

NEW SPECIES OF CLICK BEETLES FROM TURKEY (COLEOPTERA, ELATERIDAE)

Giuseppe Platia¹, Nicklas Jansson², Mustafa Avci³,
Oguzhan Sarikaya³, Mustafa Coskun⁴ & Tamer Kayis⁴

¹Via Molino Vecchio, 21, 47043 Gatteo (FC), Italy. ²IFM, Division of Ecology, Linköping University, Linköping, Sweden.
³Forest Faculty, Suleyman Demirel University, Isparta, Turkey. ⁴Department of Biology, Adiyaman University, Adiyaman, Turkey.

Abstract: Thirteen new species of click beetles belonging to the genera *Elathous*, *Agriotes*, *Ampedus*, *Brachygonus*, *Elater*, *Peripontius*, *Tolphorea*, *Cardiophorus* and *Dicronychus* are described. They were collected with traps on old hollow oaks (*Quercus* spp.) mainly from three localities of the southern Mediterranean coast of Turkey. Another species, *Crepidophorus mutilatus* (Rosenhauer), is recorded for the first time from Turkey.

Key words: Coleoptera, Elateridae, new species, new record, hollow oaks (*Quercus* spp.), Turkey.

Nuevas especies de elatéridos de Turquía (Coleoptera, Elateridae)

Resumen: Se describen trece nuevas especies de los géneros *Elathous*, *Agriotes*, *Ampedus*, *Brachygonus*, *Elater*, *Peripontius*, *Tolphorea*, *Cardiophorus* y *Dicronychus*. Se han capturado con trampas en cavidades de viejos *Quercus* spp., principalmente en tres localidades de la costa sur mediterránea de Turquía. Otra especie, *Crepidophorus mutilatus* (Rosenhauer) se cita por primera vez de Turquía.

Palabras clave: Coleoptera, Elateridae, especies nuevas, cita nueva, cavidades de *Quercus* spp., Turquía.

Taxonomy / Taxonomía:

Elathous nurayae n. sp. Platia

Elathous emrei n. sp. Platia

Agriotes ayani n. sp. Platia

Agriotes ulkeri n. sp. Platia

Agriotes gulnariensis n. sp. Platia

Ampedus camillae n. sp. Platia

Brachygonus gunnurae n. sp. Platia

Elater turcicus n. sp. Platia

Peripontius omissoides n. sp. Platia

Tolphorea ozalpi n. sp. Platia

Cardiophorus sculptus n. sp. Platia

Cardiophorus kasnaki n. sp. Platia

Dicronychus gulleri n. sp. Platia

Introduction

In Europe and Turkey old oaks (*Quercus* spp) and its beetle fauna are very rare and threatened. The reason is lack of suitable trees from lack of right management or habitat conversion. The aim with this study was to describe the saproxylic beetle fauna in Turkey. The second aim was to compare the diversity of this fauna with similar habitats in other countries in Europe. Eight stands with old hollow oaks, spread on four areas, have been studied in Turkey during 2005-2009. In total 80 hollow oaks have been studied. The studied oak species are *Quercus cerris*, *Q. infectoria*, *Q. libanii*, *Q. pubescens*, *Q. ithaburensis* and *Q. vulcanica*. The same methods have been used for sampling the beetles: window traps on the tree trunk and pit fall traps in the wood mould inside the trunk cavities. The traps have been in field from middle of April to the end of September. The studied areas are all situated 50-150 km from the southern Mediterranean coast at an altitude between 1100-1500m.

The main 3 sites with new beetles are: Altinyayla, 150 km W Antalya; Kasnak forest, 20 km S Egirdir; Koseçobanlı-Tasdustu, 30 km NW Gülnar.

The tribal placement of genera and species listed below follows Sánchez-Ruiz (1996).

Material and methods

Body measurements: Body length is measured along the midline from the anterior margin of the frons to the apex of the elytra; the width is measured across the broadest part of the entire beetle.

Pronotal measurements: The pronotal length is measured along the midline; the width at the broadest part, which is most usually at the hind angles.

Abbreviations: The names of institutions, museums and private collections containing the studied material are abbreviated as follows:

CGT - Goux coll., Toulouse (France).

CMHK – Mertlik coll., Hradec Kralove (Czech Rep.)

CJL – Jansson coll., Linköping University (Sweden)

CPG – Platia coll., Gatteo (Italy)

Results

Tribe Dendrometrini Gistel, 1856

Elathous nurayae n. sp. Platia.

Fig. 1, 1a, 32.

MATERIAL EXAMINED. Holotype ♂ - **Turkey:** Egirdir, Yukangökdere, Kasnak forest, 7.VIII.2007, N. Jansson & M. Avci, window trap 12 (CPG). 2 Paratypes ♂ - same data as Ht, window trap 21; 11.IX.2007, window trap 8. (CJL, CPG).

DIAGNOSIS. Species allied to *E. rufobasalis* Wurst, 1994 for the very similar male genitalia (fig. 3, 3a), it can be separated by the different pattern of colour, a little longer antennae and more dense puncturation on pronotal surface.

DESCRIPTION. Male. Shiny; entirely dark-brown to blackish with anterior margin of frons, posterior angles of pronotum,

scutellum, elytral suture, antennae and legs yellow ferruginous; covered with dense, long, partially erect, particularly on sides of elytra, yellow-fulvous vestiture.

Frons flat, more or less impressed near the anterior margin, the latter moderately thickened, substraight, well protruding above clypeus, punctures very coarse, strongly umbilicate, with shortest, shiny intervals.

Antennae exceeding by one article past the apicis of posterior angles of pronotum, feebly serrated from fourth articles on; second and third articles subcylindrical, twice longer than wide and subequal in length, taken together notably longer than fourth; fourth-tenth triangular, about twice longer than wide, last as long as penultimate, ellipsoidal.

Pronotum as long as wide or just wider, widest at apicis of the posterior angles or at middle, regularly convex, sides arcuate, from middle or just behind the middle forwards gradually tapering, backwards just sinuate before the posterior angles, the latter short, slightly divergent, with a short, raised carina directed inwards; lateral margins complete; puncturation moderate on all the surface, punctures on disc deep, simple with intervals on average equal to larger than their own diameters, at sides gradually denser with shortest interstices.

Scutellum shield-shaped, convex, ridged at base, more or less sinuate at sides, punctured.

Elytra 2.7x longer than pronotum and as wide as it at base, convex, rather depressed on disc along the suture; nearly vertically sloping at sides; sides subovate, widest just behind the middle; striae punctured and from fourth more coarser punctured; interstriae flat with subrugose surface.

Tarsal articles simple and regularly decreasing in length. Aedeagus as in fig. 1, 1a (length 1 mm).

Female unknown.

Size. Length 8-8.5 mm; width 2.3-2.5 mm.

ETYMOLOGY. The species is dedicated to Mrs. Nuray, the wife of Mustafa Coskun.

***Elathous emrei* n. sp.** Platia

Fig. 2, 2a, 33.

MATERIAL EXAMINED. Holotype ♂ - **Turkey:** Mersin, 40 km N of Gülnar, Koseçobanlı-Tasdustu, 26.VIII.2006, N. Jansson & M. Avci, window trap 10 (CPG). 10 Paratypes (2 ♂, 8 ♀) – same data as Ht, window trap 3, 5, 8, 15, 18; Gölhisar, 120 km W of Antalya, 7 km SW Altinyayla, 4.X.2009, N. Jansson & M. Avci, window trap 24; Gölhisar-Altinyayla, 30.VIII.2009, W trap 6; Egirdir, Yukangökdere, Kasnak forest, 11.IX.2007, N. Jansson & M. Avci, window trap 5, 21. (CJL, CPG).

