

Family Sclerogibbidae parasitoid of the weaver bug (Insecta: Embioptera).

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The term Aculeata has a long history. Originally it was considered an infraorder or division. Due to phylogenetic studies, it is currently known that it is a monophyletic group, that is, all members of the group descend from a single ancestor. In turn, the sister group, Parasitica, appears to be paraphyletic or an artificial group that brings together phylogenetically unrelated subgroups. Formed by the superfamilies: Chrysidoidea, Apoidea, and Vespoidea (Figure 1) [1-2].



Figure 1. *Mystrocnemis africana* Kieffer, 1904. Source: Photographs © Simon van Noort (Iziko Museums of South Africa).

Description: Head rounded and obliquely hypognathous; antenna with 13 segments; pronotum substantially horizontal without anterior ridge, so that the propleura appears partially exposed dorsally; prosternum large, diamond-shaped; hind wing without closed cells; pro-trochanter originates from the lateral surface of the procoxa (Figure 2) [3-4].

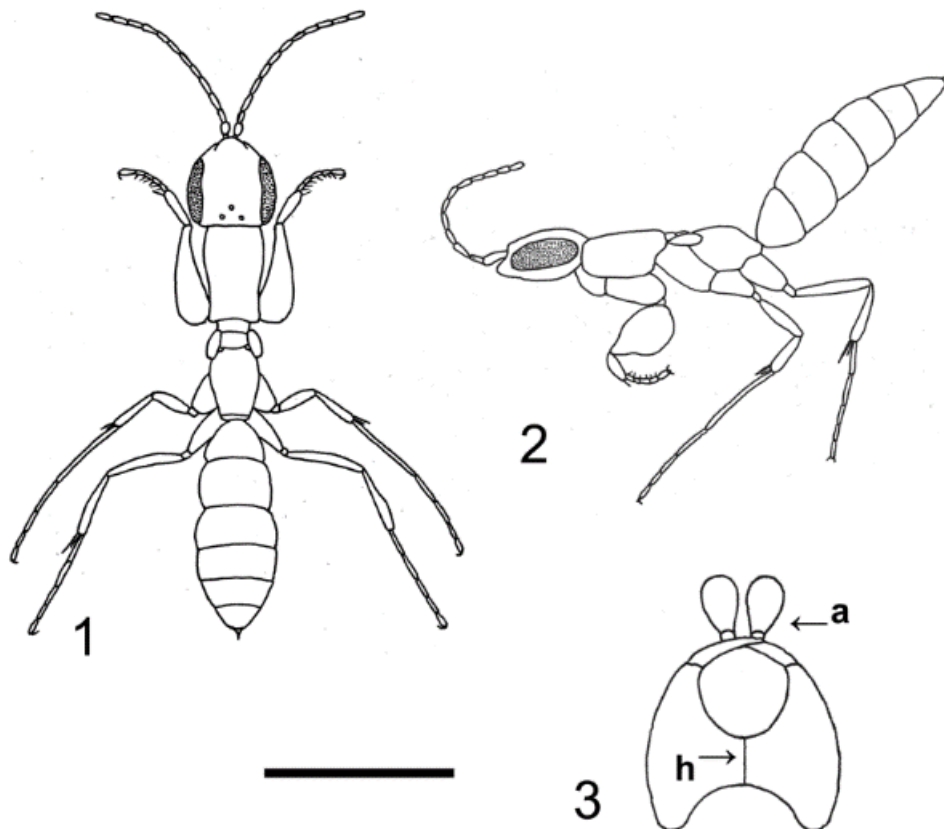


Figure 2. figs. 1–3. *Protosclerogibba australis* sp. nov., holotype, ♀. 1, dorsal view; 2, lateral view; 3, head in ventral view (a: first antennal segment; h: hypostomal bridge). The seventh exposed segment of the gaster was very small. Scale bar 1.89 mm (1), 1.87 mm (2), 0.93 mm (3). Source: <https://zenodo.org/records/1052515>.

The Sclerogibbidae (Hymenoptera: Chrysidoidea) includes parasitoid wasps, whose larvae develop, obligatorily, as cenobiont ectoparasitoids, from nymphs or adults of Order Embioptera (Insecta). These are insects rarely collected in studies fauna and are generally found in arid or semi-arid environments (Figure 3) [5-6].

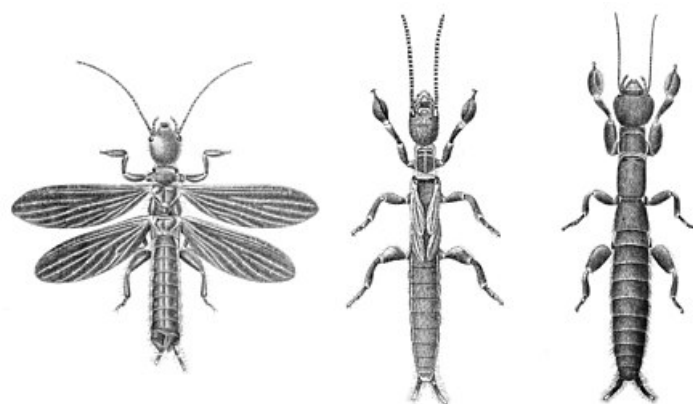


Figure 3. Host *Embia major* sp. nov, winged male, male nymph, and adult female "from the Himalayas. Source: by Augustus Daniel Imms, 1913.

