. Adults of *Schizopus* are either found feeding on the blossoms of desert plants (*S. laetus*), or clinging to the dried leaves of grasses (*S. sallei*). *Dystaxia* adults have been collected on the foliage of *Quercus* spp., occasionally on *Juniperus*, with *D. murrayi* sometimes found on *Cbrysothamnus*. Adults of *Glyptoscelimorpha* occur on the foliage of *Juniperus* spp.

Status of the classification: This family was recently revised by Nelson and Bellamy (1991), where cladistic analysis supported four major lineages, with the schizopodids and julodines branching outside of the apparent true buprestid line. The genus *Dystaxiella* is now considered a subgenus of *Glyptoscelimorpha*. Schizopodidae, one of the major buprestoid lineages, was first defined as a distinct family by LeConte in 1861. Subsequent authors have either accepted or ignored this status, although the three major buprestid authorities of the last century, Kerremans, Théry and Obenberger retained it as a buprestid tribe in the system of Lacordaire (1857). However, the concepts of Höy (1993) did not accept this familial status and most recently Lawrence and Newton (1995) listed this group again as a subfamily, stating that there was no indication of what group, outside of Buprestoidea, the schizopodid or -podine line was related to. In an interesting 1982 paper on the dryopoid affinities of buprestids,

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Crowson suggested that a possible candidate for analysing buprestid relationships was the luctrochid genus *Lara*; indeed these beetles bear a remarkable resemblance to *Schizopus* in general morphology. This was the out-group used in the analysis by Nelson and Bellamy, but the lack of defined sister-group still allows conjecture.

Distribution: There are 9 species and subspecies presently known from California, southern Nevada, southwestern Arizona, and northern Baja California.

KEY TO NEARCTIC GENERA

- 1. Surface sculpture coarse; antennae with 11 antennameres, serrate antennameres transversely triangular; pronotal disk with distinct impressions (tribe Schizopodini) *Schizopus*
- Surface sculpture of fine punctures; antennae with 12 antennameres, serrate antennameres elongate triangular; pronotal disk without impressions (tribe Dystaxiini) 2
- 2. Robust oval; vestiture a mixture of hairlike and elongate flattened setae; terminal antennomere elongate slender; clypeus deeply emarginate; tarsal claws distinctly bifid *Dystaxia*
- Ovate-cylindrical; vestiture of elongate, lanceolate shaped, flattened setae; terminal antennomere small, oval; clypeus shallowly emarginate; tarsal claws simple or with small internal tooth *Glyptoscelimorpha*

CLASSIFICATION OF THE NEARCTIC GENERA

Schizopodidae

Schizopodinae

Schizopodini

Schizopodina

Schizopus LeConte, 1858, 2 spp., 1 ssp., Arizona, California, and Nevada (key to spp., Nelson and Bellamy, 1991).

Yermoella Obenberger, 1939

Dystaxiini

Dystaxiina

Dystaxia LeConte, 1866, 2 spp., California (key to spp., Nelson and Bellamy, 1991).

Glyptoscelimorpha Horn, 1893, 3 spp., 1 ssp., California (key to spp., Nelson and Bellamy 1991).

Subgenus *Dystaxiella* Knoll, 1940

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