



RESEARCH ARTICLE

**Two new species of *Otiorhynchus* Germar, 1822 (Coleoptera: Curculionidae: Entiminae) from eastern Turkey with new taxonomical contributions to the subgenus *Choilisanus* Reitter, 1912**

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**Abstract:** Two new species *Otiorhynchus karadeniz* Davidian & Gültekin **sp. nov.** and *Otiorhynchus aziziyensis* Davidian & Gültekin **sp. nov.** are described from eastern Turkey. *Otiorhynchus karadeniz* Davidian & Gültekin **sp. nov.** closely related to *Otiorhynchus (Choilisanus) megareoides* Smreczyński, 1977. *Otiorhynchus aziziyensis* Davidian & Gültekin **sp. nov.** is tentatively included in the subgenus *Choilisanus* Reitter, 1912. *Stierlinellus* Reitter, 1913 is resurrected from synonym of *Choilisanus* Reitter, 1912. *Otiorhynchus megareus* Reitter, 1913 and *Otiorhynchus rotundicollis* Stierlin, 1876 are redescribed. Colour illustrations of habitus and important morphological characters are presented.

**Key words:** *Otiorhynchus*, *Choilisanus*, new species, taxonomy, synonym, Turkey.

## Introduction

This paper is a continuation of our publications devoted to studies on the subgenus *Choilisanus* Reitter, 1912 in Turkey (Davidian & Keskin 1910; Davidian & Gültekin 2015).

In this paper, two new species of *Otiorhynchus* Germar, 1822 are described and assigned in *Choilisanus*. One of them closely related to *O. megareoides* Smreczyński, 1977. Taxonomical position of another one is not so clear, it is most similar to *O. terrifer* Stierlin,

1884. Two known species are redescribed. *Stierlinellus* Reitter, 1913 is resurrected from synonym of *Choilisanus* Reitter, 1912.

## Material and methods

The material for this work have been studied in collection of Zoological Institute (ZIN RAS, St. Petersburg, Russia) and Entomology Museum of Ataturk University (AUEM) [Atatürk University, Faculty of Agriculture, Plant Protection Department, Erzurum, Turkey]. Type specimens from E. Reitter's collection from Hungarian Natural History Museum in Budapest (HNHM) and from G. Stierlin's collection from the Senckenberg Deutsches Entomologisches Institute in Müncheberg (DEI) were studied. The holotype of *Otiorhynchus karadeniz* Davidian & Gültekin **sp. nov.** is deposited in the collection of ZIN RAS. The holotype and two of the paratypes of the *Otiorhynchus aziziyensis* Davidian & Gültekin **sp. nov.** are deposited in the collection of AUEM, three of the paratypes in the collection of ZIN RAS, two paratypes are deposited in the collections of Faculty of Science, Department of Biology, Zoology Section, Ege University (Bornova-İzmir, Turkey) and V. Yu. Savitsky (Moscow State University, Biology Faculty, Department of Entomology, Moscow), respectively.

The term vagina treats herein in accordance with A.T. Howden (1995): vagina it is the area of reproductive tract between the common oviduct and the vulva.

Photographs of details of genitalia and terminalia were prepared with the microscope Axio Imager M-1 by Carl Zeiss in the Biological Control Laboratory, All-Russian Institute of Plant Protection (St. Petersburg). The photographs of the habitus were made with the digital camera Cannon 60D.

## Results

### Subgenus *Stierlinellus* Reitter, 1913, stat. resurrect.

Reitter 1913: 78; Magnano 1998: 55 (*Choilisanus* Reitter, 1912); Davidian & Keskin 2010: 61 (*Choilisanus* Reitter, 1912); Magnano & Alonso-Zarazaga 2013: 309 (*Choilisanus* Reitter, 1912).

*Otiorhynchus rotundicollis* Stierlin, 1876 – type species by original designation.

It is a monotypical subgenus. Synonymy of *Stierlinellus* Reitter, 1913 was established by Magnano (1998) without necessary justification. The differences between subgenera *Stierlinellus* and *Choilisanus* are given herein in a key. One of the main internal characters of *Choilisanus* is the structure of spermatheca. Unfortunately, spermatheca of the type of *O. rotundicollis* was missing, so we could not give its features in a key.

