

# SHORT COMMUNICATIONS

# КРАТКИЕ СООБЩЕНИЯ

## A NEW SPECIES OF *TEUCHOPHORUS* (DOLICHOPODIDAE, DIPTERA) FROM MOROCCO

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*Teuchophorus rifensis* sp.n., is a newly described species, collected at the border of the Talassemrane National Park in northern Morocco. This species can be distinguished from *T. bipilosus* and *T. samraoui* by the hind tibia with a slightly thickened apical half; hind tibia with a single fine bristle at 2/3, 3–3.5 times as long as diameter of tibia, and a row of 6–7 bristly hairs; hind tibia with a strong subapical ventral bristle and without ventral bristles in basal half. A key to determining the 14 Mediterranean species of *Teuchophorus* (males) is compiled.

**Key words:** key, Mediterranean Region, Palaearctic, Rif Mountains, Talassemrane National Park, *Teuchophorus rifensis*

### Introduction

The Talassemrane National Park is located in the mountainous Rif region of northern Morocco. The park was created in October 2004 to conserve the last of Morocco's threatened fir forests (UNEP-WCMC & IUCN, 2019). The National Park also contains other plant species endemic to the Spanish / Maghrebi biodiversity hotspot. The Rif region and mountains in the south of Andalusia have very similar environmental conditions, being united in the Intercontinental Biosphere Reserve of the Mediterranean. The Biosphere Reserve was designated in 2006 by the Man and the Biosphere Programme (MAB) of UNESCO.

The twenty Palaearctic species of *Teuchophorus* Loew, 1857 (Sympycninae) have been recently reviewed, illustrated and keyed by Pollet & Kechev (2007) and Grichanov et al. (2012). Later a new species has been described from Bulgaria (Kechev et al., 2014). Here we describe a new species from Morocco and provide an identification key to the Mediterranean species.

### Material and Methods

Material cited in this work is stored at the Zoological Institute of RAS, St. Petersburg (ZIN). The holotype has been studied and photographed with a ZEISS Discovery V-12 stereo microscope and an AxioCam MRc5 camera in St. Petersburg. Male genitalia have not been dissected and figured as they have low taxonomic value in the genus *Teuchophorus* (Grichanov et al., 2012). Morphological terminology

and abbreviations follow Cumming & Wood (2017) and Grichanov & Brooks (2017). The relative length of the podomeres are given in millimeters. The body length is measured from the base of the antenna to the tip of the 6<sup>th</sup> abdominal segment. The wing length is measured from the base of the wing to the wing apex.

The holotype has been collected by a sweep net at Souk Lhad, a small village in the rural district of Bni Darkoul in the Province of Chefchaouen in the north of Morocco. The village is located at the south-east of Chefchaouen. It is characterised by cold weather in winter and hot weather in summer. The habitat represents a scrubland with rocky soil of a calcareous nature with a small river running through it (Fig. 1) and bordered by vegetation composed of *Nerium oleander* L. and *Rubus ulmifolius* Schott (Fig. 2). Further afield, fruit trees grow, *Olea europea* L. and *Ficus carica* L. mainly. The single specimen collected in this location was the result of a very brief sweeping action that was not focused on dolichopodids.

### Description of the new species

*Teuchophorus rifensis* sp.n. (Fig. 3).

**Material.** Holotype, ♂, Morocco: Rif, Chefchaouen, Oued Souk Lhad (river bank), 35.057222° N, 5.069444° W, 820 m a.s.l., 30.04.2016, sweep net, leg. F.Z. Bahid, A. Adghir.

The holotype is deposited in the collection of the Zoological Institute of RAS (Saint-Petersburg).

