

First record of *Neoheterophriectus smithi* Mirza, bhosale & sanap, 2014 (Arachnida, Araneae, Theraphosidae) from Gujarat, India

Dhaval M Bhatt¹, Niketa P Maheta¹, Anuj D Raina^{2*}

¹ Department of Zoology, Faculty of Science, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India

² Deputy Manager, Information and Technology, Gujarat Heavy Chemical Limited, Gujarat, India

Abstract

Neoheterophriectus smithi Mirza, Bhosale & Sanap, 2014 belonging to the family Theraphosidae Thorell, 1869 is recorded from Gujarat state, India for the first time. The species has thus far been recorded from Northern Western ghats of India and now from the dry-deciduous forest of Gujarat state. The report highlights the habitat preference and range extension of species with current geographic distribution in India.

Keywords: theraphosidae, *Neoheterophriectus smithi*, new record, shoolpaneshwar wildlife sanctuary, range extension

Introduction

Spiders (Araneae Clerck, 1757) forms the largest group among arachnids. It consists of two sub-orders Mesothelae Pocock, 1892 (spiders with a segmented abdomen) and Opisthothelae Pocock, 1892 (includes all other spiders). Opisthothelae further divides into two infra-orders named as Mygalomorphae Pocock, 1892 (primitive spiders such as tarantulas, trapdoor, and funnel web spiders) and Araneomorphae Pocock, 1892 (modern groups including the vast majority of spiders) (Coddington 2005; Dhali *et al.*, 2016) [2, 3]. The family Theraphosidae Thorell, 1869 is one of the largest mygalomorph families with 1010 species and 152 genera in the World (WCS 2021). In India, it is represented by 54 species from 12 genera placed among five subfamilies (Mirza *et al.*, 2014; Hadole *et al.*, 2015) [6, 4]. In India, it is represented by 61 species from 12 genera placed among six subfamilies (Bhatt & Raina, 2022) [1].

Presently, a total of eight species are classified in *Neoheterophriectus* i.e., *N. amboli* (Mirza & Sanap, 2014; Bhatt & Raina, 2022) [6, 1]; *N. bhori* (Gravely, 1915); *N. chimminiensis* (Sunil Jose, 2020); *N. cruofofulvus* (Siliwal, Gupta & Raven, 2012) [10]; *N. madraspatanus* (Gravely, 1935); *N. Sahyadri* (Siliwal, Gupta & Raven, 2012) [10]; *N. smithi* (Mirza, Bhosale & Sanap, 2014) [6] and *N. uttarakannada* (Siliwal, Gupta & Raven, 2012) [10]. All the species are restricted to Western Ghats and endemic to India (Siliwal & Raven, 2012; Mirza *et al.*, 2014; Bhatt & Raina, 2022) [10, 6, 1]. *Neoheterophriectus* differs from all other genera known within the Theraphosidae (except for the Eumenophorinae & Theraphosinae) in bearing stridulatory setae between the coxae of legs I–II (Mirza *et al.*, 2014) [6]. The tarsi of leg IV divided by a band of short spike setae in *Neoheterophriectus* instead of normal setae present in the Eumenophorinae. It differs from Theraphosinae in lacking urticating setae (Mirza *et al.*, 2014) [6]. Furthermore, it differs from *Heterophriectus* in possessing tibial spur, scopulae of leg III undivided and in lacking a cluster of spiniform setae on the retrolateral basal region of tibia I (Mirza *et al.*, 2014) [6]. The present study reports the first record of *Neoheterophriectus*

smithi from Gujarat India, which adds one more species of spider in the geographical zone of Gujarat.

Material and Method

Neoheterophriectus smithi Mirza, Bhosale & Sanap, 2014 [6] was observed vicinity of Sagai campsite of Shoolpaneshwar Wildlife Sanctuary (SWLS), Gujarat state, India for the first time on 10th of June 2015, at 01:05 AM IST. The SWLS is located between 21° 03' N to 21° 59' N latitude and 73° 05' E to 74° 10' E longitude at an elevation of 800 to 900 m from sea level (Fig. 1). The characters were noted down and photographs of the specimen were captured. The identification of the observed characters and photographic records were done using available literature (Tikader 1987; Smith 1987; Tikader 1977; Siliwal *et al.*, 2012; Mirza *et al.*, 2014) [13, 12, 10, 6].

