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**RESEARCH ON THE NATURAL HERITAGE OF THE
RESERVES VINCHETO DI CELARDA AND
VAL TOVANELLA
(BELLUNO PROVINCE, ITALY)**

Conservation of two protected areas in the context of a LIFE Project



Cornò Forestale dello Stato
Centro Nazionale per lo Studio e la Conservazione
della Biodiversità Forestale "Bosco Fontana"
Verona

This volume of the series "Quaderni Conservazione Habitat" is the result of four years of research carried out in the nature reserves Vincheto di Celarda and Val Tovanella, in the context of the LIFE Project LIFE04NAT/IT/000190. Both areas are managed by the Italian State Forestry Service (Corpo Forestale dello Stato) and are situated in the province of Belluno. While the first reserve is located in a plain alongside the Piave River, the second reserve is a small secluded valley in the Dolomites. The book includes 33 scientific articles, a general introduction and concluding remarks and treats a wide range of subjects, covering hydrogeology, flora, vegetation, lichens, molluscs, spiders, insects, fish and birds. A number of national and international specialists were coordinated by the Centro Nazionale per lo Studio e la Conservazione della Biodiversità Forestale "Bosco Fontana" of Verona and contributed to the project. This allowed to describe the biological systems of the reserves at an unprecedented level of detail. For example, a total of 21 species are for the first time reported for the Italian territory. Numerous rare and protected species were also discovered and it was thus possible to consider their ecological needs for the management of the reserves. The multitude of new faunistic and floristic data contained in this volume highlights the elevated level of biodiversity of the reserves and adds substantially to the knowledge of the natural heritage of Belluno province.

Questo volume della serie "Quaderni Conservazione Habitat" è il risultato delle ricerche svolte nell'ambito del progetto LIFE Natura LIFE04NAT/IT/000190 nelle Riserve Naturali Vincheto di Celarda e Val Tovanella, entrambe gestite dal Corpo Forestale dello Stato, Ufficio Territoriale Biodiversità di Belluno. La prima è collocata lungo il fiume Piave, mentre la seconda è una piccola valle delle Dolomiti Bellunesi. Questo libro, composto da 33 articoli scientifici, una introduzione generale e da conclusioni finali, tocca una moltitudine di argomenti, come idrologia, flora, vegetazione, licheni, molluschi, ragni, insetti, pesci e uccelli. La collaborazione di numerosi esperti, nazionali ed internazionali, coordinati dal Centro Nazionale per lo Studio e la Conservazione della Biodiversità Forestale "Bosco Fontana" di Verona, ha permesso di descrivere il sistema biologico delle riserve con una accuratezza senza precedenti. Ad esempio, 21 specie sono segnalate per la prima volta nel territorio italiano e molte altre risultano rare e protette. Le loro esigenze ecologiche sono in seguito state considerate nella gestione delle riserve. La moltitudine di nuovi dati sulla fauna e flora presentati in questo libro, oltre che dare rilievo alla straordinaria biodiversità di questi territori, contribuisce in modo significativo alla conoscenza degli assetti naturalistici della provincia di Belluno.

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Research on the Cerambycidae (Coleoptera) of Val Tovanella Nature Reserve

Enzo GATTI

ABSTRACT

Forty-one species of Cerambycidae (15% of the Italian fauna) have been recorded so far in Val Tovanella. Details on the collections in the reserve are listed for each species, and for 18 of these species information on the ecology and biology is presented as well. The remaining 23 species were already discussed in “Cerambycidae of the Vincheto di Celarda Nature Reserve”, which is published in this same volume. The distribution of the chorological categories of the cerambycid fauna known from the reserve is compared to that of four other valleys of the eastern Alps. Three of the species are discussed as particularly relevant for conservation, due to their rarity: *Oplasia cinerea* (Mulsant, 1839), *Pedostrangalia (Etorofus) pubescens* (Fabricius, 1787), *Tetropium fuscum* (Fabricius, 1787).

Key words: Cerambycidae, North-Eastern Italy, ecology, chorology.

RIASSUNTO ESTESO

Vengono riportati i risultati delle ricerche compiute sui Coleoptera Cerambycidae della Riserva Naturale Orientata Val Tovanella. I dati, raccolti durante i monitoraggi previsti nell'ambito del Progetto LIFE LIFE04NAT/IT/000190 e riguardanti gli invertebrati della riserva, sono stati integrati con i risultati di ricerche effettuate negli anni 1988-89 per l'allora Ufficio Gestione ex Azienda di Stato per le Foreste Demaniali, oggi divenuto Ufficio Territoriale per la Biodiversità di Belluno. Ne è risultata una checklist di 41 specie che si può ritenere sufficientemente rappresentativa della diversità dei Cerambycidae della riserva. Poiché 23 specie risultano in comune con i Cerambycidi raccolti al Vincheto di Celarda, vengono brevemente illustrati gli aspetti ecologici, biologici e corologici delle sole 18 specie raccolte esclusivamente nella Val Tovanella; per le altre 23 specie sono stati forniti solamente i dati relativi a località di cattura, date di raccolta, nomi dei raccoglitori e metodi di raccolta impiegati.

I risultati del presente studio sono stati confrontati, relativamente alle percentuali delle categorie corologiche, con quelli ottenuti in altre quattro aree alpine, poste ad una latitudine analoga a quella della Val Tovanella: la Val di Genova (Trento), la Val di Fiemme (Trento), il Monte Bondone (Trento) e l'Alta Val Torre (Udine). In tutti i cinque casi le categorie corologiche predominanti sono quelle Asiatico-Europeo e Sibirico-Europeo, che risultano primariamente associate ad aree caratterizzate da un clima continentale e boreale freddo.

Infine vengono brevemente commentate tre specie che rivestono una certa rilevanza biogeografica per la loro rarità o per la loro distribuzione frammentata: *Oplasia cinerea* (Mulsant, 1839), *Pedostrangalia (Etorofus) pubescens* (Fabricius, 1787) e *Tetropium fuscum* (Fabricius, 1787).

INTRODUCTION

Members of the family Cerambycidae are xylophagous, sapro-xylophagous or phytophagous, at the larval stages. Normally, saproxylic species consume wood of sick trees, with hollows, or dead wood. Several species of Cerambycidae feed on tree roots, while some species can attack the wood of healthy trees. Others develop in herbaceous plants.

The ecological function of saproxylic organisms is of vital importance for the functioning of ecosystems. They accelerate the transformation of dead wood, so that the minerals there contained do not accumulate and can be re-used by other plants.

Aim of this paper is to provide a summary of the Cerambycidae known from the Val Tovanella Nature Reserve, which were mainly collected within the

LIFE Project LIFE04NAT/IT/000190.

