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STUDIES ON LONGHORN BEETLES (COLEOPTERA CERAMBYCIDAE) OF THE MONTE RUFENO NATURE RESERVE AND BOSCO DEL SASSETO NATURAL MONUMENT (LAZIO, CENTRAL ITALY) ([1])

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Faggi M., Nappini S., Biscaccianti A.B. – Studies on longhorn beetles (Coleoptera Cerambycidae) of the Monte Rufeno Nature Reserve and Bosco del Sasseto Natural Monument (Lazio, central Italy).

This paper discusses the results of faunal and zoogeographical surveys on the longhorn beetles of the Monte Rufeno Nature Reserve and Natural Monument «Bosco del Sasseto» (central Italy, Lazio, Viterbo province). In this area 75 species of longhorn beetles have been recorded, a figure that accounts for 27% of the Italian fauna and for 46% of that of the Lazio region. Among them, *Rhagium* (s.str.) *inquisitor inquisitor, Anastrangalia dubia dubia, Monochamus galloprovincialis* and *Exocentrus lusitanus* are new findings for Lazio. Several species, which are rare or strongly localized in Italy or only in the Apennine, have been recorded in the study area, such as *Agapanthia* (s.str.) *maculicornis davidi, Asemum tenuicorne, E. lusitanus, Isotomus barbarae, Necydalis ulmi, Pseudosphegesthes cinerea, Saperda octopunctata* and *Stenhomalus* (*Obriopsis*) *bicolor*. All available records, chorotype, and distribution in Italy are provided for each species, along with a brief discussion, when relevant.

New Italian regional records are provided for: *Rhagium (Megarhagium) sycophanta* (Toscana and Campania), *Cortodera humeralis humeralis, Rhamnusium bicolor* (s.l.) (Umbria), *Xylotrechus antilope antilope, Agapanthia* (s. str.) *maculicornis davidi,* (Abruzzo).

KEY WORDS: Cerambycidae, Italy, Lazio, faunistics, zoogeography.

INTRODUCTION

The Monte Rufeno Nature Reserve, established in 1983, extends for 2892 hectares in the municipal area of Acquapendente (Viterbo Province) and is situated in the northern part of Lazio, on the border with both Toscana and Umbria. The Reserve's territory is in the high valley of the river Paglia and is characterized by a gentle hilly morphology, with medium slopes of 25-30% and moderate altitudes, with a maximum altitude of 774 m a.s.l. on Greppe della Maddalena and 734 m on Mount Rufeno; average elevations are between 500-550 m above sea-level. The river Paglia goes through the Reserve dividing it in two parts: the northern part (left bank of the river Paglia) is the largest and its boundaries are marked by the streams Subissone, Acquacalda, Tirolle and Fossatello; in the southern part (on the right bank of the river Paglia) the boundaries of the protected area are marked by the river Paglia itself and the Vallone and Subissone streams.

The Bosco del Sasseto Natural Monument is just outside the eastern borders of the Reserve, near the Torre Alfina hamlet.

The central and northern parts of the Reserve are characterized by stratified flysch of variable thickness, mainly in clay and arenaceous, marly-arenaceous, and calcareous layers, which originates sub-acid soils, mostly sandstones, and alkaline and sub-alkaline soils where clays surface. The southern part instead is characterized by lavic tuffaceous outcrops that are piled up onto the sedimentary layer that originated from the same volcanic activity that gave rise to the Volsinium complex. On the valley bottom are sediments such as clay, silt and cobbles caused by the erosion of the complex and to the deposits left by the flowing water (SCOPPOLA, 1996, 1998).

In terms of climate, the area is situated in the temperate region; its rainfall is influenced by nearby Mount Amiata and the Mount Labbro range (over 1000 m a.s.l.) in Toscana; this causes a considerable rise in average precipitations, about 1000 mm per annum, compared with surrounding areas, which is of about 900 mm (SCOPPOLA, 1998).

The territory of the Reserve is almost completely covered by woods, the diversity of which matches the Reserve's diversity in physical environments. The most widespread forest typology is mixed oak wood, consisting mainly of *Quercus cerris* L., that can be set in the association *Asparago–Quercetum cerridis* (SCOPPOLA, 1996), with rare presences of *Quercus petraea* (Matt.) Liebl. On the eastern side of Mount Rufeno, at the highest elevations, *Castanea sativa* L. occurs, in association with *Carpinus betulus* L., *Fraxinus ornus* L., *Acer opalus* Mill. subsp. *obtusatum* (Waldst. & Kit. ex Willd.) Gams and *Ostrya carpinifolia* Scop. In the impluvi and in the areas exposed to the north the vegetation becomes a mesophilous mixed wood, while scrubs grow in the driest and most degraded areas. For the most part, these scrubs are *Quercus pubescens* Willd., with *O. carpinifolia*, *A. monspessulanum* L., and shrubbery like *Erica arborea* L., *Pyrus communis* L., *Juniperus communis* L.

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The warmer slopes lying at lower altitudes host a Mediterranean, sclerophyllous vegetation such as *Quercus ilex* L., *Phillyrea latifolia* L., *Arbutus unedo* L., *Viburnum tinus* L. Riparian vegetation of note grows along the river Paglia: *Populus nigra* L., *P. alba* L., *Alnus glutinosa* (L.) Gaertn., *Salix* spp., along with small plain woods with *Q. robur* L., *Ulmus minor* Mill., *Acer campestre* L. e *Fraxinus angustifolia* Vahl. (SCOPPOLA, 1996, 1998).

One fifth of the vegetation is represented by reforestations with conifers planted in the 1960s. The most widespread species is *Pinus pinaster* Aiton, which covers about 230 hectares, but *P. halepensis* Mill. and *P. nigra* Arnold are also present. The latter two species cover just over 100 hectares each.

The Bosco del Sasseto is a relict strip of mesophilous wood with centuries-old broad-leaf plants that covers a surface of about 50 hectares and grows on pile of huge volcanic rocks. The prevailing forest species are *Quercus ilex* and *Ostrya carpinifolia*, but there is a noteworthy combination of species such as *Fagus sylvatica* L., *Tilia platyphyllos* Scop., *Fraxinus angustifolia, F. ornus, Carpinus betulus, Q. cerris, Q. petraea, Q. pubescens, Acer pseudoplatanus* L., *A. campestre*, *Ulmus glabra* Huds. and *Ilex aquifolium* L.

MATERIAL AND METHODS

The field researches were carried out from May 2006 to August 2008 (with a number of additional sampling carried out later) using both traditional tools and methods for raising beetles (collection on sight, with an entomological sheet, net), and different kind of traps.

Moreover, we have taken a number of samples of plants attacked by larvae of Cerambycidae, in order to obtain adults of the most elusive species. In addition we have studied material sampled from other research projects, which was kindly made available to us by colleagues.

For each species, we have listed the following in the faunistic list (with a few exceptions):

– published records followed by relevant sources and a full stop;
– unpublished records, ordered alphabetically, with indications of collecting place and altitude (see «Abbreviations»), collecting date of adults, collecting methods (see «Abbreviations»), host plants, if available, and name of collector(s), abbreviated if repeated at least two times in the text (see «Abbreviations»). Data from Monte Rufeno Nature Reserve and Bosco del Sasseto Natural Monument are separated by a full stop. In some cases we have added data coming from other Italian regions (in «Additional records»), when useful to the discussion or in order to facilitate a better understanding of the Italian distribution of each taxa;
– the general distribution in Italy;
– remarks on species of interest for the Italian fauna, or because of taxonomic, biological or ecological features.

The chorological classification of the Cerambycidae of the study area is detailed in Table 1, and always refers to the species sensu lato; we used chorotypes suggested by VIGNA TAGLIANTI et al. (1993, 1999). Their application is based upon the distribution data provided by BENSE (1995), ALTHOFF & DANILEVSKY (1997), and SAMA (2002, 2005a). For further details on the general distribution, biology and ecology of each species we refer to ŠVÁCHA & DANILEVSKY (1987, 1988, 1989), SAMA (1988, 2002, 2005a), BENSE (1995), ŠVÁCHA (2001), and to the bibliography quoted in these works.

Nomenclature and systematic order is taken from SAMA (2005b) and LÖBL & SMETANA (2010), while the botanic nomenclature follows CONTI et al. (2005).

ABBREVIATIONS

COLLECTING PLACES

BSM = Acquapendente (Viterbo), Torre Alfina hamlet, Bosco del Sasseto Natural Monument, 450-500 m; MRR-01 = Acquapendente (Viterbo), Trevinano hamlet, CONECOFOR area, m 665; MRR-02 = Acquapendente (Viterbo), Monte Rufeno Nature Reserve, loc. Barlettara, m 460; MRR-03 = ibidem, loc. Casale Giardino, m 430; MRR-04 = ibidem, loc. Casavecchia, m 630; MRR-05 = ibidem, loc. Cava del Bianchi, m 570; MRR-06 = ibidem, loc. Felceto, m 550; MRR-07 = ibidem, loc. La Farnia, m 240; MRR-08 = ibidem, loc. M. Rufeno, m 730; MRR-09 = ibidem, loc. Macchione, m 600; MRR-10 = ibidem, loc. Macchione, m 600; MRR-11 = ibidem, loc. Marzapalo, m 520; MRR-12 = ibidem, loc. Monacaro, m 560; MRR-13 = ibidem, loc. Monacaro Vecchio, m 580; MRR-14 = ibidem, loc. Monaldesca, m 670; MRR-15 = ibidem, loc. Olivena, m 480; MRR-16 = ibidem, loc. Pian di Mele, m 660; MRR-17 = ibidem, loc. Pianacce, m 260; MRR-18 = ibidem, loc. Poggio Gattuccio, m 480; MRR-19 = ibidem, loc. Porta di Ferro, m 510; MRR-20 = ibidem, loc. Sambucheto, m 470; MRR-21 = ibidem, loc. Sant'Anna, m 320; MRR-22 = ibidem, loc. Tettorosso, m 510; MRR-23 = ibidem, loc. Tigna, m 630; MRR-24 = ibidem, loc. Tirolle, m 530; MRR-25 = ibidem, loc. Vitabbieti, m 560.

