Additions to the centipede (Chilopoda) fauna of the Maltese Islands, with new distributional records and an updated checklist

Thomas Cassar^{1,*} and Marzio Zapparoli²

¹ Department of Biology, Faculty of Science, University of Malta, Msida MSD 2080, Malta

ORCiD: https://orcid.org/0000-0001-8703-813X

² Department of Innovation of Biological, Agro-Food and Forest Systems DIBAF, Tuscia University, Via San Camillo de Lellis snc, 01100 Viterbo, Italy ORCiD: https://orcid.org/0000-0001-7601-3412

* Corresponing author, Email: thomas.cassar@um.edu.mt

Received 28 July 2021 | Accepted 14 October 2021 Published online at www.soil-organisms.de 1 December 2021 | Printed version 15 December 2021 DOI 10.25674/so93iss3id166

Abstract

Three chilopod species are recorded as new for the Maltese archipelago, and two species are recorded for the first time from the island of Comino. The local distribution of previously-recorded species is updated with new data. A check-list of the twenty-five species occurring on the islands is also provided.

Keywords Geophilomorpha | Lithobiomorpha | new records | Mediterranean | Malta

1. Introduction

The earliest records of Maltese chilopods are those provided by Gray (1844) in a list of chilopods and diplopods retained in the British Museum at that time; he briefly mentions two specimens, one of Scolopendra cingulata Latreille, 1829 (as Rhombocephalus parvus Newport, 1845) and one of Pachymerium ferrugineum (C. L. Koch, 1835) (as Mecistocephalus punctilabium Newport, 1843), from Malta - though the latter transpired to actually belong to the Greek island of Corfu (Newport 1845, 1856). Fourteen years later, Gulia (1858) also mentioned Scolopendra cingulata from Malta, also adding Scutigera coleoptrata (Linnaeus, 1758). Interestingly, this appears to be the first time the Maltese vernacular name for centipede is written in literature: xini, a word also used to refer to a galley. This is due to the fact that the many pairs of legs possessed by chilopods are likened to the multitude of oars used to propel such ships. Gulia (1858) states that locals referred to Scolopendra cingulata as xini isfar ('yellow centipede') and Scutigera coleoptrata as xini tal-indewwa ('centipede of moisture'). The first work

specifically dedicated to Maltese chilopods, however, was that of Gulia (1890), who mentions yet again the presence of *Scutigera coleoptrata* and *Scolopendra cingulata*, but also adding a third species - *Lithobius forficatus*. All three of these species were mentioned again twenty-three years later by the same author with no further additions (Gulia 1913).

Surprisingly, there is no mention of Maltese chilopods in the literature until fifty-five years later, when Matic et al. (1968) recorded six species for the first time from the Maltese archipelago: *Eupolybothrus (Allopolybothrus) nudicornis* (Gervais, 1837), *Bothriogaster signata* (Kessler, 1874), *Dignathodon microcephalus* (Lucas, 1846), *Scolopendra oraniensis* Lucas, 1846 and *Cryptops trisulcatus* Brölemann, 1902; as well as re-confirmed the presence of *Scolopendra cingulata*. Foddai et al. (1996) listed four new records for the Maltese Islands: *Lithobius castaneus* Newport, 1844, *Lithobius crassipes* L. Koch, 1862, *Henia vesuviana* (Newport, 1845) and *Pachymerium ferrugineum*; along with another eight previously-recorded species. A few common species were mentioned by Schembri (1996) in a popular work on



Maltese wildlife. A list of a few unpublished records from Malta collected by Richard Desmond Kime in 1979 and identified by Edward H. Eason was provided by Kime (2003). The most recent work treating Maltese chilopods is the exhaustive review provided by Zapparoli et al. (2004), providing notes on twenty-one species recorded from the archipelago up until then.

Besides providing new locality data of species already recorded before, the present work also records three additional taxa for the entirety of the Maltese archipelago, and another two species recorded from Comino for the first time. A check-list of all twenty-five Maltese chilopods is provided in Appendix I.