MATERIALS AND METHODS

In the Val Tovanella Nature Reserve the Cerambycidae were collected using the following sampling methods:

- one Malaise trap on the ground (Mason et al. 2002) and three aerial traps baited with sweet liquids (Mason et al. 2002) were set in the clearing Pescòl, and in Campigol de Còl Tamài (year 2004)
- one Malaise trap was suspended under the canopy of a single tree in the clearing Pescòl (years 2005 and 2006)
- three (year 2004) and one (years 2005-2006)

window flight traps (Mason et al. 2002) were set in the clearing Pescòl.

All collection sites are located in the municipality of Ospitale di Cadore (Belluno province) (fig.1). A large number of specimens were collected in 1988 and 1989 in several sites of the reserve. Pre-imaginal stages were collected by gathering wood and fallen twigs. These were kept in the laboratory until adults emerged. The nomenclature and systematic follow Sama (2005).

The chorological categories were attributed following Vigna Taglianti et al. (1993, 1999). Information on ecology, biology and distribution was taken from Sama (1988, 2002, 2005) and Biscaccianti (2002, 2004, 2007). The labels of the specimens are here reported in Italian, the original language.

For a description of the main habitats see Lasen et al. (2008). The specimens are preserved in the Ufficio Territoriale per la Biodiversità di Belluno, Italy.

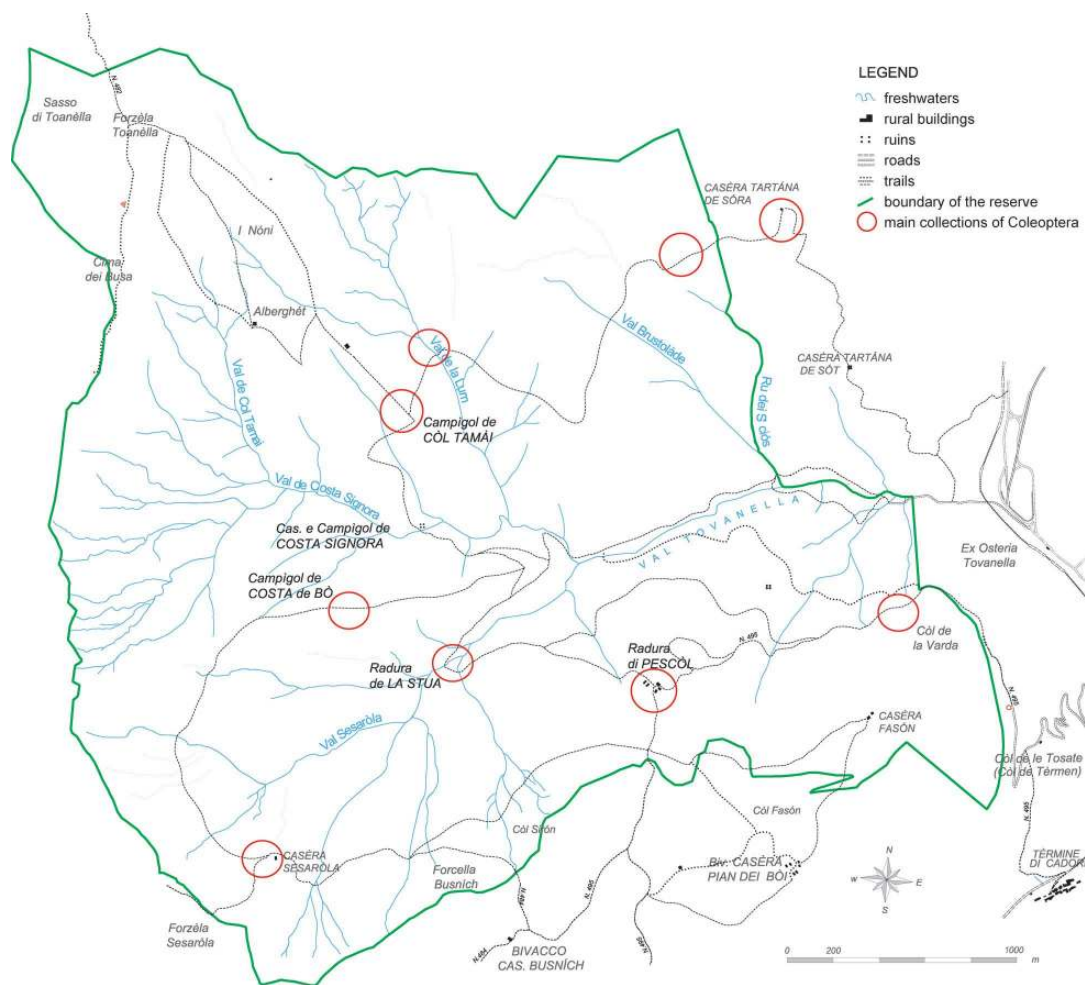


Fig. 1. Location of the sites where Cerambycidae were collected.

ABBREVIATIONS

coll. = collected; EG = Enzo Gatti leg.; em. = emerged; GP = Giuliano Paoli leg.; loc. = locality; MDB = Mauro De Bernardo leg.; MDC = Marialuisa Dal Cortivo leg.; MDR = Mirco Dalla Rosa leg.; MS = Monica Sommacal leg.

RESULTS

A total of 41 species of Cerambycidae, representing

15% of the Italian fauna were collected in the reserve. Twenty-three of the species collected in Val Tovanella were also recorded in the Vincheto di Celarda Nature Reserve and are discussed in Gatti (2008). For these species only the following data are presented here: references, collection locality, altitude, date, collector(s).

Comments on ecology and chorology of the remaining 18 species, not recorded at Vincheto, are presented below, together with short notes on their presence in Italy.