**Male** (Fig. 3). Length (mm): body 2.0, wing 2.1/0.8.



**Fig. 1.** Oued Souk Lhad: type locality of *Teuchophorus rifeensis* sp.n. (Photo: M. Nourti, 29.07.2019).



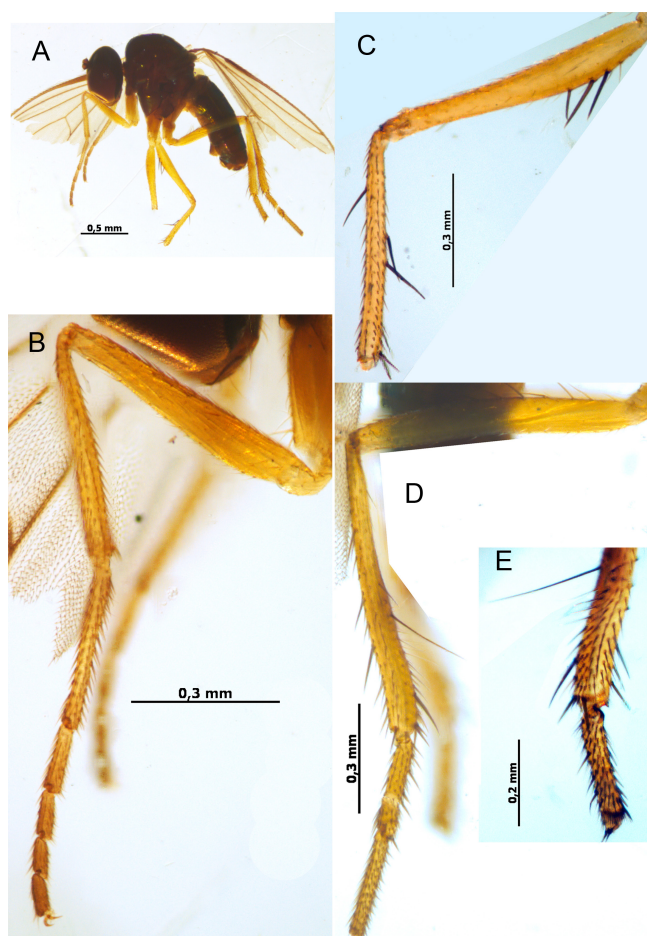
**Fig. 2.** Surrounding landscape at Oued Souk Lhad (Photo: M. Nourti, 29.07.2019).

**Head.** Face with shining bluish green ground colour, distinctly narrowing towards clypeus, not reaching lower eye margin; frons shining dark blue. Occiput convex, with metallic green colour. Two pairs of postvertical bristles (lost). Vertical bristles (lost). Antenna with black scape and pedicel, post-pedicel lost. Scape bare, pedicel with distal ring of setae. Palpus small, dark, with dark pubescence, with one strong bristle. Proboscis small, brown.

**Thorax.** The thoracic chaetotaxy same as in other Mediterranean species of the genus. Mesonotum and scutellum dorsally shining dark green. Six pairs of dorsocentrals (lost). Acrostichals uniserial. Pleura black. No propleural bristles. Scutellum with only medial pair of strong bristles present (lost), without fine hairs.

**Wings** transparent, with brown veins and distinct long costal stigma behind  $R_1$ . Halteres yellow.

**Legs.** All legs mainly yellow, mid and hind coxae and apical tarsomeres brownish. Fore and mid coxae pubescent. Fore femur and tibia simple, without strong bristles. Fore basitarsus with a row of small ventral setae in basal half, not longer than tarsomere width. Length ratio of fore leg: 0.62/0.47/0.33/0.13/0.09/0.08/0.09. Mid femur with three basoventral bristles at basal 1/4, about as long as femur width; with one anterior preapical bristle, with sparse antero- and posteroventral hairs. Mid tibia with one anterodorsal and one posterodorsal bristle at basal 1/3, one anterodorsal bristle at apical third, with 2 strong and long ventral bristles at middle; with one pair of preapical bristles. Length ratio of mid femur to tibia (tarsi lost): 0.76/0.63. Hind coxa with dark brown bristle. Hind femur dorsally with a row of fine bristles, ventrally with short setae. Hind tibia gradually but slightly dilated towards apex, with one fine and long ventral bristle at 2/3, 3–3.5



**Fig. 3.** *Teuchophorus rifeensis* sp.n. A – male (holotype), habitus, lateral view, B – fore leg, lateral view, C – mid femur and tibia, lateral view, D – hind leg, outer lateral view, E – apex of hind tibia and basitarsus, inner lateral view (Photo: I.Ya. Grichanov).

times longer than tibia width, one row of 6–7 bristly hairs below, not longer than tibia width, one strong ventral subapical bristle, 2 dorsal bristles. Length ratio of hind leg: 0.87/0.81/0.28/0.28/–/–/–.

