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Ergebnisse der Bhutan-Expedition 1972 des Naturhistorischen Museums in Basel

Araneae: Fam. Salticidae Genus Synagelides

By A. Bohdanowicz

Abstract: The genus *Synagelides* is recorded for the first time from Bhutan with the following two new species: *S. wuermlii* and *S. wangdicus*.

The 1972 Expedition to Bhutan of the Naturhistorisches Museum in Basel, consisting of W. Wittmer, C. Baroni Urbani, O. Stemmler and M. Würmli has collected, among others, very interesting specimens of the genus *Synagelides* (Salticidae, Aranei).

The genus *Synagelides* Strand in BÖSENBERG and STRAND, 1906 was described on the basis of a single species from Japan — *S. agoriformis* Strand, 1906. A further species — from Southern China, apparently related to *Synagelides* but described as a separate genus *Tagoria* Schenkel, 1963—*T. cavaleriei* was added by SCHENKEL in 1963. There are also 2 species of *Synagelides* described recently from the Far East of the USSR (Prószyński, in print), and 2 undescribed species from Japan (Bohdanowicz and Prószyński, in litt.). Adding to the above a single yet undescribed specimen from Nepal in the collection of M. Hubert (Paris) we obtain a clear picture of distribution of an Oriental genus, into which the occurrence in Bhutan of two species described below fits rather well.

Both Bhutan species are apparently very closely related to *Tagoria cavaleriei* and, at least, to one Japanese species. As the generic separation of *Tagoria* from *Synagelides* seems to be rather doubtful, I decided to place them in the genus *Synagelides*. The specimens described in this paper are kept in the collection of the Naturhistorisches Museum in Basel.

Synagelides wuermlii n. sp.

Material: Bhutan: "20 km S Thimphu, 18.5.1972" — 1 ♀ holotype, 1 juv.

Comparative material: *a: Tagoria cavaleriei* Schenkel, 1963, South China, Anschun fu, 1912 — 1 ♂, 1 ♀ (syntypes), coll. MNHN, Paris. *b:*

Synagelides annae Bohdanowicz (in press), "Japan, Osaka Pref. 29". coll. T. Yaginuma, 1 ♂, 1 ♀ (syntypes).

Description of female: Dorsal aspect. Cephalothorax fawn with eyes surrounding intense black. Eye field surface wrinkled (as in *S. annae*, in *T. cavaleriei* the surface is pitted) and with a distinct golden gloss, covered with dull, whitish adpressed setae and brown bristles. Setae on posterior slope of carapace form symmetric delicate arci, spreading from fovea. Thorax with a symmetric blot-shaped dark pattern (In *T. cavaleriei* thorax bald with dark, inconspicious patches, in *S. annae* thorax uniformly yellow-fawn). Ventral margin of carapace with a lighter streak (dark margin in *S. annae*, no margin in *T. cavaleriei*). Above eyes I a row of scattered whitish medially bent setae and a further row of long brown bristles (in *T. cavaleriei* on distinct row of long and fine golden hairs) Length of cephalothorax 1.62, length of eye field 0.95, width of eye field I 0.97, width of eye field II 1.07. Data for *T. cavaleriei* are respectively: 1.62, 0.95, 0.97, 1.07; for *S. Annae:* 1.5, 0.95, 1.07, 1.05.

Leg. I: tarsus and patella pale yellow, other segments yellow-fawn, tibia and femur with longitudinal, brown patches. Retrolateral surface of femur I with distinct light streak having rounded ends (In *T. cavaleriei* dark streaks on ventral surface of patella and little dark spot on ventral surface of distal end of femur; in *S. annae* metatarsus and tibia a little darker). On both prolateral and retrolateral surfaces of metatarsus I two pairs (2+2) of strong, longitudinally arranged spines reaching almost the end of tarsus. On tibia I similarly arranged four pairs (4+4) of strong spines, the proximal spines are set near proximal end of segment, all spines reaching the end of the segment (*S. annae* has similar spines on leg I; *T. cavaleriei* differs having only one spine on retrolateral side of metatarsus, two spines on prolateral side, similarly long as in *S. wuermlii* and in having the proximal spine on tibia set at one-third length of segment from its proximal end).