COLLECTORS

AB = A.B. Biscaccianti; BF = A.B. Biscaccianti and M. Faggi; FN = M. Faggi and S. Nappini; GC = G. Carpaneto and collaborators; MF = M. Faggi; MZ = M. Zapparoli and collaborators.

SAMPLING METHODS

ac = adult(s) in pupal cell (followed by the host plant); at = specimen(s) collected by air trap; dc = direct collection at sight, with sheet or net (followed by the host plant when identified at least at the genus level); el = ex larvis (followed by the host plant); lt = specimen(s) collected with light trap; lv = larvae (followed by the host plant); mt = specimen(s) collected by Malaise trap; re = rest of adult.

TAXONOMIC ACCOUNT

Prionus coriarius (Linnaeus, 1758)

Records from study area - BSM, 18.vii.2006, lt, FN; ibidem, 22.ii.2008, re, BF. MRR-20, 23.viii.2006, re, FN; MRR-25, 26.vii.2007, re, GC; Acquapendente (Viterbo) m 410, 03.viii.2010, dc, MF.

Distribution in Italy - Almost all regions except Valle d'Aosta, Molise and Sardegna (SAMA, 1988, 2005b).

Table 1– List of longhorn beetles of the Monte Rufeno Nature Reserve and Bosco del Sasseto Natural Monument with their host plants (on square brackets the host plants) and chorotypes.

Chorotypes/Species	Host plants
WIDELY DISTRIBUTED SPECIES	
Olarctic (OLA)	
Rhagium (s.str.)inquisitor inquisitor	Pinus pinaster
Saperda populnea	[Rubus sp.]
Asiatic-European (ASE)	
Phymatodes testaceus	Castanea sativa, Quercus cerris
Sibiric-European (SIE)	
Alosterna tabacicolor tabacicolor	[Populus tremula]
Aromia moschata moschata	[Salix caprea]
Hylotrupes bajulus	[Pinus pinaster]
Monochamus galloprovincialis	Pinus halepensis, P. nigra, P. pinaster
Plagionotus floralis	
Pseudovadonia livida livida	[Daucus sp.]
Saperda scalaris	Prunus avium
Stenurella bifasciata bifasciata	[Cistus]
Stenurella melanura	[Cistus]
Centralasiatic-European-Mediterranean (CEM)	
Arhopalus ferus	Pinus nigra
Opsilia caerulescens	[Verbascum sp.]
Stictoleptura rubra rubra	[Sambucus ebulus]
Turanic-European-Mediterranean (TEM)	
Cerambyx cerdo	Quercus cerris
Stictoleptura cordigera cordigera	[Daucus sp.]
Stictoleptura scutellata scutellata	Acer monspessulanum, [Carpinus betulus]
Turanic-European (TUE)	
Aegosoma scabricornis	Carpinus betulus, Quercus cerris
Agapanthia (s.str.) maculicornis davidi	
Chlorophorus sartor	
Pachytodes erraticus erraticus	[Cistus sp., Daucus sp.]
Stenopterus rufus rufus	[Daucus sp.]
European-Mediterranean (EUM)	
Anastrangalia dubia dubia	[Rosa canina]
Calamobius filum	
Callimus angulatus	Quercus ilex
Deilus fugax	[Cistus sp.]
Mesosa nebulosa	Quercus cerris, Tilia platyphyllos
Plagionotus arcuatus	Quercus cerris
Pyrrhidium sanguineum	Quercus cerris
Saperda punctata	Ulmus minor
Xylotrechus antilope antilope	Quercus cerris
Xylotrechus arvicola	Carpinus betulus
SPECIES WITH EUROPEAN DISTRIBUTION	
European (EUR)	
Anaesthetis testacea	
Anoplodera sexguttata	
Cerambyx scopolii	[Quercus cerris, Rubus sp., Sambucus ebulus]
Cortodera humeralis humeralis	
Dinoptera collaris	[Sambucus ebulus]
Exocentrus adspersus	Carpinus betulus, Quercus ilex
Exocentrus lusitanus	Tilia platyphyllos
Grammoptera ruficornis ruficornis	[Daucus sp.]
Leiopus nebulosus	Carpinus betulus
Mesosa curculionoides	Prunus avium, Tilia platyphyllos
Paracorymbia fulva	[Sambucus ebulus]
Prionus coriarius	
Purpuricenus kaehleri kaehleri	[Spartium junceum]
Rhagium (Megarhagium) sycophanta	[Castanea sativa]
Rhamnusium bicolor (s.l.)	Aesculus hippocastanus
Ropalopus femoratus	Quercus cerris
Rosalia alpina	
Rutpela maculata maculata	Quercus cerris, [Sambucus ebulus, Rosa sp.]
Saperda octopunctata	Tilia platyphyllos
Stenurella nigra	[Ligustrum vulgare, Rosa sp.]
S-European (SEU)	
Callimus abdominalis	Acer monspessulanum, Quercus ilex, [Cistus sp., Rosa sp.]
Cerambyx welensii	
Clytus rhamni	[Rosa canina]
Herophila tristis tristis	Hedera helix
Isotomus barbarae	Carpinus betulus, Ostrya carpinifolia
Morimus asper	Prunus avium, Quercus cerris, Robinia pseudacacia
Necydalis ulmi	[Ostrya carpinifolia]
Parmena unifasciata	Carpinus betulus, [Quercus cerris]
Pseudosphegesthes cinerea	Quercus cerris
SPECIES WITH MEDITERRANEAN DISTRIBUTION	
Mediterranean (MED)	
Agapanthia (Epoptes) sicula malmerendii	Foeniculum vulgare
Arhopalus syriacus	Pinus nigra
Brachypteroma ottomanum	[Crataegus monogyna]
Dorcadion (Pedestredorcadion) etruscum	
Gracilia minuta	[Juglans regia]
Stenopterus ater	[Leucanthemum sp.]
Trichoferus holosericeus	Prunus armeniaca, Quercus ilex
Trichoferus sparti	Spartium junceum
Vesperus luridus	
E-Mediterranean (EME)	
Stenhomalus (Obriopsis) bicolor	[Rubus sp.]
SPECIES NOT INCLUDED IN A CHOROTYPE (nc)	
Agapanthia (s.str.) cardui	[Cirsium sp.]
Agapanthia (s.str.) violacea	[Avena fatua]
Asemum tenuicorne	Pinus nigra

Aegosoma scabricorne (Scopoli, 1763)

Records from study area - BSM, 18.vii.2006, lt, FN; ibidem, 7.vi.2006, lv *Carpinus betulus*, FN; ibidem, 22.ii.2008, re, BF. MRR-25, 16.vi.2006, lv *Quercus cerris*, FN; ibidem, 26.vii.2007, re, GC; Acquapendente (Viterbo) m 410, 03.viii.2010, dc, MF.

Distribution in Italy - All regions (SAMA, 1988, 2005b).

Vesperus luridus (Rossi, 1794)

Records from study area - Acquapendente (Viterbo), m 410, 22.viii.2007, dc, FN.

Distribution in Italy - Liguria, Emilia-Romagna, central and southern regions (except Molise), Sicilia and Sardegna (SAMA, 1988, 2005b).

Rhagium (*s.str.*) ***inquisitor inquisitor*** (Linnaeus, 1758)

Records from study area - MRR-07, 11.iii.2007, ac *Pinus pinaster*, FN; MRR-10, 4.v.2006, dc *P. pinaster*, FN.

Distribution in Italy - In addition to the above mentioned record, the species occurs in Piemonte, Valle d'Aosta, Liguria, Lombardia, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Toscana, Abruzzo, Molise, Basilicata, Calabria and Sicilia (SAMA, 1988, 2005b).

Remarks - This species usually develops on conifers (Pinaceae) but it has also been recorded on deciduous trees (SAMA, 2002). The above mentioned records confirm the expansion of *R. inquisitor* in artificial pine wood, as already suggested by SAMA (1988). Moreover, this species is a new finding for the Lazio region.

Rhagium (Megarhagium) sycophanta (Schrank, 1781)

Records from study area - MRR-14, 13.v.2010, dc *Castanea sativa*, MF.

Additional records - Toscana: Monticello Amiata (Siena), 21.V.2004, dc, S. Nappini and M. Bracalini. Campania: Mts Alburni, Corleto Monforte (Salerno), Serra La Ciavola S side, m 1298, 18.vi.2008, dc *Fagus sylvatica*, AB.

Distribution in Italy - In addition to the above mentioned records, the species occurs in Piemonte, Lombardia, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Umbria, Marche, Lazio, Abruzzo, Basilicata, Calabria and Sicilia (SAMA, 1988, 2005b).

Remarks - Rare and strongly localized species in the Apennine, new to Toscana and Campania regions.

Rhamnusium bicolor *(s. l.)* (Schrank, 1781)

Records from study area - Acquapendente (Viterbo), m 410, 27.ii.2010, re *Aesculus hippocastanus* L., MF; ibidem, 23.vi.2010, lv *Aesculus hippocastanus,* FN.

