Definition of the spider genus *Talavera* (Araneae, Salticidae), with a description of a new species*. 

by Dmitri V. LOGUNOV

**Abstract**

The spider genus *Talavera* Peckham & Peckham is defined. Morphological characters of copulatory organs and relationships of *Talavera* are discussed. Four new combinations (*Talavera aequipes*, *Talavera thorelli*, *Talavera monticola* and *Talavera trivittata*) are proposed; and new species, *Talavera esynini*, from the Urals is figured and described.

**Keywords:** Araneae, Salticidae, taxonomy.

**Introduction**

The spider genus *Talavera* Peckham & Peckham, 1909 belongs to the subfamily *Euophrydinae* (sensu Prószynski, 1976). Up to now it included only the type species, *Talavera minuta* (Banks, 1895), which occurs in the USA and Canada (Richler, Cutler, 1978) and in the Magadan Area of the USSR (Marusik, 1988).

In this paper, 6 species are included in the genus *Talavera*, of which one is new to science. Four others were originally described in the genus *Euophrys* C.L. Koch, 1834. The genus *Euophrys* (s. str.), i.e. the "frontalis" species group only, is here interpreted as the sister group of *Talavera*. The standard abbreviations and the names of parts of the copulatory organs used in this paper are those used by Griswold (1987), Wanless (1988) and Davies & Zabka (1989), and for the leg spination the system adopted is that used by Ono (1988). All measurements are in mm.

The type material has been shared between the collections of the Zoological Museum of the Moscow State University, Moscow (ZMMU); Zoological Museum of the Institute of Biology, Novosibirsk (BI); Dept. of Zoology of the Perm State University, Perm (PSU); and the Royal Belgian Institute for Natural Science (RINS).

**Genus Talavera** Peckham & Peckham, 1909

**Type species:** *Talavera minuta* (Banks, 1895)

**Definition:**

Small spiders ranging from about 2.5 to 3 mm in length. Sexual dimorphism not marked; the only differences between males and females are the dark-brown prolateral sides of femur, patella and tibia of the leg I in males. Carapace: moderately high (fig. 8); brownish with black eye-field, covered with pale adpressed hairs; fovea absent; eye-field of transverse-rectangular, with its length 1.5-1.7 times smaller than width. Eyes: AML > ALE > PLE > PLE. Clypeus: vertical, low; its height half AME-diameter in males, 3-4 times as small in females. Chelicerae: vertical, small; promargin with 2 teeth, retromargin with 1 tooth. Maxillae: transverse, almost square. Labium: small, three-cornered, apex rounded and directed anteriorly. Sternum: oval. Abdomen: oval; length 1.5-2 times width; grey with dorsal markings composed of yellowish thin transverse lines or some longitudinal greyish-brown stripes (as in *T. trivittata*, see Paik, 1986, figs. 1-2), covered with whitish hairs; males have, an inconspicuous scutum covering almost all the dorsal surface of abdomen. Legs: moderately short; yellowish with numerous brown rings; leg formula IV, III, I, II or IV, I, III, II. Female palp: without apical claws. Male palp: cymbium simple; tibia without apophysis (figs. 11, 14, 34); embolus with well-developed distal haematodocha (figs. 9-14); tegulum with distal sclerite which forms a flat (figs. 10, 13, 24) or rounded (fig. 34) convexity on the distal part of tegulum (function of this sclerite unknown); trajectory of sperm ducts complex (figs. 1-4); embolus straight or a little curved (figs. 10-13); embolus connected to tegulum by a solid chitinouse ligament (figs. 25-27, 33). Epignynum: generally simple, weakly sclerotized with internal structures usually visible through the integument; copulatory openings very small, paired, covered with either paired rounded lids (fig. 15), or a single transverse chitinous fold (fig. 18); insemination ducts very thin, thread-like; spermatheca large, ovoid with lanceolate fertilisation ducts (figs. 16, 17, 21).
Affinities:
The genus *Talavera* PECKHAN & PECKHAM is here defined to include those species with the following uniquely shared characters: embolus straight or slightly curved (figs. 10, 13, 27); trajectory of sperm ducts complex (figs. 1-4); distal sclerite present (figs. 10, 13, 24); solid chitinous ligament of embolus present (figs. 24-27, 34); insemination ducts thin, thread-like, without a spiral twisting (fig. 16). These characters appear to be good synapomorphies for the members of *Talavera*.

The genus *Euophrys* (s. str.), as I understand it, seems to be a sister group of the genus *Talavera*. *Euophrys* (sensu stricto)* shares the following characters: very thin tibial apophysis (fig. 29: *E. proszynskii* LOG et al.) and coiled embolus in males; spiral twisted insemination ducts in females (fig. 20). Besides that, *Euophrys* shows a strongly pronounced sexual dimorphism, which has never been observed in *Talavera*.

Figs. 1-8 – Schematic drawings of the trajectory of sperm duct (1-7) and carapace of male (8).

