

Orijinal araştırma (Original article)

***Lebertia insignis* Neuman, 1880 (Acari, Hydrachnidia, Lebertiidae), a new record for the Turkish fauna¹**

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Summary

Lebertia insignis Neuman, 1880 (Acari, Hydrachnidia, Lebertiidae) was collected from Tifi stream with rich aquatic plants in Tokat, Turkey between 2000 and 2005. The structural properties, zoogeographical distribution and original drawings of male *L. insignis*, which is a new record for the Turkish fauna, are given. Furthermore, identification key of subgenera of *Lebertia* Neuman, 1880 are provided.

Key words: *Lebertia insignis*, Acari, Hydrachnidia, Lebertiidae, Turkey

Anahtarsözcükler: *Lebertia insignis* Neuman, 1880, Hydrachnidia, Lebertiidae, Türkiye.

Introduction

A total of 56 species and 9 subspecies of subgenus *Lebertia* (*Pilolebertia*) Neuman, 1880 have been known on worldwide fauna of water mites (Viets, 1956; Lundblad, 1956; Bader, 1975; Viets, 1978, 1987). Distribution of species and subspecies of *Lebertia* (*Pilolebertia*) are listed in Europe (33 species, 6 subspecies), in the North and Middle Asia (13 species, 3 subspecies), in the North America (7 species), in the North Africa (2 species), and in Capensis realm of South Africa (1 species). *Lebertia* (*Pilolebertia*) *insignis* Neuman, 1880 is widespread in Europe (Viets, 1956; Disabotino et al., 2003; Pesic, 2003).

Turkish fauna of water mites represented to 236 species in 52 genera and 23 families. Only 37 of these species (15.7%) are indicated as being endemic (Erman et al., 2010). In addition, *Lebertia* species recorded from Turkish fauna of water mites and their distributions are here; *Lebertia* (*Lebertia*) *castalia* K. Viets, 1925 Erzurum, Muş. Habitat; Crenobiont. Distribution; Central, eastern and northern Europe, Asia Minor, scattered records. *Lebertia* (*Lebertia*) *glabra* Thor, 1897. Turkey, Niğde. Habitat; Crenobiont, lowland springs, at higher elevations found both in low and middle order streams. Distribution; Western Palearctic. *Lebertia* (*Lebertia*) *maculosa* Koenike, 1902. Turkey, Rize. Habitat; Rhithrobiont, crenophilous. Distribution; Central, western and south-eastern Europe. *Lebertia* (*Lebertia*) *schechteli* Thor, 1913. Turkey, Elazığ, Erzurum, Kayseri and Van. Habitat; Crenobiont or at least crenophilous. Distribution: Western, central and south-eastern Europe, restricted to higher mountain ranges. *Lebertia*

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(*Pilolebertia*) *porosa* Thor, 1900. Turkey, Afyon, Elazığ, Erzurum, Konya and Rize. Habitat: Instanding waters and pools of streams. Distribution: Holarctic. *Lebertia* (*Mixolebertia*) *turcica* Bursali&Özkan, 2004. Turkey, Tokat. Habitat; Rhithrobiont. Distribution: Turkey (Erman et al., 2007; 2010)

To date, there was no record for *L.insignis* in Turkey. In the present study, *L.insignis*, which is a new record for the Turkish fauna, was found in Tokat, Turkey and its description, drawings of some body parts and zoogeographical distribution were given. Furthermore, a key for subgenera of genus *Lebertia* Neuman, 1880 were provided. In addition, some systematic problems of the genus *Lebertia* were discussed.

Materials and Methods

Water mite specimens were collected from water lands of Tokat, Turkey and preserved as described earlier by Cook (1974) and Özkan (1981). Figures were drawn with a compound microscope (Olympus CX41, Japan with drawing attachment) and dimensions measured in micrometers (μm).

Results

Lebertiidae Thor, 1900

Lebertia insignis Neuman, 1880

Male: Body relatively elongated and 1086 (1066-1106) /880 (826-933 μm) in size. Skin thin, smooth and slightly punctuated (Figure 1A). A long seta on the dorso anterior edge of P-II siffts slightly to backward and edge of the ventral side of the part is concave slimly. P-III is prominently expanded to apical side. Medial surface of the P-III with five long seta. Median long seta on the medial surface of this part is closer notably the bottom one settled terminally. A pair of fosses with very weak seta on the ventral side of P-IV is far off each other (Figure 1C). Dorsal length of palp segments, respectively; 28(26-30)-113(106-120)-100(97-103)-145(140-150)-35(30-40)= 421(399-443), ventral length; 23(20-26)-83(80-85)-57(53-60)-125(120-130)-30(25-35)= 318(298-336), heights; 53(50-55)-68(66-70)-61(58-64)-16(14-18).

The length of coxal region 716/764 and extending to middle of the ventral side of the body. Furthermore, genital plate not surrounded by epimeral region. Capitular buy is not deep. The length of bottom edge side of " Y " shaped suture line is the same as length from the middle side of " Y " shaped suture line to capitular buy. The length of the edge, which is middle bottom side of the epimeral region, is smaller than those of the genital flap (Figure 1B).