DIAGNOSIS. Species allied to *E. nurayae* n.sp. for the general shape, size and colour, it can be separated by the antennae a little longer, anterior margin of frons less thickened, aedeagus with apicis of paramera more expanded inwards.

DESCRIPTION. Male. Shiny; colour rather variable, from entirely dark-brown to blackish with anterior margin of frons, posterior angles of pronotum, scutellum, elytral suture, antennae and legs yellow ferruginous, to entirely or nearly entirely ferruginous only with the posterior half of elytra fuscous; covered with dense, long, partially erect, particularly on sides of elytra, yellow-fulvous vestiture.

Frons flat, anterior margin substraight, slightly thickened, protruding above clypeus; punctures coarse, strongly umbilicate, with shortest interstices.

Antennae just exceeding the apicis of posterior angles of pronotum, feebly serrated from fourth articles on; second and third articles subcylindrical, twice longer than wide and subequal in length, taken together notably longer than fourth; fourth-tenth triangular, about twice longer than wide, last as long as penultimate, ellipsoidal.

Pronotum as long as wide, widest at apicis of posterior angles and at middle, strongly convex, abruptly sloping at sides and base; sides moderately and regularly arcuate, sinuate near the posterior angles, the latter divergent, with short carina subparallel and very near to the lateral margins in the first half then directed inwards; punctures moderate, rather uniformly distributed, on disc deep, simple, with intervals on average equal to their own diameters, to sides a little denser, with shortest interstices.

Scutellum shield-shaped, convex, ridged at base, more or less sinuate at sides, punctured.

Elytra 2.7x longer than pronotum and as wide as it at base, convex, rather depressed on disc along the suture; nearly vertically sloping at sides; sides subovate, widest just behind the middle; striae punctured and from fourth more coarsely punctured; interstriae flat with subrugose surface.

Tarsal articles simple and regularly decreasing in length.

Aedeagus as in fig. 2, 2a (length 1.02 mm).

Female. Similar to male with more subparallel body and a little shorter antennae.

Size. 7.6-10.5 m; width 2.3-3.1 mm.

ETYMOLOGY. The species is dedicated to Prof. Emre, chief of biology institution at Cukurova University helped us to start the project in the start 2005.

Crepidophorus mutilatus (Rosenhauer, 1847)

Fig. 4, 4a, 34.

MATERIAL EXAMINED. 2 ♂ - **Turkey:** Egirdir, Yukangökdere, Kasnak forest, 27.VI.2007, N. Jansson & M. Avci, window trap 8 (CPG); same locality, 8.VI.2010, N. Gouix & R. Minetti. (CGT).

NOTE: Aedeagus as in fig. 4, 4a (length 1.43).

DISTRIBUTION: uncommon saproxylic species widespread from central-north-east Europe to Ukraine (Cate, 2007), recently recorded from N Spain (Pérez Moreno & Moreno Grijalba, 2009). New to Turkey.

Tribe Agriotini Champion, 1896

***Agriotes ayani* n. sp.** Platia

Fig. 14, 21, 35.

MATERIAL EXAMINED. Holotype ♀ - **Turkey:** Gölhisar, 120 km W of Antalya, 7 km SW Altinyayla, 22.V.2009, N. Jansson & M. Avci, window trap 1. (CPG).

DIAGNOSIS. A small species resembling *A. karsantianus* Pic, 1910, it can be separated by the larger size, coarser and denser puncturation on head and pronotum, more divergent posterior angles of pronotum, deeper elytral striae with subconvex intervals.

DESCRIPTION. Female. Bicoloured. Moderately shiny; head, pronotum and underbody blackish; antennae, elytra and legs yellow-ferruginous; covered with dense, long, recumbent, yellow-fulvous, vestiture.

Frons convex, flat at anterior margin, suprantennal carinae not reaching anterior margin; punctures coarse, more or less clearly umbilicate, contiguous. Antennae (fig. 21) not reaching the apicis of posterior angles of pronotum, serrated from fourth articles on; second and third articles subconical, second a little longer than third, taken together clearly longer than fourth; fourth-tenth subtriangular, less twice longer than wide; last ellipsoidal longer than penultimate.

Pronotum just longer than wide, widest at posterior angles, convex, with a trace of shallow mid-longitudinal depression at basal slope; sides subparallel at middle, arcuate at anterior third, gently sinuate at posterior angles, the latter rather acute, feebly divergent with a short carina subparallel to the lateral margins; puncturation rather uniformly distributed; punctures coarse, on disc vaguely umbilicate with very short intervals or contiguous, gradually denser to sides, more distinctly umbilicate, contiguous or confluent at extremities.

Scutellum shield-shaped, flat, ridged at base, round at apex, densely punctured.

Elytra 2.75x longer than pronotum and as wide as it, sides subparallel at the first half, slightly arcuate at middle then gradually tapering to apicis; striae well punctured, interstriae moderately convex with rugose surface.

Bursa copulatrix sclerified as in fig. 14.

Male unknown.

Size. 7.5 mm; width 2 mm.

ETYMOLOGY. The species is dedicated to Dr. Ayan, Region chief of forest ministry in Gölhisar helped us with field work and equipment.

***Agriotes ulkeri* n. sp.** Platia

Fig. 15, 22, 36.

MATERIAL EXAMINED. Holotype ♀ - **Turkey:** Gölhisar, 120 km W of Antalya, 7 km SW Altinyayla, 28.VI.2009, N. Jansson & M. Avci, window trap 2. (CPG). 1 Paratype ♀ - same data Ht, window trap 4. (CJL).

DIAGNOSIS. A species too resembling *A. karsantianus* Pic, 1910 (fig. 16) for the general shape and size, it can be separated by the lighter colour, more convex pronotum with sides dilated at anterior third.

DESCRIPTION. Female. Moderately shiny; colouration variable; head dark ferruginous to brown, pronotum blackish on disc with anterior margin and apicis of posterior angles ferruginous; elytra totally yellow-ferruginous or with undefined blackish shadings; antennae and legs yellowish; covered with dense, recumbent, yellowish vestiture.

Frons convex, flat at anterior margin, suprantennal carinae not reaching anterior margin; punctures deep, simple, with shortest intervals. Antennae (fig. 22) not reaching apicis of posterior angles of pronotum, feebly serrated from fourth on; second and third articles subcylindrical, with second just longer than third; taken together clearly longer than fourth; fourth-tenth subtriangular, less twice longer than wide; last regularly ellipsoidal and slightly longer than penultimate.

Pronotum as long as wide, widest at apicis of posterior angles and at anterior third, strongly convex; with a short impressed mid-longitudinal line from posterior third to basal slope; sides parallel for about the two third of its length, feebly dilated ant anterior third, posterior angles rather acute, not divergent with feeble carina subparallel to the lateral margins,

the latter briefly obsolete at middle; punctures deep, simple, with shortest interstices on disc, gradually denser to sides but always deep and simple, nearly contiguous at the extremities.

