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THE NITIDULIDAE AND KATERETIDAE (COLEOPTERA: CUCUJOIDEA) OF SICILY: RECENT RECORDS AND UPDATED CHECKLIST

COSIMO BAVIERA [a*] AND PAOLO AUDISIO [b]

(communicated by Salvatore Fasulo)

ABSTRACT. This paper compiles an updated checklist of Sicilian species of Nitidulidae and Kateretidae from historical bibliographical data, and new Sicilian material collected by the first author and several other Italian and European entomologists in the last few decades. The paper is completed with an updated checklist of the species so far recorded from the island, including those based on unpublished data or extracted from recently examined material. A total of 88 species are reported (81 Nitidulidae and 7 Kateretidae). The new records for the Island include 10 Nitidulidae and 1 undescribed Kateretidae, and the neotropical *Colopterus abdominalis* (Erichson, 1843) is first recorded for Europe. The presence in SE Sicily of the invasive beehive pest *Aethina tumida* Murray, 1867, recently introduced to Calabria (Summer 2014), is also confirmed. Eight species, previously doubtfully recorded for Sicily, are to be excluded from the Sicilian fauna.

1. Introduction

Nitidulidae and Kateretidae are two families of Coleoptera Cucujoidea closely related to each other (Audisio 1993; Cline *et al.* 2014; Lawrence and Newton 1995). Nitidulidae is actually an average sized beetle family, the third largest in Cucujoidea, while Kateretidae is a relatively small family, with some 3,800 and 100 described species, respectively. Kateretids are particularly abundant in warm temperate zones of the world (circum-Mediterranean areas, SW North America, western South America, and Australia), while nitidulids show high species richness especially in tropical, subtropical, and warm temperate regions. The Kateretidae are characterized by 11-jointed antennae with slender, loose, and mostly three-segmented clubs, tarsal formula 5-5-5, six pairs of abdominal spiracles, maxillary galea strongly developed, larval mandibular prostheca absent, and larval urogomphi absent. All species are phytophagous, mainly being anthophagous or palynophagous (Audisio 1993), and usually associated with open habitats (meadows, steppic and parasteppic environments, rocky places, edges of bushy areas). Most of the Nitidulidae, excluding the previously presumed "subfamily" Cybocephalinae, are characterized by usually distinctly 11-jointed antennae with compact, mostly three-segmented club, tarsal formula 5-5-5, six pairs of abdominal spiracles, maxillary galea absent, larval mandibular prostheca usually present, and urogomphi present except in subfamily Meligethinae. Most species are fungivorous

to some degree, which is apparently the ancestral mode of life, but certain subfamilies or tribes (e.g. Meligethinae, Nitidulinae Mystropini) are strictly anthophagous (Audisio 1993; Audisio *et al.* 2009), and a few species show peculiar adaptations, being zoosaprophagous, phyllophagous, or myrmecophilous. Cybocephalidae is now (Cline *et al.* 2014) a formally distinct family that is not closely related to either Nitidulidae and Kateretidae. For this reason we follow here the taxonomic scenario previously accepted by Audisio (1993), where Cybocephalidae were considered a separate family.

The systematic knowledge of the Italian species of Nitidulidae and Kateretidae is good, especially following the publication of the volume of the series "Fauna d'Italia" (Audisio 1993) and the most recent contributions listed above.

Nitidulidae and Kateretidae (Angelini *et al.* 1995; Audisio 1993, 2002; Audisio *et al.* 2013; Audisio and De Biase 2005; Audisio, De Biase, and Antonini 2003; Audisio *et al.* 2000, 1999; Audisio and Jelínek 2005-2013; Audisio *et al.* 2014; Audisio and Nardi 2007; Jelínek and Audisio 2007; Marini *et al.* 2013) are now together represented by at least 203 species in Italy (among the 186 species of Nitidulidae, 167 are autochtonous, 19 introduced and acclimatized with certainty; 17 autochtonous species among Kateretidae), with an increase of 9 autochtonous and 6 introduced and acclimatized species, respectively, during the last twenty years after the publication of Audisio's monograph (Audisio 1993).

This is the first attempt to compile an updated checklist of Sicilian species of Nitidulidae and Kateretidae; until now knowledge on the Sicilian fauna of these beetles was, in fact, mainly based on historical generic regional records reported by Ragusa (1883) and Ragusa (1892, 1894, 1896, 1921) and by Vitale (1904a,b, 1927, 1932), or regional records provided by the national catalogues of Bertolini (1872) and Luigioni (1929), and Porta (1929). Besides these often generic citations, there are only relatively few literature records where a detailed locality is provided (Audisio 1993, 1995; Audisio, Biondi, and Bologna 1985; Audisio and De Biase 2005; Audisio and Jelínek 1990, 2005-2013; Mifsud and Audisio 2008).

2. Materials and Methods

The aim of this work is to provide an updated account of the presence and distribution of the families Nitidulidae and Kateretidae in Sicily. The taxon listings are partly based on the results of researches carried out by the first author from 2000 until now aiming for a better knowledge of the Sicilian Coleoptera (Baviera 2006, 2007, 2008, 2009, 2010, 2011; Baviera and Liberti 2010; Baviera and Magnano 2010; Baviera and Sparacio 2002; Bellò and Baviera 2011; Caldara, Casalini, and Baviera 2012; Giachino, Vailati, and Baviera 2011; Magrini and Baviera 2011; Toševski *et al.* 2014, in press, 2011). Sampling was carried out in whole Sicily, prevalently in open or forest habitats with the aid of sweep netting, or leaf-litter sifting using sieves with meshes progressively from 10 to 3 millimeters, pitfall traps, and window traps. These data have been integrated with all available literature records of regional presence. Several additional detailed localities from Sicily were added for lesser known Sicilian species, chiefly based on unpublished data from the second author's collection. The systematic-nomenclatural order for the Nitidulidae subfamily Meligethinae follows Audisio *et al.* (2009), while for the remaining subfamilies it follows (Audisio and Jelínek 2005-2013; Jelínek and Audisio 2007), except for the above discussed exclusion of

the Cybocephalinae/Cybocephalidae from Nitidulidae (Cline *et al.* 2014). For each species, nomenclatural combinations, chorotype [according to the categories of Vigna Taglianti *et al.* (1993, 1999) and the distributions provided by Angelini *et al.* (1995), Audisio (1993), Audisio and Jelínek (2005-2013), and Jelínek and Audisio (2007)], and any relevant notes or citations following the monograph of Audisio (1993) and the data-base of Audisio and De Biase (2005), are given. Records are listed as follows: the locality (with municipality and province), date, collector, collecting method and habitat, number of specimens, and collection (in parenthesis). For records taken from the literature the source is given after the mentioned locality or the generic regional record; updated data records from ancient collections are enclosed in square brackets. Genera and species are all listed in alphabetical order within each subfamily or family.

COROTYPE ACRONYMS

AFM = Afrotropical-Mediterranean;
ASE = Asiatic-European;
CAE = Centralasiatic-European;
CAM = Centralasiatic-Mediterranean;
CEM = Centralasiatic-European-Mediterranean;
COS = Cosmopolitan;
EUM = European-Mediterranean;
EUR = European;
NAF = North African;
NET = Neotropical;
MED = Mediterranean;
OLA = Olartic;
PAL = Palaeartic;
SCOS = Sub-Cosmopolitan;
SEU = South European;
SIE = Sibiric-European;
TEM = Turanic-European-Mediterranean;
TUE = Turanic-European;
TUM = Turanic-Mediterranean;
WEU = West European;
WME = West Mediterranaen;
WPA = West Palaeartic.

COLLECTIONS ACRONYMS

CA = P. Audisio's collection, Zoological Museum of the Sapienza Rome University, Italy.
CB = C. Baviera's collection, Messina University, Italy.
CV = F. Vitale collection, Zoological Museum Cambria Messina University, Italy.

3. Results

FAUNISTIC LIST

NITIDULIDAE Latreille, 1802

Cillaeinae Kirejtshuk and Audisio, 1986

Colopterus abdominalis (Erichson, 1843)
Chorotype - NET
Records - **Messina**: Monti Peloritani: Salice-Urni, 21.V/02.VI.2004, C. Baviera leg., in pitfall traps baited with vinegar and salt 1♀ (CB); Monte Antennammare, 21.V-02.VI.2004, C. Baviera leg., 1♂ (CA); Colli San Rizzo, 3-17.VII.2004, C. Baviera leg. 1♂ (CA); Musolino, 19.VI-03.VII.2004, C. Baviera leg., 2♂ 1♀ (CA, CB), same locality, 20.VI-05.VII.2005, C. Baviera leg., 2♂ (CA, CB), Castroreale, loc., Cavallaro, 18.VII-11.VIII.2013, V. Valenti leg., 2♂ 1♀ (CA, CB); Isole Eolie: Isola di Lipari, Vallone Ponte 100 m a.s.l., 38°27'55 N 14°56'40 E, 30.VI-14.VII.2014, in pitfall trap, Merlino S., leg. 1♀ (CB). **Catania:** Monte Etna: Adrano, 12-26.VI.2011, S. Biondi leg., 1♀ (CB).