2. Materials and methods

Study area. The Maltese archipelago consists of a group of small, low islands located at the centre of the Mediterranean Sea, aligned in a North-West to South-East direction. With a total area of 314 km², the Maltese Islands lie approximately 96 km to the south of the Italian island of Sicily and about 350 km directly north of the Libyan coast of North Africa. The three largest islands of the archipelago are inhabited, namely Malta, Gozo and Comino, with a total population of just over 500,000. Various uninhabited islets and rocks occur along the coasts of these three islands, such as St Paul's Islands, Cominotto, Filfla and Fungus Rock. The climate is typically Mediterranean; summers are hot and dry; whilst winters are mild and wet. The Maltese Islands are home to an estimated 4,500 species of terrestrial and freshwater arthropods, though biodiversity is intensely pressured by human land-use (Dandria & Mifsud 2017).

Sampling. Specimens were collected by Thomas Cassar from all three main islands in the Maltese archipelago throughout the years 2019-2021. Sampling was carried out by direct collection with forceps after overturning logs and stones during the wet season, as well as setting pitfall traps filled with ethylene glycol as a preservative which were checked periodically. All specimens were stored in 70-80% ethanol. Identification of all material was carried out by Marzio Zapparoli, and all material is deposited within his collection (MZ).

For each species, a list of the material examined is given, and body length and number of leg pairs (lp) are provided for Geophilomorpha according to Foddai et al. (1995) and Minelli & Bonato (2014). Information on the geographic distribution and chorotype (pattern of distribution) according to Vigna Taglianti et al. (1992, 1999), with notes on previous local and distribution records, are also given.

3. Results

LITHOBIOMORPHA Pocock, 1895 LITHOBIIDAE Newport, 1844

Eupolybothrus nudicornis (Gervais, 1837)

Material examined. MALTA: 1, 2 immatures, Dingli, 2 February 2020, leg. T. Cassar; 1, Buskett, 27 February 2021, leg. T. Cassar; 1, Mellieħa, 15 February, 2020, leg. T. Cassar. COMINO: 1, central part of the island (36°00'45.6"N 14°20'07.0"E), 23 February 2020, leg. T. Cassar.

Distribution. Europe: Spain, France (mainland, Corsica), Italy (mainland, Sicily, Sardinia), Malta . North Africa: Algeria (north), Morocco (north–east), Tunisia (north) (Stoev et al. 2010).

Chorotype. W-Mediterranean.

Notes. Previously recorded by Matic et al. (1968), Foddai et al. (1996), Kime (2003) (under *E. impressus* C.L. Koch, 1841) and Zapparoli et al. (2004) from Malta and Gozo, but the above collected material is the first record of this species from Comino. It is an extremely widespread species in the Maltese Islands, occurring in a wide variety of habitats.

Lithobius castaneus Newport, 1844

Material examined. MALTA: 1 \Diamond , Xemxija, November 2020, leg. T. Cassar (pitfall trap); 1 \bigcirc , Buskett, December 2020, leg. T. Cassar (pitfall trap).

Distribution. Europe: Austria (south), Bosnia and Herzegovina, Croatia, France (mainland, Corsica), Italy (mainland, Sicily, Sardinia), Malta, Portugal (mainland), Serbia, Slovenia, Spain (mainland); records from Bulgaria requires confirmation; North Africa: Algeria, Morocco, Tunisia; Central America: Guatemala (introduced, established?) (Zapparoli 2009).

Chorotype. S-European.

Notes. Previously recorded by Matic et al. (1968), Foddai et al. (1996) and Zapparoli et al. (2004) from Malta, where it is a common and widespread species, occurring in a variety of habitats, including valleys, garigue and artificial gardens.

Lithobius lapidicola Meinert, 1872

Material examined. MALTA: 1 ♂, Rdum tal-Madonna, Mellieħa, 2020, leg. T. Cassar.

Distribution. Europe: Albania, Austria, Bosnia and Herzegovina, Czech Republic, Denmark (mainland),

France (mainland, Corsica), Germany, Great Britain, Greece (mainland, Ionic Isl.), Hungary, Ireland, Italy (mainland, Sicily, Sardinia), Malta, Montenegro, Norway, Poland, Romania, Slovakia, Slovenia, Spain (mainland, Canary Isl.), Sweden, Switzerland, The Netherlands, Ukraine (Zapparoli 2009).

