

## ***Pellenes iva* sp. n. (Araneae: Salticidae) with a distinct M-shaped central epigynal pocket from India**

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### **Abstract**

**A new species of the jumping spider genus *Pellenes* Simon 1876, *Pellenes iva* sp. n. is described from Chennai, India. Both sexes of the species are diagnosed and illustrated in detail.**

**Keywords:** *diagnosis, taxonomy, new species, jumping spider, Chennai.*

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### **Introduction**

The jumping spider genus *Pellenes* was erected by Simon in 1876 with *Pellenes tripunctatus* (Walckenaer, 1802) as the type species. Currently, 82 valid species are known from Asia, Africa, Europe, North America and Australia (World Spider Catalog, 2017). Out of these, two species are known from India; *P. allegrii* Caporiacco, 1935 from Kashmir and *P. maderianus* Kulczyński, 1905 from Jabalpur, Madhya Pradesh (Caporiacco, 1935; Prószyński, 1992). In the present paper, we describe a third species, *Pellenes iva* sp. n. from southern part of India.

### **Materials and Methods**

Live specimens were photographed using Nikon D3200. The specimens were preserved in 70% ethanol and examined using a Leica EZ4 HD and Leica M205A stereoscopic microscope. Micro-photographs were obtained using Leica DFC500 HD digital camera attached to stereoscopic microscope with LAS core software package. All measurements are in millimeters. Leg measurements are given as: total length (femur, patella, tibia, metatarsus, tarsus). Descriptions are based on fresh specimens. Spine positions are as follows: prolateral, dorsal, retrolateral and ventral. Terminology used for copulatory organs follow Logunov *et al.* (1999). The types have been

deposited in the National Zoological Collections, Centre for DNA taxonomy, Zoological Survey of India, Kolkata (ZSI-CDT) and Zoological Survey of India, Southern Regional Centre, Chennai (ZSI-SRC).

Abbreviations used in the text: ALE – anterior lateral eye, AME – anterior median eye, AER – anterior eye row, CBP – central blind-ending pocket, CTA – compound terminal apophysis, EFL – eye field length, PER – posterior eye row, PLE – posterior lateral eye, PME – posterior median eye, RTA – retrolateral tibial apophysis, ZSI-CDT – Zoological Survey of India, Centre for DNA Taxonomy, Kolkata, ZSI-SRC – Zoological Survey of India, Southern Regional Centre, Chennai.

### **Taxonomy**

#### ***Pellenes* Simon, 1876**

**Type species:** *Pellenes tripunctatus* (Walckenaer, 1802)

**Diagnosis:** For diagnostic features and description, see Logunov *et al.* (1999).

***Pellenes (Pelmultus) iva* Caleb sp. n.**  
(Iva's jumping spider)  
(Figs. 1–29)

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**Type material: Holotype:** Male (ZSI-SRC-I/SP 34) India: Tamil Nadu, Thirumullaivoyal (13.1251° N, 80.1355° E, 24 m), 16 August 2015, leg. John Caleb T.D. **Paratypes:** 2 males (ZSI-SRC-I/SP 35) and (ZSI-CDT-AA1065) from same location, 22 June 2016; and 1 female (ZSI-CDT-AA1064) India: Tamil Nadu, Thiruninravur (13.1232° N, 80.0447° E, 32 m) 29 June 2016, leg. John Caleb T.D.