Notes. Members of the genus *Colopterus* Erichson, 1843 are mainly distributed in the New World, with a few relic species in the Oriental Region (Murray 1864; Kirejtshuk 1984). The only known (introduced) genus of Cillaeinae in Italy, Europe and Macaronesian areas was *Brachypeplus* Erichson, 1843, including a few species frequently introduced with timbers and fruits from tropical areas, some of them being later locally acclimatized in southern and central Europe, including Macaronesia (Audisio 1993; Burle and Lechanteur 1999; Jelínek and Audisio 2007). In Brazil flowers of some Annonaceae (e.g. *Duguetia asterotricha* (Diels) R. E. Fries and *Rollinia insignis* R. E. Fries) with a strong fruit scent attract several species of *Colopterus* for pollination. *Colopterus* enter in the oral chamber in the first day of anthesis, so acting as pollinators before they were released when the petals dropped in the early morning of the second day of anthesis (Jelínek and Audisio 2007). *Annona cherimola* Mill. is locally cultivated in NE Sicily since around 1970, where it is used and sold as edible tropical fruit. *Colopterus abdominalis* may have been accidentally introduced from tropical South America at the end of the past century, in association with its favored host-plants, and acclimatized in the area, due to favorable thermal and macroclimatic conditions of Sicily, and local availability of flowers and fruits of cultivated Annona. This exotic genus and species represent new records for Italy and for the whole W Palaearctic subregion. Even if this species seems likely to not represent a serious potential danger for Italian crops, contrary to several other recently introduced species of sap beetles (Audisio 1985, 1988, 1993; Audisio *et al.* 2014; Marini *et al.* 2013), some others species of *Colopterus* spp. were verified to be among the primary vectors of the oak wilt fungus *Ceratocystis fagacearum* a "Quarantine Pests" very harmful also for European oaks (Ambourn, Juzwik, and Moon 2005; Hayslett and Moltzan 2008). First species records from Europe.

Cryptarchinae Thomson, 1859

Cryptarcha strigata (Fabricius, 1787)
Chorotype - ASE
Records - **Messina**: Monti Peloritani: Bosco di Malabotta 1300 m a.s.l., 11.VI.2004, C. Baviera leg. (CB).

Notes. Relatively rare and local species, although being widespread in most Italian regions from Alps to Sicily, always in ancient oak forests. From the latter region known thus far only from Randazzo (Catania) (Audisio and De Biase 2005).

Cryptarcha undata (Olivier, 1790)
Chorotype - ASE
Records - **Messina**: 2.IV.[1]921, F. Vitale [leg.] (CV); Monti Peloritani: Bosco di Malabotta 1200 m a.s.l., 12.VIII-12.IX.2014, C. Baviera leg. (CB).

Notes. Rare and local species, although being widespread in most Italian regions from Alps to Sicily (Porta 1929), always in ancient oak forests. From the latter region recorded by Vitale (1927), and, only recently, for a single specimen collected in Malabotta Forest. The specimen preserved in Vitale Collection was identified by Schatzmayr under the name of its synonym *Cryptarcha imperialis* (F.).

Glischrochilus quadripunctatus (Linnaeus, 1758)
Chorotype - SIE
Records - [**Messina**: Nebrodi:] Ucria, 3.XI.[1]907, F. Vitale [leg.] (CV).

Notes. This widespread but rare species, strictly associated with ancient coniferous forests, was mentioned from Sicily by Ghiliani (1842), and thereafter by Ragusa (1892) and Luigioni (1929) (as *Ips quadripustulatus* L.). No recent records allow to confirm the actual presence of this species in Sicily, although its presence on Mount Etna (where large forests of *Pinus laricio* (Poiret) Maire are present) cannot be excluded (Audisio 1993). The two specimen in Vitale Collection came from an area without large *Pinus* forest, and have been probably accidentally imported into Sicily with timber, like the specimen, from the same locality, of *Laemostenus* (*Pristonychus*) *conspicuus* Waltl, 1838 reported from Vitale Collection (Facchini and Baviera 2004). Interestingly, a new cryptic species closely related to *G. quadripunctatus* was recently discovered in Scandinavian areas (Clayhills and Audisio, unpublished data), strictly associated with aspen.

Pityophagus ferrugineus (Linnaeus, 1761)
Chorotype - SIE
Records - **Messina**: Monti Peloritani: Bosco di Malabotta 1300 m a.s.l., 14.V-02.VII.2005, C. Baviera leg. (CA); Monte Antennammare 1133 m a.s.l., 21.V-22.VI.2004, C. Baviera leg. (CB).

Notes. Again a widespread but rare species, strictly associated with ancient coniferous or mixed coniferous/*Fagus* forests, exhibiting a rather scattered Italian distribution from Alps to Calabria (Mount Pollino and Sila: (Audisio 1993; Audisio and De Biase 2005)). New species records from Sicily.

Nitidulinae Latreille, 1802

Ipidia binotata Reitter, 1875
Chorotype - SIE

Notes. This widespread but rare species, strictly associated with ancient *Fagus* forests, and exhibiting a rather scattered Italian distribution from Alps to Calabria (Audisio 1993), was mentioned from Sicily by Horion (1960); under *I. quadrinotata* (F.). Details of this ancient record are unavailable, and further records from Sicily are also unknown thus far.

Ithyra hirsutula Reitter, 1873
Chorotype - AFM

Notes. This species is common and widespread throughout most of tropical and subtropical Africa, and is associated as larva with several species and genera of Acanthaceae (Audisio 1982; Audisio and Kirejtshuk 1983). It was collected once in NE Sicily by Vitale (Audisio 1978): (Gesso, Messina, V. 1936), but no additional material was collected during a series of field researches carried out in the same locality and elsewhere in NE Sicily by the authors in different years (1990/2013) and seasons (April/June) on the likely authochtonous *Acanthus* sp. and on *Justicia adhatoda* (L.) (both in the family Acanthaceae; the latter introduced from Asia into Sicily as ornamental plant). *Ithyra hirsutula* was probably only occasionally introduced into Sicily with ornamental flowers from tropical Africa, but never acclimatized. In Vitale collection there are no additional specimens or label of this species.

Aethina tumida Murray, 1867
Chorotype - SCOS

Notes. This invasive African species, popularly known as *small hive beetle* (SHB), is recognized worldwide as one of the most dangerous pests of beehives (Cuthbertson *et al.* 2013). It was accidentally introduced to southern Italy (Calabria, near Gioia Tauro) during the Summer 2014 (*Aethina tumida. Situazione epidemiologica* 2014). In the Autumn 2014 SHB spread to the SE coasts of Sicily (Melilli municipality, Siracuse province), and a wider diffusion of SHB in Sicily and elsewhere in Italy is foreseen to be almost impossible to prevent in the next few months or years.

Nitidula bipunctata (Linnaeus, 1758)
Chorotype - OLA

Notes. A single specimen of this species in Vitale collection labeled: "Sicilia F. Vitale" testifies another possible introduction of this northern species in Sicily after the one reported by Ragusa (1892). *Nitidula bipunctata* is zoosaprophagous, usually living on dry bones of large mammal carcasses, but sometimes in the past was also collected on cured meats imported from Central Europe and NE Italy.

Nitidula carnaria (Schaller, 1783)
Chorotype - OLA

Notes. Common species widespread throughout Italy and Sicily, living on dry bones of large mammals (Audisio 1993; Audisio and De Biase 2005).

Nitidula flavomaculata Rossi, 1790
Chorotype - TUM
Records - **Messina**: Monti Nebrodi: Monte Soro 1800 m a.s.l., 09.IX.2005, C. Baviera leg.; Biviere di Cesarò, 1200 m a.s.l., 09.IX.2005, C. Baviera, leg. (CB). **Trapani**: C[astel]vetrano, 11.X.1910, F. Vitale [leg.], (CV).