Additional records - Umbria: Perugia, loc. Pila (PG), 21.vi.2010, re *Aesculus hippocastanus*, FN.

Distribution in Italy - Almost all regions except Molise, Puglia, Calabria and Sardegna, while the record from Basilicata (GOBBI, 1994) requires confirmation (cfr. SAMA, 1988, 1999, 2005b).

Remarks - Endangered species living in old decayed trees, often in association with other saproxylic beetles with a particular ecological importance (cfr. BISCACCIANTI, 2007). *Rhamnusium bicolor* should be treated as a significant element in terms of habitats conservation. The rests of adults found in the hollow trunk of host plant do not allow to understand if these populations belong to *Rhamnusium bicolor bicolor* or to the subspecies *R. bicolor demaggii* Tippmann, 1956. New record from Umbria region.

Dinoptera collaris (Linnaeus, 1758)

Records from study area - RMR-22, 23.vi.2007, dc *Sambucus ebulus* L., FN.

Distribution in Italy - In addition to the above mentioned record, the species occurs in all the other regions except Sardegna (SAMA, 1988, 2005b). However, *D. collaris* has been recently deleted from the fauna of Sicilia (RAPUZZI & SAMA, 2006), because the only record on the island (RAGUSA, 1924) has never been confirmed.

Cortodera humeralis humeralis (Schaller, 1783)

Records from study area - MRR-01, 10.iii.2006, mt, MZ.

Additional records - Umbria: Foligno (Perugia), loc. Cifo, m 700, 15.V.1999, dc *Crataegus monogyna* Jacq. Nocera Umbra (Perugia), M. Pennino W side, m 1300, 3.vi.1999, dc *Fagus sylvatica*, A. B. Biscaccianti and R. Casalini.

Distribution in Italy - In addition to the above mentioned records, *C. humeralis* occurs in Piemonte, Liguria, Lombardia, Trentino-Alto Adige, Emilia-Romagna, Toscana, Marche, Lazio, Abruzzo, Molise, Basilicata and Calabria (SAMA, 1988, 2005b).

Remarks - Uncommon species in Italy, new to Umbria region.

Grammoptera ruficornis ruficornis (Fabricius, 1781)

Records from study area - MRR-06, 16.vi.2006, dc *Daucus* sp., FN.

Distribution in Italy - All regions except Sardegna (SAMA, 1988, 2005b).

Alosterna tabacicolor tabacicolor (De Geer, 1775)

Records from study area - «Monte Rufeno» (FATTORINI, 1989). BSM, 22.v.2007, dc, FN. MRR-17, 30.iv.2007, dc *Populus tremula* L., FN.

Distribution in Italy - All regions except Abruzzo, Molise, Calabria and Sardegna (SAMA, 1988, 2005b; RAPUZZI & SAMA, 2006).

Pseudovadonia livida livida (Fabricius, 1777)

Records from study area - «Monte Rufeno» (FATTORINI, 1989, sub *Pseudoallosterna* (*Pseudovadonia*) *livida*). RMR-12, 23.vi.2007, dc *Daucus* sp., FN.

Distribution in Italy - All regions except Sardegna (SAMA, 1988, 2005b).

Pachytodes erraticus erraticus (Dalman, 1817)

Records from study area - «Monte Rufeno» (FATTORINI, 1989). RMR-13, 23.vi.2007, dc *Cistus* sp., *Daucus* sp., FN.

Distribution in Italy - Almost all regions except Valle d'Aosta, Liguria, Lombardia, Molise and Sardegna (SAMA, 1988, 2005b; STROCCHI, 1995).

Anoplodera sexguttata (Fabricius, 1775)

Records from study area - «Podere Monacaro» (FATTORINI, 1989).

Distribution in Italy - Piemonte, Lombardia, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Toscana, Lazio, Basilicata (SAMA, 1988; PETRIOLI, 2001; SAMA, 2005b).

Remarks - Very localized and sporadic species in Apennine. No further records from study area after FATTORINI (1989).

Anastrangalia dubia dubia (Scopoli, 1763)

Records from study area - MRR-14, 20.v.2009, dc *Rosa canina* L., MF.

Distribution in Italy - Aside from quoted record, *A. dubia* occurs in northern regions and in some localities in Emilia-Romagna, Toscana, Abruzzo, Molise, Basilicata and Calabria (SAMA, 1988, 2005b).

Remarks - Strongly localized in Apennine, mainly linked to autochthonous pinewoods and fir-woods. It is also capable of colonizing artificial coniferous woods. Such a case, for example, has been recorded on the Majella massif (Abruzzo, central Italy) (BISCACCIANTI, unpublished data), and proven by the record mentioned in this paper, which is also the first one from Lazio region.

Paracorymbia fulva (De Geer, 1775)

Records from study area - «Monte Rufeno» (FATTORINI, 1989, sub *Corymbia fulva*). MRR-11, 27.vi.2007, dc *Sambucus ebulus*, FN; MRR-20, 23vi.2007, dc *S. ebulus*, FN; MRR-22, 27.vi.2007, dc *S. ebulus*, FN.

Distribution in Italy - The species occurs in all regions except Sardegna (SAMA, 1988, 2005b).

Stictoleptura cordigera cordigera (Füesslins, 1775)

Records from study area - «Podere Monacaro», «Podere Rufeno» (FATTORINI, 1989, sub *Corymbia cordigera*). MRR-18, 27.vi.2007, dc *Daucus* sp., FN; MRR-24, 9.vii.2007, dc *Daucus* sp., FN.

Distribution in Italy - The species occurs in all Italy (SAMA, 1988, 2005b).

Stictoleptura rubra rubra (Linnaeus, 1758)

Records from study area - MRR-20, 23.vi.2007, dc *Sambucus ebulus*, FN.

Distribution in Italy - Northern and central regions up to Marche and Lazio (SAMA, 1988, 2005b), Basilicata, Calabria (ANGELINI, 1986, sub *Leptura rubra*) and Sardegna (BISCACCIANTI, 2002, sub *Corymbia rubra*), (these last three regional records have not been confirmed). This species is quoted also for Abruzzo region (PORTA, 1934, sub *L. rubra*), but also this record has not been confirmed.

Stictoleptura scutellata scutellata (Fabricius, 1781)

Records from study area - MRR-23, 8.v.2008, el *Acer monspessulanum*, FN; MRR-06, 12.vii.2010, dc, *Carpinus betulus*, MF.

Distribution in Italy - Piemonte, Lombardia, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Toscana, Umbria, Marche, Lazio, Abruzzo, Puglia, Campania, Basilicata, Calabria and Sardegna (SAMA, 1988, 2005b).

Remarks - Uncommon and localized species in Italy, occurring mainly in mesophilous forests of the mountain belt and in well preserved plain forests.

Ruptela maculata maculata (Poda, 1761)

Records from study area - «Podere Monacaro», «Podere Rufeno» (FATTORINI, 1989, sub *Leptura* (*Rutpela*) *maculata*). MRR-01, 28.vi.2006, mt, MZ; MRR-08, 28.v.2006, el *Quercus cerris*, FN; MRR-13, 27.v.2007, dc *Rosa* sp., FN; MRR-15, 18.vi.2007, dc *Sambucus ebulus*, FN.

Distribution in Italy - The species sensu lato is known from all regions (SAMA, 1988, 2005b).

Stenurella bifasciata bifasciata (Müller, 1776)

Records from study area - «Podere Monacaro» (FATTORINI, 1989, sub *Leptura* (*Stenurella*) *bifasciata*). MRR-13, 29.v.2007, dc *Cistus* sp., FN; MRR-18, 27.v.2007, dc *Cistus* sp., FN.

Distribution in Italy - All regions (SAMA, 1988, 2005b; VITALI, 1999).

Stenurella melanura (Linnaeus, 1758)

Records from study area - «Podere Monacaro» (FATTORINI, 1989, sub *Leptura* (*Stenurella*) *melanura*). MRR-01, 28.vi.2006, mt, MZ; MRR-13, 29.v.2007, dc *Cistus* sp., FN; MRR-18, 27.v.2007, dc *Cistus* sp., FN; MRR-24, 27.v.2007, dc *Cistus* sp., FN.

Distribution in Italy - *S. melanura* occurs in northern and central regions up to Lazio and Abruzzo, as well as in Basilicata and Calabria (SAMA, 1988, 2005b).

Stenurella nigra (Linnaeus, 1758)

Records from study area - "Acquapendente, M. Rufeno", 07.vi.1963, leg. M. Cassola [G. Sama coll.]. «Podere Monacaro» (FATTORINI, 1989, sub *Leptura* (*Stenurella*) *nigra*). MRR-13, 29.v.2007, dc *Ligustrum vulgare* L., *Rosa* sp., FN; MRR-18, 27.v.2007, dc *L. vulgare*, *Rosa* sp., FN; MRR-23, 3.vi.2006, dc *L. vulgare*, *Rosa* sp., FN.

Distribution in Italy - Probably the species occurs in all regions except Sicilia and Sardegna (SAMA, 1988, 2005b).

Necydalis ulmi (Chevrolat, 1838)

Records from study area - BSM, 2.vii.2008, dc *Ostrya carpinifolia*, MF.

Distribution in Italy - Piemonte, Toscana, Umbria, Lazio, Abruzzo, Campania, Basilicata (SAMA, 1988, 2005b).

Remarks - Very sporadic and localized species, living in well preserved termophilous forests with senescent and weakened trees. *Necydalis ulmi* is highly significant in terms of habitats conservation.

Asemum tenuicorne Kraatz, 1879

Records from study area - MRR-08, 3.v.2006, el *Pinus nigra*, FN.

