

Spiders of the genus *Thyene* Simon (Araneae: Salticidae) from China

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Summary

Four new and two known species from southern China, *Thyene bivittata* sp. n., *T. radialis* sp. n., *T. triangula* sp. n., *T. yuxiensis* sp. n., *T. imperialis* (Rossi, 1846) and *T. orientalis* Zabka, 1985, are described. A key to Chinese species is also provided. Type specimens are deposited in Hunan Biology Research Institute.

Introduction

Recently, while examining specimens, we found males of four species which are closely related to *Thyene orientalis* Zabka in the form of the body and palpal organ. Obviously they should be congeneric. Zabka (1985: 454) and Prószyński (1992: 207) were uncertain about the generic position of *T. orientalis*, so we therefore showed our figures of these species to Prof. Prószyński and Dr Zabka. Following their suggestions, and especially in respect of the palpal structure, we provisionally describe them here as new species in the genus *Thyene*.

The genus *Thyene* Simon includes about 35 species according to the catalogue of Salticidae (Prószyński, 1990). Most of them are distributed in Africa, only 3 being reported from Asia. This paper describes four new and two known species of the genus collected from southern China, and provides a key to Chinese species. All measurements are in mm. The main characteristics of the genus are summarised in accordance with the Chinese species.

Genus *Thyene* Simon, 1885

Thyene Simon, 1885: 4.

Type species: Thyene imperialis (Rossi, 1846).

Description: Medium size spiders (total length 3.5–7.4), eye field shorter than half of carapace. Eyes III wider than eyes I, eyes II at midpoint between ALE and PLE or slightly closer to ALE. Abdomen elongated, median longitudinal stripe on dorsum yellow-brown, laterally black-brown (except *T. imperialis*). The body form of most Chinese species differs considerably from the type-species (*T. imperialis*), but the palpal organ has a similar structure. Embolus long and thin, curving around bulbus in one or two circles. Bulbus round in ventral view, with a membranous outgrowth on upper or lower part. Epigynum: copulatory canal relatively long, twisted into several circles.

Key to males of Chinese *Thyene* species

1. Embolus around bulbus in two circles (Fig. 5B,C)*imperialis*
— Embolus around bulbus in one circle (Fig. 1B,C) ...2
2. Outgrowth on upper part of bulbus (Fig. 1B)3
— Outgrowth on lower part of bulbus (Fig. 2B)4
3. Chelicera with one retromarginal tooth, bifurcated distally; outgrowth of bulbus finger-shaped (Fig. 1B,E).....*bivittata*
— Chelicera with one simple retromarginal tooth; outgrowth of bulbus triangular (Fig. 3B,E)*triangula*
4. Embolus originates from upper part of bulbus (Fig. 4B).....*yuxiensis*
— Embolus originates from lower part of bulbus (Fig. 2B)5
5. Three or four radial striae on surface of bulbus, outgrowth longer (Fig. 2B).....*radialis*
— Without radial striae, outgrowth shorter (Fig. 6B)*orientalis*