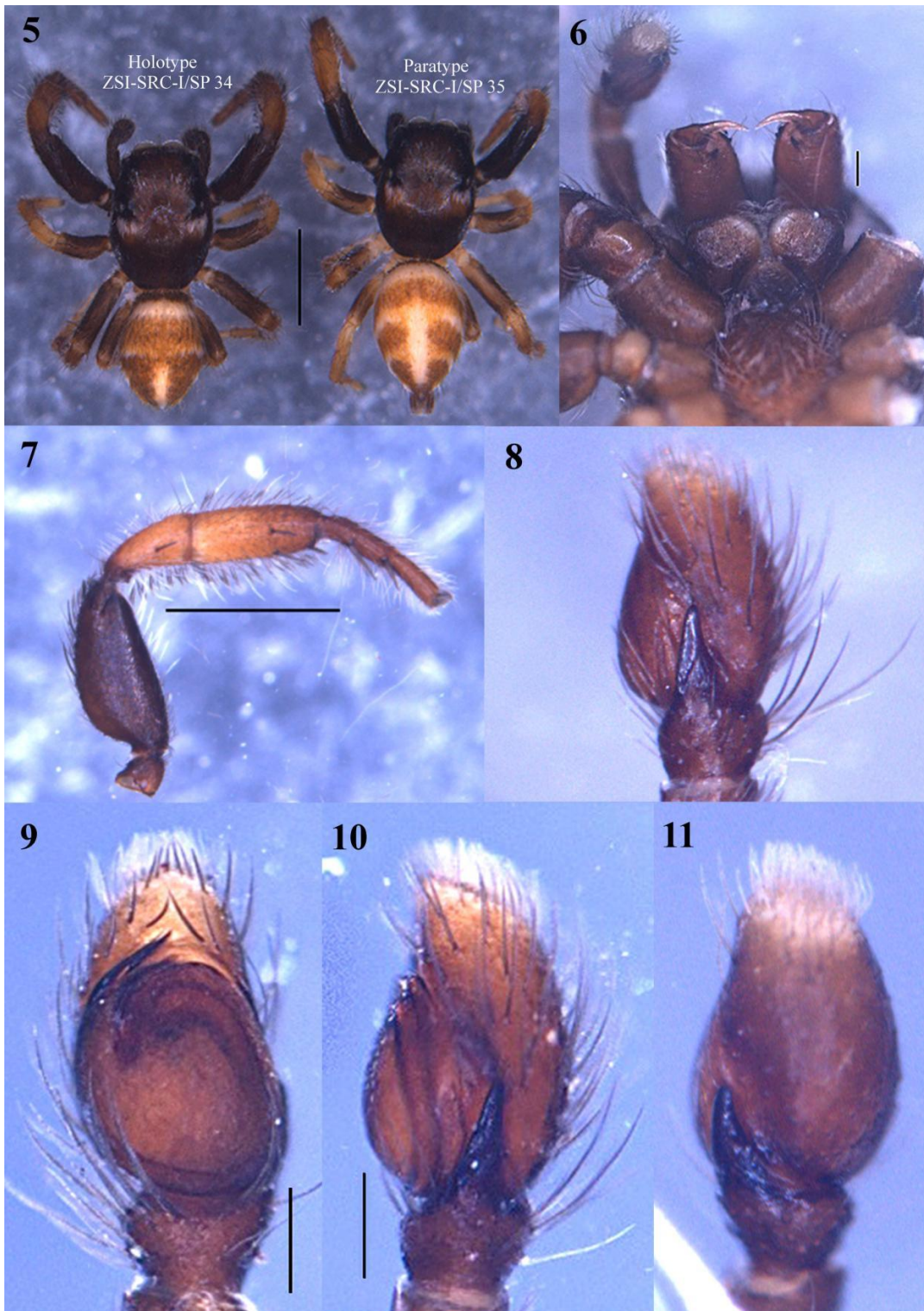
**Etymology:** The specific name is a noun in

apposition, named for the first author's daughter 'Esther Iva'.

