

UDK 595.796 (540)

## FIRST RECORD OF THE GENUS *MYOPIAS* (HYMENOPTERA, FORMICIDAE) FROM INDIA, WITH DESCRIPTION OF NEW SPECIES

H. Bharti, A. A. Wachkoo

Department of Zoology, Punjabi University, Patiala — 147002 India  
E-mail: himenderbharti@gmail.com

Received 14 July 2011

Accepted 10 November 2011

**First Record of the Genus *Myopias* (Hymenoptera, Formicidae) from India, with Description of New Species.** Bharti H, Wachkoo A. A. — *Myopias shivalikensis* Bharti et Wachkoo, sp. n. is described based on a single worker, collected in lower Shivalik range (700 m a. s. l.) of Northwest Himalaya by soil core method. The genus *Myopias* is recorded for the first time in India. *M. shivalikensis* is a cryptobiotic species with reduced body size and rudimentary eyes. It is similar to *M. nops* Willey et Brown, 1983, distinctly differing from all described species of this genus.

Key words: ants, *Myopias shivalikensis*, Ponerinae, Shivalik, soil core, cryptobiotic species.

**Первая находка рода *Myopias* (Hymenoptera, Formicidae) в Индии, с описанием нового вида.** Бхарти Х., Вачко А. А. — *Myopias shivalikensis* Bharti et Wachkoo, sp. n. описан по единственному рабочему, найденному в нижней части хребта Шивалик (700 м над у. м.) в северо-западных Гималаях в почвенных пробах. Это первая находка рода *Myopias* в Индии. Данный вид является криптобионтом и характеризуется мелкими размерами и редуцированными глазами. Он наиболее сходен с *M. nops* Willey et Brown, 1983 и хорошо отличается от всех ранее описанных видов этого рода.

Ключевые слова: муравьи, *Myopias shivalikensis*, Ponerinae, Шивалик, почвенные сборы, криптобионтный вид.

### Introduction

*Myopias* belongs to the ant subfamily Ponerinae and is a primitive ant genus, distributed in Oriental, Indo-Australian and Australasian Regions, reaching its highest species diversity in Indonesia and New Guinea. Ants of this genus are specialized predators, mostly collected from soil and leaf litter. Unfortunately, not much is known about biology and life history of these ants. *Myopias* is currently represented by 34 described species and two subspecies (Bolton, 2011). Below we describe a new species, *Myopias shivalikensis* Bharti et Wachkoo, sp. n., representing the first record of this genus from India.

### Materials and methods

A single specimen of this new species was collected through soil core method. The taxonomic analysis was conducted on Nikon SMZ 1500 stereo zoom microscope. For digital images, MP evolution digital camera was used on same microscope with Auto-Montage (Syncroscopy, Division of Synoptics, Ltd.) software. Later, images were cleaned as per requirement with Adobe Photoshop CS5. Morphological definitions for measurements (accurate to 0.01 mm) and indices include:

HL — maximum length of head in dorsal view, measured in straight line from the anteriormost point of the frontal lobes to the midpoint of the occipital margin;

HW — maximum width of head in dorsal view;

ML — straight line length of mandible from apex to visible basal end, measured in dorsal view;

SL — maximum length of the scape excluding the basal neck and condyle;

CL — maximum length of median clypeal lobe measured in dorsal view;

CW — maximum width of median clypeal lobe measured in dorsal view;

WL — Weber's length of mesosoma, measured in lateral view from the anterior surface of the pronotum (excluding the collar) to the posterior margin of the propodeal lobes;

GL — length of the gaster in lateral view from the anteriormost point of first gastral segment to the posteriormost point of the last segment (excluding sting);

PL — maximum length of the petiole from above;

PW — maximum width of the petiole from above;

PH — maximum height of the petiole in profile from the apex of subpetiolar process to dorsalmost point;

TL — total length:  $HL + WL + PL + GL$ .

Indices: CI — cephalic index:  $HW/HL \times 100$ ;

MI — mandibulo-cephalic index:  $ML \times 100/HL$ ;

SI — scape index:  $SL/HW \times 100$ ;

PI — petiolar index:  $PW/PL \times 100$ .

***Myopias shivalikensis* Bharti et Wachkoo, sp. n. (fig. 1–3)**

Material. Holotype worker, India, Jammu and Kashmir, Surinsar, 32.7009°N 75.1512°E, 700 m a. s. l., 14 July 2009, soil core (coll. Aijaz A. Wachkoo). Holotype deposited in Punjabi University Patiala Ant Collection (PUPAC), Patiala, India.

Holotype worker. TL 2.9; HL 0.63; HW 0.6; ML 0.53; CL 0.08; CW 0.1; WL 0.83; PL 0.23; PW 0.26; PH 0.37; SL 0.42; GL 1.2 mm. Indices: CI 95.24; MI 84.13; SI 70; PI 113.

