

**SYSTEMATIC CATALOGUE OF THE ENTOMOFAUNA
OF THE MADEIRA ARCHIPELAGO AND SELVAGENS ISLANDS**

STAPHYLINOIDEA, STAPHYLINIDAE (COLEOPTERA)*

Vol. II, Part 2

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With 59 figures

ABSTRACT. Based on a revision of the relevant taxonomic and faunistic literature, as well as of previously published and unpublished material, a critical updated catalogue of the Staphylinidae of Madeira and the Selvagens is compiled. 25 species are deleted from the list of Madeiran Staphylinidae, 10 species are recorded from the archipelago for the first time. Seven new synonymies are proposed: *Stenus brunneus* Puthz, 1978 = *S. maderensis* Puthz, 1980, syn. n.; *Pseudomedon obscurellus* (Erichson, 1840) = *Lithocharis brevipes* Wollaston, 1860, syn. n.; *Ocypus pedemontanus* (Müller, 1924) = *Staphylinus caroli* Jarrige, 1943, syn. n.; *Tasgius winkleri* (Bernhauer, 1906) = *Staphylinus maderae* Jarrige, 1943, syn. n.; *Quedius nigriceps* Kraatz, 1857 = *Q. nigriceps maderensis* Smetana, 1963, syn. n.; *Atheta immucronata* Pace, 1999 = *A. pseudolaticollis* Erber & Hinterseher, 1992, syn. n., = *A. atlantidum* Smetana, 2004, syn. n. For all the species recorded from the archipelagos, the references are listed, additional (*i. e.* previously unpublished) records, if available, are reported, the distribution in the Atlantic Islands and elsewhere is summarised, and bionomic data are compiled. Disregarding 5 names of doubtful taxonomic status, a total of 210 species and subspecies are reported from the Madeiras, 198 of them from Madeira proper, 52 from Porto Santo, and 11 from the Desertas. Four species, two of them endemic, are recorded from the Selvagens. A zoogeographic analysis revealed that the Madeiran staphylinid fauna is characterised by a high proportion (30%) of endemic species; the remainder is composed mainly of species with West Palearctic (25%), Cosmopolitan (18%), Holarctic (11%), Palearctic (4%), and Western Mediterranean (4%) distributions. 9% have not been recorded again since 1900, suggesting that their (Madeiran) populations may have gone extinct. The distributions of various Madeiran endemics are mapped. The occurrence, distributions, and wing development of the species present in the archipelagos are summarised in a checklist.

KEY WORDS: Coleoptera, Staphylinidae, Madeira, Selvagens, islands, taxonomy, catalogue, new synonyms, new records, endemism.

* We dedicate this contribution to our dear friend and colleague, the late Dieter Erber, in gratitude for his inspiration and for his devotion to the study of the Coleoptera of the Atlantic Islands.

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RESUMO. O presente trabalho consiste num catálogo crítico e actualizado dos Staphylinidae da Madeira e das Selvagens, baseado na revisão da literatura relevante de âmbito taxonómico e faunístico acerca desta família. São retiradas da lista de Staphylinidae da Madeira 25 espécies e 10 são referidas para o arquipélago pela primeira vez. Sete novas sinónimas são propostas: *Stenus brunneus* Puthz, 1978 = *S. maderensis* Puthz, 1980, syn. n.; *Pseudomedon obscurellus* (Erichson, 1840) = *Lithocharis brevipes* Wollaston, 1860, syn. n.; *Ocypus pedemontanus* (Müller, 1924) = *Staphylinus caroli* Jarrige, 1943, syn. n.; *Tasgius winkleri* (Bernhauer, 1906) = *Staphylinus maderae* Jarrige, 1943, syn. n.; *Quedius nigriceps* Kraatz, 1857 = *Q. nigriceps maderensis* Smetana, 1963, syn. n.; *Atheta immucronata* Pace, 1999 = *A. pseudolaticollis* Erber & Hinterseher, 1992, syn. n., = *A. atlantidum* Smetana, 2004, syn. n. Para todas as espécies abrangidas pelo catálogo, são indicadas as referências bibliográficas, novas adições para a fauna da Madeira (*i. e.* por publicar), se disponíveis, são referidas, a sua distribuição nas Ilhas Atlânticas e noutros locais é sumariada e compilados dados sobre a sua biologia. Excluindo 5 nomes de estatuto taxonómico duvidoso, são referidas para o arquipélago um total de 210 espécies e subespécies, 1987 das quais da Madeira, 52 do Porto Santo e 11 das Desertas. Quatro espécies, duas das quais endémicas, são referidas para as Selvagens. Uma análise zoogeográfica revelou que a fauna de Staphylinidae da Madeira é caracterizada por uma elevada proporção (30%) de espécies endémicas, sendo o restante composto por espécies de distribuição Oeste – Paleártica (25%), Cosmopolita (18%), Holártica (11%), Paleártica (4%), e Oeste – Mediterrânea 4%. 9% das espécies não voltaram a ser encontradas desde 1900, o que sugere que as suas populações (madeirenses) podem ter-se extinguido. Apresentam-se mapas de distribuição de vários endemismos da Madeira. A ocorrência, distribuição e desenvolvimento alar das espécies presentes nos arquipélagos encontra-se sumariada numa checklist.

PALAVRAS CHAVE: Coleoptera, Staphylinidae, Madeira, Selvagens, ilhas, taxonomia, catálogo, novos sinónimos, novas referências, endemismo.

CONTENTS

CONTENTS	7
INTRODUCTION	8
Depositories of types and non-type material	10
The Staphylinidae of the Madeiras and the Selvagens	11
Checklist of the Staphylinidae of the Madeira and Selvagens archipelagos	15
Catalogue	20
Subfamily Proteininae	21
Subfamily Pselaphinae	23
Subfamily Omaliinae	26
Subfamily Osoriinae	31
Subfamily Oxytelinae	32
Subfamily Steninae	41
Subfamily Paederinae	49
Subfamily Staphylininae	56
Subfamily Tachyporinae	79
Subfamily Trichophyinae	93
Subfamily Habrocerinae	94
Subfamily Aleocharinae	95
Acknowledgments	137
References	138
Index to scientific names	153

INTRODUCTION

Insects were first reported from Madeira in the middle of the 19th century. The real starting point for the study of Madeiran beetles is the year 1847 when T. V. Wollaston organised his first trip to the archipelago. During the period from 1847 to 1871 he visited the islands seven times, each time for some months. In several longer papers (WOLLASTON, 1854, 1857, 1865, 1871A) and numerous shorter contributions he provided a synopsis of the Madeiran Coleoptera as a whole, including the Staphylinidae, based on material collected by himself as well as by Bewicke, Lowe, Moniz, Anderson, Paiva, Park and others. The Wollaston collection is today divided into three major fractions housed at the Natural History Museum, London, the Hope Museum, Oxford, and the collection of the California Academy of Sciences, San Francisco (KAVANAUGH, 1979). Additional material, including types, is deposited in various other collections all over the world, *e. g.* in the collections of the Deutsches Entomologisches Institut, Müncheberg.

At the turn of the century, FAUVEL (1897A, B) published catalogues of the Staphylinidae of Madeira, Porto Santo, the Desertas, and the Selvagens, which he subsequently included in the fourth and fifth editions of his catalogue of the Staphylinidae of North Africa (FAUVEL, 1897C, 1902).

In the 20th century, the study of Madeiran Staphylinidae was continued mainly through the publication of the results of collecting trips by CAMERON (1901), LIEBMANN (1939), BERNHAUER (1940), and JANSSON (1940). After World War II, the development of tourism with quick and relatively inexpensive travel connections by flight, modern accommodation, and an improved accessibility of all parts of Madeira proper increased the frequency of collecting trips to Madeira and other Atlantic islands and consequently the number of publications: LUNDBLAD (1958), GARDNER & CLASSEY (1961), SMETANA (1962, 1970), LIKOVSKÝ (1963), MITTER (1984), ERBER & WHEATER (1987), ERBER & HINTERSEHER (1988), and ERBER (1990). In addition to presenting their own records, JANSSON (1940) and LUNDBLAD (1958) provided synopses of the species inventory of Madeiran Staphylinidae. Up to the beginning of the 1980s, only few papers including revisionary work were published: BESUCHET (1968, 1970) on Pselaphinae, ISRAELSON (1979) on *Heterothops*, PALM (1979, 1980A, 1981A) on *Othius*, *Mycetoporus*, and *Geostiba* (as *Sipalia*), PUTHZ (1966) on *Stenus*, and WILLIAMS (1975) on *Oligota*.

During the last two decades collecting activity in the Madeiran archipelago increased even further and taxonomic research reached a peak with several revisions, especially of genera containing endemic species: ASSING & WUNDERLE (1985B, 1986A, 1986B) on *Othius*, *Geostiba* and *Xenomma*, ASSING (1997A, 1998A) on *Geostiba* and *Othius*, CUCCODORO & LÖBL (1997) on *Megarthus*, and ZERCHE (1998) on *Metopsia*.

Recently, BOIEIRO *et al.* (2001, 2002) made an attempt at compiling the species inventory of the Staphylinidae of Madeira proper solely based on literature records and practically without a study of material. Consequently, their list includes numerous doubtful records, names of doubtful taxonomic status, numerous invalid (synonymic) names (*e. g.* *Aleochara albovillosa*, the first name of the list), unavailable names (*e. g.* *Stenomastax immigrator*), incorrect combinations (*e. g.* *Atheta cambrica*), double records of species in different genera and/or under different names (*e. g.* *Nacaeus impressicollis/irregularis*, *Stenus providus/rogeri*), and some species are missing in the list (*e. g.* *Paraphloeostiba gayndahensis*), not to mention some grammatically incorrect names (*e. g.* *Atheta maderense*). As a result of these shortcomings, the catalogue is of little use for the specialist and even misleading or confusing for the amateur. This particularly applies to information presented on genera such as *Ocypus*, *Philonthus*, and *Sepedophilus*, and to almost all Aleocharinae, except for the recently revised genera *Geostiba*, *Xenomma*, and *Oligota*.

Therefore, when a few years ago, Dieter Erber (Giessen) suggested to us to compile the available data on Staphylinidae within the framework of a general catalogue of all Madeiran Coleoptera, we felt that this was an opportunity to rectify the existing data and to provide a basis for future research. This contribution is based not only on the faunistic and taxonomic literature directly or indirectly dealing with Madeiran Staphylinidae, but also on large amounts of recently collected and revised material. For the results of a revision of the types of several names see SCHÜLKE (2004).

The Madeira Archipelago (Fig. 1) includes five islands: Madeira proper, the three islands of the Desertas (Ilhéu Chão, Deserta Grande, Ilhéu Bugio), and Porto Santo. Its origin and geological history has been the subject of a controversial discussion in the past, with some authors maintaining that the archipelago represented the remnant of a submerged part of the African continent. Meanwhile, however, there is no doubt that the islands of the Madeiran archipelago originated from volcanic activity without a connection to the African continental plate. Also, there is no reasonable doubt that the formation of the whole Madeiran archipelago is the result of the activity of the Madeiran hotspot. While the existence and orientation of the hotspot tracks are generally accepted, the origin and causes of the hotspot are under controversial discussion, some authors assuming a relation of the Madeiran to the Canarian hotspot. Both hotspots are orientated in northeastern direction, the Madeiran hotspot following a chain of seamounts up to the southwest of Portugal (Serra de Monchique).

The Selvagens (Fig. 1) are not a part of this hotspot system, their origin seems to be related to the Canarian hotspot. They are much older than the islands of the Madeira archipelago. Their origin dates back to the transition of the oligocene/miocene ages and can be divided into three phases, the earlier shield stage (24-26 Ma) and two later posterosional stages (8-12 and 3.4 Ma) (GELDMACHER *et al.*, 2001). Porto Santo, the first island of the Madeiran archipelago, was formed in the middle of the Miocene (11.1 to 14.3 Ma). Madeira proper and the Desertas are much younger, their origin dating back to the early pliocene. Two stages of island formation can be distinguished for Madeira proper (4.6 to 3.9 Ma and 3.0 to 0.7 Ma) interrupted by the Desertas rift stage (3.6 to 3.2 Ma). Major volcanic activity on Madeira after island formation during the last 0.7 Ma was interrupted by longer phases of erosion (GELDMACHER *et al.*, 2000). Owing to the volcanic origin, the soil of the islands is primarily the result of basalt and lava erosion by wind and water, as well as of the deposition of humus layers by the rich vegetation.

Little is known about the colonisation of Madeira by Staphylinidae. The large number of so-called "supertramps", Cosmopolitan species, and of species evidently originating from regions other than the Western Palaearctic (*e. g. Stenomastax madeirae*) suggests that many of them are rather recent introductions and/or have been brought to the archipelago by man. According to the few revisionary studies on endemic Staphylinidae, the fauna is most closely related to that of the Western Mediterranean. For the genus *Othius*, two successful colonisations with subsequent speciation can be assumed (ASSING, 1998A). The closest extant allies of *Stenus undulatus* are species of the *aethiopicus* group from East Africa, but there is little doubt that the common ancestor originated from the Western Palaearctic (PUTHZ, 1971).

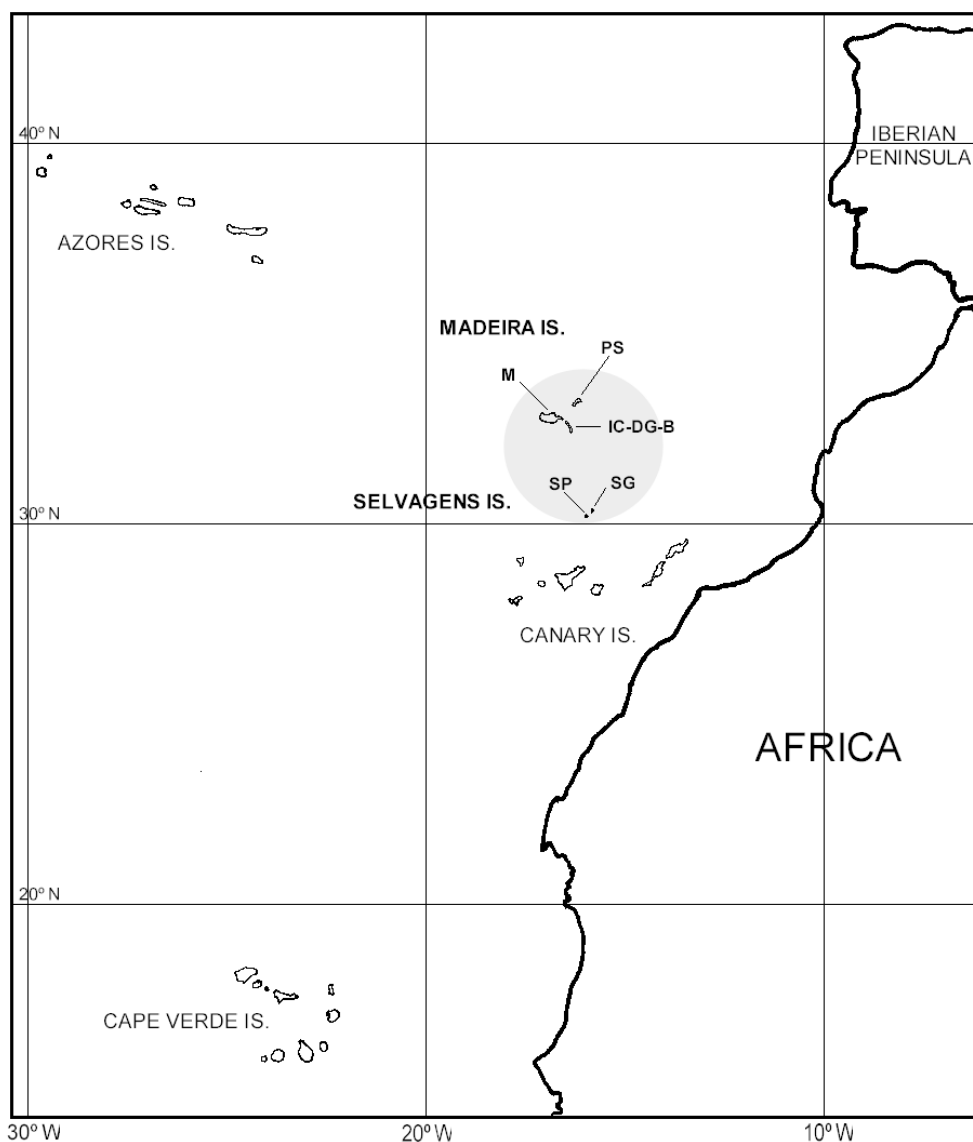


Fig. 1 - The Macaronesian Islands; the shaded circle indicates the islands included in the present catalogue: M – Madeira, PS – Porto Santo, IC – Ilhéu Chão, DG – Deserta Grande, B – Bugio. Selvagens Islands: SG – Selvagem Grande, SP – Selvagem Pequena (map by courtesy of A. Aguiar).

Depositories of types and non-type material

The public and private collections referred to in the catalogue are abbreviated as follows:

BMNH	The Natural History Museum, London
DEI	Deutsches Entomologisches Institut, Müncheberg
FMNH	Field Museum of Natural History, Chicago
HMO	Hope Museum Oxford

IRSNB	Institut Royal des Sciences Naturelles de Belgique, Bruxelles
MHNG	Muséum d'Histoire Naturelle, Genève
MHNP	Muséum d'Histoire Naturelle, Paris
MNHUB	Museum für Naturkunde der Humboldt-Universität, Berlin
MZLU	Museum of Zoology, Lund University
NHMW	Naturhistorisches Museum Wien
SMNH	Museum of Natural History Stockholm
SMNS	Staatliches Museum für Naturkunde, Stuttgart
SMTD	Staatliches Museum für Tierkunde, Dresden
MMF	Museo Municipal do Funchal, Madeira
ZMHU	Zoological Museum, University of Helsinki
cAgu	Private collection António M. F. Aguiar, Funchal, Madeira
cApf	Private collection Wolfgang Apfel, Eisenach
cAss	Private collection Volker Assing, Hannover
cBra	Private collection Volker Brachat, Geretsried
cErb	Private collection Dieter Erber, Giessen/Lahn
cGil	Private collection Gösta Gillerfors, Varberg
cJue	Private collection Ernst Juenger, Wilflingen
cMit	Private collection Heinz Mitter, Steyr
cOro	Private collection Pedro Oromí, La Laguna, Tenerife, Canaries
cPut	Private collection Volker Puthz, Schlitz
cSch	Private collection Michael Schülke, Berlin
cWun	Private collection Paul Wunderle, Mönchengladbach
cZan	Private collection Adriano Zanetti, Verona

The Staphylinidae of the Madeiras and the Selvagens

Not counting 5 names of doubtful taxonomic status, the list of Madeiran Staphylinidae comprises 210 species and subspecies, three of them not yet identified. 198 of these taxa have been recorded from Madeira proper, 52 from Porto Santo, and 11 from the Desertas. Only 4 species are known from the Selvagens. The diversity of the Madeiran staphylinid fauna is distinctly lower than that of the Canaries, from where MACHADO & OROMÍ (2000) report 333 species and subspecies, and approximately as high as that of Tenerife (212 species and subspecies), which, among the Canary Islands, hosts by far the highest diversity of Staphylinidae.

A zoogeographic analysis revealed that of the 210 taxa recorded from the Madeiran archipelago, 53 (25%) are West Palaearctic elements, 38 (18%) have a Cosmopolitan, 23 (11%) a Holarctic, 9 (4%) a Palaearctic, and 8 (4%) a Western Mediterranean distribution, with one species also occurring in the north of Western Europe (Fig. 2). 5 species are recent introductions from the Iberian Peninsula. Other zoogeographic elements are negligible; the general distributions of some species are unknown. 18 (9%) species have not been recorded since 1900 suggesting that their (Madeiran) populations may have gone extinct.

63 (30%) of the 210 species of Madeiran Staphylinidae have been recorded only from the Madeiran archipelago, suggesting that they are endemic; the zoogeographic or taxonomic status of 4 of these species, however, is doubtful. Among these 63 species, 51 (81%) are exclusive to Madeira proper, 6 (10%) to Porto Santo, 3 (= 5%) to Madeira proper and Porto Santo, and 3 (= 5%) to Madeira proper and the Desertas (Fig. 3); one doubtful species has been reported from Madeira

proper, Porto Santo, and the Desertas. The list by BOIEIRO *et al.* (2003), who indicate only 49 endemic species and one endemic subspecies for Madeira proper, is clearly incomplete and, at the same time, includes several doubtful (1), synonymic (6), or misinterpreted (1) names; at least six of these names refer to widespread, non-endemic species. The staphylinid fauna of the Selvagens is very poor and includes merely two endemic species.

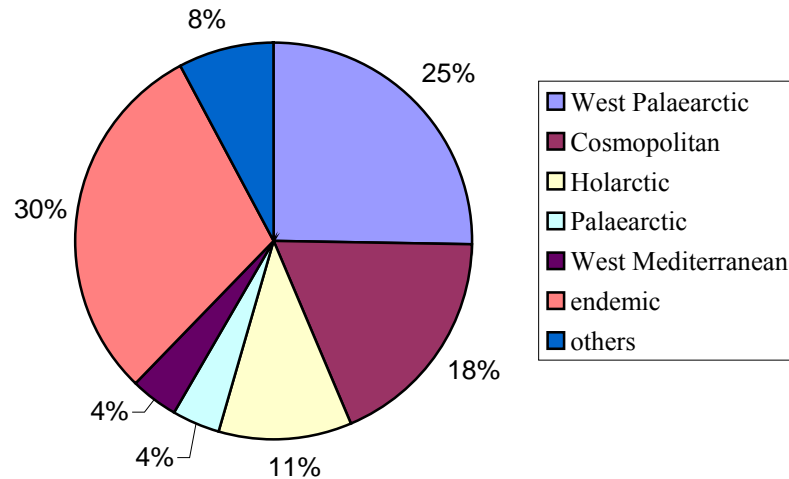


Fig. 2 - Distribution types of the Staphylinidae recorded from the Madeira archipelago.

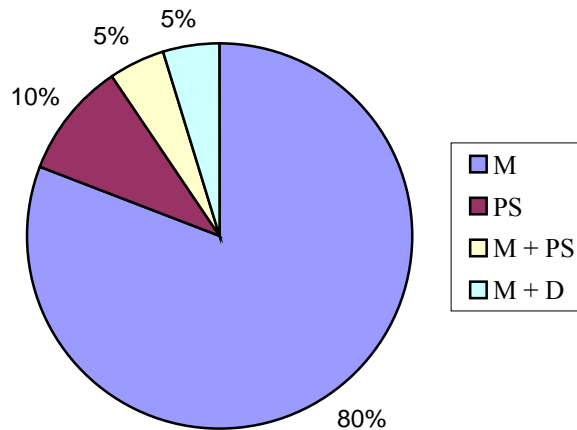


Fig. 3 - Distribution types of the endemic Staphylinidae species of the Madeira archipelago. Abbreviations: M – Madeira proper, PS – Porto Santo, D – Desertas.

There are only eight genera with more than one Madeiran endemic: *Geostiba* Thomson (19 species), *Othius* Stephens (5 species), *Stenus* Latreille (4 species), *Atheta* Thomson (4 species, possibly more), *Aloconota* Thomson (3 species), *Mycetoporus* Mannerheim (3 species), *Medon* Stephens (2 species), and *Xenomma* Wollaston (2 species). Two genera are endemic to Madeira: *Xenomma* and *Madeirostiba* Assing & Wunderle. (Note that some South American species have

been attributed to *Xenomma* by PACE (1987, 1999B), but they are most likely to refer to other genera).

The region with the highest diversity of endemic species is the central part of Madeira proper, roughly between the Boca da Encumeada and Ribeiro Frio and including the highest mountain peaks of the archipelago (Pico Ruivo, Pico do Arieiro, Pico do Jorge, etc.), where the endemics are mostly found on the northern slopes at intermediate and higher elevations, in the soil and leaf litter layer of the laurisilva and shrub vegetation (*Erica*, *Vaccinium*), as well as in the roots of grasses and ferns near the mountain peaks. The high number of endemic species present in this area can be explained with the diversity of habitats and elevations, in combination with the presence of deep ravines which may have worked as barriers in the past. However, only little is known about the geological history of this part of the island and also about the exact distributions of the species, so that detailed conclusions are currently not possible. The region with the second highest diversity of endemic species is the region to the west of the Boca da Encumeada (Paúl da Serra, Ribeira da Janela, Ribeira do Seixal, etc.) with its extensive areas of laurisilva and *Erica* vegetation. BOIEIRO *et al.* (2003) identify Terreiro da Luta as a third “hotspot” of endemism in Madeira proper, evidently an artefact resulting from biased sampling activity and the fact that the data used for the analysis are partly erroneous. The area north of Funchal was one of the preferred collecting sites of various coleopterists who spent their holidays on the island. Moreover, the conclusions given by BOIEIRO *et al.* (2003) are exclusively based on selected literature data and consequently do not account for the results of recent collection trips, for recent taxonomic changes (*e. g.* synonyms), and for data from literature sources not primarily focusing on Madeiran Staphylinidae (recent revisions, etc.); part of the species believed to be endemic and recorded from the surroundings of Funchal are in fact widespread.

The endemics of Porto Santo are confined to what has remained of the semi-natural woodland on the northern slopes of the Pico Juliana, Pico do Facho, Pico do Castelo, and Pico Branco, and are highly threatened by extinction. This particularly applies to *Geostiba portosantoi* and, above all, *G. brancomontis*, whose present distribution comprises a few square metres of scattered shrubs and grass at the peak of the Pico Branco (ASSING, 1997A). The poor staphylinid fauna and low number of endemic species of the Selvagens is readily explained with the small size, the isolation, as well as by the dry conditions, absence of woodland, and low habitat diversity on these islands.

As hinted at above, the vast majority of endemic species of the Madeira archipelago lives in the leaf litter and soil of laurisilva and shrub biotopes (*Erica*, *Vaccinium*) at intermediate and higher elevations. Several other endemics are usually found in moist habitats (banks of streams, etc.). Aside from these habitats, endemics are known only from the following habitats: beach (1 species), fungi (1 species), dung (1 species), and caves (1 species).

Although most taxonomic problems have been clarified in the recent past and the knowledge of the species inventory of Madeira can be considered fairly complete, there are still some groups that require thorough taxonomic and systematic study, especially the species of the subgenus *Mocyta* Mulsant & Rey of the genus *Atheta* Thomson. However, such a project would have to be carried out within the framework of a revision of many other species of the Western Palearctic and would probably have to include the application of biochemical methods. Moreover, it seems safe to assume that more adventive species will reach the archipelago in the future or have reached it already. The arrival or introductions of such species are best recorded by monitoring techniques involving flight traps (light sources, flight-intercept traps) and by a study of certain habitats, especially rapidly decomposing organic matter (compost, dung, etc.). Although many species have become known only from one locality, the known inventory of endemic species is probably not far from complete. The only genus that is rather likely to be represented in the Madeira archipelago by further undiscovered

taxa is *Geostiba*. The Madeiran species of that genus are mostly very small, live in deeper strata of the soil, and may have very restricted distributions. Future field work focussing especially on less easily accessible areas on the northern slopes of the Pico Ruivo may lead to the discovery of additional undescribed species.

Another - extensive - field of future research is the biogeography of Madeiran Staphylinidae, especially the distribution patterns of the endemic species, which would help to better understand the speciation processes and relevant biogeographic factors in the archipelago. Also, apart from some records of larvae and teneral adults, as well as from some scattered observations on the presence of eggs in the ovaries, hardly anything is known about the phenology of Madeiran Staphylinidae. It would be of considerable general interest to see how life histories and temporal distributions compare to those known from the continent.

Checklist of the Staphylinidae of the Madeira and Selvagens archipelagos

The attribution of the species to the different categories of wing development is only tentative and requires verification, especially regarding the macropterous and polymorphic endemic species. Moreover, fully developed wings are not necessarily evidence of flight ability, since many species of Staphylinidae are known to have long wings, but reduced flight muscles.

Abbreviations: Islands: M = Madeira proper; PS = Porto Santo; IB = Ilheu Bugio; DG = Deserta Grande; IC = Ilheu Chão; S = Selvagens; Ca = Canary Islands; Az = Azores; Cv = Cape Verde. **General distribution (“other”):** C = Cosmopolitan; CU = Cuba; E = Ethiopian region; H = Holarctic; M = Mediterranean; MR = Madagascar; NA = Nearctic; NT = Neotropics; NZ = New Zealand; O = Oriental region; P = Palaearctic; PO = Portugal; SP = Spain (mainland); U = unknown; WM = West Mediterranean (including West European); WP = West Palearctic. **Presence in the Atlantic Islands:** + = present, but not endemic; e = endemic; i = doubtlessly introduced; x = not re-recorded since 1900, probably extinct. **Wing development (WD):** b = brachypterous; d = dimorphic; m = macropterous; p = polymorphic; sm = submacropterous.

	Species	Distribution										WD
		M	PS	IB	DG	IC	S	Ca	Az	Cv	Other	
	Proteininae											
1	<i>Megarthritis longicornis</i> Wollaston, 1854	e										m
2	<i>Metopsia ampliata</i> Wollaston, 1854	e										b
3	<i>Proteinus atomarius</i> Erichson, 1840	+	+					+			H	m
	Pselaphinae											
4	<i>Bryaxis lusitanicus</i> (Saulcy, 1870)	+									SP, PO	?
5	<i>Bryaxis pandellei curticolis</i> (Reitter, 1880)	+									SP	?
6	<i>Euplectus intermedius</i> Wollaston, 1857	ex										?
7	<i>Euplectus karsteni</i> (Reichenbach, 1816)	+									WP, NA	?
8	<i>Euplectus lundbladi</i> Jansson, 1940	e										?
9	<i>Euplectus sexstriatus</i> Besuchet, 1970		e									?
10	<i>Mayetia nevesi</i> Jarrige, 1949	i									PO	b
11	<i>Mayetia moscosoensis</i> Outerelo, 1976	i									SP	b
12	<i>Pselaphus minyops</i> Wollaston, 1871	ex										?
	Omaliinae											
13	<i>Eusphalerum metasternale</i> Fauvel, 1898	x									WP	m
14	<i>Omaliium ocellatum</i> Wollaston, 1854					x		+				m
15	<i>Paraphloeostiba clavicornis</i> (Wollaston, 1857)	i?x									?	m
16	<i>Paraphloeostiba gayndahensis</i> (MacLeay, 1873)	i						+			C	m
17	<i>Philorinum sordidum</i> (Stephens, 1834)	+									WP	m
18	<i>Phloeonomus punctipennis</i> Thomson, 1867	+							+		WP	m
19	<i>Phloeonomus pusillus</i> (Gravenhorst, 1806)	+						+	+		H	m
20	<i>Phyllodrepa devillei</i> Bernhauer, 1902	+									WM	m
21	<i>Xylodromus concinnus</i> (Marsham, 1802)	+									C	m
22	<i>Xylostiba tricolor</i> (Wollaston, 1865)	i?x									?	m
	Osoriinae											
23	<i>Nacaeus impressicollis</i> (Motschulsky, 1858)	+						+	+		C	m
	Oxytelinae											
24	<i>Anotylus complanatus</i> (Erichson, 1839)	+	+					+	+		C	m
25	<i>Anotylus glareosus</i> (Wollaston, 1854)	+						+			C	m
26	<i>Anotylus insignitus</i> (Gravenhorst, 1806)	+									C	m
27	<i>Anotylus nitidifrons</i> (Wollaston, 1871)	+						+	+		C	m
28	<i>Anotylus nitidulus</i> (Gravenhorst, 1802)	+	+					+	+		C	m
29	<i>Carpelimus bilineatus</i> Stephens, 1834	+	+					+	+		C	m

	Species	Distribution										WD	
		M	PS	IB	DG	IC	S	Ca	Az	Cv	Other		
30	<i>Carpelimus corticinus</i> (Gravenhorst, 1806)	+	+					+	+			H	m
31	<i>Carpelimus nigrita</i> (Wollaston, 1857)		e?x									?	m
32	<i>Carpelimus exilis</i> (Wollaston, 1860)	e?x										?	m
33	<i>Carpelimus simplicicollis</i> (Wollaston, 1857)		x									WP	m
34	<i>Oxytelus piceus</i> (Linnaeus, 1767)	+	+					+	+			E, P	m
35	<i>Oxytelus sculptus</i> Gravenhorst, 1806	+	+					+	+			C	m
36	<i>Platystethus degener</i> Mulsant & Rey, 1878	+	+					+				H	m
37	<i>Platystethus nitens</i> (Sahlberg, 1832)	x										P	m
38	<i>Platystethus spinosus</i> Erichson, 1840		x						+			WP	m
39	<i>Thinodromus transversalis</i> (Wollaston, 1857)			x				+		+		WP	m
	Steninae												
40	<i>Stenus cicindeloides</i> (Schaller, 1783)	+										P	m
41	<i>Stenus guttula</i> Müller, 1821	+	+					+	+			WP	m
42	<i>Stenus heeri</i> Wollaston, 1854	e											b
43	<i>Stenus ossium</i> Stephens, 1832	+	+									WP	m
44	<i>Stenus providus</i> Erichson, 1839	+										WP	m?
45	<i>Stenus ruivomontis</i> Assing & Wunderle, 1995	e											b
46	<i>Stenus undulatus</i> Wollaston, 1854	e											b
47	<i>Stenus wollastoni</i> Gemminger & Harold, 1868	e											b
	Paederinae												
48	<i>Achenium hartungii</i> Wollaston, 1854	x	x									WM	b?
49	<i>Astenus bimaculatus</i> (Erichson, 1840)	x										WP	b?
50	<i>Astenus chimaera</i> (Wollaston, 1854)	ex											?
51	<i>Astenus lyonessius</i> (Joy, 1908)	+	+	+					+			WP	p
52	<i>Hypomedon debilicornis</i> (Wollaston, 1857)	+						+	+	+		C	m
53	<i>Leptobium paivae</i> (Wollaston, 1865)						e						b
54	<i>Lithocharis ochracea</i> (Gravenhorst, 1802)	+						+	+	+		C	m
55	<i>Lithocharis vilis</i> (Kraatz, 1859)	+	+					+				C?	m
56	<i>Lobrathium multipunctum</i> (Gravenhorst, 1802)	+						+	?			WP	p
57	<i>Medon apicalis</i> (Kraatz, 1857)	+	+									WP	m
58	<i>Medon indigena</i> (Wollaston, 1857)	e	e										b
59	<i>Medon ripicola</i> (Kraatz, 1854)	+							+			WP	m
60	<i>Medon vicentensis</i> Serrano, 1993	e											b
61	<i>Pseudobium gridellii ibericum</i> Coiffait, 1982	+										PO?	m
62	<i>Pseudomedon obscurellus</i> (Erichson, 1840)	+	+						+			WP	m
63	<i>Rugilus orbiculatus</i> (Paykull, 1789)	+						+	+			WP	m
64	<i>Scopaeus subopacus</i> Wollaston, 1860	e											?
65	<i>Sunius propinquus</i> (Brisout, 1867)	+	+	+	+	+		+	+			WP	m
	Staphylininae												
66	<i>Bisnius cephalotes</i> (Gravenhorst, 1802)	+										H	m
67	<i>Bisnius sordidus</i> (Gravenhorst, 1802)	+			+			+	+			C	m
68	<i>Creophilus maxillosus</i> (Linnaeus, 1758)	+	+		+			+	+			C	m
69	<i>Gabrius nigritulus</i> (Gravenhorst, 1802)	+	+					+	+			C	m
70	<i>Gabrius simulans</i> (Wollaston, 1857)	e											m
71	<i>Gabronthus thermarum</i> (Aubé, 1850)	+						+	+			C	m
72	<i>Gauropterus fulgidus</i> (Fabricius, 1787)	+						+				H	m
73	<i>Gyrophypnus angustatus</i> (Stephens, 1833)	+										WP	m
74	<i>Gyrophypnus fracticornis</i> (Müller, 1776)	+										C	m
75	<i>Heterothops minutus</i> Wollaston, 1860	+	+						+			WP	m
76	<i>Lepidophallus hesperius</i> (Erichson, 1839)	+						+	+			WP	m
77	<i>Leptacinus pusillus</i> (Stephens, 1833)	+	+					+	+			WP	m

	Species	Distribution										WD	
		M	PS	IB	DG	IC	S	Ca	Az	Cv	Other		
78	<i>Neobisnius lathrobioides</i> (Baudi, 1848)	+						+	+			H	m
79	<i>Ocypus aethiops</i> (Waltl, 1835)	+							+			WP	b?
80	<i>Ocypus fortunatarum</i> (Wollaston, 1871)	+						+				WP	m?
81	<i>Ocypus obscuroides schatzmayri</i> (Müller, 1923)	+										WM	m?
82	<i>Ocypus olens</i> (Müller, 1764)	+	+		+			+	+			H	m
83	<i>Ocypus pedemontanus</i> (Müller, 1924)	+										WP	b
84	<i>Othius arieiroensis</i> Palm, 1979	e											b
85	<i>Othius baculifer</i> Assing & Wunderle, 1995	e											b
86	<i>Othius jansoni</i> Wollaston, 1854	e			e								b
87	<i>Othius ruivomontis</i> Assing & Wunderle, 1995	e											b
88	<i>Othius strigulosus</i> Wollaston, 1854	e											b
89	<i>Phacophallus pallidipennis</i> (Motschulsky, 1858)	+						+				O,WP	m
90	<i>Phacophallus parumpunctatus</i> (Gyllenhal, 1827)	+						+	+			C?	m
91	<i>Philonthus cognatus</i> (Stephens, 1832)	+										H	m
92	<i>Philonthus discoideus</i> (Gravenhorst, 1802)	+						+	+	+		C	m
93	<i>Philonthus fenestratus</i> Fauvel, 1872	+	+					+	+			WP	m
94	<i>Philonthus jurgans</i> Tottenham, 1937	+										H	m
95	<i>Philonthus longicornis</i> Stephens, 1832	+	+					+	+	+		C	m
96	<i>Philonthus politus</i> (Linnaeus, 1758)	+						+	+	+		C	m
97	<i>Philonthus rectangulus</i> Sharp, 1874	+						+	+			C	m
98	<i>Philonthus turbidus</i> Erichson, 1840	+						+		+		C	m
99	<i>Philonthus umbratilis</i> (Gravenhorst, 1802)	+						+	+			H	m
100	<i>Philonthus ventralis</i> (Gravenhorst, 1802)	+	+					+	+	+		C	m
101	<i>Quedius curtipennis</i> Bernhauer, 1908	+							+			H	p
102	<i>Quedius levicollis</i> (Brullé, 1832)	+	+									WP	m
103	<i>Quedius nigriceps</i> Kraatz, 1857	+										WP	p
104	<i>Quedius simplicifrons</i> Fairmaire, 1862	+						+	+			WP	sm?
105	? <i>Remus pruinosis</i> (Erichson, 1840)	+						+	+			WP,CU?	m
106	<i>Tasgius winkleri</i> (Bernhauer, 1906)	+										H	m?
107	<i>Xantholinus longiventris</i> Heer, 1839	+							+			H	m
	Tachyporinae												
108	<i>Cilea silphoides</i> (Linnaeus, 1767)	+						+	+	+		C?	m
109	<i>Coproporus pulchellus</i> (Erichson, 1839)	+						+	+			NA,NT	m
110	<i>Ischnosoma biplagiatum</i> (Fairmaire, 1860)	+										WM	m
111	<i>Lordithon thoracicus</i> (Fabricius, 1777)	+						+				H	m
112	<i>Mycetoporus johnsoni</i> Wollaston, 1860	e											b
113	<i>Mycetoporus wollastoni</i> Fauvel, 1897	e											b
114	<i>Mycetoporus portosanctanus</i> Palm, 1980		e										b
115	<i>Sepedophilus lusitanicus</i> Hammond, 1973	+							+			WP	m
116	<i>Sepedophilus monticola</i> (Wollaston, 1854)	e?	e?										b
117	<i>Sepedophilus nigripennis</i> (Stephens, 1832)	+										WP	m?
118	<i>Sepedophilus testaceus</i> (Fabricius, 1793)	+	+					?	?			H	m
119	<i>Tachyporus caucasicus</i> Kolenati, 1846	+	+					+				WP	m
120	<i>Tachyporus celer</i> Wollaston, 1854	e			e								m?
121	<i>Tachyporus dispar</i> (Paykull, 1789)	+						+	+			H	m
122	<i>Tachyporus nitidulus</i> (Fabricius, 1781)	+	+	+	+	+		+	+			H,NZ	d
123	<i>Tachyporus quadriscopulatus</i> Pandellé, 1869	+										WP	d
	Trichophyinae												
124	<i>Trichophya huttoni</i> Wollaston, 1854	e											m
	Habrocerinae												
125	<i>Habrocerus capillaricornis</i> (Gravenhorst, 1806)	+						+	+			C	m

CATALOGUE

In the catalogue, the type locality is indicated only for endemic species and for names (including junior synonyms) whose descriptions are based on material from Madeira. For data on the type localities of most other species the world catalogue by HERMAN (2001) should be consulted.

In the species sections, the references are given under the names specified in the respective articles, even if these names represent synonyms, misinterpretations, or a misidentifications.

Some names of very doubtful status are omitted from the species list, but are given in the index at the end of the article. Names qualifying for this category are those that are most likely to represent synonyms, that are almost certainly based on misidentifications or misinterpretations, that were only once doubtfully recorded and never re-recorded, or that were only vaguely stated to occur in "Madeira" without providing any concrete source.

In addition to the literature specifically dealing with the coleopterous fauna of the Madeira and Selvagens archipelagos, the following general synoptic works (catalogues, check-lists, keys) are listed, if they contain an explicit reference to any of the islands under study: BERNHAUER & SCHUBERT (1910, 1911, 1912, 1914, 1916), BERNHAUER & SCHEERPELTZ (1926), COIFFAIT (1972, 1974, 1978, 1982, 1984), HERMAN (2001), SCHEERPELTZ (1933, 1934). The Palaearctic catalogue (LÖBL & SMETANA, 2004), which appeared in print long after the manuscript of this study had been submitted, is referred to only in cases of important nomenclatural and taxonomic changes, as well as to indicate omissions.

In the catalogue, the species are sorted by genus and subfamily. The chronology by which the latter are arranged is somewhat deliberate, but in accordance with the concept proposed by BENICK & LOHSE (1974) and LOHSE (1964, 1974) and widely in use in many parts of Europe. The genera within a subfamily and the species within a genus are arranged alphabetically.

The remarks on the general distributions of non-endemic species are based on various literature sources, unpublished data, and on the authors' personal experience. References are provided only in exceptional cases.

SUBFAMILY PROTEININAE

1. *Megarthus longicornis* Wollaston, 1854 (Plate I, fig. 1)

References: WOLLASTON (1854: 615; 1857: 206; 1865: 525); (1871A: 313); FAUVEL (1897A: 48; 1897C: 242; 1902: 49); SCHMITZ (1897: 151); BERNHAUER & SCHUBERT (1910: 36); JANSSON (1940: 56); COIFFAIT (1954: 162); LUNDBLAD (1958: 468); SMETANA (1963: 31); CUCCODORO & LÖBL (1997: 1376); HERMAN (2001: 618); BOIEIRO *et al.* (2001: 21; 2002: 22).

Locus typicus: Madeira proper: vicinity of Funchal, spring 1848, a single specimen (holotype), leg. Wollaston, in the BMNH collection (CUCCODORO & LÖBL, 1997).

Additional records: Madeira proper: 1 ex., Pousada dos Vinháticos, 9.II.1978, leg. Waldén (MMF); 1 ex., Ribeira do Tristão at Salão, 24.III.1983, leg. Waldén (MMF); 2 exs., Ponta do Pargo, near lighthouse, sifted from leaf litter, 12.XI.1997, leg. Lange (cErb); 1 ex., Chão da Cancela, S Seixal, 500 m, 1.III.2003, leg. Lompe (cAss); 6 exs., Seixal, Chão da Ribeira, 450 m, grass heap, 31.III.1996, leg. Zerche (DEI).

Distribution: Madeira, endemic. Madeira proper: Funchal, Vale Paraíso, Vinháticos, Ribeira do Tristão at Salão, Ponta do Pargo, Chão da Cancela, Chão da Ribeira. CUCCODORO & LÖBL (1997) revised 53 specimens from Madeira, but gave no further detailed localities.

Bionomics: The species has been found in various kinds of plant debris (grass, compost, leaf litter) from February through April and in November.

Remarks: Until recently, *M. longicornis* was confounded with the Canarian endemic *Megarthus wollastoni* Cuccodoro & Löbl (CUCCODORO & LÖBL, 1997).

2. *Metopsia ampliata* Wollaston, 1854

References: WOLLASTON (1854: 616; 1857: 206; 1865: 525); FAUVEL (1902: 49); ZERCHE (1998: 35); HERMAN (2001: 629); BOIEIRO *et al.* (2001: 21; 2002: 22, ; 2003: 56).

As *Phloeobium ampliatum*: FAUVEL (1897A: 48; 1897C: 242; 1902: 49); BERNHAUER & SCHUBERT (1910: 33); SCHMITZ (1897: 151); LIEBMANN (1939: 155); JANSSON (1940: 56); LUNDBLAD (1958: 468).

Locus typicus: Madeira proper: Ribeiro Frio and Feijã da Corte [Fajã da Corte] (both single specimens, leg. Wollaston). The specimen from Ribeiro Frio (BMNH) was designated as lectotype by ZERCHE (1998).

Distribution: Endemic to Madeira proper; rare. Localities: Ribeiro Frio, Fajã da Corte, Pico do Arieiro, Encumeada – Pico do Jorge, Achada do Teixeira, Santo da Serra, Monte, Curral das Freiras, Ribeira das Cales, Seixal.

Bionomics: Collected in laurel and *Erica* stands, between 900 and 1350 m (ZERCHE, 1998). LIEBMANN (1939) collected the species near the top of Pico do Arieiro from *Vaccinium* litter with rabbit dung. Adult beetles have been found February, March, May, October and December.

3. *Proteinus atomarius* Erichson, 1840

References: BOIEIRO *et al.* (2001: 21; 2002: 22).

Additional records: Madeira proper: 2 exs., Ribeiro Frio, 26.VI.1982, leg. Gillerfors (cGil); 1 ex., Ribeiro Frio, 25.XII.1987, leg. Gillerfors (cGil); 2 exs., Supra Monte, 21./23.XII.1982, leg.

Gillerfors (cGil); 2 exs., Queimadas env., W Pousada, 900 m, laurisilva, 28.II.2003, leg. Lompe (cAss); 1 ex., Ribeira Brava, sifted compost and grass, 200 m, 27.III.1996, leg. Zerche (DEI). Porto Santo: 1 ex., Pico do Facho, N-slope, 500 m, degraded laurisilva, 1.IV.1996, leg. Zerche (DEI).

Distribution: Northern Africa, Europe, Russia, Mongolia, also recorded from North America (HERMAN, 2001). Canaries, Madeira: Madeira proper, Porto Santo. BOIEIRO *et al.* (2001, 2002) do not specify any localities.

Bionomics: The species is an active flyer and found in various kinds of rotting organic matter, especially in plant material. The Madeiran specimens were collected from grass heaps, compost and from leaf litter in laurisilva at lower and intermediate elevations in February, March, June, and December.

SUBFAMILY PSELAPHINAE**4. *Bryaxis lusitanicus* (Saulcy, 1870)**

Records: Madeira proper: 2 exs., Ribeiro Frio, 900 m, 18.-30.I.1999, leg. Lebenbauer (cBra); 1 ex., S Seixal, 400-500 m, 18.-30.I.1999, leg. Lebenbauer (cBra).

Distribution: Spain and Portugal.

