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**RESEARCH ARTICLE** 

# Two new species of *Otiorhynchus* Germar, 1822 (*Tecutinus* Reitter, 1912) from south-western Anatolia (Coleoptera, Curculionidae: Entiminae)

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**Abstract:** Otiorhynchus (Tecutinus) gultekini **sp. nov.** from Geyik Dağları and O. (Tecutinus) marggii **sp. nov.** from Bey Dağları, both from south-western Turkey, are described. Otiorhynchus gultekini **sp. nov.** is close to O. riedeli Braun, 1989 and O. ikisderensis Smreczyński, 1970 whereas O. marggii **sp. nov.** is morphologically close to O. brevicornis Boheman, 1842 and O. staveni Braun, 2000. All species of the subgenus are keyed and mapped.

Key words: Entiminae, Otiorhynchus, new species, Turkey, taxonomy.

## Introduction

Within the last years the number of species of the subgenus *Tecutinus* Reitter, 1912 raised to 26, the currently described new ones included. The species are distributed in the Middle East, the vast majority in Asiatic part of Turkey (Magnano & Alonso-Zarazaga 2013, Germann & Colonnelli 2015, Germann 2016). Species of *Tecutinus* are comparatively well characterised within the exceptionally species-rich genus *Otiorhynchus* Germar, 1822. For details see Reitter (1912a, 1912b), Lona (1943), Braun (1988, 1989), Benedikt (2000), Germann & Colonnelli (2015) and Germann (2016). The main characteristics are the very wide head with large frons, the small protruding button-like eyes surrounded by furrows, edentate femora with metatibiae often modified (incised or prolonged inwards) towards the apex in males.

The present descriptions are based upon specimens from the NMBE-collection that remained unnoticed since longer time. The discoveries of new species within *Tecutinus* from mountains in southern Anatolia, where no species of this subgenus were at present known, show that a thorough exploration with focus on alpine Curculionidae of other areas in Turkey will certainly result in many more new species being discovered.

## **Material and methods**

Photographs were taken with a 3.15-megapixel digital camera (ProgRes CT3) on a stereomicroscope (Nikon SMZ 1000). Series of images were captured with ProgRes Capture Pro 2.8.8 for Windows and stacked with the freely available software CombineZP Image Stacking by Alan Hadley. Body length was measured from the anterior margin of the rostrum to the apex of the elytra. Usually the rostrum is not included in the body size of weevils, as the rostrum length varies considerably – also or especially between sexes in "long nosed" weevils (but not in *Otiorhynchus*). But since Braun (1988, 1989, 2000) included it, and the measurements have to be comparable, I followed this practice as an exception in this case (see also Germann 2016), and all sizes are adapted to this standard. Label data are reported literally, additional remarks set in square brackets. Data from different labels are separated by a double slash (//).

Abbreviations: NHMUK – The Natural History Museum London, United Kingdom; NMBE – Naturhistorisches Museum der Burgergemeinde Bern; NMSO – Naturmuseum Solothurn; cCG – collection Christoph Germann, Thun (Switzerland).

# Results

## Otiorhynchus (Tecutinus) gultekini sp. nov. (Figs 1 & 2)

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**Holotype:**  $\bigcirc$  TR - Antalya Geyik Dağı 2600m N36°54' E32°11' 22.5.2007 [unknown collector] // Red label: Holotype Otiorhynchus (Tecutinus) gultekini sp. nov. des. Germann, 2017 (NMBE). **Paratypes** 7  $\bigcirc$ , 2  $\bigcirc$  same data as holotype // Red label: Paratype Otiorhynchus (Tecutinus) gultekini sp. nov. des. Germann, 2017 (cCG, NMBE). 5  $\bigcirc$ , 2  $\bigcirc$  TR - Antalya Geyik Dağı 2300m N36°54' E32°11', 22.5.2007 [unknown collector] // Red label: Paratype Otiorhynchus (Tecutinus) gultekini sp. nov. des. Germann, 2017 (NMBE). 1  $\bigcirc$ , 1  $\bigcirc$  TR Prov. Konya [locality at the border between provinces Antalya and Konya] Geyik Dağh 2400 m N36°54 E32°11, 22.5.2006 [unknown collector] // Red label: Paratype Otiorhynchus (Tecutinus) gultekini sp. nov. des. Germann, 2017 (NMSO).

Further specimens examined (not included in type series. The single male was collected from another locality and differs slightly):  $1 \stackrel{<}{\circ} TR$  - Konya 1800m Alacabel Geçidi N37°10' E31°56' (NMBE).