### Comparative diagnostic key to subgenera *Choilisanus* Reitter and *Stierlinellus* Reitter

1(2). Head dorsally and laterally covered with distinct coarse longitudinal grooves. Pronotum very small relative to elytra. Elytra broadly oval, equally rounded basally and apically, approximately 2 times as wide as pronotum. Dorsal surface of pronotum and elytra quite markedly raised above of the mesonotum. Ovipositor narrow, markedly elongated. Vagina outside of coxites without distinct armament.....*Stierlinellus* Reitter, 1913

2(1). Head dorsally and laterally without coarse longitudinal grooves, or covered with thin and shallowly grooves laterally. Elytra usually obovate, clearly narrowed apically. Elytra

noticeably narrower, about 1.4–1.65 times as wide as pronotum. Dorsal surface of pronotum and elytra slightly raised above of mesonotum in lateral view. Ovipositor generally subconical. Vagina outside of coxites generally with distinct armament in form of longitudinal plate.....*Choilisanus* Reitter, 1912

***Otiorhynchus rotundicollis* Stierlin, 1876** (Figs. 1–5).

Stierlin 1876: 513–514; Reitter 1913: 78 (in the “artengruppe” (=subgenus) *Stierlinellus*); Avgin & Colonnelli 2011: 13575 (in the subgenus *Choilisanus*); Magnano & Alonso-Zarazaga 2013: 310 (in the subgenus *Choilisanus*).

**Type data:** The type was examined; it is deposited in the DEI collection. This is a female specimen, provided with the following labels: 1) “Antiochia” – hand-written; 2) small rectangular label with unclear hand-written “13”; 3) “Syntypus” – printed on the red label; 4) “*O. rotundicollis* Stl.” – handwriting of G. Stierlin; 5) “coll. Stierlin” – printed; 6) “DEI Müncheberg Col – 04238” – printed; 7) “*Otiorhynchus rotundicollis* Strl. Lectotype des. P. Bialooki, 2008” – printed.

The type corresponds completely with the original description of the species. The left antenna and spermatheca are missing. Right side of elytral disc with pin-made hole. The specimen was remounted prior to us. We remounted it again in a search for spermatheca. It is remounted on a rectangular card, 3–5 ventrites placed in the right posterior corner behind of the beetle; the genitalia placed in a drop of water-soluble fixing agent in the left posterior corner.

Body length of the type 5.4 mm, width 3.0 mm.

Body black, mainly with matte integument, antennae and legs barely reddish. Antennal scrobe wide with broadly rounded pterygia. Head with eyes combined nearly as wide as rostrum. Head dorsally and laterally covered with distinct coarse longitudinal grooves. Epistome triangular, symmetrically marginated with carina. Frons with transverse impression and narrow elongated pit at middle. Eye small, dorso-lateral, convex, not projecting beyond of head outline, its longitudinal diameter lesser than distance between of the eye and pterygia. Rostral dorsum with distinct median carina, forked distad to base of pterygia and then interrupted. Rostrum dorso-apically, posteriad to epistome, impressed, with short and thin median carina. Lateral margins of rostral dorsum in basal half slightly convex. Ventral side of rostrum at base of pterygia with transverse sulcus, clearly visible in lateral view. Scape slightly curved, clavate, gradually thickened apically. First two funicular segments nearly subequal, 2.11 as long as wide, 3<sup>rd</sup> slightly elongated, 4–7<sup>th</sup> moniliform, 5<sup>th</sup> barely smaller than both of adjacent funicular segments. Club broadly fusiform, widest at middle, longer than 5–7<sup>th</sup> funicular segments combined. 1<sup>st</sup> segment of club nearly half length of entire club, markedly constricted from lateral sides.

Pronotum small relative to elytra, subglobular and slightly transverse, 1.25 times as wide as long, widest slightly basad to middle, apical and basal pronotal margins straight. Pronotal disc distinctly convex, with large roundish markedly convex granules with setiferous pores in center. Disc of pronotum slightly after middle with a small flattened portion subequal to granule. Interspaces between granules markedly narrower than granule.

Elytra broadly oval, basal and apical margins equally and widely rounded, apical slope markedly bent downward. Elytra 3.17 times as long and nearly 2 times as wide as pronotum. Elytral disc flattened and markedly raised above pronotal disc. Elytral interstriae slightly convex, delicately sculptured, 2 times as wide as striae.



**Figures 1–5.** *Otiorrhynchus rotundicollis* Stierlin, type. **1**, habitus; **2**, right fore leg; **3**, head and pronotum, dorso-lateral view; **4**, ovipositor; **5**, spiculum ventrale.

Legs rather slender, similarly thickened. Femora with small acute denticle, fore femora additionally with tiny granule. Fore tibiae slightly curved inward, outer apical angle obliquely truncated without dilation, inner margin with row of denticles, ill-visible between suberected setae. Tibiae mucronate, only right hind tibia with spur near mucro. Tarsi small and short, 2<sup>nd</sup> segment of fore tarsus slightly transverse, 3<sup>rd</sup> – 1.55 times as wide as 2<sup>nd</sup>. Claw segment slightly longer than 2<sup>nd</sup> and 3<sup>rd</sup> combined.

