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Annotated checklist of the family Scathophagidae (Diptera) in Central Europe, with new faunistics data on some species

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A b s t r a c t : Check-list of the family Scathophagidae has been compiled for the following Central European countries, and the following species numbers are given: Austria 69 species, Czech Republic 89 species, Germany 59 species, Hungary 40 species, Poland 67 species, Slovakia 64 species and Switzerland 46 species. Until 2017, 118 species in 42 genera are known from the Central Europe, i.e. approximately 70% of species known from Europe. *Scathophaga analis* (MEIGEN, 1826) is confirmed as valid species and one new synonymy is established, *Scathophaga bohemiae* ŠIFNER, 2000 syn. nov. = *Scathophaga analis*. New faunistic data from the Central Europe and from some other European countries are added, including the following new records: *Mirekiana anthrax* (SCHINER, 1864) from Montenegro, *Cordilura umbrosa* (LOEW, 1873) from Turkey, *Norellisoma nervosum* (MEIGEN, 1826) from Italy, and *Scathophaga inquinata* (MEIGEN, 1826) from Albania.

K e y w o r d s : Diptera, Scathophagidae, taxonomy, faunistics, number of species, Centrale Europe, Palaearctic Region.

Introduction

Notes to the geological evolution and a geographic characteristics of Central Europe

The whole Europe, and the Central Europe especially, passed a complicated geological and climatic changes in the course of evolution. In the first place the Mesozoic and Tertiary mountain-building processes, the Miocene marine transgression period and the continental Quaternaly glaciations during which the Scandinavia developed glacial cover extending into the Central Europe up to Sudeten and Carpathians. The geological history of Central Europe is therefore very long and complicated: includes changing of seas to dry land and vice versa, volcanic activity, the processes of sedimentation, as well as interchanges of glacial and postglacial periods, all with conclusions for the nature (cf. LOŽEK 1996, LOŽEK & CÍLEK 2003).

The Central Europe is from the zoogeografical point of view a part of the Palaearctic region, in greater detail it belongs to the zone of mixed forest of the Euro-Siberian sub-region. The following countries have been usually placed into this area: Austria (AU), Czech Republic (CZ), Germany (GE), Hungary (HU), Poland (PL), Slovakia (SK) and Switzerland (SW).

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The family Scathophagidae in Central Europe

Although speialized species might disappear in the course of time, but some of them survived in isolated, ecologically suitable habitats. Position of the zoogeographical boundary between the Hercynian Mts. and Western Carpathians, makes possible the penetration of the Carpahian species more westwards and vice versa. Especially the transition zone of deciduous forests to Pannonian steppes makes possible the spreading of species between Central Europe and the mountains of Balkan. In the territory of the Central Europe the presence of boreal and boreo-montane species is very important. These species are remnants of the last glacial or early postglacial period, being dependent on expansion of the tajga or to some later cold periods; they inhabit higher mountain altitudes, peat bogs or localities with cold microclimate in mixed forest. Many of them have been found in limited areas of the Alps, Carpathians or Hercynian mountains.

BERNASCONI et al. (2000) addressed the problems of phylogeny by carying out analysis based on COI and Cytb sequences, and they confirmed the monophyly of the Scathophagidae within the limits of the muscoid families. The family Scathophagidae was considered by some authors as characteristic family of the northern part of the Palaearctic Region (Becker 1894, Sack 1937). Howerer, the data on the distribution of some species including discoveries of new species from the southwards areas namely in the Mediterranean subregion do not confirme Becker's conclusion. In the areas of the Mediterranean Sea are presented 12 species (ŠIFNER 2008), from the Iberian Penninsula 11 species (CARLES-TOLRÁ 2006), and *Norellisoma spinimanum* (FALLÉN, 1819) was presently confirmed in Turkey (EREN & OZEROV 2017).

The number of species identified in the individual countries of the Central Europe depends on the level of faunistic and taxonomic research. According to the checklists or catalogues of the particular countries, the numbers of species are following: Austria with 66 species (FRANZ 1989), Czech Republic with 68 species (ŠIFNER 2003), Germany with 58 species (PÜCHEL 1999), Hungary with 40 species (PAPP 2006), Poland with 74 species (DRABER-MOŃKO 1991), Slovakia with 54 species (ŠIFNER 2003), and Switzerland with 43 species (MERZ & BÄCHLI 1998). Altogether 166 species are known to occur in whole Europe (ŠIFNER 2008), and 118 species in 42 genera occur in Central Europe. Only 19 species (16.1%) are common to all countries of Central Europe: *Americina media* (BECKER, 1894), *A. vittata* (MEIGEN, 1826), *Microprosopa filiformis* (ZETTERSTEDT, 1838), *Amaurosoma flavipes* (FALLÉN, 1819), *A. tibiellum* (ZETTERSTEDT, 1838), *Cleigastra apicalis* (MEIGEN, 1826), *Cordilura ciliata* (MEIGEN, 1826), *C. picipes* (MEIGEN, 1826), *C. rufipes* (MEIGEN, 1826), *Phrosia albilabris* FABRICIUS, 1805, *Norellisoma spinimanum*, *N. striolatum* (MEIGEN, 1826), *Parallelomma albipes* (FALLÉN, 1819), *Chaetosa punctipes* (MEIGEN, 1826), *Trichopalpus fraternus* (MEIGEN, 1826), *Scathophaga cineraria* (MEIGEN, 1826), *S. furcata* (SAY, 1823), *S. lutaria* (FABRICIUS, 1794) and *S. stercoraria* (LINNAEUS, 1758). However, new faunistic discoveries as well as descriptions of newly discovered species from Central Europe promise an increase to 120 or 130 species. Considering the newly published records, the actual numbers of species in individual coutries of the Central Europe are following: from Austria 69 species (OZEROV 2013), from the Czech Republic 89 species (ŠIFNER 2008, 2009a,b, 2011a,b, 2012, 2013, 2015, 2016a,b,c) from Germany 59 species (SCHACHT 2003, STUKE & SCHACHT 2009, KASSEBEER 2016), from Hungary 40 species (PAPP 2006), from Poland 67 species (DRABER-MOŃKO 1991), from Slovakia 64 species (ŠIFNER 2003) and from Switzerland 46 species (OZEROV 2008, 2010, 2013).

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The areas of the Central Europe and its specific habitats are only partially explored, depending on attractiveness of particular areas, combined with their accessibility. The mountain systems, such as the Alps, West and East Carpathians and Hercynians are very important for the penetrantion of cold-loving moutain species in the east–west direction (cf. ŠIFNER 1977), some of them have apparently boreo-alpine distribution, which gives possibility of incipient speciation. The adults occur in sheltered and moist habitats of various types, from wet lowlands to mountain meadows, marches, peat-bogs, seasonal as well as permanent water courses, pools, riparian woodlands etc. The adults are predators hunting small insects, whilst some are coprophagous and perhaps saprophagous. The flying activity of adults in open space is very limited (only overflying), they hunt their prey furtively among the lower parts of vegetation, and may be captured only by pedestrian sweeping or by individual catching with a net, by use of Malaise traps placed to the ground and by use of yellow pan traps; the efficiency of yellow pan traps may by influenced by flowering plants (ŠIFNER 2011). The larvae are phytophagous-mining in leaves or stems, other larvae are predaceous or saprophagous, living in soil or stagnant and running water. KUTTY et al. (2007) demonstrate that phytophagy in the form of leaf mining is the ancestral larval feeding habit for Scathophagidae and from phytophagy, two shifts to saprophagy are one shift to predation have occured while another origin of predation is from a saprophagous ancestor (BERNASCONI et al. 2000, cf. KUTTY et al. 2007).