Distribution in Italy - Toscana, Umbria, Lazio, Abruzzo, Campania and Sicilia (SAMA, 1988, 2005b; RAPUZZI & SAMA, 2006).

Remarks - Oligophagous species, linked to Pinaceae, rare and very localized in Italy. It seems to be in expansion

in artificial pinewood (GOBBI, 2002), as Mt Rufeno's population proves.

Arhopalus ferus (Mulsant, 1839)

Records from study area - MRR-22, 22.vii.2006, el *Pinus nigra*, FN.
Distribution in Italy - All regions excluding Molise (SAMA, 1988; 2005b).

Arhopalus syriacus (Reitter, 1895)

Records from study area - MRR-22, 27.vii.2006, el *Pinus nigra*, FN.
Distribution in Italy - Liguria, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Toscana, Marche, Lazio, Campania, Puglia, Calabria, Sicilia and Sardegna (SAMA, 1988, 2005b).

Trichoferus holosericeus (Rossi, 1790)

Records from study area - Acquapendente (Viterbo), m 410, 30.viii.2008, dc *Prunus armeniaca* L., FN. MBS, 22.ii.2008, lv *Quercus ilex*, BF; ibidem, 10-20.viii.2008, el *Q. ilex*, BF.1988,
Distribution in Italy - All regions except Valle d'Aosta (SAMA, 1988, 2005b).

Trichoferus spartii (Müller, 1948)

Records from study area - BSM, 22.ii.2008, lv *Spartium junceum* L., BF; ibidem, 15-25.viii.2008, el *S. junceum*, BF.
Distribution in Italy - Friuli-Venezia Giulia, Emilia-Romagna, Toscana, Marche, Lazio, Abruzzo, Puglia, Basilicata and Sicilia (Sama, 1988, 2005b).

Gracilia minuta (Fabricius, 1781)

Records from study area - MRR-03, 13.vi.2010, dc *Juglans regia* L., MF.
Distribution in Italy - Almost all regions except Valle d'Aosta, Umbria and Molise (SAMA, 1988, 2005b).

Brachypteroma ottomanum (Heyden, 1863)

Records from study area - MRR-06, 7.v.2006, dc *Crataegus monogyna*, FN.
Distribution in Italy - Almost all regions except Valle d'Aosta, Liguria, Friuli-Venezia Giulia and Sardegna (TASSI, 1966; SAMA, 1988, 2005b).

Stenopterus ater (Linnaeus, 1767)

Records from study area - «Podere Monacaro» (FATTORINI, 1989). MRR-21, 30.v.2007, dc *Leucanthemum* sp., FN.
Distribution in Italy - All regions (SAMA, 1988, 2005b).

Stenopterus rufus rufus (Linnaeus, 1767)

Records from study area - «Podere Monacaro» (FATTORINI, 1989). MRR-18, 7.vi.2007, dc *Daucus* sp., FN; MRR-24, 13.vi.2007, dc *Daucus* sp., FN.
Distribution in Italy - *S. rufus* occurs in all Italy (SAMA, 1988, 2005b).

Callimus abdominalis (Olivier, 1795)

Records from study area - BSM, 22.ii.2008, re *Quercus ilex*, BF; ibidem, 6.iv.2008, el *Q. ilex*, BF. MRR-06, 11.v.2007, dc *Rosa* sp., *Cistus* sp., FN; MRR-12, 11.v.2007, dc *Rosa* sp., *Cistus* sp., FN; MRR-23, 22.iv.2008, el *Acer monspessulanum*, FN.
Distribution in Italy - All regions south of Emilia-Romagna, Sicilia and Sardegna. (SAMA, 1988, 2005b; BISCACCIANTI, 2007).

Callimus angulatus (Schrank, 1789)

Records from study area - BSM, 22.ii.2008, ac *Quercus ilex*, BF; ibidem, 6.iv.2008, el *Q. ilex*, BF.
Distribution in Italy - Piemonte, Trentino-Alto Adige, Friuli-Venezia Giulia, Emilia-Romagna, Toscana, Umbria, Marche, Lazio, Campania, Basilicata, Calabria and Sicilia (SAMA, 1998, 2005b).

Stenhomalus (Obriopsis) bicolor (Kraatz, 1862)

Records from study area - BSM, 22.v.2007, dc *Rubus* sp., FN.
Distribution in Italy - Friuli-Venezia Giulia, Toscana, Umbria, Marche, Lazio, Abruzzo, Campania, Puglia, Basilicata and Sicilia (SAMA, 1988, 2005b; BISCACCIANTI, 2004).
Remarks - Rare and very localized species in Italy, where it reaches the western border of its distributional range (cfr. BENSE, 1995, sub *Obriopsis bicolor*; SAMA, 2002).

Deilus fugax (Olivier, 1790)

Records from study area - MRR-12, 11.v.2007, dc *Cistus* sp., FN.
Distribution in Italy - All regions except Valle d'Aosta (SAMA, 1988, 2005b; VITALI, 1999).

Cerambyx cerdo Linnaeus, 1758

Records from study area - BSM, 19.vi.2007, dc *Quercus cerris*, FN. MRR-14, 22.vi.2007, re, FN.
Distribution in Italy - All regions except Valle d'Aosta (SAMA, 1988; 2005b).

Cerambyx scopolii Füsslins, 1775

Records from study area - BSM 9.vi.2006, dc *Quercus cerris*, FN. MRR-08, 29.vi.2007, dc *Rubus* sp., FN; MRR-20, 8.vii.2006, dc *Sambucus ebulus*, FN.
Distribution in Italy - All regions except Molise (SAMA, 1988, 2005b).

Cerambyx welensii (Küster, 1845)

Records from study area - BSM, 18.vii.2006, lt, FN; ibidem, 15-20.vii.2008, at, MF; ibidem, 2.viii.2008, at, MF.
Distribution in Italy - Almost all regions; it seems to be absent in Valle d'Aosta, Calabria and Sardegna (SAMA, 1988, 2005b).

Purpuricenus kaehleri kaehleri (Linnaeus, 1758)

Records from study area - MRR-04, 20.v.2006, dc *Spartium junceum*, FN.
Distribution in Italy - Almost all regions except Valle d'Aosta and Sardegna (SAMA, 1988, 2005b).

Aromia moschata moschata (Linnaeus, 1758)

Records from study area - MRR-14, 18.vii.2010, dc *Salix caprea* L., leg. M. Faggi and S. Di Francesco.
Distribution in Italy - Almost all regions except Molise, Puglia, Calabria and Sardegna (SAMA, 1988; SPARACIO, 1992).

Rosalia alpina (Linnaeus, 1758)

Records from study area - Acquapendente (Viterbo), Torre Alfina hamlet, m 500, summer 1970, R. ANTONINI pers. comm.
Distribution in Italy - All regions except Sardegna (Sama, 1988; BISCACCIANTI, 2004).
Remarks – A photograph of this old record has been published by the author himself (ANTONINI, 2002).

Hylotrupes bajulus (Linnaeus, 1758)

Records from study area - MRR-11, 30.vi.2010, dc *Pinus pinaster*, MF.
Distribution in Italy - All regions except Molise (SAMA, 1988, 2005b).

Ropalopus femoratus (Linnaeus, 1758)

Records from study area - MRR-08, 13.iv.2007, el *Quercus cerris*, FN.
Distribution in Italy - Northern regions (except Valle d'Aosta), Emilia-Romagna, Toscana, Marche, Lazio, Abruzzo and Campania (SAMA, 1988, 2005b; BISCACCIANTI, 2007).

Pyrrhidium sanguineum (Linnaeus, 1758)

Records from study area - MRR-24, 8.iv.2006, el *Quercus cerris*, FN.
Distribution in Italy - Northern regions except Valle d'Aosta, central regions up to Abruzzo and Basilicata on adriatic and tyrrhenian side respectively, Sardegna (SAMA, 1988; PETRUZZIELLO, 1995; SAMA, 2005b).

Phymatodes testaceus (Linnaeus, 1758)

Records from the study area - MRR-01, 28.vi.2006, mt, MZ; MRR-16, 25.iv.2008, el *Castanea sativa*, FN; MRR-25, 13.iv.2006, el *Quercus cerris*, FN.
Distribution in Italy - All regions (SAMA, 1988, 2005b).

Xylotrechus antilope antilope (Schönherr, 1817)

Records from the study area - MRR-08, 13.v.2006, el *Quercus cerris*, FN.
Additional records - Abruzzo: Majella massif, Campo di Giove (L'Aquila), Valle di Cansano, Colle Cisternola-Colle Rotondo, m 1000, at, 28.vi.2002, AB.
Distribution in Italy - In addition to the above mentioned records, the species is known from northern regions (except Valle d'Aosta), Emilia-Romagna, Toscana, Marche, Lazio and Sicilia (SAMA, 1988, 2005b).-
Remarks - Uncommon and localized species in Italy, new to Abruzzo region.

Xylotrechus arvicola (Olivier, 1795)

Records from the study area - BSM, 26.v.2006, el *Carpinus betulus*, FN.
Distribution in Italy - Almost all regions except Valle d'Aosta and Lombardia (SAMA, 1988, 2005b; BISCACCIANTI, 2004, 2007).

Clytus rhamni Germar, 1817

Records from the study area - MRR-10, 28.v.2007, dc *Rosa canina*, FN.
Distribution in Italy - the species occurs in all Italy (SAMA, 1988, 2005b).