List of species collected in the reserve

1. *Rhagium (Rhagium) inquisitor* (Linnaeus, 1758)
2. *Rhagium (Hargium) bifasciatum* Fabricius, 1775
3. *Rhagium (Megarhagium) mordax* (De Geer, 1775)
4. *Oxymirus cursor* (Linnaeus, 1758)
5. *Evodinus clathratus* (Fabricius, 1792)
6. *Dinoptera collaris* (Linnaeus, 1758)
7. *Gaurotes (Carilia) virginea* (Linnaeus, 1758)
8. *Pidonia lurida* (Fabricius, 1792)
9. *Grammoptera ruficornis ruficornis* (Fabricius, 1781)
10. *Alosterna tabacicolor* (De Geer, 1775)
11. *Pseudovadonia livida* (Fabricius, 1776)
12. *Pedostrangalia (Etorofus) pubescens* (Fabricius, 1787)
13. *Pachytodes cerambyciformis* (Schrank, 1781)
14. *Anastrangalia dubia* (Scopoli, 1763)
15. *Anastrangalia sanguinolenta* (Linnaeus, 1760)
16. *Stictoleptura rubra* (Linnaeus, 1758)
17. *Rutpela maculata* (Poda, 1761)
18. *Stenurella bifasciata* (Müller, 1776)
19. *Stenurella melanura* (Linnaeus, 1758)
20. *Asemum striatum* (Linnaeus, 1758)
21. *Tetropium castaneum* (Linnaeus, 1758)
22. *Tetropium fuscum* (Fabricius, 1787)
23. *Saphanus piceus* (Laicharting, 1784)
24. *Molorchus minor* (Linnaeus, 1758)
25. *Obrium brunneum* (Fabricius, 1792)
26. *Cerambyx scopoli* Fuesslins, 1775
27. *Hylotrupes bajulus* (Linnaeus, 1758)
28. *Callidium aeneum* (De Geer, 1775)
29. *Callidium violaceum* (Linnaeus, 1758)
30. *Phymatodes testaceus* (Linnaeus, 1758)
31. *Clytus arietis* (Linnaeus, 1758)
32. *Clytus lama* Mulsant, 1847
33. *Anaglyptus mysticus* (Linnaeus, 1758)
34. *Monochamus sartor* (Fabricius, 1787)
35. *Pogonocherus fasciculatus* (De Geer, 1775)
36. *Pogonocherus hispidulus* (Piller & Mitterpacher, 1783)
37. *Pogonocherus ovatus* (Goeze, 1777)
38. *Oplosia cinerea* (Mulsant, 1839)
39. *Leiopus nebulosus* (Linnaeus, 1758)
40. *Saperda scalaris* (Linnaeus, 1758)
41. *Oberea (Oberea) oculata* (Linnaeus, 1758)

1. *Rhagium (Rhagium) inquisitor* Linnaeus, 1758

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 13.V.1988, EG, rac-

colta diretta; Loc. Còl dei S'chèi, 1220 m, 18.VI.2004, EG, raccolta diretta; Radura di Pescòl, 1175 m, 16.VI-3.VII.2006; 3-24.VII.2006 MDC & MDB, Malaise trap sospesa.

2. *Rhagium (Hargium) bifasciatum* Fabricius, 1775 (fig. 2)

MATERIAL. Loc. Casèra Tartàna de Sòra, 1285 m, 18.VI.2004, EG, raccolta diretta; Radura di Pescòl, 1166 m, 7.VII-21.VIII.2004, EG, window flight trap.

Species of the montane belt, in the Apennines it is present at altitudes as low as 600 m. The larvae live in decomposing wood, preferably old, more commonly of conifers, sometimes of broad-leaved trees (Sama 1988, 2002). Contrary to the other species of the genus *Rhagium* Fabricius, 1775, larval development occurs deep in the wood, only in a few rare cases in the subcortical layer of the host plant (Pesarini & Sabbadini 1994). After spending the winter completely metamorphosed inside the pupal cells, adults emerge in early spring. However, adults can be found overwintering together with larvae and nymphs deriving from late ovipositions.

Fig. 2. *Rhagium bifasciatum* from Nevegal (Veneto, Belluno province) (length 12 mm) (photo by E. Gatti).

CHOROTYPE AND ITALIAN DISTRIBUTION. Asiatic-European.

In Italy, this species is present in the Alps and, discontinuously on the Apennine and in Sicily (Sama 1988; Biscaccianti 2004; Sama 2005).

3. *Rhagium (Megarhagium) mordax* (De Geer, 1775)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 13.V.1988, EG, raccolta diretta; Radura di Sesaròla, 1 700 m, 11.VII.2006, MS, raccolta diretta; Radura di Pescòl, 1 175 m, 13.VI-3.VII.2006, MDC & MDB, Malaise trap sospesa.

4. *Oxymirus cursor* (Linnaeus, 1758)

MATERIAL. Radura di Pescòl, 1 175 m, 22.VI.2006, MDC, raccolta diretta; Campigol de Costa de Bò, 1 440 m, 22.VI.2006, MDC & GP, raccolta diretta; Radura di Pescòl, 1 175 m, 29.V-13.VI.2006, MDC & MDB, Malaise trap sospesa.

Species typical of mixed *Abies alba* Mill. and *Picea abies* (L.) H. Karsten woods in the montane horizon and in the *Abies alba* woods in the subalpine belt (Contarini 1988). Sometimes this species can enter into alpine meadows and pastures of the belt suggesting a good ability to disperse by flight, helped by ascending wind currents (Zandigiacoimo & Coghi 2000). Larvae live in logs and rotting trunks of conifers. In Northern Europe the pre-imaginal stages occur also in wood of broad-leaved trees (Sama 1988, 2002). The adults have been found on fallen trunks of conifers and on flowers, where they feed on nectar and pollen (Zuliani et al. 2002).

CHOROTYPE AND ITALIAN DISTRIBUTION. Sibero-European.

In Italy this species is present in the Alps and in few isolated stations in the Apennines, from Emilia-Romagna to Latium and Abruzzo (Zandigiacoimo & Coghi 2000).

5. *Evodinus clathratus* (Fabricius, 1792)

MATERIAL. Radura di Pescòl, 1 175 m, 13.VI-3.VII.2006, MDC & MDB, Malaise trap sospesa.

A hygrophilic species of hills, mountains, subalpine and alpine belt, which has been found as high as 3 000 m a.s.l. (Kierdorf-Traut 2007). Adults are floricolous, preferring Apiaceae (e.g. *Angelica* sp.) Rosaceae (e.g. *Aruncus vulgaris* Raf.) and *Rubus* spp. (Contarini 1988; Coghi 1997; Sama 2002). In South Tyrol, adults have been reported from *Rhododendron ferrugineum* L.

(Kierdorf-Traut 2007). *Evodinus clathratus* can also be collected by beating *Alnus incana* (L.) Moench and *Corylus avellana* L. (Martinelli 1996; Kierdorf-Traut 2007). Larvae develop in a variety of broad-leaved and conifer trees, in rotting wood of branches and tree stumps, while metamorphosis occurs in the soil, where hibernation takes place as well (Sama 2002).

CHOROTYPE AND ITALIAN DISTRIBUTION. European.

In Italy this species is localized in the Alps, and northern Apennines.

6. *Dinoptera collaris* (Linnaeus, 1758)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1 175 m, 22.VI.2005, MDC & GP, raccolta diretta.