Scutellum shield-shaped, flat, ridged at base, round at apex, densely punctured. Elytra 2.9-3x longer than pronotum and as wide as it; ovate, widest at middle; striae well marked and punctured, interstriae flat with subrugose surface.

Bursa copulatrix sclerified as in fig. 15.

Male unknown.

Size. Length 5.93 (Ht) – 6.35 mm; width 1.68 (Ht)-1.81 mm.

ETYMOLOGY. The species is dedicated to Mr. Ulker, the manager of the national park.

***Agriotes gulnariensis* n. sp.** Platia

Fig. 5, 5a, 23, 37.

MATERIAL EXAMINED. Holotype ♂ - **Turkey :** Mersin, 40 km N of Gülnar, Koseçobanlı-Tasdustu, 28.VIII.2006, N. Jansson & M. Avci, window trap 21 (CPG).

DIAGNOSIS. Species belonging to the *A. nuceus* Fairmaire group; for the general appearance, size, colour and structure of antennae with the second and third articles, taken together, notably shorter than fourth, it can be compared to *A. anaticus* Platia & Gudenzi, 2003, but is separated for the less convex pronotum with more parallel sides and posterior angles more acute and strongly divergent

DESCRIPTION. Male. Moderately shiny; entirely dark-brown with antennae and legs ferruginous; covered with dense, recumbent, yellowish vestiture.

Frons feebly convex on vertex, flat anteriorly; suprantennal carinae reaching the anterior margin; punctures coarse, simple to vaguely umbilicate with shortest intervals.

Antennae (fig. 23) exceeding by about two articles past the apicis of posterior angles of pronotum; second article subcylindrical, longer than wide and longer than third; third subconical, just longer than wide; second and third, taken together shorter than fourth; fourth-tenth triangular, gradually shorter and less twice longer than wide; last longer than penultimate, narrow, with subparallel sides, notably constricted at apical third.

Pronotum 1.17x wider than long, uniformly convex, abruptly sloping at sides, with a trace of mid-longitudinal impressed line at basal slope; sides subparallel or very feebly arcuate for about the two thirds of its length tapering only at anterior extremity, suddenly sinuate at posterior angles, the latter very divergent, long, acute, with a very fine carina parallel to the lateral margins, the latter briefly interrupted at basal third; punctures coarse, on disc deep, simple or vaguely umbilicate with shortest intervals, gradually denser towards the sides where can be contiguous and more clearly umbilicate.

Scutellum shield-shaped, well ridged at base, flat, densely punctured. Elytra 2.9x longer than pronotum and as wide as it at base; sides subparallel for about the two thirds of its length then rather suddenly tapering to apicis, these are rather acuminate; striae well marked and punctured; interstriae flat with finer punctures.

Aedeagus as in fig. 5, 5a (length 1.75 mm).

Female unknown.

Size. Length 14.8 mm; width 4.2 mm.

ETYMOLOGY. The name is derived from Gulnar, the nearest city to the oak forest we found the specimen.

Tribe Ampedini Gistel, 1856

Ampedus camillae n. sp. Platia

Fig. 6, 6a, 17, 17a, 24, 24a, 38.

MATERIAL EXAMINED. Holotype ♂ - **Turkey:** Egirdir, Yukangökdere, Kasnak forest, 7.VI.2007, N. Jansson & M. Avci, window trap 6 (CPG). 3 Paratypes (1 ♂, 2 ♀) - same data as Ht, window trap 11, 12. (CJL, CPG).

DIAGNOSIS. Species that can be compared with *A. anatolicus* Platia & Gudenzi, 2002 for the small second and third articles of antennae in the male, taken together, as long as fourth and male genitalia

DESCRIPTION. Male. Moderately shiny; bicoloured; antennae, head, pronotum, scutellum, underbody, black; elytra entirely red-orange, with blackish shadings at apical extremity; legs dark brown; covered with dense, partially erect particularly at sides of pronotum, blackish, vestiture.

Frons convex, anterior margin very arcuate, punctures very coarse, umbilicate, contiguous. Antennae (fig. 24) nearly reaching the apicis of posterior angles of pronotum, second article small, as long as wide, third conical just longer than wide and slightly longer than second; second and third, taken together, as long as fourth; fourth-tenth triangular, less twice longer than wide, gradually slenderer; last regularly elliptical, a little longer than penultimate.

Pronotum 1.25x wider than long, widest at apicis of posterior angles, convex, with a trace of mid-longitudinal impressed line from posterior third to basal slope; sides nearly regularly tapering from base to apex, posterior angles not divergent, with a well raised carina directed inwards; punctures on disc finer, deep, slightly umbilicate with intervals on average equal to smaller than their own diameters, gradually larger and denser towards the sides, clearly umbilicate, contiguous or confluent at lateral extremities.

Scutellum shield-shaped, ridged at base, moderately convex, densely punctured. Elytra 2.8x longer than pronotum and as wide as it at base, sides subparallel from base to the middle then gradually narrowing to apicis; striae well marked and punctured; interstriae flat, finely and densely punctured.

Aedeagus as in fig. 6, 6a (length 1.25 mm).

Female. Similar to male but with shorter antennae (fig. 24a), third article subconical and slenderer, second and third, taken together longer than fourth.

Bursa copulatrix sclerified as in fig. 17, 17a.

Size. Length 10.6-11.6 mm; width 3.2-3.7 mm.

ETYMOLOGY. The species is dedicated to Camilla, the wife of Nicklas Jansson.

Brachygonus gunnurae n. sp. Platia

Fig. 7, 7a, 25, 25a, 39, 39a.

MATERIAL EXAMINED. Holotype ♂ - **Turkey:** Egirdir, Yukangökdere, Kasnak forest, 7.VI.2007, N. Jansson & M. Avci, window trap 11 (CPG). 3 Paratypes (1♂, 2♀) – same data as Ht and 19.VII.2007, window trap 24 (CJL, CPG).

DIAGNOSIS. Small species resembling *B. hadullanus* Wurst, 1995 for the general shape and colour, it is easy separated by the subconical shape of third articles of antennae and characters of male genitalia.

DESCRIPTION. Male. Moderately shiny; entirely yellow-ferruginous covered with dense, recumbent, yellow-fulvous, vcestiture.

Frons convex, anterior margin moderately and regularly arcuate, punctures coarse, more or less clearly umbilicate, nearly contiguous.

Antennae (fig. 25) exceeding by about three articles past the apicis of posterior angles of pronotum, clearly serrate from fourth article on; second article subcylindrical as long as wide or a little longer, third subconical, twice longer than wide and twice longer than second, second and third, taken together, a little longer than fourth; fourth-tenth triangular, on average, less twice longer than wide; last regularly ellipsoidal, longer than penultimate.

Pronotum 1.3x wider than long, widest at apicis of posterior angles and at middle, moderately convex, gradually sloping at sides and base, with a trace of narrow mid-longitudinal line at basal slope; sides subparallel from middle to posterior angles, gradually tapering at anterior third; apicis of posterior angles not divergent, bicarinate, the outer carina is very few apparent or reduced to a trace, the inner is well visible and directed inwards; punctures on disc deep, slightly umbilicate with intervals on average equal to their own diameters, gradually denser and larger towards the sides, until to contiguous at the extremities.

Scutellum shield-shaped, ridged at base, finely punctured. Elytra 3.4-3.5x longer than pronotum and as wide as it at base; moderately convex; sides subparallel for about the two thirds of its length; striae well marked and punctured; interstriae flat, finely punctured.