Notes. Common xerophilous species widespread throughout Italy and Sicily, living on dry bones of large mammals (Audisio 1993; Audisio and De Biase 2005). This species was not formally recorded from NE Sicily (Audisio and De Biase 2005).

Omosita discoidea (Fabricius, 1775)
Chorotype - OLA
Records - **Messina**: Monti Peloritani: Musolino 400 m a.s.l., 22.III-07.IV.2004, C. Baviera leg. (CB). Orto Botanico, VIII.[19]31, F. Vitale [leg.]; Messina, XII.[19]19, F. Vitale [leg.]; Messina, 7.II.[19]29, F. Vitale [leg.] (CV).

Notes. Common species widespread throughout Italy and Sicily, living on dry bones of large mammals (Audisio 1993; Audisio and De Biase 2005). This species even if reported from "Messina" (Vitale 1920), was not formally recorded from Peloritani Mounts (Audisio and De Biase 2005).

Omosita colon (Linnaeus, 1758)
Chorotype - OLA
Records - **Messina**: Monti Nebrodi: Monte Soro 1500 m a.s.l., 20.XI.2003-26.IV.2004, C. Baviera leg. (CB).

Notes. Common species, widespread throughout northern and central Italy, but relatively rare in the southern portion of the Italian Peninsula (mostly present in mountain areas, southwards to Calabria, Sila), living on dry bones of large mammals (Audisio 1993; Audisio and De Biase 2005). New species record from Sicily.

Pocadius ferrugineus (Fabricius, 1775)
Chorotype - SIE
Records - [**Palermo**: Madonie:] C.[astel]buono, 1905, L. Failla [leg.] (CV).

Notes. Quite common species, widespread throughout Italy and Sicily, living as larva within puffball mushrooms of the genus *Lycoperdon* and allies (Audisio 1993; Audisio and De Biase 2005), firstly reported from Palermo, Madonie: Castelbuono (Ragusa 1883; Ragusa 1892).

Pocadius adustus (Reitter, 1888)
Chorotype - SIE
Records - **Messina**: Monti Nebrodi: Portella Maulazzo 1300 m a.s.l., wet place, 28.V.2011, C. Baviera leg. (CB).

Notes. This is the second known European species of *Pocadius*; *P. adustus* Reitter, 1888 (Audisio 1993), widespread throughout northern Italy, and living as larva within *Lycoperdon* and allies, has never been found in southern Italy and Sicily (Audisio 1987, 1993). New species record from Sicily.

Soronia grisea (Linnaeus, 1758)
Chorotype - ASE
Records - [**Messina**:] Barcellona, 14.I.[1]919, F. Vitale [leg.] (CV).

Notes. Quite common species, widespread throughout peninsular Italy under bark of broadleaved trees, and also recorded from Sicily (Audisio 1993; Vitale 1904b). It was firstly reported for Sicily by a single specimen collected in Castelbuono, leg. Failla (Ragusa 1883; Ragusa 1892) and from Peloritani Mts., Castanea, Cavaliere, 22.VIII.1903, leg. (Vitale 1904b). No definitive recent data are reported from this island.

Soronia oblonga C. Brisout de Barneville, 1863
Chorotype - SEU
Records - **Catania:** Monte Etna: Milo, Bosco Cerrita 1500 m a.s.l., 16.IV-24.IX.2003, C. Baviera leg.; ibidem, 16.V-15.VI.2003, C. Baviera leg., Adrano: Osservatorio, 1200 m, 14-30.XI.2011, Biondi S. leg.; **Messina**: Monti Peloritani: Musolino 600 m a.s.l., 19.VI-03.VII.2004, C. Baviera leg.; Salice 400 m a.s.l., 19.VI-03.VII.2004, C. Baviera leg.; Monte Scuderi 1200 m a.s.l., 18.VI.2004-18.III.2005, C. Baviera leg.; Bosco di Malabotta 1300 m a.s.l., 14.V-02.VII.2005, C. Baviera leg.; Castroreale, Cavallaro 400 m a.s.l., in pitfall trap 18.VII-11.VIII.2013, V. Valenti leg. (CB).

Notes. A relatively common species, widespread throughout peninsular and insular Italy, under bark of broadleaved trees (chiefly xerophylous oaks), and previously recorded for Siracuse (Rottenberg 1871), Castelbuono (Ragusa 1892), and recently from a single locality (Pedara, Ragalà) (Audisio and De Biase 2005); also reported from Siracusa and Palermo: Madonie: Castelbuono (Ragusa 1883; Ragusa 1892).

Soronia punctatissima (Illiger, 1794)
Chorotype - CEU

Notes. A rare species, widespread in Central Europe and in northern Italy, under bark of broadleaved trees (chiefly willows and pedunculate oaks in wetlands and hygrophilous forests), recorded once from northern Sicily in the Gibilmanna forest area by Lundberg, Palm, and Trottestam (1987).

Stelidota geminata (Say, 1825)
Chorotype - COS
Records - **Messina**: Messina città, 06.IV.1998, C. Baviera leg.; Orto Botanico, 25.II.2014, C. Baviera leg.; Torre Faro, contr. Granatari, 14.IV.1998, C. Baviera leg.; Monti Peloritani: Portella Croce Cumia, 27.IX-10.X.2004, C. Baviera leg.; Salice 400 m, 03-17.VII.2004; Musolino 500 m, 19.VI-03.VII.2004, C. Baviera leg.; Isole Eolie: Isola di Lipari, 2014, many localities and dates in pitfall trap, Merlino S., leg. (CB).

Notes. Nearctic species of southern origin. A rapid expansion and widespread acclimatization has followed its relatively recent introduction into Italy. Collected, in fact, for the first

time in Italy (Veneto and Lombardy) at the end of the past Century (Audisio 2002; Audisio and De Biase 2005), but now widespread in most continental and peninsular Italy. This species has recently become a primary pest of strawberries in the northeastern United States after many years of being considered a secondary pest (Connell 1980; Loughner and Loeb 2006; Loughner, Loeb, and Turechek 2007, and references therein). This species, recently firstly recorded for Italy (Audisio 2002), seems likely to represent a serious potential danger for Italian and southern European crops. New species records from Sicily and Aeolian Islands.

Thalycra fervida (Olivier, 1790)
Chorotype - EUR
Records - **Catania:** Mount Etna: Milo, Bosco Cerrita 1500 m a.s.l., 16.V-14.VI.2002, C. Baviera leg.; ibidem, 12.VII.2004, C. Baviera leg.; Piano Provenzana 1800 m a.s.l., 10.VII-04.VIII.2002, C. Baviera leg.; Adrano, Osservatorio 1200 m, 27.VII-14.VIII.2011, S. Biondi leg.; same locality, different dates from June to October (CB).

Notes. Mycetobiontic species, widespread in Italy, more common in mountain areas, previously recorded for Sicily from two localities on Mounts Nebrodi and Peloritani (Audisio and De Biase 2005). This species appear to be common and locally abundant on Mount Etna.

Xenostrongylus arcuatus Kiesenwetter, 1859
Chorotype - APD

Notes. Uncommon species, associated as larvae with large basal leaves of several wild and cultivated Brassicaceae. Widespread in continental and peninsular Italy, and previously recorded also from Sicily (Porta 1929; Ragusa 1892; Rottenberg 1871), based on material of doubtful Sicilian origin, or on wrongly identified specimens of *X. lateralis* Chevrolat. Probably to be excluded from the Sicilian fauna.

Xenostrongylus deyrollei Jacquelin duVal, 1860
Chorotype - WME

Notes. Uncommon species, associated as larvae with large basal leaves of several wild and cultivated Brassicaceae, in Sardinia chiefly on *Nasturtium officinale* L., along streams, channels and in wetlands. Widespread in North Africa and in Sardinia, and previously recorded also from "Sicily" based on a couple of specimens (MHNP, CA) of doubtful Sicilian origin (Audisio 1993). Probably to be excluded from the Sicilian fauna.

Xenostrongylus lateralis Chevrolat, 1861
Chorotype - NAF
Records - **Messina**: Francavilla di Sicilia, Fiume Alcantara, Le Gurne, 19.IV.2010, C. Baviera leg. (CB); Torre Faro, Granatari, 26.III.1998, C. Baviera leg. (CB) ; ibidem, 10.X.1998, C. Baviera leg. (CB); Pizzo Chiarino, 29.V.2011, C. Baviera leg.; Catarratti, 23.III.2010, C. Baviera leg. (CA); Scala, IX.[1]916, F. Vitale [leg.]; Castanea, VII.[1]934, F. Vitale [leg.]; ibidem 11.IX.[1]934; ibidem 06.IX.[1]934, (CV); **Palermo**: Monte Pellegrino, IV.1972, K. Spornraft leg. (CA); Favorita VII. [1]912, F. Vitale [leg.] (CV).

