

New records of Heteroptera (Hemiptera) from Campania, Southern Italy

Ivano Adamo¹, Francesco Carandente¹, Camillo Pignataro¹, Paolo Crovato² & Nicola Maio^{1*}

¹Fondazione I.R.I.D.I.A. - Museo Naturalistico, Via Forese 16 - 84020 Corleto Monforte (SA), Italy

²Via S. Liborio, 1 - 80134 Napoli, Italy

*Corresponding author, e-mail: nicomaio@unina.it

ABSTRACT

During a two-year faunistic research (2010 and 2011) carried out in three different areas of Campania (the Crater of Astroni, the Matese Mountains, and the Alburni Mountains: Site of Community Importance, SCI, - Special Protection Area, SPA) eight species of Heteroptera that are new records for the region were collected.

KEY WORDS

Heteroptera; Campania; Southern Italy; faunistics.

Received 20.06.2012; accepted 26.06.2012; printed 30.06.2012

INTRODUCTION

The level of knowledge of the Heteroptera of Campania (489 species; 13,595 sq Km) is far below that of other regions of Southern Italy, such as Basilicata and Calabria.

This is even more evident when comparing the number of heteropteran species known so far with the surfaces of the respective regions: according to Tamanini (1981) for Basilicata and Calabria, in fact, 422 and 564 species are known on 9,992 and 15,079 sq Km, respectively. The purpose of this paper is, therefore, to help bridge this gap by increasing the knowledge of this group in Campania.

MATERIALS AND METHODS

The field survey was conducted in three different areas of Campania between February 2010 and May 2011, namely: the Crater of Astroni, the Matese Mountain, and the Alburni Mountains.

The Crater of Astroni (SIC-ZPS IT8030007) is a WWF oasis, nature reserve of the state, located between Naples and Pozzuoli and is the biggest crater among thirty craters in Campi Flegrei area.

The Matese Regional Park (33,326.5 ha) was established in 2002 to protect the Matese Mountain (ZPS-SIC IT 722228) range, which marks the border between Campania and Molise, and whose territory, in the former region, includes four provinces (Campobasso, Isernia, Benevento and Caserta).

Alburni Mountains (SIC IT8050033 and ZPS IT8050055) are included in National Park of Cilento and Vallo di Diano. This park is the second largest park in Italy. It stretches from the Tyrrhenian coast to the foot of the Apennines in Campania and Basilicata. All insects from Alburni Mountains were captured through sweep net, vacuum, or dropping them into a large mouth glass containers. The specimens from the Crater of Astroni and from Matese mountain have been temporarily captured for specific determination, photographed and released.

The list of reported species follows the taxonomic order of the Italian Checklist (Faraci & Rizzotti Vlach, 1995).

For each species details of the finding are shown along with a brief note on chorology and biology; moreover, description of the finding station with regard to environmental types to which it relates, according to the classification system of habitats CORINE Biotopes (employed for either Charter of

Nature or EUNIS information system designed to support the "Rete Natura" 2000) is reported. When it was possible to make a parallel between the two systems both of them have been submitted (AA.VV., 1991; APAT, 2003).

If it was not possible to refer to older systems, the Natura 2000 code which is found in "Allegato I", 92/43/EEC directive, was used.

RESULTS

Family Miridae Hahn, 1831

Oncotylus (Oncotylus) viridiflavus viridiflavus (Goeze, 1778)

CHOROTYPE AND DISTRIBUTION. Turano-European. It is a rather rare and local species, widespread from Europe, Asia Minor and Caucasus to Western Siberia; the subspecies *O. viridiflavus longipes* Wagner, 1954 is restricted to Southern Anatolia. In Italy it was previously reported only for Abruzzo, Apulia (Gargano) and Sicily (Servadei, 1967), but the records for the latter region are considered erroneous (Faraci & Rizzotti Vlach, 1995).

BIOLOGY AND HOST PLANTS. Its host plant is the cornflower (*Centaurea* spp.). The adults can be observed from July to September.