Pseudosphegesthes cinerea
(Laporte de Castelnau & Gory, 1836)

Records from the study area - MRR-06, 23.vii.2007, el *Quercus cerris*, FN.
Distribution in Italy - Valle d'Aosta, Trentino-Alto Adige, Veneto, Emilia-Romagna, Toscana, Lazio, Abruzzo, Campania, Basilicata, Sicilia and Sardegna (SAMA, 1988; CONTARINI, 1997; SAMA, 2005b).

Plagionotus arcuatus (Linnaeus, 1758)

Records from the study area - MRR-24, 8.vii.2007, el *Quercus cerris*, FN.
Distribution in Italy - All regions except Valle d'Aosta (SAMA, 1988, 2005b).

Plagionotus floralis (Pallas, 1773)

Records from the study area - «Monte Rufeno» (FATTORINI, 1989). BSM, 22.vi.2005, dc, FN. MRR-15, 4.vii.2008, dc, FN.
Distribution in Italy - Almost all regions except Valle d'Aosta, Sicilia and Sardegna (SAMA, 1988, 2005b; BISCACCIANTI, 2004).

Chlorophorus sartor (Müller, 1766)

Records from the study area - «Podere Monacaro» (FATTORINI, 1989). MRR-05, 23.vi.2007, dc, FN.
Distribution in Italy - the species occurs in all Italy (SAMA, 1988, 2005b).

Isotomus barbarae Sama, 1977

Records from the study area - «Acquapendente, loc. Torre Alfina» (NAPPINI & FAGGI, 2008). BSM, 11.vi.2009, el *Carpinus betulus*, FN.
Distribution in Italy - Emilia-Romagna, Toscana, Marche, Lazio, Campania and Basilicata (SAMA, 1988, 2005b; GIGLI, 2008; NAPPINI & FAGGI, 2008).
Remarks - Endemic species of Apennine, rare and localized but perhaps occurring in all the Apennine ridge.

Dorcadion* (*Pedestredorcadion*) *etruscum (Rossi, 1790)

Records from the study area - Acquapendente (Viterbo), m 410, 18.vi.2007, dc, FN; MRR-03, 13.vi.2010, dc, MF.
Distribution in Italy - All regions except Valle d'Aosta and Sardegna (SAMA, 1988, 2005b).

Parmena unifasciata (Rossi, 1790)

Records from the study area - BSM, 27.iv.2007, el *Carpinus betulus*, FN; ibidem, 22.ii.2008, dc *Quercus cerris*, BF.
Distribution in Italy - The specie occurs in continental Italy (CHEMINI, 1976; SAMA, 1984, 1988, 2005b; STROCCHI, 1995).

Mesosa curculionoides (Linnaeus, 1760)

Records from the study area - Acquapendente (Viterbo), m 410, 2.vi.2007, dc *Prunus avium* L., FN. BSM 23.ii.2008, el *Tilia platyphyllos*, BF.
Distribution in Italy - Almost all regions except Valle d'Aosta, Molise and Sardegna (SAMA, 1988, 2005b; BISCACCIANTI, 2007).

Mesosa nebulosa (Fabricius, 1781)

Records from the study area - BSM, 18.v.2006, el *Quercus cerris*, FN; ibidem, 19.iii.2008, el *Tilia platyphyllos*, BF. MRR-25, 6.v.2006, el *Q. cerris*, FN.
Distribution in Italy - The species occurs in all Italy (SAMA, 1988).

Herophila tristis tristis (Linnaeus, 1767)

Records from the study area - BSM, 18.vii.2006, el *Hedera helix* L., FN.
Distribution in Italy - Almost all regions except Valle d'Aosta and Molise (SAMA, 1988, 2005b).

Morimus asper (Sulzer, 1776)

Records from the study area - BSM, 13.vii.2006, dc *Quercus cerris*, *Prunus avium*, FN. MRR-03, 9.vii.2006, dc *Q. cerris*, FN; MRR-23, 6.vi.2007, dc *Q. cerris*, *Robinia pseudacacia* L., FN.
Distribution in Italy - The species occurs in all Italy (SAMA, 1988, 2005b).

Monochamus galloprovincialis (Olivier, 1795)

Records from the study area - MRR-08, 22.v.2007, el *Pinus nigra*, FN; ibidem, 30.vii.2010, dc *P. nigra*, MF; MRR-10, m 600, 20.v.2007, dc *P. pinaster*, FN; MRR-23, 11.v.2006, dc *P. halepensis*, FN; MRR-25, 26.vii.2007, dc, GC.
Distribution in Italy - Northern regions, Emilia-Romagna, Toscana, Umbria, Marche, Campania, Puglia and Sicilia (SAMA, 1998; PETRUZZIELLO, 1995; SAMA, 2005b).
Remarks - *Monochamus galloprovincialis* is here quoted for the first time to Lazio region.

Anaesthetis testacea (Fabricius, 1781)

Records from the study area - MRR-01, 7.vi.2006, mt, MZ.
Distribution in Italy - Almost all regions except Molise and Sardegna (SAMA, 1988, 2005b).

Leiopus nebulosus (Linnaeus, 1758)

Records from the study area - BSM, 29.v.2007, el *Carpinus betulus*, FN; ibidem, 7.vi.2008, el *C. betulus*, BF.
Distribution in Italy - Almost all regions (SAMA, 1988, 2005b; BISCACCIANTI, 2007).

Exocentrus adspersus Mulsant, 1846

Records from the study area - MBS, 16.v.2007, el *Carpinus betulus*, FN; ibidem, 7.vi.2008, el *Quercus ilex*, BF.
Distribution in Italy - Almost all regions except Calabria and Sardegna (SAMA, 1988, 2005b; BISCACCIANTI, 2004).

Exocentrus lusitanus (Linnaeus, 1767)

Records from the study area - BSM, 7.vi.2008, el *Tilia platyphyllos*, BF.
Distribution in Italy - Piemonte, Lombardia, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Abruzzo and Basilicata (SAMA, 1988, 2005b; BISCACCIANTI, 2005).
Remarks - Rare and strongly localized in peninsular Italy, its presence in Apennine is explainable as an ice-age relict of the Quaternary period. The above mentioned record is the first of this significant species for Lazio region.

Saperda octopunctata (Scopoli, 1772)

Records from the study area – "Acquapendente, Torre Alfina hamlet» (FAGGI & NAPPINI, 2008). MBS, 18.v-

19.vi.2007, el *Tilia platyphyllos*, FN; ibidem, 14.v-7.vi.2008, el *T. platyphyllos*, BF.

Distribution in Italy - Piemonte, Lombardia, Trentino-Alto Adige, Friuli-Venezia Giulia, Lazio and Calabria (SAMA, 1988, 2005b; FAGGI & NAPPINI, 2008).

Remarks - *Saperda octopunctata* (fig. I) is a stenophagous species linked to *Tilia* spp., very rare in Italy, and reported from scattered localities.

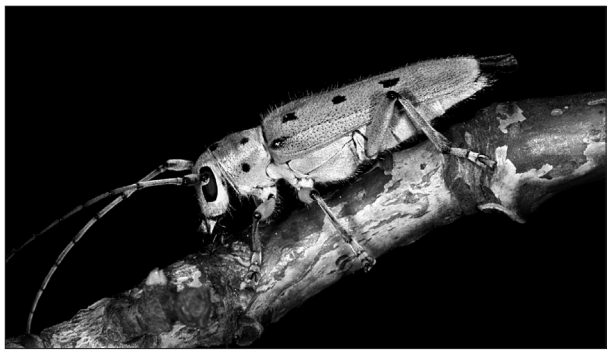

Figure I – Adult of *Saperda octopuntata* on *Tilia platyphyllos.*

Saperda populnea (Linnaeus, 1758)

Records from the study area - MRR-07, 22.v.2007, dc *Rubus* sp., FN.

Distribution in Italy - All regions (SAMA, 1988, 2005b)

Saperda punctata (Linnaeus, 1767)

Records from the study area - MRR-06, 6.vi.2007, el *Ulmus minor*, FN.

Distribution in Italy - Probabily the species occurs in all regions, but sporadic and localized (SAMA, 1988, 2005b).

Remarks - Uncommon and quite localized in Italy.

Saperda scalaris (Linnaeus, 1758)

Records from the study area - BSM, 4.vii.2007, el *Prunus avium*, FN. MRR-06, 23.vi.2007, el *P. avium*, FN.

Distribution in Italy - Almost all regions except Molise, Puglia and Sardegna (SAMA, 1988, 2005b; STROCCHI, 1995).

Agapanthia (Epoptes) sicula malmerendii Sama, 1981

Records from the study area - MRR-02, 7.vii.2007, dc *Foeniculum vulgare* Mill., FN; MRR-19, 11.vii.2007, dc *F. vulgare*, FN.

Distribution in Italy - Apennine regions, from Emilia-Romagna to Calabria, Sardegna (SAMA, 2005b).

Agapanthia *(s.str.)* ***maculicornis davidi*** Sláma, 1981

Records from the study area - Acquapendente (Viterbo), loc. Salara, m 450, 12.v.2008, dc, MF.

Additional records - Abruzzo: Majella massif, Fara San Martino (Chieti), Colle Bandiera, m 600-700, 14.v.2002, dc, A. B. Biscaccianti and M. Giubbi. Mts Pizzi (Majella), Serra Montitto W side, m 1100-1250, 6-7.vi.2003, dc, AB.

Distribution in Italy - Toscana, Lazio, Molise, Basilicata, Puglia, Calabria and Sicilia (SAMA, 1988, 2005b).

Remarks - Very rare species, strongly localized in central Apennine. Moreover, the record from Abruzzo is the first for this region.

Agapanthia *(s.str.)* ***cardui*** (Linnaeus, 1767) *sensu* SAMA (2002, 2008)

Records from the study area - MRR-10, 23.vi.2006, dc *Cirsium* sp., FN.

