



## New data on some Coccinellidae (Coleoptera) from the Mediterranean Region\*

CLAUDIO CANEPARI

Via Venezia 1, I-20097 San Donato Milanese, Milan, Italy. E-mail: ccanepari@libero.it

\*In: Cerretti, P., Mason, F., Minelli, A., Nardi, G. & Whitmore, D. (Eds), *Research on the Terrestrial Arthropods of Sardinia (Italy)*. Zootaxa, 2318, 1–602.

### Abstract

*Scymnus incisus* H. Lindberg, 1931 **resurrected name** is a valid species, not a synonym of *Nephus* (*Nephus*) *peyerimhoffi* (Sicard, 1923). *Nephus quadrimaculatus bucciarellii* Canepari & Tedeschi, 1977 is removed from synonymy with *N. (N.) ulbrichi* Fürsch, 1977 and synonymized with *N. (N.) schatzmayri* Canepari & Tedeschi, 1977 **syn. nov.** *Hyperaspis inexpectata* Günther, 1959 **resurrected name** is a valid species, not a synonym of *H. concolor* Suffrian, 1843. Four species are newly recorded from Sardinia: *Diomus rubidus* (Motshulsky, 1837), *Scymnus* (*Scymnus*) *femoralis* (Gyllenhal, 1827), *Hyperaspis* (*Hyperaspis*) *duvergeri* Fürsch, 1985 and *H. (H.) inexpectata* Günther, 1959.

**Key words:** Coleoptera, Coccinellidae, Sardinia, Spain, Canary Islands, new synonyms, new records

### Introduction

The Coccinellidae are Coleoptera well known for their prettiness and utility. They belong to the superfamily Cucujoidea and are a large family with about 6,000 species described worldwide (Iablokoff-Khnzorian 1982; Vandenberg 2002), but many others, especially in the subfamilies Sticholotidinae and Scymninae of the tropical regions, are waiting to be discovered. One hundred and thirty species occur in Italy including Sardinia, Sicily and the smaller islands (Audisio *et al.* 1995; Canepari 2003, 2004).

The goal of this paper is to provide new information on some Mediterranean species of this family, chiefly in view of the ongoing preparation of a faunistic paper on the Sardinian species.

### Material and methods

Most of the material studied was obtained in recent surveys by the Centro Nazionale per lo Studio e la Conservazione della Biodiversità Forestale “Bosco Fontana” of Verona (*cf.* Mason *et al.* 2006), the remainder came from private and public collections; all specimens were identified by the author.

The systematics used follow Kovář (2007), except for *Nephus peyerimhoffi* (Sicard, 1923), which, according to Canepari (2004), is placed in the nominal subgenus instead of in subgenus *Bipunctatus* Fürsch.

Illustrations were prepared using a drawing tube mounted on a Zeiss Stemi SV6 stereoscopic microscope.

In 2005 the Sardinian provinces were rearranged and increased in number from four to eight; nevertheless in this paper the provinces are reported as on the original labels. Localities and collections are listed alphabetically.

The following abbreviations are used: dint. = environs; ex. = specimen/s; prov. = province.

## Acronyms of specimen depositories

CCC	Claudio Canepari collection, San Donato Milanese, Italy
CCM	Carlo Meloni collection, Cagliari, Italy
CFA	Fernando Angelini collection, Francavilla Fontana, Italy.
CGN	Gianluca Nardi collection, Cisterna di Latina, Italy.
CNBFVR	Centro Nazionale per lo Studio e la Conservazione della Biodiversità Forestale “Bosco Fontana”, Verona. Italy.
DMC	Luigi De Marzo collection, Matera, Italy.
IEASS	Istituto di Entomologia Agraria, Università di Sassari, Sassari, Italy.
MCR	Enrico Migliaccio collection, Rome, Italy.
MMC	Museo di Storia Naturale, Milan, Italy.
MVC	Museo di Storia Naturale, Verona, Italy.
MTC	Michele Tedeschi collection, Milan, Italy.
SMC	Stephen Schembri collection, Zebbug, Malta.