**Abdomen** with tergites metallic dark green, sternites black; 6 cylindrical segments with small

black pubescence. *Hypopygium* small, black, cerci small, brown, with short pale hairs. Hypopygium morphology has no differential significance for the West Palearctic species.

**Etymology.** The new species is named after the Rif Mountains, where the type material was collected.

### Differential diagnosis

*Teuchophorus rifensis* sp.n. is morphologically close to *T. bipilosus* Becker, 1908 and *T. samraoui* Grootaert, Stark et Meuffels, 1995. The latter differs from the new species by the less setose mid leg and the following features of the hind tibia: one blunt ventral bristle at 1/4, slightly longer than tibia width; one long ventral bristle at about 2/3,

4 times as long as tibia width; 4–5 shorter ventral bristles basally, half as long as longish bristles, and followed by preapical setal ventral serration. *Teuchophorus bipilosus*, on the other hand, differs by the following characters of the hind tibia: devoid of ventral bristles in basal half; with 2 very long anteroventral bristles right beyond middle, 4–5 times as long as tibia width, followed by a tuft of about 7 bristly hairs. The new species can further be distinguished from the two above mentioned species by the hind tibia that is slightly thickened on apical half; by the single fine, but long bristle at 2/3, 3–3.5 times as long as tibia width, and the adjacent row of 6–7 bristly hairs; and the strong subapical ventral bristle and an entirely bare basal half.

### Key to the species of *Teuchophorus* (males) of the Mediterranean Sea Basin

1. Femora and tibiae without strong ventral bristles; hind tibia with ventral row of bristly hairs, about as long as diameter of tibia; body 1.3–1.7 mm (Europe) ..... *T. simplex* Mik, 1880  
– At least some femora and tibiae with strong ventral bristles; hind tibia often thickened distally and bearing modified setae ventrally ..... 2
2. Hind femur with double row of long ventral bristles; hind tibia simple, without strong or modified ventral bristles ..... 3  
– Hind femur with at most a few preapical bristles; hind tibia usually thickened distally and bearing modified bristles ventrally ..... 4
3. Mid and hind tibiae without conspicuous ventral setation; body 1.2–1.7 mm (Bulgaria, Turkey) .....  
..... *T. chaetifemoratus* Pollet & Kechev, 2007  
– Mid tibia with ventral row of 3–4 strong bristles at middle; hind tibia with ventral row of bristly hairs, about as long as diameter of tibia; body 1.6 mm (Israel) ..... *T. israelensis* Grichanov, Negrobov & Selivanova, 2012
4. Hind tibia equally thick along entire length, without gradual or abrupt swelling towards apex, straight, with comb-like structure in basal half ..... 5  
– Hind tibia gradually or abruptly thickened distally, usually curved, with modified bristles and/or group of dense hairs ventrally in distal half ..... 6
5. Postpedicel at apex yellow; hind tibia with anteroventral comb of strong 4 equal-sized bristles, 1 smaller and 2 longest bristles; behind the comb 3–5 thin anteroventral bristles; body 1.7 mm (Bulgaria) .....  
..... *T. medovoensis* Kechev, Negrobov & Grichanov, 2014  
– Postpedicel black; hind tibia with comb of 5 equal-sized blunt bristles in addition to longer bifurcate blunt bristle and distinctly longer branched process; body 1.75–2.0 mm (Europe) ..... *T. nigricosta* (von Roser, 1840)
6. Hind tibia with modified (thick, blunt or flattened) bristles in distal half in addition to simple bristles and hairs ..... 7  
– Hind tibia with only simple bristles in distal half, sometimes long and curved, or simple hairs, sometimes grouped in a tuft ..... 10
7. Hind tibia with ventral row of 4 equal-sized blunt erect bristles right below middle, about as long as diameter of tibia; body 1.5 mm (Turkey) ..... *T. quadrisetosus* Naglis, 2009  
– Hind tibia with only 2 unequal modified bristles or with fan of flattened bristles on short stem ..... 8
8. Hind tibia with fan of flattened bristles on short stem right below middle; body 1.5 mm (Europe) .....  
..... *T. calcaratus* (Macquart, 1827)  
– Hind tibia with 2 unequal modified bristles ..... 9
9. Hind tibia with one strong spine and one very thin adjacent bristle at about 2/3; apical swelling with sparse hairs; body 1.5–2.0 mm (Europe, West Asia) ..... *T. monacanthus* Loew, 1859  
– Hind tibia with 2 blunt subequal bristles beyond 2/3; apical swelling with dense hairs; body 1.5–2.0 mm (Iraq, Israel, Tajikistan, Turkey, Uzbekistan) ..... *T. bisetus* Loew, 1871
10. Hind tibia abruptly thickened in distal third, without very long ventral bristles ..... 11

