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## ***Polyrhachis (Hemioptica) becvari* nov.sp. (Hymenoptera, Formicidae) from Sri Lanka**

Herbert ZETTEL & Esther OCKERMÜLLER

**Abstract:** A new ant species from Sri Lanka is described: *Polyrhachis (Hemioptica) becvari* nov.sp. is closely related to *Polyrhachis (Hemioptica) bugnioni* FOREL, 1908. A lectotype for *Polyrhachis bugnioni* is designated.

**Key words:** *Polyrhachis*, *Hemioptica*, ants, taxonomy, lectotype designation, new species, Sri Lanka.

### **Introduction**

During identification work in the collection of the Biologiezentrum in Linz, Upper Austria, some ants of the genus *Polyrhachis* SMITH, 1857 from Sri Lanka were studied in detail. At first glance, a couple of specimens were thought to be *Polyrhachis (Hemioptica) bugnioni* FOREL, 1908, but a closer examination yielded several differences, and therefore they were recognised as an undescribed species. *Hemioptica* ROGER, 1862 (type species: *Hemioptica scissa* ROGER, 1862) was originally described as a distinct genus (ROGER 1862), which was followed by some contemporaries, but MAYR (1872) included *Hemioptica* as a subgenus in *Polyrhachis*, which is the accepted rank of this taxon today (e. g., ANTWEB 2023, ANTWIKI 2023). DOROW (1995) and DOROW & KOHOUT (1995) constructed keys to the three described species of *Hemioptica*. The treatment of *P. bugnioni* by DOROW & KOHOUT (1995) and a note by Karl Vorse Krombein on leg colour cited in the same paper already gave a hint that the name may refer to several species rather than a single one. The interpretation of *P. bugnioni* in the present study is based on the syntype specimen illustrated in ANTWEB (2023), which is selected as the lectotype herein.

### **Chronological list of species of the subgenus *Hemioptica* and their distribution**

*Polyrhachis scissa* (ROGER, 1862) (Sri Lanka)

*Polyrhachis bugnioni* FOREL, 1908 (Sri Lanka)

*Polyrhachis boltoni* DOROW & KOHOUT, 1995 (West Malaysia)

*Polyrhachis becvari* ZETTEL & OCKERMÜLLER nov.sp. (Sri Lanka)

### **Material and methods**

Thirteen workers and one dealate gyne from the Biologiezentrum in Linz were examined.



**Figs 1-4:** *Polyrhachis (Hemioptica) becvari* nov.sp., heads in frontal view: (1) holotype, worker; (2) paratype, gyne. (3) Labels of holotype. (4) Labels of paratype © E. Ockermüller.

The specimens were compared to literature and illustrations of related taxa provided by ANTWEB (2023) and ANTWIKI (2023).

Measurements were taken with a Wild M10 binocular microscope at 50-80× magnification and are given in millimetres (mm). Acronyms of measurements and indices:

TL.....Approximate total length of specimen. The added lengths of head (including mandibles), mesosoma, petiole, and gaster.

HW .....Head width. Maximum width of head in full-face view, including eyes.

HL.....Head length. Maximum length of head in full-face view, excluding mandibles, measured from anterior-most point of clypeus to posterior-most point of vertex, parallel to midline.

EL.....Eye length. Maximum diameter of compound eye.

SL.....Scape length. Maximum length of antennal scape in dorsal view excluding basal neck and condyle.

- MSL.....Mesosoma length; measured laterally from anterior surface of pronotum proper (excluding collar) to posteroventral corner of metapleuron.
- PNW .....Pronotum width. Maximum width between apices of spines / corners, measured anteriorly.
- PNL .....Pronotum length of gyne, measured along midline, excluding collar.
- PML.....Combined length of pronotum and mesonotum of worker, measured along midline, excluding pronotal collar.
- PPW.....Propodeum width. Maximum width measured dorsally.
- MTL.....Mesotibia length. Maximum length of second tibia, measured at extensor side.
- PEL.....Petiole length. Maximum length of main petiolar body.
- PEW.....Petiole width. Maximum width of petiolar body, measured between lateral teeth.
- GL.....Gaster length. Maximum length from anterior end of gaster tergite 1 to apex of abdomen.
- GW .....Gaster width. Maximum width, measured at gaster tergite 1.
- CI.....Cephalic index.  $HW / HL \times 100$
- SI .....Scape index.  $SL / HW \times 100$
- EI .....Eye index.  $EL / HW \times 100$