MATERIALS. Alburni (SA), Sant'Angelo a Fasanello, "Tempa di Don Giovanni", 760 m a.s.l., 21.VII.2011, 2 specimens, I. Adamo legit.

REMARKS. The site is located in an area with fragmented cropland and fallow (EUNIS code II.5, Bare tilled, fallow or recently abandoned arable land) surrounded by the shrubberies *Prunetalia spinosae* related to the edges of deciduous forests (code EUNIS F3.1, temperate thickets and scrub; code CORINE Biotopes 31.81, Medio-European rich-soil thickets) and forest stands dominated by oaks (*Quercus pubescens* and *Q. cerris*) (EUNIS code G1.71, woods of *Quercus pubescens*).

Family Coreidae Leach, 1815

Ceraleptus lividus Stein, 1858

CHOROTYPE AND DISTRIBUTION. Turano-European. The species, present in much of the European

continent, is more common in central and northern regions. In Italy it is common in all regions of the Apennine peninsular regions and reaches some xerothermic oases of the Alps (Servadei, 1967; Tamanini, 1981).

BIOLOGY AND HOST PLANTS. It is found on grasses in dry and open lands and is mainly related to some Fabaceae (*Trifolium*, *Lotus*).

MATERIALS. Alburni (SA), Plot Alburni 1, Ottati, "Pozzo della Lavandaia", 900 m a.s.l., 22.V.2011, 1 specimen, I. Adamo legit (Fig. 1).

REMARKS. The Plot "Alburni 1" is a wet meadow characterized by the presence of wells and springs and by a small portion of riparian vegetation (code EUNIS E1.3, Mediterranean xeric grassland; cod. Nature 2000 6210, Semi-natural dry grasslands and scrubland facies on calcareous substrates, *Festuco-Brometalia*).

Family Lygaeidae Schilling, 1819

Xanthochilus saturnius (Rossi, 1790)

CHOROTYPE AND DISTRIBUTION. Turanian-Mediterranean. Widespread throughout the Mediterranean countries and extending eastwards to Tadzhikistan. In Italy it is present in all regions south of the Po river, including islands (Servadei, 1967) and quite frequent especially in the center-south.

BIOLOGY AND HOST PLANTS. The species is mainly found either on sandy or gravelly soils in dry areas.

MATERIALS. Alburni (SA), Plot Alburni 2, Castelcivita, Celadonna, 405 m a.s.l., 16.X.2010, 1 specimen, I. Adamo legit.

REMARKS. The Plot "Alburni 2" is located at the base of a limestone slope along the road margin and is characterized by sclerophyllous vegetation (code EUNIS F5.5, Thermo-Mediterranean scrub) with typical Mediterranean vegetation formations to *Ampelodesmus mauritanicus* (cod. EUNIS F5.53, with garrigue *Ampelodesmus mauritanicus* dominant. Corine Biotopes 32.23, *Ampelodesmus mauritanicus* garrigue) replaced, where significant events of disturbance occurred, by communities dominated by therophytes (code EUNIS E1.3, Mediterranean xeric grassland, cod. Nature 2000 6220, Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea).

