



New Record of Himalayan Earth Tiger Tarantula *Haplocosmia himalayana* (Pocock, 1899) (Arachnida : Araneae : Theraphosidae) from Rajpur, Dehra Dun (Uttarakhand) with its Taxo-morphology, Distribution and Pest Controlling

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ABSTRACT: *Haplocosmia himalayana*, the Himalayan Earth Tiger Tarantula, a rare Himalayan arachnid species, the only species known from India, out of the two, under the genus *Haplocosmia* Schmidt & von Wirth, 1996. It was described long back from Dehra Dun by Pocock in 1899. Recently, a good specimen of the same was rescued from an old building at Rajpur (Dehra Dun) which after study was released in a nearby forest. The present communication deals with its taxo-morphological account, distribution and pest controlling nature.

Keywords: New Record, *Haplocosmia himalayana*, Rajpur, Dehra Dun.

I. INTRODUCTION

The arachnid fauna of Dehra Dun is very little known except for Pocock (1899) [7], Uniyal & Hore (2006) [9], Gupta & Siliwal (2013) [4], Husain (2019) and Husain & Hasan (2020) [2, 3]. Recently a beautiful specimen of a big tarantula was collected during the renovation of an old building at Rajpur (base of Mussoorie Hills), Dehra Dun (Uttarakhand) which on examination found to be the rare *Haplocosmia himalayana* [7], the Himalayan Earth Tiger Tarantula, belonging to family Theraphosidae and is recorded here as new for the area.

Pocock (1899) described it from Dehra Dun but not mentioned the locality [7]. Gupta & Siliwal (2013) [4] listed a juvenile from Wildlife Institute of India Campus, Chandrabani, Dehra Dun at the base of Siwalik range, some 20 km down the present location [4].

The only other species *Haplocosmia nepalensis* Schmidt & von Wirth, 1996, the Nepal Bright Burrowing Tarantula, is found in Nepal.

II. COLLECTION SITE: RAJPUR, DEHRA DUN

Location: Rajpur (30°23'32 N Latitude and 78°5'43" E Longitude; altitude around 871 m / 2,860 ft) at the base of Mussoorie Hills, Dehra Dun (Uttarakhand).

Climate: Temperate and warm; winters (December-February) very cold; May-June the warmest months, with an average annual temperature of 21.8°C; maximum av. annual rain fall, 1896 mm occur during July – August, with highest relative humidity.

Flora (Rajpur & vicinity): The area is lush green with a mix of hill and plain vegetation as listed below (vide

personal communications by Mr. Ajay Sharma and Dr. Amber Srivastava and author's information):

Agathis robusta- Kauri Pine; *Atrocarpus lacucha*- Badhal; *Araucaria columnaris*- Cook Pine; *Bauhinia variegata*- Kachnar; *Bombax ceiba*-Semal; *Beaucarnea recurvata*- Elephant's Foot or Ponytail Palm; *Broussonetia papyrifera*- Paper Mulberry; *Careya arborea*-Kumbhi; *Carica papaya*- Papaya; *Cascabela thevetia*- Yellow Oleander; *Casimiroa edulis*- White Sapote; *Cassia fistula*- Amalta; *Clerodendrum trichotomum*- Glory tree; *Cycas revoluta*- Sago Palm; *Dalbergia sissoo*- Shisham; *Delonix regia*- Gulmohar; *Elaeocarpus ganitrus*- Rudraksha; *Erythrina variegata*- Indian Coral tree; *Eucalyptus tereticornis*- Forest Red-gum; *Ficus benghalensis*- Banyan; *F. elastica*- Rubber plant; *F. recemosa*- Gular; *F. religiosa*- Peepal; *F. virens*- Pilkhan; *Grevillea robusta*- Silver Oak; *Hibiscus rosa-sinensis*- China rose, Gurhal; *Jacaranda mimosifolia*- Jacoranda; *Koelreuteria elegans*- Flame Gold; *Largestroemia speciosa*- Jarul; *Magnolia champaca*- Son Champa; *Mallotus philippensis*- Kamala or Kumkum tree; *Mangifera indica*- Mango; *Manilkara zapota*- Sapodila, Chikoo; *Melaleuca viminalis*- otle Brush; *Melia azedarach*- Pride of India or Bakain; *Millettia pinnata*- Karanj; *Mimusops elengi*- Maulsari or Bakul; *Murraya koenigii*- Curry-patta; *Musa acuminata*- Banana; *Peltophorum pterocarpum*- Copper-pod tree; *Plumeria obtusa*- White Frangipani, Champa; *Prunus persica*- Peach, Aaroo; *Pinus roxburghii*- Chi Pine; *Psidium guajava*- Guava; *Pterospermum acerifolium*- Kanak Champa; *Sapindus mukorossi*- Reeta; *Saraca asoca*- Ashoka tree; *Shorea robusta*- Sal tree; *Tabernaemontana divaricata*- Crape