Photographs were created using a Nikon AZ100M camera. Images were processed using NIS-Elements Microscope Imaging and Adobe Photoshop 7.0.

## Taxonomy

### *Polyrhachis (Hemioptica) becvari* nov.sp. (Figs 1-8)

**Type material.** Holotype (worker): Sri Lanka, Southern Province, Matara District, 3 km NW of Kotapola [labelled "Kotopola"], 4-8.XII.1995, leg. S. Bečvář, deposited in Biologiezentrum Linz, Upper Austria. Paratypes: 12 workers, 1 dealate gyne, same locality data. Holotype and paratypes in Biologiezentrum Linz, further paratypes in collection of first author. Labels see Figs 3, 4.

**Diagnosis of worker:** Small, black species with dense, attached pilosity and relatively long standing setae on dorsum of head, mesosoma, and gaster. Eyes hardly truncated. Head with sharp lateral margin. Mesosoma stout, not marginate. Pronotum and mesonotum fused, convex, anteriorly with blunt angle. Metanotal suture separating mesonotum from propodeum narrow and deep. Propodeum toothless, with convex dorsum and slightly concave posterior face, both completely separated by a sharp ridge. Petiole stout, laterally with small sharp teeth, ridge between them convex, without mediodorsal emargination.

**Description of worker:** Measurements of holotype. TL ca. 5.7; HW 1.28; HL 1.45; EL 0.41; SL 1.72; MSL 1.79; PNW 1.27; PML 0.86; PPW 0.99; MTL 1.11; PEL 0.59; PEW 0.95; GL 1.76; GW 1.68. Indices: CI 89; EI 32; SI 134.

Measurements of paratypes (n = 11). TL ca. 5.4-6.3; HW 1.19-1.35; HL 1.36-1.54; EL 0.35-0.41; SL 1.58-1.94; MSL 1.68-1.93; PNW 1.13-1.31; PEW 0.89-1.02; GL 1.80-2.08; CI 86-90; EI 29-31; SI 128-145.

Structures. Head (Fig. 1), mesosoma, petiole, and gaster chiefly with dense reticulation, moderately shiny. Head longer than wide; occiput strongly convex in frontal view. Frontal carina strongly raised above antennal fossa; frontal area between carinae narrower than dorsally, finely punctured. Occipital carina slightly concave behind eye, so that underside of head narrowly visible in a strict lateral view. Eye moderately large, hardly truncated and protruding; hind margin straight. Clypeus finely punctured, with some larger punctures at bases of setae, without median carina; anterior margin with a minute, hardly visibly medial emargination. Frontal triangle not delimited. Ocelli lacking. Mandibles with scattered, fine punctures. Antennal scape slender, steadily widened towards apex, over most of its length more slender than flagellum; base of scape, distal of condyle, strongly curved.

Mesosoma (Figs 5, 6) without lateral margins; in lateral view both the fused promesonotum and the propodeum with convex outlines; with a deep fissure between these two parts. In dorsal aspect, pronotal corners forming a blunt angle or almost rectangular; collar distinct. Promesonotal suture not recognizable. Metanotal suture very deep, its ground smooth and shiny; suture posteriorly pronounced by the sharp anterio-dorsal edge of propodeum. Propodeum without spines, with a complete carina separating the concave posterior face.

Petiole stout in lateral aspect (Fig. 5); dorsal crest evenly convex, terminated laterally by small acute teeth. Gaster slightly longer than wide.

