

Zeitschrift: Mitteilungen der Schweizerischen Entomologischen Gesellschaft =
Bulletin de la Société Entomologique Suisse = Journal of the Swiss
Entomological Society

Herausgeber: Schweizerische Entomologische Gesellschaft

Band: 87 (2014)

Heft: 1-2

Artikel: The Dipsocoromorpha (Heteroptera) of Switzerland

Autor: Hollier, John / Heckmann, Ralf / Strauss, Gerhard

DOI: <https://doi.org/10.5169/seals-403083>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 30.04.2026

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

The Dipsocoromorpha (Heteroptera) of Switzerland

JOHN HOLLIER¹, RALF HECKMANN² & GERHARD STRAUSS³

¹ Muséum d'histoire naturelle, C.P. 6434, CH-1211, Genève 6, Suisse. john.hollier@ville-ge.ch

² Schillerstr. 13, D-78467 Konstanz, Deutschland. ralf.p.heckmann@t-online.de

³ Mozartstr. 4, D-88400 Biberach, Deutschland. ge_strauss@t-online.de

Pachycoleus pusillimus is recorded for the first time for Switzerland. Additional distribution data are given for *Ceratocombus coleoptratus* and *Pachycoleus waltli*.

Keywords: Heteroptera, Ceratocombidae, Dipsocoridae, *Ceratocombus*, *Cryptostemma*, *Pachycoleus*, *alienum*, *coleoptratus*, *pusillimus*, *waltli*, Switzerland, first record.

INTRODUCTION

The Dipsocoromorpha are tiny predatory bugs that are mostly associated with moist habitats, either wet mosses or the edges of running water. The European fauna comprises only eleven species in two families, the Ceratocombidae and the Dipsocoridae (Kerzhner 1995). They differ from the other Heteroptera family groups by retaining very conservative features in construction of the wings and the possession of the most complex external genitalia seen in Heteroptera. All of the Palaearctic representatives of the Ceratocombidae belong to the genus *Ceratocombus*, while the Dipsocoridae comprise the genera *Alpagut*, *Cryptostemma* and *Pachycoleus* (Heiss & Péricart 2007; Aukema *et al.* 2013). All species are captured infrequently, and Kerzhner (1995) listed only two species for Switzerland: *Ceratocombus coleoptratus* and *Cryptostemma alienum*. A third species, *Pachycoleus waltli* Fieber, 1860, was added a few years ago (Heiss & Péricart 2007; Hollier 2012).

Due to the cryptic habits of these species there are very few published records for Switzerland.

The data presented come from two sources. The first is a series of samples collected by the coleopterists Anton Comellini, Ivan Löbl and especially Claude Besuchet in Switzerland, mainly by sieving moss and litter, and housed in the Muséum d'histoire naturelle, Genève (MHNG). The second is a series of samples collected using pitfall traps during several projects of the Swiss Federal Institute for Forest, Snow and Landscape Research WSL (WSL).

MATERIALS AND METHODS

In the MHNG samples, 146 samples of Hemiptera stored in 75 % alcohol were examined, and the adult Dipsocoromorpha identified by the first author using the keys in Heiss & Péricart (2007). Determination of Dipsocoromorpha in the WSL pitfall samples, stored in 70 % alcohol, was done by the second author.

Abbreviations:

For the distribution data in Switzerland we use the automotive canton codes. Collectors: Al. = Matthias Albrecht, Be. = Claude Besuchet, Co. = Anton Comellini, We. = Beat Wermelinger.

The nomenclature follows Heiss & Péricart (2007) and Aukema *et al.* (2013).

RESULTS

Ceratocombus coleoptratus (Zetterstedt, 1819)

(Fig. 1)

The body length of this dark-brown coloured species lies between 1.5 mm and 2.3 mm. These predatory insects generally live in leaf litter in moist habitats, but sometimes occur in dry habitats where they may be found in moss cushions, in litter below conifers, and amongst decomposing leaves and grasses. Consequently, most records are from pitfall traps. They are sometimes also found in decayed wood. In Southern Germany they have two generations a year and overwinter as eggs (Heckmann & Rieger 2001). In the Dipsocoromorpha *C. coleoptratus* is the most frequently captured species and records exist from almost all European countries (Heiss & Péricart 2007) and four cantons in Switzerland. Published records are for BE (Frey-Gessner 1869), SH (Di Giulio *et al.* 2000), TI (Otto 1994; Giacalone *et al.* 2002) and VS (Joris 2002; Heckmann 2011). MHNG has old specimens from Bern labeled «Burgdorf», possibly the specimens from Meienmoos (leg. Meyer-Dür) cited in Frey-Gessner (1869).