Remarks: Since the species is not capable of long-distance dispersal, it was probably introduced recently from the Iberian Peninsula. First record from Madeira.

5. *Bryaxis pandellei curticolis* (Reitter, 1879)

Records: Madeira proper: 10 exs., Junqueira, 18.X.1997, leg. Lompe (cBra); 2 exs., Junqueira, 400 m, 19.II.2003, leg. Lompe (cBra).

Distribution: The nominal subspecies occurs in the Western Pyrenees and along the Atlantic coast of France, to the Bretagne in the north, the subspecies *curticolis* is distributed in Spain.

Remarks: The species is not capable of long-distance dispersal, suggesting that it was introduced recently from Spain. First record from Madeira.

6. *Euplectus intermedius* Wollaston, 1857

References: WOLLASTON (1857: 168; 1865: 450); FAUVEL (1897A: 52); SCHMITZ (1897: 154); RAFFRAY (1903: 571); JANSSON (1940: 57); LUNDBLAD (1958: 472); BESUCHET (1968: 278).

Locus typicus: Madeira proper: Campanário (leg. Bewicke). Lectotype (HMO) designated by BESUCHET (1968). Paralectotypes from Lombo dos Pecegueiros (VII. 1855, leg. Wollaston) and Campanário (leg. Bewicke) refer to *Euplectus lundbladi*.

Additional records: 3 exs., Pico Ruivo, N slope, 1850 m, *Erica*, moss, 29.III.1996, leg. V. Assing (cBra).

Distribution: Endemic to Madeira proper: Campanário, Pico Ruivo, and Fanal.

Bionomics: Wollaston collected one specimen beneath the bark of a dead tree; no further habitat information is available. The species has been collected in April and July.

Remarks: See remarks on *Euplectus lundbladi*.

7. *Euplectus karsteni* (Reichenbach, 1816)

Records: Madeira proper: 5 exs., Ribeiro Frio, 900 m, “dans le bois pourri d’un chataignier”, 3.IV.1975, leg. S. Vit (MHNG).

Distribution: Whole Western Palearctic including North Africa and Turkey introduced in North America (USA, Canada).

Remarks: Since the species is not capable of flight, it was probably introduced. First record from Madeira.

8. *Euplectus lundbladi* Jansson, 1940

References: JANSSON (1940: 23, 57); JEANNEL (1956: 34, 36, 39); LUNDBLAD (1958: 472); LINDBERG (1963B: 51); BESUCHET (1968: 280).

As *Euplectus signatus* Reichenbach, 1816 (misidentification): WOLLASTON (1865: 451); SCHMITZ (1897: 154); JANSSON (1940: 57); LUNDBLAD (1958: 472).

As *Euplectus signatus* Wollaston, 1865 (nomen nudum): FAUVEL (1897A: 52).

As *Euplectus intermedius* Wollaston, 1857 (misidentification): RAFFRAY (1910: 233); JEANNEL (1956: 36, 39).

Locus typicus: Madeira proper: Rabaçal, 1080 m (one male, one female) and Ribeira do Inferno, 1150 m (3 males, 3 females). At least one of the syntypes is deposited in SMNH collection (BESUCHET, 1968).

Distribution: Endemic to Madeira proper. Localities: Santo da Serra [= Santo António da Serra], Rabaçal, Ribeira do Inferno, Lombo dos Pecegueiros, Campanário, Queimadas, Funchal, Ribeira Bonito, Ribeira Frio, Ribeira Grande.

Bionomics: The few known specimens have been found under bark in May, July, and August.

Remarks: According to the data given for *E. lundblati* in BESUCHET (1968), part of the paralectotypes of *E. intermedius* Wollaston from Lombo dos Pecegueiros and Campanário refer to this species.

9. *Euplectus sexstriatus* Besuchet, 1970

References: BESUCHET (1970: 121).

Locus typicus: Porto Santo: Pico Branco (13.IV.1968, two specimens, leg. Franz). Male holotype in collection Franz (now NHMW), male paratype in MHNG (BESUCHET, 1970).

Distribution: Endemic to Porto Santo: Pico Branco.

Bionomics: Only once collected near the top of Pico Branco from a rotting pine trunk in April.

10. *Mayetia nevesi* Jarrige, 1949

References: VIT (1979: 493).

Distribution: Portugal: Pena Maior (OUTERELO: 1974: 226); Madeira proper: Curral de Baixo, Montado do Paredo.

Bionomics: Like all other species of the genus, *M. nevesi* is anophthalmous and has a subterranean habitat. The Madeiran specimens were collected at Curral de Baixo from roots of young laurel sp. and at Montado Paredo at the base of *Eucalyptus* trees, both at an elevation of 600 m in March and April.

Remarks: As *Mayetia nevesi* is not capable of long-distance dispersal, the species was probably introduced with live plants from Portugal.

11. *Mayetia moscosoensis* Outerelo, 1976

References: VIT (1979: 495); OUTERELO (1981: 183).

Distribution: Spain (Pontevedra); Madeira proper: Santo da Serra.

Bionomics: Like the preceding species, *M. moscosoensis* is blind and lives in a subterranean habitat. In Madeira, it was collected from the roots of laurel trees in March.

Remarks: *Mayetia moscosoensis* was described from Moscoso, Pontevedra province, Spain, and was probably introduced to Madeira with live plants.

12. *Pselaphus minyops* Wollaston, 1871

References: WOLLASTON (1871A: 283); FAUVEL (1897A: 52); SCHMITZ (1897: 155); JANSSON (1940: 57); JEANNEL (1956: 153, 154); LUNDBLAD (1958: 472); BESUCHET (1968: 288).

Locus typicus: Madeira proper: San Antonio da Serra [= Santo da Serra] (V.1870, three specimens, leg. Wollaston). A female syntype in BMNH collection (BESUCHET, 1968).

Distribution: Endemic to Madeira proper; known only from the type locality.

Bionomics: Wollaston collected the three known specimens of this apparently extremely rare species by sifting fallen leaves compost in May.

Remarks: The species is omitted both in RAFFRAY (1904) and in the Coleopterorum Catalogus (RAFFRAY, 1911).

SUBFAMILY OMALIINAE**13. *Eusphalerum metasternale* (Fauvel, 1898)**

References: ZANETTI (1991: 23); HERMAN (2001: 437).

As *Eusphalerum torquatum* (MARSHAM, 1802) (misidentification): HERMAN (2001: 463); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Anthobium torquatum* (misidentification): WOLLASTON (1860B: 107), (1865: 524); BERNHAUER & SCHUBERT (1910: 44); JANSSON (1940: 56); LUNDBLAD (1958: 468).

As *Anthobium metasternale*: FAUVEL (1897A: 48; 1897C: 243; 1898: 94; 1902: 51); SCHMITZ (1897: 151); BERNHAUER & SCHUBERT (1910: 41); LUNDBLAD (1958: 468).

Distribution: Southwestern, Western, and Northern Europe, North Africa, Japan, Canada; Madeira proper. Only one record from Madeira: Quinta Palmeira (Funchal), garden, without date, 1 ex., leg. Bewicke (WOLLASTON, 1860B).

Bionomics: *Eusphalerum metasternale* is xerophilous and, like all its congeners, floricolous.

Remarks: All known citations refer to the single specimen recorded by Wollaston as *Anthobium torquatum*. Since the Madeiran specimen was not examined by ZANETTI (1991), the true identity of this record remained uncertain. Based on the citations above, HERMAN (2001) recorded both *E. torquatum* and *E. metasternale* from Madeira. The single female specimen recorded from Madeira (“in garden Palmeira above Funchal 1858 Mr. Bewicke”), which is deposited in the Wollaston collection (BMNH), was studied and found to be not conspecific with *Eusphalerum torquatum*. It fits the description of *E. metasternale* given by FAUVEL (1898) and the illustration of the female elytral outline illustrated by ZANETTI (1991). Therefore, we tentatively refer it to *E. metasternale* (Fauvel).

14. *Omalium ocellatum* Wollaston, 1854

References: WOLLASTON (1854: 613; 1857: 204; 1865: 522); LUZE (1906: 487); BERNHAUER & SCHUBERT (1910: 55); JANSSON (1940:56); COIFFAIT (1954: 162); LUNDBLAD (1958: 468); HERMAN (2001: 522); SCHÜLKE (2004: 394).

As *Homalium ocellatum*: WOLLASTON (1871A: 311); FAUVEL (1897A: 48; 1897C: 247; 1902: 54); SCHMITZ (1897: 151).

Locus typicus: Northern Deserta or Ilhéu Chão (beginning of June 1850, a single specimen, leg. Wollaston); holotype in BMNH.

Distribution: Canaries, Madeira: Ilhéu Chão.

Bionomics: The circumstances of the collection of the single Madeiran specimen are unknown. In the Canary Islands, the species has been collected by sifting laurel tree and *Erica* litter (Tenerife) and on the wing in El Golfo (El Hierro: Mirador de la Peña, Mirador de la Jinama) at elevations between 650 and 1225 m.

Remarks: All literature records from Madeira are based on the holotype, which was collected on Ilhéu Chão (Desertas). Later, *O. ocellatum* was recorded only from the Canaries. The female holotype was recently studied by SCHÜLKE (2004), who found the Madeiran and Canarian specimens to be conspecific, based on external characters and on the structure of the female accessory sclerites.

15. *Paraphloeostiba clavicornis* (Wollaston, 1857)

References:

As *Omalius clavicorne*: WOLLASTON (1857: 204).

As *Homalium clavicorne*: WOLLASTON (1865: 523; 1871A: 312); CROTCH (1867: 385; 1870: 94); FAUVEL (1897A: 48; 1897C: 245; 1902: 53); SCHMITZ (1897: 151); SCHÜLKE (2004: 397).

As *Phloeonomus clavicornis*: LUZE (1906: 599); BERNHAUER & SCHUBERT (1910: 58); BERNHAUER (1940: 1); JANSSON (1940: 56); LUNDBLAD (1958: 468); HERMAN (2001: 544).

As *Xylostiba clavicornis*: BOIEIRO *et al.* (2001: 21; 2002: 21; 2003: 56).

Locus typicus: Madeira proper: upland region of the Fanal (summer 1855, leg. Wollaston). Lectotype (BMNH) designated by SCHÜLKE (2004).

Distribution: Endemic to Madeira proper. Known only from the type locality.

Bionomics: Wollaston found the species under bark of *Euphorbia mellifera* and from putrid stems of *Cestrum verspertinum*.

Remarks: No further material has been collected since 1871. HERMAN (2001) lists the species as *Phloeonomus*. Based on an examination of a syntype from the BMNH collections, the species was transferred to the genus *Paraphloeostiba* Steel by SCHÜLKE (2004). In external, as well as in the primary and secondary male sexual characters, the species is similar to *P. gayndahensis* (Macleay). Like its congener, it was probably introduced to Madeira. The absence of recent records suggests that the Madeiran population may have gone extinct.

16. *Paraphloeostiba gayndahensis* (MacLeay, 1873)

References: ASSING (1996: 179).

As *Paraphloeostiba gayndahense*: HERMAN (2001: 538).

Additional records: Madeira proper: 3 exs., Rabaçal, 1300 m, creek gravel, sifted, 27.III.1996, leg. Lompe (cAss); 3 exs., above Porto Moniz, 400 m, laurisilva, 28.III.1996, leg. Assing (cAss); 1 ex., E Encumeada pass, 1300 m, old *Erica*, N slope; wet laurel litter, S-slope, 30.III.1996, Assing (cAss); 1 ex., Caniço de Baixo, 80 m, window pane, 15.-28.IX.1995, leg. Pieper (cErb); 5 exs., Funchal, Bom Sucesso (above botanical garden), on *Passiflora*, 29.VI.2001, leg. Aguiar (cAgu, cSch); 1 ex., São Jorge, Ribeira Funda, 7.VII.2001, leg. Aguiar (cAgu); 1 ex., Caniço, Abegoaria, on *Brassica oleracea*, 7.VIII.1996, leg. Aguiar & Jesus (cAgu); 1 ex., Tabúa, Zimbreiros, on fruits of *Psidium guajava*, 20.III.1996, leg. Aguiar & Jesus (cAgu); 4 exs., Ponta do Sol, Lugar de Baixo, on *Musa acuminata*, 2.II.2000, 11.VI.2001, leg. Aguiar (cAgu, cSch); 16 exs., Prazeres, under bark, 2.III.2006, leg. Hlaváč (cAss).

Distribution: Adventive species of Australian origin, originally described from Eastern Australia. Recently introduced in New Zealand, the United States (California), Germany, Italy, France (including Corsica), Spain, the Canaries, Madeira: Madeira proper.

Bionomics: The species has been collected in laurisilva, under bark of fallen *Eucalyptus* trees, from plant refuse at banana plantations (ASSING, 1996), from *Passiflora*, *Brassica oleracea*, and from fruits of *Psidium guajava*. The Madeiran specimens were mostly found at lower elevations, on one occasion also at 1300 m, in February, March, and June through September.

Remarks: This species is not listed by BOIEIRO (2001, 2002).

17. *Philorinum sordidum* (Stephens, 1834)

References: FAUVEL (1897A: 48; 1897C: 247; 1902: 55); SCHMITZ (1897: 151); JANSSON (1940: 56); LUNDBLAD (1958: 468); HERMAN (2001: 362); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Philorinum humile* (ERICHSON, 1839) (synonym): WOLLASTON (1865: 521).

As *Philorhinum humile* (incorrect spelling, synonym): WOLLASTON (1860B: 106).

Additional records: Madeira proper: 21 exs., Paúl da Serra, 1300 m, on inflorescent *Ilex*, 4.IV.1993, leg. Assing & Wunderle (cAss, cWun); 1 ex., Queimadas, 900 m, laurisilva, 27.III.1993, leg. Wunderle (cWun).

Distribution: Western Mediterranean region including North Africa (Tunisia, Algeria, Morocco), the British Isles, western and southern Central Europe; Madeira: Madeira proper. The record from Eastern European Russia (Ural) is doubtful, because the species is unknown from the Eastern Mediterranean and from Eastern Europe. *Philorinum sordidum* is here re-recorded for the first time since WOLLASTON (1860B).

Bionomics: Floricolous species, in Europe mostly collected on flowering broom (*Genista*, *Sarothamnus*). The Madeiran specimens were found on *Ilex* in early spring (March and April).

18. *Phloeonomus punctipennis* Thomson, 1867

References: JANSSON (1940: 56); LUNDBLAD (1958: 468); SMETANA (1963: 31); BORGES & SERRANO (1989: 9); BORGES (1990: 103); HERMAN (2001: 548); BOIEIRO *et al.* (2001: 21; 2002: 21).

Additional records: Madeira proper: 1 ex., Santo da Serra, 22.VIII.1983, leg. Mitter (cSch); 1 ex., S Paúl da Serra, 800 m, V.1984, leg. Vit (cAss); 13 exs., Lamaceiros Forest Station 2 km WSW Portela, 4 km S Porto da Cruz, 13.IX.1998, leg. Schuh (cAss); 2 exs., Caniço de Baixo, 80 m, window pane, 15.-28.IX.1995, leg. Pieper (cErb).

Distribution: Europe, Azores. Madeira: Madeira proper.

Bionomics: Corticolous species; active flyer. Mostly under bark of broad-leaved trees. The few recently recorded specimens were collected in May, June, August, and September.

Remarks: See *Phloeonomus pusillus*.

19. *Phloeonomus pusillus* (Gravenhorst, 1806)

References: LUZE (1906: 600); JANSSON (1940: 4, 56); MÉQUIGNON (1942: 16; 1946: 114); LUNDBLAD (1958: 468); SMETANA (1963: 31); ERBER & HINTERSEHER (1988: 151); ISRAELSON (1990: 2); BORGES (1990: 103); HERMAN (2001: 548); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Omalium granulatum* WOLLASTON, 1854: WOLLASTON (1854: 613; 1857: 206).

As *Homalium pusillum*: WOLLASTON (1865: 524); CROTCH (1870: 94); FAUVEL (1897A: 48; 1897C: 246; 1902: 53); SCHMITZ (1897: 151).

Locus typicus (*O. granulatum*): Madeira proper: Lombo dos Pecegueiros (VII.1850, four specimens, leg. Wollaston). Type specimens probably at least in part in BMNH.

Additional records: Madeira proper: 1 ex., Santo da Serra, 22.VIII.1983, leg. Mitter (cSch); Caniço de Baixo, 80 m, 4.-25.IX.1986, window pane, Pieper (cErb); Ribeiro do Poço, 860 m, 12.IX.1992, under bark of a dead *Juglans*-tree, leg. Erber (cErb).

Distribution: Palaearctic (including Canaries, Azores), North America. Madeira: Madeira proper.

Bionomics: In Europe, the species is mostly collected under bark of coniferous trees. In Madeira, it has been found both at lower and at higher elevations in the spring and summer months.

Remarks: WOLLASTON (1854) originally described his material as *Omalium granulatum*, but later (WOLLASTON, 1865: 603), he attributed it to *Homalium pusillum* Gravenhorst. JANSSON (1940) studied a specimen of *Omalium granulatum* from the Wollaston collection in the BMNH and identified it as *Phloeonomus punctipennis* Thomson. Having compared the descriptions of WOLLASTON (1854) and WOLLASTON (1865), he was convinced that Wollaston in fact recorded both *P. pusillus* and *P. punctipennis*. As a result of this confusion, some later authors listed only one of the species for Madeira. Since both species have been reliably recorded only recently, the presence of both species seems to be without doubt, although the identities of some records still require confirmation.

MÉQUIGNON (1942) cites *exilis* WOLLASTON (1871: 311) as a synonym of *P. pusillus*. This erroneous record seems to be based on Wollaston's remark "this little *Trogophloeus*, ..., is said by Mr. Fauvel (L'Abeille, vi. 152) to be conspecific with the European *T. pusillus* Grav.". In this case Wollaston clearly refers to *Carpelimus pusillus* Gravenhorst (Oxytelinae), not to *Phloeonomus pusillus* (Gravenhorst) of the Omaliinae.

20. *Phyllodrepa devillei* Bernhauer, 1902

Records: Madeira proper: 2 exs. [det. Zanetti], Encumeada, 900 m, 4.III.2006, leg. Hlaváč (cAss, cZan); 1 ex., Prazeres, under bark, 2.III.2006, leg. Hlaváč (cAss).

Distribution: Western Europe: France, Italy, Switzerland, Great Britain, Ireland.

Bionomics: According to ZANETTI (1987), this species is usually found under bark of *Pinus pinaster* in autumn and – more rarely – in spring.

Remarks: The absence of earlier records suggests that the species has colonised the archipelago very recently. First record from Madeira.

21. *Xylodromus concinnus* (Marsham, 1802)

References: SCHEERPELTZ (1933: 1051); JANSSON (1940: 5, 56); LUNDBLAD (1958: 468); HERMAN (2001: 588); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Homalium concinnum*: WOLLASTON (1871A: 312); FAUVEL (1897A: 48; 1897C: 245; 1902: 53); SCHMITZ (1897: 151).

Distribution: Europe (including Iceland, Faeroes), Greenland, Russia. Madeira: Madeira proper. Also recorded from the USA and New Zealand.

Bionomics: Mostly collected from straw, haystacks, and compost, often in the vicinity of vole burrows. In Madeira, the species was found in a granary and by sifting rubbish in an old outhouse (WOLLASTON, 1871), also by sifting fern in an old house (JANSSON, 1940). The Madeiran specimens were collected in spring and August.

22. *Xylostiba tricolor* (Wollaston, 1865)

References: SCHÜLKE (2004: 396)

As *Phloeonomus tricolor*: LUZE (1906: 594); BERNHAUER & SCHUBERT (1910: 58); JANSSON (1940: 56); LUNDBLAD (1958: 468); HERMAN (2001: 551); BOIEIRO *et al.* (2001: 21; 2002: 21; 2003: 56).

As *Homalium tricolor*: WOLLASTON (1865: 523, Appendix 75); FAUVEL (1897A: 48; 1897C: 246; 1902: 53); SCHMITZ (1897: 151).

Locus typicus: Madeira proper: Ribeira de São Jorge; holotype in BMNH.

Distribution: Known only from Madeira proper.

Bionomics: Bewicke found a single specimen (holotype) under bark of rotting *Euphorbia*; no further data are available.

Remarks: The generic assignment of the species requires confirmation. HERMAN (2001) lists the species in *Phloeonomus*. The single holotype was studied by M. Thayer in 1984, who attached the label “currently in *Xylostiba*” to the specimen. All records refer to this holotype which was again studied in detail by SCHÜLKE (2004). The species is not closely related to any of the European representatives of *Phloeonomus*, *Phloeostiba*, *Paraphloeostiba*, or *Xylostiba*, but is nevertheless tentatively attributed to *Xylostiba*, based on the similarities in the shape of the clypeus, the chaetotaxy of the antennae, the microsculpture, and the puncturation.

SUBFAMILY OSORIINAE**23. *Nacaeus impressicollis* (Motschulsky, 1858)**

References: As *Lispinus impressicollis*: FAUVEL (1897A: 48; 1897C: 240; 1902: 47); SCHMITZ (1897: 151); BERNHAUER & SCHUBERT (1910: 22); LIEBMANN (1939: 150); JANSSON (1940: 56); MÉQUIGNON (1942: 16; 1946: 114); LUNDBLAD (1958: 468); SMETANA (1963: 30); BORGES (1990: 103); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Nacaeus impressicollis*: HERMAN (2001: 1280).

As *Nacaeus irregularis* (BLACKWELDER, 1943) (synonym): ASSING (1998B: 140); HERMAN (2001: 1282); BOIEIRO *et al.* (2001: 21; 2002: 22).

Additional records: Madeira proper: 2 exs., Caniço de Baixo, 80 m, window pane, 7.–13.IX.1989, leg. Pieper; 5 exs., same data, but 14.–20.IX.1989; 1 ex., same data, but 13.–19.IX.1990 (cErb, cAss); 1 ex., Funchal, São Martinho, Quebradas, 27.VI.2001, yellow pan trap, leg. Aguiar (cAgu).

Distribution: Circumtropical, cosmopolitan. Oceania, Japan, SE-Asia, Madagascar, tropical Africa, Hawaii, Cuba, Jamaica, Hispaniola. Europe: France, Azores, Canaries; Madeira: Madeira proper. Recently introduced species, only few literature records.

Bionomics: The species is an active flyer and found in various kinds of rotting organic matter, especially in plant material. LIEBMANN (1939) sifted it from rotting plants in a banana plantation near Funchal; Pieper collected the species at a window pane in 1989 and 1990. The Madeiran specimens were collected in February, April, June, and September.

Remarks: The records of both *Lispinus impressicollis* and *Nacaeus irregularis* refer to the same species (IRMLER, 2003).

SUBFAMILY OXYTELINAE

24. *Anotylus complanatus* (Erichson, 1839)

References: BORGES (1990: 103); HERMAN (2001: 1345); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Oxytelus complanatus*: WOLLASTON (1854: 608; 1857: 200; 1865: 517); CROTCH (1870: 93); FAUVEL (1897A: 48; 1897C: 257; 1902: 66); SCHMITZ (1897: 152); LIEBMANN (1939: 150); BERNHAUER (1940: 9); JANSSON (1940: 6, 56); MÉQUIGNON (1942: 17; 1946: 114); LUNDBLAD (1958: 468); GARDNER & CLASSEY (1962: 158); SMETANA (1963: 32; 1970: 54); SERRANO (1987B: 150); ERBER & HINTERSEHER (1988: 152); BORGES & SERRANO (1989: 10); ERBER (1990: 165).

Additional records: Madeira proper: 1 ex., Faial, 100 m, bank of stream, 6.IV.1993, leg. Assing (cAss); 1 ex., Achada do Teixeira, 1350 m, in moss/litter in stand of old *Erica*, bank of stream, 7.IV.1993, leg. Assing (cAss); 4 ex., Terreiro da Luta, 1250 m, pine forest, human faeces, 7.IV.1993, leg. Assing & Wunderle (cAss, cWun); 2 exs., Funchal, Ponta do Garajau, on dead rat, 22.III.2005, leg. Ausmeier (cAss); 1 ex., Camacha-Assumada, dog faeces, 11.VI.2001, leg. Constant (cAss); 4 exs., Caniço de Baixo, 80 m, window pane, 21.-27.IX.1989, leg. Pieper; 1 ex., same data, but 13.-19.IX.1990; 3 exs., same data, but 20.-27.IX.1990 (cErb, cAss); 1 ex., Santana, Pico, on *Vicia faba*, 27.II.1996, leg. Aguiar (cAgu); 1 ex., Caniço, Serralhal, Santa Cruz, 21.II.2002, leg. Aguiar (cAgu); 2 exs., Ribeira Brava, 200 m, sifted compost and grass, 27.III.1995, leg. Zerche (DEI); 1 ex., road from Ribeira da Janela to Paúl da Serra, 1100 m, lakeshore, flood debris, 25.III.1996, leg. Zerche (DEI).

Distribution: Adventive species of Palaearctic origin, today widespread from Morocco to Scandinavia in the north, and from the Azores to the Caucasus in the east. Today also known to occur in New Zealand, Argentina, and Chile (HAMMOND, 1976: 174), Afghanistan, Iran, and Mongolia (HERMAN, 2001: 1345). Azores, Canaries, Madeira: Madeira proper, Porto Santo; very abundant at all elevations.

Bionomics: Eurytopic species; active flyer. The species has been collected from dung, various kinds of rotting organic matter, and from windowpanes at a wide range of elevations. The Madeiran specimens were recorded in the period from February through July and in September.

25. *Anotylus glareosus* (Wollaston, 1854)

References: HERMAN (2001: 1355); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Oxytelus glareosus*: WOLLASTON (1854: 610; 1857: 201; 1865: 517); FAUVEL (1897A: 48; 1897C: 256; 1902: 66); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1911: 113); LIEBMANN (1939: 151); JANSSON (1940: 56); LUNDBLAD (1958: 468).

As *Delopsis glareosa*: SMETANA (1963: 31).

Locus typicus: Madeira proper: near Funchal, R. T. Lowe's garden, at the levada (spring 1848, at a dry bone, leg. Wollaston); single holotype in BMNH, recorded as lectotype by HAMMOND (1975).

Additional records: Madeira proper: >50 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 14 exs., same data, but 7.-13.IX.1989; 123 exs., same data, but 14.-20.IX.1989; 11 exs., same data, but 21.-27.IX.1989; 10 exs., same data, but 13.-19.IX.1990; <5 exs.,

same data, but 20.-27.IX.1990; >50 exs., same data, but 7.-20.V.1992; >200 exs., same data, but 15.-28.IX.1995 (cErb, cAss); 4 exs., between Larano and Caniçal, 24.II.2003, leg. Lompe (cAss).

Distribution: Adventive species of Oriental origin, today a Cosmopolitan island species (HAMMOND, 1975), known from India, Pakistan, Bangladesh, Malaysia, Indonesia, Sri Lanka, Taiwan, Ghana, Sierra Leone, Tahiti, Jamaica, Cuba, Haiti, Grenada, Mauritius, Réunion, Canaries. Madeira: Madeira proper.

Bionomics: According to HAMMOND (1976), *A. glareosus* is originally not an inhabitant of dung and not restricted to synantropic habitats. The species appears to live in forest leaf litter in primary forests and secondary forests, and it has also been found under crop plants. *Anotylus glareosus* is a flying species also known to be attracted by light. The records from Madeira are more or less restricted to synantropic habitats. The species was collected from dry bones (WOLLASTON, 1854), vegetable refuse (WOLLASTON, 1857), as well as at light and from a window pane in February, June, and September.

Remarks: SMETANA (1963) states: “Das einzige vorliegende Exemplar wurde mit den Exemplaren der typischen Serie aus der Sammlung Wollaston verglichen. Diese Serie besteht aus 10 Exemplaren, vier davon wurden mir zum Studium vorgelegt. Da Wollaston kein Exemplar als den Typus bezeichnet hat, habe ich ein von den mir vier gesandten Exemplaren als Lectotypus bezeichnet”. This lectotype designation is invalid, since the original description is explicitly based on a single holotype (WOLLASTON, 1854).

26. *Anotylus insignitus* (Gravenhorst, 1806)

References: HERMAN (2001: 1359); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Oxytelus insignitus*: WOLLASTON (1857: 199; 1865: 516); FAUVEL (1897A: 48; 1897C: 255; 1902: 65); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1911: 114); LIEBMANN (1939: 151); BERNHAUER (1940: 9); JANSSON (1940: 56); LUNDBLAD (1958: 468); SMETANA (1963: 32); ERBER & HINTERSEHER (1988: 152).

Additional records: Madeira proper: Gruta dos Cardais, São Vicente, 14.II.1994 and 5.I.1996 in Barber traps, leg. de Silva and Erber (cErb); 1 ex., Terreiro da Luta, 1250 m, pine forest, human faeces, 7.IV.1993, leg. Assing (cAss); 1 ex., Faial, 100 m, bank of stream, 6.IV.1993, leg. Wunderle (cWun); 1 ex., Camacha-Assumada, dog faeces, 11.VI.2001, leg. Constant; >100 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 46 exs., same data, but 7.-13.IX.1989; 11 exs., same data, but 14.-20.IX.1989; 4 exs., same data, but 21.-27.IX.1989; <5 exs., same data, but 13.-19.IX.1990; 9 exs., same data, but 20.-27.IX.1990; >100 exs., same data, but 7.-20.V.1992; >50 exs., same data, but 15.-28.IX.1995 (cErb, cAss); 1 ex., Ribeira Brava, 200 m, arable land, bank of stream, 27.III. 1996, leg. Assing (cAss); 1 ex., Funchal, São Martinho, Amparo, 15.VII.1993, leg. Aguiar (cAgu). Porto Santo: 3 exs., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: According to HAMMOND (1975, 1976), a species of Neotropical origin. Today widespread in the warmer parts of the New World, for a detailed list of countries see HERMAN (2001: 1359), also known from Mauritius, Réunion, and Tahiti. Madeira: Madeira proper and Porto Santo.

Bionomics: *Anotylus insignitus* is usually found in various kinds of dung, also in compost, heaps of decaying vegetation, or at light sources. The Madeiran specimens were collected from cattle dung (WOLLASTON, 1857), a banana (LIEBMANN, 1939), rotting banana leaves (ERBER & HINTERSEHER, 1988), and at a window pane (ERBER & HINTERSEHER, 1988) almost throughout the year (February-July, September, November).

27. *Anotylus nitidifrons* (Wollaston, 1871)

References: BORGES (1990: 103); HERMAN (2001: 1373); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Oxytelus nitidifrons*: FAUVEL (1897A: 48; 1897C: 256; 1902: 65); SCHMITZ (1897: 152); LIEBMANN (1939: 151); BERNHAUER (1940: 9); JANSSON (1940: 56); MÉQUIGNON (1942: 17; 1946: 114); LUNDBLAD (1958: 468); SMETANA (1963: 32; 1970: 54); SERRANO & BORGES (1987: 55); ERBER & HINTERSEHER (1988: 152).

As *Oxytelus advena* Sharp, 1880 (synonym): CAMERON (1901: 221).

Additional records: Madeira proper: >100 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 50 exs., same data, but 7.-13.IX.1989; 33 exs., same data, but 14.-20.IX.1989; 8 exs., same data, but 21.-27.IX.1989; <5 exs., same data, but 7.-20.V.1992; >50 exs., same data, but 15.-28.IX.1995 (cErb, cAss); 24 exs., Seixal, Chão da Ribeira, 450 m, in grass heap, 31.III.1996, Zerche (DEI); 13 exs., Ribeira Brava, sifted from compost and grass, 200 m, 27.III.1996, Zerche (DEI); 1 ex., Santana, Pico, 26.VIII.1999, leg. Aguiar (cAgu); 3 exs., Ponta do Sol, Lugar de Baixo, rotting banana, 8.XI.2002, leg. Aguiar & Jesus (cAgu); 2 exs., São Vicente, Casa do Lanço, soil with planted *Impatiens*, 13.XI.1995, leg. Aguiar & Jesus (cAgu, cSch). Porto Santo: 4 exs., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: Adventive species of Oriental origin, but firstly described from St. Helena (WOLLASTON (1871B: 411)). HAMMOND (1975) lists records from China, Japan, large parts of Oriental Asia, and some Pacific Islands (Hawaii, Palau, Yap Islands). It is also known from parts of Africa and Madagascar (HAMMOND, 1976). St. Helena, Azores, Canaries; Madeira: Madeira proper, at all elevations, mostly in the south of the island; Porto Santo.

Bionomics: According to HAMMOND (1976), *Anotylus nitidifrons* is a typical island species. It has been observed in various kinds of decaying vegetation and less frequently in dung; the species is also attracted by light. The Madeiran specimens have been collected from dung, compost, and at a window pane, once on *Brassica oleracea*, practically throughout the year.

28. *Anotylus nitidulus* (Gravenhorst, 1802)

References: BORGES (1990: 103); HERMAN (2001: 1374); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Oxytelus nitidulus*: WOLLASTON (1854: 609; 1857: 201; 1865: 517); CROTCH (1870: 94); FAUVEL (1897A: 48; 1897C: 256; 1902: 66); SCHMITZ (1897: 152); PEYERIMHOFF (1931: 28); BERNHAUER (1940: 9); JANSSON (1940: 6, 56); MÉQUIGNON (1942: 17; 1946: 114); LUNDBLAD (1958: 468); SMETANA (1963: 32; 1970: 55); SERRANO (1987B: 149).

Additional records: Madeira proper: Caniço de Baixo, 80 m, 4.-25.IX.1986, leg. Pieper (cErb). Porto Santo: 4 exs., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: Palaearctic: Europe, N-Africa (including Egypt, El Goléa, and Hoggar), Middle East, Middle Asia, and Mongolia. Also recorded from Pakistan, India, Malaysia, and North America (Herman 2001: 1374). Azores, Canaries; Madeira: Madeira proper, Porto Santo.

Bionomics: *Anotylus nitidulus* is a eurytopic species usually associated with various kinds of decaying organic matter and an active flyer. The Madeiran specimens were collected in summer and autumn (June-July, September, November), mostly in excrements of bigger animals, on one occasion also at a window pane.

29. *Carpelimus bilineatus* Stephens, 1834

References: BORGES (1990: 103); GILDENKOV (2000A: 132); HERMAN (2001: 1642); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Trogophloeus bilineatus*: WOLLASTON (1857: 201); FAUVEL (1897A: 48; 1897C: 252; 1902: 61); SCHMITZ (1897: 151); BERNHAUER (1940: 9); JANSSON (1940: 56); MÉQUIGNON (1946: 114); LUNDBLAD (1958: 468).

As *Trogophloeus riparius* Lacordaire, 1835 (synonym): WOLLASTON (1865: 518), CROTCH (1870: 94).

Additional records: Madeira proper: 3 exs., Caniço de Baixo, 80 m, window pane, 14.-20.IX.1989, leg. Pieper; same data, but 13.-19.IX.1990 (cErb, Ass). Porto Santo: 1 ex., below Pico Branco, 150 m, muddy ditch, 1.IV.1996, leg. Lompe (cAss).

Distribution: Palaearctic region: Europe, Siberia, North Africa, Middle East, Middle Asia, Afghanistan, and Mongolia. Northern and temperate South America, Australia, New Zealand, South Africa (GILDENKOV, 2000A: 132; HERMAN, 2001: 1642). Azores, Canaries; Madeira: Madeira proper. One of the more common Madeiran representatives of the genus, recorded only from lower elevations.

Bionomics: In Madeira, this eurytopic species was collected on stream banks, from various kind of decaying organic matter (flood debris, compost, etc.), on one occasion also at a window pane, in April, May, and September.

30. *Carpelimus corticinus* (Gravenhorst, 1806)

References: BORGES & SERRANO (1989: 10); ISRAELSON (1990: 2); BORGES (1990: 93, 103); GILDENKOV (2000A: 176); HERMAN (2001: 1649); BOIEIRO *et al.* (2001: 21; 2002: 21); SCHÜLKE (2004: 398).

As *Trogophloeus corticinus*: WOLLASTON (1857: 203; 1865: 519); CROTCH (1870: 94); FAUVEL (1897A: 48; 1897C: 253; 1902: 62); SCHMITZ (1897: 152); PEYERIMHOFF (1931: 27); JANSSON (1940: 5, 56); MÉQUIGNON (1942: 16; 1946: 114); LUNDBLAD (1958: 468); SMETANA (1963: 31); ERBER & HINTERSEHER (1988: 151).

As *Trogophloeus nanus* WOLLASTON, 1854 (synonym): WOLLASTON (1854: 611).

Locus typicus (*T. nanus*): Madeira proper: Santa Anna [= Santana], (mud at the edges of a small stream, summer 1850, three specimens, leg. Wollaston). One female syntype in BMNH.

Additional records: Madeira proper: >10 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 7 exs., same data, but 7.-13.IX.1989; 2 exs., same data, but 14.-20.IX.1989; 3 exs., same data, but 21.-27.IX.1989 (cErb, cAss); 1 ex., Lombo do Mouro, 1400 m, 29.III.1993, leg. Assing (cAss); 1 ex., between Larano and Caniçal, 24.II.2003, leg. Lompe (cAss).

Distribution: Holarctic species (GILDENKOV, 2001a): Europe, N-Africa, Siberia, Mongolia, Korea, Japan, North and Central America. Azores, Canaries, St. Helena; Madeira: Madeira proper, Porto Santo. Rather rare in the Madeiran Archipelago, mainly at lower altitudes.

Bionomics: In Madeira, this eurytopic species has been observed in the same habitats as the preceding species in February, March, May, July, and September.

Remark: The single available syntype of *T. nanus* from the BMNH collection was identified as *Carpelimus corticinus* (Gravenhorst) by SCHÜLKE (2004).

[*Carpelimus exiguus* (Erichson, 1839)]

References: HERMAN (2001: 1657); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Trogophloeus exiguus*: PEYERIMHOFF (1931: 28); SCHEERPELTZ (1933: 1089); JANSSON (1940: 56); LUNDBLAD (1958: 468, recorded as doubtful).

Distribution: Palaearctic, Oriental and Australian regions. Not recorded from the New World. Cape Verde, Canaries.

Remarks: This species was listed by all authors following PEYERIMHOFF (1931), who only indicated Madeira without any further information. None of the records indicated above are based on additional specimens. In view of the absence of any material confirming the presence of this species, it is here deleted from the list of Madeiran Staphylinidae.

31. *Carpelimus exilis* (Wollaston, 1860)

References: SCHÜLKE (2004: 400).

As *Trogophloeus exilis*: WOLLASTON (1860B: 105; 1865: 519, App. 75).

As *Carpelimus pusillus* (GRAVENHORST, 1802) (misidentification): WOLLASTON (1871A: 207, 311); BORGES (1990: 103); HERMAN (2001: 1692); BOIEIRO *et al.* (2001: 21; 2002: 21).

As *Trogophloeus pusillus* (misidentification): FAUVEL (1897A: 48; 1897C: 254; 1902: 64); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1911: 103); BERNHAUER (1940: 2); JANSSON (1940: 56); LUNDBLAD (1958: 468).

Locus typicus: Madeira proper, near Funchal. (a single specimen, leg. Park); male holotype in BMNH.

Distribution: Madeira: Madeira proper. Very rare; no further records since Wollaston's time.

Bionomics: No data available.

Remarks: GILDENKOV (2001A) regarded *T. exilis* Wollaston as a synonym of *Carpelimus pusillus* (Gravenhorst), but had not studied any material from Madeira. The male holotype was recently examined by SCHÜLKE (2004) and GILDENKOV (*pers. comm.*), who found that it is conspecific neither with *Carpelimus pusillus* nor with any other West Palaearctic species.

32. *Carpelimus nigrita* (Wollaston, 1857)

References: HERMAN (2001: 1680); SCHÜLKE (2004: 398).

As *Trogophloeus nigrita*: WOLLASTON (1857: 202; 1865: 519); FAUVEL (1902: 61); BERNHAUER & SCHUBERT (1911: 101); JANSSON (1940: 56); COIFFAIT (1954: 162); LUNDBLAD, 1958: 468

As *Trogophloeus memnonius* ERICHSON, 1840 (misidentification): FAUVEL (1897A: 48; 1897C: 252); SCHMITZ (1897: 151).

Locus typicus: Madeira: Porto Santo, Zimbral d'Areia (a single specimen, spring 1855, leg. Wollaston 1857); male holotype in BMNH.

Distribution: Madeira: Porto Santo.

Bionomics: The type specimen was collected at the edge of a small stream (WOLLASTON, 1857).

Remarks: The male holotype was recently studied by SCHÜLKE (2004) and GILDENKOV (*pers. comm.*). It is not conspecific with the widespread species for which the name has been used in the past and whose valid name is now *Carpelimus insularis* (Kraatz). GILDENKOV (2001a) revised

material of the latter from the Caucasus area, Uzbekistan, Tajikistan, Turkmenistan, Spain, Italy, France, Bulgaria, Turkey, Lebanon, North Africa (Tunisia, Algeria, Sudan), and Zaire (as *nigrita*). Apart from the holotype, which was collected by Wollaston, no further material of *Carpelimus nigrita* has become known.

33. *Carpelimus simplicicollis simplicicollis* (Wollaston, 1857)

References: SCHÜLKE (2004: 401).

As *Trogophloeus simplicicollis*: WOLLASTON (1857: 203; 1865:521); FAUVEL (1897A: 48; 1897C: 254); SCHMITZ (1897: 152); JANSSON (1940: 56).

As *Trogophloeus halophilus* Kiesenwetter, 1844 var. *simplicicollis* Wollaston, 1857: LUNDBLAD (1958: 468); FAUVEL (1902: 64); SCHEERPELTZ (1933: 1085); SMETANA (1963: 31); HERMAN (2001: 1669).

As *Trogophloeus halophilus*: PEYERIMHOFF (1931: 27).

Locus typicus: Madeira: Porto Santo, Zimbral d'Areia (beginning of V.1855, unspecified number of specimens, leg. Wollaston); lectotype and paralectotypes in BMNH.

Distribution: Egypt, Middle Asia (Uzbekistan, Turkmenistan), Middle East (Iraq), Canary Islands. Madeira: Porto Santo. Only once collected after original description by H. Lindberg in Porto Santo (SMETANA, 1963).

Bionomics: Wollaston collected the types of this ripicolous species burrowing in the bank of a brackish stream.

Remarks: The type series was recently studied by SCHÜLKE (2004), who designated a lectotype, and GILDENKOV (*pers. comm.*), who confirmed the correctness of the current interpretation of this name.

34. *Oxytelus piceus* (Linnaeus, 1767)

References: WOLLASTON (1854: 606; 1857: 199; 1865: 516); FAUVEL (1897A: 48; 1897C: 255; 1902: 64); SCHMITZ (1897: 152); BERNHAUER (1940: 9); JANSSON (1940: 5, 56); LUNDBLAD (1958: 468); SMETANA (1963: 32); SERRANO (1987B: 149); ERBER & HINTERSEHER (1988: 151); ERBER (1990: 164); HERMAN (2001: 1447); BOIEIRO *et al.* (2001: 21; 2002: 22).

Additional records: Madeira proper: 1 ex., Ribeira Brava, sifted compost and grass, 200 m, 27.III.1996, leg. Zerche (DEI). Porto Santo: 1 ex., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: Palaearctic and Ethiopian regions. Azores, Canaries; Madeira: Madeira proper, Porto Santo.

Bionomics: The species is usually associated with various kind of decaying organic matter. The Madeiran specimens were collected almost throughout the year (January, March, May-November).

35. *Oxytelus sculptus* Gravenhorst, 1806

References: WOLLASTON (1854: 607; 1857: 199; 1865: 516); CROTCH (1870: 93); FAUVEL (1897A: 48; 1897C: 255; 1902: 65); SCHMITZ (1897: 152); BERNHAUER (1940: 9); JANSSON (1940: 56); MÉQUIGNON (1942: 17; 1946: 114); LUNDBLAD (1958: 468); SMETANA (1963: 32; 1970: 54); SERRANO (1987B: 149); BORGES (1990: 104); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Anotylus sculptus*: BORGES & SERRANO (1989: 10).

? As *Oxytelus sculpturatus* GRAVENHORST, 1806: ERBER & HINTERSEHER (1988: 151).

Distribution: Cosmopolitan. Azores, Canaries; Madeira: Madeira proper, Porto Santo. Recorded from numerous localities at a wide range of altitudes.

Bionomics: The species is usually associated with various kinds of decaying organic matter. The Madeiran material was collected from decaying vegetable refuse, at the edge of ponds and streams, and from cattle dung in spring (March-May).

[*Platystethus alutaceus* Thomson, 1861]

References: Scheerpeltz (1933: 1106); Jansson (1940: 56); Lundblad (1958: 468); Boieiro et al. (2001: 21; 2002: 22).

As *Platystethus cornutus* (Gravenhorst, 1802) var. *alutaceus* Thomson, 1861: Fauvel (1897A: 48); Schmitz (1897: 152).

As *Platystethus cornutus* var. beta *alutaceus* Thomson, 1861: Fauvel (1897C: 258; 1902: 67).

Distribution: Palaearctic: Europe, North Africa, Afghanistan, Mongolia. Madeira, Canaries.

Remarks: Since all the above citations refer to the record in FAUVEL (1897A, C) without further data and since earlier authors considered *P. alutaceus* only as color variation of *P. cornutus*, the presence of *P. alutaceus* in Madeira is more than questionable. FAUVEL (1897C, 1902) notes (without comments) that the record of var. beta *alutaceus* is based on WOLLASTON, 1862: 340, who, however, explicitly refers to *P. cornutus*. Moreover, no further records have become known so that this species is here deleted from the list of Madeiran Staphylinidae.

36. *Platystethus degener* Mulsant et Rey, 1878

References: HAMMOND (1971: 108).

As *Platystethus cornutus* (Gravenhorst, 1802) (misidentification): WOLLASTON (1862: 340; 1865: 514); FAUVEL (1897A: 48; 1897C: 258; 1902: 67); SCHMITZ (1897: 152); JANSSON (1940: 6, 56); LUNDBLAD (1958: 468); SMETANA (1963: 32); ERBER (1990: 149); HERMAN (2001: 1476); BOIEIRO *et al.* (2001: 21; 2002: 22).

Distribution: Europe, Turkey, India, and USA. Canaries; Madeira: Madeira proper, Porto Santo. Rare, only a few records, found both at lower and at higher elevations.

Bionomics: This species usually lives on sandy and muddy banks of running and standing waters and has been recorded also from various kinds of decaying organic matter. The Madeiran specimens were collected from cattle dung (JANSSON, 1940) and at a window pane (ERBER, 1990).

Remarks: When revising the British species of *Platystethus*, HAMMOND (1971) stated that he had not seen any material of *P. cornutus* from the Atlantic Islands, but numerous specimens of *P. degener* both from Madeira and the Canaries. ASSING (1998B: 140), too, recorded *P. degener* from Gran Canary. Similarly, the specimen collected by Pieper in Caniço de Baixo (ERBER, 1990) proved to be a male of *P. degener*. These observations suggest that all the previous records of *P. cornutus* are based on misidentifications and in fact refer to *P. degener*, so that the former is here deleted from the list of Madeiran Staphylinidae. The previous record of *P. degener* is not listed by BOIEIRO *et al.* (2001, 2002).

37. *Platystethus nitens* (C. R. Sahlberg, 1832)

References: FAUVEL (1897A: 48; 1897C: 258; 1902: 68); SCHMITZ (1897: 152); JANSSON (1940: 56); MÉQUIGNON (1942: 17; 1946: 114); BORGES (1990: 104); HERMAN (2001: 1482); BOIEIRO *et al.* (2001: 21; 2002: 22); SCHÜLKE (2004: 401).

As *Platystethus nitens* Thomson: LUNDBLAD (1958: 468).

