

Research articleSubmitted: August 25th, 2019 - Accepted: October 8th, 2019 - Published: November 15th, 2019**Contribution to the knowledge of the genus *Clanoptilus* Motschulsky, 1854 in Italy (Coleoptera: Cleroidea, Malachiidae)**

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Abstract

In this paper, the species of the genus *Clanoptilus* Motschulsky, 1854 mentioned for the Italian territory are reviewed. Two separate keys are provided for identification of males and females. For each species a discussion of taxonomic status and distribution in Italy, and the list of localities of studied specimens are also presented. *Clanoptilus affinis subconcolor* (Pic, 1911) and *Clanoptilus spinipennis brevispina* (Kiesenwetter, 1871) are tentatively proposed as valid subspecies or separate semi-species. The new synonymy *Clanoptilus bellieri* (Peyron, 1877) = *Clanoptilus transadriaticus* (Evers, 1970) is also proposed.

Key words: Soft-winged Flower Beetles, identification keys, distribution, Italy, new synonymy, new subspecies.

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Introduction

Malachiidae of genus *Clanoptilus* are easy to observe and collect, often very common in spring-summer in sunny environments, on flowers and herbaceous vegetation from sea level to alpine meadows. This accessibility is however rather skin-deep; in fact, the knowledge on their systematics, distribution and biology is largely incomplete and inaccurate, also because the simple species recognition is often difficult. Determination errors and species intermingling, even at the generic level, come up frequently in the revision of the collection material, especially on female specimens, and the literature often contains unreliable data.

The present work therefore aims at giving a contribution to the improvement of this knowledge, although limited to the Italian fauna, the most accessible to the writer.

History

The genus *Clanoptilus* (from Greek: “hollow wings”) was established by Motschulsky (1854) for the species of *Malachius* with male elytral apex folded and fitted with appendages. Later authors either considered *Clanoptilus* as a subgenus of *Malachius* (e.g. Mulsant & Rey 1867 and Pic 1913–1914), or ignored it (e.g. Peyron 1877; Abeille de Perrin 1890–91; Krauss 1902), until the publication of the fundamental work by Evers (1985) which focused on characters of excitators and related structures. The excitators are paired secretory organs of males, located in various parts of body; their secretion is used for precopulatory

behavior (Matthes 1962). Evers (1985) divided the genus *Malachius* into eight genera and repropoed *Clanoptilus* as a genus in its own right, with its original meaning. The type species is *C. antennatus* Motschulsky, 1854, synonymous of *C. spinipennis* (Germar, 1824).

The subgenus *Hypoptilus* was established by Mulsant & Rey (1867) for the *Clanoptilus* species in which the elytral apex of males is only slightly folded, and its appendages are reduced or missing. The type species of the subgenus is *C. barnevillei* (Puton, 1865).

The catalog of the Palaearctic fauna of Mayor (2007) lists 82 *Clanoptilus* s.str. and 19 *Hypoptilus*.

Tshernyshev (2009) moved some of Evers’s *Clanoptilus* into the new genus *Anthomalachius*, characterized by the prolonged body, elongate pronotum, characteristic shape of antenna, completely dark coloration with green or blue metallic lustre except for the yellow or orange spots on the elytral apices, and specific shape of urites and genitalia. *Anthomalachius* is represented in Italy by two species not treated in this work: *A. spinosus* (Erichson, 1840) with a wide Italian diffusion, and *A. strangulatus* (Abeille de Perrin, 1885) with citations for Emilia Romagna, Lazio and Basilicata.

For the Italian territory, important contributions to the knowledge of the species now included in genus *Clanoptilus* were given by Baudi di Selve (1873), and above all by Pardo Alcaide (1960–1969). In more recent years, the faunistic works of Angelini (1986, 1991), Pasqual & Angelini (2001) and Pasqual (2007, 2010) have been pub-

lished. These Authors have repeatedly underlined the existing problems, and the need to review the taxonomy and the distribution of some of the species.

Ecology

Imagos of *Clanoptilus* can be found on flowers and herbs and, as common in Malachiidae, they are pollen feeders and partially zoophagous. Larvae are zoophagous and develop at the expense of xylophagous arthropods under bark of trees and in the stems of herbaceous plants: maritime pine (Perris 1863), grapevine (Abeille de Perrin 1890–91), bramble (Pic 1913–1914). F. Izzillo (pers. comm.) has recently observed the emergency of *C. spinipennis* from stems of *Ferula communis* attacked by *Anthaxia anatolica anatolica* (Col. Buprestidae) and *Psilothrix viridicoerulea* (Col. Dasytidae); G. Altadonna (pers. comm.) has obtained *Clanoptilus parilis* from stems of the same plant attacked by *Psilothrix viridicoerulea* and *P. protensa*. Cases of parasitism at the expense of Hymenoptera have also been reported (Pic 1913–1914), analogously to what is known for other members of the family.

Materials and Methods

Identification by comparison with type material has been necessary only in two cases, as most of the taxa covered have indeed widely recognized taxonomic statuses and boundaries.

Bibliography for each species includes the original description and the main works that support its identification or provide significant information.

During the present work, some thousands of Italian specimens belonging to museums and private collections were examined. For each species, all localities reported have been checked by the author and are listed, by region and province, in alphabetical order, with the altitude when specified on the label. After each locality the repository of the specimens has been added.

The framework of Vigna Taglianti et al. (1992, 1999) has been followed for definition of chorotypes.

Line drawings of antennae have been obtained from macrophotographs, and converted to digital form with Inkscape™ software package.

Abbreviations used:

CAB	Coll. A. Bramanti, Pietrasanta, IT
CFA-MB	Coll. F. Angelini & M. Bocci, Francavilla Fontana, IT
CFA-MZUF	Coll. F. Angelini in Museo di Storia Naturale dell'Università degli Studi di Firenze, Sezione di Zoologia "La Specola", Firenze, IT
CGF	Coll. G. Franzini, Milano, IT
CGL	Coll. G. Liberti, Ubolde, IT
CLF	Coll. L. Forbicioni, Portoferraio, IT
CLS	Coll. L. Saltini, Modena, IT
CRP	Coll. R. Papi, Castelfranco, IT

CSC	Coll. S. Cosimi, Casale Marittimo, IT
CTG	Coll. T. Gazurek, Warszawa, PL
MNB	Museum für Naturkunde, Berlin, DE
MNHN	Musée National d'Histoire Naturelle, Paris, FR
MSNG	Museo Civico di Storia Naturale, Genova, IT
MSNM	Museo Civico di Storia Naturale, Milano, IT
MSNVE	Museo di Storia Naturale, Venezia, IT
MSNVR	Museo di Storia Naturale, Verona, IT
PNALM	Coll. of Parco Nazionale Abruzzo, Lazio e Molise, Villetta Barrea, IT

Identification Keys

In descriptions the below listed conventions have been adopted for the following anatomical parts:

- antennal articles are always considered in physiological position, i.e. facing forward: the term *upper* refers to the superior side (generally uniform and devoid of differentiated structures) and *lower* to the inferior one (often concave, serrate or triangular).
- the structures at the apex of the elytra of the males (*excitators*) consist of a portion more or less deeply inwards folded, with an angular or rounded *upper margin*, usually of a pale (yellow or orange) color contrasting with the rest of the elytra, and more or less broadly dark-bordered at apex. In many species the excitators are provided with sturdy bristles and a dark thorn-shaped appendage, according to the "*marginellus* type" of Matthes (1962: 443). This appendage is sometimes provided with rows or tufts of setae arranged differently depending on the species.

Key for Males

Antennae exhibit constant differences between species and are the most reliable means of identification.

The pro- and/or metatibiae of some species are characterized by the presence, in addition to the basic bristles, of long, curved whitish bristles. Metatibiae can, as in some other genera of Malachiidae (e.g. *Anthocomus*, *Axinotarusus*, *Charopus*, *Ebaeus*), present themselves in two states: keeled on the inner side, or simple.

Male genitalia show a great uniformity of structure and do not display useful elements for species identification. They are therefore not used in the table.

1. Elytra at apex strongly folded inwards, excitators with well developed appendages 2
- Elytra at apex at most weakly folded, appendages of excitators rudimentary or absent (see also *C. spinipennis*) 13
2. Metatibiae with a thin, sharp keel along the inner side 3
- Metatibiae simple, without keel 7
3. Knees dark like the rest of the femur 4
- Knees pale 5
4. Lower edge of antennomeres IV–VI clearly concave; frons dark *affinis*
- Antennomeres IV–VI subconical, not concave at lower edge; frons pale in large extent *ambiguus*
5. Pronotum entirely metallic; sutural angle of elytra pale with large dark spot 6

- Sides of pronotum orange-yellow; sutural angle of elytra pale with only a narrow dark border *marginellus*
- 6. Antennomere I about 1.5 times longer than wide, cylindrical; metatibiae keeled on 3/4 of length; outer margin of dark apical spot of elytra forming an angle with the suture *[elegans]*
- Antennomere I about 2 times longer than wide, with bottom edge concave; keels on metatibiae extending up to close to articulation with femora; outer margin of dark apical spot of elytra parallel to the suture *emarginatus*
- 7. Elytra entirely orange-red *rufus*
- Elytra metallic, often with orange or yellow spot at apex .. 8
- 8. Antennomere I cylindrical 9
- Antennomere I conical 10
- 9. Legs completely dark; genae dark; size smaller (4–5 mm) ... *spinipennis*
- Knees pale, specially the front ones; genae pale; size larger (6–8 mm) *geniculatus*
- 10. At least protibiae with two types of white bristles: short, brush-like and long, thin and curved. Upper edge of excitators, seen from above, sharply angled; the appendages of excitators almost reach the apex of elytra, bearing bristles much shorter than the appendages 11
- All tibiae with only short, brush-like bristles. Upper edge of excitators, seen from above, obtuse or rounded; appendages of excitators short, barely protruding from the upper edge, and bearing a row of bristles about as long as the appendages; large body size (6–7 mm), antennae longer than the body *calabrus*
- 11. Both pro- and metatibiae bearing two types of white bristles; appendages of excitators with a tuft of bristles at tip *arnaizi*
- Two types of white bristles on protibiae only; appendages of excitators with a longitudinal row of bristles on inner side 12
- 12. Apex of antennomeres III–IV rounded at tip; sutural angle of elytra with narrow dark border; appendages of excitators with a longitudinal row of bristles at mid of inner side; genae dark *parilis*
- Apex of antennomeres III–IV angled at tip; sutural angle of elytra with wide dark border; appendages of excitators with a longitudinal row of bristles at bottom of inner side; genae pale *italicus*
- 13. Elytra entirely metallic *barnevillei*
- Elytra with orange or yellow spot at apex 14
- 14. Pronotum entirely metallic 15
- Sides of pronotum orange-red *sardous*
- 15. Palpi partly pale; antennomeres IV–VI not widened at apex 16
- Palpi entirely dark; antennomeres IV–VI sharply widened at apex *spinipennis brevispina*
- 16. All antennomeres but first partly pale; apical palpomere slightly darkened distally; eyes strongly protruding; body size smaller (5 mm) *[dissimilis]*
- Only antennomeres II–V partly pale on upper side; eyes less protruding; apical palpomere entirely dark; body size larger (6–8 mm) *bellieri*

Key for Females

The females of *Clanoptilus* are uniform in appearance, moreover they can be confused with those of the other genera derived from the split of historical *Malachius*, such as *Malachius s.str.*, *Anthomalachius*, *Cordylepherus* and *Micrinus*, with which they can be found mixed up. It has been therefore considered useful to include these genera in

the table below, which again is applicable only within the Italian territory.

