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Bostrichidae and Anobiidae (Coleoptera)

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Abstract

The "Bosco della Fontana" nature reserve (Lombardy, Mantua province) is largely covered by a remnant oak-hornbeam forest (*Querco-Carpinetum boreoitalicum*) of the Po plain. A total of 590 specimens were studied from this reserve, belonging to 4 species of Bostrichidae and 15 species of Anobiidae (including 3 Ptininae). Most specimens were collected using window flight traps and trunk window traps placed in the mesophilous forest stands with *Quercus robur*. These traps allowed to ascertain the activity density of 14 species, and the overall dominance of *Priobium carpini* and *Oligomerus brunneus*. The autochthonous species *Quercus robur* was the tree on which the highest activity density of bostrichoids was found, followed by *Q. rubra* and *Platanus hybrida*, both allochthonous. Altogether, window flight traps collected more specimens than trunk window traps.
From a faunistic point of view, the presence of *Lichenophanes varius* (Bostrichidae), *Dorcatoma chrysomelina* and *Mesothes ferrugineus* (Anobiidae) is noteworthy. *Anobium hederae*, *A. inexspectatum* (Anobiidae Anobiinae) and *Ptinus calcaratus* (Anobiidae Ptininae) are firstly recorded for Lombardy. Nine species were collected also with Malaise and aerial traps placed in the lowest part of the canopy of oak trees. Moreover, the rearing of a larva of *Ptinus sexpunctatus* (Anobiidae Ptininae) from a Meloid beetle preserved in an entomological box is commented on. For each species chorotype, Italian regional distribution and ecology are provided.

***Key words**: Anobiidae, Bostrichidae, Ptininae, allochthonous trees, ancient forest, canopy, Italy, window traps.*

Riassunto

Bostrichidae e Anobiidae (Coleoptera)

*La Riserva Naturale di Bosco della Fontana (Lombardia, provincia di Mantova) è in gran parte coperta da un residuo del querco-carpineto (*Querco-Carpinetum boreoitalicum*) della Pianura Padana. In base allo studio di 590 esemplari, 4 specie di Bostrichidae e 15 di Anobiidae (incluse 3 di Ptininae) sono segnalate di questa Riserva. La maggior parte del materiale è stato raccolto con "window flight traps" e "trunk window traps" collocate nelle particelle forestali mesofile con* Quercus robur. *Queste trappole hanno permesso di accertare la densità di attività di 14 specie e la dominanza complessiva di* Priobium carpini *e di* Oligomerus brunneus. Quercus robur *(specie autoctona), seguita da* Q. rubra *e da* Platanus hybrida *(entrambe specie alloctone), è stata la specie arborea sulla quale è stata riscontrata la più alta densità totale di Bostrichoidei. Complessivamente, le "window flight traps" hanno catturato un numero maggiore di esemplari delle "trunk window traps".*
Notevole dal punto di vista faunistico è la presenza di Lichenophanes varius *(Bostrichidae),* Dorcatoma chrysomelina *e* Mesothes ferrugineus *(Anobiidae).* Anobium hederae, A. inexspectatum *(Anobiidae Anobiinae) e* Ptinus calcaratus *(Anobiidae Ptininae) sono segnalati per la prima volta per la Lombardia. Nove specie sono state raccolte anche con trappole poste nella parte bassa della chioma di* Quercus *spp. È segnalata una larva di* Ptinus sexpunctatus *(Anobiidae Ptininae) sviluppatasi in un Coleottero Meloide conservato in una collezione entomologica. Per ogni specie sono forniti il corotipo, la distribuzione regionale italiana e l'ecologia.*

INTRODUCTION

Bostrichidae and Anobiidae are two closely related families of the superfamily Bostrichoidea (sensu Lawrence & Newton 1995). From a systematic point of view Ptinidae were, until recently, considered as a family (e.g. Porta 1929; Audisio et al. 1995) within the Bostrichoidea, but currently they are treated as a subfamily of Anobiidae (cf. Lawrence & Newton 1995; Ivie 2002; Philips 2002).
There are about 550 species of Bostrichidae and 2,200 species of Anobiidae worldwide (Ivie 2002; Philips 2002). The larvae of most Bostrichidae species are wood borers, but a few species occur in starchy stored products (cf. Ivie 2002). The larvae of most species of Anobiidae sensu stricto are xylophagous, boring in bark, dry wood, twigs, woody fruits, pine cones and furniture. A few species develop in thistle heads, umbellifer stalks, galls, hard fungi, book bindings, stored products (e.g. tobacco, spices, cereals) and in the dung of herbivorous mammals (cf. Lepesme 1944; Español 1992; Philips 2002). On the other hand, only a few Ptininae species are wood borers; most are scavengers, feeding on accumulated dried animal or plant material, whereas some are often associated with stored prod-

ucts, and yet others are specialized myrmecophiles (cf. Lepesme 1944; Philips 2002).
The only available records of these families from the Mantua area are old quotations, without a precise locality, of the following four species: *Bostrichus capucinus* (Linnaeus, 1759) (Lanfossi 1826, as "*Bostrichus capucinus*"; Paglia 1879, as "*Apate capucina*. L."), *Psoa dubia* (Rossi, 1792) (Paglia 1879, as "*Psoa italica*. F.") (Bostrichidae), *Gibbium psylloides* (Czempinski, 1778) (Paglia 1879, as "*Gibbium scotias*. F.") and *Ptinus* (*Ptinus*) *latro* Fabricius 1775 (Paglia 1879, as "*Ptinus latro*. Stm.") (Anobiidae Ptininae). Moreover, a list of 8 species from the "Bosco della Fontana" nature reserve has been published by Nardi (2002).
The aim of this paper is to provide faunistic and ecological data on the Bostrichoidea of the reserve, chiefly obtained through the study of material collected with window traps during a survey of saproxylic arthropods (Mason et al. 2001, 2002).

STUDY AREA

The "Bosco della Fontana" nature reserve (coordinates 45°12'N, 10°44'E) is situated about 5 km northwest of Mantua, near the small town of Marmirolo (N Italy, Lombardy), at an altitude of 25 m a.s.l. Its surface area is about 233 ha, 198 of which are forest, 2 are occupied by an artificial wetland, while the remaining 33 consist of grassland and forest tracks. The reserve is one of the last remaining oak-hornbeam forests in the Po plain (cf. Ruffo 2001), and is completely surrounded by agricultural land. From a phytosociological point of view, the forest has been classified as *Querco-Carpinetum boreoitalicum* Pignatti, 1953. Nevertheless, its classification is problematic for the presence of some strictly hygrophilous species (*Alnus glutinosa*, *Fraxinus oxycarpa* and *Frangula alnus*) (cf. Persico 1998; Mason et al. 2002; Mason 2004). In any case, the main types of forest habitat (cf. Mason et al. 2002: 18, fig.1) are:

- Mesoxerophilous forest with *Quercus cerris* (stands 1, 7, 33–40), *Polygonatum multiflori – Quercetum roboris* sub association *carpinesotum betuli* (Sartori, 1984), variant with *Quercus cerris*.
- Mesophilous forest with *Quercus robur* (stands 8–32), *Polygonatum multiflori – Quercetum roboris* sub association *carpinesotum betuli* (Sartori, 1984).
- Mesohygrophilous forest with *Fraxinus oxycarpa* (stands 2–6), *Carici elongatae – Alnetum glutinosae* Bodeux, 1955 with *Fraxinus oxycarpa* dominance.
- Riparian forest with *Fraxinus oxycarpa* and *Alnus glutinosa* (a narrow strip along the "Rio Begotta"), *Carici elongatae – Alnetum glutinosae* Bodeux, 1955 with *Alnus glutinosa* dominance.

Speight (1989) lists this reserve among the European forests of potential international importance for their saproxylic invertebrate fauna. Moreover, it is considered as a "Primary Ancient Wood" (cf. Mason 2004).
Additional information (history, geology, climate, vegetation, fauna) on this reserve can be found in Persico (1998), Mason et al. (2002), Mason (2004) and Cerretti et al. (2004a, 2004b).