The list of Scathophagidae species in the Central Europe

D e l i n i n a e ROBINEAU-DESVOIDY, 1830

Delinini ŠIFNER, 2003	**AU**	**CZ**	**GE**	**HU**	**PL**	**SK**	**SW**	**Note**
Americina MALLOCH, 1923								
A. media (BECKER, 1894)	●	●	●	●	●	●		
A. vittata (MEIGEN, 1826)	●	●	●	●	●	●	●	
Delina ROBINEAU-DESVOIDY, 1830								
D. nigrita (FALLÉN, 1819)	●	●	●		●	●	●	
Leptopa ZETTERSTEDT, 1838								
L. filiformis ZETTERSTEDT, 1838	●	●	●			●	●	
Micropselapha BECKER, 1894								
M. basovi OZEROV, 2010		●	●			●		**1**
M. filiformis (ZETTERSTEDT, 1838)	●	●	●	●	●	●	●	
Mirekiana ŠIFNER, 2012								
M. anthrax (SCHINER, 1864)	●	●		●		●	●	**2**
Neochirosia MALLOCH, 1917								
N. cepelaki TESCHNER, 1987						●		**3**
N. nigriceps (BECKER, 1894)	●	●				●	●	
N. veratri (HENDEL, 1925)	●	●	●		●	●		**4**

S c a t h o p h a g i n a e ROBINEAU-DESVOIDY, 1830

Amaurosomini ŠIFNER, 2003	**AU**	**CZ**	**GE**	**HU**	**PL**	**SK**	**SW**	**Note**
Amaurosoma BECKER, 1894								

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Amaurosomini ŠIFNER, 2003	AU	CZ	GE	HU	PL	SK	SW	Note
A. armilatum (ZETTERSTEDT, 1846)	●	●	●		●	●	●	**5**
A. articullatum BECKER, 1894	●	●	●	●	●	●		
A. bernasconii ŠIFNER, 2008		●						
A. brevifrons (ZETTERSTEDT, 1838)	●	●	●	●	●	●		
A. fasciatum (MEIGEN, 1826)	●	●	●	●	●			
A. flavipes (FALLÉN, 1819)	●	●	●	●	●	●	●	
A. inerme BECKER, 1894	●	●	●	●	●	●		
A. leucostoma (ZETTERSTEDT, 1846)	●	●				●		
A. loewi BECKER, 1894					●			
A. longicorne (VON ROSER, 1840)	●		●				●	
A. minutum BECKER, 1894		●				●		
A. nigrifrontatum BECKER, 1894					●			
A. obenbergeri ŠIFNER, 2016		●						
A. puberulum BECKER, 1894	●	●	●			●		
A. tibiellum (ZETTERSTEDT, 1838)	●	●	●	●	●	●	●	**6,7**
Gabreta ŠIFNER, 2015								
G. macai ŠIFNER, 2015		●						
Gonatherus RONDANI, 1856								
G. planiceps (FALLÉN, 1819)	●	●	●	●	●	●		
Julienomyia ŠIFNER, 2015								
J. miroslavi ŠIFNER, 2015		●						
Orthachaeta BECKER, 1894								
O. pilosa (ZETTERSTEDT, 1838)	●	●	●		●			

Cleigastrini ŠIFNER, 2003	AU	CZ	GE	HU	PL	SK	SW	Note
Acerocnema BECKER, 1894								
A. macrocera (MEIGEN, 1826)	●	●	●	●	●	●		**8**
Cleigastra MACQUART, 1835								
C. apicalis (MEIGEN, 1826)	●	●	●	●	●	●	●	
Gonarcticus BECKER, 1894								
G. abdominalis BECKER, 1894		●						
Hexamitocera BECKER, 1894								
H. loxocerata (Fallén, 1826)				●			●	**9**
H. martineki ŠIFNER, 2003		●						
Jezekia ŠIFNER, 2009								
J. kmenti ŠIFNER, 2009		●						
Megaphthalma BECKER, 1894								
M. pallida (FALLÉN, 1819)	●	●	●		●	●	●	
Spathephilus BECKER, 1894								
S. nigriventris (LOEW, 1864)	●	●	●	●	●	●		
Hajekiana ŠIFNER, 2016								
H. orlicensis ŠIFNER, 2016		●						

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Cordilurini ŠIFNER, 2003	**AU**	**CZ**	**GE**	**HU**	**PL**	**SK**	**SW**	**Note**
Cordilura FALLÉN, 1819								
C. aemula COLLIN, 1958		●	●	●				
C. atrata (ZETTERSTEDT, 1846)	●	●		●		●		
C. ciliata (MEIGEN, 1826)	●	●	●	●	●	●	●	
C. flavovenosa BECKER, 1894					●			
C. picipes (MEIGEN, 1826)	●	●	●	●	●	●	●	
C. rufipes (MEIGEN, 1826)	●	●	●	●	●	●	●	**10**
C. pudica (MEIGEN, 1826)	●	●	●		●	●	●	
C. rufimana (MEIGEN, 1826)	●	●			●	●		
C. socialis BECKER, 1894					●			
C. umbrosa (LOEW, 1873)	●	●	●	●	●	●		**11**
Norellisoma WAHLGREN, 1917								
N. alpestre (SCHINER, 1864)	●	●	●		●	●	●	
N. armipes (MEIGEN, 1826)	●		●		●			**12**
N. femorale (LOEW, 1864)	●				●	●	●	
N. flavicorne (MEIGEN, 1826)	●	●			●			
N. ivanae ŠIFNER, 2003						●		
N. jelineki ŠIFNER, 2006		●						
N. lesgiae BECKER, 1894					●			
N. lituratum (MEIGEN, 1826)	●	●	●		●	●	●	
N. mirusae ŠIFNER, 1974		●	●			●	●	
N. nervosum (MEIGEN, 1826)	●	●	●		●	●	●	
N. seguyi ŠIFNER, 1973	●							
N. spinimanum (FALLÉN, 1819)	●	●	●	●	●	●	●	
N. striolatum (MEIGEN, 1826)	●	●	●	●	●	●	●	
N. vockerothi OZEROV, 2013	●						●	
N. vonickai ŠIFNER, 2006		●						
Parallelomma BECKER, 1894								
P. albipes (FALLÉN, 1819)	●	●	●	●	●	●	●	
P. fuscipes (ZETTERSTEDT, 1838)			●		●			
Phrosia ROBINEAU-DESVOIDY, 1830								
P. albilabris (FABRICIUS, 1794)	●	●	●	●	●	●	●	
Scoliaphleps BECKER, 1894								
S. ustulata (ZETTERSTEDT, 1838)	●	●	●	●	●	●		**13**

Gimnomerini ŠIFNER, 2003	**AU**	**CZ**	**GE**	**HU**	**PL**	**SK**	**SW**	**Note**
Gimnomera RONDANI, 1867								
G. alpina ŠIFNER, 2003	●							
G. castanipes (BECKER, 1894)	●					●	●	
G. cuneiventris (ZETTERSTEDT, 1846)						●		
G. dorsata (ZETTERSTEDT, 1838)	●						●	
G. lasiostoma (BECKER, 1894)	●						●	
G. slovaca ŠIFNER, 2003						●		
G. tarsea (FALLÉN, 1819)		●	●		●			**14**

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Gimnomerini ŠIFNER, 2003	**AU**	**CZ**	**GE**	**HU**	**PL**	**SK**	**SW**	**Note**
G. tatrica ŠIFNER, 2003						●		
Norellia ROBINEAU-DESVOIDY, 1830								
N. spinipes (MEIGEN, 1826)	●	●	●	●		●	●	

Hydromyzini ŠIFNER, 2003	**AU**	**CZ**	**GE**	**HU**	**PL**	**SK**	**SW**	**Note**
Ernoneura BECKER, 1894								
E. argus (ZETTERSTEDT, 1838)					●			
Chaetosa COQUILLETT, 1898								
Ch. punctipes (MEIGEN, 1826)	●	●	●	●	●	●	●	
Cosmetopus BECKER, 1894								
C. dentimanus (ZETTERSTEDT, 1838)	●	●					●	
Hydromyza FALLÉN, 1823								
H. livens (FABRICIUS, 1794)	●	●	●	●	●		●	
Paracosmetopus HACKMAN, 1956								
P. helleni HACKMAN, 1956		●						
Pogonota ZETTERSTEDT, 1860								
P. barbata (ZETTERSTEDT, 1838)		●			●			**15**
Spaziphora RONDANI, 1856								
S. hydromyzina (FALLÉN, 1819)	●	●	●	●	●		●	

Microprosopini ŠIFNER, 2003	**AU**	**CZ**	**GE**	**HU**	**PL**	**SK**	**SW**	**Note**
Acanthocnema BECKER, 1894								
A. glaucescens (LOEW, 1864)	●	●	●	●	●	●		
A. nigrimana (ZETTERSTEDT, 1846)	●	●	●	●	●	●		
Megaphthalmides RINGDAHL, 1936								
M. unilineatus (ZETTERSTEDT, 1838)	●	●			●	●	●	
Microprosopa BECKER, 1894								
M. gruberi ŠIFNER, 2013						●		
M. haemorrhoidalis (MEIGEN, 1826)	●	●			●		●	
M. palidicauda (MEIGEN, 1826)	●				●		●	
M. preisleri ŠIFNER, 2013		●				●		
M. zemani ŠIFNER, 2013		●						
M. zlobini OZEROV, 2008							●	
Paramicroprosopa RINGDAHL, 1936								
P. bartaki (ŠIFNER, 1999)	●							
P. ozerovi (ŠIFNER, 2008)						●		
P. pokornyi (ŠIFNER, 2011)		●						
Trichopalpus RONDANI, 1856								
T. fraternus (MEIGEN, 1826)	●	●	●	●	●	●	●	