Differences in pale/dark pattern of head seem constant, but they are usable only for a subset of the species. Many of the other characters used in the table are somewhat blurred and best viewed on a series of individuals. The antennae repeat the characters of the corresponding males, but in a reduced and attenuated form; other characters, such as the keels and the long white bristles of the tibiae, are absent. The determination of single female specimens is therefore not always possible with certainty, except by resorting to differences in distribution.

1. Antennomere III barely longer than wide, or elytra orange-red at least on the sides 2
- Antennomere III much longer than wide and elytra largely or completely metallic 4
2. Elytra metallic at least on part of the base .. *[Malachius pars]*
- Elytra entirely orange-red 3
3. Elytra covered with double pubescence: short adpressed and long setae *rufus*
- Elytra covered with single pubescence, very short *[Anthocomus rufus]*
4. Elytra short, widened in apical half (pear-shaped), single-colour (dark greenish) *[Micrinus pars]*
- Elytra parallel, more slender, either single-colour or with pale spot at apex 5
5. All appendages entirely dark and/or metallic 6
- At least some antennomeres partly pale on the lower side .. 7
6. Elytra with pale spot at apex *[Anthomalachius]*
- Elytra single-colour *[Micrinus pars]*
7. Elytra single-colour 8
- Elytra with pale spot at apex 9
8. Genae pale; mesepimera pale, contrasting with the rest of the mesosternum *barnevillei*
- Genae dark; mesepimera generally dark metallic like the rest of mesosternum *affinis*
9. Sides of pronotum orange-yellow 10
- Pronotum entirely metallic 11
10. Fore knees and genae dark *sardous*
- Fore knees and genae pale *marginellus*
11. Lower edge of antennomeres IV–V (or IV–VI) clearly concave 12
- Lower edge of antennomeres IV–V (or IV–VI) straight (IV sometimes slightly concave in *arnaizi*) 14
12. Palpi sharply bicoloured, with last palpomere much darker than the rest; lower edge of antennomere VI visibly concave, pronotum not wider than long, body size smaller (5 mm) 13
- Palpi dark not sharply bicoloured, lower edge of antennomere VI only slightly concave, pronotum wider than long, body size larger (6–8 mm) *geniculatus*
13. Antennomere I more conical, eyes slightly protruding *[elegans]*
- Antennomere I less conical, slender, eyes more protruding *emarginatus*
14. Genae dark between eye side and antennal insertion; palpi always uniformly dark 15
- Genae partly pale between eye side and antennal insertion; palpi usually pale in part (see also *C. parilis*) 16
15. Frons and clypeus strongly convex between antennal insertion; genae partly pale, pale color going up to the the eye margin; pale spot at elytral apex smaller ... *[Cordylepherus]*
- Frons and clypeus almost flat between antennal insertion;

- genae entirely dark, so the border pale-dark is straight; pale spot at elytral apex larger *spinipennis*
16. Antennae long and slender, antennomeres V–IX about 3 times as long as maximum width *calabrus*
- Antennae shorter and stouter, antennomeres V–IX about 2 times as long as maximum width 17
17. Antennomeres IV–VIII triangular; antennae appear distinctly serrate 18
- Antennomeres IV–VIII cylindrical or subconical; antennae do not appear distinctly serrate 20
18. Apex of antennomeres III–IV rounded at tip; genae dark below eyes; palpi uniformly dark *parilis*
- Apex of antennomeres III–IV angled at tip; genae partly pale below eyes 19
19. Pronotum more transverse, about 1.3 times wider than long; inter-antennal space wider than width between internal margin of eye and internal margin of antennal insertion *arnaizi*
- Pronotum less transverse, about 1.2 times wide as long; inter-antennal space as wide as that width *italicus*
20. All antennomeres but I partly pale at upper side .. [*dissimilis*]
- Only antennomeres II–IV partly pale at upper side 21
21. Antennomere III pale in major part; antennae appear bicoloured. Elytra parallel, about 3 times as long as maximum width, body size 6 mm or above *bellieri*
- Antennomere III dark in major part; antennae do not appear bicoloured. Elytra widened posteriorly, about 2 times as long as maximum width, body size 5 mm or less *ambiguus*

Species Accounts

Clanoptilus affinis (Ménétriés, 1832) (Figs 1a, 2a)

Malachius affinis Ménétriés, 1832: 164, *loc. typ.* Salyan (Azerbaijan); Horion, 1953: 106.

Malachius affinis v. *concolor* Krauss, 1902: 21.

Malachius affinis v. *subconcolor* Pic, 1911: 113.

Clanoptilus affinis Mayor, 2007: 442.

The species does not raise nomenclature problems: it is well recognizable by the entirely dark legs, metatibiae with keels and proportionally short antennae, especially in males. The dark color of mesepimera seems to be constant in the Italian populations but the writer has studied specimens with pale ones from other parts of its geographic range. This Euro-Asiatic, steppic and thermophile element (Horion 1953: 106) shows in Italy an apparently disjunct distribution. It is present in Trentino-Alto Adige in the Venosta, Isarco and Pusteria valleys, and with two plausible citations for Pejo (Bertolini 1898: 104) and Castel Toblino (Dudich 1922: 10); then reappears in the Central and Southern Apennines, with the Monti della Maddalena (Basilicata - Potenza) as a hitherto established southern limit (Pasqual & Angelini 2001: 116).

The male specimens examined from both the above Italian areas have completely dark elytra, or with a pale spot limited to a small area at upper excitators apex, on the other hand elytra of other European populations have ex-

citators largely pale. The chromatic form with dark apex was described from Croatia as var. *concolor* by Krauss (1902: 21), and this is the name under which the specimens from Trentino-Alto Adige appear in the collection of MNB. Pic (1911: 113) recording the primary homonymy with *Malachius* (now *Cordylepherus*) *viridis* v. *concolor* (Schilsky, 1888), proposed the new replacement name *subconcolor*.

In consideration of the uniformity and amplitude of its geographical distribution, the writer proposes to give to the Italian populations subspecific rank, keeping the name *subconcolor* (Pic, 1911). There is a margin of doubt in this interpretation, as it has not been possible to verify the identity of the Italian specimens with any corresponding to Krauss' diagnosis neither from Croatia nor from adjacent regions. However, there is no doubt about their belonging to *C. affinis*, and they fit with the Krauss description (although succinct). The writer did not verify the males pigmentation pattern of the populations west of Italian Alps; the species is indeed reported for France up to the Massif Central (Allenspach & Wittmer 1979:b90; Constantin 2014: 475). In this latter part of its range, females can be, at first sight, confused with *C. barnevillei* and with *Micrinus* species, however head and mesepimera colour, as already mentioned, remains a good diagnostic character.

List of localities: **Trentino-Alto Adige:** Brixen-Tschöttscher Heide (Bressanone - Scezze) (Bolzano) (MNB); Coldrain (Coldrano) (Bolzano) (MNB); Collalbo (Bolzano) m 1190 (MNB); Lasa (Bolzano) (CGF); Latsch (Laces) (Bolzano) (MNB); Schludern (Sluderno) (Bolzano) (MNB); Staben b. Naturns (Stava - Naturno) (Bolzano) (MNB); Tannas (Bolzano) m 1500 (MNB); Villabassa (Bolzano) (MSNVE). **Marche:** Furlo - Mount Paganuccio (Pesaro-Urbino) (CGF); Mount Catria (Pesaro-Urbino) m 1600 (CRP); Mount Vettoreto (Ascoli Piceno) m 1920 (CGL); Pretare (Ascoli Piceno) m 1015 (CGL). **Umbria:** Fossato di Vico (Perugia) m 740 (CFA-MB); Nocera Umbra - Mount Alago (Perugia) m 1000 (CGL, CFA-MZUF); Scheggia e Pascelupo (Perugia) m 700-1400 (CFA-MB); Sigillo (Perugia) m 950-1100 (CFA-MB). **Lazio:** Mount Terminillo (Rieti) m 1500 (CGL); Piano di Rosce (Rieti) (MSNVR). **Abruzzo:** Castelvechio Calvisio (L'Aquila) m 1000 (MSNG); Cerchio (L'Aquila) (MSNM); Rocca di Cambio (L'Aquila) m 1400 (MNB).

Clanoptilus ambiguus (Peyron, 1877) (Figs 1b, 2b, 3)

Malachius ambiguus Peyron, 1877: 102, *loc. typ.* Austria; Krauss, 1902: 2 [status changed to good species]; Horion, 1953: 110.

Malachius geniculatus var. *ambiguus* Abeille de Perrin, 1891: 139.

Clanoptilus ambiguus Mayor, 2007: 443.