As *Platystethus fossor* Wollaston, 1854 (synonym): WOLLASTON (1854: 603; 1857: 199).

Locus typicus (*P. fossor*): Madeira proper: Santa Anna [= Santana] (summer 1850, wet mud at the edges of a small stream, unknown number of specimens, leg. Wollaston); types at least in part in BMNH.

Distribution: Europe, North Africa, Middle East, Middle Asia, China, Mongolia, Azores, Canaries; Madeira: Madeira proper. Very rare, no further records since WOLLASTON (1857).

Bionomics: This species lives in moist habitats (banks, shores) and in various kinds of decaying organic matter (compost, dung, flood debris, leaf litter). The Madeiran material was collected in July.

Remarks: WOLLASTON (1854, 1857) listed *P. spinosus* and *P. fossor* as different species. Later, WOLLASTON (1865) regarded *P. fossor* as a synonym of *P. spinosus*, a view also adopted by GANGLBAUER (1895), BERNHAUER & SCHUBERT (1911), and HERMAN (2001). FAUVEL (1897A) and SCHMITZ (1897) listed *P. spinosus* and *P. nitens* as valid species and added *P. fossor* as a synonym of *P. nitens*. The Wollaston collection (BMNH) contains six syntypes of *P. fossor*, which were studied by HAMMOND in 1969. He labelled one of the specimens as lectotype, but never published the designation. All six specimens are identical with *Platystethus nitens* (C. R. Sahlberg) (SCHÜLKE, 2004).

38. *Platystethus spinosus* Erichson, 1840

References: WOLLASTON (1854: 602; 1857: 198; 1865: 515); CROTCH (1867: 384; 1870: 93); FAUVEL (1897A: 48; 1897C: 258; 1902: 68); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1911: 124); JANSSON (1940: 56); BERNHAUER (1940: 2); LUNDBLAD (1958: 468); BORGES (1990: 104); HERMAN (2001: 1488); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Platystethus fossor* Wollaston, 1854 (misidentification): WOLLASTON (1854: 603; 1857: 199).

Distribution: Europe, North Africa, Middle East, Middle Asia, Azores, Madeira: Porto Santo. No further records since WOLLASTON (1857).

Bionomics: This species is usually found associated with dung and carrion. The single specimen recorded from Porto Santo was taken burrowing in the soil beneath a stone at the edge of a sandy road in December.

Remarks: The single female specimen collected by Wollaston is deposited in the Wollaston collection at the BMNH. It was studied and identified as *Platystethus spinosus* Erichson by HAMMOND in 1969 (unpublished). For further remarks see comments below *P. nitens*.

39. *Thinodromus transversalis* (Wollaston, 1857)

References: HERMAN (2001: 1775); GILDENKOV (2001C: 106); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Trogophloeus transversalis*: WOLLASTON (1857: 202; 1865: 518; 1867: 255); FAUVEL (1897A: 48; 1897C: 251; 1902: 60); SCHMITZ (1897: 151); BERNHAUER & SCHUBERT (1911: 97); PEYERIMHOFF (1931: 27); JANSSON (1940: 56); LUNDBLAD (1958: 468).

Locus typicus: Madeira: Southern Deserta (Bugio) (on the wing, in a cavern during VI.1855, a single specimen, leg. Wollaston). According to GILDENKOV (2001C), the type specimen is deposited in the DEI.

Distribution: Mediterranean region: Spain, North Africa, Middle East, Turkmenistan, Canaries, Cape Verdes. Madeira: Desertas: Ilheu Bugio. No further records from Madeira since the original description.

Bionomics: Like other species of the genus, *T. transversalis* is ripicolous and psammophilous.

Remarks: The identity of the holotype with specimens collected in the Canaries, North Africa, the Middle East and Middle Asia was confirmed by GILDENKOV (2001), based on study of the male holotype.

SUBFAMILY STENINAE

40. *Stenus cicindeloides* (Schaller, 1783)

References: FAUVEL (1897C: 267; 1902: 77); BERNHAUER & SCHUBERT (1911: 173); JANSSON (1940: 56); LUNDBLAD (1958: 468); SMETANA (1963: 33); PUTHZ (1966: 132); SERRANO (1987B: 150); ERBER & HINTERSEHER (1988: 152); ERBER (1990: 165); HERMAN (2001: 2121); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Stenus cicindeloides* Gravenhorst: WOLLASTON (1865: 513); FAUVEL (1897A: 49); SCHMITZ (1897: 152).

As *Stenus hydropathicus* Wollaston, 1857 (synonym): WOLLASTON (1857: 197).

As *Stenus similis* (Herbst, 1784): CAMERON (1901: 221).

Locus typicus (*S. hydropathicus*): “between São Vicente [= Vicente] and Seisal [= Seixal]” (one specimen) and “between Ribeira da Janella [= Janela] and Porto Moniz” (one specimen).

Additional records: 1 ex., “Madeira” (FMNH, coll. Bernhauer) (PUTHZ, *pers. comm.*).

Distribution: Palearctic. Madeira: Madeira proper.

Bionomics: The species inhabits moist habitats, often near standing or running water.

[*Stenus elegans* Rosenhauer, 1856]

References: SERRANO (1987B: 150).

Remarks: The record above is evidently based on a misidentification; Serrano is a coauthor of the checklist by BOIEIRO *et al.* (2001, 2002), who do not list this species. It is here deleted from the list of Madeiran Staphylinidae.

41. *Stenus guttula* Müller, 1821

References: WOLLASTON (1854: 597; 1857: 196; 1865: 511); CROTCH (1870: 93); FAUVEL (1897A: 49; 1897C: 264; 1902: 74); SCHMITZ (1897: 152); CAMERON (1901: 221); BERNHAUER (1940: 3); JANSSON (1940: 6, 56); MÉQUIGNON (1942: 17; 1946: 114); LUNDBLAD (1958: 468); SMETANA (1963: 32; 1970: 55); PUTHZ (1966: 133, 134); MITTER (1984: 4); SERRANO & BORGES (1987: 55); ERBER & HINTERSEHER (1988: 152); BORGES (1990: 104); ERBER (1990: 149); HERMAN (2001: 2207); BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: 5 exs., Queimadas, 900 m, near waterfall, 27.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Ribeiro Frio, 700 m, 1.IX.1998, leg. Schuh (cAss); 3 exs., Poiso, 1200 m, bank of stream, 28.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., N Pico do Arieiro, Pico das Torres, 3.IX.1998, leg. Schuh (cAss); 3 exs., 3km N Monte, Ribeira das Cales, 9.IX.1998, leg. Schuh (cAss); 4 exs., Roseira, 700 m, grass and moss near stream, 5.IV.1993, leg. Assing (cAss); 1 ex., Rabaçal, 1300 m, bank of stream, 27.III.1996, leg. Lompe (cAss); 12 exs., Rabaçal, 950 m, laurisilva, 30.III.&2.IV.1996, leg. Lompe (cAss); 1 ex., Rabaçal, 32°45'26N, 17°07'24W, 1000 m, 25.II.2003, leg. Lompe (cAss); 1 ex., Achada do Teixeira, 1300 m, 19.X.1997, leg. Lompe (cAss); 1 ex., S Lamaceiros, Levada Central da Janela, 20.III.2004, leg. Aßmann (cAss); 4 exs., SW Santana, Rio Silveira, 12.III.2004, leg. Aßmann (cAss).

PUTHZ (*pers. comm.*) reports the following material: 23 exs., “Madeira” (BMNH, FMNH, HMO, NHMW). Madeira proper: 1 ex., Ribeira da Janela, 1230 m, 22.VI.1935, d’Orchymont

(IRSNB); 1 ex., Cruzinhas, 1230 m, 22.VI.1935, leg. d'Orchymont (IRSNB); 4 exs., Ponta Delgada, 150 m, 12.VI.1935, leg. d'Orchymont (IRSNB, cPut); 2 exs., Rabaçal, 8.VIII.1975, leg. Vit (MHNG); 3 exs., São Roque, 6.X.1971, leg. G. Benick (cPut); 1 ex., São Vicente, IV.1957, leg. Coiffait (cPut). Porto Santo: 4 exs., Porto Santo (HMO); 3 exs., Porto Santo, Pico Branco, leg. Franz (NHMW, cPut).

Distribution: West Palaearctic; Azores, Canaries, Madeira: Madeira proper, Porto Santo.

Bionomics: *Stenus guttula* is a common riparian species.

42. *Stenus heeri* Wollaston, 1854 (Plate I, fig. 2, Fig. 4)

References: WOLLASTON (1854: 600; 1857: 198; 1865: 513); FAUVEL (1897A: 49; 1897C: 267; 1902: 76); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1911: 170, pars); JANSSON (1940: 6, 56); LUNDBLAD (1958: 468); SMETANA (1963: 33); PUTHZ (1966: 131); ASSING & WUNDERLE (1995C: 2); HERMAN (2001: 2212); BOEIRO *et al.* (2001: 22; 2002: 23; 2003: 57).

Locus typicus: Madeira proper: Cruzinhas and Fanal.

Additional records: Madeira proper: 1 ex., “Madeira / *Stenus* var. *heeri* / Coll. Kraatz / *heeri* Woll. det. Puthz” (syntype?) (DEI); 30 exs., Pico do Arieiro, 1600 m, stand of *Erica* sp. and *Vaccinium padifolium*, 26.III.&3.IV.1993, leg. Assing, Wunderle (cAss, cWun); 4 exs., same locality, 21.III.1996, leg. Assing, Zerche (cAss, DEI); 4 exs., same locality, 1600-1700 m, stand of *Erica* sp. and *Vaccinium padifolium* in northern exposition, 9.I.2001, leg. Schülke (cSch); 1 ex., Pico do Arieiro, 1750 m, sifted from grass and moss, 26.III.1993, leg. Assing (cAss); 5 exs., Bica da Cana, 1600 m, meadow, 29.III.1993, leg. Assing (cAss); 4 exs., Bica da Cana, 1550 m, stand of *Erica* sp. and *Vaccinium padifolium*, 29.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Bica da Cana, NE-slope, 1500-1550 m, *Vaccinium*, 11.I.2001, leg. Schülke (cSch); 6 exs., Bica da Cana, 1500-1550 m, *Erica*, *Genista*, 14.&21.I.2001, leg. Schülke (cSch); 2 exs., Bica da Cana, 32°45'10N, 17°03'02W, 1620 m, 25.II.2003, leg. Lompe (cAss); 2 exs., Bica da Cana, 32°45'11N, 17°03'08W, 1550 m, 25.II.2003, leg. Lompe (cAss); 33 exs., Caramujo, 1300 m, stand of old *Erica* sp., 29.III.&4.IV.1993, leg. Assing (cAss); 2 exs., Caramujo, 1220 m, Fayal-Brezal, 4.IV.1993, leg. Assing (cAss); 1 ex., Estanquinhos, 15.III.2004, leg. Abmann (cAss); 2 exs., Ruivo do Paul, 1600-1640 m, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch); 1 ex., Rabaçal, 1150 m, stand of *Erica* sp., 31.III.1993, leg. Assing (cAss); 1 ex., Rabaçal, 1000 m, laurisilva, 23.III.1996, leg. Assing (cAss); 2 exs., NW Rabaçal, road from Paúl da Serra to Porto Moniz, Cabeço da Quebrada, 1000 m, stand of *Erica* sp. and *Vaccinium padifolium*, 23.III.1996, leg. Assing, Zerche (cAss, DEI); 1 ex., 1km SE Rabaçal, 1250 m, *Erica* litter, 14.IX.1998, leg. Schuh (cAss); 1 ex., Encumeada, 1000 m, stand of *Erica* sp., 5.IV.1993, leg. Assing (cAss); 5 exs., path from Encumeada to Pico do Jorge, 1300 m, leaf litter of old laurel tree, 26.III.1996, leg. Assing, Zerche (DEI, cAss); 18 exs., same locality, stand of *Erica* sp. and *Vaccinium padifolium*, 26.&30.III.1996, leg. Assing, Zerche (DEI, cAss); 6 exs., same locality, stand of old *Erica* sp. in northern exposition, 30.III.1996, leg. Assing (cAss); 3 exs., path from Encumeada to Pico do Jorge, 1500 m, litter of *Erica* sp., 26.III.1996, leg. Zerche (DEI); 13 exs., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss); 3 exs., Achada do Teixeira, 1580 m, grass and debris in shadow of big rocks, 6.IV.1993, leg. Assing (cAss); 1 ex., Achada do Teixeira, 1350 m, litter of *Erica*, 29.III.1996, leg. Zerche (DEI); 2 exs., Achada do Teixeira, 32°45'52N, 16°54'44W, 1350 m, 20.II.2003, leg. Lompe (cAss); 1 ex., Achada do Teixeira, near Mirador, N-slope, 1400 m, *Erica*, 12.I.2001, leg. Schülke (cSch); 1 ex., northern slope of Pico Ruivo, 1700 m, fern and grass in shadow of big rocks, 29.III.1996, leg. Assing (cAss); 2 exs., Pico Ruivo, N-slope, 1850 m, *Erica*, 16.I.2001, leg. Schülke (cSch); 6 exs., Ribeira da

Janela, Fanal, 1000 m, laurisilva, 25.III.1996, leg. Assing (cAss); 3 exs., Ribeira da Janela, Fanal, 1300 m, stand of *Erica* sp. and *Vaccinium padifolium*, 25.III.1996, leg. Assing (cAss); 2 exs., road from Ribeira da Janela to Paúl da Serra, 1300 m, litter of *Erica*, 25.III.1996, leg. Zerche (DEI); 1 ex., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss); 1 ex., Cabeço da Esmoutada, 32°49'07N, 17°08'59W, 900 m, 27.II.2003, leg. Lompe (cAss); 1 ex., S Seixal, Chão de Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss).

PUTHZ (*pers. comm.*) reports the following material: 2 exs., Pico do Arieiro, 1750 m, 7.X.1971, leg. G. Benick (SMNS, cPut); 1 ex., Cruzinhas, 16.IV.1959, leg. Mateu (cPut).

Distribution: Madeira, endemic (Fig. 4): Madeira proper: Cruzinhas, Feija de Corte [= Fajã da Corsa in São Jorge?], Pico do Arieiro, Pico Ruivo, E Encumeada, Pico do Jorge, Pico das Eirinhas, Achada do Teixeira, Paúl da Serra, Ruivo do Paul, Caramujo, Bica da Cana, Fanal, Chão de Cancela, Cabeço da Esmoutada, Rabaçal, Quebradas.

Bionomics: The species inhabits the litter layer of laurel woods and stands of *Erica*, *Vaccinium* and other shrubs at higher altitudes (almost all records above 1000 m), occasionally also at lower altitudes (see records above and ASSING & WUNDERLE, 1995C). It has been collected almost throughout the year (January-April, July, August, September, October).

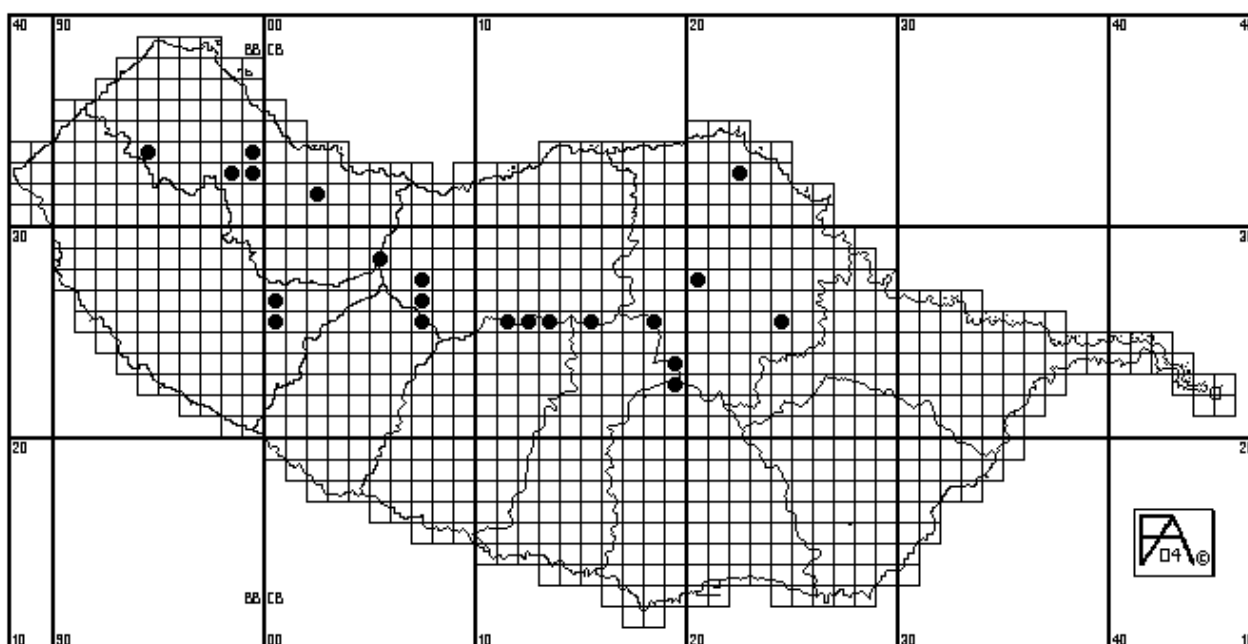


Fig. 4 - Distribution of *Stenus heeri* Wollaston in Madeira.

[*Stenus brunneus* Puthz, 1978]

= *Stenus maderensis* Puthz, 1980; **syn. n.**

References: As *S. maderensis*: PUTHZ (1980: 47); ASSING & WUNDERLE (1995C: 1); HERMAN (2001: 2271); BOIEIRO *et al.* (2001: 22; 2002: 23; 2003: 57).

Locus typicus: Madeira proper: Near Funchal, Ribeira da Fundoa [evidently mislabelled].

Distribution: Endemic to Tenerife, Canary Islands.

Remarks: The identity of *S. maderensis* was most doubtful for various reasons. First, the original description is based on a single female found near Funchal in *Eucalyptus* leaf litter, a habitat and area that would be most unusual for an endemic *Stenus* species. Second, the species had never been found again, although it is neither very small nor does it live in a cryptic habitat. Third, in Madeira, the known endemic species belong to the subgenus *Tesnus* (3 species) and *Stenus* (1 species), so that the presence of an endemic representative of *Hemistenus* Motschulsky would have been surprising. The latter subgenus, however, is represented by several endemic species in the Canary Islands. Finally, mislabelled specimens are apparently not unprecedented with material from the Franz collection (ASSING, *unpubl.*). These observations and conclusions suggested that the original description of *S. maderensis* is based on a mislabelled specimen, presumably from the Canary Islands.

An examination of the holotype of *S. maderensis* [labelled: “Madeira, Ribeira da Fundoa / HOLOTYPE / *Stenus maderensis* nov. spec. det. V. Puthz 1979” (NHMW)] and a comparison with material of all the Canarian *Hemistenus* species revealed that it is conspecific with *S. brunneus* Puthz, a species described two years earlier. As expected, H. Franz had evidently mislabelled the holotype, since *A. brunneus* is endemic to the Anaga range in Tenerife. The name *S. maderensis* is here placed in the synonymy of *S. brunneus* and deleted from the list of Madeiran Staphylinidae.

43. *Stenus ossium* Stephens, 1832

References: LIEBMANN (1939: 155); JANSSON (1940: 56); LUNDBLAD (1958: 468); SMETANA (1963: 33); ERBER & HINTERSEHER (1988: 152); ERBER (1990: 165); BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: 5 exs., Terreiro da Luta, 1100 m, litter of *Pinus* and *Eucalyptus*, 25.III.1993, leg. Assing (cAss); 10 exs., Pico do Arieiro, 1600 m, stand of *Erica* sp. and *Vaccinium padifolium*, 26.III.1993, leg. Assing (cAss); 1 ex., same locality, meadow, under stone, 3.IV.1993, leg. Assing (cAss); 4 exs., same locality, 21.III.1996, leg. Assing, Zerche (DEI, cAss); 3 exs., Pico do Arieiro, near Achada Grande, 1500 m, *Vaccinium*, *Genista*, NE-slope, 21.I.2001, leg. Schülke (cSch); 3 ex. (cSch); 4 exs., Poiso, 1200 m, bank of stream, 28.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Levada do Furado, Ribeira do Poço do Bezerro, 32°43'47N, 16°52'02W, 800 m, 18.II.2003, leg. Lompe (cAss); 5 exs., João do Prado, NE Poiso, 1300 m, *Pinus*, *Abies*, mushrooms, 12.I.2001, leg. Schülke (cSch); 1 ex., Queimadas, 900 m, near waterfall, 27.III.1993, leg. Wunderle (cWun); 1 ex., Queimadas, 900 m, laurisilva, 27.III.1993, leg. Wunderle (cWun); 1 ex., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss); 1 ex., Ribeiro Frio, Levada do Furado, 700 m, 1.IX.1998, leg. Schuh (cAss); 17 exs., Bica da Cana, 1550 m, stand of *Erica* sp. and *Vaccinium padifolium*, 29.III.1993, leg. Assing (cAss); 2 exs., Bica da Cana, 1500-1550 m, *Vaccinium*, *Genista*, *Erica*, 11.&14.I.2001, leg. Schülke (cSch); 2 exs., Bica da Cana, 32°45'10N, 17°03'02W, 1620 m, 25.II.2003, leg. Lompe (cAss); 8 exs., Paul da Serra, Campo Pequena, 1400 m, 18.VI.2005, leg. Apfel (cApf); 1 ex., Paul da Serra, Estanquinhos 1500 m, 16.VI.2005, leg. Apfel (cApf); 2 ex., SW Seixal, Fanal, 1150 m, 9.VI.2005, leg. Apfel (cApf); 1 ex., Lombo do Mouro, 1400 m, wet grass and moss, 29.III.1993, leg. Wunderle (cWun); 59 exs., Caramujo, 1220 m, Fayal-Brezal, 29.III.&4.IV.1993, leg. Assing, Wunderle (cAss, cWun); 49 exs., Caramujo, 1300 m, stand of old *Erica* sp., 29.III.&4.IV.1993, leg. Assing, Wunderle (cAss, cWun); 2 exs., Caramujo, 32°46'05N, 17°03'29W, 1250 m, 22.II.2003, leg. Lompe (cAss); 1 ex., Estanquinhos, 15.III.2004, leg. Aßmann (cAss); 12 exs., Rabaçal, 1050 m, laurisilva, 31.III.1993, leg. Assing, Wunderle (cAss, cWun); 3 exs., Rabaçal, 1400 m, stand of *Erica* sp., 31.III.1993, leg. Assing,

Wunderle (cAss, cWun); 9 exs., Rabaçal, 1000 m, laurisilva, 23.III.1996, leg. Assing, Zerche (cAss, DEI); 4 exs., Rabaçal, 950 m, laurisilva with *Erica* and *Vaccinium*, 2.&3.IV.1996, leg. Assing & Lompe (cAss); 8 exs., Rabaçal, 1300 m, bank of stream, 27.III.1996, leg. Lompe, Zerche (DEI, cAss); 3 exs., same date and locality, but stand of *Erica* sp. and *Vaccinium padifolium*, leg. Assing (cAss); 17 exs., Ribeira da Janela, Fanal, 800 m, laurisilva, 1.IV.1993, leg. Assing (cAss); 3 exs., same data, but degraded laurisilva with *Erica* and *Pinus*; 16 exs., Fanal, 20.III.2004, leg. Aßmann (cAss); 9 exs., Ribeira da Janela, 900 m, laurisilva, 25.III.1996, leg. Assing, Zerche (DEI, cAss); 13 exs., same data, but 1000 m (DEI; cAss); 8 exs., same data, but 1100 m, edge of pond (DEI, cAss); 1 ex., same data, but 1300 m, stand of *Erica* sp. and *Vaccinium padifolium* (cAss); 1 ex., Cab. da Esmoutada, 32°49'07N, 17°08'59W, 900 m, 27.II.2003, leg. Lompe (cAss); 2 exs., Encumeada, 1000 m, stand of *Erica* sp., 5.IV.1993, leg. Assing (cAss); 1 ex., E Encumeada, Pico do Jorge, 1500 m, stand of *Erica* sp., 26.III.1996, leg. Assing (cAss); 4 exs., path from Encumeada to Pico do Jorge, 1300 m, leaf litter of old laurel tree, 26.III.1996, leg. Assing, Zerche (DEI, cAss); 15 exs., same locality, stand of *Erica* sp. and *Vaccinium padifolium*, 26.&30.III.1996, leg. Assing, Zerche (DEI, cAss); 1 ex., same locality, stand of old *Erica* sp. in northern exposition, 30.III.1996, leg. Assing (cAss); 3 exs., Pico do Jorge, 32°44'57N, 16°58'48W, 2.III.2003, leg. Lompe (cAss); 1 ex., northern slope of Pico Ruivo, 1700 m, fern and grass in shadow of big rocks, 29.III.1996, leg. Assing (cAss); 3 exs., E Encumeada, Pico da Cabra, N slope, moss, fern, *Erica*, *Rhododendron*, 1250 m, 11.I.2001, leg. Schülke (cSch); 3 exs., Achada do Teixeira, 1350 m, 6.IV.1993, leg. Wunderle (cWun); 15 exs., same locality, 29.III.1996, leg. Assing, Zerche (DEI, cAss); 1 ex., Achada do Teixeira, 1580 m, grass and debris in shadow of big rocks, 6.IV.1993, leg. Wunderle (cWun); 1 ex., Achada do Teixeira, near Mirador, 1400 m, *Erica*, N-slope, 12.I.2001, leg. Schülke (cSch); 1 ex., Achada do Teixeira, N-slope, 1400 m, *Erica*, laurel, dead wood, 16.I.2001, leg. Schülke (cSch); 2 exs., Achada do Teixeira, 32°45'52N, 16°54'44W, 1350 m, 20.II.2003, leg. Lompe (cAss); 1 ex., Achada do Teixeira, 32°45'42N, 16°54'57W, 1600 m, 20.II.2003, leg. Lompe (cAss); 4 exs., Rancho das Pedras, S Santana, grass heap, 12.I.2001, leg. Schülke (cSch); 1 ex., road between Pico da Lamoirinha and Pico Gordo, 1200 m, N-slope, *Erica*, sifted, 14.I.2001, leg. Schülke (cSch); 1 ex., 4km S Porto da Cruz, 2km WSW Portela, Lamaceiros Forest Station, 750 m, 13.IX.1998, leg. Schuh (cAss); 1 ex., Ribeira Brava, 200 m, compost and dry grass, 27.III.1996, leg. Zerche (DEI); 1 ex., Fonte da Pedra, 15.III.2004, leg. Aßmann (cAss). Porto Santo: 2 exs., Pico do Facho, 500 m, N-slope, laurisilva with *Erica* and *Pinus*, 1.IV.1996, leg. Assing (cAss); 9 exs., Pico do Facho, N slope, 450-510 m, *Erica*, *Thuya*, 20.I.2001, leg. Schülke (cSch).

PUTHZ (*pers. comm.*) reports the following material: Madeira proper: 4 exs., Rabaçal, 15.IV.1957, leg. Mateu (MHNP); 9 exs., Rabaçal, VIII.1975, leg. Vit (MHNG, cPut); 4 exs., Ribeira das Cales, leg. Franz (NHMW); 4 exs., Funchal, II.1966, leg. Palm (ZML, cPut); 5 exs., Funchal, XI.1967, leg. Benick (cPut); 5 exs., Poiso, 1600 m, 9.II.1978 (ZML); 1 ex., Ribeiro das Cales, leg. Franz (cPut); 2 exs., Ribeiro Bonito, leg. Franz (cPut); 1 ex., Câmara de Lobos, Jardim da Serra, 4.-10.X.1993, leg. Heiss (cPut); 37 exs., "Madeira" (DEI, MHNP, NHMW, cPut). Porto Santo: 1 ex., Porto Santo, Pico do Facho, 18.XII.1972, leg. Palm (ZML); 1 ex., Porto Santo, III.1964, leg. Fongond (cPut).

Distribution: Mediterranean region, West and Central Europe; Madeira: Madeira proper: common; Porto Santo: Pico do Facho.

Bionomics: Common and eurytopic species in Madeira; collected mainly at higher elevations throughout the year (I-XII).

Remark: The fact that Wollaston did not record this common species suggests that it was introduced in more recent days. *Stenus ossium* was first recorded by LIEBMANN (1939).

44. *Stenus providus* Erichson, 1839

References: WOLLASTON (1854: 598; 1857: 196); 1865: 512); FAUVEL (1897A: 49; 1897: 265; 1902: 74); SCHMITZ (1897: 152); CAMERON (1901: 221); LUNDBLAD (1958: 468); PUTHZ (1966: 133); SMETANA (1970: 56); ERBER & HINTERSEHER (1988: 152); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Stenus rogeri* Kraatz, 1857 (synonym): WOLLASTON (1865: 512); JANSSON (1940: 56); LUNDBLAD (1958: 468); PUTHZ (1966: 133); BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: 1 ex., Ribeira Brava, 200 m, bank of stream, 27.III.1996, leg. Assing (cAss).

PUTHZ (*pers. comm.*) reports the following material: 5 exs., Santana (IRSNB); 3 exs., Rabaçal (FMNH, IRSNB); 1 ex., 4 km E Porto da Cruz, 300 m, *Erica* litter and bank of stream, 24.III.1996, leg. Zerche (DEI); 18 exs., “Madeira”, ex colls. Wollaston, Sharp, Cameron (HMO, cPut).

Distribution: West Palaearctic. Madeira: Madeira proper.

Bionomics: The species inhabits moist habitats and was collected primarily at intermediate elevations, occasionally together with *S. guttula*.

Remarks: BOIEIRO *et al.* (2001, 2002) list this species both as *S. providus* and *S. rogeri*. The latter, however, was (re-) synonymized with the former approximately 30 years ago (PUTHZ, 1974); *S. rogeri* was already listed as a synonym of *S. providus* by FAUVEL (1897C).

45. *Stenus ruivomontis* Assing & Wunderle, 1995 (Plate I, fig. 3, Fig. 5)

References: ASSING & WUNDERLE (1995C: 1ff.); HERMAN (2001: 2374); BOIEIRO *et al.* (2001: 22; 2002: 23; 2003: 57).

Locus typicus: Madeira proper: Achada do Teixeira, 1350 m.

Additional records: Madeira proper: 12 exs., Achada do Teixeira, 1350 m, 29.III.1996, leg. Assing (cAss); 4 exs., Achada do Teixeira, 1400 m, *Erica*, laurel, dead wood, 16.I.2001, leg. Schülke (cSch).

Distribution: Endemic to Madeira proper. Known only from the type locality (Fig. 5); apparently local endemic.

Bionomics: The species was sifted from deep litter in a stand of very old *Erica* sp.

Remark: The year of the original description is 1995, not 1994 (see HERMAN (2001) and reference section).

46. *Stenus undulatus* Wollaston, 1854 (Plate I, fig. 4, Fig. 5)

References: WOLLASTON (1854: 599; 1857: 197; 1865: 512); FAUVEL (1897A: 49; 1897C: 264; 1902: 74); SCHMITZ (1897: 152); JANSSON (1940: 56); LUNDBLAD (1958: 468); SMETANA (1963: 33); PUTHZ (1966: 130f., 134); ASSING & WUNDERLE (1995C: 1); HERMAN (2001: 2426); BOIEIRO *et al.* (2001: 22; 2002: 23; 2003: 57).

Locus typicus: Madeira proper: Cruzinhas, under moist decaying leaves at the edge of a minute trickling stream in lofty region.

Additional records: Madeira proper: 2 exs., Queimadas, 900 m, near waterfall, 27.III.1993, leg. Wunderle (cAss, cWun).

PUTHZ (*pers. comm.*) reports the following material: 17 exs., “Madeira”, leg. Wollaston (DEI, HMO, cPut); 1 ex., Caramujo, 1600 m, VI.1952, leg. Pecoud (MHNP); 2 exs., Curral das Freiras, 18.X.1971, leg. Benick (MHNG, cPut).

Distribution: Endemic to Madeira proper (Fig. 5): Cruzinhas, Queimadas, Curral das Freiras, Caramujo.

Bionomics: Very rare species; only twice recorded since Wollaston's days. The species has been found in very moist habitats. The specimens collected by Paul Wunderle were found in wet vegetation close to a waterfall.

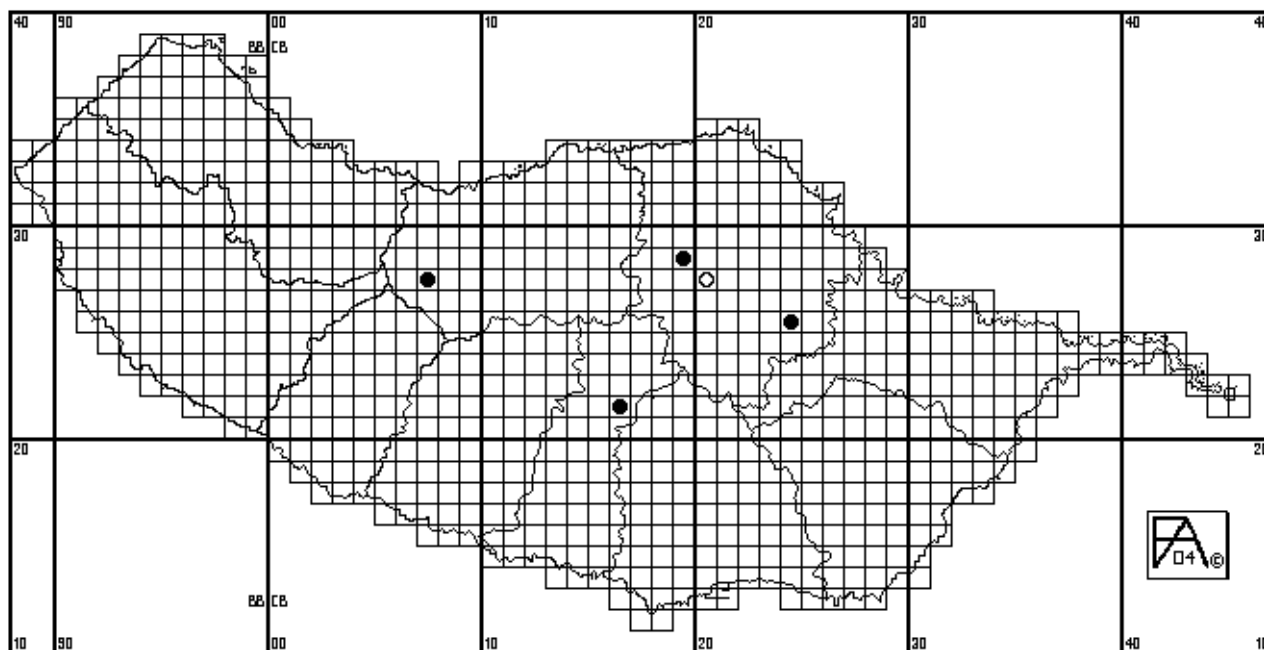


Fig. 5 - Distributions of *Stenus ruivomontis* Assing & Wunderle (open circle) and *S. undulatus* Wollaston (filled circles) in Madeira.

47. *Stenus wollastoni* Gemminger & Harold, 1868 (Plate I, fig. 5, Fig. 6)

References: WOLLASTON (1871A: 310); SMETANA (1963: 33); PUTHZ (1966: 132ff.); ASSING & WUNDERLE (1995C: 1, 4); HERMAN (2001: 2437); BOIEIRO *et al.* (2001: 22; 2002: 23; 2003: 57).

As *Stenus heeri* var. β : WOLLASTON (1854: 600).

As *Stenus fulvescens* Wollaston, 1857: WOLLASTON (1857: 198; 1865: 513); FAUVEL (1897A: 49); SCHMITZ (1897: 152).

As synonym of *Stenus heeri*: FAUVEL (1897C: 267; 1902: 76); BERNHAUER & SCHUBERT (1911: 170).

Locus typicus: Madeira proper: Cruzinhas and Lombo dos Pecegeiros.

Additional records: Madeira proper: 6 exs., Queimadas, 900 m, near waterfall, 27.III.1993, leg. Assing, Wunderle (cAss, cWun); 2 exs., Bica da Cana, 1550 m, stand of *Erica* sp. and *Vaccinium padifolium*, 29.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Rabaçal, 1000 m, 27.X.1997m, leg. Lompe (cAss); 1 ex., Achada do Teixeira, 32°45'52N, 16°54'44W, 1350 m, 20.II.2003, leg. Lompe (cAss).

Distribution: Endemic to Madeira proper (Fig. 6): Cruzinhas, Lombo dos Pecegeiros, Bica da Cana, Queimadas, Rabaçal, Achada do Teixeira.

Bionomics: This rare species has been collected in moist vegetation and in stands of *Erica* sp. and *Vaccinium padifolium* at intermediate and higher elevations (ASSING & WUNDERLE, 1995C).

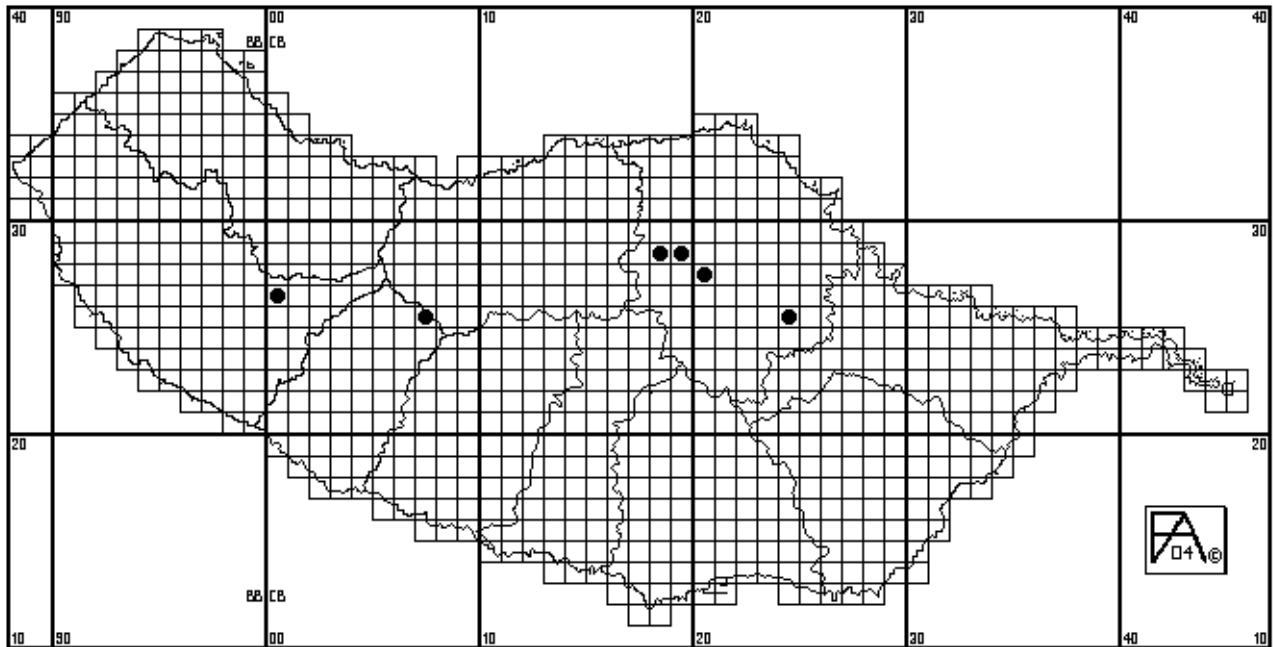


Fig. 6 - Distribution of *Stenus wollastoni* Gemminger & Harold in Madeira.

SUBFAMILY PAEDERINAE

48. *Achenium hartungii* Wollaston, 1854

References: WOLLASTON (1854: 587; 1857: 193; 1865: 500).

As *Achenium hartungi* (misspelling): FAUVEL (1902: 96); BERNHAUER & SCHUBERT (1912: 272); KOCH (1937: 75, 111); JANSSON (1940: 56); LUNDBLAD (1958: 468); SMETANA (1963: 32); ERBER (1990: 149); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Achenium basale* (Erichson, 1840) (misidentification): FAUVEL (1897A: 49; 1897C: 288); SCHMITZ (1897: 152).

Locus typicus: “Cabo Gerajão, or Brazen Head” (= Cabo Garajau), two miles east of Funchal.

Distribution: South of Iberian Peninsula, Morocco; Madeira: Madeira proper, Porto Santo. Very rare: No further records since WOLLASTON (1857).

Bionomics: The holotype was found under a stone; according to WOLLASTON (1857), the Madeiran specimens were collected in winter and spring.

49. *Astenus bimaculatus* (Erichson, 1840)

References: FAUVEL (1897A: 49; 1897C: 273; 1902: 83); BERNHAUER & SCHUBERT (1912: 214); JANSSON (1940: 56); LUNDBLAD (1958: 468); COIFFAIT (1984: 291); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Sunius bimaculatus*: WOLLASTON (1854: 594; 1857: 195; 1865: 509); CAMERON (1901: 222).

As *Mecognathus bimaculatus*: SCHMITZ (1897: 152).

Distribution: West Palaearctic; Madeira: Madeira proper. Only recorded by WOLLASTON (1854, 1865).

Bionomics: According to WOLLASTON (1865) the Madeiran material was found in saline spots “behind the sea-beach”.

50. *Astenus chimaera* (Wollaston, 1854)

References: FAUVEL (1897A: 49; 1897C: 273; 1902: 83); BERNHAUER & SCHUBERT (1912: 214); JANSSON (1940: 56); LUNDBLAD (1958: 469); COIFFAIT (1984: 305); BOIEIRO *et al.* (2001: 21; 2002: 22; 2003: 56).

As *Mecognathus chimaera*: WOLLASTON (1854: 595; 1857: 196; 1865: 511); SCHMITZ (1897: 152).

Locus typicus: Madeira proper, Ribeiro Frio, levada.

Distribution: Endemic to Madeira proper. Very rare or extinct; the species has not been recorded again since Wollaston’s days.

Bionomics: WOLLASTON (1854) found the species “under stones and decaying logs of wood in the dampest spots” in woodland at intermediate and higher elevations in February, July, and August.

51. *Astenus lyonessius* (Joy, 1908)

References:

As *Sunius angustatus* (PAYKULL, 1789) (misidentification): WOLLASTON (1854: 593; 1857: 195; 1865: 509); CAMERON (1901: 222).

As *Sunius gracilis* (PAYKULL, 1789) (misidentification): CROTCH (1870: 92); WOLLASTON (1871A: 309).

As *Astenus gracilis*: MEQUIGNON (1942: 18; 1946: 114).

As *Astenus angustatus*: FAUVEL (1897A: 49; 1897C: 274; 1902: 84); BERNHAUER & SCHUBERT (1912: 213); LIEBMANN (1939: 154); BERNHAUER (1940: 3).

As *Mecognathus angustatus*: SCHMITZ (1897: 152).

As *Astenus longelytratus* Palm, 1936 (synonym): BERNHAUER (1940: 9); JANSSON (1940: 7, 56); LUNDBLAD (1958: 468); SMETANA (1963: 34), (1970: 56); ERBER & HINTERSEHER (1988: 152); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Astenus longelytrata*: BORGES (1990: 104).

As *Sunius aequivocus* (synonym): WOLLASTON (1860B: 104; 1865: 508).

As *Mecognathus aequivocus*: SCHMITZ (1897: 152).

As *Astenus aequivocus*: FAUVEL (1897A: 49; 1897C: 274; as doubtful synonym of *A. angustatus*); BERNHAUER & SCHUBERT (1912: 213); LUNDBLAD (1958: 469); BOIEIRO *et al.* (2001: 21; 2002: 22; 2003: 56).

Locus typicus (*S. aequivocus*): “near Funchal”.

Additional records: Porto Santo: 2 exs., Campo de Baixo, 21.III.2004, leg. Aßmann (cAss).

Distribution: West Palaearctic, Middle Asia; Azores, Madeira: Madeira proper, Porto Santo, Ilhéu Bugio.

Bionomics: *Astenus lyonessius* is a eurytopic species found in forested and open biotopes, also in arable land and in gardens, often in decaying plant material (HORION, 1965).

Remarks: *Astenus aequivocus* (Wollaston) was regarded as a doubtful synonym of *A. angustatus* (Paykull) by FAUVEL (1897A, 1897C). Shortly afterwards, FAUVEL (1902) synonymized *A. aequivocus* stating that the holotype was but a large teneral specimen of *A. angustatus*. This synonymy was apparently overlooked by LUNDBLAD (1958) and BOIEIRO *et al.* (2001, 2002), the latter listing the species both as *A. longelytratus* and *A. aequivocus*. There has been some doubt whether the above records should be referred to *A. lyonessius* (Joy) or to *A. gracilis* (Paykull). JANSSON (1940), however, examined the genitalia and attributed his records to *A. longelytratus*, a junior synonym of *A. lyonessius*.

[*Astenus nigromaculatus* (Motschulsky, 1858)]

References: COIFFAIT (1984: 285); BOIEIRO *et al.* (2001: 21; 2002: 22).

Distribution: Southern West Palaearctic.

Bionomics: According to ISRAELSON (1971), *A. nigromaculatus* is a desert species.

Remarks: COIFFAIT (1984) collectively indicates the species for Madeira, without giving a concrete reference. The record is apparently based on an error and the species is here deleted from the list of Madeiran Staphylinidae.

52. *Hypomedon debilicornis* (Wollaston, 1857)

References:

As *Lithocharis debilicornis*: WOLLASTON (1857: 194; 1865: 508); CROTCH (1870: 93).

As *Medon debilicornis*: FAUVEL (1897A: 49; 1897C: 279; 1902: 88); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1912: 238); LIEBMANN (1939: 151); BERNHAUER (1940: 3); JANSSON (1940: 56); MÉQUIGNON (1942: 18; 1946: 114); LUNDBLAD (1958: 469); SERRANO (1982: 72).

As *Chloecharis debilicornis*: SMETANA (1963: 34); BORGES (1990: 104).

As *Chloeocharis* [recte *Chloecharis*] *debilicornis*: BORGES (1990: 104); SERRANO (1993: 5); BOIEIRO *et al.* (2001: 21; 2002: 22).

Locus typicus: Madeira proper: near Funchal.

Additional records: Madeira proper: 1 ex., Caniço de Baixo, window pane, 21.-27.IX.1989, leg. Pieper (cAss); 1 ex., Ribeira Brava, compost and grass sifted, 200 m, 27.III.1996, leg. Zerche (DEI).

Distribution: Cosmopolitan; Azores, Canaries, Cape Verdes, St. Helena; Madeira: Madeira proper.

Bionomics: The species inhabits various kinds of decaying organic matter, especially plant material.

53. *Leptobium paivae* (Wollaston, 1865) (Plate II, fig. 1)

References: SMETANA (1963: 32); OROMÍ *et al.* (1978: 187); COIFFAIT (1969: 844; 1982: 110); OROMÍ (1983: 281); SERRANO (1983: 761); ERBER & WHEATER (1987: 163); ASSING (2005: 170).

As *Dolicaon paivae*: WOLLASTON (1865: 503 + app. 73); Fea (1883: 765); FAUVEL (1897B: 74; 1897C: 282; 1902: 92); GARETTA (1911: 394); BERNHAUER & SCHUBERT (1912: 275); GRIDELLI (1926: 154); ALLUAUD (1935: 39); LUNDBLAD (1958: 469).

Locus typicus: Selvagem Grande.

Distribution: Selvagens, endemic: Selvagem Grande, Selvagem Pequena.

Bionomics: WOLLASTON (1865) does not indicate any ecological details.

