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Taxonomic notes on *Indopadilla* Caleb et Sankaran, 2019, with description of two new species from Vietnam (Aranei: Salticidae)

Таксономические заметки по *Indopadilla* Caleb et Sankaran, 2019, с описанием двух новых видов из Вьетнама (Aranei: Salticidae)

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KEY WORDS: Araneae, Baviini, dichotomous key, distribution, DNA barcode, Hainan, jumping spiders.
КЛЮЧЕВЫЕ СЛОВА: Araneae, Baviini, дихотомический ключ, распространение, ДНК баркод, Хайнань, пауки-скакунчики.

ABSTRACT. Two new species of the genus *Indopadilla* Caleb et Sankaran, 2019 are described from Vietnam: viz., *I. retsivn* sp.n. (♂♀), and *I. yokdon* sp.n. (♀). The distribution of *Indopadilla annamita* (Simon, 1903) in Vietnam is updated. The species name *Indopadilla tianya* Yang, Wang et Zhang, 2023 syn.n. is synonymized with *I. songi* Wang et Li, 2023. A detailed description, illustrations of copulatory organs and somatic features, DNA barcodes for the new species, and a distributional map are provided. An identification key to all *Indopadilla* species known from Vietnam is given as well.

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РЕЗЮМЕ. Из Вьетнама описаны два новых вида рода *Indopadilla* Caleb et Sankaran, 2019: а именно, *I. retsivn* sp.n. (♂♀) и *I. yokdon* sp.n. (♀). Уточнена информация о распространении *Indopadilla annamita* (Simon, 1903) во Вьетнаме. Видовое название *Indopadilla tianya* Yang, Wang et Zhang, 2023 syn.n. синонимизировано с *I. songi* Wang et Li, 2023. Приведены подробное описание, иллюстрации копулятивных органов и соматических признаков, штрих-коды ДНК для новых видов и карта распространения. Также приводится определительный ключ ко всем видам *Indopadilla*, известным из Вьетнама.

Introduction

The tropical Asian jumping spider genus *Indopadilla* Caleb et Sankaran, 2019 is known to be the largest member of the tribe Baviini, accounting for 18 described species [World Spider Catalog, 2024]. To date, only three *Indopadilla* species have been reported from Vietnam, namely, *I. annamita* (Simon, 1903), *I. cuc* Wang, Li et Pham, 2023, and *I. phantoani* Hoang et Zhang, 2023 [Simon, 1903; Żabka, 1988; Caleb *et al.*, 2019; Hoang *et al.*, 2023; Wang *et al.*, 2023].

Based on extending the first author's research on the fauna of jumping spiders throughout Vietnam, we have found two unknown *Indopadilla* species, which will be described in the present work: viz., *I. retsivn* sp.n. (♂♀) from Dong Nai Province in the south, and *I. yokdon* sp.n. (♀) from the Central Highlands. This study also includes DNA barcodes for the newly described species, facilitating sex matching and future research. Additionally, we have presented an update on the current occurrence of *I. annamita* in Vietnam. The species name *Indopadilla tianya* Yang, Wang et Zhang, 2023 syn.n. is recognized as a junior synonym of *I. songi* Wang et Li, 2023 (see below). Hence, three *Indopadilla* species from Vietnam have been illustrated and diagnosed and all the five Vietnamese species have been mapped. A new identification key to all the *Indopadilla* species of Vietnam has been presented as well.

Table 1. DNA voucher information.
Таблица 1. Информация об образцах ДНК.

Species	Sex	GenBank accession numbers	Collection localities
Indopadilla retsivn sp.n.	Male	PP318610	Tan Phu Dist., Dong Nai Prov., Vietnam
Indopadilla retsivn sp.n.	Female	PP318611	
Indopadilla phantoani	Male	PP318613	Chu Yang Sin NP, Dak Lak Prov., Vietnam
*Indopadilla phantoani**	Female	OP288798	
Indopadilla yokdon sp.n.	Female	PP318612	Yok Don NP, Dak Lak Prov., Vietnam
*Indopadilla nesinor**	Female	MW081865	Singapore

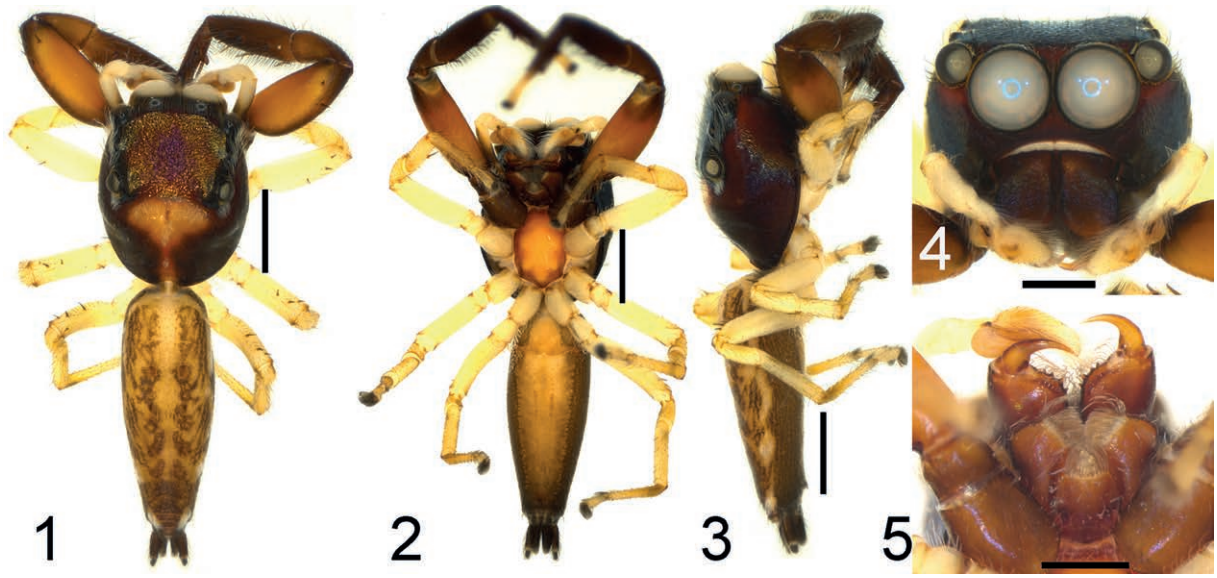
(*) downloaded from GenBank.