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Scathophagini ŠIFNER, 2003	AU	CZ	GE	HU	PL	SK	SW	Note
Ceratinostoma MEADE, 1885								
C. ostiorum (CURTIS, 1832)			●		●			
Coniosternum BECKER, 1894								
C. dvoraki ŠIFNER, 2015		●						
C. decipiens (HALIDAY, 1832)	●		●					
C. fluviale (RONDANI, 1867)	●	●						
C. lapponicum RINGDAHL, 1920		●						
C. mihalyii ŠIFNER, 1975		●						**16**
C. nelsoni ŠIFNER, 2003		●						
C. obscurum (FALLÉN, 1819)	●	●	●		●	●	●	
C. tinctinerve BECKER, 1894	●	●		●	●			
Scatomyza FALLÉN, 1810								
S. scybalaria (LINNAEUS, 1758)	●	●	●	●	●		●	
Scathophaga MEIGEN, 1826	●	●						
S. analis (MEIGEN, 1826)	●	●			●			**17**
S. cineraria (MEIGEN, 1826)	●	●	●	●	●	●	●	**18**
S. furcata (SAY, 1823)	●	●	●	●	●	●	●	
S. inquinata (MEIGEN, 1826)	●	●	●	●	●	●		
S. intermedia (WALKER, 1849)					●			
S. jizerensis ŠIFNER, 2004		●						
S. litorea (FALLÉN, 1819)			●		●			**19**
S. lutaria (FABRICIUS, 1794)	●	●	●	●	●	●	●	
S. moraviensis ŠIFNER, 2011		●						
S. pictipennis OLDENBERG, 1923	●	●	●			●		
S. stercoraria (LINNAEUS, 1758)	●	●	●	●	●	●	●	
S. suilla (FABRICIUS, 1794)	●	●	●		●	●	●	
S. taeniopa (RONDANI, 1867)	●	●			●		●	
S. vlastae ŠIFNER, 2000						●		

Notes on the changes

1) OZEROV (2010) described *Micropselapha basovi* from environs of the lake Raifsa in Tatarstan. The shape of the male abdominal sternites IV and V distinctly differs from *Micropselapha filiformis* (ZETTERSTEDT, 1846). However, the shape of pregonite, an important character, is not figured. BARTÁK & KUBÍK (2012) decribed from the Czech Republic and Slovakia *Micropselapha bohemica* BARTÁK & KUBÍK, 2012; they distinguished this species from *M. basovi* in particular by the length of lobes of the male sternite V, and in the female by the shape of tergite VI. OZEROV (2014a) on the basis a study of the comparative specimens considers *M. bohemica*, in Ozerov's words 'to be the new synonym of *M. basovi*'. On the basis of these facts – as the shape of pregonite is not known in any of the two species – I leave this problem unresolved and conditionally accept the opinion of OZEROV (2014a) that *M. bohemica* is a junior synonym of *Micropselapha basovi* OZEROV, 2010.
2) The species *Mirekiana anthrax* (SCHINER, 1864) was originally described by Schiner as *Cleigastra anthrax* from Austria "bei Moosbrunn, mitten auf den dortigen Moorweisen, von beiden Geschlechtern" [= environs Moosbrunn, in the middle of a local swampy meadows, in both sexes] (cf. SCHINER 1864: 12). BECKER (1894) and

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SACK (1937) left the species in the genus *Cleigastra* MACQUART, 1835. In later years it was transffered into the genus *Delina* ROBINEAU-DESVOIDY, 1830 by SÉGUY (1952), GORODKOV (1986) and ŠIFNER (2008). OZEROV (2009a) placed it in the genus *Neochirosia* MALOCH, 1917. ŠIFNER (2012) on the basis of some characters described a monotypic genus *Mirekiana* with the type species *Cleigastra anthrax* (SCHINER, 1864). In the collections of the Naturhistorisches Museum in Wien the following specimens of this species are deposited: from Austria: loc. Austria, "Alte Sammlung" [= old collection], 1♀ (without data), det. Schiner as *anthrax*; Moosbr. [= Moosbrunn], Alte Sammlung, 15.v. (without year), 1♀, as *Clidogastra anthrax* Schiner det.?; Germer Hochschwabgebiet, 1.vi.1925, 1 m * 1♀, det. Hendel as *Clid. anthrax* Sch.; loc. Nied.Österr., Nasswald, 8.vi.1930, 1♂, Zerny leg., as *Cleig. anthrax* Sch., det. J. R. Vockeroth 1956; from Switzerland: loc. St. Moritz 26.vi. (without year), 1♂, det. Becker as *Clid. carbonaria* Pokorny; the same locality, 23.vii.1902, 1♂ 1♀, leg. Oldenburg, det. Oldenburg as *Cl. carbonaria.* Without locality: "Alte Sammlung", without data, 1♂, as *carbonaria* det.? Plant hosts are not mentioned. All specimens have been compared with those from the Czech Republic and Slovakia (cf. ŠIFNER 2012) and determined as *Mirekiana anthrax* (Schiner, 1864) including an acknowledgement that *Cleigastra carbonaria* Pokorny, 1887 is a junior synonym of this species (cf. also ŠIFNER 2008). All specimens from the Czech Republic and Slovakia originate from *Veratrum album*. OZEROV & KRIVOSHEINA (2015) were described from Serbia a new species, *Neochirosia nikita* OZEROV & KRIVOSHEINA, 2015; all specimens were collected on *Veratrum* sp. The authors distinguished the species *N. nikita* from *N. anthrax* by the structure of sternite V and genitalia; the shape of sternite IV, pregonite, postgonite and distiphallus bearing the important characters are not figured. The shape of cerci may be very variable. Both authors doubted the validity of the genus *Mirekiana.* I note for this problem only: the diagnostic characters are given in my key of genera and all are figured. The genus *Mirekiana* is to my opinion a valid genus.

3) Nowadays, I accept MICHELSEN'S (2007) nomenclatural act that *Chirosia cepelaki* TESCHNER, 1987 originaly described from Slovakia is a valid species of the family Scathophagidae. I cannot accept Michelsen's opinion that: "*Delina nigrita* (FALLÉN) sensu ŠIFNER (2003) are misidentifications of *D. cepelaki* (Teschner)". I note only that all species of *D. nigrita* (FALLÉN, 1819) from the Czech and Slovak Republics were compared with the specimens from Finland.
4) The species *Cleigastra veratri* (HENDEL, 1925) was in past documented in the Czech Republic and in Slovakia based on one male and one female; I synonymized the species with *Delina nigriceps* (BECKER, 1894) (ŠIFNER 2003: 63). Both the specimens from *Veratrum nigrum* were moreover identified in 1954 by J. R.Vockeroth as *D. nigriceps.* OZEROV (2009a) during a revision of the genus *Delina* Robineau-Desvoidy, 1830 revalidated *Cleigastra veratri* HENDEL, 1925 as a distinct species. Nowadays, I accept Ozerov's nomenclatural act; in my opinion the position in this species in the genus *Neochirosia* MALLOCH, 1917 is disputable and there is the necessity of the further comparative studies.
5) *Amaurosoma mensuratum* BECKER, 1894 is recorded in Germany (PÜCHEL 1999: 186) and Poland (DRABER-MOŃKO 1991: 231) as a valid species; however, this species is a junior synonym of *A. armilatum* BECKER, 1894. The species *A.*

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mensuratum was first synonymized by VOCKEROTH but this nomenclatural act was not published; thus the species was formally synonymized by ŠIFNER (2008: 151).

