

The spider genus *Pterotricha* Kulczyński, 1903 (Araneae, Gnaphosidae) in the United Arab Emirates

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Abstract

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Spiders of the gnaphosid genus *Pterotricha* Kulczyński, 1903 occurring in the United Arab Emirates (UAE) are surveyed on the basis of a large collection deposited in the American Museum of Natural History. Within the examined material, six species were recognized, four of which are described as new to science: *P. arabica* sp. n. (♂♀), *P. esyunini* sp. n. (♂), *P. nadolnyi* sp. n. (♂) and *P. stevensi* sp. n. (♂), and two are newly recorded for the fauna of the UAE: *P. dalmasi* Fage, 1929 (hitherto known from Algeria, Egypt, Sudan, Israel, Jordan, Saudi Arabia, and possibly Iran) and *P. kovblyuki* Zamani & Marusik, 2018 (hitherto known only from Iran). Illustrations for all treated species and a map of collection localities are provided.

Introduction

The spider family Gnaphosidae is a large and globally distributed family currently comprising 2226 extant species in 129 genera, characterized by their parallel, large and cylindrical anterior spinnerets lacking a distal ring, and their greatly enlarged piriform gland spigots that have a flattened base and shaft, and a slit-like opening (Jocqué and Dippenaar-Schoeman 2006, WSC 2018). The Old-World genus *Pterotricha* Kulczyński, 1903 currently comprises 40 valid species that are primarily distributed in arid and semi-arid habitats of the Middle East, North Africa and Central Asia (Levy 1995, WSC 2018). These are medium-sized (5–13 mm) Gnaphosinae spiders, which can be diagnosed from other genera of the subfamily by their very long, rigid cylindrical, tube-shaped anterior spinnerets extending much beyond other spinnerets (Levy 1995). Till now, there has been no study on the spiders of this genus in the United Arab Emirates (UAE). Recently, I had a chance to investigate

a large collection of these spiders deposited in the American Museum of Natural History, the result of which is reported in this paper.

Material and methods

Specimens were photographed using an Olympus Camera E-520 camera attached to an Olympus SZX16 stereomicroscope or to the eye-piece of an Olympus BH-2 transmission microscope at the Zoological Museum of University of Turku, Finland. Digital images were prepared using “CombineZP” image stacking software (<http://www.hadleyweb.pwp.blueyonder.co.uk/>). Illustrations of internal genitalia were made after clearing in 10% KOH aqueous solution. Lengths of leg segments were measured on the dorsal side. Measurements of legs are listed as: total length (femur, patella, tibia, metatarsus, tarsus). All measurements are given in millimeters. All specimens were collected by Barbara J. Tigar and her

students, and are deposited in the American Museum of Natural History, New York (AMNH). The map (Fig. 7) was created using the webpage SimpleMappr (online at <http://www.simplemappr.net/>).

Abbreviations: ALE – anterior lateral eye, AME – anterior median eye, PLE – posterior lateral eye, PME – posterior median eye.

Taxonomy

Gnaphosidae Pocock, 1898

Pterotricha Kulczyński, 1903

Pterotricha arabica sp. n.

<http://zoobank.org/FED3800C-BB6F-493A-BFEB-A94437AA5533>

Figs 1a–b, 2a, 3a, 4a–d, 5a, 6

Holotype. ♂ (AMNH_IZC 00326723), UAE: Umm Al Zumul, 22°52'N, 55°10'E, 2 Feb 1995, mobile sand.

Paratypes. 1♀, (AMNH_IZC 00326766), Madinat Zayed, 23°50'N, 54°6'E, 1 Jan 1995, mobile sand; 1♂ (AMNH_IZC 00326772), Madinat Zayed, 23°51'N, 54°5'E, 10 Feb 1994, mobile sand; 1♀, 1 sub ♀ (AMNH_IZC 00326717), Madinat Zayed, 23°51'N, 54°3'E, 5 Oct 1994, gravel/hard plain; 1♀, 1 sub ♀, 1 juv. (AMNH_IZC 00326704), Khatam, 23°52'N, 55°23'E, 9 Oct 1994, mobile sand; 1♀, 1 juv. (AMNH_IZC 00326744), Madinat Zayed, 23°51'N, 54°4'E, 10 May 1994, mobile sand; 1♀ (AMNH_IZC 00326705), Madinat Zayed, 23°51'N, 54°4'E, 3 Dec 1994, mobile sand; 4♂, 1 juv. (AMNH_IZC 00326775), Madinat Zayed, 23°51'N, 54°4'E, 11 Apr 1994, mobile sand; 1♀, 1 juv. (AMNH_IZC 00326726), Madinat Zayed, 23°51'N, 54°4'E, 5 Oct 1994, mobile sand; 1♂, 3 juv. (AMNH_IZC 00326703), Umm Al Zumul, 22°54'N, 55°11'E, 15 March 1994; UAE: 1♂, 1 juv. (AMNH_IZC 00326733), Umm Al Zumul, 22°52'N, 55°10'E, 14 Apr 1994; 1♀ (AMNH_IZC 00326721), Madinat Zayed, 23°51'N, 54°5'E, 3 Nov 1994, mobile sand; 1♂ (AMNH_IZC 00326727), Madinat Zayed, 23°51'N, 54°5'E, 12 March 1994; 1♂ (AMNH_IZC 00326727), Madinat Zayed, 23°51'N, 54°5'E, 12 March 1994; 1♂ (AMNH_IZC 00326750), Madinat Zayed, 23°51'N, 54°5'E, 7 Aug 1994, mobile sand; 2♂ (AMNH_IZC 00326756), Umm Al Zumul, 22°52'N, 55°10'E, 2 Feb 1995, mobile sand; 1♂ (AMNH_IZC 00326762), Khatam, 23°53'N, 55°22'E, 3 Feb 1995, mobile sand; 1♂ (AMNH_IZC 00326769), Umm Al Zumul, 22°52'N, 55°10'E, 15 Jan 1994, mobile sand; 2♂ (AMNH_IZC 00326715), Khatam, 23°52'N, 55°23'E, 15 Apr 1994; 1♂, 1 juv. (AMNH_IZC 00326843), Khatam, 23°53'N, 55°22'E, 14 Feb 1994; 1♀ (AMNH_IZC 00326836), Umm Al Zumul, 22°53'N, 55°10'E, 15 March 1994; 2♂ (AMNH_IZC 00326794), Umm Al Zumul, 22°52'N, 55°10'E, 13 Feb 1994; 1♀ (AMNH_IZC 00326836), Umm Al Zumul, 22°53'N, 55°10'E, 15 March 1994; 1♀, 1 juv. (AMNH_IZC 00326785), Umm Al Zumul, Madinat Zayed, 23°51'N, 54°4'E, 9 June 1994, mobile

