

A NEW SPECIES OF THE GENUS *PARATOPULA* WHEELER (HYMENOPTERA, FORMICIDAE) FROM TIBET

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Abstract A new species of the ant genus *Paratopula* Wheeler is described from Mêdog, Tibet, the south slope of Mt. Himalaya. Key to the 7 known species of the genus of the world based on worker caste is provided. The new species, *P. zhengi* sp. nov., is close to *P. intermedia* Sheela & Narendran, 1998, but frontal carinae fine and continuous, about as long as scapes; propodeal declivity straight, propodeal lobes short, truncated apically; anterodorsal corner of petiolar node roundly prominent; and the dorsum of alitrunk with abundant hairs.

Key words Hymenoptera, Formicidae, *Paratopula*, new species, China.

The ant genus *Paratopula* was erected by Wheeler (1919) based on the type-species *Atopomyrmex ceylonicus* Emery in the subfamily Myrmicinae. Species belonging to the genus were described by Emery (1901), Forel (1902, 1913a, 1913b), Crawley (1924), and Stitz (1938) respectively. Bolton (1988) reviewed the genus and recognized 9 valid species in the Oriental and Indo-Australian Regions, but only 5 species were known from worker caste.

In the Rapid Assessment Program of Biodiversity of Mêdog Nature Reserve in 2008, a new species, *P. zhengi* sp. nov., was discovered at Mêdog, Tibet, the south slope of Mt. Himalaya. The genus was therefore recorded in mainland China for the first time. The type specimen is deposited in the Insect Collection, Southwest Forestry University, Kunming, Yunnan Province, China.

Materials and Methods

The worker caste was collected by a search-collecting method in the secondary monsoon forest area at Mêdog Town. Descriptions and measurements were made under a XTB-1 stereo microscope with a micrometer. Illustrations were made under a Motic stereo microscope with illustrative equipment.

Standard measurements (in millimeters) and indexes are as defined in Bolton (1981, 1982): TL-Total length, HL-Head length, HW-Head width, CI-Cephalic index, SL-Scape length, SI-Scape index, PW-Pronotal width, AL-Alitrunk length, ED-Maximum diameter of eye.

Paratopula Wheeler, 1919

Paratopula Wheeler, W. M. 1919: 144. Type-species: *Atopomyrmex ceylonicus*, by original designation.

Taxonomic position. Formicidae, Myrmicinae,

Paratopulini.

Geographical range. Oriental and Indo-Australian.

Key to known species of *Paratopula* of the world based on worker caste.