Notes. Rare species associated as larvae with large basal leaves of several wild and cultivated Brassicaceae, in Italy chiefly on *Lunaria annua* L. and *Brassica rupestris* Rafin. This species, more common in North Africa, exhibits a scattered Italian distribution (Audisio 1993) including a few localities from Latium, Abruzzi, Campania, Calabria, and Sicily (Messina and Bosco Ficuzza near Palermo). An abundant population of this species was recently discovered in Calabria near Reggio Calabria (between Villa San Giovanni and Scilla, rocky slopes, 10 m a.s.l., 38°.14′.50″.0 N, 15°.41′.12″.0 E, 24.III.2010, 25 exx., on *Brassica rupestris* Rafin., C. Baviera leg.). All the specimens in Vitale Collection are sub "*Xenostrongylus histrio* var. *truncatus* Kiesen.".

Xenostrongylus truncatus Kiesenwetter, 1870
Chorotype - NAF

Notes. Uncommon species, associated as larvae with large basal leaves of several wild and cultivated Brassicaceae. Distributed in southern Spain and North Africa, this species is known in Italy only by a single specimen likely erroneously labeled "Italien", previously considered from Sicily or southern Italy (Audisio 1993; Audisio and De Biase 2005). Probably to be excluded from the Sicilian and Italian fauna.

Carpophilinae Erichson, 1842

Carpophilus bifenestratus Murray, 1864
Chorotype - COS

Notes. Species widespread in Sicily, previously confused with the similar *Carpophilus bipustulatus* (Heer, 1841), or mentioned under its recently established synonym *C. tersus* Wollaston, 1865 (Jelínek and Audisio 2007).

Carpophilus bipustulatus (Heer, 1841)
Chorotype - CEM
Records - **Messina**: Monti Peloritani: Monte Antennammare 1133 m a.s.l., 13.-31.VIII.2004, C. Baviera leg.; Massa San Giovanni, 05.IV.1998, C. Baviera leg.; **Catania:** Monte Etna: Piano Provenzana 1800 m a.s.l., 14.VI.2002, C. Baviera leg. (CB).

Notes. Collected data allow to confirm the actual presence of this widespread species in Sicily, mostly associated with bark of broadleaved trees (chiefly oaks) in mature forest habitats.

Carpophilus dimidiatus (Fabricius, 1792)
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits.

Carpophilus fumatus Boheman, 1851
Chorotype - COS

Notes. Species probably introduced several times into Italy and in Sicily from tropical and subtropical countries, but thus far apparently not acclimatized with certainty in the Island (Audisio 1993).

Carpophilus hemipterus (Linnaeus, 1758)
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits.

Carpophilus ligneus Murray, 1864
Chorotype - COS

Notes. Species introduced several times from tropical and subtropical countries into different harbor areas of Italy and Sicily (including Palermo), but thus far not acclimatized with certainty (Audisio 1993; Audisio and De Biase 2005).

Carpophilus marginellus Motschulsky, 1858
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits.

Carpophilus mutilatus Erichson, 1843
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits.

Carpophilus nepos Murray, 1864
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits (Audisio 1993), as *C. freemani* Dobson, 1956 (Audisio and De Biase 2005).

Carpophilus obsoletus Erichson, 1843
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits or under rotting phylloclades of *Opuntia*.

Carpophilus quadrisignatus Erichson, 1843
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits.

Carpophilus sexpustulatus (Fabricius, 1791)
Chorotype - CEM

Notes. Species widespread in northern Sicily, in mature forest habitats, under bark of broadleaved trees (Audisio 1993).

Carpophilus truncatus Murray, 1864 (= pilosellus auct., nec Motschulsky, 1858)
Chorotype - COS
Records - **Messina** - Monti Peloritani: Monte Antennammare 1133 m a.s.l., 13.-31.VIII.2004, C. Baviera leg. (CB).

Notes. Species previously known to occur in Italy near Naples southwards, but recently recorded also from Sicily (Audisio and Jelínek 2005-2013), on the base of the above reported material. Mostly on rotting fruits.

Carpophilus zeaphilus Dobson, 1969
Chorotype - COS

Notes. Recently introduced species, recorded from Sicily, Trapani, in 1996 (Audisio and De Biase 2005), but whose acclimatization in Italy and Sicily is not confirmed.

Urophorus humeralis (Fabricius, 1798)
Chorotype - COS

Notes. Species widespread in Sicily, mostly on rotting fruits.

Urophorus rubripennis (Heer, 1841)
Chorotype - SEU
Records - **Messina**: Granatari, by sweeping in xeric meadows, IV.2010, P. Audisio leg.; Monti Peloritani: Monte Scuderi 1200 m a.s.l., 25.VI.-20.XI.2005, C. Baviera leg.; Bosco di Malabotta, 1300 m a.s.l., 15.IV-14.V.2005, C. Baviera leg.; Colle S Rizzo 350 m a.s.l., 19.VI-2003.VII.2004, C. Baviera leg.; Castroreale, Cavallaro 400 m a.s.l., in pitfall trap, 18.VII-11.VIII.2013, V. Valenti leg. (CB).

Notes. Species widespread in Sicily (Audisio and De Biase 2005), usually associated with rotting roots and stems of *Ferula* spp. (Apiaceae) (Audisio 1993; Mifsud and Audisio 2008). Until now never reported for Peloritani Mounts.

Epuraeinae Kirejtshuk, 1986

Epuraea aestiva (Linnaeus, 1758)
Chorotype - OLA
Records - **Messina:** Messina, F. Vitale [leg.] [sub *E. depressa* Illiger]; ibidem, 7.XII.[19]19, F. Vitale [leg.] sub [*E. depressa* a. *bisignata* Stur.] (CV).

Notes. Species widespread in Europe and in peninsular Italy on flowers at the edge of forest habitats, but rare in Sicily. Only known, until now, generically for "Messina" (sub *E. depressa* a. *bisignata* Stur., (Vitale 1920) and Nebrodi Mountains (Audisio 1993; Audisio and De Biase 2005).

Epuraea fageticola Audisio, 1991
Chorotype - EUR

Notes. Rare mycetophagous species, usually associated with fungi on trees. From Sicily only known, until now, on Nebrodi Mountains (Loc. Medda; (Audisio 1993; Audisio and

De Biase 2005)).

Epuraea fuscicollis (Stephens, 1832)
Chorotype - WPA

Notes. Species widespread in Sicily, in oak forests. In Vitale collection there are specimens from Messina surrounding, sub *E. ragusai* Reitter and *E. guttifera* Reitter.

Epuraea longula Erichson, 1845
Chorotype - ASE
Records - **Palermo:** Castelbuono, Failla [leg.] (CV).

Notes. Species thus far known, in Sicily, from Peloritani and Nebrodi Mountains (Audisio 1993; Audisio and De Biase 2005).

Epuraea marseuli Reitter, 1872
Chorotype - SIE
Records - **Palermo:** Monti Sicani: Bosco di Ficuzza, Località Alpe Cucco 950 m a.s.l., 25.IX.2010, C. Baviera leg. (CB).

Notes. Widespread species in most Europe and in peninsular Italy, usually associated with coniferous forests, but also occurring as relic in *Fagus* forests in NE Sicily (Audisio, Biondi, and Bologna 1985; Avgin *et al.* 2012). Previously know from Sicily only on Peloritani (Malabotta Forest) and Nebrodi Mts. (Audisio, Biondi, and Bologna 1985; Audisio and De Biase 2005).

Epuraea melanocephala (Marsham, 1802)
Chorotype - PAL

Notes. Uncommon European species, occurring in Sicily only on Nebrodi Mts. (Audisio and De Biase 2005).

Epuraea melina Erichson, 1843
Chorotype - SIE
Records - **Messina:** Monti Peloritani: Bosco di Malabotta 1300 m a.s.l., 05.III-24.IV.2006, C. Baviera leg.; same data, 02.X.2007 (CB).

Notes. Species widespread in Europe and in peninsular Italy, but rare in Sicily. Only known, until now, for Nebrodi and Madonie Mountains (Audisio 1993; Audisio and De Biase 2005).

Epuraea unicolor (Olivier, 1790)
Chorotype - PAL

Notes. Species widespread in Italy and Sicily, usually in oak forests, but frequently also on rotting fruits.