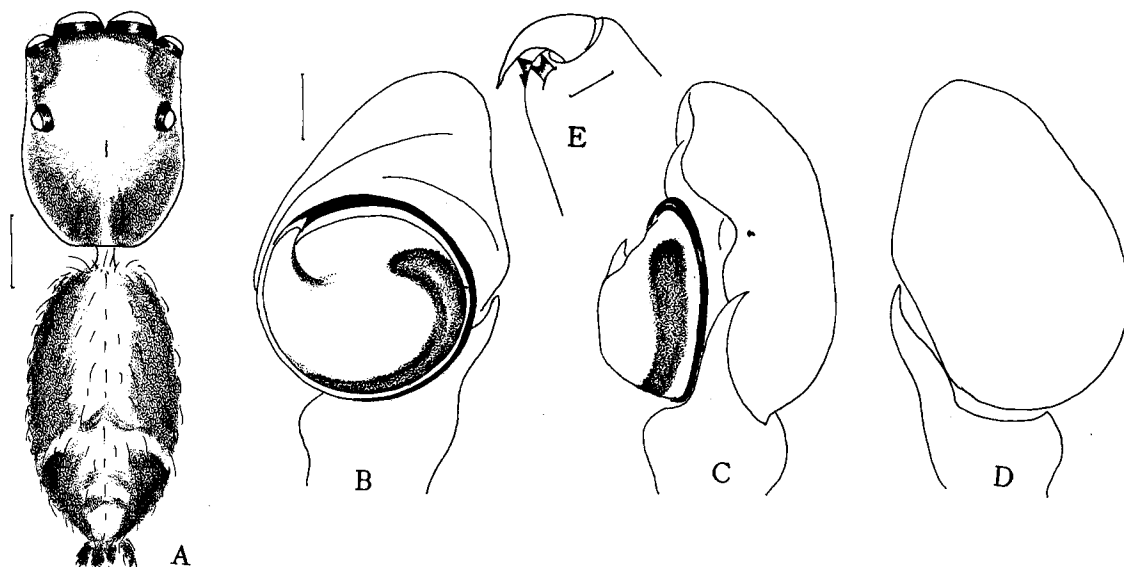


Fig. 1: *Thyene bivittata*, sp. n., male. **A** Body, dorsal; **B** Left palpal organ, ventral; **C** Ditto, lateral; **D** Ditto, dorsal; **E** Chelicera. Scale lines=0.5 mm (A), 0.1 mm (B–E).

Thyene bivittata, sp. n. (Fig. 1)

Type material: Holotype ♂, China, Yunnan province, Mengla county, 14 March 1981, leg. Wang Jia-fu. Paratypes: 2♂, as holotype; 1♂, China, Hunan province, Suning county, 6 August 1984, leg. Zhang Yong-jing.

Etymology: From Latin *bivittatus*, referring to the pair of brown streaks on the carapace.

Diagnosis: The palpal organ can be easily distinguished from that of *T. orientalis* Zabka by the position of the base of the embolus and the outgrowth on the bulbus; in this species both on upper part of bulbus, in *T. orientalis* both on lower part. This species differs from "*Thyene*" sp. (Prószyński, 1992: 207, figs. 183–184) by: (1) outgrowth finger-shaped instead of rectangular as in the latter; (2) tibial apophysis with pointed end in lateral view. *T. bivittata* also differs from *T. triangula* sp. n. in the shape of the bulbus outgrowth and by the bifurcate retromarginal cheliceral tooth.

Measurements: Male: total length 3.5–4.2. Holotype: total length 3.5; cephalothorax length 1.5, width 1.3; abdomen length 1.8, width 1.15; eye field length 0.85, width of eye row I 1.2, eye row III 1.25. Leg I 2.8 (0.9, 1.0, 0.4, 0.5); II 2.65 (0.9, 0.9, 0.4, 0.45); III 3.1 (1.0, 1.0, 0.6, 0.5); IV 3.3 (1.0, 1.1, 0.6, 0.6); leg formula 4, 3, 1, 2.

Description: *Holotype male:* Carapace orange, fringed with black; surroundings of AME yellow-brown, of other eyes black. Diameter of AME about twice that of ALE. A pair of brown streaks run from edge of eye field to posterior margin of cephalothorax. Chelicerae yellow-brown, with 2 promarginal teeth, 1 rectangular retromarginal tooth bifurcated distally (Fig. 1E). Maxillae and labium brown. Abdomen elongated oval, dorsum with greyish yellow-brown longitudinal median stripe densely covered with fine grey-white hairs; three or four chevrons posteriorly, rest of abdomen black-brown (Fig. 1A). Venter medially greyish yellow-brown, with a black stria, and three striae posteriorly. Spinnerets yellow-brown. Palpal organ (Fig. 1B–D): embolus long and thin, around bulbus in one circle; finger-shaped outgrowth towards promargin; both on upper part of bulbus.

Female: Unknown.

Distribution: China (Yunnan & Hunan provinces).

Thyene radialis, sp. n. (Fig. 2)

Type material: Holotype ♂, China, Hunan province, Chengbu county, 26 July 1982, leg. Wang Jia-fu.

Etymology: From Latin *radialis*, referring to three or four radial striae on the surface of the bulbus.