In the Peyron's collection (American University, Beirut -

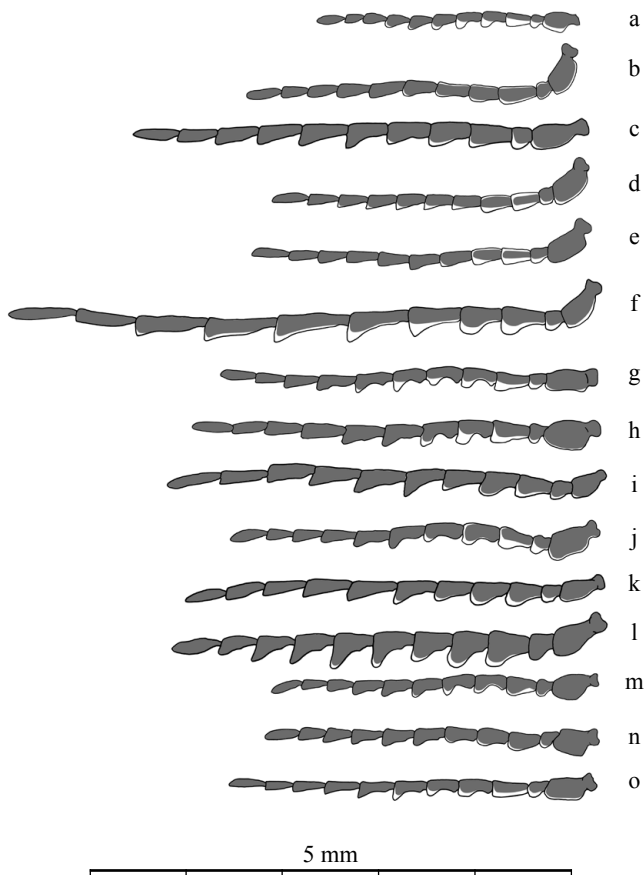


Fig. 1 – Antennae of males of *Clanoptilus* spp.: **a**, *affinis*: Krym/Krymskie gory (RU); **b**, *ambiguus*: Prezli Pan (HR); **c**, *arnaizi*: Giaglione; **d**, *barnevillei*: Hautes Alpes - Ancelle (FR); **e**, *bellieri*: Ferla-Valle F. Anapo; **f**, *calabrus*: Straorini; **g**, *emarginatus*: Mount Vulture; **h**, *geniculatus*: Bubano di Mordano; **i**, *italicus*: Pania della Croce; **j**, *marginellus*: Palencia-Baltanas (ES); **k**, *parilis*: San Piero a Patti; **l**, *rufus*: Foresta Burgos; **m**, *sardous*: Palau; **n**, *spinipennis*: Tresnuraghes; **o**, *elegans*: Sierra Gredos (ES).

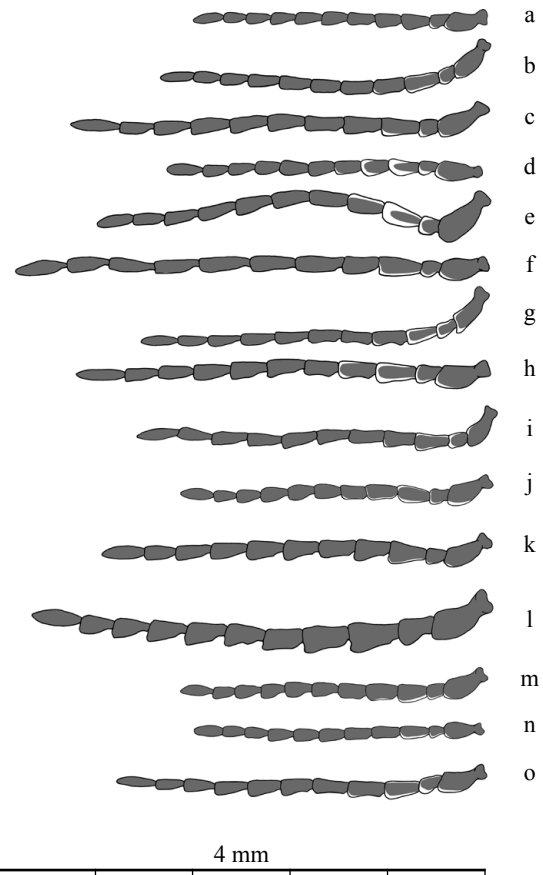


Fig. 2 – Antennae of females of *Clanoptilus* spp.: **a**, *affinis*: Vettoreto Mt.; **b**, *ambiguus*: Prezli Pan (HR); **c**, *arnaizi*: Giaglione; **d**, *barnevillei*: Palencia - Baltanas (ES); **e**, *bellieri*: Kestriani (GR); **f**, *calabrus*: Sella Entrata; **g**, *emarginatus*: Mazia - Piz Lun; **h**, *geniculatus*: Hradec Králové (CZ); **i**, *italicus*: Mount Catria; **j**, *marginellus*: Souss (MO); **k**, *parilis*: Gioiosa Marea; **l**, *rufus*: Oschiri; **m**, *sardous*: Palau; **n**, *spinipennis*: Bassura del Bardello; **o**, *elegans*: Villaseca (ES).

LB) are kept five specimens labelled “Autriche” (three); “Naples”; “Balis Th. Deyr.” (K. Knio, pers. comm.). They correspond well to what Peyron wrote in the original description [“Autriche. Hongrie. Italie: Naples (Costa). Arménie: Bitlis, Erzéroum, lac de Van (Th. Deyrolle)”], and must be considered as syntypes. Unfortunately they were not available for detailed examination at this time.

This species has a Pontic-Pannonian distribution (Horion 1953: 110; Evers 1979: 63), has been reported in the past for several Italian peninsular regions, e.g. by Pardo Alcaide (1960: 174) and Pasqual & Angelini (2001: 116). Also Peyron (1877) in his original description, associated with the true *ambiguus* of Austria the name *apenninus*: listed but not described by Costa (1858: 14; 1881: 48) from “Monti Partenii” (= Partenio Mts, Campania, Avellino province), presumably corresponding to the syntype of “Naples” mentioned above.

Based on the material studied by the writer, however, its presence in Italy is very marginal. It is confirmed only

for a few locations in eastern Friuli-Venezia Giulia (Fig. 3), from the Carso westwards up to the Tagliamento river, a presence which is in agreement with the datum of Kahlen (2010: 101) for Flagogna (Udine). It has been possible to check (in MSNVR) some of the specimens from Monti Picentini and Sibillini identified as *ambiguus* by Pardo Alcaide (1974: 174, 175): they are, in fact, *C. italicus*.

The shape of the antennomere I of males, one of the crucial characters used in determination keys, looks objectively difficult to interpret (“épais, presque quadrangulaire” in the description) for *C. ambiguus*: either reported as cylindrical e.g. in Krauss (1902: 22), or as conical e.g. in Evers (1979: 62). It must also be noted that the male antenna drawing in Solodovnikov (1994: 677) poorly fits with Peyron’s description “4^e à 7^e un peu prolongés au bout”, raising the doubt that it might refer to another species. In Italy, the most likely confusion is with the species with the antennomere I conical, namely *arnaizi*, *italicus* and *parilis*. However, for these latter species males can be

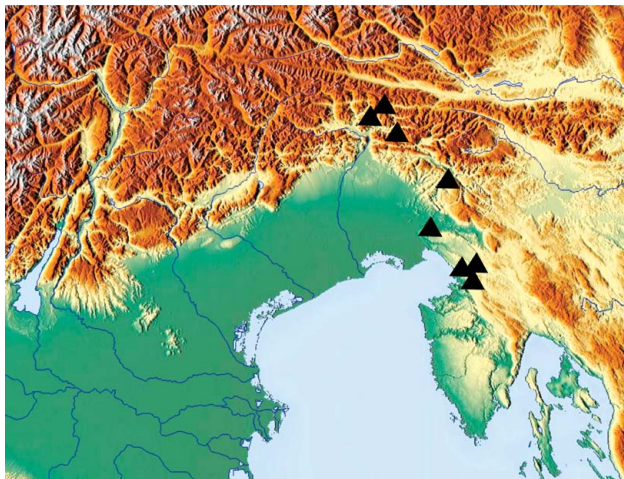


Fig. 3 – Recorded localities of *Clanoptilus ambiguus* in Italy.

easily recognized for the keeled metatibiae and the protibiae without long white bristles, and females for the antennomeres IV–VIII not serrate.

List of localities: **Friuli-Venezia Giulia:** Gemona - Mount Chiampon (Udine) (MSNM); Lake Cavazzo (Udine) (MSNM); Mount Festa (Udine) m 500-600 (MSNM); Mount Matajur (Udine) (MSNM, MSNV); Istrien - Gradisce (Gorizia) (MSNM); Gropada (Trieste) (MSNM); Opicina (Trieste) (MSNM); Trieste - Carso (Trieste) (MSNM).

Clanoptilus arnaizi (Pardo Alcaide, 1966) (Figs 1c, 2c)

Malachius arnaizi Pardo Alcaide, 1966: 34, *loc. typ.* Barcelona;

Malachius parilis Auct. *nec* Erichson, 1840.

Clanoptilus arnaizi Mayor, 2007: 443.

Pardo Alcaide (1966: 34) has highlighted the distinctive features of this species from the true *parilis*, describing it from Spain and southern France. This same Author, in a subsequent work (1967: 103), also indicated its presence in Italy in Western Liguria. Focarile (1975: 30) reports it for two other Italian regions: Valle d'Aosta and Piedmont up to Ivrea. Based on the material examined, it is possible to confirm the presence in Italy of *C. arnaizi* only in the north-western regions, namely western Liguria, at least up to the province of Savona, Maritime and Ligurian Alps, intra-alpine valleys of Piedmont (Stura, Susa, Chisone, Lanzo) and Valle d'Aosta, with Ivrea as the eastern limit. The specimens, on which the report of Focarile (1975: 30) for Friuli-Venezia Giulia is based (Lago di Cavazzo, Udine, *leg.* Springer), are stored at MSNM, and have been found to belong to *C. ambiguus* (see above), with respect to which males can be identified for long white bristles on tibiae and absence of keels on metatibiae, and females for the antennomeres IV-VIII serrate. All the abundant mate-

rial examined for the other peninsular regions from Genova southwards turned out to belong either to *C. italicus* or *C. calabrus*. For the time being the writer considers all citations of *C. arnaizi* for these regions, as for example those of Focarile (see also distribution map in 1974: 17) and Pasqual & Angelini (2001: 117) as doubtful. A single male specimen from Sardinia (Asuni - Nuoro, *leg.* Krausse) is located at MNB, and the actual presence of this species in the region is to be confirmed.

