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Authors: Ghonaim, Mohamed, Ali, Arshad, and Salem, Magdy

Source: Florida Entomologist, 87(4) : 571-575

Published By: Florida Entomological Society

URL: https://doi.org/10.1653/0015-4040(2004)087[0571:TDCEWD]2.0.CO;2

TANYTARSUS (DIPTERA: CHIRONOMIDAE) FROM EGYPT WITH DESCRIPTION OF A NEW SPECIES

MOHAMED GHONAIM[1], ARSHAD ALI[1] AND MAGDY SALEM[2]
[1]University of Florida/IFAS, Mid-Florida Research and Education Center
and Department of Entomology and Nematology, 2725 Binion Rd., Apopka, FL 32703-8504, USA

[2]Insect Survey and Classification Department, Institute of Plant Protection
Egyptian Ministry of Agriculture, Giza, Egypt

ABSTRACT

Three species of the genus *Tanytarsus* van der Wulp were captured during a survey of chironomid midges (Diptera: Chironomidae), conducted from September 1997 to October 1999, of all major geographical zones in Egypt. *Tanytarsus spadiceonotatus* Freeman is recorded from Egypt for the first time, whereas *T. itsae* sp. nov. is described for the first time from male imagines. *Tanytarsus nocticola* Kieffer, which had been recorded by Kieffer from Egypt (Aswan) in 1911 (Freeman 1958), was not found at the sampled localities. A key to the male imagines of *Tanytarsus* in Egypt is presented. New distributional data for the three collected species are provided.

Key Words: Taxonomy, distribution, keys, *Tanytarsus itsae* sp. nov., *Tanytarsus formosanus*, *Tanytarsus spadiceonotatus*.

RESUMEN

Tres especies del género *Tanytarsus* van der Wulp fueron capturadas durante un muestreo de los mosquitos chironomidos (Diptera: Chironomidae) realizado desde septiembre 1997 hasta octubre 1999 en todas las regiones geográficas de Egipto. Se registra *Tanytarsus spadiceonotatus* Freeman por primera vez en Egipto, también por primera vez se describe el adulto del macho (imago) de *T. itsae* spec nov. No se encontró ejemplares de *Tanytarsus nocticola* Keiffer en las localidades muestreadas, el cual fue registrado en Egipto (Aswan) por Keiffer en 1911. Se presenta una clave de los imagos de los machos de *Tanytarsus* en Egipto. Se provee información sobre la distribución de las tres especies informadas en Egipto.

Tanytarsus van der Wulp, is one of the most species rich genera in the Holarctic region, and the immature stages inhabit many different aquatic habitats. Thus, many species are potential indicators for short and long term environmental change (Ekrem 2004). In the Afrotropical region, 26 species of this genus are hitherto recognized (Ekrem 2001).

The present work is based on material collected during a survey conducted from September 1997 to October 1999, covering major geographical zones of Egypt (28 locations). *Tanytarsus* spp. were collected from 9 locations (Fig. 1); *T. itsae* Ghonaim sp. nov. is described for the first time. Additional distributional data for a new record, *T. spadiceonotatus* Freeman and a previous record, *T. formosanus* Kieffer are also given.

MATERIALS AND METHODS

The description of the new species is based on specimens that were mounted on slides. The preparation of slides followed the method of Pinder (1989). Identifications were based on adult males. The morphological terms, ratios, and abbreviations used are those recommended by Sæther (1980), and adopted by Pinder (1989), with the additions and corrections of Sæther (1990). Slide-mounted specimens were photographed at 100-1000× magnifications with a microscope-mounted camera. The resulting 35 mm positive slides (Kodak, USA100 Tungsten, positive exposures) were digitally scanned (Polaroid, *Sprintscan* 4000 plus) and processed for the best available resolution, printed on a glossy paper, and subsequently traced with ink pens.

All specimens used in this study were collected by the first author and preserved in 70% alcohol. Authorship of the new species is attributed to the first author. The holotype of the new species is deposited at the Museum of Entomology, Florida State Collection of Arthropods, Gainesville, Florida, USA.