The fact that the species *E. petrensis* is difficult to refer to *Euophrys* or *Talavera* reflects the affinity between these genera. For instance, *E. petrensis* shares with *Talavera* the complex trajectory of sperm ducts (fig. 5) and lack of a tibial apophysis in males, but retains chitinous “rings” in the epigynum (fig. 19) and twisted insemination ducts (fig. 20) in females that indicate its similarity with *Euophrys*. Besides that, *E. petrensis* shows clear sexual dimorphism, as in all true *Euophrys*. It is possible that *E. petrensis* may be referred to the genus *Talavera*, but I delay accepting it until the whole genus *Euophrys* (s. lat.) is revised, especially as there are other species of *Euophrys* without a tibial apophysis, for instance, *E. gambosa*.

It is necessary to comment on the solid chitinous ligament in particular. This sclerotized ligament is a rigid rod, situated within the wall of the distal haematodocha, which joins the embolus directly to the distal end of the tegulum. Because of this solid ligament, the distal haematodocha is expanded during palp inflation without spiral twisting and protrudes to one side as a slightly curved, translucent sac (figs. 24, 25). This shape of expanded distal haematodocha is typical of the species having a straight (*T. minuta*) or almost straight (*T. esyunini, T. thorelli*) embolus.

All species of the genus *Euophrys* (s. str.) lack such a solid ligament and have a coiled embolus joined to the tegulum only by a haematodocha. In this group the retrolateral side of the distal haematodocha is only slightly sclerotized and morphologically more complex than in the genus *Talavera*. It consists of a number of thin transverse chitinous ridges displaced relative to each other (fig. 31).

Due to the structure of the membranous wall, the completely expanded distal haematodocha appears spiral, like a Helix-shell, for instance in *E. flavoatra* (GR.) and *E. proszynskii* LOG. et al. (figs. 28-30).

The solid ligament is slightly sclerotized in *T. aequipes*, because its expanded distal haematodocha has an identical shape to that in *Euophrys*, i.e. a “spiral shell” (fig. 32). This is not a serious argument against including *T. aequipes* in the genus *Talavera*, since all the remaining characters, such as the complex trajectory of the sperm ducts (fig. 4); the presence of distal sclerite (bump like) (fig. 34); and the vulva structure (fig. 21), are evidence of our conclusion. The type of inflation of the distal haematodocha is most probably dependant on the shape of the embolus, and reflects some functional peculiarities.

(*) The genus *Euophrys* (s. lat.) as currently defined (GALIANO, 1962, 1968; PROSZYNSKI, 1976; ŻABKA, 1985) undoubtedly is a paraphyletic taxon. I suggest that at least the members of the “erratica” species group (erratica, iwatenis, obsoleta, langera and others) and many South-American species (a-noitara, laeta, tehuelche, mapuche and others) should be transferred from *Euophrys* (s. str.). The genus *Euophrys* (s. str.) should probably be limited to the “frontalis” species group only. A full consideration of this problem is beyond the scope of the present study and will be addressed later.
Figs. 9-17 - Copulatory organs of *Talavera minuta* (9-11) and *Talavera esyunini* (12-17), male-holotype, female-paratype. 9, 12 - left palp, prolateral view; 10, 13 - ditto, ventral view; 11, 14 - ditto, retrolateral view; 15 - epigynum; 16 - vulva, ventral view; 17 - spermathecae, lateral view. Abbreviations: e - embolus, t - tegulum, ds - distal sclerite, dh - distal haematodocha, rl - rounded lids of epigynum, id - insemination ducts, s - spermathecae.
of the palp during mating. If so, the spiral form of the expanded distal haematodocha in _T. aequipes_ is a good example of homoplasy between _Talavera_ and _Euophrys_. _T. aequipes_, as well as _E. petrensis_, seems to occupy an intermediate position between _Talavera_ and _Euophrys_, probably reflecting the close affinity of these genera.

_Natural history:_
Within the Palaearctic region the species of this genus may be found in the stony mountainous steppes (_T. thorelli_ and _T. aequipes_); in alpine meadows (_T. monticola_) (after THALER, 1981); in mountainous shrub tundra (_T. esyunini_); and in larch coppice-forest with a moss-lichen-cover (_T. minuta_).

_Distribution:_
The genus _Talavera_ (s. lat.) has an essentially a Holarctic, or more exactly a circumboreal boreo-montane distribution (sensu GORODKOV, 1984).

**Remarks:**
Based on genitalic characteristics (complex trajectory of sperm ducts, straight embolus and others) it appears to be necessary to transfer to _Talavera_ two European species that had previously placed in _Euophrys_. These are _E. aperta_ MILLER (from Czechoslovakia) [see PROSZYNKI, 1976; fig. 120; MILLER, 1971: tab. XX, fig. 19] and _E. westringi_ (SIMON) (from Central Europe) [see TULLGREN, 1944 (as _E. poecilopus_): S. 38, fig. 24A; Pl. III, figs. 52-55; MILLER, 1971: tab. XX, fig. 16]. Both these species are in need of redescription, therefore I am not proposing new combinations for them here. Thus the revised list of the species in the genus _Talavera_ includes:

- _T. aequipes_ (O.P. CAMBRIDGE, 1871) comb. nov.
- _T. monticola_ (KULCZYŃSKI, 1884) comb. nov.
- _T. thorelli_ (KULCZYŃSKI, 1891) comb. nov.
- _T. minuta_ (BANKS, 1895).
- _T. trivittata_ (SCHENKEL, 1963) comb. nov.
- _E. esyunini_ sp. nov.
Figs. 24-27 – Expanded left palps of *Talavera*.
Since all these have recently been redescribed (*T. minuta*: MARUSIK-LOGUNOV, in press; PRÓSZYŃSKI, in press; *T. aequipes* and *T. thorelli*: LOGUNOV, CUTLER, MARUSIK, in press; *T. monticola*: THALER, 1981; *T. trivittata*: SCHENKEL, 1963; PAIK, 1986) only a description of the new species, *T. esyunini*, is provided below.