Head. Head subrectangular, slightly longer than broad, sides convex; occiput strongly emarginate, occipital corners rounded and prominent. Median clypeal lobe trapezoidal, widest near the base, furnished at each anterior corner with a distinct protrusive tooth. Mandibles porrect, their masticatory margin furnished with 4 teeth; apical tooth longer than preapical one, then followed basally by two blunt teeth, which are separated from each other by almost the same distance as apical is separated from the pre-apical tooth. Antennae 12-segmented with 4-segmented club; scape almost reaching protruded occipital corners of head. Eyes rudimentary, with indistinct

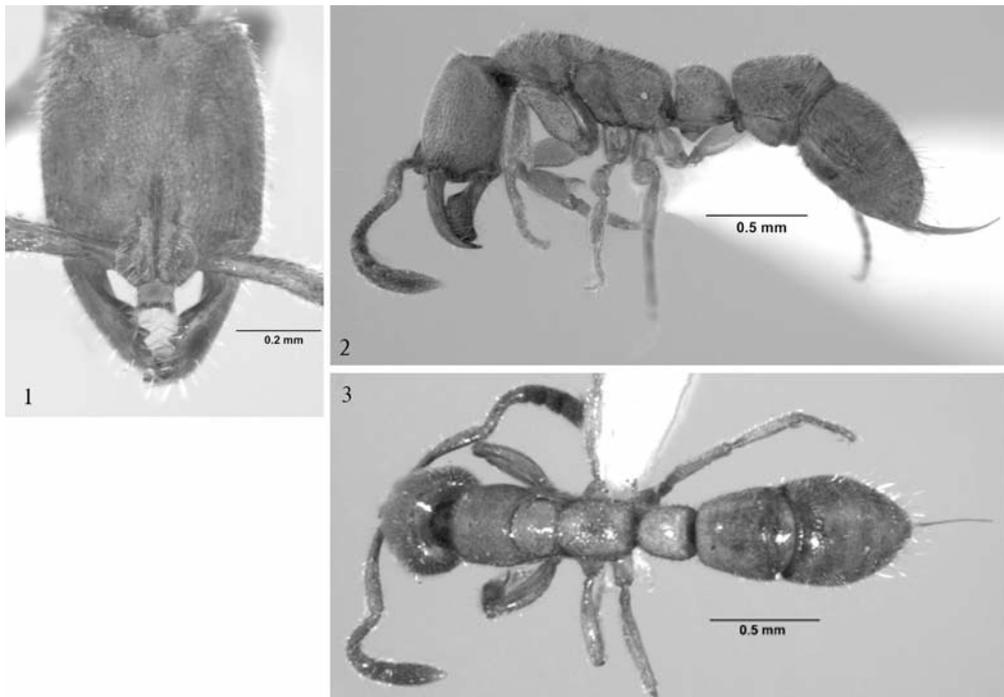


Fig. 1–3. *Myopias shivalikensis*: 1 — head, dorsal view; 2 — body, lateral view; 3 — body, dorsal view.

Рис. 1–3. *Myopias shivalikensis*: 1 — голова сверху; 2 — тело, вид сбоку в профиль; 3 — тело сверху.

facets, represented by a tiny black dot, situated well below midlength of head. Frontal groove short and deep, reaching the level of eyes.

Mesosoma and petiole. Mesosoma narrowed laterally, rather low, with feebly convex promesonotal dorsum; propodeal dorsum almost flat, slightly inclined backward, forming rounded angle with subvertical, evenly convex declivity. Mesosomal sutures distinct, promesonotal suture is immediately followed by few horizontal, concentric striations on dorsum, metanotal suture is deeper, with a row of short longitudinal ridges on it. Petiole dorsally subrectangular with sides diverging, slightly broader than long, its anterior face in lateral view straight, while posterior face is convex; subpetiolar process large, with a trapezoidal base surmounted by a thin acute, posteriorly directed flange.

Gaster. Gaster elongate, with tergite of first segment rising posteriorly, remaining segments of gaster gently curved down, a distinct constriction with a row of short longitudinal ridges in it separates first and second gastral segments. Sting long, sharp and up-curved.

Sculpture. Head opaque, covered by wide, regular, closely spaced piligerous punctures. Punctures on pronotal and propodeal dorsum are denser than on the mesonotum. Sides of mesosoma with punctures, which are more pronounced on pronotum, sides of propodeum also weakly striated. Petiole with shallow punctures. Mandibles, clypeal lobe and gaster shiny, with scattered punctures.

Pilosity. Dense, reclinate, suberect, short and uniform on head; longest hairs (0.18 mm) present on anteriormost part of clypeus.

Colour. Brownish orange.

Distribution and habitat. This species seems to be rare in the Shivalik range of Northwest Himalaya: the single specimen was found in Jammu and Kashmir during the intensive surveys. The species was found along a small shady lakeside fragment with loose and moist soil, typical to inhabit this specialist predator; it is a hypogaecic ant and has been collected only by soil core method.

Etymology. The species is named after the study area, Shivalik.

Differential diagnosis. *M. shivalikensis* is a blind species and well differs from all congeners (except for *M. nops*) with the combination of many characters, including the shape of mandible, arrangement and shape of teeth, shape of clypeal lobe, petiole and subpetiolar process, eye size; measurements and sculpture taken together confirm this species as new. However, it somewhat resembles *M. nops*, sharing cryptobiotic life style, small body size and degenerated eyes, but can be easily distinguished from the latter by the presence of two protruding teeth on the anterior corners of clypeus, and strongly emarginated occipital margin. Eyes are also strongly reduced in *M. nops* and barely visible amid the surface sculpture, while only clear black dots represent eyes in *M. shivalikensis*. Mandibular size is shorter in *M. nops* (ML 0.42) compare to *M. shivalikensis* (ML 0.53); shape of mandibles is also quite different: *M. nops* has blunt pre-apical tooth, whereas both apical and pre-apical teeth are clearly acute in *M. shivalikensis*.

Financial assistance rendered by Ministry of Environment and Forests (Grant No. 14/10/2007-ERS/RE), Govt. of India, New Delhi is gratefully acknowledged.

Bolton B. Bolton's Catalogue and Synopsis. Available from: <http://gap.entclub.org/> Version: 1 July 2011.  
Willey R. B., Brown W. L. Jr. New species of the ant genus *Myopias* (Hymenoptera: Formicidae: Ponerinae) // Psyche. — 1983. — 90. — 249–285.