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TWO NEW SUBSPECIES OF THE GENUS *CARABUS* L. FROM SOUTHERN TURKEY (COLEOPTERA: CARABIDAE)

Dušan ČATLOŠ¹ and František MORAVEC²

¹ Tokajčicka 14, 821 03 Bratislava, Slovakia

² Jiráskova 4, 851 01 Bratislava, Slovakia

Abstract - Two new subspecies of the genus *Carabus* L. from southern Turkey, *Carabus (Procrustes) payafa pseudoacuticollis* ssp. nov. and *Carabus (Procrustes) anatolicus gueneycensis* ssp. nov., are described and compared with the most closely related taxa *C. (P.) payafa payafa* White 1845 and *C. (P.) anatolicus lycicus* Breuning 1934.

KEY WORDS: Coleoptera, Carabidae, *Carabus*, Turkey, taxonomy

Izveček - DVE NOVI PODVRSTI RODU *CARABUS* L. IZ JUŽNE TURČIJE (COLEOPTERA: CARABIDAE)

Dve novi podvrsti rodu *Carabus* L. iz južne Turčije, *Carabus (Procrustes) payafa pseudoacuticollis* ssp. nov. in *Carabus (Procrustes) anatolicus gueneycensis* ssp. nov., sta opisani in primerjani z najbližjimi taksoni *C. (P.) payafa payafa* White 1845 in *C. (P.) anatolicus lycicus* Breuning 1934.

KLJUČNE BESEDE: Coleoptera, Carabidae, *Carabus*, Turčija, taksonomija

Introduction

During October 1997 several specimens of *Procrustes payafa* White 1845 were collected by the authors in the mountain passes of the Taurus Mts. near Akseki and in the vicinity of Geriş (Turkey, Antalya province). Three subspecies of *Procrustes payafa* are known to date, according to Brezina (1994). *Procrustes payafa* s.str. is described from

Turkey, Taurus Mts., from the surroundings of Antalya (Güneç - loc. typ.). *Procrustes payafa acuticollis* Motschoulsky 1858 is described from Turkey, Kurdistan (loc. typ.), and *Procrustes payafa drouxianus* Machard 1934 is described from Turkey, Taurus Mts. (Yelibelli Geçidi loc. typ.). An isolated population of *Procrustes payafa* was discovered near Geriş and in the high passes of the Taurus Mts. (Bademli Geçidi and Irmasan Geçidi) near Akseki, ca 100 km east of Antalya.

At the same time a number of *Procrustes anatolicus* Chaudoir 1857 specimens were collected by the authors in the Davraz Dag Mts. (Turkey, Isparta province). Two subspecies of *Procrustes anatolicus* are known to date, according to Brezina (1994). *Procrustes anatolicus* s.str. is described from Cyprus (Mont Olympe - loc. typ.) according to Breuning (1932-1937), and *Procrustes anatolicus lycicus* Breuning 1934 is described from southern Turkey, from the vicinity of Antalya (Adalia=Antalya - loc. typ.). An isolated population was discovered in Davraz Dag Mts., ca 100 km north of Antalya.

The present paper deals with the description of a new subspecies of *Procrustes payafa* from Taurus, and *Procrustes anatolicus* from Davraz Dag.

Material

Type material of *Procrustes payafa* ssp. nov. was collected by the authors in October 1997 and June 1998 in Bademli Geçidi and Irmasan Geçidi near Akseki, and one specimen near Geriş (Turkey, Antalya province) was found in October 1997. Comparative material of *Procrustes payafa* s.str. was collected by the authors in the mountain passes between Antalya and Korkuteli (Turkey, Antalya province) and in the Davraz Dag Mts. (Turkey, Isparta province) ca 100 km north of Antalya in October 1997.

Type material of *Procrustes anatolicus* ssp. nov. was collected by the authors in October 1997 in the Davraz Dag Mts. (Turkey, Isparta province). Comparative material of *Procrustes anatolicus lycicus* was collected by the authors near the city of Antalya at the same time.