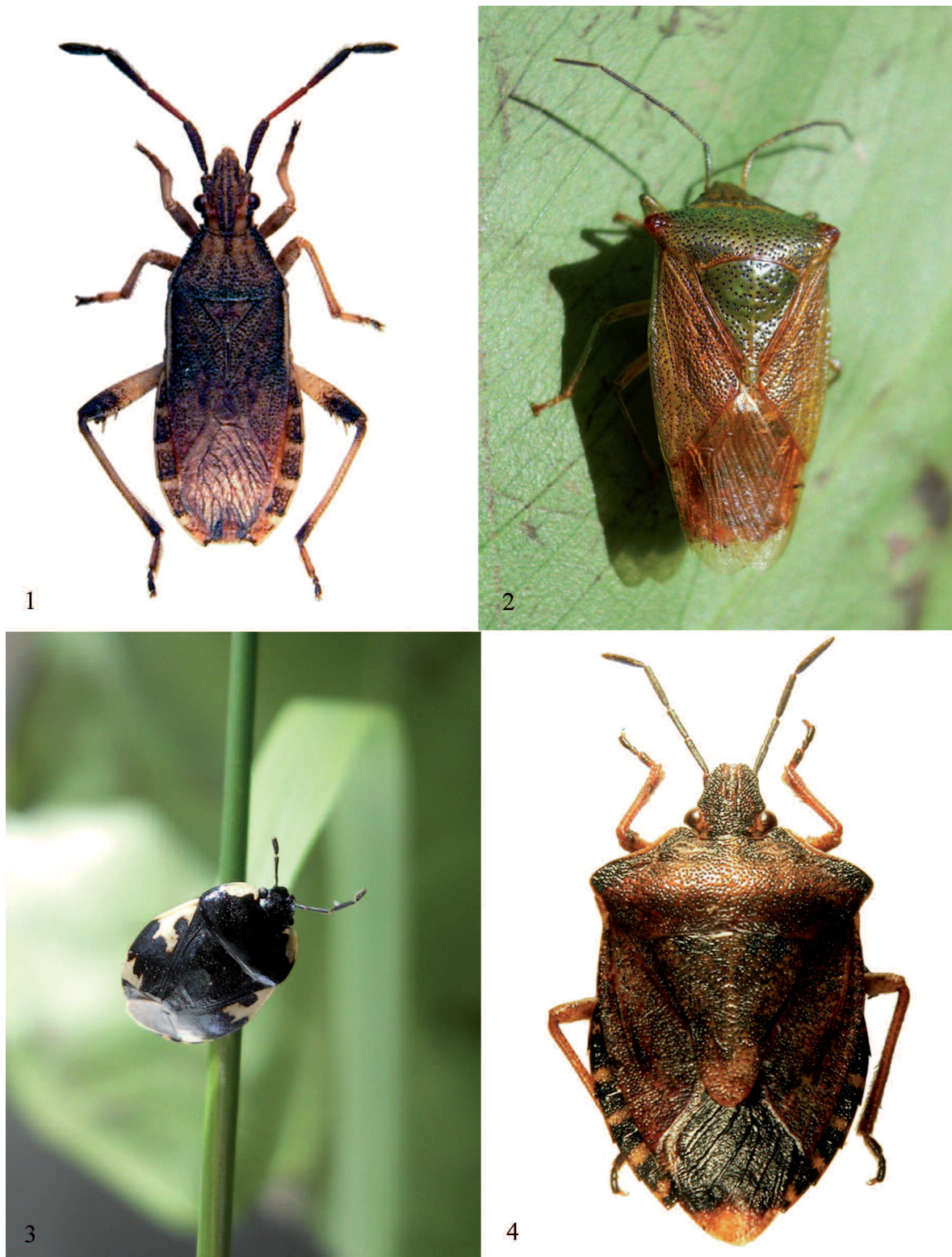


Figure 1. *Ceraleptus lividus* from Alburni Mountains (photo by I. Adamo). Figure 2. *Acanthosoma haemorrhoidale* from “Lago del Matese” (photo by I. Adamo). Figure 3. *Tritomegas rotundipennis* from Crater of Astroni (photo by I. Adamo). Figure 4. *Carpocoris purpureipennis* from Alburni Mountains (photo by I. Adamo).

Family Acanthosomatidae Signoret, 1836

Acanthosoma haemorrhoidale haemorrhoidale
(Linnaeus, 1758)

CHOROTYPE AND DISTRIBUTION. Asian-European. Reported in all regions of northern Italy to Lazio and Abruzzo (Servadei, 1967), in Sicily and Sardinia.

BIOLOGY AND HOST PLANTS. Species mainly mountainous and widespread in mixed woods and clearings where it is linked to various hardwoods such as *Quercus*, *Crataegus*, *Sorbus*, *Corylus*, *Carpinus* and *Betula*. It is often harmful to the crops of hazel.

MATERIALS. Matese (CE), San Gregorio Matese, "Lago del Matese", 1015 m a.s.l., 07.VII.2010, 1 specimen observed on *Crataegus laevigata*, I. Adamo det. (Fig. 2).