Materials & methods

Specimens were collected by beating trays and then examined using a Leica M205C stereo microscope. Photos were taken using Jenoptik ProgRess CF Scan 12.5MP camera attached to the stereo microscope and Jenoptik ProgRes Capture Pro 2.10.0.1 software. The male palp and the female epigyne were examined and illustrated after dissection. The epigyne was cleared in a 10% KOH solution at room temperature for about 12 hours. Photos were stacked using the Helicon focus 8.2.2 Pro software and then modified using Adobe Photoshop CS2 9.0. All measurements are given in millimeters (mm). Leg segment lengths are given as follows: femur + patella + tibia + metatarsus + tarsus (total length). The map was created using the Google Earth Pro v.7.3 (64-bit). The studied specimens have been deposited in the Vietnam National Museum of Nature (VNMN), Hanoi, Vietnam.

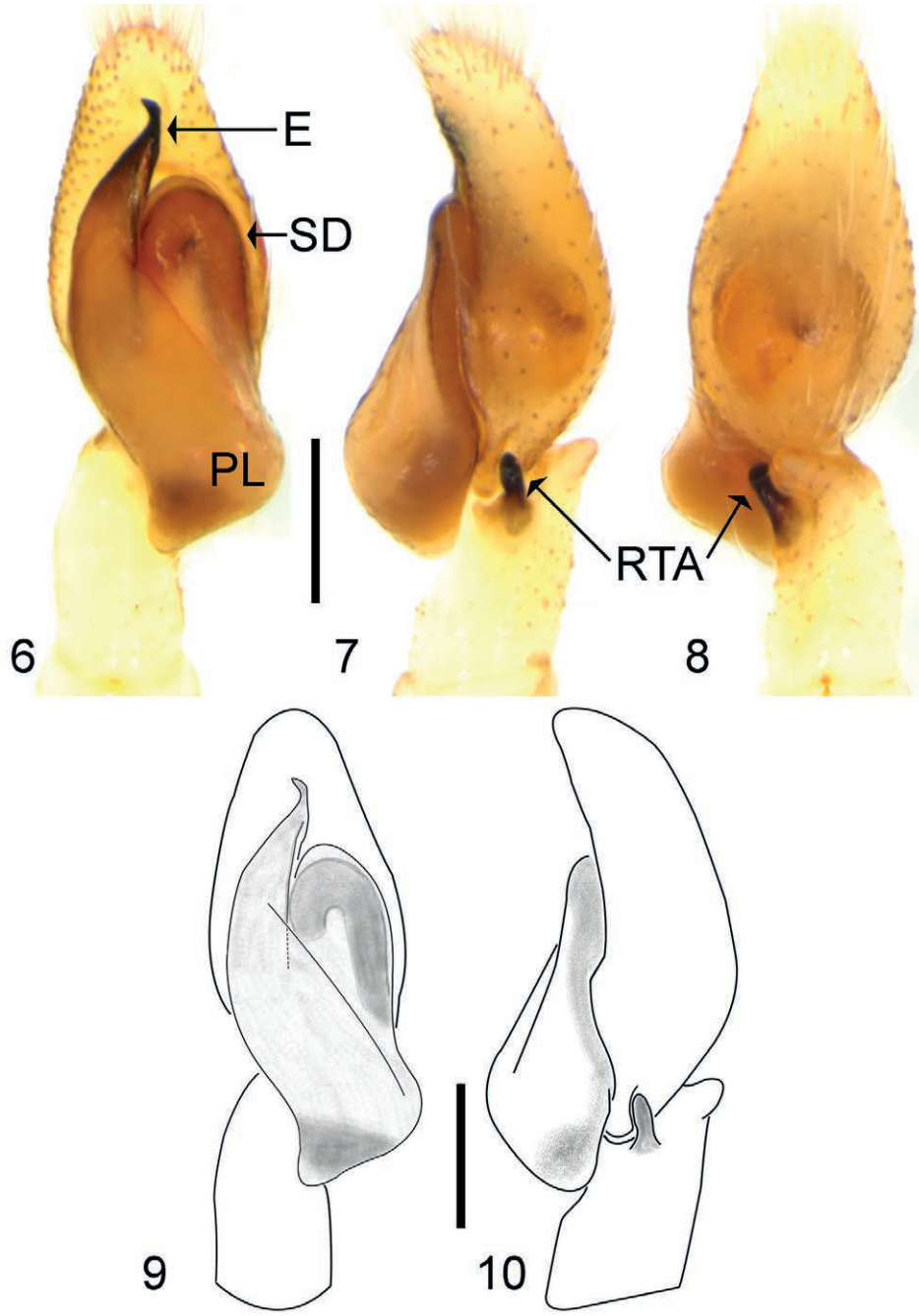
Abbreviations used in the text are as follows: ALE — anterior lateral eye; AME — anterior median eye; PLE — posterior lateral eye; PME — posterior median eye; Fm — femur; Tb — tibia, Mt — metatarsus; the number and position of spines on legs: d — dorsal; pr — prolateral; v — ventral. Museum acronym: MHBU — Museum of Hebei University in Baoding, China; MNHN — Muséum National d'Histoire Naturelle, Paris, France; TRU — Tongren University in Tongren, China. IZCAS, Institute of Zoology, Chinese Academy of Sciences in Beijing, China.

The GeneJET Genomic DNA Purification Kit (Thermo Scientific, Lithuania) was used to extract genomic DNA from two legs of the specimens, the extraction steps followed the manufacturer's instructions. The partial fragment of the mitochondrial cytochrome c oxidase subunit I (COI) gene was successfully amplified using the universal primer pairs LCO1490/HCO2198 [Folmer *et al.*, 1994]. The sequencing chromatograms were quality checked and the sequences edited using the software FinchTV version 1.4.0 (Geospiza Inc.). All sequences were translated into amino acids to check stop codons by using software MEGA version 11.0.13 [Tamura *et al.*, 2021]. Finally, the sequences were verified by using BLAST (https://www.ncbi.nlm.nih.gov) and deposited in GenBank (Table 1). A total of six sequences of four *Indopadilla* species as presented in Table 1 were aligned using MUSCLE [Edgar, 2004] built in the software MEGA version 11.0.13, under default parameters. The genetic



Figs 1–5. *Indopadilla retsivn* sp.n., male holotype. 1 — habitus, dorsal view; 2 — same, ventral view; 3 — same, lateral view; 4 — carapace, frontal view; 5 — chelicerae, endites and labium, ventral view. Scale bars: (1–3) 1 mm, (4–5) 0.5 mm.

Рис. 1–5. *Indopadilla retsivn* sp.n., голотип самец. 1 — габитус, вид сверху; 2 — то же, вид снизу; 3 — то же, вид сбоку; 4 — головогрудь, вид спереди; 5 — хелицеры, эндиты, нижняя губа, вид снизу. Масштаб: (1–3) 1 мм, (4–5) 0,5 мм.