#### Description

*Size* (including rostrum): Holotype male: 9.1 mm, Paratypes: 7.6–9.1 mm. *Habitus* (Figs 1A–B), body black.

*Head* large and wide; rostrum somewhat longer than wide, rostral dorsum flat and shiny, punctate-striolate; impressed behind V-shaped epistome; frons a little more than one third wider than rostral dorsum between insertions of antennae, with small, puncture-like fovea; scrobes short; rostrum at level of pterygia somewhat narrower than width of head at level of the eyes.

*Antennae*: Scape short and robust, weakly widening towards tip, of twice its width at apex; first and second funicular segments of same length, 1.2 times longer than wide; third to seventh globular to weakly transverse, club fusiform.

*Pronotum* transverse (length/width: 0.76–0.8), widest just before midlength, laterally strongly rounded, hind margin wider than anterior one. Surface shining, without microsculpture, covered with coarse, partly umbilicate tubercles, at disc tubercles partly coalescent; at discal area scarce punctures inbetween; sparse, short bowed brownish bristles arise from umbilicate tubercles at sides of pronotum.

*Elytra* (length/width males: 1.44–1.49; females: 1.27–1.32) oval, widest in the middle, without shoulders and laterally regularly rounded towards base. Striae with shallow but pronounced regular punctures, from which tiny, hardly visible bowed bristles arise. Intervals more (males) or less (females) rugose with dense and irregularly arranged fine punctures, from which short and bowed, mainly brownish bristles arise (best visible at elytral declivity). Outer intervals with rasp-like punctures appearing as pointed microscopic tubercles.



Figures 1A–B. Habitus of Otiorhynchus gultekini sp. nov. A, Male; B, Female.

*Legs* very robust, even more robust in males, protibiae not dilated outwards, male hind tibiae weakly incised, apex thorn-like prolonged; tarsi very robust.

*Genitalia*: penis parallel-sided from basal third up to apex, apex subtruncate, faintly rounded; laterally bowed in basal half (Figs 2A–B). transfer apparatus consisting of four twisted sclerites (Fig. 2C). *Female sternite VIII* very robust and entirely strongly sclerotized, plate roundish, laterally strongly rounded, apical margin straight and set with long hairs (Fig. 2D). *Spermatheca* with c-shaped and regularly tapered cornu, and short globular nodulus and ramus (Fig. 2E). *Ovipositor* rather simple, very robust and strongly sclerotized, torpedo-shaped (Fig. 2F). Apex inconspicuous (without long styli nor bristles), apical half with numerous sensorial grooves.



Figures 2A–F. Genital organs of *Otiorhynchus gultekini* sp. nov. A, penis, ventral view; B, lateral view; C, transfer apparatus; D, female sternite VIII; E, spermatheca; F, ovipositor.

*Sexual dimorphism*: Males differ from females in: elytra narrower; surface of elytra more rugose; legs stronger: femora thicker, tibiae stronger, meso- and metatibiae stronger mucronate, metatibiae weakly incised; tarsi – especially third bilobed segment and strongest pronounced in protibiae – broader, almost twice as wide (Figs 1A–B).

**Differential diagnosis:** *Otiorhynchus gultekini* sp. nov. belongs to the species with pronounced elytral striae, and with flattened tubercles on the pronotum. It is morphologically

close to *O. ikisderensis* and *O. riedeli*. Based on the shape of the penis, especially the broadly truncated apex, the new species also shows similarities with *O. karagolensis*.

**Derivation of name:** The new species is named after my esteemed Anatolian colleague Dr. Levent Gültekin, expert in Lixinae, of the genus *Larinus* Dejean, 1821.

**Ecology:** The new species was collected together with similar black and shiny Carabidae under stones on Alpine meadows from 1800–2600 m a.s.l.

## Otiorhynchus (Tecutinus) marggii sp. nov. (Figs 3 & 4)

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**Holotype:**  $\bigcirc$  TR Prov. Antalya Bey Dagh 2300-2700m Kizlar Sivris Tepe [N]36°35 [E]30°06, 6.6.[20]06 [unknown collector] // Red label: Holotype *Otiorhynchus (Tecutinus) marggii* sp. nov. des. Germann, 2017 (NMBE). **Paratypes** 1  $\bigcirc$  same data as holotype // Red label: Paratype *Otiorhynchus (Tecutinus) marggii* sp. nov. des. Germann, 2017 (cCG). 1  $\bigcirc$  TR - Prov. Antalya Kizlar Sivris Tepe/Bey Dağları near Elami [Elmali] 2500-2600m, N 36°35,44 E 30°06,18, 6.6.2006 [unknown collector] // Red label: Paratype *Otiorhynchus (Tecutinus) marggii* sp. nov. des. Germann, 2017 (NMSO).