MATERIALS AND METHODS

This study was mainly based on the examination of 515 specimens (30 Bostrichidae, 485 Anobiidae) which were collected with 70 window traps of two types (flight and trunk) placed, from 18th April to 4th October 2000, on untreated standing or naturally fallen trees of *Quercus robur* and on both artificially treated (uprooted, girdled or snagged) and untreated allochthonous tree species (*Q. rubra* and *Platanus hybrida*). Fourteen window traps (11 flight and 3 trunk) were placed on *Quercus robur*, 28 (14 flight and 14 trunk) on *Q. rubra* and 28 (14 flight and 14 trunk) on *P. hybrida*; all traps were placed in the mesophilous forest stands of the reserve (cf. Mason et al. 2001, 2002; Birtele 2003).
The data obtained were used to determine activity density (AD), total activity density (ADt) and specific dominance index (D) for each species (tabs 2–4), using the following formulas:

- AD = [number of trapped specimens of a given species / (number of traps x number of days of exposition)] x 14 (cf. Brandmayr & Brunello Zanitti 1982);
- ADt = $\sum$ AD;
- D = (ADt/ADtN) x 100, where ADtN is the total activity density of the taxocoenosis, obtained by adding up the ADt values of all species.

The normalized data were used to evaluate the efficiency of the two types of trap, as well as possible preferences shown by the beetles for trees species (tabs 3–4). Additional faunistic information was gained from 49 specimens collected with various other methods (cf. Mason et al. 2002) and 26 specimens collected with four Malaise traps placed in a mesoxerophilous and a mesohygrophilous forest stand (cf. Cerretti et al. 2004c).
The following information is given for the examined material: forest stand number (cf. Mason et al. 2002,

fig. 1), date, collector, collecting method and number of specimens. The material, unless otherwise stated, is preserved in the collection of the "Centro Nazionale per lo Studio e la Conservazione della Biodiversità Forestale" at Marmirolo (Mantua).
A semicolon separates different collecting dates at a same site, whereas a full stop separates different sites. Dates indicated for trapped individuals during 1998 and 2000 correspond to the date of trap emptying. Sampling lasted a fortnight for window and Malaise traps, and a week for aerial traps. Window traps are indicated with five-character codes (see tab. 1 for further details), the last character representing trap number. For example, "Qb1B3" should be read as follows: trunk window trap n.3 on an untreated standing *Quercus rubra* tree.
Italian distribution is given at regional level and is based on Bertolini (1904), Luigioni (1929) and Porta (1929). Data from these works were supplemented with subsequent literature having provided new regional records.
Chorotypes were assigned according to Vigna Taglianti et al. (1999).
The nomenclature and classification follow those of the Fauna Europaea (Nardi 2004; Zahradník 2004).

Tab. 1. Abbreviations for window traps.

A = window flight trap
B = trunk window trap
Pt1 = untreated standing *Platanus hybrida* tree
Pt2 = treated (nest hole and/or basal slits) standing *P. hybrida* tree
Qb1 = untreated standing *Quercus rubra* tree
Qb2 = girdled standing *Q. rubra* tree
Qb3 = artificially uprooted *Q. rubra* tree
Qb4 = snagged standing trunk of *Q. rubra*
Qr1 = untreated standing *Q. robur* tree
Qr2 = naturally fallen *Q. robur* trees

ABBREVIATIONS

Aerial = Aerial trap placed in the lowest part of the canopy of *Quercus* trees at approximately 15–20 m above the ground (cf. Mason et al. 2002); AT = A. Tagliapietra legit; BDF = "Bosco della Fontana" (without further detail); CPC = P. Cornacchia collection (Porto Mantovano, Mantua); DB = D. Birtele legit; DW = D. Whitmore legit; EG = E. Gatti legit; EM = E. Minari legit; ex = specimen/s; FD = F. Donini legit; FM = F. Mason legit; GN = G. Nardi legit; M = Malaise trap placed on the ground; Mc = Malaise trap placed in the lowest part of the canopy of a *Quercus cerris* tree at a height of about 15 m (cf. Cerretti et al. 2004c); MT = M. Tisato legit; PC = P. Cornacchia legit; PE = P. Cerretti legit; Pitfall = Pitfall trap (cf. Mason et al. 2002); SH = S. Hardersen legit.

FAUNISTIC LIST

BOSTRICHIDAE

Lichenophanes varius (Illiger, 1801)

Material examined. **Stand 12**, 14.VI.2000, FM, Qr1B3, 1 ex.

Chorotype. Turano-Europeo-Mediterranean (cf. Lesne 1901, 1905; Vrydagh 1960; Horion 1961; Vrydagh 1962; Horion 1969; Nardi 2004).
Italian distribution. Lombardy, Latium, Campania, Puglia, Basilicata and Sardinia (cf. Nardi 1997; Gobbi 2002).
Ecology. The adults of this species are nocturnal and remain hidden in their tunnels, under bark or in the cracks of trunks during the day (Lesne 1901; Iablokoff 1943; Español 1955; Horion 1961). The larvae develop in the wood of many broadleaved tree genera (e.g. *Castanea*, *Fagus*, *Populus* and *Quercus*) (cf. Lesne 1901; Horion 1961; Zahradník 1996); in Italy they have been bred from *Quercus suber* (Gobbi 1984) and *Acer monspessulanum* (Gobbi 2002). According to some authors (cf. Iablokoff 1943; Español 1955) *L. varius* might attack only wood invaded by the mycelia of *Nummularia bulliardi* (Pyrenomycetes). This peculiar ecological requirement, if confirmed, could be one of the causes of the rarity of this species, as observed for other saproxylophagous beetles (cf. Rejzek & Vlásak 2000).
Notes. *L. varius* is rare and considered a "primary forest species" in most parts of central Europe (e.g. Geiser 1994; Flechtner 1999, 2000). In Italy it is rare and extremely localized; for Lombardy only old quotations from the Como area were known (cf. Lesne 1901), as well as a generic one from the plain (Villa & Villa 1844: 62, as *Apate* "*varia* Ill."). Therefore, its occurrence at "Bosco della Fontana" is of a high conservation value.

Sinoxylon sexdentatum (Olivier, 1790)

Material examined. **Stand 36**, 6–13.V.2003, DW, PE, Mc, 1 ex.

Chorotype. Mediterranean (cf. Nardi & Ratti 1995; Nardi 2004).
Italian distribution. All regions (Bertolini 1904; Luigioni 1929; Porta 1929).
Ecology. This species develops in recently dead or diseased twigs of many non-resinous tree species (cf. Lesne 1901; Halperin & Damoiseau 1980; Nardi & Ratti 1995); however, in Italy it shows a preference

for *Ficus carica* and *Vitis* spp. (Nardi, unpublished data). The adults, like those of other bostrichid species, are known to damage telephone wires (cf. Nardi & Ratti 1995).
Notes. The specimen was trapped in the canopy of a *Quercus cerris*. This species has been recorded from Lombardy at least since Villa & Villa (1844: 62, as *Apate* "*sexdentata* Ol.").

Scobicia chevrieri (Villa & Villa, 1835)

Material examined. **Stand 5**, 10–17.VI.2003, DW, PE, M, 2 ex; 5–12.VII.2003, DW, PE, Mc, 1 ex; 16–22.VII.2003, DW, PE, M, 1 ex. **Stand 12**, 18.VI–13.VII.2004, EM, Qr1A, 2 ex. **Stand 13**, 27.VI.2000, FM, Qr2A1, 2 ex. **Stand 14**, 14.VI.2000, FM, Qr2A2, 1 ex. **Stand 16**, 17.V.2000, FM, Pt1A1, 1 ex; ditto, Pt2A4, 1 ex; 14.VI.2000, Pt1A3, 1 ex; ditto, Qb4A4, 2 ex; 27.VI.2000, FM, Pt1A2, 1 ex; ditto, Pt1A6, 2 ex; ditto, Pt1B1, 1 ex; ditto, Pt2A1, 1 ex. **Stand 19**, 14.VI.2000, FM, Qr2A4, 1 ex. **Stand 20**, 14.VI.2000, FM, Qb4B4, 1 ex. **Stand 21**, 17.V.2000, FM, Qb2B3, 1 ex; 14.VI.2000, FM, Qb2B3, 1 ex; ditto, Qb2B4, 2 ex. **Stand 25**, 14.VI.2000, FM, Qb1A2, 1 ex; ditto, Qb2A2, 1 ex. **Stand 28**, 14.VI.2000, FM, Qr2A8, 1 ex. **Stand 30**, 31.V.2000, FM, Qb4A3, 2 ex; 14.VI.2000, FM, Qb4A3, 3 ex. **Stand 31**, 17.V.2000, FM, Qr2A5, 1 ex. **Stand 36**, 5–12.VIII.2003, DW, PE, Mc, 1 ex; 12–19.VIII.2003, DW, PE, M, 1 ex.