Chorotype. Central European.

Notes. Previously recorded by Zapparoli et al. (2004) from Malta, occurring in semi-natural woodland areas and artificial gardens.

SCOLOPENDROMORPHA Pocock, 1895 CRYPTOPIDAE Kohlrausch, 1881

Cryptops (Cryptops) trisulcatus Brölemann, 1902

Material examined. MALTA: 1 ex., Mellieha, 15 February 2020, leg. T. Cassar. GOZO: 1 ex., Ta' Ċenċ, Sannat, 29 December 2019, leg. T. Cassar.

Distribution. Europe: France (mainland, Corsica), Greece (Ionian Isl., Southern Sporades, Crete), Italy (mainland, Sicily, Sardinia), Malta, Portugal (mainland), Romania, Spain (mainland, Balearic Isl., Canary Isl.); North Africa: Algeria, Tunisia; West Asia: Turkey (south–east) (Zapparoli, 2009).

Chorotype. Mediterranean.

Notes. Previously recorded by Matic et al. (1968), Foddai et al. (1996) and Zapparoli et al. (2004) from Malta, Gozo and Comino. In the Maltese Islands, this species occurs mostly in coastal habitats and valleys.

SCOLOPENDRIDAE Newport, 1844

Scolopendra oraniensis Lucas, 1846

Material examined. MALTA: 1 ex., Dingli, 2 February 2020, leg. T. Cassar.

Distribution. Europe: France (Corsica), Italy (mainland, Sicily, Sardinia), Malta, Portugal (mainland), Spain (mainland, Balearic Isl.); North Africa: Algeria, Morocco (Zapparoli 2009).

Chorotype. W-Mediterranean.

Notes. Previously recorded by Matic et al. (1968), Foddai et al. (1996), Kime (2003) (under *S. c. oraniensis*) and Zapparoli et al. (2004) from Malta and Gozo. It is an extremely widespread species in the Maltese Islands, occurring in a wide variety of habitats, though mostly found in garigue and valleys.

GEOPHILOMORPHA Pocock, 1895 DIGNATHODONTIDAE Cook, 1895

Dignathodon microcephalus (Lucas, 1846)

Material examined. MALTA: 1 ♂ (37 mm, 83 lp), Buskett, 17 November 2019, leg. T. Cassar.

Distribution. Europe: Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, France (mainland, Corsica), Greece (mainland, insular including Crete), Italy (mainland, Sicily, Sardinia), Luxembourg (introduced?), Montenegro, Malta, Portugal, Romania, Serbia, Slovak Republic, Spain (mainland, Balearic Isl.), Ukraine (Crimea); North Africa: Algeria, Morocco, Tunisia (Zapparoli 2009).

Chorotype. Mediterranean.

Notes. Previously recorded by Matic et al. (1968) and Zapparoli et al. (2004) from Malta and Gozo. A thermophilous species.

Henia (Meinertia) bicarinata (Meinert, 1870)

Material examined. MALTA: 1 & (30 mm, 65 lp), Misraħ Għar il-Kbir (limits of Siġġiewi), 2 February 2020, leg. T. Cassar.

Distribution. Europe: Bosnia and Herzegovina, Bulgaria, Croatia, France (mainland, Corsica), Greece (mainland, insular including Crete), Hungary, Iberian Peninsula, Italy (mainland, Sicily, Sardinia), Macaronesia, Malta; North Africa: Maghreb; West Asia: Turkey, Caucasus (Minelli 1982a) (Zapparoli 2009).

Chorotype. Mediterranean.

Notes. Previously recorded by Kime (2003) and Zapparoli et al. (2004) from Malta and Gozo. It is a widespread species in the Maltese Islands, occurring in a variety of coastal habitats, from banquettes of stranded *Posidonia*, to garigue and inland valleys.

GEOPHILIDAE Leach, 1815

Clinopodes flavidus C.L. Koch, 1847

Material examined. MALTA: 1 ♂ (54 mm, 67 lp), unknown locality, 2020, leg. T. Cassar.

