

***Urozelotes yutian* (Platnick & Song, 1986), a junior synonym of *Zelotes mundus* (Kulczyński, 1897) (Araneae: Gnaphosidae)**

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**Summary**

*Urozelotes yutian* (Platnick & Song, 1986) was found to be identical with *Zelotes mundus* (Kulczyński, 1897) and is therefore considered a junior synonym. *Zelotes mundus* is a member of the genus *Zelotes* Gistel, 1848 s. str., because males possess an intercalary sclerite on the palp and females lack an elongate, triangular median plate on the epigyne. Consequently, the possible transfer of *Z. mundus* into the genus *Urozelotes* is rejected. Males and females of *Z. mundus* are redescribed based on material including the holotype. Data are given on phenology, distribution and habitat.

**Introduction**

*Zelotes mundus* was first described as *Prothesima munda* (see Chyzer & Kulczyński, 1897: 207–208, plate 8, fig. 19) based on a single male from Kecskemét (Hungary). Later, Reimoser (1919) transferred the species into the genus *Zelotes*. Since then, *Z. mundus* has been mentioned in several spider lists from the Balkan Peninsula (Bulgaria: Drensky, 1936; Hungary: Szilady, 1925, sub. *Scotophaeus munda* (cited in Kolosvary, 1932); Yugoslavia: Nikolić & Polenec, 1981) and the Russian Plain (Turan province: Spassky, 1952, sub. *Z. munda*; see also Mikhailov, 1997). Further specimens have been found in Macedonia (Stojićević, 1929: 59; see also Blagoev, 2002), Romania (Weiss & Marcu, 1979; Bauchhenss *et al.*, 1997; Weiss *et al.*, 1998), the Kalmykian Republic of the former Soviet Union (Ponomarev, 1981), Hungary (Loksa, 1981; Samu *et al.*, 1996; Tóth, 1997), Austria (Zulka *et al.*, 1997) and Slovakia (Krajča *et al.*, 2004). Based on material from Romania, Hungary and Austria, Bauchhenss *et al.* (1997) redescribed the male of *Z. mundus* referring to the diagnosis of the holotype given in Chyzer & Kulczyński (1897) and described the female for the first time.

*Urozelotes yutian* (Platnick & Song, 1986) was first found in China (Platnick & Song, 1986; Hu & Wu, 1989) and has also been reported from Kazakhstan (Eskov & Marusik, 1995) and Russia (Marusik *et al.*, 1993; Marusik & Logunov, 1995; Eshyulin & Efimik, 1996).

The present study considers, first, *U. yutian* as a junior synonym of *Z. mundus*, and secondly, *Z. mundus* as a member of the genus *Zelotes* (*sensu* Platnick & Shadab, 1983), in particular of the “*puritanus* subgroup” (see Platnick & Song, 1986).

All measurements are given in millimetres and all material was stored in ~70% alcohol. For the vulva preparations the epigynes were removed; remaining

tissues were removed with pins and by boiling in 4% KOH.

***Zelotes mundus* (Kulczyński, 1897) (Figs. 1–3)**

*Prothesima munda* Kulczyński, in Chyzer & Kulczyński, 1897: 297, pl. 8, fig. 19 (D♂).

*Zelotes mundus*: Bauchhenss, Weiss & Tóth, 1997: 43, figs. 1–6 (♂, D♀).

*Zelotes yutian* Platnick & Song, 1986: 12, figs. 41–44 (D♂♀). **Syn. n.**

*Zelotes yutian*: Hu & Wu, 1989: 299, fig. 240. 1–4 (♂♀); Marusik & Logunov, 1995: 197, figs. 88–90 (♂♀); Song, Zhu & Chen, 1999: 464, fig. 267 G, M (♂♀).

*Urozelotes yutian*: Eshyulin & Efimik, 1996: 111, figs. 16, 19–22 (♂♀); Song, Zhu & Zhang, 2004: 242, fig. 141 A–D.

**Material examined:** The study is based on material of *Z. mundus* from Austria and Hungary and of *U. yutian* from China, Mongolia and Russia.