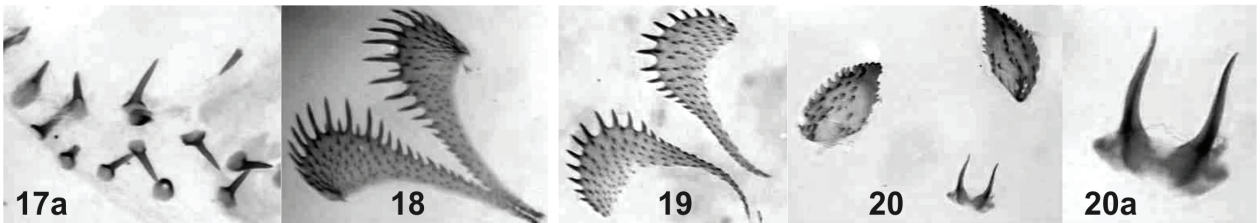
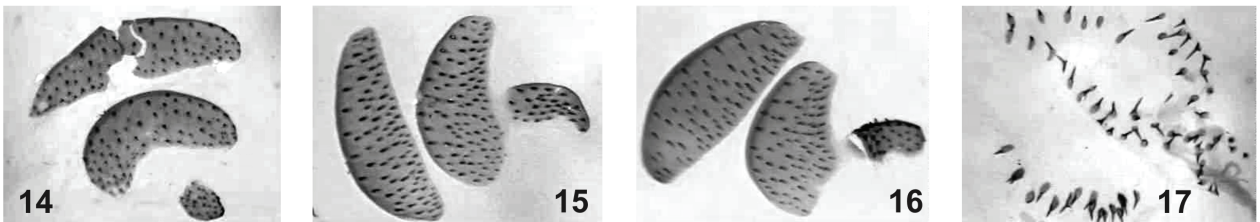
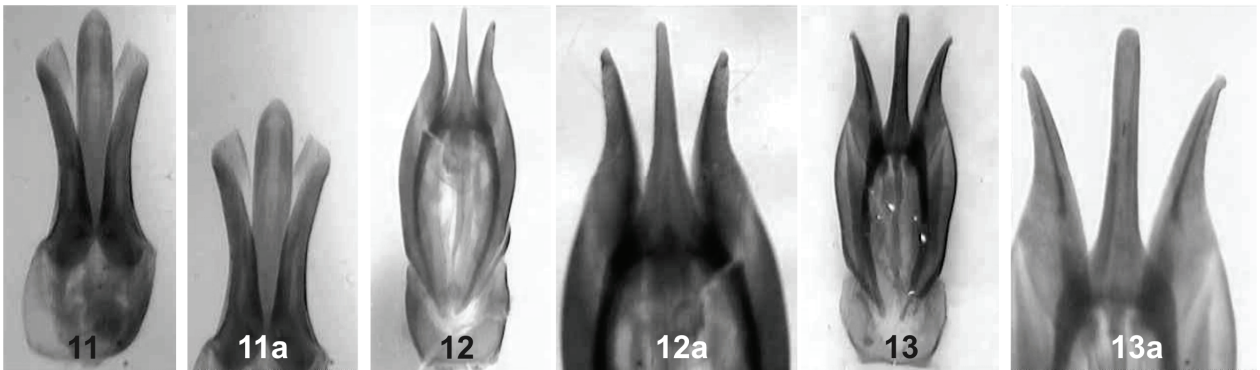
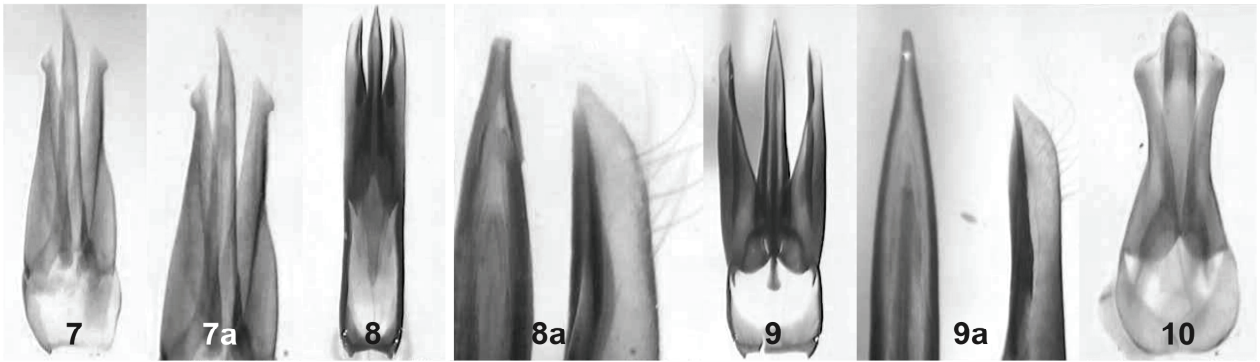
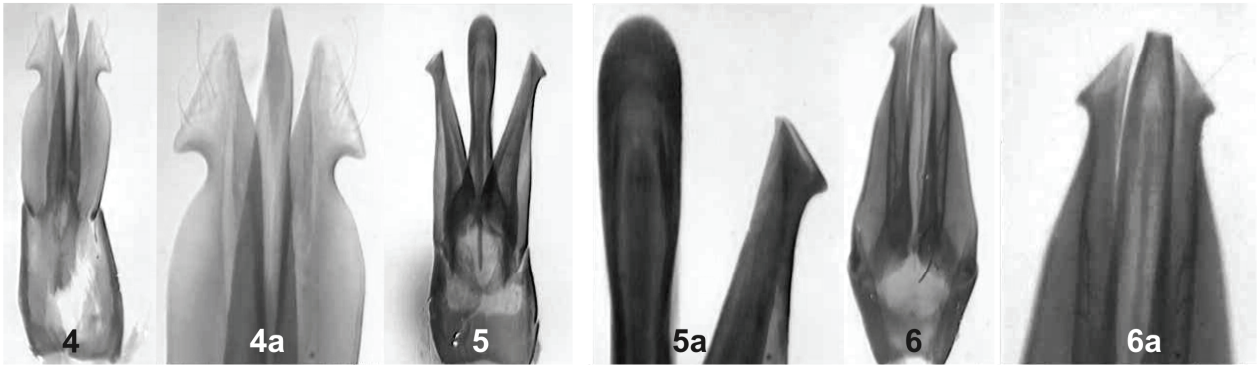
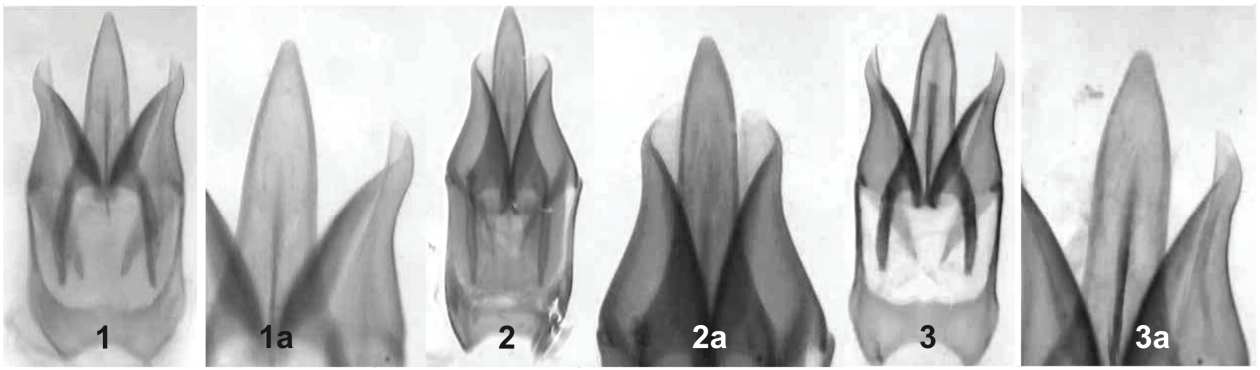
Aedeagus as in fig. 7, 7a (length 0.81 mm).