## List of taxa

### *Diomus rubidus* (Motshulsky, 1837)

**Material examined.** Italy: Sardinia: Carbonia-Iglesias prov., Domusnovas, sa Duchessa, 371 m, UTM 32S 0464990 4358384, 4-18.IV.2006, G. Chessa leg., Malaise trap, 2 ex (CNBFVR); Carbonia-Iglesias prov., Iglesias, dint. Colonia Beneck, 636 m, UTM 32S 0462391 4355441, 11-25.VII.2008, G. Chessa leg., Malaise trap, 6 ex (CNBFVR, CCC).

**Remarks.** Species widespread from Central Asia to the Mediterranean Region (Kovář 2007), but previously unrecorded from Sardinia (Canepari 2004).

The genus *Diomus* Mulsant, 1850 once considered a subgenus of *Nephus* Mulsant, 1846 is characterized by postcoxal lines united with the posterior margin of the first abdominal sternum. Subsequently Gordon (1999) raised *Diomus* to genus level and created the tribe Diomini based on the shape of the basal capsule of the siphon and the morphology of the basal lobe. In *Diomus rubidus* the basal capsule of the siphon is identical to many species of *Scymnus* Dobzhansky 1928 (*cf.* Canepari 2000) with short siphon and basal capsule not T-shaped.

### *Nephus (Nephus) peyerimhoffi* (Sicard, 1923)

(Figs 1–6)

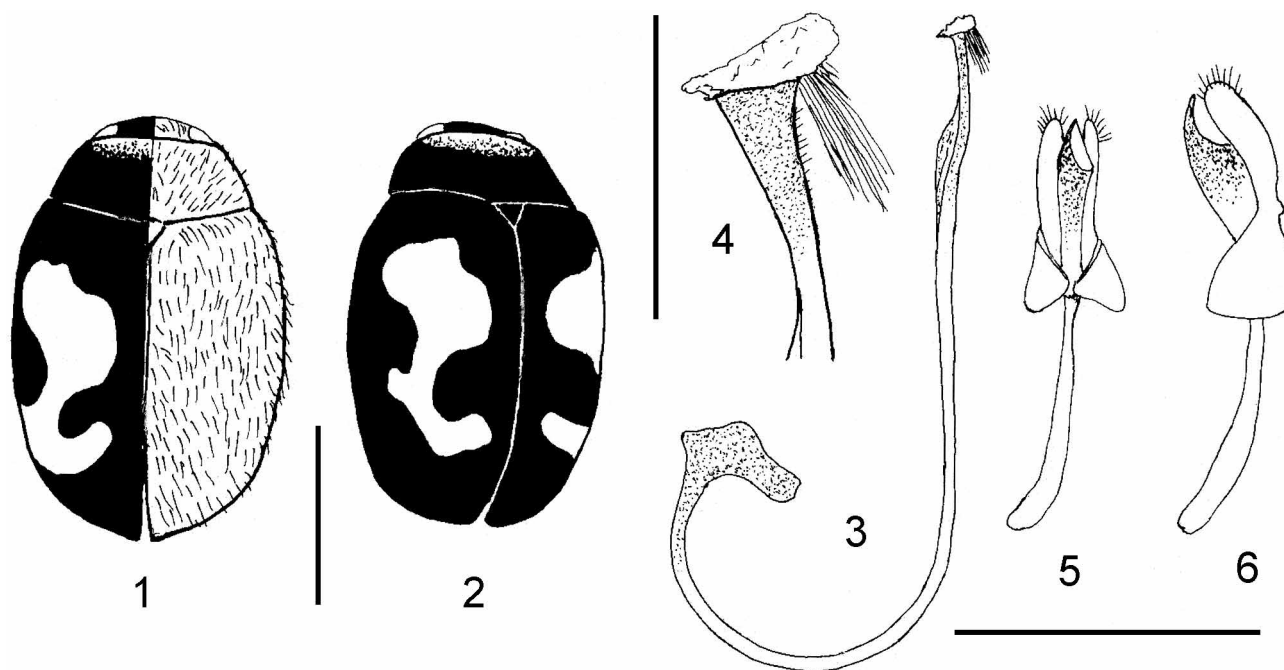
*Scymnus (Nephus) peyerimhoffi* Sicard, 1923: 79

**Material examined.** Italy: Sardinia: Nuoro prov., road Fonni-Desulo, Rio Aratu, 950 m, 8.V.1995, F. Angelini leg., 1 ex (CCC); Sassari prov., Buddusò, Foresta comunale, no date, no collector, 1 ex (IEASS); Cagliari prov., Giara di Gesturi, V. 2007, M. Tedeschi leg., 1 ex (MTC).