7. *Gaurotes (Carilia) virginea* (Linnaeus, 1758)

Literature record: Gatti (1998, as *Carilia virginea*).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Loc. Casèra Tartàna de Sòra, 1 285 m, 18.VI.2004, EG, raccolta diretta; Radura di Pescòl, 1 175 m, 22.VI.2005, MDC & GP, raccolta diretta; Campigol de Costa de Bò, 1 440 m 28.VI.2005, MDC & GP, raccolta diretta; Campigol de Costa de Bò, 1 440 m, 21.VII.2005, MDC, raccolta diretta.

Species of the montane and sub-alpine belt as high as 2 200 m a.s.l. Larvae develop in the wood of *Picea abies* (L.) H. Karsten, but according to some authors also in *Pinus* sp., *Larix* sp., *Abies* sp. and *Quercus* sp. Adults feed on flowers (e.g. *Rubus* sp. and *Scabiosa* sp.).

CHOROTYPE AND ITALIAN DISTRIBUTION. Sibero-European.

In Italy, this species occurs only in the Alps.

8. *Pidonia lurida* (Fabricius, 1792)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1 175 m, 22.VI.2005, MDC & GP, raccolta diretta.

Only in the montane belt, strongly heliophile. Larvae live under the bark of dead roots of *Picea* sp. and *Fagus* sp. (Sama 2002). The metamorphosis takes place in the soil. Adults on flowers, primarily of *Sambucus* sp. (Pedroni 1998).

CHOROTYPE AND ITALIAN DISTRIBUTION. European.

In Italy, this species is present only in the Alps, being more frequent in the Eastern part.

9. *Grammoptera ruficornis ruficornis* (Fabricius, 1781)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1 175 m, 7.VII-21.VIII.2004, EG, Malaise trap a terra; Radura di Pescòl, 1 175 m, 13.VI-3.VII.2006, MDC & MDB, Malaise trap sospesa.

10. *Alosterna tabacicolor* (De Geer, 1775) (fig. 3)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1 175 m, 21.VII-3.VIII.2004, EG, window flight trap; Radura di Pescòl, 1 175 m, 7.VII-21.VIII.2004, EG Malaise trap a terra.

Species mainly present in the montane belt. Larvae live under the bark of rotting wood of broad-leaved trees. Sometimes reported also from the wood of co-



Fig. 3. *Alosterna tabacicolor*, Val Tovanella (Veneto, Belluno province) (length 7.6 mm) (photo by E. Gatti).

nifers. A relationship with fungi seems likely (Sama 2002). Adults on flowers, mostly on Apiaceae.

CHOROTYPE AND ITALIAN DISTRIBUTION. Sibero-European. Present in all Italy, being less frequent in Southern Italy. Also reported for Sicily (Rapuzzi & Sama 2006). *Alosterna tabacicolor* is common in Veneto, at least in the northern area of Belluno province (Gatti 1998; Biscaccianti 2002; P. Zandigiacomo

pers. com.), and is abundant in Val Tovanella Nature Reserve.

11. *Pseudovadonia livida* (Fabricius, 1776)

Literature record: Gatti (1998, as *Pseudalosterna* (*Pseudovadonia*) *livida*).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Loc. Còl dei S'chèi, 1 220 m, 21.VII.2005, MDC raccolta diretta; Radura de la Stua, 1 010 m, 21.VIII.2005, MDC & GP raccolta diretta, Campìgol de Còl Tamai, 1 280 m, 22.VII-3.VIII.2004, EG, window flight trap.

12. *Pedostrangalia (Etorofus) pubescens* (Fabricius, 1787) (fig. 4)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta.

The species lives in the montane and sub-alpine belt with a discontinuous distribution (Zuliani et al. 2002). Adults on inflorescences of various plants. The larval biology of this species is little known although it is almost certain that larvae develop in trees of the genus *Pinus* (Biscaccianti 2002).

CHOROTYPE AND ITALIAN DISTRIBUTION. European. In Italy, the species is known only from the Alps.



Fig. 4. *Pedostrangalia (Etorofus) pubescens*, Val Prescudin (Friuli-Venezia Giulia, Pordenone) (length 10.5 mm) (photo by E. Gatti).

13. *Pachytodes cerambyciformis* (Schrank, 1781)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1175 m, 21.VII-11.VIII.2004, EG, Malaise trap a terra.

Species present in the montane and sub-alpine belt. Larvae develop in the roots of various broad-leaved trees. Metamorphosis occurs in the soil, inside cocoons. Adults live on flowers.

CHOROTYPE AND ITALIAN DISTRIBUTION. European. In Italy, this species is common all over the Alps.

14. *Anastrangalia dubia* (Scopoli, 1763)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1175 m, 9.VIII.1989, 21.VII.2004, EG, raccolta diretta; Campìgol de Costa de Bò 1450 m, 21.VII.2005, MDC, raccolta diretta; Radura de la Stua, 1010 m, 21.VIII.2005, MDC & GP, raccolta diretta; Radura di Pescòl, 1175 m, 21.VII-3.VIII.2004, EG, Malaise trap a terra.

Mountain and sub-alpine species. Larvae feed on the wood of conifers, while adults feed on flowers.

CHOROTYPE AND ITALIAN DISTRIBUTION. Europeo-Mediterranean.

In Italy, this species is present across the Alps, and in some localities of the Apennines in *Abies alba* Mill. and *Pinus* spp. forest.

15. *Anastrangalia sanguinolenta* (Linnaeus, 1760)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1175 m, 9.VIII.1989, 21.VII.2004, EG, raccolta diretta.

16. *Stictoleptura rubra* (Linnaeus, 1758)

Literature record: Gatti (1998, as *Corymbia rubra*).

MATERIAL. Loc. Còl de la Varda, 1000 m, 8.VII.1988, 4.VIII.1988, 9.VIII.1989, EG, raccolta diretta; Radura di Pescòl, 1175 m, 9.VIII.1989, 21.VII.2004, EG, raccolta diretta; Radura di Pescòl, 1175 m, 21.VII-11.VIII.2004, 11.VIII-27.VIII.2004, EG, Malaise trap a terra; Campìgol de Còl Tamai, 1280 m, 3.VIII-27.VIII.2004, EG, Malaise trap a terra.

17. *Rutpela maculata* (Poda, 1761)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 8.VII.1988, EG, rac-

colta diretta; Radura di Pescòl, 1175 m, 21.VII.2004, EG, raccolta diretta; Radura di Pescòl, 1175 m, 7-21.VII.2004, 3-11.VIII.2004, EG, window flight trap; Campìgol di Còl Tamai, 1280 m, 21.VII-3.VIII.2004, EG, trappola aerea a birra; Radura di Pescòl, 1175 m, 21.VII-3.VIII.2004, 11-27.VIII.2004, EG, Malaise trap a terra.