Chorotype. Mediterranean, with extension to the Caucasus and Iran (cf. Nardi & Ratti 1995; Nardi 2004).
Italian distribution. All regions (cf. Luigioni 1929; Porta 1929; Nardi & Ratti 1995).
Ecology. The larvae of this species develop in the wood of many broadleaved tree genera: *Castanea*, *Ficus*, *Laurus*, *Morus*, *Olea*, *Pistacia*, *Punica*, *Quercus*, *Ulmus*, as well as introduced species of *Eucalyptus* (cf. Cymorek 1974; Halperin & Damoiseau 1980; Nardi & Ratti 1995).
Notes. *S. chevrieri* was described by the Villa brothers (Villa & Villa 1835: 49, as *Apate Chevrierei*), not by "Villa". The correct authorship has only been given since Audisio et al. (1995). The type locality was not cited in the original description, but is certainly in Italy, as indicated by an "*" in the species list (Villa & Villa 1835: 45). Later, Villa & Villa (1868: 76 [translation from Italian]) supplemented the original description of the species, and also added that: "It lives in the branches of the fox grape [...] It lives in Lombardy, especially near Milan and in the Como area. It has been collected by us also on the island of Sardinia". Therefore, the type series of the species came from Lombardy. At "Bosco della Fontana", three specimens were trapped in the canopy of a *Quercus cerris* tree.

Xylopertha retusa (Olivier, 1790)

Material examined. **Stand 36**, 15.V.1998, FM, AT, Aerial n.2/2, 1 ex.

Chorotype. Europeo-Mediterranean, with extension to the Caucasus (cf. Lesne 1901, as *Xylonites retusus*; Vrydagh 1960; Halperin & Damoiseau 1980; Nardi 2004).
Italian distribution. Northern regions, Tuscany, Latium, Campania, Calabria, Sicily and Sardinia (Luigioni 1929; Porta 1929; Lundberg et al. 1987, in all cases as *Xylonites retusus*; Angelini 1991, as *Xylonectes* [sic!] *retusus*). Bertolini (1904, as *Xylonites retusa*) cited this species generically for the whole of Italy, but subsequent authors did not confirm this distribution.
Ecology. The larvae develop in dead wood of *Quercus*. They also inhabit *Castanea*, *Ficus*, *Acer* and *Vitis* (Lesne 1901).
Notes. Species already recorded from "Bosco della Fontana" (Nardi 2002) on the basis of the above specimen, trapped on a oak tree at approximately 15–20 m above the ground.

ANOBIIDAE

Anobium hederae Ihssen, 1949

Material examined. **Stand 16**, 17.V.2000, FM, Pt2A6, 3 ex; 14.VI.2000, FM, Pt1tA2, 1 ex; ditto, Pt2A3, 1 ex; 27.VI.2000, FM, Pt2A5, 1 ex. **Stand 20**, 14.VI.2000, FM, Qb4A4, 1 ex. **Stand 21**, 14.VI.2000, FM, Qr2A3, 1 ex. **Stand 25**, 17.V.2000, FM, Qb1A1, 7 ex. **Stand 26**, 14.VI.2000, FM, Qb2A1, 8 ex; 27.VI.2000, FM, Qb2A1, 1 ex. **Stand 27**, 31.V.2000, FM, Qb2A2, 1 ex; 27.VI.2000, FM, Qb1B3, 2 ex. **Stand 28**, 14.VI.2000, FM, Qr2A8, 1 ex; 27.VI.2000, FM, Qr2A8, 1 ex. **Stand 30**, 14.VI.2000, FM, Qb2A3, 6 ex; 27.VI.2000, FM, Qb2A3, 2 ex; 13.VII.2000, FM, Qb2A3, 1 ex; 26.VII.2000, FM, Qb2A3, 1 ex.

Chorotype. S-European, with extension to Abchazia eastwards (cf. Logvinovskij 1985; Zahradník 2004).
Italian distribution. South Tyrol (cf. Kahlen & Hellrigl 1996), Tuscany (Bordoni & Rocchi 2003), Latium (Cecchi & Nardi 1997) and Sicily (Lundberg et al. 1987: 52, fig. 6).
Ecology. The larvae develop in dry *Hedera helix*

wood, sometimes together with those of *Anobium punctatum* (De Geer, 1774) and *A. inexspectatum* Lohse, 1954 (Horion 1961; Zahradník, unpublished data).
Notes. First record for Lombardy. The above record from Sicily was overlooked by Audisio et al. (1995) and Zahradník (2004). The species is very probably as widespread in Italy as its host plant (Pignatti 1982).

Anobium inexspectatum Lohse, 1954

Material examined. **Stand 16**, 31.V.2000, DB, FD, AT, MT, Pt2A6, 1 ex.

Chorotype. European (mainly in southern and central countries), with extension to Azerbaijan (Nardi & Zahradník 1998; Zahradník 2004).
Italian distribution. Trentino-Alto Adige and Latium (Horion 1961; Nardi & Zahradník 1998).
Ecology. The larvae, like those of the previous species, are monophagous on dry *Hedera helix* wood (cf. Nardi & Zahradník 1998).
Notes. First record for Lombardy. This species also is very probably widespread in Italy. Syntopy between *Anobium hederae* and *A. inexspectatum* had never before been observed in Italy. The trap that captured the only specimen of the latter species had collected *A. hederae* during other periods.

Gastrallus laevigatus (Olivier, 1790)

Material examined. **Stand 5**, 10–17.VI.2003, DW, PE, M, 1 ex; 24.VI–1.VII.2003, DW, PE, Mc, 2 ex; 8–16.VII.2003, DW, PE, M, 1 ex. **Stand 7**, 30.VI.1998, FM, AT, Aerial n.6/1, 1 ex. **Stand 12**, 14.VI.1998, FM, AT, M, 1 ex; 27.VI.2000, FM, Qr1B3, 1 ex; 3–10.VII.2004, EM, Qr1A, 1 ex. **Stand 16**, 14.VI.2000, FM, Pt2A7, 1 ex; 27.VI.2000, FM, Pt1A6, 2 ex; ditto, Pt1B7, 1 ex; 13.VII.2000, FM, Pt1A6, 1 ex; ditto, Pt2B6, 1 ex; 6.IX.2000, FM, Pt2A7, 1 ex. **Stand 21**, 27.VI.2000, FM, Qb2B4, 1 ex. **Stand 25**, 27.VI.2000, FM, Qb1B2, 1 ex. **Stand 28**, 30.VI.1998, FM, AT, Aerial n.1/2, 1 ex. **Stand 31**, 27.VI.2000, FM, Qr2A5, 1 ex. **Stand 33**, 23.VI.1998, FM, AT, M, 1 ex. **Stand 36**, 24.VI–1.VII.2003, DW, PE, M, 1 ex; 1–8.VII.2003, DW, PE, Mc, 1 ex; 8–16.VII.2003, DW, PE, M, 1 ex; 16–22.VII.2003, DW, PE, Mc, 1 ex.