**Remarks.** *Nephus (Nephus) peyerimhoffi* was described by Sicard (1923) based on specimens from Algeria (Biskra, Edough, Kerrata) and Tunisia (Gabès). Smirnov (1973) examined the types in Sicard's collection and designated a lectotype for *N. peyerimhoffi*, also providing a figure of the apex of the siphon. Fürsch (1987b) considered *Scymnus incisus* H. Lindberg, 1951 from the Canary Islands, of which he examined the holotype and 14 paratypes, as a synonym of *N. peyerimhoffi*. He gave the illustration of the male genital apparatus of the types but the siphon is different from those figured by Smirnov (1973). The specimens

from Sardinia are identical in elytral pattern and in the male genitalia to the *N. peyerimhoffi* figured by Smirnov (1973). Moreover, the specimens examined by me (Figs 1–6) fit well with Sicard's original description. I have never examined specimens of *Scymnus incisus*, but by its description (Lindberg 1951: 7) it seems to be a different species (see further on). *Nephus (Nephus) peyerimhoffi* belongs to the same group as *N. (N.) quadrimaculatus* (Herbst, 1783), but the subapical part of the siphon lacks the thorn-like processes present in *N. (N.) quadrimaculatus* and *N. (N.) schatzmayri* Canepari & Tedeschi, 1977 (cf. Canepari & Tedeschi 1977; Fürsch & Uygün 1980).

Fürsch (1987a) and Kovář (2007) put *N. peyerimhoffi* in subgenus *Bipunctatus* Fürsch, while according to Canepari (2004) it belongs to subgenus *Nephus*; this opinion is here adopted.



**FIGURES 1–6.** *Nephus (Nephus) peyerimhoffi* (Sicard) (Sardinia, Nuoro province, road Fonni-Desulo, Rio Aratu). **1.** Habitus (showing pubescence on the right side, colour pattern on the left), scale bar: 1 mm. **2.** Habitus, scale bar: 1 mm. **3.** Siphon, scale bar: 0.5 mm. **4.** Apex of siphon, scale bar: 0.1 mm. **5.** Tegmen in ventral view, scale bar: 0.5 mm. **6.** Tegmen in lateral view, scale bar: 0.5 mm.

#### *Nephus (Nephus) schatzmayri* Canepari & Tedeschi, 1977

*Nephus quadrimaculatus schatzmayri* Canepari & Tedeschi, 1977: 103

*Nephus quadrimaculatus bucciarellii* Canepari & Tedeschi, 1977: 101 **syn. nov.**

**Material examined from Sardinia.** Nuoro prov., Siniscola, Monte Albo, 4.V.1995, F. Angelini leg., 1 ex (CFA); Carbonia-Iglesias prov., Domusnovas, sa Duchessa, 371 m, UTM 32S 0464990 4358384, 4-18.IV.2006, G. Chessa leg., Malaise trap, 6 ex (CCC, CNBFVR); Carbonia-Iglesias prov., Iglesias, dint. Colonia Beneck, 636 m, UTM 32S 0462391 4355441, 13-27.VI.2006, G. Chessa leg, Malaise trap, 6 ex (CCC, CNBFVR); Cagliari prov., Cagliari, no date, C. Meloni leg., 2 ex (CCM); Cagliari prov., Costa Rei, 13.V.1995, F. Angelini leg., 2 ex (CFA); Cagliari prov., Quartu S. Elena, no date, leg. C. Meloni, 2 ex (CCM); Cagliari prov., Iglesias, Marganai, Plot CONECOFOR SAR 1, UTM 32 S 462853 4355582, 700 m, 15-30.VI.2004, G. Chessa leg., 1 ex (CNBFVR); Cagliari prov., San Gregorio, no date, C. Meloni leg., 3 ex (CCM).