**Holotype:** HUNGARY: Wegry: Kecskemét, 12 July 1889, leg. Biro, Y.Z.P.A.N. Warszawa 46/51U.

**AUSTRIA:** Burgenland: Neusiedl: “Seewinkel”: salt pans, sampling periods 28 May–7 June 2003 and 13–23 July 2003: Albersee, 3♀; Birnbaumlacke, 2♂; Freiflecklacke, 1♂ 5♀; Höllacke, 2♂; Kirchsee, 1♀; Kleine Neubruchlacke, 2♂ 1♀; Lacke südlich Oberer Stinkersee, 1♂ 1♂; Lacke südlich Unterer Stinkersee, 3♀; Martinhoflacke, 4♂ 3♀; Moschadolacke, 7♂ 8♀; Ochsenbrunnlacke, 1♂; Obere Fuchslochlacke, 2♂ 1♀; Oberer Stinkersee, 1♂ 1♀; Paulhoflacke, 1♂ 1♀; Untere Fuchslochlacke, 1♀; Unterer Stinkersee, 5♂ 1♀; Wörtenlacke, 1♂ (all leg. & det. Milasowszky & Zulka; deposited in private collection of N. Milasowszky).

**CHINA:** Xinjiang: Fukang: 1 August 1982, 1♀ (det. Platnick & Song, 1986); Xinjiang: Qira: 16 July 1982, 1♂ (leg. Hu, det. Platnick & Song, 1986). **MONGOLIA:** Tov Aimak, Bayankhangai Somon, 47°20′N, 105°24′E, 21–25 May 1997, leg. Y. M. Marusik. **RUSSIA:** Kalmykiya: Rybachii: Chernozemelsk area, coast of Kuma river, 12 June 1974, 1♂, 23 June 1974, 1♂, leg. A. V. Ponomarev; Tuva: Dus-Khol’ lake, 50°19′N, 95°01′E, 10 July 1995, 1♂ 1♀, leg. D. V. Logunov; Khakassia: Novorossiyskoye village, 23–24 June 1990, 1♂ 1♀, leg. D. V. Logunov.

**Description:** *Male* ( $n=38$ ): Total length  $4.01 \pm 0.48$ ; carapace length  $1.69 \pm 0.2$ , width  $1.3 \pm 0.16$ ; eye sizes and interdistances: AME  $0.053 \pm 0.008$ , ALE  $0.065 \pm 0.006$ , PME  $0.078 \pm 0.008$ , PLE  $0.061 \pm 0.012$ ; AME-AME  $0.053 \pm 0.011$ , AME-ALE  $0.011 \pm 0.001$ , PME-PME  $0.024 \pm 0.001$ , PME-PLE  $0.028 \pm 0.008$ , ALE-PLE  $0.043 \pm 0.011$ ; MOQ length  $0.184 \pm 0.019$ , front width  $0.158 \pm 0.017$ , back width  $0.174 \pm 0.02$ . Colour dark brown, metatarsi and tarsi lighter. Anterior shiny brown scutum covers nearly one third of opisthosoma. Large bristle on ventral-prolateral side of pedipalpus. Terminal apophysis distally acute; embolus short, wide and slightly curved; median apophysis wide and round, with claw-like structure pointing retrolaterally (Fig. 1). Intercalary sclerite fused with sperm duct (Fig. 2), visible only after meticulous examination and preparation of subtegulum.

**Female** ( $n=34$ ): Total length  $4.99 \pm 0.64$ ; carapace length  $1.81 \pm 0.13$ , width  $1.38 \pm 0.1$ ; eye sizes and interdistances: AME  $0.053 \pm 0.006$ , ALE  $0.064 \pm 0.007$ , PME  $0.078 \pm 0.007$ , PLE  $0.061 \pm 0.007$ ; AME-AME  $0.061 \pm 0.009$ , AME-ALE  $0.012 \pm 0.001$ , PME-PME  $0.025 \pm 0.007$ , PME-PLE  $0.012 \pm 0.001$ , ALE-PLE  $0.025 \pm 0.007$ ; MOQ length  $0.193 \pm 0.016$ , front width  $0.163 \pm 0.013$ , back width  $0.177 \pm 0.012$ . Colour as in male. Opisthosoma without scutum. Epigyne (Fig. 3) characterised by small, unpaired, crater-like central sclerotisation at base of cuticular convexities (cf. Bauchhenss *et al.*, 1997: figs. 5–6). Anterior epigynal

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margin in form of slightly curved ledge; this anterior epigynal rim and length of lateral margins can differ between individuals.