- AG:** Aristau, Steinmatten, artificial meadow, 10.VI.2003: 2 ♂, 24.VI.2003: 1 ♂, leg. Al.
 Berikon, Dungelen, ecological compensation area, meadow, 24.VI.2003: 1 ♂, leg. Al.
 Schlossrued, Deckbungart, ecological compensation area, meadow, 25.VI.2003: 1 ♂, leg. Al.
 Schlossrued, Pfaffenberg, ecological compensation area, meadow, 11.VI.2003: 4 ♂♂, 25.VI.2003: 5 ♂♂, 2 ♀♀, 9.VII.2003: 1 ♂, 1 ♀, leg. Al.
 Schlossrued, Pfaffenberg, meadows, 12.VI.2003: 3 ♂, 26.VI.2003: 3 ♂♂, 9.VII.2003: 1 ♂, leg. Al.
 Schlossrued, Suren, meadow, 3.IX.2003: 1 ♂, leg. Al.
 Vordenwald, Wald, 2005: 1 ♂ (the finds were pooled over the whole year), leg. We.
- BL:** Rheinach, Tschuppen, artificial meadow, 12.VI.2003: 1 ♂, leg. Al.
- TI:** Magadino, Bolle di Magadino, forest, 2000: 1 ♂, 2005: 2 ♂♂ (the finds were pooled over the whole year), leg. We.
 Magadino, Bolle di Magadino, open country, 2005: 1 ♂ (the finds were pooled over the whole year), leg. We.
 Magadino, marsh, 6.VII.1975: 1 ♂, leg. Be.
- VD:** Bavais, 14.X.1977: 1 ♀, leg. Be.
- ZH:** Affoltern am Albis, Äspli, ecological compensation area, meadow, 24.VI.2003: 11 ♂♂, 1 ♀, 8.VII.2003: 1 ♀, 19.VIII.2003: 1 ♀, 16.IX.2003: 1 ♂, 1 ♀, leg. Al.
 Affoltern am Albis, Äspli, meadows, 10.VI.2003: 1 ♂, 24.VI.2003: 11 ♂♂, 5 ♀, 8.VII.2003: 1 ♀, 22.VII.2003: 1 ♀, 5.VIII.2003: 1 ♂, 16.IX.2003: 1 ♀, leg. Al.
 Affoltern am Albis, Loh, ecological compensation area, meadow, 24.VI.2003: 1 ♂, leg. Al.

Cryptostemma alienum Herrich-Schaeffer, 1835

With a body-length up to 2.8 mm this is the largest European species in the group. It lives close to the edge of running water or in the riparian zone of lakes and ponds where it is found under stones. They are able to survive if their habitat is submerged