Seventh tergite with straight apical margin, 3–5<sup>th</sup> ventrites rather deeply punctated except narrow portion along the basal margin.

Vestiture sparse, consists of similar curved suberect spatulate light-brown scales, composed 2–3 irregular rows on interstriae. Striae without setae. Antennal scape and legs in similar pubescens, setae on scape nearly twice wider than on funicle.

Ovipositor narrow markedly elongated. Coxites with small subapical styli. Vagina outside of coxites without distinct armament. Spiculum ventrale 5 times as long as its lamella. Lamella of spiculum ventrale subrectangular, 1.36 as wide as long, smoothly emarginated in medio-apical part. Manubrium of spiculum ventrale gradually curved.

**Distribution:** This species is known only in the type specimen from Antiochia. It is historical name of the Antakya in Hatay Province (Southern Turkey).

### Subgenus *Choilisanus* Reitter, 1912

= *Asphaerorhynchus* Reitter, 1912: 50; Magnano 1998: 51.

= *Lacocnesus* Reitter, 1912: 64; Magnano 1998: 66; Davidian & Keskin 2010: 61–62 (*Choilisanus* Reitter, 1912).

Type species *Otiorrhynchus balcanicus* Stierlin, 1861, by original designation.

**Taxonomic notes:** We consider that subgenus *Choilisanus* Reitter, 1912 sensu Magnano & Alonso-Zarazaga (2013) is a polyphyletic group. We have already indicated that part of species, including *O. caroli* Stierlin, 1893, *O. pilosus* Gyllenhal, 1834 and *O. incivilis* Gyllenhal, 1839, should be excluded from *Choilisanus* (Davidian & Keskin 2010).

### *Otiorrhynchus megareus* Reitter, 1913 (Figs. 8, 10, 14, 17, 19).

Reitter 1913: 79 (in the “artengruppe” (=subgenus) *Asphaerorrhynchus*); Smreczyński 1977: 374, 376 (in the subgenus *Asphaerorrhynchus*).

*Otiorrhynchus megareus* Reitter, 1913 is known only from the type specimen.

**Type data:** The holotype was examined; it is deposited in the HNHM collection. This is a female specimen, provided with the following labels: 1) “Anatolien, Ak-Chehir, 1900, Korb” – printed; 2) “*O. megareus* m.” – handwriting of E. Reitter; 3) “coll. Reitter” – printed; 4) “Holotypus 1913 *Otiorrhynchus megareus* Reitter” – museum label in red edging.

The type corresponds completely with the original description of the species. Smreczyński (1977) designated it as holotype, but any reliable evidences for this opinion is absent in the original description. The 4–7<sup>th</sup> segments of the right antennal funicle with club and right hind tarsus are missing. The specimen was remounted by us on a rectangular card, 3–5 ventrites placed in the right posterior corner behind of the holotype, the genital organs were placed in a drop of water-soluble fixing agent in the left posterior corner.

Body length of the holotype 7.9 mm, width 3.7 mm.

**Redescription of the holotype:** Integument nearly black, slightly brownish, antennae and legs slightly reddish. Antennal scrobes rather broad, asymmetrically rounded, more dilated in distal part. Apical margin of antennal scrobes situated considerably posteriad to level of epistomal angles. Epistomal plate with deep angular medio-apical emargination. Epistome right-angled, symmetrically margined with carina. Rostral dorsum longitudinally flattened with distinct median carina, its lateral margins nearly rectilinearly converged basally. Frons with shallowly transverse impression, 1.8 times as wide as longitudinal diameter of eye. Eye moderately convex, not projecting beyond of the head outline in dorsal view. Vertex and temples clearly punctated.

Antennal scape gradually thickened apically. 1<sup>st</sup>–6<sup>th</sup> funicular segments subequal in width, 1<sup>st</sup> segment gradually broadened apically not swollen in distal part, 2.42 times as long as wide, 2<sup>nd</sup> segment 1.84 times as long as wide, 3<sup>rd</sup> segment slightly elongated 1.15 times as long as wide, 4<sup>th</sup> barely elongated, 5<sup>th</sup> and 6<sup>th</sup> – subglobular, 7<sup>th</sup> segment as long as wide, slightly broader than preceding segments. Club shortened fusiform, widest at middle, 1.27 times as long as 1<sup>st</sup> funicular segment, clearly shorter than 5–7<sup>th</sup> segments of funicular segments combined, 1<sup>st</sup> segment of club twice shorter than club, its lateral margins straight.