Distribution. Europe: Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, European Turkey, Germany, Greece (mainland, including North Aegean Is., Dodecanese Is., Cyclades Is., Crete), Hungary, Italy (mainland, including Sicily), Makedonia (FYR), Malta, Poland, Rep. of Moldova, Romania, Slovakia, Slovenia, Switzerland, Ukraine, Yugoslavia. Records of this species from Anatolia and the Caucasus deserve confirmation, as they were possibly based on *C. escherichii* Verhoeff, 1896 or *C. caucasicus* (Selivanov, 1884) (cf. Bonato et al. 2011).

Chorotype. European.

Notes. Previously recorded by Zapparoli et al. (2004) from only one locality in Malta (Buskett). The present record confirms the occurrence of the species in the Maltese Islands, where it seems to be uncommon. The data associated with the material mentioned in this study for this species has been lost, but the record has been included in order to indicate that it is an established, albeit rare, species.

Geophilus sp. cf. alpinus Meinert, 1870

Material examined. MALTA: 1 immature (22 mm, 53 lp), Buskett, 27 February 2021, leg. T. Cassar.

Distribution. *G. alpinus* is an European species whose distribution includes Austria, Bulgaria, Croatia, Denmark, Czech Republic, European Russia, France (mainland, Corsica), Germany, Greece (mainland, Crete), Hungary, Ireland, Italy (mainland, Sardinia, Sicily), Montenegro, Netherlands, Norway, Romania, Slovenia, Sweden, United Kingdom; also recorded in Morocco and Tunisia (Zapparoli 2009, Simaiakis et al. 2013, Tuf & Tajovský 2016).

Notes. The identification of the single specimen is only tentative, because the taxonomy is still uncertain for the group of closely related species containing *G. alpinus* and other less adequately described species which are very similar. Considering the identification as correct, it represents a new record for the Maltese Islands. The single specimen (22 mm long, with 53 leg pairs) was collected from a semi-natural woodland, one of few such habitats in the Maltese archipelago, suggesting that this species' distribution in the islands may be fairly restricted.

Pachymerium ferrugineum (C.L. Koch, 1835)

Material examined. MALTA: 1 ex (32 mm, 49 lp), Buskett, 08 February 2020, leg. T. Cassar; 1 ex (25 mm, 49 lp), ibidem, December 2020, leg. T. Cassar; 1 ex., Misraħ Għar il-Kbir, 07 February 2021, leg. T. Cassar; 2 exs, Pembroke, 16 February 2020, leg. T. Cassar; 2 exs, ibidem, 14 February 2021, leg. T. Cassar; COMINO: 1 ex, Blue Lagoon (23 mm, 57 lp), 23 February 2020, leg. T. Cassar.

Distribution. Europe: Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark (mainland), European Russia,

Finland, France (mainland, Corsica), Great Britain, Greece (mainland, insular including Crete), Hungary, Italy (mainland, Sicily, Sardinia), Latvia, Malta, Republic of Macedonia, Norway, Poland, Portugal (mainland, Azores Isl., Madeira Is.), Romania, Slovakia, Slovenia, Spain (mainland, Balearic Isl., Canary Isl.), Sweden, The Netherlands; North Africa: Algeria, Central Sahara, Lybia, Morocco, Tunisia; West Asia: Caucasus, Iran, Palestine, Turkey, Uzbekistan; Central Asia: Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan, Mongolia; East Asia: Pribilof Is. (Russia), Japan (introduced); North America: Alaska, introduced elsewhere; Central America: Mexico (introduced); South America: Chile (Juan Fernández Is., introduced; Easter Is., introduced); Pacific islands: Hawaii Isl. (introduced) (Zapparoli 2009, Dyachkov & Nedoev 2021).

Chorotype. W-Palearctic.

Notes. Previously recorded by Matic et al. (1968) and Zapparoli et al. (2004) from Malta and Gozo, but the above collected material is the first record of this species from Comino. It is an extremely widespread species in the Maltese Islands, occurring in a wide variety of habitats.