Distribution in Italy - All regions except Valle d'Aosta (SAMA, 1988, 2005b).

Agapanthia *(s.str.)* ***violacea*** (Fabricius, 1775)

Records from the study area - Acquapendente (Viterbo), loc. Salara, m 450, 16.v.2009, dc *Avena fatua* L., FN.

Distribution in Italy - All Italy except north-eastern regions and Sardegna (SAMA, 2008, 2005b).

Calamobius filum (Rossi, 1790)

Records from the study area - MRR-06, 12.v.2009, dc, FN.

Distribution in Italy - All regions exclept Valle d'Aosta (SAMA, 1988, 2005b).

Opsilia coerulescens (Scopoli, 1763)

Records from the study area - MRR-22, 24.v.2009, dc *Verbascum* sp., FN.

Distribution in Italy - All regions (SAMA, 1988, 2005b).

RESULTS AND DISCUSSION

FAUNISTIC AND ECOLOGICAL CONSIDERATIONS

The species hitherto recorded in the study area are 75, and account for about 27% of the Italian fauna and 46% of that of Lazio region (SAMA, 2005b). Beforehand, only 14 species for Monte Rufeno Nature Reserve had been recorded (FATTORINI, 1989), while the neighbouring Bosco del Sasseto, one of the most important old-growth forest relicts of Lazio region, had not been investigated at all. Among the findings of FATTORINI (1989), just *Anoplodera sexguttata* has not been found during the samplings made for this study, probably due to its rarity in peninsular Italy. Also *Rosalia alpina*, collected fourty years ago in the hamlet of Torre Alfina, has not been confirmed.

The longhorn beetles' fauna of the study area includes several elements of high significance under ecological or biogeographic points of view. Among the former, at least six species should be highlighted: *Rhamnusium bicolor* and *Necydalis ulmi*, both linked to hollows of old and senescent trees (cfr. SCHMIDT, 1987; REJZEK & VLÁSAK, 2000; SAMA, 2002), *Cortodera humeralis humeralis*, montane species reaching in the Reserve the lower altitude hitherto recorded in the central Apennine (sensu BOLOGNA, 1994), *Rhagium* (*Megarhagium*) *sycophanta* and *Stictoleptura scutellata scutellata*, colonizing dead wood of snag and stumps, or marcescent parts of old living trees

occurring in old-growth broad-leaved forests, *Pseudosphegesthes cinerea*, a stenotopic termophilous species, living on the canopy of trees (CONTARINI, 1997). In terms of biogeography, particularly important is the presence in the territory of *Asemum tenuicorne*, linked to Pinaceae, *Stenhomalus* (*Obriopsis*) *bicolor*, polyphagous on decidous trees, *Agapanthia* (s.str.) *maculicornis davidi*, polyphagous on herbaceous plants. All these species are strongly localized in Italy. Highly significant for central Italian fauna is also the occurrence of *Isotomus barbarae*, endemic of Apennine at average altitudes, western vicariant of *I. speciosus* (Schneider, 1787), *Exocentrus lusitanus* and *Saperda octopunctata*, two rare oligophagous species developing on *Tilia* spp., both strongly localized in the Apennine.

Four species are new findings for Lazio region: *Rhagium* (s.str.) *inquisitor inquisitor*, *Anastrangalia dubia dubia*, *Monochamus galloprovincialis*, *Exocentrus lusitanus*); other two species (*Isotomus barbarae* and *Saperda octopunctata*) have ben recently quoted for Lazio (FAGGI & NAPPINI, 2008; NAPPINI & FAGGI, 2008) upon material reported in this paper.

The results obtained so far cannot be considered complete, despite the survey was conducted for over two years with many sampling techniques. In fact the apparent lack of some species is not completely justified under ecological or biogeographic point of view. Additional surveys in well preserved grasslands, such as flood plains, could definitely increase the number of phytophagous longhorn beetles, chiefly those of the tribe Phytoeciini, hitherto represented only by *Opsilia coerulescens*; also *Agapanthia (Epoptes) villosoviridescens* (De Geer, 1775) (Agapanthiini) could be present in pastures and in the same flood plains. Riparian woods, with *Salix* spp., *Populus* spp., *Ulmus minor*, *Alnus glutinosa*, *Fraxinus angustifolia* and, rarely, *Quercus robur*, are in some cases well preserved, but they were not properly investigated; they could host at least *Lamia textor* (Linnaeus, 1758), *Aegomorphus clavipes* (Schrank, 1781) and *Oberea oculata* (Linnaeus, 1758). Termophilous oak wood, the groves of Turkey oaks and their shrubs could host at least *Poecilium alni alni* (Linnaeus, 1767), *Chlorophorus glabromaculatus* (Goeze, 1777), *Anaglyptus gibbosus* (Fabricius, 1787), *Niphona picticornis* (Mulsant, 1839) and *Pogonocherus hispidus* (Linnaeus, 1758), as well as *Deroplia troberti troberti* (Mulsant, 1843), much more sporadic and localized, but known of the nearby territory of Selva del Lamone (BISCACCIANTI, unpublished data). We can therefore argue that the species hitherto recorded account for about 90% of those potentially present.

CHOROLOGICAL REMARKS

Main chorological categories applied to the Cerambycidae of the study area have been divided into five groups with a broad zoogeographic significance (cfr. DE FELICI & VIGNA TAGLIANTI, 1994: 79; BISCACCIANTI, 2007: 270); these are the follow (in square brackets the chorotypes not represented in the study area):

– GME, including species living in the Mediterranean area, arranged in the chorotypes MED, [WME] and EME;
– GEU, including species living in Europe, arranged in the chorotypes EUR, [NEU], [CEU], SEU, [WEU] and [EEU];
– CAT, including species widespread in Europe and Mediterranean basin, or from these areas to Turanic region or to central Asia, arranged in the chorotypes CEM, [CAE], [CAM], TEM, TUE, [TUM] and EUM;
– AST, including species widespread in Europe and northern Asia, arranged in the single Sibiric-European chorotype (SIE);
– LAD, including species largely widespread in the Palaeartic or Olartic regions, arranged in the chorotypes OLA, [PAL], [WPA] and ASE.

The species we did not confer a chorotype to (nc) are highlighted in Tab. 1.

The graph in fig. II shows a rather complex chorologic composition, highlighting the transitional features of this geographical area, and reflecting the phytoclimatic and geomorphologic complexity of northern Lazio in general (see for example BLASI, 1996; SCOPPOLA, 1998).

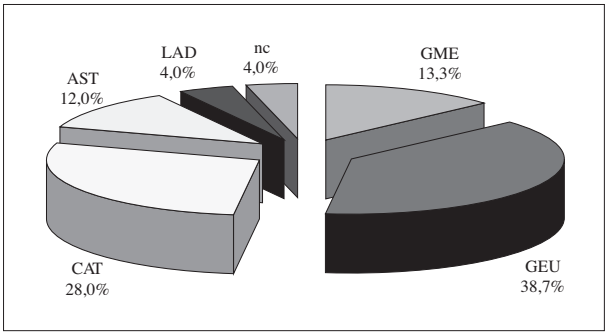

Figure II – Chorologic spectrum of longhorn beetles of the Monte Rufeno Nature Reserve and Bosco del Sasseto Natural Monument by groups of chorotypes (see the text for abbreviations).

As in other areas of the mid-Thyrrenian Subapennine, species living in a European context prevail (GEU: 38,7%), with a moderate contingent of those widespread in the European and Mediterranean area, or from these areas to Turanic region or to central Asia (CAT 28%), and a relatively low contingent of elements living in the Mediterranean area (GME: 13,3%), the latter represented by a small number of species of biogeographic interest. Elements widespread in Europe and northern Asia (AST: 12%) are sparsely represented, those with a broader distribution even less so (LAD: 4%).

A different approach made throughout the analyses of each chorotype (Tabs 1 and 2), substantially confirms the previous analysis made throughout chorologic groups. The group of species with a European chorotype (EUR) numbers many significant elements such as Rhagium (*Megarhagium*) *sycophanta, Anoplodera sexguttata* and the above mentioned *Rhamnusium bicolor, Exocentrus lusitanus* and *Saperda octopunctata*; among S-European contingent, several species have to be highlighted under ecological (*Necydalis ulmi* and *Pseudosphegesthes cinerea)* and biogeographic points of view (*Isotomus barbarae*) (tab. 1). All these species are rare and localized in the Apennine, or, at any rate, they are strongly decreasing (*Rhamnusium bicolor).* Regarding the contribution of Mediterranean elements, *Stenhomalus* (*Obriopsis*) *bicolor* and *Trichoferus spartii* are particularly interesting in terms of biogeography. Mediterranean chorotype (MED) includes *Arhopalus syriacus,* which only occasionally reaches inner Apennine (SAMA, 1988).

Finally, among the elements with a broad distribution, belonging to the groups CAT (21 species), AST (9 species)

and LAD (3 species), there is a moderate prevalence of European-Mediterranean (EUM) and Sibiric-European (SIE) species (Tab. 2).

This component includes a number of important elements for the Apennine fauna, such as *Stictoleptura scutellata scutellata, Agapanthia* (s.str.) *maculicornis davidi, Callimus angulatus, Saperda punctata* and *Xylotrechus antilope antilope* (Tab. 1).

Species linked to the Pinaceae, whose autochtonous origin is not proved (*Rhagium* (s.str.) *inquisitor inquisitor, Monochamus galloprovincialis, Stictoleptura rubra rubra, Anastrangalia dubia dubia)* (Tab. 1), have been not considered.