Figs 6–10. *Indopadilla retsivn* sp.n., male holotype. 6, 9 — palp, ventral view; 7, 10 — same, retrolateral view; 8 — same, dorsal view. Scale bars: (6–10) 0.2 mm. Abbreviations: E — embolus, RTA — retrolateral tibial apophysis, SD — sperm duct.

Рис. 6–10. *Indopadilla retsivn* sp.n., голотип самец. 6, 9 — пальпа, вид снизу; 7, 10 — то же, вид сбоку-сзади; 8 — то же, вид сверху. Масштаб: (6–10) 0,2 мм. Сокращения: E — эмболюс, RTA — ретролатеральный тибиальный отросток, SD — семенной каналец.

distance was calculated using Kimura's two parameter (K2P) model using the software MEGA 11.0.13 (Table 2).

Results

Genus *Indopadilla* Caleb et Sankaran, 2019

Indopadilla Caleb et Sankaran, 2019: 570.

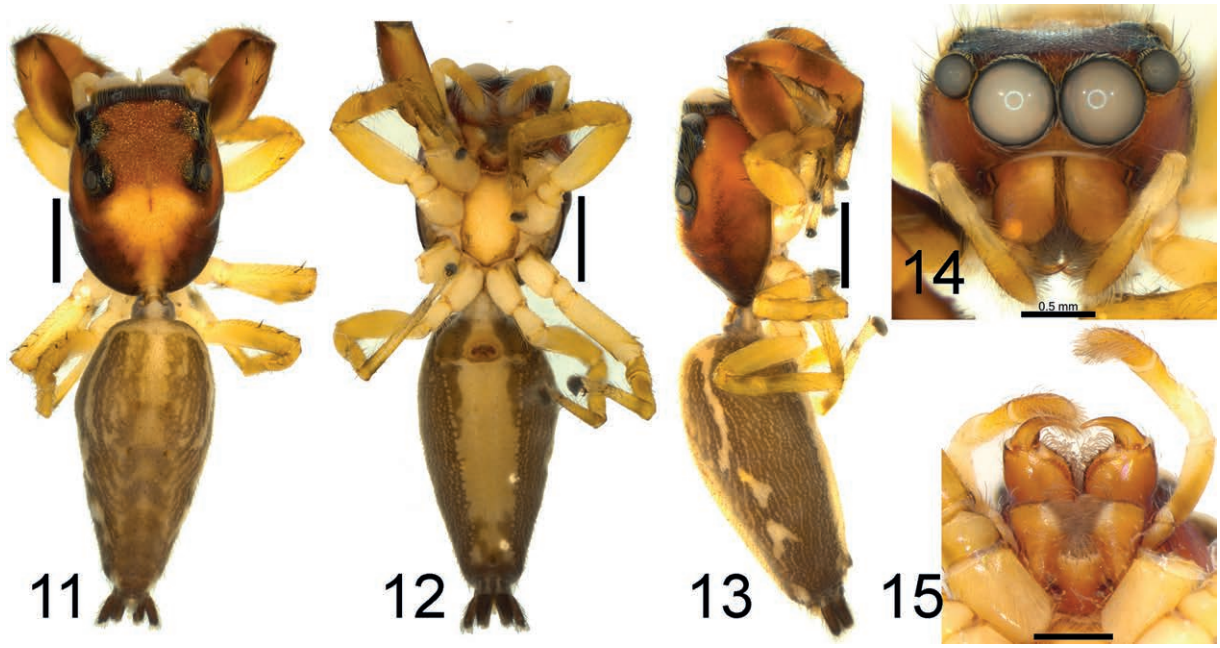
Type species. *Indopadilla darjeeling* Caleb et Sankaran, 2019.

DIAGNOSIS. See Caleb *et al.* [2019], Maddison *et al.* [2020], and Hoang *et al.* [2023].

DISTRIBUTION. India, Malaysia, China, Indonesia, Singapore, Caroline Islands, and Vietnam.

Key to five species of *Indopadilla* from Vietnam

1 Male 2
– Female 5
2 Embolus accompanied by terminal apophysis (TmA) 3



Figs 11–15. *Indopadilla retsivn* sp.n., female paratype. 11 — habitus, dorsal view; 12 — same, ventral view; 13 — same, lateral view; 14 — carapace, frontal view; 15 — chelicerae, endites and labium, ventral view. Scale bars: (11–13) 1 mm, (14–15) 0.5 mm.

Рис. 11–15. *Indopadilla retsivn* sp.n., паратип самка. 11 — габитус, вид сверху; 12 — то же, вид снизу; 13 — то же, вид сверху; 14 — головогрудь, вид спереди; 15 — хелицеры, эндиты, нижняя губа, вид снизу. Масштаб: (11–13) 1 мм, (14–15) 0,5 мм.

– Embolus without TmA.....*I. retsivn* sp.n.
3 Membraneous TmA..... 4
– TmA sclerotized, thorn-shaped and parallel with the embolus (Figs 5, 8 in Hoang *et al.* [2023]).....*I. phantoani*
4 RTA broad, bent inward distally (Fig. 30) .....*I. annamita*
– RTA narrow, pointed and directed anteriad (Fig. 13B in Wang *et al.* [2023]) ..... *I. cuc*
5 Epigyne with a broad hood (Fig. 32) .....*I. annamita*
– Epigyne with a narrow hood..... 6
6 Glandular ducts invisible (Fig. 14 in Hoang *et al.* [2023])... .....*I. phantoani*
– Glandular ducts prominent..... 7
7 Copulatory ducts with large anterior glandular ducts (Figs 17, 19).....*I. retsivn* sp.n.
– Copulatory ducts with small posterior glandular ducts..... 8
8 Copulatory ducts large and wide; spermathecae complex, coiled and sclerotized (Fig. 26) .....*I. yokdon* sp.n.
– Copulatory ducts narrow; spermathecae almost rounded (Fig. 14B in Wang *et al.* [2023]) ..... *I. cuc*

Indopadilla retsivn **sp.n.**
Figs 1–19, 34.

