

UDC 595.796 (540)

***ECHINOPLA CHERAPUNJIENSIS* SP. N. (HYMENOPTERA, FORMICIDAE) FROM INDIA**

H. Bharti, I. Gul

Department of Zoology and Environmental Sciences, Punjabi University,

Patiala — 147002, India

E-mail: himenderbharti@gmail.com; irfangulhhh@gmail.com

Received 14 July 2011

Accepted 28 May 2012

Echinopla cherapunjiensis sp. n. (Hymenoptera, Formicidae) from India. Bharti H., Gul I. — *Echinopla cherapunjiensis* Bharti et Gul, sp. n. is described from India. This represents the second species of genus reported in India, with only *Echinopla lineata senilis* Mayr, 1862 described earlier from Nicobar Islands. The species distinctly differs from all other known species of this genus by the following combination of characters: globose shape of head, presence of seven teeth on petiolar scale, flat dorsum of mesosoma with promesonotal and mesometanotal sutures obsolete, whole body surface (dorsum) rough due to sinuous sculpture, deep excavations and spiky elevations on head and mesosoma and excavations on gaster.

Key words: *Echinopla*, Formicinae, new species, India.

Echinopla cherapunjiensis sp. n. (Hymenoptera, Formicidae) из Индии. Бхарти Х., Гул И. — *Echinopla cherapunjiensis* Bharti et Gul, sp. n. описан из Индии. Это второй представитель рода, обнаруженный в Индии, вместе с видом *Echinopla lineata senilis* Маур, 1862, описанный ранее с Никобарских островов. Этот вид четко отличается от всех других известных видов этого рода рядом признаков: шаровидной головой, наличием семи зубцов на петиолярном сегменте, плоской брюшной частью с промезонотальным и мезометанотальным рудиментарным швом, шероховатой дорсальной поверхностью тела благодаря волнистой скульптуре, глубокими выемкам и шиповидными выпуклостями на голове и мезосоме, а также выемками на брюшке.

Ключевые слова: *Echinopla*, Formicinae, новый вид, Индия.

Introduction

Echinopla Smith, F., 1857 is a pocket size genus. It is currently represented by 22 species and 4 subspecies from the world (Bolton, 2011). *Echinopla* awaits a global taxonomic revision, as no significant contributions except for isolated descriptions have been published. From India the genus is represented by a single species *Echinopla lineata senilis* Mayr, 1862 (Bharti, 2011). With one described species in our publication, *Echinopla* signifies 2 species from India. This also confirms first record of this genus from North India.

Echinopla cherapunjiensis Bharti et Gul, sp. n. collected from high altitude range of North-East Himalaya is described below. The species inhabits the areas with wet atmospheric conditions and high annual rainfall. It is not obvious whether the species is arboreal or nests in the soil but the specimen was collected from a branch of a broad leaved tree.

Material and methods

A single specimen of this rare species was collected through hand picking method. The taxonomic analysis was carried 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 terminology for measurements (given in millimeters) and indices includes:

HL Maximum length of head in dorsal view, measured in straight line from the anterior most point of the frontal lobes to the midpoint of the occipital margin.

HW Maximum width of head in dorsal view including eyes.

- SL Maximum length of the scape excluding the basal neck and condyle.
 WL Weber's length measured from the anterior surface of the pronotum proper (excluding the collar) to the posterior extension of the propodeal lobes.
 GL The length of the gaster in lateral view from the anterior most point of first gastral segment to the posterior most point (excluding sting).
 PL Maximum length of the petiole in dorsal view.
 PW Maximum width of the petiole in dorsal view.
 TL Total length: HL+WL+PL+GL.
 CI Cephalic index: HL/HW×100.
 SI Scape index: SL/HW×100.
 PI Petiolar index: PW/PL×100.