Chorotype. Turano-European (cf. Logvinovskij 1985; Zahradník 1998; Zahradník et al. 2000; Zahradník 2004); records from Japan and Maghreb refer to other species (cf. Español 1963; Sakai 1985).
Italian distribution. All regions (Bertolini 1904; Luigioni 1929; Porta 1929).
Ecology. The larvae develop in *Viscum album*, and less frequently in branches of some deciduous trees (e.g. *Corylus*, *Fagus*, *Laburnum*, *Quercus*, *Ulmus*) (cf. Español 1992; Zahradník 1996; Cecchi & Bartolozzi 1997).
Notes. Species already recorded from "Bosco della Fontana" (Nardi 2002). In this locality its typical host plant, *Viscum album*, is absent however (Persico 1998). Some specimens were trapped in the canopies of oak trees.

Hemicoelus fulvicornis (Sturm, 1837)

Material examined. **BDF**, 10.VI.1984, PC, 1 ex (CPC); 29.V.1988, EG, 5 ex. **Stand 3**, 1.VI.1998, FM, AT, M, 1 ex. **Stand 5**, 3–10.VI.2003, DW, PE, M, 1 ex. **Stand 12**, 2.VI.1998, FM, AT, M, 1 ex; 23.VI.1998, FM, AT, M, 1 ex; 17.V.2000, FM, Qr1A3, 1 ex; 31.V.2000, FM, Qr1A3, 3 ex. **Stand 13**, 17.V.2000, FM, Qr2A1, 1 ex; 13.VII.2000, FM, Qr2A1, 3 ex. **Stand 14**, 31.V.2000, Pt1A1, 1 ex; ditto, Pt1B1, 1 ex; ditto, Pt2A7, 1 ex; ditto, Qr2A2, 1 ex; 17.V.2000, FM, Pt1A1, 2 ex; ditto, Pt1A2, 7 ex; ditto, FM, Pt1A4, 2 ex; ditto, Pt1A6, 1 ex; ditto, Pt1B4, 1 ex; ditto, Pt2A1, 1 ex; ditto, Pt2A4, 1 ex; ditto, Pt2A5, 1 ex; ditto, Pt2B4, 1 ex; ditto, Qb4A4, 1 ex; 14.VI.2000, FM, Pt1A2, 2 ex; ditto, Pt1A3, 1 ex; ditto, Pt1B6, 1 ex; ditto, Qb4A4, 3 ex; 27.VI.2000, FM, Pt1A1, 1 ex; ditto, Pt1A2, 2 ex; ditto, Pt2B7, 1 ex. **Stand 19**, 17.V.2000, FM, Qr2A4, 1 ex. **Stand 21**, 17.V.2000, FM, Qr2A3, 1 ex; 31.V.2000, FM, Qb2B3, 1 ex; ditto, Qb2B4, 1 ex; 4.X.2000, FM, Qb4B3, 1 ex. **Stand 25**, 17.V.2000, FM, Qb3A3, 3 ex; 31.V.2000, FM, Qb1A3, 1 ex. **Stand 26**, 31.V.2000, FM, Qb1B3, 1 ex; ditto, Qb4B1, 1 ex; 27.VI.2000, FM, Qb1B3, 1 ex. **Stand 27**, 17.V.2000, FM, Qb3A2, 1 ex; 14.VI.2000, FM, Qb2A2, 1 ex. **Stand 28**, 31.V.2000, FM, Qr2A7, 1 ex. **Stand 31**, 17.V.2000, FM, Qr2A5, 1 ex. **Stand 36**, 10–17.VI.2003, DW, PE, M, 1 ex.

Chorotype. European, with extension to the Caucasus and Anatolia (Zahradník 1998, 2004).
Italian distribution. Northern and central regions, Campania and Sardinia (Bertolini 1904, as *Anobium fulvicorne*; Luigioni 1929, as *Hadrobregmus fulvicornis*; Porta 1929, as *Anobium* (*Hadrobregmus*) *fulvicorne*).
Ecology. The larvae develop in the wood of various species of broadleaved trees (e.g. *Carpinus*, *Castanea*, *Corylus*, *Fagus*, *Populus*, *Prunus*, *Quercus*) (Español 1992; Zahradník 1996; Cecchi & Bartolozzi 1997).
Notes. Species already known from "Bosco della Fontana" (Nardi 2002). The listing of *Hemicolelus nitidus* (Fabricius, 1792) from the reserve (Nardi 2002) is due to a misprint and must be ignored.

Oligomerus brunneus (Olivier, 1790)

Material examined. **Stand 3**, 28.VII.1998, FM, AT, M, 6 ex. **Stand 12**, 14.VI.1998, FM, AT, M, 1 ex; 7.VII.1998, FM, AT, M, 6 ex; 14.VI.2000, FM, Qr1A3, 1 ex; 27.VI.2000, FM, Qr1A1, 11 ex; ditto, Qr1A2, 5 ex; ditto, Qr1A3, 3 ex; ditto, Qr1B3, 1 ex; 13.VII.2000, DB, FD, AT, MT, Qr1A2, 1 ex; ditto, Qr1A1, 1 ex; 18.VI–13.VII.2004, EM, Qr1A, 3 ex. **Stand 13**, 14.VI.2000, FM, Qr2A1, 1 ex; 27.VI.2000, FM, Qr2A1, 2 ex; 13.VII.2000, FM, Qr2A1, 1 ex. **Stand 14**, 14.VI.2000, FM, Qr2A2, 1 ex. 13.VII.2000, FM, Qr2A2, 2 ex. **Stand 16**, 17.V.2000, FM, Pt2A4, 3 ex; 14.VI.2000, FM, Pt1A1, 1 ex; ditto, Pt1A3, 1 ex; ditto, Pt2A7, 1 ex; ditto, Qb4A4, 4 ex; 27.VI.2000, FM, Pt1A2, 2 ex; ditto, Pt1A4, 1 ex; ditto, Pt1A6, 1 ex; ditto, Pt1A7, 4 ex; ditto, Pt1B3, 1 ex; ditto, Pt1B7, 2 ex; ditto, Pt2A1, 2 ex; ditto, Pt2A2, 5 ex; ditto, Pt2A3, 1 ex; ditto, Pt2A4, 3 ex; ditto, Pt2A5, 2 ex; ditto, Pt2A6, 2 ex; ditto, Pt2A7, 7 ex; ditto, Pt2B1, 3 ex; ditto, Pt2B2, 5 ex; ditto, Pt2B3, 3 ex; ditto, Pt2B7, 1 ex; 13.VII.2000, FM, Pt1A2, 1 ex; ditto, Pt2A1, 1 ex; ditto, Pt2A4, 1 ex; ditto, Pt2A6, 1 ex; ditto, Pt2A7, 1 ex; ditto, Pt2B6, 1 ex; 26.VII.2000, FM, Pt2A4, 1 ex. **Stand 19**, 27.VI.2000, FM, Qr2A4, 1 ex; 13.VII.2000, AT, DB, FD, MT, Qr2A4, 1 ex. **Stand 20**, 27.VI.2000, FM, Qb2A4, 3 ex; ditto, Qb4B4, 2 ex; 13.VII.2000, FM, Qb2A4, 1 ex. **Stand 21**, 14.VI.2000, FM, Qr2A3, 1 ex; 27.VI.2000, FM, Qb2B3, 8 ex; ditto, Qb4B3, 7 ex; ditto, Qr2A3, 1 ex; 13.VII.2000, FM, Qb2B3, 5 ex; 26.VII.2000, FM, Qb2B3, 1 ex; 9.VIII.2000, FM, Qb2B3, 1 ex; 23.VIII.2000, FM, Qb4B3, 1 ex. **Stand 22**, 31.V.2000, FM, Qb3A1, 1 ex; 14.VI.2000, FM, Qb2B2, 12 ex; 27.VI.2000, FM, Qb2B2, 6 ex; ditto, Qb3A1, 6 ex; 13.VII.2000, FM, Qb2B2, 2 ex. **Stand 25**, 14.VI.2000, FM, Qb3A3, 1 ex; 27.VI.2000, FM, Qb1A1, 1 ex; ditto, Qb4A1, 3 ex; ditto, Qb4A2, 5 ex; 13.VII.2000, FM, Qb1A4, 1 ex; ditto, Qb4A2, 5 ex; ditto, Qb1B4, 1 ex. **Stand 26**, 14.VI.2000, FM, Qb1B1, 1 ex; 27.VI.2000, FM, Qb4B1, 1 ex; 13.VII.2000, FM, Qb4B1, 1 ex. **Stand 27**, 27.VI.2000, FM, Qb3A2, 2 ex; 13.VII.2000, FM, Qb2A2, 1 ex. **Stand 28**, 14.VI.2000, FM, Qr2A7, 1 ex; 27.VI.2000, FM, Qr2A7, 1 ex; ditto, Qr2A8, 10 ex; 13.VII.2000, FM, Qr2A6, 2 ex; ditto, Qr2A8, 1 ex. **Stand 31**, 13.VII.2000, FM, Qr2A5, 2 ex.

