

<https://zoobank.org/urn:lsid:zoobank.org:pub:C9473F13-9463-4D2F-83BA-DB67DFFD95F2>

Water mites from Fuerteventura, Canary Islands, Spain (Acari: Hydrachnidia)

HARRY SMIT

Naturalis Biodiversity Center, P.O. Box 9517, 2300 RA Leiden, the Netherlands. E-mail: harry.smit@naturalis.nl

Received: 2 June 2017 | Accepted by V. Pešić: 24 June 2017 | Published online: 27 June 2017.

Abstract

The first records are presented of water mites from Fuerteventura, Canary Islands. Five species were found, three of which are widespread in the (SW) Palaearctis. One species new to science is described, *Neumania fortiventa* while *Arrenurus pervius* Walter is synonymized with *A. caesaraugustanus* Viets, a rare species only known from temporary and/or saline ponds in semiarid climate.

Key words: Systematics, new species, Fuerteventura.

Introduction

Several publications are known of the water mites of the Canary Islands. Lundblad (1962) reported water mites from La Gomera, Gran Canaria, La Palma and Tenerife. Later on, Lundblad (1972) published more records of Gomera. K.O. Viets (1968) published new records of water mites from La Gomera and La Palma, Gerecke (1999) published one species new to science from La Gomera and Valdecasas (2002) added more records from La Palma. Finally, Zawal & Pešić (2015) published the first record of the marine water mite *Litarachna duboscqi* Walter, 1925 from Tenerife.

In this paper data are presented from Fuerteventura. This island has a desert-like climate, with a mean rainfall of only some 100 mm/year, while the temperature ranges from 20 ° - 27 ° C. Most rain falls in the winter months, especially in December. Surface water is very scarce, and occurs as temporary pools, man-made reservoirs, springs and a few temporary streams.

Material and Methods

All localities were found with the help of a map (scale 1: 50.000; Kompass, Innsbruck). Except for the springs called Fuente Blanca S of Puertito de los Molinos and Fuente del Chupadero (NW of La Mantilla), all springs mentioned on this map were visited, but the following sites could not be found: Fuente de las Tenerías and Fuente del Chupadera (both SW of Tindaya), Fuente del Viso (E of La Asomada), Fuente de Majada Larga and Fuente de la Breña (N of Casillas del Angel). The following springs were without water mites: Fuente Cochina de Tao and Fuente de Tabalba. Three streams were visited, all without water mites:

Rio Cabras, Rio Palmas and a small stream N of Pájara crossing road PV-30. Two reservoirs were without water mites: Embalse de los Molinos and Presa de las Peñitas. Abbreviations used: Asl = above sea level; P1-5 = palp segments 1-5; I-leg-4-6: segments 4-6 of first leg. Measurements are given in μm .

Systematics

Family Limnesiidae Thor, 1900

Limnesia (Limnesia) arevaloi arevaloi Viets, 1918

Material examined. 6/7/1, Fuente El Risco o El Pozo (name on map: Fuente del Valle de Valhondo), N of La Mantilla, 28° 34.168 N 13° 57.784 W, alt. 108 m asl, 3-iii-2017; 1/0/0, Fuente de Martinez, N of Tefía, 28° 32.350 N 13° 58.894 W, alt. 202 m asl, 7-iii-2017.

Remarks. Previously known from Tenerife and La Palma (as *L. martianezii* Lundblad). Widespread in the western Mediterranean region and North Africa (Gerecke et al. 2016).

Family Unionicolidae Oudemans, 1909

Neumania (Neumania) fortiventa n. sp. (Figs. 1A-E)

Material examined. Male, Fuente El Risco o El Pozo (name on map: Fuente del Valle de Valhondo), N of La Mantilla, 28° 34.168 N 13° 57.784 W, alt. 108 m asl, 3-iii-2017.

Diagnosis. Integument with very small spines, genital field rounded, gonopore narrowed anteriorly.

Description. Male: Idiosoma 810 long and 680 wide. Integument with very small spines, hardly visible. Apodemes of anterior coxae reaching to third coxae. Third and fourth coxae with narrow borders of secondary sclerotization, posterior margin of fourth with short apodemes. Genital field rounded, 186 long and 259 wide, with 16-17 pairs of acetabula. Near anterior margin of genital field 9-10 small setae, of which 4-5 in a row near posterior margin a row of 6 setae. Gonopore 154 long, anteriorly narrowed. Excretory pore with a sclerotized ring. Length/height of P1-5: 28/44, 100/54, 62/44, 106/32, 36/22. P3 dorsally with a long seta, P4 anteroventrally with a short setal tubercle and two small seta (one seta on other margin, not illustrated). Length of I-leg-4-6: 192, 214, 198. Length of IV-leg-4-6: 208, 236, 235. Swimming setae: III-leg-3 one, III-leg-4 four, III-leg-5 two, IV-leg-3 one, IV-leg-4 three, IV-leg-5 two. Female: Unknown.