Pronotum slightly transverse, 1.13 times as wide as long, widest slightly basad to middle, with shallow basal constriction, more distinct than subapical one. Disc of pronotum weakly convex, without median carina, densely covered with fine roundish setiferous granules. Granules occasionally merged, the interspaces between granules narrow, linear.

Elytra obovate with flattened dorsal side, 1.38 times as long as wide, 1.43 times as wide as pronotum. Apical slope of elytra nearly steep downward. Base of elytra immediately posteriad to mesonotum with shallow punctures and longitudinal wrinkles on either sides of scutellum and with large single puncture at the beginning of 5<sup>th</sup> stria. Dorsal surface of pronotum and elytra slightly raised above mesonotum.

Outer margin of fore tibiae straight, inner margin S-shaped, curved, in distal 2/3 part with row of small denticles, outer apical angle of tibia slightly obliquely truncated without dilation.

Vestiture rather sparse, not continuous, consisting of mainly brown narrow recumbent hair-like and elongated lanceolate scales. Vestiture of pronotum and elytra intermingled with light scales, consisting of nebulous irregular pattern. Temples with distinct narrow scales.

**Comparative diagnosis:** *Otiorrhynchus megareus* Reitter closely related to *O. megareoides*, from which it is distinguishable in large size of body, sculpture and vestiture of temples.

**Taxonomic notes:** Some of external and internal characters of *O. megareus* resemble those of subgenus *Elvandrinus* Reitter, 1912.

*Otiorrhynchus megareoides* Smreczyński, 1977 (Fig. 7).

Smreczyński 1977: 376–377 (in the subgenus *Asphaerorrhynchus*).

**Material:** NW Turkey: “Turchia, vil. Bursa, Uludag Mt., 2000–2300 m, 15/17.VII.1972 (M. & G. Osella leg.)”, 2♀♀.

Body length 5.2–6.2 mm, width 3.7–4.25 mm.

**Distribution:** It is bisexual species, which is known for us only from type locality in the NW of Turkey: Uludag Mt. (Bursa Province). We have studied 2 females thanks to courtesy of Luigi Magnano (Italy).

*Otiorrhynchus karadeniz* Davidian & Gültekin sp. nov. (Figs. 6, 12, 13, 15, 21).

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**Material:** Holotype: Turkey, Bayburt Province, Lazistan Mt. Range, S slope of Karakaya Dağı, eastward of Soğanlı Geçidi, 10–15 km westward of Kırklar Dağı, 2200–2400 m, 16.VI.1996 (Davidian G.E.), ♀.

**Female:** Antennal scrobe broad, subequal in size to eye. Head with eyes combined 1.08 times as wide as rostrum. Rostrum transverse, nearly 1.38 times as wide as long, widest part of rostrum 1.33 times as wide as its narrowest part at base of pterygia. Base of rostrum marginated on ventral side with transverse sulcus, clearly visible in lateral view. Shape of epistome obtuse-angled triangle, symmetrically marginated with carina. Rostral dorsum flattened, barely convex, narrowest at base of pterygia, from which nearly similar dilating apically and basally. Surface of rostrum coarsely punctated with distinct median carina, punctures occasionally merged in furrows. Eye dorso-lateral, rather large oval, slightly elongated, moderately convex, slightly projecting beyond head outline. Frons without transverse impression with small unclear pit in the middle. Frons 1.55 times as wide as longitudinal diameter of eye. Temples matte, without punctation and vestiture. Vertex immediately behind eyes distinctly punctated.