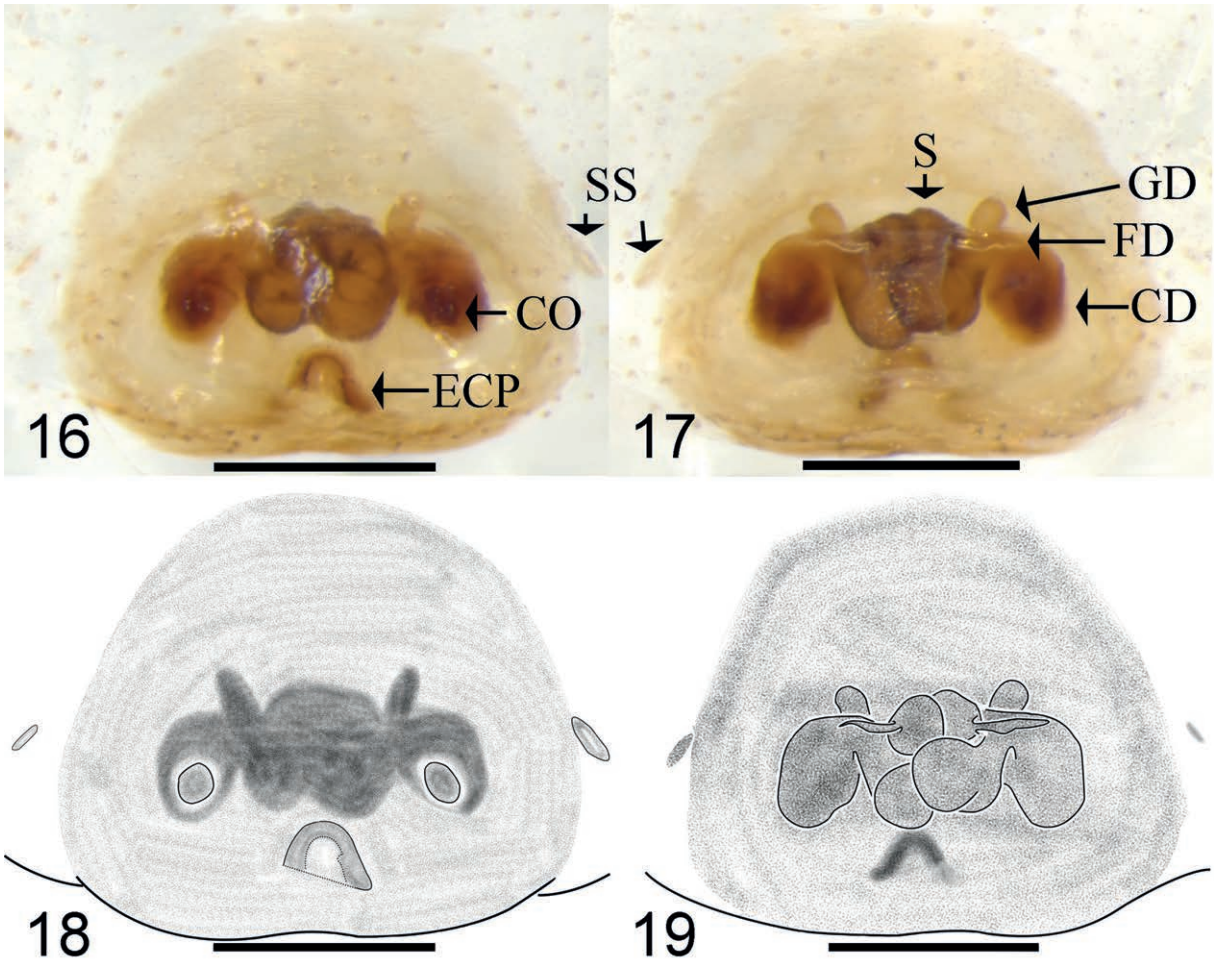
TYPES. Holotype ♂ (VNMN-ARA-SAL-110), Vietnam, Dong Nai Prov., Tan Phu Distr. (11.40633°N, 107.4370°E), 121 m a.s.l., 22.11.2021, Q.D. Hoang. — Paratypes: 3 ♀♀ (VNMN-ARA-SAL-109.1-3), 1 ♂ (VNMN-ARA-SAL-110.1), together with the holotype.

ETYMOLOGY. This species is named after the nickname of Professor Pham Hong Hai ("Hong Hai" means "red sea" = retsi and "vn" means "Vietnam"), a medical doctor at the College of Medicine and Pharmacy, Duy Tan University, Vietnam in appreciation of her support during our fieldwork; a noun in apposition case.

DIAGNOSIS. In having the robust embolus tapering and almost straight (without any terminal apophysis; Figs 6, 9) and the retrolateral tibial apophysis simple (Figs 7–8, 10), the male of *I. retsivn* sp.n. is similar to those of *I. bamilin* and *I. vimedaba*, from which it can be distinguished by the following characters: the embolus bent prolaterad at its tip (Figs 6, 9), *vs.* straight in both *I. bamilin* (fig. 76 in Maddison *et al.* [2020]) and *I. vimedaba* (fig. 121 in Maddison *et al.* [2020]); the posterior lobe relatively wide (Figs 6, 9), *vs.* notably narrower in both *I. bamilin* (fig. 76 in Maddison *et al.* [2020]) and *I. vimedaba* (Fig. 121 in Maddison *et al.* [2020]); the retrolateral tibial apophysis almost straight, uniform and narrow at its base (Figs 7–8, 10), *vs.* notably wider at the base in *I. vimedaba* (Fig. 77 in Maddison *et al.* [2020]), or pointed and bent inward in *I. vimedaba* (fig. 122 in Maddison *et al.* [2020]). In having the epigynal coupling pocket curved upwards and situated far away from the epigastric furrow, and the copulatory openings simple, at nearly a median position (Figs 16, 18), the female of *I. retsivn* sp.n. resembles that of *I. phantoani*, from which it can be distinguished by the following characters: the relatively narrow and deep epigynal coupling pocket (Figs 16, 18); the copulatory ducts are wider than those of *I. phantoani*; the anterior, robust glandular ducts that are visible (Figs 17, 19), *vs.* short and invisible in *I. phantoani* (fig. 14 in Hoang *et al.* [2023]).

DISTRIBUTION. Known only from the type locality (Fig. 34).

DESCRIPTION. MALE (holotype): Measurements: Total length 5.29; Carapace length 2.22, width 1.86; Abdomen length 3.07, width 1.18. Clypeus height 0.07. Carapace reddish to dark brown, with iridescent rough surface, and lighter area surrounding fovea, clothed with dense long white scales, and with a narrow pale band along thoracic slope medially, clothed with tuft of white setae (Fig. 1); around eye region surrounded by a long white line of scales (Fig. 1). Anterior eyes surrounded by yellow-orange orbital scales (Fig. 4). Clypeus dark brown, narrowest medially, and shows a narrow arthrodial membrane below clypeus (Fig. 4). Sternum yellowish brown, with darker margins (Fig. 2). Endites and labium darker than sternum and