## Description

Size range (including rostrum): Holotype male: 7.8 mm, Paratypes: 7.3–7.9 mm.

Habitus (Figs 2 and 4), body black.

*Head* wide; rostrum as long as wide, rostral dorsum flat and shiny, punctate-striolate; impressed behind V-shaped epistome; frons twice as wide as rostral dorsum between insertions of antennae, with small puncture-like fovea; scrobes short; pterygia well pronounced, rostrum at level of pterygia narrower than width of head at level of eyes.

Antennae: Scape short and robust, weakly widening towards tip, of about twice its width at apex; first and second funicular segments of same length, 1.2 longer than wide; third to seventh globular, club fusiform.

*Pronotum* moderately transverse (length/width: 0.75–0.8), widest just before midlength, hind margin wider than anterior one. Mainly tuberculate, tubercles flattened, some (especially lateral ones) umbilicate with very scarce, bowed, brownish bristles, at disc punctuate, surface shining, without microsculpture.

*Elytra* (length/width 1.42–1.46) long-oval, widest just before midlength, without shoulders and laterally regularly rounded towards base. Striae very shallow, hardly visible, small sharp punctures spread over elytra; tiny, hardly visible bowed brown bristles arise from punctures (best visible at elytral declivity). Outer intervals with rasp-like punctures appearing as pointed microscopic tubercles. Surface of elytra chagrinated, thus appearing more dull than shiny pronotum.

Legs very robust, protibiae not dilated outwards, apex of metatibiae in males thornlike prolonged; tarsi very robust.

*Genitalia*: penis parallel-sided from basal third up to apex, apex truncate with faint depression in middle; in lateral view weakly bowed, almost straight (Figs 4A–B). Transfer apparatus consisting of four twisted sclerites (Fig. 4C). *Female sternite VIII* very robust and entirely strongly sclerotized, plate roundish, apical margin straight and set with hairs (Fig.

4D). *Spermatheca* with long and narrowly bowed cornu, and short globular nodulus and ramus (Fig. 2E). *Ovipositor* rather simple, very robust and strongly sclerotized, torpedo-shaped (Fig. 4F). Apex inconspicuous (without long styli nor bristles), apical half with numerous sensorial grooves.



Figures 3A–B. Habitus of *Otiorhynchus marggii* sp. nov. A, male; B, female.

*Sexual dimorphism*: elytra of males narrower and shorter than those of the female; legs in males stronger, tarsi – especially third bilobed segment and strongest pronounced in protibiae – broader, almost twice as wide as in females; apex of hind legs longer thorn-like prolonged in males (Figs 3A-B).

**Differential diagnosis:** *O. marggii* sp. nov. belongs to the species with a chagrinated elytral surface (from no. 21 on in the key), and is morphologically closest to *O. brevicornis* and *O. staveni*.

**Derivation of name:** The new species is named after Dr. h. c. Werner Marggi, scientific collaborator at the NMBE, esteemed colleague and renowned carabidologist. We collected together on numerous excursions, and worked together in the field on Carabidae, I could always count on Werner's exceptionally rich and broad knowledge and experience in entomology.

**Ecology:** The new species was collected together with similar black and shiny Carabidae under stones on Alpine meadows above 2300 m a.s.l.



Figures 4A–F. Genital organs of *Otiorhynchus marggii* sp. nov. A, penis ventral view; B, lateral view; C, transfer apparatus; D, female sternite VIII; E, spermatheca; F, ovipositor.

## Key to species of Otiorhynchus, subgenus Tecutinus

Adapted from Germann (2016), distribution see Fig. 5.

1. Apex of penis pointed and elongated tongue-like	2
- Apex of penis pointed, truncated or rounded	3
2. Disc of pronotum densely punctured, pronotum transverse; interspaces	on elytra leather-like,
finely punctured, striae shallow. Rostrum short, rectangular, pterygia narr	ow; antennae thicker;
metatibiae in males less deeply incised, margin not carinate (6.8-7.5	mm). Lebanon [Pass
between Ainata and Becharré; Mount Sannin above Beyrouth]	