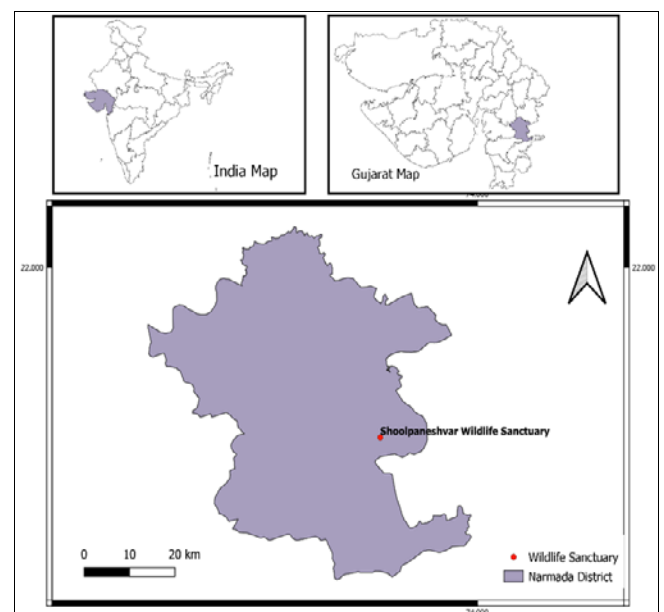


Fig 1: Location Map of Shoolpaneshwar Wildlife Sanctuary, Gujarat, India

Result and Discussion

A. Systematics

Phylum: Arthropoda

Subphylum: Chelicerata

Class: Arachnida

Order: Araneae

Infraorder: Mygalomorphae

Family: Theraphosidae

Genus: *Neoheterophriectus* Siliwal & Raven, 2012^[10]

Neoheterophriectus smithi Mirza, Bhosale & Sanap, 2014^[6]

B. Diagnosis

Neoheterophriectus smithi male differ from *N. amboli* male and *N. sahyadri* male in possessing a long slender spine at the base of the primary tibial apophysis (Figure 3f). Primary tibial apophysis in *N. smithi* curves at the apex, tapering gradually and lacks subapical swelling present in *N. amboli* (Figure 3f). *N. smithi* further differs from *N. amboli* in possessing spine of patella of leg IV (Figure 3A, 3B). *N. crurofulvus* does not bear a long slender spine at the base of the primary tibial apophysis (Figure 3F). The spider has well-developed scopula with urticating hairs and claw tufts; body is reddish brown with grey wavy setae. Cephalothorax: longer than wide; the carapace is covered with short brown setae which is more concentrated at the margins and interstitial ridges, Y-shaped black lines at carapace meeting at a procurved foveal groove (Fig. 2C). Abdomen: oval in shape with hirsute (Fig. 2D); Spinnerets: long and digitiform (Fig. 2D). Legs: moderately stout, hirsute, spines present except on femora. Presence of hirsute, white claw tufts on all leg's tarsi, presence of scopula, presence of stridulatory spike setae between coxae of legs; claws at the distal end of the tarsi (Fig. 2E). All legs subequal in thickness; tibia to tarsus of leg IV covered with many long hairs; metatarsi and tarsi of leg III and IV heavily spined (Fig. 2B). Brush of large feathery hair (appearing like scopula from lateral view) on prolateral distal half of coxae, trochanter to patella of leg I and on retro lateral distal half of coxae, trochanter to tibia and band on prolateral femur of palp (Fig. 2A). Presence of tibial apophysis (Fig. 2F); absence of spiniform setae on retrolateral tibia I (Fig. 2E).



Fig 2: Morphological features of *Neoheterophriectus* sp.: (A) *Neoheterophriectus* sp. male; (B) Lateral view: Leg III and IV showing spines; (C) Cephalothorax: With foveal groove (D) Oval abdomen with hirsute and long, digitiform Spinnerets; (E) Claws at the distal end of tarsi; (F) Tibial apophysis on leg I and absence of spiniform setae on retrolateral tibia I.

C. Distribution

Western Ghats and Gujarat (present study), India.

D. Remarks

N. smithi has been recorded from the periphery of Sharavati Valley Wildlife Sanctuary (SVWLS), Shimgo district, Karnataka at an elevation of 72 m, whereas the nearest record of the genus *Neoheterophriectus* is for *N. amboli* Mirza & Sanap, 2014^[6] at Amboli Ghat, Sindhudurg District, Southern Maharashtra at an elevation of 702 m (Mirza *et al.*, 2014)^[6]. The aerial distance in Google map for SWLS and SVWLS is 860 km (approximate), and the distance of SWS and Amboli Ghat is 650 km (approximate).

Conflict of interests

The authors declare that they have no Conflicts of interest.

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