List of localities: **Valle D'Aosta:** Chambave (Aosta) (MSNG); Champdepraz (Aosta) m 600 (CGL); Cogne (Aosta) (MSNM); Gressan (Aosta) m 750 (CGL); La Ravoire - Lake Lolair (Aosta) m 1110 (CGL); Planaval (Aosta) m 1450 (CGL); Pondel (Aosta) (MSNM); Quart (Aosta) (CGF); River Dora - Bard (Aosta) (MSNM); Vetan (Aosta) m 1550 (CGL). **Piemonte:** Balme (Torino) (MSNM); Exilles (Torino) m 1000 (CGL); Fenestrelle (Torino) (MSNM, MSNG); Giaglione (Torino) m 800 (CGF); Ivrea (Torino) (MSNM); Perrero (Torino) (MSNM); Salbertrand (Torino) m 1100-1750 (CGF); Susa - San Colombano (Torino) m 1300 (MSNG); Aisone - Vallone di Valletta (Cuneo) m 1550 (CGL); Ardua - Pesio Valley (Cuneo) m 950 (MSNG); Cuneo (Cuneo) (MSNM); Montalto Mondovi (Cuneo) (MSNG); Montenegro (Cuneo) m 1800 (CGL); Murazzano (Cuneo) (MSNG); Ormea (Cuneo) (MSNM); Ormea - Chionea (Cuneo) m 1220 (CGL); San Giacomo (Cuneo) m 1390 (CGL); Tanaro Valley (Cuneo) (MSNM); Terme di Valdieri (Cuneo) m 1750-1970 (CGL); Valdieri (Cuneo) m 850-930 (CGL); Vinadio - Neraissa (Cuneo) (MSNM); Viozene (Cuneo) m 1500 (CGL). **Liguria:** Baiardo (Imperia) m 942 (CGL); Colla Melosa (Imperia) m 1780 (CGL); Mount Bignone (Imperia) m 1200 (CGL); Mount Grammondo (Imperia) m 900 (CGL); Mortola Superiore (Imperia) m 700 (CGL); Sanremo (Imperia) (MSNM); Sanremo - Mount Bignone (Imperia) m 1300 (MSNM); Teglia Pass (Imperia) m 1390 (CGL); Ventimiglia - Sant'Antonio (Imperia) m 300 (CGL); Villatella - Cornà Pass (Imperia) m 800-900 (CGL); Albissola (Savona) (MSNM); Bormida River - Case Borgno (Savona) (CGL); Bormida River - Mereta (Savona) (CGL); Cengio (Savona) (MSNG); Colle di Melogno (Savona) (MSNM, CGL); Ginestro Pass (Savona) (CGL); Laigueglia (Savona) (CGL); Mount San Giorgio (Savona) (MSNM); Sassello (Savona) 6 km N (CGF). **Sardegna:** Asuni (Oristano) (MNB).

Clanoptilus barnevillei (Puton, 1865) (Figs 1d, 2d)

Malachius barnevillei Puton, 1865: 131. *loc. typ.* Seyne (Basses Alpes); Horion 1953: 105.

Clanoptilus barnevillei Mayor, 2007: 445.

This species does not raise nomenclature problems. The males are recognizable by the combination of unicoloured elytra and poorly differentiated excitators, the females can

be distinguished from those of *C. affinis*, having equally unicoloured elytra, by the pale color of genae and mesepimera. It is widespread from the Iberian Peninsula to the British Isles and Scandinavia, and in Italy it has only a marginal presence on the western border of Piedmont, with a transalpine distribution.

List of localities: **Piemonte**: Salbertrand (Torino), 1000 m (MSNG); Ulzio (Torino) (MSNG).

Clanoptilus bellieri (Peyron, 1877) (Figs 1e, 2e, 4, 5, 6)

Malachius bellieri Peyron, 1877: 53, *loc. typ.* Sicilia, Malta;

Malachius dissimilis v. *bellieri* Abeille de Perrin, 1883: 50; Evers 1964: 362.

Malachius dissimilis Pardo Alcaide, 1968: 274.

Clanoptilus bellieri Mayor, 2007: 445 (*nomen dubium*);

Malachius transadriaticus Evers, 1970: 241; (*loc. typ.* Calabria), **syn. nov.**

The types (two syntypes) object of Peyron's description are kept in the Abeille de Perrin collection (MNHN): a male labelled "Bellieri Peyr. / ♂♀ / Types" and "Sicile" (Fig. 4), and a female labelled "Bellieri ♀ / Type ex Peyr." and "Malta" (Fig. 5). The male actually displays the differences from *C. dissimilis* highlighted by Peyron in his description; the female of Malta lacks part of the antennae and is difficult to attribute.

In describing his *Malachius bellieri*, Peyron compares it to *M. dissimilis* of Baudi di Selve only on the ground of the original description. Abeille de Perrin (1883: 50) gives little value to the differences highlighted by Peyron and dismisses *bellieri* to a variety of *dissimilis*. Later (1891: 138) he assigns the Maltese specimen (female) to *geniculatus*, whose presence in Malta, however, has to be confirmed (Švihla & Mifsud, 2006: 100).

Luigioni (1929: 623), Porta (1929: 103) and Pardo Alcaide (1968: 274) follow the Abeille de Perrin's opinion. Evers (1964) reports *M. dissimilis* var. *bellieri* for Albania. Subsequently the same Author describes (1970:



Fig. 4 – *Clanoptilus bellieri*, syntype male (copyright MNHN).



Fig. 5 – *Clanoptilus bellieri*, syntype female (copyright MNHN).

241), on specimens from Calabria, Sicily and Albania, *M. transadriaticus* comparing it only with *M. geniculatus*. Evers (1964) recognizes the proximity of his new species to *M. dissimilis* var. *bellieri* [on which he accepts (see also 1985: 5) the opinion of Abeille de Perrin] but he excludes that his new form might be identical to *bellieri* on the ground of incompatible body length (“wegen deren Länge nicht übereinstimmt”). However, this argument is based on an error of identification: the Sicilian specimens labelled *M. dissimilis* var. *bellieri* kept in the Evers’ collection (MNB) (and possibly used for comparison) are indeed smaller than the 7–8 mm indicated for *transadriaticus*, but they are not *bellieri*. They were found to belong in majority to *C. spinipennis* ssp. *brevispina* (see below), and for the rest to *C. parilis*.

Pasqual & Angelini (2001: 118) include in their Catalogue both *bellieri* and *transadriaticus*. To the former they attribute all the specimens studied by them and, for the latter, they report only the localities mentioned in Evers’ description.

The examination of the typical series of *transadriaticus* (MNB), and the comparison with other specimens attributable to this taxon from Sicily, southern Italy and Greece indicate that they all belong to the same species, conforming to the type of Peyron’s *Malachius bellieri*, and well distinguishable from the Middle-Eastern *dissimilis* of Baudi di Selve. The distribution of *C. bellieri* therefore appears to be transjonic (Fig. 6). The citation by Della Beffa and Gagliardi (1911: 41) for Mount Senario (Tuscany), re-proposed by successive Authors, is probably wrong.

The general aspect of *bellieri* and *geniculatus* females are really very similar and it is possible to distinguish them only from the differences in the antennomeres III–V shape and colour. Re-examination of materials from the above mentioned regions, currently determined as *geniculatus*, could probably lead to the identification of further specimens of *bellieri*.

The examination of the few known localities suggests that *C. bellieri* could be a species linked to wetlands, which would make it very vulnerable from the ecological point of view, given the low extent and the degree of threat of these habitats within its known range.

List of localities: **Puglia**: Francavilla Fontana (Brindisi) (CGL); River Lato (Taranto) (CGL); Upper Lake Alimini (Lecce) (CGL). **Basilicata**: Terranova di Pollino (Potenza) (MSNM); Metaponto (Matera) (CGF); Nova Siri (Matera) (MSNVR); Policoro (Matera) (CFA-MZUF). **Calabria**: Piana di Sibari (Cosenza) (MSNM); River Crati mouth (Cosenza) (MNB). **SICILIA**: Bosco della Ficuzza (Palermo) (MSNG, CGL); Palazzo Adriano - River Sosio (Palermo) (MSNG); Portella Polizzi (Palermo) (MSNVR); Nebrodi - Lake Quattrocchi (Messina) (CFA-MZUF); Ferla - River Anapo valley (Siracusa) (CRP); Lentini (Siracusa) (MNB). **Albania**: Berat (MNB). **Greece**: Corfu (MNB); Igoumenitsa (MNB); Kestrini (CGL).

Clanoptilus calabrus (Baudi di Selve, 1873) (Figs 1f, 2f, 7)

Malachius parilis var. *calabrus* Baudi di Selve, 1873: 244, loc. typ. “Provincia di Catanzaro”.

Malachius calabrus Abeille de Perrin, 1883: 50 [status changed to good species]; Pardo Alcaide 1967: 98.

Clanoptilus calabrus Mayor, 2007: 443.

It was not possible to locate the typical material of Baudi di Selve, but even if it has been described as a variety of *parilis* the species does not raise today problems of nomenclature. The first author to attribute the status of good species was Abeille de Perrin (1883: 50), who clearly highlighted its distinctive characteristics.

According to the material studied, the distribution of this species appears limited to a part of Calabria, from Cosenza province to Aspromonte (Fig. 7); it is therefore much narrower than it appears in the literature. There are citations of *calabrus* from other mountainous massifs of the Southern Apennines, e.g. Mount Pollino (Angelini 1986: 66) and Sila (Angelini 1991: 197) and from Sicily (Pasqual & Angelini 2001: 118), but all the specimens examined thus far for these localities turned out to belong to *C. italicus* and to *C. parilis* respectively. The discrimination between males of these three species based on the length of the antennae alone can be misleading, as in *italicus* and *parilis* the antennal length is highly variable. Protibiae without long white bristles, large size, hollow forehead, shape of the elytral apex and short appendages of excitators allow a secure recognition. Some of these characters are found in *C. capricornis* (Peyron, 1877), a mid-eastern species which, however, has paler edge of pronotum and whose males have keeled metatibiae and antennomeres with setae on the lower edge. Identification of *C. calabrus* females from other species with serrate antennae is possible on the ground of the longer and thinner antennae.

C. calabrus is included in the Red List of Italian Saproxyllic Coleoptera (Audisio et al. 2014: 115) as species of Least Concern (LC) but, considering the narrowness of its assessed distribution such classification should be probably reconsidered. Some of the recorded localities are protected inside both the Sila and the Aspromonte National Parks.

List of localities: **Calabria**: Cosenza (Cosenza) (MSNG); San Pietro in Guarano (Cosenza) (MSNG); San Vincenzo in Costa - Zizito (Cosenza) m 500 (CRP); Sambiasi (Catanzaro) (MSNG); Mount Pecoraro - Le Serre (Vibo Valentia) (MSNVR); Serra San Bruno (Vibo Valentia) m 750 (CGL); Bagaladi (Reggio Calabria) m 1150 (CGL); between San Lorenzo and Roccaforte del Greco (Reggio Calabria) m 700 (CRP); Motta San Giovanni (Reggio Calabria) m 400 (CRP); Piani di Aspromonte (Reggio Calabria) m 1000 (CFA-MZUF, CGF); Roccaforte del Greco (Reggio Calabria) m 900 (CRP); Santuario di Polsi (Reggio Calabria) m 1000 (CGL); Sella Entrata m 1370

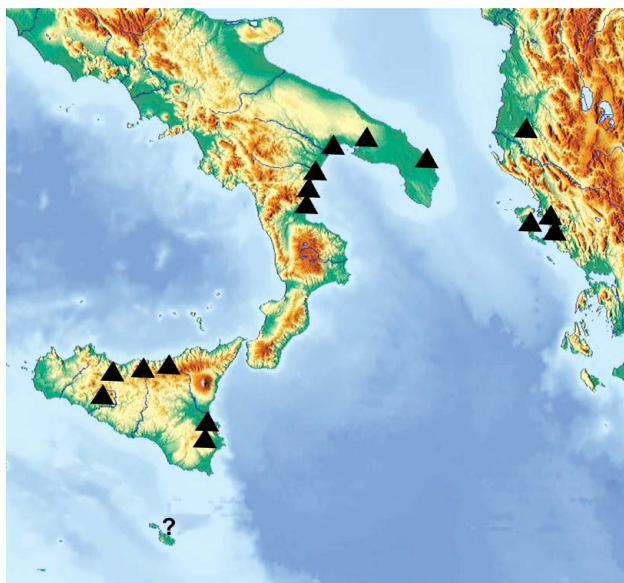


Fig. 6 – Recorded localities of *Clanoptilus bellieri*.

