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TITLE: Notes on the genera *Paederidus* Mulsant & Rey, 1878, *Paederus* Fabricius, 1775 and *Uncopaederus* Korge, 1969 from the Palearctic Region (Coleoptera: Staphylinidae: Paederinae)

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Original article (Orijinal araştırma)

Notes on the genera *Paederidus* Mulsant & Rey, 1878, *Paederus* Fabricius, 1775 and *Uncopaederus* Korge, 1969 from the Palearctic Region (Coleoptera: Staphylinidae: Paederinae)¹

Palearktik Bölgedeki *Paederidus* Mulsant & Rey, 1878, *Paederus* Fabricius, 1775 ve *Uncopaederus* Korge, 1969 cinslerine bağlı türler üzerine notlar (Coleoptera: Staphylinidae: Paederinae)

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Abstract

The genera *Paederidus* Mulsant & Rey, 1878, *Paederus* Fabricius, 1775 and *Uncopaederus* Korge, 1969 comprise 117 species in the Palearctic Region. In the present study, new and additional distribution data for 16 species of the genera *Paederidus*, *Paederus* and *Uncopaederus* are reported from different countries of the Palearctic Region. The material examined was collected between 1884 and 2017; and contained types and additional specimens in European museums and Alaşehir Zoological Museum. Among them, six species are the first country records: Albania (1), Bosnia Herzegovina (2), Israel (1), Kazakhstan (1), Macedonia (1), Montenegro (2), Morocco (1). In addition, *Uncopaederus signiventris* (Smetana, 1962) is illustrated. Two synonymies are proposed: *Paederus littoralis* Gravenhorst, 1802 = *Paederus pelikani* Reitter, 1884 syn. n., = *Paederus littoralis ilsae* Bernhauer, 1932 syn. n.

Keywords: Paederinae, *Paederidus*, *Paederus*, synonymies, *Uncopaederus*

Öz

Paederidus Mulsant & Rey, 1878, *Paederus* Fabricius, 1775 ve *Uncopaederus* Korge, 1969 cinsleri Palearktik Bölge'de 117 tür ile temsil edilirler. Bu çalışmada, Palearktik Bölge'deki farklı ülkelerde bulunan *Paederidus*, *Paederus* ve *Uncopaederus* cinslerine bağlı 16 türe ait yeni ve ek yayılışsal kayıtlar verilmiştir. İncelenen materyal, 1884-2017 yılları arasında toplanmış olup, Avrupa müzeleri ve Alaşehir Zooloji Müzesi'nde bulunan tip ve diğer örnekleri içermektedir. Bu 16 türden altı tür ilk ülke kaydı niteliğindedir: Arnavutluk (1), Bosna Hersek (2), İsrail (1), Kazakistan (1), Makedonya (1), Karadağ (2), Fas (1). Ayrıca, *Uncopaederus signiventris* (Smetana, 1962) türü şekillendirilmiştir. Yeni sinonimler önerilmiştir: *Paederus littoralis* Gravenhorst, 1802 = *Paederus pelikani* Reitter, 1884 syn. n., = *Paederus littoralis ilsae* Bernhauer, 1932 syn. n.

Anahtar sözcükler: Paederinae, *Paederidus*, *Paederus*, sinonimler, *Uncopaederus*

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Introduction

The genera *Paederidus* Mulsant & Rey, 1878, *Paederus* Fabricius, 1775 and *Uncopaederus* Korge, 1969 belong to the tribe Paederini Fleming (Schomann & Solodovnikov, 2017). They are remarkable for the coloring of their body. These species occur in many places, mainly on the banks of rivers, creeks, lakes, dams, wetlands and wet agricultural areas (Anlaş et al., 2017).

According to the recent catalog by Schülke & Smetana (2015), the genera *Paederidus* (13 species) *Paederus* (103 species) and *Uncopaederus* (1 species, known only from Northern Anatolia) comprise 117 species in the Palearctic Region. The genera *Paederidus* and *Uncopaederus* do not include any subgenera, but the genus *Paederus* has been divided into ten subgenera: the nominate subgenus (13 species); *Eopaederus* Scheerpeltz (13 species); *Gnathopaederus* Chapin (6 species); *Harpopaederus* Scheerpeltz (16 species); *Heteropaederus* Scheerpeltz (2 species); *Megalopaederus* Scheerpeltz (8 species); *Nepalopaederus* Scheerpeltz (1 species); *Oedopaederus* Scheerpeltz (1 species); *Oreinopaederus* Scheerpeltz (1 species); and *Poederomorphus* Gautier des Cottes (2 species), with 13 additional species listed as incertae sedis (Assing, 2015; Schülke & Smetana, 2015). The genus *Paederus* is widespread around the world; and is also one of the most studied staphylinid taxa. Despite this, the taxonomy of this genus is very complicated and still far from being resolved, especially from the point of subgeneric concepts. For this reason, to resolve the taxonomical problems, phylogenetic analyses using multiple DNA markers should be made.

In the present study, 16 species of the genera *Paederidus*, *Paederus* and *Uncopaederus* are reported from different countries of the Palearctic Region, including some records of zoogeographic interest. Two synonymies are proposed: *Paederus littoralis* Gravenhorst, 1802 = *Paederus pelikani* Reitter, 1884 syn. n., = *Paederus littoralis ilsae* Bernhauer, 1932 syn. n. Additionally, *Uncopaederus signiventris* (Smetana, 1962) is illustrated.

The main aim of this study was to contribute to the knowledge of the *Paederidus*, *Paederus* and *Uncopaederus* fauna of the Palearctic Region.