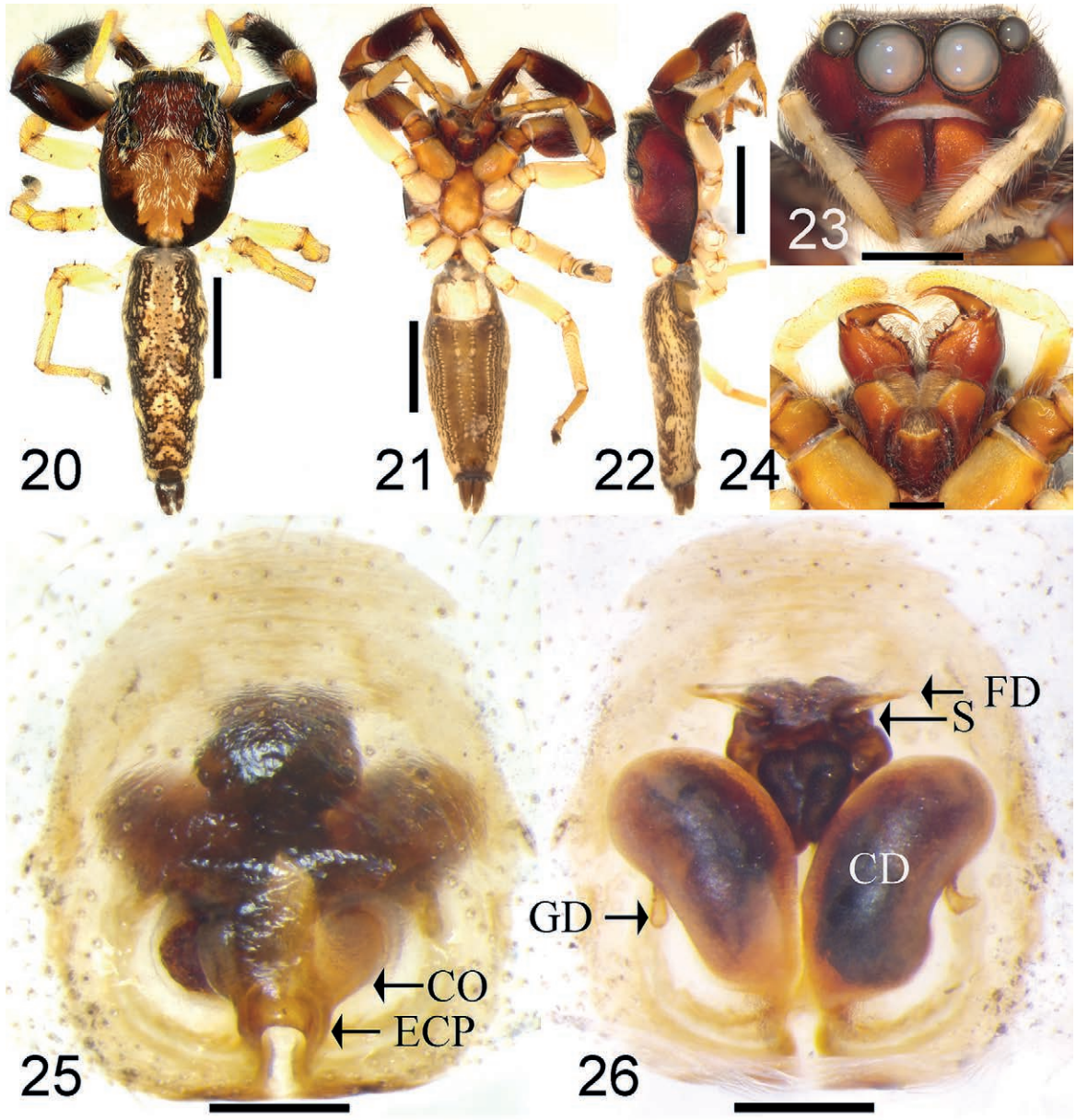


Figs 16–19. *Indopadilla retsivn* sp.n., female paratype. 16, 18 — epigyne, ventral view; 17, 19 — same, dorsal view. Scale bars: (16–19) 0.2 mm. Abbreviations: CD — copulatory duct; CO — copulatory opening; ECP — epigynal coupling pocket; FD — fertilization duct; GD — glandular duct; S — spermathecae; SS — slit sensilla (black arrows).

Рис. 16–19. *Indopadilla retsivn* sp.n., самка-паратип. 16, 18 — эпигина, вид снизу; 17, 19 — то же, вид сверху. Масштаб: (16–19) 0,2 мм. Сокращения: CD — копулятивный каналец; CO — копулятивные отверстия; ECP — эпигинальный карман; FD — оплодотворительный каналец; GD — каналец железы; S — сперматека; SS — щелевидные сенсилы (черные стрелки).

light at tips (Figs 2, 5). Chelicerae dark brown; promargin with four teeth, and one retromarginal tooth with seven cusps on left (six on right) (Fig. 5). Abdomen yellowish brown and adorned with brown marks, with some dark brown inverted chevrons in posterior half of dorsum (Fig. 1); venter yellowish brown, with some pale spots (Fig. 2). Lateral sides of abdomen with some streaks of white setae (Fig. 3). Spinnerets dark brown. Leg I yellowish brown, covered with densely pale setae, robust and largest; legs II, III and IV pale yellow, leg IV smallest. Width of eye rows: anterior eye row 1.68; posterior medial eye row 1.51; posterior lateral eye row 1.62. Distance between ALE-PME 0.58; ALE-PLE 1.13. Diameter of eyes: AME 0.64; ALE 0.30; PME 0.06; PLE 0.26. Length of leg segments: I 1.54 + 0.97 + 1.25 + 1.03 + 0.41 (5.20); II 1.24 + 0.71 + 0.75 + 0.73 + 0.33 (3.76); III 1.06 + 0.60 + 0.52 + 1.16 + 0.36 (3.70); IV 1.40 + 0.65 + 0.91 + 1.15 + 0.41 (4.52). Leg formula I–IV–II–III. Leg spination: I: Fm d 1, pr 1; Ti v 2–2–2; Mt v 2–2. II: Fm d 1–1; Tb pr 1, v 1; Mt v 2–2. III: Fm d 1–1. and IV: Fm d 1–1. Palp (Figs 6–10) pale yellow (except reddish brown femur); tibia about a half of cymbium in length, with a disto-dorsal lobe, directed retrolaterally (Figs 7–8, 10); retrolateral tibial apophysis simple and blunt, almost straight, uniform and narrowest near base, directed anteriad in retrolateral view (Figs 7–8, 10); posterior lobe wide, directed retrolaterally (Figs 6, 9); embolus strong, almost straight, without any terminal apophysis, bent at its tip, and directed prolaterad in ventral view (Figs 6, 9).

