

A new *Indopadilla* Caleb & Sankaran, 2019 (Araneae: Salticidae) from the Western Ghats, Tamil Nadu, India

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Abstract

A new species of the jumping spider genus *Indopadilla* Caleb & Sankaran, 2019 is described from the Kanniyakumari district, Tamil Nadu state, India. Detailed diagnosis, description, and illustration are provided. In addition, a new locality record of *Indopadilla darjeeling* Caleb & Sankaran, 2019 is presented.

Introduction

Caleb & Sankaran (in Caleb *et al.* 2019) introduced the genus *Indopadilla* to accommodate *I. insularis* (Malamel, Sankaran & Sebastian, 2015) and *I. thorelli* (Simon, 1901), which were previously in the genus *Bavia* Simon, 1877. Also, they identified *Indopadilla darjeeling* Caleb & Sankaran, 2019 as a new species and designated it the genotype. Maddison *et al.* (2020) provided compelling molecular evidence affirming the legitimacy of this new genus. Furthermore, they expanded their findings by detailing additional species and classifying the genus within the *Bavia* clade. At present, the genus consists of eighteen species described from South and Southeast Asia, with three of these species being endemic to India.

This paper introduces a newly discovered species, *Indopadilla kanniyakumari* sp. n., which was collected from the Kanniyakumari district in Tamil Nadu, India. The species is described, diagnosed, and illustrated in this study. Additionally, we present an expanded range for *Indopadilla darjeeling* Caleb & Sankaran, 2019.

Material and methods

All measurements are in millimeters (mm). Lengths of palp and leg segments are given as: total (femur, patella, tibia, metatarsus (absent on palp), tarsus). The micrographic images were taken with a Leica DMC4500 attached to a Leica M205A stereomicroscope with the software package Leica Application Suite (LAS, version 3.8) for stacking images taken at different focal planes. Terminology of male and female genitalia mostly follows Caleb *et al.* (2019). The

specimens examined are deposited in the research collections of the National Centre for Biological Sciences, Bengaluru, Karnataka, India (NRC).

Abbreviations: ALE = anterior lateral eye, AME = anterior median eye, do = dorsal, NRC = National Centre for Biological Sciences Research Collections, pl = prolateral, pld = prolateral dorsal, PLE = posterior lateral eye, plv = prolateral ventral, PME = posterior median eye, rl = retrolateral, rld = retrolateral dorsal, rlv = retrolateral ventral, RTA = retrolateral tibial apophysis.

Salticidae Blackwall, 1841

Indopadilla Caleb & Sankaran, 2019

Type species: *Indopadilla darjeeling* Caleb & Sankaran, 2019

Diagnosis: For diagnosis of the genus, see Caleb *et al.* (2019) and Maddison *et al.* (2020).

Distribution: South and Southeast Asia (Maddison *et al.* 2020; World Spider Catalog 2023).

Indopadilla kanniyakumari Kadam & Tripathi sp. n. (Figs. 1–22)

Types: Holotype ♂ (NRC-AA-8615), INDIA: Tamil Nadu, Kanniyakumari district, Upper Victory Estate, 8°21'36"N 77°28'20"E, 897 m, 23 May 2023, from bamboo grass, by hand, G. Kadam leg. Paratype ♀ (NRC-AA-8616), same data as for the holotype.

Etymology: The specific epithet is a noun and refers to the type locality of the new species.

Diagnosis: It is very similar to *I. darjeeling* Caleb & Sankaran, 2019 and *I. kodagura* Maddison, 2020, but can be distinguished by embolus arising from 1 o'clock (v. 9 o'clock in *I. darjeeling* and 4 o'clock in *I. kodagura*); another difference is the lateral ridge tooth present on the chelicera (v. absent in *I. darjeeling*). The female can be distinguished by the copulatory duct being long and intricately coiled (v. short and relatively simple). (cf. Figs. 12, 16–22 with Caleb *et al.* 2019: figs. 12–13, and Maddison *et al.* 2020: fig. 93).