CONCLUSIONS

Following a first preliminary pubblication on longhorn beetles fauna of the Monte Rufeno Nature Reserve (FATTORINI, 1989), this paper presents an overall view of the composition of and zoogeographic significance of the longhorn beetles fauna in this important bioclimatic transitional area of the central Apennine, which hitherto has been poorly investigated in terms of saproxilic beetles fauna. In particular, data from Bosco del Sasseto were completely lacking, although it is an important relict of old-growth mesophilous forest that presents interesting and unusual floristic and ecological features (COLLETTI, 1996), and hosts a coleopterological fauna of primary importance.

The results so far obtained, although surely incomplete, have given us the opportunity to attempt a first chorological organisation of the Cerambycidae of this territory, confirming the floristic and vegetational studies hitherto published (BLASI, 1996; SCOPPOLA, 1996, 1998; SCOPPOLA & AVENA, 1991).

The prevalence of elements living in the Mediterranean and European context confirms the relative mesophily of this area, highlighted by the occurrence of species with a northern origin, with a particular biogeographic importance, such as *Rhagium* (*Megarhagium*) *sycophanta, Anoplodera sexguttata, Cortodera humeralis humeralis, Exocentrus lusitanus, Rosalia alpina* and *Saperda octopunctata*, some of which are presumably post-glacial relicts (*Rhagium* (*Megarhagium*) *sycophanta, A. sexguttata, E. lusitanus, S. octopunctata*). Species that can be generally defined as broadly distributed include significant elements in terms of biogeography: among them are *Stictoleptura scutellata scutellata, Agapanthia* (s.str.) *maculicornis* and *Callimus angulatus.* The occurrence of important termophilous south-European elements, such as *Callimus abdominalis, Isotomus barbarae, Necydalis ulmi* and *Pseudosphegesthes cinerea*, along with the species living in the Mediterranean area, helps to boost the structural complexity of the longhorn beetles fauna in the study area, and in the Mts Vulsini complex (sensu ALMAGIÀ, 1966) in general.

It must be pointed out, however, that the Mediterranean component of the longhorn beetles of the study area requires further studies. In fact, certain envinronments have not been sufficiently investigated, such as the scrubs with *Quercus pubescens*, the Mediterranea maquis, the riparian woods and so on.

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RIASSUNTO

STUDI SUI LONGICORNI (COLEOPTERA CERAMBICIDAE) DELLA RISERVA NATURALE MONTE RUFENO E DEL MONUMENTO NATURALE BOSCO DEL SASSETO (LAZIO, ITALIA CENTRALE)

Nel presente contributo sono discussi i risultati relativi alle ricerche faunistiche e zoogeografiche sui Coleotteri Cerambicidi della Riserva Naturale Regionale Monte Rufeno e del limitrofo Monumento Naturale Bosco del Sasseto. Nel comprensorio studiato sono censite 75 specie di Cerambicidi, che rappresentano circa il 27% della fauna italiana e circa il 46% di quella del Lazio. Tra queste, *Rhagium* (s.str.) *inquisitor inquisitor, Anastrangalia dubia dubia, Monochamus galloprovincialis* ed *Exocentrus*

Table 2 – Chorological arrangement of longhorn beetles of the Monte Rufeno Nature Reserve and Bosco del Sasseto Natural Monument.

Chorotype	Abbreviation	N.	%
WIDELY DISTRIBUTED SPECIES		**33**	**44.0**
Olarctic	OLA	2	
Asiatic-European	ASE	1	
Sibiric-European	SIE	9	
Centralasiatic-European-Mediterranean	CEM	3	
Turanic-European-Mediterranean	TEM	3	
Turanic-European	TUE	5	
European-Mediterranean	EUM	10	
SPECIES WITH EUROPEAN DISTRIBUTION		**29**	**38.7**
European	EUR	20	
S-European	SEU	9	
SPECIES WITH MEDITERRANEAN DISTRIBUTION		**10**	**13.3**
Mediterraneo	MED	9	
E-Mediterranean	EME	1	
SPECIES NOT INCLUDED IN A CHOROTYPE		**3**	**4.0**

lusitanus risultano nuove per il Lazio. Numerose specie rare o molto localizzate in ambito appenninico o in Italia sono state campionate nel corso delle ricerche, tra cui *Agapanthia* (s.str.) *maculicornis davidi, Asemum tenuicorne, Exocentrus lusitanus, Isotomus barbarae, Necydalis ulmi, Pseudosphegesthes cinerea, R.* (*Megarhagium*) *sycophanta, Saperda octopunctata* e *Stenhomalus* (*Obriopsis*) *bicolor*.

Per ogni specie sono riportati tutti i reperti esaminati, la categoria corologica di appartenenza, la distribuzione in Italia e, se opportuno, una nota di commento. Reperti inediti per altre regioni italiane sono stati altresì riportati per le seguenti specie: *Rhagium* (*Megarhagium*) *sycophanta* (Toscana e Campania), *Cortodera humeralis humeralis, Rhamnusium bicolor* (Umbria), *Xylotrechus antilope antilope, Agapanthia* (s.str.) *maculicornis davidi,* (Abruzzo).

BIBLIOGRAPHY

ALMAGIÀ R., 1966 – *Le regioni d'Italia, 11. Lazio*. UTET, Torino, 750 pp.

ALTHOFF J., DANILEVSKY M.L., 1997 – *A Checklist of Longicorn Beetles (Coleoptera, Cerambycoidea) of Europe*. Slovensko entomološko društvo Štefana Michielija, Ljubljana, 64 pp.

ANGELINI F., 1986 – *Coleotterofauna del Massiccio del Pollino (Basilicata-Calabria) (Coleoptera).* - Entomologica, 21: 37-125.

ANTONINI R., 2002 – *Sasseto - antica selva*. Ceccarelli ed., Grotte di Castro, Viterbo.

BENSE U., 1995 – *Longhorn Beetles. Illustrated key to the Cerambycidae and Vesperidae of Europe.* Bockkäfer. Illustrierter Schlüssel zu den Cerambyciden und Vesperiden Europas. Margraf Verlag, Weikersheim, 512 pp.

BISCACCIANTI A.B., 2002 - *Nuovi dati geonemici su alcuni Cerambicidi italiani (Coleoptera, Cerambycidae).* - Bollettino della Associazione romana di entomologia, 57 (1-4): 49-62.

BISCACCIANTI A.B., 2004 – *Note su alcuni longicorni dell'Appennino umbro-marchigiano (Italia centrale) (Coleoptera, Cerambycidae).* - Bollettino della Associazione romana di entomologia, 59 (1-4): 43-88.

BISCACCIANTI A.B., 2007 – *I Coleotteri Cerambicidi del Vesuvio (Coleoptera: Cerambycidae),* 249-278. In: G. Nardi & V. Vomero (eds), *Artropodi del Parco Nazionale del Vesuvio: ricerche preliminari*. Conservazione Habitat Invertebrati, 4, Cierre Edizioni, Verona.

BLASI C., 1996 – *Il paesaggio vegetale del Lazio: caratteri fisici e biologici*. In: A. Dinelli & P.M. Guarrera (eds), *Ambienti di particolare interesse naturalistico del Lazio. Censimento del patrimonio vegetale del Lazio.* Quaderno n. 2. Tipar Poligrafica Editrice, Roma, pp. 9-24.

BOLOGNA M.A., 1994 – *Considerazioni sul popolamento animale e vegetale dell'Appennino umbro-marchigiano in conclusione del XXIX Congresso della Società italiana di Biogeografia*. - Biogeographia, (n. s.), 17 (1993): 567-579.

CHEMINI C., 1976 - *Coleotteri Cerambicidi della Riserva Naturale di Torricchio*. La Riserva naturale di Torricchio, 1: 105-129.

COLLETTI L., 1996 – *Note sulla flora del Bosco monumentale del Sasseto.* - Monti e Boschi, 47 (1): 19-22.

CONTARINI E., 1997 – *Osservazioni sulla coleotterofauna di un relitto di bosco termofilo della costa veneta: la R.N.I. di Bosco Nordico.* - Bollettino del Museo civico di Storia Naturale di Venezia, 47 (1996): 75-94.

CONTI F., ABBATE G., ALESSANDRINI A., BLASI C., (Eds.), 2005 – *An annotated checklist of the Italian vascular flora.* Palombi & Partner, Roma, 420 pp.

COSTA A., 1874 – *Una peregrinazione zoologica sui monti dell'Alburno.* - Rendiconto dell'Accademia delle Scienze fisiche e matematiche - Classe della Società Reale di Napoli, (serie I) 13: 7 pp. [estratto].

DE FELICI S., VIGNA TAGLIANTI A., 1994 – *I Coleotteri Carabidi dei Colli Albani (Coleoptera, Carabidae).* - Bollettino della Associazione romana di entomologia, 49 (1-2): 3-96.

FAGGI M., NAPPINI S., 2008 – *Segnalazioni faunistiche italiane. 478* - Saperda octopunctata (Scopoli, 1772) *(Coleoptera Cerambycidae).* - Bollettino della Società entomologica italiana, 140 (3): 190.

FATTORINI S., 1989 – *Contributo alla conoscenza dei Cerambicidi della Riserva Naturale di Monte Rufeno (Lazio) (Coleoptera, Cerambycidae).* - Bollettino della Associazione romana di Entomologia, 43 (1-4): 43-48.

GIGLI M., 2008 – Isotomus barbarae *Sama, 1977, nuova per il Lazio (Coleoptera, Cerambycidae).* - Bollettino della Associazione romana di Entomologia, 63 (1-4): 59-62.