sand; 2♂ (AMNH_IZC 00326761), Public Hunting Triangle, 24°39'N, 55°10'E, 12 Apr 1994; 1♀ (AMNH_IZC 00326780), Umm Al Zumul, 22°53'N, 55°2'E, 15 Jan 1994, mobile sand; 1♂ (AMNH_IZC 00326816), Public Hunting Triangle, 24°39'N, 55°8'E, 12 Apr 1994; 1 sub ♂, 1♀, 3 juv. (AMNH_IZC 00326828), Khatam, 23°52'N, 55°21'E, 20 Oct 1993; 1♂ (AMNH_IZC 00326814), Madinat Zayed, 23°51'N, 54°4'E, 9 June 1994; 1♂, 1♀ (AMNH_IZC 00326790), Khatam, 23°53'N, 55°22'E, 3 Feb 1995, mobile sand; 1♂, 1♀ (AMNH_IZC 00326840), Umm Al Zumul, 22°54'N, 55°10'E, 4 Jan 1995, mobile sand; 1♂ (AMNH_IZC 00326849), Khatam, 23°52'N, 55°22'E, 14 Feb 1994; 1♂ (AMNH_IZC 00326841), Madinat Zayed, 23°51'N, 54°4'E, 10 May 1994.

Etymology. The specific epithet refers to the Arabian Peninsula, from where the specimens have been collected.

Diagnosis. This species is most similar to *P. syriaca* Dalmas, 1921 from Syria by the almost horizontal tibial apophysis tapering to a bifurcated tip of the males (cf. Figs 2a, 3a and fig. 118 in Levy 1995), and by the similarly rounded epigynal plates of the females (cf. Fig. 4c, d and fig. 119 in Levy 1995). The two species can be separated by the different shape of the median apophysis of the male palp (almost rounded in *P. syriaca* (cf. fig. 35 in Dalmas 1921), vs. with a distinct prolateral protrusion in the new species (cf. Figs. 2a, 4a, b)) and by the different shape of the epigynal anterior depression of the females (with a median depression in *P. syriaca* (cf. fig. 119 in Levy 1995), vs. with a rounded rim, lacking any depression in the new species (cf. Fig. 4c, d)).

Description. Male (holotype, AMNH_IZC 00326723). Total length 11.5. Carapace 4.8 long, 4.3 wide. Eyes sizes and interdistance: AME: 0.22, ALE: 0.20, PME: 0.22, PLE: 0.30, PME–PME: 0.15. Carapace, sternum, labium, chelicerae and maxillae light brown without any distinct patterns, with darkening ocular area. Chelicerae with bifurcated serrated keels (Fig. 5a). Abdomen cream with short transparent setae and a small scutum. Legs the same color as carapace and with numerous spines. Scopula on metatarsi and tarsi distinct and with long setae. Tarsi of all legs with cuticular cracks (pseudosegmentations). Measurements of legs: I: 23.3 (5.95, 2.25, 5.65, 5.2, 4.25), II: 26.8 (6.4, 2.3, 6.3, 7.9, 3.9), III: 22.1 (5.6, 2.1, 5.2, 5.4, 3.8), IV: 30.6 (8.4, 2.2, 7.1, 8.7, 4.2). Anterior lateral spinnerets 4.9 long, 0.42 wide. Palp as in Figs 2a, 3a, 4a–b. Tibial apophysis almost horizontal, tapering to a bifurcated tip; median apophysis longer than wide with large base having a distinct prolateral protrusion, and an almost straight apical hook; conductor large, tip with a small invagination; embolus filliform and without a stylus, origination near the 6:30 o'clock position and tapering near the apex of conductor.

Female (paratype, AMNH_IZC 00326717). Total length 13.0. Carapace 4.85 long, 4.35 wide. Eyes sizes and interdistance: AME: 0.25, ALE: 0.22, PME: 0.3, PLE: 0.35, PME–PME: 0.12. Coloration and somatic characters as in male. Measurements of legs: I: 15.9 (4.7, 1.9, 3.1, 3.0, 3.2), II: 15.9 (4.3, 1.9, 3.3, 3.3, 3.1), III: 18.5