- Hind tibia gradually thickened in distal half, with at least one ventral bristle, about 4 times as long as diameter of tibia ..... 12
11. Hind tibia with a ventral tuft of 4–6 bristly hairs right before distal swelling; body 1.7 mm (Italy, Turkey) ..... *T. cristulatus* Meuffels & Grootaert, 1992
- Hind tibia with a dense ventral tuft of fine hairs on distal swelling; body 1.25–1.5 mm (Europe, Azerbaijan, Egypt, Kazakhstan, Turkey) ..... *T. spinigerellus* (Zetterstedt, 1843)
12. Hind tibia with one blunt ventral bristle at 1/4, slightly longer than diameter of tibia; with one long ventral bristle at about 2/3, 4 times as long as diameter of tibia, with 4–5 half shorter bristles at its basis and followed by setal serration; body 1.28–1.44 mm (Grichanov et al., 2012: Fig. 23) (Algeria) ..... *T. samraouii* Grootaert, Stark & Meuffels, 1995
- Hind tibia devoid of ventral bristles in basal half; with 1 or 2 very long anteroventral bristles beyond middle, followed by tuft of about 7 bristly hairs ..... 13
13. Hind tibia with one fine and long ventral bristle at about 2/3, 3–3.5 times as long as diameter of tibia; body 2 mm (Morocco) ..... *T. rifensis* sp. n.
- Hind tibia with 2 very long anteroventral bristles right beyond middle, 4–5 times as long as diameter of tibia; body 1.8 mm (Grichanov et al., 2012: Fig. 24) (Algeria, France, Portugal, Krasnodarsky Krai in Russia, Spain) ..... *T. bipilosus* Becker, 1908

### Discussion

Now the *Teuchophorus* fauna of the Mediterranean Sea basin totals 14 species (including a new one), but more new species from some under collected countries of the Region (e.g. Algeria, Tunisia, Libya, Lebanon, Syria) are anticipated. The Mediterranean Sea Region is inhabited by mostly endemic *Teuchophorus* species, being obviously a centre of diversity in the West Palaearctic (Grichanov et al., 2012; Kechev et al., 2014). Two species of the genus, i.e. *T. cristulatus* Meuffels et Grootaert, 1992, and *T. spinigerellus* (Zetterstedt, 1843), are known from Morocco (Pärvu et al., 2006; Ebejer et al., 2019), and two more species, *T. bipilosus* Becker, 1908 and *T. samraouii* Grootaert, Stark et Meuffels, 1995, have been reported from neighbouring Algeria and the Canary Islands (Grichanov et al., 2012).

The Palaearctic *Teuchophorus* species are usually collected in humid habitats with slowly running or stagnant water, canopied by tall grasses or deciduous trees (Kechev et al., 2014). Three species of the genus recorded in Portugal (*T. bipilosus*, *T. monacanthus* and *T. spinigerellus*) inhabit salt and brackish marshes, marshlands and parks, being found near open water, on river banks (Pollet et al., 2019, and references herein). When such species are only known from small blocks of remnant or disturbed vegetation, their long-term survival is problematical, especially in highly altered agricultural and urban districts. They may be threatened, if their remnant habitats are degraded by burning, grazing, clearing or invasion by exotic weeds, replaced by settlements, roads and other anthropogenic landscapes. Active application of chemical plant protection means,

land reclamation, changes in land use technologies towards more rationalised approaches can have adverse effects on the biodiversity of natural ecosystems (Grichanov, 2007).