54. *Lithocharis ochracea* (Gravenhorst, 1802)

References: WOLLASTON (1854: 590; 1857: 193; 1865: 506; 1867: 244); CROTCH (1870: 92); CAMERON (1901: 222); BORGES (1990: 104); SERRANO (1993: 5); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Medon ochraceus*: FAUVEL (1897A: 49; 1897C: 278; 1902: 88); SCHMITZ (1897: 152); LIEBMANN (1939: 151); BERNHAUER (1940: 3, 9); JANSSON (1940: 56); MÉQUIGNON (1942: 19; 1946: 114); LUNDBLAD (1958: 469).

Distribution: Cosmopolitan; Azores, Canaries, Cape Verdes, St. Helena; Madeira: Madeira proper.

Bionomics: The species is an active flyer and found in various kinds of rotting organic matter, especially in plant material.

55. *Lithocharis vilis* (Kraatz, 1859)

References: SMETANA (1963: 34); ERBER (1990: 150); SERRANO (1993: 5); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Medon vilis*: FAUVEL (1897A: 49; 1897C: 278; 1902: 88); SCHMITZ (1897: 152); LUNDBLAD (1958: 469).

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, window pane, 7.-20.V.1992, leg. Pieper (cAss); 5 exs., same data, but 15.-28.IX.1994 (cAss).

Distribution: Probably cosmopolitan; Canaries; Madeira: Madeira proper, Porto Santo.

Bionomics: Similar to the preceding species. In Madeira collected from cattle dung and from a window pane (ERBER, 1990).

56. *Lobrathium multipunctum* (Gravenhorst, 1802)

References: COIFFAIT (1982: 286); SERRANO (1987B: 150); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Lathrobium multipunctum*: FAUVEL (1897A: 49; 1897C: 284; 1902: 93); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1912: 263); SMETANA (1963: 34; 1970: 58).

As *Lathrobium multipunctatum* (subsequent misspelling): WOLLASTON (1854: 588; 1857: 193; 1865: 501); JANSSON (1940: 7, 56); LUNDBLAD (1958: 469).

As *Lobrathium multipunctatum*: BORGES (1990: 104).

Additional records: Madeira proper: 1 ex., Queimadas, 900 m, near waterfall, 27.III.1993, leg. Assing (cAss); 2 exs., Queimadas, 32°46'45N, 16°54'32W, 900 m, 28.II.2003, leg. Lompe (cAss); 1 ex., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss); 1 ex., Ribeiro Frio, Levada do Furado, leaf litter sifted, 18.III.2005, leg. Ausmeier (cAss); 1 ex., Bica da Cana, meadow, under stones, 4.IV.1993, leg. Assing (cAss); 34 exs., Ribeira da Janela, Fanal, 1100 m, edge of pond, 25.III.1996, leg. Assing, Zerche (DEI, cAss, cSch); 1 ex., S Seixal, Chão de Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss); 8 exs., Rabaçal, 950 m, 30.III.&2.IV.1996, leg. Lompe (cAss); 1 ex., Rabaçal, 32°45'26N, 17°07'24W, 1000 m, 25.II.2003, leg. Lompe (cAss); 1 ex., Faial, 100 m, stream bank, 6.IV.1993, leg. Assing (cAss); 1 ex., Achada do Teixeira, 1350 m, bank of narrow stream, 7.IV.1993, leg. Assing (cAss); 1 ex., path from Achada do Teixeira to Pico Ruivo, 1700 m, N slope, wet moss, 29.III.1996, leg. Zerche (DEI); 3 exs., SW Santana, Rio Silveira, 12.III.2004, leg. Aßmann (cAss).

Distribution: West Palaearctic; Azores?, Canaries; Madeira: Madeira proper.

Bionomics: The species is usually found in various kinds of damp habitats, also in arable land and gardens, and in decaying organic matter.

57. *Medon apicalis* (Kraatz, 1857)

References: FAUVEL (1897A: 49; 1897C: 278; 1902: 87); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1912: 233); BERNHAUER (1940: 3); JANSSON (1940: 56); MÉQUIGNON (1942: 18; 1946: 114); LUNDBLAD (1958: 469); SMETANA (1970: 57); COIFFAIT (1984: 40); BORGES (1990: 104); SERRANO (1993: 5); BOIEIRO *et al.* (2001: 21; 2002: 22); ASSING (2004: 36, 2006: 29).

As *Lithocharis apicalis*: WOLLASTON (1871A: 307).

As *Lithocharis fuscula* Lacordaire, 1835 (misidentification): WOLLASTON (1854: 589; 1857: 193; 1865: 505).

Distribution: Europe except for the southeast, Northwest Africa; Azores, Canaries; Madeira: Madeira proper, Porto Santo.

Bionomics: The species is often collected flying (car-nets, flight intercept traps) and in various types of woodland, at the edge of streams, under haystacks, or at light sources; its reproduction habitat is essentially unknown. Adult beetles have been recorded throughout the year; teneral specimens were observed in autumn (ASSING, 2006).

58. *Medon indigena* (Wollaston, 1857) (Plate II, fig. 2)

References: FAUVEL (1897A: 49; 1897C: 277; 1902: 88); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1912: 235); JANSSON (1940: 56); LUNDBLAD (1958: 469); COIFFAIT (1984: 43); SERRANO (1993: 5); BOIEIRO *et al.* (2001: 21; 2002: 22; 2003: 56); ASSING (2006: 83).

As *Lithocharis indigena*: WOLLASTON (1857: 193; 1865: 505).

Locus typicus: Madeira proper, Cruzinhas. Male holotype in BMNH collection.

Distribution: Endemic to Madeira: Madeira proper, Porto Santo.

Bionomics: Wollaston found the holotype under a stone. In Porto Santo, the species was sifted in large numbers from leaf litter and rotting wood on the northern slopes of Pico Juliana, Pico do Castelo, and Pico do Facho (see records above).

59. *Medon ripicola* (Kraatz, 1854)

References: FAUVEL (1897A: 49; 1897C: 278; 1902: 87); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1912: 236); BERNHAUER (1940: 3); JANSSON (1940: 56); MÉQUIGNON (1942: 18; 1946: 114); LUNDBLAD (1958: 469); COIFFAIT (1984: 64); BORGES (1990: 104); SERRANO (1993: 5); BOIEIRO *et al.* (2001: 21; 2002: 22); ASSING (2004: 76, 2006: 78).

As *Lithocharis ripicola*: Wollaston (1871a: 307).

Additional records: Madeira proper: 2 exs., above Seixal, 550 m, sifted leaf litter in laurisilva near stream, 31.III.1996, leg. Assing (cAss); 4 exs., S Lamaceiros, Levada Central da Janela, 20.III.2004, leg. Aßmann (cAss).

Distribution: Europe, except for the extreme southeast; North Africa, Azores, Madeira: Madeira proper.

Bionomics: The species is capable of flight and often found in flood debris (spring and winter) and in other habitats near or at the banks of rivers and streams, especially mole nests. Adult beetles are present throughout the year; teneral specimens were observed in autumn (ASSING, 2006).

60. *Medon vicentensis* Serrano, 1993 (Plate II, fig. 3)

References: SERRANO (1993: 1ff.); ASSING (1998B: 143, 2006: 57); BOIEIRO *et al.* (2001: 21; 2002: 22; 2003: 56).

Locus typicus: Madeira proper: São Vicente, Gruta dos Cardais.

Additional record: Madeira proper: 1 ex., São Vicente, Gruta dos Cardais, pitfall trap, 5.I.1996, leg. Erber (cAss).

Distribution: Madeira, locally endemic; known only from the type locality.

Bionomics: This species is a true troglobite, as can be inferred from the morphological adaptations to caves (reduction of eyes, wings, and pigmentation); for an illustration see Plate II, fig. 3.

61. *Pseudobium gridellii ibericum* Coiffait, 1982

References: COIFFAIT (1982: 262); BOIEIRO *et al.* (2001: 21; 2002: 22).

Distribution: Portugal, Madeira: Madeira proper.

Bionomics: *Pseudobium gridellii* is usually found in riparian habitats.

62. *Pseudomedon obscurellus* (Erichson, 1840)

= *Lithocharis brevipes* Wollaston, 1860; **syn. n.**

References: COIFFAIT (1984: 127); BORGES (1990: 104); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Lithocharis obsoleta* (NORDMANN, 1837) (misidentification): WOLLASTON (1865: 506; 1867: 244).

As *Medon obsoletus*: FAUVEL (1897A: 49; 1897C: 278; 1902: 88); SCHMITZ (1897: 152); JANSSON (1940: 56); LUNDBLAD (1958: 469).

As *Hypomedon obsoletus*: SERRANO (1993: 5).

As *Pseudomedon obsoletus*: SERRANO (1987B: 150); BOIEIRO *et al.* (2001: 21; 2002: 22).

? As *Lithocharis brevipes* Wollaston, 1860 (synonym): WOLLASTON (1860B: 104).

Locus typicus (*L. brevipes*): “Mr. Bewicke’s garden at the Palmeira, above Funchal” (WOLLASTON, 1860B).

Additional records: Madeira proper: 2 exs., Madeira, above Seixal, Ribeira do Seixal, 550 m, edge of stream, 31.III.1996, leg. Lompe (cAss); 1 ex., Faial, 100 m, stream bank, 6.IV.1993, leg. Wunderle (cWun).

Distribution: West Palaearctic. Azores, Madeira: Madeira proper, Porto Santo.

Bionomics: *Pseudomedon obscurellus* occurs in riparian habitats, occasionally also in rotting plant material. SERRANO (1987B) collected the species at a light source.

Remarks: *Pseudomedon obscurellus* and *P. obsoletus* have frequently been confused (see LOHSE, 1989A). Based on the evidence available, it seems most likely that only one of the two species occurs in Madeira. Except for BOIEIRO *et al.* (2001, 2002), all the authors listed above only indicate either of the species from the archipelago. In contrast to *P. obsoletus*, *P. obscurellus* is very common in the Western Mediterranean, and we have seen only the latter species from Madeira. Therefore, it seems that the records of *P. obsoletus* from Madeira are based on misidentifications or misinterpretations, which is why it is here deleted from the list of Madeiran Staphylinidae. *Lithocharis brevipes* Wollaston, which has previously been treated as a synonym of *P. obsoletus*, is consequently regarded as a synonym of *L. obscurellus*.

63. *Rugilus orbiculatus* (Paykull, 1789)

References: BORGES & SERRANO (1989: 10); BORGES (1990: 104); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Stilicus orbiculatus*: FAUVEL (1897A: 49; 1897C: 275; 1902: 85); SCHMITZ (1897: 152); BERNHAUER (1940: 3); JANSSON (1940: 7, 56); MÉQUIGNON (1946: 114); LUNDBLAD (1958: 469); SMETANA (1963: 34; 1970: 56); SERRANO & BORGES (1987: 55).

As *Rugilus affinis* (ERICHSON, 1837) (synonym): WOLLASTON (1854: 592; 1857: 195).

As *Stilicus affinis*: WOLLASTON (1865: 503); CROTCH (1870: 92).

Additional records: Madeira proper: 1 ex., Lombo do Mouro, 1400 m, wet grass and moss, 29.III.1993, leg. Wunderle (cWun); 1 ex., Funchal env., 900 m, 12.XI.1967, leg. Benick (cAss); 3 exs., Rancho das Pedras, S Santana, grass heap, 12.I.2001, leg. Schülke (cSch); 2 exs., Seixal, Chão

da Ribeira, 450 m, grass heap, 31.III.1996, leg. Zerche (DEI); 6 exs., Seixal, Chão da Ribeira, laurisilva, leaf litter sifted, 20.III.2005, leg. Ausmeier (cAss).

Distribution: West Palaearctic; Azores, Canaries; Madeira: Madeira proper.

Bionomics: *Rugilus orbiculatus* is a eurytopic species and found in forest leaf litter, as well as in various kinds of rotting organic material, both in open and forested biotopes.

64. *Scopaeus subopacus* Wollaston, 1860

References: WOLLASTON (1860B: 103; 1865: 504 + app. 74); FAUVEL (1897A: 49; 1897C: 277; 1902: 86); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1912: 251); JANSSON (1940: 56); LUNDBLAD (1958: 469); FRISCH (1997: 533); BOIEIRO *et al.* (2001: 21; 2002: 22; 2003: 56).

As *Scopaeus maderae* Coiffait, 1960 (synonym): Coiffait (1960: 287; 1984: 187);

Locus typicus: Madeira proper: Santo da Serra.

Distribution: Madeira: Madeira proper, endemic.

Bionomics: Very rare; known only from the type localities of *S. subopacus* (S. Antonio da Serra) and *S. maderae* (Pico Ruivo). Additional ecological data are not available.

65. *Sunius propinquus* (Brisout, 1867)

References: BORGES (1990: 104); BOIEIRO *et al.* (2001: 21; 2002: 22).

As *Medon propinquus*: FAUVEL (1897A: 49; 1897C: 280; 1902: 89); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1912: 239); BERNHAUER (1940: 3); JANSSON (1940: 56); MEQUIGNON (1942: 18; 1946: 114); LUNDBLAD (1958: 469).

As *Hypomedon propinquus*: SMETANA (1963: 34; 1970: 57); COIFFAIT (1984: 95); SERRANO & BORGES (1987: 55); ERBER & HINTERSEHER (1988: 152); SERRANO (1993: 5).

As *Lithocharis melanocephala* (FABRICIUS, 1792) (misidentification): WOLLASTON (1854: 591; 1857: 194).

As *Lithocharis tricolor* (MARSHAM, 1802) (primary homonym): WOLLASTON (1865: 507).

As *Lithocharis ruficollis* (KRAATZ, 1858) (synonym): WOLLASTON (1871A: 309); CROTCH (1870: 93).

Additional records: Madeira proper: 12 exs., Madeira, Ribeira da Janela, Fanal, 1100 m, in debris near edge of pond, 25.III.1996, leg. Assing, Zerche (DEI, cAss, cSch); 6 exs., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss); 3 exs., Fanal, 20.III.2004, leg. Aßmann (cAss); 9 exs., Seixal, Chão da Ribeira, laurisilva, leaf litter sifted, 20.III.2005, leg. Ausmeier (cAss); 1 ex., Madeira, Caniço de Baixo, 80 m, window pane, 7.-13.IX.1989, leg. Pieper (cAss); 1 ex., same data, but 13.-19.IX.1990 (cAss); 2 exs., same data, but 7.-20.V.1992 (cAss); 1 ex., same data, but 4.-25.IX.1986 (cErb); 1 ex., Madeira, Boca da Corrida, 1.XII.1999, leg. Kirschbaum (cErb); 1 ex., Bica da Cana, meadow, under stones, 4.IV.1993, leg. Assing. Porto Santo: 1 ex., peak of Pico Branco, 450 m, 1.IV.1996, leg. Assing (cAss); 3 exs., peak of Pico do Facho, 500 m, N-slope, 1.IV.1996, leg. Assing (cAss). Ilhéu Chão: 3 exs., no further data, leg. Franz (cAss).

Distribution: Europe (except for the southeast), Northwest Africa; Azores, Canaries; Madeira: Madeira proper, Porto Santo, Deserta Grande, Ilhéu Bugio, Ilhéu Chão.

Bionomics: Eurytopic species, occurring in leaf litter, rotting plant material, under stones; repeatedly collected flying in Caniço de Baixo (see records above).

SUBFAMILY STAPHYLININAE

66. *Bisnius cephalotes* (Gravenhorst, 1802)

Additional records: Madeira proper: 1♀, Ribeira Brava, 27.XII.1982, leg. Gillerfors (cGil).

Distribution: Recorded from large parts of the Western Palaearctic, eastwards to Middle Asia and Mongolia (HERMAN, 2001), also introduced in North America (SMETANA, 1995).

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost). No information is available on the circumstances of collection of the Madeiran specimen.

Remarks: First record from Madeira.

67. *Bisnius sordidus* (Gravenhorst, 1802)

References: As *Philonthus sordidus*: WOLLASTON (1854: 582; 1857: 189; 1865: 491); CROTCH (1870: 90); FAUVEL (1897A: 49; 1897C: 300; 1902: 109); SCHMITZ (1897: 153); JANSSON (1940: 8, 56); MÉQUIGNON (1942: 20; 1946: 114); LUNDBLAD (1958: 469); SMETANA (1963: 36; 1970: 59); HERMAN (2001: 2556); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Philonthus pachycephalus* Nordmann, 1837 (synonym): SERRANO & BORGES (1987: 56); BORGES (1990:104).

Distribution: Cosmopolitan in temperate regions: Europe, Siberia, North Africa, Middle East, Middle Asia, Mongolia, India, Nepal, New Zealand, North and South America. Azores, Canaries. Madeira: Madeira proper, Deserta Grande. Collected from the vicinity of Funchal, Paúl da Serra, and Ribeiro Frio, once recorded also from Deserta Grande (WOLLASTON, 1854).

Bionomics: Eurytopic species, usually associated with decaying organic matter (dung, compost, nests). The Madeiran specimens were collected during the period from May through August.

68. *Creophilus maxillosus* (Linnaeus, 1758)

References: WOLLASTON (1865: 487); Crotch (1870: 90); FAUVEL (1902: 102); BERNHAUER (1940: 9); JANSSON (1940: 10, 56); MÉQUIGNON (1942: 22; 1946: 114); LUNDBLAD (1958: 470); SMETANA (1963: 39; 1970: 63); SERRANO (1982: 73; 1987B: 150); SERRANO & BORGES (1987: 57); ERBER & HINTERSEHER (1988: 153); BORGES (1990: 105); ISRAELSON (1990: 3); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Staphylinus maxillosus*: WOLLASTON (1854: 579; 1857: 188);

As *Emus maxillosus*: FAUVEL (1897A: 49; 1897C: 293); SCHMITZ (1897: 152).

Distribution: Originally Holarctic species, today more widespread and also known from the northern parts of the Oriental region, introduced in Central and South America, Iceland, Greenland, and Hawaii. St. Helena, Azores, Canaries, Madeira: Madeira proper, Porto Santo, Deserta Grande.

Bionomics: Eurytopic species usually associated with decaying organic matter, especially carrion. The Madeiran specimens were collected from February to September, at least partly on carrion of rabbit and pig.

69. *Gabrius nigrutilus* (Gravenhorst, 1802)

References: MÉQUIGNON (1942: 21; 1946: 114); SMETANA (1962: 102; 1963: 38; 1970: 59); SERRANO (1982: 72); BORGES (1990: 104); HERMAN (2001: 2637); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Philonthus aterrimus* (GRAVENHORST, 1802) (synonym): WOLLASTON (1854: 584).

As *Philonthus nigrutilus*: WOLLASTON (1857: 191; 1865: 494); CROTCH (1870: 91); FAUVEL (1897A: 50; 1897C: 302; 1902: 111); SCHMITZ (1897: 153); LIEBMANN (1939: 151); BERNHAUER (1940: 9); JANSSON (1940: 9, 56); LUNDBLAD (1958: 469).

? As *Gabrius heres* (SMETANA, 1962) (misidentification): SERRANO (1987B: 150).

Additional records: Madeira proper: >10 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 9 exs., same data, but 7.-13.IX.1989; 5 exs., same data, but 14.-20.IX.1989; 1 ex., same data, but 13.-19.IX.1990; 1 ex., same data, but 20.-27.IX.1990; <5 exs., same data, but 7.-20.V.1992; 5 exs., same data, but 15.-28.IX.1995 (cErb, cAss).

Distribution: Cosmopolitan at least in temperate regions. Azores, Canaries. Madeira: Madeira proper, Porto Santo.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost). The Madeiran specimens were collected from April through September in dense forests, at the edges of streams, under stones, from leaf litter, and from a window pane.

Remarks: SERRANO (1987B) erroneously lists *G. heres* for Madeira; according to BOIEIRO *et al.* (2001) this record is based on a confusion with *G. nigrutilus*.

70. *Gabrius simulans* (Wollaston, 1857) (Plate II, fig. 4, Fig. 7)

References: SMETANA (1962: 95, 98; 1963: 37); COIFFAIT (1974: 62); ERBER & HINTERSEHER (1988: 153, 182); HERMAN (2001: 2654); BOIEIRO *et al.* (2001: 22; 2002: 22; 2003: 56).

As *Philonthus simulans*: WOLLASTON (1857: 190; 1865: 494); FAUVEL (1897A: 50; 1997C: 302; 1902: 111); SCHMITZ (1897: 153); BERNHAUER & SCHUBERT (1914: 355); LUNDBLAD (1958: 469).

As *Philonthus canariensis* Fauvel, 1898 (misidentification): JANSSON (1940: 56).

As *Gabrius maderensis* Coiffait, 1963 (synonym): COIFFAIT (1963: 21).

Locus typicus: Madeira proper. WOLLASTON (1857) separated this species from *G. nigrutilus* (= *aterrimus*) based on four specimens without specifying the locality and date. The lectotype and three paralectotypes are in the BMNH (SMETANA, 1962, 1963).

Additional records: Madeira proper: 4 exs., above Seixal, 550 m, shady creek valley with laurel, 31.III.1996, leg. Assing (cAss).

Distribution: Endemic to Madeira proper and Porto Santo; rare (Fig. 7). Localities: Madeira proper: Rabaçal, Paúl da Serra, Seixal, Serra de Água, Terreiro da Luta, Caniço de Baixo; Porto Santo: without further locality data.

Bionomics: According to WOLLASTON (1857), *G. simulans* is most abundant in the dense forest districts at intermediate and higher elevations, especially leaf litter, but there are recent records also from lower altitudes. On one occasion, it was collected at a window pane (ERBER & HINTERSEHER, 1988). The beetles were found in March, April, and September.

Remarks: According to WOLLASTON (1857, 1865) *G. simulans* occurs in Madeira and the Canary Islands. JANSSON (1940), however, listed *G. canariensis* (Fauvel) for Madeira. LUNDBLAD

(1958) presumed that *G. simulans* from Madeira and *G. canariensis* from the Canaries were identical. SMETANA (1960) synonymized *G. simulans* and *G. canariensis* after examining non-typical Canarian material from Wollaston's collection. Later, SMETANA (1962) examined the types of *G. simulans*, found them to represent a distinct species and provided a new key to the Atlantic species of the *nigritulus* group: *G. simulans* in Madeira, and *G. heres* Smetana and *G. canariensis* in the Canaries. COIFFAIT (1974: 56) erroneously indicated *Gabrius heres* from Madeira.

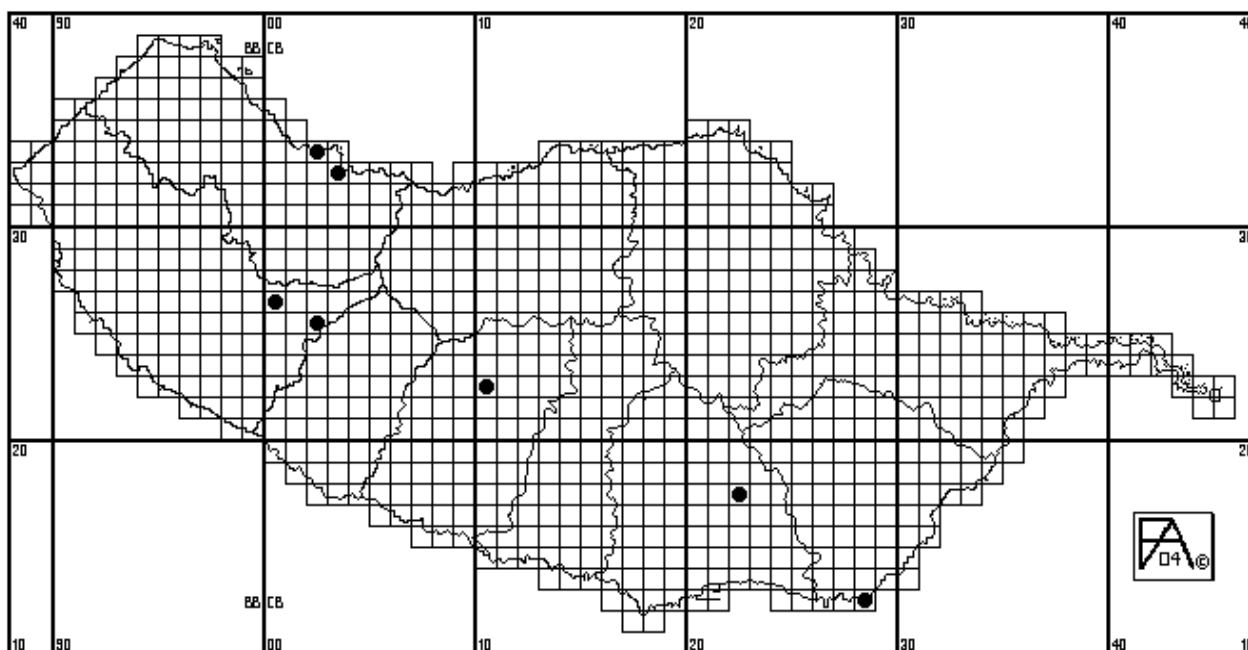


Fig. 7 - Distribution of *Gabrius simulans* (Wollaston) in Madeira.

71. *Gabronthus thermarum* (Aubé, 1850)

References: LUNDBLAD (1958: 469); BORGES (1990: 104); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Philonthus thermarum*: WOLLASTON (1860B: 102; 1865: 491); FAUVEL (1897A: 50; 1897C: 303; 1902: 111); SCHMITZ (1897: 153); JANSSON (1940: 56); MÉQUIGNON (1942: 21; 1946: 114).

Distribution: Subcosmopolitan, widespread in the Palearctic, Ethiopian, Oriental, and Nearctic regions. Azores, Canaries, Madeira: Madeira proper. No specimens have been recorded since WOLLASTON (1865).

Bionomics: Eurytopic species, usually associated with decaying organic matter (dung, compost), often also in greenhouses. There is no information on the habitat of the Madeiran specimens, which were collected by Wollaston in the vicinity of Funchal and by Bewicke (WOLLASTON, 1865).

Remarks: Old records, especially from the Ethiopian and Oriental regions, require confirmation based on dissected males, because a confusion with other widespread species of the genus is possible. In Madeira, the occurrence of *Gabrius maritimus* Motschulsky, a species also present in the Canary Islands, is not unlikely. In the shape of head and pronotum, especially in the

length and puncturation of the elytra, the female specimen, which we have seen from the Wollaston collection (BMNH), is similar to *G. thermarum*, not to *G. maritimus*.

72. ? *Gauropterus fulgidus* (Fabricius, 1787)

References: COIFFAIT (1972: 166); HERMAN (2001: 3631); BOIEIRO *et al.* (2001: 22; 2002: 22).

Distribution: Europe, North Africa, Middle East, Caucasus, introduced in Northern America, Canaries, Madeira? Records from the Eastern Palaearctic are unconfirmed; records from Southeast Asia refer to other species (BORDONI, 2002).

Bionomics: Eurytopic species, often recorded from synantropic habitats like sawmills, gardens, dumps, compost heaps, etc., and from banks of streams and rivers.

Remarks: All records are based on the remark by COIFFAIT (1972) that the species was recently introduced to Madeira.

73. *Gyrophypnus angustatus* (Stephens, 1833)

References: ASSING (2003C: 57).

As *Xantholinus liebei* Scheerpeltz, 1926 (synonym): SCHEERPELTZ (1926: 86; 1933: 1311).

As *Gyrophypnus liebei* (synonym): SMETANA (1963: 35); COIFFAIT (1972: 183); ERBER & HINTERSEHER (1988: 153, 182); HERMAN (2001: 3646); BOIEIRO *et al.* (2001: 22; 2002: 22; 2003: 56).

Locus typicus (*X. liebei*): Madeira proper: Vicinity of Funchal, Santo da Serra (VII.1925, one specimen, leg. O. Liebe); single male holotype in NHMW.

Additional records: Madeira proper: 19 exs., Fanal, 1100 m, edge of pond, debris, 25.III.1996, Assing (cAss); 1 ex., Rabaçal, 1300 m, *Erica/Vacinium* stand, 27.III.1996, Assing (cAss); 1 ex., Levada da Serra do Faial near Cabeço da Madeira, 800 m, cattle dung, 10.III.1981, leg. Erber (cErb); 13 exs., road from Ribeira da Janela to Paúl da Serra, 1100 m, lake border, flood debris, 25.III.1996, leg. Zerche (DEI, cSchü); 1 ex., Paúl da Serra, 27.XII.1987, leg. Gillerfors (cGil); 1 ex., Pico do Arieiro, 12.III.2004, leg. Aßmann (cAss).

Distribution: Widespread in the Western Palaearctic region and apparently introduced in North America. Records from other regions require confirmation. Madeira: Madeira proper.

Bionomics: Eurytopic species, often found in decaying organic matter, in forests, meadows and various kinds of cultivated landscape. The Madeiran material was collected in February-April, July, and December.

Remarks: *Gyrophypnus liebei* Scheerpeltz was synonymized with the preoccupied *G. punctulatus* by LOHSE (1988), who examined the single holotype without giving further information on the sex of the specimen, nor did he state if it was dissected. A recent revision of the type specimen of *Gyrophypnus liebei* shows that in fact *G. liebei* is not conspecific with *G. punctulatus* (Paykull), but a junior synonym of *G. angustatus* (Stephens) (ASSING, 2003C). BOIEIRO *et al.* (2003) erroneously indicate this species as a Madeiran endemic.

74. *Gyrophypnus fracticornis* (Müller, 1776)

References: SMETANA (1963: 35; 1970: 58); ERBER & HINTERSEHER (1988: 152, 181); BORGES & SERRANO (1989: 10); BORGES (1990: 104); HERMAN (2001: 3642); BOIEIRO *et al.* (2001: 22; 2002: 22).

? As *Gyrophypnus punctulatus* (Paykull, 1789) (misidentification?): MÉQUIGNON (1942: 19; 1946: 114); SERRANO (1982: 72).

? As *Xantholinus punctulatus* (misidentification?): WOLLASTON (1854: 577; 1857: 188; 1865: 497); CROTCH (1870: 91); FAUVEL (1897A: 49; 1897C: 291; 1902: 100); SCHMITZ (1897: 152); CAMERON (1901: 220, 222); JANSSON (1940: 7, 56); LUNDBLAD (1958: 469).

Distribution: Europe, Middle Asia, Middle East, introduced in Nearctic and Neotropical America, as well as in New Zealand. Azores, Madeira: Madeira proper.

Additional records: 1 ex., 26.VIII.1983, Poiso env., 1000 m, leg. Mitter (cMit); 3 exs., Chão da Ribeira, 28.VI.2000, leg. Aguiar (cAgu, cSchü); 1 ex., Paúl da Serra, Bica da Cana, Estanquinhos, 1500 m, 15.IX.1987, cattle dung, leg. Erber (cErb).

Bionomics: The species is usually associated with various kinds of decaying organic matter: compost, dung, and carrion. The Madeiran specimens were collected from April to September.

Remarks: As *Gyrophypnus fracticornis* and *G. punctulatus* were confused during the time prior to COIFFAIT (1972), all old records of these species are uncertain. The recently studied material refers to *Gyrophypnus fracticornis*. See also remarks on *Gyrophypnus angustatus* (Stephens).

75. *Heterothops minutus* Wollaston, 1860

References: WOLLASTON (1860A: 53; 1865: 485; 1867: 235), SMETANA (1963: 39); ISRAELSON (1979: 264); ERBER & HINTERSEHER (1988: 154); BORGES (1990: 105); HERMAN (2001: 3070); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Heterothops dissimilis* (Gravenhorst, 1802) (misidentification): WOLLASTON (1871A: 206, 298); FAUVEL (1897A: 50; 1897C: 310; 1902: 118); SCHMITZ (1897: 153); LIEBMANN (1939: 151); COIFFAIT (1978: 314).

As *Heterothops dissimilis* var. *brunneipennis* Kiesenwetter, 1858 (misidentification): JANSSON (1940: 10, 56); LUNDBLAD (1958: 470).

Locus typicus: Madeira proper: Funchal, Palmeira, garden of Bewicke (spring 1859, one specimen leg. Wollaston, one specimen probably from the same locality leg. Bewicke). A lectotype was designated by ISRAELSON (1979). Both specimens are in the BMNH.

Additional records: Madeira proper: >10 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 11 exs., same data, but 7.-13.IX.1989; 12 exs., same data, but 14.-20.IX.1989; 13 exs., same data, but 21.-27.IX.1989; >20 exs., same data, but 13.-19.IX.1990; 4 exs., same data, but 20.-27.IX.1990; <5 exs., same data, but 7.-20.V.1992; 5 exs., same data, but 15.-28.IX.1995 (cErb, cAss). Porto Santo: 5 exs., Pico do Facho, 500 m, N-slope of peak, *Pinus*, laurel, *Erica*, moss, 1.IV.1996, Assing (cAss); 1 ex., Pico Juliana, 400 m, *Erica*, leg. Lompe, 1.IV.1996, Assing (cAss); 4 exs., Pico do Facho, 510 m, 11.IX.1998, leg. Schuh; 2 exs., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: Probably Atlanto-Mediterranean. England, Central Europe and Sweden, Azores, Madeira: Madeira proper, Porto Santo (HERMAN, 2001). Records from North Africa, Middle Asia, and Cape Verde Islands refer to similar species or require confirmation.

Bionomics: Usually occurring in leaf litter (*Pinus*, laurel, and *Erica*), also collected in synanthropic habitats, under stones, in vegetable refuse (WOLLASTON, 1865), in dry ferns in a house (JANSSON, 1940), at a windowpane (ERBER & HINTERSEHER, 1988). Mainly at lower elevations in Madeira proper, common everywhere in Porto Santo. The Madeiran records were taken in April-September and November.

Remarks: Old records of *Heterothops* before the revision of ISRAELSON (1979) are doubtful. The genus includes several species of doubtful identity, also in the Western Palearctic, and urgently requires a thorough revision.

76. ? *Lepidophallus hesperius* (Erichson, 1839)

References: COIFFAIT (1972: 173); BORGES (1990: 104); HERMAN (2001: 3660); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Xantholinus hesperius* Erichson, 1840: WOLLASTON (1860B: 100; 1865: 497); CROTCH (1870: 91); FAUVEL (1897A: 49; 1897C: 292; 1902: 101); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1914: 304); BERNHAUER (1940: 3); JANSSON (1940: 56); MEQUIGNON (1942: 19); LUNDBLAD (1958: 469).

As *Xantholinus hesperus*: MEQUIGNON (1946: 114).

Distribution: Southwest Europe, Italy, North Africa, Malta, Azores, Canaries; Madeira: Madeira proper. No further records since WOLLASTON (1860B) recorded the species from Funchal (1858/59) in an unspecified locality (1859).

Bionomics: The bionomics of this species are insufficiently known.

Remarks: The presence of the species in Madeira requires confirmation. The single specimen from the BMNH collection is a female; it resembles *L. hesperius* in body shape, coloration, and punctuation.

77. *Leptacinus pusillus* (Stephens, 1833)

References: CROTCH (1870: 92); WOLLASTON (1871A: 207, 305); MEQUIGNON (1946: 114); SMETANA (1963: 35); BORGES (1990: 104); HERMAN (2001: 3682); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Leptacinus linearis* (Gravenhorst, 1802) (synonym, preoccupied): WOLLASTON (1860B: 101; 1865: 498); JANSSON (1940: 56); LUNDBLAD (1958: 469).

As *Leptacinus batychrus* (Gyllenhal, 1827) (misidentification): FAUVEL (1897A: 49; 1897C: 291; 1902: 100); SCHMITZ (1897: 152); HERMAN (2001: 3666).

Distribution: Europe, Mediterranean region, Azores, Canaries; Madeira: Madeira proper, Porto Santo. Very rare: Only one record from Porto Santo (SMETANA, 1963) since WOLLASTON (1860B) recorded it from Santo da Serra (summer 1858, leg. Bewicke).

Bionomics: Eurytopic species, mostly recorded from synyntropic habitats (dung, compost, and similar habitats). The Madeiran specimens were found in rotting haystacks.

Remarks: This species has been recorded from Madeira under various names, which explains why HERMAN (2001) records both *L. pusillus* and *L. batychrus* from Madeira. However, only one species occurs in Madeira. Its identity was clarified by SMETANA (1963), who dissected a male specimen from Porto Santo.

78. *Neobisnius lathrobioides* (Baudi, 1848)

References: SCHÜLKE (2004: 402).

As *Neobisnius procerulus* (Gravenhorst, 1806) (misidentification): MÉQUIGNON (1942: 20); BORGES (1990: 105); HERMAN (2001: 2712); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Neobisnius procerulus* (misidentification, misspelling): MÉQUIGNON (1946: 114).

As *Philonthus filiformis* Wollaston, 1854 (synonym): WOLLASTON (1854: 585; 1857: 192; 1865: 496; 1871: 304); CROTCH (1870: 91).

As *Actobius procerulus* (misidentification): FAUVEL (1897A: 49; 1897C: 298; 1902: 107); Schmitz (1897: 153).

As *Neobisnius procerulus* var. *filiformis* (synonym): JANSSON (1940: 56); LUNDBLAD (1958: 469).

Additional records: Madeira proper: 2 ex., Caniço de Baixo, 80 m, window pane, 20.-27.IX. 1990, 7.-20.V.1992, leg. Pieper (cErb, cAss).

Locus typicus (*P. filiformis*): Madeira proper: Santa Anna [= Santana] (summer 1850, at the edges of a small stream, a single holotype, leg. Wollaston); type in BMNH.

Distribution: Holo-Mediterranean species, which occurs in Northern Africa, Europe north to Britain and southern Scandinavia, Turkey, Caucasus region; the eastern limit of its range in Europe is uncertain. Introduced in North America (USA, Canada). Azores, Canaries, Madeira: Madeira proper. No further record has been published since Wollaston's days.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost); often found in damp habitats.

Remarks: All the records of *Philonthus filiformis*, later as *Neobisnius procerulus*, are based on a single holotype specimen collected by Wollaston at Santa Anna (WOLLASTON, 1854) and a second specimen later collected by Wollaston above Funchal. *Neobisnius lathrobioides* was confused with *N. procerulus* up until the middle of the 20th century. There is no doubt that only one species of the *procerulus* group occurs in Madeira. The single female holotype was recently studied by SCHÜLKE (2004), who synonymised *Philonthus filiformis* with *Neobisnius lathrobioides* (Baudi).

[*Neobisnius orbis* (Kiesenwetter, 1850)]

References: FAUVEL (1874: 430); HERMAN (2001: 2710).

Distribution: Originally probably Holo-Mediterranean species: Northern Africa, South Europe, and eastwards to Afghanistan, Syria, and Saudi Arabia. Probably introduced in Madagascar, Réunion, Canaries, and Cape Verde Islands.

Remarks: Only FAUVEL (1874) recorded *N. orbis* from Madeira, without further data. Since he did not repeat this record in his later papers on the Madeiran fauna (FAUVEL, 1897A, 1897C, 1902) the record seems to be erroneous. The species is here deleted from the list of Madeiran Staphylinidae.

79. *Ocypus aethiops* (Waltl, 1835)

References: ERBER & HINTERSEHER (1988: 153, 183); HERMAN (2001: 3362); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Pseudocypus aethiops*: ISRAELSON (1981: 3); BORGES & SERRANO (1989: 11); BORGES (1990: 105).

Additional records: Madeira proper: 1 ex., Poiso, 3.VIII.1999, leg. Oromí (cOro); 1 ex., N Funchal, Passo de Poiso, under stones and under bark, 22.III.2005, leg. Ausmeier (cAss); 1 ex., Pico Alto, 3.VIII.1999, leg. Oromí (cOro); 3 ex. Terreiro da Luta, 1100 m, *Pinus-Eucalyptus* forest, 25.III.1993, leg. Assing, leg. Wunderle (cAss, cWun); 1 ex., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand in northern exposure, 21.III.1996, leg. Assing (cAss), 1 ex., Curral das Freiras, Câmara de Lobos, 4.VII.2002, leg. Aguiar (cAgu); 3 exs., Pico Alto, 1100 m, forest, under stones, 2. XI. 1998, leg. Uhlig (MNHUB).

Distribution: Atlanto-Mediterranean species, known from Italy including Sicily, France, Spain, Portugal, North Africa (Morocco, Algeria, Tunisia), Azores, Madeira: Madeira proper.

Bionomics: Eurytopic, predatory species. The few Madeiran specimens were collected at a wide range of elevations mostly under stones, occasionally also by sifting leaf litter, in February, March, and July-November.

Remarks: Recently introduced species, first recorded from Terreiro da Luta and Levada da Serra do Faial (N of Camacha) by ISRAELSON (1981). Meanwhile widespread, but not very common.

80. *Ocypus fortunatarum* (Wollaston, 1871)

References: COIFFAIT (1974: 514); HERMAN (2001: 3375); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Staphylinus fortunatorum*: JARRIGE (1954: 163); LUNDBLAD (1958: 470).

As *Ocypus cupreus* Rossi, 1790 (misidentification): ERBER & HINTERSEHER (1988: 153, 183).

Additional records: Madeira proper: 1 ex., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, southern exposure, 26.III.1993, leg. Wunderle (cWun); 1 ex., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, northern exposure, 3.IV.1993, leg. Wunderle (cWun), 1 ex., Pico do Arieiro, 3.VIII.1999, leg. Oromí (cOro); 1 ex., Pico do Arieiro, 12.III.2004, leg. Abmann (cAss); 1 ex., Paul da Serra, Bica da Cana, 32°45N, 17°04W, 22.I.2005, leg. Weigel (cApf); 1 ex., Paul da Serra, Campo Pequeno, 1400 m, 18.VI.2005, leg. Apfel (cAss); 1 ex., Cova do Nigro, above Prazeres, 9.VI.2005, leg. Apfel (cApf).

Distribution: Atlanto-Mediterranean species: North Africa (Tunisia, Algeria, Morocco), South Italy including Sicily, Sardinia, Spain, Portugal, France, England, Canaries, Madeira: Madeira proper.

Bionomics: Eurytopic species. The Madeiran specimens were collected in February-April and August.

Remarks: Like the preceding species, *O. fortunatarum* seems to have been introduced recently.

81. *Ocypus obsкуроaeneus schatzmayri* (G. Müller, 1923)

References: SMETANA (1963: 39); COIFFAIT (1974: 501); MITTER (1983: 4); ERBER & HINTERSEHER (1988: 154, 183); HERMAN (2001: 3394); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Staphylinus obsкуроaeneus schatzmayri*: JARRIGE (1954: 163).

As *Staphylinus obsкуроaeneus schatzmayri* Jarrige (incorrect author): LUNDBLAD (1958: 468).

As *Pseudocypus obsкуроaeneus* (Fairmaire, 1852): GARDNER & CLASSEY (1962: 158); SERRANO (1987B: 151).

Additional records: Madeira proper: 1 ♀, Paúl da Serra, 8.VIII.1998, leg. Oromí (cOro); 1 ex., Pico do Arieiro, 1700 m, 31.X.1997, leg. Lompe (cAss); 1 ex., Pico do Arieiro, Achada Grande, 1500 m, under stone, 18.III.2005, leg. Ausmeier (cAss); 1 ex., Paúl da Serra, Bica da Cana, under stone, 10.III.1998, leg. Aguiar (cAgu); 1 ex., SW Seixal, Fanal, 1150 m, 9.VI.2005, leg. Apfel (cApf).

Distribution: Atlanto-Mediterranean species: North Africa (Morocco, Algeria, Tunisia), Spain, Portugal, SW-France, Madeira. Madeira proper.

Bionomics: Like the two preceding species evidently introduced recently. The Madeiran specimens were collected at immediate to high elevations, mostly under stones, practically throughout the year.

Remarks: The species was first recorded by JARRIGE (1954), and is now widespread, but not common. *Ocypus obsкуроaeneus schatzmayri* was described from Portugal and is distributed in southwestern Europe, whereas the nominal subspecies occurs in North Africa (COIFFAIT, 1974; HERMAN, 2001).

82. *Ocypus olens* (Müller, 1764)

References: ISRAELSON (1981: 2); MITTER (1984: 4); ERBER & HINTERSEHER (1988: 154, 184); ERBER (1990: 150); BORGES (1990: 105); HERMAN (2001: 3395); BOIEIRO *et al.* (2001: 22; 2002: 22).

Additional records: Madeira proper: 1 ex., Ruivo do Paul, 1600-1640 m, N slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch); 1 ex., Paúl da Serra, 1300 m, on flowering *Ilex*, 4.IV.1993, Wunderle (cWun); 1 ex., E Porto da Cruz, 300 m, laurel, *Erica*, flood debris, 24.III.1996, Assing (cAss); 1 ex., Pico do Arieiro, 1700 m, 31.X.1997, leg. Lompe (cAss); 1 ex., Pico do Arieiro, Achada Grande, 1500 m, under stone, 18.III.2005, leg. Ausmeier (cAss); 1 ex., Pico Ruivo, III.2004, leg. Aßmann (cAss); 1 ex., Encumeada, Folhadal, Levada do Norte, 1000 m, 28.X.1997, leg. Lompe (cAss); 1 ex., Bica da Cana, 1550 m, 25.II.2003, leg. Lompe (cAss). Porto Santo: 2 exs., highland between Pico Juliana and Pico do Castelo, 350-500 m, under stone, 20.I.2001, leg. Schülke (cSch); 2 exs., Campo de Baixo, 21.III.2004, leg. Aßmann (cAss).

Distribution: Expansive Atlanto-Mediterranean species: North Africa (Tunisia, Algeria, Morocco) Mauritania), Western, Southern, Central and Northern Europe, eastwards to the western and northern Balkans, and western Russia. Also introduced in the USA, Azores, Canaries; Madeira: Madeira proper, Porto Santo, Deserta Grande. Meanwhile widespread and the most abundant species of the genus in Madeira, present at all elevations.

Bionomics: Eurytopic predatory species, one of the largest representatives of the family. It occurs in forests, as well as in unforested habitats (*e. g.* meadows, arable land). The Madeiran specimens were collected mostly under stones, in January-April and July-December.

Remarks: First collected in 1980, *Ocypus olens* does not seem to have been introduced before the middle of the 20th century, since all the previous authors such as WOLLASTON (1871), BERNHAUER (1940), MÉQUIGNON (1942), JARRIGE (1954) and SMETANA (1970) emphasize its absence in Madeira.

83. *Ocypus pedemontanus* (Müller, 1924)

= *Staphylinus caroli* Jarrige, 1943 **syn. nov.**

References: GARDENER & CLASSEY (1962: 158); BOIEIRO *et al.* (2001: 22; 2002: 22).

As *Ocypus caroli* (Jarrige, 1943): COIFFAIT (1974: 481); ISRAELSON (1981: 2); HERMAN (2001: 3371); BOIEIRO *et al.* (2001: 22; 2002: 22; 2003: 56).

As *Staphylinus caroli* Jarrige, 1943: JARRIGE (1943: 146; 1954: 161); LUNDBLAD (1958: 470).

Locus typicus (*S. caroli*): Madeira proper: Monte, 600 m (1 female specimen, leg. Alluaud). Holotype probably in MHNP.

Additional records: Madeira proper: 1♂, Curral das Freiras, 600-800 m, under stone, 13.-27.VIII.1983, Erber (cErb).

Distribution: Montane species from southwestern Europe (France, Spain, Italy, also recorded from Suisse), Madeira: Madeira proper. Rare in the south of Madeira proper. Only once recorded by ISRAELSON (1981) since the original description.

Bionomics: Eurytopic montane forest species in the southwestern Alps and Pyrénées. Collected at low and intermediate elevations in the south of Madeira proper. Madeiran specimens mostly collected under stones in August and October.

Remarks: The records of both *Ocypus caroli* and *O. pedemontanus* are all from the same area in the south of Madeira proper, which is considerably influenced by human activity. It appears unlikely that two species of the subgenus *Matidus*, one of them endemic, should exist in this region, so that *Ocypus caroli* (Jarrige) is considered to be a junior synonym of *Ocypus pedemontanus* (Müller). Since the described subspecies of *O. pedemontanus* are insufficiently characterised morphologically and biogeographically, the specimen collected by Erber is not attributed to any of them. The species seems to have been introduced recently.

