



New records of non-native Coleoptera in Italy

Enrico Ruzzier^{‡,§,|}, Lucio Morin[|], Matteo Zugno[¶], Andrea Tapparo[¶], Luciano Bani^{#,§}, Andrea Di Giulio^{‡,§}

[‡] Department of Science, Roma Tre University, Rome, Italy

[§] NBFC, National Biodiversity Future Center, Palermo, Italy

[|] World Biodiversity Association, Verona, Italy

[¶] Regione Lombardia, Laboratorio del Servizio Fitosanitario Regionale c/o Fondazione Minoprio, Vertemate con Minoprio, Italy

[#] University of Milano-Bicocca, Department of Earth and Environmental Sciences, Milan, Italy

Corresponding author: Enrico Ruzzier (enrico.ruzzier@uniroma3.it)

Academic editor: Paulo Borges

Received: 22 Aug 2023 | Accepted: 20 Sep 2023 | Published: 17 Oct 2023

Citation: Ruzzier E, Morin L, Zugno M, Tapparo A, Bani L, Di Giulio A (2023) New records of non-native Coleoptera in Italy. Biodiversity Data Journal 11: e111487. <https://doi.org/10.3897/BDJ.11.e111487>

Abstract

Background

In the last decades, climate change and globalisation have been exacerbating the introduction of non-native beetles worldwide. Due to its peculiar territory, climate and geographical position in the middle of the Mediterranean Basin, Italy is one of the European countries with the highest number of intercepted, adventive and established non-native beetles, some of which are invasive. In this perspective, producing new faunistic records and continuously updating reliable and easily accessible distributional data is a fundamental step in investigating and potentially preventing further species introduction.

New information

The aim of this contribution is to report and discuss new faunistic records of non-native Coleoptera in Italy. For some species, new records enlarge the previously-known distribution (e.g. the ambrosia beetles *Anisandrus maiche* (Kurentzov, 1941) and *Cnestus mutilatus* (Blandford, 1894) or the click beetle *Monocrepidius posticus* (Eschscholtz, 1829)), while for others (e.g. the scarab beetle *Archophileurus spinosus* Dechambre,

2006), data confirm their establishment and highlight a possible expansion phase. The false powderpost beetles *Ptilineurus marmoratus* (Reitter, 1877) and the longhorn beetle *Xylotrechus chinensis* (Chevrolat, 1852) are two new additions to the Italian fauna, while the establishment of the monotomid beetle *Monotoma americana* Aubé 1837 is confirmed.

Keywords

beetles, biodiversity, Bostrichidae, Cerambycidae, distribution, Monotomidae, Ptinidae, Scolytinae, wood borers

Introduction

In the perspective of an increasingly globalised world in which goods and people move at an ever-increasing speed, maintaining a high level of attention towards non-native and invasive species is fundamental (Banks et al. 2015, Seebens et al. 2018). In particular, together with early detection, the production of new faunistic records and continuous updating of reliable and easily accessible distributional data is a fundamental step in investigating and preventing non-native species introduction and spread (Kenis et al. 2007). Amongst European countries, Italy has one of the highest numbers of intercepted, adventive and established non-native Coleoptera (e.g. Beenen and Roques 2010, Denux and Zagatti 2010, Kirkendall and Faccoli 2010, Roy and Migeon 2010, Sauvard et al. 2010, Yus-Ramos et al. 2014, Nardi et al. 2015, Montagna et al. 2016, Forbicioni 2019, Ruzzier and Colla 2019, Ruzzier et al. 2020b, Ruzzier et al. 2020a, Rattu et al. 2021, Ruzzier et al. 2021c, Ruzzier et al. 2022b, Ruzzier et al. 2023a, Ruzzier et al. 2023c) and this condition is plausibly attributable to Italy's central role in international trade as a crossroads to and from Europe (Roques 2010, Rassati et al. 2014). Given this latter condition, which sees Italy as a possible "gateway to Europe" for non-native species, it is essential to share distribution data to promote an ever-increasing level of attention both in Italy and neighbouring countries against possible natural spreading and introductions. Data collection and monitoring of non-native species, especially if not directed towards specific target taxa of medical, economic or phytosanitary interest, is, however, generally difficult to implement on a national scale; in this regard, the contributions deriving from the non-professional entomological community and citizen-science initiatives prove to be fundamental (e.g. Crall et al. (2010), Larson et al. (2020), Wallace et al. (2021)). This work aims to share faunistic data on Italian non-native beetles in a standard and easily accessible format, updating the distribution or confirming the establishment of some taxa and reporting the arrival of further species.

Beenen and Roques 2010, Denux and Zagatti 2010, Kirkendall and Faccoli 2010, Roy and Migeon 2010, Sauvard et al. 2010, Yus-Ramos et al. 2014, Nardi et al. 2015, Montagna et al. 2016, Ruzzier and Colla 2019, Ruzzier et al. 2020b, Ruzzier et al. 2020a, Rattu et al. 2021, Ruzzier et al. 2021c, Ruzzier et al. 2023a, Ruzzier et al. 2023c

Materials and methods

Methods for capturing specimens have been quite diverse and included direct collection (e.g. litter/organic debris sifting, beating tray, sweeping net; Iannuzzi et al. (2020)), use of baited traps (Touroult and Witté 2020, Ruchin et al. 2021, Ruzzier et al. 2021a) and light trapping (Hébert et al. 2000, Iannuzzi et al. 2020, Kammar et al. 2020). The collection of data on widespread species was possible thanks to the helpfulness of colleagues and citizens who provided specimens and direct observations (with photos) to the authors. All observations, before being included in the paper, were validated by the first author. Species treated in the "Taxon treatments" section are listed alphabetically.

Taxon treatments

Anisandrus maiche (Kurentzov, 1941)

- GBIF <https://www.gbif.org/species/10559613>

Materials

- scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Bosco in città; decimalLatitude: 45.481389; decimalLongitude: 9.099167; geodeticDatum: WGS84; eventDate: 2021-05-03; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: EB96945E-1F63-51E5-A39B-8E2194C160F3
- scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Bosco in città; decimalLatitude: 45.484722; decimalLongitude: 9.088333; geodeticDatum: WGS85; eventDate: 2021-05-17; individualCount: 2; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: A17F5897-B862-5285-B77A-E7D52E4F5BAF
- scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Azzano San Paolo; decimalLatitude: 45.664000; decimalLongitude: 9.678000; geodeticDatum: WGS86; eventDate: 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 95AD5313-4DC9-57D0-9525-D7DBE6D15DC3
- scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Bergamo; decimalLatitude: 45.674944; decimalLongitude: 9.683778; geodeticDatum: WGS87; eventDate: 2021-05-10; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: EFBE387F-891C-556E-B936-495B53D18673
- scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Boccaleone; decimalLatitude: 45.684639; decimalLongitude: 9.697556; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: C7DDD480-4485-507C-8ED4-D6D067D3D956
- scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Boccaleone; decimalLatitude: 45.684639; decimalLongitude: 9.697556; geodeticDatum: WGS88; eventDate:

- 2021-05-25; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: ADB7F3D8-723B-58EB-A63B-0B5760CE90DD
- g. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Boccaleone; decimalLatitude: 45.684639; decimalLongitude: 9.697556; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 4; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 30F1EB94-5082-509D-8C97-3E70DAB5706E
- h. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.671583; decimalLongitude: 9.711528; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 95AE07C1-D5CB-5D42-89CB-0F3B2346F704
- i. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Grassobbio; decimalLatitude: 45.662278; decimalLongitude: 9.727806; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 3; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 0E4DE7EF-44B6-565A-A939-EF031EAB9939
- j. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.667778; decimalLongitude: 9.728417; geodeticDatum: WGS88; eventDate: 2021-05-15; individualCount: 2; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: DC4AE596-9ADB-53A0-BB21-03F44A7B18B2
- k. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.667778; decimalLongitude: 9.728417; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: F2EB5C0D-0E3A-51D3-A3B1-FF14C26C2170
- l. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.671000; decimalLongitude: 9.726000; geodeticDatum: WGS88; eventDate: 2021-05-15; individualCount: 3; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 8D2E6670-11B2-5826-A9A7-C2DD7E2B0496
- m. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.671000; decimalLongitude: 9.726000; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 8BF1294F-CA05-587D-947D-CDED44FDBB13
- n. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.669694; decimalLongitude: 9.729667; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 9880F35E-E602-584D-9997-6CE2ADB1E853
- o. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.652139; decimalLongitude: 9.738250; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 3; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 97E89BDC-DB16-56A0-A7A0-749B92241D6F
- p. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Seriate; decimalLatitude: 45.652139; decimalLongitude: 9.738250; geodeticDatum: WGS88; eventDate:

- 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier;
occurrenceID: 55BDF733-6A2F-523B-A0EF-191A899A3182
- q. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Grassobbio; decimalLatitude: 45.653889; decimalLongitude: 9.735000; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 4; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 9B85CEC7-F1D3-59AA-8D3A-3E48B7F4AE60
- r. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Grassobbio; decimalLatitude: 45.653889; decimalLongitude: 9.735000; geodeticDatum: WGS88; eventDate: 2021-05-25; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 7A2D9B9B-510F-569B-AC85-270DB67D99CF
- s. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Grassobbio; decimalLatitude: 45.653889; decimalLongitude: 9.735000; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 4; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: B094AC4B-3E2F-5B19-A571-5017AF3A3F7A
- t. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Grassobbio; decimalLatitude: 45.649500; decimalLongitude: 9.737611; geodeticDatum: WGS88; eventDate: 2021-05-25; individualCount: 4; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: FF811BEC-2DE6-56DA-8281-435A4E7D9A7C
- u. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Grassobbio; decimalLatitude: 45.649500; decimalLongitude: 9.737611; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 9B3C6161-DDFE-5D39-8B72-5FCFC95AB6AC
- v. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Peschiera Borromeo; decimalLatitude: 45.438639; decimalLongitude: 9.266667; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 3; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 2F4E0987-DEE2-553A-AABB-E59A551FD31D
- w. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: San Donato Milanese; decimalLatitude: 45.423528; decimalLongitude: 9.279444; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 4; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 3A799BDB-3384-5B33-9BB1-2212E6B9518C
- x. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Mediglia; decimalLatitude: 45.415778; decimalLongitude: 9.301028; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 8; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: B11939F7-AFCA-5857-B53C-E1E5E8FAC9FA
- y. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Pioltello; decimalLatitude: 45.475611; decimalLongitude: 9.318472; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 2; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 0996BD62-3A20-5F63-84C1-4F692170B483
- z. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: San Donato Milanese; decimalLatitude: 45.424583; decimalLongitude: 9.273806; geodeticDatum: WGS88;

- eventDate: 2021-05-10; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 9A7ED195-4A0D-562E-9CFB-4ED98B1BBA27
- aa. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: La Valletta Brianza; decimalLatitude: 45.714750; decimalLongitude: 9.375583; geodeticDatum: WGS88; eventDate: 2021-05-10; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 07FEBA84-DD56-5DA6-AB60-445E24AC1298
- ab. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Montececchia; decimalLatitude: 45.713972; decimalLongitude: 9.353833; geodeticDatum: WGS88; eventDate: 2021-05-25; individualCount: 2; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: D7FBB323-2EAF-59AD-817B-4B619C619DED
- ac. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: Montececchia; decimalLatitude: 45.688528; decimalLongitude: 9.373167; geodeticDatum: WGS88; eventDate: 2021-05-25; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 10E542AA-430F-5005-B6F5-B12D4A06E9EE
- ad. scientificName: *Anisandrus maiche* (Kurentzov, 1941); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardy; locality: La Valletta Brianza; decimalLatitude: 45.715389; decimalLongitude: 9.375861; geodeticDatum: WGS88; eventDate: 2021-05-31; individualCount: 1; lifeStage: adult; identifiedBy: Enrico Ruzzier; occurrenceID: 483E50C0-637B-588A-9E99-7D58C5E60FE6

Distribution

Eastern Palearctic species, established in European Russia (Terekhova and Skrylnik 2012, Nikulina et al. 2015), Italy (Colombari et al. 2022, Ruzzier et al. 2022b, Mola et al. 2023), North America (Rabaglia et al. 2009, Gomez et al. 2018), Switzerland (Ribeiro-Correia et al. 2023) and Ukraine (Terekhova and Skrylnik 2012, Nikulina et al. 2015).

Notes

The data confirm that the species is widely distributed and relatively common in northern Italy, Lombardy in particular. Although *Anisandrus maiche* is a modestly polyphagous species on broadleaf trees (Ruzzier et al. 2023), no damage attributable to this species has been recorded so far.

Ambrosiophilus atratus (Eichhoff, 1875)

- GBIF <https://www.gbif.org/species/8046168>

Material

- a. scientificName: *Ambrosiophilus atratus* (Eichhoff 1875); family: Curculionidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Pioltello; decimalLatitude: 45.4698309832381; decimalLongitude: 9.32013889739963; geodeticDatum: WGS84; eventDate: 2021-04-0; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 2085F599-D9B3-55AC-AC25-98DAADC6DE68

Distribution

Ambrosiophilus atratus is an ambrosia beetle native to the Eastern Palearctic now established in France, Italy and Slovenia (Faccoli 2008, Dodelin 2019, Hauptman et al. 2019). The present finding is the first record of the species in Lombardy.

Notes

Ambrosiophilus atratus is a highly polyphagous species, capable of developing in both hardwoods and conifers (Ruzzier et al. 2023). Recent observations, coupled with the lack of damage attributable to the species, however, seem to suggest that *A. atratus* might have a negligible phytosanitary value, preferring severely debilitated or already dead plants as reproductive substrate (Ranger et al. 2010, Reed et al. 2015, Ruzzier et al. 2022a).

Archophileurus spinosus Dechambre, 2006

- GBIF <https://www.gbif.org/species/1073568>

Materials

- scientificName: *Archophileurus spinosus* Dechambre, 2006; family: Scarabaeidae; country: Italy; countryCode: IT; county: Puglia; locality: Molfetta; decimalLatitude: 41.184601; decimalLongitude: 16.622004; geodeticDatum: WGS8; eventDate: 2020-07-09; individualCount: 1; sex: male; identifiedBy: Enrico Ruzzier; occurrenceID: 38D8EE03-F4E1-5701-9B44-666FBCA56537
- scientificName: *Archophileurus spinosus* Dechambre, 2006; family: Scarabaeidae; country: Italy; countryCode: IT; county: Puglia; locality: Minervino di Lecce; decimalLatitude: 40.090350; decimalLongitude: 18.431938; geodeticDatum: WGS8; eventDate: 2023-07-20; individualCount: 1; sex: female; identifiedBy: Enrico Ruzzier; occurrenceID: B785307E-E50B-51B3-9466-21E2066A1E5C

Notes

The finding of the specimen in Molfetta, more than 170 km from the area of the first recording (see Ruzzier et al. (2020b)), would suggest the existence of a second population of this species, probably as a result of an independent introduction. The specimen collected in Minervino di Lecce may also be the result of an independent introduction or be confirmation that the species is expanding in southern Apulia. The fact that the specimens were observed in nature suggests the existence of at least two naturalised populations.

Caplothorax lugubris (Murray, 1864)

- GBIF <https://www.gbif.org/species/1044108>

Materials

- scientificName: *Caplothorax lugubris* (Murray, 1864); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Cassanego (Borso del Grappa); decimalLatitude: 45.827633; decimalLongitude: 11.811687; geodeticDatum: WGS84; eventDate: 2021-03-04; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: C12A2CD3-F6F7-5357-B897-91B6AEC1B840
- scientificName: *Caplothorax lugubris* (Murray, 1864); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Pederobba; decimalLatitude: 45.884568; decimalLongitude: 11.944527; geodeticDatum: WGS84; eventTime: 2021-04-17; individualCount: 1; occurrenceID: 34E90A5F-BF19-5172-948A-D29A0F7D461D
- scientificName: *Caplothorax lugubris* (Murray, 1864); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: Ronchi dei Legionari; decimalLatitude: 45.824606; decimalLongitude: 13.495001; geodeticDatum: WGS8; eventDate: 2019-08-20; individualCount: 4; identifiedBy: Enrico Ruzzier; occurrenceID: 7710809D-DDF0-548A-A92C-E920A3CE75AA
- scientificName: *Caplothorax lugubris* (Murray, 1864); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: Monte Calvario; decimalLatitude: 45.952522; decimalLongitude: 13.583972; geodeticDatum: WGS84; eventDate: 2019-04-03; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 7D090E7D-F9DB-5881-B1C9-AF8B35A35A99
- scientificName: *Caplothorax lugubris* (Murray, 1864); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: Monte Calvario; decimalLatitude: 45.952522; decimalLongitude: 13.583972; geodeticDatum: WGS8; eventDate: 2019-05-09; individualCount: 7; identifiedBy: Enrico Ruzzier; occurrenceID: 4F4A32F2-0773-5411-B774-BA7361D59E98
- scientificName: *Caplothorax lugubris* (Murray, 1864); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Creazzo; decimalLatitude: 45.527977; decimalLongitude: 11.488399; geodeticDatum: WGS84; eventDate: 2019-11-09; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 51B94B3C-5C87-5CF1-B4DF-7515EB58E368

Distribution

Species of Nearctic and Neotropical distribution (Parsons 1943), established in Italy since 2013 (Marini et al. 2013, Jelínek et al. 2016).

Notes

Species of phytosanitary relevance (e.g. Harrison (1962), Dowd (2000), Marini et al. (2013), Jelínek et al. (2016)) now widely distributed in the Po plain (Northern Italy), were is frequently injurious on *Zea mays* L. and *Fragaria* sp. (authors' personal observations).

***Cnestus mutilatus* (Blandford, 1894)**

Material

- a. scientificName: *Cnestus mutilatus* (Blandford, 1894); family: Curculionida; country: Italy; countryCode: IT; stateProvince: Veneto; municipality: Borso del Grappa; decimalLatitude: 45.815456; decimalLongitude: 11.769814; geodeticDatum: WGS84; eventDate: 2023-08-08; individualCount: 1; sex: female; recordedBy: Enrico Ruzzier; identifiedBy: Enrico Ruzzier; occurrenceID: 867EB1BE-5F06-5C36-BFA3-378BF566184B

Distribution

Species native to the Oriental and Eastern Palearctic Regions, established in North America (Gomez et al. 2018, Smith et al. 2020) and Italy (Colombari et al. 2022, Marchioro et al. 2022). This finding further extends the distribution range of the species.