REMARKS. This station is located along the southern shore of Matese Lake and at the base of beech trees that stretch along the esplanade south of the basin. The vegetation is typical of populations of hilly-mountain shrub related to the series or the edges of deciduous forests (*Prunetalia spinosae*), with wild species such as hawthorn (*Crataegus laevigata*), wild rose (*Rosa* spp.), privet (*Ligustrum vulgare*) and common laburnum (*Laburnum anagyroides*) (code EUNIS F3.1, temperate thickets and scrub; cod. CORINE Biotopes 31.81, Medio-European rich-soil thickets).

Family Cydnidae Billberg, 1820

Canthophorus melanopterus melanopterus
(Herrich-Schäffer, 1835)

CHOROTYPE AND DISTRIBUTION. Turanian-Mediterranean. Species widespread in central Asia and the Mediterranean region. It is present in all Italian regions (Servadei, 1967).

BIOLOGY AND HOST PLANTS. The species is related to Santalaceae of the genera *Thesium* and *Osyris*.

MATERIALS. Alburni (SA), Plot Alburni 3, Ottati, Vuccolo della Forca, 875 m a.s.l., 22.V.2011, 2 specimens, I. Adamo legit.

REMARKS. The Plot "Alburni 3" is located in a mesomediterranean mountain shrubland characterized by scattered pulvini of *Euphorbia spinosa* (EUNIS code F6.14, western garrigues to *Euphor-*

bia sp.; Cod. CORINE biotopes 32.44, Spurge garrigues, Shrubby formations of the western Mediterranean basin dominated by bushy or robust perennial *Euphorbia*).

Tritomegas rotundipennis (Dohrn, 1862)

CHOROTYPE AND DISTRIBUTION. S-European. Widespread but not very common in various regions of Italy; in the southern part of the peninsula the species was previously known only for Lazio, Abruzzo and Calabria (Servadei, 1967).

BIOLOGY AND HOST PLANTS. Pest. The host plant is *Lamium album* (Lamiaceae).

MATERIALS. Crater of Astroni (NA), Pozzuoli, "Stradone di Caccia" near the "Lago Grande", 25 m a.s.l., 21.II.2010, 2 specimens observed near the edge of the road on *Lamium* sp., I. Adamo det. (Fig. 3).

REMARKS. This station is located on the bottom of the Crater of Astroni, in a clearing along the main highway. The surrounding vegetation is characterized by mixed deciduous subtermophylous forest with prevalence of English oak (*Quercus robur*) and oak (*Q. petraea*) and other mesophylous species of submontane type such as hornbeam (*Ostrya carpinifolia*), chestnut (*Castanea sativa* Miller), and approaching to the stretches of water, elm (*Ulmus minor*) (code CORINE Biotopes 41.2, oak-hornbeam forests).

Family Pentatomidae Leach, 1815

Carpocoris (Carpocoris) purpureipennis (De Geer, 1773)

CHOROTYPE AND DISTRIBUTION. Siberian-European -Anatolian. In Italy it is present in all regions of northern and central Apennines up to Abruzzo (Dioli, 1995). The records reported in Servadei (1967) for Southern Italy regions and Sardinia are not correct according to Tamanini (1958).

BIOLOGY AND HOST PLANTS. Pest. Polyphagous species linked to various herbaceous plants such as *Cirsium* spp., *Cardaria draba* and *Asphodelus* spp. It is a xenocoenic and eurytopic element (Rizzotti Vlach & Zerbini, 1989).

MATERIALS. Alburni (SA), Plot Alburni 3, Ottati, Vuccolo della Forca, 875 m a.s.l., 22.V.2011, 1 specimen, I. Adamo leg.; Alburni (SA), Plot Alburni 4,

Ottati, between “Tempa del Tesoro” and “Il Lago”, track n. 315, 925 m a.s.l., 22.V.2011, 7 specimens on leaves of *Asphodelus ramosus* L., I. Adamo leg., (Fig. 4); Alburni (SA), Plot Alburni 5, Ottati, Tempa Pozzillo, track n. 315, 975-978 m a.s.l., 22.V.2011, 1 specimen, I. Adamo leg.