84. *Othius arieiroensis* Palm, 1979 (Fig. 8)

References: PALM (1979: 272); ASSING & WUNDERLE (1995B: 60); ASSING (1998A: 215); HERMAN (2001: 2465); BOIEIRO *et al.* (2001, 22; 2002: 22; 2003: 57).

Locus typicus: Madeira: between Pico do Arieiro and Poiso, about 1600 m.

Additional records: Madeira proper: 13 exs., Pico do Arieiro, 1600-1700 m, *Erica*, *Vaccinium*, NE-slope, 9.&21.I.2001, leg. Schülke (cSch).

Distribution: Madeira proper, local endemics of the Pico do Arieiro (Fig. 8). Aside from a single specimen collected near Funchal, all the known records are from the type locality (ASSING, 1998A).

Bionomics: The species inhabits the litter layer of stands of *Vaccinium padifolium* and *Erica* sp. and was found at altitudes of 900 m and 1600 m (ASSING, 1998A; ASSING & WUNDERLE, 1995B).

85. *Othius baculifer* Assing & Wunderle, 1995 (Plate II, fig. 5, Fig. 8)

References: ASSING & WUNDERLE (1995B: 61); ASSING (1998A: 215); HERMAN (2001: 2465); BOIEIRO *et al.* (2001, 22; 2002: 22; 2003: 57).

Locus typicus: Madeira: Bica da Cana, 1550 m.

Additional records: Madeira proper: 1 ex., Bica da Cana, 32°45'10N, 17°03'02W, 1620 m, 25.II.2003, leg. Lompe (cAss); 2 exs., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss).

Distribution: Madeira proper, endemic to the northern part of the island between Rabaçal and Pico Ruivo (ASSING, 1998A) (Fig. 8): Bica da Cana, Pico Ruivo, Achada do Teixeira, Rabaçal, E Encumeada, Pico do Jorge, Pico das Eirinhas.

Bionomics: Almost all the known specimens were sifted from the litter in stands of *Vaccinium padifolium* and *Erica* sp., as well as from grass and fern litter at high elevations (1500-1850 m). A third instar larva probably belonging to this species was found in March. The ovaries of a dissected female collected in March contained a mature egg.

Remark: The year of the original description is 1995, not 1993 (see HERMAN (2001) and reference section).

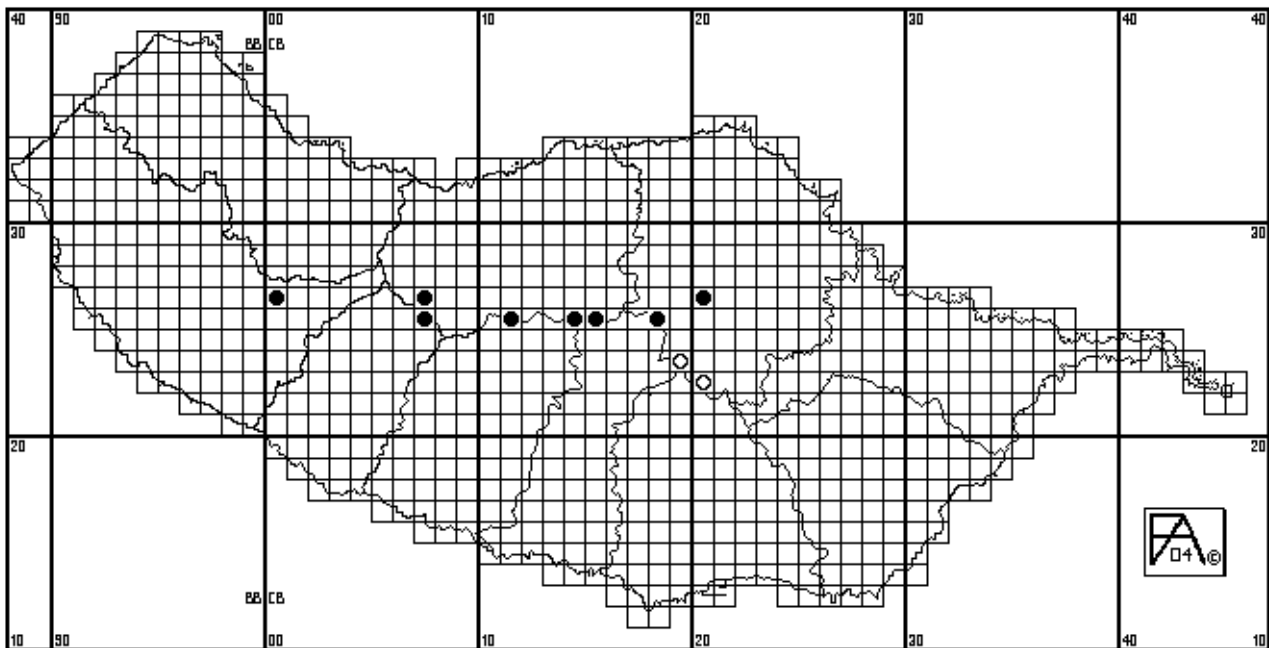


Fig. 8 - Distributions of *Othius arieiroensis* Palm (open circles) and *O. baculifer* Assing & Wunderle (filled circles) in Madeira.

86. *Othius jansoni* Wollaston, 1854 (Plate II, fig. 6, Fig. 9)

References: WOLLASTON (1854: 576; 1857: 187; 1865: 499); FAUVEL (1897A: 49; 1897C: 290; 1902: 99); SCHMITZ (1897: 152); BERNHAUER & SCHUBERT (1914: 317); JANSSON (1940: 56); LUNDBLAD (1958: 469); SMETANA (1963: 36); COIFFAIT (1972: 354); PALM (1979: 272); ERBER & HINTERSEHER (1988: 153); ASSING & WUNDERLE (1995B: 58); ASSING (1998A: 215; 1999: 672; 2003: 79); HERMAN (2001: 2470); BOIEIRO *et al.* (2001, 22; 2002: 22; 2003: 57).

As *Othius vestitus* Wollaston, 1857 (synonym): WOLLASTON (1857: 186); PALM (1979: 272).

As *Othius brevicornis* Wollaston, 1857 (synonym): WOLLASTON (1857: 187; 1865: 499); FAUVEL (1897C: 290); SCHMITZ (1897: 152).

Locus typicus: Madeira proper: “Ribeiro do [= Ribeira de] Santa Luzia”.

Additional records: Madeira proper: 1 ex., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss); 5 exs., Paul da Serra, Estanquinhos, 1500 m, 16.VI.2005, leg. Apfel (cApf, cAss); 16 exs., Estanquinhos, 15.III.2004, leg. Aßmann (cAss).

Distribution: Endemic to Madeira: Madeira proper (from Porto Moniz in the west to the Ribeiro Frio in the east), Deserta Grande (Fig. 9). Madeiran localities: Ribeira de Santa Luzia, Ribeira do Porto Novo, Curral das Freiras, between Pico Grande and Curral das Freiras, Fonte do

Curral Falso, Bica da Cana, Rabaçal, Pico das Eirinhas, summit of Pico Ruivo, W-slope of Pico Ruivo, Achada do Teixeira, Queimadas, Ribeiro Frio, Poiso, Porto Moniz, Ribeira de João Delgado, Pico do Arieiro, Pico do Cidrão NW Pico do Arieiro, Pico das Eirinhas, Estanquinhos, Deserta Grande.

Bionomics: The species has been collected almost throughout the year (March, May-July, September, October, December) and occurs primarily in the litter of shrubs (*Vaccinium padifolium* and *Erica* sp.). It has been observed at a wide range of elevations from a few hundred metres (Deserta Grande) to 1850 m (summit of Pico Ruivo). Third instar larvae presumably belonging to this species were found in March (ASSING, 1998A).

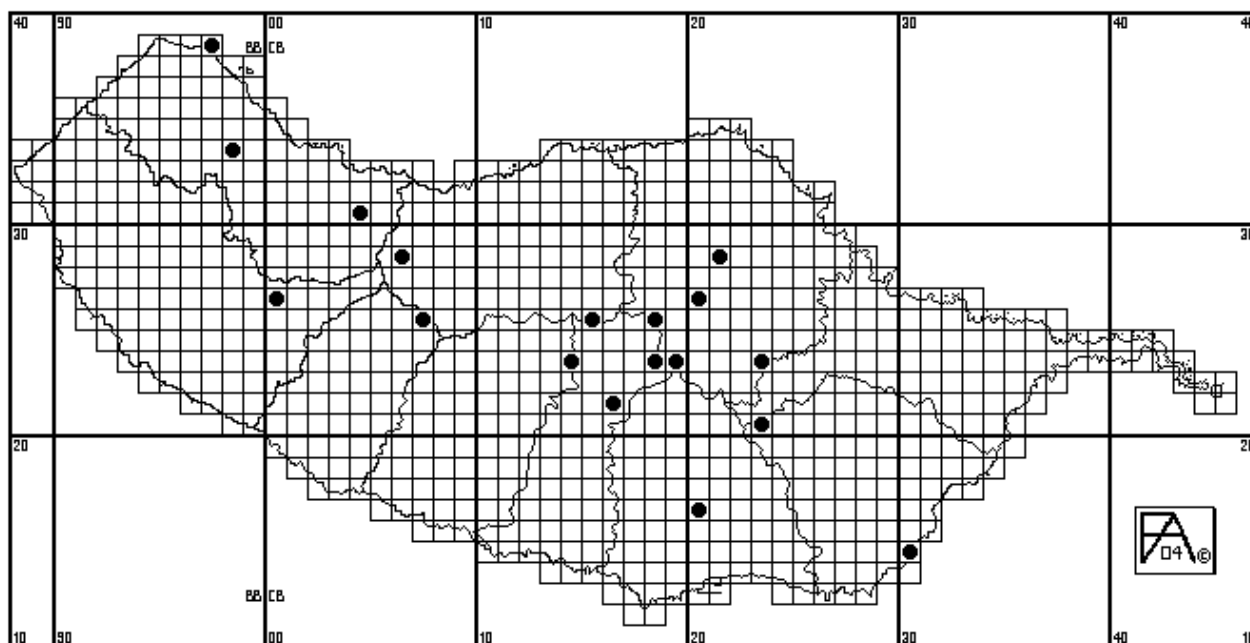


Fig. 9 - Distribution of *Othius jansoni* Wollaston in Madeira.

87. *Othius ruivomontis* Assing & Wunderle, 1995

References: ASSING & WUNDERLE (1995B: 62); HERMAN (2001: 2483); BOIEIRO *et al.* (2001, 22; 2002: 22; 2003: 57).

Locus typicus: Madeira proper: Achada do Teixeira, 1580 m.

Distribution: Endemic to Madeira; only the holotype of this species has become known.

Bionomics: The holotype was sifted from litter and moss at the N-exposed sides of rocks (ASSING & WUNDERLE, 1995B).

Remark: The year of the original description is 1995, not 1993 (see HERMAN (2001) and reference section).

88. *Othius strigosus* Wollaston, 1854 (Plate II, fig. 7, Fig. 10)

References: WOLLASTON (1854: 575; 1857: 186; 1865: 498); FAUVEL (1897A: 49; 1897C: 289; 1902: 99); SCHMITZ (1897: 152); CAMERON (1901: 220); BERNHAUER & SCHUBERT (1914:

319); JANSSON (1940: 8, 56); LUNDBLAD (1958: 469); SMETANA (1963: 36); COIFFAIT (1972: 349); PALM (1979: 269); ERBER & HINTERSEHER (1988: 153); ERBER (1990: 156); ASSING & WUNDERLE (1995B: 56); ASSING (1998A: 214; 1999: 672); HERMAN (2001: 2484); BOIEIRO *et al.* (2001, 22; 2002: 2; 2003: 57).

Locus typicus: Madeira proper: Santa Luzia, Ribeiro Frio.

Additional records: Madeira proper: 1 ex., Rabaçal, 32°45'26N, 17°07'24W, 1000 m, 25.II.2003, leg. Lompe (cAss); 1 ex., Vereda to Ribeira do Lageado, 1295m, 23.VIII.1997, leg. Aguiar (cAgu); 1 ex., Vereda from Fanal to Chão da Ribeira, 5.IX.2001, leg. Aguiar (cAgu); 1 ex., SW Santana, Rio Silveira, 12.III.2004, leg. Aßmann (cAss); 2 exs., Rio Silveira near Teixeira, Pico das Pedras, 1250 m, 18.III.2004, leg. Aßmann (cAss); 1 ex., Paul da Serra, Bica da Cana, 32°45N, 17°04W, 1500 m, 22.I.2005, leg. Weigel (cApf).

Distribution: Endemic to Madeira proper; distribution ranging from the Ribeira da Janela in the northwest to the surroundings of Funchal in the southeast (Fig. 10). Madeiran localities: Ribeiro da Santa Luzia, Ribeiro Frio, Rabaçal, Ribeira do Alecrim, Caramujo, Encumeada, Ribeiro dos Cedros, Caldeirão Verde, Bica da Cana, Achada do Teixeira, N-slope of Pico Ruivo, Rio Silveira, Valle de Paraiso, Ribeira da Janela, E Encumeada near Pico do Jorge, Pico do Arieiro, Porto Moniz, Santana, Terreiro da Luta, Funchal.

Bionomics: *Othius strigulosus* inhabits the leaf litter of the laurel woods and shrubs at altitudes of 900-1500 m. Adults were collected almost throughout the year (March-April, June-October), larvae of all instars in March and April (ASSING, 1998A; ASSING & WUNDERLE, 1995B).

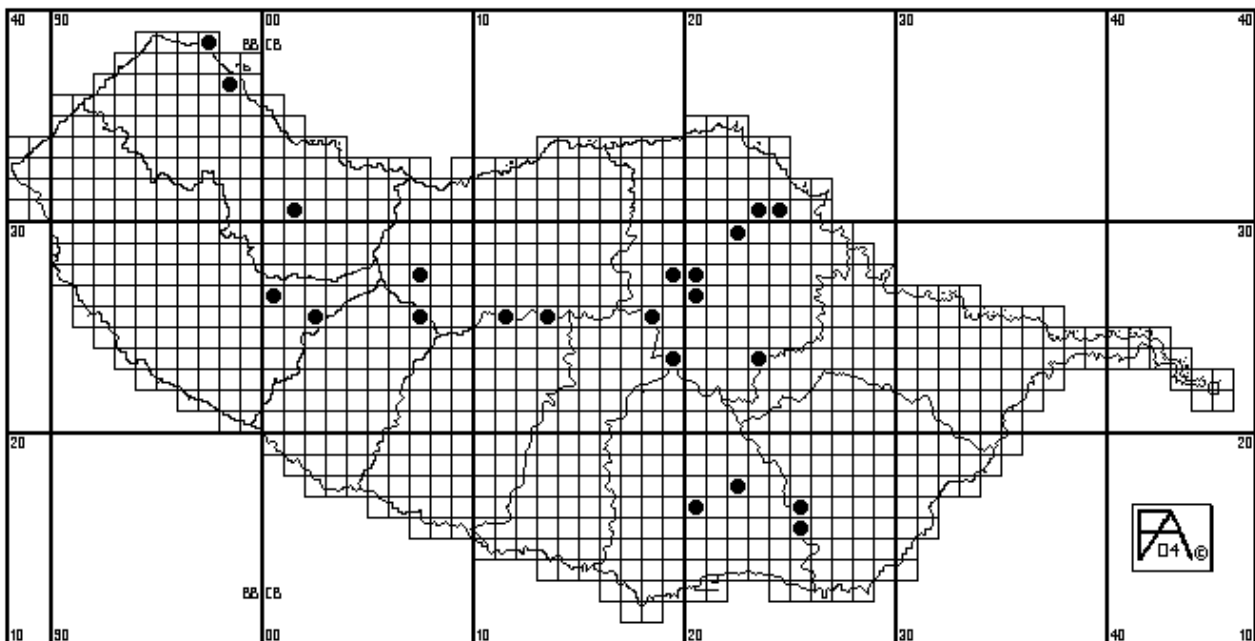


Fig. 10 - Distribution of *Othius strigulosus* Wollaston in Madeira.

89. *Phacophallus parumpunctatus* (Gyllenhal, 1827)

References: BORGES (1990: 104); HERMAN (2001: 3738); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Leptacinus parumpunctatus*: WOLLASTON (1861: 107; 1865: 498; 1867: 241); FAUVEL (1897A: 49; 1897C: 291; 1902: 100); SCHMITZ (1897: 152); BERNHAUER (1940: 9); JANSSON (1940: 56); LUNDBLAD (1958: 469); SERRANO (1982: 72).

Distribution: Recorded as Cosmopolitan species, but some of the records may refer to other species. According to BORDONI (2002), *Phacophallus parumpunctatus* is absent from the Oriental region. Azores, Canaries, Madeira: Madeira proper. The record is based on two single specimens collected by BEWICKE in Palheiro Ferreiro [in Funchal] in 1860 and by STORÅ in Funchal in 1938.

Bionomics: Eurytopic species, mostly found in dung, compost and decaying hay. Bewicke found it in haystack refuse. The Madeiran specimens were collected in May and November.

90. *Phacophallus pallidipennis* (Motschulsky, 1858)

References: As *Phacophallus trigonocephalus* (Kraatz, 1859) (misidentification): ERBER (1990: 149); BOIEIRO *et al.* (2001: 22; 2002: 23).

Distribution: Oriental species (India, Sri Lanka), which has been introduced in Europe and North America. The present range of distribution in the Palaearctic region is restricted to southern Europe (southern France, Sicily) and to North Africa (Morocco) (SMETANA, 1980). Canaries (ASSING, 2000B), Madeira.

Bionomics: The Canarian specimens were sifted from a stack of decaying plants; the Madeiran material was collected from a window pane in September.

Remarks: The records of *Phacophallus trigonocephalus* Kraatz both from the Canaries (ASSING, 2000B: 115) and Madeira refer to *P. pallidipennis* (types revised by BORDONI, 2002), which is a senior synonym of *Phacophallus tricolor* (Kraatz) (see SMETANA, 1980). The real *P. trigonocephalus* was transferred to the monotypical genus *Leptacinellus* Bordonni and has not been recorded from the Western Palaearctic (BORDONI, 2002).

91. *Philonthus cognatus* (Stephens, 1832)

Distribution: Transpalaearctic species, rare or absent in the southern Mediterranean, also introduced in North America. Madeira: Madeira proper.

First record: Madeira proper: 1 ex., Rancho das Pedras, S Santana, grass heap, sifted, 12.I.2001, leg. Schülke (cSch).

Bionomics: Common in unforested habitats, especially various kinds of grassland, like meadows, pastures, and fields.

Remarks: First record from Madeira.

[*Philonthus concinnus* (Gravenhorst, 1802)]

References: WOLLASTON (1871A: 207, 303); MÉQUIGNON (1942: 20; 1946: 114); LUNDBLAD (1958: 469); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Philonthus ochropus* (Gravenhorst, 1802) (synonym): SERRANO (1987B: 150); BORGES (1990: 104).

? As *Philonthus ebeninus* (Gravenhorst, 1802) (misidentification): FAUVEL (1897A: 50; 1897C: 301; 1902: 110); SCHMITZ (1897: 153).

Distribution: Europe, North Africa, Middle East, Middle Asia, Mongolia, Afghanistan, and North America. Azores, Canaries.

Remarks: All records are based on FAUVEL (1897A). Without providing further details, he recorded the species as *Philonthus ebeninus*, giving *P. concinnus* and *P. marcidus* Wollaston as synonyms. However, Madeiran records of *P. marcidus*, which was described from the Canaries and “which has not yet been observed in the Madeiras” (WOLLASTON, 1871: 303), are absent. Therefore, the record of *P. concinnus*, which is common in the Canaries, seems to be based on a misunderstanding by Fauvel, and the species is here deleted from the list of Madeiran Staphylinidae.

[*Philonthus debilis* (Gravenhorst, 1802)]

References: FAUVEL (1897A: 50; 1897C: 301); SCHMITZ (1897: 153); BOIEIRO *et al.* (2001: 22; 2002: 23).

Distribution: Widespread in the Palaearctic and Nearctic regions.

Remarks: The record of this species is probably based on a misunderstanding by Fauvel, who considered *Philonthus fortunatus* Wollaston, 1865, whose original description is based on a single male from Tenerife, as a synonym of *P. debilis* (FAUVEL, 1897A, 1897C). Since the species was described as var. beta *fortunatus* of *Philonthus proximus* Wollaston, which was also recorded from Madeira proper, Porto Santo, and Gomera, Fauvel erroneously referred all the records of *P. fortunatus* to *P. debilis*, too. There is, however, no confirmed record from the Madeira archipelago. Consequently, the species is here deleted from the list of Madeiran Staphylinidae. All subsequent authors (see HERMAN, 2001: 2996) considered *P. fortunatus* a synonym of *P. ventralis*.

92. *Philonthus discoideus* (Gravenhorst, 1802)

References: WOLLASTON (1857: 190; 1865: 493; 1867: 238); FAUVEL (1897A: 50; 1897C: 301; 1902: 110); SCHMITZ (1897: 153); BERNHAUER (1940: 9); JANSSON (1940: 56); MÉQUIGNON (1942: 21; 1946: 114); LUNDBLAD (1958: 469); SERRANO & BORGES (1987: 56); BORGES (1990: 104); HERMAN (2001: 2807); BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: Caniço de Baixo, 80 m, 4.-25.IX.1986, window pane, 4 ex., Pieper (cErb); 1 ex., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 1 ex., same data, but 7.-13.IX.1989; 1 ex., same data, but 20.-27.IX.1990 (cErb, cAss).

Distribution: Cosmopolitan species of Old World origin. Azores, Canaries, Cape Verdes, St. Helena, Madeira: Madeira proper. Not common: only recorded from the south coast of Madeira near Funchal and Caniço de Baixo.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost, etc.). The Madeiran specimens, some of which were collected at a window pane, were found in May and September.

93. *Philonthus fenestratus* Fauvel, 1872

References: FAUVEL (1897A: 50; 1897C: 303; 1902: 112); SCHMITZ (1897: 153); BERNHAUER & SCHUBERT (1914: 337); JANSSON (1940: 9, 56); LUNDBLAD (1958: 469); SMETANA

(1963: 36); COIFFAIT (1974: 242); ERBER & HINTERSEHER (1988: 153); BORGES (1990: 104); ERBER (1990: 165); HERMAN (2001: 2820); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Philonthus bipustulatus* Panzer, 1795 (misidentification): WOLLASTON (1854: 583; 1857: 189; 1865: 492).

As *Philonthus fenestratus* a. *concolor* Gridelli, 1920: SMETANA (1963: 36).

Additional records: Madeira proper: 2 exs., Cova do Nigro, above Prazeres, 9.VI.2005, leg. Apfel (cApf). Porto Santo: 1 ex., 30.III.1994, Jaeschke (cSch).

Distribution: Probably Holo-Mediterranean species: North Africa, West- and Southwest Europe, Italy, Cyprus, Turkey, Caucasus. Azores, Canaries, Madeira: Madeira proper, Porto Santo.

Bionomics: Eurytopic species, usually associated with decaying organic matter (dung, compost, etc.). The Madeiran material was collected in March, April and July-September, mostly in cattle dung.

Remarks: The records from the Caucasus and Turkey require confirmation.

94. *Philonthus jurgans* Tottenham, 1937

References: ERBER & HINTERSEHER (1988: 153, 182); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Philonthus fimetarius* (Gravenhorst, 1802) (misidentification): MITTER (1984: 4).

As *Philonthus rigidicornis* (Gravenhorst, 1802) (misidentification): BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: 85 exs., Caniço de Baixo, 4.-25.IX.1987, Pieper (cAss, cErb); 6 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 5 exs., same data, but 7.-13.IX.1989; 1 ex., same data, but 20.-27.IX.1990; 50 exs., same data, but 7.-20.V.1992 (cErb, cAss, cSch); 1 ex., Rabaçal, 14.VI.2001, leg. Constant (cAss); 1 ex., Caniçal, 19.XII.1987, leg. Gillerfors (cGil); 1 ex., Chão da Ribeira, Seixal, 550 m, cattle dung, 13.VI.1996, leg. Aguiar (cAgu).

Distribution: Russia, Central Europe, Scandinavia, England, also recorded from North America. Madeira: widespread in Madeira proper, at elevations of up to 1500 m (Paúl da Serra-Estanquinhos).

Bionomics: The Madeiran specimens were found in cattle dung and rotting plant material (*e. g.* pumpkin), or collected at a window pane, on one occasion in great numbers, in June and August-September.

Remarks: The species was recorded as *Philonthus fimetarius* by MITTER (1984). A study of the unique female specimen from the Mitter collection revealed that it is not identical with *Bisnius fimetarius* (Gravenhorst), but resembles *Philonthus jurgans* Tottenham in every respect. Therefore, *Bisnius fimetarius* is deleted from the list of Madeiran Staphylinidae.

95. *Philonthus longicornis* Stephens, 1832

References: WOLLASTON (1871A: 207, 302; 1871B: 409); FAUVEL (1897A: 50; 1897C: 304; 1902: 112); SCHMITZ (1897: 153); JANSSON (1940: 9, 56); MÉQUIGNON (1942: 20; 1946: 114); LUNDBLAD (1958: 469); SMETANA (1963: 36; 1970: 59); ERBER & WHEATER (1987: 164); ERBER (1990: 165); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Philonthus longicornus* (misspelling): ERBER & HINTERSEHER (1988: 153).

As *Philonthus scybalarius* Nordmann, 1838 (synonym): WOLLASTON (1857: 189; 1865: 492; 1867: 237); CROTCH (1870: 91).

As *Spatulonthus longicornis*: Serrano & Borges (1987: 56); BORGES & SERRANO (1989: 11); BORGES (1990: 104).

? As *Philonthus varians* (Paykull, 1789) (misidentification): WOLLASTON (1854: 583).

? As *Philonthus varians* var. *beta agilis* (Gravenhorst, 1806) (misidentification): FAUVEL (1897A: 50; 1897C: 304; 1902: 112); SCHMITZ (1897: 153).

? As *Philonthus agilis* (Gravenhorst, 1806): LUNDBLAD (1958: 469).

? As *Philonthus parvicornis* (Gravenhorst, 1802): BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, window pane, 7.-13.IX.1989, leg. Pieper; 2 exs., same data, but 13.-19.IX.1990 (cErb, cAss).

Distribution: Cosmopolitan. Azores, Canaries. Madeira: Madeira proper, Porto Santo, Salvages.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost, etc.). The Madeiran specimens were collected from cattle dung, rotting plant material (*e. g.* pumpkin), and carrion (pig) in April and June-September.

Remarks: LUNDBLAD (1958) and BOIEIRO *et al.* (2001, 2002) also list *P. parvicornis* (Gravenhorst) [= *P. agilis* (Gravenhorst)] based on Fauvel's records of *P. varians* var. *agilis*, all of which are doubtful, because a confusion with other species is very likely. In view of the absence of confirmed records from Madeira, *P. parvicornis* is deleted from the list of Madeiran Staphylinidae.

96. *Philonthus politus* (Linnaeus, 1758)

References: FAUVEL (1897A: 49; 1897B: 74; 1897C: 299; 1902: 108); SCHMITZ (1897: 153); ALLUAUD (1935: 39); JANSSON (1940: 8, 56); MÉQUIGNON (1942: 20; 1946: 114); LUNDBLAD (1958: 469); SMETANA (1963: 36); ERBER & WHEATER (1987: 163); SERRANO & BORGES (1987: 56); BORGES (1990: 104); ISRAELSON (1990: 2); HERMAN (2001: 2913); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Philonthus aeneus* (Rossi, 1790) (synonym): WOLLASTON (1854: 580; 1857: 188; 1865: 490); CROTCH (1870: 90).

Distribution: Cosmopolitan in temperate regions. Azores, Canaries, Madeira: Madeira proper, Selvagem Grande. Madeiran localities: Funchal, Fanal, Ribeiro Frio, Rabaçal, Paúl da Serra.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost, etc.). The Madeiran specimens were collected in April and June-August.

97. *Philonthus rectangulus* Sharp, 1874

References: COIFFAIT (1974: 194); ERBER & HINTERSEHER (1988: 152, 182); BORGES & SERRANO (1989: 11); BORGES (1990: 104); ISRAELSON (1990: 2); HERMAN (2001: 2935); BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, 4.-25.IX.1986, Pieper (cErb).

Distribution: Adventive species of probably East Palaearctic and Oriental origin. Today Cosmopolitan. Azores, Canaries, Madeira: Madeira proper.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost, etc.). The specimen collected by Pieper was found at a windowpane. The Madeiran material was collected in March and September.

Remarks: Recently introduced; recorded by COIFFAIT (1974) without specification of locality and date. Later only once collected at the Levada leading from Serra do Faial to Curral Velho (ERBER & HINTERSEHER, 1988).

98. *Philonthus turbidus* Erichson, 1840

References: WOLLASTON (1867: 240; 1871A: 207, 304); FAUVEL (1897A: 50; 1897C: 302; 1902: 110); SCHMITZ (1897: 153); SCHEERPELTZ (1933: 1365); JANSSON (1940: 56); LUNDBLAD (1958: 49); HERMAN (2001: 2983); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Philonthus punctipennis* Wollaston, 1857 (synonym): WOLLASTON (1857: 192; 1865: 495); PEYERIMHOFF (1931: 32).

As *Philonthus wollastoni* Scheerpeltz, 1933 (synonym): SCHEERPELTZ (1933: 1368); COIFFAIT (1974: 207, misidentification); HERMAN (2001: 3004); BOIEIRO *et al.* (2001: 22; 2002: 23).

Locus typicus (*P. punctipennis*): Madeira proper: Sta. Cruz, in a river bed (III.1856, 5 specimens, leg. Bewicke); one female syntype in the BMNH collection (TOTTENHAM, 1956).

Distribution: Ethiopian region, North Africa, Spain, Italy, Russia, Middle East, India. Also known from North America and Hawaii. Canaries, Cape Verdes, Madeira: Madeira proper. No further records since WOLLASTON (1865): near Funchal, without exact date, leg. Anderson.

Bionomics: Eurytopic and hygrophilous species, also attracted by light.

Remarks: The original description of *Philonthus punctipennis* Wollaston is based on five specimens collected by Bewicke and later synonymised with *P. turbidus* Erichson. GRIDELLI (1930) erroneously removed *P. punctipennis* from the synonymy of *P. turbidus* (TOTTENHAM, 1956). When SCHEERPELTZ (1933) introduced the name *P. wollastoni* to replace the preoccupied name *P. punctipennis* Wollaston, he had not studied Wollaston's type specimens. TOTTENHAM (1956) compared the single female syntype of *P. punctipennis* in the BMNH with a male specimen of *P. turbidus* from Madeira and found both to be conspecific with the types of *P. turbidus* Erichson. Therefore, he considered *P. wollastoni* to be a synonym of *P. turbidus*. Based on an examination of the said syntype of *P. punctipennis*, Tottenham's conclusions are here confirmed. Later, COIFFAIT (1974) followed the interpretation of GRIDELLI (1930) without any discussion of or reference to Tottenham's paper.

As only few specimens were collected in two localities between 1856 and 1865, one male of which was dissected and compared with the types of *P. turbidus* by Tottenham, it seems most likely that his conclusions are correct, *i. e.* that only one species of the *turbidus* group occurs in Madeira and that *P. punctipennis* Wollaston (and therefore also *P. wollastoni* Scheerpeltz) is a synonym of *P. turbidus* Erichson. It does not seem advisable to introduce a new name for the species illustrated by GRIDELLI (1930) and COIFFAIT (1974), because it was probably already described as *P. tumulinus* by Tottenham [as discussed by TOTTENHAM (1956)], a species unknown from Madeira.

99. *Philonthus umbratilis* (Gravenhorst, 1802)

References: WOLLASTON (1854: 581; 1857: 189; 1865:490); CROTCH (1870:90); FAUVEL (1897A: 49; 1897C: 300; 1902: 108); SCHMITZ (1897: 153); JANSSON (1940: 56); MÉQUIGNON (1942: 21; 1946: 114); LUNDBLAD (1958: 469); COIFFAIT (1974: 272); SERRANO & BORGES (1987: 56); BORGES (1990: 104); HERMAN (2001: 2985); BOIEIRO *et al.* (2001: 22; 2002: 23).

Additional records: Madeira proper: 2 exs., Caniço de Baixo, 80 m, window pane, 21.-27.IX.1989, leg. Pieper; 1 ex., same data, but 7.-20.V.1992 (cErb, cAss).

Distribution: Species of Holarctic distribution. Europe including Britain and Ireland, North Africa (Tunisia), Russia, Caucasus region, Syria, Turkey, North America. Azores, Canaries, Madeira: Madeira proper.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost, etc.). The Madeiran specimens were collected in May and September. Wollaston collected four specimens at the edge of a small stream; the recent records are based on specimens found at a window pane.

100. *Philonthus ventralis* (Gravenhorst, 1802)

References: WOLLASTON (1867: 238; 1871A: 207, 303); FAUVEL (1897A: 50; 1897C: 301; 1902: 109); SCHMITZ (1897: 153); SMETANA (1963: 36); ERBER (1990: 165); BOIEIRO *et al.* (2001: 22; 2002: 23); SCHÜLKE (2004: 403).

As *Philonthus proximus* Wollaston, 1857 (synonym): WOLLASTON (1857: 189; 1865: 493); Crotch (1867: 383).

As *Philonthus ventralis* var. *proximus* (synonym): BERNHAUER (1940: 4); JANSSON (1940: 56); LUNDBLAD (1958: 469).

As *Philonthus ventralis* ssp. *proximus* (synonym): MÉQUIGNON (1942: 21; 1946: 114); BORGES & SERRANO (1989: 10); BORGES (1990: 104).

Locus typicus (*P. proximus*): Madeira proper: near Funchal, Gorgulho and Praia Formosa (summer 1855, number of specimens not specified, leg. Wollaston); Porto Santo (summer 1855, one specimen, leg. Wollaston). Lectotype in BMNH.

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 1 ex., same data, but 7.-20.V.1992 (cErb, cAss).

Distribution: Cosmopolitan. Azores, Canaries, Cape Verdes, Madeira: Madeira proper, Porto Santo. Several records at various elevations from Madeira proper, also twice recorded from Porto Santo.

Bionomics: Eurytopic species usually associated with decaying organic matter (dung, compost, flood debris, etc.). The Madeiran material was collected in April-June and September, partly at a windowpane.

Remarks: A single male syntype of *Philonthus proximus* was studied by SCHÜLKE (2004), who designated a lectotype and confirmed the synonymy with *P. ventralis*.

101. *Quedius curtipennis* Bernhauer, 1908

Records: Madeira proper: 2 exs., Fajã da Nogueira, 4.VIII.1999, leg. Oromí (cOro, cAss); 2 exs., Ribeira de Ametade, app. 600 m, 12.-13.V.1994, leg. Hieke & Wendt (cAss, cWun); 1 ex., E Porto da Cruz, Larano, 350 m, 29.X.1997, leg. Lompe (cAss); 1 ex., between Larano and Caniçal, 24.II.2003, leg. Lompe (cAss); 1 ex., Levada Nova, valley of the Ribeira de Sebastião Vaz, 550 m, 26.II.2003, leg. Lompe (cAss); 1 ex., Queimadas, first valley, near the Levada, 900 m, 28.II.2003, leg. Lompe (cAss).

Distribution: Probably Holo-Mediterranean species, known from Europe, North Africa (Morocco), Turkey, and Middle Asia (Uzbekistan). Introduced in North America (USA, Canada), Azores and Madeira: Madeira proper.

Bionomics: Eurytopic species often collected from litter, moss, grass, hay, under stones, and loose bark. The Madeiran specimens were collected at low and intermediate elevations in February, May, August, and October.

Remarks: The species is here recorded from Madeira for the first time; doubtlessly, it was introduced to Madeira only recently.

102. *Quedius levicollis* (Brullé, 1832)

References: HERMAN (2001: 3184).

As *Quedius tristis* (Gravenhorst, 1802) (nomen nudum): SMETANA (1963: 39; 1970: 62); ERBER & HINTERSEHER (1988: 154); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Quedius laevicollis* (misspelling): GARDNER & CLASSEY (1962: 158).

Additional records: Madeira proper: 1 ex., Levada do Caldeirão Verde, near Queimadas, 900 m, pitfall, 16.IX.1988, leg. Lange (cErb); 1 ex., Pico Alto, 3.VIII.1999, leg. Oromí (cOro); 1 ex., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, northern exposure, 3.IV.1993, leg. Assing (cAss); 1 ex., Pico do Arieiro, Achada Grande, 1500 m, under stone, 18.III.2005, leg. Ausmeier (cAss); 2 exs., Achada do Teixeira, 1580 m, N-slope, moss, grass, litter, 6.IV.1993, leg. Assing (cAss); 4 exs., E Porto da Cruz, 300 m, laurel, *Erica*, flood debris, 24.III.1996, leg. Assing (cAss); 1 ex., Rabaçal, 25 springs, 1000 m, 27.X.1997, leg. Lompe (cAss).

Distribution: Holo-Mediterranean species, known from North Africa (Tunisia, Algeria), Europe including Britain and Scandinavia, eastwards to southern Russia, Ukraine, the Caucasus region, Turkey, Iran, Lebanon, and Israel. Madeira: Madeira proper, Porto Santo.

Bionomics: Eurytopic species. The Madeiran specimens were found under stones, in old cattle dung, sifted from litter of *Erica*, *Vaccinium*, and laurel trees, from moss and grass or from flood debris, in March-April and June-October.

Remarks: The species was first collected by Lindberg (Valparaiso, 13.VI.1957), suggesting that it was introduced only recently.

103. *Quedius nigriceps* Kraatz, 1857

= *Quedius nigriceps maderensis* Smetana, 1963; **syn. n.**

References:

As *Quedius nigriceps maderensis* (synonym): SMETANA (1963: 40); COIFFAIT (1978: 251); HERMAN (2001: 3218); BOIEIRO *et al.* (2001: 22; 2002: 23; 2003: 57).

As *Quedius* (*Sauridus*) ? nov. sp. prope *Q.* (*Sauridus*) *nigriceps*: JANSSON (1940: 10, 56); LUNDBLAD (1958: 470).

Locus typicus (*Q. n. maderensis*): Madeira proper: Queimadas (holotype, 14.-16.V.1959, leg. H. Lindberg), Serra de Água (allotype, 20.-21.IV.1959, leg. Lindberg), Vale Paraíso, Poiso-Arieiro, and Serra de Água (five paratypes); holotype, allotype, and 3 paratypes in ZMHU, two paratypes in coll. Smetana (Ottawa).

Additional records: Madeira proper: 1 ex., Achada do Teixeira, 1500 m, pitfall, 30.IX.1988, leg. Lange (cErb); 1 ex., same data, but 11.X.1988; 2 exs., Encumeada, Levada do Norte, 1030 m, pitfall, 12.X.1988, leg. Lange (cErb); 3 exs., Serra de Água, Boca de Encumeada, leaf litter sifted, 21.III.2005, leg. Ausmeier (cAss); 7 exs., Ribeiro Frio, near Balcões, 940 m, pitfall, 27.IX.1988, leg. Lange (cErb, cAss); 1 ex., Queimadas, 900 m, laurisilva, 27.III.1993, Assing (cAss); 1 ex., Bica da Cana, 1550 m, *Erica-Vaccinium* stand, northern exposure, 29.III.1993, Assing (cAss); 2 exs., Ribeira da Janela, 800 m, *Pinus-Erica*-laurel stand; southern exposure, 31.III.1993, leg. Assing, leg.

Wunderle (cAss, cWun); 2 exs., Roseira, 800 m, laurisilva, 5.IV.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Encumeada, 1000 m, *Erica* stand, 5.IV.1993, leg. Assing (cAss); 1 ex., Achada do Teixeira, 1580 m, N-slope, in moss, grass, leaf litter, 6.IV.1993, leg. Assing (cAss); 1 ex., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, southern exposure, 26.III.1993, leg. Wunderle (cWun); 1 ex., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, northern exposure, 21.III.1996, leg. Assing (cAss); 1 ex., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss).

Distribution: Expansive Atlanto-Mediterranean species, known from North Africa, the Iberian Peninsula, and southern Italy to Great Britain, southern Scandinavia, Poland, Austria, and the Czech Republic. Introduced to Madeira: Madeira proper.

Bionomics: Species usually occurring in the leaf litter of various forest and shrub biotopes. The Madeiran material was collected at intermediate and higher elevations, mostly sifted from the leaf litter of laurel trees, *Erica*, *Vaccinium*, and *Pinus* between 800 and 1600 m from March through August. Six of the eight type specimens, all of which were collected during the period from April through June, are teneral (SMETANA, 1963).

Remarks: The species was first recorded from Madeira by JANSSON (1940), suggesting that it was introduced to the island only recently.

The original description of *Q. nigriceps maderensis* is based on eight type specimens, six of which are teneral. According to SMETANA (1963), the main differences distinguishing the new subspecies from continental *Q. nigriceps* refer to the coloration, the shape of the pronotum, and the width of the head. A comparative study of more material from Madeira (see additional records) and of material from localities in Southwest and Central Europe (Portugal, Spain, Germany), however, did not confirm these differences. Since no significant differences were found in the male sexual characters either, we consider *Q. n. maderensis* Smetana a junior synonym of *Q. nigriceps* Kraatz. It does not seem very likely that a population that apparently has existed in Madeira for little more than half a century should represent a distinct subspecies.

104. *Quedius simplicifrons* Fairmaire, 1862

References: SMETANA (1963: 39); COIFFAIT (1978: 196); BORGES & SERRANO (1989: 11); ISRAELSON (1990: 3); BORGES (1990: 105); HERMAN (2001: 3271); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Quedius* (s.str.) *hispanicus* Bernhauer, 1898 (synonym): SMETANA (1970: 61).

As *Quedius pallipes* Lucas, 1846 (*hammianus* Sharp, 1911) (misidentification): GARDNER & CLASSEY (1962: 157).

As *Quedius pallipes* ab. *secundus* Last, 1952 (synonym): GARDNER & CLASSEY (1962: 158).

As *Quedius simplicifrons* ab. *rufulus* Blümml, 1898 (synonym): SMETANA (1963: 40).

Distribution: West, South, and Central Europe: Spain, Portugal, France, Italy, Denmark, Germany, Belgium, Netherlands, Britain, and coastal regions only. Azores, Canaries, Madeira: Madeira proper.

Bionomics: Halotolerant species, in continental Europe usually found in coastal areas like sandy or muddy banks, salt marshes and brackish lagoons, in Madeira and the Canaries also in non-coastal habitats, especially forests. One of the Madeiran records, for instance, is from Poiso-Arieiro (19.VI.1957, leg. Lindberg), at a relatively high altitude.

105. ? *Remus pruinosus* (Erichson, 1840)

References: ISRAELSON (1990: 2); BOIEIRO *et al.* (2001: 22; 2002: 23).

? As *Cafius sericeus* (Holme, 1837) (misidentification?): FAUVEL (1874: 425); JANSSON (1940:56); LUNDBLAD (1958:470); HERMAN (2001: 3017).

Distribution: Coasts of Western and Southern Europe, Turkey, South Russia. Azores, Canaries, Madeira? Once recorded from Cuba (HERMAN, 2001).

Bionomics: Intertidal species, mostly collected from seaweed, occasionally also from dead fish on sandy beaches. No information is available regarding the circumstances of the collection of the Madeiran specimens.

Remarks: Often confused with *Remus sericeus*, especially old records from the Eastern Mediterranean are doubtful. All the Madeiran records are based on FAUVEL (1874) who fails to specify any further data. We have been unable to locate any Madeiran material. The Fauvel collection (IRSNB) contains no material of *Remus* from Madeira (DRUGMAND, *pers. comm.*). Therefore, the occurrence of *Remus pruinosus* (and also of *R. sericeus*) remains most doubtful.

106. *Tasgius winkleri* (Bernhauer, 1906)

= *Staphylinus maderae* Jarrige, 1943 **syn. nov.**

References: HERMAN (2001: 3551); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Staphylinus winkler* Gardner & Classey (1962: 158).

As *Ocypus winkleri*: SMETANA (1963: 39).

As *Tasgius globulifer* (Geoffroy, 1785) (misidentification): BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Staphylinus globulifer* (misidentification): BERNHAUER (1940: 9); LUNDBLAD (1958: 470).

As *Tasgius maderae* (JARRIGE, 1943) (synonym): HERMAN (2001: 3540); BOIEIRO *et al.* (2001: 22, 2002: 23; 2003: 57).

As *Staphylinus maderae* (synonym): JARRIGE (1943: 147); LUNDBLAD (1958: 468);

As *Alapsodus maderae* (synonym): COIFFAIT (1974: 545).

Additional records: Madeira proper: 1 ex., Achada do Teixeira, peak near the cottage, 1600 m, 20.II.2003, leg. Lompe (cAss); 1 ex., Vereda from Fanal to Chão da Ribeira, 6.IX.2001, leg. Aguiar (cAgu).

Locus typicus (*S. maderae*): Madeira proper: “d’Encumiada” [Encumeada] (VIII.1932, a single female, leg. Barreto); holotype probably in MHNP.

Distribution: Probably Ponto-Mediterranean species: Turkey, Lebanon, Armenia, Southeast, South, and Central Europe, southern Sweden, England, also recorded from Portugal. Introduced in North America; Madeira: Madeira proper.

Bionomics: Eurytopic, xerophilous, predatory species. Recorded from gardens, edges of forests, meadows, farmland, gravel pits, stone quarries, and xerothermous slopes. The few Madeiran specimens were collected at intermediate to high elevations in February, May, August, September, and December.

Remarks: SMETANA & DAVIES (2000: 46) attribute the species of the former *Ocypus* subgenera *Tasgius* and *Alapsodus* to the genus *Tasgius*. Doubtlessly, all the Madeiran records of *Tasgius* species refer to one species. Based on the circumstances of the records there is no evidence suggesting the presence of an endemic Madeiran species. At the time of Bernhauer’s record, various species were confounded under the name *S. globulifer*. Later JARRIGE (1943) described a new species, *S. maderae*, based on a single female, although the species group had not been

taxonomically revised at that time. SMETANA (1963), a distinguished specialist of Staphylinini, identified the dissected male specimen collected by Lindberg as *T. winkleri* (Bernhauer). Since all the Madeiran specimens of *Tasgius* we have seen belong to *T. winkleri*, we regard *T. maderae* as a junior synonym of *T. winkleri*.

107. *Xantholinus longiventris* Heer, 1839

References: JANSSON (1940: 8, 56); LUNDBLAD (1958: 469); SMETANA (1963: 36), COIFFAIT (1972: 268); SERRANO (1987B: 150); ERBER & HINTERSEHER (1988: 152); BORGES & SERRANO (1989: 10); BORGES (1990: 104); ERBER (1990: 165); HERMAN (2001: 3809); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Xantholinus linearis* (Olivier, 1795) (misidentification): WOLLASTON (1854: 577; 1857: 188; 1865: 497); CROTCH (1870: 92); FAUVEL (1902: 102); MEQUIGNON (1942: 19; 1946: 114); LUNDBLAD (1958: 469); BORGES (1990: 104); HERMAN (2001: 3804); BOIEIRO *et al.* (2001: 22; 2002: 23).

As *Xantholinis linearis* (Gravenhorst, 1802) (nomen nudum): FAUVEL (1897A: 49; 1897C: 293); SCHMITZ (1897: 152).