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### References

- Cumming J.M., Wood D.M. 2017. 3. Adult morphology and terminology. In: A.H. Kirk-Spriggs, B.J. Sinclair (Eds.): *Manual of Afrotropical Diptera. Volume 1. Introductory chapters and keys to Diptera families*. Suricata 4. Pretoria: SANBI Graphics & Editing. P. 89–134.
- Ebejer M.J., Kettani K., Gatt P. 2019. First records of families and species of Diptera (Insecta) from Morocco. *Boletín de la Sociedad Entomológica Aragonesa* 64: 143–153.
- Grichanov I.Ya. 2007. *A checklist and keys to Dolichopodidae (Diptera) of the Caucasus and East Mediterranean*. St. Petersburg: VIZR. 160 p. (Plant Protection News Supplements).
- Grichanov I.Ya., Negrobov O.P., Selivanova O.V. 2012. A review of Palaearctic *Teuchophorus* Loew (Dolichopodidae, Diptera) with an updated catalog and revised key to species. *Russian Entomological Journal* 21(1): 89–96. DOI: 10.15298/rusentj.21.1.11
- Grichanov I.Ya., Brooks S.E. 2017. 56. Dolichopodidae (long-legged dance flies). In: A.H. Kirk-Spriggs, B.J. Sinclair (Eds.): *Manual of Afrotropical Diptera, Volume 2. Ne-matocerous Diptera and Lower Brachycera*. Suricata 5. Pretoria: SANBI Graphics & Editing. P. 1265–1320.

- Kechev M., Negrobov O., Grichanov I.Ya. 2014. Diversity of long-legged flies (Diptera: Dolichopodidae) along the banks of the Omurovska River (Bulgaria), with the description of a new species of the genus *Teuchophorus* Loew. *Acta Zoologica Bulgarica* 66(3): 317–323.
- РБГВУ С., Mirceni R.P., Zaharia R. 2006. Faunistic data on some dipteran families (Insecta, Diptera) from Morocco (Results of «Hamada» Expedition 2005. *Travaux du Muséum National d'Histoire Naturelle «Grigore Antipa»* 49: 271–281.
- Pollet M., Andrade R., Gonzalves A., Andrade P., Jacinto V., Almeida J., De Braekeleer A., van Calster H., Brosens D. 2019. Dipterological surveys in Portugal unveil 200 species of long-legged flies, with over 170 new to the country (Diptera: Dolichopodidae). *Zootaxa* 4649 (1): 1–69. DOI: 10.11646/zootaxa.4649.1.1
- Pollet M., Kechev M. 2007. A review of Palaearctic *Teuchophorus*, with a new species from Bulgaria (Diptera: Dolichopodidae). *Zootaxa* 1592: 45–56. DOI: 10.5281/zenodo.178614
- UNEP-WCMC, IUCN. 2019. *Protected Planet: Talassemtane National Park in Morocco*. Cambridge, UK: UNEP-WCMC and IUCN. Available from: <https://www.protectedplanet.net/talassemtane-national-park-national-park>.

## НОВЫЙ ВИД РОДА *TEUCHOPHORUS* (DOLICHOPODIDAE, DIPTERA) ИЗ МАРОККО

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Описан новый вид *Teuchophorus rifensis* sp.n., собранный около границы национального парка Талласемтан, входящего в межконтинентальный Средиземноморский биосферный резерват. Этот вид близок к *T. bipilosus* и *T. samraoui*, отличаясь от них количеством и расположением вентральных щетинок на задних голених. Составлен ключ для определения 14 средиземноморских видов рода *Teuchophorus*.

**Ключевые слова:** *Teuchophorus rifensis*, горы Эр-Риф, ключ, национальный парк Талласемтан, Палеарктика, Средиземноморье