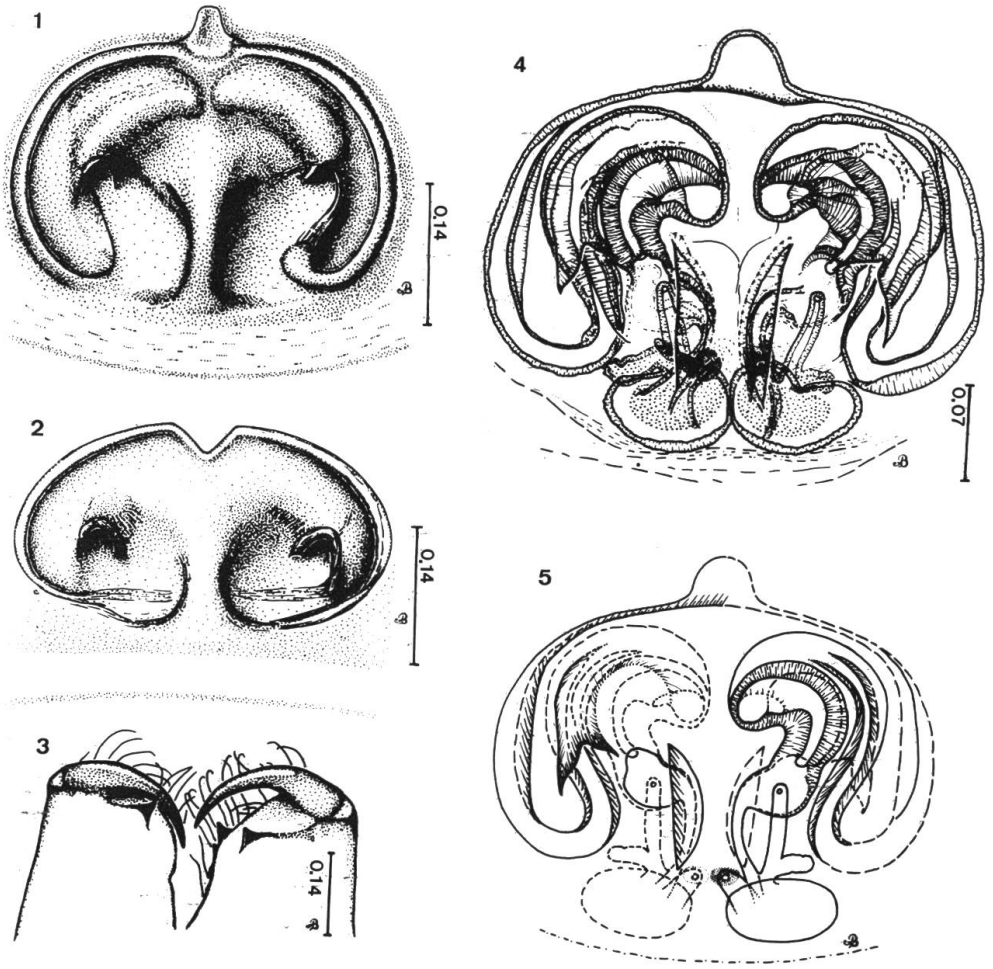
Legs II-IV yellow with longitudinal dark streaks on the prolateral surfaces of longer segments, on legs III and IV streaks on retrolateral side are less distinct (*S. annae* has segments of all legs uniformely yellow; in *T. cavaleriei* both legs III are missing, legs II and IV dorsally pale-yellow, with dark longitudinal streaks on retrolateral sides of metatarsus, tibia, patella and femur). Length of segments of legs: I 0.40 +0.47 + 0.80 + 0.75 + 0.92, II 0.35+ 0.52 + 0.47 + 0.40 + 0.67, III 0.40 + 0.60 + 0.50 + 0.35 + 0.65, IV 0.47 + 0.87 + 0.85 + 0.47 + 0.95.