Additional records: Madeira proper: 1 ex., Santo da Serra, 700 m, 18.VIII.1983, leg. Mitter (cMit); 1 ex., Paúl da Serra, 8.VIII.1998, Oromí (cOro); 15 exs., Fanal, 1100 m, edge of pond, debris, 25.III.1996, Assing (cAss); 1 ex., Ribeira Brava, 27.XII.1982, leg. Gillerfors (cGil); 1 ex., Fanal Lagoa, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss); 1 ex., Chão da Cancela, S Seixal, 500 m, 1.III.2003, leg. Lompe (cAss); 1 ex., Cova do Nigro, above Prazeres, 9.VI.2005, leg. Apfel (cAss); 3 exs., SW Seixal, Fanal, 1150 m, 9.VI.2005, leg. Apfel (cApf); 1 ex., Achada do Teixeira, under stone, 26.I.2003, leg. Erber (cErb); 19 exs., road from Ribeira de Janela to Paúl da Serra, 1100 m, lakeshore, flood debris, 25.III.1996, leg. Zerche (DEI, cSch); 2 exs., Seixal, Chão da Ribeira, laurisilva, leaf litter sifted, 20.III.2005, leg. Ausmeier (cAss); 1 ex., Pico do Arieiro, Achada Grande, 1500 m, under stone, 18.III.2005, leg. Ausmeier (cAss).

Distribution: Europe, Northern Africa?, introduced in USA: Pacific coast, Azores, Madeira. Madeira proper.

Bionomics: Eurytopic species; Central European populations usually reproduce in open landscapes, especially arable land, during summer and fly to forest biotopes for hibernation. In Madeira, most of the recently collected specimens were sifted from flood debris. In Central Europe, the species reproduces in spring and early summer, pre-imaginal development is completed in autumn; for further details see ASSING (1993).

Remarks: JANSSON (1940) assumes that the *Xantholinus linearis*, as recorded by WOLLASTON (1854) and all following authors, in fact refers to *X. longiventris*. We agree with his opinion, because all records of *X. linearis* (which has often been confused with other similar species) refer to the specimens collected by Wollaston and only *X. longiventris* were collected by recent authors. *Xantholinus linearis* is here deleted from the list of Madeiran Staphylinidae.

SUBFAMILY TACHYPORINAE

108. *Cilea silphoides* (Linnaeus, 1767)

References: FAUVEL (1897A: 50; 1897C: 315; 1902: 122); SCHMITZ (1897: 153); CAMERON (1901: 221); SERRANO & BORGES (1987: 57); BORGES (1990: 105); HERMAN (2001: 809); BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Tachinus silphoides* Erichson, 1839 (nomen nudum): WOLLASTON (1854: 570; 1857: 185).

As *Leucoparyphus silphoides* Kraatz, 1857 (nomen nudum): WOLLASTON (1865: 481).

As *Leucoparyphus silphoides*: WOLLASTON (1867: 234); JANSSON (1940: 56); MÉQUIGNON (1942: 22; 1946: 114); LUNDBLAD (1958: 470); SMETANA (1970: 63).

Distribution: Widespread in the Palaearctic region, probably introduced in the West Indies and North America, additional records from large parts of the Ethiopian and Oriental regions require verification. Azores, Canaries, Cape Verde; Madeira: Madeira proper. Rare, collected only in the region of Funchal, the latest record dates back to 1901 (CAMERON, 1901).

Bionomics: *Cilea silphoides* inhabits decaying organic matter and is found especially in compost, hay stacks, dung, mushrooms, and fermenting fruit. Wollaston collected the species in the garden of the Quinta d'Ambrosia during the winter, often on the wing; CAMERON (1901) observed the species in February.

109. *Coproporus pulchellus* (Erichson, 1839)

References: ISRAELSON (1984: 145); ERBER & HINTERSEHER (1988: 155, 185); BORGES & SERRANO (1989: 11); BORGES (1990: 105); BOIEIRO *et al.* (2001: 23; 2002: 23).

Additional records: Madeira proper: 15 exs., Caniço de Baixo, window pane, IX.1988, leg. Pieper (cErb, cSch); >100 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper; 167 exs., same data, but 7.-13.IX.1989; 56 exs., same data, but 14.-20.IX.1989; 21 exs., same data, but 21.-27.IX.1989; <5 exs., same data, but 13.-19.IX.1990; 6 exs., same data, but 20.-27.IX.1990; >100 exs., same data, but 7.-20.V.1992; >100 exs., same data, but 15.-28.IX.1995 (cErb, cAss); 2 exs., Garajau, IV.1978, leg. Palm (MMF); 1 ex., Caniçal, 19.XII.1987, leg. Gillerfors (cGil); 5 exs., Ponta do Sol, Lugar de Baixo, 2.II.2000, leg. Aguiar & Jesus (cAgu, cSch).

Distribution: Neotropics, North America, Azores, Canaries, Madeira: Madeira proper. The species has been recorded only from the south coast of Madeira proper.

Bionomics: *Coproporus pulchellus* is a eurytopic inhabitant of decaying plant material. Most Madeiran specimens were collected at a window pane in February, April, May, September, and December.

110. *Ischnosoma biplagiatum* (Fairmaire, 1860)

References: KOCIAN (1997: 276); HERMAN (2001: 718).

As *Mycetoporus pseudolongicornis* Palm, 1980 (synonym): PALM (1980A: 395).

As *Ischnosoma pseudolongicorne* (synonym): ERBER & AGUIAR (1996: 45); SCHÜLKE (1996:188).

As *Ischnosoma pseudolongicornis* (synonym, misspelling): BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Mycetoporus longicornis* Märklin, 1847 (misidentification): ERBER (1990: 150).

Locus typicus (*M. pseudolongicornis*): Madeira proper: Terreiro da Luta, 900 m (9.II.1966, sifted from decaying, mouldy layer of leaves in wet mixed deciduous forest under *Eucalyptus*, leg. Palm); holotype and eight paratypes from Terreiro da Luta, Monte, Porto Novo, Ribeiro Frio in Palm collection, now in MZLU.

Additional records: Madeira proper: 1 ex., Rabaçal, 1150 m, *Erica* stand; western exposure, 31.III.1993, Assing (cAss); 3 exs., Rabaçal, 1400 m, below small *Erica*; western exposure, 31.III.1993, Assing (cAss); 3 exs., Caniço de Baixo, 80 m, window pane, 21.-27.IX.1989, leg. Pieper; 1 ex., same data, but 7.-20.V.1992 (cErb, cAss); 1 ex., Rabaçal, Levada das 25 Fontes, 900 m, 29.I.2003, leg. Erber (cErb).

Distribution: Atlanto-Mediterranean species: Spain, Portugal, S-France, N-Africa, Corsica, Sardinia, Sicily; Madeira: Madeira proper. Rare, recently introduced species.

Bionomics: The Madeiran material was collected by sifting the leaf litter of *Eucalyptus*, *Erica*, and laurisilva; several specimens were found at a window pane. Adult beetles were observed in January and from March through September (KOCIAN, 1997, and additional records).

111. *Lordithon thoracicus* (Fabricius, 1777)

References: SCHÜLKE (2000: 98); BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Bolitobius thoracicus*: Erber & Hinterseher (1988: 154, 184); ERBER & AGUIAR (1996: 44).

Additional records: Madeira proper: 1 ex., env. João do Prado, E Poiso, 1300 m, *Pinus*, *Abies*, mushrooms, 12.I.2001, leg. Schülke (cSch); 2 exs., Queimadas -> Caldeirão Verde, above 2nd levada tunnel, laurel, *Erica*, moss, sifted, 18.I.2001, leg. Schülke (cSch); 1 ex., 1 km W Ribeiro Frio, laurel chestnut litter, 8.IX.1998, leg. Schuh (cSch); 1 ex., Chão da Ribeira, 1.VIII.1999, leg. Oromí (cOro); 1 ex., Queimadas, 900 m, Laurisilva, 27.III.1993, leg. Assing (cAss); 1 ex., Caramujo, 1220 m, Fayal-Brezal, 29.III.1993, leg. Assing (cAss); 1 ex., Terreiro da Luta, 1100 m, *Pinus-Eucalyptus* stand, 25.III.1993, leg. Wunderle (cWun); 1 ex., Rabaçal, 1400 m, *Erica*, western exposure, 31.III.1993, leg. Wunderle (cWun); 4 exs., E Encumeada-pass, 1300 m, *Erica-Vaccinium*-laurel/lichen, 26./30.III.1996, leg. Assing (cAss); 1 ex., Levada Furado, Poço do Bezerro, 800 m, 18.II.2003, leg. Lompe (cAss); 2 exs., Fanal Lagoa, 1025 m, flood debris, 27.II.2003, leg. Lompe (cAss); 1 ex., Queimadas Achada do Roque, Ribeira da Silveira, 900 m, 28.II.2003, leg. Lompe (cAss); 1 ex., road from Ribeira de Janela to Paúl da Serra, 1025 m, *Erica* sifted, 25.III.1996, leg. Zerche (DEI); 1 ex., road from Ribeira de Janela to Paúl da Serra, 900 m, laurisilva, 25.III.1996, leg. Zerche (DEI).

Distribution: Holarctic: N-Africa, Europe, Middle East, Siberia, Japan?, North America, Canaries, Madeira: Madeira proper. Recently introduced, today widespread and common in Madeira proper.

Bionomics: Eurytopic mycetophilous species. The Madeiran specimens were collected at elevations of 850-1500 m in January-March, August, and September. BENICK (1952) lists 62 Central European species of mushrooms as habitat of the species. No information on the preferred mushroom species in Madeira is available.

Remarks: The Canarian populations represent a distinct subspecies: *Lordithon thoracicus luridus* (WOLLASTON, 1864) (SCHÜLKE, 2000).

[*Lordithon trinotatus* (Erichson, 1839)]

References: BOIEIRO *et al.* (2001: 23, 2002: 23).

As *Bolitobius trinotatus* Erichson, 1839: SMETANA (1963: 41).

Distribution: West Palaearctic, probably Holo-Mediterranean species, Europe to Sweden in the north, to Poland in the east, and to Greece and Cyprus in the southeast, North Africa (Algeria).

Remarks: All identifications of *Lordithon trinotatus* Erichson prior to the recent revision by SCHÜLKE (2000) are doubtful due to confusion with *Lordithon bimaculatus* (Schrank). Both species are widespread. Since no Madeiran material of this or any other species of the genus other than *L. thoracicus* Fabricius was studied by the authors, the single record by SMETANA (1963) is likely to be based on a misidentification. *Lordithon trinotatus* is here deleted from the list of Madeiran Staphylinidae.

112. *Mycetoporus johnsoni* Wollaston, 1860 (Plate III, fig. 1, Fig. 11)

References: WOLLASTON (1860A: 52; 1865: 483, App.70); FAUVEL (1897A: 50; 1897C: 314; 1902: 122); SCHMITZ (1897: 153); BERNHAUER & SCHUBERT (1916: 451); JANSSON (1940: 11, 56); LUNDBLAD (1958: 470); SMETANA (1963: 41); PALM (1980A: 397); HERMAN (2001: 781); BOIEIRO *et al.* (2001: 23; 2002: 23; 2003: 57).

As *Mycetoporus pronus* Erichson, 1839 var. beta (misidentification): WOLLASTON (1854: 573, 1857: 186).

? As *Mycetoporus johnsoni* var. *lubrica* Wollaston, 1871: WOLLASTON (1871A: 298);

? As *Mycetoporus johnsoni* var. *lubricus*: BERNHAUER & SCHUBERT (1916: 451).

? As *Mycetoporus johnsoni* ab. *lubricus*: SCHEERPELTZ (1933: 1482).

Locus typicus: Madeira, without further data. WOLLASTON (1860A) designated no type material of the species in his original description, which contains only an indication of *Mycetoporus pronus* var. beta sensu Wollaston (1854). In his 1854 paper, Wollaston mentioned some localities for the species he identified as *Mycetoporus pronus* Erichson, but no separate localities for var. beta. PALM (1980A) studied two specimens of var. beta from the Wollaston collection (BMNH), referring to one of them as “the type”.

Additional records: Madeira proper: 16 exs., Pico do Arieiro, 1600-1700 m, *Erica-Vaccinium*, sifted, NE-slope, 9.I.2001, leg. Schülke (cSch); Pico do Arieiro, 1600 m, NE-slope, *Vaccinium*, sifted, 18.I.2001, leg. Schülke (cSch); 46 exs., Pico do Arieiro, 1600-1700 m, *Vaccinium*, sifted, NE-slope, 21.I.2001, leg. Schülke (cSch); 6 exs., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, northern exposure, 26.III.1993, leg. Assing, Wunderle (cAss, cWun); 15 exs., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, southern exposure, 26.III.1993, leg. Assing, leg. Wunderle (cAss, cWun); 3 exs., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand, northern exposure, 3.IV.1993, leg. Assing (cAss); 5 exs., Pico do Arieiro, 1600 m, *Erica-Vaccinium* stand; southern exposure, 21.III.1996, leg. Assing (cAss); 5 exs., road to Pico do Arieiro, 1650 m, *Vaccinium*, 21.III.1996, leg. Zerche (DEI, cSch); 2 exs., Bica da Cana, 1500-1550 m, *Vaccinium*, NE-slope, 11.I.2001, leg. Schülke (cSch); 1 ex., Bica da Cana, 1600 m, on pasture, below *Ilex*, 29.III.1993, leg. Assing (cAss); 11 exs., Bica da Cana, 1550 m, *Erica-Vaccinium* stand, northern exposure, 29.III.1993, leg. Assing, Wunderle (cAss, cWun); 2 exs., Bica da Cana, 1620 m, 25.II.2003, leg. Lompe (cAss); 3 exs., Queimadas, 900 m, laurisilva, 27.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Queimadas -> Caldeirão Verde, above 2nd levada tunnel, laurel, *Erica*, moss, sifted, 18.I.2001, leg. Schülke (cSch); 3 exs., 32 exs., Rabaçal, 1000 m, *Erica* sifted, 23.III.1996, leg. Zerche (DEI, cSch); 22 exs., Rabaçal,

1000 m, *Erica*-laurel stand, 23.III.1996, leg. Assing (cAss); 13 exs., Rabaçal, 1050 m, Laurisilva, 31.III.1993, leg. Assing, leg. Wunderle (cAss, cWun); 47 exs., Rabaçal, 1150 m, *Erica* stand; western exposure, 31.III.1993, leg. Assing, leg. Wunderle (cAss, cWun); 2 exs., Rabaçal, 1300 m, creek gravel, sifted, 27.III.1996, leg. Lompe (cAss); 18 exs., Rabaçal, 1300 m, *Erica-Vaccinium* stand, 27.III.1996, leg. Assing (cAss); 2 exs., Rabaçal, 950 m, laurel-*Erica-Vaccinium* stand, 2.IV.1996, leg. Lompe (cAss); 11 exs., Rabaçal, 950 m, laurel-*Erica-Vaccinium* stand, 3.IV.1996, leg. Assing (cAss); 3 exs., above Rabaçal, Levada 1 km E car park, 1300 m, *Erica* sifted, 27.III.1996, leg. Zerche (DEI, cSch); 3 exs., Rabaçal, 950 m, *Erica* and laurel forest, 3.IV.1996, leg. Zerche (DEI, cSch); 18 exs., Rabaçal, 1000 m, 7.VIII.1975, leg. Vit (MHNG, cSch); 2 exs., Ribeira da Janela, 800 m, laurisilva; western exposure, 31.III.1993, leg. Assing, Wunderle (cAss, cWun); 15 exs., road from Ribeira da Janela to Paúl da Serra, 900 m, laurisilva, 25.III.1996, leg. Zerche (DEI, cSch); 4 exs., road from Ribeira da Janela to Paúl da Serra, 1025 m, *Erica* sifted, 25.III.1996, leg. Zerche (DEI); 3 exs., peak of Pico Ruivo, W-slope, *Erica*, 1850 m, 29.III.1996, leg. Zerche (DEI); 68 exs., Pico Ruivo, 1850 m, peak, N-slope, litter and moss below *Erica*, 29.III.1996, leg. Assing (cAss); 24 exs., Achada do Teixeira -> Pico Ruivo, 1700 m, litter of fern and grass in the shade of rocks, 29.III.1996, leg. Assing (cAss); 2 exs., trail from Achada do Teixeira to Pico Ruivo, 1700 m, N-side, 29.III.1996, leg. Zerche (DEI, cSch); 1 ex., road to Achada do Teixeira, 1350 m, *Erica* sifted, 29.III.1996, leg. Zerche (DEI); 35 exs., Caramujo, 1220 m, Fayal-Brezal, 29.III.1993, leg. Assing, Wunderle (cAss, cWun); 4 exs., Caramujo, 1300 m, old *Erica* stand, 29.III.1993, leg. Assing (cAss); 7 exs., Caramujo, 1220 m, Fayal-Brezal, 4.IV.1993, leg. Assing (cAss); 9 exs., Caramujo, 1300 m, old *Erica* stand, 4.IV.1993, leg. Assing, leg. Wunderle (cAss, cWun); 3 exs., Ribeiro Frio, 850 m, Laurisilva, 24.III.1996, leg. Assing (cAss); 14 exs., Fanal, 900 m, Laurisilva, 25.III.1996, leg. Assing (cAss); 39 exs., Fanal, 1000 m, laurisilva, 25.III.1996, leg. Assing (cAss); 9 exs., Fanal, 1300 m, laurel-*Erica-Vaccinium* stand, 25.III.1996, leg. Assing (cAss); 1 ex., E Encumeada pass, 1500 m, *Erica* with individual laurel trees, 26.III.1996, leg. Assing (cAss); 2 exs., Pico das Eirinhas, path from Encumeada pass to Pico Ruivo, N-slope, 1500 m, 2.III.2003, leg. Lompe (cAss); 1 ex., Pico das Eirinhas, path from Encumeada pass to Pico Ruivo, 1500 m, *Erica*, 2.III.2003, leg. Lompe (cAss); 1 ex., Paúl da Serra, Estanquinhos, 1500 m, 28.I.2003, leg. Erber (cErb).

Distribution: Endemic to Madeira proper (Fig. 11). Madeiran localities: Rabaçal, Queimadas, Pico do Arieiro, Poiso, Bica da Cana, Ribeira da Janela, Achada do Teixeira, Caramujo, Ribeiro Frio, Fanal, Encumeada, Pico Ruivo, Pico das Eirinhas, Estanquinhos.

Bionomics: Hygrophilous brachypterous species. Very abundant at higher elevations. The species was collected in January-May, July, and August, mostly from the moist leaf litter of laurel woods and of *Erica* and *Vaccinium* vegetation.

113. *Mycetoporus portosanctanus* Palm, 1980 Plate III, fig. 2, Fig. 12)

References: PALM (1980A: 395); HERMAN (2001: 793).

Locus typicus: Porto Santo: Pico Ana Ferreira (31. I. 1978, leg. Palm; male holotype). 26 paratypes from Pico Ana Ferreira, Pico do Baixo, Pico Branco, Pico do Castelo, and Pico do Facho. Holotype and paratypes in Palm collection (now in MZLU), paratypes also in the Leiler collection.

Additional records: Porto Santo: 3 exs., Pico Branco, [sp 1245,] leg. Franz (NHMW, cSch); 2 exs., Porto Santo, without further data, leg. Franz (NHMW); 2 exs., Pico Juliana, 400 m, pine and laurel wood, 1.IV.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Pico Branco, 450 m, mountain top, laurel trees, *Pinus*, *Erica*, moss, 1.IV.1996, leg. Assing (cAss); 2 exs., below Pico Branco, 150 m, bank of stream, 1.IV.1996, leg. Lompe (cAss).

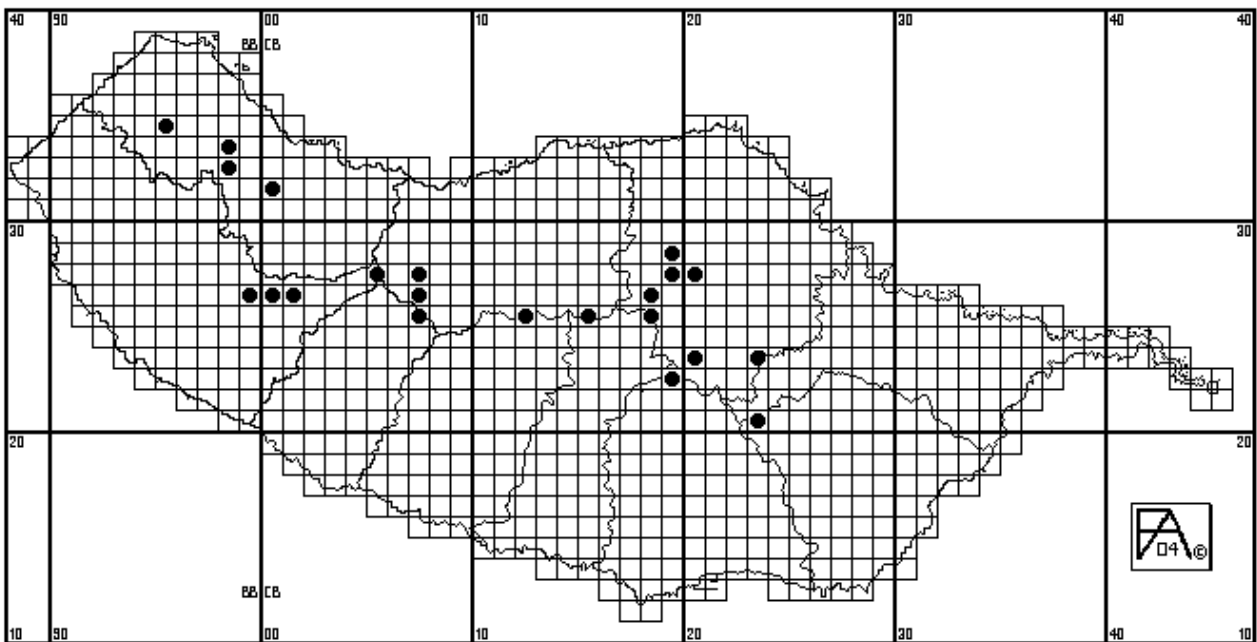


Fig. 11 - Distribution of *Mycetoporus johnsoni* Wollaston in Madeira.

Distribution: Madeira. Endemic to Porto Santo (Fig. 12). Localities: Pico Ana Ferreira, Pico do Baixo, Pico Branco, Pico do Castelo, Pico do Facho, Pico Juliana.

Bionomics: Brachypterous species; collected in January, February, April, and May. PALM (1980A) found the species in plant debris on open ground. The recently collected material listed above was sifted from the floor of pine and laurel woods. On one occasion it was found on the bank of a stream.

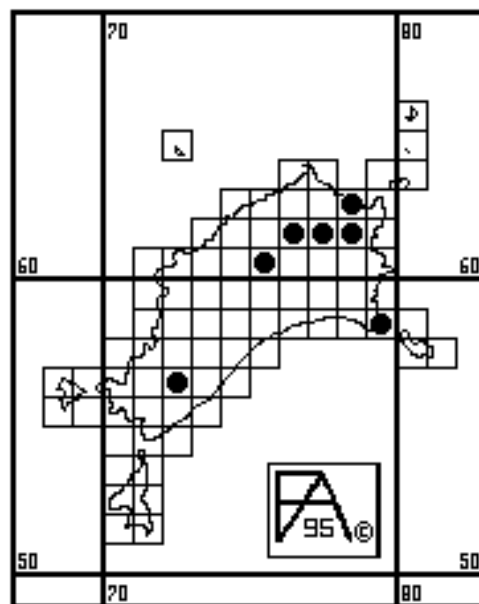


Fig. 12 - Distribution of *Mycetoporus portosanctanus* Palm in Porto Santo.

114. *Mycetoporus wollastoni* Fauvel, 1897 (Plate III, fig 3, Fig. 13)

References: FAUVEL (1897A: 50; 1897C: 314; 1902: 121); SCHMITZ (1897: 153); BERNHAUER & SCHUBERT (1916: 456); LUNDBLAD (1958: 470); PALM (1980A: 397); HERMAN (2001: 802); BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Mycetoporus pronus* Erichson, 1839 (misidentification): WOLLASTON (1854: 573, 1857: 186, 1865: 483).

As *Mycetoporus clavicornis* (Stephens, 1832) (misidentification): JANSSON (1940: 11, 56).

Locus typicus: Madeira, without further data. Fauvel named the species as nomen novum for *Mycetoporus pronus* sensu Wollaston (nec Erichson), based only on an indication (citation of WOLLASTON, 1854, 1865) without further remarks or references to type localities. WOLLASTON (1854) gives the following localities for the species he named *Mycetoporus pronus* Erichson: Fajã da Corte, Cruzinhas, Lombo dos Pecegueiros, and Fanal. The localities are not clearly distinguished for *Mycetoporus pronus* and *M. pronus* var. beta (which is in fact *M. johnsoni*). PALM (1980) studied two syntypes without further data from the collection of the BMNH and designated one of them as the lectotype.

Additional records: Madeira proper: 1 ex., Cruta do Cardal at São Vicente, 28.VII.1994, leg. João de Silva (cErb); 1 ex., 2 km E Ribeiro Frio, Levada do Furado, 900 m, laurisilva, 24.III.1996, leg. Zerche (cSch); 1 ex., Levada da Serra do Faial, 860 m, 31.XII.1995, leg. Erber (cSch); 1 ex., Queimadas, Levada do Caldeirão Verde, 900-1000 m, 5.IX.1998, leg. Schuh (cSch); 2 exs., Ribeiro Frio, 700 m, along Levada do Furado, 1.IX.1998, leg. Schuh (cSch); 2 exs., Ribeira das Cales, laurisilva, [spec. 1141], leg. Franz (NHMW, cSch); 1 ex., Poiso, 3.VIII.1999, leg. Oromí (cOro); 2 exs., Pico do Arieiro, 1600 m, N-slope, *Erica-Vaccinium* stand, 26.III.1993, leg. Assing (cAss); 4 exs., Pico do Arieiro, 1600 m, S-slope, *Erica-Vaccinium* stand, 26.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Pico do Arieiro, 1600 m, S-slope, *Erica-Vaccinium* stand, 21.III.1996, leg. Assing (cAss); 1 ex., Fanal, 900 m, laurisilva, 25.III.1996, leg. Assing (cAss); 1 ex., same data, but 1000 m (cAss); 1 ex., road to Pico do Arieiro, 1650 m, *Vaccinium*, 21.III.1996, leg. Zerche (DEI); 1 ex., Rabaçal, 1000 m, 25.II.2003, leg. Lompe (cAss); 1 ex., Cabeço da Esmoutada, 900 m, laurisilva, stream bank, 27.II.2003, leg. Lompe (cAss).

Distribution: Endemic to Madeira proper (Fig. 13). Madeiran localities: Ribeiro Frio, Poiso, Rabaçal, Cruta do Cardal near São Vicente, Serra do Faial, Queimadas, Ribeira das Cales, Pico do Arieiro, Fanal, Cabeço da Esmoutada.

Bionomics: Like *M. johnsoni*, this species is hygrophilous and brachypterous. It has been found at intermediate and higher elevations, where it is much rarer than *M. johnsoni*. Adult beetles were collected mostly by sifting moist leaf litter in January-May, July-September, and December.

Remarks: This endemic species is not listed by BOIEIRO *et al.* (2003).

115. *Sepedophilus lusitanicus* Hammond, 1973

References: HAMMOND (1973: 150); BORGES (1990: 105); HERMAN (2001: 885); BOIEIRO *et al.* (2001: 23; 2002: 23).

? As *Conurus pubescens* (Paykull, 1790) (misidentification): WOLLASTON (1854: 565; 1857: 184), FAUVEL (1897A: 50; 1897C: 316); SCHMITZ (1897: 153).

? As *Conosoma pubescens* (misidentification): WOLLASTON (1865: 478).

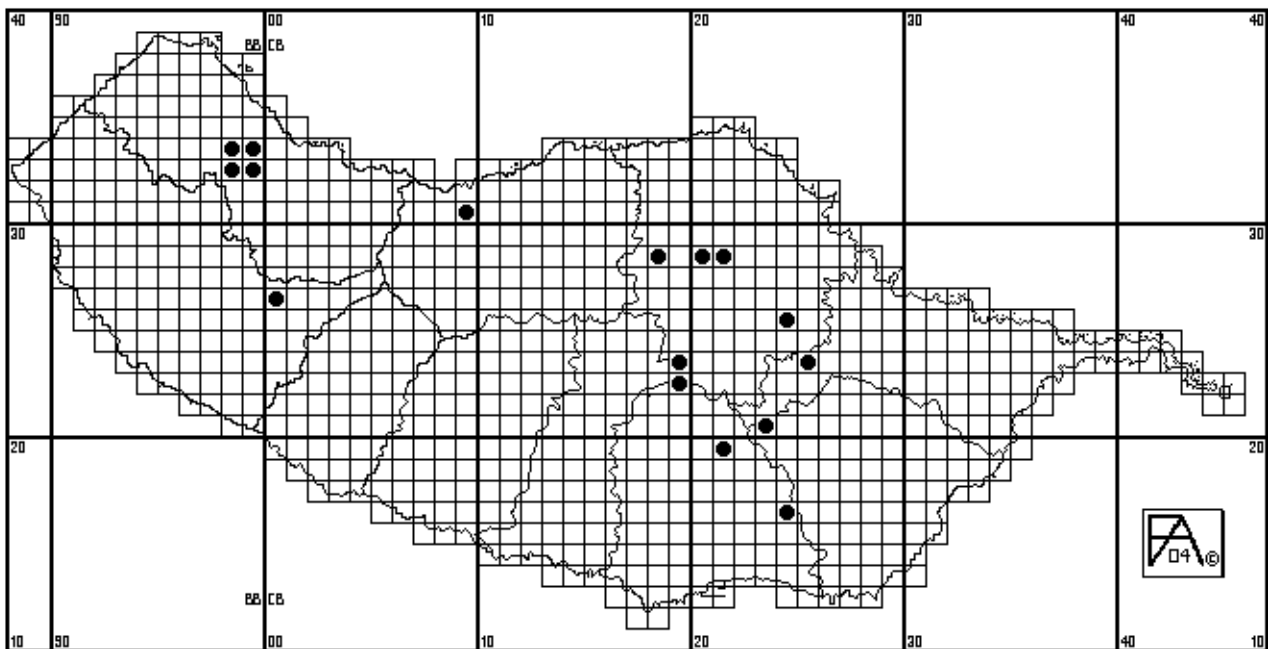


Fig. 13 - Distribution of *Mycetoporus wollastoni* Fauvel in Madeira.

Additional Records: Madeira proper: 2 exs., above Porto Moniz, 400 m, levada, laurisilva, 28.III.1996, leg. Assing (cSch); 4 exs., S Seixal, 400-500 m, I.1999, leg. Lebenbauer (cSch); 1 ex., Ribeira do Seixal, 3 km S Seixal, laurel tree litter, 12.IX.1998, leg. Schuh (cSch); 2 exs., Ribeira da Silveira, S Queimadas, 900 m, 5.IX.1998, leg. Schuh (cSch); 1 ex., Queimadas, 900-1000 m, Levada do Caldeirão Verde, 5.IX.1998, leg. Schuh (cSch); 1 ex., Queimadas, 900-1000 m, Levada do Caldeirão Verde, 5.IX.1998, leg. Schuh (cSch); 2 exs., Queimadas -> Caldeirão Verde, above 2nd. levada tunnel, laurel, *Erica*, moss, sifted, 18.I.2001, leg. Schülke (cSch); 4 exs., Queimadas, 900 m, Laurisilva, 27.III.1993, leg. Assing, leg. Wunderle (cAss); 1 ex., Pico das Pedras to Queimadas, 900 m, 8.I.1996, leg. Erber (cErb); 4 exs., 1 km W Ribeiro Frio, along levada, 800 m, 8.IX.1998, leg. Schuh (cSch); 1 ex., 1 km W Ribeiro Frio, laurel and *Castanea* litter, 8.IX.1998, leg. Schuh (cSch); 2 exs., Ribeiro Frio, 700 m, along Levada do Furado, 1.IX.1998, leg. Schuh (cSch); 1 ex., Encumeada, São Vicente, 17.IV.1960 (cSch); 11 exs., Terreiro da Luta, 1100 m, *Pinus-Eucalyptus* stand, 25.III.1993, leg. Assing, leg. Wunderle (cAss, cWun); 5 exs., Ribeira da Janela, 800 m, S-slope, *Pinus-Erica*- laurel stand, 31.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Ribeira da Janela, 660 m, 15.IX.1992, leg. Erber (cErb); 1 ex., Roseira, 800 m, laurisilva, 5.IV.1993, leg. Assing (cAss); 1 ex., Roseira, 700 m, shady creek valley, in moss and grass, 5.IV.1993, leg. Wunderle (cWun); 1 ex., Encumeada, 1000 m, *Erica* stand, 5.IV.1993, leg. Assing (cAss); 1 ex., Levada do Furado, Poço do Bezerro, 800 m, 18.II.2003, leg. Lompe (cAss); 1 ex., Junqueira, 400 m, 19.II.2003, leg. Lompe (cAss); 1 ex., Rabaçal, 1000 m, dead wood, 25.II.2003, leg. Lompe (cAss); 1 ex., Levada do Norte, N-slope, between first and second tunnel, 1030 m, barber trap, 12.X.1988, leg. Lange (cErb); 2 exs., Fajã da Nogueira 500-800 m, 9.X.1988, 19.IX.1992, leg. Erber (cErb).

Distribution: Southwest and West Europe: England, Belgium, France, Spain, Portugal, Madeira, Canaries (HAMMOND, 1972), Azores (BORGES, 1990: 93). Madeira: Madeira proper.

Bionomics: Eurytopic species. The Madeiran specimens were collected from litter of laurel trees, *Erica*, *Castanea*, *Eucalyptus*, and *Pinus*, mostly at lower and intermediate elevations (400-1100 m), once at 1500 m, in January-April, September, and October.

Remarks: HAMMOND (1973) described the species from England, with paratypes from different countries in western and southwestern Europe, including specimens from Canaries and Madeira (2 males, 2 females without additional data). Prior to HAMMOND (1973), the species was referred to as *Conosoma testaceum* (Fabricius), *C. pubescens* (Gravenhorst), or *C. pubescens* var. *constans* Sharp (HAMMOND, 1973) or *Sepedophilus marshami* (Stephens) by ERBER & HINTERSEHER (1988) and ERBER (1990). The records of *S. marshami* may have led BORGES (1990) to doubt the presence of *S. lusitanicus* in Madeira. Some of the old records of *S. testaceus* or *S. pubescens* from Madeira are likely to refer to *S. lusitanicus*, too.

[*Sepedophilus marshami* (Stephens, 1832)]

References: BOIEIRO *et al.* (2001: 23; 2002: 23).

? As *Conosoma marshami*: ERBER & HINTERSEHER (1988: 154, 184); ERBER (1990: 165).

Distribution: Palearctic: Europe, Siberia, N-China, also introduced in N-America. Azores?.

Remarks: All citations from Madeira are doubtful. We have seen no specimens of *Sepedophilus marshami* from any of the Atlantic Islands. We conclude that all the records in fact refer to *Sepedophilus lusitanicus*, which is similar in external characters, and delete the species from the list of Madeiran Staphylinidae.

116. *Sepedophilus monticola* (Wollaston, 1854)

References: ERBER & AGUIAR (1996: 44); HERMAN (2001: 888); BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Conurus monticola*: WOLLASTON (1854: 566; 1857: 185); FAUVEL (1897A: 50; 1897C: 317; 1902: 124); SCHMITZ (1897: 153).

As *Conosoma monticola*: WOLLASTON (1865: 479); BERNHAUER & SCHUBERT (1916: 469); JANSSON (1940: 12, 56); LUNDBLAD (1958: 470).

As *Conurus pedicularis* (Gravenhorst, 1802) (misidentification): WOLLASTON (1854: 565; 1857: 184).

As *Conosoma pedicularium* (misidentification): WOLLASTON (1865: 478); JANSSON (1940: 56); LUNDBLAD (1958: 470).

As *Sepedophilus pedicularius* (misidentification): HERMAN (2001: 894); BOIEIRO *et al.* (2001: 23; 2002: 23).

Locus typicus: Madeira proper: Crucinhas [= Cruzinhas], about 5000 feet (VII.1850, 3 exs., leg. Wollaston); types at least in part in BMNH.

Additional records: Madeira proper: 1 ex., Pico das Eirinhas, path from Encumeada pass to Pico Ruivo, 1500 m, *Erica*, 2.III.2003, leg. Lompe (cAss); 1 ex., road to Achada do Teixeira, 1350 m, *Erica* sifted, 29.III.1996, leg. Zerche (DEI). Porto Santo: 1 ex., Lombinho below Pico Branco, 2.II.1978, leg. Waldén (cSch); 2 exs., Pico Branco, 300 m, 26.IX.1992, leg. Erber (cSch); 21 exs., Pico Branco, 450 m, peak, pine and laurel forest, *Erica*, moss, 1.IV.1996, leg. Assing (cAss); 18 exs., Pico Juliana, 400 m, 1.IV.1993, leg. Assing (cSch); 12 exs., Pico Juliana, 400-440 m, N-slope, *Erica* and broadleaved shrubs, 20.I.2001, leg. Schülke (cSch); 2 exs., 5 exs., Pico Juliana, 400 m, *Erica*, 1.IV.1996, leg. Lompe (cAss); 2 exs., Pico Juliana, N-slope, 400 m, pine forest, 1.IV.199, leg.

Zerche (DEI); Pico do Facho, N-slope, 450-510 m, *Erica*, *Thuya*, sifted, 20.I.2001, leg. Schülke (cSch); 8 exs., Pico do Facho, 510 m, 11.IX.1998, leg. Schuh (cSch); 22 exs., Pico do Facho, 500 m, N-slope of peak, pine and laurel forest, *Erica*, moss, 1.IV.1996, leg. Assing (cAss); 1 ex., Pico do Facho, N-slope, 500 m, degraded laurisilva, 1.IV.1996, leg. Zerche (DEI).

Distribution: Described from Madeira proper, almost all recent records from Porto Santo. The identity of records from Europe and North Africa remain uncertain.

Bionomics: The species occurs in the leaf litter of various kinds of woodland and shrub biotopes (laurisilva, pine, *Erica*, etc.). Adult beetles have been observed in January-April, July, and September.

Remarks: *Conurus monticola* was described from Madeira proper, but recent records from Madeira proper are very rare. However, the species is very common in Porto Santo. The types of *C. monticola* were studied during a stay in the BMNH. Based on external characters, they were found to be indistinguishable from the Porto Santo specimens and certainly different from other Western Palaearctic species like *Sepedophilus pedicularius* (Gravenhorst, 1802), *S. obtusus* (Luze, 1901) or *S. nigripennis* (Stephens, 1832).

The material (two specimens from Madeira proper and one from Porto Santo, BMNH) upon which the records of *S. pedicularius* by WOLLASTON (1854, 1865) and all subsequent authors are based was examined and proved to refer to *S. monticola*, so that *S. pedicularius* is here deleted from the list of Madeiran Staphylinidae.

117. *Sepedophilus nigripennis* (Stephens, 1832)

References: HAMMOND (1973: 160).

Distribution: Probably Atlanto-Mediterranean species, for further distributional data see HAMMOND (1973) and SCHÜLKE (1999).

Bionomics: Eurytopic species. No data are available for the Madeiran specimens.

Remarks: Recorded by HAMMOND (1973) without additional data. We have seen no material of this species, nor do we know of any other recent records.

118. *Sepedophilus testaceus* (Fabricius, 1793)

References: HAMMOND (1973: 142); BORGES (1990: 105); HERMAN (2001: 905); BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Sepedophilus testaceum* (misspelling): SERRANO & BORGES (1987: 57).

As *Conurus pubescens* (Paykull, 1790): WOLLASTON (1854: 565; 1857: 184); FAUVEL (1897A: 50; 1897C: 316); SCHMITZ (1897: 153); CAMERON (1901: 220).

As *Conosoma pubescens* (synonym): WOLLASTON (1865: 478; 1871A: 297).

As *Conosomus pubescens* (synonym): MEQUIGNON (1942: 22; 1946: 114).

As *Conurus testaceus*: FAUVEL (1902: 124).

As *Conosoma sericeum* Latreille (nomen nudum): CROTCH (1867: 382; 1870: 89).

As *Conosoma testaceum*: JANSSON (1940: 56); LUNDBLAD (1958: 470); SMETANA (1963: 41; 1970: 63); SERRANO (1987B: 151); ERBER & HINTERSEHER (1988: 154).

As *Sepedophilus littoreus* (Linnaeus, 1758) (misidentification): HERMAN (2001: 881).

Additional records: Madeira proper: 1 ex., Ribeira da Janela, 31.III.1993, 800 m, leg. Assing (cSch); 4 exs., S Seixal, 400-500 m, I.1999, leg. Liebenbauer (cSch); 1 ex., Ribeira do Seixal, laurisilva, 12.IX.1998, leg. Schuh (cSch); 2 exs., above Seixal, 550 m, shady creek valley with

laurisilva, 31.III.1996, leg. Assing (cAss); 4 exs., Seixal, Chão da Ribeira, laurisilva, leaf litter sifted, 20.III.2005, leg. Ausmeier (cAss); 1 ex., Queimadas -> Caldeirão Verde, above 2nd levada tunnel, laurel trees, *Erica*, moss, sifted, 18.I.2001, leg. Schülke (cSch); 1 ex., Ribeiro Frio, 700 m, along Levada do Furado, 1.IX.1998, leg. Schuh (cSch); 10 exs., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss); 1 ex., Ribeiro Frio, Levada do Furado, leaf litter sifted, 18.III.2005, leg. Ausmeier (cAss); 1 ex., N Funchal, Passo de Poiso, under stones and under bark, 22.III.2005, leg. Ausmeier (cAss); 3 exs., Serra de Água, Boca de Encumeada, leaf litter sifted, 21.III.2005, leg. Ausmeier (cAss); 18 exs., above Porto Moniz, 400 m, Laurisilva, 28.III.1996, leg. Assing (cAss); 2 exs., Rabaçal, 950 m, Laurisilva, moist leaf litter, 30.III.1996, leg. Lompe (cAss); 1 ex., Caniço de Baixo, 80 m, window pane, 21.-27.IX.1989, leg. Pieper; 10 exs., same data, but 7.-20.V.1992 (cErb, cAss); 2 exs., Levada Calheta, Florenças, 680 m, under bark of dead *Pinus* 27.IX.1993, leg. Erber (cErb); 3 exs., Cova da Roda, 680 m, under bark of *Pinus*, 19.IX.1992, leg. Erber (cErb); 1 ex., Arieiro, Achada Grande, 1500 m, under bark of dead *Pinus*, leg. Erber (cErb); 1 ex., Paúl da Serra, under stone, 30.III.1995, leg. Aguiar (cAgu). Porto Santo: 11 exs., Pico do Castelo, 400 m, pine and laurel wood, 1.IV.1993, leg. Assing, leg. Wunderle (cAss, cWun); 72 exs., Pico Juliana, 400 m, pine and laurel wood, 1.IV.1993, leg. Assing, Wunderle (cAss, cWun).

Distribution: This common species is widespread at least in the western parts of the Palaearctic region. It is also known from North America (CAMPBELL, 1976). Records from other areas such as Saudi Arabia, Siberia, China, Taiwan, and Japan (see HERMAN, 2001) require further investigation. Madeira: Madeira proper and Porto Santo.

Bionomics: Eurytopic species, usually found in association with decaying wood (under bark of various tree species, in tree trunks, etc.). Abundant and widespread mostly at lower and intermediate elevations. The Madeiran specimens were collected in January, March-July, and September.

Remarks: The species is common at least on Madeira proper. The identities of *S. testaceus* and its related taxa were clarified by STRAND (1966), SMETANA (1969), and HAMMOND (1973). Therefore at least some of the old records are likely to refer to *S. lusitanicus*. HERMAN (2001) lists *S. littoreus* for Madeira, based on the records of its synonym *C. pubescens* Paykull. The corresponding specimens, however, doubtlessly belong to *S. testaceus* (Fabricius) or *S. lusitanicus* Hammond. *Sepedophilus littoreus* is absent from Madeira.

[*Tachinus corticinus* Gravenhorst, 1802]

References: BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Tachinus collaris* Gravenhorst, 1802 (synonym): MITTER (1984: 4).

Distribution: Siberian element, widespread and common in most of Europe; introduced in North America.

Remarks: This species was recorded from Madeira only by MITTER (1984). A loan of the corresponding specimen was requested, but MITTER (*pers. comm.*) informs us that it is apparently lost. We have seen no specimens of *Tachinus* from Madeira, so that the presence of the species in Madeira appears most unlikely and it is here deleted from the list of Madeiran Staphylinidae.

119. *Tachyporus caucasicus* Kolenati, 1846

References: ERBER & AGUIAR (1996: 44); BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Tachyporus solutus* Erichson, 1839; ERBER & HINTERSEHER (1988: 155, 185).

Additional records: Madeira proper: 1 ex., Pico do Arieiro, 1600 m, S-slope, *Erica-Vaccinium* stand, 26.III.1993, leg. Assing (cAss); 1 ex., Paúl da Serra, 1300 m, on flowering *Ilex*, 4.IV.1993, leg. Assing (cAss); 1 ex., Rabaçal, 1300 m, *Erica-Vaccinium* stand, 27.III.1996, leg. Assing (cAss); 1 ex., Funchal, Barreiros, inside house, 22.IV.2002, leg. Aguiar (cAgu).

Distribution: Holo-Mediterranean species: North Africa (Algeria, Morocco, Tunisia), most of southern Europe (Ukraine, France, Spain, Portugal, Italy, Bosnia-Herzegovina, Bulgaria, Greece, Croatia, Montenegro, Macedonia, Slovenia), Middle East (Georgia, Turkey, Jordania, Israel, Lebanon, Cyprus), Canaries and Madeira: Madeira proper, Porto Santo.

Bionomics: Eurytopic species in the Mediterranean area. Only few specimens have been recorded from Madeira; they were collected at a wide range of altitudes (sea level to 1600 m) in February-April and in July.

Remarks: The species was probably introduced to Madeira and La Palma (Canaries) very recently. Prior to the revision by SCHÜLKE (1991), it was confounded with *T. solutus* Erichson or recorded as colour variation of that species.

120. *Tachyporus celer* Wollaston, 1854 (Plate III, fig. 4, Fig. 14)

References: WOLLASTON (1854: 567; 1857: 185); FAUVEL (1897A: 50; 1897C: 315; 1902: 123); SCHMITZ (1897: 153); BERNHAUER & SCHUBERT (1916: 473); JANSSON (1940: 13, 56); LUNDBLAD (1958: 470); SERRANO (1987B: 151); ERBER & HINTERSEHER (1988: 155, 185); ERBER & AGUIAR (1996: 44); HERMAN (2001: 1009); BOIEIRO *et al.* (2001: 23; 2002: 23; 2003: 57).

As *Tachyporus pusillus* Gravenhorst, 1806 (misidentification): WOLLASTON (1865: 480).

Locus typicus: Madeira proper: Feijã da Córte [Fajã da Corsa] (VIII. 1850) and Ribeiro Frio (early spring, unspecified number types, leg. Wollaston).

Additional records: Madeira proper: Rabaçal, Levada das vinte e cinco fontes, 960 m, 1.X.1993, in grass, leg. Erber (cErb); 3 exs., Queimadas, 900 m, on waterfall from moss and grass, 27.III.1993, leg. Assing, Wunderle (cAss, cWun).

Distribution: Endemic to Madeira proper, Deserta Grande (Fig. 14). Rare; only few records since Wollaston's days. Madeiran localities: Madeira proper: Fajã da Corsa, Ribeiro Frio, Rabaçal, Deserta Grande: Cabeço da Doca.

Bionomics: Probably hygrophilous species. Collected at intermediate elevations under logs of wood, or sifted from grass and moss in March and July-October.

