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Autor: Faccoli, Massimo / Battisti, Andrea

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On the occurrence of *Pityophthorus carniolicus* WICHMANN (Coleoptera, Scolytidae) in Italy

MASSIMO FACCOLI¹ & ANDREA BATTISTI²

The occurrence of *Pityophthorus carniolicus* WICHMANN, 1910 (Coleoptera, Scolytidae) in North Italy is reported. One adult was found on white pine (*Pinus strobus*), a host tree new to the species. *Pityophthorus carniolicus* usually lives both in Austrian pine (*Pinus nigra*) and Scots pine (*Pinus sylvestris*). It was not possible to find other specimens from the same stand whilst looking for the beetle. It therefore seems probable that the white pine is just an occasional host. Another interesting aspect concerning the biology of *P. carniolicus* is represented by its monogamy, a characteristic shared in the Palaearctic regions only with few other *Pityophthorus* species. The species completes at least two generations per year. The collection site is apparently important to partially explain the European distribution of the beetle. The new record, from a central location of the Northern Italy, shows that the species may have a larger and continuous European distribution, extending probably over all the central-eastern Alps. *Pityophthorus carniolicus* does not present any economic importance. A distribution map and a sketch of the adult are also presented.

Keywords: *Pityophthorus carniolicus*, Coleoptera, Scolytidae, Italy

INTRODUCTION

A thorough examination of the bark beetle collection held in the Institute of Agricultural Entomology of the Padua University (Italy), led to the detection of one specimen of the pine bark beetle *Pityophthorus carniolicus* WICHMANN, 1910 (Coleoptera Scolytidae). This species was already known from a presently Italian territory, which did not belong to Italy at the time of the record (WICHMANN 1916). However, it had not yet been included in the bark beetle national check-list (ABBAZZI et al. 1995). The insect was singly found on the 27.07.1986, 70 years after the first Italian record. The beetle was obtained from a small lateral branch of a white pine, *Pinus strobus* L., growing in a mixed stand with predominant Austrian black pine, *Pinus nigra* ARNOLD, located at Mt Garzon, Tregnago, Verona (northern Italy) < 11°12'E ; 45°33'N > 450 m.a.s.l. It was not possible to find subsequently other specimens from the same stand. The discovery confirms occurrence of this insect along the Italian Alps. As the species seems to be very rare, some brief notes concerning European distribution, biology and ecology are given.

EUROPEAN DISTRIBUTION

The beetles was found for the first time on *Pinus nigra* in the Kranjska district (German Krain), presently in Slovenia, not far from the Italian border (WICH-

¹ Department of Environmental Agronomy and Crop Production, University of Padua, Via Romea 16/a, Agripolis, I-35020 Legnaro (PD), Italy. E-mail: massimo.faccoli@unipd.it

² Department of Agricultural Biotechnology, University of Florence, Piazzale delle Cascine 28, I-50144 Firenze, Italy. E-mail: battisti@area.fi.cnr.it

MANN 1910). *Pityophthorus carniolicus* was further collected on the same host plant at Opicina, near Trieste (WICHMANN 1916). Subsequently, the species was also found in Czechoslovakia (ROUBAL 1950), Poland (PFEFFER 1955), Austria (HOLZSCHUH 1966) and Germany (BOVEY 1976) (Fig. 1). ROUBAL (1950) firstly suggested for the species a small area of natural distribution, limited to central-eastern Europe. Later, BOVEY (1976) made reference to the more western and isolated collection site, located in Germany only 4 Km from the French border. It seems thus that *P. carniolicus* occurs very likely also in France. The new record, from a central location of the Northern Italy (Fig. 1), shows that the species may have a larger and continuous European distribution, extending possibly over all the central-eastern Alps. It is probable that *Pityophthorus carniolicus* also occurs in some other European countries, such as Switzerland and France, but its small size and its strong similarity to other *Pityophthorus* species make this beetle hard to find.

