

A new subspecies of *Perotis lugubris* Fabricius, 1777 from Southern Italy (Coleoptera, Buprestidae).

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ABSTRACT A new subspecies of Coleoptera Buprestidae, *Perotis lugubris meridionalis* n. ssp. from Southern Italy, is described, illustrated and compared with related taxa.

KEY WORDS Coleoptera, Buprestidae, *Perotis lugubris meridionalis* n. ssp., Southern Italy.

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INTRODUCTION

Perotis lugubris Fabricius, 1777 s.l. is a Coleoptera Buprestidae of the subfamily Chrysochroinae Laporte, 1835 tribe Dicercini Gistel, 1848 widely distributed in Central Asia (Turan)-SE Europe (Kubán, 2006).

The nominal subspecies (locus typicus: Austria) is widespread in many Central and Eastern European states, Balkan Peninsula and Turkey; the ssp. *mutabilis* Abeille, 1896 is known for Iran, Iraq, Lebanon, Syria and Turkey; the ssp. *longicollis* Kraatz, 1880 from Azerbaijan, Armenia, southern Russia, Iran, Iraq, Turkmenistan and the ssp. *transcaspica* Semenov, 1891 is reported for Iran and Turkmenistan (cfr. Kubán, 2006).

In Italy there is the nominal subspecies in Friuli Venezia Giulia, Marches, Liguria, Tuscany, Latium, Campania and Apulia (Lecce) (Luigioni, 1929, Porta, 1929; Curletti, 1985; Platia & Gobbi, 1995). An old report from Sardinia (Porta, 1929) was never confirmed (Curletti, 1985; Gobbi & Platia, 1995); a citation for Sicily was made by Romano (1849), although remained unknown or at least never reported by other authors.

Bertolini (1899) and Reitter (1906) signalized in southern Italy *Perotis xerses* v. *viriditarsis* Schaufuss, 1879; Luigioni (1929) and Porta (1929) reported this quote but Obenberger (1926) considered this variety a synonymous of *P. xerses* Marseul, 1865 from Asia Minor and excluded it from Italian Coleoptera; moreover, Obenberger himself (1924-1932) acknowledged this quote was wrong.

The examination of material collected from Southern Italy, Basilicata in particular, has allowed us to highlight some morphological peculiarities in these populations that can be described as a new subspecies.

ACRONYMS. The materials used for this study are deposited in the following Museums and private collections: F. Angelini, Francavilla Fontana (Brindisi), Italy (CA); M. Bollino, Lecce, Italy (CB); P. Crovato, Naples, Italy (CC); D. Gianasso, Castelnuovo Don Bosco (Asti), Italy (CG); M. Gigli, Rome, Italy (CMG); Istituto Nazionale di Entomologia, Rome, Italy (INER); F. Izzillo, Orta di Atella (Caserta), Italy (CI); A. Liberto, Rome, Italy (CL); G. Magnani, Cesena, Italy (CM); C.O. Mancini, Iasi (Romania) (CCM); E. Migliaccio, Rome, Italy (CEM); Museo

Civico di Storia Naturale di Genova, Italy (MSNG); Museo Civico di Zoologia, Rome, Italy (MCZR); D. Sechi, Quartu Sant'Elena (Cagliari), Italy (CS); I. Sparacio, Palermo, Italy (CIS).

Where not specified, the collector is the same owner of the collection.