Jasmine; *Tecoma stans*- Yellow Trumpet; *Terminalia arjuna*- Arjun; *Wodyetia bifurcata*- Foxtail Palm; seasonal flowering plants and kitchen garden vegetables.

HAPLOCOSMIA HIMALAYANA (POCOCK, 1899)

Taxo-morphological Account, Distribution and Other Aspects

Synonymy:

Selenocosmia himalayana Pocock, 1899. *J. Bombay nat. Hist. Soc.*, 12(4): 746 (type-locality: Dehra Dun); Hirst, 1907. *Ann. Mag. nat. Hist.* (7) 19: 523, fig. 2; Smith, 1986. *The tarantula: classification and identification guide*: 122, fig. 28h (male); Smith, 1987. *The tarantula: classification and identification guide* (2nd ed.): 122, fig. 28h (male); Platnick, 1989. *Advances in spider taxonomy, 1981-1987: A supplement to Brignoli's A Catalogue of the Araneae described between 1940 and 1981*: 109; Platnick, 2000. *The World Spider Catalog*, Version 1.0; Platnick, 2001. *ibid.*, Version 2.0; Platnick, 2002. *ibid.*, Version 2.5; Platnick, 2002. *ibid.*, Version 3.0.; Platnick, 2003. *ibid.*, Version 3.5; Platnick, 2003. *ibid.*, Version 4.0; Platnick, 2004. *ibid.*, Version 4.5; Platnick, 2004. *ibid.*, Version 5.0; Platnick, 2005. *ibid.*, Version 5.5.

Haplocosmia himalayana, Schmidt, 2003. *Neue Brehm-Bucherei, Hohenwarsleben*: 238, fig. 763 (male); Schmidt, 2004. *Tarantulas of the World*, 99: 6, fig. 1; Platnick, 2005. *The World Spider Catalog*, Version 6.0; Platnick, 2006. *ibid.*, Version 6.5; Platnick, 2006. *ibid.*, Version 7.0; Platnick, 2007. *ibid.*, Version 7.5; Platnick, 2007. *ibid.*, Version 8.0; Platnick, 2008, Version 8.5; Platnick, 2008. *ibid.*, Version 9.0.; Platnick, 2009. *ibid.*, Version 9.5; Platnick, 2009. *ibid.*, Version 10.0; Platnick, 2010. *ibid.*, Version 10.5; Platnick, 2010. *ibid.*, Version 11.0; Platnick, 2011. *ibid.*, Version 11.5; Platnick, 2011. *ibid.*, Version 12.0. *ibid.*; Platnick, 2012. *ibid.*, Version 12.5; Platnick, 2012. *ibid.*, Version 13.0; Gupta & Siliwal, 2013. *Indian society of Arachnology*, 1 (2): 82; Platnick, 2013. *The World Spider Catalog*, Version 13.5; Platnick, 2013. *ibid.*, Version 14.0; Platnick, 2014. *ibid.*, Version 14.5; Platnick, 2014. *ibid.*, Version 15; Platnick, 2020. *ibid.*, Version 21. 5.