Material and Methods

Classification and nomenclature of the genera *Paederidus*, *Paederus* and *Uncopaederus* suggested by Schülke & Smetana (2015) were followed in this study. Morphological studies were conducted using a Stemi 2000-C microscope (Zeiss, Germany). For photographs a digital camera (Zeiss Axiocam ERC5s) was used.

The studied material was collected between 1884-2017 and included types and additional male specimens in museums. The material referred to in this study is stored in the following collections:

AZMM – Alaşehir Zoological Museum, Manisa, Turkey (S. Anlaş);

HNHM – Hungarian Natural History Museum, Budapest, Hungary (G. Makranczy, O. Merkl);

IRSNB – Inst. Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium (W. Dekoninck);

MHNG – Muséum d'Histoire Naturelle, Genève, Switzerland (G. Cuccodoro);

NMNHs – National Museum of Natural History, Sofia, Bulgaria (R. Bekchiev); and

NMPC – National Museum, Praha, Czech Republic (M. Fikáček).

Results

Genus *Paederidus* Mulsant & Rey, 1878

Paederidus albipilis (Solsky, 1871)

Material examined: Turkmenistan: 2 exs, Turcmenia, coll. Reitter (NMPC).

Distribution: This species has been recorded in Afghanistan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan (Schülke & Smetana, 2015).

Paederidus algiricus antoinei (Koch, 1937)

Material examined: Morocco: 1 ex., 15.IV.1974, Morocco, Sud Valée, du Dra Agdz, leg. Besuchet (MHNG).

Distribution: This species has been recorded in Spain and Morocco (Schülke & Smetana, 2015).

Paederidus rubrothoracicus (Goeze, 1777)

Material examined: Greece: 3 exs, 23.V.1976, Graecia, Peloponnes, Megalopolis, leg. Maroni (MHNG). Italy: 1 ex., 11-12.V.1980, Appennino, Lombardo, Stáffora-Tal, leg. Zwick (MHNG). Montenegro: 2 exs, 10.VII.1934, Crna Gora, Savnik, leg. Fodor (HNHM). Romania: 8 exs, 26.V.1994, Romania, Gorj, Menadii-hegyseg, Cerna-Sat, 700 m, Cserna-Part, leg. Székely (HNHM). Turkey: 3 exs, 16.IX.2011, Afyonkarahisar, Şuhut, Paşacık, Selevir Dam, 38°30'46" N, 30°42'24" E, 1102 m, leg. Yağmur & Örgel (AZMM). 7 exs, 11 exs, 22.V.2015, Denizli, Acipayam, Sandalcık, 37°04'58" N, 29°07'24" E, 633 m, leg. Yağmur & Örgel (AZMM). 4 exs, 14.XI.2014, İzmir, Karaburun 5 km SW 38°37'39" N, 26°29'26" E, leg. Anlaş, Yağmur & Örgel (AZMM). 3 exs, 18.IX.1988, Manisa, Salihi, leg. Jaccoud & Zumstein (MHNG). 5 exs, 21.V.2015, Muğla, Dalaman, 36°53'37" N, 28°53'37" E, 127 m, leg. Yağmur & Örgel (AZMM). 3 exs, 19.IX.2013, Uşak, Gediz, Sandıklı 2 km S, 38°55'03" N, 29°52'54" E, 854 m, leg. Özgen & Örgel (AZMM). 2 exs, 24.V.2016, Konya, Hadim, Beyreli Hill, 36°50'37" N, 32°22'26" E, 1537 m, leg. Örgel & Yaman (AZMM). 3 exs, 25.X.2017, Konya, Beyşehir, Dumanlı, 37°29'51" N, 31°20'45" E, 1615 m, leg. Örgel & Yaman (AZMM).

Distribution: This species is widespread from Europe, Turkey and Cyprus (Schülke & Smetana, 2015). Its occurrence in Montenegro is reported for the first time.

Paederidus ruficollis (Fabricius, 1777)

Material examined: Albania: 1 ex., 4.VI.2003, Thirrë from conjunction of the Shkodër-Kukës Road 42°01'05" N, 20°12'59" E, 970 m, leg. Eráss & Feher (HNHM). Bosnia Herzegovina: 2 exs, 14.VI.1930, Bosnia, Sarajevo, leg. Fodor (HNHM). 3 exs, 15.VII.1929, Bosnia, Jablanica, Narenta Valley, leg. Fodor (HNHM). Italy: 7 exs, 14.VI.1994, Calabria, Castiglione Cos. (CS) torr. Padula, leg. Angelini (AZMM). FRANCE: 1 ex., V.1930, Gorge du Longi, leg. Fodor (HNHM). Morocco: 5 exs, 02.V.1997, Ijoukak, High Atlas, leg. Batelka & Podrouzkova (NMPC). Turkey: 1 ex., 15.IV.2015, Afyonkarahisar, Hocalar, Kirseli Mts., 38°33'44" N 30°02'17" E, 1460 m, leg. Anlaş & Örgel (AZMM). 3 exs, 19.IV.2015, Denizli, Acipayam, Elmadağ, 37°37'01" N, 29°26'55" E, leg. Anlaş, Yağmur & Örgel (AZMM). 3 exs, 28.VI.2014, Kütahya, Domaniç, Ortaca 1 km W, 39°49'55" N, 29°29'40" E, 700 m, leg. Yağmur & Örgel (AZMM). 2 exs, 30.XI.2014, Manisa, Spil Mts., 38°33'44" N, 27°23'10" E, 1100 m, leg. Yağmur & Örgel (AZMM). 1 ex., 04.IV.2013, Muğla, Datça, Emecik 2 km SW, 36°46'01" N, 27°48'39" E, 107 m, leg. Yağmur & Örgel (AZMM). 1 ex., 01.XI.2017, Niğde, Çiftlik Road, 38°06'47" N, 34°35'47" E, 2114 m, Örgel & Yaman (AZMM).