6) *Amaurosoma nigrifrontatum* BECKER, 1894 is recorded in Poland (DRABER-MOŃKO 1991: 231) as a valid species. This species was proposed as a new junior synonyme of *A. tibiellum* (ZETTERSTEDT, 1838) by OZEROV (2014b: 39).
7) *Amaurosoma nutans* BECKER, 1894 is recorded in Austria (FRANZ 1989: 116) and in Poland (DRABER-MOŃKO 1991: 231) as a valid species; this species is a junior synonym of *A. tibiellum* (ZETTERSTEDT, 1838) (cf. ŠIFNER 2008: 155).
8) *Cordilura fulvipes* (MEIGEN, 1838) is recorded in Poland (DRABER-MOŃKO 1991: 231) as a valid species. However, *C. fulvipes* is a junior synonym of *Acerocnema macrocera* (MEIGEN, 1826); this species was synonymized already by BECKER (1905: 17) (cf. also ŠIFNER 2008: 147).
9) In 1971 I identified the species *Hexamitocera loxocerata* (FALLÉN, 1826) from Hungary: 'loc. Dobogókö, 28.iv.1957, 1♂, Soós A. leg. / Hexamitocera loxocerata (Fall.), det F. Šifner, ♂' (HNHM). PAPP (2001, 2006) doubted my identification and re-identified the specimen as *Nanna brevifrons* (ZETTERSTEDT, 1838), mentioning among others: 'I cannot find any reasonable cause for the first misidentification, so I am afraid, that was an erroneous change of identification labels…….'. PAPP (2006) deals with the discovery of a species *Hexamitocera loxocerata* in the Hungarian territory including its exact determination. I am convinced that my original identification (including comparison with Finish specimens identified by W. HACKMAN) is correct. I can also exclude the possibility of its misidentification as *Spathephilus nigriventris* (LOEW, 1873), which is valid name for *S. breviventris* (LOEW, 1873) according to OZEROV (2010b).
10) VOCKEROTH (1965) referred to the genus *Cordilura* as *Cordilura* FALLÉN, 1810 and fixed the type-species as *Cordilura rufipes* (MEIGEN, 1826). He first used this name in a text in 1988 (cf. VOCKEROTH 1988: 1088, Fig. 7). SABROSKY (1999) wrote: "The problem is one of misidentifield type species … The Commission and /or specilist should clarify this situation" (cf. also ŠIFNER 2008: 116–117). ŠIFNER (2008) accepted the priority of the opinion of VOCKEROTH (1965: 827), considering *Cordylura rufipes* MEIGEN, 1826 as the type-species of the genus *Cordilura* FALLÉN, 1810 and he proposed provisional use of the name of *Cordilura pubera* LINNAEUS, 1758 as *Cordilura pubera* (auct., nec LINNAEUS, 1758). Ozerov & Krivosheina (2014) considered *Cordilura pubera* (auct., nec LINNAEUS, 1758) as synonym of *Cordilura rufipes* (MEIGEN, 1826); as did BAGADANOVA et al. (2016). I accept completely OZEROV'S (2014) nomenclatural act with the following comment: the author's conclusion is completely logical and objective. The MEIGEN'S original description of *Cordylura rufipes* is brief but precise in the Latine and German versions including the accompanyig text; the identity of *Cordilura pubera* (auct., nec LINNAEUS, 1758) in the form of the new name *Cordilura rufipes* (MEIGEN, 1826) is clear, unambiguous and definitive.
11) OZEROV (2014b) considered *Cordilura umbrosa* (LOEW, 1873) as a junior synonym of *C. impudica* (RONDANI, 1867). This conclusion is erroneous. Both *C. umbrosa* (Loew) and *C. impudica* are valid species (cf. ŠIFNER 2003: 13, 18).
12) OZEROV (2009b) revised *Cordylura armipes* MEIGEN, 1826 on the basis of study of dissected holotype male. He figured some components of the genital apparatus

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(without the pregonite) and sternites IV and V; *Norellisoma armipes* (MEIGEN, 186) is certainly a valid species.

13) *Scoliaphleps melanacra* (LOEW, 1873) was recorded in Hungary (PAPP 2001: 226). This species is a junior synonym of *Scoliaphlaps ustulata* (Zetterstedt, 1846); it was synonymized by present author (ŠIFNER 1977: 397) on the basis of the study of the type including the female abdominal sternites VI and VII; It was erroneously noted by me on label as a male (cf. OZEROV 2014b).

14) The discovery of this species in the Czech Republic is based on the specimen from Western Bohemia, 6042 Mariánské Lázně. The voucher specimen (one female) is deposited in Naturhistorisches Museum in Wien (Austria); it is labelled by one label with a text: Franzenstein, 3.vi.1893, col. Mik [= Františkův kámen, environs Mariánské Lázně – 49°58′41″N 12°42′42″E]. At the end of the 19th century it was a resting place with important entomological localities; nowadays, there is a wooded area.

15) The record and description of this species from the territory of the Czech Republic is based on one female. The voucher specimen is deposited in VIMMER'S collection in the National Museum in Prague (Czech Republic) and it was described by Vimmer (1937) as *Amaurosoma klickai*. ŠIFNER (1964) revised and determined this specimen with certainty as *Pogonota barbata* (ZETTERSTEDT, 1838). This female was designated by Vimmer as "Typ" (green label) and with the text of locality on the second label: "Wimmer, Karlův Týn" [= Karlštejn in Central Bohemia]. I have my doubts about the provenance of this specimen, which moreover has no characters of the genus *Amaurosoma*. The occurrence of *Pogonota barbata* (ZETTERSTEDT, 1838) is possible in the area of Krkonoše Mts. and Jizerské hory Mts. (northern Bohemia) or Orlické hory Mts. (northeastern Bohemia), in Moravia in the area of Jeseníky Mts. These areas are near to the locality of Kohlfurther Moor (= Węgliniec, southwestern Poland), from which locality the voucher specimens are deposited in Naturhistorischen Museum in Berlin (Germany) and in Naturhistorischen Museum in Wien (Austria). The whole time no more data on the occurrence of this species in the territory of the Czech Republic were ascetained. I regard the record from the territory of Bohemia in the Czech Republic from the faunistic point of view as dubious.

16) The discovery of *Coniosternum mihalyii* ŠIFNER, 1975 in Šumava Mts.: Trojmezná Mt. is the first finding of this species not only in the Czech Republic but in the whole Europe (cf. ŠIFNER 2016b).

17) GORODKOV (1986) considered *Scathophaga analis* as a doubtful species. Bernasconi (2000) and BERNASCONI et al. (2000) for this problem mention "*Scathophaga analis* .., could be a synonym of *Scathophaga inquinata*. The sequences of the two species are identical and incomplete sorting or introgression seems very unlikely in this case, but further study is certainly needed". ŠIFNER (2008: 165) based on above mentioned reasons regarded *S. analis* (MEIGEN, 1826) as a synonym of *S. inquinata* (MEIGEN, 1826). I confirme here *Scathophaga analis* (MEIGEN, 1826) as a valid species and *S. bohemiae* ŠIFNER, 2000 is its new junior synonym. This species was discovered and it was determined simultaneously as *S. bohemiae* on the subsequent localities: Veltrusy (5751–52) (ŠIFNER 2003); Děčínský Sněžník Mt. (5250); Rejdice (5258); Vřesová, Vintířov (5742); Orické hory Mts., NNR Černý důl (5864); Smršťov (6355); Broumov (6974); Hrubá Vrbka (7170); Strání (7071) (ŠIFNER 2011); Krásno (5842); Bečov nad Teplou (5942) (ŠIFNER 2013).

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18) *Scathophaga lurida* (SCHINER, 1864) is a junior synonym of *Scathophaga cineraria* (MEIGEN, 1826) (cf. ŠIFNER 2008: 161). The collection of NHMW contains also a specimen with the text on the first label: Austria, A. S. (= Alte Sammlung), *lurida*, det. Schiner, *lurida* Mihi ♂, and with pink label bearing designation "Type". It is questionable whether this male is the original specimen.

19) In Poland *Scathophaga arrogans* (HALIDAY, 1832) is recorded by DRABER-MOŃKO (1991: 232), however, *S. arrogans* is a junior synonym of *S. litorea* (FALLÉN, 1819) (cf. ŠIFNER 2008: 166).

New and so far not published localities of the species in the European countries

a) Ahead of each locality for the species in the Czech Republic and Slovakia are aligned to map field codes for the faunistic grid mapping system (PRUNER & MÍKA 1986) are given.

b) The following abbreviations of collections containing voucher specimens are used in the text (in partenheses).