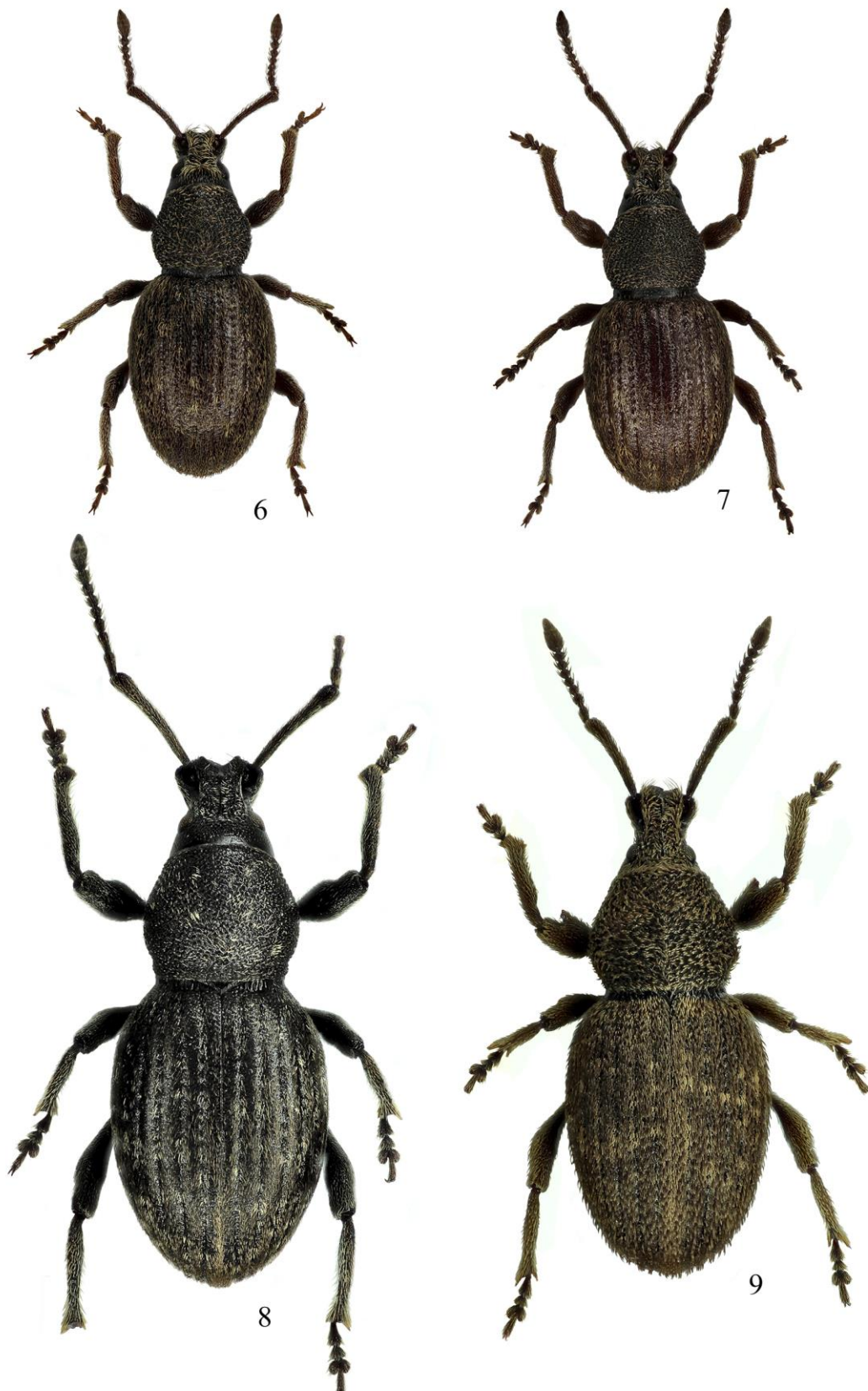
Scape rather narrow, gradually and clavately thickened apicad. 1<sup>st</sup> funicular segment 2.0 times as long as wide, clearly swollen in distal part and abruptly narrowed basad in basal 1/3, 2<sup>nd</sup> gradually thickened apically and 1.86 times as long as wide, 3<sup>rd</sup> slightly elongated, 4–7<sup>th</sup> subglobular. Club fusiform, pointed apically, 2.25 times as long as wide, longer than last three funicular segments combined. 1<sup>st</sup> segment of the club slightly shorter than half length of entire club, its lateral margins straight.

Pronotum slightly transverse, widest somewhat basad of the middle, 1.16 times as wide as long, its lateral sides moderately rounded, with clear subapical shallow constriction and nearly without basal constriction. Disc of pronotum densely covered with roundish small size setiferous granules (about 19 granules along median line) without median carina, interspaces between granules narrow, like a line. Basal and apical margins rectilinear. Dorsal surface of pronotum and elytra slightly raised above mesonotum. Base of elytra immediately behind of mesonotum with distinct single puncture at base of 5<sup>th</sup> elytral stria, interspaces between that puncture and scutellum with row of longitudinal wrinkles.

Elytra elongated obovate, 1.36 times as long as wide, apical slope of elytra slightly bent downwards. Interstriae of elytra clearly visible about 2 times as wide as striae, its surface flattened and covered with fine granules, very thin transverse wrinkles and 3–5 irregular rows of setiferous pores.

Apical margin of tergite 7 barely convex. All ventrites combined 1.27 times as long as wide, its surface moderately shine, densely punctated, 5<sup>th</sup> ventrite in most dense punctation, interspaces between punctures narrow as line.