***Perotis lugubris meridionalis* n. ssp.**

EXAMINED MATERIAL. Holotypus male: Italy, Basilicata (Matera): Policoro, 26.VI.1989, legit F. Izzillo (CI). Allotypus female: same data as holotypus (CIS); Paratypi: Italy, Basilicata (Matera): Policoro, 27.VI.1991, legit F. Izzillo, 1 ex (CIS); idem, 8.VII.1989, legit F. Izzillo, 2 exx (CIS); idem, 8.VII.1989, legit P. Crovato, 2 exx (CIS); idem, 18.VII.1990, legit F. Izzillo, 1 ex (CIS); idem, 5.VI.1989, legit N. Liantonio, 1 ex (CIS); idem, 10.VII.1989, legit P. Crovato, 1 ex (CIS); idem, 5.VII.1989, 1 ex (CI); idem, 6.VII.1989, 2 exx (MSNG); idem, 6.VII.1989, 1 ex (CI); idem, 6.VII.1989, legit N. Liantonio, 1 ex (CI); idem, 8.VII.1989, legit N. Liantonio, 1 ex (CI); idem, 10.VII.1989, 1 ex (CI); idem, 23.VI.1990, 2 exx (CI); idem, 10.VII.1990, legit I. Izzillo, 2 exx (CI); idem, 11.VII.1990, 1 ex (CI); idem, 21.VII.1990, legit F. Angelini, 1 ex (CI); idem, 23.VII.1991, 1 ex (CI); idem, 25.VII.1991, 3 exx (CI); idem, 25.VII.1991, legit N. Liantonio, 1 ex (CI); idem, 27.VII.1991, 1 ex (CI); idem, 27.VII.1991, legit N. Liantonio, 1 ex (CI); idem, 4.VI.1992, 2 exx (CI); idem, 6.VI.1993, 2 exx (CI); idem, 26.VI.1994, 1 ex (CI); idem, 3.VII.1994, 2 exx (CI); idem, 10.VII.1994, 1 ex (CI); idem, 23.VII.1994, 2 exx (CI); idem, 4.VI.1995, 2 exx (CI); idem, 16.VI.1996, 1 ex (CI); idem, 13.VII.1996, 1 ex (CI); idem, 26.IV.1999, 1 ex (CI); idem, 10.VII.1989, legit F. Izzillo, 1 ex (CA); idem, 28.VII.1990, 1 ex (CA); idem, 24.VII.1994, 1 ex (CA); idem, 26.VI.1989, legit F. Izzillo, 1 ex (CG); idem, 23.VII.1991, legit F. Izzillo, 1 ex (CM); idem, 25.VII.1991, legit F. Izzillo, 3 exx (CM); idem, 27.VII.1991, legit F. Izzillo, 1 ex (CM); idem, 4-5.VII.1992, 2 exx (CM); idem, 23.VII.1994, legit F. Izzillo, 1 ex (CS); idem, 10.VII.1989, legit F. Izzillo, 1 ex (CL); idem, 3.VII.1994, legit F. Izzillo, 1 ex (CL); idem, 18-20.VI.1996, legit A. Liberto, 2 exx (CL); idem, 6.VII.1989, legit F. Izzillo, 1 ex (CC); idem, 8.VII.1989, 1 ex (CC); idem, 23.VI.1990, legit F. Izzillo, 1 ex (CC); idem,

23.VI.1990, 1 ex (CC); idem, 6.VI.1993, legit F. Izzillo, 1 ex (CC); idem, 5.VII.1994, 2 exx (CC); idem, 23.VII.1994, legit F. Izzillo, 1 ex (CC).

Apulia (Lecce): Ugento, Lido Marini (Macchia Rottacapozza), 8-10.V.1993, legit M. Portalatina, 2 exx (CB).

Holotypus, allotypus and paratypi are deposited in the cited collections.

DESCRIPTION OF HOLOTYPE MALE. Length 19 mm; width (near elytral base) 7 mm; body ovoid, large, convex; bronze-green. Frons, antennae, legs and ventral surface with short, sparse and white pubescence.

Epistome concave. Frons large, slightly convex, with big and irregular puncture; intervals are microreticulated and irregularly raised. Eyes big, protruding, converging dorsally.

Antennal cavities large, oblique and deep. Antennae short, serrate from fifth segment; first antennomere short and rounded, a little dilated anteriorly, second one little and short, about half as long as the first; third antennomere is about twice as long as the second; fourth little longer than the third, slightly denticulate anteriorly; fifth denticulate; segments 6-10 widely sub-squared with obtuse outer angles; terminal antennomere rounded, little elongated.

Pronotum convex, trasverse, 1.7 times as wide as long, lateral margins converging anteriorly, maximum pronotal width at basal third, posterior angles straight and protruding, anterior angles slightly protruding; anterior pronotal margin slightly bisinuate, posterior margin bisinuate and distinctly lobate in the middle. Pronotal sculpture consisting of rounded, deep and little dense punctures that are gathered and irregular at the sides of pronotum; interspace between punctures is microreticulated.

Scutellum small and transverse. Elytra 1.8 times as long as wide, slightly wider than pronotum at humeral part, wide and arched at basal third, narrowed at elytral apices; humeral swellings small but well-developed; apex of elytra obliquely truncate, not tighten.