RESULTS

Tanytarsus formosanus Kieffer, 1912

Distribution. Lower Egypt: Memphis, numerous imagines, 17-IV-1954 (Fittkau) (Reiss & Fittkau 1971). ASWAN: El-Mahareef, 4 ♂♂, 2 ♀♀, 8-IX-1999; Toshka, 12 ♂♂, 3-XI-1997. BEHEIRA:

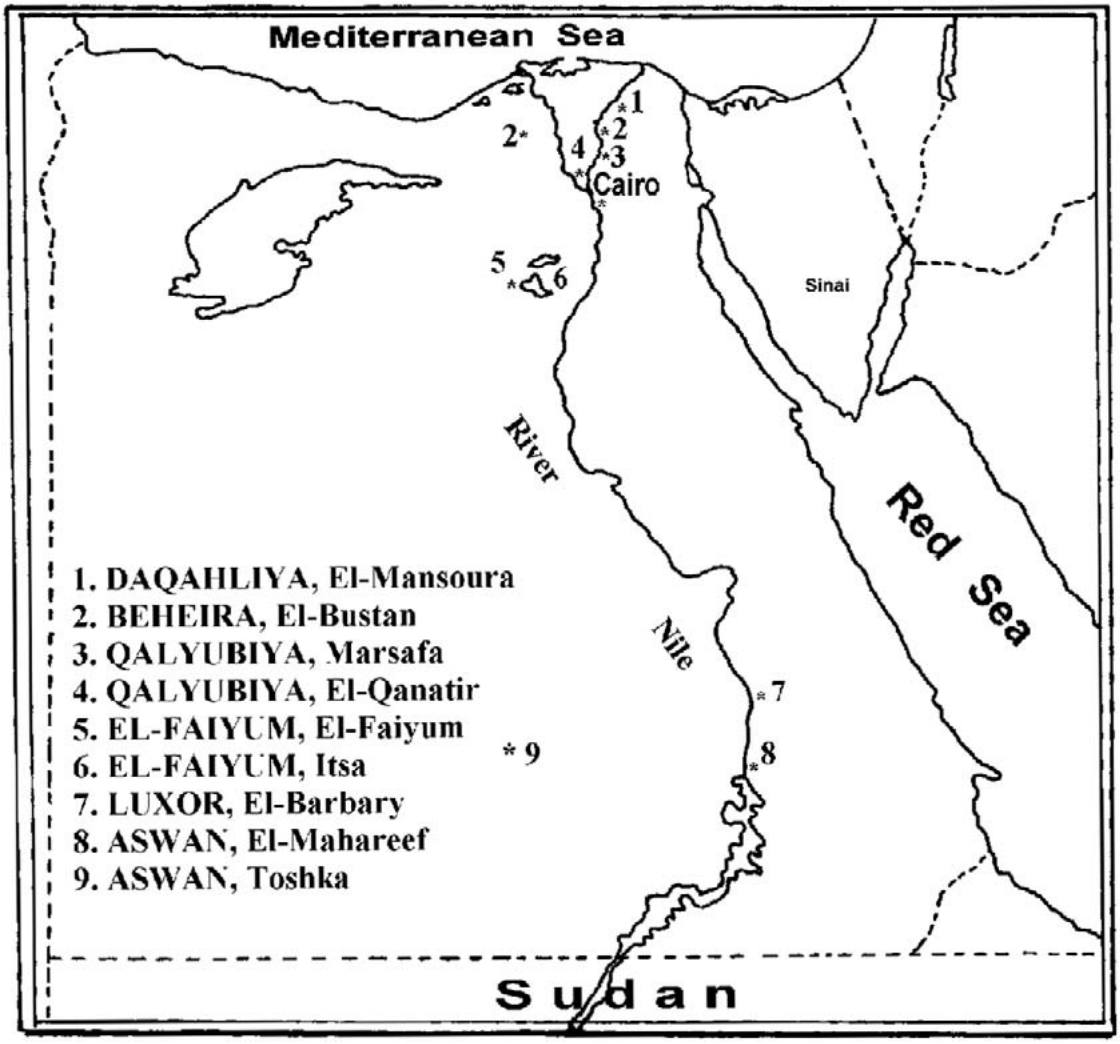


Fig. 1. Map of Egypt showing collection locations of *Tanytarsus*.

El-Bustan, 1 ♂, 21-IX-1999. DAQAHLIYA: El-Mansoura, 1 ♂, 15-IX-1999. EL-FAIYÛM: Itsa, 4 ♂♂, 123 ♀♀, 28-IX-1999. LUXOR: El-Barbary, 6 ♂♂, 9-IX-1999. QALYUBIYA: El-Qanatir, 4 ♂♂, 9-X-1998; Marsafa, 2 ♂♂, 24-X-1998; 1 ♀, 10-IV-1999; 87 ♂♂ (swarm), 27-VII-1999.

