

A new *Protanilla* TAYLOR, 1990 (Hymenoptera: Formicidae: Leptanillinae) from Sri Lanka

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Abstract

Protanilla schoedli sp.n. is described from a gyne collected in Sri Lanka. This first described *Protanilla* gyne has eyes and wings, two plesiomorphic traits not shared with *Leptanilla*. The new species, moreover, allows considerable extension of the geographic range of this southern Palaearctic and Oriental genus.

Key words: *Protanilla schoedli*, new species, Formicidae, Leptanillinae, Sri Lanka, Palaearctic, Oriental.

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Introduction

Since its first description 15 years ago (TAYLOR in BOLTON, 1990), the species level systematics of the genus *Protanilla* has not been dealt with in an exhaustive way.

The description of the type species of the genus (*P. rafflesi* TAYLOR in BOLTON, 1990 from Singapore) consisted only of a set of measurements. In the same paper BOLTON (1990) figures a Pakistani species without describing it and mentions the existence of another five or six species widely distributed in the Oriental and Indo-Australian regions [sic] to be described elsewhere by Taylor. The relevant descriptions have not yet appeared. BOLTON (1994) published two scanning electron micrographs of a *Protanilla* species of which neither name nor provenance were given. Despite minor differences between these illustrations, we guess that these 1994 figures refer to the same Pakistani species previously illustrated by BOLTON (1990). More recently, XU (2002) published the first descriptions of two species from Yunnan and XU & ZHANG (2002) added a third taxon from that Chinese province.

In this paper we describe a new species from Sri Lanka. It is the first described *Protanilla* gyne and represents a remarkable extension of the known distribution of the genus. Measurements and indices are as in XU (2002).

***Protanilla schoedli* sp.n.** (Figs. 1 - 3)

Type material. Holotype dealate gyne (unique) from Sri Lanka labelled "CEYLAN, Uva, Ingirigala, 12.II.1970, Mussard, Besuchet & Löbl", in the Natural History Museum of Geneva, Switzerland. A damaged specimen. Only the left foreleg remains and the right antenna is also missing. The hairs are partly glued and the photographs were taken without coating the specimen.

Derivatio nominis. This species is named in memory of Dr. Stefan Schödl.

Diagnosis. A *Protanilla* species differing from the other species of the genus as follows: from *P. furcomandibula* XU & ZHANG, 2002 by the mandibles lacking lateroventral teeth and by the ventral margin of postpetiole being convex instead of concave; from *P. bicolor* XU, 2002 by the funicular joints being about as broad as long in-

stead of broader than long and by the body being concolorous instead of bicoloured; from *P. concolor* XU, 2002 by the anterolateral sides of the head close to the antennal insertion being weakly pointed instead of concave and by the anterior face of the first gastral tergite being gently concave instead of straight.

No convincing differences were detected from *P. rafflesi*, described from Singapore, based on the few published measurements available for the latter. Since the gyne-based *P. schoedli* and the worker-based *P. rafflesi* are known on different castes, differences in size could be caste-dependent. We are confident that the geographic heterogeneity of the two specimens will imply morphological heterogeneity as well.

Description. Head gently convex, about one fourth longer than broad and with sides converging anteriorly and ending in minute denticle. Vertex with sub-rounded corners and almost straight margin. Compound eyes large, slightly behind midlength of head, gently convex and with reduced interommatidial pilosity. Ocelli small and weakly salient. Posterior half of clypeus superficially raised, subrectangular and with internal median longitudinal line visible in transparency. Anterior part of clypeus broad, feebly protruding and declivous anteriorly; its anterior border almost straight. Antennal fossae superficially concave. Scapes sub-cylindrical and reaching vertexal margin posteriorly. Funicular joints 2 - 10 about as broad as long. Joints 1 and 11 longer than broad. Mandibles triangular, slightly shorter than one half of head length, downcurved apically, each with 16 "pencil-like denticles" and 3 long + 3 apical, short, probable trigger hairs, lower on internal face. These "denticles" are modified hairs since a medial, similar "denticle" is visible on the anterior border of the labrum (Fig. 3). Outer margin of mandibles with laterobasal pit subtended by distinct longitudinal groove running anteriorly and traversing width of mandibles before narrow apex.

Mesosoma elongate. Pronotum about as long as mesonotum in dorsal view. Parapsidal furrows superficially impressed. Scutellum sub-rounded. Propodeum in profile convex.