All specimens were taken actively or by the pitfall trap method.

Carabus (Procrustes) payafa pseudoacuticollis ssp. nov. (Figs. 1-4)

Type locality: Southern Turkey, Antalya province., Taurus Mts., Bademli Geçidi., 1390 m.

Type specimens: **Holotype** male, labelled: S Türkiye Antalya, Toros Dağları Bademli Geçidi, 27.-29.VI.1998, 1390 m, Čatloš et Moravec lgt. Deposited in the collection of František Moravec.

Allotype female - labelled as previously, deposited in the collection of Dušan Čatloš.

Paratypes: 31 males and 21 females with the same label as in holotype and allotype; 3 females labelled: S Türkiye - Antalya, Toros Dağları - Irmasan Geçidi., 27.-29.VI.1998, 1500 m, Čatloš et Moravec lgt; 7 males and 3 females labelled: S Türkiye-Antalya, Toros Dağları Bademli Geçidi., 15.-16.X.1997, 1390 m, Čatloš et Moravec lgt.; 2

males and 1 female labelled: S Türkiye - Antalya, Toros Dağları - İrmasan Geçidi., 9.-16.X.1997, 1500m, Čatloš et Moravec lgt; 1 female: S Türkiye - Antalya, Toros Dağları - Geriş env., 9.-16.X.1997, 1200 m, Čatloš et Moravec lgt. Paratypes deposited in the authors collections as well as Jan Hron (Rokycany, Czech Republic), Zdenek Hanousek (Rokycany, Czech Republic), Slavoj Budka (Písek, Czech Republic), Oskar Friedrich (Kassel, Germany) and Pompiliu Lie (Lugoi, Romania).

Description: Body length 34-41 mm in males and 40.5-47.5 mm in females. Colour of dorsal and ventral surface, antennae, legs and maxillar appendages black. Habitus of holotype as in Fig. 1.

Head thickened and very robust with longitudinal impressions above the eyes. Dorsal surface smoothed, punctures sparse and shallow. Eyes small. Mandibles long, and robust. Antennae in males reaching approximately 1/3 of elytra length from basis. First joint of antennae with seta.

Pronotum transverse, ratio width to length 1.29-1.49. Maximum width 8.0-11.7 mm, near 1/3 of pronotum length. Maximum length (from tips of anterior angles to tips of posterior angles) 8.1-10.6 mm. Anterior margin distinctly emarginate and sinuate, anterior angles with sharp, sometimes narrowly rounded tips, projecting anteriorly. Width of anterior margin between tips of angles 6.2-9.0 mm. Lateral margins broadly rounded in anterior half, sinuate in posterior half and almost straight before posterior angles. Posterior angles, projecting posteriorly, triangular in shape, elongated, with sharp tips. Width of posterior margin between tips of angles 6.5-8.9 mm. Disc convex, more or less flattened and smoothed, surface with shallow wrinkles and irregular punctures. Medial line impressed distinctly. Sides of disk widened, with very strongly expressed lateral groove and lateral border. Lateral margins bent dorsally, narrower in anterior half, in posterior half wide and expressed to the top of posterior angles. No lateral setae present.

Scutellum triangular, transverse.

Elytra oblong-oval, weakly convex. Ratio length to width 1.58-1.85 in males, and 1.63-1.93 in females. Maximum width 12.0-16.0 mm at posterior part of elytra and 1.30-1.57 times as maximum width of pronotum. Humeral angles well developed, narrowly rounded. Lateral margin rounded at humerus, straight and almost parallel in basal half and broadly rounded to apex. Marginal groove narrow but well expressed, especially in humeral part. Disk convex, striae not evident, the serial punctures very fine, if any. Primary intervals generally not present, sometimes developed like gloss and narrow stripes or very fine and weakly elevated intervals, the foveae often impressed, then arranged in the usual three rows. The general surface smooth, with very fine shallow wrinkles and irregular punctures.