All femora equally thickened, without tooth. Outer margin of fore tibia straight, inner margin S-shaped curved, in distal half with row of fine granules, outer apical angle slightly obliquely truncated without dilation. Fore tibiae without spur near of mucro, mid and hind tibia with single spur. First segment of fore tarsus shaped as equilateral triangle, as wide as



**Figures 6–9.** *Otiorrhynchus* Germar, female (1–4) habitus. **6,** *O. karadeniz* sp. nov. (holotypus); **7,** *O. megareoides* Smreczyński (topotype); **8,** *O. megareus* Reitter (holotypus); **9,** *O. aziziyensis* sp. nov. (paratypus).



2<sup>nd</sup>, latter transverse, 1.67 times as wide as long, 3<sup>rd</sup> – transverse, 1.3 times as wide as 2<sup>nd</sup>, claw segment, without claws, 2.22 times as long as 3<sup>rd</sup>.

Vestiture hair-like, not continuous, brownish recumbent, intermingled with slightly more broad light scales. Interstriae of elytra with 4–5 irregular rows of hair-like scales. Antennal scape and funicle in similar seta-like pubescence.

Lamella of spiculum ventrale moderately transverse, 1.4 times as wide as long, medio-apically smoothly emarginated, manubrium equally thickened with distinct caput. Spiculum ventrale 4.27 times as long as lamella. Ovipositor elongated-subconical, 3.25 as long as wide. Coxites with small subapical styli. Armament of vagina includes long wide plates, moderately projecting out of coxites. Spermatheca: cornu falciform tapered apically, collum elongated and slightly curved, ramus broad and barely convex.

Length of the holotype 4.2 mm, width – 1.95 mm.

**Etymology:** The new species is named after its collecting place, located in Black Sea Region (= “Karadeniz” in Turkish).

**Comparative diagnosis:** New species is closely related to *O. megareoides* Smreczyński, 1977. It is easily distinguished from most species of subgenus *Choilisanus* in having smooth temples without punctures and pubescence. Diagnostic characters of new species are given herein in the key.

**Comparative diagnostic key to *O. megareoides* Smreczyński and *O. karadeniz* sp. nov.**

1(2). Antennal scrobe slightly larger than eye. Scape thicker, 5<sup>th</sup> funicular segment subequal to both of adjacent segments. Temples matte, with very faint traces of sculpture and single sporadic linear scales. Pronotum 1.22 times as wide as long. Pronotal disc with 21–23 granules along of median line. Elytra wider, 1.31 times as long as wide. All ventrites combined 1.16 as long as wide. Fore tibiae with single spur near mucro. Claw segment of tarsus without claws, 1.2 times as long as 3<sup>rd</sup> tarsomere.....*O. megareoides* Smreczyński

2(1). Antennal scrobe subequal to eye. Scape slightly narrower, 5<sup>th</sup> funicular segment slightly smaller than both of adjacent segments. Temples matte, without punctation and vestiture. Pronotum 1.16 times as wide as long. Pronotal disc with 19 granules along of median line. Elytra narrower, 1.36 times as long as wide. All ventrites combined 1.23 as long as wide. Fore tibiae without spur near mucro. Claw segment of tarsus more elongated, without claws, 1.44 times as long as 3<sup>rd</sup> tarsomere.....*O. karadeniz* sp. nov.

**Distribution:** New species is known only from one point in southern slope of Lazistan MtR (= Karadeniz MtR) system in Bayburt Province (NE Turkey). Its bisexual relative *O. megareoides* Smreczyński, 1977 occurs in Turkey considerable westward in Bursa Province.

**Ecology:** New species was collected in mountain steppe zone under a stone.

***Otiorrhynchus (Choilisanus) aziziyensis* Davidian & Gültekin sp. nov.** (Figs. 9, 11, 16, 18, 20).

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**Material:** Holotype: Turkey, Erzurum Province, Aziziye District, 3-4 km NE of Rizekent Village, Dallıkavak Pass, 40°10'33" N / 40°58'04" E, 2381 m, 23.VI.2007 (Davidian G.E. & Gültekin L.), ♀. Paratypes: 7♀ were collected together with holotype in the same location.

**Female:** Epistome symmetrically and angularly carinated. Antennal scrobe moderately wide. Rostrum transverse, 1.23–1.27 times as wide as long. Maximum width of rostrum 1.32–1.42 times as wide as its narrowest part. Rostrum posterior to pterygia subparallel-sided, slightly dilated towards head. Rostral dorsum flattened with thin median carina, in basal half subparallel sided, in apical half gradually dilated apically, in apical part slightly wider than frons. Eyes oval and convex, slightly projecting beyond outline of head, somewhat impressed into head capsule, distinctly smaller than antennal scrobe. Frons with shallow transverse impression.