FEMALE. Measurements: Total length 5.60; Carapace length 2.32, width 1.91; Abdomen length 3.28, width 1.60. Clypeus height 0.03. Width of eye rows: anterior eye row 1.70; posterior medial eye row 1.48; posterior lateral eye row 1.62. Distance between ALE-PME 0.57; ALE-PLE 1.15. Diameter of eyes: AME 0.63; ALE 0.30; PME 0.06; PLE 0.27. Endites and labium as in the holotype (Figs 12, 15). Chelicerae same as in holotype. Length of leg segments: I 1.48 + 0.86 + 1.05 + 0.82 + 0.37 (4.58); II 1.22 + 0.70 + 0.73 + 0.69 + 0.34 (3.68); III 1.13 + 0.61 + 0.50 + 0.77 + 0.33 (3.34); IV 1.33 + 0.66 + 0.95 + 1.18 + 0.39 (4.51). Leg formula I–IV–II–III. Leg spination: I: Fm d 1, pr 1; Ti v 2–2–2; Mt v 2–2. II: Fm d 1; Tb pr 2, v 1; Mt v 2–2. III Fm d 1–1, pr 1. IV d 1–1. Almost similar to that of holotype (Figs 11–15), except body colour (Figs 11–13) lighter than that of male holotype, carapace dorsally without any white setae (Figs 11, 13). Epigyne (Figs 16–19) less sclerotized (Figs 16–19); copulatory openings simple, located posteriorly (Figs 16, 18); epigynal coupling pocket deep, delicate, and curved



Figs 20–26. *Indopadilla yokdon* sp.n., female holotype. 20 — habitus, dorsal view; 21 — same, ventral view; 22 — same, lateral view; 23 — carapace, frontal view; 24 — chelicerae, endites and labium, ventral view; 25 — epigyne, ventral view; 26 — same, dorsal view. Scale bars: (16–19) 0.2 mm. Abbreviations: CD — copulatory duct; CO — copulatory opening; ECP — epigynal coupling pocket; FD — fertilization duct; GD — glandular duct; S — spermathecae; SS — slit sensilla (red arrows).

Рис. 20–26. *Indopadilla yokdon* sp.n., голотип самка. 20 — габитус, вид сверху; 21 — то же, вид снизу; 22 — тоже, вид сбоку; 23 — головогрудь, виз спереди; 24 — хелицеры, эндиты, нижняя губа, вид снизу; 25 — эпигина, вид снизу; 26 — то же, вид сверху. Масштаб: (16–19) 0,2 мм. Сокращения: CD — копулятивный каналец; CO — копулятивные отверстия; ECP — эпигинальный карман; FD — оплодотворительный каналец; GD — каналец железы; S — сперматека; SS — щелевидные сенсилы (красные стрелки).

upwards (Figs 16, 18); copulatory ducts wide at base, and accompanied by large glandular ducts anteriorly (Figs 17, 19); spermathecae covered a part from each other, spermathecae base small and almost rounded (Figs 17, 19).

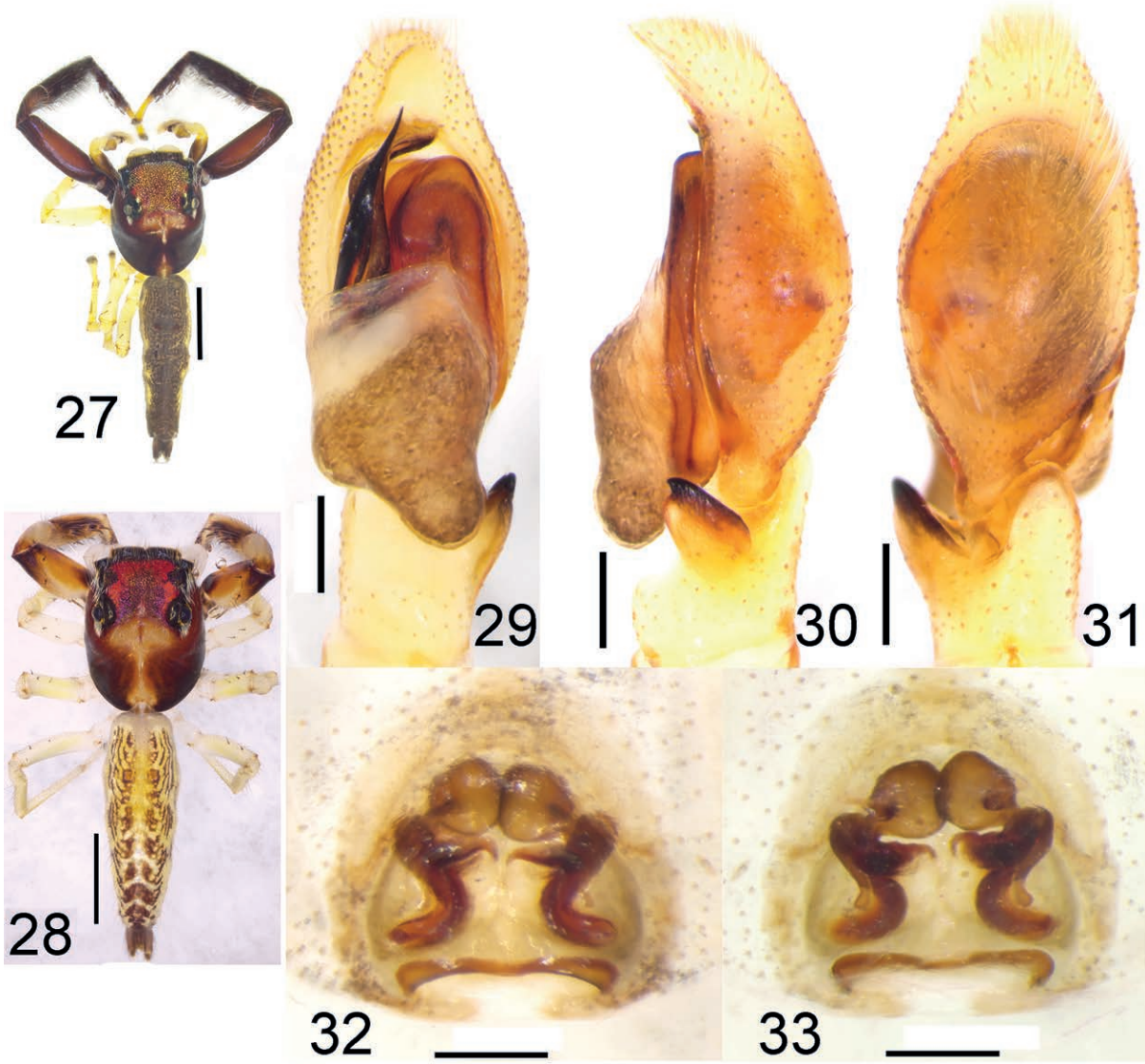
Indopadilla yokdon **sp.n.**
Figs 20–26, 34.