Distribution: According to Schülke & Smetana (2015), this species is widespread from Europe, North Africa (Algeria, Morocco and Tunisia) Iran, Turkey and Cyprus. However, it has not been recorded from Albania.

Genus *Paederus* Fabricius, 1775Subgenus *Eopaederus* Scheerpeltz, 1957*Paederus mesopotamicus* Eppelsheim, 1889

Material examined: Iran: 12 exs, 8-9.IV.1973, S-Iran, 13 km SSE Nikshahr, coll. B. Šticha (NMPC). 3 exs, 6-7.X.2002, Fars prov. Zagros, 5 km above Thangebollahayat (to Shiraz), 1750 m, leg. Gyulai & Garai (HNHM). Iraq: 12 exs, 4-5.XII.1977, Iraq, Arbil, Eskikalak, near Great Zab River, leg. Topál & Zilahy (HNHM). 1 ex., Mesopotamia, coll. Reitter (HNHM). Syria: 1 ex., Holotype of *Paederus syriacus* Reitter, 1889, Syria, coll. Reitter (HNHM). Turkey: 1 ex., 31.V.1989, Siirt, Kotum, leg. Podlussány (HNHM). 8 exs, 21.V.2010, 17.XI.2010, Siirt, Baykan 4 km E, ca. 770 m, 38°11'42" N, 41°49'03" E, leg. Anlaş & Yağmur (AZMM). 1 ex., 20.V.2011, Elazığ, Keban 2 km S, leg. Anlaş (AZMM). 1 ex., 17.V.2011, Erzincan, Kemah, Özdamar 2 km W, leg. Anlaş (AZMM). 2 exs, 16.V.2011, Gümüşhane, Kelkit, Çimenli, 1689 m, 39°58'06" N, 39°22'48" E, leg. Anlaş & Özgen (AZMM). 8 exs, 19.V.2011, Tunceli, Pülümür 3 km SE, leg. Anlaş,

Özgen & Khachikov (AZMM). 2 exs, 19.V.2011, Tunceli, Pülümür, Kangallı, 1310 m, 39°25'37" N, 39°50'16" E, leg. Anlaş, Özgen & Khachikov (AZMM). 4 exs, 02.XI.2017, Sivas, Hafik, Beydili, 40°04' N, 37°16' E, 1700 m, leg. Örgel & Yaman (AZMM).

Distribution: According to Willers (2011), the species is known from Iran, Iraq, Syria and Turkey.

Paederus debilior Eppelsheim, 1892

Material examined: Kazakhstan: 1 ex., Turkestan, coll. Reitter (HNHM). 2 exs, 05.IV.2010, Yuzhno-Kazakhstan Region, Boralday Range, Satur Mts, hole of the Kulan nv., high Krasnye Vorota pass, 1000 m, 42°35'13" N, 70°26'53" E, leg. Matalin (AZMM).

Distribution: This species is known from Turkmenistan and Uzbekistan (Schülke & Smetana, 2015). The above specimens from Kazakhstan represent the first record for this country.

Subgenus *Harpopaederus* Scheerpeltz, 1957

Paederus baudii Fairmaire, 1860

Material examined: Italy: 4 exs, 22.VI.1992, Fornovolasco (LU), 700 m, leg. Angelini (AZMM). 2 exs, 22.IX.1996, Basilicata, str. Irsina-Grassano su F. Bradano Mts., 150 m, leg. Angelini (AZMM). 1 ex., 20.V.1998, Toscana, Minucciano (LU), L. Gramolazzo, 680 m, leg. Angelini (AZMM).

Distribution: This species occurs in France, Italy and Switzerland (Schülke & Smetana, 2015).

Paederus schoenherri Czwalińska, 1889

Material examined: Bulgaria: 1 ex., 09.VIII.2010, Belasitsa Mts., Kongura hut, 41°35'10" N, 23°19'07" E, leg. Bekchiev (NMNHS). 1 ex., 30.V.2010, Black sea coast, Primorsko env., 42°28'59" N, 27°58'37" E, leg. Bekchiev (NMNHS). 1 ex., 07.VIII.1983, Bulgaria, Cserno More, Burgasz, leg. Kismarjai (HNHM). 1 ex., 29.VI.1969, Pirin, hegyséa, Popina, leg. Kismarjai (HNHM).

Distribution: *Paederus schoenherri* is known from Southeastern Europe and Iran (Schülke & Smetana, 2015).

Subgenus *Heteropaederus* Scheerpeltz, 1957

Paederus alfieri Koch, 1934

Material examined: Egypt: 3 exs, 15.X.1957, Sids, Exp. Egypt, Mus. Nat. Hung., leg. Gozmány (HNHM).

Distribution: According to Schülke & Smetana (2015), this species is widespread in Algeria, Egypt, Iraq and Saudi Arabia.