(Reggio Calabria) (CGL); Straorini (Reggio Calabria) m 580 (CGL).

Clanoptilus emarginatus (Krauss, 1902) (Figs 1g, 2g)

Malachius elegans v. *emarginatus* Krauss, 1902: 24, *loc. typ.* Ostalpen; Horion 1953: 109.

Malachius falcifer Abeille de Perrin 1891: 144, *pars*; Pardo Alcaide 1960: 173; 1961: 6.

Malachius emarginatus Pardo Alcaide, 1969: 356 [status changed to good species]; Allenspach & Wittmer 1979: 91. *Clanoptilus emarginatus* Mayor, 2007: 443.

Malachius emarginatus has been described by Krauss as a variety of *elegans*, previously (Abeille de Perrin 1891: 144) and afterwards (e.g. Pi, 1913–1914:37; Porta 1929: 103; Luigioni 1929: 623; Pardo Alcaide 1960: 173 and 1961: 6) mistaken with the middle-eastern *M. falcifer* (Abeille de Perrin, 1882). The relationship between these taxa was at last clarified by Pardo Alcaide (1969: 356) who recognized *emarginatus* as a valid species. The species is widespread throughout the Peninsula, from hilly zones up to over 1500 m, but apparently not in Sicily. It is also present outside the Italian borders, with an Alpine-Apenninic type of distribution.

List of localities: **Valle D’Aosta**: La Ravoire - Lake Loir (Aosta) m 1000 (CGL). **Piemonte**: Bracchio - Mount Faiè (Verbano-Cusio-Ossola) m 1350 (CGL); Cairasca Valley (Verbano-Cusio-Ossola) (MSNG); Craveggia - Mount Ziccher (Verbano-Cusio-Ossola) m 1600 (CGL); Domodossola (Verbano-Cusio-Ossola) (MSNG); Premeno (Verbano-Cusio-Ossola) (MSNG); Valstrona - Forno (Verbano-Cusio-Ossola) m 1000 (CGL); Vigizzo Valley

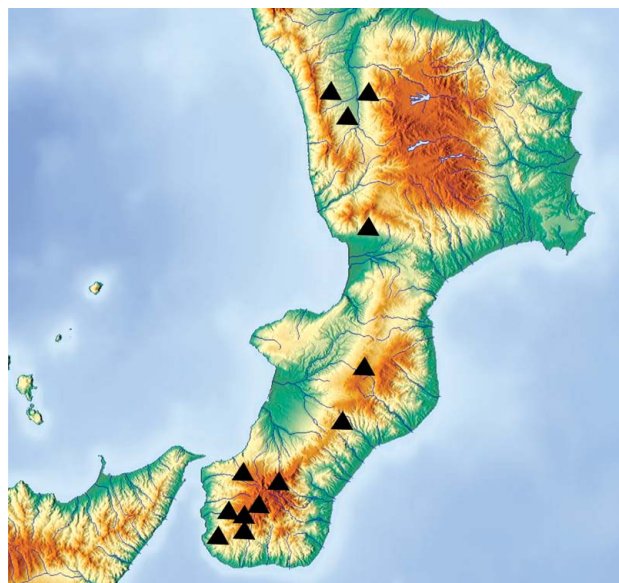


Fig. 7 – Recorded localities of *Clanoptilus calabrus*.

(Verbano-Cusio-Ossola) (MSNG, CGL); Caravino (Torino) (CGL); Castiglione Torinese (Torino) (MSNG); Salbertrand - Auberges (Torino) m 1000-1400 (CGF); Alpe Le Piane - Chiobbia Valley (Biella) m 1300 (MSNG); Bioglio - Mount Rovella (Biella) (MSNG); Mount Cucco (Biella) (CGL); Piedicavallo (Biella) (MSNG); Sabbiola Valley (Vercelli) (CFA-MZUF); Varallo (Vercelli) (CGL); Carpignano Sesia (Novara) (CGL); Aisone - Vallone della Valletta (Cuneo) m 1470-1550 (CGL); Ardua - Pesio Valley (Cuneo) m 950 (MSNG); Maira Valley - Elva (Cuneo) (MSNG); Mongioie - Montenegro (Cuneo) m 1800 (CGL); Ormea - Chionea (Cuneo) m 1220 (CGL); Ponte di Nava (Cuneo) (MSNM); Pradleves (Cuneo) m 1000 (CGL); San Giacomo (Cuneo) m 1390 (CGL); Valdieri (Cuneo) m 930 (CGL); Terme di Valdieri (Cuneo) m 1340-1390 (CGL); upper Tanaro Valley (Cuneo) (MSNM); Cartosio - River Erro (Alessandria) (CGL). **Lombardia**: Arcisate (Varese) (MSNM); Cerro - Fortino (Varese) (MSNM); Gaggio (Varese) (CGL); Laveno (Varese) (MSNM); Calco (Como) (MSNG); Canzo (Como) (MSNG); Caslino d’Erba (Como) (CGL); Erba (Como) (MSNM, CGL); Lake Seggino (Como) (CGL); Arlate (Lecco) (MSNM); Esino Lario (Lecco) (MSNG); Galbiate - Mount Barro (Lecco) m 600-800 (CGL); Mandello Lario (Lecco) m 800 (CGL); Pasturo (Lecco) (CGL); Codera (Sondrio) m 800 (CGL); Grosina Valley - Verva Pass (Sondrio) m 1700-2100 (CGF); Masino Valley - Filorera (Sondrio) m 1100 (CGL); Masino Valley - Valbiore (Sondrio) m 1550 (CGL); Carona (Bergamo) m 1100 (CGL); Dossena (Bergamo) m 1065 (CGL); Lake Sardegnana (Bergamo) m 1750 (CGL); San Pellegrino Terme - Antea (Bergamo) (CGL); Valcava (Bergamo) (MSNM); Valleve (Bergamo) m 1300 (CGL); Vivione Pass (Bergamo) m 1175 (CGL); Zambra - Pizzo Arera (Bergamo) m 1400 (CGL); Zorzzone (Bergamo) m 1230 (CGL);

Magenta - River Ticino (Milano) (CGL); Milano (Milano) (MSNM); Milano - Lacchiarella (Milano) (MSNM); Milano - Trenno (Milano) (CGL); Nosate - River Ticino (Milano) (CGL); Segrate (Milano) (CGL); Rivolta d'Adda (Cremona) (MSNM); Mount Penice (Pavia) m 1000 (CGL). **Trentino-Alto Adige:** Brunico - Furcia Pass (Bolzano) m 1730 (CGL); Campo di Tres - Mules (Bolzano) (MSNVE); Mazia - Piz Lun (Bolzano) m 1600-2200 (CGF); Folgaria - Sommo Pass (Trento) m 1380 (CGL); Madonna di Campiglio (Trento) m 1500 (CGF); Mount Baldo - Madonna della Neve (Trento) (MSNG); Mount Penegal (Trento) m 1700 (CGL); Vallarsa - Piano delle Fugazze (Trento) m 1200-1420 (CGL). **Veneto:** Mount Baldo - Le Colme (Verona) (MSNG); Alleghe - Coi (Belluno) m 1350 (CGL); Alpage - Tambre (Belluno) m 1275 (CGL); Auronzo di Cadore (Belluno) m 900 (CGL); Vallada - Andrich (Belluno) m 1300 (CGL). **Friuli-Venezia Giulia:** Barcis - Forcella di Pala Barzana (Pordenone) m 930 (CGL); Amaro (Udine) m 290 (CGL); Fusine Val Romana (Udine) m 813 (CGL); Lake Cavazzo (Udine) (MSNM); Mount Festa (Udine) (CGL); Mount Matajur (Udine) m 900 (CGL); Pontebba (Udine) (CGL); Stazione Carnia (Udine) (MSNM); Tanamea Pass (Udine) m 1000 (CGL); Tarcento - Musi Valley (Udine) (CGL). **Liguria:** Colla Melosa (Imperia) m 1680 (CGL); Molini di Triora (Imperia) m 750 (CGL); Mount Bignone (Imperia) m 820-1200 (CGL); Teglia Pass (Imperia) m 1390 (CGL); Alpicella - Varazze (Savona) (MSNG); Colle del Melogno (Savona) (MSNM, CGL); Mount Beigua (Savona) m 1000 (MSNG); Mount Carmo (Savona) m 1000 (CGL); Mount San Giorgio (Savona) (MSNM); River Bormida - Case Borgno (Savona) m 600 (CGL); Sassello (Savona) (MSNM, CGL); Savona (Savona) (MSNM); Faiallo Pass (Genova) m 650 (CGL); Mignanego - Vittoria (Genova) (MSNG); Mount Fasce (Genova) (MSNG); Mount Figogna (Genova) (MSNM); Prato Casarile (Genova) (MSNG); Rezzoaglio (Genova) (MSNG); Turchino Pass (Genova) m 600 (CGL); Voltri (Genova) (MSNM); Bocco Pass (La Spezia) m 900 (CGL); Bocco Pass - Sopralacroce (La Spezia) m 1000 (MSNG); Carro (La Spezia) (MSNG); Chiusola (La Spezia) m 800 (MSNG); Foce Tre Confini (La Spezia) m 1350 (MSNG); Mount Gottero (La Spezia) m 1250 (MSNG); Mount Penna (La Spezia) m 1400 (MSNG); Rastrello Pass (La Spezia) m 800 (MSNG); Varese Ligure - Cento Croci Pass (La Spezia) m 1000 (MSNG). **Emilia Romagna:** Ferriere - Lake Moo (Piacenza) m 1000 (CGL); Montegrosso (Piacenza) m 950 (CGL); Trebbia Valley - Cerignale (Piacenza) (MSNG); Pellegrino Parmense - Montesalso (Parma) (MSNG); Casiuna - Pantano (Reggio Emilia) m 650 (CGL); Cerreto Pass (Reggio Emilia) m 1280 (CAB); Mount Ventasso (Reggio Emilia) m 1700 (CGL); Carpi (Modena) (CLS); Le Tagliole (Modena) m 1000 (CGL); Mandriole (Modena) (MSNG); Sant'Anna Pelago (Modena) m 1150 (CLS); Sestola - Mount Cimone (Modena) m 1600 (CGL); Castel d'Aiano - Mount Spe (Bologna) m 850 (CGF); Corno alle Scale (Bologna) m 1700-1900 (CGF, CGL); Lizzano in