- Disc of pronotum tuberculate, tubercles flat, irregular and intermixed with punctures; rostrum longer than wide; elytra chagrinated; antennae slenderer; metatibiae of males more deeply incised, margin granulate (7.0–9.5 mm). Mount Salbakos [=Karci Dağları]......catonii Lona 4. Habitus robust with broad elytra, strongly tuberculate pronotum and simply pointed apex of penis (8.5–10.3 mm). Crete Island.....lefkaoriensis Germann & Colonnelli - Habitus gracile, elytra elongate oval, disc of pronotum punctured, apex of penis pointed and bispinate (7.7–8.5 mm). Ak Dağları......charleshuberi Germann 6. Small species (6.2–6.5 mm); vestiture of elytra consisting of evenly distributed dense short grey hairs. Giresun Dağları.....torulensis Benedikt - Larger species (> 8.5 mm); vestiture not homogeneous but patchy or intermixed with dark bristles.....7 7. Vestiture of elytra with patches of grey hairs without dark bristles; inner sides of protibiae in scabrous and with tooth in middle (9 - 10)mm). males Eskisehir province.....escherichi Reitter - Vestiture with grey hairs and dark bristles; inner sides of protibiae in males without tooth in 8. Pronotum transverse with shiny tubercles, laterally strongly rounded; rostral dorsum strongly furrowed (size not known). "Persia occidentalis" [probably Dagestan; but with "Persia occidentalis" territory Adjaria. often the of Georgia was meant].....crassicornis Gyllenhal - Pronotum less transverse with flattened dull tubercles, laterally less rounded; rostral dorsum 9. Rostral dorsum short and well separated from head, rostrum stout, resembling an equilateral triangle; metatibiae in males less deeply incised (8.5-9 mm). Bulgar Maaden [= Bolkar Dağları].....crinitellus K. Daniel & J. Daniel - Head less separated from rostrum, rostrum slenderer, resembling an acute triangle; metatibiae in males more deeply incised (9–10.5 mm). İskilib.....paracrinitellus Braun 11. Pits very broad and irregular, overlapping in first two rows and in rows 3 and 4, therefore first and third interspaces not visible (intervals in part zigzag); disc of pronotum densely set with flat tubercles, not punctured; metatibiae of males strongly incised at inner margin before apex; apex of fore tibiae clearly protruding outwards in both sexes (8.3-10.3 mm). Mihalıççık - Pits on elytra small, arranged in regular rows, first and third interspaces not zigzag; disc of 12. Pronotum narrow; meso- and metatibiae in males only weakly broadened, metatibiae inconspicuously incised (7.5-9.5 mm). "Gebirge Armeniens" [NE Turkey (Artvin), Armenia; - Pronotum broader; meso- and metatibiae in males strongly broadened towards apex, inner sides (8.5–10 mm). of metatibiae strongly incised "Amasia" Amasva. Ν Turkev 13. Elytral striae strongly, pronounced and well visible......14 14. Disc of pronotum and sides mainly with flattened tubercles, only sparse punctures between 

- Disc of pronotum mainly punctuate, small tubercles towards sides of pronotum 15. Elytra subtly sculptured, vestiture consisting of rather dense black hairs; pronotum narrow, laterally less rounded; penis rounded (not truncate) at apex (9-10.5 mm). Sivas Kızıldağ - Elytra stronger sculptured, vestiture consisting of less dense or scarce black hairs; pronotum 16. Antennae short and thick with strongly transverse funicular segments; penis more gracile, narrowed towards apex, apex truncate (7.8-8 mm). İkizdere....ikisderensis Smreczyński - Antennae slenderer, funicular segments globular to weakly transverse; penis larger, more robust (7.6–9.1 mm). Geyik Dağı, Alacabel Geçidi (nontypical material).....gultekini sp. nov. 17. Antennae slenderer, funicular segments less transverse; metatibiae in males less deeply incised on inner margin before apex; penis more rounded at apex (8.2–8.5 mm). Cesarea [Ercives Dağı]......caesareus K. Daniel - Antennae thicker, funicular segments more transverse; metatibiae in males more deeply incised; penis truncate, almost angular and faintly divergent just before apex (7.1-8 mm). Soğanlı Dağı.....soganliensis Smreczyński 18. Surface of elytra without chagrination, leather-like with tiny pointed tubercles on outer - Elytral surface chagrinated (inconspicuous only in karagolensis), with tiny tubercles or 19. Frons concave; body shorter; pronotum more gracile, much smaller than elytra; protibiae almost straight, only weakly granulated; metatibiae in males deeply incised at inner side before - Frons convex; body massive, oval to broad oval; pronotum stronger; metatibiae in males either 20. Eyes strongly protruding; apex of protibiae only weakly dilated outwards; metatibiae of males deeply incised; elytra at disc flattened, declivity less steep (10.5-11 mm). Tmolos Dağları [=Bozdağ E of Izmir]......tmolosensis Lona - Eyes less protruding; apex of protibiae strongly protruding outwards (Arammichnus-like); 21. Eyes smaller in relation to head; protibiae emarginate at inner side with several tooth-like tubercles along the middle, apex protruding outwards (8-9.5 mm). Sultan Dağları gymnopterus K. Daniel & J. Daniel - Eyes bigger in relation to head; protibiae without tooth-like tubercles at inner side, only weakly granulate (8–9.6 mm). Tarsus [= Mersin]; Çamlıyayla.....latifrons Stierlin 22. Bigger species (> 10 mm) with massive body; metatibiae of males broadened but not incised on inner side before apex (10–10.5 mm). Mount Salbakos [= Karci Dağları]...salbakosanus Lona 23. Antennae short and thick; funicular segments 3-7 transverse; microsculpture of elytra less apparent; metatibiae spur-like extended inwards (6.7 - 8.5)Giresun mm). Dağları......karagolensis Smreczyński - Antennae slenderer, only some funicular segments transverse; microsculpture of elytra more 24. Funicular segments 4-7 transverse; apex of metatibiae in males moderately incised (6.2-7.8 mm). "Constantinopolis" [Bithynian Olymp; Uludağ near Bursa in NW Turkey] ......brevicornis Boheman - funicle with globular segments, at most segments 6-7 transverse; apex of metatibiae not incised 