Chorotype. Centralasiatic-European (cf. Horion 1961; Logvinovskij 1985; Zahradník 2004). Old records from Japan refer to other species (cf. Sakai 1982).
Italian distribution. All regions (Bertolini 1904; Luigioni 1929; Porta 1929).
Ecology. The larvae develop in the wood of several genera of broadleaved trees (e.g. *Carpinus*, *Fagus*, *Fraxinus*, *Populus*, *Prunus*, *Quercus, Salix*, *Tilia*) (Koch 1989; Español 1992; Zahradník 1996, unpublished data).
Notes. Species (fig. 1) already recorded from "Bosco della Fontana" (Nardi 2002). It was the most abundant species in window trap samples (fig. 4).

Fig. 1. Habitus of *Oligomerus brunneus* (photo by P. Cerretti).

Priobium carpini (Herbst, 1793)

Material examined. **Stand 12**, 14.VI.2000, FM, Qr1A1, 2 ex; ditto, Qr1A3, 1 ex; 27.VI.2000, FM, Qr1A1, 1 ex; ditto, Qr1A3, 3 ex. **Stand 13**, 27.VI.2000, FM, Qr2A1, 1 ex; 13.VII.2000, FM, Qr2A1, 1 ex. **Stand 14**, 14.VI.2000, FM, Qr2A2, 3 ex; 27.VI.2000, FM, Qr2A2, 3 ex; 4.X.2000, FM, Qr2A2, 1 ex. **Stand 16**, 17.V.2000, FM, Pt2A4, 1 ex; 14.VI.2000, FM, Pt1A3, 3 ex; ditto, Pt1B4, 1 ex; ditto, Pt2A3, 2 ex; ditto, Pt2A5, 1 ex; ditto, Pt2A6, 1 ex; ditto, Pt2A7, 1 ex; ditto, Qb4A4, 1 ex; 27.VI.2000, FM, Pt1A1, 5 ex; ditto, Pt1A2, 2 ex; ditto, Pt1A3, 1 ex; ditto, Pt1A4, 3 ex; ditto, Pt1A5, 1 ex; ditto, Pt1A6, 1 ex; ditto, Pt1A7, 1 ex; ditto, Pt1B3, 1 ex; ditto, Pt1B7, 1 ex; ditto, Pt2A2, 2 ex; ditto, Pt2A3, 1 ex; ditto, Pt2A4, 1 ex; ditto, Pt2A5, 1 ex; ditto, Pt2A6, 2 ex; ditto, Pt2A7, 4 ex; ditto, Pt2B7, 1 ex; 6.IX.2000, FM, Pt1B4, 1 ex; ditto, Pt2A7, 1 ex. **Stand 19**, 27.VI.2000, FM, Qr2A4, 4 ex. **Stand 20**, 14.VI.2000, FM, Qb4B4, 1 ex; 27.VI.2000, FM, Qb2A4, 3 ex; 7.VII.2004, SH, on a wooden (*Abies* sp. and *Quercus rubra*) walkway, 1 ex. **Stand 21**, 14.VI.2000, FM, Qb2B4, 1 ex; ditto, Qb4B3, 1 ex; 4.X.2000, FM, Qb4B3, 2 ex. **Stand 22**, 14.VI.2000, FM, Qb3A1, 1 ex; 27.VI.2000, FM, Qb3A1, 3 ex; ditto, Qb3A4, 15 ex. **Stand 25**, 14.VI.2000, FM, Qb3A3, 1 ex; 27.VI.2000, FM, Qb3A3, 1 ex; ditto, Qb4A1, 8; 13.VII.2000,

FM, Qb1A3, 1 ex; 13.VII.2000, AT, DB, FD, MT, Qb4A2, 1 ex. **Stand 26**, 14.VI.2000, FM, Qb1B3, 2 ex; 27.VI.2000, FM, Qb4B1, 1 ex; 13.VII.2000, FM, Qb2A1, 1 ex. **Stand 27**, 14.VI.2000, FM, Qb2A2, 4 ex; ditto, Qb3A2, 6 ex; 27.VI.2000, FM, Qb2A2, 5 ex; ditto, Qb3A2, 11 ex; 13.VII.2000, FM, Qb3A2, 1 ex. **Stand 28**, 14.VI.2000, FM, Qr2A6, 2 ex; ditto, Qr2A7, 4 ex; 27.VI.2000, FM, Qr2A6, 4 ex; ditto, Qr2A7, 7 ex; ditto, Qr2A8, 1 ex; 13.VII.2000, FM, Qr2A7, 1 ex. **Stand 36**, 10–17.VI.2003, DW, PE, M, 1 ex.

Chorotype. Sibero-European (cf. Logvinovskij 1985; Español 1992; Zahradník 2004).
Italian distribution. Piedmont, Lombardy, Friuli-Venezia Giulia and Emilia-Romagna (Bertolini 1904, as *Trypopitys carpini*; Luigioni 1929; Porta 1929, as *Trypopithys* [sic!] *carpini*; Horion 1961).
Ecology. The larvae develop in dead wood of broadleaved trees (e.g. *Carpinus*, *Fagus*, *Quercus*, *Prunus*) and conifers (*Abies* and *Picea*) (Koch 1989; Zahradník 1996).
Notes. Species (fig. 2) already recorded from "Bosco della Fontana" (Nardi 2002). It was the second most abundant species in window trap samples after *Oligomerus brunneus* (fig. 4).

Caenocara affine (Sturm, 1837)

Material examined. **Stand 5**, 29.IV–6.V.2003, DW, PE, M, 1 ♀.

Fig. 2. Habitus of *Priobium carpini* (photo by P. Cerretti).

Chorotype. Sibero-European (cf. Logvinovskij 1985; Español 1992; Zahradník 2004).
Italian distribution. Liguria, Piedmont, Lombardy, Trentino-Alto Adige, Tuscany, Latium, Campania and Basilicata (Bertolini 1904, as *Coenocara affinis*; Luigioni 1929; Porta 1929; Angelini & Montemurro 1986, in all cases as *Caenocara affinis*).
Ecology. Both the larvae and adults feed on and live in Lycoperdaceae fungi (Español 1992; Zahradník 1996).
Notes. This species is included in the Red List of the beetles of South Tyrol (Kahlen et al. 1994, as *C. affinis*).

Dorcatoma (*Pilosodorcatoma*) *chrysomelina* Sturm, 1837

Material examined. **Stand 7**, 29.VII.1998, FM, AT, Aerial n.1, 1 ex. **Stand 22**, 31.V.2000, FM, Qb2B2, 1 ex; 14.VI.2000, FM, Qb3A1, 2 ex. **Stand 25**, 14.VI.2000, FM, Qb1A2, 1 ex. **Stand 26**, 14.VI.2000, FM, Qb1B1, 1 ex. **Stand 28**, 19.VI.1998, FM, AT, Aerial n.1/1, 1 ex. **Stand 30**, 14.VI.2000, FM, Qb4A3, 1 ex. **Stand 36**, 15.VI.1998, FM, AT, Aerial n.2/2, 1 ex; 27.V–3.VI.2003, DW, PE, M, 1 ex; 10–17.VI.2003, DW, PE, M, 1 ex.