The abdomen of the specimen is badly preserved (soft tissues shrunken and separated from chitinous wall of the abdomen), dorsally covered with short indistinct setae and scarce dull-whitish adpressed flattened setae. Indistinct herring-bone dark-brown pattern on gray background, covered with small pale spots scattered all over. A dark belt along the mid-longitudinal line with inconspicuous borders, more intense between the first pair of apodemae. On the posterior half of the belt three or four diagonally backward pointed short and dark transverse belts. Sides similarly gray. Anal tubercle pale-gray, spinnerets yellow (*T. cavaleriei* differs in general pattern: on an uniformly yellow anterior and middle part of abdomen four radial dark patches, over each of the anterior patches a tuft of adpressed dull-whitish flattened setae, both posterior patches with distinct yellow round spot. Abdomen posteriorly dark brown, sides yellow. *S. annae* also distinctly different: on dark-gray background covered with small pale spots a wide mid-longitudinal light belt and a narrow white belt on each side, three belts connected at about three-fifth of the length of abdomen by a transverse light belt. Sides dark gray.) Length of abdomen 2.65 (data for *T. c.* and *S. a.* respectively: 2.20 and 2.22).

Frontal aspect. Clypeus narrow, fawn (similar in *S. annae,* in *T. cavaleriei* bordered dark). Chelicerae yellow-brown with a single tooth on inner posterior margin, fig. 3 (in ♂ *T. cavaleriei* on both chelicerae a second, much smaller tooth, in *S. annae* chelicerae asymmetric: on the right a rounded bifid tooth, on the left two separate teeth). Pedipalps: all segments blackish except the pale yellow tarsus, (in *S. annae* uniformely pale yellow, in *T. cavaleriei* the palps are missing).

Ventral aspect. Sternum yellow-gray with fawn margins and some indistinct setae. Abdomen with a longitudinal yellowish pale belt with gray spots more dense posteriorly. (In *T. cavaleriei* abdomen yellow gray with indistinct gray patches, in *S. annae* abdomen light gray with broad dentation on dark gray sides.) The external appearance of epigynum is shown on figs 1 and 2 and is characterised by a distinct sculpture of relatively well sclerotized plate. Its oval outline is surrounded by a horse-shoe-shaped narrow rim, opening posteriorly. In the middle of its anterior arcus the rim is flattened and elongated into a presumably blind pocket (unnoticeable opening of vagina – ?). The posterior ends of the rim turn medially and anteriorly passing into the pocket-like openings on both sides, forming the two-edged gutter (seen only after maceration

in KOH, fig. 4). These presumably copulatory openings lead to internal semicrescent-like wide canals twisted medially and then suddenly laterally into arcuated thick walled and well sclerotized canals. They open somewhere about the bottom of each one of two broad superficial grooves separated by a posteriorly elongated median ridge. Their further way to spermathecae is not clear from that point, although the presumably distal parts of canals are clearly seen from their proximal opening somewhere around the bottom of the grooves to the openings into the spermathecae, where they form an additional bag-like branch. This discontinuity is complicated by the fact that besides the above described



Figs. 1–5. *Synagelides wuermlii* n. sp.: 1–2, Epigynum in normal position and seen slightly from the rear. 3, Posterior view of chelicerae. 4, Epigynum after maceration. 5, Diagram explaining presumable continuity of external (left side of the diagram) and internal structures of epigynum. All scales in mm.

canals and chimney-like openings to the fertilization ducts, each bag-like oval spermatheca possesses a third canal opening also about the bottom of the grooves. The diagram (fig. 5) shows author's interpretation of canals' course.

The epigynum of *T. cavaleriei* has a similar outline, externally characterized by big, rectangular central grooves and widening posteriorly median ridge. The external rim is anteriorly widely broken, the outline of the anterior canals can be seen through a semitransparent plate. Proximal parts of copulatory canals broad and rectangular at their bottom, their middle and well sclerotized parts relatively short and spherical. The presumably distal part of canals is twisted medially at its anterior end. Spermathecae long and boot-shaped. "Third" opening of each spermatheca very wide or, what is not clear, takes form of two separate internal ridges on the plate.