Notes

Cnestus mutilatus is a somewhat polyphagous species (Ruzzier et al. 2023b), including plants of economic/productive relevance (e.g. Mandelshtam et al. (2019), Ruzzier et al. (2021b), Monterrosa et al. (2022)), yet its host plants in Europe were not known. The specimen on which the report is based was found in a tunnel bored into a branch of an unidentified conifer (probably *Abies*). This is the first observation in which *C. mutilatus* was found in association with a conifer; however, it is plausible that this plant might not be a reproductive host.

***Dinoderus (Dinoderastes) japonicus* Lesné, 1895**

- GBIF <https://www.gbif.org/species/4427616>

Materials

- a. scientificName: *Dinoderus japonicus* Lesné, 1895; family: Bostrichidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: Ronchi dei Legionari; decimalLatitude: 45.824285; decimalLongitude: 13.495115; geodeticDatum: WGS84; eventDate: 2020-05-1; individualCount: 1; recordedBy: Lucio Morin; identifiedBy: Enrico Ruzzier; occurrenceID: 3FDA78E1-BEA0-5E32-AB07-6E9C35C04C2F
- b. scientificName: *Dinoderus japonicus* Lesné, 1895; family: Bostrichidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Altavilla Vicentina; decimalLatitude: 45.521738; decimalLongitude: 11.478075; geodeticDatum: WGS84; eventDate: 2021-08-05; individualCount: 1; recordedBy: Enrico Ruzzier; identifiedBy: Enrico Ruzzier; occurrenceID: BDCD3FCA-A8F4-508F-A50E-FBEE98D010A5

Distribution

Species native to China, Japan, Korea and Taiwan, recorded multiple times in Austria, France, Germany, Great Britain, Italy, Poland, Sweden, Switzerland and the Netherlands; observations indicate established populations only in France (Brustel and

Aberlenc 2014), Italy (Nardi et al. 2015) and, more recently, in the Caucasus (Bieńkowski and Orlova-Bienkowskaja 2017).

Notes

The recollection of the single specimen in Ronchi dei Legionari, in nature, suggests the existence of an established population in the area. However, given the close vicinity of the Monfalcone port, a well-known port of entry for non-native species (Rassati et al. 2014), it might be possible that the specimen would be the result of a recent introduction. The specimen recollected in Altavilla Vicentina was found already dead inside a DIY store, suggesting its introduction via bamboo products.

Monocrepidius posticus (Eschscholtz, 1829)

- GBIF <https://www.gbif.org/species/6984492>

Materials

- scientificName: *Monocrepidius posticus* (Eschscholtz, 1829); family: Elateridae; country: Italy; countryCode: IT; stateProvince: Calabria; locality: Torre Mezza Praia, Acconia; decimalLatitude: 38.8162444606245; decimalLongitude: 16.2220915973993; geodeticDatum: WGS84; eventDate: 2014-06-28; individualCount: 26; recordedBy: Rudolf Schuh; identifiedBy: Rudolf Schuh; occurrenceID: D85425C8-4501-55CA-8092-190FD66AB239
- scientificName: *Monocrepidius posticus* (Eschscholtz, 1829); family: Elateridae; country: Italy; countryCode: IT; stateProvince: Sicily; county: Messina; locality: Tremestieri; decimalLatitude: 38.143639; decimalLongitude: 15.522750; geodeticDatum: WGS84; eventDate: 2023-06-28; individualCount: 1; recordedBy: Giovanni Altadonna; identifiedBy: Giovanni Altadonna; occurrenceID: 3178C064-E00D-5267-8230-DAE8EEA1D0C8
- scientificName: *Monocrepidius posticus* (Eschscholtz, 1829); family: Elateridae; country: Italy; countryCode: IT; stateProvince: Sicily; county: Messina; locality: Tremestieri; decimalLatitude: 38.143639; decimalLongitude: 15.522750; geodeticDatum: WGS84; eventDate: 2023-07-08; individualCount: 1; recordedBy: Giovanni Altadonna; identifiedBy: Giovanni Altadonna; occurrenceID: 5D51C8AA-856B-5E00-87EA-BBB20B575E39
- scientificName: *Monocrepidius posticus* (Eschscholtz, 1829); family: Elateridae; country: Italy; countryCode: IT; stateProvince: Veneto; county: Vicenza; locality: Costalunga; decimalLatitude: 45.811018; decimalLongitude: 11.743925; geodeticDatum: WGS84; eventDate: 2023-08-12; individualCount: 1; recordedBy: Enrico Ruzzier; identifiedBy: Enrico Ruzzier; occurrenceID: E628CAD2-F417-5A7D-B164-644C000CC0E5

Distribution

Species native to the Neotropics and now established in both the Nearctic and Western Palearctic (Ruzzier et al. 2021c, Van Meer and Artéro 2022). *Monocrepidius posticus* is seemingly a species of relatively recent introduction that, however, has been able to spread in peninsular Italy and Sicily. The rapid diffusion of this species is most probably associated with potted plants (Ruzzier et al. 2021c), especially when the insect is at the

larval stage. Specimens from Calabria and Veneto represent new regional records that further demonstrate the wide distribution of the species on the Italian territory.

Notes

Species included in the [CABI Invasive Species Compendium](#); to date, there is no information on the real economic or environmental impact of this non-native species (Ruzzier et al. 2021c). This species was earlier known as *Conoderus posticus*; however, the name *Conoderus* Eschscholtz, 1829 is a synonym of *Monocrepidius* Eschscholtz, 1829 (see Kundrata et al. (2019)).

***Monotoma americana* Aubé, 1837**

Material

- a. scientificName: *Monotoma americana* Aubé 1837; family: Monotomida; country: Italy; stateProvince: Friuli Venezia Giulia; county: Gorizia; municipality: Rochi dei Legionari; decimalLatitude: 45.838596; decimalLongitude: 13.497632; geodeticDatum: WGS84; eventDate: 2020-11-20; individualCount: 100; lifeStage: adult; recordedBy: Lucio Morin; identifiedBy: Enrico Ruzzier; occurrenceID: 555B1798-5F9E-5831-B495-B95E460B5E6D

Distribution

North American species (Bousquet and Laplante 1999) introduced in Croatia and Italy (Jelínek 2007).

Notes

The finding of additional specimens confirms the establishment of this species in the Italian territory, as the occurrence of this taxon was so far limited to the only vague indication given in Jelínek (2007).

***Ptilineurus marmoratus* (Reitter, 1877)**

- GBIF <https://www.gbif.org/species/1095559>

Materials

- a. scientificName: *Ptilineurus marmoratus* (Reitter, 1877); family: Ptinidae; country: Italy; countryCode: IT; stateProvince: Lombardy; county: Brescia; municipality: Esine; decimalLatitude: 45.92741; decimalLongitude: 10.25646; geodeticDatum: WGS84; eventDate: 2022-06-12; individualCount: 1; recordedBy: Davide Pedersoli; identifiedBy: Enrico Ruzzier; occurrenceID: 9D84AA13-EAE2-55A3-9AEB-1DDC4358CABE
- b. scientificName: *Ptilineurus marmoratus* (Reitter, 1877); family: Ptinidae; country: Italy; countryCode: IT; stateProvince: Piedmont; county: Asti; municipality: Rocchetta Tanaro; decimalLatitude: 44.8622778; decimalLongitude: 8.3246666; geodeticDatum: WGS84; eventDate: 2022-06-30; individualCount: 1; recordedBy: Luca Cristiano; identifiedBy: Enrico Ruzzier; occurrenceID: 1CFB379D-F5FA-5665-915E-07E7C5FD86E3

Distribution

Taxon native to China, Indonesia, Japan and introduced in Germany, Sweden and USA (Zahradník 2012, Zahradník 2021, Jarzabek-Müller 2023); new species for the Italian fauna.

Notes

The two records, which occurred in different regions and in nature, clearly indicate the establishment of the species in the Italian territory. *Ptilineurus marmoratus* is a negligible pest in the countries of origin, where it has been recorded damaging stored grains (Yan et al. 2010) or furnishings (Yuasa and Onoe 1930).