Tanytarsus itsae Ghonaim, **sp. nov.**
(Figs. 2-7)

Material Examined. Holotype, male: EGYPT, El-Faiyûm, Itsa, 28-IX-1999, slide mounted in Euparal. Paratype 1 male as holotype.

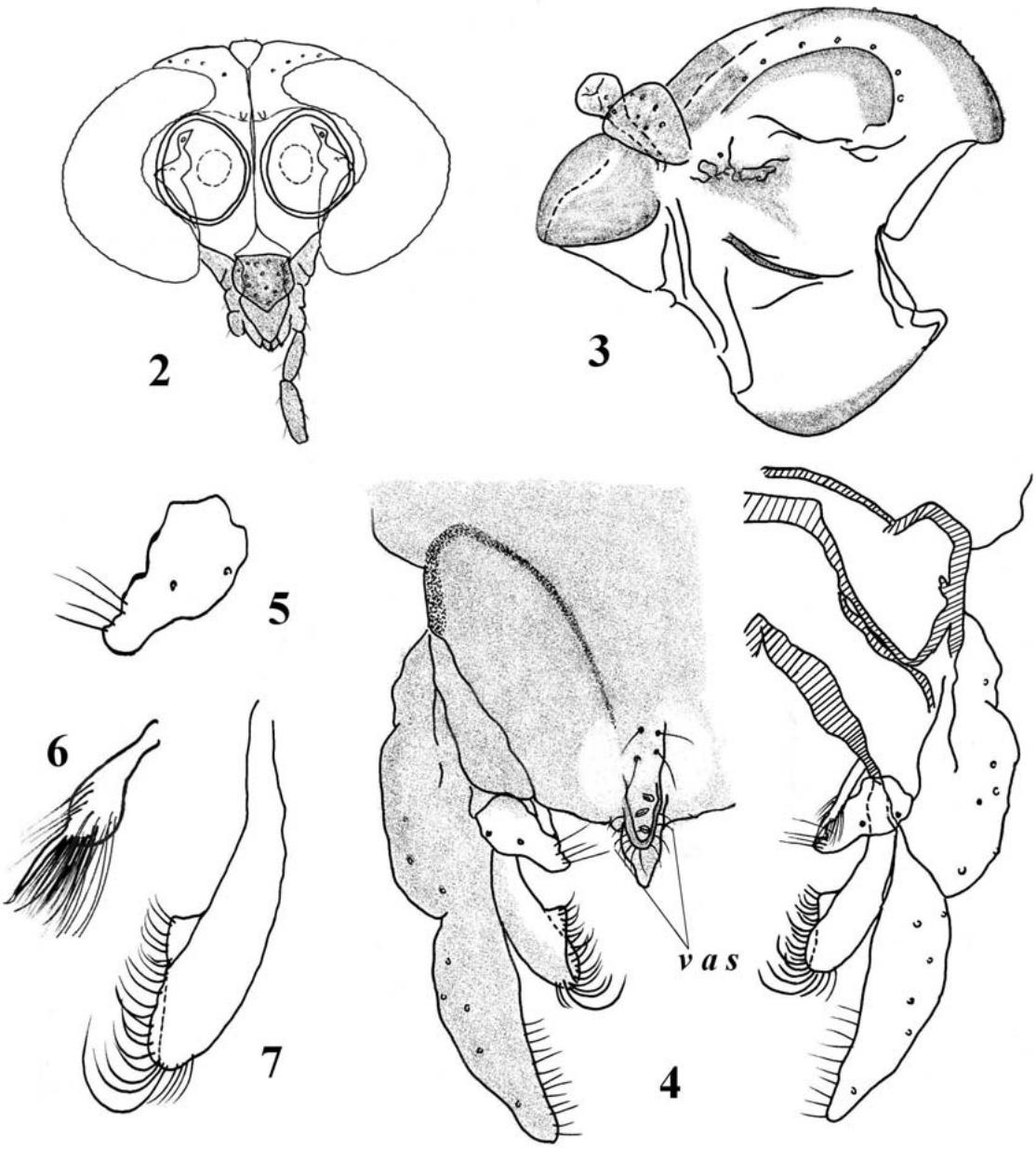
Diagnostic characters. *Tanytarsus itsae* sp. nov. is yellowish to dark brown species with distinct color pattern of thorax and abdominal tergites; it is separable from other species of *Tanytarsus* by its relatively smaller size, short anal point, with lateral and ventroapical setae, short median volsella, and relatively large inferior volsella with apicomedial projection. Superior volsella without digitus.