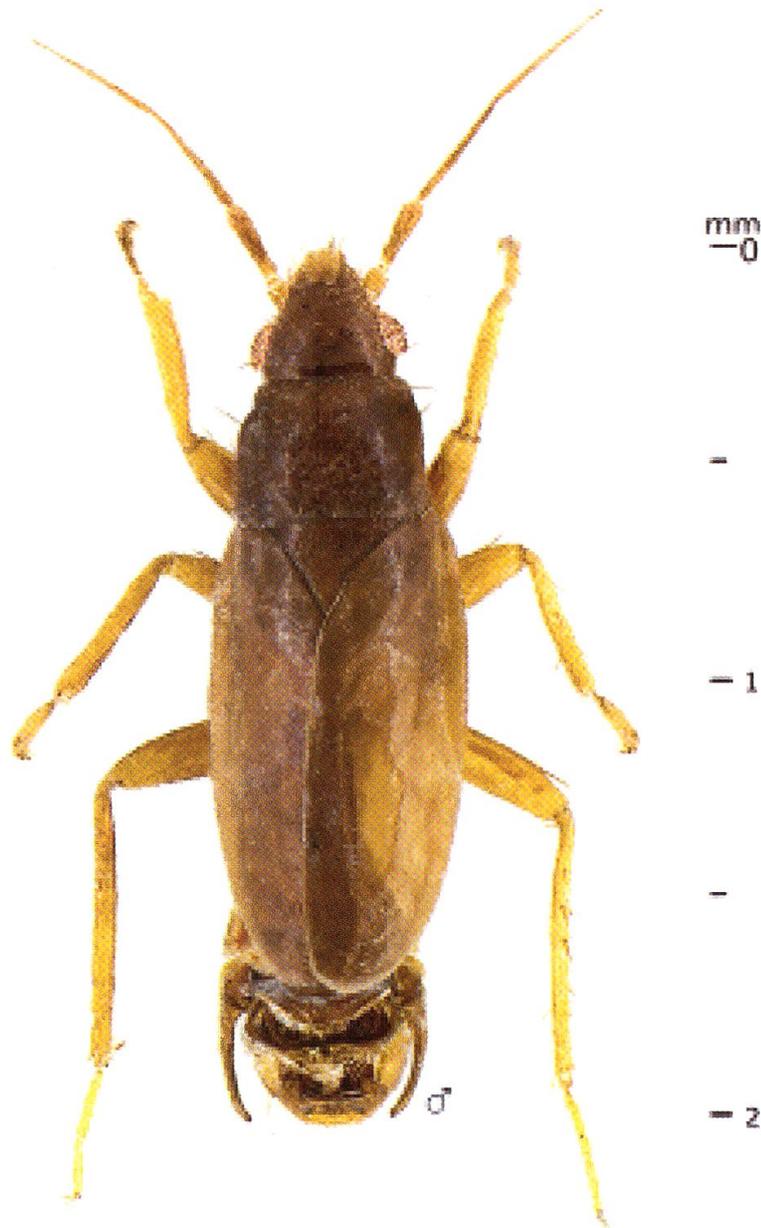


Fig 1: *Ceratocombus coleoptratus*, male from Steinmatten near Aristau in the canton Aargau, B. Wermelinger leg., photograph by G. Strauss. The paratergites of the 8th abdominal segment are finger-shaped and reach the apex of the genital segment. They are believed to be used in copulation.

using plastron respiration. They feed on small invertebrates including dead ones, and overwinter as adults.

This species is known from the surrounding countries of France, Germany, Austria and Italy (Kerzhner 1995). The first Swiss record was from Basle (precise canton not indicated) by Meyer-Dür (1843). Later finds concern AG (Frey-Gessner 1871; Heiss & Péricart 2007), BS (Frey-Gessner 1864), GE (Hollier 2012), TG (Heckmann & Blöchlinger 2011) and VD (Frey-Gessner 1864).