HIMANTARIIDAE Bollman, 1893

Bothriogaster signata (Kessler, 1874)

Material examined. MALTA: 1 ♂ (76 mm, 99 lp), Pembroke, 16 February 2020, leg. T. Cassar.

Distribution. Europe: Albania, Bulgaria, Greece (mainland, Crete, Cyclades, Dodecanese), Republic of Macedonia, Malta; North Africa: Egypt, Libya (Cyrenaica, Tripolitania), Tunisia; West Asia: Caucasus, Cyprus, Iran, Iraq, Israel, Jordan, Palestine, Saudi Arabia, Syria, Turkey; Central Asia: Turkmenistan, Uzbekistan, Tajikistan, Kazakhstan (Simaiakis et al. 2013, Dyachkov & Nedoev 2021).

Chorotype. Turanic-Mediterranean.

Notes. Previously recorded by Matic et al. (1968), Foddai et al. (1996) and Zapparoli et al. (2004) from Malta, Gozo and Comino.

Haplophilus dimidiatus (Meinert, 1870)

Material examined. MALTA: 1 \Diamond (85 mm long, 125 lp), 1 \bigcirc (79 mm long, 129 lp), Misraħ Għar il-Kbir, 02 February 2020, leg. T. Cassar; 2 $\Diamond \Diamond$ (63, 64 mm long, 121 lp), 1 \bigcirc (70 mm long, 121 lp), Buskett, 27 February 2021, leg. T. Cassar.

Distribution. Europe: France (SW mainland, Corsica), Italy (mainland, Sicily), Malta, Portugal (mainland,

Madera Is.), Spain (mainland, Canary Isl. and Balearic Isl.); North Africa: Algeria, Morocco, Tunisia (Minelli & Zapparoli 2011, Iorio 2014).

Chorotype. W-Mediterranean.

Notes. New record for the Maltese Islands. Multiple specimens collected from two nearby locations which, however, represented different habitats – a karst garigue (Misraħ Għar il-Kbir) and a semi-natural woodland (Buskett).

Himantarium gabrielis (Linnaeus, 1767)

Material examined. MALTA: $1 \Leftrightarrow (80 \text{ mm}, 135 \text{ lp})$, Qormi, 9 February 2020, leg. T. Cassar; $1 \Leftrightarrow (115 \text{ mm}, 131 \text{ lp})$, Misraħ Għar il-Kbir, 7 February 2021, leg. T. Cassar.

Distribution. Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, France (mainland, Corsica), Greece (mainland, insular excluding Crete), Italy (mainland, Sicily, Sardinia), Malta, Republic of Macedonia, Montenegro, Romania (southern), Slovenia, quoted from Portugal by Attems (1929) but not by Machado (1952), also in Central Europe according to Brölemann (1930) and in the Czech Republic (Tuf & Tajovský 2016); North Africa: Algeria, Morocco, Tunisia; Austral Africa: Madagascar (?), introduced (Lawrence 1960); West Asia: Turkey (western) (Zapparoli 2009).

Chorotype. Mediterranean.

Notes. Previously recorded by Schembri (1996), Kime (2003) and Zapparoli et al. (2004) from Malta. It is a widespread species in the main island of the archipelago, occurring in a wide variety of habitats.

Stigmatogaster gracilis (Meinert, 1870)

Material examined. MALTA: $1 \Leftrightarrow (68 \text{ mm long}, 105 \text{ lp})$, Qormi, 9 February 2020, leg. T. Cassar; $1 \Leftrightarrow (94 \text{ mm}, 108 \text{ lp})$, Pembroke, 16 February 2020, leg. T. Cassar.

Distribution. Europe: Albania, Croatia, France (mainland, Corsica), Greece (mainland, insular excluding Crete), Italy (mainland, Sicily, Sardinia), Malta, Montenegro, Spain (Balearic Isl.); North Africa: Algeria, Tunisia (Zapparoli 2009).

Chorotype. Mediterranean.

Notes. Previously recorded by Zapparoli et al. (2004) from Malta. It has been found locally in a private garden in an urban environment (Qormi), as well as in garigue (Pembroke), which suggests that this species may occur in a wide variety of habitats in Malta.