REMARKS. For Plot “Alburni 3” see above. The “Alburni 4” and “Alburni 5” Plot belong to the same type of environment: code EUNIS E1.3, Mediterranean xeric grassland; cod. Nature 2000 6210, Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*).

Family Scutelleridae Leach, 1815

Eurygaster testudinaria (Geoffroy, 1785)

CHOROTYPE AND DISTRIBUTION. Asiatic-European-Mediterranean. Widespread in Italy, the species is present in almost all regions of the peninsula (Servadei, 1967). The historical reports for Sardinia need confirmation.

BIOLOGY AND HOST PLANTS. Pest, it is on *Carex* (Cyperaceae), *Juncus* (Juncaceae) but also on wild and cultivated Poaceae. It is related to wet meadows with tall grass. In Southern Italy it is a mountain species and is found in the plans up to 1500 m a.s.l.

MATERIALS. Alburni (SA), Plot Alburni 1, Ottati, “Pozzo della Lavandaia”, 900 m a.s.l., 22.V.2011, 1 specimen, I. Adamo leg.

REMARKS. For Plot “Alburni 1” see above.

DISCUSSION AND CONCLUSIONS

Up to now, 489 heteropterans species were known in Campania (Cirillo, 1787; O.G. Costa, 1834; Costa A., 1841, 1843, 1846, 1847a, 1847b, 1847c, 1853, 1862, 1874, Filippi, 1947; Tamanini, 1981; Carapezza et al., 1995; Carapezza & Faraci, 2005; Carapezza, 2007), to which we add the eight new species listed in this paper.

Canthophorus melanopterus, *Tritomegas rotundipennis*, *Eurygaster testudinaria*, *Xantochilus sarturnius* and *Oncotylus viridiflavus viridiflavus* are species fairly common in Italy, whose absence in the literature for Campania was probably only due to a lack of research. *Ceraleptus lividus* is a predominantly northern species, hence Campania may be part

of the southern limit of its distribution range. Also the report of *Carpocoris purpureipennis* could represent the southern limit of the distribution range of the species in Italy (Tamanini, 1959).

ACKNOWLEDGEMENTS

This work was funded with the support from the National Park of Cilento and Vallo di Diano (PNCVD).

Authors wish to thank: The Regional Park of Campi Flegrei, the Matese Regional Park Authority and the National Park Authority of the Cilento and Vallo di Diano. In particular for the National Park of Cilento and Vallo di Diano: Amilcare Troiano (President), Corrado Matera (Vice-President) and Angelo De Vita (Director). A special thanks goes to Laura De Riso (Technical Area) for collaboration as well as advising on technical and administrative aspects. We want to thank Giuseppe Capozzolo for administrative cooperation (Fondazione I.RI.DI.A. - Museo Naturalistico) and Attilio Carapezza (Palermo).

REFERENCES

- AA.VV., 1991. CORINE biotopes manual. Habitats of European Community. EUR 12587/3 EN. Office for Official Publications of the European Communities, Luxembourg: 300 pp.
- APAT, 2003. Gli habitat secondo la nomenclatura Eunis: manuale di classificazione per la realtà italiana. Rapporti, 39. I.G.E.R., Roma, 160 pp.
- Carapezza A., 2007. Gli Eterotteri (Heteroptera). In: Nardi G. & Vomero V. (eds.), Artropodi del Parco Nazionale del Vesuvio: ricerche preliminari. Conservazione Habitat Invertebrati, 4: 87-97.
- Carapezza A. & Faraci F., 2005. Insecta Heteroptera Lep-topodidae, Saldidae, Miridae (partim), Tingidae, pp. 151-153. 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, 2a serie, Sezione Scienze della Vita, 16: 1-307 + CD-ROM.
- Carapezza A., Faraci F. & Péricart J., 1995. Designation of lectotypes and paralectotypes of Palaearctic Heteroptera in the collection of Achille Costa (Museo di Zoologia dell'Università di Napoli). Il Naturalista siciliano, 19: 279-294.
- Cirillo D., 1787. Entomologiae Neapolitanae specimen primum. Napoli, 13 pp., 12 tavv.