Paederus fuscipes Curtis, 1826

Material examined: Algeria: 4 exs, 20.V.1988, Algeria, Gde Kabylie, Oued Sébaou, W. Dellys, leg. Besuchet, Löbl & Buchardt (MHNG). Armenia: 1 ex., 20.VIII.1976, Armenia, Tsakhkadzor, 1850 m, leg. Vósárhelyi (HNHM). Azerbaijan: 1 ex., 09.VI.2004, Talysh, Derinsky distr., Gostilyani 10 km N, leg. Kasatkin (AZMM). 1 ex., 02.VI.2008, Lenkoran distr., near Alexeevka (Burgali), leg. Kasatkin (AZMM). Bosnia Herzegovina: 2 exs, 20.VIII.1930, Bosnia, Vrelo, Bosne, leg. Fodor (HNHM). Czech Republic: 1 ex., 28.VIII.1958, Ryb. Rožmberk, Bohemia (NMPC). Egypt: 10 exs, 29.V.1996, Cairo, Dahshur ca. 23 km S Cairo, 29°48'00" N, 31°14'30" E, light traps, leg. Ullrich (MHNG). Iran: 2 exs, 03.VI.1975, Azerbaidjan occ., prés de Mahâbâd, 36°50' N, 45°47'E, leg. Senglet (MHNG). 3 exs, 14.VI.2000, Mazandran, Sah Mts. Ghorogh, 54°40'52" E, 36°52'55" N, 140 m, leg. Fabian & Székely (HNHM). 2 exs, 28-30.V.1973, S-Iran, Korsiâh, Exped. Nat. Mus. Praha (NMPC). Israel: 1 ex., 27.IV.1982, Golan, Mahjor, -200 m, leg. Besuchet & Löbl (MHNG). Italy: 1 ex., 27.VI.1979, Sicilia, Coccamo, Tannita, leg. Zombori (HNHM). Kazakhstan: 2 exs, 05.IV.2010, Yuzhno-Kazakhstan Region, Boralday Range, Satur Mts, hole of the Kulan nv., high Krasnye Vorota pass, 1000m, 42°35'13" N, 70°26'53" E, Matalin (AZMM). 1 ex., 05.IV.2010, Yuzhno-Kazakhstan Region, Taskara Mts, Novonikolaevka vill 2,5 km SW 1200m, 42°24'49" N, 70°27'23" E, Makaraov & Matalin (AZMM). 2 exs, 31.III.2010, Yuzhno-Kazakhstan Region, South bank of Kyzylkol Lake, right bank

Ushbas River, near mouth 1200m, 43°43'56" N, 69°30'48" E, leg. Matalin (AZMM). Morocco: 1 ex., 05.V.1960, Morocco, M. Atlas, Ouioname, leg. Besuchet (MHNG). Syria: 2 exs, 18.VI.1998, Deir-er-zu prov., Dura Europas, at light, 34°45' N, 40°44' E, leg. Chvojka (NMPC). Turkey: 2 exs, 31.V.2011, Muş, Varto, leg. Khachikov & Kasatkin (AZMM). 1 ex., 25.V.2010, Kırklareli, İğneada, car net, leg. Bekchiev (NMNHS). 1 ex., 02.V.1967, Turquie, Adana, leg. Wittmer (MHNG). 1 ex., 05.V.1967, Turquie, Adana, 24 km N of Kozan, 1600 m, leg. Wittmer (MHNG). 4 exs, 12.V.1967, Turquie, Erzurum, Azort, leg. Besuchet (MHNG). 2 exs, 16.IV.1969, İzmir, Bahçeliköy, leg. Besuchet (MHNG). 7 exs, 06.V.1978, Kayseri, Sultan Sazlığı, 1000 m, leg. Besuchet & Löbl (MHNG). 1 ex., 27.IV.1989, Diyarbakır, Kavurma vill., Ergani 10 km NE, 1400 m, 39°41' E, 38°19' N, leg. Fábrián, Ronkay & Ronkay (HNHM). 1 ex., 12.IV.2013, Afyonkarahisar, Düzağaç 2 km N, 38°48'01" N, 30°09'03" E, 1172 m, leg. Anlaş, Yağmur & Örgel (AZMM). 3 exs, 02.V.2015, Afyonkarahisar, Ahır Dağları, Büyükhacet Tepesi, 38°39'52" N, 30°07'17" E, 1556 m, leg. Yağmur & Örgel (AZMM). 15 exs, 22.III.2015, Aydın, Dilek Yarımadası Milli Parkı, 37°39'49" N, 27°12'57" E, 969 m, leg. Yağmur & Örgel (AZMM). 1 ex., 30.IV.1975, Aydın, 10 km S of Çine, leg. Besuchet & Löbl (MHNG). 6 exs, 14.X.2013, Denizli, Çivril, Beydilli, Işıklı Lake, 38°15'56" N, 29°55'33" E, 841 m, leg. Özgen & Örgel (AZMM). 4 exs, 01.V.2014, Çivril, Işıklı Lake, 38°15'49" N, 29°55'36" E, 826 m, leg. Yağmur & Örgel (AZMM). 2 exs, 08.V.1979, İzmir, Efes, leg. Besuchet & Löbl (MHNG). 1 ex., 14.VII.1980, Smyrna, (HNHM). 6 exs, 13.IV.2015, Kütahya, Simav, Akdağ, 39°14'58" N, 28°49'41" E, 1670 m, leg. Anlaş, Yağmur & Örgel (AZMM). 7 exs, 26.III.2015, Uşak, Altıntaş vill., 38°43'04" N, 29°30'27" E, 918 m, leg. Yağmur & Örgel (AZMM). 1 ex., 21.VI.2016, Eskişehir, Sarıcakaya, Sakarya River, 40°05'24" N, 30°50'41" E, 286 m, leg. Örgel & Yaman (AZMM). 1 ex., 31.V.2016, Niğde, Çiftlik, Kireli, Melendiz Mts., 38°07'13" N, 34°22'01" E, 2150 m, leg. Anlaş, Örgel & Yaman (AZMM). 4 exs, 09.VI.2016, Kayseri, Pınarbaşı, Eskiyaşıpınar, Gövdeli Mts., 38°44'03" N, 36°38'21" E, 1921 m, leg. Yağmur, Örgel & Yaman (AZMM). 1 ex., 26.IX.2017, Ankara, Kızılcahamam-Çerkeş Road, 40°36'19" N, 32°39'50" E, 1150 m, leg. Örgel & Yaman (AZMM). 2 exs, 30.X.2017, Karaman, Ayrancı, Yüglük Tepesi, 37°00'49" N, 33°46'55" E, 1967 m, leg. Örgel & Yaman (AZMM). Turkmenistan: 2 exs, 09.V.1991, USSR, Turkmenia, Karakum desert, 200 m, 20 km SW Repetek, 63°09' E, 38°25' N, leg. Gsoroba, Fabian, Herczig, Hrebiay & Ronkay (HNHM).