Etymology. *Tanytarsus itsae* is named after the type locality.

Description. MALE (Figs. 2-7, $n = 2$ unless otherwise stated). Total length 1.75-1.77 mm. Wing length 1.16-1.19 mm. Total length/wing length 1.49-1.51. Wing length/length of profemur 2.03-2.09.

Coloration. Yellowish to dark brown species, head brown, thorax yellowish brown with darker stripes, legs faint brown, abdominal tergites with dark brown incisures.

Head (Fig. 2). AR 1.09. Thirteenth flagellomere 410-435 µm long. Longest antennal seta 410-420 µm long. Eyes with moderate dorsomedial extension; distance between eyes 125-182 µm. Frontal



Figs. 2-7. *Tanytarsus itsae* Ghonaim, sp. nov., male imagine. 2, Head; 3, Thorax; 4, Hypopygium; 5, Superior volsella; 6, Median volsella; 7, Inferior volsella (*v a s*: Ventroapical and lateral setae).

tubercles 27 µm long. Temporal bristles 7-12; 5-7 inner verticals, 2-3 outer verticals, 0-2 postorbitals. Clypeus 53-62 µm long, 74 µm wide, with 14-17 setae. Tentorium 75-95 µm long, 30-45 µm wide at sieve plate, 7 µm wide at posterior pore. Stipes indistinct. Lengths of palpomeres (in µm): 25-26, 31-32, 68-70, 79(1), last palpomere lost.

Thorax (Fig. 3). Dorsocentrals 6, acrostichals 7-9, prealars 0-3, scutellars 5. Halteres with 3-4 fine setae.

Wing. VR 1.11-1.15. Brachiolum with 1 seta, Sc bare, R with 9-12 setae, R_1 18-24, R_{4+5} 26-30, M bare, M_{1+2} 24-39, M_{3+4} 18-20, Cu 6-8, Cu_1 16-19, An 4-14. Cells r_{4+5} with about 64-77 setae, m_{1+2} 35-42, m_{3+4} 15-16, an 3-4. Setae denser towards wing tip.

Legs. Spur of front tibiae 17-19 µm long, of mid tibiae 15-17 µm and 23-24 µm long, of hind tibia 29-32 µm and 30-31 µm long. Combs of mid tibia 23-24 µm and 30-31 µm long, of hind tibia 23 µm and 35-38 µm long. Apical width of fore tibia 40-

41 µm, of mid tibia 41 µm, of hind tibia 47-49 µm. Pulvilli present, subequal to claws, of front legs lost, of mid legs 15-17 µm long, of hind legs 17-18 µm. Lengths (in µm) and ratios of legs:

	fe	ti	ta_1	ta_2	ta_3	ta_4
P_1	555-587	305-325	—	—	—	—
P_2	560-570	475-510	490 (1)	170 (1)	145 (1)	105 (1)
P_3	610-655	595-675	478 (1)	319 (1)	268 (1)	165 (1)

	ta_5	LR	BV	SV	BR
P_1	—	—	—	—	—
P_2	80 (1)	0.96 (1)	3.07 (1)	2.20 (1)	2.45 (1)
P_3	103 (1)	0.71 (1)	2.11 (1)	2.78 (1)	3.08 (1)

Hypopygium (Figs. 4-7). Anal tergite 83-112 µm long with 2-5 median setae. Apical margin with one shoulder. Anal tergite bands smoothly curved, separated posteromedially, not connected to anal crests. Anal point very short, 10-35 µm long, 15-16 µm wide at base, 4-8 µm wide at tip, with about 7-12 ventroapical and lateral, curved setae, and 3 wide spinules between anal crests (Fig. 4). Fine microtrichiae scattered between anal crests. Microtrichiae present on anal tergite, with a microtrichia free area around the base of anal point. Transverse sternapodeme 63-65 µm long, phallapodeme 36-42 µm long. Gonocoxite 67-68 µm long. Gonostylus 90-112 µm long, with fine medial setae. Superior volsella (Fig. 5) bare, 39-40 µm long, 22-23 µm wide, with 3 apicomedian and 3 lateral setae; digitus absent. Median volsella (Fig. 6) 17-28 µm long, 5-6 µm wide, with one foliate lamella and about 12 simple lamellae, 15-26 µm long. Inferior volsella (Fig. 7) relatively large, 58-86 µm long, 14-30 µm wide at apex, with apicomedial projection and approximately 20-24 apical long setae. HR 0.61-0.74; HV 1.56-1.97.