Diagnosis: The palpal organ of this species is close to that of *T. orientalis* Zabka in having similar positions of embolus origin and outgrowth on bulbus — both on lower part of bulbus. However, the form of the outgrowth and other parts of the palp is different: (1) the outgrowth is longer in *radialis*; (2) in *radialis* there are three or four radial striae on the surface of bulbus, and there is a tuft of distinctly bent bristles, pointing to the apex of the tibial apophysis, on the lateral side of the cymbium (Fig. 2B) — these are lacking in *orientalis*.

Measurements: Holotype: total length 5.5; cephalothorax length 2.7, width 1.9; abdomen length 2.9, width 1.5; eye field length 1.2, width of eye row I 1.7, eye row III 1.8. Leg I 4.2 (1.4, 1.5, 0.7, 0.6); II 4.0 (1.3, 1.4, 0.7, 0.6); III 5.0 (1.5, 1.6, 1.1, 0.8); IV 5.3 (1.5, 1.8, 1.2, 0.8); leg formula 4, 3, 1, 2.

Description: *Holotype male:* Cephalothorax high. Carapace red-brown, darker brown laterally, sparsely covered with white hairs; surroundings of eyes black. Diameter of AME about twice that of ALE. Chelicerae red-brown, with 3 promarginal teeth, 1 rectangular retromarginal tooth bifurcated distally (Fig. 2E). Maxillae and labium brown. Sternum yellow-brown. Legs black-brown. Abdomen elongated, anterior margin with tuft of white bristles; median longitudinal stripe yellow-brown, with dense white hairs; two pairs of depressed dots anteriorly, two or three indistinct chevrons posteriorly (Fig. 2A). Lateral area dark brown, yellow-brown on venter. Spinnerets black-brown. Palpal organ (Fig. 2B–D): long tongue-shaped outgrowth on lower part of bulbus; three or four radial striae on surface of

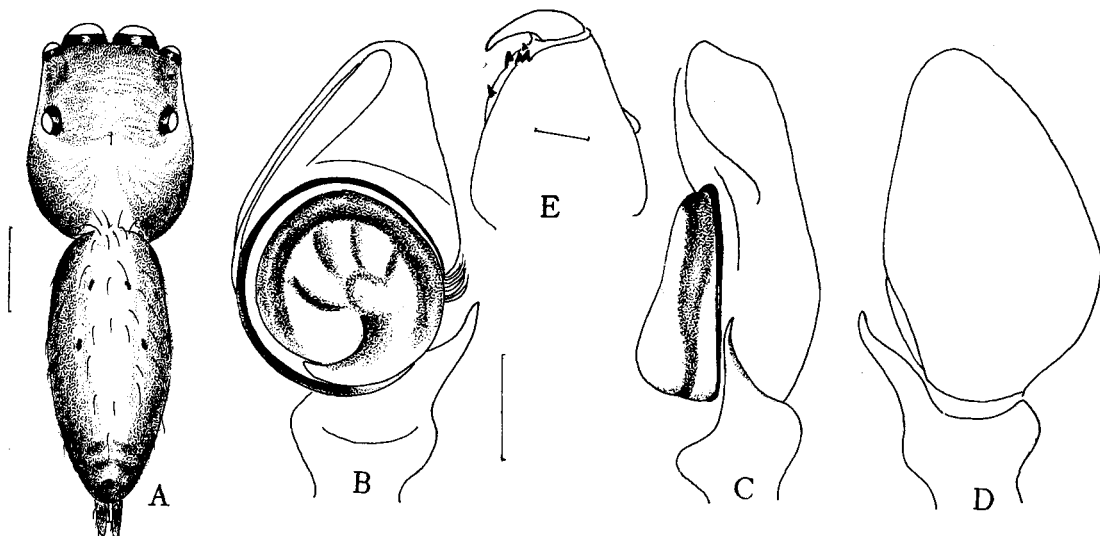


Fig. 2: *Thyene radialis*, sp. n., male. A Body, dorsal; B Left palpal organ, ventral; C Ditto, lateral; D Ditto, dorsal; E Chelicera. Scale lines=1.0 mm (A), 0.2 mm (B–E).

bulbus; tuft of distinctly bent bristles, pointing to apex of tibial apophysis, on lateral side of cymbium.