**Other material examined. Italy:** Apulia: Bari, 12.VIII.1991, L. De Marzo leg., 8 ex (CCC, DMC); Bari prov., Noicattaro, 30.III.1992, L. De Marzo leg., 1 ex (DMC); Bari prov., Castellana Grotte, no date, no

collector, 3 ex (DMC); Lecce prov., Gallipoli, 10.IX.1991, L. De Marzo leg., 1 ex (DMC). Basilicata: Potenza prov., Sellata, 1000 m, 8.VI.1991, La Penta leg., 1 ex (CCC); Potenza prov., Monticchio, 23.VIII.1991, L. De Marzo leg., 1 ex. (DMC). Latium: Roma, 12.X.1938, E. Migliaccio leg., 1 ex (MCR); Roma, no date, no collector, 2 ex (MVC); Latina prov., Cisterna, Ninfa near the lake, 22.VII.1988, G. Nardi leg., 1 ex (CGN); Latina prov., San Felice Circeo, Peretto, 2-20.IX.2004, G. Forcina leg, 3 ex (CCC, CNBFVR); Latina prov., Isola di Ponza, VIII.1981, leg. C. Canepari, 2 ex (CCC). Liguria, Genova prov., Genova Nervi, VIII.1990, leg. Franciscolo, 1 ex (CCM); Sicily, Siracusa, 23.II.1926, leg. A. Schatzmayr, holotype and 12 paratypes of *N. quadrimaculatus schatzmayri* (CCC, MMC, MTC). Marches, Ascoli Piceno prov., M.ti Sibillini, Foce, 3.VII.1991, leg. C. Canepari, 1 ex (CCC); Puglia, Bari, 27.VIII.1992, leg. L. De Marzo, 2 ex (CCC, CFA). Sicily: Siracusa prov., Pachino, no date, no collector, 1 ex (CFA); Messina prov., Montalbano, no date, no collector, 1 ex (CFA), Sicily, Messina prov., Messina, no date, no collector, 1 ex (MMC); Sicily, Palermo prov., Madonie, Piano Zucchi, no date, no collector, 2 ex, (CCC, MVC); Palermo prov., Bosco Ficuzza, Torretta Torre, 940 m, UTM 33 S 357671 4194110, VIII.2008, A. Gatto leg., Malaise trap, 4 ex (CCC, CNBFVR); idem, 9.XII.2003-24.II.2004, A. Gatto leg., Malaise trap, 4 ex (CCC, CNBFVR). Tuscany: Florence prov., Vallombrosa, no date, no collector, 14 ex (CCC); Grosseto prov., Scarlino, Cala Violina, 3.VI-20.VII. 2004, M. Mazza leg., 3 ex (CCC, CNBFVR); Livorno prov., Colognole 150 m, 29.VI-13.VII.2005, F. Bongiani leg., 3 ex (CCC, CNBFVR); Lucca prov., Bagni di Lucca, 24.VIII.1998, C. Canepari leg., 1 ex (CCC). **Croatia:** Dalmatia, no locality, no date, no collector, 1 ex (MMC). **Malta:** Birkirkara, IV.1979, Schembri leg., 2 ex (SMC); Mt. Scala, 20.III.1979, leg. Bezzina, 2 ex (CCC); Marsascala, III-IV. 1979, Schembri leg., 3 ex, attracted to light (SMC).

**Remarks.** *Nephus (Nephus) schatzmayri* was described by Canepari and Tedeschi (1977) as a subspecies of *N. (N.) quadrimaculatus* together with *N. (N.) quadrimaculatus bucciarellii*; in the same paper *N. (N.) quadrimaculatus* var. *pictus* Ganglbauer, 1899, currently known as *N. (N.) ganglbaueri* Kovář, 2007, was raised to subspecies level. Subsequently, Fürsch and Uygun (1980) elevated *N. (N.) quadrimaculatus schatzmayri* as a good species and synonymized *N. (N.) quadrimaculatus bucciarellii* with *N. (N.) ulbrichi* Fürsch, 1977 from Spain. After examination of abundant material from Italy, Sicily and Sardinia, I consider *N. schatzmayri* and *N. quadrimaculatus bucciarellii* identical (**syn. nov.**), while *N. ulbrichi* is a different species distinguished from *N. schatzmayri* by the shape of the apex of the siphon (Fürsch & Uygun 1980, fig. 12). *Nephus (N.) schatzmayri* is a widely spread species in Italy, Sardinia, Sicily and Malta (Canepari & Tedeschi 1977; Schembri 1993; Canepari 2007). The Sardinian records of *Nephus (Nephus) ulbrichi* Fürsch, 1977 in Audisio *et al.* (1995: 11), Canepari (2004) and Kovář (2007) must be referred to *N. (N.) schatzmayri*. This species is reported also from Greece, Andorra, France and Portugal (Kovář 2007) but I never observed material from these countries.