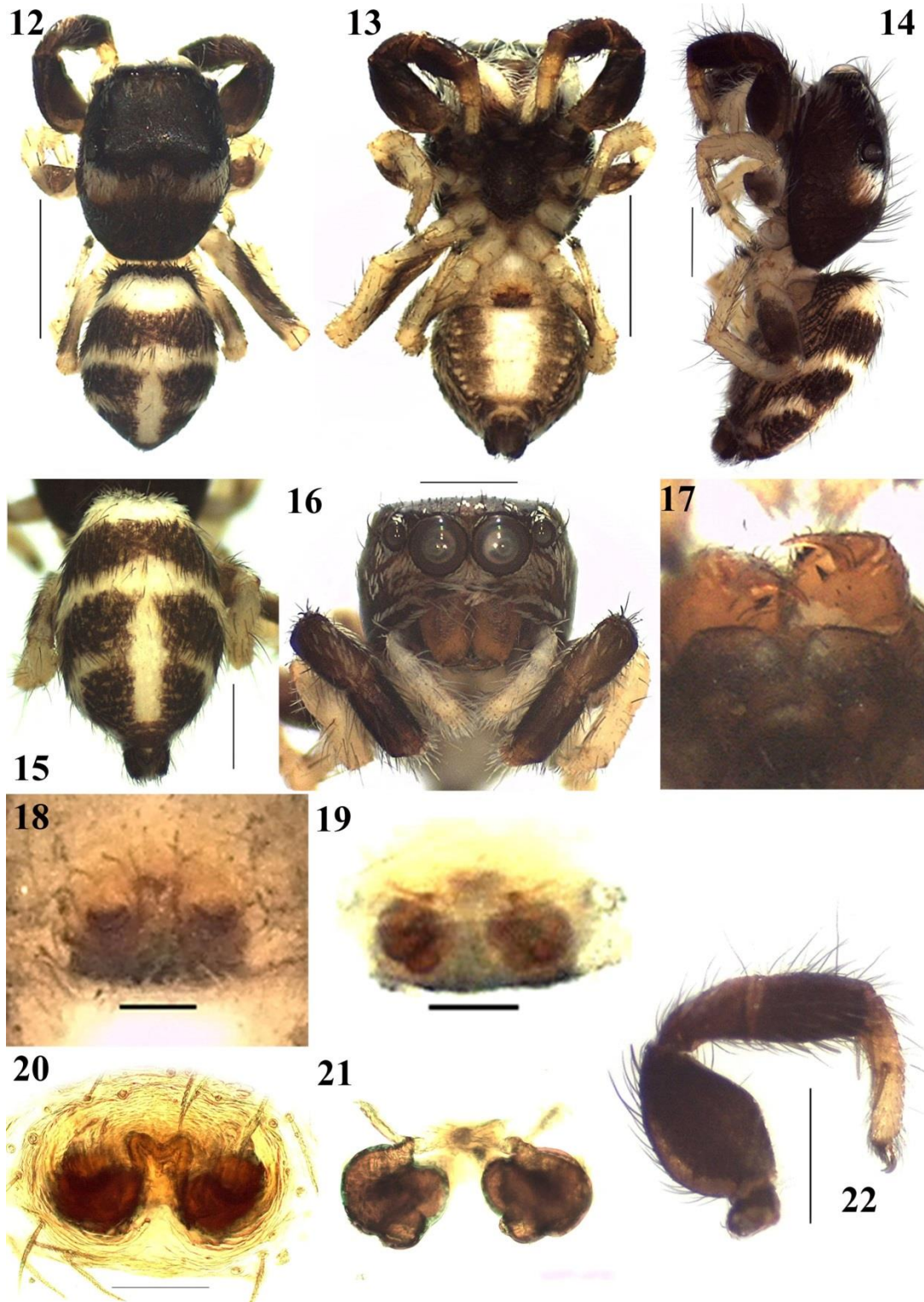
**Diagnosis:** The species closely resembles *Pellenes bitaeniata* (Keyserling, 1882) in general color pattern (cf. Figs. 1–5, 12 with Figs.1–4 in Zabka, 2006) but differs by the shape of CTA (elongated terminally in *P. bitaeniata*); presence of a small, thick ridge on the cymbium near the RTA (indicated by arrows in Figs. 26, 27). Female can be readily distinguished by the characteristic M-shaped CBP (arched in *P. bitaeniata* and majority of *Pellenes* species) (Figs. 18, 20, 28).