Elytral sculpture consisting of irregular striae of deep punctures, interspace between punctures is microreticulated; intervals represented by some remarks smooth, irregular, fragmented and absent on the sides of the elytra and at the apex.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

Figure 1. *P. lugubris meridionalis* n. ssp. from Italy, Matera, Policoro (length 20 mm).
Figure 2. *P. lugubris lugubris* from Slovakia, Hegy Farok (length 20 mm).
Figure 3. *P. lugubris lugubris* from Italy, Rome, Castelfusano (length 21 mm).
Figure 4. *P. lugubris lugubris* from Greece, Attica, Legrena (length 22 mm;).

Large and distinct elytral epipleura, reaching apex of elytra.

Legs relatively long, protibiae with a tooth anteriorly, metatibiae curved on the outside; 1-4 segments of tarsi dilated, the first one narrower than the other three, fifth flat and rectangular.

Prosternum with big and dense punctuation, prosternal process with a median and smooth prominence and with big and sparse punctures; the sides of prosternal process are dilated and angled, apex truncate and rounded.

Metasternum with punctures and a deep median furrow; between posterior coxae there are two prominences close and slightly divergent posteriorly, extending up the 1st sternite without reaching the back edge.

Sternites microreticulated with big and irregular punctures, sometimes thickened; anal sternite truncated at apex.

Aegeagus little enlarged at apical third with parameres narrow and elongated anteriorly; median lobe pointed apically.

VARIABILITY. The length of the specimens examined varied from 14 to 25 mm; the width from 5.5 to 11 mm. The dorsal surface is always green, sometimes very notable. Anal sternite of the males sometimes more or less concave. The females have the same characteristics of the males but are usually larger and more convex dorsally.

ETIMOLOGY. From southern Italy, particularly Basilicata and Apulia (Salento) where this new taxon was collected.

BIOLOGY AND DISTRIBUTION. *P. lugubris* s.l. is a quite rare species in Italy. Its findings are sporadic, generally discontinuous and occasional. This species seems to prefer the Mediterranean maquis as elective habitat, although occurring, at very low frequencies and at low altitudes, in the most exposed areas of mesophilic forests and cultivated areas, given certain conditions. In particular, it is present in cultivated fields where intensive farming techniques are not employed, where agricultural cultivation is followed by relatively long periods of stasis, and that are interspersed with areas of natural vegetation (Authors' personal observations).

The forest Pantano-Sottano di Policoro, the main site of collection of the new subspecies, in the last two decades has undergone a profound transformation due to altered environmental conditions occurred as a result of the barrage with dams upstream of some rivers (particularly of Sinni river); these works have gradually led primarily to a drastic reduction of water intake and, subsequently, to depletion of groundwater beneath the forest. This situation has greatly affected vegetation of the area and actually has impoverished the rich population of arthropods occurring therein.

Over the years, starting from the peripheral areas of the forest, there has been a gradual regression of hygrophilous plants such as ash, poplar (white and black), willow, alder, as well as the elm trees [these latter also because of Dutch elm disease (DED)]. At the same time, several species peculiar of the Mediterranean maquis or, however, of xeric areas such as mastic, myrtle, *Phyllirea* and *Crataegus* gradually moved forward and, as a further sign of a progressive drying up of the area, it is now possible to come across a few plants of maritime pine and *Quercus* sp. (= xerophytes), recently settled. In such an environment and in the most exposed areas at the edge of the forest we found, quite frequent, *Perotis* specimens.

In line with what already reported in other countries (Lebanon, Greece and Crete), we observed specimens of the subspecies *meridionalis* often in flight from bush to bush or, more or less hidden, clinging to small diameter branches, behaving similarly as congeneric beetles. At Policoro, in particular, *P. lugubris meridionalis* seem to be present at all the shrubs of the Mediterranean maquis, without any particular preference (but we never observed it on Juniper). We have seen a few couplings on *Quercus* sp. and *Crataegus* sp.; during mating animals stood motionless on twigs, half-concealed, with no detectable activities, just like other taxa of the family.

Only once we observed it gnawing the apical part of a small branch of a young oak tree. If it feels in danger, *P. lugubris meridionalis* tends to turn around the branch or drop down, and, more rarely, it can fly away quickly. As all taxa belonging to the family Buprestidae, it is a phytophagous species the larva of which is

polyphagous and radicicolous on trees and shrubs; Curletti et al. (2003) reported it as host of *Arbutus unedo*, *Malus* sp. and *Pistacia lentiscus*, but, within broad-leaved trees, the taxon certainly feeds on a broader spectrum of plants than established so far.