### *Nephus (Nephus) ulbrichi* Fürsch, 1977

**Remarks.** I never examined specimens of this species. Distinction from *N. schatzmayri* is based on the drawings of the apex of the siphon reported by Fürsch and Uygun (1980). See also the remarks under the previous species.

### *Scymnus (Scymnus) femoralis* (Gyllenhal, 1827)

**Material examined.** Italy, Sardinia: Carbonia-Iglesias prov., Iglesias, dint. Colonia Beneck, 636 m, UTM 32S 0462391 4355441, 11-28.VII.2008, G. Chessa leg., Malaise trap, 1 ex (CNBFVR).

**Remarks.** First record for Sardinia (Audisio *et al.* 1995; Canepari 2003, 2004). *Scymnus femoralis* is recorded from central and southern Europe (Canepari 2004; Kovář 2007). Its male genitalia are very similar to those of *S. (S.) interruptus* (Goeze, 1777) (*cf.* Canepari 1983). It could be a black form or an ecological race of

the latter but further studies are necessary to clear its status; generally it is found in populations topically separated from *S. (S.) interruptus* (Canepari unpublished data).

### ***Scymnus (Scymnus) incisus* H. Lindberg, 1951 resurrected name**

*Scymnus incisus* H. Lindberg, 1951: 7

**Remarks.** I do not know *Scymnus incisus* from the Canary Islands, but by its description (Lindberg 1951: 7) it is clearly a different species from *Nephus (Nephus) peyerimhoffi* (see above). I here resurrect the species from the synonymy with *N. peyerimhoffi* established by Fürsch (1977) and place it in genus *Scymnus* Kugelann according to its original placement and description.

### ***Hyperaspis (Hyperaspis) duvergeri* Fürsch, 1985**

**Material examined.** Italy, Sardinia, Sassari prov., Burgos, 10.III.2003, L. Fancello leg., 7 ex (CCC).

**Remarks.** First record for Sardinia (Canepari 2004). This species is recorded from all mainland Italy, Sicily, Ponza Island (Latium), Giglio Island (Tuscany), Corsica, southern France, Spain, Portugal, Morocco, Algeria, Dalmatia (Croatia) and Hungary (Canepari *et al.* 1985; Canepari 2004, 2007; Kovář 2007).

### ***Hyperaspis (Hyperaspis) inexpectata* Günther, 1959 resurrected name**

**Material examined.** Italy, Sardinia, Medio Campidano prov., Villacidro, Rio Cannisoni, 401 m, 19-25.V.2008, D. Whitmore leg., Malaise trap, 2 ex (CCC).

**Remarks.** First record for Sardinia (Audisio *et al.* 1995; Canepari 2004). This species is recorded from central Europe, southern France, Spain, Bosnia, southern Italy, Dalmatia (Croatia) and Crete (Greece) (Canepari *et al.* 1995; Canepari 2004). Kovář (2007) lists *Hyperaspis (Hyperaspis) inexpectata* as a synonym of *H. (H.) concolor* Suffrian, 1843. *Hyperaspis inexpectata* Günther, 1959, as considered by Canepari *et al.* (1985), is different from *H. concolor* Suffrian, 1843. I could not examine the holotype of *Hyperaspis inexpectata*, but this group of species needs further revision.