*Justification of synonymy:* Males and females of *Z. mundus* (Kulczyński, 1897) and *U. yutian* (Platnick & Song, 1986) were compared, and found to be clearly conspecific. In males the shape of the terminal apophysis, median apophysis and embolus of the pedipalpus (Figs. 1–2) is identical. Small differences in the figures showing the shape of the terminal apophysis in Platnick & Song (1986: fig. 41), Hu & Wu (1989: fig. 3), Esyunin & Efimik (1996: figs. 19–21) and Bauchhness *et al.* (1997: figs. 2 & 4) are possibly the result of different drawing perspectives. The epigynes of *Z. mundus* and *U. yutian* females are identical (Fig. 3). Between the anterior edges of the spermathecae, both species possess a conspicuous sclerotised invagination resembling a crater with a circular rim (see Bauchhness *et al.*, 1997: 44) (Fig. 3).

*Justification of transfer to genus Zelotes:* Among the gnaphosid spiders, all species sharing a preening comb on metatarsi III and IV (see Kaston, 1978: fig. 527) are, at a subfamilial level, recognised as zelotines, comprising at least six genera (Platnick, 1982) that have been

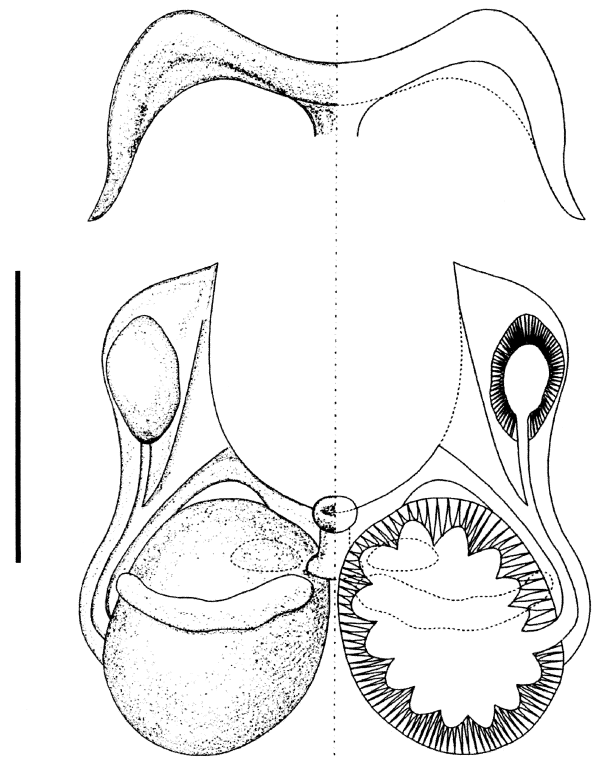
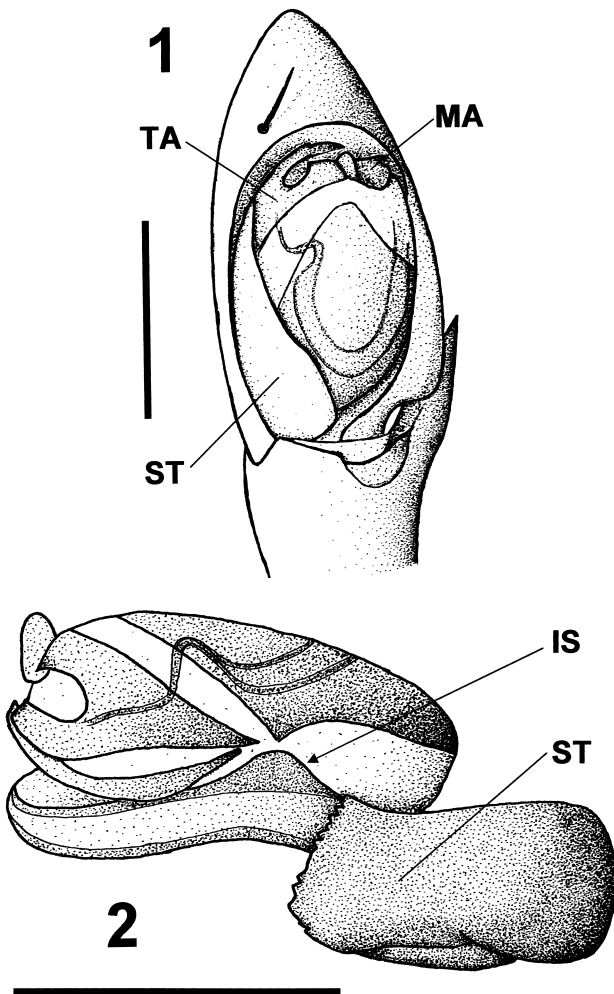


