

First record of *Leptogenys birmana* Forel, 1900 (Hymenoptera: Formicidae) from Arunachal Pradesh, India

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Abstract

Leptogenys birmana Forel, 1900 is a ponerine ant distributed across the Indomalayan region, with extension into the southern Palaearctic. The species had not previously been recorded from Arunachal Pradesh. During fieldwork on 3 March 2025, it was recorded from Budhisatta, near the Deban Range of the Namdapha Tiger Reserve, Changlang district, Arunachal Pradesh, representing a new state record and extending its known distribution in northeastern India. This finding adds to the documented ant fauna of the region and highlights the importance of continued myrmecological surveys in underexplored areas of Northeast India.

Keywords: Formicidae, Ponerinae, New state record, Arunachal Pradesh, Indo-Burma, Myrmecofauna

Introduction

The genus *Leptogenys* Roger, 1861 is the most speciose genus within the subfamily Ponerinae and is widely distributed throughout tropical and subtropical regions (Schmidt and Shattuck 2014) [1]. It currently comprises 320 extant species, 14 subspecies, and one valid fossil species (Bolton 2025) [5]. Species of *Leptogenys* are ecologically important predators inhabiting leaf litter and soil environments, many exhibiting specialized morphological and behavioural adaptations associated with predation and cryptobiotic lifestyles (Schmidt and Shattuck 2014) [1]. Within this genus, *Leptogenys birmana* Forel, 1900 is relatively widespread, occurring across the Indomalayan region and extending into the southern Palaearctic through China (AntWiki 2025) [1].

In India, *L. birmana* has been documented from Assam, Karnataka, Kerala, Meghalaya, Tamil Nadu, Tripura, and West Bengal (Bharti *et al.* 2016) [4]. Dhar and Saroj (2025) [7] subsequently reported the species from Manipur, further extending its known range in Northeast India. However, despite these faunistic efforts, *L. birmana* has not been recorded from Arunachal Pradesh to date.

Arunachal Pradesh harbors one of the richest ant faunas in India, with 255 species representing 61 genera (Bharti *et al.* 2016) [4]. Nevertheless, large parts of the state remain undersampled, and continued surveys frequently yield new state records and range extensions (e.g., Rilta and Bharti 2025) [10]. Such records are essential for refining species distribution data and understanding biogeographic patterns (Baidwan *et al.* 2024, 2025) [2,3]. Northeast India, situated at the junction of the Eastern Himalaya and Indo-Burma biodiversity hotspots, remains comparatively underexplored in terms of its myrmecofauna (Kapoor *et al.* 2026) [9].

The present study documents the first record of *Leptogenys birmana* from Arunachal Pradesh.

Materials and Methods

Field observations were conducted from September 2024 to March 2025 as part of an ongoing conservation project focused on the White-bellied Heron (*Ardea insignis*). Fieldwork was conducted on 3 March 2025 at Budhisatta village, near the Deban Range of Namdapha Tiger Reserve, Changlang district, Arunachal Pradesh, India (Fig. 1).

Workers of *Leptogenys birmana* were located in leaf litter and along the forest floor and were collected by hand-picking. Specimens were preserved in 100% ethanol for subsequent morphological examination. Identification was carried out using available taxonomic literature and online resources. QGIS version 3.34.3 was used to analyse and show spatial data in order to create distribution maps and record observation locations.

Results and Discussion

Taxonomic Account

Kingdom: Animalia
Phylum: Arthropoda
Class: Insecta
Order: Hymenoptera
Family: Formicidae
Subfamily: Ponerinae
Tribe: Ponerini
Genus: *Leptogenys*

