

A New Sino-Japanese Species of the Genus *Cupa*
(Araneae, Thomisidae) from the Coastal
Areas of the East China Sea

By

Hirotsugu ONO

Department of Zoology, National Science Museum, Tokyo

and

SONG Daxiang

Institute of Zoology, Academia Sinica, Beijing, China

Abstract A new spider of the poorly known thomisid genus *Cupa* is described from Japan and China, under the name of *C. zhengi*. It has been collected on the Nansei Islands (the Ryukyus) of Southwest Japan and in Sanmen County of Zhejiang in East China. It is apparent from these collecting records that the spider is distributed in the areas bordering on the East China Sea.

Very little has been known about the spider genus *Cupa* STRAND, 1906, established in the work "Japanische Spinnen" written by BÖSENBERG & STRAND. It is monotypic, and the type species, *Cupa typica* BÖSENBERG et STRAND, 1906, which was described on a single female specimen collected by W. DÖNITZ at Saga in Kyushu, West Japan, has never been rediscovered since that time. The holotype preserved in the Senckenberg Museum, Frankfurt am Main, is the only existing material of the species.

The first author, ONO, has obtained several specimens of a peculiar thomisid spider recently collected on the Nansei (Southwest) Islands of Japan. It has some features characteristic of the genus *Cupa* of the subfamily Stephanopinae but is specifically different from its only known representative, *Cupa typica*. While ONO was preparing a description of the new species, the second author, SONG, also obtained some specimens of the same species collected in Sanmen County of Zhejiang in East China (ca. 250 km S of Shanghai). These collecting records seem to show that the new species is distributed in the coastal areas on either side of the East China Sea.

When SONG visited Tokyo in the summer of 1985, the two authors reached an agreement that the best procedure was to describe this interesting spider in a joint paper. The result of their cooperation will be given in the following lines.

The abbreviations used in this paper are the same as those explained in ONO (1984).

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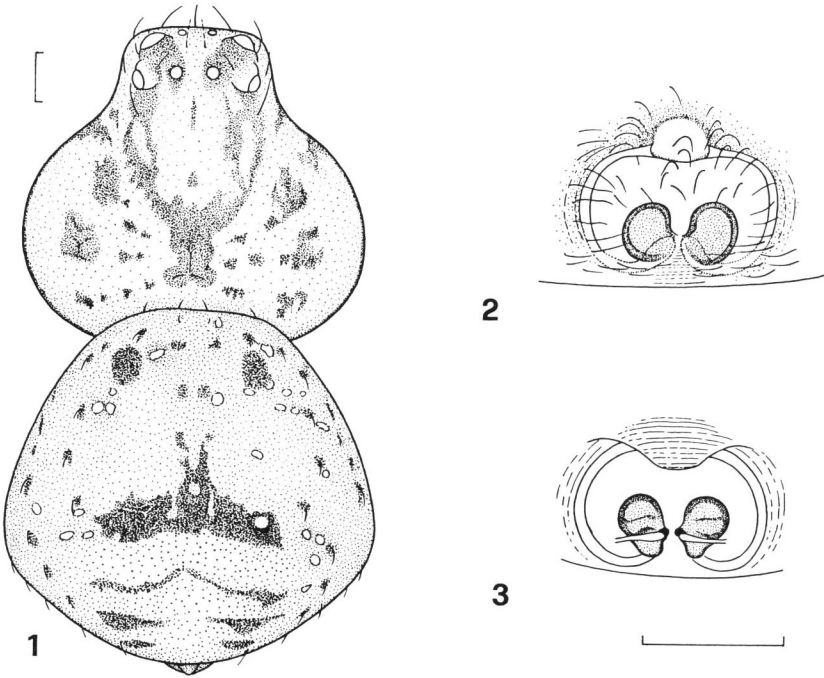
Cupa zhengi ONO et SONG, sp. nov.