Scape slightly curved or straight, gradually thickened apically. First segment of antennal funicle 1.9 times as long as wide and 1.36–1.42 times as long as 2<sup>nd</sup> segment, 2<sup>nd</sup> – 1.4 times as long as wide, 3<sup>rd</sup>–6<sup>th</sup> subglobular, as wide as first 2 segments, 7<sup>th</sup> slightly transverse, wider than preceding. Sometimes 3<sup>rd</sup> segment barely elongated and 6<sup>th</sup> slightly transverse. Club subovate, pointed apically, widest slightly basad to middle, distinctly longer than 5–7<sup>th</sup> segments of funicle combined. First segment of club twice shorter than club, its lateral margins convex.

Pronotum widest slightly basad to middle, its lateral sides rounded with shallow subapical and basal constrictions. Pronotum moderately transverse, 1.10–1.18 times as wide as long. Disc of pronotum slightly convex without median carina, densely covered with small setiferous granules.

The basal portion of elytra immediately behind mesonotum with a distinct single puncture at base of 5<sup>th</sup> elytral stria, interspaces between scutellum and this puncture with distinct longitudinal wrinkles. Dorsal surface of pronotum and elytra barely raised above of mesonotum.

Elytra elongated obovate, 1.43–1.47 as long as wide. Dorsal side flattened, apical slope of elytra slightly bent downward. Elytral striae distinctly narrow, interspaces between punctures nearly as long as diameter of punctures. Interstriae flattened, barely convex, about 2 times as wide as striae.

Femora similarly thickened, with large tooth. Tooth on fore and middle femora obliquely truncated at apex or blunted, on hind femur acute. Tibiae wide, outer margin of fore tibiae straight, outer apical angle nearly right-angled and not dilated, inner margin deeply emarginated in basal part, in apical 2/3 of length with row including about 5 short slanted denticles each of which provided by strong seta. Fore and middle tibiae provided with single spur near of mucro, hind of them – with 2 spurs. 2<sup>nd</sup> segment of fore tarsus slightly transverse, 3<sup>rd</sup> – 1.21 times as wide as long, claw segment without claws 1.83 times as long as 3<sup>rd</sup>.

Apical margin of tergite 7 barely emarginated at middle. All ventrites combined 1.09–1.29 times as long as wide, its surface shiny with dense punctation, 5<sup>th</sup> ventrite widely impressed in distal part.

Vestiture of body rather dense, not continuous. It is mainly brown in colour, intermingled with lighter scales. Vertex and temples densely covered with linear scales, directed anteriorly. Dorsal vestiture consist of elongated fusiform pointed apically recumbent scales and suberect somewhat flattened setae. Setae arranged in 1–3 irregular rows on the interstriae, most clearly visible on apical margin of elytra. Punctures in elytral striae with distinct suberect setae, which are shorter than those in interstriae. Antennal scape covered with similar flattened setae, funicule – only with hairlike setae. Vestiture of ventrites consists of recumbent elongated scales and suberect hairs without broad scales.

Ovipositor about 1.78 times as long as wide. Armament of vagina weakly sclerotized, not protruding out of coxites. Coxites with fine ill-visible preapical styli. Spiculum ventrale

4.61 times as long as lamella. Lamella of spiculum ventrale transverse, slightly medio-apically emarginated. Spermatheca: ramus about 3 times as wide as long; collum as long as wide, about 3 times narrower than ramus; cornu falciform, markedly pointed apically.



**Figures 10–21.** *Otiorrhynchus* Germar, ovipositor (10–13); spiculum ventrale (15–17); distal part of 7 tergite (14, 18); spermatheca (19–21). **10, 14, 17, 19,** *O. megareus* Reitter (holotypus); **11, 16, 18, 20,** *O. aziziyensis* sp. nov. (paratypus); **12, 13, 15, 21,** *O. karadeniz* sp. nov. (holotypus).

Body length 4.8-6.15 mm, width 2.3-2.8, in holotype 5.8 mm and 2.75 mm, respectively.

**Male:** Unknown.

**Etymology:** Name of the new species originates from the name of district Aziziye (formerly Ilica) where it was collected.

**Comparative diagnosis:** New species assigned to subgenus *Choilisanus* for its similarity in habitus with *O. terrifer* Stierlin, 1884. In the same time, it easily differs from other species of *Choilisanus* in having a large tooth on the femora. We believe that taxonomic position of new species needs revision. The diagnostic characters of mentioned species are given herein in the key.