The length of the leg parts; LegI: 72(65-80)-92(90-94)-121(117-124)-172(170-174)-179(173-186)-169(165-173)=805(780-831), LegII: 81(70-93)-106(106-106)-137(133-140)-212(210-214)-228(226-230)-217(213-21)= 981(958-1004), LegIII:84(75-93)-118(116-120)-165(160-170)-246(240-253)-267(266-268)-247(240-253)=1127 (1097-1157), LegIV: 162(150-173)-139(133-140)-205(200-210)-281(270-293)-291(290-293)-275(270-280)=1353 (1313-1389). Legs with swimming hairs but Leg-I. The length of the genital field 172/160; punctuated genital flap with a rank of seta on each side (Figure 1B).

Materials examined: Stream with in rich aquatic plants; Tokat; Niksar, Tifi stream (Kelkit River Basin), 1050 m, 10.IX.2000, 15♂♂; 15.IIIV.2005, 3♂♂. Distribution: Austria, England, Finland, France, Germany, Holland, Hungary, Ireland, Italy, Latvia, Romania, Russia, Swiss, Switzerland, (Viets, 1936; 1956, Pesic, 2003; Di Sabatino et al., 2003).

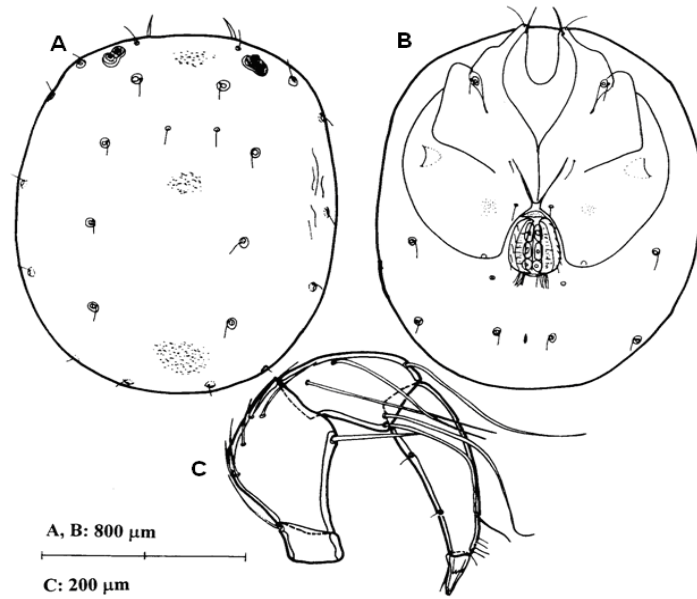


Figure 1. *Lebertia insignis* Neuman, 1880 (Acari, Hydrachnidia, Lebertiade) Male, A) dorsumofidiosoma, B) venterofidiosoma C) palp; lateral view (Original).

Key to the subgenera of genus *Lebertia* Neuman, 1880

(Derivated from Cook, 1974)

- 1. Medial surface of P-III with 5 long hairs 2
 - Medial surface of P-III with more than 5 long hairs 4
- 2. Integument smooth 3
 - Integument lined or papillae..... *Pseudolebertia* Thori, 1897
- 3. Leg-III and IV many with swimming hairs; P-III short and thick; P-IV elbow -shaped and with 7 thin setae on dorsum.....*Pilolebertia*Thori, 1900
 - Leg-II without swimming hairs; leg-III and IV with a few swimming hairs; P-III delicate and not cap shaped; P-IV long and smooth edged, and with a few short thin setae on dorsum*Lebertia*(s.str) Neuman, 1880
- 4. Medial surface of P-III with 6 long setae5
 - Medial surface of P-III with 7 long setae*Septlebertia* Imamura, 1954
- 5. Integument papillae coarsely or lined; reduced swimming hairs present or not
 - *Hexalebertia*Thori, 1907
 - Integument surface with finely papillae, wrinkled, granulated or occasionally smooth; swimming hairs frequently present*Mixolebertia*Thori, 1906

Discussion

Lebertia (Pilolebertia) insignis Neuman,1880 being euryterm and cosmopolite, type species of subgenus *Pilolebertia*Neuman, 1880 (Lundblad1956).

This species differs from other *Lebertia* species by punctuated epimer without any chitin structure

on; two long seta settled terminally on the medial surface of P-III very close each other (Viets, 1936; 1956). Apart from all these specific characters of *L. (Pilolebertia) insignis*, it is known that some structural properties of its palps are extremely amazing. Some of them are here; shape of P-IV; a pair of fosses with very weak seta on venter of P-IV may close each other or not; the structure of heavy seta distoventral side of P-II, even present or not; setaenumber of P-II can be different on each one palp (Lundblad, 1956). Our samples, which were captured only male specimens, resemble to the North European species apart from West Mediterranean samples extremely with variation.

Unfortunately, because of neglecting aforementioned things above while the species were described, whishing situation in diagnosing of the species of genus *Lebertia* has not still been cached up.

Özet

Türkiye faunası için yeni bir kayıt *Lebertia insignis* Neuman, 1880 (Acari; Hydrachnidia, Lebertiidae)

Bu çalışmada; Tokat ili Tifi deresinin su bitkilerinin zengin olduğu bölgesinden 2000 ile 2005 yılları arasında yakalanan *Lebertia insignis* Neuman, 1880 (Acari, Hydrachnidia, Lebertiidae)'in yapısal özellikleri, özgün şekillerinin çizimleri ve dünyadaki yayılış alanları verilmiştir. Ayrıca, *Lebertia* Neuman,1880 cinsinin alt cinsleri için bir teşhis anahtarı sunulmuştur.

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