Belvedere (Bologna) m 800 (CGF); Vidiciatico (Bologna) m 875 (CGL); Verghereto (Forlì-Cesena) m 1100 (CGL). **Toscana:** Campo Cecina (Massa-Carrara) m 900 (CGL); Fivizzano (Massa-Carrara) (MSNG); Mount Folgorito (Massa-Carrara) (CAB); Mount Pisanino (Massa-Carrara) m 1640 (CAB); Pian della Fioba (Massa-Carrara) (CAB); Resceto (Massa-Carrara) m 600 (CAB); Col di Favilla (Lucca) m 950 (CAB); Mount Altissimo (Lucca) m 1580 (CAB); Mount Alto (Lucca) m 750 (CAB); Mount Corchia (Lucca) (CAB); Padule di Fociomboli (Lucca) m 1100 (CAB); Pania della Croce (Lucca) m 600-1100 (CAB); Seravezza (Lucca) m 850 (CAB); Abetone (Pistoia) m 1500 (CGL); Bosco del Teso (Pistoia) (MSNG); Pracchia (Pistoia) m 700 (CGL); Croci di Calenzano (Firenze) (MSNVE); Marradi (Firenze) (MSNM); Mount Senario (Firenze) (MSNM); Muraglione Pass (Firenze) (CGL); Vallombrosa (Firenze) (MSNM); Sasso di Simone (Arezzo) (CGL); Montalcino (Siena) m 600 (CGL); Mount Cetona - Saccaia Valley (Siena) m 850 (CGF); Bosco Rocconi (Grosseto) (PNALM); Mount Amiata (Grosseto) m 700 (CGL); Scarlino (Grosseto) (CGL). **Marche:** Camerino (Macerata) m 500 (CGL); Mount Catria (Ascoli Piceno) m 680-1000 (CRP, MSNG); Sibillini Mountains - Montemonaco (Ascoli Piceno) (MSNG). **Umbria:** Costacciaro (Perugia) m 480-1400 (CFA-MB); Fossato di Vico (Perugia) m 500 (CFA-MB); Mount Porche (Perugia) m 1735 (CGL); Scheggia e Pascelupo (Perugia) m 420-1400 (CFA-MB); Sigillo (Perugia) m 600-1200 (CFA-MB). **Lazio:** Farnese - Lamone (Viterbo) m 230 (CGL); Mount Terminillo (Rieti) (CGL, MSNM); Colli Albani (Roma) (MSNG); Tuscolo (Roma) (MSNG). **Abruzzo:** Coppito (L'Aquila) (MSNG); Fonte Romana (L'Aquila) (CGL); Lake Scanno (L'Aquila) m 950 (MSNG); Pacentro (L'Aquila) m 750 (CGL); San Leonardo Pass (L'Aquila) m 1300 (CGL); Santa Maria dei Bisognosi (L'Aquila) m 1200 (CGL); Lanciano Pass (Pescara) m 1100 (CGL); Maiella - Santo Spirito (Pescara) (MSNG); Mount Amaro (Pescara) m 1570 (CGL). **Molise:** Pizzone (Isernia) m 930 (CGL). **Campania:** Bagnoli Irpino - Lake Laceno (Avellino) (CGF). **Puglia:** Maglie (Lecce) (CGL). **Basilicata:** Calvello (Potenza) m 660 (CGL); Colle dell'Impiso (Potenza) m 1590 (CGL); Laurenzana (Potenza) m 595 (CGL); Mount Vulture (Potenza) m 1185 (CGL). **Calabria:** Fago del Soldato (Cosenza) (MSNG); Mormanno (Cosenza) m 900 (CGL); Sila (Cosenza) (CGL); Sila - Monte Oliveto (Cosenza) (MSNG); Soveria Mannelli (Catanzaro) (MSNG); Gambarie m 1280 (Reggio Calabria) (CRP); Sella Entrata (Reggio Calabria) m 1370 (CGL); Straorini (Reggio Calabria) m 950 (CGL); Vinco - Campi di Cardeto (Reggio Calabria) m 700 (CRP). **France:** Montauban-sur-l'Ouvèze - Mount Chamouse (Drôme) (CGL); Fontan - Vallon du Cayros (Alpes Maritimes) m 950 (CGL). **Switzerland:** Cari (Canton Ticino) m 1300-1800 (CGL); Caval Drossa (Canton Ticino) m 1500 (CGL); Ossasco - Bedretto Valley (Canton Ticino) m 1300 (CGL). **Slovenia:** Postumia (MSNG).

Clanoptilus geniculatus (Germar, 1824) (Figs 1h, 2h)

Malachus geniculatus Germar, 1824: 73, *loc. typ.* Dalmatia; Horion 1953: 109.

Clanoptilus geniculatus Mayor, 2007: 443.

This widespread Central Asian-European species is one of the most common and better known of the genus, and does not raise problems of interpretation.

In Italy *C. geniculatus* is present in most of the Peninsula, southwards at least up to Puglia, but more frequent in the North, in lowland or hilly areas.

List of localities: **Val D'Aosta**: Pollein (Aosta) (CGL). **Piemonte**: Castiglione Torinese (Torino) (MSNG); Ivrea (Torino) (MSNM, CGL); Meana di Susa (Torino) (MSNG); Venaria Reale - River Stura woods (Torino) (MSNG); Villar Pellice (Torino) (MSNG); Carpignano - River Sesia (Vercelli) (CGL); at the confluence of the rivers Cervo and Sesia (Vercelli) (MSNM); Ghislarengo - River Sesia (Vercelli) (CGL); Vercelli - River Sesia woods (Vercelli) (MSNG); Asti (Asti) (MSNG); Casale Monferrato - Terranova (Alessandria) (MSNG); Cassine (Alessandria) (CGL); Piovera (Alessandria) (MSNG). **Lombardia**: Galbiate - Mount Barro (Lecco) m 600-800 (CGL); Brianzone (Sondrio) m 550 (CGF); Abbiategrosso - River Ticino (Milano) (CGL); Boffalora (Milano) (CGL); Castano Primo (Milano) (CGL); Milano - Affori (Milano) (CGL); Milano - Bruzzano (Milano) (MSNM); Milano - San Siro (Milano) (CGL); River Ticino near Turbigo (Milano) (MSNM); Segrate (Milano) (CGL); Trenno (Milano) (CGL); Vimodrone (Milano) (CGL); Vaccarizza (Pavia) (CGL); Zerbolò - Siro Negri wood (Pavia) (CGL). **Trentino-Alto Adige**: Lasa (Bolzano) m 800 (CGF); Cavareno (Trento) (MSNG). **Veneto**: Treviso (Treviso) (MSNG); Padova (Padova) (CGL); Marghera (Venezia) (CGL); Mestre (Venezia) (CGL); Venezia - San Giuliano (Venezia) (CGL). **Friuli-Venezia Giulia**: Vivaro (Pordenone) (CGL). **Liguria**: Albenga (Savona) (MSNM); Bisagno - Ca' de Pitta (Genova) (MSNG); Genova - Creto (Genova) (MSNG); Mignanego - Vittoria (Genova) (MSNG); Molassana (Genova) (MSNG); Mount Fasce - Liberale (Genova) m 600 (MSNG); Brugnato (La Spezia) (MSNG); Deiva Marina (La Spezia) (CGL, MSNG). **Emilia-Romagna**: Carpi (Modena) (CLS); Casinalbo (Modena) (MSNG); Novi (Modena) (CLS); Sassuolo (Modena) (MSNG); Secchia (Modena) (MSNG); Borgo Capanne (Bologna) (MSNG); Galliera (Bologna) (MSNG); Mordano - Bubano (Bologna) (CGF); Brisighella (Ravenna) (MSNM); Ravenna (Ravenna) (MSNM); Verucchio (Rimini) (CGL). **Toscana**: Lake Porta (Lucca) (CAB); Firenze (Firenze) (MSNM); Tombolo (Pisa) (MSNG); Ansedonia (Grosseto) (MSNG). **Umbria**: Costacciaro (Perugia) m 480 (CFA-MB); Perugia (Perugia) (MSNM). **Lazio**: Mount Terminillo (Rieti) (MSNM); Roma (Roma) (MSNG); Sabaudia (Latina) (MSNM). **Abruzzo**: Barrea (L'Aquila)

(MSNG); Rosciano (Pescara) (CGF). **Campania**: Bagnoli Irpino (Avellino) (MSNVR). **Puglia**: Accadia (Foggia) m 650 (MSNG); Torre Petra (Foggia) (CGL); Volturara Appula (Foggia) (CGL). **Basilicata**: Laurenzana (Potenza) (CGL); San Martino d'Agri (Potenza) m 600 (CGF).

Clanoptilus italicus (Pardo Alcaide, 1967) (Figs 1i, 2i)

Malachus italicus Pardo Alcaide, 1967: 99, *loc. typ.* Monte Scuro (Vallo Lucano).

Malachus parilis Auct. nec Erichson, 1840.

Clanoptilus italicus Mayor, 2007: 443.

Like *arnaizi*, this species also was separated from *parilis* by Pardo Alcaide (1967: 99), and its characterization does not raise problems of interpretation. Based on the material examined, it is endemic to the Peninsula, excluding the Alpine chain and the Po Valley. The north-western distribution limit of the species found so far is, in fact, the province of Genova; the southernmost locality found is Catanzaro (Calabria). The range of this species then overlaps in part with that of *calabrus*, but from the studied material no syntopic occurrences have been recorded.