Ventral surface glossy, finely punctured, density of punctures rises laterally, longitudinal striae of sternites present, shortened laterally. Last sternite without setae. Legs not thickened. Front tarsal segments 1 - 3 of males widened, the fourth much narrower than the third.

Aedeagus as in Fig. 3.

Distribution: Southern Turkey, Antalya province, Taurus Mts., high elevated passes

near Akseki.

Etymology: Substantive in nominative. The name is derived to show the similarity to *Procrustes payafa acuticollis* Motschulsky 1858.

Differential diagnosis: Based on the shape and structure of head, pronotum, elytra, last sternite of abdomen and aedeagus. *Carabus (Procrustes) payafa pseudoacuticollis* ssp. nov. differs from closely related *C. (P.) payafa* s.str. by the generally more robust but slender body and flattened habitus, more robust head with sparse but deep punctures, narrower and flattened pronotum, and narrower and almost parallel elytra with flattened disc with smooth surface. Last sternite of abdomen is without setae, in *C. (P.) payafa* s.str. one seta on each side of last sternite. Aedeagus almost of the same shape as in *C. (P.) payafa* s.str. (Figs. 3, 4) but generally more robust.

Carabus (Procrustes) anatolicus gueneyensis ssp. nov.
(Figs. 5-10)

Type locality: southern Turkey, Isparta province, Davraz Dag Mts., Güneççe vill., 1200 m.

Type specimens: **Holotype** male, labelled: S Türkiye - Isparta, Davraz Dag Mts., 6.-18.X.1997, Čatloš et Moravec lgt. Deposited in the collection of Dušan Čatloš.

Allotype female labelled as previously, deposited in the collection of František Moravec.

Paratypes: 32 males and 64 females with the same label as in holotype and allotype, deposited in the authors' collections as well as Jan Hron (Rokycany, Czech Republic), Zdeněk Hanousek (Rokycany, Czech Republic), Slavoj Budka (Písek, Czech Republic), Karel Adamík (Frídek-Místek, Czech Republic), Jože Broder (Kranj, Slovenia), Oskar Friedrich (Kassel, Germany) and Pompiliu Lie (Lugoi, Romania).

Description: Body length 25.1-29.0 mm in males and 27.9-32.0 mm in females. Colour of dorsal and ventral surface, antennae, legs and maxillar appendages black, sometimes dark brown (perhaps immature specimens). Margins of pronotum and elytra often coloured very deep blue, especially in males. Habitus of holotype and allotype as in Figs. 5 and 6.

Head not thickened, front surface smoothed, wrinkled in posterior part with longitudinal impressions above the eyes. Punctures sparse and deep. Eyes convex, almost hemispherical. Mandibles long, upper surface with very fine punctures, apical part of mandibles saberly curved, sharp and flattened. Antennae in males reaching approximately 1/3 of elytra length from basis. First joint of antennae with seta.

Pronotum transverse, ratio width to length 1.27-1.64. Maximum width 6.8-9.0 mm, near 1/3 of pronotum length. Maximum length (from tips of anterior angles to tips of posterior angles) 5.1-7.0 mm. Anterior margin emarginate, anterior angles rounded, projecting anteriorly. Width of anterior margin between tips of angles 4.0-5.2 mm. Lateral margins broadly rounded in anterior half, nearly straight in posterior half and slightly sinuate before posterior angles. Posterior part of pronotum elevated medially, posterior angles, projecting posteriorly, triangular in shape with sharp, sometimes nar-

rowly rounded tips. Width of posterior margin between tips of angles 4.9-6.9 mm. Disc convex, more or less flattened and smoothed, at center with shallow wrinkles and weakly expressed smoothed irregular punctures. Medial line impressed distinctly. Sides of disk widened, with strongly expressed lateral groove and lateral border, with irregular and deep wrinkles and punctures, especially in posterior part. Anteriorly lateral groove almost absent, posteriorly strongly expressed. Lateral margins bent dorsally, rather narrow in anterior half, in posterior half wide and expressed almost to the top of posterior angles. No lateral setae present.