At present, *P. lugubris meridionalis* is known for some coastal places of Basilicata and Apulia (Salento).

COMPARATIVE NOTES. *P. lugubris meridionalis* n. ssp. appears to be well differentiated from neighboring populations attributable to the nominal subspecies, by many characters as follows: the body is narrower and greenish in colour (Fig. 1), pronotum with lateral margins narrowed anteriorly and with the punctures smaller and little dense, the shape of the antennae (Fig. 5) with 4th and 5th articles less denticulate, a minor extension of residual elytral intervals, the shape of the prosternal process (Fig. 9), the punctuation of abdominal sternites and aedeagus (Fig.13). In *P. lugubris lugubris*, the body is wider, more convex, bronze, rarely with green tinge (Fig. 2), pronotum is wider and convex with maximum width in the middle and punctures bigger and dense; antennae (Fig. 6) with 4th and 5th articles more denticulate, 7th-10th larger, straight or slightly rounded at corners, 11th more elongated; elytra wider and curved at the sides with the greater extent of residual elytral intervals; prosternal process wider at the base and rounded at the sides (Fig. 10), sternites with punctuation bigger, dense, irregular and confluent; aedeagus (Fig. 14) more dilated anteriorly with curved sides.

These morphological characters have been observed in the populations from Central and Eastern Europe (locus typicus: Austria) and, with some minor variations, even in the Italian populations of Latium and N-Apulia (Figs. 3, 7, 11, 15). For Campania we observed only one small male specimen that seems similar to the nominal subspecies.

The populations from Greece, however, show major differences from the nominal subspecies (Figs. 4, 8, 12, 16), especially in shape of prosternal process and aedeagus. The ssp. *prolongata* described by Obenberger (1918) from Greece, without precise location, is considered just a form of no taxonomic validity by Mühle et al. (2000).

EXAMINED MATERIAL. *Perotis lugubris lugubris* Fabricius, 1777.

SLOVAKIA. Hegy Farok, 27.VI.1972, legit O. Marek, 2 exx (CIS); Plast'ovce 12-15.V.1999, legit V. Krivan, 3 exx (CS); Kamenica n. Hronom, legit L. Klíma, 5.VI.1983, 3 exx (CS); Kamenica n. Hronom, 30.IV.1994, legit S. Baron, 1 ex (CS); Stúrovo, 20.VI.1993, legit S. Baron, 1 ex (CS); Slovacchia, 30.V.1988, legit V. Mikes, 1 ex (CS); Stúrovo, 9.V.1977, legit J. Hala, 1 ex (CM); Stúrovo, 15.V.1976, legit J. Hala, 1 ex (CM).

ROMANIA. Oltenia-Mehedinți Gura Văii (near clearing, 44.675421/22.539392, 120 m, 16.VI.2003, 1 ex (CCM); Dobrogea-Tulcea, Babadag (near), Babadag forest, 44.817756/28.750953, 100 m, 17.VII.2008, 1 ex (CCM).

BULGARIA. Volcanic Hill "Kozhuh" (Petrich), 11.IV.2004, 1 ex (CEM).

GREECE. Attica, dintorni Legrena, 25/30. IV.1991, legit A. Liberto, 3 exx (CIS); idem, 1 ex (CG); Legrena littoral, 26.IV.1991, legit A. Liberto, 5 exx (CIS); Ahaia (Peloponnesos), Halandritsa, 3.VII.1993, 1 ex (CEM); Etolia, Lessini, 1-3.VII.1993, 2 exx (CEM); Attica, dintorni Lavrio, 10.V.1991, legit A. Liberto, 1 ex (CG); Attica, dintorni Kalivia, 22.IV.1988, legit A. Liberto, 1 ex (CG); Trikala, Meteora, 18.V.1977, 1 ex (CG); Ahaia, Kalavrita, 1-3.VII.1996, 2 exx (CM); Thessalia, Stomion, VI. 1984, legit J. & M. Sláma, 1 ex (CM); Argolida, Epidaurus, 2.V.1999, 2 exx (CA); Ahaia, Kalavrita, 17-21.VI.1998, 2 exx (CA); Limnos Island, Thanos Beach, 28-29.VII.2006, 1 ex (CS); Attica, Legrena, 16.V. 1995, 4 exx (CI); idem, 17.V.1995, 3 exx (CI); idem, 18.V.1995, 14 exx (CI); Attica, Capo Sounio, 16.V.1995, 13 exx (CI); Attica, Mandra, 19.V.1995, 1 ex (CI); Ahaia, Kalavrita, 3.VII.1996, 3 exx (CI); idem, 18.VI.1998, 3 exx (CI); idem, 24.VI.1998, 1 ex (CI); Korinthia, Killini Oros, 23.V.2004, 1 ex (CI); Argolida, Asini, 24.V.2004, 1 ex (CI).