Common Names: Himalayan Earth Tiger Tarantula and Himalayan Purple-banded Earth Tiger Tarantula.

Classification: Class Arachnida Cuvier, 1812, order Araneae Clerck, 1757, family Theraphosidae Thorell, 1870 (Tarantulas), subfamily Therephosinae Thorell, 1870, genus *Haplocosmia* Schmidt & von Wirth, 1996.

Sighting: 1 example (female), old building at Rajpur (30°23'32" N Lat. and 78°5'43" E Long., alt. 871 m

vide fall in grain), Dehra Dun, 17.x.2018, by Mr. Sachin Rana.

Diagnostic Features:

Colouration: Cephalothorax yellowish-grey, covered with colour pubescence; abdomen brownish-black with olive-green pubescence; legs purplish- black with patella (knee segment) and upper side of trochanter and coxa yellowish-grey, covered accordingly with pubescence.

Size: Total length 3.5 cm, carapace length 1.5 cm [7]; small to medium size, females reach about 10 cm V4 in, males mature smaller [10]; female 11.4 cm / 4.5 in, male 3.8 cm / 1.5 in [13]; 12.7 cm / 5 in [14; 21]; 3-4 cm [15]; 3.5 cm [16]; small to medium, female reaches 8.9-12.7 cm/4-5 inches in leg-span, male smaller [20]; 3.5 cm [17]; 6 cm [18].

Altitudinal Range: 2,012 m / 6,600 ft Kasauli (Solan district, Himachal Pradesh); 1,829 m / 6,000 ft Dalhousie (Chamba dist., H. P.); 871 m / 2,860 ft Rajpur (Dehra Dun dist., Uttarakhand); ca. 400 m / 1,312 ft Wildlife Institute of India Campus, Chandrabani (Dehra Dun dist., UK); 1,500 ft Dehra Dun (arachnoiden) [10].

Distribution: Himalayan foot hills (Northern India).

Dehra Dun: Rajpur (present new record); Dehra Dun (locality not mentioned, Pocock, 1899); Wildlife Institute of India Campus, Chandrabani [4].

Rest of Uttarakhand: No other record.

Elsewhere: Himachal Pradesh (Dalhousie, Chamba dist. and Kasauli, Solan dist.).

Habitat: Lives in burrows in moist soil along southern edge of Himalayan foothills.

Food and Feeding: Voracious feeder as having good appetite, feeding on insects, other arthropods and sometimes on their own. They are well adapted to kill large prey being armed with massive and powerful chelicerae, tipped with long chitinous fangs.

Breeding: Not much is known about its breeding except for the mating / pairing part as observed by Miller [19].

Life-span: 5-15 years in captivity, females live longer than male [20].

Behaviour: Aggressive and defensive, though relatively docile, can pack a toxic bite when irritated and hence one has to be careful while handling it [20]. Can tolerate swings in temperature and humidity, best suited 23 - 28°C and 65% respectively [21 as per 13]. In captivity, it does well at room temperature [10]. Grows moderately fast and makes web to hide.

Trade: In demand as pet among hobbyists, being brightly coloured with leg bands and manageable.



Fig. 1. *Haplocosmia himalayana*, female (Courtesy: Mr. Sachin Rana, Rajpur, Dehra Dun).

III. BIOLOGICAL PEST CONTROLLER

Spiders which forage on the plant itself and feed mainly on insects are considered effective predators of insect pests and hence can be helpful in their control. They have been successfully used as bio-control agents in some crop ecosystems (orchards and rice paddies) throughout the world [1, 5, 6, 8]. In the present scenario, they are taken as one of the best biological pest controllers. Husain & Hasan (2020) considered *Nephila pilipes*, the Giant Golden Orb Weaver, a natural biological pest controller [3]. In the same way *Haplocosmia himalayana*, the Himalayan Earth Tiger Tarantula can be helpful in the control of insect pests. For the eradication of pests, use of chemical pesticides should be avoided as they kill other natural enemies of pests, besides spiders.

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