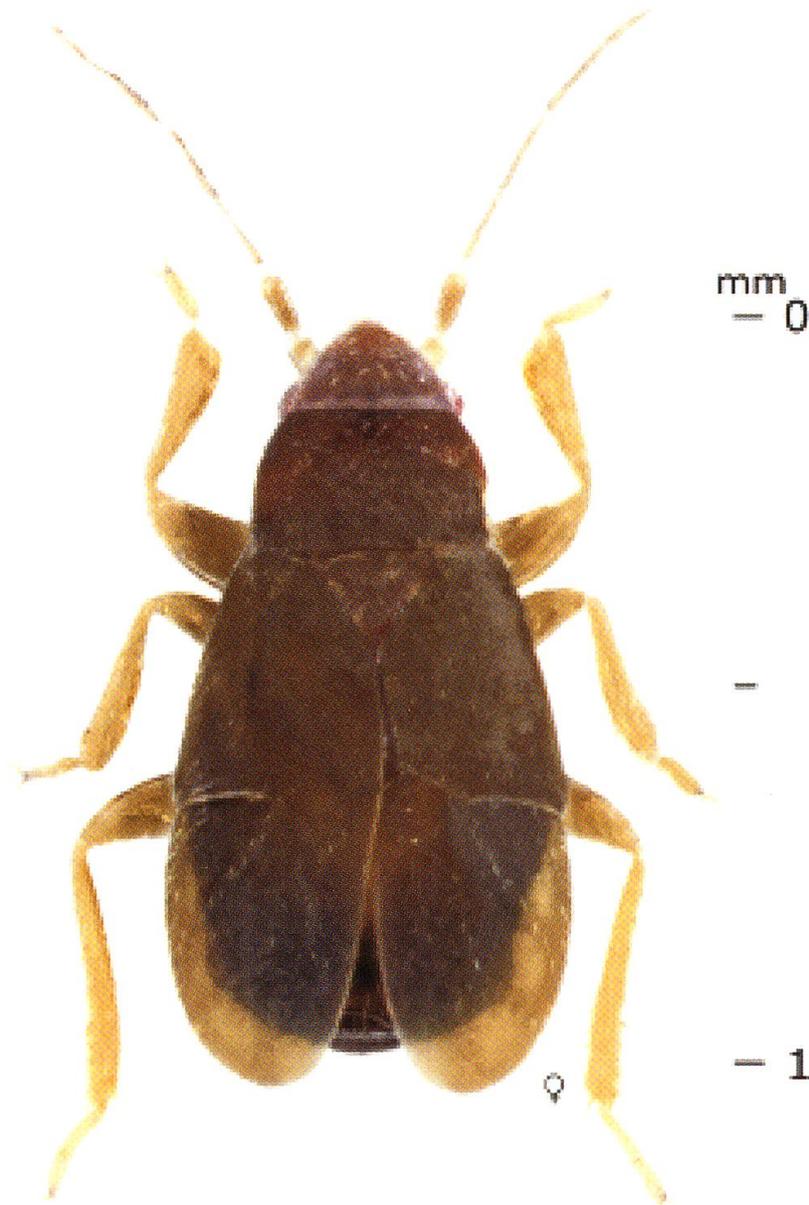


Fig. 2: *Pachycoleus pusillimus*, female from Schiermonnikoog, Friesland in the Netherlands, B. Aukema leg., photograph by G. Strauss. This species is the smallest Central European true bug.

***Pachycoleus pusillimus* (J. Sahlberg, 1870)**

(Fig. 2)

P. pusillimus with a body-length between 0.9 mm and 1.4 mm is the smallest Central European true bug. It lives in bogs, fens and wet meadows in *Sphagnum* and other mosses.

New record for the fauna of Switzerland. In the adjacent countries the species is recorded from north and east of Germany, from south and east of Austria, south

and west of France and the north of Italy (Heiss & Péricart 2007). The two new finds therefore fit perfectly in the known distribution area.

GE: Verbois, pièges, 17.III.1966: 1 ♂, leg. Co.

VS: Hameau de Ninda, above Savièse, 1140 m, mousses dans marais, 25.IX.1997: 2 ♂♂, 4 ♀♀, leg. Be. (with *Hebrus ruficeps* Thomson, 1871).

Pachycoleus waltli Fieber, 1860

(Fig. 3)

P. waltli is slightly bigger than *P. pusillimus* and prefers similar habitats. In the neighbouring regions it is known from Baden-Wurtemberg, Bavaria, Vorarlberg, Piedmont, Lombardy and Trentino-Alto Adige (Heckmann & Rieger 2001; Heiss & Péricart 2007). In Switzerland it has been recorded from GE by Heiss & Péricart (2007) and Hollier (2012).

AG: Schlossrued, Deckbungart, ecological compensation area, meadow, 27.V.2003: 1 ♂, 12.VI.2003, 1 ♀, leg. Al.

GE: Peney, piège, 15.III.1966: 1 ♂, 1 ♀, leg. Co.

LU: Eigental, near Eigenthal (village), Forenmoos, 970 m, Sphagnum, 2.VIII.1996: 1 ♂, 2 ♀, 10 nymphs leg. Be. (with *Hebrus ruficeps* Thomson, 1871).
Finsterwald, 1100 m, Hochmoor, 2.IX.1997: 22 ♂♂, 16 ♀♀, 6 nymphs, leg. Be. (with *Hebrus ruficeps* Thomson, 1871).

TI: Campra s/Olivone, 1430 m, *Sphagnum*, 12.VII.1995: 1 ♂, 3 ♀♀, 26 nymphs, leg. Be.

VS: Praz-de-Fort, 1200 m, 9.VI.1976: 4 ♂♂, 4 ♀♀, leg. Be.

ZG: Steinhausen, Zürcherhof, ecological compensation area, meadow, 8.VII.2003: 3 ♂♂, leg. Al.

DISCUSSION

The Dipsocoromorpha are rare in Switzerland, with only nine of the 146 samples in the MHNG and three of the 49 sampling sites in WSL projects containing the group, but the material examined shows that they can be locally abundant. Our investigations also confirm the much broader ecological range of *Ceratocombus coleoptratus* compared to the two *Pachycoleus* species which are much more dependent on undisturbed *Sphagnum* cover. It is interesting to note that *Hebrus ruficeps* Thomson, 1871 was also taken in three of the MHNG samples containing *Pachycoleus* species, an indication of the semi-aquatic nature of their habitats already noted by Heiss & Péricart (2007).

The apparent rarity of these tiny bugs in general is mainly due to the inefficiency of the methods normally used by Heteropterists, such as beating and sweeping, in collecting them. It is clear, however, that pitfall traps and sieving are very effective for the three species for which we provide new data. *Cryptostemma alienum* can only be detected by turning stones in riparian zones in suitable biotopes.