- Costa A., 1841. Mémoire pour servir à l'histoire des Hémiptères Hétéroptères de Deux-Siciles. Annales de la Société Entomologique de France, 10: 279-308.
- Costa A., 1843. Camicum Regni Neapolitani Centuria. Napoli, 76 pp.
- Costa A., 1846. Osservazioni intorno la entomologia del Matese da servire alla geografia entomologica del Regno. Annali dell'Accademia degli Aspiranti Naturalisti, 3: 81-94.
- Costa A., 1847a. Camicum Regni Neapolitani. Centuria secunda. Decas prima, secunda, tertia, quarta et quinta. Napoli, 43 pp., 3 tavv. (sep.).
- Costa A., 1847b. Camicum regni Neapolitani. Centuria secunda. Decas sexta, septima, octava, nona et decima. Napoli, 41 pp., 2 tavv. (sep.).
- Costa A., 1847c. Specie nuove o rare d'insetti delle montagne del Matese. Annali dell'Accademia degli Aspiranti Naturalisti, 1: 89-131.
- Costa A., 1853. Camicum regni Neapolitani. Centuria tertia et quartae fragmentum. Napoli: 77 pp., 3 tavv. (sep.).
- Costa A., 1862. Additamenta ad centurias Camicum regni Neapolitani. Napoli, 41 pp., 3 tavv. (sep.).
- Costa A., 1874. Una peregrinazione zoologica su' monti dell'Alburno. Rendiconto dell'Accademia delle Scienze Fisiche e Matematiche (Sezione della Società Reale di Napoli), 13: 129-135.
- Costa O.G., 1834. Cenni zoologici ossia descrizione sommaria delle specie nuove di animali scoperti in diverse contrade del regno nell'anno 1834 con illustrazioni sopra talune altre meno ovvie. Annuario Zoologico, Azzolino e Comp., 90 pp.
- Dioli P. 1995. Eterotteri del ferrarese. 1. La fauna terrestre (Heteroptera Cimicomorpha et Pentatomorpha). Quaderni della Stazione Ecologica del Civico Museo di storia Naturale di Ferrara, 8: 7-49.
- Faraci F. & Rizzotti Vlach M., 1995. Heteroptera, pp. 1-56. In: Minelli A., Ruffo S. & La Posta S. (eds.), Checklist delle specie della fauna italiana, 41. Calderini, Bologna.
- Filippi N., 1947. Primo contributo alla conoscenza della fauna entomologica del Matese. Emittenti Eterotteri. Bollettino della Associazione romana di Entomologia, 2: 24-26.
- Rizzotti Vlach M. & Zerbini C., 1989. Studi sulla palude del Busatello (Veneto-Lombardia). 8. Gli Eterotteri. Memorie del Museo Civico di Storia Naturale di Verona (2 serie), biol. 7:67-88.
- Servadei A., 1967. Rhynchota (Heteroptera, Homoptera, Auchenorrhyncha). Catalogo topografico e sinonimico. Fauna d'Italia, IX. Calderini, Bologna, 851 pp.
- Tamanini L., 1958. Revisione del genere *Carpocoris* Klt. con speciale riguardo alle specie italiane (Hemiptera, Heter., Pentatomidae). Memorie del Museo Civico di Storia Naturale di Verona, 6: 333-388.
- Tamanini L., 1959. I *Carpocoris* della Regione Palearctica. Tabella per la determinazione delle entità e loro distribuzione (Hem., Heteroptera, Pentatomidae). Memorie della Società Entomologica Italiana, 38: 120-142.
- Tamanini L., 1981. Gli Eterotteri della Basilicata e della Calabria (Italia Meridionale) (Hemiptera Heteroptera). Memorie del Museo civico di Storia naturale di Verona, 3: 1-164.