Epuraea (*Haptoncus*) *luteolus* (Erichson, 1843)
Chorotype - COS
Records - **Messina:** Capo Rasocolmo, 18.III-02.VII.2004, C. Baviera leg.; ibidem, 02-21.VII.2004, C.

Baviera leg.; Messina città, 16.IV-14.V.2005, C. Baviera leg.; Isole Eolie, Isola di Vulcano loc. Piano 300 m a.s.l., C. Baviera leg.; Torre Faro, Granatari, 14.IV.1998, C. Baviera leg.; **Catania:** Monte Etna: Milo, Bosco Cerrita 1500 m a.s.l., 16.XI.2002-16.V.2003, C. Baviera leg.; Piano Provenzana 1800 m a.s.l., 10.VII-04.VIII.2002, C. Baviera leg. (CB).

Notes. Species introduced several times from tropical and subtropical countries into different harbor areas of Italy and Sicily (including Palermo), widely acclimatized and locally exceedingly abundant throughout most regions of peninsular and insular Italy. Formally reported for Sicily, from the "Riserva dello Zingaro" (Trapani) and Catania (Audisio and De Biase 2005).

Epuraea (*Haptoncus*) *ocularis* (Fairmaire, 1849)
Chorotype - COS
Records - **Messina**: Castroreale, Cavallaro 400 m a.s.l., in pitfall trap, 18.VII-11.VIII.2013, V. Valenti leg.; Isole Eolie: Isola di Lipari, many localities and dates, in pitfall traps, Merlino S. leg. (CB).

Notes. Species introduced several times from tropical and subtropical countries into different harbor areas of Italy, and now widely acclimatized and locally exceedingly abundant throughout most regions of peninsular and insular Italy (Audisio and De Biase 2005). First record for Sicily and Aeolian Archipelago.

Epuraea (*Haptoncus*) sp.
Chorotype - ?
Records - **Messina:** Monti Peloritani: Musolino 400 m a.s.l., 22.III-07.IV.2004, C. Baviera leg. Salice Urni 400 m, 21.V-02.VI.2004, C. Baviera leg.; Castroreale, Cavallaro 400 m a.s.l., in pitfall trap 18.VII-11.VIII.2013, V. Valenti leg.; **Catania:** Monte Etna: Piano Provenzana 1800 m a.s.l., 10.VII-04.VIII.2002, in pitfall trap, C. Baviera leg.; Bosco Cerrita, 10.VII-04.VIII.2002, in pitfall trap, C. Baviera leg. (CB).

Notes. The above cited *Epuraea* (*Haptoncus*) sp. is an unidentified alien species which was recorded as new to Europe by Audisio and Nardi (2007), probably following a recent introduction from Neotropical or Oriental areas.
Unfortunately, it resulted thus far impossible to identify at species level this alien sap-beetle, likely representing a new species whose geographical origin remains unknown. This species is now the dominating *Epuraea* (*Haptoncus*) in eastern Sicily, in Campania, as well as in other southern Italian regions and many European countries, and it is evidently in a phase of fast spreading also throughout other European countries (K. Renner, personal communication, 2013).

Meligethinae Thomson, 1859

Acanthogethes brevis (Sturm, 1845)
Chorotype - EUR

Notes. This uncommon species, associated as larva with *Helianthemum* sp. (Cistaceae), is known so far from Sicily only from Mount Etna (Audisio and De Biase 2005).

Acanthogethes fuscus (Olivier, 1790)
Chorotype - WME
Records - **Messina:** Monti Nebrodi: Portella Maulazzo 1300 m a.s.l., 19.V.1979, Leg. M. Romano; Monti Peloritani: Monte Antennammare, 1133 m a.s.l., 07.IV.2004, C. Baviera leg.; Forte San Iachiddu 400 m a.s.l., IV. 2010, P. Audisio and C. Baviera leg. (CB).

Notes. Species widespread in Sicily, chiefly in littoral and sub-littoral areas, on *Cistus* spp. (Cistaceae) as larva. Previously formally recorded from Trapani province (Zingaro Nature Reserve), Eolian Islands (Lipari), and Tono (Messina) (Audisio and De Biase 2005).

Afrogethes planiusculus (Heer, 1841)
Chorotype - WPA

Notes. Species widespread in Sicily, on *Echium* spp. (Boraginaceae) as larva.

Astylogethes substrigosus (Erichson, 1845)
= *Astylogethes subrugosus* Auct., nec (Gyllenhal, 1808)
Chorotype - PAL

Notes. Species recorded from northeast of Sicily (Audisio and De Biase 2005). On *Campanula* spp. (Campanulaceae) as larvae.

Brassicogethes aeneus (Fabricius, 1775)
Chorotype - OLA
Records - **Messina:** Isole Eolie: Isola di Salina, 10-12.V.2007, C. Baviera leg. (CB).

Notes. Species widespread in Sicily, never recorded before for Aeolian Archipelago. On several Brassicaceae as larvae.

Brassicogethes anthracinus C. Brisout de Barneville, 1863
Chorotype - TEM

Notes. Species present in northeast Sicily (Audisio and De Biase 2005), on *Isatis tinctoria* L. (Brassicaceae) as larvae, mostly in anthropogenic habitats.

Brassicogethes thalassophilus (Audisio and De Biase 2005)
Chorotype - WME
Records - **Trapani**: R.N.O. "Zingaro", 23-25.VI.2003, C. Baviera leg.; ibidem, on *Matthiola incana* (L.) R.Br., 14.IV.1999, P. Audisio and A. De Biase leg. (CB, CA).

Notes. Rare and nearly threatened species, mostly associated with littoral sandy and rocky habitats, on *Matthiola incana* (L.) R.Br. and *M. sinuata* (L.) R.Br. (Brassicaceae). A population slightly differentiated molecularly and ecologically is known from central Sicily, Caltanissetta province, Barriera Noce near Santa Caterina Villarmosa, 13.IV.1999, on *Matthiola fruticulosa* (L.) Maire (De Biase *et al.* 2012, on-line supplementary material).

Brassicogethes viridescens (Fabricius, 1787)
Chorotype - TEM

Notes. Species widespread in Sicily, on several Brassicaceae as larvae.

Clypeogethes elongatus (Rosenhauer, 1856)
Chorotype - NAF

Notes. Species known in Italy, from Pantelleria Island (Audisio 1993, 1995; Audisio and De Biase 2005); it develops as larvae on *Matthiola incana* (L.) R.Br. (Audisio 1995).

Clypeogethes lepidii (Miller, 1851)
Chorotype - CEM

Notes. Species known, in Sicily, only from Catania and Mount Etna area (Audisio and De Biase 2005), where is rare on *Isatis tinctoria* L. (Brassicaceae).

Fabogethes nigrescens (Stephens 1830)
Chorotype - PAL

Notes. Species widespread in Sicily, chiefly on *Trifolium* spp. and other small Fabaceae, mostly in early Spring.

Genistogethes bidentatus (C. Brisout de Barneville, 1863)
Chorotype - EUR
Records - **Catania:** Monte Etna: Zafferana Etnea 1000 m, on *Genista aetnensis* (Raf. ex Biv.) DC., 12.V.2012, P. Audisio leg., (CA); **Trapani**: Erice Piano Guastella 180 m, 26.XI.2009, Bellò C. leg. (CB).

Notes. Species more common in Central Europe, peculiarly rare and local in southern Italy; thus far was known, in Sicily, only from Mount Etna (Audisio and De Biase 2005), where, as above reported, it develops as larvae on *Genista aetnensis* (Raf. ex Biv.) DC.

Genistogethes carinulatus (Förster, 1849)
Chorotype - WPA
Records - **Messina:** Monti Peloritani: Bosco Acquamenta 900 m, 11.X.2009, C. Baviera leg.; San Pier Niceto, Terra Salata 700 m, 20.VI.2010, C. Baviera leg.; Mortelle, Lido Spiaggia D'oro, 28.IV.2010, C. Baviera leg.; **Catania:** Monte Etna: versante Nord, Rifugio Brunek 1500 m, 20.VI.2006, C. Baviera leg. (CB).

Notes. Species widespread in Sicily on *Lotus* spp. (Fabaceae), although formally known, until now, only from Nebrodi Mountains (Floresta) (Audisio and De Biase 2005).

Genistogethes erichsonii (C. Brisout de Barneville,1863)
Chorotype - SEU

Notes. Species widespread in Sicily from sea level (sand dunes) to xeric meadows in mountain areas, associated as larvae with *Lotus* spp. and *Hyppocrepis* spp. (Fabaceae).