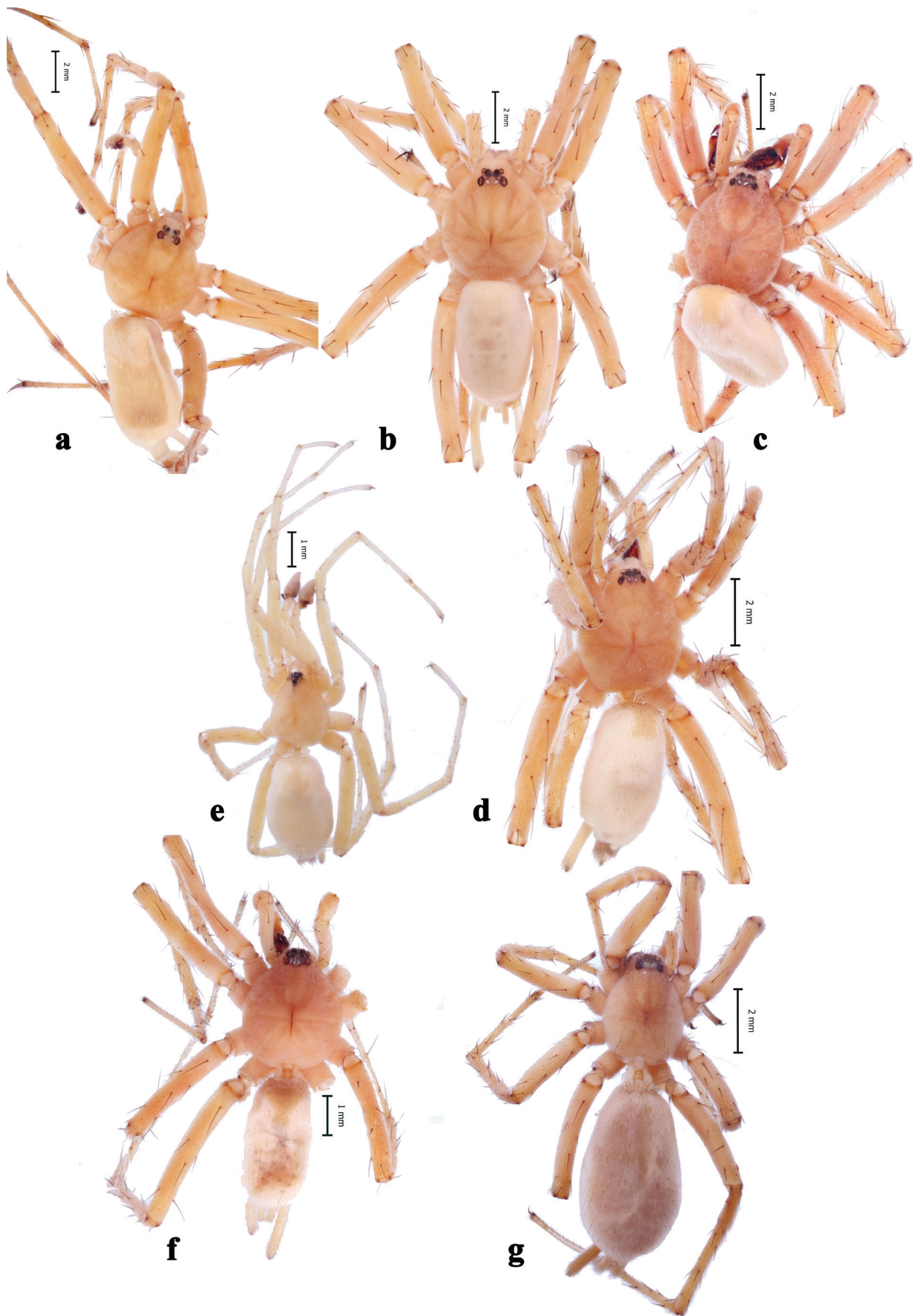


Figure 1. Dorsal habitus of *Pterotricha* spp.: **a, b**) *P. arabica* sp. n., male and female; **c**) *P. esyunini* sp. n., male; **d**) *P. nadolnyi* sp. n., male; **e**) *P. stevensi* sp. n., male; **f, g**) *P. dalmasi*, male and female.

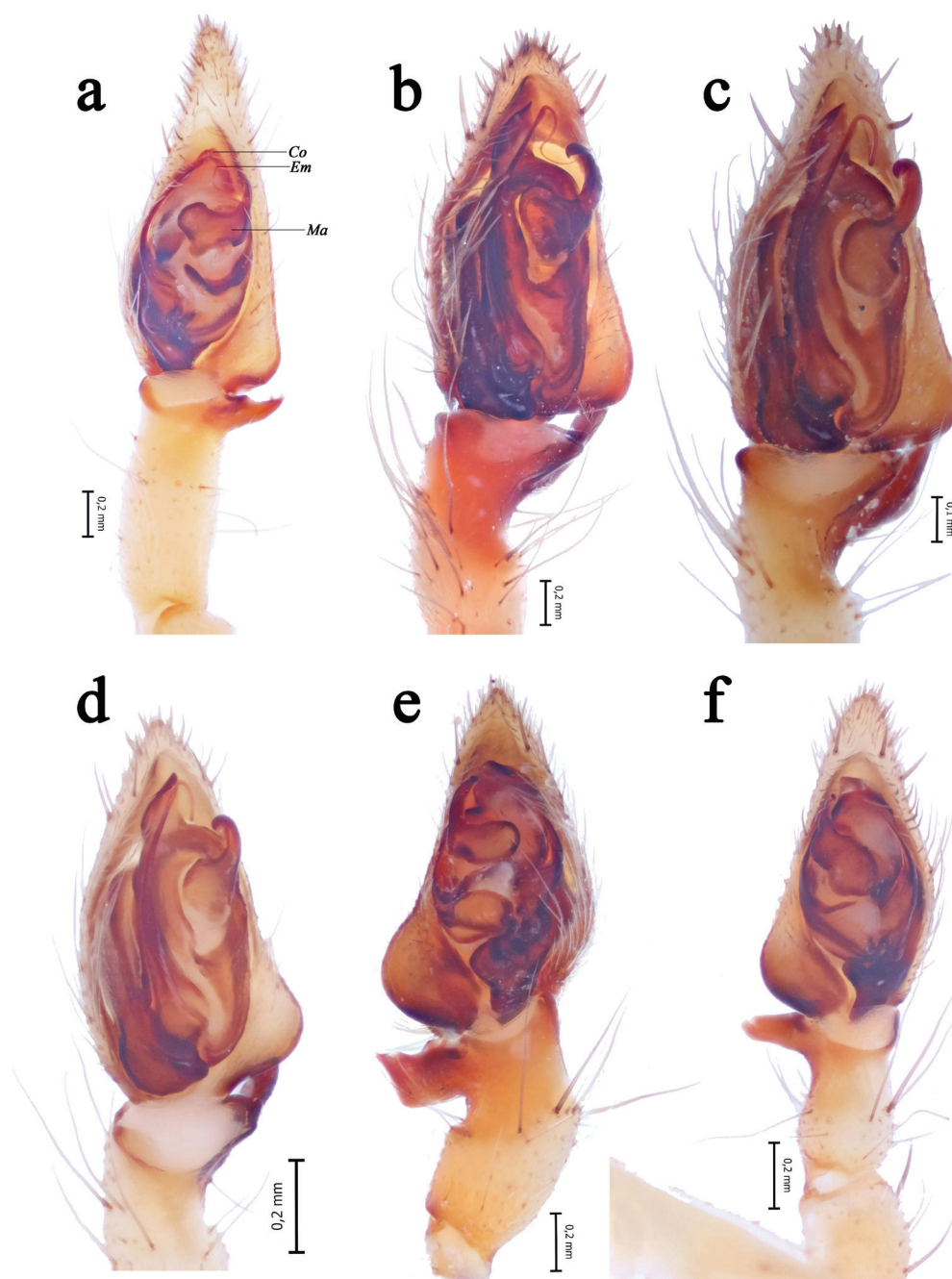


Figure 2. Ventral views of the male palps of *Pterotricha* spp.: **a)** *P. arabica* sp. n.; **b)** *P. esyunini* sp. n.; **c)** *P. nadolnyi* sp. n.; **d)** *P. stevensi* sp. n.; **e)** *P. dalmasi*; **f)** *P. kovblyuki*. Abbreviations: *Co*: conductor; *Em*: embolus; *Ma*: median apophysis.