SCHENDYLIDAE Cook, 1896

Nannophilus eximius (Meinert, 1870)

Material examined. MALTA: 1 ♂, Mellieħa (39 mm, 77 lp), 15 February 2020, leg. T. Cassar.

Distribution. Europe: Greece (mainland, Dodecanese, Crete), Italy (mainland, Sardinia, Sicily), Malta, Portugal (Madeira Is.), Spain (Canary Isl.); North Africa: Algeria, Tunisia; West Asia: Cyprus (Simaiakis et al. 2013).

Chorotype. Mediterranean.

Notes. New record for the Maltese Islands. A single male specimen (39 mm long, with 77 leg pairs) collected from a garigue habitat.

4. Discussion

The chilopod fauna of the Maltese Islands is so far found to consist of 25 species. The present work presents three new additions to the local fauna, as well as two new records for Comino, from a sample size of merely 32 specimens. This fact indicates that further indepth study of Maltese chilopods may yield more new discoveries and certainly improve the knowledge of local distribution. The latter is especially true for the island of Comino, and perhaps the north-central region of Gozo, which appear to be relatively under-sampled in this respect. Collection of chilopods in the Maltese Islands is best undertaken between November and March, when the soil surface remains relatively moist or humid and thus chilopods are surface active and easily collected directly by lifting debris and sifting through leaf litter. Though pitfall traps may prove useful for collecting a few surface active species, decomposition of specimens is problematic and traps should be checked relatively frequently when using ethylene glycol as a preservative. Though many habitats have been sampled for Maltese chilopods in the past, the strictly endogean chilopod fauna remain relatively uninvestigated; sampling with specialized mesovoid shallow substratum traps may yield interesting results.

5. References

Attems, C. G. (1929): Myriapoda: 1. Geophilomorpha. – In: Schulze, F. E., W. Kükenthal, K. Heider & R. Hesse (eds): Das Tierreich Bd. 52. – De Gruyter, Berlin, Leipzig: xxiii + 388 pp.
Bonato, L., E. Iorio & A. Minelli (2011): The centipede genus *Clinopodes* C. L. Koch, 1847 (Chilopoda, Geophilomorpha, Geophilidae): reassessment of species diversity and distribution, with a new species from the Maritime Alps (France). – Zoosystema, **33**(2): 175–205 [http://doi. org/10.5252/z2011n2a3].

- Brolemann, H. W. (1930): Elements d'une faune de Myriapodes de France. 25. Chilopodes. – Impr. Toulousaine, Toulouse: 405 pp.
- Dandria, D. & D. Mifsud (2017): Towards a checklist of the terrestrial and freshwater Arthropoda of the Maltese Islands.
 Bulletin of the Entomological Society of Malta 9: 71–72.
- Dyachkov, Y. V. & K. Nedoev (2021): A contribution to the centipede (Chilopoda: Geophilomorpha, Scolopendromorpha) fauna of Uzbekistan and Turkmenistan. – Ecologica Montenegrina **41**: 41–50 [http://doi.org/10.37828/em.2021.41.6].
- Foddai, D., A. Minelli, U. Scheller & M. Zapparoli (1995): Chilopoda, Diplopoda, Pauropoda, Symphyla. – In: Minelli, A., S. Ruffo & S. La Posta (eds): Checklist delle specie della fauna italiana 32. – Calderini, Bologna: 35 pp.
- Foddai, D., A. Minelli & M. Zapparoli (1996): I chilopodi delle isole circumsarde nel contesto del popolamento insulare dell' area tirrenica s.l. – Biogeographia. The Journal of Integrative Biogeography, 18: 357–376 [http://doi.org/10.21426/ b618110444].
- Gray, J. E. (1844): List of the specimens of Myriapoda in the collection of the British Museum. British Museum, London: 17 pp.
- Gulia, G. (1858): Corso elementare di entomologia maltese dato nel palazzo di St'Antonio. Malta: 82 pp.
- Gulia, G. (1890): Indice dei Miriapodi maltesi. II Naturalista Maltese 1(5): 41–42.
- Gulia, G. (1913): Uno sguardo alla zoologia delle "Isole maltesi". – IXe Congrès international de zoologie: tenue à Monaco du 25 au 30 Mars 1913, 4: 545–555.
- Iorio, E. (2014): Catalogue biogéographique et taxonomique des chilopodes (Chilopoda) de France métropolitaine. Mémoires de la Société Linnéenne de Bordeaux **15**: 1–372.
- Kime, R. D. (2003): Some unpublished records of centipedes identified by Dr. E.H. Eason. – Bulletin of the British Myriapod and Isopod Group 19: 45–50.
- Machado, A. (1952): Miriápodes du Portugal. Premeira parte: Quilópodos. – Brotéria, Série trimestral: Ciências Naturais **21**: 65–159.
- Matic, Z., C. Darabantu & M. Clichici (1968): Contributo alla conoscenza dei Chilopodi di Spagna e di Malta. – Bollettino dell'Accademia Gioenia di Scienze Naturali in Catania 9: 175–195.
- Minelli, A. & L. Bonato (2014): Chilopoda Geophilomorpha of Europe: a revised list of species, with taxonomic and nomenclatorial notes. – Zootaxa 3770(1) [https://doi. org/10.11646/zootaxa.3770.1.1].
- Minelli, A. & M. Zapparoli (2011): I Chilopodi (Chilopoda) dell'Appennino siculo (Monti Peloritani, Monti Nebrodi, Madonie): aspetti faunistici, zoogeografici ed ecologici. –