***Echinopla cherapunjiensis* Bharti et Gul, sp. n. (fig. 1–3)**

Material. Holotype worker, India, Meghalaya, Cherapunji, 25.2988° N 91.7086° E, 1200 m a. s. l. 02. i. v. 2009 (coll. Irfan Gul). Holotype deposited in Punjabi University Patiala Ant Collection (PUPAC), Patiala, India.

Holotype worker. TL 6.6; HL 1.70; HW 1.90; WL 2.16; PW 0.75; PL 0.60; SL 1.49; GL 2.14 mm. Indices: CI 89.47; SI 78.42; PI 125.

Head. Head more or less globose in full face view, broadest just behind eyes; lateral sides convex; posterior margin of head feebly convex; eyes very prominent, with approximately 21 facets in its greatest diameter, positioned behind the midline, towards lateral sides of the head; clypeus weakly convex, with its anterior border more or less straight; frontal lobes much raised over the antennal sockets; mandibles short, stout armed with five prominent teeth; antennal scape slender, short, extending up to the posterior border of head, funiculus with first joint a little longer than the following six, which are of about equal length, last joint about as long as the two preceding taken together.

Mesosoma and petiole. In profile, mesosomal dorsum more or less flat; in dorsal view, the sides of the mesosoma narrowed to the base of the propodeum; promesonotal and mesometanotal suture obsolete; scale of petiole transverse, armed with seven teeth, which are almost equidistant, except for the dorsal two teeth, where the distance is maximum between the two; propodeal declivity more or less straight; gaster subglobose, broad in dorsal view; the acidopore at the apex of gaster, covered by long bristles.

Sculpture. Head, mesosoma, petiole coarsely sinuous and excavated; gaster only excavated; whole head and mesosoma and basal part of the gaster interspersed with spiky blunt elevations placed in great regularity over the entire upper surface making the surface rough, each elevation having a long setae at its apex, the elevations longer on the mesosoma and relatively short on head, petiole and gaster; mandibles, legs and scape smooth.

Pilosity. Head, mesosoma, gaster, petiole and legs covered with hairs, more abundant and curved on head and mesosoma, sparse on gaster and legs, straight and plentiful on petiole; pubescence more dense on antennal funiculus, sparse on legs; entire surface of the body, including legs and scape, covered with more uniformly placed long setae.

Color. Mandibles, antennae, eyes and legs light brown to dark brown; head, mesosoma, petiole and gaster black; mandibles, antennal scapes, legs and ventral part of gaster shiny.

Distribution and habitat. This species is rare in Himalaya and was found only once in a single locality of Meghalaya during the intensive surveys. The species was found under the cover of a rain forest nesting inside a hollow twig and was collected by hand picking.

Etymology. The species is named after the type locality, Cherapunji.

Differential diagnosis. *Echinopla cherapunjiensis* is significantly different from all known species of this genus. The species is well distinguished by the distinct sculpture (sinuate sculpture, spikes, excavations) of body, shape of mesosoma (flat dorsum, sutures obsolete), sculpture, shape and number of teeth on petiole (surface excavated, scale transverse, 7 teeth). The shape of mesosoma is a trait somewhat unique to this species. It is remarkably different from *E. lineata senilis* Mayr, 1862, the only species reported