(5.0, 2.0, 4.2, 4.3, 3.0), IV: 21.9 (6.0, 2.0, 5.2, 5.2, 3.5). Anterior lateral spinnerets 3.65 long, 0.45 wide. Epigyne as in Fig. 4c–d. Median septum broad, with a rounded rim of anterior margin, and with widening posterior end. Copulatory duct long and looped, leading to a large, longer than wide receptacle (*Re*).

Ecology. This nocturnal species builds tubular retreats on firm sandy flats, generally on the edge of the gravel plains towards the vegetation and in dunes. They have been observed to seal the entrance of their burrow in the early morning and open them again in the sunset, and to

use silk-covered sand balls around the entrance in a fan-shaped manner, with radiating silk strands leading back to the burrow (Roosenschoon and Simkins 2015). Open burrows have been reported to be vertical, silk-lined and surrounded at a short distance by a crater of soft sand (Feulner and Roobas 2015).

Distribution. Currently known from the listed localities in the United Arab Emirates (Fig. 7), and, based on some photographs provided for me, also present in Dubai Desert Conservation Reserve, about 75 km SE of Dubai city, on the border of Dubai emirate with Sharjah and Abu Dhabi.

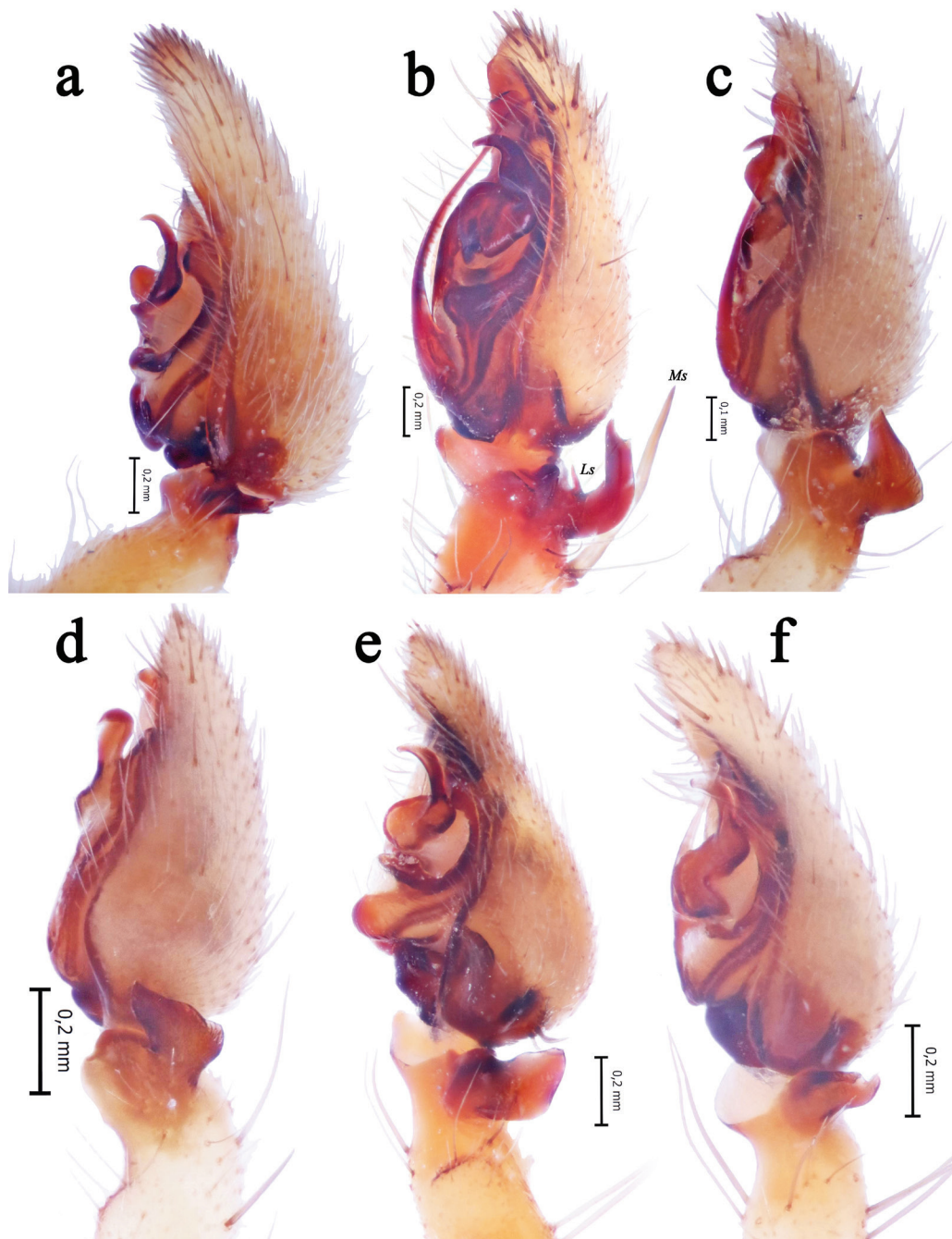


Figure 3. Retrolateral views of the male palps of *Pterotricha* spp.: **a)** *P. arabica* sp. n.; **b)** *P. esyunini* sp. n.; **c)** *P. nadolnyi* sp. n.; **d)** *P. stevensi* sp. n.; **e)** *P. dalmasi*; **f)** *P. kovblyuki*. Abbreviations: Ls: horizontal extension of the tibial apophysis; Ms: macroseta.

***Pterotricha esyunini* sp. n.**

<http://zoobank.org/85EB36B3-D065-48EF-9227-FFF3E2DE8DCA>
Figs 1c, 2b, 3b, 5b–c

Holotype. ♂ (AMNH_IZC 00326774), UAE: Baynunah, 27 Feb 1995.

Paratypes. 1♂ (AMNH_IZC 00326753), Madinat Zayed, 23°50'N, 54°6'E, 10 Feb 1994; 1♂ (AMNH_IZC 00326834), Madinat Zayed, 23°50'N, 54°6'E, 11 Apr 1994; 1♂ (AMNH_IZC 00326809), Public Hunting Triangle, 24°40'N, 55°3'E, 28 Jan 1994.

Etymology. This species is named after the Russian arachnologist Sergei L. Esyunin, in recognition of his contributions to the taxonomy of gnaphosid spiders.

Diagnosis. This species is easily diagnosed from other congeners by the presence of a dorsal horizontal extension at the base of the tibial apophysis (Fig. 3b).