Pilosity. Entire body bearing a thin, pale grey pilosity, not completely covering integument. Pale standing setae on dorsum of head, mesosoma, and gaster, and on gastral sterna relatively long and abundant; lacking on body sides, scape and legs, except a few standing pale setae on coxae, trochanters, and flexor sides of femora (on metafemur only at base). Mandible with scattered setae, distally longer than elsewhere.

Colour. Black. Palpi yellow. Tibiae dark red, except base and extreme apex black.

**Description of gynes:** Measurements of paratype. TL ca. 7.1; HW 1.49; HL 1.64; EL 0.49; SL 1.94; MSL 2.57; PNW 1.44; PNL 0.50; PPW 1.17; MTL 1.29; PEL 0.54; PEW 1.07; GL 2.21; GW 2.10. Indices: CI 91; EI 33; SI 130.

Structures. Similar to worker. Head (Fig. 2): Eyes slightly larger and more prominent than in worker. Ocelli present. Medial incision of clypeus small, but more distinct than in worker. Pronotal humeri blunter than in worker. Structures of mesosoma as typical for gynes. Metanotum lower than mesoscutum; metanotal suture deep and distinct (Fig. 7). Wings broken off.

Pilosity and colour similar as in worker.

**Comparative notes:** DOROW & KOHOUT (1995) constructed a key to the species of *Hemioptica*. Therein, *P. bugnioni* is characterised by small size, silverish pubescence of body, and hardly truncated eyes. The new species is similar to *P. bugnioni* in these characters, but there are several differences: The frontal carinae are highly elevated in *P. becvari* nov.sp., but relatively low in *P. bugnioni*. The setae on the occiput of head and on pronotum are long (distinctly longer than scape width) in *P. becvari* nov.sp., but short in *P. bugnioni*. Femora are black in *P. becvari* nov.sp., but red in *P. bugnioni*.



**Figs 5-6:** *Polyrhachis (Hemioptica) becvari* nov.sp., holotype, worker; (5) lateral view; (6) dorsal view. © E. Ockermüller.

The petiole of the new species is wider, and its summit is lacking a small emargination as described for *P. bugnioni* by FOREL (1908: "faiblement échancré au sommet").

**D i s t r i b u t i o n :** Sri Lanka, Southern Province, only known from types.

**E t y m o l o g y :** Named to honour the collector of the new species, the Czech coleopterist Stanislav Bečvář.



**Figs 7-8:** *Polyrhachis (Hemioptica) becvari* nov.sp., paratype, gyne; (7) lateral view; (8) dorsal view.  
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***Polyrhachis (Hemioptica) bugnioni* FOREL, 1908**

**Lectotype designation:** FOREL (1908) described several workers (information deducted from the provided size range) and a gyne from Sri Lanka without indicating an exact locality. ANTWEB (2022) illustrates one syntype specimen from "Ceylon Up. Country". The pictures were taken by Michele Esposito at the Forel Collection of the Museum of Natural History, Geneva (MNHG). Our exact interpretation of *P. bugnioni* is based on this specimen. To avoid future confusions, this specimen (labelled CASENT0910965) is designated as the lectotype of *Polyrhachis bugnioni*. A lectotype label has been printed and will be sent to the curator at MNHG.

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**Zusammenfassung**

Eine neue Ameisenart aus Sri Lanka wird beschrieben. *Polyrhachis (Hemioptica) becvari* nov.sp. ist mit *P. (H.) bugnioni* FOREL, 1908 nahe verwandt; ein Lectotypus wird für diese Art designiert.

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Authors' addresses:

Herbert ZETTEL  
Thaliastraße 61/14-16, A-1160 Vienna, Austria;  
Natural History Museum, 2<sup>nd</sup> Zoological Department  
Burgring 7, A-1010 Vienna, Austria  
E-mail: herbert.zettel@nhm-wien.ac.at

Esther OCKERMÜLLER  
Biologiezentrum Linz  
Johann-Wilhelm-Klein Straße 73, A-4040 Linz, Austria  
E-mail: esther.ockermueller@ooelkg.at



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