18. *Stenurella bifasciata* (Müller, 1776)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1175 m, 21.VII-3.VIII.2004, EG, Malaise trap a terra.

19. *Stenurella melanura* (Linnaeus, 1758)

MATERIAL. Radura di Pescòl, 1175 m, 9.VIII.1999, EG, raccolta diretta; Campìgol di Còl Tamai, 1280 m, 22.VII-3.VIII.2004, EG, window flight trap; Radura di Pescòl, 1175 m, 7.VII-21.VIII.2004, EG, Malaise trap a terra.

20. *Asemum striatum* (Linnaeus, 1758)

MATERIAL. Loc. Còl dei S'chèi, 1220 m, 18.VI.2004, EG, raccolta diretta; Val de la Lum, 1250 m, 22.VII.2004, EG, raccolta diretta; Radura di Pescòl, 1175 m, 10.VII.2006, MDC, raccolta diretta.

21. *Tetropium castaneum* (Linnaeus, 1758)

MATERIAL. Loc. Còl dei S'chèi, 1220 m, 18.VI.2004, EG, raccolta diretta; Radura di Pescòl, 1175 m, 26.VI.2006, MDC, raccolta diretta.

22. *Tetropium fuscum* (Fabricius, 1787)

MATERIAL. Loc. Còl dei S'chèi, 1220 m, 18.VI.2004, EG, raccolta diretta; Radura di Pescòl, 1175 m, 26.VI.2006, MDC, raccolta diretta; Campìgol de Costa de Bò, 1450 m, 7.VIII.2006, MDC & MDB, raccolta diretta.

Montane and sub-alpine species which develops in the wood of conifer trees, mostly *Picea abies* (L.) H. Karsten, but also *Abies alba* Mill., *Larix decidua* Mill., and *Pinus* spp. *Tetropium fuscum* is rarer than *T. castaneum* (Linnaeus, 1758) which shares the same habitat. *Tetropium fuscum* mainly attacks the basal part of large trees, often during the mass emergence of Scolitydae (*Ips typographus* (Linnaeus, 1758) and *Dentroctonus micans* Kugelann, 1794) (Stergulc & Frigimelica 1996).

CHOROTYPE AND ITALIAN DISTRIBUTION. European.

In Italy, this species is present across the Alps. Because

only a few records are known, one additional specimens collected in Belluno province is reported here: Sovramonte, Sorriva, 585 m, 18.V.2006, MDC, raccolta diretta.

23. *Saphanus piceus* (Laicharting, 1784)

MATERIAL. Loc. Còl de la Varda, 1 000 m, ex larvis in *Corylus avellana*, coll. 15.III.2004, em. 20.IV.2004, 28.IV.2004, 1.V.2004, 3.V.2004, EG; Campigol de Còl Tamai, 1 280 m, 23.VI-22.VII.2004, EG, Malaise trap a terra.

24. *Molorchus minor* (Linnaeus, 1758)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Loc. Còl dei S'chèi, 1 220 m, 18.VI.2004, EG, raccolta diretta; Radura di Pescòl, 1 175 m, 13.VI-3.VII.2006, MDC & MDB, Malaise trap sospesa.

25. *Obrium brunneum* (Fabricius, 1792)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Radura di Pescòl, 1 175 m, 7.VII-21.VII.2004, 21.VII-3.VIII.2004, EG, window flight trap; Radura di Pescòl, 1 175 m, 3.VIII-11.VIII.2004, 7.VII-21.VIII.2004, EG, trappola aerea, attivata con birra.

26. *Cerambyx scopolii* Fuesslins, 1775 (fig. 5)

MATERIAL. Loc. Còl dei S'chèi, 1 220 m, 18.VI.2004, EG, raccolta diretta.

This is the smallest and most common European species of the genus *Cerambyx* Linnaeus, 1785. This species occurs from the plains to the montane belt. Larvae live in wood of various broad-leaved trees. *C. scopolii* attacks exclusively branches and trunks of dead trees. It seems likely that old records from living plants are erroneous. The larvae feed under the bark before penetrating deeper into the wood. The lower part of the trunk is often chosen and sometimes the larvae even attack the roots.

CHOROTYPE AND ITALIAN DISTRIBUTION. European. Records of this species exist from all Italian regions with the exception of Molise (Sama 2005).

27. *Hylorupes bajulus* (Linnaeus, 1758)

MATERIAL. Radura di Pescòl, 1 160 m, 11.VII.2006, MS, raccolta diretta.



Fig. 5. *Cerambyx scopolii*, Puos d'Alpago (Veneto, Belluno province) (length 22.0 mm) (photo by E. Gatti).

28. *Callidium aeneum* (De Geer, 1775) (fig. 6)

MATERIAL. Loc. Còl dei S'chèi, 1 220 m, 18.VI.2004, EG, raccolta diretta.

Montane and sub-alpine species. The larvae develop in the wood of conifers.

CHOROTYPE AND ITALIAN DISTRIBUTION. Asiatic-European.

In Italy this species is present all over the Alps, being never common. It is rare in the Apennine, where it lives in some relict populations of *Abies alba* Mill. (Sama 1988, 2005).

29. *Callidium violaceum* (Linnaeus, 1758)

MATERIAL. Radura di Pescòl, 1 175 m, 26.VI.2006, MDC, raccolta diretta; Radura di Pescòl, 1 175 m, 7.VII-21.VIII.2004, EG, Malaise trap a terra.

30. *Phymatodes testaceus* (Linnaeus, 1758)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VIII.1988, EG, raccolta diretta.

31. *Clytus arietis* (Linnaeus, 1758)



Fig. 6. *Callidium aeneum*, Val Tovanelle (Veneto, Belluno province) (length 12.4 mm) (photo by E. Gatti).

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1 000 m, 8.VII.1988, EG, raccolta diretta; Loc. Casèra Tartàna de Sòra, 1 285 m, 18.VI.2004, EG, raccolta diretta; Campìgol de Còl Tamai, 1 280 m, 22.VII-3.VIII.2004, E. Gatti, window flight trap; Campìgol de Còl Tamai, 1 280 m, 13-22.VII.2004, E. Gatti, Malaise trap a terra.

32. *Clytus lama* Mulsant, 1847

MATERIAL. Radura di Pescòl, 1 175 m, 26.VI.2006, 10.VII.2006, MDC, raccolta diretta; Radura di Sesaròla, 1 700 m, 11.VII.2006, MS, raccolta diretta; Radura di Pescòl, 1 175 m, 21.VII-3.VIII.2004, EG, window flight trap; Radura di Pescòl, 1 175 m, 21.VII-11.VIII.2004, EG, Malaise trap a terra, Campìgol de Còl Tamai, 1 280 m, 13-22.VII.2004, EG, Malaise trap a terra.