FSCP ..... František Šifner private collection, Chyňava (Czech Republic);

IZW ..... Institute of Zoology Academy of Sciences, Warszawa (Poland);

HNHM..... Hungarian Natural History Museum, Budapest (Hungary);

MHNB..... Musée d'Histoire Naturelle, Bucuresti (Romania);

ML..... Musée Lausanne (Switzerland);

MMBC ..... Moravian Museum, Brno (Czech Republic);

NHMB..... Naturhistorisches Museum, Berlin (Germany);

NHMW..... Naturhistorisches Museum, Wien (Austria).

MMSC..... Municipal Museum, Soběslav (Czech Republic)

c) The system used by ŠIFNER (2008) is adopted and the taxa are arranged alphabetically in the fram of tribes.

Tribe D e l i n i n i

Americina vittata (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Finland:** Oulanka, Biol. Station, 22.vii.1967, 1♀; Kuusamo, Pihäjaki, 22.vii.1967, 1♀, all Mihályi leg. (HNHM). **Poland:** Reinerz [= Duszniki Zdrój], without date, 1♀, Oldenberg det. as *A. vittata* (NHMW). **Slovakia:** Tatry Mts., Zúberec-Brestová, 800 m a.s.l., spruce forest, 19.vii.1999, 1♂, Mocek leg. (FSCP).

Delina nigrita (FALLÉN, 1819)

M a t e r i a l e x a m i n e d : **Poland:** Nimptsch [= Niemcze], 18.viii.1908, 1♂, 25.v.1909, 1♂, Duda leg.; Silsterwitz [= Sulistrowice] (NHMW), 12.v.1911, 1♂, Duda leg. (ZMB).

Leptopa filiformis ZETTERSTEDT, 1838

M a t e r i a l e x a m i n e d : **Finland:** Oulanka, Biol. Station, 22.vii.1967, 1♀, Mihályi leg. (HNHM). **Czech Republic:** Chyňava (5950), 12.v. 2015, 1♀, Šifner leg.; Horní Kramolín (6042) 10.vi.2003, 1♂, Šifner leg. (all FSPC).

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***Mirekiana anthrax* (SCHINER, 1864)**

M a t e r i a l e x a m i n e d : **Montenegro:** Čakor pass, 10.vi.1967, 4♂♂, Lauterer leg. (MMBC). **Switzerland:** Grisons, 8.vii.1955, 1♂, J. de Beaumont leg. (ML); St. Moritz, 4.vi., No. 10620, 1♂, leg.?; 2.vi., No. 9404, 1♂, leg.?; 23.vii., No.1102, 1♂ 1♀, 28.viii.1906, 1♂, leg. Oldenberg (NHMW). **New species for fauna of Montenegro.**

Tribe A m a u r o s o m i n i

***Amaurosoma armillatum* (ZETTERSTEDT, 1846)**

M a t e r i a l e x a m i n e d : **Czech Republic:** Chyňava (5950), 12.v.2016, 1♂ 2♀♀, Šifner leg. (FSPC); Boletice (7151) 12.v.2010, 1♂, Máca leg. (MMSC).

***Amaurosoma articulatum* BECKER, 1894**

M a t e r i a l e x a m i n e d : **Czech Republic:** Suchdol u Kunštátu (6857), 3.v.2007, 1♀, Máca leg. (MMSC). **Poland:** Bialiwieza, 26.v.1957, 1♀, Kaszab leg. (NNHM).

***Amaurosoma brevifrons* (ZETTERSTEDT, 1838)**

M a t e r i a l e x a m i n e d : **Czech Republic**: Chyňava – Kamenná hill (5950), 18.vi.2016, 1♂ 2♀♀, Šifner leg. (FSPC); Senorady (6863), 12.v.2010, 1♀, Máca leg. (MMSC); Boletice – N.Víska (7151), 13.v. 2008, 1♀, Máca leg. (MMSC); Jemčina (6955), 13.v.1991, 1♂, Šifner leg. (FSPC). **Poland:** Breslau [= Wrócław], A.S. [Alte Sammlung = old colection], without data, 1♂ 6♀♀; Liegnitz [= Legnice], 8.iv.1854, 1♂, det. Becker (NHMW).

***Amosoma leucostoma* (ZETTERSTEDT, 1846)**

M a t e r i a l e x a m i n e d : **Czech Republic**: Rabštejn, PR Střela (5945), 20.iv.2014, 1♂, Dvořáková leg. (FSPC).

***Amaurosoma minutum* BECKER, 1894**

M a t e r i a l e x a m i n e d : **Czech Republic:** Hejnice (5751), 24.v.2003, 1♂, Preisler leg. (FSPC); Hluboká (5945), 8.v.2002, 1♀, Šifner leg. (FSPC).

***Amaurosoma puberulum* BECKER, 1894**

M a t e r i a l e x a m i n e d : **Czech Republic:** Kynšperk nad Ohří (5841), 20.vi.2001, 1♂, Šifner leg. (FSPC).

***Amaurosoma tibiellum* (ZETTERSTEDT, 1838)**

M a t e r i a l e x a m i n e d : **Czech Republic:** Horní Pole (6757), 19.iv.2007, 1♂, Máca leg. (MMSC); **Poland:** Breslau [= Wrócław], 1♂, without data, as *A. nigripes* det. Schiner (NHMW).

***Gonatherus planiceps* (FALLÉN, 1819)**

M a t e r i a l e x a m i n e d : **Czech Republic:** Modrava (6946), 19.v.2002, 1♂, Šifner leg. (FSPC). **Germany:** Erfurt, 6.v.1841, 1♂; 10.v.1841, 1♀; 10.v.1858, 1♂; 20.ix.1859, 1♀, all Steiger leg. (NHMW).

***Orthacheta pilosa* (ZETTERSTEDT, 1838)**

M a t e r i a l e x a m i n e d : **Germany:** Baden, without date, 1♂, No.43223, det Becker (NHMW).

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Tribe C l e i g a s t r i n i

Cleigastra apicalis (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Kynšperk nad Ohří (5841), 2.vi.2012, 1♂, Šifner leg. (FSPC); Plzeň-Slovany (6246), 4.vi.2009, 1♀, Dvořáková leg. (FSPC); Turovec (6654), 29.iv.1999, 1♂, Šifner leg. (FSPC); SPR Velký Tisý (6954), 12.v.2001, 2♂♂, Šifner leg. (FSPC); Český Rudolec (6957), 25.iv.2007, 1♂, Máca leg. (MMSC). **Finland:** Oulanka Biol. Station, 12.vii.1967, 1♂, Mihályi leg. (HNHM). **Poland:** Umgebung Breslau [=Wrócław environs], A.S. [= Alte Sammlung = old collection], 1♂, without data, Schiner det. as *C. apicalis* (NHMW).

Megaphthalma pallida (FALLÉN, 1819)

M a t e r i a l e x a m i n e d : **Czech Republic:** Carlsbad [= Karlovy Vary] (5742), 1.viii. [19]15, 1♂, Oldenberg leg. (NHMW).

Tribe C o r d i l u r i n i

Cordilura ciliata (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Chyňava-Podkozí (5950), 11.v.2016, 1♂, Šifner leg. (FSPC); Vysoká-Háje (6041), 25.vii.2014, 1♂, Dvořák leg. (FSPC); Včelákov (6161), 17.vii.2007, 1♂, Máca leg. (MMSC); Loučovice (7151), 15.vii.2006, 1♀, Máca leg. (FSPC); Kraslice (5641), 7.vii.2001, 1♀, Šifner leg. (FSPC). **Finland:** Oulanka, 22.vii.1967, 5♀♀(HNHM). **Italia:** Veneto, 5.vii.1913, 1♀, Maidl & Zerny leg. (NHMW). **Poland:** Nimptsch [= Niemcze], 1♀, without data, Duda leg. (NHMW), Bialowieza reservation, 10.viii.1957, 1♀, Soós leg. (HNHM).

Cordilura picipes (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Lázně Kynžvart (6041), 5.vi.2003, 1♂, Šifner leg. (FSPC); Ratibořice (6554), 29.vii.2008, 2♀♀, Máca leg. (MMSC); Makov (6464), 19.vii.1991, 1♂, Šifner leg. (FSPC); Český Rudolec (6957), 25.iv.2007, 1♂, Máca leg. (MMSC). **Poland:** bei Nimptsch [= Niemcze environs], 22.vii.1912, 1♂, leg.? (NHMB).