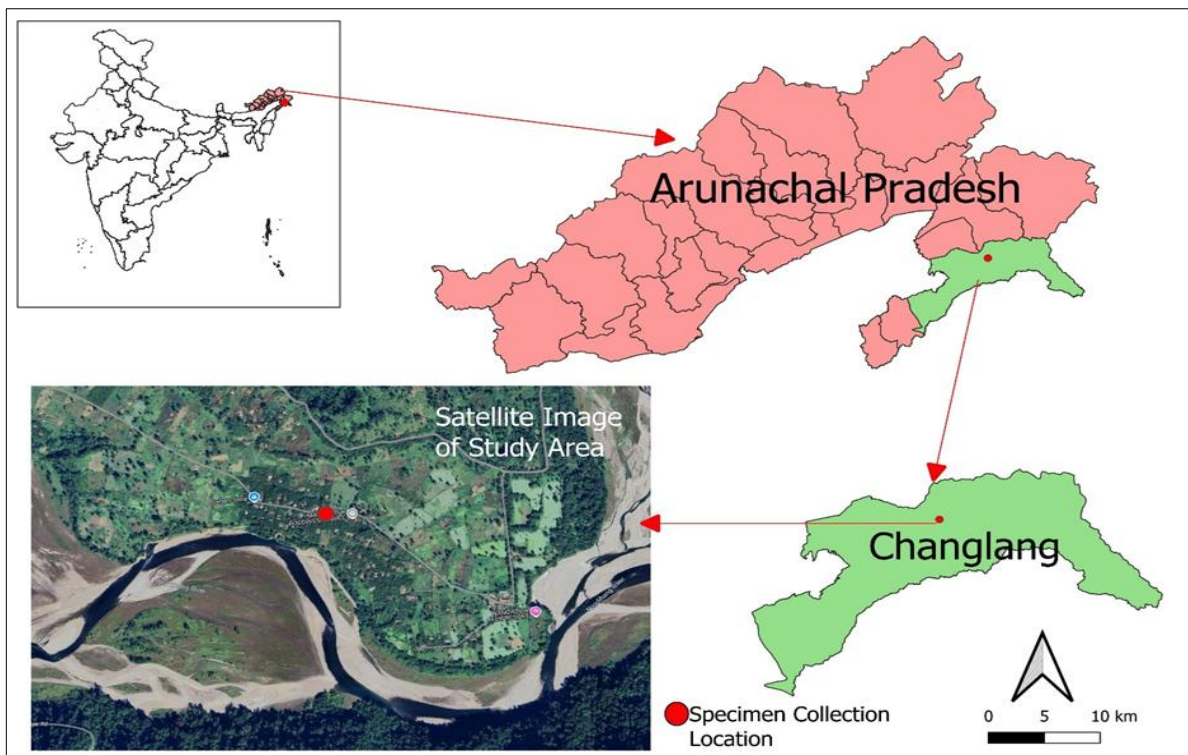


Fig 1: Study Area: Budhisatta village, near Deban Range of Namdapha Tiger Reserve, Changlang district, Arunachal Pradesh, India

***Leptogenys birmana* Forel, 1900 (Fig. 2)**

Leptogenys (Lobopelta) birmana Forel, 1900: 310 (w.) MYANMAR, INDIA (Assam). Indomalaya. Primary type information: Primary type material: syntype workers (number not stated). Primary type localities: Myanmar ("Burma"): Bhamo (*L. Fea*), Burma: vers 1200 m. (*L. Fea*), Burma: Ye Valley (*C.T. Bingham*), Burma: (no further data) (*C.T. Bingham*), Burma: (no further data) (*Watson*), Burma: Palon, and Carin (no collectors' names), India: Assam (*Long*). Primary type depositories: MHNG, NHMB (perhaps also BMNH or OXUM). Type notes: Baroni Urbani, 1973: 142, cites 3 worker syntypes in NHMB.

Material Examined

India: Arunachal Pradesh, Changlang district, Budhisatta village, near Deban Range of Namdapha Tiger Reserve

(Budhisatta village, 27°30'15"N 96°22'27"E), 369 m a.s.l., 3 March 2025, coll. Srinjoy Das (Fig. 1).