Fig. 3: *Zelotes mundus*, epigyne on left, vulva on right. Scale line=0.1 mm.



Figs. 1–2: *Zelotes mundus*. **1** Left male palp, ventral view; **2** Prepared bulbus, prolateral view, showing fused intercalary sclerite. Abbreviations (according to Platnick & Shadab, 1983: fig. 2): IS=intercalary sclerite, MA=median apophysis, ST=subtegulum, TA=terminal apophysis. Scale lines=0.2 mm.

established through a number of revisions by Platnick and co-workers: *Camillina* Berland, 1919 (Platnick & Shadab, 1982b; Platnick & Murphy, 1987), *Drassyllus* Chamberlin, 1922 (Platnick & Shadab, 1982a), *Setaphis* Simon, 1893 (Platnick & Murphy, 1996), *Trachyzelotes* Lohmander, 1944 (Platnick & Murphy, 1984), *Urozelotes* Mello-Leitão, 1938 (Platnick & Murphy, 1984) and *Zelotes* Gistel, 1848 s. str. (Platnick & Shadab, 1983). Males of *Zelotes* can be distinguished from all other gnaphosids by the combined presence of a preening comb on metatarsi III & IV and an intercalary sclerite on the male palp. No synapomorphy was found for females (Platnick & Shadab, 1983). Species of *Urozelotes* can be distinguished from those of all other zelotine genera by genitalic characters: males have a pointed terminal apophysis closely appressed to the embolus, and females have an epigyne bearing an elongate, triangular median plate and anterior epigynal ducts bearing bulbous anterolateral extensions (Platnick & Murphy, 1984).

While Platnick & Song (1986: fig. 41) described an intercalary sclerite on the male palp in *Z. yutian* specimens from Xinjiang (China), Esyunin & Efimik (1996: fig. 19) stated that the intercalary sclerite is absent in males from the Urals (Russia). Consequently, Esyunin & Efimik (1996) criticised the findings of Platnick & Song (1986) as a misinterpretation and established the new combination *U. yutian* (Platnick & Song, 1986).

To decide on the presence or absence of an intercalary sclerite, N. I. Platnick (pers. comm.) proposed that re-examination of material should be made on a fully expanded palp. It should also be kept in mind, that the intercalary sclerite could be fused with another sclerite. Following the advice of Platnick, we found an

intercalary sclerite in the male palp, but it is covered by the subtegulum, and can only be detected after detailed preparation. Moreover, females of *Z. mundus* lack an elongate, triangular median plate which is the diagnostic character of *Urozelotes*, but have an anterior epigynal margin that can be described as a slightly curved ledge (Fig. 3). We therefore argue that the transfer of *Z. mundus* [*yutian*] to the genus *Urozelotes* is not justified and that *Z. mundus* is a member of the genus *Zelotes*.

### Phenology

Phenology data on *Z. mundus* came from a total year catch in a grazed salt meadow situated near the "Illmitzer Zicksee" (47°46'N, 16°46'E) (see Zulka *et al.*, 1997). Spiders were sampled using five pitfall traps emptied at ten-day intervals from 9 April–26 October 1990 (Lethmayer, 1992). *Zelotes mundus* was caught between 29 April and 16 September, reaching its activity peak between 18–28 June (Fig. 4). Females were caught over a longer period (9 May–16 September) than the males (29 April–28 July) and reached their activity peak later than the males (Fig. 4). Following the system of Schaefer (1976), *Z. mundus* can be classified as a stenochronous species reproducing in late spring and summer. Our findings agree with the phenology data given in the literature (Ponomarev, 1981; Platnick & Song, 1986; Marusik & Logunov, 1995; Marusik *et al.*, 1996; Esyunin & Efimik, 1996; Krajča *et al.*, 2004).