RESUME

Pachycoleus pusillimus est signalé pour la première fois en Suisse. Nouvelles informations sur la distribution de *Ceratocombus coleoptratus* et *Pachycoleus waltli* sont fournies.

ZUSAMMENFASSUNG

Pachycoleus pusillimus wurde zum ersten Mal für die Schweiz nachgewiesen. Ergänzende Verbreitungangaben werden für *Ceratocombus coleoptratus* und *Pachycoleus waltli* gegeben.

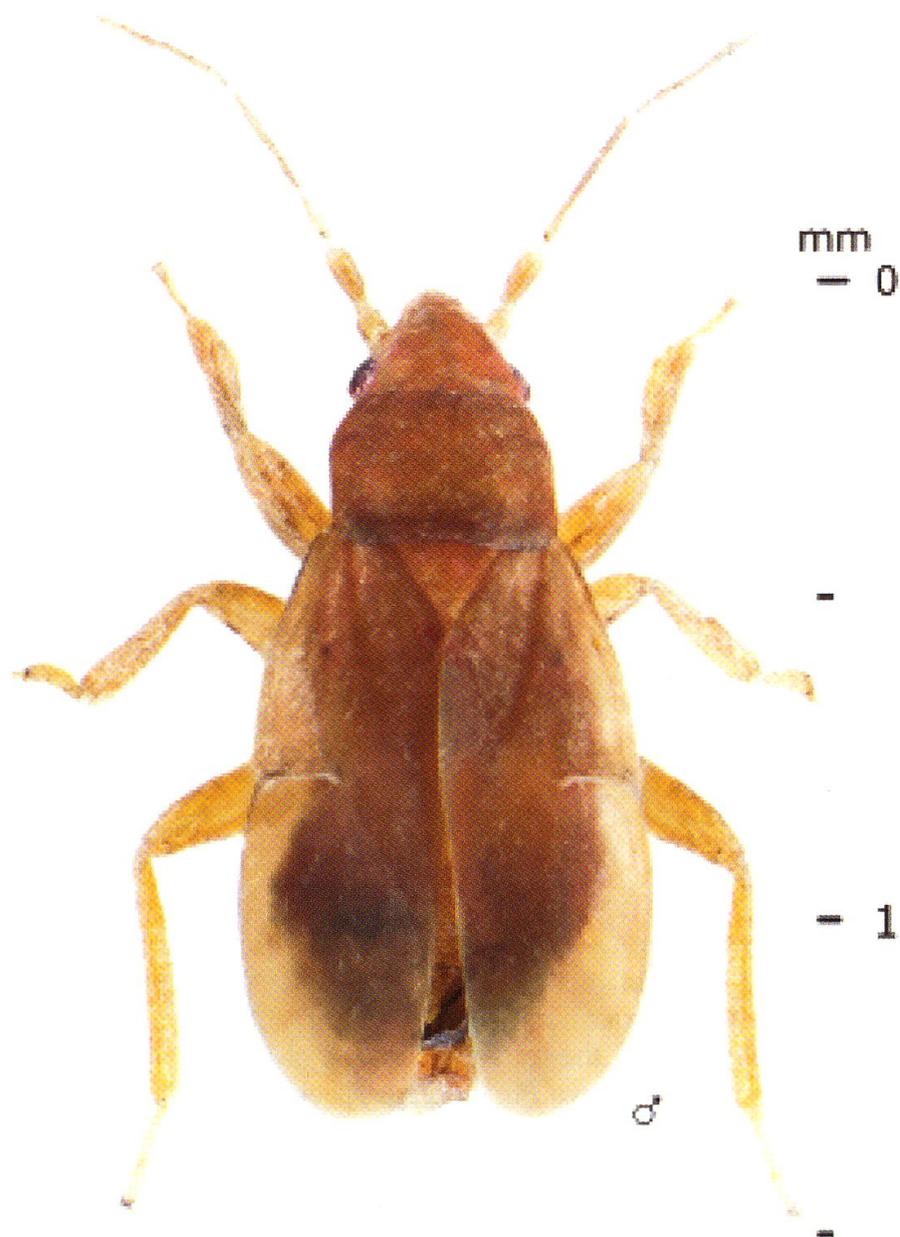


Fig 3: *Pachycoleus waltli*, male from Steinhausen, Zürcherhof in the canton Zug, M. Albrecht leg., photograph by G. Strauss.