Etymology. The name is derived from Fuerteventura, which means strong winds.

Remarks. The new species differs from *Neumania uncinata* Walter, 1927 (syn.: *Neumania atlantida* Lundblad, 1941, Pešić et al. 2007) thus far the only known *Neumania* species from the Canary Islands, in the shape of the male genital field. The latter species has a genital field with somewhat angular lateral corners, and the narrowing of the gonopore is lacking. Moreover, P4 of the new species is more stocky, and the new species is much larger than *N. atlantida*, which measures 550 in idiosoma length. None of the European species with an integument with spines has a similar shape of the gonopore and genital field. *Neumania seurati* Walter, 1931 from southern Algeria has a similarly shaped genital field, but lacks the narrowing of the gonopore. Moreover, the palp is more slender compared with the new species.

Family Arrenuridae Thor, 1900

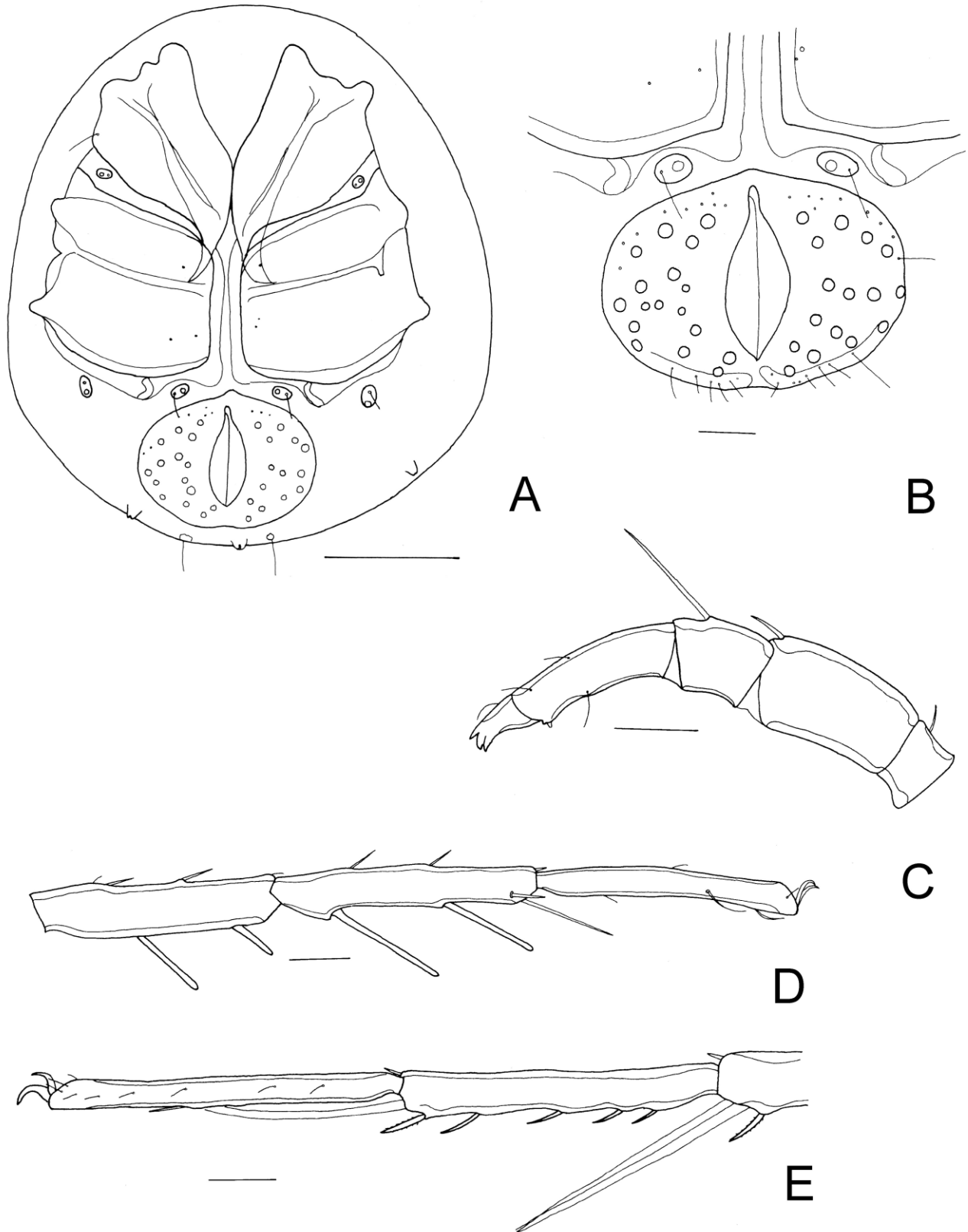


Figure 1. *Neumania fortiventa* n. sp., A-E = holotype male. A = venter; B = Genital field; C = palp; D = I-leg-4-6; E = IV-leg-5-6. Scale bars: A = 200 μ m, B-E = 50 μ m.

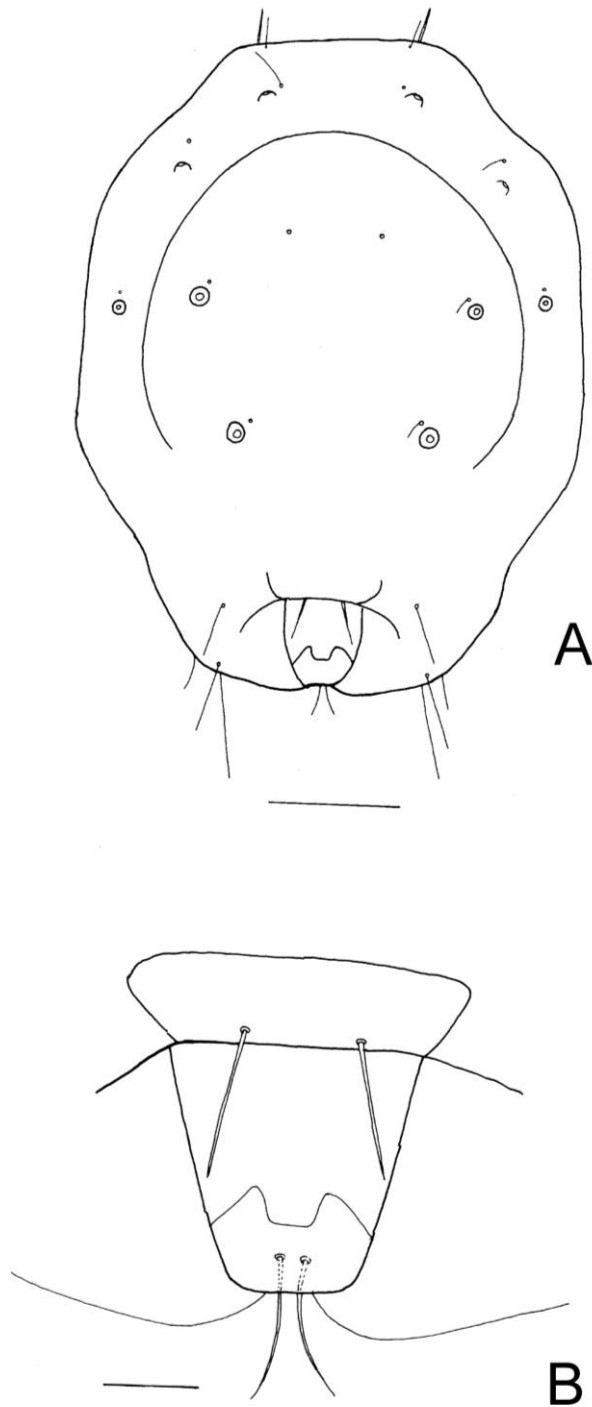


Figure 2. *Arrenurus caesaraugustanus* Viets, male, A-B. A = Male with incomplete dorsal shield, dorsal view; B = detail of petiole. Scale bars: A = 200 μ m, B = 50 μ m.

***Arrenurus (Arrenurus) cuspidifer* Piersig, 1894**

Material examined. 2/10/0, Temporary pool, Barranco de la Muley, 28° 25.161 N 13° 53.214 W, alt. 45 m asl, 2-iii-2017; 5/28/0, Fuente de la Culata, S of Las Parcelas, 28° 31.396 N 14° 02.623 E, alt. 108 m asl, 8-iii-2017.