Distribution: According to Schülke & Smetana (2015), this species is widespread and common in the Palearctic Region. However, it has not been recorded from Bosnia Herzegovina and Morocco.

Subgenus *Paederus* Fabricius, 1775

Paederus balcanicus Koch, 1938

Material examined: Italy: 2 exs, 22.VII.1993, Basilicata, F. Sinni a Episcopia (PZ), leg. Angelini (AZMM). 4 exs, 30.V.1991, Basilicata, Oasi WWF Lago Pantano di Pignola, 770 m, leg. Angelini (AZMM). Romania: 1 ex., Romania, Rum-Mamaia, L. Siut-Ghiol, Smetana, 1961 (NMMH).

Distribution: This species is known from Europe, Iran and Turkey (Schülke & Smetana, 2015).

Paederus melanurus Aragona, 1830

Material examined: Italy: 3 exs, 01.V.1995, Lombardia, Bereguardo (PV), leg. Diotti (AZMM).

Distribution: This species occur in Albania, Greece, Italy and Switzerland (Schülke & Smetana, 2015).

Paederus riparius (Linnaeus, 1758)

Material examined: Russia: 1 ex., 22.VII.1999, Rostov Region, Veshenskaya vill., leg. Khachikov (AZMM). Turkey: 1 ex., 23.IV.2014, Denizli, Babadağ, Akdağ, 37°48'17" N, 28°49'26" E, 1781 m, leg. Anlaş & Örgel (AZMM). 28 exs, 11.IV.2014, İzmir, Ödemiş, Bozdağ, Gölcük, leg. Yağmur & Örgel (AZMM). 3 exs, 30.XI.2014, Manisa, Spil Dağı, 38°33'44" N, 27°23'10" E, 1100 m, leg. Yağmur & Örgel (AZMM). 2 exs, 25.X.2017, Konya, Beyşehir Lake, 37°45' N, 31°40' E, Örgel & Yaman (AZMM).

Distribution: This species is widespread from Europe, Algeria, Egypt, Siberia, Middle Asia, Iran and Turkey (Schülke & Smetana, 2015).

Paederus sabaeus Erichson, 1840

Material examined: Israel: 1 ex., 21.IV.1982, Meron, 900 m, leg. Besuchet & Löbl (MHNG). Oman: 3 exs, 28.III.2012, Oman, Dnolar prov., wadi Darbat, 325 m, northern part near Shihayt, leg. Reiter (NMPC). Yemen: 1 ex., 04.XI.2010, Al Hudaydah gov., Jabal Bura valley, Forest NP, 240-350 m, 14°52'45" N, 43°24'25" E, leg. Bezdék (NMPC).

Distribution: This species is known from Egypt, Oman, Saudi Arabia, Syria and Yemen. The above specimen from Israel represents the first record for this country (Schülke & Smetana, 2015).

Subgenus *Poederomorphus* Gautier des Cottés, 1862

Paederus littoralis Gravenhorst, 1802 (Figures 1A-U; 2A-G)

Paederus pelikani Reitter, 1884: 44 syn. n.

Paederus littoralis ilsae Bernhauer, 1932: 233 syn. n.