Description. Male (holotype, AMNH_IZC 00326774). Total length 8.3. Carapace 3.9 long, 3.4 wide. Eyes sizes and interdistance: AME: 0.20, ALE: 0.22, PME: 0.22, PLE: 0.20, PME–PME: 0.12. Carapace, sternum, labium, chelicerae and maxillae light brown without any distinct

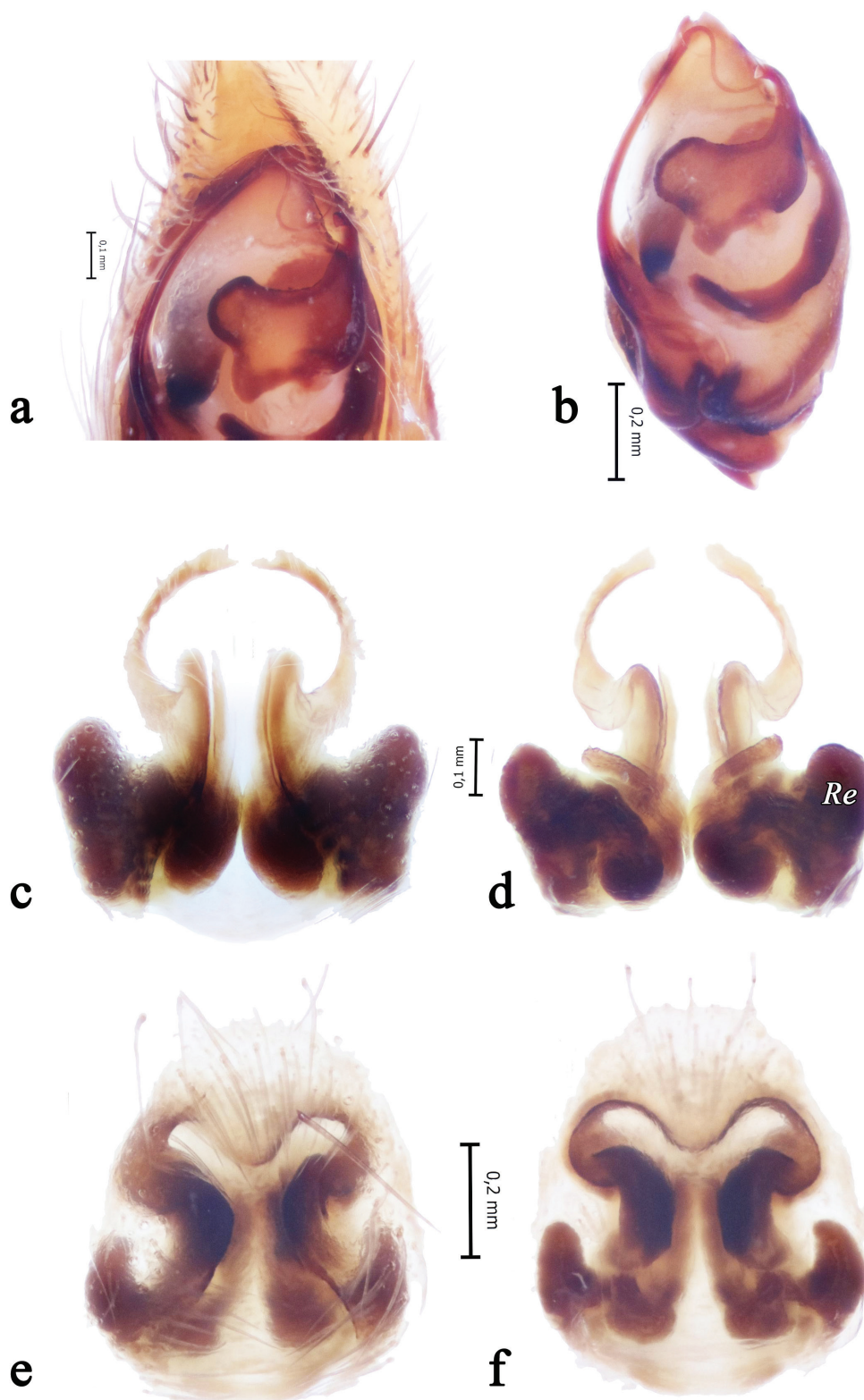


Figure 4. Copulatory organs of *Pterotricha* spp.: **a)** apical portion of the male palp of *P. arabica* sp. n.; **b)** dissected bulb of *P. arabica* sp. n.; **c, d)** epigyne of *P. arabica* sp. n., dorsal and ventral views; **e, f)** epigyne of *P. cf. dalmasi*, dorsal and ventral views. Abbreviation: *Re*: receptacle.

patterns, with darkening ocular area. Chelicerae with a triangular serrated keel retrolaterally (Fig. 5b), and a bifurcated serrated keel prolaterally (Fig. 5c). Abdomen cream-coloured with short scattered setae and with a scu-

tum anteriorly. Legs the same color as carapace and with spines. Tarsi of all legs with pseudosegmentations. Scopula on metatarsi and tarsi indistinct. Measurements of legs: I: 15.8 (4.45, 1.70, 3.35, 3.95, 2.35), II: 17.7 (4.45, 1.95, 3.3,