Remarks: *Tachyporus celer* Wollaston is the only true endemic of the genus known from the Western Palaearctic region.

121. *Tachyporus dispar* (Paykull, 1789)

References: ERBER & AGUIAR (1996: 45); BOIEIRO *et al.* (2001: 23; 2002: 23).

? As *Tachyporus chrysomelinus* (Linnaeus, 1758) (misidentification): SMETANA (1963: 41; 1970: 62); ERBER & HINTERSEHER (1988: 154, 184); BORGES (1990: 105); HERMAN (2001: 1009); BOIEIRO *et al.* (2001: 23; 2002: 23).

Additional records: Madeira proper: 3 exs., Rancho das Pedras, S Santana, grass heap, sifted, 12.I.2001, leg. Schülke (cSch); 5 ex., env. João do Prado, E Poiso, 1300 m, *Pinus*, *Abies*, mushrooms, 12.I.2001, leg. Schülke (cSch); 1 ex., Poiso, 1200 m, creek bank, 28.III.1993, leg. Assing (cAss); 1 ex., Pico Ruivo, 1700-1800 m, 29.III.1996, leg. Lompe (cSch); 1 ex., Achada do

Teixeira -> Pico Ruivo, 1700 m, shade of rock, moist litter of fern and grass, 29.III.1996, leg. Assing (cAss); 2 exs., Queimadas, 900 m, near waterfall from moss and grass, 27.III.1993, leg. Assing

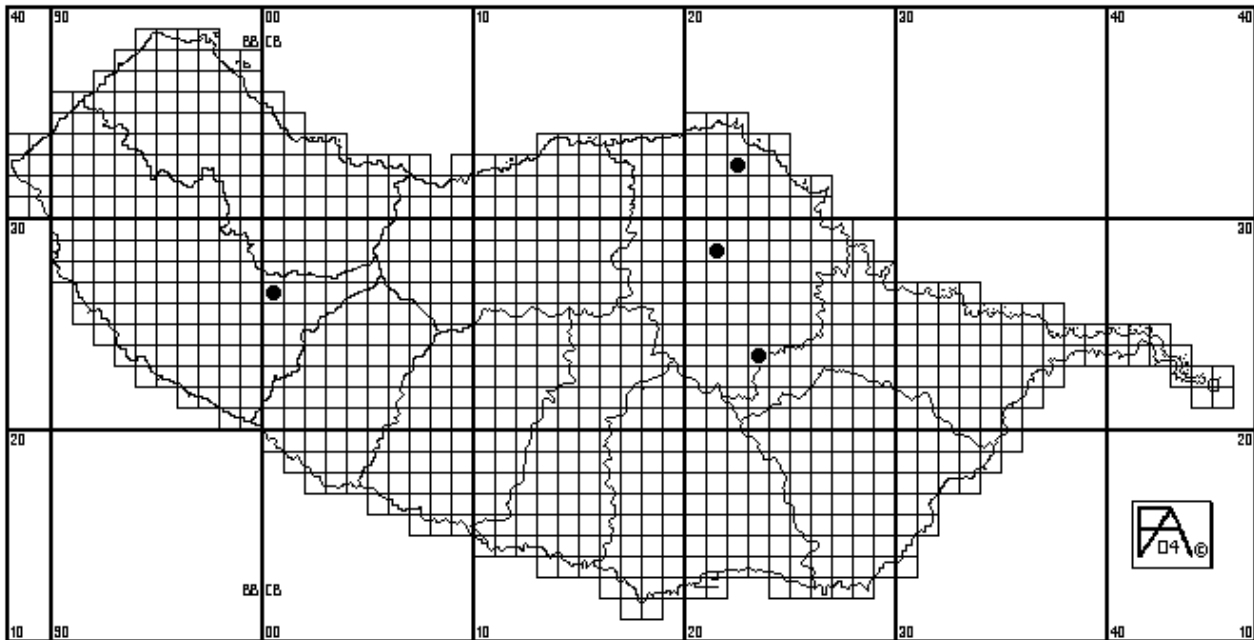


Fig. 14 - Distribution of *Tachyporus celer* Wollaston in Madeira.

(cAss); 1 ex., Queimadas, 28.XII.1982, leg. Gillerfors (cGil); 3 ex., Caramujo, 1300 m, old *Erica* stand, 29.III.1993, leg. Assing, leg. Wunderle (cAss, cWun); 9 exs., Bica da Cana, 1550 m, N-slope, *Erica-Vaccinium* stand, 29.III.1993, leg. Assing, Wunderle (cAss, cWun); 10 exs., Bica da Cana, 1620 m, 25.II.2003, leg. Lompe (cAss); 1 ex., Faial, 100 m, creek bank, 6.IV.1993, leg. Wunderle, (cWun); 7 exs., Fanal, 1100 m, edge of pond, debris, 25.III.1996, leg. Assing (cAss); 2 exs., Ribeiro Frio, 16.VI.1982, 22.XII.1982, leg. Gillerfors (cGil); 1 ex., Supra Monte, 23.XII. 1982, leg. Gillerfors (cGil); 1 ex., Ribeiro Frio, Botanical Garden, 900 m, laurisilva, 29.III.1996, leg. Zerche (DEI); 1 ex., Seixal, Chão da Ribeira, 450 m, grass heap, 31.III.1996, leg. Zerche (DEI); 1 ex., Chão da Ribeira, 400 m, field, sweep-net, 27.I.2003, leg. Erber (cErb); 1 ex., above Rabaçal, Levada, 1 km E carpark, 1300 m, *Erica* sifted, 27.III.1996, leg. Zerche (DEI); 2 exs., road from Ribeira de Janela to Paúl da Serra, 1100 m, lakeshore, flood debris, 25.III.1996, leg. Zerche (DEI); 1 ex., SW Santana, Rio Silveira, 12.III.2004, leg. Aßmann (cAss).

Distribution: Palaearctic, Azores, Canaries, North America. Madeira: Madeira proper.

Bionomics: Eurytopic species; in Madeira common, collected at intermediate to high elevations practically throughout the year.

Remarks: Prior to the revision by BOOTH (1988), the species was confounded with *Tachyporus chrysomelinus* (Linné). Both species are widespread in the Palaearctic region; *T. dispar* seems to be more expansive, and is introduced in North America, the Azores and Canaries. Since all the examined material belongs to *Tachyporus dispar*, *T. chrysomelinus* is here deleted from the list of Madeiran Staphylinidae.

122. *Tachyporus nitidulus* (Fabricius, 1781)

References: FAUVEL (1897A: 50; 1897C: 316; 1902: 124); SCHMITZ (1897: 153); BERNHAUER (1940: 9); JANSSON (1940: 12, 56); MEQUIGNON (1942: 22; 1946: 114); LUNDBLAD (1958: 470); GARDNER & CLASSEY (1962: 157); SMETANA (1963: 41; 1970: 62); SERRANO (1987B: 151); ERBER & HINTERSEHER (1988: 154); BORGES (1990: 105); ERBER (1990: 165); ISRAELSON (1990: 3); HERMAN (2001: 1030); BOIEIRO *et al.* (2001: 23; 2002: 23).

As *Tachyporus brunneus* (Fabricius, 1793) (synonym): WOLLASTON (1854: 568; 1857: 185; 1865: 480).

Additional records: Madeira proper: 1 ex., road between Pico da Lamoirinha & Pico Gordo, 1200 m, N-slope, *Erica*, sifted, 14.I.2001, leg. Schülke (cSch); 1 ex., Pico do Arieiro, 1600-1700 m, *Vaccinium*, sifted, NE-slope, 21.I.2001, leg. Schülke (cSch); 1 ex., Pico do Arieiro, env. Achada Grande, 1500 m, *Vaccinium*, *Cytisus*, sifted, NE-slope, 21.I.2001, leg. Schülke (cSch); 2 exs., Pico do Arieiro, 1600 m, N-slope, *Erica-Vaccinium* stand, 26.III.1993, leg. Assing, Wunderle (cAss, cWun); 2 exs., same data, but 3.IV.1993, leg. Assing (cAss); 2 exs., Pico do Arieiro, 1600 m, S-slope, *Erica-Vaccinium* stand, 26.III.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Terreiro da Luta, 1100 m, *Pinus-Eucalyptus* forest, 25.III.1993, leg. Assing (cAss); 11 exs., Bica da Cana, 1600 m, an meadows and *Ilex*, 29.III.1993, leg. Assing, leg. Wunderle (cAss, cWun); 1 ex., Achada do Teixeira, 1350 m, N-slope, *Erica*, 6.IV.1993, leg. Assing (cAss); 1 ex., Achada do Teixeira, 1350 m, old *Erica*, litter and moss, 29.III.1996, leg. Assing (cAss); 2 exs., Achada do Teixeira, peak near cottage, 1600 m, 20.II.2003, leg. Lompe (cAss); 1 ex., trail from Achada do Teixeira to Pico Ruivo, 1700 m, N-slope, 29.III.1996, leg. Zerche (DEI); 1 ex., Fanal, 1300 m, laurisilva, *Vaccinium*, *Erica*, 25.III.1996, leg. Assing (cAss); 1 ex., E Encumeada pass, 1500 m, *Erica* with individual laurel trees, 26.III.1996, leg. Assing (cAss); 1 ex., E Encumeada pass, 1300 m, old *Erica*, N slope, wet laurel litter at S-slope, 30.III.1996, leg. Assing (cAss); 1 ex., Caniço de Baixo, 80 m, window pane, 7.-13.IX.1989, leg. Pieper; 1 ex., same data, but 13.-19.IX.1990; 5 exs., same data, but 7.-20.V.1992 (cErb, cAss); 1 ex., Queimadas env., W. Pousada, 900 m, laurisilva, 28.II.2003, leg. Lompe (cAss); 1 ex., Caniçal, on *Myrica faya*, XII.1992, leg. Aguiar (cAgu); 2 exs., road from Ribeira de Janela to Paúl da Serra, 1100 m, lakeshore, flood debris, 25.III.1996, leg. Zerche (DEI); 4 exs., Fanal, 20.III.2004, leg. Abmann (cAss); 1 ex., Rabaçal, 1000 m, 7.VIII.1975, leg. Vit (MHNG); 2 exs., above Rabaçal, Levada 1km E carpark, 1300 m, *Erica* sifted, 27.III.1996, leg. Zerche (DEI). Porto Santo: 52 exs., Pico do Castelo, 400 m, pine and laurel forest, 1.IV.1993, leg. Assing, Wunderle (cAss, cWun); 48 exs., Pico Juliana, 400 m, pine and laurel forest, 1.IV.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Pico do Facho, N-slope, 450-510 m, *Erica*, *Thuya*, sifted, 20.I.2001, leg. Schülke (cSch); 4 exs., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: Palaearctic, North Africa, Mediterranean Region, North America, Azores, Canaries, New Zealand, Chatham Islands. Madeira: Madeira proper, Porto Santo, Ilhéu Chão, Deserta Grande, Ilheu Bugio.

Bionomics: Very eurytopic species, abundant almost everywhere. The Madeiran material was collected at a wide range of elevations by sweeping vegetation and by sifting all kinds of litter, moss, and flood debris in January-May and August-December.

Remarks: Most abundant species of the genus in North Africa, introduced in all Atlantic archipelagos, except for the Cape Verde Islands.

123. *Tachyporus quadriscopulatus quadriscopulatus* Pandellé, 1869

References: SCHÜLKE (1997: 146).

As *Tachyporus atriceps* ab. *signifer* Pandellé, 1869 (misidentification): JANSSON (1940: 13, 56).

As *Tachyporus atriceps* var. *signifer* (misidentification): LUNDBLAD (1958: 470).

As *Tachyporus atriceps* Stephens, 1932 (misidentification): BOIEIRO *et al.* (2001: 23; 2002: 23).

Additional records: Madeira proper: 2 exs., E Porto da Cruz, 300 m, laurel, *Erica*, flood debris, 24.III. 1996, leg. Assing (cAss); 1 ex., Supra Monte, 23.XII.1982, leg. Gillerfors (cGil).

Distribution: Southwest, West, North, and Central Europe; Madeira: Madeira proper.

Bionomics: Eurytopic species mostly collected in unforested habitats. The few known Madeiran specimens were collected at low and intermediate elevations in March, July, August, and December.

Remarks: Recently introduced to Madeira. *Tachyporus quadriscopulatus quadriscopulatus* is distributed in large parts of Europe, whereas *T. quadriscopulatus signifer* occurs in North Africa, southern Spain, and Portugal (SCHÜLKE, 1997). *Tachyporus atriceps* is here deleted from the list of Madeiran Staphylinidae.

SUBFAMILY TRICHOPHYINAE**124. *Trichophya huttoni* Wollaston, 1854**

References: WOLLASTON (1854: 572; 1857: 186); ASSING (2003B).

As *T. pilicornis* (Gyllenhal, 1810) (misidentification): WOLLASTON (1865: 481); FAUVEL (1897A: 50; 1897C: 319; 1902: 127); SCHMITZ (1897: 153); JANSSON (1940: 56); LUNDBLAD (1958: 470); BORGES (1990: 105); BOIEIRO *et al.* (2001: 23; 2002: 23).

Locus typicus: Lombo dos Pecegueiros.

Additional records: 1 ex., Seixal, Chão da Ribeira, laurisilva, leaf litter sifted, 20.III.2005, leg. Ausmeier (cAss); 1 ex., “Madeira”, coll. Kraatz (DEI).

Distribution: Endemic to Madeira proper: Lombo dos Pecegueros, Seixal. Very rare, only twice collected since the original description (see record above and ASSING 2003B).

Bionomics: WOLLASTON (1954) found the holotype “adhering to the under side of a moist log of wood”; further data are not available.

Remarks: For nearly one and a half centuries *Trichophya huttoni* has undisputedly been treated as a junior synonym of *T. pilicornis* (Gyllenhal), ever since WOLLASTON (1865) proposed this synonymy. It was discovered only recently, however, that *T. huttoni* represents a distinct species (ASSING, 2003B).

SUBFAMILY HABROCERINAE**125. *Habrocerus capillaricornis* (Gravenhorst, 1806)**

References: WOLLASTON (1854: 569; 1857: 185; 1865: 481); CROTCH (1870: 89); FAUVEL (1897A: 50; 1897C: 314; 1902: 122); SCHMITZ (1897: 153); BERNHAUER (1940: 9); JANSSON (1940: 11, 56); MÉQUIGNON (1942: 22; 1946: 114); LUNDBLAD (1958: 470); SMETANA (1963: 40); BORGES (1990: 105); ASSING & WUNDERLE (1995A: 316); HERMAN (2001: 653); BOIEIRO *et al.* (2001: 21; 2002: 21).

Additional records: Madeira proper: 1 ex., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss); 2 exs., Ribeiro Frio, 900 m, 16.-30.I.1999, leg. Lebenbauer (cAss); 2 exs., Funchal, Levada dos Tornos, under bark, 27.II.-5.III.2006, leg. Hlaváč (cAss); 1 ex., Ribeira da Janela, Fanal, 800 m, laurisilva, 1.IV.1993, leg. Assing (cAss); 23 exs., same data, but degraded laurisilva with *Erica* and *Pinus*, leg. Assing, Wunderle (cAss, cWun); 1 ex., S Lamaceiros, Levada Central da Janela, 20.III.2004, leg. Abmann (cAss); 12 exs., above Seixal, 550 m, laurisilva near stream, 31.III.1996, leg. Assing (cAss); 1 ex., Cab. da Esmoutada, 32°49'07N, 17°08'59W, 900 m, 27.II.2003, leg. Lompe (cAss); 5 exs., Caniço de Baixo, 80 m, window pane, 21.-27.IX.1989, leg. Pieper (cAss); 1 ex., same data, but 13.-19.IX.1990; 6 exs., same data, but 7.-20.V.1992 (cAss); 1 ex., Serra de Água, Boca de Encumeada, leaf litter sifted, 21.III.2005, leg. Ausmeier (cAss).

Distribution: West Palaearctic; introduced in North and South America, New Zealand, and South Africa. Azores, Canaries; Madeira: Madeira proper.

Bionomics: Common species of the leaf litter and other habitats with decaying plant material.

SUBFAMILY ALEOCHARINAE

126. *Aleochara binotata* Kraatz, 1856

References: WOLLASTON (1857: 182, identification doubtful; 1865: 475, identification doubtful); MAUS (1996: 56).

Distribution: Palaearctic. Madeira: locality not specified.

Bionomics: The species has been found in carrion, excrements, and decaying plant material. The larvae are parasitoids of puparia of various dipteran species (families: Ulidiidae, Piophilidae, Lonchaeidae, Anthomyiidae, Muscidae, Calliphoridae, Sarcophagidae) (MAUS *et al.*, 1998).

Remarks: Until recently, the species had been confused with *A. verna* Say (LOHSE, 1986), so that older records must be considered doubtful. *Aleochara binotata* is not a recent introduction; the only confirmed record is based on a specimen in the Wollaston collection (MAUS, 1996). It seems likely that part of the records of *A. bipustulata* in fact refer to *A. binotata*. The species is not listed by BOEIRO *et al.* (2001, 2002).

[*Aleochara bipustulata* (Linnaeus, 1761)]

References (all of them doubtful, see remarks below): FAUVEL (1902: 166); BERNHAUER (1940: 9); JANSSON (1940: 22, 57); MÉQUIGNON (1942: 26; 1946: 115); LUNDBLAD (1958: 472); LIKOVSKÝ (1963: 50); SMETANA (1970: 65); SERRANO (1982: 73; 1987B: 152); BORGES & SERRANO (1989: 12); ERBER & HINTERSEHER (1988: 157; 1990: 142); BORGES (1990: 105); ERBER (1990: 166); BOEIRO *et al.* (2001: 19; 2002: 20).

? As *A. nitida* Gravenhorst, 1802 (doubtful synonym): WOLLASTON (1854: 560; 1857: 182; 1865: 475); CROTCH (1870: 87); FAUVEL (1897A: 52; 1897C: 357); SCHMITZ (1897: 154).

? As *A. lindbergi* Likovský (misidentification?): ERBER & HINTERSEHER, 1988: 188 (see ERBER, 1990); but see remarks below.

Distribution: Palaearctic, Northern India; records from the Nearctic and the Ethiopian regions have not been confirmed (MAUS, 1998). Madeira: Despite numerous literature records, the presence of *A. bipustulata* in the Madeira archipelago requires confirmation (see remarks).

Bionomics: Associated with carrion, excrements, and decaying plant material (MAUS *et al.*, 1998).

Remarks: Before LOHSE (1986, 1989B), *A. bipustulata* was generally confounded with *A. verna* Say (and *A. binotata* Kraatz). According to MAUS (1998), who does not confirm a single record of this species from Madeira, it is likely that at least part of the records refer to *A. lindbergi* Likovský. The presence of *A. bipustulata* in the Madeiran archipelago is doubtful and requires confirmation. So far all the Madeiran material of “*A. bipustulata*” examined by MAUS (*pers. comm.*) proved to be either *A. lindbergi* or *A. verna*. For the reasons stated above, the species is here deleted from the list of Madeiran Staphylinidae.

127. *Aleochara clavicornis* Redtenbacher, 1849

References: WOLLASTON (1867: 277; 1871A: 293); FAUVEL (1897A: 51; 1897C: 354; 1902: 164); SCHMITZ (1897: 154); JANSSON (1940: 57); MÉQUIGNON (1942: 26; 1946: 115); LUNDBLAD

(1958: 472); ERBER & HINTERSEHER (1988: 157, 188); BORGES (1990: 105); BOIEIRO *et al.* (2001: 19; 2002: 20).

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper (cAss); 1 ex., same data, but 7.-13.IX.1989; 1 ex., same data, but 21.-27.IX.1989; 1 ex., same data, but 20.-27.IX.1990; 1 ex., same data, but 15.-28.IX.1995 (cAss).

Distribution: Cosmopolitan. Madeira: Madeira proper.

Bionomics: Unlike other species of the genus, *A. crassicornis* is not a parasitoid. All three larval instars are of the usual aleocharine type and feed on decaying meat, maggots, and dipteran pupae (MAUS *et al.*, 1998).

128. *Aleochara funebris* Wollaston, 1864

References: BERNHAUER & SCHEERPELTZ (1926: 783); LUNDBLAD (1958: 472; as doubtful record); WELCH (1997: 8).

As *Aleochara moesta* var. *funebris* Wollaston: FAUVEL (1897A: 52); SCHMITZ (1897: 154).

As *Aleochara diversa* Sahlberg, 1876 (misidentification), now a synonym of *A. kamila* Likovský, 1984: JANSSON (1940: 22, 57); LUNDBLAD (1958: 472); LIKOVSKÝ (1963: 48); BOIEIRO *et al.* (2001: 19; 2002: 20).

As *Aleochara albovillosa* Bernhauer, 1901 (synonym): ERBER & AGUIAR (1996: 46); BOIEIRO *et al.* (2001: 19; 2002: 20).

As *Aleochara moesta* Gravenhorst, 1802 (misidentification): WOLLASTON (1854: 560; 1857: 181; 1865: 474; 1871A: 293); FAUVEL (1897C: 356; 1902: 165).

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, window pane, 7.-20.V.1992, leg. Pieper (cAss); 2 exs., Rabaçal, 7.VIII.1975, leg. Vit (cAss).

Distribution: Palaearctic. Madeira: Madeira proper.

Bionomics: Several specimens were found on a dead fish (JANSSON, 1940), but according to MAUS *et al.* (1998), the species inhabits nests, burrows, and decaying plant material. The larvae are parasitoids of Calliphoridae.

Remarks: There has been considerable taxonomic confusion regarding this species, until the identities especially of *A. diversa* Sahlberg, *A. albovillosa* Bernhauer, and *A. funebris* Wollaston were clarified by LIKOVSKÝ (1968) and WELCH (1969, 1997). In BOIEIRO *et al.* (2001, 2002), the species is listed both as *A. albovillosa* Bernhauer and *A. diversa* Sahlberg. It is not indicated for Madeira by SMETANA (2004B).

It can be inferred that from WOLLASTON (1857, 1865), FAUVEL (1902), and WELCH (1997) that Wollaston's records of *A. moesta* from Madeira are likely to refer to *A. funebris*.

129. *Aleochara lindbergi* Likovský, 1963

References: LIKOVSKÝ (1963: 48); ERBER & HINTERSEHER (1988: 157, 188; 1990: 142); ERBER (1990: 151); MAUS (1998: 85); BOIEIRO (2001: 19; 2002: 20; 2003: 55).

? As *Aleochara bilineata* Gyllenhal, 1810 (misidentification): BERNHAUER (1940: 9); LUNDBLAD (1958: 472).

Locus typicus: Madeira, Serra d'Água [= Serra de Água].

Additional record: Madeira proper: 1 ex., Faia, Gaula (Santa Cruz), on *Brassica oleracea*, 31.III.1993, leg. Aguiar (cAgu).

Distribution: Endemic to Madeira proper. Localities: Pico Ruivo, Serra de Água, Queimadas, Rosario, Rabaçal, Ribeiro Frio, Vale Paraíso, Terreira da Luta, Ribeiro do Poço, Fajã da Nogueira, Ribeiro da Cal, Paúl da Serra: Estanquinhos, Gaula (Santa Cruz).

Bionomics: Like most species of the subgenus, *A. lindbergi* is presumably associated with dung, but it has also been collected on a rabbit carcass, under stones, swept from vegetation, and caught in pan traps (MAUS, 1996).

Remarks: At least part of the literature records of *A. bipustulata* and *A. bilineata* refer to this species (MAUS, 1996, 1998; see also remarks below *A. bipustulata*). The taxonomic status of *A. lindbergi* is still somewhat uncertain (see discussion in MAUS, 1996). A separation from *A. bipustulata* is often difficult.

130. *Aleochara moesta* Gravenhorst, 1802

References: JANSSON (1940: 22, 57); LUNDBLAD (1958: 472); LIKOVSKÝ (1963: 48); ERBER & HINTERSEHER (1988: 157); ERBER (1990: 166); BOIEIRO *et al.* (2001: 19; 2002: 20); see also remarks below.

As *A. crassiuscula* Sahlberg, 1834 (synonym): WOLLASTON (1865: 473); FAUVEL (1897A: 52; 1897: 355; 1902: 165); SCHMITZ (1897: 154).

As *A. tristis* (misidentification): WOLLASTON (1854: 560; 1857: 181); SERRANO (1987B: 152).

Additional records: Madeira proper: 1 ex., Paúl da Serra, 8.VIII.1998, leg. Oromí (cOro); 1 ex., Funchal, pigeon dung, 21.XI.1967, leg. Benick (cAss).

Distribution: Palaearctic. Madeira: Madeira proper, Porto Santo.

Bionomics: *Aleochara moesta* inhabits especially excrements, but also decaying plant material. The larvae are parasitoids of puparia of various Diptera species (MAUS *et al.*, 1998).

Remarks: The identities of *A. moesta*, *A. tristis*, and *A. crassiuscula* in the older papers are not completely clear. However, it can be inferred from FAUVEL (1902) and WELCH (1997) that Wollaston's records of *A. moesta* seem to refer to *A. funebris* Wollaston, those of *A. tristis* Gravenhorst to *A. moesta* Gravenhorst, and that his records of *A. crassiuscula* Sahlberg apparently refer to *A. moesta* Gravenhorst; for further discussion see remarks below *A. funebris*.

131. *Aleochara puberula* Klug, 1832

References: WOLLASTON (1857: 180; 1865: 473; 1867: 228); CROTCH (1870: 87); FAUVEL (1897A: 51; 1897C: 355; 1902: 164); SCHMITZ (1897: 154); JANSSON (1940: 57); MÉQUIGNON (1942: 26; 1946: 115); LUNDBLAD (1958: 472); ERBER & HINTERSEHER (1988: 157, 188); BORGES (2000: 105); BOIEIRO *et al.* (2001: 19; 2002: 20).

As *Aleochara armitagei* Wollaston, 1854 (synonym): WOLLASTON (1854: 559).

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, 13.-19.IX.1990, leg. Pieper (cAss); 3 exs., Funchal, 31.III.1975, leg. Vit (cAss).

Distribution: Cosmopolitan. Madeira: Madeira proper, Porto Santo.

Bionomics: This generalised species inhabits carrion, excrements, and decaying plant material. The larvae are parasitoids of puparia of various species of Anthomyiidae, Muscidae, and Calliphoridae (Diptera) (MAUS *et al.*, 1998).

132. *Aleochara verna* Say, 1833

References: MAUS (1998: 87f.); see also remarks below. Doubtful: JANSSON (1940: 57); LUNDBLAD (1958: 472); SERRANO (1987B: 152).

Additional records: Porto Santo: 1 ex., Pico Branco, 450 m, 1.IV.1996, leg. Assing (cAss); 1 ex., Pico do Facho, 510 m, 11.IX.1998, leg. Schuh (cAss); 1 ex., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: Holarctic and Oriental regions. Madeira: Madeira proper (locality not specified), Porto Santo.

Bionomics: The species is associated with excrements and decaying plant matter; the larvae are parasitoids of puparia especially of Anthomyiidae, but also of Scathophagidae, Muscidae, and Sarcophagidae (Diptera) (MAUS *et al.*, 1998).

Remarks: The species was omitted by BOIEIRO *et al.* (2001, 2002). The presence of the true *Aleochara verna* in the Palaearctic region was not recognized until LOHSE (1986) clarified the previously confused taxonomic status of *A. verna* and *A. binotata* and provided distinguishing characters. Consequently, only the Madeiran record by MAUS (1998) can be considered reliable. The remaining records may refer to other species of the subgenus *Coprochara*.

133. *Aloconota granulosa* (Wollaston, 1854) (Plate IV, fig. 1, Fig. 15)

References: As *Homalota granulosa*: WOLLASTON (1854: 548; 1857: 174; 1865: 461).

As *Atheta granulosa*: FAUVEL (1897A: 51; 1897C: 336; 1902: 143); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 610); JANSSON (1940: 18, 57); LUNDBLAD (1958: 471); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira proper: Cruzinhas.

Additional records: Madeira proper: 1 ex., Encumeada, Folhadal, Levada do Norte, 28.X.1997, leg. Lompe (cAss); 1 ex., Achada do Teixeira, 1350 m, 7.IV.1993, leg. Assing (cAss); 17 exs., Achada do Teixeira, path to Pico Ruivo, 1700 m, 29.III.1996, leg. Assing, Lompe, Zerche (DEI, cAss); 1 ex., Rio Silveira near Teixeira, Pico das Pedras, 1250 m, 18.III.2004, leg. Aßmann (cAss); 3 exs., Queimadas, 900 m, 27.III.1993, leg. Assing, Wunderle (cAss, cWun); 5 exs., E Encumeada pass, near Pico do Jorge, 1500 m, 26.III.1996, leg. Assing (cAss); 2 exs., above Seixal, Ribeira do Seixal, bank of stream, 550 m, 31.III.1996, leg. Lompe, Zerche (DEI, cAss); 12 exs., S Seixal, 400-500 m, 18.-30.I.1999, leg. Lebenbauer (cAss); 1 ex., Paúl da Serra, 1 km SE Rabaçal, Rib. Lajeado, Rib. Alecrim, 1250 m, 14.IX.1998, leg. Schuh (cAss); 2 exs., Pico das Torres, N Pico do Arieiro, 1600 m, 3.IX.1998, leg. Schuh (cAss); 1 ex., Seixal, Ribera da Seixal, 600 m, 10.IV.2005, leg. Apfel (cApf).

Distribution: Endemic to Madeira proper (Fig. 15): Cruzinhas, Rabaçal, Ribeiro do Alecrim, Ribeira do Inferno, Caramujo, Encumeada, Achada do Teixeira, Pico Ruivo, Queimadas, Pico do Jorge, Seixal, Pico das Torres near Pico do Arieiro.

Bionomics: *Aloconota granulosa* occurs in moist habitats and was found especially near running waters.

Remarks: A syntype from the Wollaston collection at the BMNH was examined. Based on external, as well as on the primary and secondary sexual characters, this species refers to the genus *Aloconota* Thomson.

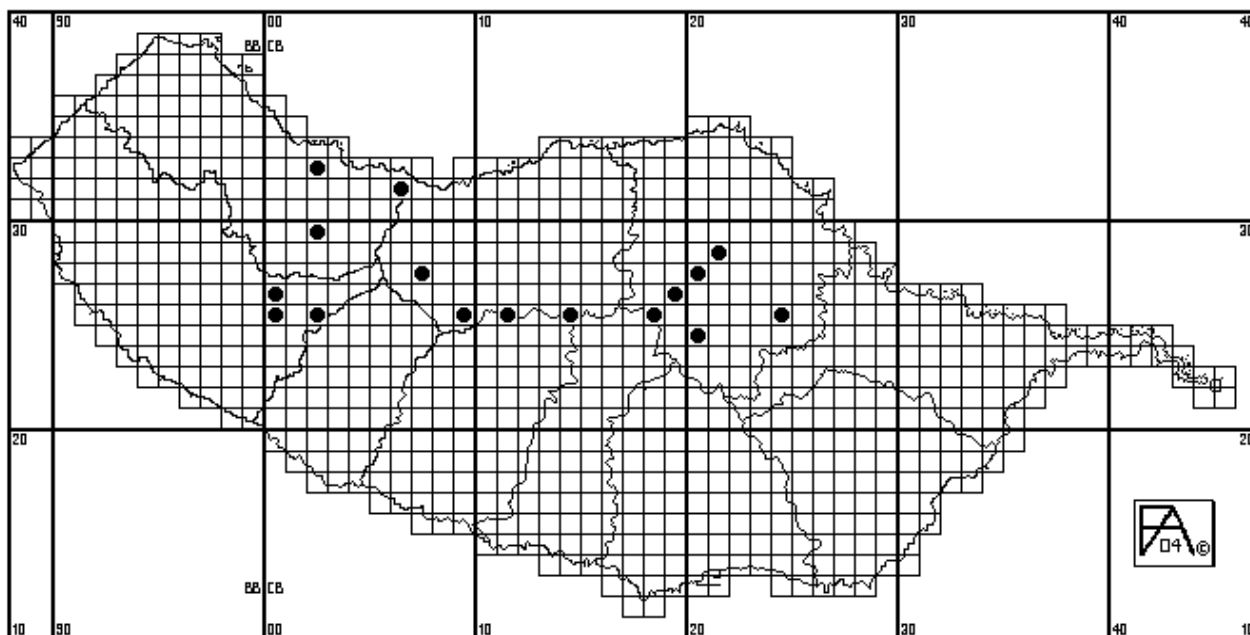


Fig. 15 - Distribution of *Aloconota granulosa* (Wollaston) in Madeira.

134. *Aloconota gregaria* (Erichson, 1839)

References: SERRANO & BORGES (1987: 57); ERBER (1990: 166); BOIEIRO *et al.* (2001: 19; 2002: 20).

As *Homalota gregaria*: WOLLASTON (1854: 550; 1857: 174; 1865: 462; 1871A: 290).

As *Atheta gregaria*: FAUVEL (1897A: 51; 1897C: 337; 1902: 145); SCHMITZ (1897: 154); JANSSON (1940: 57); LUNDBLAD (1958: 471).

Additional records: Porto Santo: 1 ex., peak of Pico Branco, 450 m, 1.IV.1996, leg. Assing (cAss).

Distribution: West Palaearctic. Madeira: Madeira proper, Porto Santo.

Bionomics: Common and generalised species, especially in arable land and other unforested biotopes.

[*Aloconota insecta* (Thomson, 1856)]

References: BORGES (1990: 105); BOIEIRO *et al.* (2001: 19; 2002: 20).

As *Atheta insecta*: BERNHAUER (1940: 9); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 45); BRINCK (1977: 84); SERRANO (1987B: 151).

Distribution: West Palaearctic. Madeira: Madeira proper.

Remarks: It is most likely that this species has been confused with *A. sulcifrons*; we have not seen any Madeiran material of *A. insecta*. Its presence in Madeira should be considered doubtful until it is confirmed. The species is here deleted from the list of Madeiran Staphylinidae.

135. *Aloconota maderensis* (Wollaston, 1865)

References: As *Homalota amnigena* var. β *maderensis*: WOLLASTON (1865: 463).

? As *Atheta amnigena* (Wollaston, 1864) (probably misidentification): FAUVEL (1897A: 51; 1897C: 336); SCHMITZ (1897: 154).

? As *Aloconota cambrica* (Wollaston, 1855) (probably misidentification): FAUVEL (1902: 144); LUNDBLAD (1958: 471); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Atheta philonthoides* (Wollaston, 1854), partim (misidentification): BERNHAUER & SCHEERPELTZ (1926: 610).

Locus typicus: Madeira proper.

Distribution: Probably endemic to Madeira proper (see remarks).

Additional records: Madeira proper: 1 ex., Ribeiro da Ametade, 600 m, 12.-13.V.1994, leg. Hieke & Wendt (cAss).

Bionomics: It seems likely that, like most of its congeners, *A. maderensis* inhabits moist habitats.

Remarks: FAUVEL (1897A, 1897C) regarded *Homalota maderensis* as a synonym of *H. amnigena* Wollaston, but, having studied the holotype, only shortly afterwards changed his mind and considered *H. amnigena* a junior synonym of *H. philonthoides* and *H. maderensis* a junior synonym of *H. cambrica* Wollaston (FAUVEL, 1902). The latter view has prevailed until today, although the synonymies suggested by Fauvel have never been reexamined. A comparison of material of *A. amnigena* from the Canaries and of *A. cambrica* from the European continent, however, revealed that they are distinct species (ASSING, *unpublished*; see also OROMÍ & MACHADO, 2000), and an examination of a male from Madeira, whose morphology is in agreement with the details indicated in the original description of *A. maderensis* by WOLLASTON (1865), suggests that *A. maderensis*, too, represents a distinct species.

136. *Aloconota philonthoides* (Wollaston, 1854)

References: BOIEIRO *et al.* (2001: 19; 2002: 20).

As *Homalota philonthoides*: WOLLASTON (1854: 551; 1857: 175; 1865: 462); CAMERON (1901: 220).

As *Atheta philonthoides*: FAUVEL (1897A: 51; 1897C: 330; 1902: 144); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 610, pars); JANSSON (1940: 19, 57); LUNDBLAD (1958: 471).

Locus typicus: Madeira, Cruzinhas.

Distribution: Apparently endemic to Madeira proper.

Additional records: Madeira proper: 2 exs., S Seixal, 400-500 m, 18.-30.I.1999, leg. Lebenbauer (cAss).

Bionomics: *Aloconota philonthoides* has been collected from moist leaf litter and other kinds of decaying organic matter (CAMERON, 1901; WOLLASTON, 1865).

Remarks: The species is absent from the Canary Islands (OROMÍ & MACHADO, 2000); records from there are based on misidentifications, probably confusion with *A. amnigena* (Wollaston). FAUVEL (1902) erroneously considers *A. amnigena* and *A. philonthoides* to be conspecific.

137. *Aloconota planifrons* (Waterhouse, 1863)

Record: Madeira proper: 1♀, Madeira, Ribeiro da Ametade, 600 m, 12.-13.V.1994, leg. Hieke & Wendt (cAss).

Distribution: West Palaearctic. Madeira: Madeira proper.

Bionomics: *Aloconota planifrons* is usually collected on banks of rivers and streams. The species is a very active flyer and often caught on the wing.

Remarks: First record from Madeira.

138. *Aloconota sulcifrons* (Stephens, 1832)

References: ERBER & HINTERSEHER (1988: 155); BORGES (1990: 105); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Homalota obliquepunctata* Wollaston, 1854 (synonym): WOLLASTON (1854: 549; 1857: 174; 1865: 461; 1871A: 289); CROTCH (1870: 87); CAMERON (1901: 220).

As *Homalota pavens* Erichson, 1839 (synonym): WOLLASTON (1871A: 289).

As *Atheta sulcifrons*: FAUVEL (1897A: 51; 1897C: 336; 1902: 144); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 610); BERNHAUER (1940: 6); JANSSON (1940: 18, 57); MÉQUIGNON (1942: 23; 1946: 114); LUNDBLAD (1958: 471); BRINCK (1977: 84); SERRANO (1982: 73).

Additional records: Madeira proper: 10 exs., Achada do Teixeira, 1350 m, edge of small stream in stand of old *Erica*, 7.IV.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Roseira, 700 m, grass and moss near stream, 5.IV.1993, leg. Wunderle (cWun); 1 ex., Porto da Cruz, 300 m, bank of stream, 24.III.1996, leg. Assing (cAss); 3 exs., Ribeira Brava, 200 m, bank of stream, 27.III.1996, leg. Assing (cAss); 1 ex., Rabaçal, 1300 m, bank of stream, 27.III.1996, leg. Lompe (cAss); 1 ex., Rabaçal, 32°45'26N, 17°07'24W, 1000 m, 25.II.2003, leg. Lompe (cAss); 1 ex., S Seixal, 16.-30.I.1999, leg. Lebenbauer (cAss); 3 exs., S Seixal, Chão da Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss); 4 exs., 3 km N Monte, Ribeira das Cales, 1130 m, 9.IX.1998, leg. Schuh (cAss); 1 ex., Ribeiro Frio, Levada do Furado, 700 m, 1.IX.1998, leg. Schuh (cAss); 1 ex., Ribeira Brava, 200 m, compost and grass, 27.III.1995, leg. Zerche (DEI); 7 exs., Ribeira da Janela, 20.III.2004, leg. Aßmann (cAss).

Distribution: Palaearctic, South America, New Zealand; probably Cosmopolitan. Madeira: Madeira proper.

Bionomics: Found in damp situations, especially near running or standing water (banks of rivers and streams, lake shores), but also in moist decaying organic matter. On one occasion it was collected in a cave near São Vicente (ERBER, *unpublished*).

Remark: Based on an examination of the material in the Wollaston collection at the BMNH the synonymy of *H. obliquepunctata* with *A. sulcifrons* is here confirmed.

139. *Aloconota* sp.

Record: Madeira proper: 1 ex., S Seixal, Chão da Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss).

So far, it has not been possible to identify the above specimen.

140. *Amischa analis* (Gravenhorst, 1802)

References: JANSSON (1940: 16, 57); MÉQUIGNON (1942: 25: Madeira?; 1946: 115: Madeira?); LUNDBLAD (1958: 471); BENICK (1967: 17); SMETANA (1970: 64); SERRANO (1982: 73: Madeira?); BORGES (1990: 106); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Homalota tantilla* Wollaston, 1854 (synonym): WOLLASTON (1854: 553).

As *Homalota analis*: WOLLASTON (1857: 176; 1865: 466).

As *Atheta analis*: FAUVEL (1897A: 51; 1897C: 332; 1902: 140); SCHMITZ (1897: 154).

Additional records: Madeira proper: 3 exs., Lombo do Muro, 1400 m, wet grass and moss, 29.III.1993, leg. Assing, Wunderle (cAss, cWun); 5 exs., Ribeira da Janela, Fanal, 1100 m, edge of pond, 25.III.1996, leg. Assing, Zerche (DEI, cAss); 4 exs., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss); 1 ex., Rabaçal, 950 m, 30.III.1996, leg. Lompe (cAss); 1 ex., Ruivo do Paul, 1600-1640 m, N-slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch); 1 ex., Pico do Arieiro, 1600 m, 21.III.1996, leg. Zerche (DEI).

Distribution: Cosmopolitan. Madeira: Madeira proper.

Bionomics: Common, especially in various types of grassland.

141. *Amischa decipiens* (Sharp, 1869)

References: ERBER (1990: 151); BOIEIRO *et al.* (2001: 20; 2002: 20).

Additional records: Madeira proper: 3 exs., Ribeira da Janela, Fanal, 1100 m, edge of pond, flood debris, 25.III.1996, leg. Zerche (DEI, cAss); 5 exs., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss).

Distribution: West Palaearctic. Madeira: Madeira proper.

Bionomics: The species is regularly found especially in various types of arable land, gardens, and other biotopes under considerable human impact. The published Madeiran specimen was taken from under a stone; its identification was confirmed by J. Vogel (ERBER, 1990). The species is not indicated for Madeira by SMETANA (2004B).

142. *Amischa nigrofusca* (Stephens, 1832)

References: As *Amischa soror* (Kraatz, 1856) (synonym): SMETANA (1970: 65); BOIEIRO *et al.* (2001: 20; 2002: 20).

Distribution: West Palaearctic. Madeira: Madeira proper.

Bionomics: Frequently found in various types of grassland, arable land, gardens, and other habitats under considerable human impact. The records from Madeira are omitted in the Palaearctic catalogue (SMETANA, 2004B).

[*Atheta aeneicollis* (Sharp, 1869)]

References: As *A. pertyi* (Heer, 1838) (synonym): BERNHAUER (1940: 7); BOIEIRO *et al.* (2001: 20; 2002: 20).

Distribution: West Palaearctic.

Remarks: According to FAUVEL (1902), his earlier record of *A. pertyi* from Madeira was erroneous. Apparently, it is this erroneous record that the (vague) record in BERNHAUER (1940) and

consequently also that in BOIEIRO *et al.* (2001, 2002) are based on, suggesting that *A. aeneicollis* is absent from Madeira. The species is here deleted from the list of Madeiran Staphylinidae.

143. *Atheta amicula* (Stephens, 1832)

References: GARDNER & CLASSEY (1962: 158); LIKOVSKÝ (1963: 45); ERBER & HINTERSEHER (1988: 156, 187); BORGES (1990: 106); BOIEIRO *et al.* (2001: 20; 2002: 20).

Additional records: Madeira proper: 6 exs., Terreiro da Luta, 1250 m, pine forest, 7.IV.1993, leg. Wunderle (cWun); 1 ex., Queimadas, 32°46'54N, 16°54'06W, 900 m, 28.II.2003, leg. Lompe (cAss); 1 ex., Encumeada, 1000 m, *Erica* litter, 5.IV.1993, leg. Wunderle (cWun); 2 exs., Prazeres, 8.X.1994, leg. Döberl (cAss, cErb); 1 ex., Caniço de Baixo, 80 m, window pane, 7.-20.V.1992, leg. Pieper (cAss); 1 ex., Rancho das Pedras, S Santana, grass heap, sifted, 12.I.2001, leg. Schülke (cSch); 2 exs., Ruivo do Paul, 1600-1640 m, N-slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch); 1 ex., Camacha, 600 m, VII.1992, leg. Pott (cAss); 1 ex., Ribeira Brava, compost and grass, 200 m, 27.III.1995, leg. Zerche (DEI); 2 exs., Seixal, Ribera da Seixal, 600 m, 24.I.2005, leg. Weigel (cApf, cAss); 1 ex., Seixal, Chão da Ribeira, laurisilva, leaf litter sifted, 20.III.2005, leg. Ausmeier (cAss); 2 exs., Prazeres, under bark, 2.III.2006, leg. Hlaváč (cAss).

Distribution: Palaearctic. Madeira: Madeira proper.

Bionomics: *Atheta amicula* is a common, generalised, and widespread species usually found in various types of decaying organic matter.

Remark: According to FAUVEL (1897C), his earlier record of *A. amicula* from Madeira was erroneous.

144. *Atheta atramentaria* (Gyllenhal, 1810)

References: FAUVEL (1897A: 51; 1897C: 327; 1902: 134); SCHMITZ (1897: 154); BERNHAUER (1940: 7, 9); JANSSON (1940: 20, 57); MÉQUIGNON (1942: 25; 1946: 115); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 45); SMETANA (1970: 64); SERRANO (1987B: 151); ERBER & HINTERSEHER (1988: 156); BORGES (1990: 106); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Homalota atramentaria*: WOLLASTON (1854: 555; 1857: 178; 1865: 467); CROTCH (1870: 89); CAMERON (1901: 220).

Additional records: Madeira proper: 44 exs., Terreiro da Luta, 1250 m, pine forest, 7.IV.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Roseira, 700 m, grass and moss near stream, 5.IV.1993, leg. Wunderle (cWun); 1 ex., Caniçal, 24.III.1975, leg. Vit (cAss); 1 ex., Serra de Aqua, Pico das Furnas, 26.I.2005, leg. Weigel (cApf). Porto Santo: 4 exs., Pico do Castelo, 400 m, pine forest with scattered laurel trees, 1.IV.1993, leg. Assing (cAss); 2 exs., Pico Juliana, 400 m, pine forest with scattered laurel trees, 1.IV.1993, leg. Assing, Wunderle (cAss, cWun); 2 exs., Pico do Facho, 500 m, 1.IV.1996, leg. Assing (cAss); 2 exs., Pico Branco, 450 m, 1.IV.1996, leg. Assing (cAss).

Distribution: Palaearctic. Madeira: Madeira proper, Porto Santo.

Bionomics: Common in various types of excrements and other kinds of decaying organic matter.

145. *Atheta coriaria* (Kraatz, 1856)

References: FAUVEL (1897A: 51; 1897C: 329; 1902: 136); SCHMITZ (1897: 154); LIEBMANN (1939: 151); BERNHAUER (1940: 9); JANSSON (1940: 57); MÉQUIGNON (1946: 115); LUNDBLAD (1958: 471); Likovský (1963: 45); ERBER & HINTERSEHER (1988: 155); BORGES (1990: 106); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Homalota coriaria*: WOLLASTON (1857: 177; 1865: 469); CROTCH (1870: 88); CAMERON (1901: 222).

As *Homalota sodalis* (misidentification): WOLLASTON (1854: 554).

Additional records: Madeira proper: 1 ex., Ribeira da Janela, 800 m, laurisilva, 31.III.1993, leg. Assing (cAss); 5 exs., Caniço de Baixo, 80 m, window pane, 7.-13.IX.1989, leg. Pieper (cAss); 2 exs., same data, but 14.-20.IX.1989 (cAss, cErb); 1 ex., Funchal, 920 m, 27.V.1984 (cAss); 31 exs., Prazeres, under bark, 2.III.2006, leg Hlaváč (cAss).