GOBBI G., 1994 – *Interessanti reperti di Cerambycidae italiani, specialmente delle regioni centro-meridionali (Coleoptera).* - Bollettino della Associazione romana di entomologia, 48 (1-4) (1993): 83-101.

GOBBI G., 2002 – *Su alcuni interessanti Coleotteri xilofagi dell'Appennino centrale (Coleoptera, Buprestidae, Cerambycidae).* - Bollettino della Associazione romana di entomologia, 57 (1-4): 27-31.

LINNAEUS C., 1760 – *Fauna Suecica sistens Animalia Sueciae regni: Mammalia, Aves, Amphibia, Pisces, Insecta, Vermes. distributa per classes & ordines, genera & species, cum differentiis specierum, synonymis auctorum, nominibus incolarum, locis natalium, descriptionibus insectorum*. editio altera, auctior. Stockholm (1761), [48] + 578 pp.

LÖBL I., SMETANA A. (Eds.), 2010 – *Catalogue of Coleoptera of Palaearctic region, vol. 6, Chrysomeloidea.* Apollo Books, Stenstrup: 924 pp.

NAPPINI S., FAGGI M., 2008 – *Segnalazioni faunistiche italiane. 479* - Isotomus barbarae *Sama, 1977 (Coleoptera Cerambycidae*). - Bollettino della Società entomologica italiana, 140 (3): 191.

PETRIOLI A., 2001 – *Segnalazioni faunistiche italiane:* Anoplodera sexguttata (Fabricius, 1775). - Bollettino della Società entomologica italiana, 133 (3): 271.

PETRUZZIELLO L., 1995 – *Segnalazioni faunistiche italiane. 273* - Lamia textor *(Linnaeus, 1758) (Coleoptera Cerambycidae)*; 274 - Monochamus galloprovincialis galloprovincialis *(Olivier, 1795) (Coleoptera Cerambycidae);* 275 - Pyrrhidium sanguineum *(Linnaeus, 1758) (Coleoptera Cerambycidae);* 276 - Saperda populnea *(Linnaeus, 1758) (Coleoptera Cerambycidae).* - Bollettino della Società entomologica italiana, 127 (1): 66-67.

PORTA A., 1934 – *Fauna Coleopterorum Italica, IV. Heteromera-Phytophaga.* Stabilimento Tipografico Piacentino, Piacenza, 415 pp.

RAGUSA E., 1924 –I *Cerambycidae della Sicilia*. Tipografia Boccone del Povero, Palermo, 33 pp. [estratto]

RAPUZZI P., SAMA G., 2006 – *Cerambycidae nuovi o interessanti per la fauna di Sicilia (Insecta Coleoptera Cerambycidae).* - Quaderno di Studi e Notizie di Storia naturale della Romagna, 23: 157-172.

REJZEK M., VLÁSAK J., 2000 – *Larval nutrition and female oviposition preferences of* Necydalis ulmi *Chevrolat, 1838*

(Coleoptera: Cerambycidae). - Biocosme Mésogéen, 16 (1-2) (1999): 55-66.

SAMA G., 1984 – *Studi sul genere* Parmena *Latreille,1829. (Prima parte)*. - Rivista piemontese di Storia naturale, 5: 205-230.

SAMA G., 1988 – *Fauna d'Italia XXVI. Coleoptera Cerambycidae. Catalogo topografico e sinonimico.* Calderini, Bologna, XXXVI + 216 pp.

SAMA G., 1999 – *Aggiunte e correzioni alla fauna dei Cerambycidae d'Italia (Insecta Coleoptera Cerambycidae).* - Quaderno di Studi e Notizie di Storia naturale della Romagna, 11 (suppl.): 41-56.

SAMA G., 2002 – *Atlas of the Cerambycidae of Europe and Mediterranean Area. 1: Northern, Western, Central and Eastern Europe. British Isles and Continental Europe from France (excl. Corsica) to Scandinavia and Urals.* V. Kabourek, Zlin, 173 pp.

SAMA G., 2005a – *Fauna Europaea: Cerambycidae*. In: P. Audisio (ed.), *Fauna Europaea: Coleoptera 2, Beetles.* Fauna Europaea version 1.2, http://www.faunaeur.org

SAMA G., 2005b – *Insecta Coleoptera Cerambycidae,* pp. 217-219. In: S. Ruffo & F. Stoch (eds), *Checklist e distribuzione della fauna italiana. 10.000 specie terrestri e delle acque interne*. - Memorie del Museo Civico di Storia naturale di Verona, 2. serie, Sezione Scienze della Vita, 17, 303pp + CD.

SAMA G., 2008 – *Notes on the genus* Agapanthia *Serville, 1835.* - Boletin Sociedad Entomologica Aragonesa, 42: 123-127.

SCHMIDT G., 1987 – *Studien über die Biologie und Bemerkungen zur Taxonomie des Bockkäfers* Rhamnusium bicolor *Schrank 1781 (salicis Fabricius 1787) (Coleoptera, Cerambycidae).* - Mitteilungen des internationalen entomologischen Vereins, 11 (2-3): 49-66.

SCOPPOLA A., 1996 – *Boschi della Riserva Naturale Regionale Monte Rufeno,* pp. 50-53. In: A. Dinelli & P.M. Guarrera (eds), *Ambienti di particolare interesse naturalistico del Lazio. Censimento del patrimonio vegetale del Lazio.* - Quaderno n. 2. Tipar Poligrafica Editrice, Roma, 374 pp.

SCOPPOLA A., 1998 – *La vegetazione della Riserva Naturale Monte Rufeno (VT).* Regione Lazio, Assessorato U.T.V. delle Risorse Naturali - Riserva Naturale Monte Rufeno, Acquapendente (VT), 88 pp., 14 tavv., 1 carta.

SCOPPOLA A., AVENA G., 1991 – *La vegetazione della Riserva Naturale regionale Monte Rufeno* In: M. Olmi & M. Zapparoli (eds), *L'ambiente della Tuscia laziale: aree protette e di interesse naturalistico della provincia di Viterbo.* U.P. Edizioni, Viterbo, pp. 111-118.

SPARACIO I., 1992 – *Su alcuni interessanti Cerambicidi del Museo Regionale di Terrasini (Coleoptera Cerambycidae).* - Il Naturalista Siciliano, (s. IV) 16 (suppl.): 29-35.

STROCCHI A., 1995 – *Segnalazioni faunistiche italiane. 277 -* Chlorophorus pilosus glabromaculatus *(Goeze, 1777) (Coleoptera Cerambycidae); 278 -* Chlorophorus trifasciatus *(Fabricius, 1781) (Coleoptera Cerambycidae); 279 -* Hyloytrupes [sic!] bajulus *(Linneo, 1758) (Coleoptera Cerambycidae); 280 -* Pachytodes erraticus *(Dalman, 1617) [sic!] (Coleoptera Cerambycidae); 281 -* Parmena unifasciata *(Rossi, 1790) (Coleoptera Cerambycidae); 282 -* Saperda scalaris *(Linneo, 1758) (Coleoptera Cerambycidae)*. - Bollettino della Società entomologica italiana, 127 (1): 67-68.

ŠVÁCHA P., 2001 – *17. Überfamilie: Chrysomeloidea. 114. Familie: Cerambycidae. 7. Unterfamilie: Lamiinae.* In: B. Klausnitzer (ed.), *Die Larven der Käfer Mitteleuropas, 6.* Spektrum Akademischer Verlag, Heidelberg – Berlin, pp. 248-298.

ŠVÁCHA P., DANILEVSKY M.L., 1987 – *Cerambycoid larvae of Europe and Soviet Union (Coleoptera, Cerambycoidea). Part I.* - Acta Universitatis Carolinae - Biologica, 30 (1-2) (1986): 1-177.

ŠVÁCHA P., DANILEVSKY M.L., 1988 – *Cerambycoid larvae of Europe and Soviet Union (Coleoptera, Cerambycoidea). Part II.* - Acta Universitatis Carolinae - Biologica, 31 (3-4) (1987): 121-284.

ŠVÁCHA P., DANILEVSKY M.L., 1989 – *Cerambycoid larvae of Europe and Soviet Union (Coleoptera, Cerambycoidea). Part III.* - Acta Universitatis Carolinae - Biologica, 32 (1-2) (1988): 1-205.

TASSI F., 1966 – *Ricerche zoologiche sul Massiccio del Pollino (Lucania-Calabria). 32. Coleoptera. - 17. Cerambycidae*. - Annuario dell'Istituto e Museo di Zoologia dell'Università di Napoli, 17 (6): 1-65, 3 tavv.

VIGNA TAGLIANTI A., AUDISIO P.A., BELFIORE C., BIONDI M., BOLOGNA M.A., CARPANETO G.M., DE BIASE A., DE FELICI S., PIATTELLA E., RACHELI T., ZAPPAROLI M., ZOIA S., 1993 – *Riflessioni di gruppo sui corotipi fondamentali della fauna W-paleartica ed in particolare italiana.* - Biogeographia, (n.s.) 15 (1992): 159-179.

VIGNA TAGLIANTI A., AUDISIO P.A., BIONDI M., BOLOGNA M.A., CARPANETO G.M., DE BIASE A., FATTORINI S., PIATTELLA E., SINDACO R., VENCHI A., ZAPPAROLI M., 1999 – *A proposal for a chorotype classification of the Near East fauna, in the framework of the Western Palearctic region.* - Biogeographia, (n.s.) 20: 31-59.

VITALI F., 1999 – *Nuovi dati corologici per alcune specie di Cerambicidi italiani (Coleoptera, Cerambycidae).* - Doriana, 7 (315): 1-6.