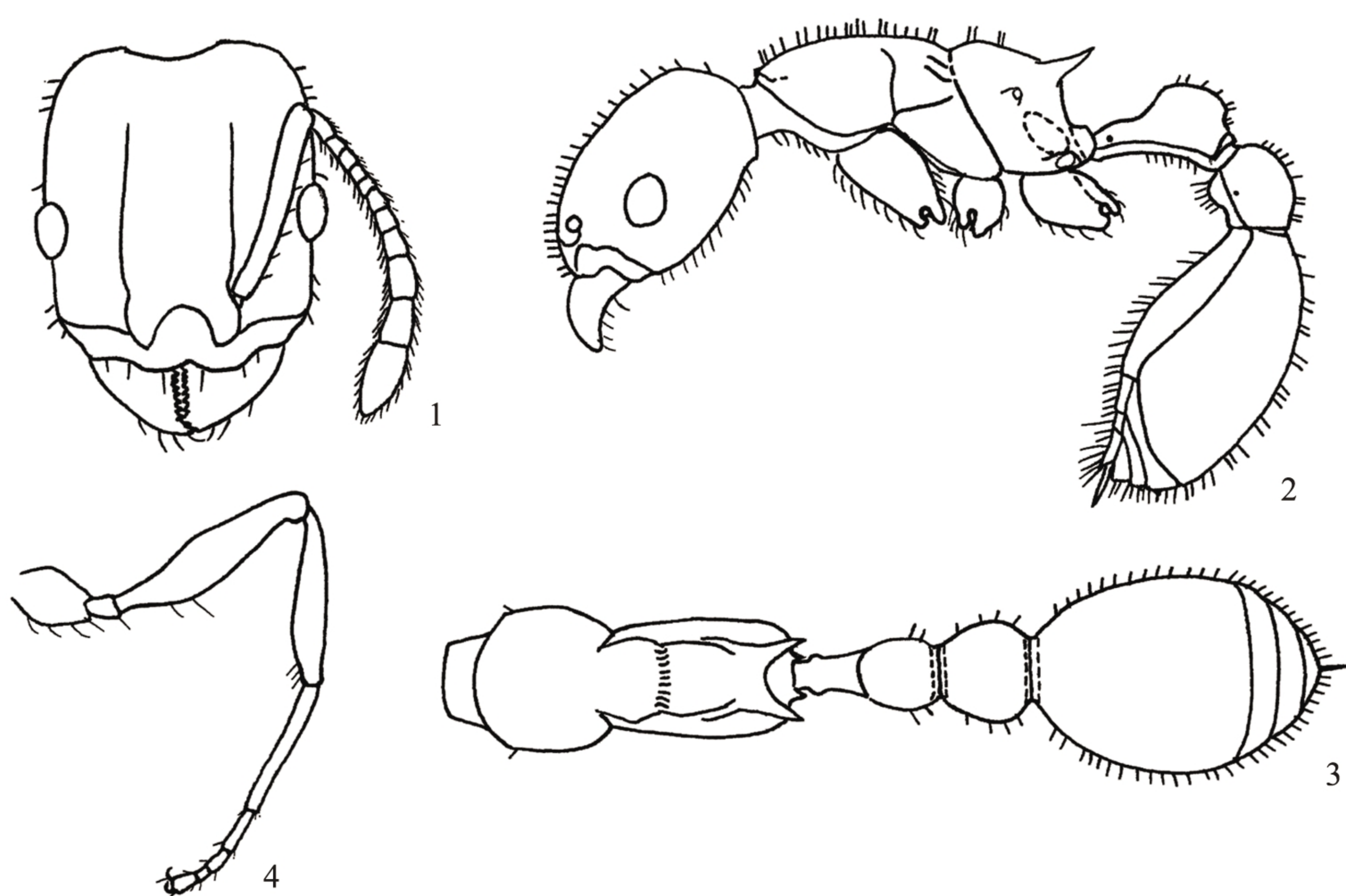
1. Dorsal surfaces of middle and hind tibiae with short stout erect to suberect hairs and short decumbent to appressed pubescence (Bolton, 1988. Fig. 2) (Brunei, Malaysia) *P. macta* Bolton
Dorsal surfaces of middle and hind tibiae lacking standing hairs, at most with short decumbent to appressed pubescence 2
2. Propodeal lobes sharply hooked upwards apically, their apices directed vertically (Bolton, 1988. Fig. 1) (Brunei)
..... *P. ankistra* Bolton
Propodeal lobes rounded or truncated apically, never hooked upwards 3
3. Anterior 2/3 of postpetiolar sternite truncated ventrally 4
Anterior 2/3 of postpetiolar sternite roundly convex ventrally 5
4. Propodeal lobes about as broad as long. Pronotal humeri angulate in dorsal view (Bolton, 1988. Fig. 3) (Malaysia)
..... *P. demeta* Bolton
Propodeal lobes broader than long. Pronotal humeri rounded in dorsal view (Bolton, 1988. Fig. 4) (Indonesia) *P. catocha* Bolton
5. In dorsal view, petiolar and postpetiolar nodes roughly rectangular. Hairs on first gastral tergite tapering and acute apically (Bolton, 1988. Fig. 5) (China, Taiwan; India, Sri Lanka)
..... *P. ceylonica* (Emery)
In dorsal view, petiolar and postpetiolar nodes distinctly narrowed backwards. Hairs on first gastral tergite short and truncated apically 6
6. Frontal carinae indistinct behind frontal lobes. Propodeal lobes angulated apically (Sheela & Narendran, 1998. Figs 1–4) (India)
..... *P. intermedia* Sheela & Narendran
Frontal carinae fine and continuous, about as long as scapes. Propodeal lobes truncated apically (Figs 1–4) (China, Tibet)
..... *P. zhengi* sp. nov.