Biogeographia – The Journal of Integrative Biogeography, **30**: 339–392 [http://doi.org/10.21426/B630110563].

- Newport, G. (1845): Monograph of the class Myriapoda order Chilopoda; with observations on the general arrangement of the Articulata.– Transactions of the Linnean Society of London **19**: 265–302, 349–439.
- Newport, G. (1856): Catalogue of the Myriapoda in the Collection of the British Museum. Part I. Chilopoda. Taylor & Francis, London: 96 pp.
- Schembri, P. J. (1996): Myriapods. In: Sultana, J. & V. Falzon (eds): Wildlife of the Maltese Islands. – Environment Protection Department, Malta: 118–120.
- Simaiakis, S. M, M. Zapparoli, A. Minelli & L. Bonato (2013): The centipede fauna (Chilopoda) of the island of Cyprus, with one new lithobiomorph species. – Zootaxa 3647(2): 279–306 [http://doi.org/10.11646/zootaxa.3647.2.3].
- Stoev, P., N. Akkari, M. Zapparoli, D. Porco, H. Enghoff, G. D. Edgecombe, T. Georgiev & L. Penev (2010): The centipede genus *Eupolybothrus* Verhoeff, 1907 (Chilopoda: Lithobiomorpha: Lithobiidae) in North Africa, a cybertaxonomic revision, with a key to all species in the genus and the first use of DNA barcoding for the group. – ZooKeys 50: 29–77 [http://doi.org/10.3897/zookeys.50.504].
- Tuf, I. H. & K. Tajovský (2016): An annotated checklist of the centipedes (Chilopoda) recorded in the Czech Republic. – Acta Societatis Zoologicae Bohemicae 80: 45–50.
- Vigna Taglianti, A., P. A. Audisio, C. Belfiore, M. Biondi, M. A. Bologna, G. M. Carpaneto, A. De Biase, S. De Felici, E. Piattella, T. Racheli, M. Zapparoli & S. Zoia (1992): Riflessioni di gruppo sui corotipi fondamentali della fauna W-paleartica ed in particolare italiana. – Biogeographia – The Journal of Integrative Biogeography 16: 159–179 [https://doi. org/10.21426/B616110375].
- Vigna Taglianti, A., P. A. Audisio, M. Biondi, M. A. Bologna, G. M. Carpaneto, A. De Biase, S. Fattorini, E. Piattella, R. Sindaco, A. Venchi & M. Zapparoli (1999): A proposal for a chorotype classification of the Near East fauna, in the framework of the Western Palearctic region. – Biogeographia – The Journal of Integrative Biogeography 20: 31–59 [https:// doi.org/10.21426/B6110172].
- Zapparoli, M. (2009): An annotated catalogue of the epigeic and cave centipedes (Chilopoda) of Sardinia. – Zootaxa 2318(1): 56–168 [http://doi.org/10.11646/zootaxa.2318.1.6].
- Zapparoli, M., A. Minelli & P. J. Schembri (2004): The centipedes of the Maltese Archipelago (Chilopoda). Revue Suisse de Zoologie **111**(2): 433–456 [http://doi.org/10.5962/bhl.part.80247].