Cordilura rufipes (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Croatia:** Lissa [= Hvar Island], without data, 1♀, 1.v.1851, 1♂, all Schiner det. (NHMW). **Czech Republic:** Mlékojedy (5450), 15.iv.2003, 1♀, Šifner leg. (FSPC); Kynšperk nad Ohří (5840), 16.v.2014, 2♀♀, Dvořák leg. (FSPC); Vlkov (6853), 17.v.1998, 1♀, Šifner leg. (FSPC); Budislav (6755), 5.vi.2007, 1♂, Máca leg. (MMSC). **Italy:** Calabre, Camigliatello, 12.–24.v.1950, 1♂, Aubert leg. (ML), Carnica [= Carnia, province Udine], 1854, 1♀, leg.? (NHMW). **Poland:** Nimptsch [= Niemcze], 26.v.1908, 1♂, Duda leg.; Liegnitz [= Legnica], 24.v., 1♀, No.5642 (ZMB). **Portugal:** Loriga, 19.iv.1960, 1♂, Aubert leg. (ML). **Slovakia:** Velké Leváre (7567), 15.vii.1983, 1♀, Šifner leg. (FSPC).

Cordilura pudica (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Kynšperk nad Ohří (5841), 20.vi.2001, 1♀, Šifner leg. (FSPC); Loučovice (7351), 15.viii.2006, 1♂, Máca leg. (MMSC). **Poland:** Kohlfurth [= Węgliniec], v., 1♂, No. 60839; Reinercz [=Duszniky-Zdrój], 25.v., 1♂, No. 26198 (ZMB).

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Cordilura rufimana (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Loučovice (7351), 15.vii.2006, 1♂, Máca leg. (MMSC). **Russia:** Kamtschatka, Malaise, without data, 1♂, No. 315, Hendel det. as *C. rufimana* (NHMW).

Cordilura umbrosa (LOEW, 1873)

M a t e r i a l e x a m i n e d : **Hungary:** Rákos, 20.viii.1880, 1♀, Kertész det., Magyarfalva, v. (without further data), 1♀ (NHMW). **Poland:** bei Nimptsch [= Niemcze environs], 22.vii.1916, 1♀, leg? (NHMW). **Romania:** Tulcea, 20.vii.1959, 2♂♂ 2♀♀, Gozmány leg. (NHMB). **Turkey:** Istanbul, Széraly, 31.vii.1959, 1♀, Gozmány leg. (NHMB). **New species for fauna of Turkey.**

Norellisoma alpestre (SCHINER, 1864)

M a t e r i a l e x a m i n e d : **Switzerland:** St. Moritz, 30.vi.1857, 1♂, leg.? (NHMW)

Norellisoma lituratum (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Loučovice (7351), 15.vii.2006, 1♂ 1♀, Máca leg. (MMSC). **Poland:** Babia Góra, 1.ix.1957, 1♀, R. Trojan leg. (IZW). **Romania:** Pojorita, 8.vi.1976, 1♂, I. Ceianu leg. (MHNB). **Slovakia:** Roháče (6784), 16.viii.1984, 1♂, Šifner leg. (FSPC). **Slovenia**: Illyria, Görz [= Nova Gorica], 26.vi.1864, 1♂, Mik leg. (NHMW). **Switzerland:** Vaud-Solalex, 20.viii.1954, 1♀, Valais-Bretolet, 22.viii.1960, 1♀, all Aubert leg. (ML).

Norellisoma nervosum (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Tisá (5250), 28.vi. 2002, 1♂, leg.? (FSPC); Kraslice (5641), 12.vi.2014, 1♀, Dvořáková leg. (FSPC); Vysoká-Háj (6041), 25.vii.2014, 1♂, Dvořák leg. (FSPC). **Italy:** Sicilien, A.S. [Alte Sammlung = old collection], 1♀, without data, Schiner det. (NHMW). **Poland:** Schreibenhau [= Sklarska Poręba], 20.vii.1911, 1♂, 6.vii.1905, 1♂ 1♀, Schroeder leg. & det. (IZW). **Romania:** Pojorita, 8.vi.1976, 1♀, I. Ceianu leg. (MHNB). **Slovakia**: Námestovo (6582), 25.vi.1971, 1♀, Máca leg. (MMSC). **New species for fauna of Italy.**

Norellisoma seguyi ŠIFNER, 1973

M a t e r i a l e x a m i n e d : **Bulgaria:** Rila, Rilsky monastir, mixed forest, 23.viii.1972, 1♂, Lauterer leg. (MMBC).

Norellisoma spinimanum (FALLÉN, 1819)

M a t e r i a l e x a m i n e d : **Croatia:** Dalmatia, Cuciste [= Kučište], 1♂, Mik leg, F. Hendel det. (NHMW). **Czech Republic:** Chyňava-Podkozí (5950), 26.v.2015, 1♂, Šifner leg. (FSPC); Tři Sekery (6041), 5.v.2013, 1♀, Dvořák leg. (FSPC); Mariánské Lázně (6042), 13.v.2013, 1♀, Dvořák leg. (FSPC); Plzeň-Slovany (6246), 5.v.2013, 1♂, Dvořáková leg. (FSPC); Mackov (6464), 23.vii.1971, 1♂, Máca leg. (MMSC); SPR Velký Tisý (6954), 26.vii.1971, 1♂, Máca leg. (MMSC).

Norellisoma striolatum (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Romania:** Grumelau, 19.vi.1971, 1♂, I. Ceianu leg. (MHNB).

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Parallelomma albipes (FALLÉN, 1819)

M a t e r i a l e x a m i n e d : **Czech Republic:** Kynšperk nad Ohří (5841), 15.vi.2013, 1♂, Dvořák leg. (FSPC); Tři Sekery (6041), 5.v.2013, 1♀, Dvořák leg. (FSPC); Plzeň-Slovany (6246), 5.v.2013, 1♂, Dvořáková leg. (FSPC). **Finland:** Oulanka Biol. Station, 19.vii.1967, 1♀; Koli, 15.vii.1967, 1♀, all Mihályi leg. (HNHM). **Germany:** Rügen-Sasnitz, 9.vii.1963, 1♀, Horvatowich leg. (NHMB). **Hungary:** Magyarfalva, 1♀, v., leg. et det.? (NHMW). **Poland:** Nimptsch [= Niemcze], 12.viii.1909, 1♀, Duda leg., Liegnitz [= Legnice], 16.vi., No.13262, 1♀, as *unicolor* det. J. R.Vockeroth 1958 (ZMB); Breslau [= Wróclaw], without dada 3♂♂, (NHMW); Warszawa-Bielany, 17.v.1957, Bialowicza, 26.v.1957, 2♂♂ 3♀♀, all Kaczab leg. (HNHM). **Slovenia:** Illyria, Görz [= Velka Gorica], 2.v.1864, 1♂, Mik leg. & det.; the same locality, 5.v.1865, 1♀, Mik leg. (NHMW).

Phrosia albilabris (FABRICIUS, 1794)

M a t e r i a l e x a m i n e d : **Czech Republic:** Plzeň-Slovany (6246), 5.v.2013, 1♂, Dvořákvá leg. (FSPC); Benešov (6254), 14.v.2006, 1♂, Šifner leg. (FSPC); Karlov (6450), 6.v.2009, leg.? (FSPC); Soběslav (6754), 15.vii.1974, 1♀, Máca leg. (MMSC). **Hungary:** Ketzel, 1♀ (without data), Thalhammer det., coll. Vogt, Kalocza, vi. [18]93, 1♂, Mik leg. (NHMW). **France:** Versailles, 11.viii., 1♂ (NHMW). **Italy:** Ragusa [in Sicilia], without data, 1868, 1♀, Mann (NHMW). **Poland:** Umgebung Breslau [= Wróclaw environs], 1♂, Schiner det. (NHMW). **Slovakia**: Roháče (6784), 27.vi.1974, 1♂, Máca leg. (MMSC). **Switzerland**: environs de Neuchâtel, without data, 3♂♂ 3♀♀, coll. B. Jacobs; Vaud-St.Sulpice, vii.1946, 2♂♂, F. Smid leg.; La Chaux, 7.vii.1963, 1♂; Chalelle, 30.v.1961, 1♀, Aubert leg. (ML).