Female. Similar for colour and size to male, antennae (fig. 25a) shorter just reaching the apicis of posterior angles of pronotum and less serrate from fourth article on.

Size. Length width 5.5–5.9 mm; width 1.55-1.68 mm.

ETYMOLOGY. The species is dedicater to Gunnur, the wife of Mustafa Avci.

► **Fig. 1-13a.** Male genitalia in dorsal view. **1,1a.** *Elathous nurayae* n. sp.; **2, 2a.** *Elathous emrei* n. sp.; **3, 3a.** *Elathous rufobasalis* Wurst; **4, 4a.** *Crepidophorus mutilatus* (Rosenhauer); **5, 5a.** *Agriotes gulnariensis* n. sp.; **6, 6a.** *Ampedus camillae* n. sp.; **7, 7a.** *Brachygonus gunnurae* n. sp.; **8, 8a.** *Elater turcicus* n. sp.; **9, 9a.** *Elater tauricus* (Schwarz); **10.** *Peripontius omissoides* n. sp.; **11, 11a.** *Tolphorea ozalpi* n. sp.; **12, 12a.** *Cardiophorus sculptus* n. sp.; **13, 13a.** *Dicronychus gulleri* n. sp. **Fig. 14-20a.** Sclerifications of bursa copulatrix. **14.** *Agriotes ayani* n. sp.; **15.** *Agriotes ulkeri* n. sp.; **16.** *Agriotes karsantianus* Pic; **17, 17a.** *Ampedus camillae* n. sp.; **18.** *Peripontius omissoides* n. sp.; **19.** *Tolphorea ozalpi* n. sp.; **20, 20a.** *Cardiophorus kasnaki* n. sp.



Tribe Elaterini Leach, 1815

Elater turcicus n. sp. Platia

Fig. 8, 8a, 26, 26a, 40.

MATERIAL EXAMINED. Holotype ♂ - **Turkey:** Gölhisar, 120 km W of Antalya, 7 km SW Altinyayla, 25.VII.2009, N. Jansson & M. Avci, window trap 17 (CPG). 7 Paratypes (2 ♂, 5 ♀) - Golhisar-Altinyayla., 30.VIII.2009, W trap 22; Egirdir, Yukangökdere, Kasnak forest, 7.VIII.2007, N. Jansson & M. Avci, window trap 26; Yukangökdere, Kasnak forest, 18.-23. 7. 1998, R. Lizler et K. Werner; Yukangökdere env., Davraz Dağ, 21.-22. 5. 1998, 1 ♂, ex. larva, VI. 1999, in cavity of *Cedrus libani*, J. Mertlik; Antalya, Ak Dağlar, Boğlar Köyi (road Söğüt-Kemer), 17. 4. 1990, 1 ♀ (ex. larva, VII. 1990), *Salix* sp., J. Mertlik; Antalya, Ak Dağlar, Elmali env., Ciglicara Ormanlari (forest), 18. 4. 1990, 1 ♀ (ex. larva, III. 1991), *Thuja* sp., J. Mertlik; Elmali, VIII.1992, Falletti. (CJL, CMHK, CPG).

DIAGNOSIS. Species very similar in the general shape, size and colour to *Elater tauricus* Schwarz (1897) (fig. 9, 9a, 27, 27a) and probably confused with it in the collections, it can be separated by the third article of antennae only a little longer than second and taken together as long as fourth in male, just longer in female and male genitalia.

DESCRIPTION. Male. Moderately shiny; entirely black-piceous with antennae and legs brown-ferruginous; covered with very fine, short, recumbent, yellow-fulvous vestiture.

Frons flat, suprantennal carinae reaching the anterior margin, punctures of variable diameters, deep, simple, with variable intervals on average smaller than their own diameters.

Antennae (fig. 26, 26a) not reaching the apicis of posterior angles of pronotum strongly serrate from fourth articles on; second article subconical nearly as long as wide, third conical a little longer than second and less twice longer than wide, second and third taken together as long as fourth; fourth-tenth triangular, fourth longer than the following, on average less twice longer than wide; last slightly longer than penultimate, ellipsoidal strongly constricted at apical third.

Pronotum 1.15x wider than long, widest at the apicis of posterior angles, strongly convex, abruptly sloping at sides and base, with a trace of mid-longitudinal, narrow, impressed line at basal slope; sides moderately and regularly arcuate, suddenly tapering before the anterior margin, slightly sinuate before the posterior angles, the latter long, acuminate, not divergent at extremities, with a sharp carina directed inside; lateral margins complete and nearly totally visible in a dorsal view; puncturation rather uniformly distributed, punctures coarse, on disc deep, simple, with shortest, moderately shagreened, intervals; at sides the punctures become more superficial, more or less clear umbilicate and the intervals more shagreened.

Scutellum shield-shaped, flat, ridged at base, sinuate at sides, punctured.

Elytra 2.8x longer than pronotum and as wide as it at base, convex, abruptly sloping at sides and at periscutellar area; sides regularly narrowing from base to apicis, the latter rather acute; striae superficial, indistinctly punctured, interstriae flat, very densely punctured.

Aedeagus as in fig. 8, 8a (length 3.3 mm).

Female. Very similar to male with more parallel body,

punctures of pronotum coarser, articles of antennae less serrate from fourth on, second and third, taken together, just longer than fourth.

Size. Length 20-25 mm; width 5.9- 6.8 mm.

ETYMOLOGY. The name is derived from Turkish to honour the country of study.

Tribe Synaptini Gistel, 1856

Peripontius omissoides n. sp. Platia

Fig. 10, 18, 28, 30, 41.

MATERIAL EXAMINED. Holotype ♂ - **Turkey:** Gölhisar, 120 km W of Antalya, 7 km SW Altinyayla, 30.VIII.2009, N. Jansson & M. Avci, window trap 14. (CPG). 9 Paratypes (3 ♂, 6 ♀) – same data as Ht, 28.VI.2009, window trap 23; Golhisar-Altinyayla, 25.VI.2009, N. Jansson & M. Avci, window trap 3; 25.VII.2009, window trap 6; Golhisar, 28.VI.2009, N. Jansson, window trap 7; Egirdir, Yukangökdere, Kasnak forest, 19.VII.2007, N. Jansson & M. Avci, window trap 29. (CJL, CPG).