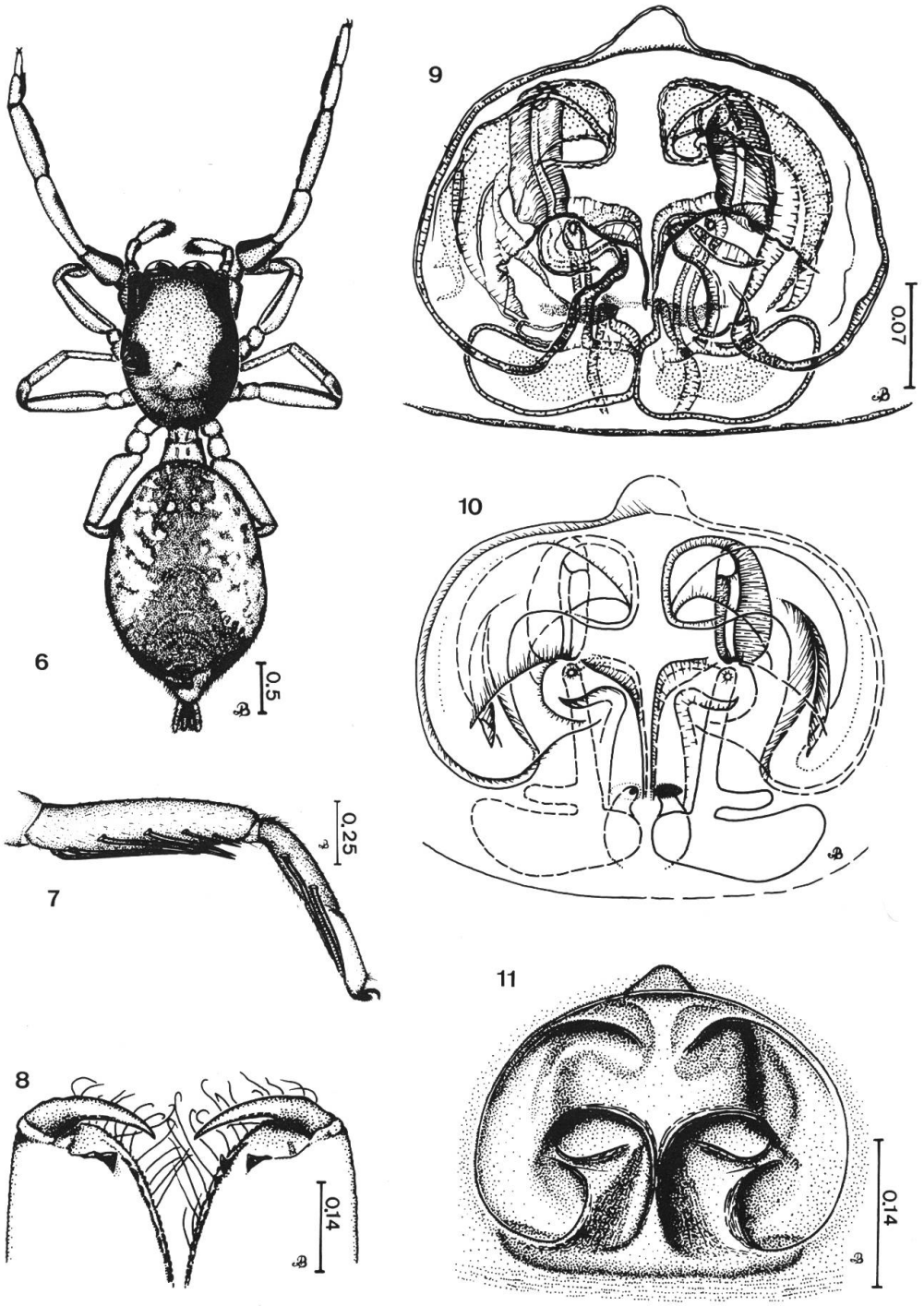
The epigynum of *S. annae* is characterized externally by two broad anterior grooves and two dark and smaller posterior grooves, both pairs separated by a common mid-longitudinal ridge. The internal structure is generally similar to that of *S. wuermlii*. The main difference between *S. annae* and the other *Synagelides* discussed here, lies in the structure of the copulatory canals: in their proximal parts they form two further turns behind the first one and their middle, well sclerotized part is thin-walled. The copulatory openings, visible after maceration, are widely opened; the presumably distal parts of copulatory canals are more elongated and begin below a roof-like rims over the posterior grooves. The third pair of canals of uncertain function, known in *S. wuermlii* and *T. cavaleriei* is presumably absent in *S. annae*. Spermathecae elongated transversally, bag-shaped. Male unknown.