[Japanese name: Minami-tarugumo]

(Figs. 1-7)

Description. Measurement. Body length ♀ 3.04-4.67 mm, ♂ 3.18 mm; prosoma length ♀ 1.48-1.78 mm, ♂ 1.56 mm, width ♀ 1.56-1.78 mm ♂ 1.48 mm; opisthosoma length ♀ 1.70-2.96 mm, ♂ 1.68 mm, width ♀ 1.78-3.00 mm, ♂ 1.41 mm. Lengths (in mm; ♀/♂) of legs of 1 ♀ from Okinawa Island and 1 ♂ from Sanmen are as follows:

Leg	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
I	0.48/0.55	1.41/1.43	1.85/1.81	0.89/0.75	2.15/1.91	6.78/6.45
II	0.48/0.54	1.38/1.40	1.85/1.81	0.89/0.73	2.15/1.94	6.75/6.42
III	0.38/0.36	0.58/0.61	0.83/0.80	0.63/0.50	1.20/1.04	3.62/3.31
IV	0.38/0.37	0.75/0.70	1.03/0.95	0.60/0.49	1.35/1.18	4.11/3.69

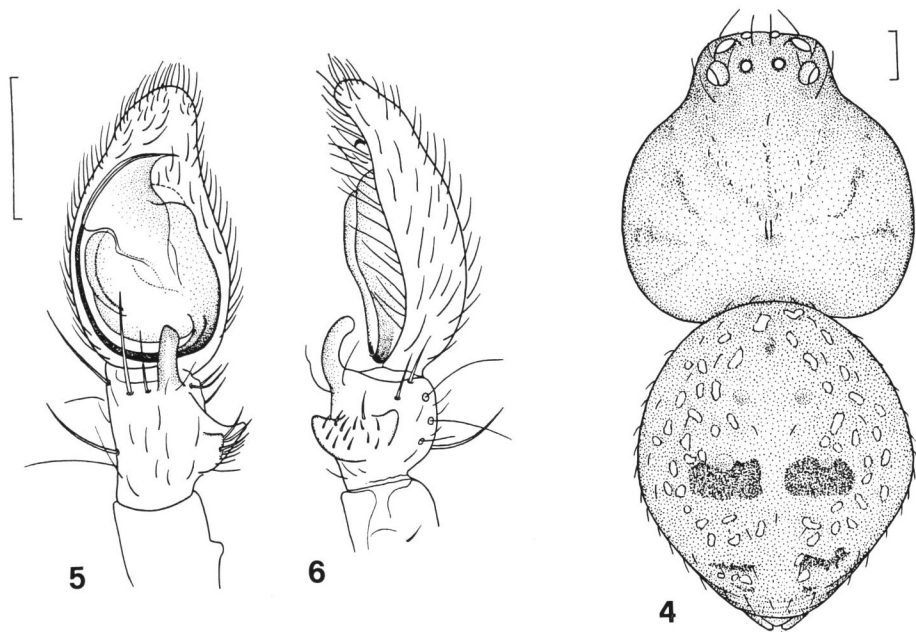


Figs. 1-3. *Cupa zhengi* ONO et SONG, sp. nov. — 1. Female from Tokunoshima Island, Japan. 2. Epigynum. 3. Female genitalia, dorsal view. (Scale: 0.25 mm.)

Prosoma nearly as long as wide (length/width ♀ 0.94–1.03, ♂ 1.05), poorly haired; head narrow, with setae. Posterior row of eyes recurved, $ALE \geq PLE > PME > AME$, ALE/AME ♀ 2.50–3.33, ♂ 2.57, PLE/PME ♀ 1.33–1.67, ♂ 1.23, $AME-AME/AME-ALE$ ♀ 1.33–2.00, ♂ 1.33, $PME-PME/PME-PL$ ♀ 0.81–0.95, ♂ 0.75, MOA nearly as long as wide (L/W ♀ 1.00–1.05, ♂ 1.12), wider behind than in front (WA/WP ♀ 0.54–0.67, ♂ 0.70), clypeus/AME–AME ♀ 1.25–1.58, ♂ 1.67. Chelicera vertical, with scopula, furnished with two teeth on promargin and three teeth on retromargin of fang furrow. Labium wider than long (length/width ♀ 0.66–0.83, ♂ 0.78); sternum as long as or slightly longer than wide (length/width ♀ 1.00–1.10, ♂ 1.06). Leg formula I–II–IV–III.