Genistogethes immundus (Kraatz, 1858)
Chorotype - MED
Records - **Messina:** Isole Eolie: Isola di Alicudi, 30.IX.2006, C. Baviera leg.; Isola di Stromboli, 07-09.IV.2006, C. Baviera leg.; Monti Peloritani: Monte Antennammare 1130 m, 27.VI.1997, C. Baviera leg.; ibidem, 09.IV.2002, C. Baviera leg.; Salice, 23.III.2010, C. Baviera leg.; **Catania:** Monte Etna: versante Nord, Rifugio Brunek 1500 m, 20.VI.2006, C. Baviera leg.; Linguaglossa, 22.IV.2000, C. Baviera leg.; **Trapani**: R.N.O. "Zingaro", 23-25.VI.2003, C. Baviera leg.; **Palermo**: Madonie: Piano Battaglietta, 16.V.2008, C. Baviera leg. (CB).

Notes. Species known, until now, in Sicily, from Pantelleria Island, Messina and Syracuse provinces, never formally recorded before for Aeolian Archipelago (Audisio and De Biase 2005). Associated as larvae with several Fabaceae Genisteae (Audisio 1993).

Genistogethes punctatus (C. Brisout de Barneville, 1863)
Chorotype - SEU
Records - **Messina:** Isole Eolie: Isola di Vulcano, 09-10.V.2007, C. Baviera leg.; Isola di Stromboli, 07-09.IV.2006, C. Baviera leg. (CB); **Catania:** Zafferana Etnea 400 m, V.2012, P. Audisio leg. (PA).

Notes. Species widespread in Sicily, although never recorded before for Aeolian Archipelago. Associated as larvae with *Spartium junceum* L. (Fabaceae) (Audisio 1993). It is interesting to note the nearly syntopic presence of two sister species *G. punctatus* and *G. bidentatus* on Mount Etna.

Lamiogethes bidens (C. Brisout de Barneville, 1863)
Chorotype - EUR

Notes. Species known from Sicily only on Nebrodi Mountains (Audisio and De Biase 2005). Associated as larvae with *Clinopodium vulgare* L. (Lamiaceae) (Audisio 1993).

Lamiogethes difficilis (Heer, 1841)
Chorotype - PAL

Notes. Species common in Europe and in peninsular Italy, but rare in Sicily, known thus far only from Nebrodi Mountains and Ficuzza Wood on Sicani Mountains (Audisio and De Biase 2005). Associated as larvae with *Lamium* spp. (Lamiaceae) (Audisio 1993).

Lamiogethes jelineki (Audisio, 1976)
Chorotype - PAL

Notes. Rare species known from Sicily only for Malabotta Forest on Peloritani Mountains (Audisio 1993; Audisio and De Biase 2005). Associated as larvae with *Melittis* spp. (Lamiaceae) (Audisio 1993).

Lamiogethes leati (Easton, 1956)
Chorotype - NAF
Records - **Catania:** Mojo Alcantara, 16.V.2009, C. Baviera leg. (CB).

Notes. Mostly North African species, known in Italy only from N Sicily. Widespread in northern mountains (Audisio 1993; Audisio and De Biase 2005). Associated as larvae with *Prunella* spp. (Lamiaceae) (Audisio 1993).

Lamiogethes morosus (Erichson, 1845)
Chorotype - PAL
Records - **Messina:** Monti Peloritani: Rometta Superiore, Gimello, S. Leone, 24.IV.2010, C. Baviera leg. (CB).

Notes. Species known, from Sicily, in northern mountains from Nebrodi to Sicani Mts. (Audisio and De Biase 2005). Associated as larvae with *Lamium* spp. (Lamiaceae) (Audisio 1993).

Meligethes atratus (Olivier, 1790)
Chorotype - ASE

Notes. Species known from Sicily on Nebrodi and Madonie Mts. (Audisio and De Biase 2005). Associated as larvae with *Rosa* spp. (Rosaceae) (Audisio 1993).

Meligethes flavimanus Stephens, 1830
Chorotype - ASE
Records - **Messina:** Monti Nebrodi: Biviere di Cesarò 1200 m a.s.l., 19.VI.2002, C. Baviera leg. (CB).

Notes. Species in Italy known thus far from Alps to Calabria (Audisio 1987, 1993; Audisio and De Biase 2005). New species record from Sicily. Associated as larvae with *Rosa* spp. (Rosaceae) (Audisio 1993).

Meligethinus pallidulus (Erichson, 1843)
Chorotype - WME
Records - **Messina:** Torre Faro, Granatari, 22.III.2010, C. Baviera leg. (CB).

Notes. Species known, until now, only from western Sicily, Monte Pellegrino (Palermo) and Trapani province (Audisio and De Biase 2005). Associated as larvae with *Chamaerops*

humilis L. (Arecaceae) (Audisio 1993), in both natural and urban (there introduced) environments.

Pria dulcamarae (Scopoli, 1763)
Chorotype - PAL

Notes. Species widespread in Sicily. Associated as larvae with *Solanum dulcamara* L. (Solanaceae) (Audisio 1993), in wet habitats.

Sagittogethes distinctus (Sturm, 1845)
Chorotype - EUR

Notes. Species widespread in northern Sicily. Associated as larvae with *Teucrium chamaedrys* L. (Lamiaceae) (Audisio 1993), in xeric forest habitats.

Sagittogethes hoffmanni (Reitter, 1871)
Chorotype - PAL

Notes. Species associated as larvae with *Teucrium scordium* L. (Lamiaceae) in damp places, widespread in Italy but threatened. In Sicily, known only from Messina and Syracuse provinces (Audisio and De Biase 2005).

Sagittogethes lindbergi (Rebmann, 1940)
Chorotype - PAL

Notes. Species widespread in Sicily. Associated as larvae with *Teucrium flavum* L. (Lamiaceae) in rocky and sunny places.

Sagittogethes minutus (C. Brisout de Barneville, 1863)
Chorotype - WME
Records - **Ragusa**: Monti Iblei: W slope of Mount Casale 670 m a.s.l., 37.04.07.3N 14.48.57.5E, 24.V.2010, P. Audisio and C. Baviera leg., on *Teucrium polium* L., 18 exx. (CA, CB).

Notes. Exceedingly rare species in Italy, until more recent times only known from a single specimen collected several years ago at Syracuse, Greek Theater (Audisio 1993; Audisio and De Biase 2005); only recently recorded also from SE Calabria and from the above reported new Sicilian locality (Audisio and Jelínek 2005-2013). Associated as larvae with *Teucrium polium* L. (Lamiaceae) in rocky sunny places and xeric stony meadows.

Sagittogethes umbrosus (Sturm, 1845)
Chorotype - EUR

Notes. Species known in Sicily from several localities on Nebrodi Mountains. Associated as larvae with *Prunella* spp. (Lamiaceae) in forest habitats and meadows.

Stachygethes nanus (Erichson, 1845)
Chorotype - TEM

Notes. Species known in Sicily only from Biviere di Gela (Caltanissetta) and Levanzo in Egadi Archipelago (Trapani) (Audisio and De Biase 2005). Associated as larvae with *Marrubium vulgare* L. (Lamiaceae) in rocky sunny places and xeric meadows.

Stachygethes ruficornis (Marsham, 1802)
Chorotype - CAE
Records - **Trapani**: R.N.O. "Zingaro", 26-29.III.2003, C. Baviera leg. (CB).

Notes. Species known in Sicily from Nebrodi and Sicani Mountains (Audisio and De Biase 2005), but probably more widespread. Reported also sub *Meligethes flavipes* from Termini Imerese (Palermo) by Ciofalo, 1886. Associated as larvae with *Ballota nigra* L. (Lamiaceae), mostly in xeric meadows.

Stachygethes scholzi (Easton, 1960)
Chorotype - EME
Records - **Trapani**: Castellamare del Golfo, Castello di Baida, 16.V.2008, C. Baviera leg.; R.N.O. "Zingaro", 26-29.III.2003, C. Baviera leg. (CB); WSW slope of Mount Erice 200 m, 13.IV.1999, P. Audisio and A. De Biase leg. (CA); **Catania:** Pedara 600 m, 5/15.VI.1948, F. Hartig leg. (CA).

Notes. Species formally reported in Sicily only from Monte Pellegrino (Palermo) and Biviere di Gela (Caltanissetta) (Audisio and De Biase 2005). Associated as larvae with *Ballota rupestris* L. (Lamiaceae) in rocky sunny places.

Stachygethes villosus (C. Brisout de Barneville, 1863)
Chorotype - SEU

Notes. Species widespread in Sicily. Associated as larvae with *Marrubium vulgare* L. (Lamiaceae), in rocky sunny places and xeric meadows.