Diagnosis (Worker)

Workers characterized by mandibles with the masticatory margin bearing more than two teeth and denticles in addition to the apical tooth; head in full-face view quadrate to subtrapezoidal, approximately as broad as long; dorsum of head medial to the eyes longitudinally striate; anteromedian clypeal margin broadly angulate; antennal funicular segments IV–VI approximately as broad as long; petiolar node in lateral view longitudinally compressed and squamiform, acute at the summit and lacking a distinct horizontal dorsal margin; in dorsal view, node at least twice as broad as long; subpetiolar process broad and triangular in profile; body reddish brown (Chen *et al.* 2024)^[6].

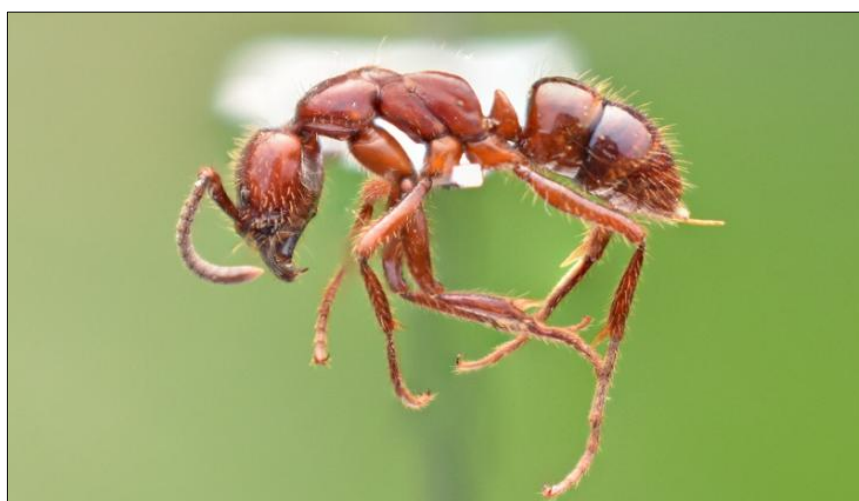


Fig 2: *Leptogenys birmana* Forel, 1900

With this addition, the total number of *Leptogenys* species and subspecies known from Arunachal Pradesh increases to 10 taxa (Table 1). The discovery of *L. birmana* in Arunachal Pradesh represents a significant range extension at the Indian state level and provides further evidence that many widely distributed Indomalayan ants remain under-recorded in Northeast India.

Given the proximity of Arunachal Pradesh to previously known localities in Assam and Manipur, the presence of *L. birmana* in the state is biogeographically expected; nevertheless, formal documentation is essential for accurate faunistic and biogeographic syntheses.

Table 1: Checklist of *Leptogenys* species recorded from Arunachal Pradesh based on Bharti *et al.* 2016 (including the present record).

S. No.	Species (with Authority)	Endemic (E)
1	<i>Leptogenys chinensis</i> (Mayr, 1870)	No
2	<i>Leptogenys dentilobis</i> Forel, 1900	Yes
3	<i>Leptogenys diminuta</i> (Smith, 1857)	No
4	<i>Leptogenys diminuta deceptrix</i> Forel, 1901	No
5	<i>Leptogenys diminuta diminutolaeviceps</i> Forel, 1900	No
6	<i>Leptogenys diminuta laeviceps</i> (Smith, 1857)	No
7	<i>Leptogenys diminuta woodmasoni</i> (Forel, 1886)	Yes
8	<i>Leptogenys kitteli</i> (Mayr, 1870)	No
9	<i>Leptogenys roberti</i> Forel, 1900	No
10	<i>Leptogenys birmana</i> Forel, 1900	No

Checklists and reports of new distributional records are important for improving our understanding of biodiversity and species distribution patterns (Kapoor *et al.*, 2025)^[8]. Recording species from previously undocumented regions helps update their known geographic range and contributes to clearer biogeographic interpretations. Such information also provides valuable baseline data for future ecological, taxonomic, and faunistic studies. Moreover, these records help highlight biodiversity-rich areas and support conservation efforts, especially in relatively unexplored regions such as Arunachal Pradesh. The present record of *Leptogenys birmana* therefore contributes to the existing knowledge of ant diversity in northeastern India.

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