Psacotheta hilaris (Pascoe, 1857)

- GBIF <https://www.gbif.org/species/9166077>

Materials

- scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Carugate; decimalLatitude: 45.551858579102; decimalLongitude: 9.3466620693504; geodeticDatum: WGS84; eventDate: 2021-08-25; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: CBDF2EE5-F84F-5374-9DB7-B5E0247C1B51
- scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Carate Brianza; decimalLatitude: 45.6792254670083; decimalLongitude: 9.22969294016464; geodeticDatum: WGS84; eventDate: 2021-08-13; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: E6FE9FF5-BE9F-54F0-82EE-55C401085FC7
- scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Mandello del Lario; decimalLatitude: 45.9141449791127; decimalLongitude: 9.32590399764125; geodeticDatum: WGS84; eventDate: 2021-08-15; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 7ABA8012-C57A-57BD-9709-726A4DEEB99C
- scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Valbrona; decimalLatitude: 45.8757857966675; decimalLongitude: 9.2992147264757; geodeticDatum: WGS84; eventDate: 2021-08-13; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 63207C90-E03D-565D-AB6B-011CF79005D6
- scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Viganò; decimalLatitude: 45.715744797865; decimalLongitude: 9.32365682691914; geodeticDatum: WGS84; eventDate: 2021-07-31; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 113CAE03-455D-560A-B0C4-5D471A19FD07
- scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Valaperta; decimalLatitude: 45.6731438758896; decimalLongitude: 9.35553589763243; geodeticDatum: WGS84; eventDate: 2020-07-20; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 876A5500-62E0-5609-BE88-85B64AD9BA81

- g. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Casetello di Brianza; decimalLatitude: 45.764033; decimalLongitude: 9.34946156924904; geodeticDatum: WGS84; eventDate: 2021-06-09; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: AFCB9F02-0C7C-5DFC-A0BE-1BE208E1BC31
- h. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Nesso; decimalLatitude: 45.91001879; decimalLongitude: 9.15568364012023; geodeticDatum: WGS84; eventDate: 2019-09-02; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 236111F8-A763-515A-993E-1FA25C760478
- i. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Castelmarte; decimalLatitude: 45.8327755037426; decimalLongitude: 9.24120299763827; geodeticDatum: WGS84; eventDate: 2019-08-3; individualCount: 1; occurrenceID: 6D4BCC00-4E11-5109-8352-FB4803E70DB9
- j. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Sala di Calolziocorte; decimalLatitude: 45.7906744601323; decimalLongitude: 9.44158372647262; geodeticDatum: WGS84; eventDate: 2020-06-25; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 3AC5E866-5647-5D50-A8CD-AD9D46110B4D
- k. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Como; decimalLatitude: 45.7826544507253; decimalLongitude: 9.08968049763644; geodeticDatum: WGS84; eventDate: 2021-08-30; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 8B6CBB74-10B6-59BE-B51B-3B07CC764CD6
- l. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Calolziocorte; decimalLatitude: 45.7916760173374; decimalLongitude: 9.44862099763678; geodeticDatum: WGS84; eventDate: 2020-10-25; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 5DEBB24C-1B93-5D45-8A44-7BBA731F4D11
- m. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Villasanta; decimalLatitude: 45.617095; decimalLongitude: 9.299486; geodeticDatum: WGS84; eventDate: 2023-07-17; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 3FBFE588-631C-5034-A930-AC6A11E9B40E
- n. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Cernusco del Naviglio; decimalLatitude: 45.522631; decimalLongitude: 9.338841; geodeticDatum: WGS84; eventDate: 2023-07-14; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 7E650CF7-A0E1-51A4-BCC9-1E6CBE8862A7
- o. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Castelnovo; decimalLatitude: 45.692475; decimalLongitude: 9.322235; geodeticDatum: WGS84; eventDate: 2023-06-09; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: E8910DA7-1194-5217-8D26-65E321CD7FED
- p. scientificName: *Psacotheta hilaris* (Pascoe, 1857); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Arlate; decimalLatitude: 45.729312; decimalLongitude: 9.441062; geodeticDatum: WGS84; eventDate: 2023-07-29; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: AD01E2C1-1FF7-5AC9-9C1C-6C7E14760A34

Distribution

Species widely distributed in southeast China and Japan (Danilevsky 2020), introduced and established in Italy (Lupi et al. 2013).

Notes

Psacotha hilaris is facing a substantial expansion phase in northern Italy (Lupi et al. 2023), where it is a pest on *Ficus carica* L. (Moraceae) (Lupi et al. 2013).

Sinoxylon unidentatum (Fabricius, 1801)

- GBIF <https://www.gbif.org/species/6005764>

Material

- scientificName: *Sinoxylon unidentatum* (Fabricius, 1801); family: Bostrichida; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Marghera - Porto; decimalLatitude: 45.4675788; decimalLongitude: 12.237859; geodeticDatum: WGS84; eventDate: 2021-09-27; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 676575BD-B096-510A-A62F-8C24806832C6

Distribution

Species of Oriental origin and now established in Asia, North, Central and South America, Africa (including Madagascar) and Oceania (Lykidis et al. 2016).

Notes

Sinoxylon unidentatum has been recorded multiple times in Europe (Nardi and Mifsud 2015, Lykidis et al. 2016), although it appears that there are currently no established populations (Lykidis et al. 2016). The fact that the specimen presented here was collected in close proximity to a port area would suggest its recent arrival rather than the existence of a stable population.

Stelidota geminata (Say, 1825)

- GBIF <https://www.gbif.org/species/1043978>

Materials

- scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Cison del Grappa; decimalLatitude: 45.930615; decimalLongitude: 11.731266; eventTime: 2021-02-15; individualCount: 5; identifiedBy: Enrico Ruzzier; occurrenceID: 5551F673-ECC8-5945-9549-80EE22205D8D
- scientificNameID: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Madonnetta (Pieve del Grappa); decimalLatitude: 45.850090; decimalLongitude: 11.838718; geodeticDatum: WGS84;

- eventDate: 2021-03-04; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 5BEB32C2-4714-515E-865D-9434470A652D
- c. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Cavaso del Tomba; decimalLatitude: 45.87854064067142; decimalLongitude: 11.870694397663117; geodeticDatum: WGS84; eventTime: 2020-10-31; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: F865FB4A-7A60-56CC-B7A4-7BCAF2B56908
- d. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Romano d'Ezzelino; decimalLatitude: 45.79608863822578; decimalLongitude: 11.744732926495166; geodeticDatum: WGS84; eventDate: 2020-10-01; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: BA8E0D16-9738-5D36-8E02-CD458527A1B4
- e. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Val dei Ponti (Solagna); decimalLatitude: 45.824872; decimalLongitude: 11.719725; geodeticDatum: WGS84; eventDate: 2021-04-29; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 95FE36BB-B51F-5361-AB40-1EB21FEE1E16
- f. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Calabria; locality: Torre Mezza Praia, Acconia; decimalLatitude: 38.8162444606245; decimalLongitude: 16.2220915973993; geodeticDatum: WGS84; eventDate: 2014-062; individualCount: 1; identifiedBy: Rudolf Schuh; occurrenceID: FD7E0C67-C3CD-59FD-AC56-92718EDDD617
- g. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: San Piero di Fieletto; decimalLatitude: 45.9296259207839; decimalLongitude: 12.2343788273258; geodeticDatum: WGS84; eventDate: 2021-08-13; individualCount: 23; identifiedBy: Enrico Ruzzier; occurrenceID: 345F5E0E-D792-53A0-B3CC-38D9CE0972F2
- h. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: Marina Julia (Monfalcone); decimalLatitude: 45.780855; decimalLongitude: 13.522679; geodeticDatum: WGS84; eventDate: 2017-03-17; individualCount: 1; identifiedBy: Lucio Morin; occurrenceID: 3A918067-EA6F-5E90-94EE-35B7AD7B52D7
- i. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: Piedimonte- Monte Calvario; decimalLatitude: 45.944862; decimalLongitude: 13.583999; geodeticDatum: WGS84; eventDate: 2020-05-23; individualCount: 1; identifiedBy: Lucio Morin; occurrenceID: DF66CDE3-D4A6-5F85-9588-45DCEC391444
- j. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: Duino - Bosco della Cernizza; decimalLatitude: 45.777; decimalLongitude: 13.594; geodeticDatum: WGS84; eventDate: 2011-11-27; identifiedBy: Lucio Morin; occurrenceID: 92C5CB23-6FB3-541F-9643-7B7BD1A48741
- k. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Creazzo; decimalLatitude: 45.5460; decimalLongitude: 11.4780; geodeticDatum: WGS84; eventDate: 2015-04-25; individualCount: 2; identifiedBy: Enrico Ruzzier; occurrenceID: B48C6458-0EB2-549A-B42E-13AF551B7D0D
- l. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: ITALY; countryCode: IT; stateProvince: Lombardia; locality: Angone; decimalLatitude: 45.905485; decimalLongitude: 10.198955; geodeticDatum: WGS84; eventDate: 2006-09-06;

- individualCount: 2; identifiedBy: Davide Pedersoli; occurrenceID: EE28EC36-B058-57D3-BBE0-C9AA2E589258
- m. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Boario; decimalLatitude: 45.891122; decimalLongitude: 10.189661; geodeticDatum: WGS84; eventDate: 2008-08-24; identifiedBy: Davide Pedersoli; occurrenceID: CA1227D5-3BFC-5A44-8DD7-DFF162590571
- n. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Bunote di Angone; decimalLatitude: 45.911237; decimalLongitude: 10.204144; geodeticDatum: WGS84; eventDate: 2012-05-08; individualCount: 1; identifiedBy: Davide Pedersoli; occurrenceID: D8A9309C-5293-5450-940F-B50FA1CFE040
- o. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Esine; decimalLatitude: 45.905999; decimalLongitude: 10.222361; geodeticDatum: WGS84; eventDate: 2016-06-25; individualCount: 1; identifiedBy: Davide Pedersoli; occurrenceID: 27691415-EFCE-5316-8EC4-3DAD5BBA921F
- p. scientificName: *Stelidota geminata* (Say, 1825); family: Nitidulidae; country: Italy; countryCode: IT; stateProvince: Lombardia; locality: Tisa; decimalLatitude: 46.180218; decimalLongitude: 10.318497; geodeticDatum: WGS84; eventDate: 2017-08-0; individualCount: 1; identifiedBy: Davide Pedersoli; occurrenceID: 2A18DEB8-174F-53B8-8BC5-1251AC0BACEF

Distribution

Species of North American origin and established in Central and South America, Europe, the Oriental Region and in the Near East (Peck et al. 2014, Jelínek et al. 2016, Stan 2019).