Scoliaphleps ustulata (ZETTERSTEDT, 1838)

M a t e r i a l e x a m i n e d : **Czech Republic:** Chyňava-Podkozí (5950), 26.v.2015, 1♂, Šifner leg. (FSPC)

Tribe G i m n o m e r i n i

Gimnomera dorsata (ZETTERSTEDT, 1838)

M a t e r i a l e x a m i n e d : **Sweden:** Abisko, 7.x.1909, 5♂♂ 1♀, same locality, vii., 2♀♀, leg.?; Gällivare, 1.viii.1909, 2♂♂ 2♀♀ (NHMW). **Switzerland:** coll. Lautaret, without data, 1♀, No.56985; St.Moritz, 24.vii.1902, 1♀; 12.vii.1906, 2♀♀; 16.vii.1906, 1♀; 22.vii.1906, 2♀♀; 29.vii.1906, 1♂ 1♀; 17.vii.1907, 2♂♂, all leg. Oldenberg, coll. Lautaret, 3♂♂, No. 56986, same locality, 1♂, No.56985 (all NHMW).

Gimnomera tarsea (FALLÉN, 1819)

M a t e r i a l e x a m i n e d : **Finland:** Oulanka Biol. Station, 21.vii.1967, 1♀, Mihályi leg.; Helsingfors, 1870, 1♀, Alte Sammlung [= old collection], Palmén (NHMW).

Norrelia spinipes (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Hungary:** Magyarfalva, v. (without year), 1♀, orig. det.? as *Acant. spinipes*, det. Šifner as *Norrelia spinipes* (NHMW).

Tribe H y d r o m y z i n i

Chaetosa punctipes (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic**: Karlovy Vary (5743), 24.viii.1971, 1♂, Máca leg. (MMSC); Turovec (6654), 5.vi.1971, 1♀, Máca leg. (MMSC); Český Rudolec (6957),

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25.iv.2007, 1♂ 1♀, Máca leg. (MMSC). **Germany:** Ins. Usedom, Ahbeck, 14.–22.vii.1928, 3♂♂ 5♀♀; 14.–22.viii.1928, 1♂1♀, Zerny leg. (ZMB). **Poland:** Nimptsch [= Niemcze], 15.ix.1909, 1♂, Duda leg. (NHMW). **Romania:** Sinaia, Munti Bucezi [= Munti Bucegi], 770–900 m a.s.l., 29.vii.1971, 1♂, Lauterer leg. (MNB).

Hydromyza livens (FABRICIUS, 1794)

M a t e r i a l e x a m i n e d : **Germany:** Kiel, without data, 1♂ 1♀, coll. Wiedeman, as *H. livens* det.? (NHMW).

Pogonota barbata (ZETTERSTEDT, 1838)

M a t e r i a l e x a m i n e d : **Finland:** Oulanka, Biol. Station, 24.vii.1967, 1♀; Kuusamo, Kithajaki, 20.vii.1967, 1♀, all Mihályi leg. (HNHM). **Poland:** Kohlfurth [= Węgliniec], 25.vi., No. 31797, 1♀; 25.vi., No. 31797 1♂ 1♀, Becker det. as *Pogonota barbata*; 21.vi1902, 2♀♀, leg.?; vii., 2♂♂, leg.?; 18.vii., No. 41940, 1♂, leg.? (NHMW). **Sweden:** Gällivare, 9.vii., No. 43465, 1♂, Becker det. as *Pogonota hircus* (NHMW).

Spaziphora hydromyzina (FALLÉN, 1819)

M a t e r i a l e x a m i n e d : **Finland:** Oulanka Biol. Station, 11.vii.1957, 1♀, Mihályi leg. (NHMW). **Germany:** Ins. Usedom, Ahlbeck, 14.–22.viii.1928, 6♂♂ 6♀♀, Zerny leg. (NHMW). **Poland:** Liegnitz [= Legnica], 1.ix., No. 24539, 1♂, leg.? (NHMW). **Switzerland**: Moritz [= St. Moritz], 4.vi., 1♂, leg.? (NHMW).

Tribe M i c r o p r o s o p i n i

Megaphthalmoides unilineatus (ZETTERSTEDT, 1838)

M a t e r i a l e x a m i n e d : **Czech Republic**: Jelení (7149), 22.xi.1973, 1♀, Máca leg. (MMSC). **Finland:** Pallastunturi, 29.vii.1967, 17♂♂ 19♀♀; Kuusamo, Kithajaki, 20.vii.1976, 1♀; Oulanka Biol. Station, 22.vii.1976, 5♂♂ 2♀♀, all Mihályi leg. (HNHM).

Trichopalpus fraternus (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Český Rudolec (6957), 25.iv.2007, 1♂, Máca leg. (MMSC). **Switzerland:** Vaud-Eclipeus, 20.vi.1949, 1♀, F. Smid leg. (ML)

Tribe S c a t h o p h a g i n i

Ceratinostoma ostiorum (CURTIS, 1832)

M a t e r i a l e x a m i n e d : **France:** Courseulles [= Courseulles-sur-Mer], 28.viii.1920, 2♀♀, det. J. Villeneuve (NHMW).

Coniosternum obscurum (FALLÉN, 1819)

M a t e r i a l e x a m i n e d : **Albania:** Durazzo [= Durres], [18]97, 1♂ 1♀, Karny leg. (NHMW). **Poland:** Liegnitz [= Legnice], 8.v., No. 24603, 1♂, Becker det. as *Coniosternum obscurum* (NHMW). **Sweden:** Gällivare, vii., No. 60461, 1♀ (NHMW).

Scatomyza scybalaria (LINNAEUS, 1758)

M a t e r i a l e x a m i n e d : **Czech Republic:** Fedsberg in S. Mähren [=Valtice] (7266), 1♀ without data (NHMW). **Germany:** Ins. Usedom, Ahlbeck, 14.–22.vii.1923, 2♂♂ 2♀♀, 14.–22.viii.1923, 2♂♂, both Zerny leg (NHMW).

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Scathophaga analis (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Czech Republic:** Dyleň hill, Vysoká (6041), 25.vii.2014, 1♂, Dvořák leg. (FSPC); Šumava Mts., Jezerní Mt. (6845), 12.vii.2005, 1♀, Liška leg. (FSPC).

Scathophaga cineraria (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Switzerland:** St. Moritz, 1.vii., 1♂ 1♀, leg.? (NHMW).

Scathophaga furcata (SAY, 1823)

M a t e r i a l e x a m i n e d : **Bosnia and Herzegovina:** Bosnien, Treskavica Pl., 13.–14.vii.1929, 3♂♂ 1♀, Zerny leg. (NHMW). **Czech Republic:** Kynšperk nad Ohří (5841), 16.v.2014, 1♂ 1♀, Dvořák leg. (FSPC); Horní Žitná (5941), 2.vii.2014, 2♂♂ 4♀♀, Dvořák leg. (FSPC); Vysoká, Dyleň hill (6041), 5.vii.2014, 5♂♂ 3♀♀, Dvořák leg. (FSPC); Hamerníky (6042), 7.iv.2014, 1♀, Dvořák leg. (FSPC); Tři Sekery (6041), 8.v.2014, 1♀, Dvořák leg. (FSPC); Kladská (5942), 13.vi.2014, 5♂♂ 5♀♀, Dvořáková leg. (FSPC); Mariánské Lázně (6042), 24.vii.2014, 1♂ 1♀, Dvořák leg. (FSPC); Brdy Mts., Tok Mt. (6249), 21.v.2006, 2♂♂ 2♀♀, Liška leg. (FSPC); Modrava (6946), 5.vii.2014, 1♂ 1♀, Máca leg. (FSCP); SPR Žofínský prales (7354), 3O.v.2008, 3♂♂ 1♀, Liška leg. (FSCP). **Italy:** Calabrie, Valée du Neto, 1.vii.1955, 2♂♂ 1♀, Aubert leg.; Camigliatello, 28.vi.–2.vii.1955, 1♀, Aubert leg. (ML). **Slovenia:** Görz [=Nova Gorica], 5.viii.1862, 1♀, Mik. leg. (NHMW). **Switzerland:** Valais, Ferpech, 30.v.1946, 1♂ 1♀, Aubert leg. (ML).