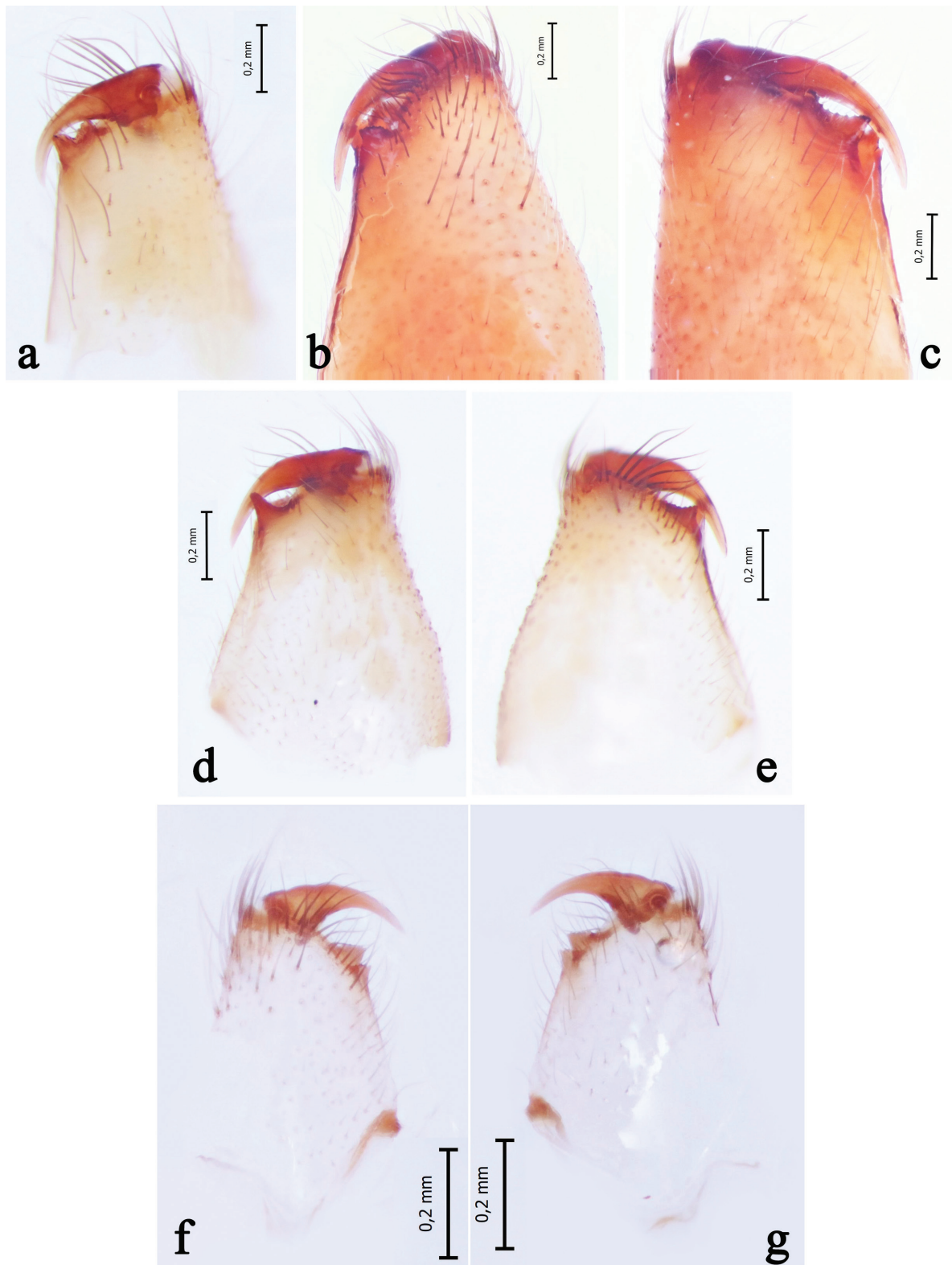


Figure 5. Chelicerae of *Pterotricha* spp.: **a**) male *P. arabica* sp. n., retrolateral view; **b, c**) *P. esyunini* sp. n., retro- and prolateral views; **d, e**) *P. nadolnyi* sp. n., retro- and prolateral views; **f, g**) *P. stevensi* sp. n., pro- and retrolateral views.

5.0, 3.0), III: 16.45 (4.25, 1.9, 3.30, 4.35, 2.65), IV: 20.15 (5.25, 1.95, 4.00, 5.95, 3.0). Anterior lateral spinnerets 1.5 long, 0.30 wide. Palp as in Figs 2b, 3b. Tibia with a long, strong macroseta (*Ms*) on the dorsal side; Tibial apophysis L-shaped with bifurcated tip, with a large dorsal horizontal

extension (*Ls*) at the base; median apophysis with large elliptic base and a curved apical hook; conductor large; embolus simple and without a stylus, tapering near the apex of conductor terminating in a whip-like manner.

Female. Unknown.



Figure 6. Live habitus of *Pterotricha arabica* sp. n., sub adult male, Dubai Desert Conservation Reserve, about 75 km SE of Dubai city. Photo by Priscilla Van Andel.

Distribution. Currently known only from the listed localities in the United Arab Emirates (Fig. 7).

***Pterotricha nadolnyi* sp. n.**

<http://zoobank.org/DE857123-49A8-4F39-B17D-F9726FA6F1DD>

Figs 1d, 2c, 3c, 5d–e

Holotype. ♂ (AMNH_IZC 00326742), UAE: Madinat Zayed, 23°50'N, 54°6'E, 11 Apr 1994.

Paratypes. 3♂ (AMNH_IZC 00326844), Khatam, 23°53'N, 55°25'E, 15 Apr 1994; 4♂ (AMNH_IZC 00326782), Baynunah, 24°0'N, 55°39'E, 9 May 1994; 4♂ (AMNH_IZC 00326809), Public Hunting Triangle, 24°40'N, 55°3'E, 28 Jan 1994; 2♂ (AMNH_IZC 00326798), Madinat Zayed, 23°51'N, 54°4'E, 11 Apr 1994; 4♂ (AMNH_IZC 00326781), Khatam, 23°52'N, 55°22'E, 15 Apr 1994; 2♂ (AMNH_IZC 00326824), Khatam, 23°53'N, 55°25'E, 15 Apr 1994; 3♂ (AMNH_IZC 00326764), Khatam, 23°52'N, 55°23'E, 15 Apr 1994; 1♂ (AMNH_IZC 00326753), Madinat Zayed, 23°50'N, 54°6'E, 11 Apr 1994; 4♂ (AMNH_IZC 00326819), Khatam, 23°53'N, 55°22'E, 15 Apr 1994; 3♂ (AMNH_IZC 00326743), Baynunah, 24°0'N, 55°39'E, 6 Aug 1994; 1♂ (AMNH_IZC 00326756), Umm Al Zumul, 22°52'N, 55°10'E, 2 Feb 1994, mobile sand.

Etymology. This species is named after my friend and colleague Anton A. Nadolny (Crimea, Ukraine).

Diagnosis. This species is similar to *Pterotricha chazaliae* (Simon, 1895) known from Morocco, Mauritania, Algeria and Israel, by similar shape of conductor, and the tapering terminal part of the embolus (cf. Fig. 2c

and fig. 103 in Levy 1995). The two species can be differentiated by the length of the terminal part of the embolus (longer and more tapering in *P. chazaliae*), different shape of the basal portion of the median apophysis (longer than wide in *P. nadolnyi* sp. n. vs. wider than long in *P. chazaliae*) and different shape of the tibial apophysis (horizontal in *P. chazaliae* (cf. figs 104, 105 in Levy 1995) vs. strong and triangular in the new species (cf. Fig. 3c)).