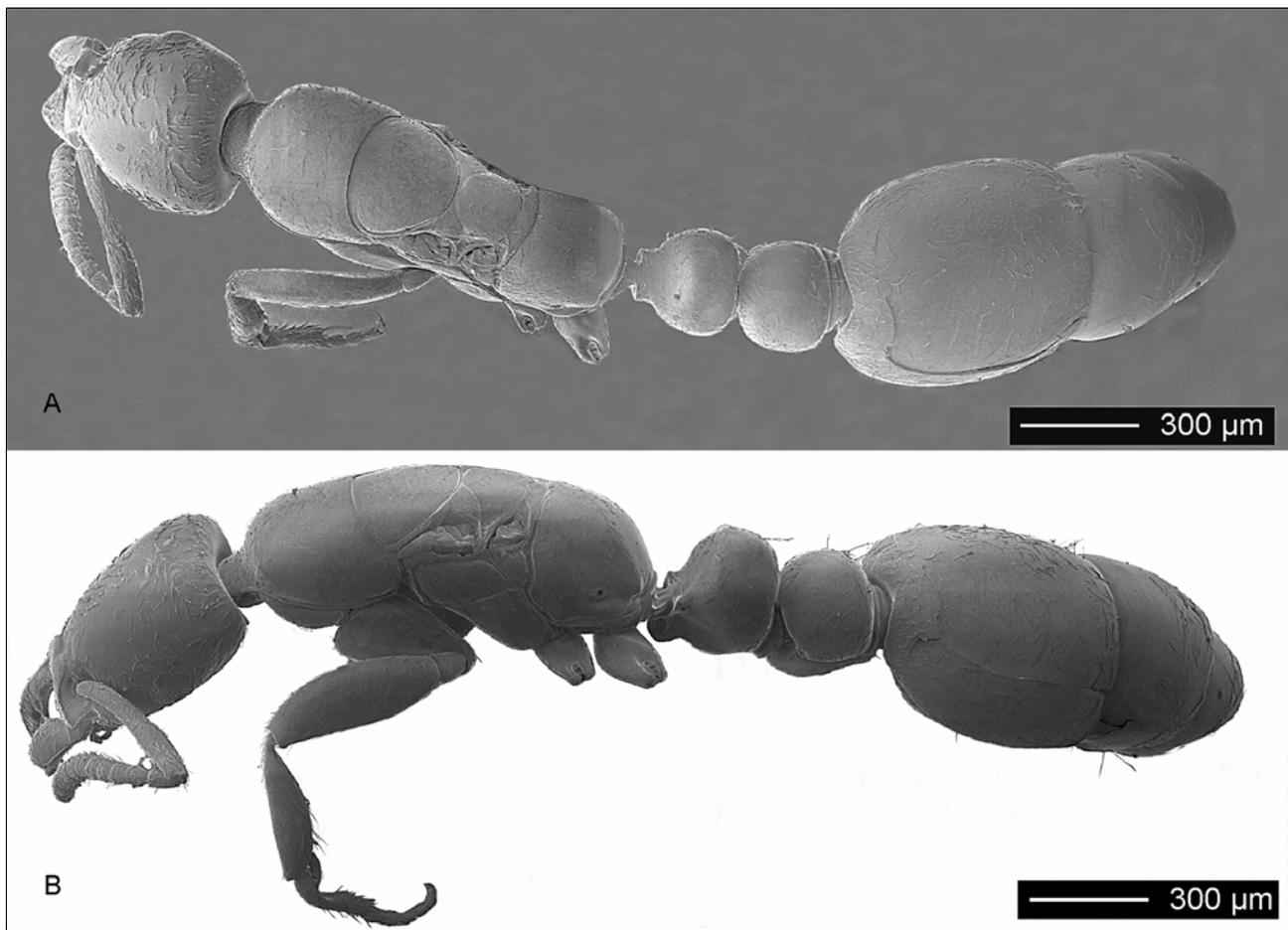


Fig. 1: *Protanilla schoedli* sp.n., holotype gyne, general habitus: (A) dorsal view; (B) profile oblique.

Petiole slightly longer than broad, with short neck anteriorly and posteriorly. Anterior neck denticulate on sides, with denticles separated by faint margin. Petiolar node high, convex and broader than long. Ventral surface of petiole with sub-rounded tooth on anterior fourth, tooth directed anteriorly; remaining three fourths of ventral surface of petiole strongly convex medially. Postpetiole slightly broader than long, with short neck posteriorly only. Postpetiolar node high and convex. Ventral surface of postpetiole strongly convex.

Gaster elongate oval. Base of first tergum weakly incised medially.

Sculpture. Body smooth and shining with minute, sparse, piligerous punctures only.

Pilosity. Body with short, appressed hairs; similar hairs but shorter and suberect or subdecumbent on antennae. In addition, a few, rare, longer, suberect hairs sparse on body.

Colour. Light yellowish-brown.

Measurements (in mm) and indices. Total Length, combined head length in full-face view (closed mandibles included), Weber's length of mesosoma (see below), petiole and postpetiole lengths (in profile) and length of gaster (in profile): 3.75; Head Length, maximum measurable distance between medial margin of vertexal angles and antero-medial margin of clypeus with head in full frontal view: 0.59; Head Width, maximum measurable head width with head in full frontal view: 0.45; Scape Length, length of scape shaft, excluding basal condyle: 0.46; Mandible Length,

maximum length of mandible between antero-medial margin of clypeus and mandibular apex: 0.26; Eye Length, maximum diameter of eye: 0.12; Petiole Length, maximum measurable length on petiole transversal plane: 0.29; Petiole Width, maximum measurable width of petiole in dorsal view: 0.27; Petiole Height, maximum measurable height on petiole sagittal plane: 0.35; Postpetiole Length, maximum measurable length on postpetiole transversal plane: 0.27; Postpetiole Width, maximum measurable width of postpetiole in dorsal view: 0.29; Postpetiole Height, maximum measurable height on postpetiole sagittal plane: 0.37; Weber's Length, diagonal length of mesosoma from anterior pronotal border (excluding neck) to distal edge of propodeal lobe 1.02; Cephalic Index, (Head Width / Head Length) \times 100: 76.3; Scape Index (Scape Length / Head Length) \times 100: 102.2.