Sclerogibbidae (Hymenoptera: Chrysidoidea) is a small family of ectoparasitoids on Order Embioptera (Embiidina). It is widespread over the warm-temperate regions of the world, where 22 species are distributed in three genera:

Caenosclerogibba Yasumatsu, 1958, *Probethylus* Ashmead, 1902 and *Sclerogibba* Riggio & Stefani-Perez, 1888 (Figure 4) [7-8].

b

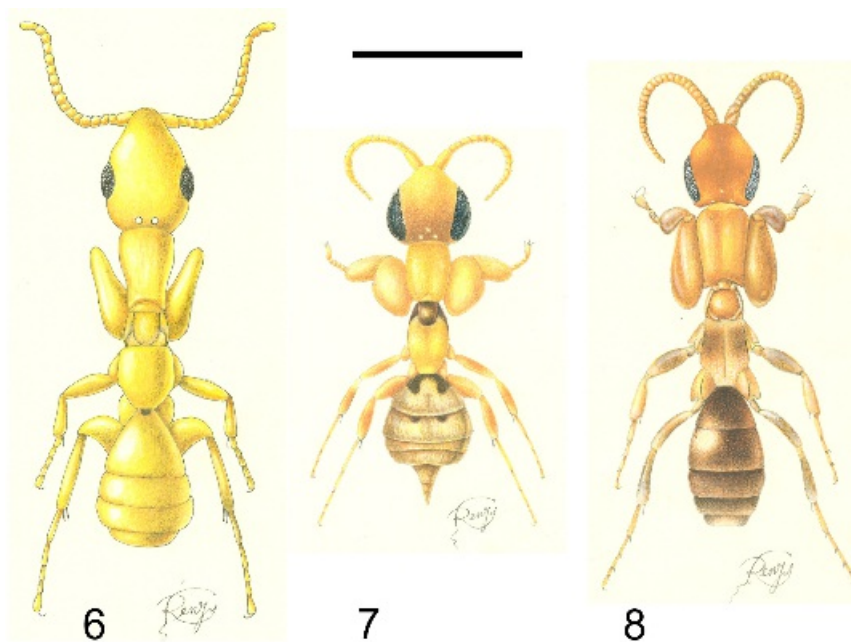


Figure 4. figs. (6 – 8). Females of Sclerogibbidae. 6, *Caenosclerogibba longiceps* (Richards, 1958); 7, *Probethylus callani* Richards, 1939; 8, *Sclerogibba magrettii* (Kieffer, 1939). Scale bar 0.69 mm (6), 1.36 mm (7), 1.52 mm (8). Sources: © Olmi, Massimo; Marletta, Alessandro; Guglielmino, Adalgisa; Speranza, Stefano.

Taxonomy, Distribution, Biology and classification of Afrotropical Hymenoptera.

Genus: *Caenosclerogibba* Yasumatsu, 1958, *Probethylus* Ashmead, 1902 and *Sclerogibba* Riggio & Stefani-Perez, 1888.

Distribution: Worldwide in warmer areas.

Biology: Ectoparasitoids of *Embiidina* Enderlein, 1909 (= Embioptera) nymphs. Pupation takes place in the host web.

Genus *Caenosclerogibba*: Species: *Caenosclerogibba longiceps* (Richards, 1958) and *Caenosclerogibba probethyloides* Olmi, 2005.

Distribution: Afrotropical region: Madagascar, Yemen. Neotropical region: Ecuador, Mexico. Oriental region: China, India, Japan, and Nepal.

Biology: Ectoparasitoids of *Embiidina* (= Embioptera) nymphs.

Genus *Probethylus*: **Specie:** *Probethylus callani* Richards, 1939.

Distribution: Afrotropical: Angola, Democratic Republic of Congo, Kenya, Nigeria, South Africa, Tanzania, Yemen. Nearctic: USA: Arizona, California, Texas. Neotropical: Mexico, Trinidad, Dominican Republic, Honduras, Nicaragua, Costa Rica, Panama, Columbia, Venezuela, Peru, Brazil, Paraguay and Argentina.

Biology: Parasitoids of *Embiidina* [9-10].

First record of the Sclerogibbidae from the Galapagos Islands.

Caenosclerogibba sp.

These two females constitute the first record of the genus and family for the Galapagos Islands. The family is distributed worldwide but is uncommonly collected. *Caenosclerogibba* Yasumatsu, 1958 is the most widespread genus in the family, and has been reported from Africa, several regions of Asia, and the New World; recently, new records extended its occurrence southward into Southeast Asia.

Sclerogibbidae are parasitoids of webspinners (Embiodea), such as *Caenosclerogibba longiceps* (Richards, 1958) reared from Oligotomidae and Embiidae. Two species of Embiodea have been reported from the Galapagos Islands, *Chelicerca galapagensis* Ross, 1966, and *Oligotoma saundersii* (Westwood, 1837) [10-11].

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