Material examined: Armenia: 2 exs, 16.IX.1982, USSR, Armenia, Karashamb, Agveran, netted, 1500 m, leg. Merkl & Ronkay (HNHM); 1 ex., 01.X.1982, USSR, Armenia, Tsakhkadzor, 1800-2300 m, leg. Merkl & Ronkay (HNHM). 1 ex., 10.X.1984, Armenia, Djirvezh, 1100 m, leg. Korsós & Vásárhelyi (HNHM). 3 exs, 16.X.1984, Armenia, Nor Geghi, 1200 m, leg. Korsós & Vásárhelyi (HNHM). 2 exs, 16.X.1984, Armenia, Aghveran, 200 m, leg. Korsós & Vásárhelyi (HNHM). 1 ex., 14-19.VI.1999, Razdansky distr., Tsakhkunyats Range, high Arzakan vill., leg. Nabozhenko (AZMM). Austria: 1 ex., Styria, Reitter (IRSNB). Azerbaijan: 2 exs, 16.VI.2007, Lenkoran, environs Dashytuk and Apo vills., leg. Kasatkin (AZMM). Bosnia Herzegovina: 2 exs, 17.III.1930, Bosnia, Sarajevo, Kosevo, leg. Fodor (HNHM). 2 exs, 03.IV.1932, Bosnia, Sarajevo, Rijeka Miljacka, leg. Fodor (HNHM). 3 exs, 28.IX.1928, Bosnia, Pazarić, Krupa valley, leg. Fodor (HNHM). 9 exs, I.1918, Bosnia, Sarajevo, Pale, leg. Fodor (HNHM). Bulgaria: 2 exs, 12.II.2012, Maleshevska Mts., Mikrevo vill., 41°54'29" N, 23°17'58" E, leg. Beckhiev (AZMM). 1 ex., 29.V.2010, Strandzha Mts., Slivarovo vill., leg. Bekchiev (NMNHS). CYPRUS: 2 exs, 24.IV.2015, Lefkoşa, Değirmenlik, 650 m, leg. Yağmur (AZMM). France: 1 ex., 20.VI.1970, Corse (AZMM). Greece: 2 exs, 09.IV.2011, Halkidiki, North of Aston, Stagira vill. env., in a forest, 585 m, 40°31'51" N, 23°43'11" E, leg. Bekchiev (AZMM). IRAN: 1 ex., 28-30.V.1973, S-Iran, Korsiah, Exped. Nat. Mus. Praha (NMPC). 4 exs, VII. 2006, Mazandaran, Savadkooh, leg. Ghahari (AZMM). Iraq: 2 exs, 17-20.V.2008, northern Iraq, ca 10 km NW Suleimaniyah province, leg. Sevinç (AZMM). Israel: 1 ex., 15.IV.1982, Golan, Gilbon, 300 m, leg. Besuchet & Löbl (MHNG). 1 ex., 18.IV.1982, Côte Akko, N. Naaman, leg. Besuchet & Löbl (MHNG). Italy: 1 ex., V.1983, Emilia, plan de Voglio, Apennin, leg. Marggi (MHNG). 1 ex., 26.V.1979, Genova, M. Montanasco, leg. Zombori (HNHM). 3 exs, X.2006, Basilicata, Parco Nazionale del Pollino (AZMM). Macedonia: 3 exs, 07-14.VII.1937, Macedonia, Galicnik, Bistra planina, leg. Fodor (HNHM). Montenegro: 1 ex., 19-20.VII.1938, Crna Gora, Han Garancic (HNHM). Russia: 1 ex., 07.IX.2005, Rostov Region, Sholokhovskiy distr., Vehenskaya vill., leg. Khachikov (AZMM). 1 ex., 12.VI.2004, Dagestan, Berikey vill., Ulluchay River, leg. Liyina (AZMM). 1 ex., 03.V.2010, Krasnodar prov., Anapsky distr., B. Utrish vill., leg. Terskov (AZMM). Turkey: 1 ex., 27.V.1989, Adana, Hieropolis, leg. Podlussány (HNHM). 1 ex., 15.IV.2015, Afyonkarahisar, Hocalar, Kirseli Mts., 38°33'44" N 30°02'17" E, 1460 m, leg. Anlaş & Örgel (AZMM). 1 ex., 18.IV.2015, Denizli, Çameli, Değirmen Taşı Hill, 37°07'21" N, 29°20'35" E, 1497 m, leg. Anlaş, Yağmur, Örgel & Altın (AZMM). 1 ex., 30.XI.2014, Manisa, Spil Dağı, 38°33'44" N, 27°23'10" E, 1100 m, leg. Yağmur & Örgel (AZMM). 3 exs, Muğla, 10.XI.2013, Fethiye, Seki Plateau, 1483 m, leg. Kesdek (AZMM). 2 exs, 09.VII.2006, Kahramanmaraş, Nurhak 7 km E, leg. Anlaş (AZMM). 2 exs, 06.VI.2006, Trabzon, Maçka, Sümela 3 km N, leg. Yağmur (AZMM). 2 exs, VI.2001, Artvin, leg. Nabozhenko (AZMM). 1 ex., Sinop, Nisi Lake, leg. Koç (AZMM). 5 exs, 13.VIII.2012, Ardahan, Hanak, Sulakçayır, leg. Altın (AZMM). 1 ex., 01.IV.2008, Şanlıurfa, Siverek 15 km S, 37°39'00" N, 39°12'52" E, 700 m, leg. Yağmur (AZMM). 2 exs, 01.V-01.VI.2012, Fethiye, Yanıklar, pastoral valley, by pitfall traps (AZMM). 1 ex., 26.IX.2017, Ankara, Kızılcahamam, Aluç Mts., 40°30'30" N, 32°34'59" E, 1482 m, leg. Örgel & Yaman (AZMM). 2 exs, 24.IX.2017, Ankara, Beypazarı, Köşeler, 40°21'46" N, 32°00'35" E, 1360 m, leg. Örgel & Yaman (AZMM). 3 exs, 24.IX.2017, Ankara, Kızılcahamam, Sorgun Lake, 40°19'51" N, 32°13'08" E, 1271 m, leg. Örgel & Yaman (AZMM). 3 exs, 25.IX.2017, Ankara, Beypazarı, Kıbrıscık Road, 40°19'09" N, 31°55'40" E, 1574 m, leg. Örgel & Yaman (AZMM). 2 exs, 25.IX.2017, Ankara, Beypazarı, 40°20'33" N, 31°56'48" E, 1630 m, leg. Örgel & Yaman (AZMM). 11.IV.2017, 3 exs, Ankara,

Beyazarı, Üreğil, 40°17'07" N, 32°04'11" E, 1375 m, leg. Örgel & Yaman (AZMM). 10 exs, 24.VI.2016, 09.IV.2017, Ankara, Kızılcahamam, Sorgun Plateau, leg. Örgel & Yaman (AZMM). Turkmenistan: 1 ex., 21.V.1993, Chilmamedkum sands, Kyzyl-Takir, leg. Arzanov & Ivliev (AZMM).