Synagelides wangdicus n. sp.

Material: Bhutan: "Dorjula, 3100 — Wangdi-Phodrang, 26/6, 55" — 1 ♀ (holotype), coll. NHM, Basel.

Description of female: Dorsal aspect. Cephalothorax fawn, eyes surrounding intense black, eye field surface similar to that of *S. wuermlii*. On the thorax an indistinct dark pattern. Ventral margin of carapace bordered with a belt of whitish setae. Setae and bristles over eyes I similar to those in *S. wuermlii*. Length of cephalothorax 1.52, length of eye field 0.95, width of eye field 1.01.

Leg I: metatarsus, tibia and femur dorsally yellow fawn with longitudinal dark streaks on prolateral surfaces, spines on metatarsus



Figs. 6–11. *Synagelides wangdicus* n. sp.: 6, Dorsal view. 7, Prolateral view of left leg I. 8, Posterior view of chelicerae. 9, Epigynum after maceration. 10, Diagram explaining presumable continuity of external (left side of the diagram) and internal structures of epigynum. 11, Epigynum. All scales in mm.

(2+2) similar to those of *S. wuermlii* but shorter (reaching about half of tarsus). On tibia I five pairs (5+5) of spines located as in *S. wuermlii* and approximately of the same length. Other legs generally similar to those of the previous species. Length of segments of legs: I 0.40 + 0.45 + 0.83 + 0.77 + 1.02, II 0.40 + 0.52 + 0.50 +0.37 + 0.75, III 0.37 + 0.60 + 0.50 + 0.32 + 0.76, IV 0.45 + 0.85 + 0.82 + 0.47 + 0.97.

Abdomen generally dark, with whitish spots covered with short indistinct setae. On both sides of the dorsal surface big longitudinal whitish-yellow areas with irregularly scattered dark spots and deeply serrated medial margins, covering also the most part of the sides of abdomen. The dark belt between them broadens diagonally from the half length of abdomen (fig. 6). Sides pale, with irregularly scattered dark spots, beneath them on each side one broad dark longitudinal belt with an iridescent gleam (absent in each of three remaining discussed species). Anal tubercle whitish, the spinnerets yellowish with white proximal and distal ends. Length of abdomen 2.27.

Frontal aspect. Clypeus dark fawn, similar to that of *S. wuermlii*. Chelicerae yellow, with a single tooth on inner posterior margin and small numerous teeth on inner anterior margin (fig. 8). Pedipalps yellow.

Ventral aspect. Sternum similar to that of *S. wuermlii*. Abdomen whitish yellow, darkening backwards, lateral surfaces dark, with longitudinal belts with iridescent gleam.

The external appearance of epigynum is shown on fig. 11. It is characterized by two pairs of arcuated rims and differs from *S. wuermlii* in a narrow median ridge, in a distinct pair of nine-figure-shaped rims bordering the central oval grooves and a pair of pocket-like wide grooves anterior to the central pair. The outline of both anterior canals and spermathecae can be seen through a well sclerotized but semitransparent plate.

The internal structure also resembles that of *S. wuermlii* (fig. 9), but differs in proximal parts of copulatory canals rectangular at their bottom, their middle well sclerotized part almost straightly medially elongated; the presumably distal part of canals' opening very close to the openings of the thick canals; the course of the "third" canal is inconspicuous (fig. 10); spermathecae boot-shaped. Male unknown.

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