Notes

Stelidota geminata is an relevant pest of strawberries in North America (Weiss and Williams 1980, Loughner et al. 2007). This species is expanding rapidly all over the world and, in Europe, it was reported at first in the Azores in the 1980s (Israelson 1985) and then in several continental countries (Jelínek et al. 2016, Guéorguiev 2018, Stan 2019, Wojas 2022). In Italy, it seems acclimatised since the second half of the 1990s (Ratti 2002), where it has been recorded as phytosaprophagous (Pezzi 2013), but also as a concurrent source of damage on cultivated strawberries (Pansa et al. 2014, author's personal observations).

Telephanus atricapillus Erichson, 1846

- GBIF <https://www.gbif.org/species/1043900>

Materials

- a. scientificName: *Telephanus atricapillus* Erichson, 1846; family: Silvanidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Vellai (Feltre); decimalLatitude: 46.035593; decimalLongitude: 11.942838; geodeticDatum: WGS8; eventDate:

- 2012-07-07; individualCount: 1; recordedBy: Nicola Roncen; identifiedBy: Nicola Roncen; occurrenceID: E12C0E6A-B19C-5386-A74F-E5AF2317312C
- b. scientificName: *Telephanus atricapillus* Erichson, 1846; family: Silvanidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Vellai (Feltre); decimalLatitude: 46.032920; decimalLongitude: 11.951203; geodeticDatum: WGS84; eventDate: 2012-07-14; individualCount: 1; recordedBy: Nicola Roncen; identifiedBy: Nicola Roncen; occurrenceID: 37AB006F-63EE-5E7A-8D13-4667D1CA79B7
- c. scientificName: *Telephanus atricapillus* Erichson, 1846; family: Silvanidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: San Pier d'Isonzo; decimalLatitude: 45.851512; decimalLongitude: 13.453215; geodeticDatum: WGS84; eventDate: 2020-05-16; individualCount: 1; recordedBy: Lucio Morin; identifiedBy: Lucio Morin; occurrenceID: 8577D6E8-230A-5976-98A3-EB5DAEC4F4D3
- d. scientificName: *Telephanus atricapillus* Erichson, 1846; family: Silvanidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: San Pier d'Isonzo; decimalLatitude: 45.851512; decimalLongitude: 13.453215; geodeticDatum: WGS84; eventDate: 2020-05-18; individualCount: 1; identifiedBy: Lucio Morin; occurrenceID: 8D59979F-4A95-5FD4-8DE0-2C18D71F3A88
- e. scientificName: *Telephanus atricapillus* Erichson, 1846; family: Silvanidae; country: Italy; countryCode: IT; stateProvince: Friuli Venezia Giulia; locality: San Canzian D'Isonzo; decimalLatitude: 45.769977; decimalLongitude: 13.471999; geodeticDatum: WGS84; eventDate: 2021-03-01; individualCount: 1; identifiedBy: Lucio Morin; occurrenceID: 71DEFE24-F2B6-5609-BD00-C767F8395DED
- f. scientificName: *Telephanus atricapillus* Erichson, 1846; family: Silvanidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Romano d'Ezzelino; decimalLatitude: 45.813867; decimalLongitude: 11.754639; geodeticDatum: WGS84; eventDate: 2023-05-06; individualCount: 1; recordedBy: Enrico Ruzzier; identifiedBy: Enrico Ruzzier; occurrenceID: 3F1B1E10-333D-591A-B4A8-6214A5563E09

Distribution

Species of Nearctic origin, established both in Italy and Spain (Ruzzier et al. 2020a). The records here presented substantially extend the distribution of *T. atricapillus* in northern Italy.

Trichoferus campestris (Faldermann, 1835)

- GBIF <https://www.gbif.org/species/1151427>

Material

- a. scientificName: *Trichoferus campestris* (Faldermann, 1835); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Veneto; locality: Saonara; decimalLatitude: 45.394167; decimalLongitude: 12.007500; geodeticDatum: WGS84; eventDate: 2018-07-03; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: F3CD819B-D612-5D95-BAE2-0F92550A96FD

Distribution

Species of Eastern Palearctic origin, introduced in Europe and North America (Danilevsky 2020, Cocquempot et al. 2022).

Notes

In Italy, *Trichoferus campestris* was first detected in Piacenza in 2000 (Cocquempot et al. 2022) and subsequently intercepted in Naples in 2015 (Pennacchio et al. 2016), recorded in Veneto (2018, this paper) and recently observed in Lombardy in 2020 (Cocquempot et al. 2022, source INaturalist). It would seem that all the specimens observed belong to single introductions and that, currently, no established populations exist on the Italian territory. However, this situation requires further investigation given the phytosanitary relevance of the species (Allen and Humble 2002, EFSA Panel on Plant Health et al. 2021).

Xylotrechus chinensis (Chevrolat, 1852)

- GBIF <https://www.gbif.org/species/8325707>

Materials

- scientificName: *Xylotrechus chinensis* (Chevrolat, 1852); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardy; municipality: Roè Volciano; locality: Tormini; decimalLatitude: 45.607926; decimalLongitude: 10.4682366; geodeticDatum: WGS84; eventDate: 2023-07-02; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 898AAD92-D272-5BC8-8BBB-06C6C605BECA
- scientificName: *Xylotrechus chinensis* (Chevrolat, 1852); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardy; municipality: Prevalle; decimalLatitude: 45.553290; decimalLongitude: 10.422359; geodeticDatum: WGS84; eventDate: 2023-06-10; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: 932B446C-0D4C-545A-9CE6-6AAB60E5ED00
- scientificName: *Xylotrechus chinensis* (Chevrolat, 1852); family: Cerambycidae; country: Italy; countryCode: IT; stateProvince: Lombardy; municipality: Muscoline; decimalLatitude: 45.572222; decimalLongitude: 10.482320; geodeticDatum: WGS84; eventDate: 2023-06-23; individualCount: 1; identifiedBy: Enrico Ruzzier; occurrenceID: BE3DA5D1-FF92-5169-B3A6-637BD4D2F519

Distribution

Species native to East Asia, introduced in Europe (Leivadara et al. 2018, Sarto i Monteys and Torras i Tutusaus 2018, Cocquempot et al. 2019); new species for the Italian fauna.

Notes

In Europe, *Xylotrechus chinensis* was first officially reported in 2013 in Catalonia (Sarto i Monteys and Torras i Tutusaus 2018) and subsequently was observed to be established also in Greece (Leivadara et al. 2018) and France (Cocquempot et al. 2019). The three records here presented and observed in the Province of Brescia (Lombardy) indicate the first record of *X. chinensis* in Italy. The species was promptly notified to the Regional Plant Health Service ([Regione Lombardia Plant Health Service](#)) and to the European Commission (Europhyt Outbreak No. 2250). Several records of

exit holes and adults on plants of *Morus* sp. clearly indicate the establishment of *X. chinensis* on the Italian territory. There are currently no signs of attack on the other host plants known from literature (Han and Lyu 2010) and present in the Italian invaded area, such as *Malus* spp., *Pyrus* spp. and *Vitis vinifera* L. (Europhyt Outbreak No. 2250).

Discussion

The faunistic records here presented further demonstrated how Italy, due to its climatic and environmental peculiarities, is rather predisposed to host and foster the establishment of non-native beetles; in confirmation, it is sufficient to note that most of the species that have arrived in recent decades are all undergoing a substantial range expansion. It is also interesting to note that species new to the Italian fauna are already present at the European level, indicating a general homogenisation of the non-native fauna due to species natural spreading and unintentional human-mediated transport amongst EU countries. The latter could be the case for the recent arrival of *Xylotrechus chinensis*, whose Italian population may originate from infested areas in Spain or France, rather than a random introduction from countries of origin (a hypothesis that requires further investigation). Given the enormous diversity of species and adaptations that characterise Coleoptera, maintaining a national level of monitoring and data collection would not be possible without the continued support of the non-professional entomological community, as well as from citizen-science initiatives. In particular, especially for species that are more conspicuous and identifiable by photography, at least in the first instance, careful monitoring of social networks can help to collect totally unexpected observations.

Acknowledgements

The authors thank all the people who shared their observations on non-native Coleoptera, substantially contributing to the improvement of the data used in this paper. In addition, the authors acknowledge the support of NBFC to University of Roma Tre, Department of Science and University of Milano-Bicocca, Department of Earth and Environmental Sciences, funded by the Italian Ministry of University and Research, PNRR, Missione 4 Componente 2, 'Dalla ricerca all'impresa', Investimento 1.4, Project CN00000033.

