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A new species of the basal araneomorph spider genus *Ectatosticta* (Araneae, Hypochilidae) from China

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Abstract

The hypochilid spider *Ectatosticta davidi* (Simon) is redescribed on the basis of adults from Mt. Taibaishan in Shaanxi Province, China; the specimens from Qinghai Province previously identified as *E. davidi* by most modern authors belong to a new species described as *E. deltshevi*.

Keywords

Araneae, Araneomorphae, Hypochilidae, *Ectatosticta*, China

Introduction

The spiders of the family Hypochilidae have long been recognized as the most primitive of all araneomorph, or true, spiders. In modern cladistic analyses, they appear as the sister group to all other araneomorphs (Platnick 1977; Forster et al. 1987; Griswold et al. 2005).

Only two genera of hypochilids are known, *Hypochilus* Marx from the United States, and *Ectatosticta* Simon from China. Although 10 species of *Hypochilus* are now

recognized, for *Ectatosticta* only the type species, *E. davidi* (Simon, 1888), has been described, and that species has been known from only a few specimens.

Even the type locality of *E. davidi* is problematic. In the original description, Simon (1888) indicated that the male and female syntypes were collected by A. David from "Montagnes au nord de Péking". Those specimens are now labeled only "Sina", but Simon (1892) later listed the species as being from "China merid." (southern China), which hardly describes areas north of Beijing. Many decades ago, one of Simon's female specimens from "Inkiaphou" in Shaanxi Provice, China, was donated to Dr Willis Gertsch; the label with that specimen reads "Inkiaphou, Chine méridionale, Mus. Nat. d'Hist. Nat. coll. E. Simon". According to Schenkel (1963: 8), A. David collected at "Inkia-fu, Süd Schensi" in 1873. Repeated attempts by Chinese colleagues to recollect the species in the mountains north of Beijing have all been unsuccessful; Forster et al. (1987: 24) therefore concluded that the syntypes were probably collected at Inkiaphou. The exact location of Inkiaphou (in French) or Inkia-fu (in German) is also uncertain, but those names might refer to Inkiapo, now known as Yinjiapo (on Mt. Qinling) in Shaanxi (near 34°00'N, 108°00'E).

The redescription and illustrations of *E. davidi* provided by Forster et al. (1987) and other modern authors were based primarily on specimens taken in Qinghai Province, to the west of Inkiaphou. The collection of a good series of specimens, by the second author and colleagues, at Mt. Taibaishan in Shaanxi Province, has led us to reexamine the available material. We conclude that there are at least two species of *Ectatosticta*, that the specimens from Mt. Taibaishan and Inkiaphou in Shaanxi Province belong to *E. davidi*, and that the specimens from Qinghai Province described and illustrated by Forster et al. (1987) and other modern authors belong instead to a different species, here described as *E. deltshevi*.

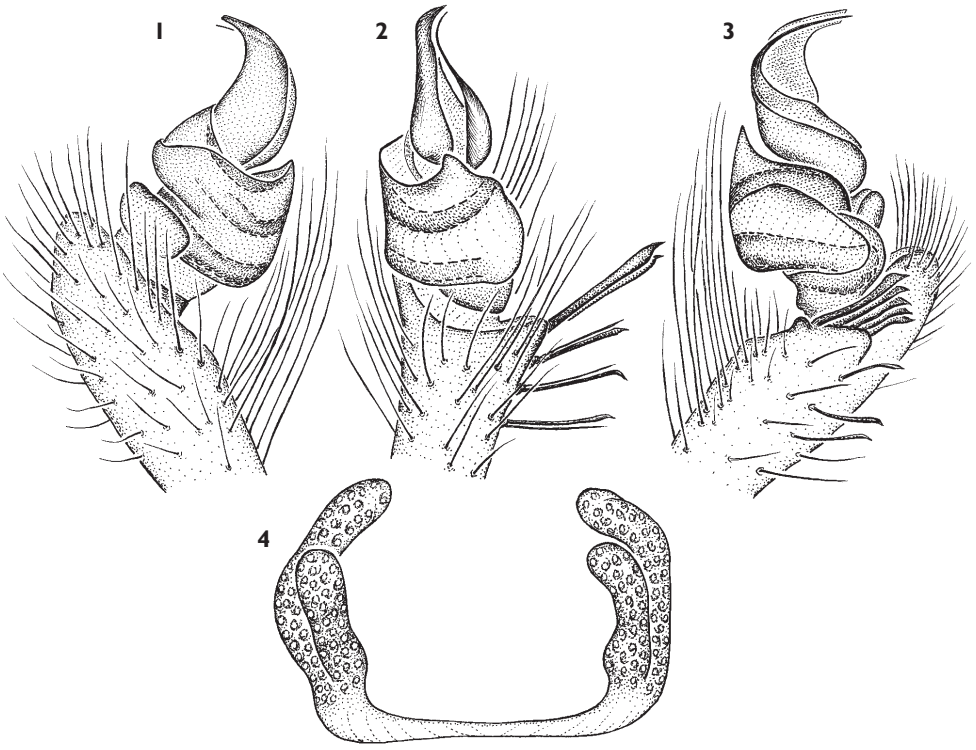
The format of the descriptions follows that of Forster et al. (1987). It is with great pleasure that we dedicate this paper, and the new species, to our Bulgarian colleague, Dr Christo Deltshev, in honor of his many contributions to arachnology. The material examined is housed in the following collections:

AMNH American Museum of Natural History, New York
IZCAS Institute of Zoology, Chinese Academy of Sciences, Beijing
MNHN Muséum National d'Histoire Naturelle, Paris
SMF Forschungsinstitut Senckenberg, Frankfurt am Main

***Ectatosticta davidi* (Simon)**
Figs 1-4

Hypochilus davidi Simon, 1888: ccviii (one male and one female syntypes, supposedly from mountains north of Beijing but probably from Inkiaphou, Shaanxi Province, China, in MNHN, examined).

Ectatosticta davidi: Simon 1892: 204, figs. 143-146, 148-149. Gertsch 1958: 13, figs. 10, 19, 22-31. Lehtinen 1967: 298, fig. 15.



Figures 1-4. *Ectatosticta davidi* (Simon): **1** left male palp, prolateral view **2** same, ventral view **3** same, retrolateral view **4** female spermathecae, dorsal view.

Diagnosis. Males of *E. davidi* can be distinguished from those of *E. deltshevi* by the details of the distal modifications on the retrolateral side of the palpal tibia. In *E. davidi*, there is a small triangular lobe followed apically by a large ledge bearing 5-7 thickened setae, all closely appressed (Fig. 3); in *E. deltshevi*, there are only four thickened setae, and the most dorsal of those is smaller and well separated from the main group of three (Forster et al. 1987: fig. 81). Females of *E. davidi* (Fig. 4) have the inner pair of spermathecae relatively larger and more robust than is the case in *E. deltshevi* (Forster et al. 1987: fig. 82).

Male. Total length 9.57. Carapace 4.61 long, 3.78 wide, yellow, with margins of pars cephalica and pair of broad marginal bands mottled with purplish brown, similar mottling along midline, with additional pair of purple lines originating anterior of thoracic groove, extending to posterior median eyes; clypeus at middle about twice AME diameter in height. Eye sizes and interdistances: AME 0.09, ALE 0.18, PME 0.21, PLE 0.15; AME-AME 0.15, AME-ALE 0.26, PME-PME 0.22, PME-PLE 0.15, ALE-PLE 0.06; MOQ length 0.37, front width 0.33, back width 0.63. Chelicerae yellow, unmarked; endites light brown, darkened distally; labium light brown, darkened distally; sternum light brown, with three broad, transverse bands of purple pigment covering most of surface. Legs light brown, with femora,