### Distribution

Members of the genus *Zelotes* (*sensu* Platnick & Shadab, 1983) are widespread throughout the Northern Hemisphere (for an overview see Platnick, 2006). The localities of *Z. mundus* are situated in a vast area between 16–129°E and 36–63°N including Austria,

Hungary, Slovakia, Romania, Macedonia, Russia, Kazakhstan, Uzbekistan, China and Mongolia. In terms of zoogeography, *Z. mundus* can be classified as a Palearctic species with a distribution across the basins of the Eurasian steppe belt (Fig. 5).

### Habitat

In Europe, *Z. mundus* has been recorded in flood-prone habitats in the Danube delta (ICPDD & WWF-Auen-Institut, 1997; Weiss *et al.*, 1998), oak woods and meadows in a river dune reserve (Weiss & Marcu, 1979), reeds (Loksa, 1981), alfalfa (= *Medicago sativa*) fields (Samu *et al.*, 1996), an oat (= *Avena sativa*) field (Krajča *et al.*, 2004), winter wheat fields and field margins (Tóth, 1997), a grazed salt meadow (Zulka *et al.*, 1997), spring-inundated inland salt pan shores (Milasowszky & Zulka, 1994) and nickel leach dumps (Krajča *et al.*, 2004). In the Russian plain, *Z. mundus* has been reported from the Kuma river and a salt lake, both situated in a semidesert-steppe area in the Caspian Basin (Ponomarev, 1981; Minoranskij & Ponomarev, 1984) and from the steppe area of the Turan lowland (Spassky, 1952). In Asia, *Z. mundus* (sub. *Z. yutian*) has been found on reedy lake shores and salinated land (Esyunin & Efimik, 1996), river banks (Marusik *et al.*, 1993; Marusik & Logunov, 1994), mesophytic meadows and gravel river banks (D. V. Logunov, pers. comm.), stony shores along rivers, forest steepes, forest steppe meadows (Marusik *et al.*, 1996), deciduous forests close to rivers (Eskov & Marusik, 1994), rape fields (Y. M. Marusik, pers. comm.) and rice fields (Platnick & Song, 1986).

*Zelotes mundus* is regarded by D. V. Logunov (pers. comm.) as an inhabitant of frequently inundated landscapes. We suggest that natural and/or anthropogenic disturbance (e.g. inundation, ploughing) is a