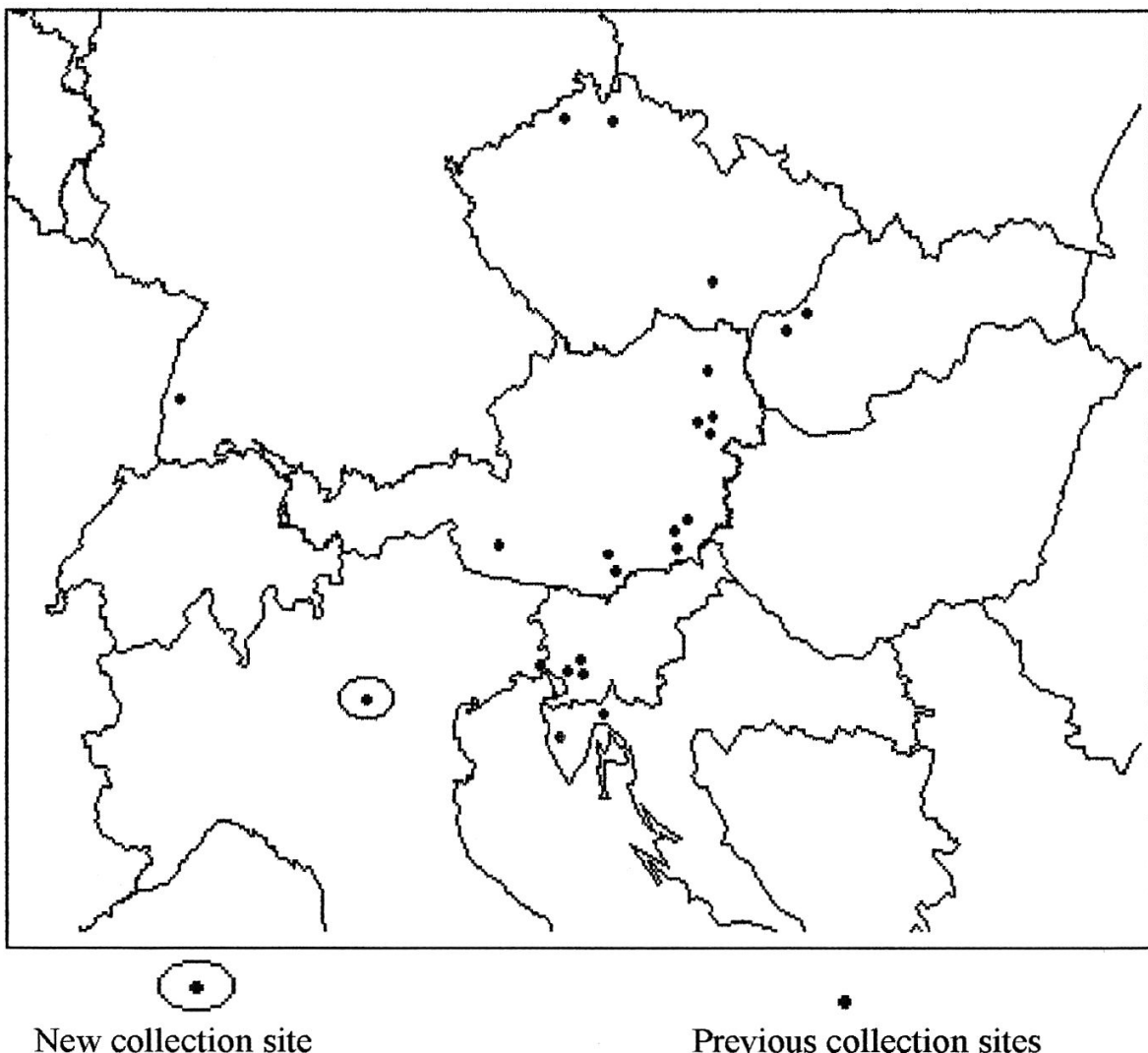


Fig. 1: European distribution of *Pityophthorus carniolicus* (modified from BOVEY 1976).

DESCRIPTION

Pityophthorus carniolicus WICHMANN is 1.1-1.5 mm long, with a cylindrical and narrow body. The elytra are dark-brown, 1.5 times as long as wide, with irreg-

ular striae covered by short blond bristles. The posterior declivity of the body is smooth, with narrow, very poor deep and hairless furrows. The presence of one row of bristles beside the median suture is also noted. The pronotum, as long as wide, is black and roughly punctured especially on its anterior part where there are several granules (Fig. 2). The male front is punctured and hairless; the female front shows short, medial, longitudinal ridge covered by short bristles. The head is a shade of black, with eyes slightly divided, antennae with funicle of 5 segments, the first one being the longest. Club with 3 marked straight sutures (WICHMANN 1910, BOVEY 1976, GRÜNE 1979, PFEFFER 1995).