Tanytarsus nocticola Kieffer, 1911

Distribution. SUEZ: Suez, 2 ♀♀, 1911 (Kieffer); ASWAN: Aswan, 1 ♂, I-1923 (Hirst) [Freeman 1958].

Tanytarsus spadiceonotatus Freeman, 1958

Distribution. ASWAN: Toshka, 8 ♂♂, 3-XI-1997. EL-FAIYÛM: El-Faiyûm, 6 ♂♂, 24-VIII-1998. DAQAHLIYA: El-Mansoura, 23 ♂♂, 15-IX-1999. LUXOR: El-Barbary, 6 ♂♂, 9-IX-1999. QALYUBIYA: El-Qanatir, 2 ♂♂, 9-X-1998; Marsafa, 3 ♂♂, 24-X-1998; 76 ♂♂ (swarm), 27-VII-1999; 6 ♂♂, 37 ♀♀, 18-IX-1999; 9 ♂♂, 19-IX-1999; 2 ♂♂, 4-X-1999.

Key to Male Imagines of the Genus *Tanytarsus* from Egypt

1. Anal point without spines nor anal crests . . . . . *T. nocticola* Kieffer
— Anal point with stout spines between anal crests 2

2. Anal point fairly short (not exceeding 35 µm in length).
Digitus of superior volsella absent (Figs. 4 & 5) . . . . . *T. itsae* Ghonaim, **sp. nov.**
— Anal point longer (at least 40 µm long). Digitus small but distinct 3

3. Large microtrichiae-free area at base of anal point. Apical margin of anal tergite with two shoulders on each side of anal point. Superior volsella elongated, tapered towards apex . . . . . *T. formosanus* Kieffer
— Microtrichiae present around anal point base. Apical margin of anal tergite without lateral shoulders. Superior volsella almost quadrate . . . . . *T. spadiceonotatus* Freeman

Discussion and Conclusion

Tanytarsus itsae Ghonaim, sp. nov. fits well in the *gregarius* group of species by the well developed pulvilli, the presence of a large michrotrichia-free area around the base of the anal point, and the absence of the digitus of superior volsella. *T. itsae* Ghonaim, sp. nov. does not fit any species in the key provided in Ekrem's reviews (2001, 2002) of Afrtropical *Tanytarsus* and South and East Asian *Tanytarsus*, or the key provided by Reiss & Fittkau (1971) for the European *Tanytarsus*. Its small size (about 1.77 mm) and noticeably short anal point, with ventroapical and lateral setae (Fig. 4) make it a distinct species, easily separated from other Afrotropical and Palaearctic *Tanytarsus* species. *T. itsae* Ghonaim, sp. nov. is close to *T. formosanus* Kieffer in the shape and setation of volsellae. However, *T. itsae* is much smaller in size, its wing length does not exceed 1.20 mm (in *T. formosanus* Kieffer, not less than 1.35 mm long), the puvilli of legs are well developed, the digitus of superior volsella is absent, and the cubitus is setose.

Acknowledgments

We thank Dr. Torbjørn Ekrem, Museum of Natural History and Archaeology, Natural History Section, Norwegian University of Science and Technology, Trondheim, Norway, and Dr. Richard Lobinske, University of Florida, for their valuable comments and review of the manuscript which improved clarity and quality of the article. Sincere gratitude is expressed to Government of Egypt (Cultural and Educational Bureau) for provision of a scholarship to M. Ghonaim to undertake this research (initiated at the Department of Zoology, Al-Azhar University, Cairo,

Egypt) completed at the Department of Entomology and Nematology/Mid-Florida Research and Education Center/IFAS, University of Florida. This is Florida Agricultural Experiment station Journal R-10254.

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