References

- Allen EA, Humble LM (2002) Nonindigenous species introductions: a threat to Canada's forests and forest economy. *Canadian Journal of Plant Pathology* 24 (2): 103-110. <https://doi.org/10.1080/07060660309506983>
- Banks NC, Paini DR, Bayliss KL, Hodda M (2015) The role of global trade and transport network topology in the human-mediated dispersal of alien species. *Ecology Letters* 18 (2): 188-199. <https://doi.org/10.1111/ele.12397>

- Beenen R, Roques A (2010) Leaf and seed beetles (Coleoptera, Chrysomelidae). Chapter 8.3. *BioRisk* 4: 267-292. <https://doi.org/10.3897/biorisk.4.52>
- Bieńkowski A, Orlova-Bienkowskaja M (2017) Establishment of the invasive pest of bamboo *Dinoderus japonicus* Lesne, 1895 (Coleoptera Bostrichidae) in the Caucasus and notes on other beetle species currently established in this region. *Redia* 100: 115-118. <https://doi.org/10.19263/REDIA-100.17.14>
- Bousquet Y, Laplante S (1999) Taxonomic review of the Canadian species of the genus *Monotoma* Herbst (Coleoptera: Monotomidae). *Proceedings of the Entomological Society of Ontario* 130: 67-96.
- Brustel H, Aberlenc H (2014) Les Bostrichidae Latreille, 1802 de la faune de France: espèces autochtones, interceptées, introduites ou susceptibles de l'être (Coleoptera). *RARE. Revue de l'Association Roussillonnaise d'Entomologie* 13 (2): 65-68.
- Cocquempot C, Desbles F, Mouttet R, Valladares L (2019) *Xylotrechus chinensis* (Chevrolat, 1852), nouvelle espèce invasive pour la France métropolitaine (Coleoptera, Cerambycidae, Clytini). *Bulletin de la Société Entomologique de France* 124 (1): 27-32. https://doi.org/10.32475/bsef_2064
- Cocquempot C, Henin J, Jourez B, Rapuzzi P, Roques A, Drumont A (2022) État de l'invasion de *Trichoferus campestris* (Faldermann, 1835) au plan international et réflexion sur sa première interception en Belgique. *Belgian Journal of Entomology* 129: 1-24.
- Colombari F, Martinez-Sañudo I, Battisti A (2022) First report of the alien ambrosia beetle *Cnestus mutilatus* and further finding of *Anisandrus maiche* in the European part of the EPPO region (Coleoptera: Curculionidae: Scolytinae: Xyleborini). *EPPO Bulletin* 52 (2): 446-450. <https://doi.org/10.1111/epp.12840>
- Crall A, Newman G, Jarnevich C, Stohlgren T, Waller D, Graham J (2010) Improving and integrating data on invasive species collected by citizen scientists. *Biological Invasions* 12 (10): 3419-3428. <https://doi.org/10.1007/s10530-010-9740-9>
- Danilevsky ML (2020) Catalogue of Palaearctic Coleoptera, Chrysomeloidea I (Vesperidae, Disteniidae, Cerambycidae). Revised and updated edition. Vol. 6. Brill, Leiden Boston, 712 pp.
- Denux O, Zagatti P (2010) Coleoptera families other than Cerambycidae, Curculionidae *sensu lato*, Chrysomelidae *sensu lato* and Coccinellidae. Chapter 8.5. *BioRisk* 4: 315-406. <https://doi.org/10.3897/biorisk.4.61>
- Dodelin B (2019) *Ambrosiophilus atratus* est arrivé dans l'Est de la France. *Entomodata*, 13 September. URL: <https://entomodata.wordpress.com/2019/09/13/ambrosiophilus-atratus-est-arrive-dans-lest-de-la-france/>
- Dowd P (2000) Dusky sap beetles (Coleoptera: Nitidulidae) and other kernel damaging insects in Bt and Non-Bt sweet corn in Illinois. *Journal of Economic Entomology* 93 (6): 1714-1720. <https://doi.org/10.1603/0022-0493-93.6.1714>
- EFSA Panel on Plant Health (, Bragard C, Baptista P, Chatzivassiliou E, Di Serio F, Gonthier P, Jaques Miret JA, Justesen AF, Magnusson CS, Milonas P, Navas-Cortes JA, Parnell S, Potting R, Reignault PL, Stefani E, Thulke H, Van der Werf W, Vicent Civera A, Yuen J, Zappalà L, Gregoire J, Malumphy C, Kertesz V, Maiorano A, MacLeod A (2021) Pest categorisation of *Xylotrechus chinensis*. *EFSA Journal* 19 (12). <https://doi.org/10.2903/j.efsa.2021.7022>

- Faccoli M (2008) First record of *Xyleborus atratus* Eichhoff from Europe, with an illustrated key to the European Xyleborini (Coleoptera: Curculionidae: Scolytinae). *Zootaxa* 1772 (1): 55-62. <https://doi.org/10.11646/zootaxa.1772.1.2>
- Forbicioni L (2019) *Trigonorhinus zaeae* (Wolfrum, 1931) nuova specie introdotta per l'Italia e per l'Europa continentale (Coleoptera Curculionoidea Anthribidae). *Revista Gaditana de Entomología* 1: 81-87.
- Gomez D, Rabaglia R, Fairbanks KO, Hulcr J (2018) North American Xyleborini north of Mexico: a review and key to genera and species (Coleoptera, Curculionidae, Scolytinae). *ZooKeys* 768: 19-68. <https://doi.org/10.3897/zookeys.768.24697>
- Guéorguiev B (2018) Coleoptera (Insecta) collected or observed around Chelopech Village, Western Bulgaria. *Historia naturalis bulgarica* 34: 1-8. <https://doi.org/10.48027/hnb.34.01001>
- Han Y, Lyu D (2010) Taxonomic review of the genus *Xylotrechus* (Coleoptera: Cerambycidae: Cerambycinae) in Korea with a Newly Recorded Species. *Korean journal of applied entomology* 49 (2): 69-82. <https://doi.org/10.5656/ksae.2010.49.2.069>
- Harrison F (1962) Infestation of sweet corn by the dusky sap beetle, *Carpophilus lugubris*. *Journal of Economic Entomology* 55 (6): 922-925. <https://doi.org/10.1093/jee/55.6.922>
- Hauptman T, Piškur B, Faccoli M, Rekanje B, Marinč A, Jurc M (2019) The first record of two non-native ambrosia beetles in Slovenia: *Ambrosiodmus rubricollis* (Eichhoff, 1875) and *Ambrosiophilus atratus* (Eichhoff, 1875) (Coleoptera: Curculionidae, Scolytinae). *Zootaxa* 4657 (2): 397-700. <https://doi.org/10.11646/zootaxa.4657.2.13>
- Hébert C, Jobin L, Fréchette M, Pelletier G, Coulombe C, Germain C, Auger M (2000) An efficient pit-light trap to study beetle diversity. *Journal of Insect Conservation* 4 (3): 189-200. <https://doi.org/10.1023/a:1009611501133>
- Iannuzzi L, Liberal CN, de Souza TB, Pellegrini TG, da Cunha JCS, Koroiva R, de Albuquerque LSC, Costa FC, Salomão RP, Maia ACD, Leivas FWT (2020) Sampling Methods for Beetles (Coleoptera). *Measuring Arthropod Biodiversity* 125-185. https://doi.org/10.1007/978-3-030-53226-0_6
- Israelson G (1985) Notes on the coleopterous fauna of the Azores, with description of new species of *Atheta* Thomson (Coleoptera). *Boletim do Museu Municipal do Funchal* 37 (165): 5-19.
- Jarzabek-Müller A (2023) Nachweis von *Ptilineurus marmoratus* (Reitter, 1877) in Deutschland (Coleoptera, Ptinidae). - Arbeitsgemeinschaft Bayerischer Entomologen: Faunistische Notizen. <https://www.abe-entomofaunistik.org/content/kaefer>. Accessed on: 2023-8-16.
- Jelínek J (2007) Monotomidae. In: Löbl I, Smetana A (Eds) *Catalogue of Palaearctic Coleoptera*. Vol. 4. Apollo Books, Stenstrup, 935 pp.
- Jelínek J, Audisio P, Hájek J, Baviera C, Moncoutier B, Barnouin T, Hervé B, Genç H, Leschen RA (2016) *Epuraea imperialis* (Reitter, 1877). New invasive species of Nitidulidae (Coleoptera) in Europe, with a checklist of sap beetles introduced to Europe and Mediterranean areas. *Atti della Accademia Peloritana dei Pericolanti-Classe di Scienze Fisiche, Matematiche e Naturali* 94 (2). <https://doi.org/10.1478/AAPP.942A4>
- Kammar V, Rani AT, Kumar KP, Chakravarthy AK (2020) Light Trap: A Dynamic Tool for Data Analysis, Documenting, and Monitoring Insect Populations and Diversity. *Innovative Pest Management Approaches for the 21st Century* 137-163. https://doi.org/10.1007/978-981-15-0794-6_8