patellae, and tibiae darkened distally. Femur I more than twice as long as carapace. Leg spination (only surfaces bearing spines listed): femora: I d3-0-0, p0-4-1, r1-3-1; II d3-0-0, p0-3-2, r3-3-1; III d3-0-0, p1-2-1, r3-2-1; IV d4-0-0, p1-3-1, r0-2-2; tibiae: I d1-0-1, p2-2-1, v4-4-3, r2-3-1; II d1-0-1, p2-2-1, v4-4-3, r2-2-1; III d1-0-1, p1-2-1, v2-2-2, r1-2-1; IV d1-0-1, p1-2-1, v2-2-1, r1-2-1; metatarsi: I d1-0-0, p1-2-2, v2-4-4, r1-1-0; II, III d1-0-0, p1-1-0, v4-4-2, r1-1-0; IV p1-0-1, v2-2-0, r1-0-1. Dorsum of abdomen white with about six purple chevrons, posterior ones stronger than anterior ones, covering most of posterior one-third, sides and venter mottled except on lung covers. Retrolateral side of palpal tibia distally with small triangular lobe followed distally by large lobe bearing 5-7 modified setae, all closely appressed (Fig. 3); embolus rounded, more smoothly curved than in *E. deltshevi* (Figs 1-3).

Female. As in male, except as noted. Total length 10.98. Carapace 4.20 long, 2.97 wide. Eye sizes and interdistances: AME 0.11, ALE 0.20, PME 0.20, PLE 0.18, AME-AME 0.14, AME-ALE 0.25, PME-PME 0.30, PME-PLE 0.15, ALE-PLE 0.09; MOQ length 0.37, front width 0.36, back width 0.70. Chelicerae light brown; sternum with only one anterior transverse light band interrupting purple mottling. Femora darkened medially and distally, tibiae and metatarsi with basal, median, and distal darkenings. Leg spination (only surfaces bearing spines listed): femora: I d2-0-0, p1-2-3, r2-4-2; II d2-1-0, p1-1-2, r2-3-1; III d2-3-0, p1-1-1, r3-3-2; IV d3-1-0, p0-2-1, r0-1-2; tibiae: I d1-0-1, p2-1-1, v2-5-2, r1-2-1; II d1-0-1, p1-2-1, v4-5-2, r1-2-1; III d1-0-1, p1-2-1, v2-2-2, r1-1-1; IV d1-0-1, p1-1-0, v2-3-2, r1-1-0; metatarsi: I d1-0-0, p1-1-0, v2-4-4, r1-1-0; II d1-0-0, p1-1-0, v4-4-4, r1-1-0; III d1-0-0, p1-1-0, v4-2-2, r1-1-0; IV p0-1-0, v1p-1p-1p, r0-1-0. Inner pair of spermathecae relatively long, robust throughout their length (Fig. 4).

Material Examined. CHINA: **Shaanxi:** Inkiaphou (AMNH), 1♀; presumably Inkiaphou, label reads only "Sina" (MNHN 7285), 1♂, 1♀ (syntypes); Mt. Taibaishan, S flanks, above Houshenzi, 33°54'43.98"N, 107°46'44.06"E, June 12-15, 1997, tree line, scattered mixed coniferous/*Rhododendron* forest, elev. 3050 m (P. Jäger, C. Fischer, AMNH), 1♂, 2♀, same (IZCAS), 1♂, 1♀, same (SMF), 1♂, 8♀ (not all dissected, some may be juvenile), June 25, 1997, primary broad-leaved forest, elev. 2500-2600 m (J. Martens, P. Jäger, SMF), 1♀.

Natural History. According to observations by the second author at Mt. Taibaishan, *E. davidi* occurs in stony debris in open, semi-open, and forest-covered habitats. One part of the elongate sheet-web (Fig. 5) is situated at the surface and connected to a stone or rock and surrounding vegetation. The apparently larger part of the web leads, as a narrow band, deep into the debris. Spiders cannot be seen or lured out of their retreat during the day. When it gets dark, the spiders sit close to the surface part of the web, ready to escape to their retreat. One male was found walking around, apparently searching for a female. Another male was observed during courtship, at the margin of a female's surface web; that male touched the web only with its first pair of legs. The third male was taken in its own web.

Distribution. Known with certainty only from Shaanxi Province, China (Fig. 6).

Figure 5. Web of *Ectatosticta davidi* (Simon) from Mt. Taibaishan, Shaanxi, China.