A montane and sub-alpine species, widespread all over the Alps, rarer in other European alpine regions (Pesarini & Sabbadini 1994). Larvae live in conifer trees. Adults can be found on very old trunks of the host plants and more rarely on the flowers of Apiaceae.

CHOROTYPE AND ITALIAN DISTRIBUTION. European.

In Italy this species is present all over the Alps. In the Apennine it is recorded for Foresta della Lama (Forlì, Cesena) and for Monti della Laga (L'Aquila) (Sama

1988, 2005), which host relict populations *Abies alba* Mill.

33. *Anaglyptus mysticus* (Linnaeus, 1758) (fig. 7)

MATERIAL. Loc. Casèra Tartàna de Sòra, 1 285 m, 18.VI.2004, EG, raccolta diretta; Radura di Sesaròla, 1 700 m 11.VII.2006, MS, raccolta diretta.

Montane hygrophilous species, in the plains it is substituted by the more thermophilous *Anaglyptus gibbosus* (Fabricius, 1878) (Sama 2002). Larvae live on various broad-leaved trees, shrubs. Adults can be found mainly in summer, on the trunks of the host plants (*Ulmus* spp., *Carpinus* spp., *Fagus* spp., *Corylus* spp. etc.) and on flowers.

CHOROTYPE AND ITALIAN DISTRIBUTION. European.

This species is present in all Italy, except Aosta Valley, Apulia, Sicily and Sardinia (Sama 2005).

34. *Monochamus sartor* (Fabricius, 1787)

Literature record: Gatti (1998).

MATERIAL. Radura di Pescòl, 1 175 m, 1.VIII.1996, 6.VIII.1996, EG, raccolta diretta; Loc. Còl de la Varda, 1 000 m, ex larvis in



Fig. 7. *Anaglyptus mysticus*, Valle del Mis (Veneto, Belluno province) (length 9.5 mm) (photo by E. Gatti).

Picea abies, coll. 9.V.2004, em. 23.VIII.2004, EG; Radura di Pescòl, 1175 m, 22.VI.2006, 26.VI.2006, 10.VII.2006, MDC, raccolta diretta; Campigol de Costa de Bò, 1440 m, 22.VI.2006, 7.VIII.2006, MDC & MDB, raccolta diretta; Radura di Pescòl, 1175 m, 13.VI-3.VII.2006, MDC & MDB, Malaise trap sospesa.

35. *Pogonocherus fasciculatus* (De Geer, 1775)

MATERIAL. Radura di Pescòl, 1175 m, 19.VII.2007, MDC & MDB, raccolta diretta; Radura di Pescòl, 1175 m, 29.V-16.VI.2006, MDC & GP, window flight trap; Radura di Pescòl, 1175 m, 3.VII-24.VII.2006, MDC & MDB, Malaise trap sospesa.

The larvae develop in conifers. In southern Europe and in Turkey the species attacks only *Pinus* spp., while in central and northern Europe it attacks *Picea* spp. In Siberia the species prefers *Picea* spp. and *Abies* spp. (Sama 2002). The larvae dig flat galleries in dry dying branches.

CHOROTYPE AND ITALIAN DISTRIBUTION. Asiatic-European.

In Italy this species is present all over the Alps and in a few isolated localities in Abruzzo and in the Lucanian Apennine (Sama 2005).

36. *Pogonocherus hispidulus* (Piller & Mitterpacher, 1783)

MATERIAL. Radura di Pescòl, 1175 m, 29.V-16.VI.2006, MDC & GP, Malaise trap sospesa.

A mesophile species (Biscaccianti 2004) which occurs on broad-leaved trees in mixed forests, from the sub-montane to the sub-alpine belt (Contarini 1988). The larvae are known to live in several broad-leaved trees and shrubs.

CHOROTYPE AND ITALIAN DISTRIBUTION. European.

In Italy this species is frequent in the northern regions; it is rare and localized in the central and southern Apennine, where it occurs as far south as Calabria (Sama 2005). *Pogonocherus hispidulus* has recently been reported for Sicily (Rapuzzi & Sama 2006).

37. *Pogonocherus ovatus* (Goeze, 1777)

MATERIAL. Radura di Pescòl, 1175 m, 3.VII-24.VII.2006, MDC & MDB, Malaise trap sospesa.

This species is most commonly found in the mountain belt. It develops in the wood of conifer trees and prefers *Abies alba* Mill., and sometimes lives also in broad-leaved trees. Adults are present throughout

the year and overwinter (Sama 2002). In some parts of Europe *P. ovatus* is protected. Steiner (1999) and Schmidl & Bussler (2003) included this species in the Red List of Cerambycidae of Carintia and Bavaria.

CHOROTYPE AND ITALIAN DISTRIBUTION. European. The species is known from the northern regions and in central Italy records exist as far south as Latium. It has also been reported from Mount Pollino and Aspromonte.

38. *Oplosia cinerea* (Mulsant, 1839)

MATERIAL. Campigol de Còl Tamai, 1280 m, 22.VII-3.VIII.2004, EG, Malaise trap a terra; Radura di Pescòl, 1166 m, 7.VII-21.VIII.2004, EG, Malaise trap a terra.

39. *Leiopus nebulosus* (Linnaeus, 1758)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 22.III.1988, EG, raccolta diretta; Campigol de Còl Tamai, 1280 m, EG, Malaise trap a terra; Radura di Pescòl, 1175 m, 3-24.VII.2006, 15.IX-15.X.2006, MDC & MDB, Malaise trap sospesa.

40. *Saperda scalaris* (Linnaeus, 1758)

MATERIAL. Radura di Pescòl, 1175 m, 22.VI.2006, MDC, raccolta diretta; Campigol de Costa de Bò, 1440 m, 22.VI.2006, 11.VII.2006, MDC & GP, raccolta diretta; Radura di Pescòl, 1175 m, 21.VII-3.VIII.2004, EG, Malaise trap a terra; Radura di Pescòl, 1175 m, 13.VI-3.VII.2006, 3-24.VII.2006, 24.VII-7.VIII.2006, 15.IX-15.X.2006, 16.VI-13.VII.2006, MDC & MDB, Malaise trap sospesa.

41. *Oberea (Oberea) oculata* (Linnaeus, 1758) (fig. 8)

Literature record: Gatti (1998).

MATERIAL. Loc. Còl de la Varda, 1000 m, 21.VII.1989, EG, raccolta diretta.