Figure 5. Map providing an overview of all *Tecutinus*-species described so far: 1) brevicornis; 2) caesareus; 3) catonii; 4) crassicornis; 5) cribripennis; 6) crinitellus; 7) escherichi; 8) fremuthi; 9) gymnopterus; 10) heinzianus; 11) ikisderensis; 12) karagolensis; 13) kindermanni; 14) latifrons; 15) lefkaoriensis; 16) paracrinitellus; 17) pseudocribripennis; 18) riedeli; 19) salbakosanus; 20) soganliensis; 21) staveni; 22) tmolosensis; 23) torulensis; 24) charleshuberi; 25) marggii sp. nov.; 26) gultekini sp. nov. (map copyright by Google).

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# References

**Benedikt S. 2000.** *Otiorhynchus torulensis* sp. n. (Coleoptera: Curculionidae) from Turkey. *Klapalekiana* 36: 1–5.

- **Braun W. 1988.** Beschreibung zweier neuer Arten der Gattung *Otiorhynchus* Germar und kritische Bemerkungen zum Rang der mit *Otiorhynchus brevicornis* Boheman verwandten Arten. *Nachrichtenblatt Bayerischer Entomologen* 37 (2): 29–41.
- **Braun W. 1989.** *Otiorhynchus fremuthi,* eine neue Art der Artengruppe *Tecutinus* Reitter aus Anatolien. *Entomologische Zeitschrift* 99: 321–334.
- Braun W. 2000. Eine neue Art der Gattung Otiorhynchus Germar, 1824, aus Anatolien und Bemerkungen zur geographischen Verbreitung wenig bekannter Otiorhynchus-Arten der Untergattung Tecutinus Reitter, 1912 (Coleoptera: Curculionidae). Entomologische Zeitschrift 110 (4): 98–99.
- Germann C. & Colonnelli E. 2015. *Otiorhynchus (Tecutinus) lefkaoriensis* sp. nov. from Crete, Greece (Coleoptera, Curculionidae, Entiminae). *Journal of Insect Biodiversity* 3 (21): 1–7.
- Germann C. 2016. A new Otiorhynchus Germar, 1822 subgenus Tecutinus Reitter, 1912 from Anatolia (Coleoptera, Curculionidae). Contributions to Natural History 33: 1– 10.
- Lona C. 1943. Studi sugli Otiorrhynchus [sic!]. IV. Memorie della Società Entomologica Italiana 22: 5–37.
- Magnano L. & Alonso-Zarazaga M. A. 2013. Tribe Otiorhynchini Schoenherr, 1826 (pp. 302–347). In: Löbl I. & Smetana A. (eds.). Catalogue of Palaearctic Coleoptera. Volume 8. Curculionoidea II. *Brill, Leiden and Boston* 700 pp.
- **Reitter E. 1912a.** Übersicht der Untergattungen und der Artengruppen des Genus *Otiorrhynchus* [sic!] Germ. *Wiener Entomologische Zeitung* 31 (2): 45–67.
- **Reitter E. 1912b.** Bestimmungstabellen der Untergattungen Arammichnus Gozis und *Tyloderes* Schönh. des Genus Otiorrhynchus [sic!] Germ. aus der palaearktischen Fauna. Wiener Entomologische Zeitung 31(3): 109–154.

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