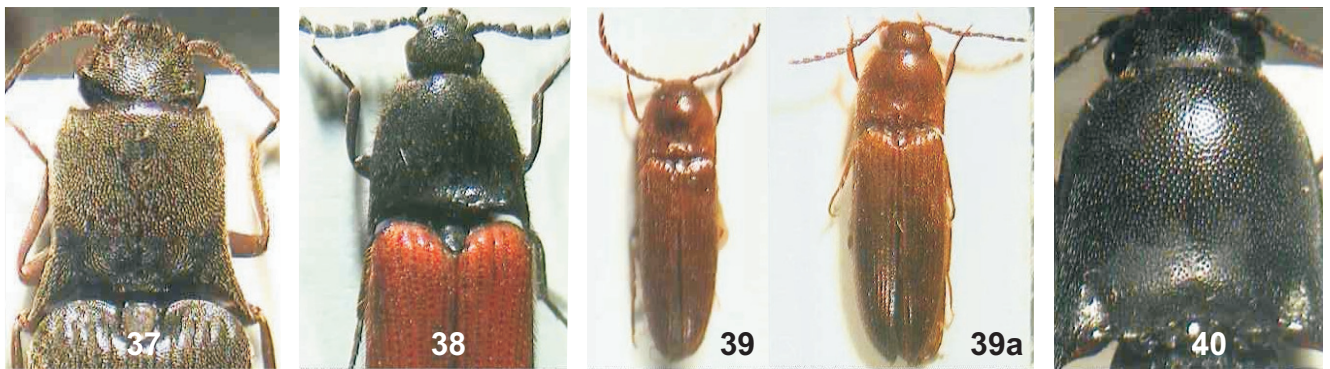
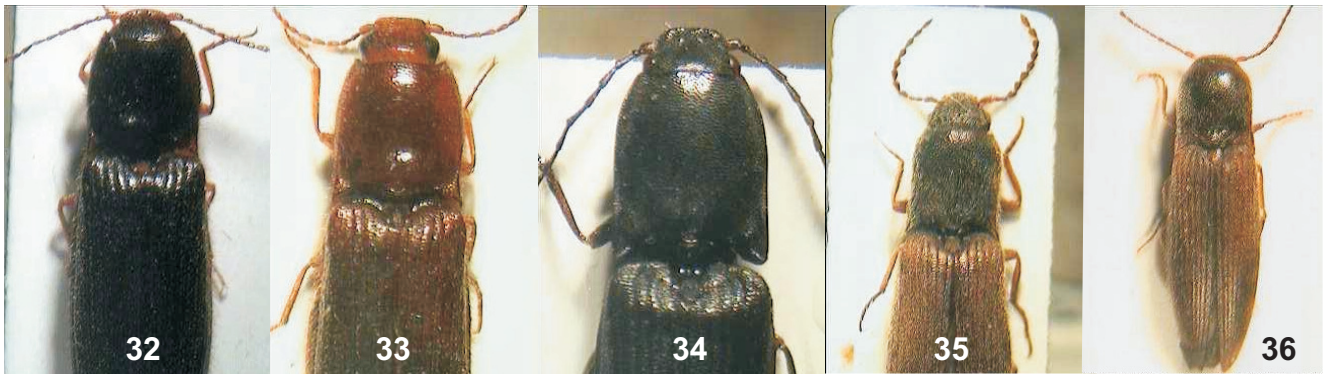
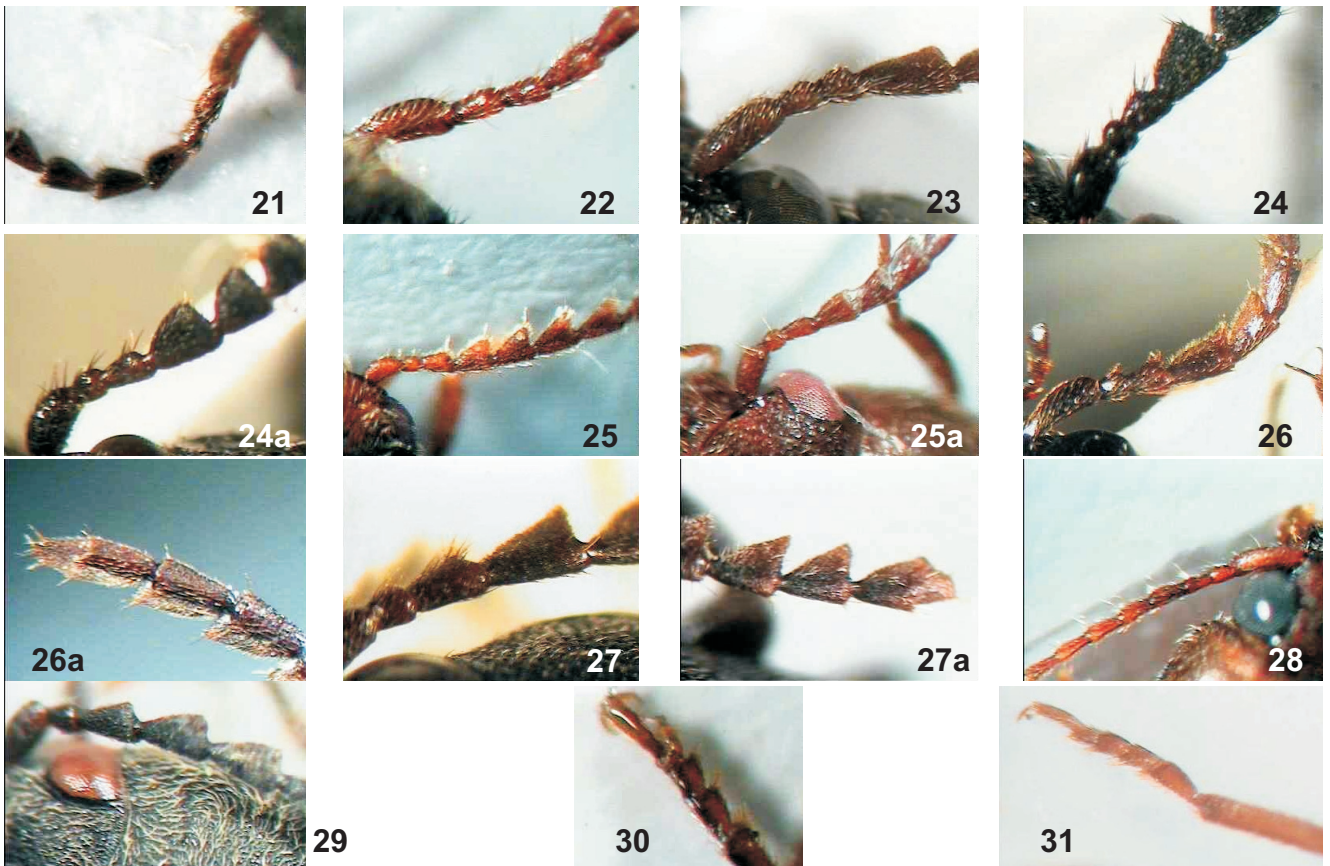
DIAGNOSIS. Species resembling *P. omissus* (Buysson, 1889) for the uniform yellow-ferruginous colour, it can be separated by the size on average smaller, shape of pronotum with sides nearly regularly tapering from base to anterior margin, genitalia.

DESCRIPTION. Male. Moderately shiny; entirely yellow-ferruginous, covered with dense, recumbent, yellow-golden, vestiture.