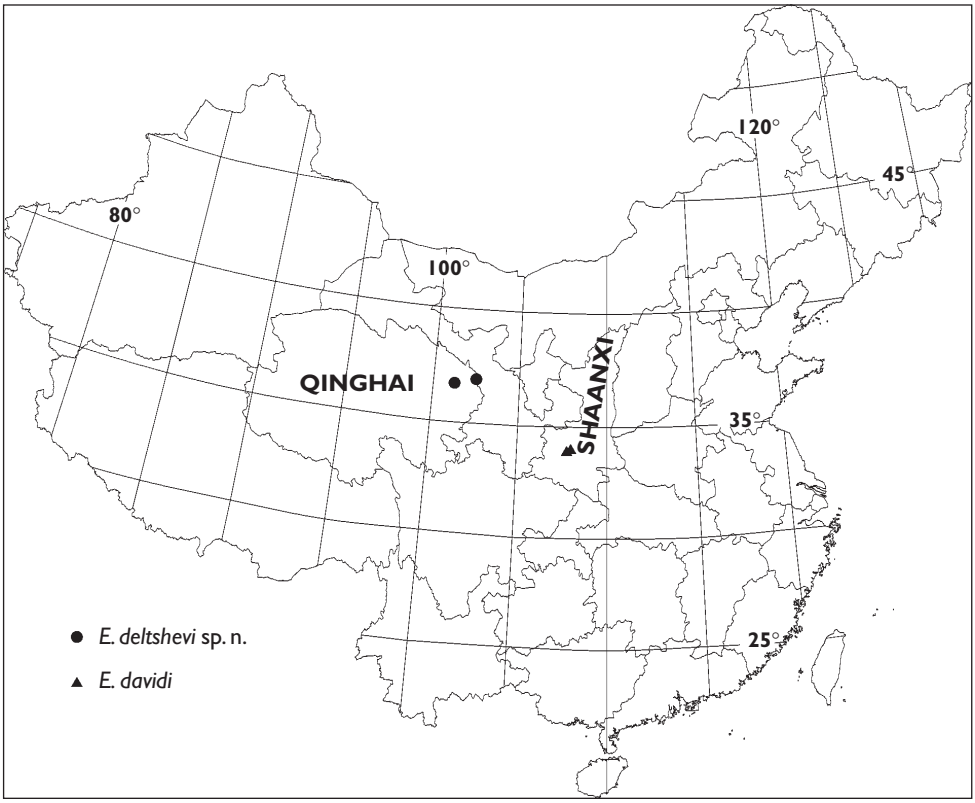


Figure 6. Map of China, showing records of *Ectatosticta*.

***Ectatosticta deltshevi* sp. n.**
urn:lsid:zoobank.org:act:FF9F3FC8-8CB0-4912-9D8E-75EA18F2E57E

Ectatosticta davidi (misidentification): Li and Zhu 1984: 510, figs. a-g. Forster et al. 1987: 23, figs. 6-16, 18-20, 23-24, 31-36, 78-82. Song et al. 1999: 41, figs. 11D, 17Q-T. Hu 2001: 69, figs. 1.1-6. Song et al. 2001: 64, figs. 24A-E.

Type. Male holotype from Huangyuan County, Qinghai Province, China, 15.IX.1984, Z.S. Li leg., deposited in IZCAS.

Etymology. The specific name is a patronym in honor of Dr Christo Deltshev.

Diagnosis. Males of *E. deltshevi* can be distinguished by the form of the specialized setae situated distally on the retrolateral ledge of the palpal tibia, as detailed above, and by the distally more sharply angled embolus (Forster et al. 1987: fig. 79). Females have the inner pair of spermathecae shorter, less robust, and distally less sclerotized than in *E. davidi*.

Male. Described by Forster et al. (1987: 23), as *E. davidi*.

Female. Described by Forster et al. (1987: 23), as *E. davidi*.

Other material examined. CHINA: **Qinghai:** Huangyuan County, Sept. 10, 1983 (Z.S. Li, AMNH), 1♂, 1♀, Sept. 15, 1984 (Z.S. Li, IZCAS), 2♂, 3♀.

Distribution. Known with certainty only from Huangyuan County, Qinghai Province, China. A juvenile taken at an elevation of 2300-2700 m in Beishan National Park, 120 km NE Xining City, Qinghai Province, China, 36°56'N, 102°29'E, 23.V – 8.VI.1996, J. Martens leg. (SMF) may also belong to this species (Fig. 6).

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