Discussion

The discovery of *Protanilla schoedli* allows hypothecation of the presence of "normal" gynes with wings and eyes in the two leptanilline genera *Protanilla* (present paper) and *Anomalomyrma* (BOLTON 1990) as opposed to dichthadiiform gynes in *Leptanilla* (BARONI URBANI 1977). The winged state of *Protanilla* and *Anomalomyrma*, however, is the plesiomorphic condition.

Biogeographically, the record of *P. schoedli* from Sri Lanka represents a considerable but not surprising extension of the previously known distribution of the genus in

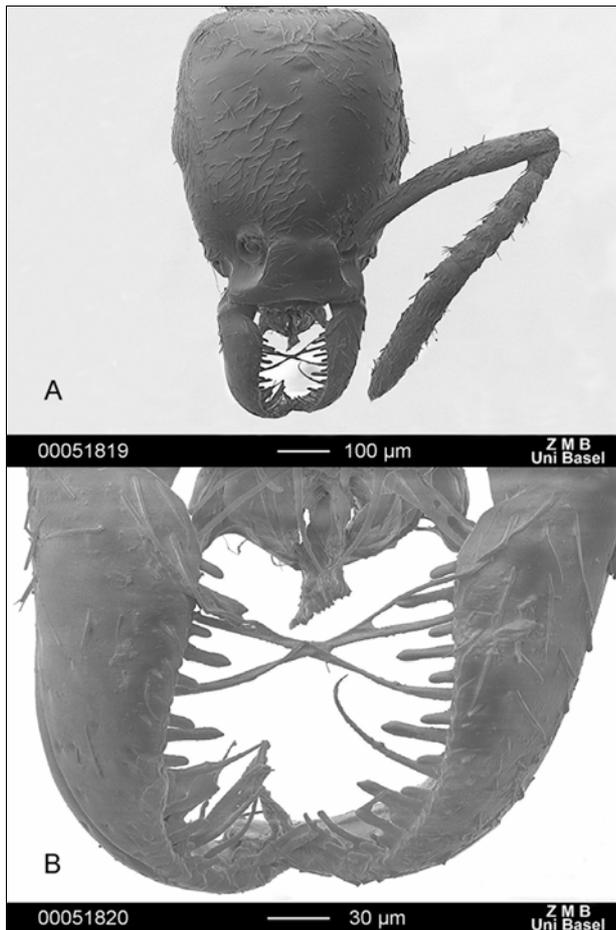


Fig. 2: *Protanilla schoedli* sp.n., holotype gyne: (A) head and left antenna in dorsal view; (B) mandibles in dorsal view showing the modified hairs substituting the teeth and probable trigger hairs arising from the lower internal face of the mandible.

the Oriental region. *Protanilla*, at present, appears to be confined to the Oriental and South Palaearctic regions in Asia.

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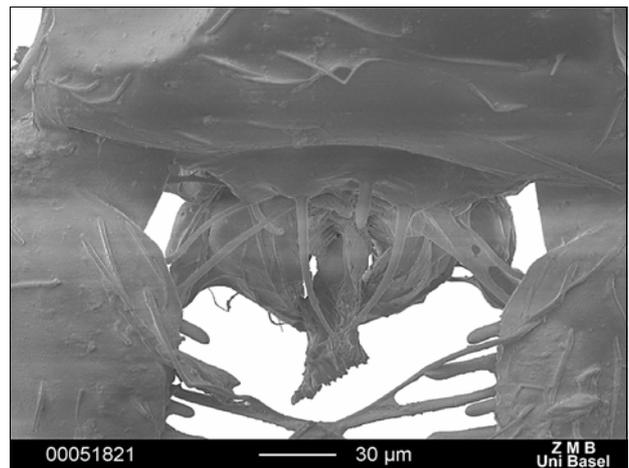


Fig. 3: *Protanilla schoedli* sp.n., holotype gyne, dorsal view of the labrum with "teeth"-like modified hairs and probable trigger hairs.

Zusammenfassung

Protanilla schoedli sp.n. wird anhand einer Gyne aus Sri Lanka beschrieben. Diese erste beschriebene *Protanilla*-Gyne hat Augen und Flügel – zwei plesiomorphe Merkmale, die bei *Leptanilla*-Gynen nicht auftreten. Durch die Beschreibung der neuen Art wird die geographische Verbreitung dieser südpaläarktischen und orientalischen Gattung beträchtlich erweitert.

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