- Kenis M, Rabitsch W, Auger-Rozenberg M-, Roques A (2007) How can alien species inventories and interception data help us prevent insect invasions? *Bulletin of Entomological Research* 97 (5): 489-502. <https://doi.org/10.1017/s0007485307005184>
- Kirkendall L, Faccoli M (2010) Bark beetles and pinhole borers (Curculionidae, Scolytinae, Platypodinae) alien to Europe. *ZooKeys* 56: 227-251. <https://doi.org/10.3897/zookeys.56.529>
- Kundrata R, Kubackzova M, Prosvirov A, Douglas H, Fojtikova A, Costa C, Bousquet Y, Alonso-Zarazaga M, Bouchard P (2019) World catalogue of the genus-group names in Elateridae (Insecta, Coleoptera). Part I: Agrypninae, Campyloxeninae, Hemiopinae, Lissominae, Oestodinae, Parablacinae, Physodactylinae, Pityobiinae, Subprotelaterinae, Tetralobinae. *ZooKeys* 839: 83-154. <https://doi.org/10.3897/zookeys.839.33279>
- Larson ER, Graham BM, Achury R, Coon JJ, Daniels MK, Gambrell DK, Jonasen KL, King GD, LaRacuente N, Perrin-Stowe TI, Reed EM, Rice CJ, Ruzi SA, Thairu MW, Wilson JC, Suarez AV (2020) From eDNA to citizen science: emerging tools for the early detection of invasive species. *Frontiers in Ecology and the Environment* 18 (4): 194-202. <https://doi.org/10.1002/fee.2162>
- Leivadara E, Leivadaras I, Vontas I, Trichas A, Simoglou K, Roditakis E, Avtzis DN (2018) First record of *Xylotrechus chinensis* (Coleoptera, Cerambycidae) in Greece and in the EPPO region. *EPPO Bulletin* 48 (2): 277-280. <https://doi.org/10.1111/epp.12468>
- Loughner R, Loeb G, Turechek W (2007) Strawberry sap beetle (Coleoptera: Nitidulidae) distribution in New York and differential movement in two types of habitat. *Journal of Entomological Science* 42 (4): 603-609. <https://doi.org/10.18474/0749-8004-42.4.603>
- Lupi D, Jucker C, Colombo M (2013) Distribution and biology of the yellow-spotted longicorn beetle *Psacotha hilaris hilaris* (Pascoe) in Italy. *EPPO Bulletin* 43 (2): 316-322. <https://doi.org/10.1111/epp.12045>
- Lupi D, Malabusini S, de Milato S, Heinzl AL, Ruzzier E, Bani L, Savoldelli S, Jucker C (2023) Exploring the range expansion of the yellow-spotted longhorn beetle *Psacotha hilaris hilaris* in northern Italy. *Agricultural and Forest Entomology* <https://doi.org/10.1111/afe.12570>
- Lykidis CT, Nardi G, Petrakis PV (2016) First record of *Sinoxylon anale* and *S. unidentatum* in Greece, with an updated account on their global distribution and host plants (Coleoptera: Bostrichidae). *Fragmenta Entomologica* 48 (2): 101-121. <https://doi.org/10.13133/2284-4880/171>
- Mandelshtam MY, Yakushkin EA, Petrov AV (2019) Oriental ambrosia beetles (Coleoptera: Curculionidae: Scolytinae): new inhabitants of Primorsky Krai in Russia. *Russian Journal of Biological Invasions* 9 (4): 355-365. <https://doi.org/10.1134/s2075111718040082>
- Marchioro M, Faccoli M, Dal Cortivo M, Branco M, Roques A, Garcia A, Ruzzier E (2022) New species and new records of exotic Scolytinae (Coleoptera, Curculionidae) in Europe. *Biodiversity Data Journal* 10 <https://doi.org/10.3897/bdj.10.e93995>
- Marini F, Mutinelli F, Montarsi F, Cline AR, Gatti E, Audisio P (2013) First report in Italy of the dusky sap beetle, *Carpophilus lugubris*, a new potential pest for Europe. *Journal of Pest Science* 86 (2): 157-160. <https://doi.org/10.1007/s10340-013-0479-9>
- Mola L, Ruzzier E, Deiaco C, Agosti M, Faccoli M, Matějček J, Farina L, Diotti L, Della Rocca F (2023) A preliminary catalogue of the Coleoptera (Hexapoda: Insecta) of the

- Monte Netto Regional Park (Lombardy NE Italy). *Zootaxa* 5293 (1): 1-44. <https://doi.org/10.11646/zootaxa.5293.1.1>
- Montagna M, Zoia S, Leonardi C, Di Taddeo V, Caldara R, Sassi D (2016) *Colasposoma dauricum* Mannerheim, 1849 an Asian species adventive to Piedmont, Italy (Coleoptera: Chrysomelidae: Eumolpinae). *Zootaxa* 4097 (1). <https://doi.org/10.11646/zootaxa.4097.1.8>
 - Monterrosa A, Joseph SV, Blaauw B, Hudson W, Acebes-Doria AL (2022) Ambrosia beetle occurrence and phenology of *Xylosandrus* spp. (Coleoptera: Curculionidae: Scolytinae) in ornamental nurseries, tree fruit, and pecan orchards in Georgia. *Environmental Entomology* 51 (5): 998-1009. <https://doi.org/10.1093/ee/nvac064>
 - Nardi G, Badano D, De Cinti B (2015) First record of *Dinoderus* (*Dinoderastes*) *japonicus* in Italy (Coleoptera: Bostrichidae). *Fragmenta Entomologica* 47 (2): 147-150. <https://doi.org/10.13133/2284-4880/143>
 - Nardi GL, Mifsud D (2015) The Bostrichidae of the Maltese Islands (Coleoptera). *ZooKeys* 481: 69-108. <https://doi.org/10.3897/zookeys.481.8294>
 - Nikulina T, Mandelshtam M, Petrov A, Nazarenko V, Yunakov N (2015) A survey of the weevils of Ukraine. Bark and ambrosia beetles (Coleoptera: Curculionidae: Platypodinae and Scolytinae). *Zootaxa* 3912 (1): 1-61. <https://doi.org/10.11646/zootaxa.3912.1.1>
 - Pansa MG, Frati S, Baudino M, Tavella L (2014) *Stelidota geminata*: nuovo fitofago preoccupante nei fragoleti piemontesi. *Protezione delle Colture* 1: 16-18.
 - Parsons CT (1943) A revision of Nearctic Nitidulidae (Coleoptera). *Bulletin of the Museum of Comparative Zoology at Harvard College* 92 (3): 121-278.
 - Peck S, Thomas M, Tumbow R (2014) The diversity and distributions of the beetles (Insecta: Coleoptera) of the Guadeloupe Archipelago (Grande-Terre, Basse-Terre, La Désirade, Marie-Galante, Les Saintes, and Petite-Terre), Lesser Antilles. *Insecta Mundi* 0352: 1-156. URL: <http://zoobank.org/cfe41e68-a725-4d3b-99ce-ff4ef6d224b9>
 - Pennacchio F, Marianelli L, Binazzi F, Francardi V, Poli F, Griffio F, Roversi PF (2016) First interception of *Trichoferus campestris* (Faldermann, 1835) (Coleoptera Cerambycidae Cerambycinae) in Italy. *Redia* 99: 59-62. <https://doi.org/10.19263/Redia-99.16.06>
 - Pezzi G (2013) L'entomofauna della Zona di Protezione Speciale (ZPS) "Bacini ex zuccherificio di Mezzano" (Ravenna). 5 contributo. Coleotteri Adefagi (escl. Carabidae sl) e Polifagi (escl. Scarabaeiformia) (Insecta Coleoptera). *Quaderno di Studi e Notizie di Storia Naturale della Romagna* 37: 105-122.
 - Rabaglia RJ, Vandenberg NJ, Acciavatti RE (2009) First records of *Anisandrus maiche* Stark (Coleoptera: Curculionidae: Scolytinae) from North America. *Zootaxa* 2137 (1): 23-28. <https://doi.org/10.11646/zootaxa.2137.1.2>
 - Ranger C, Reding M, Persad A, Herms D (2010) Ability of stress-related volatiles to attract and induce attacks by *Xylosandrus germanus* and other ambrosia beetles. *Agricultural and Forest Entomology* 12 (2): 177-185. <https://doi.org/10.1111/j.1461-9563.2009.00469.x>
 - Rassati D, Petrucco Toffolo E, Roques A, Battisti A, Faccoli M (2014) Trapping wood boring beetles in Italian ports: a pilot study. *Journal of Pest Science* 87 (1): 61-69. <https://doi.org/10.1007/s10340-013-0499-5>
 - Ratti E (2002) Biodiversità della Laguna di Venezia – Reperti 72-74, 78, 84, 93-95, 104, 106, 107. *Bollettino del Museo Civico di Storia Naturale di Venezia* 53: 282-292.