Female: Unknown.

Distribution: China (Hunan province).

***Thyene triangula*, sp. n.** (Fig. 3)

Type material: Holotype ♂, China, Yunnan province, Mengla county, 12 March 1981, leg. Wang Jia-fu.

Etymology: From Latin *triangulus*, referring to the shape of the outgrowth on the bulbus.

Diagnosis: This species can be distinguished from *T. orientalis* Zabka by the position of the embolus origin and the outgrowth on bulbus; in this species both on upper part of the bulbus, in *orientalis* both on lower part. Also, this species differs from *T. bivittata* sp. n. by: (1) shape of outgrowth, in *triangula* short and triangular, in *orientalis* long and finger-shaped; (2) retromarginal tooth of chelicerae, in *triangula* simple and triangular, in *orientalis* bifurcated distally.

Measurements: Holotype: total length 6.3; cephalothorax length 3.1, width 2.6; abdomen length 3.2, width 1.9; eye field length 1.4, width of eye row I 2.0, eye row III 2.2. Leg I 6.2 (1.8, 2.3, 1.2, 0.9); II 6.00 (1.9, 2.3, 0.9, 0.9); III 6.4 (2.1, 2.2, 1.2, 0.9); IV 6.75 (2.1, 2.3, 1.4, 0.95); leg formula 4, 3, 1, 2.

Description: *Holotype male*: Cephalothorax high. Carapace blackish red-brown, darkened laterally; surroundings of eyes black-brown. Diameter of AME about 1.75 times that of ALE; eye field length less than half carapace length. Chelicerae blackish red-brown, with 2 promarginal teeth and 1 retromarginal tooth (Fig. 3E). Maxillae, labium, sternum and legs brown, except femora blackish red-brown. Abdomen elongated oval, grey-brown longitudinal median stripe with dense white-grey hairs; a pair of curved transverse yellow-brown streaks anteriorly, and three chevrons posteriorly; lateral longitudinal band black-brown (Fig. 3A). Venter yellow-brown with black-brown striae. Spinnerets brown. Palpal organ (Fig. 3B-D): short

triangular outgrowth on upper part of bulbus; embolus around bulbus in one circle, origin on upper part.

Female: Unknown.

Distribution: China (Yunnan province).

***Thyene yuxiensis*, sp. n.** (Fig. 4)

Type material: Holotype ♂, China, Yunnan province, Yuxi county, 5 July 1983, leg. Liu Ming-yao.

Etymology: The specific name is derived from the name of the type locality.

Diagnosis: This species differs from *T. orientalis* Zabka by: (1) outgrowth on bulbus longer; (2) outgrowth hook-shaped, towards promargin, that of *orientalis* near retromargin; (3) embolus origin on upper part of bulbus, in *orientalis* on lower part.

Measurements: Holotype: total length 6.4; cephalothorax length 2.9, width 2.35; abdomen length 3.4, width 1.65; eye field length 1.3, width of eye row I 1.85, eye row III 2.0. Leg I 5.2 (1.6, 2.0, 0.9, 0.7); II 4.7 (1.5, 1.7, 0.8, 0.7); III 5.35 (1.7, 1.9, 1.0, 0.75); IV 5.95 (1.8, 2.0, 1.35, 0.8); leg formula 4, 3, 1, 2.

Description: *Holotype male*: Carapace red-brown, darkened laterally; surroundings of AME black-brown, of other eyes black, eye field light-coloured. Diameter of AME about twice that of ALE; PME slightly nearer base of ALE. Chelicerae red-brown, with 3 promarginal teeth, 1 retromarginal tooth (Fig. 4E). Maxillae and labium black-brown, sternum yellow-brown. Legs blackish red-brown, except proximal segments yellow-brown. Abdomen elongated, anterior margin with tuft of grey-white bristles; longitudinal median stripe yellow-brown, densely covered with white hairs; three indistinct chevrons posteriorly, laterally dark brown (Fig. 4A). Venter yellow-brown, with 3 grey longitudinal striae. Palpal organ (Fig. 4B-D): long hook-shaped outgrowth on lower part of bulbus, towards promargin; embolus originates from upper part and circles around bulbus.