Scathophaga inquinata (MEIGEN, 1826)

M a t e r i a l e x a m i n e d : **Albania:** Kula Ljums [= Kulat ë Ljums], 18.–28.iv.1918, 1♀, Alban. Exp. leg. (NHMW). **Czech Republic:** Děčínský Sněžník (5750), 5.vi.2007, 1♂, Ježek leg. (FSPC); Vřesová-Radvanský potok brook (5742), 18.v.2012, 1♂ 1♀, Ježek leg. (FSPC); Lazy (5941), 16.vii.2014 1♂, Dvořák leg. (FSPC); Horní Žitná (5941), 22.v.2014, 1♂ 4♀♀, Dvořák leg. (FSPC); Hamernický mokřad wetland (6041), 9.iv.2014, 1♂ 1♀, Dvořák leg. (FSPC); Drmoul (6041), 12.v.2013, 1♀, Dvořák leg. (FSPC); Tři Sekery nr. Mariánské Lázně (6041), 8.v.2014, 1♂, Dvořák leg. (FSPC); Mariánské Lázně (6042), 29.vii.2014, 1♂ 2♀♀, Dvořák leg. (FSPC); Teplá-Horní Kramolín (6043), 5.vii.2008, 1♂, leg.? (FSPC); Manětín (6045), 17.iv.2014, 1♀, Dvořák leg. (FSPC); Brdy Mts., Tok Mt. (6249), 5.vi.2006, 6♂♂ 6♀♀, Liška leg. (FSPC); Rožmitál pod Třemšínem (6349), 7.v.2007, 2♂♂, Liška leg. (FSPC); Šumava Mts., Trojmezná Mt. (7248), 8.vi.2005, 1♂; 12.vi.2007, 2♂♂; Jezerní Mt. (6845), 7.ix.2005, 4♂♂ 3♀♀, all Liška leg. (FSPC); Myslivna Mt., SPR Žofínský prales (7354), 30.v.2008, 1♂, Liška leg. (FSPC). **Poland:** Breslau [= Wrócław], 1♀, Mann leg. (NHMW). **New record for fauna of Albania.**

Scathophaga lutaria (FABRICIUS, 1794)

M a t e r i a l e x a m i n e d : **Bosnia and Herzegovina:** Bosnien, Trnovo, 13.–15.vii.1920, 1♂, Zerny leg. (NHMW). **Czech Republic:** Sklenařice (5258), 5.vii.2003, 1♀, Preisler leg. (FSPC); Počerny-Chodovský potok (5742), 1.vi.2005, 1♂, Ježek leg. (FSPC); Vřesová (5742), 20.vi.2007, 1♂, Ježek leg. (FSPC); Vintířov (5742) 11.vi.2010, 1♀, Chvojka leg. (FSPC); SPR Rašeliniště Jizery, marshes of Jizera river (5258), 27.v.2003, 1♂, Preisler leg. (FSPC); Hrušková (5842), 17.vi.2007, 2♂♂, Ježek leg. (FSPC); Libice nad Doubravou (6260), 13.vi.2005, 1♀, Macek leg. (FSPC). **Italy:** Sicilie, Ragusa, 1868, 3♂♂, Mann leg.; Taormina, 22.–30.iv.1921, 1♂, Zerny leg. (NHMW). **Poland:** Breslau [= Wrócław], 1.v.1851, 1♀ (NHMW). **Slovenia:** Görz [= Nova Gorica], viii.1874, 1♀, Bergenstamm leg. (NHMW). **Switzerland:** Lausanne-Vidy, 17.viii.1954, 1♂, Aubert leg., det.? as *S. maculipes* (ML).

Scathophaga moraviensis ŠIFNER, 2011

M a t e r i a l e x a m i n e d : **Czech Republic:** Růžová, SPR Růžák (5152), Malaise trap, 10.–17.v.2010, 3♂♂ 5♀♀, Trýzna leg. (FSPC); Vintířov (5742), Malaise trap, 11.iv.–10.v.2010, 6♂♂ 24♀♀, Kabelák leg. (FSPC); Zdobnice (5764), yellow pan trap, 7.–21.v.2002, 1♂, Hájek leg.

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(FSPC); Chyňava-Benešův luh valley (6950), Malaise trap, 16.v.–18.vi.2011, 1♂ 1♀, Šifner leg. (FSPC); Chyňava, meadow, 16.x.2011, 1♀, Šifner leg. (FSPC); Trstěnice (6042), 2.vii.2013, 1♀, Dvořák leg. (FSPC).

Scathophaga pictipennis OLDENBERG, 1923

M a t e r i a l e x a m i n e d : **Czech Republic:** Lazy, Lesný Mt. (5941), 30.vii.2014, 1♀, Dvořák leg. (FSPC).

Scathophaga stercoraria (LINNAEUS, 1758)

M a t e r i a l e x a m i n e d : **Albania:** Galica Ljums [= Galica Lumës Mts], 17.–26.vi.1918, 1♂, Alb. Exp. leg. (NHMW), Zljeb, 1916, 4♂♂, Penther leg. (NHMW). **Bosnia and Herzegovina:** Bosnien, Kojnko Pole, 1♂, without data (NHMW). **Czech Republic:** Lazy (5941), 12.vii.2014, 2♂♂, Dvořák leg. (FSPC); Vysoká-Dyleň hill (6041), 23.vii.2014, 2♂♂, Dvořák leg. (FSPC); Mariánské Lázně-PR Žižkův vrch hill (6042), 24.vii.2014, 2♂♂, Šifner leg. (FSPC); Šumava Mts., Jezerní Mt. (6845), 12.vii.2005, 1♀, Liška leg. (FSPC). **Greece:** Peloponese, Khalmos, 27.v.1955, 1♂, Aubert leg. (ML). **Italy:** Calabria, Bivio Sarga, 26.vi.–6.vii.1955, 1♂, Aubert leg. (ML). **Romania:** Valul Traian, 13.vi.1961, 1♀; Elesnita, 18.v.1969, 1♂; 20.v.1969, 1♂, M. Weinberg leg. (MHNB). **Switzerland:** Valais-Col de Bretolet, 27.vi.1963, 2♂♂; Vaud-environ de Neuchâtel, 26.ix.1961, 5♂♂ 3♀♀, all Aubert leg. (ML).

Scathophaga suilla (FABRICIUS, 1794)

M a t e r i a l e x a m i n e d : **Czech Republic:** Kraslice (5641), 12.vi.2014, 1♂, Dvořáková leg. (FSPC); Tatrovice (5742), 18.v.2012, 2♂♂, Ježek leg. (FSPC); Kynšperk nad Ohří (5841), 16.v.2014, 1♂, Dvořák leg. (FSPC); Horní Žitná (5941), 12.vii.2014, 1♂ 3♀♀, Dvořák leg. (FSPC); Louka (5942), 26.vi.2014, 1♀, Dvořáková leg. (FSPC); Vysoká-Háj, Dyleň hill (6041), 25.vii.2014, 1♀, Dvořák leg. (FSPC); Šumava Mts., Jezerní Mt. (6845), 13.vii.2004, 3♀♀, Liška leg. (FSPC); Modrava (6946), 15.vii.2014, 1♂, Máca leg. (FSPC). **Germany:** Ins. Usedom, Ahlbeck, 14.–22.vii.1928, 2♀♀; Bansin, 17.viii.1928, 1♀, all Zerny leg. (NHMW). **Poland:** Breslau [= Wrócław], 3.v.1851, 1♂, Schiner det. as *S. spurca* (NHMW). **Romania:** Braşov, 9.v.1962, 1♀, X. Scobiola leg. (MHNB). **Russia:** Irkutsk, 1891, 1♂ 1♀, Leder leg. (NHMW).

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Zusammenfassung

Eine Checkliste für die Familie Scathophagidae wird für die folgenden europäischen Staaten erstellt (Artenzahlen in Klammern): Österreich (69 Arten), Tschechien (89 Arten), Deutschland (59 Arten), Ungarn (40 Arten), Polen (67 Arten), Slowakei (64 Arten) und Schweiz (46 Arten). Bis zum Jahr 2017 wurden 118 Arten aus 42 Gattungen in Mitteleuropa festgestellt, was etwa 70% der Arten Europas entspricht.

Scathophaga analis (MEIGEN, 1826) wird als gültige Art bestätigt und *Scathophaga bohemiae* (ŠIFNER, 2000) als jüngeres Synonym zu dieser Art gestellt. Weiters werden faunistische Daten von Mitteleuorpa sowie von anderen Ländern Europas angeführt, mit folgenden Neufunden: *Mirekiana anthrax* (SCHINER, 1864) für Montenegro, *Cordilura umbrosa* (LOEW, 1873) für die Türkei, *Norellisoma nervosum* (MEIGEN, 1826) für Italien und *Scathophaga inquinata* (MEIGEN, 1826) für Albanien.

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