- Rattu R, Ruzzante G, Audisio P, Biscaccianti AB (2021) The alien species *Phenolia* (*Lasiodites*) *picta* (Macleay, 1825) in Sardinia (Coleoptera: Nitidulidae). *Fragmenta Entomologica* 53 (1): 89-92. <https://doi.org/10.13133/2284-4880/486>
- Reed S, Juzwik J, English J, Ginzel M (2015) Colonization of artificially stressed black walnut trees by ambrosia beetle, bark beetle, and other weevil species (Coleoptera: Curculionidae) in Indiana and Missouri. *Environmental Entomology* 44 (6): 1455-1464. <https://doi.org/10.1093/ee/nvv126>
- Ribeiro-Correia JP, Prospero S, Beenken L, Biedermann PW, Blaser S, Chittaro Y, Frey D, Hölling D, Kaya SO, Knížek M, Mittelstrass J, Branco M, Ruffner B, Sanchez A, Brockerhoff E (2023) Distribution of the invasive *Anisandrus maiche* (Coleoptera: Scolytinae) in Switzerland, first record in Europe of its ambrosia fungus *Ambrosiella cleistominuta*, and its new association with *Xylosandrus crassiusculus*. bioRxiv <https://doi.org/10.1101/2023.03.30.534995>
- Roques A (2010) Taxonomy, time and geographic patterns. Chapter 2. *BioRisk* 4: 11-26. <https://doi.org/10.3897/biorisk.4.70>
- Roy H, Migeon A (2010) Ladybeetles (Coccinellidae). Chapter 8.4. *BioRisk* 4: 293-313. <https://doi.org/10.3897/biorisk.4.49>
- Ruchin A, Egorov L, Khapugin A (2021) Usage of fermental traps for the study of the species diversity of Coleoptera. *Insects* 12 (5). <https://doi.org/10.3390/insects12050407>
- Ruzzier E, Colla A (2019) *Micromalthus debilis* LeConte, 1878 (Coleoptera: Micromalthidae), an American wood-boring beetle new to Italy. *Zootaxa* 4623 (3): 589-594. <https://doi.org/10.11646/zootaxa.4623.3.12>
- Ruzzier E, Morin L, Glerean P, Forbicioni L (2020a) New and interesting records of Coleoptera from northeastern Italy and Slovenia (Alexiidae, Buprestidae, Carabidae, Cerambycidae, Ciidae, Curculionidae, Mordellidae, Silvanidae). *The Coleopterists Bulletin* 74 (3). <https://doi.org/10.1649/0010-065x-74.3.523>
- Ruzzier E, Tomasi F, Poso M, Martinez-Sañudo I (2020b) *Archophileurus spinosus* Dechambre, 2006 (Coleoptera: Scarabaeidae: Dynastinae), a new exotic scarab possibly acclimatized in Italy, with a compilation of exotic Scarabaeidae found in Europe. *Zootaxa* 4750 (4): 577-584. <https://doi.org/10.11646/zootaxa.4750.4.8>
- Ruzzier E, Galli A, Bani L (2021a) Monitoring exotic beetles with inexpensive attractants: A case study. *Insects* 12 (5). <https://doi.org/10.3390/insects12050462>
- Ruzzier E, Prazaru SC, Faccoli M, Duso C (2021b) *Xylosandrus germanus* (Blandford, 1894) on grapevines in Italy with a compilation of world scolytine weevils developing on Vitaceae. *Insects* 12 (10). <https://doi.org/10.3390/insects12100869>
- Ruzzier E, Tomasi F, Platia G, Pulvirenti E (2021c) Exotic Elateridae (Coleoptera: Elateroidea) in Italy: An Overview. *The Coleopterists Bulletin* 75 (3): 673-679. <https://doi.org/10.1649/0010-065x-75.3.673>
- Ruzzier E, Prazaru S, Scaccini D, Duso C (2022a) First record of *Ambrosiophilus atratus* (Eichhoff, 1875) and further observations of *Xylosandrus germanus* (Blandford, 1894) (Coleoptera: Curculionidae: Scolytinae) on grapevine, *Vitis vinifera* L. (Vitaceae). *The Coleopterists Bulletin* 76 (3): 433-437. <https://doi.org/10.1649/0010-065x-76.3.433>
- Ruzzier E, Bani L, Cavaletto G, Faccoli M, Rassati D (2022b) *Anisandrus maiche* Kurentzov (Curculionidae: Scolytinae), an Asian species recently introduced and now widely established in Northern Italy. *BioInvasions Records* 11 (3): 652-658. <https://doi.org/10.3391/bir.2022.11.3.07>

- Ruzzier E, Haack R, Curletti G, Roques A, Volkovitsh M, Battisti A (2023a) Jewels on the go: exotic buprestids around the world (Coleoptera, Buprestidae). *NeoBiota* 84: 107-135. <https://doi.org/10.3897/neobiota.84.90829>
- Ruzzier E, Ortis G, Vallotto D, Faccoli M, Martinez-Sañudo I, Marchioro M (2023b) The first full host plant dataset of Curculionidae Scolytinae of the world: tribe Xyleborini LeConte, 1876. *Scientific Data* 10 (1). <https://doi.org/10.1038/s41597-023-02083-5>
- Ruzzier E, Martinez Sañudo I, Cavaletto G, Faccoli M, Smith S, Cognato A, Rassati D (2023c) Detection of native-alien populations of *Anisandrus dispar* (Fabricius, 1792) in Europe. *Journal of Asia-Pacific Entomology* 26 (4). <https://doi.org/10.1016/j.aspen.2023.102137>
- Sarto i Monteys V, Torras i Tutusaus G (2018) A new alien invasive longhorn beetle, *Xylotrechus chinensis* (Cerambycidae), Is Infesting Mulberries in Catalonia (Spain). *Insects* 9 (2). <https://doi.org/10.3390/insects9020052>
- Sauvard D, Branco M, Branco M, Lakatos F, Faccoli M, Faccoli M, Kirkendall L, Kirkendall L (2010) Weevils and bark beetles (Coleoptera, Curculionoidea). Chapter 8.2. *BioRisk* 4: 219-266. <https://doi.org/10.3897/biorisk.4.64>
- Seebens H, Blackburn T, Dyer E, Genovesi P, Hulme P, Jeschke J, Pagad S, Pyšek P, van Kleunen M, Winter M, Ansong M, Arianoutsou M, Bacher S, Blasius B, Brockerhoff E, Brundu G, Capinha C, Causton C, Celesti-Grapow L, Dawson W, Dullinger S, Economo E, Fuentes N, Guénard B, Jäger H, Kartesz J, Kenis M, Kühn I, Lenzner B, Liebhold A, Mosena A, Moser D, Nentwig W, Nishino M, Pearman D, Pergl J, Rabitsch W, Rojas-Sandoval J, Roques A, Rorke S, Rossinelli S, Roy H, Scalera R, Schindler S, Štajerová K, Tokarska-Guzik B, Walker K, Ward D, Yamanaka T, Essl F (2018) Global rise in emerging alien species results from increased accessibility of new source pools. *Proceedings of the National Academy of Sciences* 115 (10). <https://doi.org/10.1073/pnas.1719429115>
- Smith S, Beaver R, Cognato A (2020) A monograph of the Xyleborini (Coleoptera, Curculionidae, Scolytinae) of the Indochinese Peninsula (except Malaysia) and China. *ZooKeys* 983: 1-442. <https://doi.org/10.3897/zookeys.983.52630>
- Stan M (2019) The first record of *Stelidota geminata* (Say, 1825) (Coleoptera, Nitidulidae) in Romania. *Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa"* 62 (1): 57-60. <https://doi.org/10.3897/travaux.62.e35470>
- Terekhova VV, Skrylnik YY (2012) Biological peculiarities of the alien for Europe *Anisandrus maiche* Stark (Coleoptera: Curculionidae: Scolytinae) Bark Beetle in Ukraine. *Russian Journal of Biological Invasions* 3 (2): 139-144. <https://doi.org/10.1134/s2075111712020105>
- Touroult J, Witté I (2020) Beer, wine, or fruit juice: Which is best? A case study of bait efficiency to sample saproxylic beetles (Coleoptera) in an oak woodland. *The Coleopterists Bulletin* 74 (4): 763-771. <https://doi.org/10.1649/0010-065x-74.4.763>
- Van Meer C, Artéro A (2022) Présence en France de l'espèce exotique *Monocrepidius posticus* (Eschscholtz, 1822) (Coleoptera Elateridae Agrypninae). *L'Entomologiste* 78 (5): 353-357.
- Wallace R, Bargerion C, LaForest J, Carroll R (2021) Citizen scientists' role in invasive alien species mapping and management. *Invasive Alien Species* 325-338. <https://doi.org/10.1002/9781119607045.ch50>

- Weiss M, Williams R (1980) An annotated bibliography of the genus *Stelidota* Erichson (Coleoptera: Nitidulidae, Nitidulinae). Ohio Agricultural Research and Development Center Research Circular 255: 1-37.
- Wojas T (2022) Nowe dane o występowaniu *Epuraea distincta* (Grimmer, 1841) i *Stelidota geminata* (Say, 1825) (Coleoptera: Nitidulidae) w Polsce. [New data on the occurrence of *Epuraea distincta* (Grimmer, 1841) and *Stelidota geminata* (Say, 1825) (Coleoptera: Nitidulidae) in Poland]. Wiadomości Entomologiczne (Entomological News) 5N: 8-10. <https://doi.org/10.5281/zenodo.6198542>
- Yan X, Zhou H, Shen Z, Li W, Guo D, Song Y, Lan S, Zhang J (2010) National investigations of stored grain arthropods in China. Julius Kühn-Institut Archiv 425: 212-218. <https://doi.org/10.5073/jka.2010.425.145>
- Yuasa H, Onoe T (1930) *Ptilineurus marmoratus* Reitter, an anobiid-beetle noxious to the rush mat, with description of a new parasitic bethylid-fly. Journal of the Imperial Agricultural Experiment Station 1: 215-235.
- Yus-Ramos R, Ventura D, Bensusan K, Coello-García P, György Z, Stojanova A (2014) Alien seed beetles (Coleoptera: Chrysomelidae: Bruchinae) in Europe. Zootaxa 3826 (3). <https://doi.org/10.11646/zootaxa.3826.3.1>
- Zahradník P (2012) Ptinidae of China I. Subfamily Dorcatominae (Coleoptera: Bostrichoidea: Ptinidae). Studies and Reports Taxonomical Series 8 (1-2): 325-334.
- Zahradník P (2021) Review of the genus *Ptilineurus* Reitter, 1901 (Coleoptera: Bostrichoidea: Ptinidae), with description of five new species. Studies and Reports Taxonomical Series 17 (2): 447-459.