Paederus littoralis ilsae Bernhauer, 1932: 233 syn. n.

Comments: *P. littoralis littoralis* is widespread in Europe, Algeria, Cyprus, Iran, Turkey and western Siberia (Schülke & Smetana, 2015). *Paederus littoralis ilsae* is known from Caucasus, Ukraine, Middle East, Afghanistan, Iran, Middle Asia and Saudi Arabia (Gusarov, 1997; Schülke & Smetana, 2015). According to Gusarov (1997), this subspecies differs from *P. littoralis littoralis* in having the hooks of the aedeagus broader in lateral view. An examination of material from various parts of the distribution revealed that the species is subject to remarkable intraspecific variation, in both external and aedeagal characters (Figures 1A-U). At the same time, the variation of the breadth of the hooks of the aedeagus in lateral view does not correspond to plausible distribution patterns. In addition, this character is very variable even within the same population.



Figure 1. *Paederus littoralis* Gravenhorst 1802, intraspecific variation of aedeagus in lateral and ventral view: A-B) Turkey, Northern Anatolia; C-D) Russia, Rostov; E-F) Italy, Basilicata; G-H) Turkmenistan, Chilmamedkum; I-J) Turkey, Central Anatolia; K-L) Iran, Mazandran; M-N) Turkey, Southeastern Anatolia; O-P) Armenia, Razdansk; R-S) Azerbaijan, Lenkoran; and T-U) Bulgaria, Maleshevska. Scale bar, A-U) 0.5 mm.

Paederus pelikani Reitter, 1884 syn. n. (Figure 2A-G)

Type material examined: Lectotype 1 ♂: Corfu, Reitter, coll. Reitter; Holotypus 1884 *Paederus pelikani* Reitter; Lectotypus 1 ♂, *Paederus pelikani* Reitter, V. Gusarov des. 1993 (HNHM). Paralectotypes: 2 ♂♂, 2 ♀♀, same data as lectotype; Paratypus 1884 *Paederus pelikani* Reitter, Paralectotypus, *Paederus pelikani* Reitter, V. Gusarov des. 1993 (HNHM). 1 ♂, 1 ♀, same data as lectotype, but 693 14; Paratypus 1884 *Paederus pelikani* Reitter, Paralectotypus, *Paederus pelikani* Reitter, V. Gusarov des. 1993 (HNHM). 1 ♂, 1 ♀, Morea, Taygetus, Brenske, coll. Reitter; Paratypus 1884 *Paederus pelikani* Reitter, (HNHM). Additional material examined: Greece: 1 ♂, Attica, leg. Reitter (MHNG); 1 ♂, Insel Corfu (MHNG). 1 ♂, 1 ♀, Balkan, Corfu, leg. Paganetti (MHNG); 1 ♂, 01.IV.1971, Grèce, Céphalonie, Argostolion, leg. Hauser (MHNG). 1 ♂, 16-23.VI.1995, Greece, Korfu, Rode, leg. Czetö (HNHM).

Comments: According to Schülke & Smetana (2015) *Paederus pelikani* is known Albania, Greece and Turkey. The original description of *P. pelikani* is based on numerous syntypes from "Corfu, Zante, Cephalonia, Morea" (Reitter, 1884) in Greece. All of these localities are now part of Greece. Most of the Reitter collection was deposited in the Hungarian Natural History Museum (HNHM). The syntypes from Corfu in the HNHM were studied and labeled as lectotype and paralectotypes by Vladimir Gusarov who remarked, "...Reitter chose no holotype while describing the new species. The labels seem to have been attached by the curators of the collection and types actually were syntypes." (Gusarov, 1997). The above labeled lectotype designations were published by Gusarov (1997). I studied the type specimens of *P. pelikani* in the collections of the HNHM during a visit in 2015. However, I found only the specimens of this species from Corfu and Morea (Figure 2A-G).