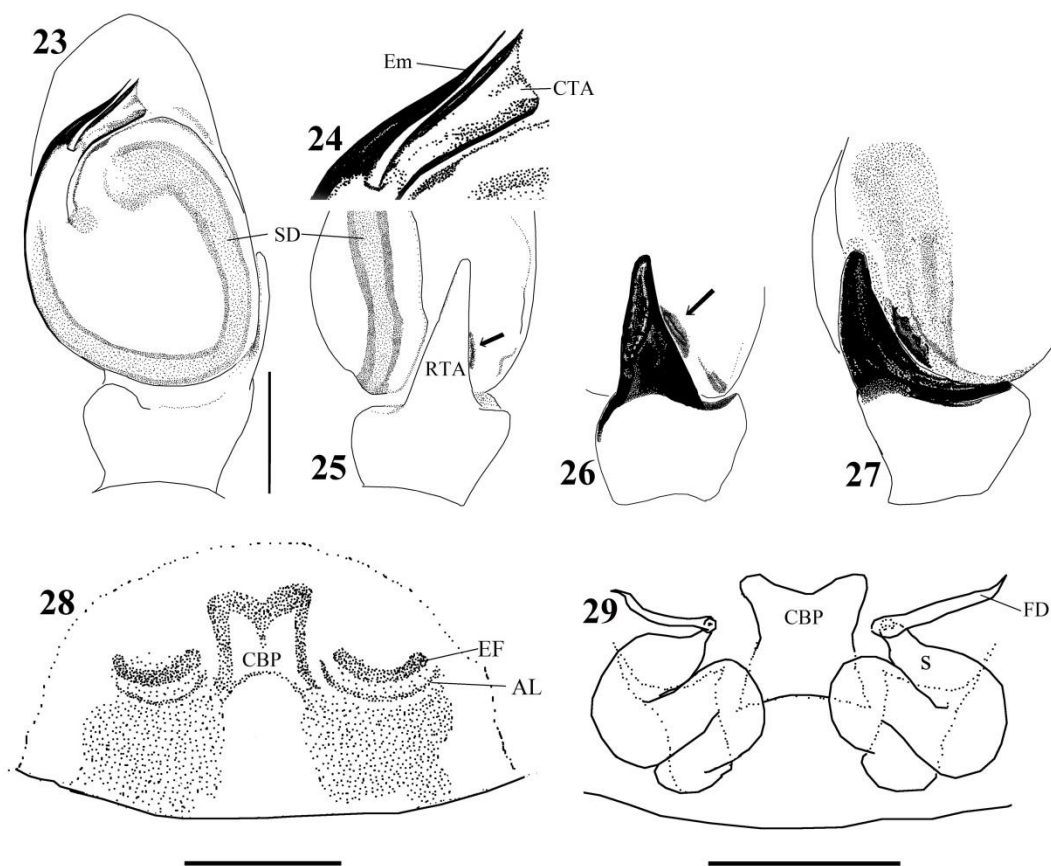
Figures 1–4. *Pellenes iva* sp. n. holotype male (ZSI-SRC-I/SP 34): 1. Dorsal view; 2. fronto-lateral view; 3. frontal view; 4. lateral view.



Figures 5–11. *Pellenes iva* sp. n. holotype male: 5. Dorsal view; 6. chelicerae, maxillae and labium; 7. leg I, prolateral view; 8. left palp, retrolateral view; 9. same, ventral view; 10. same, retrolateral view; 11. same, dorso-lateral view. Scale bars: 1 mm (5, 7); 0.1 mm (6, 9–10).



Figures 12–22. *Pellenes iva* sp. n. paratype female (ZSI-CDT-AA 1064): 12. dorsal view; 13. ventral view; 14. lateral view; 15. abdomen, dorsal view; 16. front view; 17. chelicerae; 18. epigyne, ventral view; 19. vulva, dorsal view; 20. epigyne, ventral view; 21. vulva, dorsal view; 22. leg I, prolateral view. Scale bars: 1 mm (12–13); 0.5mm (14–16, 22); 0.1 mm (18–20).



**Figures 23–29. *Pellenes iva* sp. n.:** 23. left male palp, ventral view; 24. embolic division; 25. left palp, retrolateral view; 26. tibial apophysis, retrolateral view; 27. same, dorso-lateral view; 28. epigyne, ventral view; 29. vulva, dorsal view. Abbreviations: AL – atrial lip; CBP – central blind-ending pocket; CTA – compound terminal apophysis; EF – epigynal fold; Em – embolus; FD – fertilization duct; RTA – retrolateral tibial apophysis; S – spermathecae; SD – sperm duct. Scale bars: 0.1mm (23, 28–29).