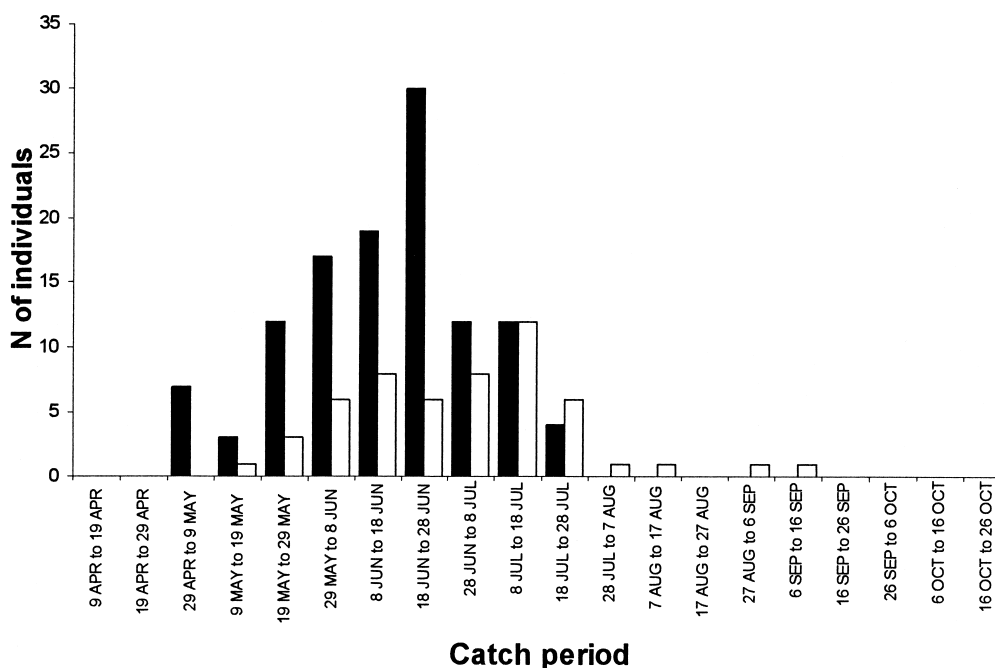


Fig. 4: Phenology of males (black bars) and females (white bars) of *Z. mundus*, during sampling period from 9 April–26 October, collected at ten-day intervals with pitfall traps in a salt meadow at the "Illmitzer Zicksee" (Lethmayer, 1992).



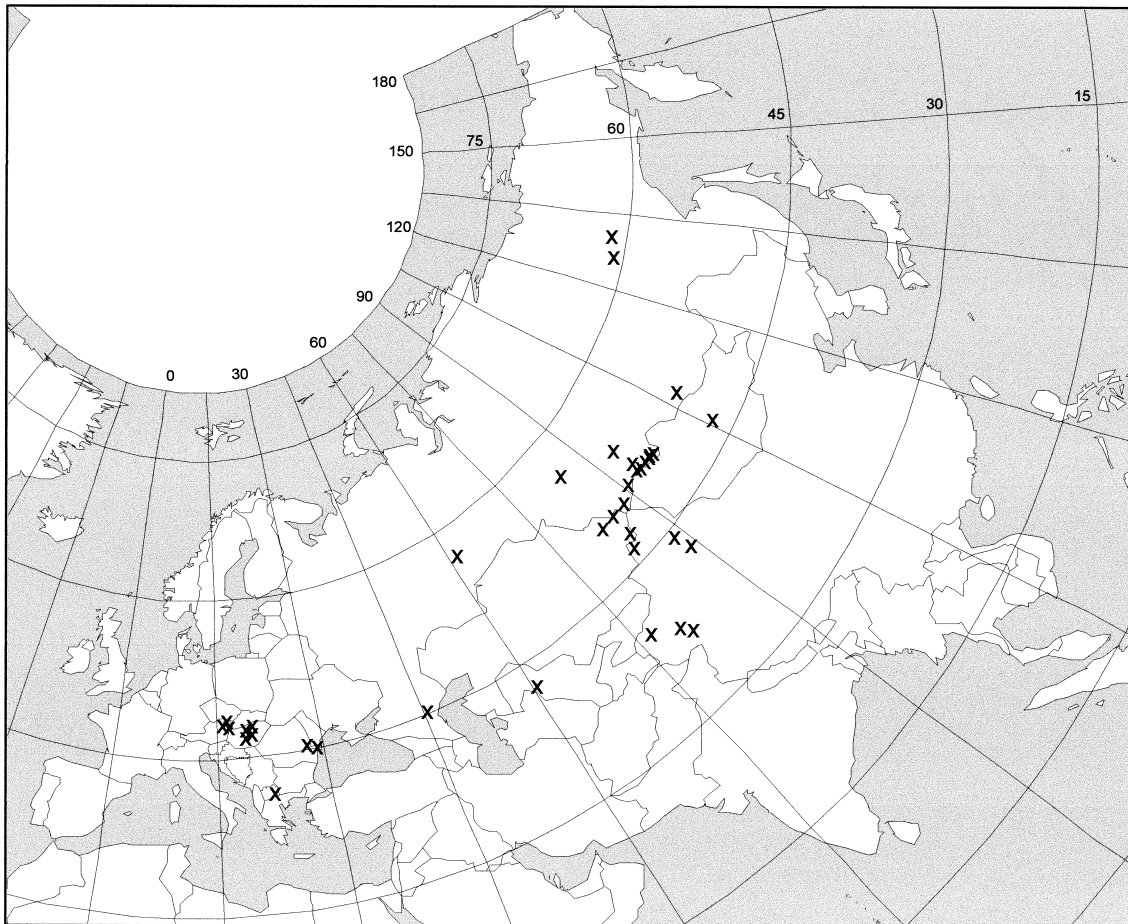


Fig. 5: Records of *Z. mundus* in Eurasia.

permanent component of the areas comprising *Z. mundus* localities.

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