Female: Unknown.

Distribution: China (Yunnan province).

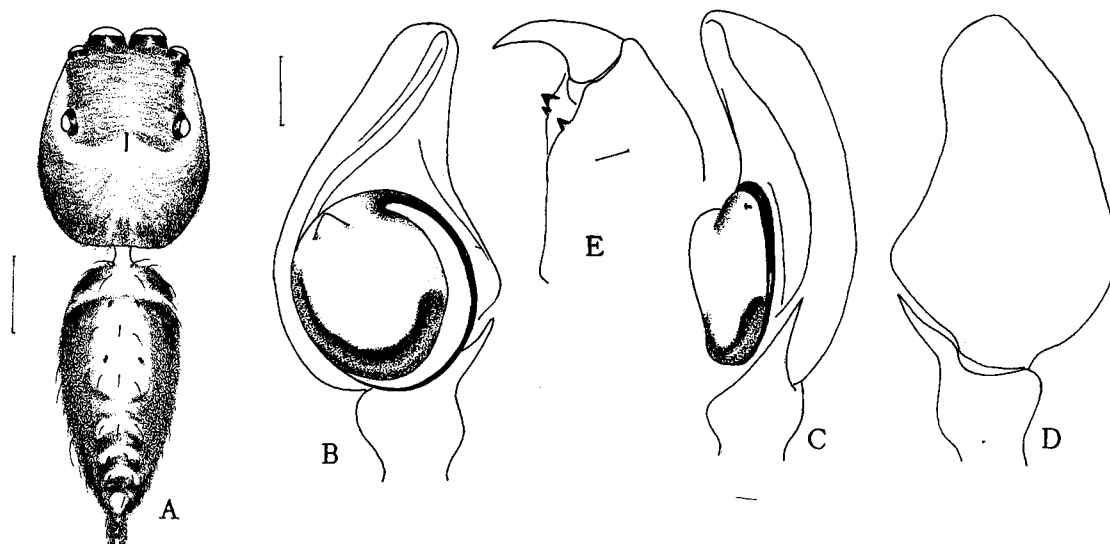


Fig. 3: *Thyene triangula*, sp. n., male. **A** Body, dorsal; **B** Left palpal organ, ventral; **C** Ditto, lateral; **D** Ditto, dorsal; **E** Chelicera. Scale lines = 1.0 mm (A), 0.2 mm (B-E).

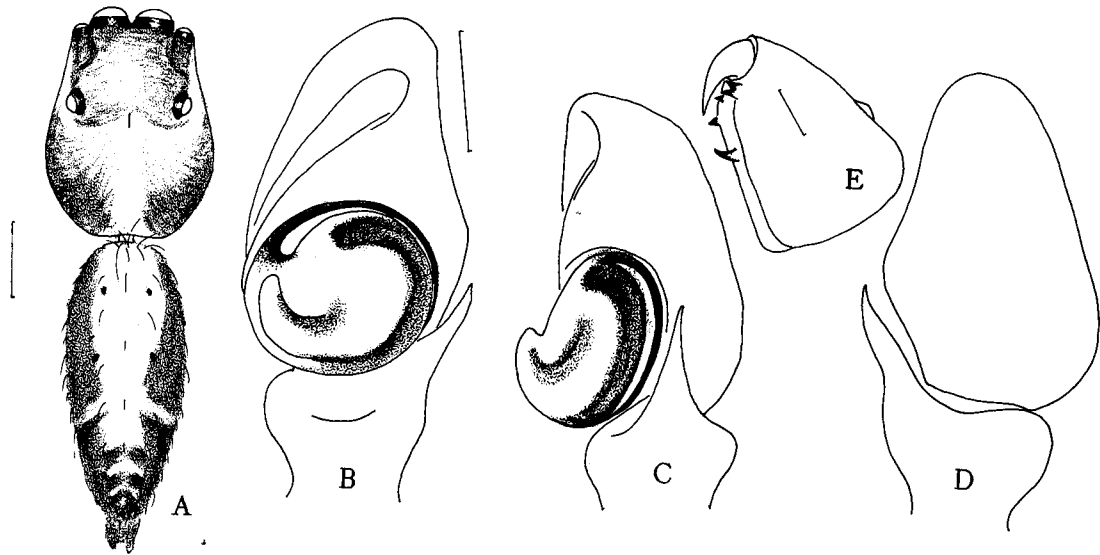


Fig. 4: *Thyene yuxiensis*, sp. n., male. **A** Body, dorsal; **B** Left palpal organ, ventral; **C** Ditto, lateral; **D** Ditto, dorsal; **E** Chelicera. Scale lines=1.0 mm (A), 0.2 mm (B-E).