TURKEY. Akhisar, 28.V.1974 (CEM); idem, 18.VI.1974 (CEM).

ITALY. Marches. Pesaro, VIII.1951, legit Berardi, 1 ex (INER).

Tuscany. Grosseto, Follonica dintorni, VI.1962, legit Bianciardi, 2 exx, coll. G. Gobbi (MCZR); Livorno, VI.1938, 1 ex coll. Cerruti (INER).

Latium. Roma, Castelfusano, 7.VII.1955, legit G. Montelli, 2 exx (CEM); idem, 1 ex,



Fig. 5



Fig. 6



Fig. 7



Fig. 8

5 mm

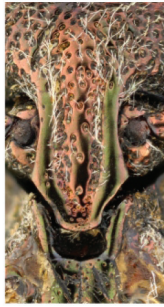


Fig. 9



Fig. 10



Fig. 11

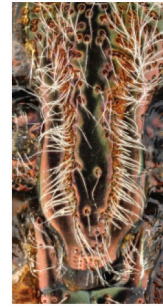


Fig. 12

3 mm



Fig. 13



Fig. 14



Fig. 15



Fig. 16

5 mm

Figures 5-8. Antennae of *P. lugubris meridionalis* n. ssp. from Italy, Matera, Policoro (5), *P. lugubris lugubris* from Slovakia, Hegy Farok (6), *P. lugubris lugubris* from Italy, Rome, Castelfusano (7), *P. lugubris lugubris* from Greece, Attica, Legrena (8). Figures 9-12. Prosternal process of *P. lugubris meridionalis* n. ssp. from Italy, Matera, Policoro (9), *P. lugubris lugubris* from Slovakia, Hegy Farok (10), *P. lugubris lugubris* from Italy, Rome, Castelfusano (11), *P. lugubris lugubris* from Greece, Attica, Legrena (12). Figures 13-16. Aedeagus of *P. lugubris meridionalis* n. ssp. from Italy, Matera, Policoro (13), *P. lugubris lugubris* from Slovakia, Hegy Farok (14), *P. lugubris lugubris* from Italy, Rome, Castelfusano (15), *P. lugubris lugubris* from Greece, Attica, Legrena (16).

Perotis lugubris Fabr., det. F. Tassi, 1961; idem, VII.1955, legit C. Saraceni, ex coll. S. Cafaro, 1 ex (CEM); idem, VII.1955, 1 ex (CEM); idem, VI.1956, legit S. Cafaro (CEM); Castelfusano, VII.1962, legit Ramaccini, 1 ex, coll. G. Gobbi (MCZR); idem, VII.1963, 1 ex, coll. G. Gobbi (MCZR); idem, 22.VI.1969, 1 ex, coll. G. Gobbi (MCZR); idem, VI.1955, legit G. Montelli, 1 ex, coll. G. Gobbi (MCZR); idem, VII.1965, legit D. Ruggiu, 1 ex, coll. G. Gobbi (MCZR); idem, 6.VII.1954, legit E. De Maggi, 2 exx (MCZR); idem, 24.VII.1954, legit E. De Maggi, 1 ex (MCZR).

Roma, Maccarese, 4.VI.2009, 1 ex (CMG).

Porto Anzio, VII.1918, 1 ex, legit Straneo, *Perotis lugubris* F., det. Obenberger.

Campania. Napoli, Villa Comunale, VIII.1911, legit Anguis (MCZR).

Apulia. Apricena dintorni (Foggia), 1.VI.2001, legit W. Pagliacci, 5 exx (CM).

CONCLUSION

Although *Perotis lugubris* s.l. is a polytypic species with a certain degree of intraspecific variability, nevertheless *P. lugubris meridionalis* ssp. is clearly differentiated and morphologically distinguishable from all other known populations, particularly those geographically close. Future research should be aimed at a reassessment of all taxonomic populations of *Perotis lugubris* s.l. and at a better definition of the presence of *P. lugubris meridionalis* n. ssp. in Southern Italy.

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