Spiniformation of legs. ♀ (Okinawa Island): Femur: I–IV dorsal 0–1–1, I prolateral 0–1–2–2–0–1–0 (on the right leg 0–1–2–0–1–0); patella: I–IV dorsal 1–0–1, IV retrolateral 1; tibia: I–IV dorsal 1–0–1, I–II prolateral 1–1–1, retrolateral 0–1–1, ventral 2–2–2–2–2, III–IV prolateral 1–1, ventral 0–2–2 ap, IV retrolateral 1–1; metatarsus: I–II pro- and retrolateral 1–0–2 ap, ventral 2–2–2, III–IV prolateral 1–2 ap, retrolateral 0–2 ap, III ventral 1.

♂ (Sanmen): Femur: I dorsal 0–1–1, prolateral 0–1–2–1–1, retrolateral 0–1–1–1–1, II dorsal 0–1–1–0–1, prolateral 0–0–1–1–1, retrolateral 0–1–1–1–1, III dorsal 0–1–0–1, prolateral 0–1–0–0, retrolateral 0–0–0–1, IV dorsal 0–1–0–1, retrolateral 0–0–0–1; patella: I–IV dorsal 1–0–1 (weak), retrolateral 1; tibia: I–IV dorsal 1–0–1 (weak),



Figs. 4–6. *Cupa zhengi* ONO et SONG, sp. nov. — 4. Male from Sanmen, China. 5. Male palp, ventral view. 6. Ditto, retrolateral view. (Scale: 0.25 mm.)

I–II pro- and retrolateral 1–1–1, ventral 2–2–2–2, III–IV pro- and retrolateral 1–1, ventral 2 ap; metatarsus: I–II pro- and retrolateral 1–0–2 ap, ventral 2–2–2–0, III–IV pro- and retrolateral 0–1–2 ap, ventral 0.

Male palp (Figs. 5–6). Tibia with VTA and RTA; VTA digitiform, RTA very wide, furnished with short strong hairs. Bulb longer than wide, simple, with a large conductor; embolus long, spiniform.

Opisthosoma as wide as or wider than long in the female (length/width 0.91–1.00), longer than wide in the male (length/width 1.19), with short hairs.

Female genitalia (Figs. 2–3). Epigynum small, without hood; intromittent orifices situated in the anterior part. Internal apparatus seen through integument; intromittent canal long; spermathecae oval.

Coloration and markings. ♀: Prosoma light yellowish brown to light greyish brown, mottled with brown or blackish brown; chelicerae, maxillae, labium, sternum and femora I–II light yellowish brown, other parts of legs I–II brown, legs III–IV yellow. Opisthosoma yellowish brown or light beige, with a pair of dark-coloured spots in the anterior part, indistinct markings at the middle and some transverse lines in the posterior part.

♂: Prosoma yellowish brown mottled with dark brown; chelicerae yellowish brown, maxillae, labium and sternum lemon-yellow; legs I yellowish brown, II lighter, III–IV yellow. Opisthosoma light beige on dorsum with a pair of black spots at the middle, venter light beige.

Type series. Holotype: ♂, allotype: ♀, Sanmen County, Zhejiang, China, 5–X–1977, ZHENG S.-X. leg. (♂, NSMT; ♀, ASB). Paratypes: 2 ♀♀, Okinawa Island, Okinawa Pref., Japan, 5–VI–1977, Y. CHIKUNI leg. (1 ♀, NSMT; 1 ♀, ASB); 1 ♀, Nishinakama, Amami-Ōshima Island, Amami Islands, Kagoshima, Pref., Japan, 24–26–V–1978, H. MAKIHARA leg. (NSMT); 1 ♀, Tokunoshima Island, Amami Islands, Kagoshima Pref., Japan, 14–VII–1983, K. SAKAI leg. (NSMT). The allotype and one paratype are deposited in the collection of the Institute of Zoology, Academia Sinica, Beijing (ASB); the remaining type specimens are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo (NSMT).