**Talavera esyunini** sp. n.  
(figs. 2, 8, 12-17, 24, 25)

**Material examined:**  
Holotype: 1m *(ZMMU, Ta-4662)*, Perm Area, Gor-  
Paratypes: 2m (Bi-1086), 2m (ZMMU, Ta-4663), together with holotype; 1f, 2m (Bi-1087-1088), 4m (RINS), 6m  
(PSU), same locality, Severnyi Baseg Mt., mountainous shrub tundra, 10.07.1990 (S.L. ESYUNIN).

**Diagnosis:**  
*Talavera esyunini* is close related to *T. minuta*, but males may be distinguished by a stronger distal haematodochal lobe and a slightly curved apex of the embolus (compare figs. 10 and 13). Females are not distinguishable.
Definition of the spider genus *Talavera* (*Araneae, Salticidae*)

1-1, v. 1-2 ap; metatarsus pr. and rt. 1-2 ap, v. 2-2 ap. Leg IV: femur d. 1-1-1, tibia pr. 0-1, rt. 1-1, v. 1-1 ap; metatarsus pr. 0-2, rt. 1-1-2, v. 1-1 ap. Female. Leg I: femur d. 1-1-2; tibia v. 1-2-2; metatarsus v. 2-2. Leg II: femur d. 1-1-2; tibia v. 1-1; metatarsus v. 2-2. Leg III: femur d. 0-0-1-1-1; tibia pr. and rt. 1-1, v. 0-1-0; metatarsus pr., rt. and v. 1-2 ap. Leg IV: tibia rt. 0-1, v. 0-1-0; metatarsus pr. 2 ap, rt. 0-1-1-2 ap, v. 1-2 ap. Coloration. Coloration of both males and females as described for the genus except as follows: eyes of row I surrounded by white flat hairs; clypeus yellowish, covered with white hairs. Palps of both males and females yellow with brownish femur. Palp is shown in figs. 12-14. Epygynum and vulva in figs. 15-17.

**Acknowledgements**

I wish to thank my colleague, Mr. Sergei L. *Esyunin* (Perm), for access to his material. I am indebted to Drs. Aleksei A. *Zyuzin* (Alma-Ata) and Stephen A. *Marshall* (Ontario), who offered a number a helpful suggestions during the preparation of this paper. I am also grateful to Dr. Stephen A. *Marshall* for linguistic help.

**Distribution:**

Only type locality.

**Etymology:**

The species is named after the Russian arachnologist, my colleague, Sergei L. *Eskyunin*, who is active studying spiders of the Ural Mountains, and who collected this new species.

**Description:**

Measurements (males/female). Carapace: length 1.19-1.26/1.21, width 0.87-0.90/0.93, height 0.54/0.58. Abdomen: length 1.23-1.43/1.77, width 0.96-1.07/1.33. Cheliceral length 0.39-0.43/0.31. Clypeus height 0.07-0.10/0.07. AME 0.20-0.23/0.23. Eye field: length 0.51-0.53/0.61, W-1 0.71-0.77/0.80, W-3 0.73-0.77/0.86. Length of segments of legs: leg I: 0.57-0.64/0.59 + 0.31-0.36/0.34 + 0.36-0.42/0.37 + 0.29-0.39/0.30 + 0.23-0.24/0.29; leg II: 0.52-0.60/0.56 + 0.26-0.31/0.34 + 0.30-0.31/0.33 + 0.27-0.30/0.30 + 0.19-0.23/0.26; leg III: 0.71-0.73/0.77 + 0.34-0.36/0.36 + 0.38-0.41/0.39 + 0.36-0.40/0.40 + 0.26-0.36/0.29; leg IV: 0.69-0.71/0.77 + 0.30-0.31/0.36 + 0.47/0.53 + 0.41-0.46/0.46 + 0.34/0.31. Leg spination. Male. Leg I: femur d. 0-1-1-1; tibia v. 1-1-1; metatarsus v. 2-2. Leg II: femur d. 0-1-1-2; tibia pr. 0-1, v. 1-1; metatarsus v. 2-2. Leg III: femur pr. 0-1, d. 0-1-1-1; tibia pr. and rt.
References


MARUSIK, Y.M., LOGUNOV, D.V., in press. Little known spiders from the families Salticidae and Thomisidae (Aranei) of the Soviet Far East. [in Russian].


Zoological Museum,
Institute of Biology,
Frunze Street 11,
Novosibirsk, 630091, Russia.