Scutellum triangular, broadly transverse.

Elytra elliptical, convex, especially in females. Ratio length to width 1.57-1.68 in males, and 1.57-1.72 in females. Maximum width 9.8-12.7 mm approximately in the middle of elytra and 1.27-1.64 times as maximum width of pronotum. Humeral angles well developed, usually narrowly rounded. Lateral margins broadly rounded and gradually narrowed to apex. Marginal groove narrow but well expressed. Disk convex, striae not evident, serial punctures very fine if any, though generally more or less irregular. Primary intervals generally not present, sometimes developed like glossy and narrow stripes or very fine and weakly elevated intervals, the foveae more often well impressed and arranged in the usual three rows. The general surface smooth, often grained, especially in lateral and apical part.

Ventral surface glossy, lateral finely punctured, longitudinal striae of sternites present, shortened laterally. Posterior margin of last sternite without setae. Legs not thickened. Front tarsal segments 1-3 of males widened, the fourth much narrower than third.

Aedeagus as in Fig. 9.

Distribution: Southern Turkey, Isparta province, Davraz Dag Mts.

Etymology: Adjective, derived from the geographical name of a village situated near the place where the new subspecies was taken.

Differential diagnosis: Based on the shape and structure of pronotum, elytra and aedeagus. *Carabus (Procrustes) anatolicus gueneycensis* ssp. nov. differs from closely related subspecies *C. (P.) anatolicus lycicus* Breuning 1934 (Figs. 7, 8) by a generally more robust body, flattened and smoothed habitus, different shape and surface of pronotum (more convex disk with smooth and glossy surface), lateral groove is very strongly expressed with lateral margins bent dorsally, elytra wide (especially robust specimens) with flattened disc, surface smooth with silky lustre. The shape of aedeagus (Figs. 9, 10) is different.



Fig. 1: *Carabus (Procrustes) payafa pseudoacuticollis* ssp. nov., holotype.



Fig. 2: Fir forest near Bademli Geçidi in Taurus Mts, typical locality of *Carabus (Procrustes) payafa pseudoacuticollis* ssp. nov.

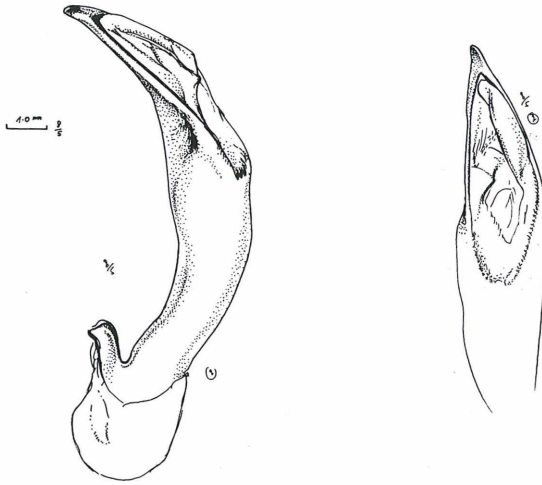


Fig. 3: Aedeagus of *Carabus (Procrustes) payafa pseudoacuticollis* ssp. nov. holotype.

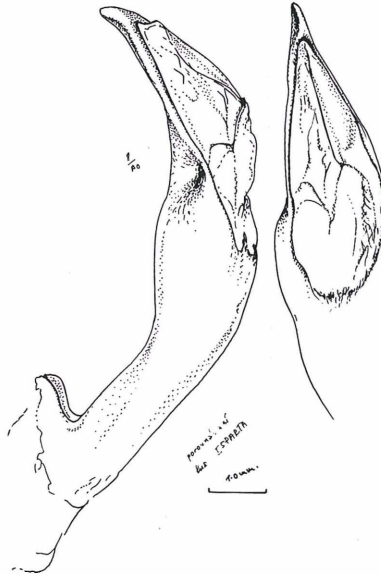


Fig. 4: Aedeagus of *Carabus (Procrustes) payafa payafa* White 1845 from Davraz Dag Mts., Isparta province.