***Thyene imperialis* (Rossi, 1846) (Fig. 5)**

Attus imperialis Rossi, 1846: 12 (descr. ♂).

Thyene imperialis: Wesolowska, 1981: 75, figs. 94-101; Peng *et al.*, 1993: 242, figs. 862-868.

Material: 3♂ 1♀, China, Guangxi province, August 1981, leg. Zhang Yong-qiang; 2♂, China, Fujian province, Congan county, 19 July 1986, leg. Xie Li-ping & Wang Hong-quan.

Measurements: Male: total length 4.9-7.35. Specimen of length 6.1 measured: cephalothorax length 2.8, width 2.87; abdomen length 3.3, width 1.63; eye field length 1.2, width of eye row I 1.65, eye row III 1.85. Female: total length 8.9; cephalothorax length 3.2, width 2.9; abdomen length 5.6, width 4.5.

Description: **Male:** Cephalothorax rounded, anterior part widest. Carapace light yellow, with white and brown bristles; eye field yellow-brown, surroundings of eyes black; scale-like white setae around eyes I, with metallic lustre. Eye field length less than half carapace length. Characteristic "horns" — tufts of long black setae, one

on each lateral side of eye field (Fig. 5A). Chelicerae with 2 promarginal teeth and 1 retromarginal tooth. Abdomen elongated (Fig. 5A), dorsum with metallic lustre. Palpal organ (Fig. 5B-D): embolus very long, originating from upper part of bulbus, two circles around bulbus.

Female: Appearance and coloration similar to male, without metallic lustre. Carapace yellow, two tufts of black bristles anteriorly. Legs shorter. Abdomen oval, with 3 pairs of brown patches on median part, first two large, third very small and elliptical. Epigynum: Fig. 5E,F.

Distribution: Mediterranean to East Africa, India and Indonesia. China (Hubei (Schenkel, 1963), Fujian, Guangdong (Wesolowska, 1981) and Guangxi provinces).

***Thyene orientalis* Zabka, 1985 (Fig. 6)**

Thyene orientalis Zabka, 1985: 454, figs. 632-635 (descr. ♂); Peng *et al.*, 1993: 244, figs. 869-873.