Chorotype. European (cf. Zahradník 2004), with extension to the Tomsk region in Western Siberia (cf. Logvinovskij 1985).
Italian distribution. Piedmont, Lombardy, Trentino-Alto Adige, Tuscany, Sicily and Sardinia (Bertolini 1904; Luigioni 1929; Porta 1929; Nardi 2002).
Ecology. The larvae develop in hard fungi, e.g. *Fomes fomentarius* (Polyporaceae) (Zahradník unpublished data) and in the wood of *Quercus* or *Salix*, decomposed by fungus mycelia (e.g. *Laetiporus sulphureus* (Polyporaceae)) (Büche & Lundberg 2002; Nikitsky & Schigel 2004). At "Bosco della Fontana", some specimens were trapped in the canopies of oak trees.
Notes. Species already recorded from "Bosco della Fontana" (Nardi 2002), which is its only known locality in Lombardy. It is included in the Red List of the beetles of South Tyrol (Kahlen et al. 1994).

Ptinomorphus imperialis (Linnaeus, 1767)

Material examined. **Stand 16**, 3.V.2000, FM, Pt2A5, 1 ex.

Chorotype. European, with extension to Anatolia and the Caucasus (Zahradník 1998; Toskina 2001; Zahradník 2004).

Italian distribution. All regions including, with doubt, Sardinia (cf. Bertolini 1904, as *Hedobia imperialis*; Luigioni 1929, as *Hedobia* (*Ptinomorphus*) *imperialis*; Porta 1929, as *H.* (*P.*) *imperialis*; Angelini 1986; Angelini & Montemurro 1986; Angelini 1991). Bargagli (1873: 41, as *H. imperialis*) recorded this species from Sardinia (without a precise locality), but Luigioni (1929) later ignored this record, whereas Bertolini (1904) and Porta (1929) cited this species generically from the whole of Italy. For this reason, Sardinia is listed with doubt by Audisio et al. (1995) and Zahradník (2004) in the geographic distribution of the species.
Ecology. The larvae develop in the wood of various genera of broadleaved trees (e.g. *Alnus*, *Carpinus*, *Corylus*, *Fagus*, *Juglans*, *Populus*, *Prunus*, *Quercus*, *Salix*, *Tilia*, *Ulmus*) and *Hedera helix* (Español 1992; Zahradník 1996; Cecchi & Bartolozzi 1997).
Notes. This species has been recorded from Lombardy at least since Villa & Villa (1844: 35, as "*Ptinus imperialis* F.").

Ptinomorphus regalis (Duftschmid, 1825)

Material examined. **Stand 14**, 31.V.2000, FM, Qr2A2, 1 ex. **Stand 16**, 3.V.2000, FM, Pt1A4, 1 ex; 3.V.2000, FM, Qb4A4, 1 ex; 31.V.2000, FM, Pt1A1, 1 ex; ditto, Pt2A2, 2 ex. **Stand 21**, 3.V.2000, FM, Qb2B4, 1 ex.

Chorotype. European (mainly in southern and central countries), with extension to the Caucasus and Iran (cf. Toskina 2001; Zahradník 2004).
Italian distribution. Northern regions, Tuscany, Latium, Abruzzo, Campania, Basilicata, Puglia and Calabria (Bertolini 1904, as *Hedobia regalis*; Luigioni 1929 as *H.* (*Ptinomorphus*) *regalis*; Porta 1929, as *H.* (*P.*) *regalis*; Angelini 1986; Angelini & Montemurro 1986). According to Horion (1961, as *H. regalis*), Porta (1929) had recorded this species also from Sicily and Sardinia. However, Porta (1929) did not cite these regions. This is why these islands are listed with doubt by Audisio et al. (1995) and Zahradník (2004) in the geographic distribution of the species.
Ecology. The larvae develop in the wood of various species of broadleaved trees (e.g. *Caragana arborescens*, *Crataegus*, *Corylus*, *Juglans*, *Prunus*, *Quercus*) and of *Viscum album* (Español 1992; Zahradník 1996).
Notes. This species has been recorded from Lombardy at least since Villa & Villa (1844: 35, as "*Ptinus regalis* Ziegl."). *Ptinomorphus regalis* var. *aureopilosus* Pic, 1901 is a synonym of this species (cf. Español 1992; Zahradník 2004); Luigioni (1929) inexplicably listed it as an aberration of *P. imperialis*.

Mesocoelopus niger (P. W. J. Müller, 1821)

Material examined. **Stand 13**, 14.VI.2000, FM, Qr2A1, 1 ex. **Stand 16**, 14.VI.2000, FM, Pt1A6, 1 ex; 27.VI.2000, FM, Pt1A7, 1 ex. **Stand 21**, 14.VI.2000, FM, Qb4B3, 1 ex; ditto, Qr2A3, 1 ex; 27.VI.2000, FM, Qb2B4, 1 ex. **Stand 22**, 31.V.2000, FM, Qb3A4, 1 ex. **Stand 25**, 14.VI.2000, FM, Qb1B2, 1 ex. **Stand 26**, 27.VI.2000, Qb1B2, FM, 1 ex. **Stand 30**, 14.VI.2000, FM, Qb4A3, 1 ex; 27.VI.2000, FM, Qb2A3, 1 ex; ditto, Qb4B2, 2 ex. **Stand 36**, 27.V–3.VI.2003, DW, PE, Mc, 2 ex; 10–17.VI.2003, DW, PE, M, 1 ex; 17–24.VI.2003, DW, PE, Mc, 2 ex; 24.VI–1.VII.2003, DW, PE, M, 1 ex.

Chorotype. European, excluding the northern regions, with extension to Anatolia (cf. Español 1992; Zahradník 1998, 2004).
Italian distribution. Northern and central regions, Campania, Puglia, Sicily and Sardinia (Bertolini 1904; Luigioni 1929; Porta 1929).
Ecology. The larvae develop in dead vines of *Hedera helix* (Español 1992).
Notes. Six specimens were trapped in stand 36, four in the canopy of a *Quercus cerris* tree (cf. Cerretti et al. 2004c).

Mesothes ferrugineus (Mulsant & Rey, 1860)

Material examined. **Stand 3**, 30.VI.1998, FM, AT, Aerial n.10/2, 1 ♀. **Stand 36**, 20–27.V.2003, DW, PE, M, 1 ♂.

Chorotype. S-European, with extension to Anatolia and the Middle East (cf. Logvinovskij 1985; Zahradník 1998, 2004).
Italian distribution. Piedmont, Lombardy, Puglia, Sicily and Sardinia (Bertolini 1904; Luigioni 1929; Porta 1929; Angelini 1987; Nardi 2002).
Ecology. The biology of this species is poorly known. *Quercus pubescens* is recorded as host plant (Ponel & Moragues 1988). Moreover, adults have been collected in dead *Hedera helix* branches and knocked off *Q. ilex* and *Q. suber* (cf. Ponel & Moragues 1988). None of these oak species are present at "Bosco della Fontana" (Persico 1998).
Notes. Species already recorded from "Bosco della Fontana " (Nardi 2002), on the basis of the above female. In Italy *Mesothes ferrugineus* is rare and localized; this locality is the only known one in Lombardy.

Ptinus (*Gynopterus*) *aubei* Boieldieu, 1854

Material examined. **Stand 5**, 8–15.IV.2003, DW, PE, M, 1 ex. **Stand 25**, 13.VII.2000, FM, Qb1A3, 1 ex. **Stand 28**, 14.VI.2000, FM, Qr2A7, 1 ex. **Stand 34**, 13.VI.1998, FM, AT, Aerial n.4/2, 1 ex.

Chorotype. Mediterranean (cf. Iablokoff-Khnzorian & Karapentian 1991; Zahradník 2004).
Italian distribution. All regions (Bertolini 1904; Luigioni 1929; Porta 1929).
Ecology. The adults of this species are usually collected on *Quercus* trees (Horion 1972; Koch 1989; Iablokoff-Khnzorian & Karapentian 1991).
Notes. One of the above specimens was trapped in the canopy of an oak tree (cf. Mason et al. 2002).