TYPES. Holotype ♀ (VNMN-ARA-SAL-208), Vietnam, Dak Lak Prov., Buon Don Dist., Yok Don National Park (12.9333°N, 107.7256°E), 145 m a.s.l., 24.4.2023, Q.D. Hoang.

ETYMOLOGY. This specific epithet is a noun in apposition taken from the type locality, Yok Don National Park, where the species was found.

DIAGNOSIS. The new species can be distinguished from all other congeners by the narrow, dome-shaped as a tunnel, epigynal coupling pocket (Fig. 25), the slit, arc-shaped copulatory openings (Fig. 25), and the large, bean-shaped copulatory ducts (Fig. 26).

DISTRIBUTION. Known only from the type locality (Fig. 34).



Figs 27–33. *Indopadilla annamita* (Simon, 1903). 27 — male habitus, dorsal view; 28 — female habitus, dorsal view; 29 — palp, ventral view; 30 — same, retrolateral view; 31 — same, dorsal view; 32 — epigyne, ventral view; 33 — same, dorsal view. Scale bars: (27, 28) 2 mm, (29–33) 0.2 mm.

Рис. 27–33. *Indopadilla annamita* (Simon, 1903). 27 — габитус самца, вид сверху; 28 — габитус смаки, вид снизу; 29 — пальпа, вид снизу; 30 — то же, вид сбоку-сзади; 31 — то же, вид сверху; 32 — эпигина, вид снизу; 33 — тоже, вид сверху. Масштаб: (27, 28) 2 мм, (29–33) 0,2 мм.

DESCRIPTION. FEMALE (holotype). Measurements: Total length 7.94; Carapace length 3.14, width 2.70; Abdomen length 4.80, width 1.93. Clypeus height 0.07. Carapace marginally dark brown, covered with dense long white scales, with a lighter area surrounding fovea, accompanied with a wide, short and pale band running along thoracic slope medially (Fig. 20). Anterior eyes lens encompassed by yellow-orange orbital scales (Fig. 23). Clypeus reddish brown, narrowest medially, and shows a narrow arthrodial membrane below clypeus (Fig. 23). Sternum yellowish brown, margin darker (Fig. 21). Endites and labium brown, darker than sternum, and yellow at their tips (Figs 21, 24). Chelicerae reddish brown; promargin with four teeth, plus one retromarginal tooth with six cusps (Fig. 24). Abdomen pale and adorned with brown marks and dots, accompanied with some dark brown inverted chevrons in the posterior half of dorsum (Fig. 20); venter brownish yellow, with some pale spots (Fig. 21). Lateral sides of abdomen with some streaks of white scales (Fig. 22). Spinnerets dark brown. Leg I strongest, dark brown, densely covered with dark and some white scales; legs II, III and IV pale yellow, leg IV smallest (Figs 20–22). Width of eye rows: anterior eye row 2.02; posterior medial eye row 1.83; posterior lateral eye row 2.02. Distance between ALE-PME 0.54; ALE-PLE 1.04. Diameter of eyes: AME 0.69; ALE 0.35; PME 0.07; PLE 0.31. Length of leg segments: I 2.15 + 1.41 + 1.75 + 1.42 + 0.55 (7.28); II 1.65 + 1.05 + 1.17 + 1.13 + 0.45 (5.45); III 1.53 + 0.95 + 0.76 + 1.25 + 0.49 (4.98); IV 2.05 + 0.92 + 1.35 + 1.80 + 0.48 (6.60). Leg formula I–IV–II–III. Leg spination: I: Fm d 1, pr 1; Ti v 2–2–2; Mt v 2–2. II: Fm d 1; Tb pr 2, v 1; Mt v 2–2. III: Fm d 1. and IV: Fm d 1–1. Epigyne (Figs 25–26) longer than wide (Fig. 25); copulatory openings slit and

Table 2. Pairwise distances in K2P model.
Таблица 2. Попарные расстояния в модели K2P.

	Species	1	2	3	4	5	6
1	*I. retsivn* (male)						
2	*I. retsivn* (female)	0.0000					
3	*I. phantoani* (male)	0.0800	0.0800				
4	*I. phantoani* (female)	0.0800	0.0800	0.0000			
5	*I. yokdon* (female)	0.1426	0.1426	0.1243	0.1243		
6	*I. nesinor* (female)	0.1110	0.1110	0.1358	0.1358	0.1250	

arc-shaped (Fig. 25); epigynal coupling pocket deep, delicate, curved upwards and dome shaped as tunnel (Fig. 25); copulatory ducts large, bean-shaped and accompanied with small, short and visible glandular ducts posteriorly (Fig. 26); spermathecae complex, coiled and sclerotized (Fig. 26).

MALE unknown.

Indopadilla annamita (Simon, 1903)
Figs 27–33.

Bavia annamita Simon, 1903: 730; TYPES: 1 ♂ 1 ♀, "*Bavia annamita* Simon, Annam, Phuc Son", MNHN 22131 (see Żabka [1988: 438]), not examined.

Bavia annamita Simon, 1903: Żabka, 1988: 438, figs 46–51; Wang, Zhang, 2020: 5, figs 1A–G, 2A–E.

Indopadilla annamita: Maddison *et al.*, 2020: 47.

MATERIAL. VIETNAM: 1 ♂ (VNMN-ARA-SAL-324), Bac Giang Prov., Son Dong Dist., Tay Yen Tu Nature Reserve, 21.1810°N, 106.7228°E, 202 m a.s.l., 9.07.2022, Q.T. Phan and Q.D. Hoang; 1 ♀ (VNMN-ARA-SAL-467), Da Nang Prov., Son Tra Distr. (16.1401°N, 108.2350°E), 13.04.2023, Q.D. Hoang; 1 ♀ (VNMN-ARA-SAL-447), Vinh Phuc Prov., Tam Dao Distr. (21.4736°N, 105.5938°E), 160 m a.s.l., 11.04.2023, Q.D. Hoang; 1 ♀ (VNMN-ARA-SAL-188), Dak Nong Prov., Krong No Distr. (12.5329°N, 107.8855°E), 365 m a.s.l., 26.03.2022, Q.D. Hoang.

DESCRIPTION. See Wang & Zhang [2020: sub *Bavia a.*] and Żabka [1988: sub *Bavia a.*] for both sexes; habitus, male palp and epigyne for both sexes from Vietnam are as in Figs 27–33.

DISTRIBUTION. China (Guangxi Prov.), Vietnam (Bac Giang, Quang Nam, Vinh Phuc, Da Nang, and Dak Nong Prov.) (Fig. 34).