Frons convex, suprantennal carinae reaching the anterior margin punctures uniformly distributed, with shortest intervals, deep, simple to vaguely umbilicate with short intervals smaller than their own diameters. Antennae (fig. 28) not reaching the apicis of posterior angles of pronotum, feebly serrated from fourth article on; second article subcylindrical, less twice longer than wide, third subconical, just longer than wide and just shorter than second; second and third, taken together, clearly longer than fourth; fourth triangular, less twice longer than wide and a little longer than the following; fifth-tenth triangular, just longer than wide; last ellipsoidal, longer than penultimate.

Pronotum 1.5-1.2x wider than long, widest at apicis of posterior angles, moderately convex; sides very gradually tapering from base to the anterior third then briefly rounded at anterior margin; posterior angles acuminate, not divergent, carina prolonged to the first third of the sides, very near and

► **Fig. 21-29.** First or last articles of antennae. **21.** *Agriotes ayani* n. sp.; **22.** *Agriotes ulkeri* n. sp.; **23.** *Agriotes gulnariensis* n. sp.; **24, 24a.** (♂♀). *Ampedus camillae* n. sp.; **25, 25a.** (♂♀). *Brachygonus gunmurae* n. sp.; **26, 26a.** ♂ *Elater turcicus* n. sp.; **27, 27a.** ♂ *Elater tauricus* (Schwarz); **28.** ♂ *Peripontius omissoides* n. sp.; **29.** ♂ *Dicronychus gulleri* n. sp. **Fig. 30-31.** Tarsal articles. **30.** *Peripontius omissoides* n. sp.; **31.** *Tolphorea ozalpi* n. sp. **Fig. 32-45.** Adults, partial or total view. **32.** ♂ *Elathous nurayae* n. sp.; **33.** ♂ *Elathous emrei* n. sp.; **34.** *Crepidophorus mutilatus* (Rosenhauer); **35.** *Agriotes ayani* n. sp.; **36.** *Agriotes ulkeri* n. sp.; **37.** *Agriotes gulnariensis* n. sp.; **38.** ♂ *Ampedus camillae* n. sp.; **39, 39a.** (♂♀). *Brachygonus gunmurae* n. sp.; **40.** ♂ *Elater turcicus* n. sp.; **41.** *Peripontius omissoides* n. sp.; **42.** *Tolphorea ozalpi* n. sp.; **43.** *Cardiophorus sculptus* n. sp.; **44.** *Cardiophorus kasnaki* n. sp.; **45.** *Dicronychus gulleri* n. sp.



subparallel to the lateral margins at base, then gradually directed inwards; punctures variable, on disc deep, simple or vaguely umbilicate with intervals variable, equal to smaller than their own diameters, towards the sides only a little denser.

Scutellum shield-shaped, as long as wide, flat, ridged at base, punctured. Elytra 3x longer than pronotum and as wide as it at base, moderately convex; sides subparallel at the first half then very gradually tapering to the apicis; striae regularly marked and punctured; interstriae flat more finely punctured.

Fourth tarsal article a little longer than wide and deeply impressed (fig. 30); claws pectinate.

Aedeagus as in fig. 10 (length 0.65 mm).

Female. Very similar to male with just shorter antennae.

Bursa copulatrix sclerified as in fig. 18.

Size. Length 5.5-6 mm; width 1.5-1.6 mm.

ETYMOLOGY. The name is derived by the resemblance of the species with *P. omissus* (Buysson).

Tolphorea ozalpi n. sp. Platia

Fig. 11, 11a, 19, 31, 42.

MATERIAL EXAMINED. Holotype ♂ - **Turkey** : Mersin, 40 km N of Gülnar, Koseçobanlı-Tasdustu, 26.VII.2006, N. Jansson & M. Avci, window trap 20 (CPG). 1 Paratype ♀ - same data as HT, 24.VI.2006 (CPG).

DIAGNOSIS. Species comparable to *T. volans* Gurjeva, 1983 from Iran, it can be separated by the pronotum wider than long and different ratio between length of pronotum and elytra.

DESCRIPTION. Male. Rather shiny; entirely ferruginous with blackish, not well defined shadings at anterior margin of head, base of pronotum and around the scutellum; covered with dense, recumbent, yellow-golden vestiture.

Frons convex, suprantennal carinae reaching the anterior margin, punctures deep, simple or vaguely umbilicate with short intervals, very smaller than their own diameters.

Antennae short, not reaching the apicis of posterior angles of pronotum; second subcylindrical, third subconical, subequal in length, taken together, clearly longer than fourth; fourth triangular, less twice longer than wide and a little longer than the following; fifth-tenth triangular, just longer than wide; last longer than penultimate, ellipsoidal, pointed at apex.

Pronotum 1.15x wider than long, widest at apicis of posterior angles, convex, with a trace of mid-longitudinal short depression at basal slope; sides from base to apex nearly regularly and very gradually tapering; posterior angles acuminate, not divergent, with a carina prolonged to the first third of the sides, at base very near to the lateral margin then gradually directed inwards; punctures rather uniformly distributed, of variable diameter, deep, simple or vaguely umbilicate, on all the surface with intervals very smaller than their own diameters.

Scutellum shield-shaped, as long as wide, ridged at base, finely punctured. Elytra 3x longer than pronotum and as wide as it at base, convex; sides from base to apicis very gradually and nearly regularly tapering; striae normally marked and punctured; interstriae flat, finely punctured.

Tarsal articles regularly decreasing in length with fourth simple (fig. 31); claws pectinate.

Aedeagus as in fig. 11, 11a (length 0.63 mm).

Female. Identical to male, only with less serrate and shorter antennae.

Bursa copulatrix sclerified as in fig. 19.

Size. Length 5.9-6.2 mm; width 1.81-1.87 mm.

ETYMOLOGY. The species is dedicated to Prof. Ozalp, the Professor I contacted and helped me to start the project.

Tribe Cardiophorini Candèze, 1860

Cardiophorus sculptus n. sp. Platia

Fig. 12, 12a, 43.

MATERIAL EXAMINED. Holotype ♂ - **Turkey** : Gölhisar, 120 km W of Antalya, 7 km SW Altinyayla, 22.V.2008, N. Jansson & M. Avci, window trap 8. (CPG).

DIAGNOSIS. Among the Turkish species with impressed last abdominal segment the new species can be compared to *C. impressiventris* Schwarz, 1900 but is separated by shorter antennae not reaching the apicis of posterior angles of pronotum, anterior margin of frons concave at middle, deeper and larger pit of last abdominal segment and apicis of paramera in the male genitalia.

DESCRIPTION. Male. Moderately shiny; entirely black with legs yellow-ferruginous except for the tarsi darkened; covered with dense, recumbent, yellowish, vestiture.

Frons flat between the eyes, moderately impressed before the anterior margin, the latter concave at middle; punctures of variable diameters, deep, simple, with short, variable, shagreened intervals.

Antennae rather short, just exceeding the middle of sides of pronotum, second article subcylindrical, about twice longer than wide, third subtriangular just longer than second and subequal to fourth in length; fourth-tenth more serrate, about twice longer than wide; last a little longer than penultimate, subellipsoidal, constricted at apex.

Pronotum 1.12x wider than long, widest at middle, strongly and regularly convex; sides very arcuate, from middle forwards gradually tapering, backwards more sharply narrowing, posterior angles short, not divergent, briefly carinate; punctures fine, approximately of the same size, uniformly distributed on all the surface, with shortest intervals.

Scutellum heart-shaped, just wider than long, shallowly impressed at middle, finely punctured.