Description. Male (holotype, AMNH_IZC 00326742). Total length 7.9. Carapace 3.6 long, 3.0 wide. Eyes sizes and interdistance: AME: 0.20, ALE: 0.15, PME: 0.22, PLE: 0.15, PME–PME: 0.05. Carapace, sternum, labium, chelicerae and maxillae light brown without any distinct patterns, with darkening ocular area. Chelicerae with a long tooth-shaped keel retrolaterally (Fig. 5d), and serrated keel prolaterally (Fig. 5e). Abdomen cream with short transparent setae and with scutum anteriorly. Legs the same color as carapace and with spines. Scopula on metatarsi and tarsi indistinct. Measurements of legs: I: 16.5 (4.15, 1.75, 3.25, 4.75, 2.6), II: 16.55 (4.3, 1.75, 3.15, 4.8, 2.55), III: 22.1 (4.5, 1.8, 3.35, 5.95, 2.85), IV: 12.4 (3.35, 1.2, 2.45, 3.25, 2.15). Anterior lateral spinnerets 1.45 long, 0.40 wide. Palp as in Fig. 2c, 3c. Tibial apophysis strong and triangular, pointing anteriorly; median apophysis with longer than wide elliptic base and a long curved apical hook; conductor large; embolus filliform and without a stylus, originating near the 6 o'clock position, shortly tapering posteriorly near the apex of conductor.

Female. Unknown.

Distribution. Currently known only from the listed localities in the United Arab Emirates (Fig. 7).

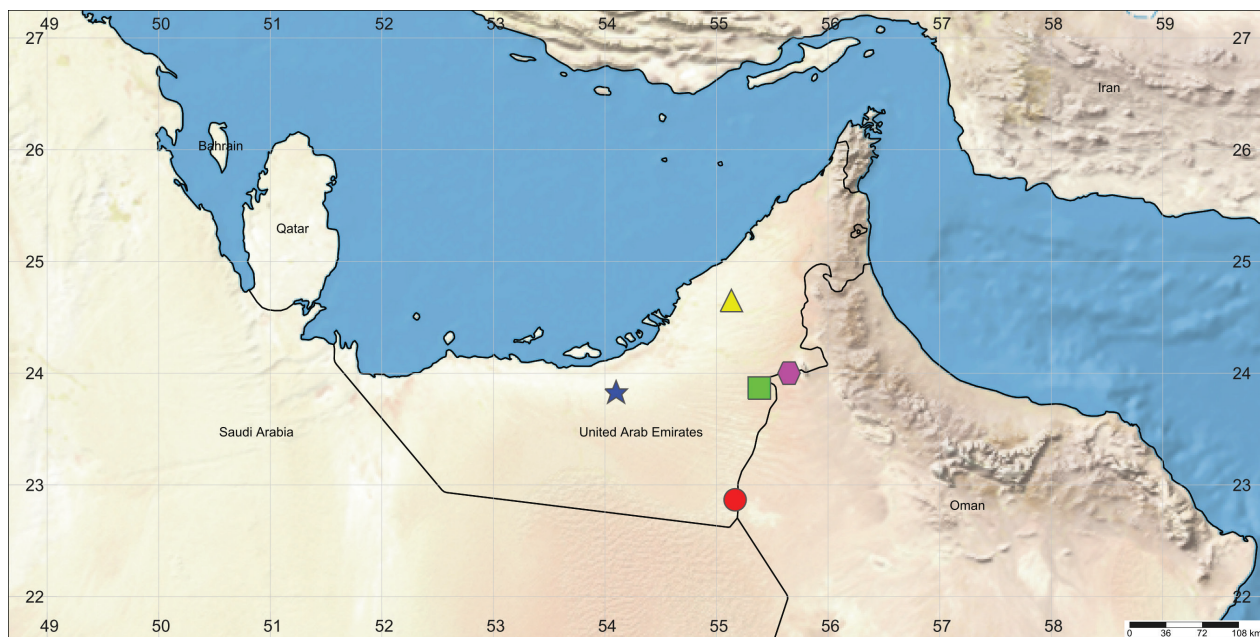


Figure 7. Map of collection localities of *Pterotricha* spp. in the United Arab Emirates. Circle: Umm al Zumul; Star: Madinat Zayed; Square: Khatam; Triangle: Public Hunting Triangle; Hexagon: Baynunah.

Pterotricha stevensi sp. n.

<http://zoobank.org/E59EBCDF-60F2-4EED-AD08-C3BD1C2F6450>
Figs 1e, 2d, 3d, 5f–g

Holotype. ♂ (AMNH_IZC 00326762), UAE: Khatam, 23°53'N, 55°22'E, mobile sand, 3 Feb 1995.

Etymology. This species is named after Austin Stevens, a South African-born Australian naturalist, herpetologist and wildlife photographer.

Diagnosis. This species is most closely similar to *P. nadolnyi* sp. n. but differs from it by smaller size (5.35 vs. 7.9, cf. Fig. 1d, e), lighter coloration and less spinose legs, the different shape of the retrolateral cheliceral keel (long tooth-shaped in *P. nadolnyi* sp. n. (cf. Fig. 5d), vs. serrated triangular-shaped in *P. stevensi* sp. n. (cf. Fig. 5f)), the shorter apical hook of the median apophysis (cf. Fig. 2c, d), and different shape of the tibial apophysis (triangular in both species, but pointing anteriorly in *P. nadolnyi* sp. n. vs. pointing ventrally in *P. stevensi* sp. n. (cf. Fig. 3c, d)).

Description. Male (holotype, AMNH_IZC 00326762). Total length 5.35. Carapace 2.1 long, 1.6 wide. Eyes sizes: AME: 0.11, ALE: 0.10, PME: 0.08, PLE: 0.10. Carapace, sternum, labium, chelicerae and maxillae light yellowish brown without any distinct patterns, with darkening ocular area. Chelicerae with one serrated keel on each side, the retrolateral one being larger (Fig. 5f, g). Abdomen cream with short transparent setae. Legs the same color as carapace and with few spines. Scopula on metatarsi and tarsi indistinct. Measurements of legs: I: 7.61 (2.2, 0.85, 1.47, 1.87, 1.22), II: 7.92 (2.22, 0.9, 1.5, 2.0, 1.3), III: 8.94 (2.37, 0.87, 1.55, 2.6, 1.55), IV: 10.09 (2.75, 1.05, 1.82, 2.95, 1.52). Anterior lateral spinnerets 0.77 long, 0.22 wide. Palp as in Figs 2d, 3d. Tibial apophysis strong and triangular, pointing ventrally, with slight-

ly curved edges; median apophysis with longer than wide semi elliptic base having a long curved apical hook; conductor large; embolus simple and without a stylus, shortly tapering posteriorly near the apex of conductor.