Ptinus (*Gynopterus*) *sexpunctatus* Panzer, 1789

Material examined. **BDF**, 2.V.2000, FM, DB, 1 ex. **Laboratory**, 16.VII.2003, GN, 1 ex. **Stand 5**, 13–20.V.2003, DW, PE, M, 1 ex. **Stand 12**, 17.V.2000, FM, Qr1A2, 2 ex. **Stand 16**, 3.V.2000, FM, Pt1A5, 1 ex; 23.VIII.2000, FM, Pt2A7, 1 ex. **Stand 20**, 4.X.2000, FM, Qb2A4, 1 ex. **Stand 27**, 27.VI.2000, FM, Qb2A2, 1 ex. **Stand 31**, 19.VI.1998, Aerial n.8/1, FM, AT, 1 ex.

Fig. 3. Habitus of *Ptinus sexpunctatus* (photo by P. Cerretti).

Chorotype. Sibero-European (cf. Iablokoff-Khnzorian & Karapentian 1991; Zahradník 2004).
Italian distribution. All regions (Bertolini 1904; Luigioni 1929; Porta 1929; Lundberg et al. 1987).
Ecology. The adults occur on old *Quercus* trees, in nests of birds, ants (*Lasius* sp.), wasps and several bee genera, but most of all in those of *Osmia* Panzer, 1806 (Hymenoptera, Apidae). The species can also be synanthropic; it attacks starchy materials (middlings and flour), only rarely becoming a serious pest (cf. Howe & Burges 1951; Horion 1961; Koch 1989; Iablokoff-Khnzorian & Karapentian 1991).
Notes. *P.* (*G.*) *sexpunctatus* has been recorded from Lombardy at least since Villa & Villa (1844). The above-cited specimen from "Laboratory" (fig. 3) was reared from a larva having emerged from the abdomen of a pinned specimen of *Meloe* (*Meloe*) *proscarabaeus proscarabaeus* Linnaeus, 1758 (Coleoptera, Meloidae) collected in the reserve (Bologna 2004) and kept in an entomological box. The larva pupated in a cocoon on blotting paper placed on the bottom of the rearing jar. This finding is very unusual, especially considering the well-known toxicity of Meloidae due to cantharidin (Bologna 1991). However, a few other species of Ptininae have been recorded on Meloidae dry-preserved for pharmaceutical needs (cf. Lepesme 1944).

Ptinus (*Ptinus*) *calcaratus* Kiesenwetter, 1877

Material examined. **Stand 3**, 2.IV.1999, AT, Pitfall n.11, 1 ♀. **Stand 5**, 14–21.X.2003, DW, PE, M, 1 ♂. **Stand 12**, 26.VI.1998, AT, Pitfall n.18, 1 ♀. **Stand 33**, 2.IV.1999, AT, Pitfall n.8, 1 ♀.

Chorotype. European (in southern and central countries), with extension to Caucasia (Horion 1961; Iablokoff-Khnzorian & Karapentian 1991; Zahradník 2004).
Italian distribution. Friuli-Venezia Giulia, central regions, Puglia, Basilicata, Calabria, Sicily and Sardinia (Luigioni, 1929; Porta 1929, Horion 1961, Gobbi 1973, in all cases as *P. edmundi* Abeille de Perrin, 1894; Angelini 1991, 1996).
Ecology. The adults occur in moss and old wood at the base of broadleaved trees (cf. Horion 1961, as *P. edmundi*; Koch 1989; Iablokoff-Khnzorian & Karapentian 1991).
Notes. First record for Lombardy. In northern Italy it had been recorded only from Opicina near Trieste (Horion 1961).

RESULTS AND DISCUSSION

Altogether, 4 species of Bostrichidae and 15 species of Anobiidae are now known from the "Bosco della Fontana" nature reserve. Thirteen species are recorded for the first time.

The 70 window traps placed in 2000 collected 515 specimens belonging to 14 species (tab. 2). These traps were placed on trees the wood of which was either left untouched or, following artificial treatment, in the scolytoidal stage of decomposition (cf. Mason et al. 2001; Faccoli & Rukalsky 2004). The total number of trapped Bostrichoidea specimens is low because they usually appear in later stages of decomposition (cf. Dajoz 1998). Only four species were collected in more than 30 specimens (tab. 2): *Oligomerus brunneus*, *Priobium carpini*, *Hemicolelus fulvicornis* and *Anobium hederae*. The first two were clearly dominant (D = 38.3 and 30.9 respectively), whereas fewer specimens of *Hemicolelus fulvicornis* (D = 11.0) and *Anobium hederae* (D = 7.6) were collected. These species, except *A. hederae*, are polyphagous on broadleaved trees in the larval stages; their abundance was therefore to be expected because the window traps were placed on *Quercus robur*, *Q. rubra* and *Platanus hybrida* trees. Both the dominant species showed outbreaks in June (fig. 4), *H. fulvicornis* in May, *A. hederae* in May and June, but the second peak of this species preceded those of the two dominant ones (fig. 5). The highest number of species was collected in May–June (tab. 2).

According to the trapping results, the species composition on the three tree species (tab. 3) was faunistically very homogeneous, with 11 species of Bostrichoidea collected on each one. Nevertheless, total activity density (tab. 3) was higher, as was expected, on the autochthonous species *Quercus robur*, followed by *Q. rubra* and *Platanus hybrida*, both allochthonous species.

Altogether, window flight traps collected 13 species and trunk window traps 10 species (tab. 4). Four species (*Anobium inexspectatum*, *Ptinomorphus imperialis*, *Ptinus aubei* and *P. sexpunctatus*) were collected only with window flight traps, while just *Lichenophanes varius* was exclusively collected in a trunk window trap. In all three cases (tab. 4) the number

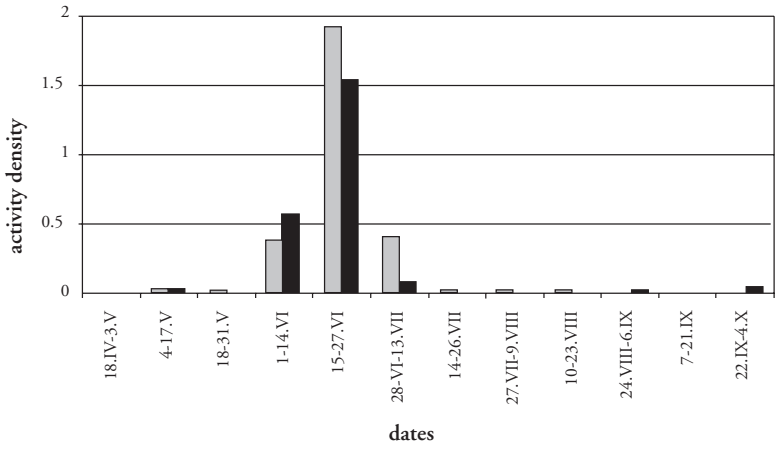

Fig. 4. Activity density of *Oligomerus brunneus* and *Priobium carpini* in the year 2000 at "Bosco della Fontana". Symbols: ■ = *O. brunneus*; ■ = *P. carpini*.

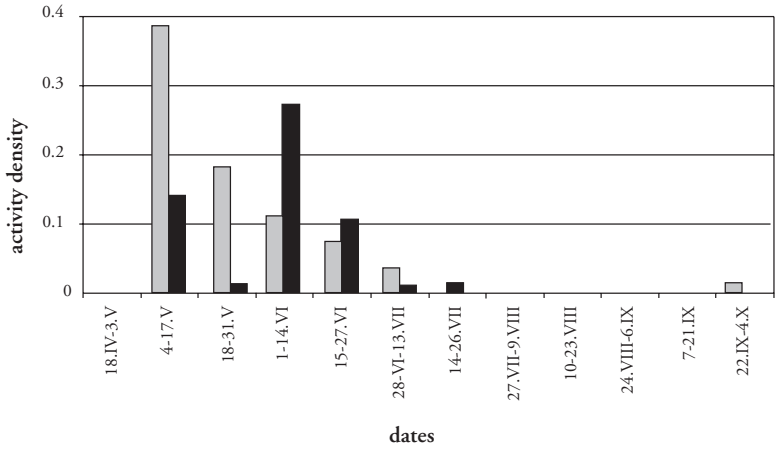

Fig. 5. Activity density of *Hemicoelus fulvicornis* and *Anobium hederae* in the year 2000 at "Bosco della Fontana". Symbols. ■ = *H. fulvicornis*; ■ = *A. hederae*.