The species is present from the plains to the montane belt; it is hygrophilous and associated with cool areas. Monophagous on the genus *Salix* (Sama 2002). *Oberea oculata* attacks living trees where it digs galleries only in small branches and thus does not kill the plant. Adults are often found on the leaves of the host plants.

CHOROTYPE AND ITALIAN DISTRIBUTION. Asiatic-European.

In Italy this species is present in the entire territory. However, it is frequent in the north, and sporadic and localized in the peninsular regions and in the islands (Biscaccianti 2004; Sama 2005).



Fig. 8. *Oberea (Oberea) oculata*, Farra d'Alpago (Veneto, Belluno province) (length 17 mm) (photo by E. Gatti).

DISCUSSION

Collection and trapping in the Val Tovanella Nature Reserve allowed recording 41 species of Cerambycidae, which is equivalent to 15% of the Italian fauna. It seems likely that these are a representative part of the fauna, even if not all species present in the reserve were collected, especially those from montane and sub-alpine biocoenosis, such as: *Pachyta quadrimaculata* (Linnaeus, 1758), *Glaphyra umbellatarum* (Schreber, 1759), *Chlorophorus figuratus* (Scopoli, 1763). These species are likely to be present also because they have been found repeatedly in neighboring valleys which are ecologically similar to Val Tovanella.

Chorotype analysis

The analysis of the chorological categories of the species collected in Val Tovanella shows a dominance of species with Asiatic-European, Sibero-European and Turano-European distribution (fig. 9). Nineteen species, representing 46% of all the species collected, belong to these categories. Within this group, species with a Sibero-European distribution are most abun-

dant (9 species, representing 22% of the total).

This pattern of the chorological categories of chorotypes is very similar to that of other mountain sites of Trentino and Venezia Giulia, where Cerambycidae were monitored in the past: Monte Bondone (Trento province) (Chemini 1970), Val di Fiemme (Trento province) (Contarini 1988), Val di Genova (Trento province) (Pedroni 2003) and Alta Val Torre (Udine) (Cogoi 1997; Zandigiacomo & Cogoi 2000) (tab.1). These sites are at approximately the same latitude as Val Tovanella.

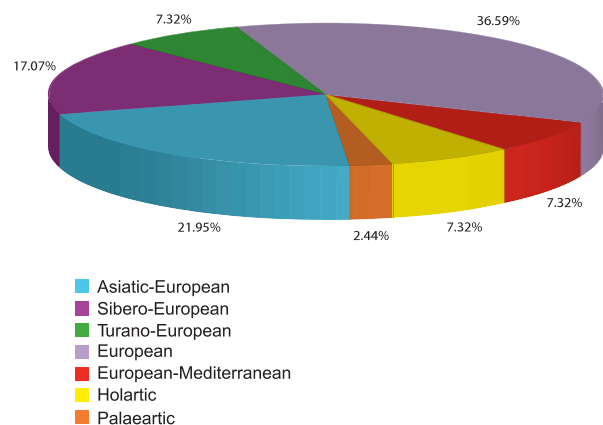


Fig. 9. Chorological categories of the Cerambycidae from the Val Tovanella Nature Reserve.

The Val di Genova species list of Cogoi & Zandigiacomo (2000) was updated with additional records (Martinelli 1996; Pedroni 1998, 2003); chorotypes were assigned following Sama (2005).

Even if the total number of taxa varies among the different areas, in all cases the most important chorological categories are Asiatic-European, Sibero-European and Turano-European.

The Cerambycidae assemblages in the mountain localities studied (tab. 1) are therefore associated to areas with a continental and boreal-cold climate, which is also the cause of the predominance of conifers rather than broad-leaved trees (Zandigiacomo & Cogoi 2000).

Faunistic relevance

Most of the species collected in the Val Tovanella Nature Reserve are common in the Alps, and 11 species are common all over Italy. Only the species discussed below are considered rare.

The record of two specimens of *Oplosia cinerea* in Val Tovanella and of one specimen in the Vinchetto di Celarda Nature Reserve add these areas to the few Italian localities known from literature (Sama 2005). They represent the first records for

Veneto region (the species is discussed in Gatti (2008)).

Pedostrangalia (Etorofus) pubescens is a species with a fragmented distribution. The collection of the specimens in the clearing Pescòl by Gatti (1998) was the first record for Veneto region (see Sama 1988). Later on, the species was collected in another locality in Belluno province: S. Stefano di Cadore, Val dell'Ovo at 850 m a.s.l., 30.VII.1996, EG. Finally, Biscaccianti (2002) recorded this species in the Piave River valley (Cadore). In Italy *Pedostrangalia pubescens* is known from Friuli-Venezia Giulia (Sama 1988; Cogoi 1997; Zuliani et al. 2002), Aosta Valley (Sama 1988), Veneto (Gatti 1998; Biscaccianti 2002) and Piedmont (Biscaccianti 2002). The following new records complete the known distribution of *P. pubescens*: Friuli-Venezia Giulia: Val Prescudin (Porde-

none), 500 m a.s.l., 22.VII.1989, 28.VII.1997, EG; 11.VII.1998, leg. A. Fabbri, E. Gatti & E. Celano; 24.VII.1999, leg. A. Fabbri & L. Zannarini. It seems likely that further research could reveal an even wider distribution of this species in the alpine area of Italy. *Tetropium fuscum* is a relatively rare species in Italy, even if it is present in most of Europe. While *T. castaneum* is common in Italy, *T. fuscum* is much rarer and seems to be relatively common only in the eastern alpine part (Sama 2005).

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Tab. 1. Distribution of chorological categories of Cerambycidae collected in five different mountain areas of North-Eastern Italy.

	Val di Genova		Val di Fiemme		M. Bondone		Alta Val Torre		Val Tovanella	
	N.	%	N.	%	N.	%	N.	%	N.	%
Holarctic	6	6.98	4	10.00	2	5.56	4	7.69	3	7.32
Palaearctic	0	0	0	0	0	0	0	0	1	2.44
Asiatic-European	15	17.44	7	17.50	9	25.00	6	11.54	7	17.07
Sibero-European	21	24.42	12	30.00	14	38.89	13	25.00	9	21.95
Turano-European	2	2.33	2	5.00	0	0	2	3.85	3	7.32
European	26	30.23	11	27.50	7	19.44	14	26.92	15	36.59
Europeo-Mediterranean	5	5.81	3	7.50	0	0	7	13.46	3	7.32
Mediterranean	1	1.16	0	0	0	0	1	1.92	0	0
Asiatic-European-Mediterranean	2	2.33	1	2.50	4	11.11	1	1.92	0	0
Cosmopolitan	1	1.16	0	0	0	0	1	1.92	0	0
Other chorological categories	7	8.14	0	0	0	0	3	5.77	0	0
TOTAL	86	100	40	100	36	100	52	100	41	100