Female. Unknown.

Distribution. Currently known only from the type locality in Khatam, the United Arab Emirates (Fig. 7).

Newly recorded species

Pterotricha dalmasi Fage, 1929

Figs 1f–g, 2e, 3e, 4e–f

Pterotricha dalmasi: Levy 1995: 948, f. 71–76 (♂♀); El-Hennawy 2014: 26, f. 1–6 (♂♀); Siyamet al. 2017: 320, f. 7–9 (♂).

Pterotricha cf. *dalmasi*: Zamani et al. 2018: 19, f. 1a–f (♀).

Material examined. 1♀ (AMNH_IZC 00326740), Public Hunting Triangle, 24°40'N, 55°3'E, 28 Jan 1994; 1♂1♀ (AMNH_IZC 00326728), Madinat Zayed, Feb 1994; 1♂ (AMNH_IZC 00326760), Baynunah, 24°0'N, 52°37'E, 11 Jan 1994, mobile sand.

Distribution. This species has been previously recorded from Algeria, Egypt, Sudan, Israel, Jordan, Saudi Arabia and, provisionally, Iran. Thus, the current record from UAE is the easternmost in the whole known range of the species (Zamani et al. 2018).

Comments. The identification of the females are to be considered as provisional: their epigynes are similar to that of *Pterotricha* cf. *dalmasi* reported from southern Iran by Zamani et al. (2018) and that illustrated by Levy (1995: fig. 75) from Israel; it is possible that they belong to the currently undescribed female of

Pterotricha kovblyuki Zamani & Marusik, 2018, and the species could potentially have a larger range than what is currently known for it.

Pterotricha kovblyuki Zamani & Marusik, 2018

Figs 2f, 3f

Pterotricha kovblyuki Zamani & Marusik, in Zamani et al. 2018: 21, f. 2a–g (♂).

Material examined. 1♂ (AMNH_IZC 00326791), UAE: Baynunah, 23°56'N, 52°34'E, 12 Oct 1993; 3♂ (AMNH_IZC 00326737), Public Hunting Triangle, 24°39'N, 55°1'E, 8 Aug 1994; 1♂ (AMNH_IZC 00326845), Baynunah, 23°56'N, 52°33'E, 12 Oct 1993; 1♂ (AMNH_IZC 00326724), Public Hunting Triangle, 24°39'N, 55°9'E, 10 June 1994; 1♂ (AMNH_IZC 00326837), Baynunah, 23°56'N, 52°33'E, 10 Apr 1994; 1♂ (AMNH_IZC 00326795), Public Hunting Triangle, 24°43'N, 55°1'E, 6 Oct 1994; 1♂ 1 juv. (AMNH_IZC 00326797), Public Hunting Triangle, 24°38'N, 55°7'E, 11 Feb 1994.

Distribution. This species has been recently described on the basis of a single male specimen from western Iran, thus, this is the southernmost record of its occurrence in the whole known range (Zamani et al. 2018).

Discussions

In this study, six species of *Pterotricha* were found to occur in the UAE, four of which are new to science and currently known from this country only, and two are recorded for the fauna of the region for the first time. Considering the size of this country and the number of *Pterotricha* species known in other countries in the Middle East (Egypt: 6, Iran: 6, Iraq: 1, Syria: 2, Turkey: 3), this number represents a high diversity of this genus the UAE. Still, considering that in the much smaller Israel currently 12 species of *Pterotricha* have been recorded, it is probable that with further samplings in desertous and mountainous habitats of the UAE more new species and records of this genus will be discovered in the future. Also, it is worth mentioning that considering the rather small species composition of the genus, the sympatric distributions of these species in the collection sites are rather interesting: *P. nadolnyi* sp. n. seems to be the most widespread as it is present in all five localities, followed by *P. arabica* sp. n., which was collected in four localities; *P. esyunini* sp. n. and *P. dalmasi* are each known in three localities while *P. kovblyuki* and *P. stevensi* sp. n. were collected in two and one locations, respectively. Within the collection sites, Umm al Zumul is inhabited by two species (*P. arabica* sp. n. and *P. nadolnyi* sp. n.), Khatam by three species (*P. arabica* sp. n., *P. nadolnyi* sp. n. and *P. stevensi* sp. n.), Baynunah by four species (*P. esyunini* sp. n., *P. nadolnyi* sp. n., *P. dalmasi* and *P. kovblyuki*), Madinat Zayed by four species (*P. arabica* sp. n., *P.*

Table 1. Distribution of the treated species in the five collection localities. B: Baynunah, K: Khatam, MZ: Madinat Zayed, PHT: Public Hunting Triangle, UAZ: Umm al Zumul.

	B	K	MZ	PHT	UAZ
<i>P. arabica</i> sp. n.		+	+	+	+
<i>P. esyunini</i> sp. n.	+		+	+	
<i>P. nadolnyi</i> sp. n.	+	+	+	+	+
<i>P. stevensi</i> sp. n.		+			
<i>P. dalmasi</i> Fage, 1929	+		+	+	
<i>P. kovblyuki</i> Zamani & Marusik, 2018	+			+	

esyunini sp. n., *P. nadolnyi* sp. n. and *P. dalmasi*) and the Public Hunting Triangle is inhabited by all species except for *P. stevensi* sp. n. (Table 1). The potential ecological adaptations leading to a reduced interspecific competition between these species warrant further studies.

The taxonomic status of the female specimens treated in this paper as *Pterotricha dalmasi* is puzzling. Levy (1995) was the first to describe the females of this species, but as two very different forms which he considered as variations. A female specimen from Saudi Arabia illustrated by El-Hennawy (2014) is identical to the “common form” sensu Levy (1995: fig. 74), but it remains unclear whether this was the only variation present at the location and whether males and females were collected in exactly the same location. Another specimen from southern Iran illustrated by Zamani et al. (2018) is similar to the “variation form” sensu Levy (1995: fig. 75). As mentioned earlier, there is a possibility that the “variation form” could actually belong to the currently undescribed female of *P. kovblyuki*. Because the two species are currently known to occur sympatrically (at least in the UAE as it is evident by their easily diagnosable males), it is not possible to assign any of these forms to any of the two species, unless an in situ investigation is completed.

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