Tab. 2. Bostrichoidea of "Bosco della Fontana" collected with window traps.
Abbreviations: AD = activity density; ADt = total activity density; D = dominance index; N = number of specimens.

Species	dates															
	18.IV	3.V	17.V	31.V	14.VI	27.VI	13.VII	26.VII	9.VIII	23.VIII	6.IX	21.IX	4.X			
							AD							ADt	D	N
Lichenophanes varius	0	0	0	0	0.014	0	0	0	0	0	0	0	0	0.014	0.194	1
Scobicia chevrieri	0	0	0.057	0.029	0.214	0.108	0	0	0	0	0	0	0	0.408	5.541	28
Anobium hederae	0	0	0.143	0.014	0.271	0.108	0.013	0.015	0	0	0	0	0	0.564	7.668	39
Anobium inexspectatum	0	0	0	0.014	0	0	0	0	0	0	0	0	0	0.014	0.194	1
Gastrallus leavigatus	0	0	0	0	0.014	0.092	0.025	0	0	0	0.014	0	0	0.146	1.983	10
Hemicoelus fulvicornis	0	0	0.386	0.186	0.114	0.077	0.038	0	0	0	0	0	0.015	0.816	11.085	57
Oligomerus brunneus	0	0	0.043	0.014	0.371	1.923	0.413	0.031	0.014	0.014	0	0	0	2.823	38.378	192
Priobium carpini	0	0	0.014	0	0.571	1.538	0.075	0	0	0	0.029	0	0.046	2.274	30.907	152
Dorcatoma chrysomelina	0	0	0	0.014	0.057	0	0	0	0	0	0	0	0	0.071	0.971	5
Ptinomorphus imperialis	0	0.013	0	0	0	0	0	0	0	0	0	0	0	0.013	0.181	1
Ptinomorphus regalis	0	0.040	0	0.057	0	0	0	0	0	0	0	0	0	0.097	1.320	7
Mesocoelopus niger	0	0	0	0.014	0.100	0.092	0	0	0	0	0	0	0	0.207	2.808	14
Ptinus aubei	0	0	0	0	0.014	0	0.013	0	0	0	0	0	0	0.027	0.364	2
Ptinus sexpunctatus	0	0.013	0.029	0	0	0.015	0	0.015	0	0	0	0	0.015	0.088	1.197	6
														7.357		515
total species	0	3	6	8	10	6	6	2	1	2	2	0	3			

Tab. 3. Bostrichoidea of "Bosco della Fontana" collected with window traps on three tree species. (See tab. 2 for abbreviations).

Species	*Quercus robur*			*Quercus rubra*			*Platanus hybrida*		
	ADt	D	N	ADt	D	N	ADt	D	N
Lichenophanes varius	0.071	0.642	1	0	0	0	0	0	0
Scobicia chevrieri	0.440	3.954	6	0.500	6.696	14	0.286	4.870	8
Anobium hederae	0.220	1.977	3	1.083	14.509	30	0.217	3.700	6
Anobium inexspectatum	0	0	0	0	0	0	0.036	0.609	1
Gastrallus leavigatus	0.154	1.384	2	0.077	1.030	2	0.211	3.594	6
Hemicoelus fulvicornis	0.902	8.111	13	0.577	7.726	16	1.011	17.233	28
Oligomerus brunneus	3.598	32.359	49	3.012	40.335	83	2.248	38.318	60
Priobium carpini	5.305	47.717	71	1.491	19.968	40	1.541	26.271	41
Dorcatoma chrysomelina	0	0	0	0.179	2.391	5		0	0
Ptinomorphus imperialis	0	0	0	0.067	0.893	2	0.033	0.568	1
Ptinomorphus regalis	0.071	0.642	1	0	0	0	0.140	2.395	4
Mesocoelopus niger	0.143	1.285	2	0.374	5.003	10	0.074	1.264	2
Ptinus aubei	0.071	0.642	1	0.031	0.418	1		0	0
Ptinus sexpunctatus	0.143	1.285	2	0.077	1.030	2	0.069		2
total	11.117	100	151	7.467	100	205	5.866	100	159
mean per trap			10.785			7.321			5.678

Tab. 4. Bostrichoidea of "Bosco della Fontana" collected with window traps on three tree species.
Abbreviations: A = number of specimens collected with flight window traps; ADt A = total activity density in window flight traps; ADt B = ditto in trunk window traps; B = number of specimens collected with trunk window traps.

Species	*Quercus robur*				*Quercus rubra*				*Platanus hybrida*			
	A	ADt A	B	ADt B	A	ADt A	B	ADt B	A	ADt A	B	ADt B
Lichenophanes varius	0	0	1	0.0020	0	0	0	0	0	0	0	0
Scobicia chevrieri	6	0.0032	0	0	9	0.0033	5	0.0025	7	0.0030	1	0.0004
Anobium hederae	3	0.0016	0	0	28	0.0104	2	0.0010	6	0.0025	0	0
Anobium inexspectatum	0	0	0	0	0	0	0	0	1	0.0004	0	0
Gastrallus leavigatus	1	0.0005	1	0.0020	0	0	2	0.0010	5	0.0021	1	0.0004
Hemicoelus fulvicornis	13	0.0070	0	0	10	0.0037	6	0.0030	23	0.0097	5	0.0021
Oligomerus brunneus	48	0.0258	1	0.0020	34	0.0126	49	0.0242	44	0.0186	16	0.0068
Priobium carpini	71	0.0382	0	0	32	0.0118	8	0.0039	35	0.0148	6	0.0025
Dorcatoma chrysomelina	0	0	0	0	3	0.0011	2	0.0010	0	0	0	0
Ptinomorphus imperialis	0	0	0	0	0	0	0	0	1	0.0004	0	0
Ptinomorphus regalis	1	0.0005	0	0	1	0.0004	1	0.0005	4	0.0017	0	0
Mesocoelopus niger	2	0.0011	0	0	3	0.0011	7	0.0035	2	0.0008	0	0
Ptinus aubei	1	0.0005	0	0	1	0.0004	0	0	0	0	0	0
Ptinus sexpunctatus	2	0.0011	0	0	2	0.0007	0	0	2	0.0008	0	0
total specimens	148		3		123		82		130		29	
mean per trap	13.4545		1		8.7857		5.8571		9.2857		2.0714	
total ADt		0.0796		0.0059		0.0455		0.0404		0.0549		0.0123
total species	10		3		10		9		11		5	

of species, mean number of specimens per trap and ADt values were higher for window flight traps. These results indicate that window flight traps are more efficient in sampling; nonetheless, the use of both types of trap allowed for a more complete faunistic inventory to be compiled, especially considering the importance of *Lichenophanes varius*.
The aerial and Malaise traps placed in the lowest part of the canopy caught few specimens, but nonetheless demonstrated that at least 9 species frequent this environment: *Sinoxylon sexdentatum, Scobicia chevrieri*, *Xylopertha retusa*, *Gastrallus laevigatus*, *Dorcatoma chrysomelina*, *Mesocoelopus niger*, *Mesothes ferrugineus*, *Ptinus aubei* and *P. sexpunctatus*. It is noteworthy that none of the previously-mentioned dominant species were found in the canopy.
From a faunistic and conservation point of view, the occurrences of *Lichenophanes varius*, *Dorcatoma chrysomelina* and *Mesothes ferrugineus* are noteworthy. From northern Italy about 145 species of Bostrichidae and Anobiidae are known (Audisio et al. 1995; Guido et al. 1995; Kahlen & Hellrigl 1996); further research in the reserve, chiefly by rearing larvae from infested wood, would certainly reveal the presence of further species of these families. Moreover, it would be necessary to search for Ptininae species, since they are clearly underrepresented in the studied material.

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