List of localities: **Piemonte**: Mount Antola (Alessandria) (MSNG). **Lombardia**: Mount Penice (Pavia) m 1000 (CGL). **Liguria**: Genova (Genova) (MSNG); Molassana (Genova) (CGL); Mount Maggio (Genova) (MSNG); Rappia di Ne - Val Graveglia (Genova) (MSNG); Rezzoaglio (Genova) (MSNG); Torriglia (Genova) (MSNM, MSNG); Bocco Pass - Sopralacroce (La Spezia) m 1000 (MSNG); Carro (La Spezia) (MSNG); Chiusola (La Spezia) m 800 (MSNG); Deiva Marina (La Spezia) (MSNG); Foce Tre Confini (La Spezia) m 1350 (MSNG); Mount Aiona (La Spezia) m 1350 (MSNG); Mount Gottero (La Spezia) m 1250 (MSNG); Mount Penna (La Spezia) m 1400 (MSNG); Rastrello Pass (La Spezia) m 800 (MSNG); Rocchetta Vara - Beverone (La Spezia) m 600 (MSNG); Varese Ligure - Cento Croci Pass (La Spezia) m 1000 (MSNG). **Emilia-Romagna**: Ferriere (Piacenza) m 700-1000 (CGL); Ferriere - Colle Pass (Piacenza) m 800 (CGL); Ferriere - Lake Moo (Piacenza) m 1000 (CGL); Montegrosso (Piacenza) m 950 (CGL). **Toscana**: Campo Cecina (Massa-Carrara) m 900 (CGL); Colonnata (Massa-Carrara) (CAB); Mount Folgorito (Massa-Carrara) (CAB); Mount Sella (Massa-Carrara) m 1500 (CAB); Mount Tambora (Massa-Carrara) (CAB); Resceto (Massa-Carrara) m 950 (CAB); Col di Favilla (Lucca) m 950 (CAB); Mount Altissimo (Lucca) m 1580 (CAB); Mount Alto (Lucca) m 750 (CAB); Mount Corchia (Lucca) m 1100 (CAB); Mount Matanna (Lucca) (CAB); Padule di Fociomboli (Lucca) m 1100 (CAB); Pania della Croce (Lucca) m 600-1800 (CAB); Pruno (Lucca) m 900 (CAB); Serravezza (Lucca) m 850 (CAB); Vologno (Lucca) m 300 (CAB); Bosco del Teso (Pistoia) (MSNG); Pracchia (Pistoia) m 700 (CGL); Mount Senario (Firenze) (MSNM); Pontassieve (Firenze) (MSNG); Mount Ceto-

na - Valle Saccaia (Siena) m 850 (CGF). **Marche:** Mount Catria (Pesaro-Urbino) (CRP, MSNG); Bolognola (Macerata) (MSNM); Canapine (Ascoli Piceno) (MSNM); Foce (Ascoli Piceno) m 1000 (MSNG); Montemonaco (Ascoli Piceno) m 1000 (MSNG); Mount Sibilla (Ascoli Piceno) m 1680 (CGL); Mount Vettoreto (Ascoli Piceno) m 1920 (CGL). **Umbria:** Costacciaro (Perugia) m 800-1400 (CFA-MB); Fossato di Vico (Perugia) m 740 (CFA-MB); Piano Grande (Perugia) (MSNVR); Scheggia e Pascelupo (Perugia) m 480-1000 (CFA-MB); Sigillo (Perugia) m 650-1200 (CFA-MB); Spoleto - Forca di Cerro (Perugia) m 700 (CGL). **Lazio:** Subiaco (Roma) (MSNG); Abbey of Montecassino (Frosinone) (CGL); Filetino (Frosinone) (CGL, MSNM); Mount Scalambra (Frosinone) (MSNG). **Abruzzo:** Gran Sasso - Prato Selva (Teramo) (CFA-MZUF); Assergi - Fonte Cerreto (L'Aquila) m 1200 (CGL); Castelvecchio Calvisio (L'Aquila) m 1000 (MSNG); Gioia dei Marsi (L'Aquila) m 1130 (CGL); Gran Sasso - Mount San Franco (L'Aquila) m 1550 (MSNG); Lake Filetto (L'Aquila) m 1370 (MSNG); Opi (L'Aquila) m 1270 (CGL); Pescasseroli (L'Aquila) m 1820 (CGL); Pescasseroli - Diavolo Pass (L'Aquila) m 1400 (MSNG); Scanno (L'Aquila) CGL; Maiella - Santo Spirito (Pesca-
 ra) (MSNG); Maiella - Blockhaus (Chieti) m 2165 (CGL). **Campania:** Lake Matese (Caserta) (CGF); Bagnoli Irpino (Avellino) (MSNVR); Sant'Angelo a Fasanella (Salerno) (CGF); Vallepiana (Salerno) (MSNVR). **Puglia:** Monte Sant'Angelo (Foggia) m 700 (CGF); Spinazzola (Barletta-Andria-Trani) (CGL); Mellitto (Bari) (MSNM); Castellana Marina (Taranto) (CGL); Martina (Taranto) (CGL); Francavilla Fontana (Brindisi) (CGL); Otranto - Santa Cesarea Terme (Lecce) (CGL). **Basilicata:** Colle del Dragone (Potenza) m 1580 (CGL); Colle dell'Impiso (Potenza) m 1590 (CGL); Cozzi Anticristo (Potenza) m 1400 (CGL); Cugno Ruggieri (Potenza) m 1500 (CGL); Duglia (Potenza) (CGL); Malvento Valley (Potenza) m 1600 (CFA-MZUF); Piani di Ruggio (Potenza) m 500 (CGL); Serra Prete (Potenza) m 1710 (CGL); Timpone Viggianello (Potenza) m 1750 (CGL); Viggianello - Serra Abete (Potenza) m 1290 (CGL). **Calabria:** Anticrisco (Cosenza) m 1100-1300 (CFA-MZUF); Civita (Cosenza) m 1138 (CGL); Croce Magara (Cosenza) m 1400 (CFA-MZUF); Fago del Soldato (Cosenza) m 1450 (CGL); Lorica (Cosenza) m 1400 (CFA-MZUF); Lungro (Cosenza) m 1150 (CGL); Mount Martinella (Cosenza) (MSNM); Mount Pollino (Cosenza) m 1800-2000 (CGL); Orsomarso - Piano Campolongo (Cosenza) m 1340 (CFA-MZUF); Sila - Lake Ampollino (Cosenza) m 1300 (CFA-MZUF, MSNM); Sila - Monte Oliveto (Cosenza) (MSNG); Sila - Montescuro Pass (Cosenza) m 1200 (CGL); Catanzaro (Catanzaro) (MSNG).

Clanoptilus marginellus (A.G. Olivier, 1790) (Figs 1j, 2j)

Malachius marginellus A.G. Olivier 1790: n.27, loc. typ. Francia; Horion 1953: 109.

Malachius marginellus var. *pseudosardous* Reclaire &

Van Der Viel 1932: 426, loc. typ. Vlieland [synonymized by Mayor (2007: 61)].

Clanoptilus marginellus Mayor, 2007: 444.

The citations for Sardinia by Luigioni (1929: 622) and Porta (1929: 100) are probably to be referred to *C. sardous*, as no Sardinian specimens referable to *marginellus* were identified among the numerous *sardous* of various locations studied during this work. *C. marginellus* is however reported for Corsica (Bastia) by Sainte-Claire Deville (1914: 534). The distinction between these two species, at least for females, is not straightforward, as in *marginellus* the pale edge of the pronotum is of variable width and can get to be as narrow as it usually is in *sardous*. This led in the past to citations of *C. sardous* to be certainly referred to *marginellus* (e.g., those from northern Germany: Kraatz 1890: 211), and to the description of the aforementioned chromatic form with a narrow margin as *pseudosardous*. Apart from Sardinia, in the peninsular regions this species is unmistakable, and is present southwards to Puglia (Pasqual & Angelini 2001: 120). Its overall distribution is of Euro-Mediterranean type.

List of localities: **Piemonte:** Macugnaga (Verbano-Cusio-Ossola) (MSNG). **Lombardia:** Esino Lario (Lecco) (MSNG); Milano (Milano) (CGL); Parco Monza (Monza-Brianza) (CGL). **Veneto:** Punta Sabbioni (Venezia) (CGL); Lido - San Nicolò (Venezia) (CGL); Isola Sant'Erasmo (Venezia) (CGL). **Liguria:** Colle del Giovo (Savona) (CGL); Mignanego - Vittoria (Genova) (MSNG, CGL); Moneglia (Genova) (CGL); Santo Stefano d'Ave-
 to (Genova) (MSNG). **Emilia-Romagna:** Bologna (Bologna) (MSNG); Borgo Capanne (Bologna) (MSNG). **Toscana:** Bibbiena - Poggio Mercatile (Arezzo) (MSNG); Brolio (Siena) (MSNG); Montaperti (Siena) (MSNG). **Marche:** Porto San Giorgio (Fermo) (MSNG); Sibillini Mts, Montemonaco (Ascoli Piceno) (MSNG). **Umbria:** Perugia (Perugia) (MSNG, MSNM). **Lazio:** Roma (Roma) (MSNM). **Abruzzo:** Majelletta (Chieti) m 2000 (MSNG).

Clanoptilus parilis (Erichson, 1840) (Figs 1k, 2k)

Malachius parilis Erichson, 1840: 80, loc. typ. Sardegna, Sicilia; Pardo Alcaide (1967: 98, 1968: 274).

Clanoptilus parilis Mayor, 2007: 444.

The writer has been able to examine the type specimens of Erichson kept at MNB, coming from Sicily and Sardinia, already described by Pardo Alcaide (1968: 274). *C. parilis* is indeed common and widespread in Sicily, while for Sardinia no further findings seem to be documented after the description. Taking into account that the Sardinian Coleoptera are rather well studied and known, a doubt remains that the indication "Sardinia" might be due to a labelling mistake. At any rate, such presence in Sardinia should be confirmed.

The reports in the literature before 1967 for all other Italian regions are to be referred to the vicariant species *C. arnaizi* and *C. italicus*.

The shape of the lower edge of the antennomeres III-IV of the males, already reported in the Erichson's description and visible in the sketch of Pardo Alcaide (1966: 35): "*apice inferiore incrassato-producto, rotundato*" is shared with the males of *C. calabrus*. The two species however can be recognized for the previously reported characters.

List of localities: **Sicilia**: Alcamo (Trapani) (MSNM); Altofante (Palermo) (CGL); Bosco Ficuzza (Palermo) (CGL); Cefalù (Palermo) (CGL); Cerda (Palermo) (MSNG); Giacalone (Palermo) (MSNG); Isnello (Palermo) m 500 (CGL); Madonie (Palermo) (PNALM); Monreale (Palermo) (CGL); Mount Quacella (Palermo) (MSNG); Palermo (Palermo) (MNB); Partinico - Lake Poma (Palermo) (CGL); Piana Albanesi (Palermo) (MSNG); Piano Battaglia (Palermo) m 1650 (CRP); San Martino Monreale (Palermo) (MSNG); Trabia - Sant'Onofrio (Palermo) (MSNG); Cesarò (Messina) m 1300 (CFA-MZUF); Cesarò - Portella dei Bufali (Messina) m 1250 (CRP); Floresta - Nebrodi Park (Messina) m 1250 (CRP); Goiosa Marea (Messina) (CRP); Letojanni (Messina) (CGF); Lipari (Messina) (CGL); Messina (Messina) (MSNM); San Piero Patti (Messina) m 750 (CRP); Cattolica - Lake Gorgo (Agrigento) (CFA-MZUF); Caltanissetta (Caltanissetta) (MSNG); Troina (Enna) (CGF); River Simeto mouth (Catania) (CGL); Linguaglossa (Catania) m 800 (CRP); Piano Provenzano (Catania) m 1780 (CRP); Cava d'Ispica (Ragusa) m 150 (CRP); Chiaramonte Gulfi (Ragusa) (MSNG); Giarratana (Ragusa) m 560 (CGL, CRP); Mount Lauro (Ragusa) m 980 (CRP); Fella - River Anapo valley (Siracusa) (CGL); Lentini (Siracusa) (CGF); Madonna del Bosco (Siracusa) (CGL); Siracusa (Siracusa) (MSNG). **Sardegna**: unspecified (MNB).