Thymogethes egenus (Erichson, 1845)
Chorotype - TUE
Records - **Ragusa**: Giarratana, 04.V.2010, C. Baviera leg. (CB).

Notes. Species reported in Sicily only from Termini Imerese (Palermo) and Messina province, but probably more widespread. Associated as larvae with *Mentha* spp. (Lamiaceae), in damp places.

Thymogethes exilis (Sturm, 1845)
Chorotype - EUR

Notes. Species rare in Sicily and in the whole southern Italy, reported in Sicily only from Monte Soro (Nebrodi Mountains) (Audisio and De Biase 2005). Associated as larvae with *Thymus* spp. (Lamiaceae), in xeric meadows.

Thymogethes grenieri (C. Brisout de Barneville,1872)
Chorotype - WME

Notes. Species reported in Sicily only from Pantelleria Island and Messina (Audisio and De Biase 2005). Associated as larvae with *Rosmarinus officinalis* L. (Lamiaceae) in rocky sunny places and xeric maquis.

Thymogethes nigritus (Lucas, 1849)
Chorotype - WME

Notes. Species widespread in SW Italy on its common larval host-plant *Lavandula stoechas* L. (Lamiaceae) in Mediterranean maquis, and reported in Sicily only from Pantelleria Island and Messina (Audisio and De Biase 2005).

Thymogethes submetallicus (Sainte-Claire Deville, 1908)
Chorotype - CAE

Notes. Species widespread in Sicily in periodically inundated xeric meadows and around springs, on its larval host-plant *Mentha pulegium* L. (Lamiaceae).

Xerogethes rotundicollis (C.Brisout de Barneville 1863)
Chorotype -MED
Records - **Ragusa:** Giarratana, Sanctuary of S. Rosalia 400 m, 15.IV.2010, C. Baviera leg.

Notes. Species widespread in Sicily, but previously recorded only from Pantelleria Island, Trapani and Caltanisetta provinces (Audisio and De Biase 2005). Associated as larvae with *Sisymbrium* spp. (Brassicaceae), in xeric meadows.

KATERETIDAE Kirby, 1837

Kateretes dalmatinus (Sturm 1844)
Chorotype - NEM

Notes. Rare species in Italy (more common in southern Balkan and Anatolian areas), in Sicily only mentioned thus far from Catania area (Audisio and De Biase 2005; Gulli 1961),

where, if this ancient record is confirmed, could be the westernmost known site of its geographic distribution. Present in wetlands, on its larval host-plants *Juncus* spp. (Juncaceae). Unfortunately, we were not able to examine samples collected from Gulli actually preserved in the Sapuppo collection.

Kateretes rufilabris (Latreille, 1807)
Chorotype - EUM

Notes. Species widespread in Sicily in wetlands, on its larval host-plants *Juncus* spp. (Juncaceae).

Brachypterus curtulus Wollaston 1864
Chorotype - WME

Notes. Species rare in Italy, where is present only in Sardinia, Sicily, Calabria, Puglia, and Basilicata (Audisio 1993; Audisio and De Biase 2005). In Sicily and in Malta (Mifsud and Audisio 2008) this species is present in xeric meadows and ruderal habitats, or at the edge of xeric rocky habitats, on its larval host-plant *Urtica pilulifera* L. (Urticaceae). To this species could be probably referred the citation of "*Brachypterus fulvipes* Er. var. *affinis* Heer." for Sicily without distribution data of Ragusa (1896).

Brachypterus glaber (Newman 1834)
Chorotype - WPA

Notes. Species widespread in Sicily in xeric meadows, ruderal habitats, xerophylous edges of forests, or at the edge of xeric rocky habitats, on its larval host-plants *Urtica* spp. (Urticaceae).

Brachypterolus antirrhini (Murray 1864)
Chorotype - MED

Notes. Species widespread in Sicily in xeric ruderal habitats, historical walls, xeric rocky habitats, on its larval host-plant *Antirrhinum majus* L. (Scrophulariaceae).

Brachypterolus sp. cfr. *antirrhini*
Chorotype - MED ?
Records - **Messina:** Monti Peloritani: Forte San Iachiddu 300 m, 28.IV.2010, P. Audisio and C. Baviera leg. (CA, CB); ibidem, 21.X.2010 (CA); Malabotta Forest 1350 m, V.1980, pitfall trap at the edge of a beech forest, unknown collector (CA); **Catania:** Randazzo 800 m., 9.IV.1977, P. Audisio leg. (CA); Mount Etna, Mareneve 1200 m, edges of *Pinus laricio* forest, 3.VI.1992, J. Pinto leg. (CA); Adrano 1200 m, 12.VI.2011, C. Baviera leg. (CB).

Notes. Species uncommon but apparently widespread in E Sicily in xeric meadows, on flowers of its larval host-plant *Linaria multicaulis* (L.) Miller and allied species (Scrophulariaceae). This *Brachypterolus*, known to occur also in North Africa and in the Near East, although being very similar in external and genital structures to the common *Brachypterolus antirrhini* (Murray 1864), represents a distinct species, maybe even a new species. However, its possible description needs a thorough morphological analysis of the known presumed synonyms of *B. antirrhini* in Mediterranean areas (Audisio 1993; Jelínek and Audisio 2007), as well as molecular data on genetic differentiation between the two believed species. Both are widely sympatric on their respective host-plants in E Sicily (*B. antirrhini* active between March and June, on *Antirrhinum*, while *B.* sp. cfr. *antirrhini* between April and October, on yellow *Linaria* spp.). An upcoming paper of Audisio et al. is devoted to face this interesting taxonomic question.

Brachypterolus linariae (Stephens 1830)
Chorotype - SIE

Notes. Widespread in Sicily in xeric meadows, rocky and ruderal habitats, on its larval host-plant *Linaria purpurea* (L.) Mill. (Scrophulariaceae).

Brachypterolus pulicarius (Linnaeus 1758)
Chorotype - ASE

Notes. Sporadic in Sicily in xeric and mesophilous meadows, on its larval host-plant *Linaria vulgaris* Mill., and probably allied species, as presence of *L. vulgaris* was confirmed only recently for Sicily (Raimondo and Bazan 2007).

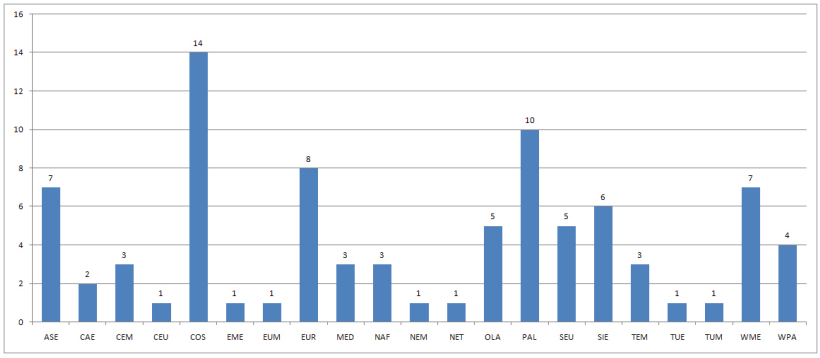

FIGURE 1. Number of Sicilian species of Nitidulidae and Kateretidae (only confirmed native and alien Sicilian species are treated), distributed in the main recognized Chorotypes. The recently introduced *Aethina tumida* was not considered in our biogeographical analysis.

TABLE 1. Checklist of the Nitidulidae and Kateretidae of Sicily. Abbreviations * = species of which the actual presence in Sicily is strongly doubtful, which probably must to be excluded from Sicilian fauna.