Indopadilla songi Wang et Li, 2023

Indopadilla songi Wang et Li, 2023: 168, figs 6A–C, 7A–G; Holotype ♂ (TRU-JS 0687), China, Hainan, Ledong County, Jianfengling National Nature Reserve, Peak Mountain, 18°43.11′N, 108°52.32′E, ca. 1400 m, 17.04.2019, C. Wang & Y.F. Yang. — Paratypes: 2 ♂♂ 1 ♀ (TRUJS 0688–0690), same data as holotype; 1 ♂ (IZCAS-Ar44505), Jianfengling National Nature Reserve, Wufenqu, 18°44.42′N, 108°51.80′E, ca. 800 m, 18.05.2011, leg. Y.Y. Zhou (not examined).

Indopadilla tianya Yang, Wang et Zhang, 2023: 17, figs 1C, 2A–D, 3A–J, 4A–E, 5A–E; Holotype: ♂ (MHBU-ARA-00024384), China, Hainan, Sanya, Tianya Distr., Phoenix Valley, A Solemn Pledge of Love Scenic Spot, 18.2532°N, 109.5457°E, 369 m, 22–24.07.2022, L. Zhang, W. H. Wang, M. J. Xu, Z. Y. Yang. — Paratypes: 2 ♂♂ 1 ♀ (MHBU-ARA-00024378, MHBU-ARA-00024379), together with the holotype (not examined), **syn.n.**

DIAGNOSIS. See Yang *et al.* [2023: sub *I. tianya*] and Wang & Li [2023].

DESCRIPTION. For both sexes see Yang *et al.* [2023: sub *I. tianya*] and Wang & Li [2023].

REMARKS. Recently, two *Indopadilla* species were described: viz., *I. tianya* Yang, Wang et Zhang, 2023 from Hainan, China [Yang *et al.*, 2023] and *I. songi* Wang et Li, 2023 [Wang, Li, 2023]. Both species are undoubtedly conspecific because they have identical conformation of the copulatory organs (see fig. 4A–D in Yang *et al.* [2023]; figs 6A–C, and 7A–B in Wang & Li [2023]); besides, they were collected from the same locality — Hainan. Although both papers were published in 2023, the one by Yang *et al.* [2023] was reported as having been printed in May, whereas the paper by Wang & Li [2023] in June. However, World Spider Catalog [2024] demonstrated that the paper by Yang *et al.* [2023] was actually printed at the end of August, not May. Hence, following the article 21 of the ICZN [2012], the name *I. songi* has a priority over *I. tianya* and should be considered a senior synonym of *I. tianya* syn.n.

Discussion

The genetic divergence among four species of the genus *Indopadilla* based on our observations is shown in Table 2. Among them, the matching of males and females of the two species *I. retsivn* sp.n. and *I. phantoani* (the DNA sequence of the male holotype of *I. phantoani* was presented for the first time) was confirmed by no differences in genetic distances. Two new species *I. retsivn* sp.n. and *I. yokdon* sp.n. can be reliably distinguished from the congeners, as indicated by our results based on both morphology and DNA barcoding. The new species *I. retsivn* sp.n. is genetically more closely related to *I. phantoani* than to *I. yokdon* sp.n., with genetic distances of approximately 8% and 14.26%, respectively.

The genus *Indopadilla* now comprises 20 valid species, of which eight remain known from by a single sex: i.e., five from the males, three from the females. With the addition of two new species to the genus, there are five species now occurring in Vietnam. Consequently, Vietnam stands out as one of the countries with the highest diversity of the genus *Indopadilla* compared to some countries, such as Malaysia (5 species), India (4 species), Indonesia (3 species), and China (2 species), etc. Nevertheless, more species of this genus are expected to be discovered in Vietnam, as many areas of the country have not yet been thoroughly explored.

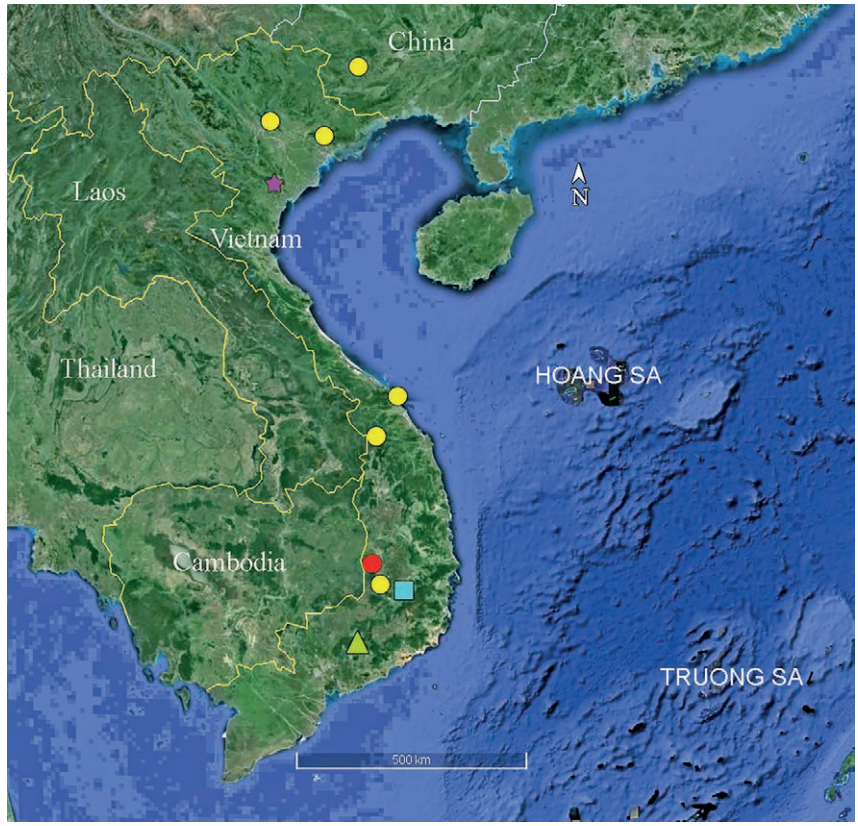


Fig. 34. Distribution of *Indopadilla* species. *I. retsivn* sp.n. (green triangle), *I. yokdon* sp.n. (red circle), *I. annamita* (yellow circles), *I. cuc* (pink star) and *I. phantoani* (blue square).

Рис. 34. Распространение видов *Indopadilla*. *I. retsivn* sp.n. (зеленый треугольник), *I. yokdon* sp.n. (красный кружок), *I. annamita* (желтые кружки), *I. cuc* (сиреневая звезда) и *I. phantoani* (голубой квадрат).

Compliance with ethical standards

CONFLICT OF INTEREST: The authors declare that they have no conflict of interest.

Ethical approval: No ethical issues were raised during our research.

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