ACKNOWLEDGEMENTS

We thank Matthias Albrecht (Agroscope), Peter Duelli, Beat Wermelinger and Martin Obrist (all three WSL) for the permission to publish the data of the Dipscomorpha found in pitfall traps in the research projects «EASY», «Pool» and «RBA» of the WSL. We are grateful to the coleopterists Anton Comellini, Ivan Löbl and especially to Claude Besuchet for the MHNG sieving samples. Berend Aukema provided the specimen represented in Fig. 2.

REFERENCES

Aukema, B., Rieger, C. & Rabitsch, W. 2013. Catalogue of the Heteroptera of the Palearctic Region. — The Netherlands Entomological Society, Amsterdam. xxiv + 629 pp.

- Di Giulio, M., Heckmann, R. & Schwab, A. 2000. The bug fauna (Heteroptera) of agricultural grassland in the Schaffhauser Randen (SH) and Rottal (LU), Switzerland, with updated checklists of Heteroptera of the Cantons Luzern and Schaffhausen. — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 73: 277–300.
- Frey-Gessner, E. 1864. Verzeichnis der schweizerischen Insekten. 1. Hemiptera. — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 1 (7): 225–244.
- Frey-Gessner, E. 1869. Hemipterologische Sammelnotizen aus dem Jahr 1868. — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 3 (1): 18–22.
- Frey-Gessner, E. 1871. Sammelbericht aus den Jahren 1869 und 1870. — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 3 (7): 313–326.
- Giacalone, I., Dioli, P. & Patocchi, N. 2002: Monitoraggi faunistici alle Bolle di Magadino (Svizzera meridionale) eterotteri acquatici e terrestri (Insecta, Heteroptera: Gerromorpha, Nepomorpha e Geocorisae). — *Bollettino della Società ticinese di Scienze naturali* 90: 81–92.
- Heckmann, R. 2011. Wanzen (Heteroptera). *In*: Bergamini, A., Obrist, M. & Nobis, M. (eds): Der artenreichste Quadratkilometer der Schweiz? Der Tag der Artenvielfalt 2010 in Mörel-Filet (VS). — *Bulletin de la Murithienne* 128: 7–42.
- Heckmann, R. & Blöchlinger, H. 2011. Die Wanzenfauna (Hemiptera: Heteroptera) des Kantons Thurgau. Teil 1: Dipsocoromorpha, Nepomorpha, Gerromorpha, Leptopodomorpha und Cimicomorpha. — *Mitteilungen der Thurgauischen Naturforschenden Gesellschaft* 65: 77–173.
- Heckmann, R. & Rieger, C. 2001. Wanzen aus Baden-Württemberg - Ein Beitrag zur Faunistik und Ökologie der Wanzen in Baden-Württemberg (Insecta, Heteroptera). — *Carolinea* 59, Karlsruhe: 81–98.
- Heiss, E. & Péricart, J. 2007. Hémiptères Aradidae, Piesmatidae et Dipsocoromorphes Euro-Méditerranéens. Faune de France 91. — *Fédération Française des Sociétés de Sciences Naturelles*, Paris. 509 pp.
- Hollier, J. 2012. Heteroptera pp. 71–82. *In*: Merz, B. (ed.) Liste annotée des insectes (Insecta) du canton de Genève. — *Instrumenta Biodiversitatis* 8: 1–532.
- Joris, C. 2002. True Bugs (Heteroptera) of steppes and extensive meadows in the Pfywald (VS, Switzerland). — *Diplomarbeit der Philosophisch-Naturwissenschaftlichen Fakultät der Universität Bern - Zoologisches Institut*.
- Kerzhner, I.M. 1995. Infraorder Dipsocoromorpha (pp. 6–12). *In*: Aukema, B. & Rieger, C. (eds.) *Catalogue of the Heteroptera of the Palaearctic Region. Volume 1 Enicocephalomorpha, Dipsocoromorpha, Nepomorpha, Gerromorpha and Leptopodomorpha*. — *The Netherlands Entomological Society, Amsterdam*. xxvi + 222 pp.
- Meyer-Dür, L.R. 1843. Verzeichniss der in der Schweiz einheimischen Rhynchoten (Hemiptera Linn.). 1. - Die Familie der Capsini. — *Jent & Gassmann, Solothurn*. 120 pp.
- Otto, A. 1994. Für die Schweiz neue oder selten gesammelte Wanzen-Arten (Heteroptera). — *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 67: 189–197.

(received March 22, 2014; accepted May 8, 2014; published June 30, 2014)