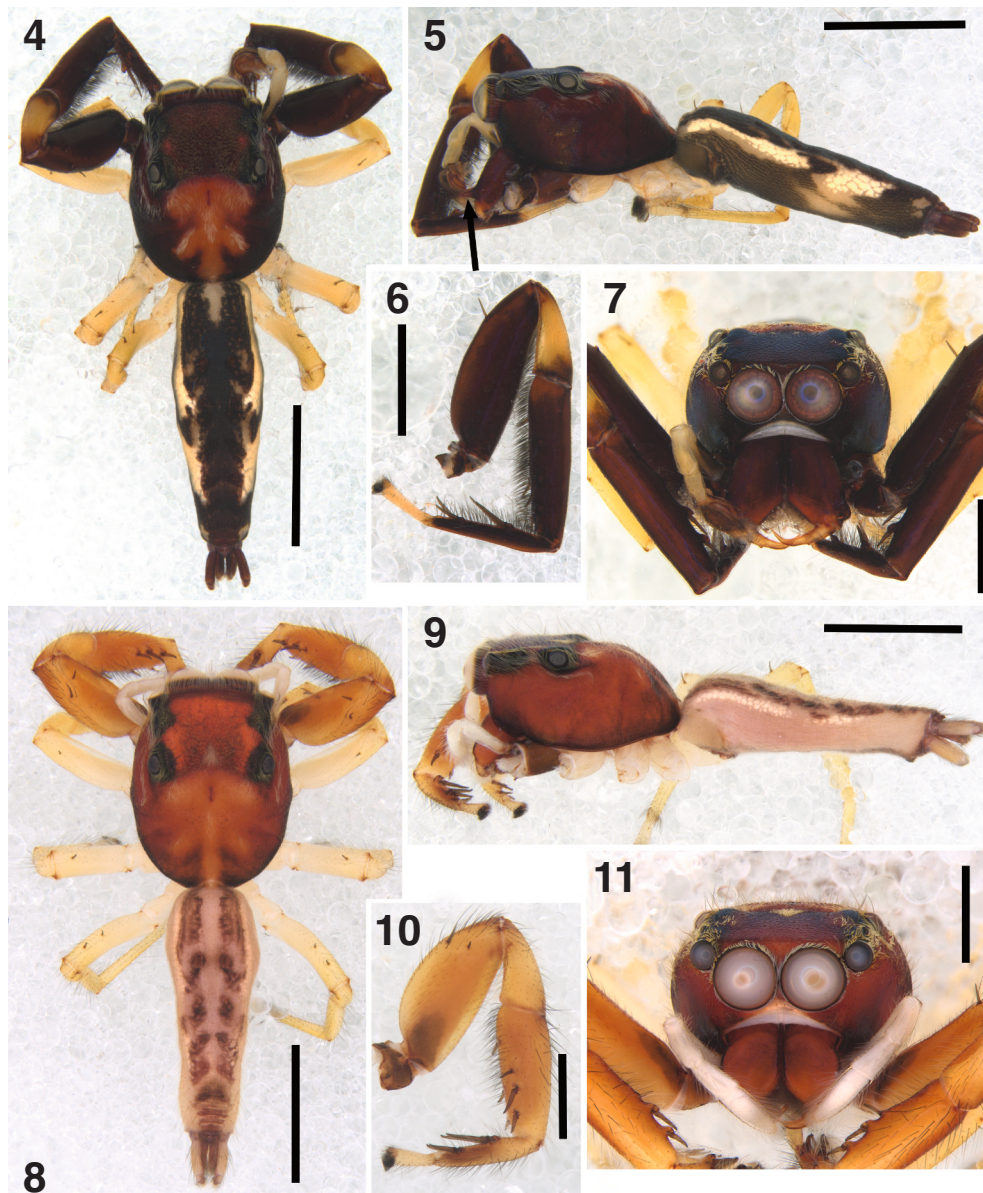
Description of holotype male (Figs. 1, 4–7, 12–13, 16–18). Carapace brown to black except orange-red pattern on thorax, with scattered white setae (Fig. 4). Ocular area rough. Clypeus dark, narrow, with white arthrochial membrane (Fig. 7). Chelicera dark, lateral ridge with long, stout tooth (Figs. 5, 12–13); promargin with five evenly spaced teeth, retromargin with five closely spaced teeth (Figs. 12–13). Legs pale yellow to orange, except leg I dark brown with patellae and tarsus lighter; leg I tibia and metatarsus with scopulae (Fig. 6). Fovea brown, straight (Fig. 4). AME–AME and AME–ALE nearly contiguous (Fig. 7). Abdomen dark except for large patches of low yellow scales along each side (Fig. 4). Measurements: body length 7.05; carapace length 2.83, width 2.36; abdomen length 4.22, width 1.43; ocular area length 1.14, width 1.55. Eye diame-