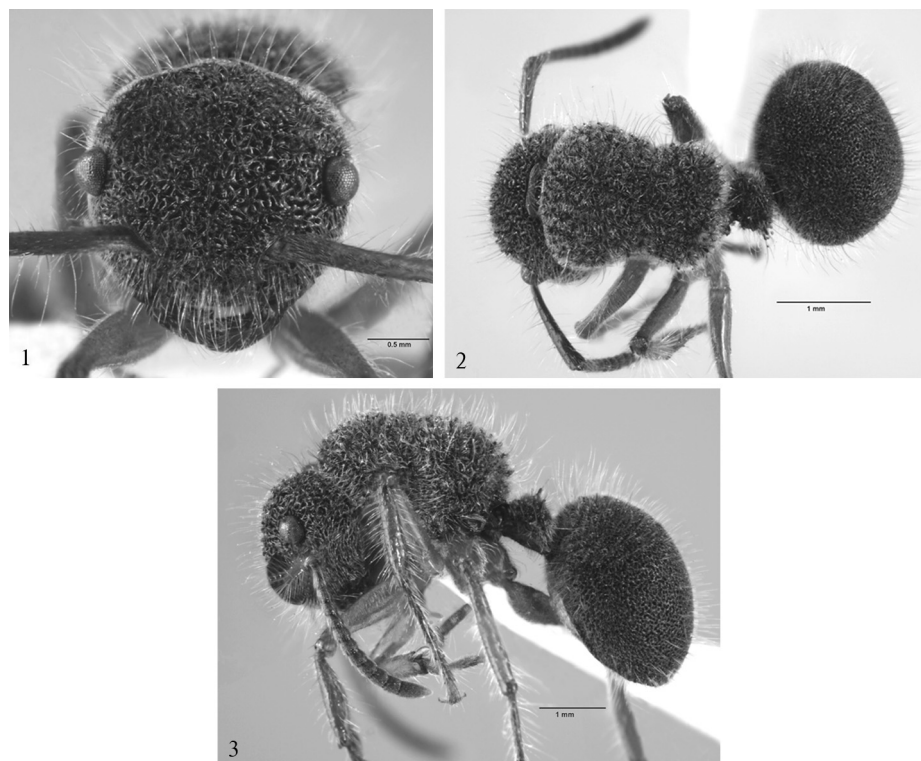


Fig. 1–3. *Echinopla cherapunjiensis*: 1 — head in full face view; 2 — dorsal view; 3 — lateral view.
 Рис. 1–3. *Echinopla cherapunjiensis*: 1 — голова общий вид; 2 — вид сверху; 3 — вид сбоку.

from India and can be easily separated from it, as in *E. lineata senilis* the body is striped and the pro-mesonotal and meso-metanotal sutures are distinct, which is not the case with *Echinopla cherapunjiensis*. The species shows some resemblance with *E. melanarctos* Smith, F., 1857 but can be reasonably differentiated, as in *E. melanarctos*, the short spiky blunt elevations are distinctly present on head, mesosoma and gaster, the mesosomal dorsum is strongly convex in profile, the head is flat on posterior margin, while in *Echinopla cherapunjiensis*, the gaster is only excavated without distinct elevations, the mesosomal dorsum is flat, posterior margin of head is convex. Additionally, the setae in *E. melanarctos* are very dense, thick and much longer than *Echinopla cherapunjiensis*.

However, the species comes most close to *E. pallipes* Smith, F., 1857 but can be easily separated, as in *E. pallipes*, in profile, the dorsum of mesosoma makes a strongly convex arch (dome shaped), petiolar scale is smooth without any sculpture, only two short horizontal spines are present on petiole but in *Echinopla cherapunjiensis*, mesosomal dorsum is flat in profile, the surface of petiolar scale is rough by the presence of excavations and spiky elevations and petiole is with seven distinct teeth.

Financial assistance rendered by Department of Science and Technology (Grant No. SR/SO/AS-65/2007), Govt. of India, New Delhi is gratefully acknowledged.

Bharti H. List of Indian Ants (Hymenoptera: Formicidae) // Halteres. — 2011. — 3. — P. 79–87.

Bolton B. Bolton's Catalogue and Synopsis. Available from: <http://gap.entclub.org/> "Version: 1 July, 2011.

Mayr G. Myrmecologische Studien // Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien. — 1862. — 12. — P. 649–776.

Smith F. Catalogue of the hymenopterous insects collected at Sarawak, Borneo; Mount Ophir, Malacca; and at Singapore, by A. R. Wallace // Journal of the Proceedings of the Linnean Society of London, Zoology. — 1857. — 2. — P. 42–88.