SPECIES	AUTHORITY	COROTYPE	NEW RECS.
Colopterus abdominalis	(Erichson, 1843)	NET	x
Brachypterolus pulicarius	(Linnaeus 1758)	ASE	
Cryptarcha strigata	(Fabricius, 1787)	ASE	
Cryptarcha undata	(Olivier, 1790)	ASE	
**Glischrochilus quadripunctatus*	(Linnaeus, 1758)	SIE	
Pityophagus ferrugineus	(Linnaeus, 1761)	SIE	x
**Ithyra hirsutula*	Reitter, 1873	AFM	
Aethina tumida	Murray, 1867	SCOS	x
**Nitidula bipunctata*	(Linnaeus, 1758)	OLA	
Nitidula carnaria	(Schaller, 1783)	OLA	
Nitidula flavomaculata	Rossi, 1790	TUM	
Omosita discoidea	(Fabricius, 1775)	OLA	
Omosita colon	(Linnaeus, 1758)	OLA	x
Pocadius ferrugineus	(Fabricius, 1775)	SIE	
Pocadius adustus	Reitter, 1888	SIE	x
Soronia grisea	(Linnaeus, 1758)	ASE	
Soronia oblonga	C. Brisout de Barneville, 1863	SEU	
Soronia punctatissima	(Illiger, 1794)	CEU	
Stelidota geminata	(Say, 1825)	COS	x
Thalycra fervida	(Olivier, 1790)	EUR	
**Xenostrongylus deyrollei*	Jacquelin duVal, 1860	WME	
Xenostrongylus lateralis	Chevrolat, 1861	NAF	
**Xenostrongylus truncatus*	Kiesenwetter, 1870	NAF	
Carpophilus bifenestratus	Murray, 1864	COS	
Carpophilus bipustulatus	(Heer, 1841)	CEM	x
Carpophilus dimidiatus	(Fabricius, 1792)	COS	
Carpophilus hemipterus	(Linnaeus, 1758)	COS	
**Carpophilus ligneus*	Murray, 1864	COS	
Carpophilus marginellus	Motschulsky, 1858	COS	
Carpophilus mutilatus	Erichson, 1843	COS	
Carpophilus nepos	Murray, 1864	COS	
Carpophilus obsoletus	Erichson, 1843	COS	
Carpophilus quadrisignatus	Erichson, 1843	COS	
Carpophilus sexpustulatus	(Fabricius, 1791)	CEM	
Carpophilus truncatus	Murray, 1864	COS	
**Carpophilus zeaphilus*	Dobson, 1969	COS	
Urophorus humeralis	(Fabricius, 1798)	COS	
Urophorus rubripennis	(Heer, 1841)	SEU	
Epuraea aestiva	(Linnaeus, 1758)	OLA	
Epuraea fageticola	Audisio, 1991	EUR	
Epuraea fuscicollis	(Stephens, 1832)	WPA	
Epuraea longula	Erichson, 1845	ASE	
Epuraea marseuli	Reitter, 1872	SIE	

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Table 1 – *Continued from previous page*

SPECIES	AUTHORITY	COROTYPE	NEW RECS.
Epuraea melanocephala	(Marsham, 1802)	PAL	
Epuraea melina	Erichson, 1843	SIE	
Epuraea unicolor	(Olivier, 1790)	PAL	
Epuraea (*Haptoncus*) *luteolus*	(Erichson, 1843)	COS	
Epuraea (*Haptoncus*) *ocularis*	(Fairmaire, 1849)	COS	x
Epuraea (*Haptoncus*) sp.			x
Acanthogethes brevis	(Sturm, 1845)	EUR	
Acanthogethes fuscus	(Olivier, 1790)	WME	
Afrogethes planiusculus	(Heer, 1841)	WPA	
Astylogethes substrigosus	(Erichson, 1845)	PAL	
Brassicogethes aeneus	(Fabricius, 1775)	OLA	
Brassicogethes anthracinus	C. Brisout de Barneville, 1863	TEM	
Brassicogethes thalassophilus	(Audisio et De Biase, 2005)	WME	
B*rassicogethes viridescens*	(Fabricius, 1787)	TEM	
Clypeogethes elongatus	(Rosenhauer, 1856)	NAF	
Clypeogethes lepidii	(Miller, 1851)	CEM	
Fabogethes nigrescens	(Stephens, 1830)	PAL	
Genistogethes bidentatus	(C. Brisout de Barneville, 1863)	EUR	
Genistogethes carinulatus	(Förster, 1849)	WPA	
Genistogethes erichsonii	(C. Brisout de Barneville, 1863)	SEU	
Genistogethes immundus	(Kraatz, 1858)	MED	
Genistogethes punctatus	(C. Brisout de Barneville, 1863)	SEU	
Lamiogethes bidens	(C. Brisout de Barneville, 1863)	EUR	
Lamiogethes difficilis	(Heer 1841)	PAL	
Lamiogethes jelineki	(Audisio 1976)	PAL	
Lamiogethes leati	(Easton, 1956)	NAF	
Lamiogethes morosus	(Erichson, 1845)	PAL	
Meligethes atratus	(Olivier, 1790)	ASE	
Meligethes flavimanus	Stephens, 1830	ASE	x
Meligethinus pallidulus	(Erichson, 1843)	WME	
Pria dulcamarae	(Scopoli, 1763)	PAL	
Sagittogethes distinctus	(Sturm, 1845)	EUR	
Sagittogethes hoffmanni	(Reitter, 1871)	PAL	
Sagittogethes lindbergi	(Rebmann, 1940)	PAL	
Sagittogethes minutus	(C. Brisout de Barneville, 1863)	WME	
Sagittogethes umbrosus	(Sturm, 1845)	EUR	
Stachygethes nanus	(Erichson, 1845)	TEM	
Stachygethes ruficornis	(Marsham, 1802)	CAE	
Stachygethes scholzi	(Easton, 1960)	EME	
Stachygethes villosus	(C. Brisout de Barneville, 1863)	SEU	
Thymogethes egenus	(Erichson, 1845)	TUE	
Thymogethes exilis	(Sturm, 1845)	EUR	
Thymogethes grenieri	(C. Brisout de Barneville, 1872)	WME	
Thymogethes nigritus	(Lucas, 1849)	WME	
Thymogethes submetallicus	(Sainte-Claire Deville, 1908)	CAE	
Xerogethes rotundicollis	(C.Brisout de Barneville, 1863)	MED	

Continued on next page

Table 1 – *Continued from previous page*

SPECIES	AUTHORITY	COROTYPE	NEW RECS.
**Kateretes dalmatinus*	(Sturm 1844)	NEM	
Kateretes rufilabris	(Latreille, 1807)	EUM	
Brachypterus curtulus	Wollaston 1864	WME	
Brachypterus glaber	(Newman 1834)	WPA	
Brachypterolus antirrhini	(Murray 1864)	MED	
Brachypterolus sp. cfr. *antirrhini*		MED?	x
Brachypterolus linariae	(Stephens 1830)	SIE	
Brachypterolus pulicarius	(Linnaeus 1758)	ASE	

4. Conclusions

Sicilian fauna for the two closely related families examined shows a relatively high specific richness well with 88 species (81 Nitidulidae and 7 Kateretidae), against 69 species (63 Nitidulidae and 6 Kateretidae) recently listed for Sardinia (Audisio 2011). The Sicilian nitidulids exhibit an higher diversity, than the Maltese Islands which consists of 29 species (26 Nitidulidae and 3 Kateretidae) (Mifsud and Audisio 2008). There are no known endemic taxa of Sicily. Species known for Sicily represent more than one third of the whole Italian fauna (Angelini *et al.* 1995; Audisio and Jelínek 2005-2013; Jelínek and Audisio 2007), excluding a dozen species listed from the island based only on ancient regional records, never confirmed by specialists, or later explicitly excluded from the Sicilian fauna.

The high number of species corresponds to high number of different Chorotypes (21). As expected, the more frequent Chorotype (14 species, 17%) is the Cosmopolitan, represented by introduced and acclimatized taxa, mostly of subtropical origin; this percentage is higher than in any other Italian regions, probably due to the central position of Sicily in the Mediterranean, combined with its climate that is particularly propitious for most introduced taxa (usually thermophilous subtropical elements, cosmopolitan or sub-cosmopolitan, associated with stored products, and with introduced tropical fruits, vegetables, and wood). Unexpected are the relevant number of Palaeartic species (9 species, 11%), of European and Asiatic-European species (8 species, 9%, and 7 species, 8%, respectively) and even of Sibiric- European species, which shows the same number of the Western-Mediterranean elements (SIE and WME; Fig. 1), with a reduced presence also of European, European-Mediterranean, and Palaearctic elements. Also unexpected, on the other hand, is the low number of North African and Mediterranean species (3 species, 3%), and the apparent absence of endemic species. Note that the recently introduced *Aethina tumida* was not considered in our biogeographical analysis.

Even if the number of taxa is therefore higher than expected, it is possible that further research may increase the number of known species, perhaps even including the identification of one or more (thus far unknown) taxa, endemic to this Mediterranean core Island.

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[a] Dipartimento di Scienze Biologiche e Ambientali
Università degli Studi di Messina, Messina, Italy

[b] Dipartimento di Biologia e Biotecnologie "Charles Darwin"
Università degli Studi di Roma "La Sapienza", Roma, Italy

* To whom correspondence should be addressed | Email: cbaviera@unime.it

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