## **References**

- Audisio, P., Canepari, C., De Biase, A., Poggi, R., Ratti, E. & Zampetti, M. F. (1995) Coleoptera Polyphaga XI (Clavicornia II). In: Minelli, A., Ruffo, S. & La Posta, S. (Eds), *Checklist delle specie della fauna italiana*, 56. Calderini, Bologna, pp. 1–19.
- Canepari, C. (1983) Le specie italiane del gruppo dello *Scymnus frontalis* Fab. con descrizione di due nuove specie (Coleoptera, Coccinellidae). *Giornale Italiano di Entomologia*, 1(4), 179–204.
- Canepari, C. (2000) The *Nephus* subgenus *Sidis* in Italy (Coleoptera Coccinellidae). *Bollettino della Società Entomologica Italiana*, 132(1), 49–62.
- Canepari, C. (2003) Fascicolo 56 – Coleoptera Polyphaga XI (Clavicornia). In: Stoch F. & Zoia S. (Eds), *Aggiornamenti alla Checklist delle specie della fauna italiana. IX. Contributo. Bollettino della Società entomologica italiana*, 134(3), pp. 282–285.
- Canepari, C. (2004) Fauna Europaea: Coccinellidae. In: Audisio, P. (Ed.), *Fauna Europaea: Coleoptera 2, Beetles*. Fauna Europaea version 1.1, available at <http://www.faunaeur.org> [accessed September 2009 as version 1.3 of April 19<sup>th</sup> 2007.]
- Canepari, C. (2007) I Coleotteri Coccinellidi (Coleoptera: Coccinellidae). In: Nardi G. & Vomero V. (Eds), *Artropodi del Parco Nazionale del Vesuvio: ricerche preliminari. Conservazione Habitat Invertebrati*, 4. Cierre Edizioni, Verona, pp. 213–219.
- Canepari, C., Fürsch, H. & Kreissl, E. (1985) Die *Hyperaspis*-Arten von Mittel-, West und Südeuropa. Systematik und