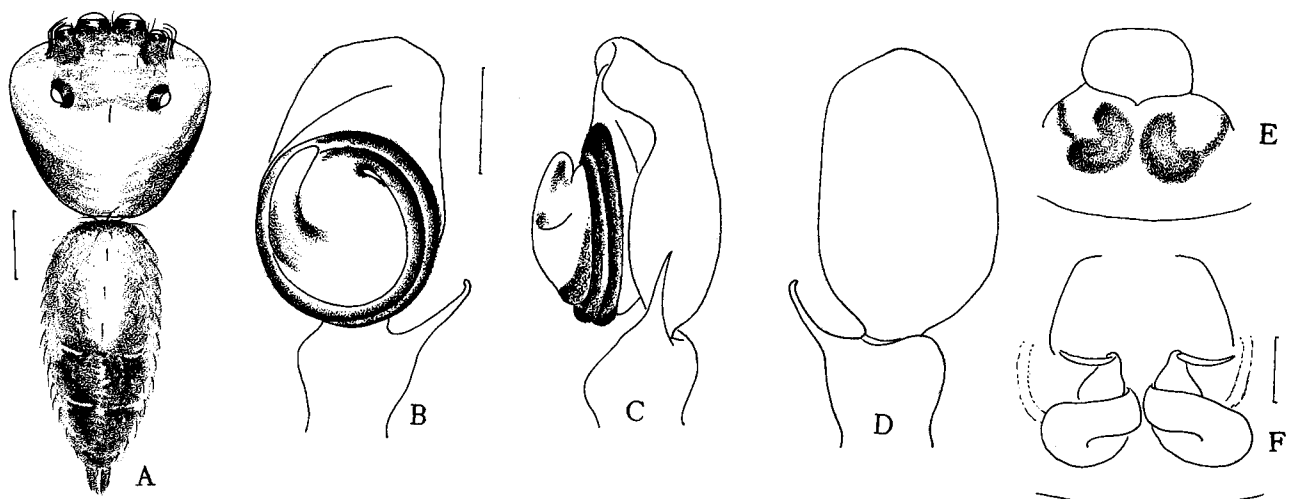


Fig. 5: *Thyene imperialis* (Rossi, 1846). **A** Male body, dorsal; **B** Left palpal organ, ventral; **C** Ditto, lateral; **D** Ditto, dorsal; **E** Epigynum; **F** Vulva. Scale lines=1.0 mm (A), 0.2 mm (B-F).

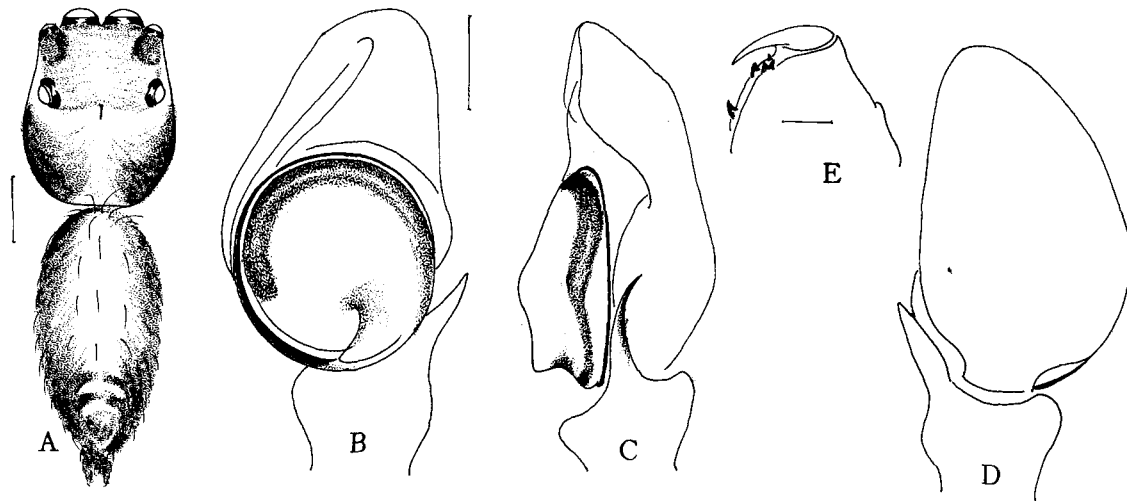


Fig. 6: *Thyene orientalis* Zabka, 1985, male. **A** Body, dorsal; **B** Left palpal organ, ventral; **C** Ditto, lateral; **D** Ditto, dorsal; **E** Chelicera. Scale lines = 1.0 mm (A), 0.2 mm (B-E).

Material: 1♂, China, Hunan province, Suining county, 8 August 1984, leg. Zhang Yong-jing.

Measurements: Male: total length 6.5; cephalothorax length 3.1, width 2.5; abdomen length 3.5, width 1.9; eye field length 1.3, width of eye row I 2.0, eye row III 2.1.

Description: *Male:* Carapace dark brown, densely covered with white setae along mid-line. Chelicerae dark brown, with 3 promarginal teeth, 1 retromarginal tooth bifurcate distally (Fig. 6E). Legs strong, densely covered with bristles and spines. Abdomen slender, anterior margin with tuft of light brown bristles; longitudinal median stripe yellow-brown densely covered with white hairs; two indistinct light brown chevrons posteriorly, laterally brown (Fig. 6A). Palpal organ (Figs. 6B-D): embolus long and thin; membranous outgrowth on lower part of bulbus.

Female: Unknown.

Distribution: Vietnam, China (Hunan province).

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