**Description:** Male holotype (Figs. 1–11, 23–27). Total length: 2.82; carapace: 1.48 long, 1.17 wide, 0.71 high at PLE; abdomen: 1.43 long, 0.95 wide. Carapace black, covered with pale hairs; a pair of white spots found behind the PLEs made of scale like hairs (Figs. 1, 4). Clypeal region blackish; anterior margin of clypeus lined by white scales which extend to the lateral sides; eyes surrounded by white orbital setae (Fig. 3). Eye measurements: AME 0.29, ALE 0.14, PME 0.03, PLE 0.13, AER 0.88, PER 1.04, EFL 0.58. Clypeus height 0.14. Chelicerae length 0.47. Chelicerae dark brown with vertical stripes of white scales (Fig. 3); two fused teeth on the promargin and one tooth on the retromargin (Fig. 6). Sternum oval, brownish; labium and maxillae dark brown. Leg

I robust (Fig. 5); femora I–IV dark brown, other segments yellowish. Legs clothed with white leaf-like scales on the lateral margins of patella and tibia (Figs. 2, 4, 7). Leg measurements: I 3.24 (1.04, 0.66, 0.75, 0.45, 0.34); II 2.03 (0.65, 0.43, 0.35, 0.32, 0.28); III 2.99 (1.06, 0.53, 0.58, 0.46, 0.36); IV 2.38 (0.78, 0.40, 0.43, 0.42, 0.35). Leg formula: 1342. Spination. Legs: femora I 0500, II 0300, III 0300, IV 0100; patellae I–II 1000, III 1010, IV 1000; tibiae I 1003, II 1002, III 2022, IV 2012; metatarsi I 0004, II 1003, III 3043, IV 1022; tarsi I–IV 0000. Abdomen ovoid, densely covered with rusty brown hairs; anterior margin covered by white scales; a longitudinal mid-dorsal stripe begins from the center and extends to the posterior end; two pairs of lateral white patches

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seen converging (Figs. 1, 5). Spinnerets brownish (Fig. 5). Palps dark brown; embolus thin accompanied by a CTA; RTA stout and strong with a blunt tip; a small ridge present hidden behind the RTA (Figs. 9–11, 23–27).

**Female:** (ZSI-CDT-AA1064) (Figs. 12–22, 28–29) Total length 2.93, carapace: 1.42 long, 1.14 wide, 0.68 high at PLE; abdomen: 1.51 long, 1.02 wide. Eye measurements: AME 0.31, ALE 0.14, PME 0.04, PLE 0.14. AER 0.91, PER 1.06, EFL 0.59. Clypeus height 0.10. Chelicerae length 0.33. Leg measurements: I 2.16 (0.68, 0.45, 0.42, 0.32, 0.29); II 1.73 (0.53, 0.38, 0.32, 0.28, 0.22); III 2.71 (0.97, 0.50, 0.49, 0.41, 0.34); IV 2.21 (0.72, 0.37, 0.41, 0.40, 0.31). Leg formula: 3412. Leg spination: femora I 0200; II 0200, III 0300, IV 0000; patellae I 0000, II 1000, III 1010, IV 1000; tibiae I 0004, II 1002, III 2022, IV 2001; metatarsi I 0004, II 0004, III 3033, IV 2022. Coloration pattern as in male but differs in the following: eye field covered with sparse white scales; some white scales are also present between the posterior pair of white spots (Fig. 12). Clypeus covered with white scales; chelicerae covered with pale hairs (Fig. 16). Pedipalps yellowish. Leg I with dark brown patella and tibia (Fig. 22). Epigyne with a pair of curved, lateral copulatory openings; CBP with a median invagination with characteristic M-shaped appearance (Figs. 18, 20, 28); internal structures shown in Figs. 19, 21 & 29.

**Natural history:** The species was found in the grassy patches along with mixed shrubs in the neighborhood nearby Araabath lake.

**Distribution:** India (Tamil Nadu: Chennai).

**Remarks:** Two species of the genus *Pellenes* are known from India: *P. allegrii* Caporiacco, 1935 from Kashmir and *P. maderianus* Kulczyński, 1905 from Jabalpur, Madhya Pradesh. Logunov *et al.* (1999) while reviewing the genus remarked that the Indian specimen which was known by a single female, identified by Prószyński (1992) as *P. maderianus* actually belongs to another species. It is likely that the species identified as *P. maderianus* from India

could probably represent the new species described herein.

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