Clanoptilus rufus (A.G. Olivier, 1790) (Figs 11, 21)

Malachius rufus A.G. Olivier 1790: n.27, loc. typ. Provence;
Clanoptilus rufus Mayor, 2007: 444.

The species is immediately recognizable among the others of the genus because it is the only Italian one with entirely red elytra. On the other hand, in the case of females, it is possible, at first sight, to mistake them with *Anthocomus rufus* (Herbst, 1784); their "near" homonymy does not help, although the different pubescence allows a safe discrimination. The distribution of *C. rufus* is of W-Mediterranean type; the recent report by Yildirim & Bulak (2012: 234) for Turkey, in the writer's opinion, requires confirmation. Its range in Italy includes all the Tyrrhenian regions from Liguria to Lazio, and Sardinia.

List of localities: **Liguria**: Ventimiglia (Imperia) (CGL). **Toscana**: Talamone (Grosseto) (CLF). **Lazio**: Guidonia -

Tor Mastorta (Roma) (CGF). **Sardegna**: Arzachena (Sassari) (CGF); Foresta Burgos (Sassari) m 600 (CGF); Luras (Sassari) (CGF); Monteforte (Sassari) (CGF); Oschiri (Sassari) (CGF); Stintino (Sassari) (CGF); Pilo pond (Sassari) (CGF); Posada (Nuoro) (CGF); Borore (Oristano) m 300 (CGF).

Clanoptilus sardous (Erichson, 1840) (Figs 1m, 2m)

Malachius sardous Erichson, 1840: 75, loc. typ. Sardinia;
Malachius schaeferi Pic, 1953:7, loc. typ. Corsica [synonymy in Mayor 2007: 445];
Clanoptilus sardous Mayor, 2007: 445.

The species does not raise nomenclature problems. *Malachius schaeferi*, described on a single female of Corsica, is to be referred to this species (Mayor 2007: 445). It is a Sardinian-Corsican endemic (see above under *C. marginellus*), common and widespread throughout Sardinia, from sea-level to mountain areas.

List of localities: **Corsica**: Corte 16 km S-W nr. Lac Capittellu m 2000 (CGL); Vescovato (CGL). **Sardegna**: Bunnari (Sassari) (MSNG); Luras (Sassari) (CGF); Monteforte (Sassari) (CGF); Palau - River Liscia mouth (Sassari) (CGF); Pilo Pond (Sassari) (CGF); Ploaghe (Sassari) (MSNG); Sorso - Rio Silis (Sassari) (MSNG); Stintino (Sassari) (CGF); Aritzo (Nuoro) (CGL); Capo Comino (Nuoro) (CGF); Fonni, River Aratu (Nuoro) m 1000 (CGL); Mount Ortobene (Nuoro) (CGL); Posada (Nuoro) (CGF); Villagrande Strisaili - Cantoniera Pira 'e Onni (Nuoro) (CGL); Asuni (Oristano) (CGF); Arbus (South Sardinia) (CGL); Burcei - Cantoniera Campu Omu (South Sardinia) (CGL); Cantoniera Arco dell'Angelo (South Sardinia) (CGL); Cantoniera Rio Gironi (South Sardinia) (CGL); Gonnosfanadiga - Mount Linas (South Sardinia) m 600 (CGL); Quirra - River San Giorgio (South Sardinia) (CGL); Colostrai Pond (South Sardinia) (CGL); Uta - Arcosu Mt. (South Sardinia) (CGL); Villacidro (South Sardinia) (CGF); San Gregorio (Cagliari) (CGL); San Nicola - Corr'e Crabu (Cagliari) (CGL).

Clanoptilus spinipennis (Germar, 1824) (Figs 1n, 2n)

Malachius spinipennis Germar, 1824: 75, loc. typ. Illiria, Dalmazia; Horion 1953: 107.
Malachius brevispina Kiesenwetter, 1871: 81, loc. typ. Sardinia; Gridelli, 1950: 132.
Clanoptilus spinipennis Mayor, 2007: 444.

This species does not raise interpretation problems and has a Turanian-European type of distribution. It is typical of low-level environments, up to hill belts, often coastal. In this species the development of excitators and related appendages presents a geographical variation: populations of central-southern Italy, Sardinia and Sicily have males

with poorly developed, or undeveloped, excitators. This form appears constant and was described by Kiesenwetter (1871: 81) with the name *brevispina* (*loc. typ.* Sardinia). It was treated by successive Authors sometimes as mere variety, sometimes as a valid species, as *e.g.* by Gridelli (1950: 132). It could be thought as belonging to “subgenus” *Hypoptilus*, but the only true *Hypoptilus* in the area in question with completely dark palpi and forehead (*sardous*) has the margins of pronotum orange-red.

The writer proposes tentatively herein to consider *brevispina* (Kiesenwetter, 1871) at least as a valid subspecies, endemic to Central and Southern Italy, and Thyrrhenian islands. So far, it has not been possible to precisely identify the boundary between the two subspecies (or vicariant sister species) on the Adriatic side since, for the Marche region, only one female was studied. On the western coast this taxon is certainly present northwards up to the Tuscan Archipelago and in Corsica. It should be noted, however, that for Corsica Sainte-Claire Deville (1914:212) reports the presence of the typical form, with developed elytral appendages. We have not identified thus far any specimen of *C. spinipennis* among the abundant Ligurian material examined. Constantin (2014) does not include it among the French species, and Plata-Negrache & Santiago Hernández (1990: 356) question its real presence in Spain.

List of localities for *C. spinipennis spinipennis*: **Veneto**: Rosolina (Rovigo) (MSNVE); Alberoni (Venezia) (CGL, MSNG, MSNV); Bibione, River Tagliamento mouth (Venezia) (MSNVE); Malamocco (Venezia) (CGL); Marghera (Venezia) (CGL); Punta Sabbioni (Venezia) (MSNG); Sant’Andrea (Venezia) (CGL); Venezia (Venezia) (CGL); Venetian Lagoon (Venezia) (CGL); Venezia Lido (Venezia) (CGL). **Friuli-Venezia Giulia**: River Isonzo, Sagraado (Gorizia) (MSNM); Sistiana - Duino (Trieste) (MSNVE). **Emilia-Romagna**: Mesola (Ferrara) (CGF); Volano (Ferrara) (MSNVE); Bassura del Bardello (Ravenna) (CGF); Casalborgsetti (Ravenna) (CGF); Riccione (Rimini) (MSNM).

List of localities for *C. spinipennis brevispina*: **Toscana**: Campo nell’Elba (Livorno) (CGF); Pianosa Island (Livorno) (CSC); Ansedonia (Grosseto) (MSNG). **Lazio**: River Arcionello valley (Viterbo) m 540 (CGF); Guidonia - Tor Mastorta (Roma) (CGF); Lido di Castelfusano (Roma) (CGL); Roma - Villa Borghese (Roma) (CGL). **Abruzzo**: Pianella (Pescara) (CGF). **Puglia**: Isole Tremiti - San Nicola Island (Foggia) (CGL); Mattinata (Foggia) (CGL); Monte Sant’Angelo (Foggia) m 700 (CGL); San Giovanni Rotondo (Foggia) (CGF); San Marco Catola (Foggia) (CGL); Torre Pietra (Foggia) (CGL); Villaggio Amendola (Foggia) (CGF); San Basilio (Taranto) (CGL); Capo D’Otranto (Lecce) (CGL); Lake Alimini Grande (Lecce) (CGL); Maglie (Lecce) (CGL); Santa Cesarea Terme (Lecce) (CGL); Torre dell’Orso (Lecce) (CGL). **Basilicata**: Grassano (Matera) (CGL). **Calabria**: Crotone (Catanzaro)

(MSNG). **Sardegna**: Marina di Sorso (Sassari) (MSNG); Porto Torres (Sassari) (MSNG); Sassari (Sassari) (CGL, MSNG, MSNM); Sorso - River Silis (Sassari) (MSNG); Tresnuraghes (Oristano) (CGF); Sanluri (South Sardinia) (MSNG). **Sicilia**: Mazara del Vallo - Gorgi Tondi (Trapani) (MSNG); Cefalù (Palermo) (CGL); Cesarò (Messina) (CGL); Messina (Messina) (MSNG); Agrigento (Agrigento) (MNB); Sant’Angelo Muxaro (Agrigento) (CGF); Santo Pietro - Mazzarrone (Catania) (CTG); Taormina (Siracusa) (MNB).

Species previously erroneously reported for the Italian fauna

Clanoptilus dissimilis (Baudi di Selve, 1873)

Malachus viridis var. *dissimilis* Baudi di Selve, 1873: 241, *loc. typ.* Caucasus;

Malachus dissimilis Peyron, 1877: 52 [status changed to good species].

Clanoptilus dissimilis Mayor, 2007: 445.

The citations of this Middle Eastern and Caucasian species, such as that for Sicily reported by Pardo Alcaide (1968: 274), are to be attributed to *C. bellieri*, as already discussed under this species.

List of localities: Caucasus [sic !] (MSNG). “Transkaspia” (now Iran): Saramsakli (MSNM).

Clanoptilus elegans (Olivier, 1790) (Figs 10, 20)

Malachus elegans A.G. Olivier 1790: n.27, *loc. typ.* Environs de Paris. Allenspach & Wittmer 1979: 90.

Clanoptilus elegans Mayor, 2007: 443.

All Italian specimens studied, determined as *C. elegans*, were found to belong to *C. emarginatus*. However, it cannot be excluded that *C. elegans*, a species with a wide European distribution, might be present somewhere near the Alpine ridgeline.

Clanoptilus falcifer (Abeille de Perrin, 1882)

Malachus falcifer Abeille de Perrin, 1882: 114 *loc. typ.* Caucasus; Pardo Alcaide, 1969: 350.

Clanoptilus falcifer Mayor, 2007: 443.

All citations for Italy of this species should be referred to *C. emarginatus*, as already mentioned in the discussion of that species.

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