Remarks. A widespread species in the Palearctis, including North Africa.

***Arrenurus (Arrenurus) radiatus* Piersig, 1894**

Material examined. 1/4/0, Fuente de la Culata, S of Las Parcelas, 28° 31.396 N 14° 02.623 E, alt. 108 m asl, 8-iii-2017.

Remarks. The colour of the idiosoma in Western Europa is reddish-brown, but the specimens from Fuerteventura are yellowish. *Arrenurus radiatus* is widespread in the Palaearctis.

***Arrenurus (Micruracarus) caesaraugustanus* Viets, 1930**

Arrenurus pervius Walter, 1940 – New syn.
(Fig. 2A-B)

Material examined. 4/21/0, Temporary pool, Barranco de la Muley, 28° 25.161 N 13° 53.214 W, alt. 45 m asl, 2-iii-2017.

Description. Male: Idiosoma 894-965 long and 664-737 wide. Dorsal shield somewhat elongated, dorsal furrow in two males complete, in two other males (both fully sclerotized) incomplete (fig. 2A). Petiole hyaline, tube-like, dorsal margin with a broad tooth (fig. 2B). Female: The female matches the description given by Viets (1930), but there is a remarkable range in size: length 794-1166, width 648-925.

Remarks. Walter (1940) described *A. pervius* from Algeria, but his description matches the description of *A. caesaraugustanus* from Zaragoza Province, northern Spain given by Viets (1930) and he does not discuss diagnostic differences between the two species. The figure of the male posterior idiosoma of Walter is very sketchy, but in the description he mentioned the hyaline tube-like petiole with a small tooth in the middle of the dorsal margin (as given in Fig. 2B). Moreover, the size of *A. pervius* is in agreement with *A. caesaraugustanus*: Male L 900, W 750, female L 1140, W 945. Palp measurements of Viets (1930) of *A. caesaraugustanus* must be erroneous, as they are two times as large as the specimens from Fuerteventura. When we take this into consideration, palp measurements of the two species are similar. The only difference is the number of setae on the medial margin of P2, seven in *A. caesaraugustanus* and four in *A. pervius*. However, the female of *A. caesaraugustanus* has P2 with four setae only. Therefore I propose to synonymize *A. pervius* with *A. caesaraugustanus*. The species is known only from Spain, Algeria and Fuerteventura. All localities where the species has been found are either temporary or somewhat saline.

Acknowledgement

I am indebted to Truus van der Pal (Alkmaar) for her assistance with the field work.

References

- Gerecke, R. (1999) Further studies on hydrophantoid water mites in the W Palaearctic region (Acari, Actinedida). *Archiv für Hydrobiologie, Supplement*, 121, 119–158.
- Gerecke, R., Gledhill T., Pesic V. & Smit H. (2016) Chelicerata: Acari III. *Süßwasserfauna von Mitteleuropa*, 7/2-3. Springer Spektrum.
- Lundblad, O. (1962) Wassermilben von den Kanarischen Inseln. *Arkiv för Zoologi, Serie 2*, 15, 285–300.
- Lundblad, O. (1972) Einige Wassermilben aus Mallorca, Gomera und Kamerun. *Entomologisk Tidskrift*, 93, 113–122.
- Pešić, V., Gerecke R. & Cîmpean M. (2007) Water mites of the genus *Neumania* Lebert (Acari, Hydrachnidia: Unionicolidae: Pionatacinae) in the Mediterranean area. *Annales de Limnologie – International Journal of Limnology*, 43, 187–198.
- Valdecasas, A.G. (2002) Some water mites (Acari, Hydrachnellae) from Caldera de Taburiente National Park (La Palma, Canary Islands). *Graellsia*, 58, 69–74.
- Viets, K. (1930) Zur Kenntnis der Hydracarina-Fauna von Spanien. *Archiv für Hydrobiologie*, 21, 175–240, 359–446.

- Viets, K.O. (1968) Über einige Wassermilben (Hydrachnellae, Acari) von den Kanarischen Inseln. *Gewässer und Abwässer*, 47, 74–78.
- Walter, C. (1940) On Hydracarina of Algeria. *Annals and Magazine of natural History*, London (s. 11), 5, 513–518.
- Zawal, A. & Pešić V. (2015) The first record of *Litarachna duboscqi* Walter, 1925 (Acari, Pontarachnidae) outside the Mediterranean Sea. *Oceanological and Hydrobiological Studies*, 44, 426–429.