Species	Record(s)	Notes where relevant	
SCUTIGEROMORPHA Gervais, 1837			
Scutigera coleoptrata (Linnaeus, 1758)	Gulia (1858, 1890, 1913) Schembri (1996) Zapparoli et al. (2004)		
LITHOBIOMORPHA Pocock, 1895 1			
Eupolybothrus nudicornis (Gervais, 1837)	Matic et al. (1968) Foddai et al. (1996) Kime (2003) Zapparoli et al. (2004) Present work		
Lithobius castaneus Newport, 1844	Matic et al. (1968) Foddai et al. (1996) Zapparoli et al. (2004) Present work		
Lithobius crassipes L. Koch, 1862	Foddai et al. (1996) Kime (2003) Zapparoli et al. (2004)		
Lithobius lapidicola Meinert, 1872	Zapparoli et al. (2004) Present work		
Lithobius peregrinus Latzel, 1880	Zapparoli et al. (2004)	Possibly an introduced species.	
Lithobius osellai Matic, 1968	Kime (2003)	Dubious record (see Kime, 2003: 48).	
Lithobius trinacrius Verhoeff, 1925	Zapparoli et al. (2004)		
SCOLOPENDROMORPHA Pocock, 1895			
Scolopendra cingulata Latreille, 1829	Gray (1844) Gulia (1858, 1890, 1913) Matic et al. (1968) Schembri (1996) Zapparoli et al. (2004)		
Scolopendra oraniensis Lucas, 1846	Matic et al. (1968) Foddai et al. (1996) Kime (2003) Zapparoli et al. (2004) Present work		
Cryptops (Cryptops) trisulcatus Brölemann, 1902	Matic et al. (1968) Foddai et al. (1996) Zapparoli et al. (2004) Present work		
GEOPHILOMORPHA Pocock, 1895			
Dignathodon microcephalus (Lucas, 1846)	Matic et al. (1968) Zapparoli et al. (2004) Present work		
Henia (Meinertia) bicarinata (Meinert, 1870)	Kime (2003) Zapparoli et al. (2004) Present work		

Appendix I. Check-list of the centipede fauna inhabiting the Maltese Islands.

¹ Lithobius forficatus (Linnaeus, 1758) should be removed from the Maltese fauna as its presence has not been confirmed since it was initially recorded over 100 years ago and most likely represents a case of misidentification (Zapparoli et al. 2004). Hence it is not included in this check-list.

Continued Appendix I.

Species	Record(s)	Notes where relevant
Henia (Chaetechelyne) vesuviana (Newport, 1845)	Foddai et al. (1996) Kime (2003) Zapparoli et al. (2004)	
Clinopodes flavidus (C. L. Koch, 1847)	Zapparoli et al. (2004) Present work	
Geophilus sp. cf. alpinus Meinert, 1870	Present work	
Pachymerium ferrugineum (C. L. Koch, 1835)	Matic et al. (1968) Zapparoli et al. (2004) Present work	
Tuoba poseidonis (Verhoeft, 1901)	Zapparoli et al. (2004)	
Bothriogaster signata (Kessler, 1874)	Matic et al. (1968) Foddai et al. (1996) Zapparoli et al. (2004) Present work	
Haplophilus dimidiatus (Meinert, 1870)	Present work	
Himantarium gabrielis (Linnaeus, 1767)	Schembri (1996) Kime (2003) Zapparoli et al. (2004) Present work	
Stigmatogaster gracilis (Meinert, 1870)	Zapparoli et al. (2004) Present work	
Nannophilus eximius (Meinert, 1870)	Present work	
Schendyla nemorensis (C. L. Koch, 1837)	Kime (2003)	
Schendyla sp.	Zapparoli et al. (2004)	This species has not been described yet.