Elytra 2.53x longer than pronotum and as wide as it at base, sides ovate, widest at middle; striae well marked and punctured; interstriae slightly convex, more finely punctured.

Last visible abdominal segment deeply impressed at middle.

Claws simple.

Aedeagus as in fig. 12, 12a (length 1.22 mm).

Female unknown.

Size. Length 7.5 mm; width 2.4 mm.

ETYMOLOGY. The name is derived by the deep impressed pit on the last abdominal visible sternite.

Cardiophorus kasnaki n. sp. Platia

Fig. 20, 20a, 44.

MATERIAL EXAMINED. Holotype ♀ - **Turkey** : Egridir, Yukangökdere, Kasnak forest, 17.V.2007, N. Jansson & M. Avci, window trap 21. (CPG).

DIAGNOSIS. For the last visible sternite ferruginous at apical half it can be compared to *C. analis* Schwarz, 1892 but can be separated for the longer antennae, less arcuate sides of pronotum and particularly for the U-shaped median piece of bursa copulatrix

DESCRIPTION. Female. Moderately shiny; entirely blackish with moderate bronzed reflexions; antennae blackish; legs ferruginous with darkened tarsi; apical half of last visible sternite ferruginous; covered with dense, recumbent, yellowish, vestiture.

Frons convex to flat at anterior margin, the latter well ridged and regularly arcuate, punctures deep, simple, with shortest intervals.

Antennae reaching the apices of posterior angles of pronotum, second article subconical, nearly twice as long as wide, third subtriangular, more twice longer than wide and as long as fourth; fourth-tenth triangular, twice longer than wide, last a little longer than penultimate, subellipsoidal, constricted apically.

Pronotum as long as wide, widest at middle, strongly and regularly convex, sides arcuate from middle forwards and backwards equally tapering, posterior angles short, not divergent, briefly carinate; punctures fine, deep, simple, on disc with intervals on average equal to their own diameters, towards the sides a little denser with shortest intervals.

Scutellum heart-shaped, as long as wide, pointed at apex, slightly impressed at middle, finely punctured.

Elytra 2.6x longer than pronotum and as wide as it at base, moderately convex; sides ovate, widest at middle, more suddenly tapering at apical third; striae regularly marked and punctured; interstriae flat, finely punctured.

Claws simple.

Bursa copulatrix sclerified as in fig. 20, 20a.

Male unknown.

Size. Length 8 mm; width 2.75 mm.

ETYMOLOGY. The name is derived from Kasnak the Turkish name for the *Quercus vulcanica* from this place.

Dicronychus gulleri n. sp. Platia

Fig. 13, 13a, 29, 45.

MATERIAL EXAMINED. Holotype ♂ - **Turkey**: Egridir, Yukangökdere, Kasnak forest, 17.V.2007, N. Jansson & M. Avci, window trap 23 (CPG). 1 Paratype ♂ - same data as Ht, window trap 4. (CJL).

DIAGNOSIS. Species resembling to *D. pici* Platia & Gudenzi, 2004 for the general shape and colour, it can be separated by the third article of antennae slenderer and equal to fourth in length.

DESCRIPTION. Male. Very moderately shiny; entirely black with some rare bronzed reflexions, with legs ferruginous except for the femura darkened; covered with dense, recumbent, whitish vestiture.

Frons convex on vertex, slightly impressed at anterior margin, the latter ridged, moderately arcuate, substraight at middle, punctures deep, simple or vaguely umbilicate contiguous or confluent.

Antennae (fig. 29) exceeding by about 2.5 articles past the apices of posterior angles of pronotum, serrated from third article; second article subconical as long as wide, third subtriangular, twice longer than second and less twice longer

than wide, as long as fourth and following more serrate and gradually slenderer, last a little longer than penultimate, subellipsoidal.

Pronotum just wider than long, widest at middle, regularly convex; sides moderately and regularly arcuate, slightly sinuate before the posterior angles, the latter short, not divergent, briefly carinate; lateral margins obsolete; punctures uniformly distributed, on disc deep, simple, nearly contiguous, at sides denser, contiguous.

Scutellum heart-shaped, as long as wide, impressed at middle, finely punctured.

Elytra 2.8x longer than pronotum and as wide as it at base, convex; sides moderately arcuate, widest at middle, gradually tapering to the apices; striae regularly marked and punctured; interstriae slightly convex, densely and finely punctured.

Claws with toothed expansion at the first half.

Aedeagus as in fig. 13, 13a (length 1.2 mm).

Female unknown.

Size. Length 5.8-6.2 mm; width 1.8-2 mm.

ETYMOLOGY. The species is dedicated to Mr. Guller, the region forest chief in Egridir where the national park is situated helped us with permissions and field work.

Bibliography

- CATE, P. C. 2007. Family Elateridae: 89-209 in Löbl I. & Smetana A. (eds.). *Catalogue of Palearctic Coleoptera* Vol. 4. Elateroidea - Derodontoidea - Bostrichoidea - Limexyloidea - Cleoidea - Cucujoidea. Apollo Books Stenstrup, 935 pp.
- GURJEVA, E. L. 1983. Novyy rod i vid zhukov-shchelkunov (Coleoptera, Elateridae) iz Irana. A new genus and species of click-beetles (Coleoptera, Elateridae) from Iran. *Vestnik Zoologii*, 1983(5): 81-82.
- MERTLIK, J. & G. PLATIA 2008 - Catalogue of the family Cebrionidae, Elateridae, Lissomidae, Melasidae & Throscidae from Turkey. *Elateridarium*, 2: 1-40. www.elateridae.com.
- PLATIA, G. & I. GUDENZI 2002 - Revisione dei *Cardiophorus* della Turchia. II. Le specie unicolori (Coleoptera Elateridae). *Bollettino della Società entomologica italiana*, Genova, 134 (1): 27-55.
- PLATIA, G. & I. GUDENZI 2004 - Contributo alla conoscenza dei *Dicronychus* Brullé, 1832 della Turchia con descrizione di nuove specie e chiave di determinazione per le specie note (Coleoptera: Elateridae: Cardiophorini). *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*, 34: 9-22.
- RECALDE IRURZUN, J.I., I. PEREZ-MORENO & A. FERMIN SAN MARTIN 2007. *Crepidophorus mutilatus* (Rosenhauer 1847), *Aulonothroscus laticollis* (Ribinsky 1897) e *Isoriphis nigriceps* (Mannerheim 1823): tres destacables Elateroidea de distribución discontinua, nuevos para la fauna ibérica. (Coleoptera: Elateridae, Throscidae & Eucnemidae). *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*, 41: 397-401.
- SÁNCHEZ RUIZ, A. 1996. *Catálogo bibliográfico de las especies de la familia Elateridae (Coleoptera) de la Península Ibérica e Islas Baleares*. Documentos Fauna Ibérica, 2. Ramos, M.A. (Ed.). Museo Nacional de Ciencias Naturales, CSIC: 265 pp.
- WURST, C. 1994. Neue Schnellkäfer der Unterfamilie Athoinae aus dem Taurusgebirge, Südtürkei (Coleoptera: Elateridae). *Mitteilungen Entomologischer Verein Stuttgart* 1869 e. V., 29: 59-63.
- WURST, C. 1995. Vier neue Schnellkäfer aus Europa und Kleinasien (Coleoptera: Elateridae). *Entomologische Zeitschrift*, 105(8): 147-156.