REFERENCES

- Biscaccianti A.B., 2002. Nuovi dati geonemici su alcuni Cerambycidi Italiani (Coleoptera, Cerambycidae). Bollettino dell'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 dell'Associazione romana di Entomologia, 59 (1-4): 43-88.
- Biscaccianti A.B., 2007. I Coleotteri Cerambycidi del Vesuvio (Coleoptera: Cerambycidae), pp. 249-278. In: Nardi G. & Vomero V. (eds.), Artropodi del Parco Nazionale del Vesuvio: ricerche preliminari. Conservazione Habitat Invertebrati, 4. Cierre edizioni, Verona.
- Chemini C., 1970. I Cerambycidi del Monte Bondone. Natura Alpina - Rivista della Società di Scienze naturali del Trentino e del Museo tridentino di Scienze naturali, 21: 22-27.
- Cogoi P., 1997. Contributo alla conoscenza della fauna a Cerambycidi dell'Alta Val Torre (Prealpi Giulie) (Coleoptera Cerambycidae). Gortania - Atti del Museo friulano di Storia naturale, 18 (1996): 183-200.
- Contarini E., 1988. Coleotteri Cerambycidi di ambienti montani ed alpini delle Dolomiti. Studi trentini di Scienze naturali, Acta biologica, 64: 319-351.
- Gatti E., 1998. Catalogo topografico dei Coleotteri Cerambycidi della Provincia di Belluno (Coleoptera, Cerambycidae). Atti del Convegno "Aspetti naturalistici della Provincia di Belluno", Belluno 30 maggio 1998: 246-273.

- Gatti E., 2008. Analysis of the Cerambycidae (Coleoptera) from Vinchetto di Celarda Nature Reserve, pp. 129-151. In: Hardersen S., Mason F., Viola F., Campedel D., Lasen C. & Cassol M. (eds.), Research on the natural heritage of the reserves Vinchetto di Celarda and Val Tovanelle (Belluno province, Italy). Conservation of two protected areas in the context of a LIFE Project. Quaderni Conservazione Habitat, 5. Arti Grafiche Fiorini, Verona.
- Kierdorf-Traut G., 2007. Notizen zum Vorkommen der Gattungen *Brachyta* Fairmaire, 1864 und *Evodinus* LeConte, 1850 in Südtirol (Coleoptera: Cerambycidae). Gredleriana, 7: 219–232.
- Lasen C., Scariot A. & Sitzia T., 2008. Natura 2000 Habitats map, forest types and vegetation outline of Val Tovanelle Nature Reserve, pp. 325-334. In: Hardersen S., Mason F., Viola F., Campedel D., Lasen C. & Cassol M. (eds.), Research on the natural heritage of the reserves Vinchetto di Celarda and Val Tovanelle (Belluno province, Italy). Conservation of two protected areas in the context of a LIFE Project. Quaderni Conservazione Habitat, 5. Arti Grafiche Fiorini, Verona.
- Martinelli A., 1996. I Cerambicidi della Val di Genova. Annali del Museo civico di Rovereto, Sezione Archeologia, Storia, Scienze naturali, 11 (1995): 349–360.
- Mason F., Cerretti P., Tagliapietra A., Speight M.C.D. & Zapparoli M. (eds.), 2002. Invertebrati di una foresta della Pianura Padana, Bosco della Fontana. Primo contributo. Conservazione Habitat Invertebrati, 1. Gianluigi Arcari Editore, Mantova, 176 pp.
- Pedroni G., 1998. Contributo alla salvaguardia della fauna a Cerambicidi della Val di Genova (TN) (Insecta, Coleoptera, Cerambycidae). Natura Alpina – Rivista della Società di Scienze naturali del Trentino e del Museo tridentino di Scienze naturali, 49: 37–45.
- Pedroni G., 2003. Sui Cerambicidi della Val di Genova (TN) (Insecta, Coleoptera, Cerambycidae). Natura Alpina – Rivista della Società di Scienze naturali del Trentino e del Museo tridentino di Scienze naturali, 54: 43–46.
- Pesarini C. & Sabbadini A., 1994. Insetti della Fauna Europea. Coleotteri Cerambicidi. Natura, 85 (1-2), 132 pp.
- Rapuzzi P. & Sama G., 2006. Cerambycidae nuovi o interessanti per la fauna di Sicilia (Insecta Coleoptera Cerambycidae). Quaderni di Studi e Notizie di Storia naturale della Romagna, 23: 157–172.
- Sama G., 1988. Fauna d'Italia. 26. Coleoptera Cerambycidae. Catalogo topografico e sinonimico. Calderini, Bologna, XXXVI + 216 pp.
- 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., 2005. Insecta Coleoptera Cerambycidae, pp. 219–222. In: Ruffo S. & Stoch F. (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, 16 + CD.
- Schmidl J. & Bussler H., 2003. Rote Liste gefährdeter Bockkäfer (Coleoptera: Cerambycidae). Bayerns. Bayerisches Landesamt für Umweltschutz, Schriftenreihe Heft, 166: 150–153.
- Steiner S., 1999. Rote Liste der Bockkäfer Kärntens (Coleoptera, Cerambycidae), pp. 269-286. In: Holzinger W.E., Mildner P., Rottenburg T. & Wieser C. (eds.), Rote Listen gefährdeter Tiere Kärntens. Schriftenreihe Naturschutz in Kärnten, 15.
- Stergulc F. & Frigimelica G., 1996. Insetti e funghi dannosi ai boschi nel Friuli-Venezia Giulia. Regione Autonoma Friuli-Venezia Giulia, Direzione Regionale delle Foreste e dei Parchi, Servizio Selvicoltura, Udine, Grafiche Fulvio, 364 pp.
- 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, Lavori della Società italiana di Biogeografia, (n.s.) 16 (1992): 159–179.
- Vigna Taglianti A., Audisio P.A., Belfiore C., 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, Lavori della Società italiana di Biogeografia, (n.s.) 20: 31–59.
- Zandigiacomo P. & Cogoi P., 2000. Note su *Oxymirus cursor* (Linnaeus, 1758) in Friuli-Venezia Giulia (Coleoptera Cerambycidae). Gortania - Atti del Museo friulano di Storia naturale, 22: 251–260.
- Zuliani M., Cogoi P. & Zandigiacomo P., 2002. Reperti della fauna a Cerambicidi della Val Resia (Alpi sud-orientali) (Coleoptera Cerambycidae). Gortania - Atti del Museo friulano di Storia naturale, 23 (2001): 157–167.

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