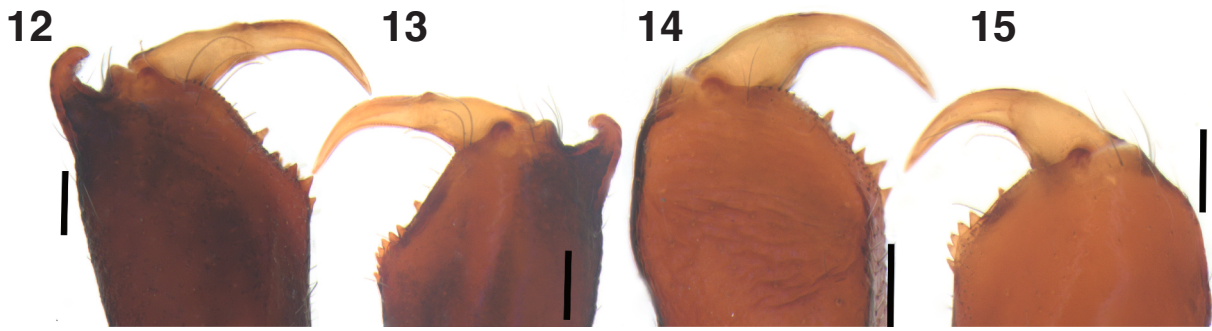
Figs. 1–3: *Indopadilla kanniyakumari* Kadam & Tripathi, sp. n., field photographs. **1** holotype male; **2** paratype female; **3** habitat. Photographs © Gautam Kadam.

ters: AME 0.68, ALE 0.28, PME 0.08, PLE 0.32. Eye inter-distances: PME–PME 1.48, ALE–ALE 1.25, PME–PLE 0.33, PLE–PLE 1.41, ALE–PME 0.29, ALE–PLE 0.73. Length of chelicera 1.13. Clypeus 0.03. Measurement of

pedipalp and legs: Pedipalp 2.30 [0.62, 0.45, 0.34, 0.89], leg I 7.94 [2.34, 1.23, 2.08, 1.59, 0.70], II 5.05 [1.63, 0.75, 1.17, 1.07, 0.43], III 4.45 [1.47, 0.69, 0.73, 1.06, 0.50], IV 5.70 [1.92, 0.61, 1.24, 1.41, 0.52]. Leg formula 1423. Spina-



Figs. 4–11: *Indopadilla kanniyakumari* Kadam & Tripathi, sp. n., holotype male (4–7) and paratype female (8–11). **4** habitus, dorsal view; **5** same, lateral view; **6** leg I, prolateral view; **7** habitus, frontal view; **8** same, dorsal view; **9** same, lateral view; **10** leg I, prolateral view; **11** habitus, frontal view. Scale bars = 2 mm (4–5, 8–9), 1 mm (7, 10–11), 0.5 mm (6).