- Verbreitung (Coleoptera Coccinellidae). *Giornale Italiano di Entomologia*, 2(9), 223–252.
- Canepari, C. & Tedeschi, M. (1977) Le sottospecie del *Nephus quadrimaculatus* (Herbst) (Coleoptera Coccinellidae). *Memorie della Società Entomologica Italiana*, 55 [1976], 101–105.
- Dobzhansky, Th. (1928) Die Coccinelliden von Gouvernement Semipalatinsk. *Revue Russe d'Entomologie*, 22(1–2), 116–123. [In Russian with descriptions in Latin.]
- Fürsch, H. (1977) Coccinellidenausbeuten aus Libanon und dem Iran im Museum Genf mit Beschreibung neuer Scymnini-Arten. *Revue Suisse de Zoologie*, 84(3), 645–657.
- Fürsch, H. (1985) [new taxa.] In: Canepari, C., Fürsch, H. & Kreissl, E., Die *Hyperaspis*-Arten von Mittel-, West und Südeuropa. Systematik und Verbreitung (Coleoptera Coccinellidae). *Giornale Italiano di Entomologia*, 2(9), 223–252.
- Fürsch, H. (1987a) Übersicht über die Genera und Subgenera der Scymnini mit besonderer Berücksichtigung der Westpalaearktis (Insecta, Coleoptera, Coccinellidae). *Entomologischen Abhandlungen Staatliches Museum für Tierkunde Dresden*, 51(4), 57–74.
- Fürsch, H. (1987b) Die Scymninae der Kanaren, Azoren und Madeira (Coleoptera Coccinellidae). *Acta Coleopterologica*, 3, 1–14.
- Fürsch, H. & Uygun, N. (1980) Neue Scymnini aus der Türkei (Coleoptera, Coccinellidae). *Nachrichtenblatt der Bayerischen Entomologen*, 20, 109–111.
- Ganglbauer, L. (1899) Über einige, zum Theil neue mitteleuropäische Coleopteren. *Verhandlungen der Kaiser-Königlichen Zoologisch-Botanischen Gesellschaft in Wien*, 49, 526–535.
- Goeze, J.A.E. (1777) *Entomologische Beyträge zur des Ritters Linné zwölften Ausgabe des Natursystems. Erster Theil*. Weidmanns Erben und Reich, Leipzig, [16] + 736 pp.
- Gordon, R.D. (1999) South American Coccinellidae (Coleoptera), Part VI: a systematic revision of the South American Diomini, new tribe (Scymninae). *Annales Zoologici*, 49 (Suppl. 1), 1–219.
- Günther, V. (1959) Vertreter des Tribus Hyperaspini (Col., Coccinellidae) aus der Tschechoslowakei. *Časopis Československé Společnosti Entomologické*, 56, 225–264.
- Gyllenhal, L. (1827) *Insecta Suecica. Classis I. Coleoptera sive Eleuterata Tomi I. Pars IV. Cum appendice ad partes priores*. F. Fleischer, Lipsiae, viii + [2] + 761 + [1] pp.
- Herbst, J.F.W. (1783) Kritisches Verzeichniss meiner Insektensammlung. *Archiv der Insektengeschichte*, 4, 1–72 + pls. 19–23.
- Kovář, I. (2007) Coccinellidae. In: Löbl, I. & Smetana, A. (Eds), *Catalogue of Palaearctic Coleoptera, Volume 4. Elateroidea, Derodontoidea, Bostrichoidea, Lymexyloidea, Cleroidea, Cucujoidea*. Apollo Books, Stenstrup, pp. 71–74, 568–630.
- Iablokoff-Khnzorian, S.M. (1982) *Les Coccinelles. Coléoptères-Coccinellidae*. Société Nouvelles Éditions Boubée, Paris, 568 pp.
- Lindberg, H. (1951) Beitrag zur Kenntnis der Käferfauna der Kanarischen Inseln. *Commentationes Biologicae*, 10(18) [1950], 1–20.
- Mason, F., Cerretti, P., Nardi, G., Whitmore, D., Birtele, D., Hardersen, S. & Gatti, E. (2006) Aspects of biological diversity in the CONECOFOR plots. IV. The Invertebrate Biodiv pilot project. In: Ferretti, M., Petriccione, B., Bussotti, F. & Fabbio, G. (Eds), *Aspects of biodiversity in selected forest ecosystems in Italy: status and changes over the period 1996-2003. Third report of the Task Force on Integrated and Combined (I&C) evaluation of the CONECOFOR programme*. *Annali dell'Istituto Sperimentale per la Selvicoltura*, 30 (Suppl. 2), 51–70.
- Motshulsky, V. de (1837) Description de quelques coléoptères recueillis dans un voyage au Caucase et dans les provinces transcaucasiennes russe en 1834 et 1835. *Nouveaux Mémoires de la Société Impériale des Naturalistes de Moscou*, 5, 413–425 + pl. 16.
- Mulsant, E. (1846) *Histoire Naturelle des coléoptères de France. Sulcicolles – Sécuripalpes*. Maison Libraire, Paris, XXIV + 280 pp. + 1 pl.
- Mulsant, E. (1850) Species des coléoptères trimères sécuripalpes. *Annales des Sciences Physiques et Naturelles, d'Agriculture et d'Industrie de Lyon* (2), 2(2), 451–1104.
- Schembri, S. (1993) The Coccinellid fauna of the Maltese Islands (central Mediterranean): an annotated list. (Coleoptera Coccinellidae). *Bollettino della Società Entomologica Italiana*, 125(1), 42–52.
- Sicard, A. (1923) Coccinellides nouveaux de l'Afrique du Nord. *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord*, 14, 78–80.
- Smirnov, W.A. (1973) Guía práctica para la identificación de las especies paleárticas del género “*Scymnus*” (Coleoptera: Coccinellidae). *Boletín de la Estación central de Ecología*, 2(4), 51–88.
- Suffrian, C.W.L. (1843) Entomologische Bemerkungen. *Entomologische Zeitung (Stettin)*, 4, 91–95.
- Vandenberg, N.J. (2002) 93. Coccinellidae Latreille 1807. In: Arnett, R.H. jr. (†), Thomas, M.C., Skelly, P.E. & Frank, J.H. (Eds), *American Beetles 2, Polyphaga: Scarabaeoidea through Curculionoidea*. CRC Press, Boca Raton, London, New York, Washington, pp. 371–389.