BALACHOWSKY (1949) regarded *P. carniolicus* as a dwarf form ("hunger form") of *P. buyssoni* REITTER, but these are two distinct species (BOVEY 1976) which can be distinguished as follows: *P. buyssoni* is longer than *P. carniolicus* (1.8-2.3 mm instead of 1.1-1.5 mm), the latter species presents also a more irregular punctation of the elytra, with longer and softer bristles, and its declivity is smoother and more scarcely furrowed, with poorly prominent suture (PFEFFER 1995).

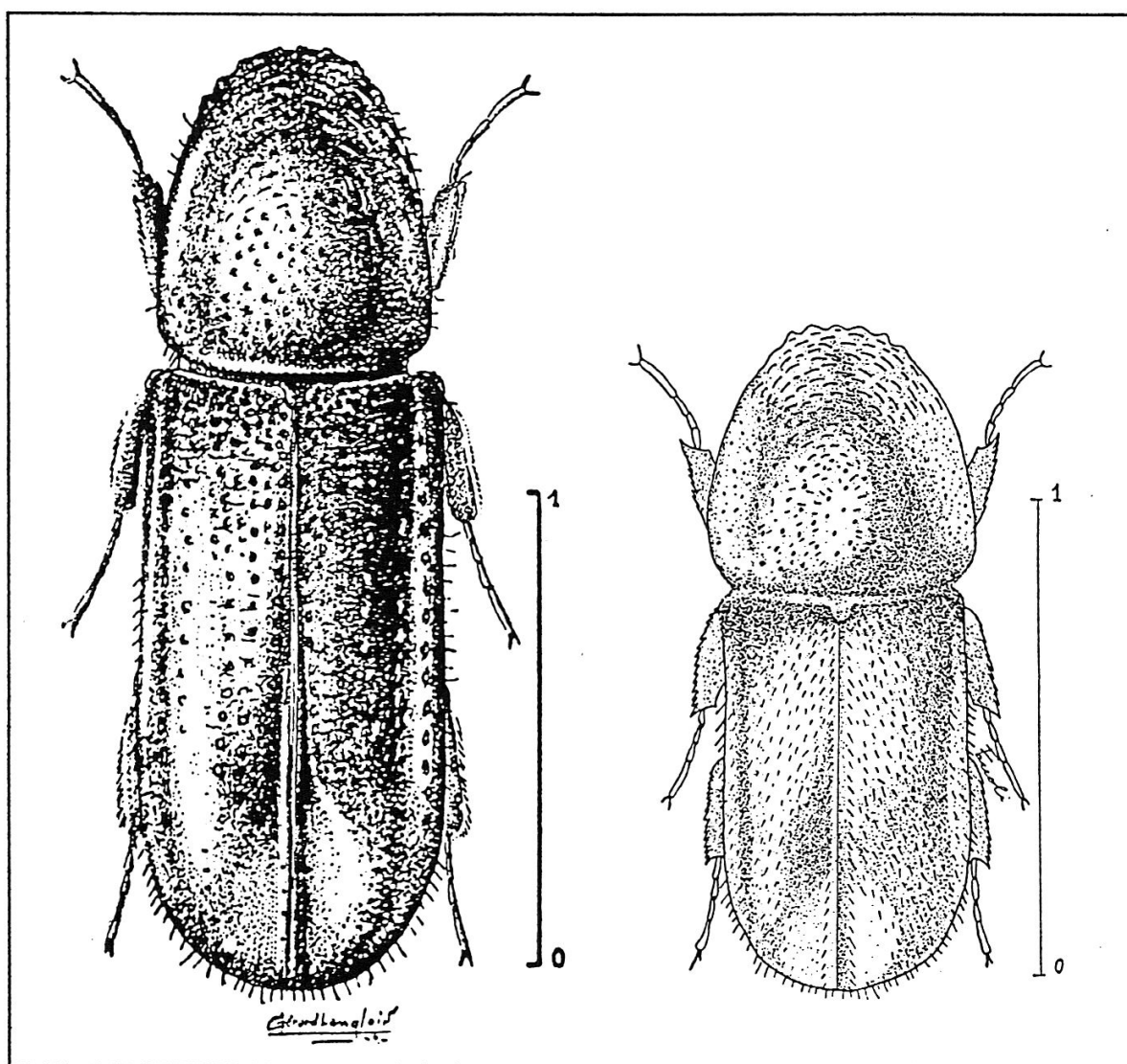


Fig. 2. Habitus of *Pityophthorus buyssoni* (left) (modified from BALACHOWSKY 1949) and *Pityophthorus carniolicus* (right).

BIOLOGY AND ECOLOGY

Pityophthorus carniolicus usually lives both in Austrian pine (*Pinus nigra* ARNOLD) and Scots pine (*Pinus sylvestris* L.) (GRÜNE 1979, PFEFFER 1995). Previous notes report that the insect also lives in spruce (*Picea abies* KARSTEN) and Douglas fir (*Pseudotsuga douglasii* CARR.) (HOLZSCHUH 1966, 1969), but the data has yet to be confirmed as at least some specimens are likely misidentified. In the area where HOLZSCHUH collected his specimens (southern Austria) (BOVEY 1976), it is possible to find also *P. morosovi* SPESSIVTSEFF, a species very similar to *P. carniolicus*, but living in spruce trees (PFEFFER 1995). The specimen examined by the authors was obtained from a white pine, *Pinus strobus* L., that, among the 26 Palaeartic *Pityophthorus* examined, has been reported to be the host tree only for *P. pityographus* (RATZEBURG) and *P. lichtensteinii* (RATZEBURG) (PFEFFER 1976, 1995). However, it was not possible to find others specimens from the same stand whilst looking for the beetle. Therefore it seems probable that the white pine is just an occasional host.

Another interesting aspect concerning the biology of *P. carniolicus* is represented by its monogamy, a characteristic shared in the Palaeartic regions only with *P. morosovi*, *P. henscheli* SEITNER and *P. traegardhi* SPESSIVTSEFF (PFEFFER 1976). Usually, *Pityophthorus* are polygamous insects with several females per each male. Under the bark of the host tree, the females excavate typical reproductive "star shaped" systems made up of numerous maternal galleries where the eggs are laid. In *P. carniolicus*, the systems are simple with only one female per male. The small, irregular and few centimetres-long maternal galleries are excavated in small, dying branches poorly engraving the wood. Often, the systems are mixed with the galleries of others species, typically *P. pubescens* (MARSHAM) (BOVEY 1976). The number of generations per year is not yet known. However, given that BOVEY (1976) found active adults in March 30th, and our collection data is in July, we can believe that the species completes at least two generations per year (CHARARAS 1962). Finally, considering its biology and ecology, *P. carniolicus* does not, as yet, present any economic importance.

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RESUMÉ

Le scolytide *Pityophthorus carniolicus* WICHMANN, 1910 (Coleoptera, Scolytidae) est signalé en Italie pour la première fois. Un adulte a été trouvé sur un pin américain (*Pinus strobus*), un arbre hôte nouveau pour l'espèce qui vit habituellement sur le pin d'Autriche (*Pinus nigra*) et le pin sylvestre (*Pinus sylvestris*). Malheureusement, il n'a pas été possible de trouver d'autres spécimens dans le même bois. Il paraît donc probable que *Pinus strobus* est seulement un hôte occasionnel. *Pityophthorus carniolicus* est un scolytide monogame, une caractéristique biologique que cet insecte partage dans la région paléarctique avec seulement deux autres espèces de *Pityophthorus*. L'insecte complète au moins deux générations par an. La localité de récolte est apparemment importante pour expliquer partiellement la distribution européenne du coléoptère. La nouvelle localité, qu'il se trouve dans une partie centrale de l'Italie du nord, suggère que l'espèce pourrait avoir aire de répartition plus grande et continue, s'étendant sur toutes les Alpes centrales et orientales. Pour le moment *Pityophthorus carniolicus* ne présente aucune importance économique. Une carte de la distribution européenne de l'espèce et un dessin de l'adulte sont aussi présentés.

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