Paratopula zhengi sp. nov. (Figs 1–7)

Holotype worker. TL 6.6, HL 1.55, HW 1.25, CI 81, SL 0.98, SI 78, PW 0.90, AL 2.08, ED 0.30. Head rectangular, distinctly longer than broad. Occipital margin evenly concave, occipital corners

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Figs 1 – 7. Worker of *Paratopula zhengi* sp. nov. 1. Head in full face view. 2. Head and body in profile view. 3. Alitrunk, petiole, postpetiole, and gaster in dorsal view. 4. Hind leg in front view. 5. Head and body in profile view. 6. Head in full face view. 7. Head and body in dorsal view.

roundly prominent. Lateral sides nearly parallel, slightly narrowed forward. Mandibles triangular, masticatory margin with 9 teeth which decreased in size from apex to base. Anterior margin of clypeus distinctly notched in the middle, posterior median portion between frontal lobes distinctly wider than the latter. Antennae 12-segmented, antennal club 3-segmented. Apexes of scapes reached to 4/5 of the distance from antennal sockets to occipital corners. Frontal carinae weakly developed and parallel, about as long as antennal scapes. Eyes developed, located slightly before the midpoints of lateral sides of head, with about 13 facets across the maximum diameter.

In profile view, promesonotum weakly convex and formed a weak arch. Promesonotal suture indistinct, metanotal groove distinctly notched. Propodeal dorsum feebly convex, slope down

backwards, slightly longer than declivity, the latter straight. Propodeal spines slender and acute, slightly curved upwards apically, about 1/2 as long as propodeal dorsum. Propodeal lobes short and truncated apically. Femora of legs obviously swelled in the middle. In profile view, ventral face of petiole weakly concave, anteroventral corner with a minute prominent. Petiolar node nearly trapezoid, dorsal face weakly convex, anterodorsal and posterodorsal corners roundly prominent. Anterior peduncle shorter than petiolar node. Dorsum of postpetiole roundly convex, anterior 2/3 of sternite roundly strongly convex ventrally. In dorsal view, both petiolar and postpetiolar nodes roughly trapezoid, distinctly narrowed forwards. First gastral tergite large, occupied about 3/5 of the length of gaster. Sting extruding.

Mandibles relatively smooth, with sparse fine

punctures. Head, alitrunk, petiole, and postpetiole with similar relatively coarse reticulations. Clypeus with sparse fine longitudinal striations. Dorsum of head with relatively coarse longitudinal striations between frontal carinae. Dorsal surfaces of middle and hind tibiae with longitudinal striations. Gaster smooth, basigastral costulae present on basal 1/3 of the first tergite. Dorsum of the whole body with abundant similar short blunt erect to suberect hairs, sparse depressed pubescence visible on the gaster. Antennal scapes with sparse short blunt erect hairs and dense depressed pubescence. Tibiae with abundant decumbent pubescence, but without erect hairs. Color orange yellow; mandibles, tarsi, and middle gaster brown; eyes black; coxae, femora, and tibiae yellow.

Holotype worker, China, Tibet, Mêdog County, Mêdog Town, Mêdog (29°19'N, 95°19'E; alt. 1 080 m), Monsoon Forest Area, foraged on the ground, 18 May 2008, leg. XU Zheng-Hui, No. A08-682.

Remarks. This new species is close to *P. intermedia* Sheela & Narendran, 1998, but frontal carinae fine and continuous, about as long as scapes; propodeal declivity straight, propodeal lobes short and truncated apically; anterodorsal corner of petiolar node roundly prominent; dorsum of alitrunk with abundant hairs.