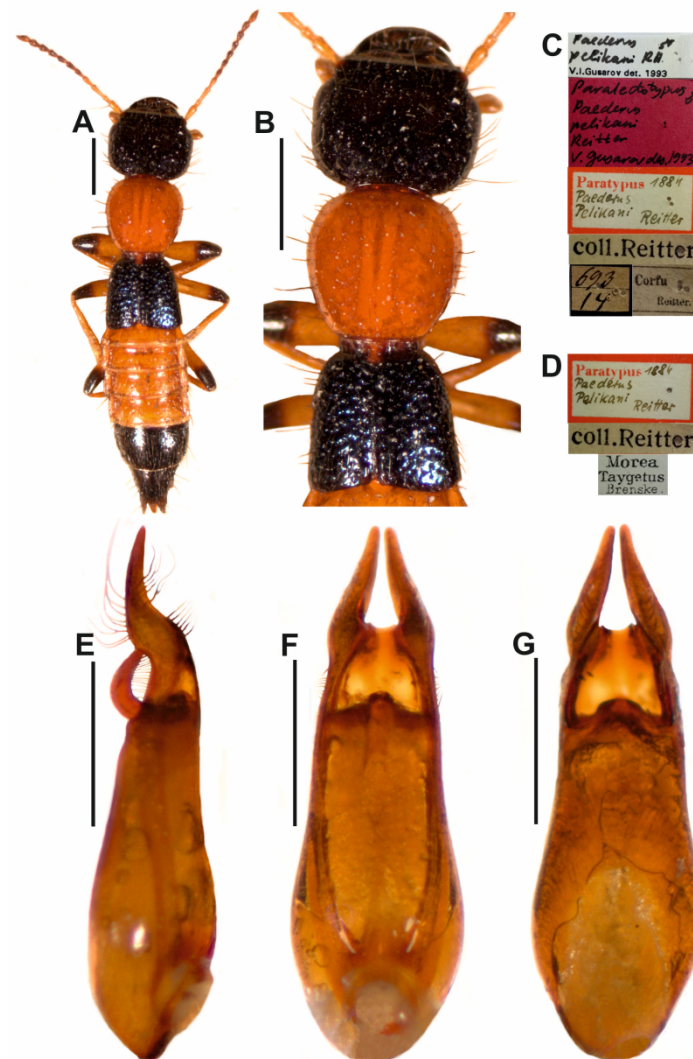


Figure 2. Detail of *Paederus pelikani* Reitter, 1884: A) Habitus; B) forebody; C-D) Paralectotypus labels; E) aedeagus, lateral view; F) aedeagus, ventral view; and G) aedeagus, dorsal view. Scale bars, A-B) 1.0 mm and E-G) 0.5 mm.

Gusarov (1997) states that this species resembles *Paederus littoralis*, except that the head is broader, the temples are more parallel and longer, the elytra are shorter and that the parameres of the aedeagus are longer. An examination of the type series from Corfu and Morea, and additional material from near the type localities revealed that the aedeagus and body is identical to that *P. littoralis*. The aedeagal and external characters, including the length of the aedeagal paramers, the head width, the shape and length of the temples, and the length of the elytra, are subject to some variation, as is usually

the case with widespread *Paederus* species. At the same time, Coiffait (1982) states that this species is mainly distinguished from *P. littoralis* by the reduced and more trapezoidal elytra and different shape of the median lobes of aedeagus, an observation that is not confirmed in present study. Moreover, when I examined of the material of *P. littoralis* from a vast area, this revealed that the species is subject to remarkable intraspecific variation, particularly in the shape and length of the elytra, and in the aedeagus. Consequently, the two new synonymies are proposed above.

The above specimens from Bosnia Herzegovina, Macedonia and Montenegro represent the first records for these countries.

Genus *Uncopaederus* Korge, 1969

Uncopaederus signiventris (Smetana, 1962) (Figure 3A-G)

Material examined: Turkey: 6 exs, 17.V.1976, Kastamonu, Ilgazdağı, prés du col., 1700-1800 m, leg. Besuchet & Löbl (MHNG). 2 exs, 08.VII.2013, Kastamonu, Ilgaz Mountains, 41°06'07" N, 33°44'54" E, leg. Kunt (AZMM). 2 exs, 14.III.2010, Sinop, Ada, 42°02'50" N, 35°11'16" E, leg. Koç (AZMM). 1 ex., 27.VI.2016, Çankırı, Ilgaz Dağı, 41°00'28" N, 33°37'00" E, 1841 m, leg. Örgel & Yaman (AZMM). 1 ex., 27.IX.2017, Ilgaz Dağı, 41°00'09" N, 33°36'32" E, 1835 m, leg. Örgel & Yaman (AZMM).

Distribution: This species is known only from Kastamonu, Rize and Samsun provinces in Northern Anatolia (Anlaş, 2009; Assing, 2010).

Comments: *Uncopaederus signiventris* is the single representative of the genus. Coiffait (1982) illustrated the aedeagus of this species. However, the illustration of the aedeagus in the paper is inaccurate. For that reason, the species illustrated in Figure 3A-G.

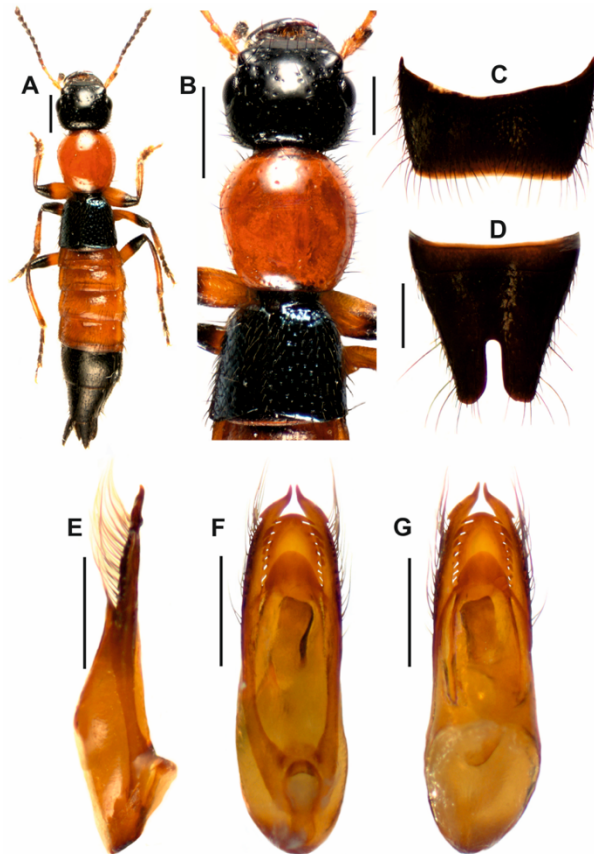


Figure 3. Detail of *Uncopaederus signiventris* (Smetana, 1962): A) Habitus; B) forebody; C) male sternite VII; D) male sternite VIII; E) aedeagus, lateral view; F) aedeagus, ventral view; G) aedeagus, dorsal view. Scale bars, A-B) 1.0 mm and C-G) 0.5 mm.

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