**Comparative diagnostic key to *O. terrifer* Stierlin and *O. aziziyensis* sp. nov.**

1(2). Epistomal carina widely and arcuately curved. Frons without transverse impression. First segment of antennal club with straight lateral margins. Disc of pronotum covered with large and deep punctures, without granules. The basal portion of elytra immediately behind of mesonotum with distinct single puncture at base of 5<sup>th</sup> elytral stria, interspaces between scutellum and those punctures smooth. Elytra widely obovate. Femora without tooth. Temples with sparse linear scales. Pronotal vestiture continuous, consisting of broad oval scales. Elytral interstriae with 1 row of suberect setae. Lateral parts of 1<sup>st</sup> and 2<sup>nd</sup> ventrites with nearly continuous vestiture, consisting of broad scales.....*O. terrifer* Stierlin

2(1). Epistomal carina angularly curved at middle. Rostrum posteriad of pterygia subparallel laterally, slightly dilated basally. Frons with transverse impression. First segment of antennal club with convex lateral margins. Disc of pronotum densely covered with small granules, without large punctures. Basal portion of elytra posteriad to mesonotum with distinct single puncture at base of 5<sup>th</sup> elytral stria, interspaces between scutellum and those punctures with short longitudinal wrinkles. Elytra elongated obovate. Femora with large tooth. Temples densely covered with linear scales. Elytral interstriae with 1–3 irregular rows of suberect setae. Ventrites with sparse uniform vestiture, consisting of elongated scales and suberect hairs.....*O. aziziyensis* sp. nov.

**Distribution:** New species is known only from northern part of Erzurum Province.

**Ecology:** All specimens were collected in 2007 by sifting of litter in a deciduous forest dominated by *Populus tremula*, *Salix* sp. and different bushes (Fig. 22). We could not found any specimen in the same place in 2014. *Otiiorhynchus terrifer* Stierlin was collected by sifting in the similar habitat in Gümüşhane Province, SW of Kostandağı Geçidi.

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**Figure 22.** Type locality of *Otiorhynchus aziziyensis* Davidian & Gültekin sp. nov.

## References

- Avgin S. S. & Colonelli E. 2011.** Curculionoidea (Coleoptera) from southern Turkey. *African Journal of Biotechnology* 10(62): 13555–13597.
- Davidian G. E. & Keskin B. 2010.** To the knowledge of the weevil genus *Otiorhynchus* Germar, 18124, subgenus *Choilisanus* Reitter, 1912 (Coleoptera: Curculionidae). *Russian Entomological Journal* 19(1): 61–65. (in Russian)
- Davidian G. E. & Gültekin L. 2006.** Contribution to the knowledge of the weevil genus *Otiorhynchus* (Coleoptera, Curculionidae) from northeastern Turkey and Transcaucasia. *Zoologicheskii Zhurnal* 85(4): 479–492. (in Russian)
- Davidian G. E. & Gültekin L. 2015.** Contribution to the knowledge of the weevil subgenus *Choilisanus* Reitter, 1912, genus *Otiorhynchus* Germar, 1822 (Coleoptera: Curculionidae: Entiminae). *Journal of Insect Biodiversity* 3(4): 1–13.
- Howden A. T. 1995.** Structures related to oviposition in Curculionoidea. *Memoirs of the Entomological Society of Washington* 14: 53–100.
- Magnano L. 1998.** Notes on the *Otiorhynchus* Germar, 1824 complex (Coleoptera, Curculionidae). pp. 51–80. – In: Colonnelli E., Louw S., Osella G. (eds.). *Taxonomy, ecology and distribution of Curculionoidea (Coleoptera, Polyphaga)*. Proceedings of XX International Congress of Entomology. Atti del Museo Regionale di Scienze Naturali, Torino, 1-294.
- Magnano L. & Alonso-Zarazaga M. A. 2013.** Otiorhynchini, p. 302–347. – In: Löbl I. & Smetana A. (eds): *Catalogue of Palaearctic Coleoptera. Curculionoidea II*. Volume 8. Leiden, Brill, 700 pp.

- Reitter E. 1912.** Bestimmungstabellen der Untergattungen: *Arammichnus* Gozis und *Tyloderes* Schönh. des Genus *Otiorrhynchus* Germ. aus der palaearktischen Fauna. *Wiener Entomologische Zeitung* 31: 109–154.
- Reitter E. 1913.** Bestimmungstabellen der *Otiorrhynchus*-Arten mit ungezähnten Schenkeln aus der palaearktischen Fauna. *Wiener Entomologische Zeitung* 32: 25–118.
- Smreczyński S. 1977.** Neue *Otiorrhynchus*-Arten aus der Türkei (Coleoptera, Curculionidae). *Acta Zoologica Cracoviensia* 22: 373–385.
- Stierlin G. 1876.** Beschreibung einiger kaukasischer Rüsselkäfer. Mittheilungen der *Schweizerischen Entomologischen Gesellschaft* 4(9): 495–514.

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