Fig. 5: *Carabus (Procrustes) anatolicus gueneycensis* ssp. nov., holotype.



Fig. 6: *Carabus (Procrustes) anatolicus gueneycensis* ssp. nov., allotype.



Fig. 7: *Carabus (Procrustes) anatolicus lycicus* Breuning 1934, male from the vicinity of Aksu near the city of Antalya.



Fig. 8: *Carabus (Procrustes) anatolicus lycicus* Breuning 1934, female from the vicinity of Aksu near the city of Antalya.

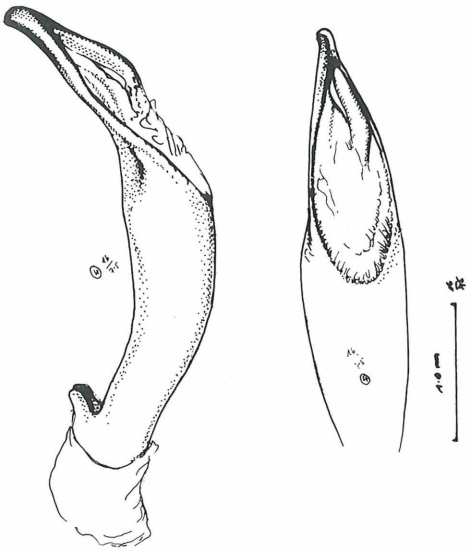


Fig. 9: Aedeagus of *Carabus (Procrustes) anatolicus gueneycensis* ssp. nov. holotype.

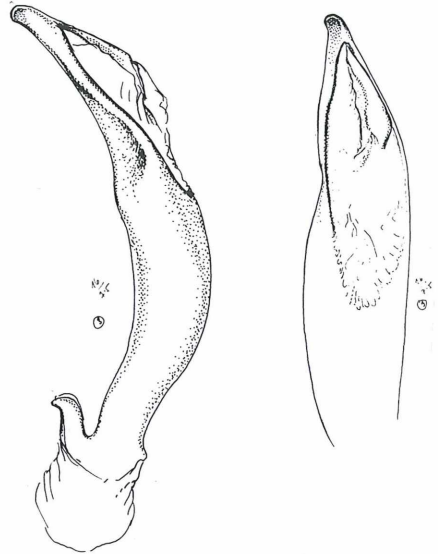
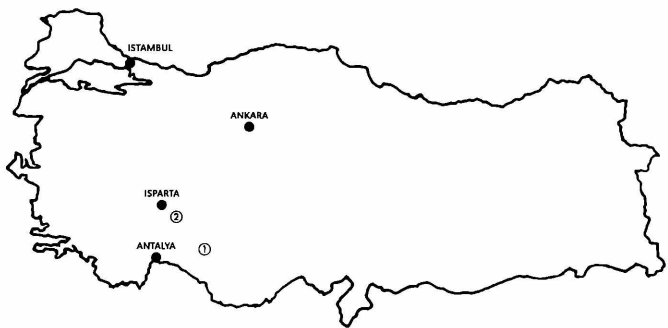


Fig. 10: Aedeagus of *Carabus (Procrustes) anatolicus lycicus* Breuning 1934 from the vicinity of Aksu near the city of Antalya.



- ① Antalya province, Taurus Mts., Bademli Geçidi.
Type locality of *Carabus (Procrustes) payafa pseudoacuticollis* ssp. nov.
- ② Isparta province, Davroz Dag Mts., Güneyce vil.
Type locality of *Carabus (Procrustes) anatolicus gueneycensis* ssp. nov.

Fig. 11: Type localities of *Carabus payafa pseudoacuticollis* ssp. nov. and *Carabus anatolicus gueneycensis* ssp. nov.

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