Figs. 12–15: *Indopadilla kanniyakumari* Kadam & Tripathi, sp. n., holotype male (12–13) and paratype female (14–15), left chelicera. **12** proteral view; **13** retrolateral view; **14** proteral view; **15** retrolateral view. Scale bars = 0.2 mm.

tion: pedipalp spineless; legs: femur I pld 1 do 1, II–III do 1, IV do 2; patellae I–IV spineless; tibia I plv 3 rlv 3, II plv 2 rlv 1, III–IV spineless; metatarsi I–II plv 2 rlv 2, III–IV spineless; tarsi I–IV spineless. Palp (Figs. 16–18) red-

brown distally, femur quarter black proterally (Fig. 16). Embolus long, angular, basolaterally originating, with broad embolic base, pointed tip (Figs. 16, 18). RTA short, simple. Tegular proximal lobe prominent (Fig. 17).



Figs. 16–22: *Indopadilla kanniyakumari* Kadam & Tripathi, sp. n., holotype male (16–18) and paratype female (19–22). **16** left male palp, ventral view; **17** same, retrolateral view; **18** embolic division, ventral view; **19** mating plug, close-up; **20** epigyne with mating plug, ventral view; **21** epigyne, ventral view; **22** vulva, dorsal view. Arrow indicates mating plug. Scale bars = 0.5 mm (16–17), 0.2 mm (18–22).

Description of female paratype (Figs 2, 8–11, 14–15, 19–22). General aspects as in the male except as follows: colour pale, abdominal pattern with longitudinal stripe medially (Fig. 8). Chelicera with lateral ridge, long, stout tooth absent; promargin with four teeth (Figs. 14–15). Leg I tibia and metatarsus with scopulae nearly absent (Fig. 10). Body length 6.51; carapace length 2.82, width 2.23; abdomen length 3.69, width 1.31; ocular area length 1.14, width 1.52. Eye diameters: AME 0.62, ALE 0.28, PME 0.06, PLE 0.30. Eye interdistances: PME–PME 1.54, ALE–ALE 1.25, PME–PLE 0.34, PLE–PLE 1.44, ALE–PME 0.26, ALE–PLE 0.60. Length of chelicera 0.95. Clypeus 0.04. Measurement of pedipalp and legs: Pedipalp 1.58[0.68, 0.21, 0.22, 0.47], leg I 5.65[1.68, 0.96, 1.43, 1.11, 0.47], II 4.25[1.42, 0.61, 1.01, 0.82, 0.39], III 3.96[1.35, 0.58, 0.59, 0.93, 0.51], IV 5.28[1.66, 0.61, 1.14, 1.39, 0.48]. Leg formula 1423. Spination. Pedipalp: spineless; Legs: femur I pld 1 pl 1, II–III pld 1, IV do 2; patellae I–IV spineless, tibia I plv 3 rlv 3, II plv 2 rlv 1, III–IV spineless; metatarsi I–II plv 2 rlv 2, III–IV spineless; tarsi I–IV spineless. Copulatory organs (Figs. 20–22): epigynum hirsute, with central broad septum; posterior V-shaped margins (Figs. 20–21). Copulatory openings oval, mediolaterally placed, widely spaced (Figs. 20–21). Vulva with longitudinally oriented, membranous anterior parts that posteriorly connected to anterior part of copulatory ducts; copulatory duct coil (Fig. 21). Spermathecae tubular and closely spaced; fertilization ducts narrow, directed medially (Fig. 21).

Distribution: Known only from the type locality (Fig. 3).

Indopadilla darjeeling Caleb & Sankaran, 2019

Indopadilla darjeeling Caleb & Sankaran, 2019 (in Caleb *et al.* 2019): 570, figs. 1–18 (♂♀). Type locality Peshok (= Pashok), Darjeeling Distr., West Bengal, India (Caleb *et al.* 2019).

Type repository: NZC-ZSI (Caleb *et al.* 2019).

Material examined: 1♀ (NRC-AA-8617), INDIA: Meghalaya, Near Pelga waterfall, West Garo Hills, 25°32'57"N 90°09'17"E, 172 m, 06 April 2022, G. Kadam leg., from bamboo grass, by hand.

Distribution: Known only from India (World Spider Catalog 2023). Records from India: Meghalaya (present data) and West Bengal (Caleb *et al.* 2019).

Acknowledgements

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