Etymology. The new species is named in honor of Professor ZHENG Zhe-Min for his outstanding contribution to the systematic entomology.

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Bolton (1981, 1982) and Sheela & Narendran (1998) respectively. The study was carried out in the Key Laboratory of Forest Disaster Warning and Control in Yunnan Province, Southwest Forestry University.

REFERENCES

- Bolton, B. 1981. A revision of six minor genera of Myrmicinae in the Ethiopian zoogeographical region. *Bulletin of the British Museum (Natural History) (Entomology)*, 43: 245–307.
- Bolton, B. 1982. Afrotropical species of the myrmicine ant genera *Cardiocondyla*, *Leptothorax*, *Melissotarsus*, *Messor* and *Cataulacus*. *Bulletin of the British Museum (Natural History) (Entomology)*, 45: 307–370.
- Bolton, B. 1988. A review of *Paratopula* Wheeler, a forgotten genus of myrmicine ants. *Entomologist's Monthly Magazine*, 124: 125–143.
- Cheng, L., Ye, Q. and Yang, Y. 1992. *Atopomyrmex srilankensis*-a new record from China. *Entomotaxonomia*, 14: 244.
- Crawley, W. C. 1924. Ants from Sumatra, with biological notes by Edward Jacobson. *Annals and Magazine of Natural History*, 13 (9): 380–409.
- Emery, C. 1901. Ameisen gesammelt in Ceylon von Dr. W. Horn, 1899. *Deutsche Entomologische Zeitschrift*, 1901: 113–122.
- Forel, A. 1902. Myrmicinae nouveaux de l'Inde et de Ceylan. *Revue Suisse de Zoologie*, 10: 165–249.
- Forel, A. 1913a. H. Sauter's Formosa-Ausbeute: Formicidae 2. *Archiv für Naturgeschichte (A)*, 79 (6): 183–202.
- Forel, A. 1913b. Wissenschaftliche Ergebnisse einer Forschungsreise nach Ostindien, ausgeführt im Auftrage der Kgl. Preuss. Akademie der Wissenschaften zu Berlin von H. v. Buttel-Reepen. 2. Ameisen aus Sumatra, Java, Malacca und Ceylon. Gesammelt von Herrn Prof. Dr. v. Buttel-Reepen in den Jahren, 1911-1912. *Zoologische Jahrbücher. Abteilung für Systematik, Geographie und Biologie der Tiere*, 36: 1–148.
- Sheela, S. and Narendran, T. C. 1998. A new species of the genus *Paratopula* Wheeler from India. *Geobios New Reports*, 17: 23–26.
- Stütz, H. 1938. Neue Ameisen aus dem indo-malayischen Gebiet. *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin*, 1938: 99–122.
- Terayama, M. 2009. A synopsis of the family Formicidae of Taiwan. *Research Bulletin of Kanto Gakuen University*, 17: 81–266.
- Wheeler, W. M. 1919. The ants of Borneo. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 63: 43–147.

西藏华丽蚁属一新种记述（膜翅目，蚁科）*

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摘要 描述采自喜马拉雅山南坡西藏墨脱的华丽蚁属 *Paratopula* Wheeler 1 新种。依据工蚁特征编制了全球华丽蚁属已知 7 个种的检索表。

郑氏华丽蚁，新种 *P. zhengi* sp. nov. (图 1~7)

新种与媒介华丽蚁 *P. intermedia* Sheela & Narendran 接近，但是额脊细而连续，约与柄节等长；侧面观并胸腹节斜面

关键词 膜翅目，蚁科，华丽蚁属，新种，中国。

中图分类号 Q969.554.2

直，并胸腹节侧叶短，末端平截；腹柄结前上角圆突；胸部背面具丰富立毛。

正模工蚁，喜马拉雅山南坡西藏墨脱，2008-05-18，徐正会采。

词源：新种种名以郑哲民教授的姓氏命名，以示对他在昆虫分类学领域做出突出贡献的敬意。

* 本文为祝贺郑哲民教授 80 寿辰暨执教 60 周年而作。