Range (Fig. 7). Japan (Nansei Islands), China (Zhejiang).

Etymology. Named after ZHENG Shao-xiong, Sanmen Bureau of Agriculture, Zhejiang, China.

Remarks. The first author examined the female holotype of *Cupa typica* STRAND (1906, p. 266) (“Yunohama Berge bei Saga”, Japan, W. DÖNITZ leg., SMF 4246) and compared it with the specimens of this new species. *Cupa zhengi* differs from *C. typica* in the diagnostic characters shown in the following key (only females; the male of *C. typica* is unknown).

Leg I six times as long as prosomal width; tibiae I–II each with three pair of ventral spines, metatarsi I–II each with two pair of ventral spines; AME–AME narrower than AME–ALE, PME–PME wider than PME–PLE; clypeus very wide, clypeus/AME–AME 5.33.....

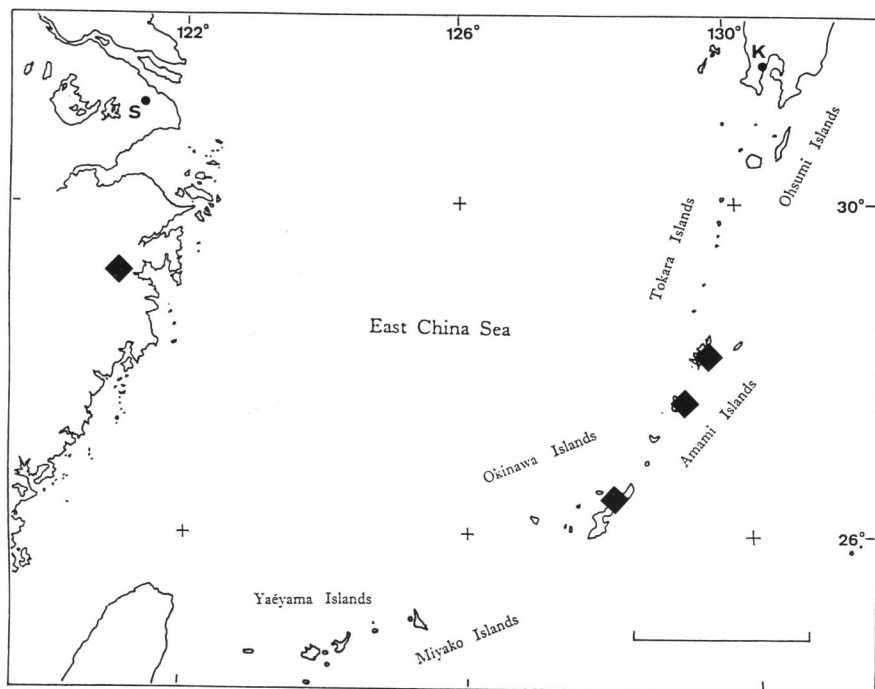


Fig. 7. Distribution of *Cupa zhengi* ONO et SONG, sp. nov. Localities (◆); S: Shanghai; K: Kagoshima. (Scale: 250 km.)

.....*Cupa typica* BÖSENBERG et STRAND, 1906.
 Leg I four times as long as prosomal width; tibiae I–II each with five pair of ventral spines, metatarsi I–II each with three pair of ventral spines; AME–AME wider than AME–ALE, PME–PME narrower than PME–PLE; clypeus narrow, clypeus/AME–AME 1.25–1.58.....*Cupa zhengi* ONO et SONG, sp. nov.

The difference between the two species is so conspicuous that they may not be simply placed in the same genus, but the present authors were unable to find any other stephanopine genus appropriately receiving the new species. When the male of *C. typica* is found in future, this problem can be solved on a sound basis.

References

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