Distribution: Cosmopolitan. Madeira: common in Madeira proper and Porto Santo.

Bionomics: Generalised species; found in various types of decaying organic matter.

Remark: Some authors have erroneously attributed this species to the subgenus *Atheta*.

146. *Atheta crassicornis* (Fabricius, 1793)

Records: 27 exs., Terreiro da Luta, 1250 m, pine forest, 7.IV.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Ribeira Brava, compost and grass, 200 m, 27.III.1995, leg. Zerche (DEI).

Distribution: (West?) Palaearctic. Madeira: Madeira proper.

Bionomics: Generalised species; found in various types of decaying organic matter, especially fungi.

Remark: First record from Madeira.

[*Atheta dilutipennis* (Motschulsky, 1858)]

References: ISRAELSON (1990: 3); BORGES (1990: 106); BOIEIRO *et al.* (2001: 20; 2002: 20).

Distribution: Palaearctic, Nearctic, Oriental, and Ethiopian regions (including Madagascar); probably Cosmopolitan. Madeira: locality not specified.

Remark: The vague Madeiran record requires confirmation and should be considered very doubtful. Moreover, the species has been misinterpreted by almost all previous authors (KLIMASZEWSKI *et al.*, 2002). Consequently, the species is here deleted from the list of Madeiran Staphylinidae.

[*Atheta fungi* (Gravenhorst, 1806)]

References: JANSSON (1940: 21, 57); LUNDBLAD (1958: 471); ERBER & HINTERSEHER (1988: 156); BORGES & SERRANO (1989: 12); BORGES (1990: 106); ERBER (1990: 166); ISRAELSON (1990A: 3); BOIEIRO *et al.* (2002: XXX). ??

Remarks: As the subgenus *Mocyta* Mulsant & Rey is in a state of taxonomic confusion, the Madeiran (and Canarian) *Mocyta* species have been interpreted ambiguously. An examination of various Madeiran *Mocyta* species (including a dissection of the genitalia) and a comparison with continental material suggest that at least a large part of the records of widespread West Palaearctic species from Madeira are probably based on misidentifications. Until a modern revision has been

carried out, a reliable identification of the species is virtually impossible, and a list of Madeiran records, references, and synonymies seems pointless, except for two conspicuous endemic species (*A. haligena*, *A. sanguinolenta*). The following names are only listed here and their identities are treated as doubtful:

Atheta fungi (Gravenhorst, 1806)
Atheta clientula (Erichson, 1839)
Atheta plebeia (Wollaston, 1854)
Atheta montivagans (Wollaston, 1857)
Atheta orphana (Erichson, 1837)
Atheta pulchra (Kraatz, 1858)
Atheta plebeia (Wollaston, 1854)
Atheta negligens Mulsant & Rey, 1873

147. *Atheta gagatina* (Baudi, 1848)

References: ERBER & HINTERSEHER (1988: 156, 187); BOIEIRO *et al.* (2001: 20; 2002: 20).

Distribution: West Palaearctic. Madeira: Madeira proper.

Bionomics: Generalized species; common in various types of decaying organic matter, often caught on the wing and in nests.

Remark: The species is not listed for Madeira by SMETANA (2004B).

148. *Atheta haligena* (Wollaston, 1857)

References: FAUVEL (1897A: 51; 1897C: 326; 1902: 133); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 674); BERNHAUER (1940: 9; probably misidentification); JANSSON (1940: 57); LUNDBLAD (1958: 471); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *Homalota haligena*: WOLLASTON (1857: 173; 1865: 459).

Locus typicus: Porto Santo: Pico Branco.

Additional records: Porto Santo: 14 exs., Pico Branco, 450 m, 1.IV.1996, leg. Assing (cAss); 14 exs., Pico do Facho, 500 m, pine forest with scattered laurel trees, 1.IV.1996, leg. Assing (cAss).

Distribution: Endemic to Madeira: Porto Santo. Doubtful: Madeira proper, Ilheu Chão, Ilheu Bugio.

Bionomics: At the type locality the species was sifted from the litter layer.

Remarks: Based on personal observations, the presence of this brachypterous species in Madeiran localities other than Porto Santo seems doubtful (ASSING, *unpublished*). A syntype in the Wollaston collection of the Natural History Museum London was examined. Various previous authors erroneously attributed this species to *Acrotona* Thomson.

149. *Atheta harwoodi* Williams, 1930

References: ERBER & AGUIAR (1996: 46); BOIEIRO *et al.* (2001: 20; 2002: 20).

Distribution: West Palaearctic. Madeira: Only once recorded from Madeira proper.

Bionomics: Common in various types of decaying organic matter. The single Madeiran specimen was collected from rabbit carrion.

Remark: The species is not listed for Madeira by SMETANA (2004B).

150. *Atheta immucronata* Pace, 1999

= *Atheta pseudolaticollis* Erber & Hinterseher, 1992 (homonym); **syn. n.**

= *Atheta gulosa* Tronquet, 2001; synonymy by SMETANA (2004A)

= *Atheta atlantidum* Smetana, 2004; **syn. n.**

References: As *Atheta atlantidum* Smetana, 2004 (synonym): SMETANA (2004A, B: 32, 389).

As *Atheta pseudolaticollis* Erber & Hinterseher, 1992 (synonym): ERBER & HINTERSEHER (1992: 2ff.); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Atheta laticollis* (Stephens, 1832): ERBER & HINTERSEHER (1988: 156, 186); BORGES (1990: 106).

As unnamed species: JANSSON (1940: 21, 57); LUNDBLAD (1958: 471).

Additional records: Madeira proper: 25 exs., Terreiro da Luta, 1250 m, pine forest, 7.IV.1993, leg. Assing (cAss); 1 ex., Funchal, Ponta do Garajau, on dead rat, 22.III.2005, leg. Ausmeier (cAss); 1 ex., Caramujo, 1220, laurisilva, 29.III.1993, leg. Assing (cAss); 1 ex., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper (cAss); 3 exs., same data, but 7.-13.IX.1989; 3 exs., same data, but 14.-20.IX.1989; 1 ex., same data, but 21.-27.IX.1989; 1 ex., same data, but 20.-27.IX.1990; >10 exs., same data, but 7.-20.V.1992; >20 exs., same data, but 15.-28.IX.1995 (cAss, cErb); 2 exs., Caniço, Abegoaria, 7.VIII.1996, leg. Aguiar & Jesus (cAgu); 9 exs., Ribeira Brava, compost and grass, 200 m, 27.III.1995, leg. Zerche (DEI, cAss); 6 exs., Prazeres, under bark, 2.III.2006, leg. Hlaváč (cAss).

Distribution: Canary Islands, France, Chile, probably Cosmopolitan. Madeira: Madeira proper.

Bionomics: Usually found associated with various kinds of decaying organic matter (carrion, excrements, compost, etc.).

Remarks: *Atheta pseudolaticollis* Erber & Hinterseher, 1992, whose description is based on type material from Madeira, is a primary homonym of *A. pseudolaticollis* Bernhauer, 1936 and *A. pseudolaticollis* Cameron, 1944 (ASSING, 2000B). SMETANA (2004A) proposed the replacement name *A. atlantidum* for *A. pseudolaticollis* Erber & Hinterseher. However, as suspected earlier (ASSING, 2000B), the species had already been described under two other names, *A. immucronata* Pace, 1999 and *A. gulosa* Tronquet, 2001, the former taking priority. The Madeiran material was compared with specimens from the vicinity of the type locality of *A. gulosa* and with type material (holotype and 16 paratypes, deposited in MHNG) of *A. immucronata* by the first author.

151. *Atheta insignis* (Wollaston, 1854) (Plate IV, fig. 2, Fig. 16)

References: FAUVEL (1897A: 51; 1897C: 331; 1902: 138); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 653, pars); JANSSON (1940: 19, 57); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 45); ERBER & HINTERSEHER (1988: 155); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *Homalota insignis*: WOLLASTON (1854: 555; 1857: 178; 1865: 468; 1871A: 291).

Locus typicus: Madeira proper: Ribeiro Frio.

Additional records: Madeira proper: 2 exs., Queimadas, 900 m, laurisilva, 27.III.1993, leg. Assing (cAss); 5 exs., path from Queimadas to Caldeirão Verde, laurel, *Erica*, moss, 18.I.2001, leg. Schülke (cSch); 2 exs., Terreiro da Luta, 1250 m, pine forest, 7.IV.1993, leg. Assing, Wunderle (cAss, cWun); 1 ex., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss); 4 exs., Ribeiro Frio, 3.IV.1975, leg. Vit (cAss); 1 ex., Ribeiro Frio, Balcões, V.1985 (cAss); 1 ex., Ribeiro Frio, Balcões, 10.IX.1988, leg. Lange (cErb); 1 ex., same locality, ca. 800 m, 20.X.1997, leg. Lompe

(cAss); 1 ex., 2.5 km E Ribeiro Frio, Levada do Furado, 800-850 m, 13.IX.1998, leg. Schuh (cAss); 1 ex., 3 km N Monte, Ribeiradas Cales, 9.IX.1998, leg. Schuh (cAss); 2 exs., Santo da Serra, 2.VIII.1975, leg. Vit (cAss); 1 ex., Paúl da Serra, Ribeira do Alecrim, V.1984 (cAss); 1 ex., Rabaçal, 1050 m, 16.-30.I.1999, leg. Lebenbauer (cAss); 1 ex., Rabaçal, 1030 m, 17.X.1997, leg. Lompe (cAss); 5 exs., Junqueira, 32°49'56N, 17°10'31W, 400 m, 19.II.2003, leg. Lompe (cAss); 2 exs., same data, but 32°49'28N, 17°10'35W (cAss); 18 exs., above Porto Moniz, 400 m, laurisilva, 28.III.1996, leg. Assing, Zerche (DEI, cAss); 1 ex., Junqueira near Porto Moniz, 350 m, 20.X.1997, leg. Lompe (cAss); 3 exs., above Seixal, 550 m, laurisilva near stream, 31.III.1996, leg. Assing, Zerche (DEI, cAss); 6 exs., locality not specified, II.1972, II.1983, leg. Matern (cAss); 3 exs., Ribeira Brava, compost and grass, 200 m, 27.III.1995, leg. Zerche (DEI); 1 ex., S Lamaceiros, Levada Central da Janela, 20.III.2004, leg. Aßmann (cAss); 6 exs., Seixal, Ribera da Seixal, 600 m, 24.I.2005, leg. Weigel (cApf); 3 exs., Seixal, Chão da Ribeira, laurisilva, leaf litter sifted, 20.III.2005, leg. Ausmeier (cAss).

Distribution: Endemic to Madeira proper (Fig. 16). Madeiran localities: Ribeiro Frio, Balcões, Levada do Furado, Monte (Ribeira das Cales), Rabaçal, Santo da Serra, Paúl da Serra (Ribeira do Alecrim), Queimadas, Caldeirão Verde, Terreiro da Luta, Porto Moniz, Junqueira, Seixal, Ribeira Brava.

Bionomics: Occurring in the laurisilvan leaf litter, but also in various other types of decaying organic matter (excrements, carrion), at lower to intermediate altitudes.

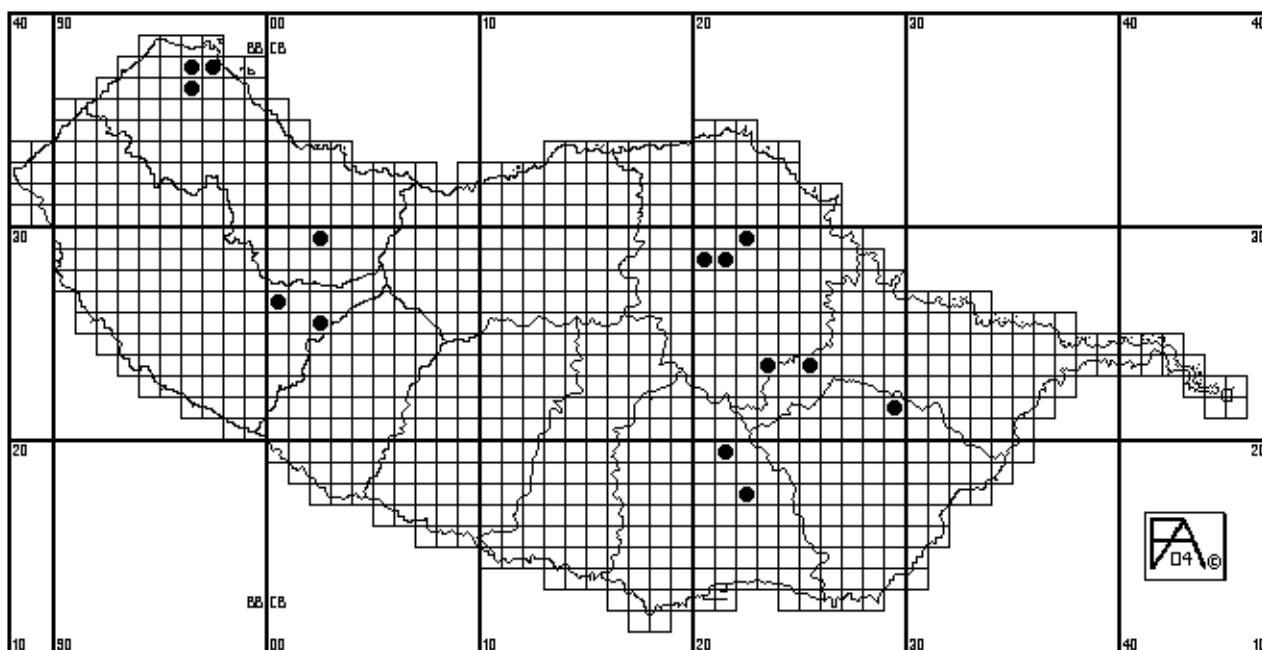


Fig. 16 - Distribution of *Atheta insignis* (Wollaston) in Madeira.

152. *Atheta leileri* (Palm, 1981) (Fig. 17)

References: ASSING & WUNDERLE (1996A: 144); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *Sipalia leileri*: PALM (1981A: 294).

As *Atheta (Parameotica) juengeri* Benick, 1984 (synonym): BENICK (1984: 166).

Locus typicus: Madeira proper: Pico do Arieiro.

Additional records: Madeira proper: 2 exs., Pico do Arieiro, 1600 m, S-slope, mixed stands of *Erica* sp. and *Vaccinium padifolium*, 21.III.1996, leg. Assing (cAss); 23 exs., Pico do Arieiro, 1600-1700 m, *Erica*, *Vaccinium*, NE-slope, 9.-21.I.2001, leg. Schülke (cSch); 23 exs., Bica da Cana, 32°45'10N, 17°03'02W, 1620 m, 25.II.2003, leg. Lompe (cAss); 21 exs., Bica da Cana, 32°45'11N, 17°03'08W, 1550 m, 25.II.2003, leg. Lompe (cAss); 4 exs., E Encumeada, path to Pico Ruivo, 1500 m, litter of *Erica* sp., 26.III.1996, leg. Assing (cAss); 115 exs., Pico Ruivo, peak, 1850 m, N-slope, stand of *Erica* sp., 29.III.1996, leg. Assing (cAss); 13 exs., same locality, 16.I.2001, leg. Schülke (cSch); 65 exs., Achada do Teixeira, path to Pico Ruivo, 1700 m, sifted ferns and grass in shade of big rocks, 29.III.1996, leg. Assing (cAss); 51 exs., Bica da Cana, 1500-1550 m, *Erica*, *Genista*, 14.&21.I.2001, leg. Schülke (cSch); 2 exs., Ruivo do Paul, 1600-1640 m, N-slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch).

Distribution: Endemic to Madeira proper (Fig. 17). Madeiran localities: Pico do Arieiro, Bica da Cana, Ruivo do Paul, Encumeada, Pico Ruivo, Achada do Teixeira.

Bionomics: Sifted repeatedly, occasionally in great numbers, from the litter layer of *Vaccinium padifolium*, *Erica* sp. and from grass and ferns at higher altitudes (1500-1850 m). One specimen found in March was teneral.

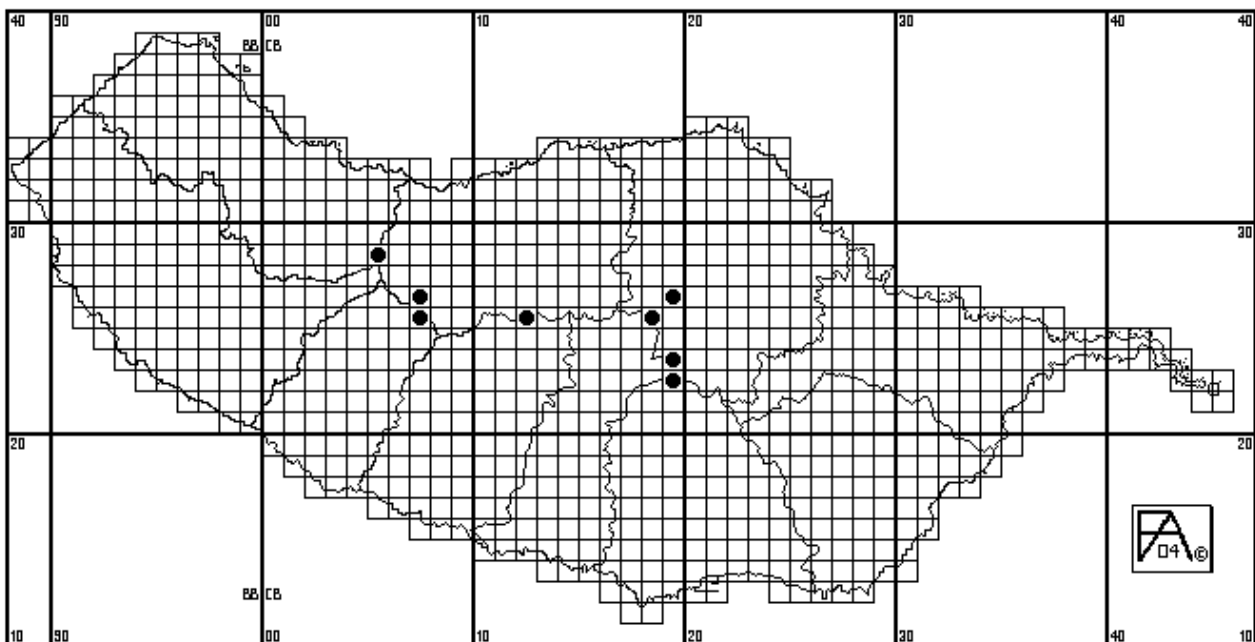


Fig. 17 - Distribution of *Atheta leileri* (Palm) in Madeira.

153. *Atheta longicornis* (Gravenhorst, 1802)

References: FAUVEL (1897A: 51; 1897C: 326; 1902: 134); SCHMITZ (1897: 154); BERNHAUER (1940: 9); JANSSON (1940: 20, 57); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 45);

SERRANO (1987B: 151); ERBER & HINTERSEHER (1988: 156); ERBER (1990: 166); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Homalota longicornis*: WOLLASTON (1854: 556; 1857: 178; 1865: 471).

Additional records: Madeira proper: 1 ex., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper (cAss).

Distribution: Palaearctic and Oriental regions. Madeira: Madeira proper.

Bionomics: Common species; usually found associated with decaying organic matter of various types (excrements, carrion, compost, etc.).

154. *Atheta luridipennis* (Mannerheim, 1830)

References: FAUVEL (1897A: 51; 1897C: 335; 1902: 142); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 612); JANSSON (1940: 57); BERNHAUER (1940: 6); MÉQUIGNON (1942: 23; 1946: 114); LUNDBLAD (1958: 471); BORGES (1990: 106).

As *Homalota luridipennis*: WOLLASTON (1857: 174; 1865: 462); CROTCH (1870: 88).

As *Homalota luticola* Wollaston, 1854 (synonym): WOLLASTON (1854: 549).

Additional records: Madeira proper: 1 ex., Achada do Teixeira, 1350 m, edge of small stream, 7.IV.1993, leg. Assing (cAss).

Distribution: West Palaearctic; Azores; Madeira: Madeira proper.

Bionomics: Hygrophilous species, found in debris near running or standing water, in moist leaf litter, etc.

Remark: The species is not listed by BOIEIRO *et al.* (2001, 2002).

[? *Atheta montivagans* (Wollaston, 1857)]

References:

As *Homalota montivagans*: WOLLASTON (1857: 176; 1865: 460).

As *Atheta pulchra* (Kraatz, 1856) (misidentification): FAUVEL (1897A: 51; 1897C: 324; 1902: 132), SCHMITZ (1897: 154).

As synonym of *Atheta clientula* (Erichson, 1839): BERNHAUER & SCHEERPELTZ (1926: 673).

As *Atheta fungi* (Gravenhorst, 1806): JANSSON (1940: 21, 57); LUNDBLAD (1958: 471); ERBER & HINTERSEHER (1988: 156); BORGES & SERRANO (1989: 12); BORGES (1990: 106); ERBER (1990: 166); ISRAELSON (1990A: 3); BOIEIRO *et al.* (2001: 20; 2002: 20).

Remark: The identity of this species is doubtful and requires clarification; for further comments see section on *Atheta fungi*.

[*Atheta negligens* Mulsant & Rey, 1873]

References: ERBER & HINTERSEHER (1988: 156, 185).

Remarks: The record is very likely to be based on a misidentification; see comments below *Atheta fungi*. The species is unlikely to occur in Madeira and is here deleted from the list of Madeiran Staphylinidae.

[*Atheta orphana* (Erichson, 1837)]

References: JANSSON (1940: 21, 57); LUNDBLAD (1958: 471)

Remarks: The species is unlikely to occur in Madeira; the identity of the records is uncertain. For further comments see remarks below *Atheta fungi*. The species is here deleted from the list of Madeiran Staphylinidae.

155. *Atheta palustris* (Kiesenwetter, 1844)

References: FAUVEL (1897A: 51; 1897C: 330; 1902: 137); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 629); BERNHAUER (1940: 6, 9); JANSSON (1940: 19, 57); MÉQUIGNON (1942: 24; 1946: 114); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 45); BRINCK (1977: 84); BORGES (1990: 105); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Homalota currens* Wollaston, 1854 (synonym): WOLLASTON (1854: 552).

As *Homalota palustris*: WOLLASTON (1857: 175; 1865: 464); MÉQUIGNON (1942: 24; 1946: 115).

Additional records: Madeira proper: 1 ex., Achada do Teixeira, 1350 m, bank of small stream, 7.IV.1993, leg. Assing (cAss); 1 ex., Terreiro da Luta, 1250 m, human faeces, 7.IV.1993, leg. Wunderle (cWun); 2 exs., Funchal, Ponta do Garajau, on dead rat, 22.III.2005, leg. Ausmeier (cAss); 5 exs., João do Prado, E Poiso, 1300 m, *Pinus*, *Abies*, mushrooms, 12.I.2001, leg. Schülke (cSch); 1 ex., Queimadas, 28.XII.1982, leg. Gillerfors (cGil).

Distribution: Holarctic region. Madeira: Madeira proper.

Bionomics: Common and generalised species, in moist habitats of various types; active flyer.

[? *Atheta plebeia* (Wollaston, 1854)]

References:

As *Homalota plebeia*: WOLLASTON (1854: 553; 1857: 176).

As *Atheta plebeja* [sic]: FAUVEL (1897A: 51; 1897C: 325; 1902: 133); SCHMITZ (1897: 154).

As *Homalota clientula* Erichson, 1839 (misidentification?): WOLLASTON (1865: 459; 1867: 224).

As *Atheta clientula*: LIEBMANN (1939: 154); JANSSON (1940: 57); LUNDBLAD (1958: 471); BOIEIRO *et al.* (2001: 20; 2002: 20).

As synonym of *Atheta fungi* (Gravenhorst, 1806): BERNHAUER & SCHEERPELTZ (1926: 674).

Remark: The identity of this species is unknown; see also remarks below *Atheta fungi*.

156. *Atheta sanguinolenta* (Wollaston, 1854) (Plate IV, fig. 3, Fig. 18)

References: FAUVEL (1897A: 51; 1897C: 326; 1902: 133); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 677, pars); JANSSON (1940: 20, 57); LUNDBLAD (1958: 471); ERBER & HINTERSEHER (1988: 156); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *Homalota sanguinolenta*: WOLLASTON (1854: 547; 1857: 173; 1865: 459; 1871A: 287f.).

As *Homalota sharpiana* Wollaston (1871: 288) (synonym): WOLLASTON (1871: 288).

As *Atheta sharpiana*: FAUVEL (1897A: 51; 1897C: 326; 1902: 133); LIEBMANN (1939: 155).

As *Sipalia formicarum* (misidentification): PALM (1981A: 294); see ASSING & WUNDERLE (1996A).

Locus typicus: Madeira proper: Cruzinhas and Fanal.

Additional records: Madeira proper: 14 exs., E Porto da Cruz, 300 m, degraded laurisilva, *Erica* sp., 24.III.1996, leg. Assing (cAss); 61 exs., Ribeira da Janela, 800 m, laurisilva, 31.III.1993,

leg. Assing, Wunderle (cAss, cWun); 103 exs., Ribeira da Janela, Fanal, 900 m, laurisilva, 25.III.1996, leg. Assing (cAss); 191 exs., same data, but 1000 m (cAss); 2 exs., Ribeira da Janela, Fanal, 1100 m, edge of pond, 25.III.1996, leg. Assing (cAss); 1 ex., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025 m, flood debris, 27.II.2003, leg. Lompe (cAss); 26 exs., above Fanal, 1300 m, laurisilva with *Erica* sp. and *Vaccinium padifolium*, 25.III.1996, leg. Assing (cAss); 13 exs., Ribeira da Janela, 20.III.2004, leg. Aßmann (cAss); 2 exs., Bica da Cana, 1550 m, 29.III.1993, leg. Assing (cAss); 2 exs., Roseira, 700 m, 5.IV.1993, leg. Assing, Wunderle (cAss, cWun); 22 exs., Junqueira, 32°49'56N, 17°10'31W, 400 m, 19.II.2003, leg. Lompe (cAss); 2 exs., E Encumeada, path to Pico do Jorge, 1300 m, litter of laurel trees and *Erica* sp., 26.III.1996, leg. Assing (cAss); 138 exs., same data, but litter of old laurel tree, 26.&30.III.1996, leg. Assing (cAss); 6 exs., Serra de Água, Boca de Encumeada, leaf litter sifted, 21.III.2005, leg. Ausmeier (cAss); 4 exs., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss); 1 ex., Encumeada, 1000 m, 18.I.2001, leg. Kronblad (DEI); 4 exs., Rabaçal, 1300 m stand of *Erica* sp. and *Vaccinium padifolium*, 27.III.1996, leg. Assing (cAss); 1 ex., Encumeada, 900 m, 4.III.2006, leg. Hlaváč (cAss); 225 exs., above Porto Moniz, 400 m, laurisilva, 28.III.1996, leg. Assing (cAss); 2 exs., Funchal, 31.III.1975, leg. Vit (cAss); 1 ex., Ribeiro Frio, 3.IV.1975, leg. Vit (cAss); 8 exs., Levada Nova, 32°48'06N, 16°56'14W, 550 m, 26.II.2003, leg. Lompe (cAss); 2 exs., Queimadas, 32°46'54N, 16°54'06W, 900 m, 28.II.2003, leg. Lompe (cAss); 3 exs., Camacha, 600 m, VII.1992, leg. Pott (cAss); 1 ex., Achada do Teixeira, 1400 m, 18.I.2001, leg. Schülke (cSch); 36 exs., Rio Silveira near Teixeira, Pico das Pedras, 1250 m, 18.III.2004, leg. Aßmann (cAss); 64 exs., above Seixal, 550 m, laurisilva near stream, 31.III.1996, leg. Assing (cAss); 6 exs., S Seixal, Chão da Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss); 25 exs., Cabeço da Esmoutada, 32°49'07N, 17°08'59W, 900 m, 27.II.2003, leg. Lompe (cAss); 2 exs., Santana, Pico das Pedras, 900 m, 12.VI.2005, leg. Apfel (cApf); 7 exs., Seixal, Ribera da Seixal, 600 m, 10.VI.2005, leg. Apfel (cApf); 6 exs., same locality, 24.I.2005, leg. Weigel (cApf).

Distribution: Endemic to Madeira proper (Fig. 18). Madeiran localities: E Porto da Cruz, Cruzinhas, Ribeira da Janela, Ribeira da Janela: Fanal, Fanal Lagoa (32°48'35N, 17°08'41W), Bica da Cana, Roseira, Junqueira (32°49'56N, 17°10'31W), Encumeada, E Encumeada (path to Pico do Jorge), Pico das Eirinhas (32°45'22N, 16°57'39W), Rabaçal, above Porto Moniz, Funchal, Ribeiro Frio, Levada Nova (32°48'06N, 16°56'14W), Queimadas, Camacha, Achada do Teixeira, above Seixal, Chão de Cancela (32°47'23N, 17°06'30W), Cabeço da Esmoutada (32°49'07N, 17°08'59W); Pico das Pedras.

Bionomics: This species is common in the Laurisilvan leaf litter at intermediate and higher elevations.

Remarks: According to WOLLASTON (1871A), *A. sharpiana* is distinguished from *A. sanguinolenta* by greater body size, a paler coloration of the forebody, and more robust antennae. While FAUVEL (1897A, 1897C, 1902) continued to treat both as distinct species, *A. sharpiana* was regarded as a junior synonym of *A. sanguinolenta* by BERNHAUER & SCHEERPELTZ (1926) and, except for LIEBMANN (1939), by all subsequent authors. Owing to the frequent confusion of this species with species of *Geostiba* (especially *G. formicarum*), the literature records indicated above are not very reliable.

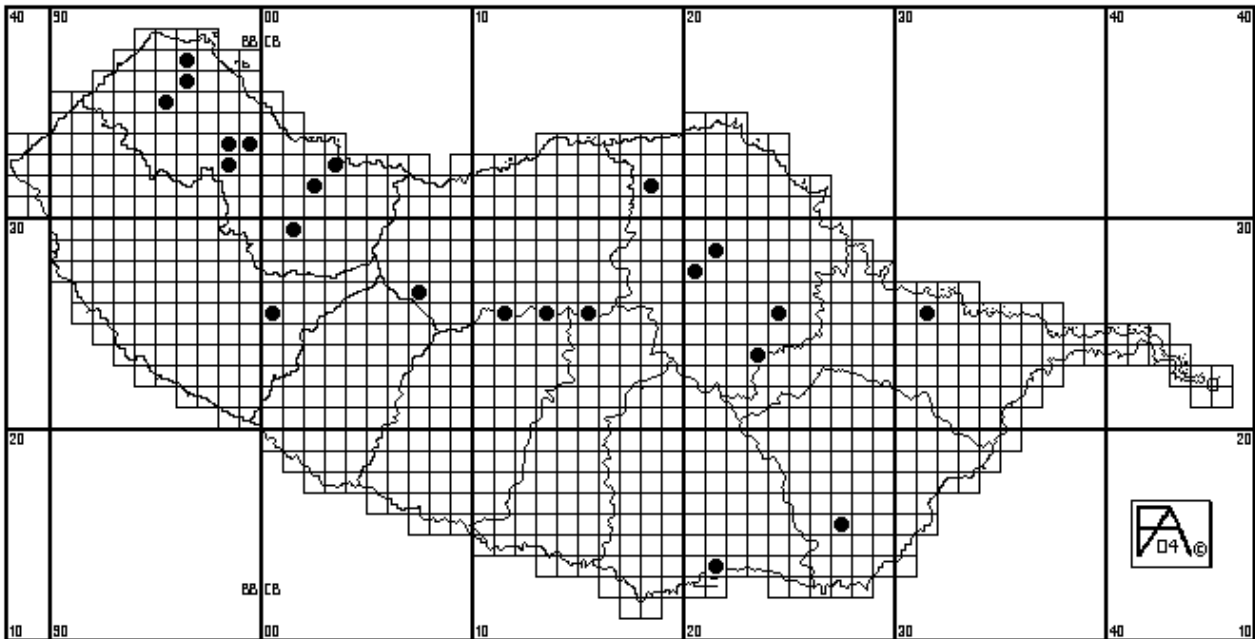


Fig. 18 - Distribution of *Atheta sanguinolenta* (Wollaston) in Madeira.

157. *Atheta trinotata* (Kraatz, 1856)

References: ERBER & HINTERSEHER (1988: 156, 187); BOIEIRO *et al.* (2001: 20; 2002: 20).

Distribution: West Palaearctic. Madeira: Madeira proper, Porto Santo.

Additional records: Porto Santo: 1 ex., Pico Ferreiro, 190 m, 28.III.1990, leg. Erber.

Bionomics: This generalised species lives in various types of decaying organic matter.

158. *Atheta zealandica* Cameron, 1945

References: BRINCK (1977: 86); BORGES (1990: 106).

As *Rhacogneme maderense* Likovský, 1963 (synonym): LIKOVSKÝ (1963: 46).

As *Atheta maderense* [sic]: ERBER & HINTERSEHER (1992: 6); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: New Zealand: Palmerston (CAMERON, 1945: 167).

Additional records: Madeira proper: 2 exs., Caniço de Baixo, 80 m, window pane, 7.-13.IX.1989, leg. Pieper (cAss); 15 exs., same data, but 14.-20.IX.1989; 2 exs., same data, but 21.-27.IX.1989; 1 ex., same data, but 13.-19.IX.1990; >10 exs., same data, but 7.-20.V.1992; >20 exs., same data, but 15.-28.IX.1995 (cAss, cErb); 2 exs., Ribeira Brava, compost and grass, 200 m, 27.III.1995, leg. Zerche (DEI, cAss); 2 exs., “Madeira”, “fressen Nematoden”, leg. Sudhaus (DEI).

Distribution: New Zealand, North Africa, Azores, Madeira; possibly cosmopolitan. Madeira: Madeira proper.

Bionomics: Most specimens were collected at a window pane, suggesting that the species is an active flyer (material examined; ERBER & HINTERSEHER, 1992). According to the labels attached to the specimens collected by Sudhaus, they were observed feeding on nematodes.

Remark: The name *A. zealandica* and the synonymy with *A. maderensis* is omitted in the Palaearctic catalogue (SMETANA, 2004B).

159. *Cordalia obscura* (Gravenhorst, 1802)

References: LIEBMANN (1939: 151); BERNHAUER (1940: 5); JANSSON (1940: 16, 56); MÉQUIGNON (1942: 23; 1946: 114); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 44); SMETANA (1970: 64); SERRANO (1987B: 151); ERBER & HINTERSEHER (1988: 155); BORGES & SERRANO (1989: 11); ERBER (1990: 166); BORGES (1990: 106); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Falagria obscura*: WOLLASTON (1854: 541; 1857: 169; 1865: 452); CROTCH (1870: 87); FAUVEL (1897A: 51; 1897C: 344; 1902: 152); SCHMITZ (1897: 154); CAMERON (1901: 220).

As *Cardiola obscura*: BERNHAUER & SCHEERPELTZ (1926: 572).

Additional records: Madeira proper: 1 ex., Poiso, 1200 m, bank of stream, 28.III.1993, leg. Assing (cAss); 1 ex., Ribeira da Janela, Fanal, 1100 m, edge of pond, 25.III.1996, leg. Assing (cAss); >20 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper (cAss); 12 exs., same data, but 7.-13.IX.1989; 5 exs., same data, but 14.-20.IX.1989; 6 exs., same data, but 21.-27.IX.1989; 5 exs., same data, but 13.-19.IX.1990; 1 ex., same data, but 20.-27.IX.1990; 5 exs., same data, but 7.-20.V.1992; 5 exs., same data, but 15.-28.IX.1995 (cAss, cErb); 2 exs., Seixal, Ribera da Seixal, 600 m, 10.VI.2005, leg. Apfel (cApf, cAss). Porto Santo: 1 ex., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: West Palaearctic, North America. Madeira: Madeira proper, Porto Santo.

Bionomics: The species is common in various kinds of decaying organic matter (excrements, compost, etc.).

160. *Cypha reducta* (Wollaston, 1860)

References: BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55)

As *Hypocypus reductus*: WOLLASTON (1860A: 52; 1865: 478 + app. 69); FAUVEL (1897A: 50; 1897C: 319; 1902: 126); SCHMITZ (1897: 153); BERNHAUER & SCHUBERT (1916: 498); JANSSON (1940: 56); LUNDBLAD (1958: 470).

Locus typicus: Madeira proper: Funchal, garden of the American Consulate.

Distribution: Endemic to Madeira proper; only the holotype of this species has become known.

Bionomics: The holotype was collected from under a board in the garden of the American Consulate.

161. *Geostiba arieiroensis* Assing & Wunderle, 1996 (Fig. 19)

References: ASSING & WUNDERLE (1996A: 126); ASSING (1997A: 346); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *G. arieiroensis* (misspelling): SMETANA (2004B)

Locus typicus: Madeira proper: Pico do Arieiro, 1600 m.

Additional records: 47 exs., Pico do Arieiro, 1600-1700 m, *Erica*, *Vaccinium*, NE-slope, 9.-21.I.2001, leg. Schülke (cSch); 3 exs., Pico do Arieiro, near Achada Grande, 1500 m, *Vaccinium*, *Genista*, NE-slope, 21.I.2001, leg. Schülke (cSch).

Distribution: Madeira proper: presumably local endemic of the Pico do Arieiro (Fig. 19), where the species is rather common.

Bionomics: Inhabits deep litter layers and soil in stands of *Erica* sp. and *Vaccinium padifolium*. The ovaries of several females collected in the beginning of April were found to contain mature eggs (ASSING & WUNDERLE, 1996A).

162. *Geostiba bicacanaensis* Assing & Wunderle, 1996 (Plate IV, fig. 4, Fig. 19)

References: ASSING & WUNDERLE (1996A: 128); ASSING (1997A: 347); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Bica da Cana, 1550 m.

Additional records: 10 exs., Ruivo do Paul, 1600-1640 m, N-slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch); 2 exs., Paúl da Serra, 1 km E Estanquinhos, 31.VIII.1998, leg. Schuh (cAss); 1 ex., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss).

Distribution: Madeira proper: local endemic of the northwestern parts of the island (Fig. 19): Ribeira do Seixal, Bica da Cana, Paúl da Serra (1 km E Estanquinhos); Pico das Eirinhas (32°45N, 16°58W), Pico do Jorge.

Bionomics: The species has been collected in deep litter layers of laurel woods and shrubs at altitudes of 500-1350 m. The ovaries of several females collected at the end of March were found to contain mature eggs (ASSING & WUNDERLE, 1996A). Teneral adults were observed in March.

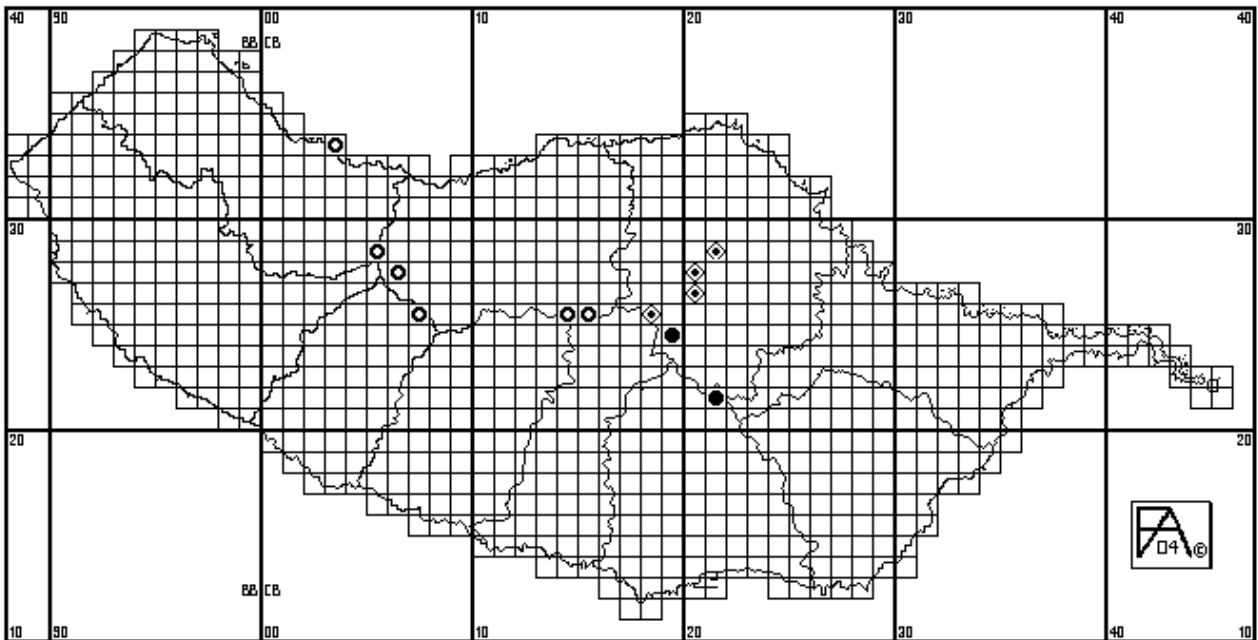


Fig. 19 - Distributions of *Geostiba arieiroensis* Assing & Wunderle (filled circles), *G. bicacanaensis* Assing & Wunderle (open circles), and *G. ruivomontis* Assing & Wunderle (diamonds) in Madeira.

163. *Geostiba brancomontis* Assing & Wunderle, 1996 (Fig. 20)

References: ASSING & WUNDERLE (1996A: 132); ASSING (1997A: 348); BOIEIRO *et al.* (2001: 20; 2002: 20).

Locus typicus: Porto Santo: Pico Branco.

Distribution: Porto Santo: local endemic of the Pico Branco (Fig. 20).

Bionomics: The species was sifted from pine, laurel, and *Erica* litter at the peak (altitude: 450 m) of the Pico Branco (ASSING, 1997A). *Geostiba brancomontis* is highly threatened by extinction, its distribution being confined to the meagre remains of (semi-) natural vegetation in the peak region of the Pico Branco.

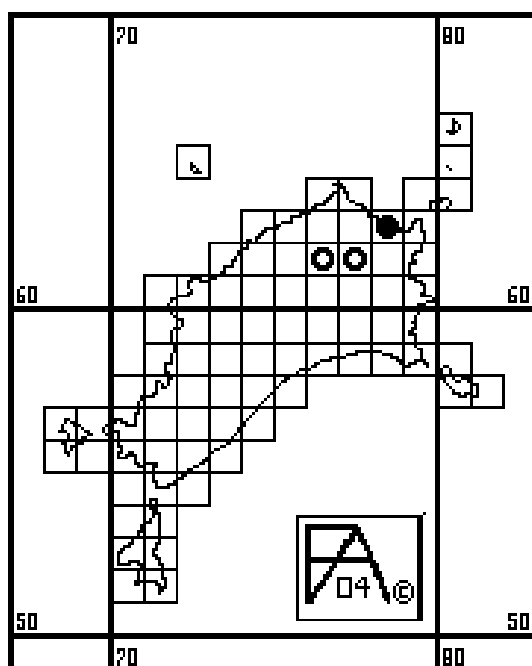


Fig. 20 - Distributions of *Geostiba brancomontis* Assing & Wunderle (filled circle) and *G. portosantoi* Franz (open circles) in Porto Santo.

164. *Geostiba caligicola* Assing & Wunderle, 1996

References: ASSING & WUNDERLE (1996A: 139); ASSING (1997A: 349); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Achada do Teixeira, 1650 m.

Distribution: Madeira proper; apparently local endemic, known only from the northern and eastern slopes of the Pico Ruivo. Localities: peak of Pico Ruivo, E Pico Ruivo (1700 m), Achada do Teixeira (1600 m).

Bionomics: This microphthalmous species has been found in grass, moss, and litter of ferns and *Erica* sp., mostly in the shade of big rocks, at relatively high altitudes (1600-1850 m) (ASSING & WUNDERLE, 1996A; ASSING, 1997A).

165. *Geostiba endogea* Assing & Wunderle, 1996 (Plate IV, fig. 5, Fig. 21)

References: ASSING & WUNDERLE (1996A: 141); ASSING (1997A: 349); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Caramujo, 1220 m.

Additional record: Madeira proper: 1 ex., Pico do Jorge, 32°44'57N, 16°58'48W, 2.III.2003, leg. Lompe (cAss).

Distribution: Madeira proper; endemic to the northwestern parts of the island from the Pico do Jorge (E Encumeada pass) to the Ribeira da Janela (Fig. 21). Localities: Caramujo, Roseira, N Fanal (Ribeira da Janela), Fanal, S Fanal, Pico do Jorge (E Encumeada).

Bionomics: This blind species inhabits deep layer of natural woodland and shrubs at altitudes of 800-1300 m (ASSING & WUNDERLE, 1996A; ASSING, 1997A).

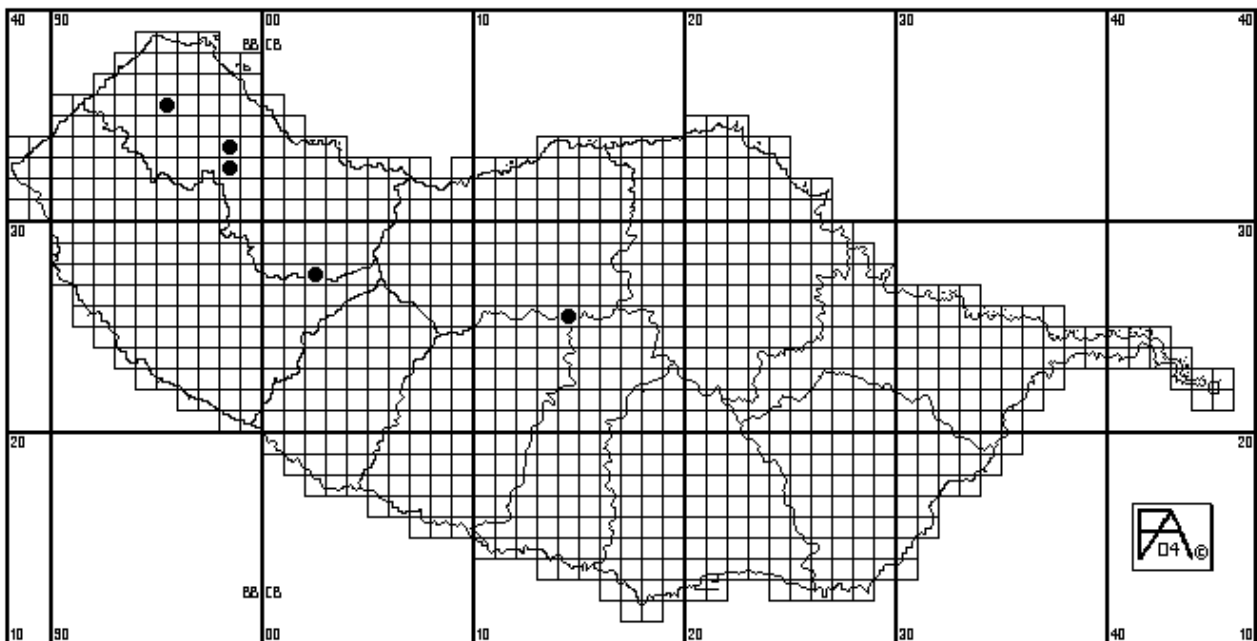


Fig. 21 - Distribution of *Geostiba endogea* Assing & Wunderle in Madeira.

166. *Geostiba ericicola* Assing, 1997 (Fig. 22)

References: ASSING (1997A: 350); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Achada do Teixeira, N slope, *Erica*-wood, 1350 m.

Distribution: Madeira proper, presumably local endemic; known only from type locality (Fig. 22).

Bionomics: This blind species was collected from soil and litter in an old stand of *Erica* sp. in northern exposition (ASSING, 1997A).

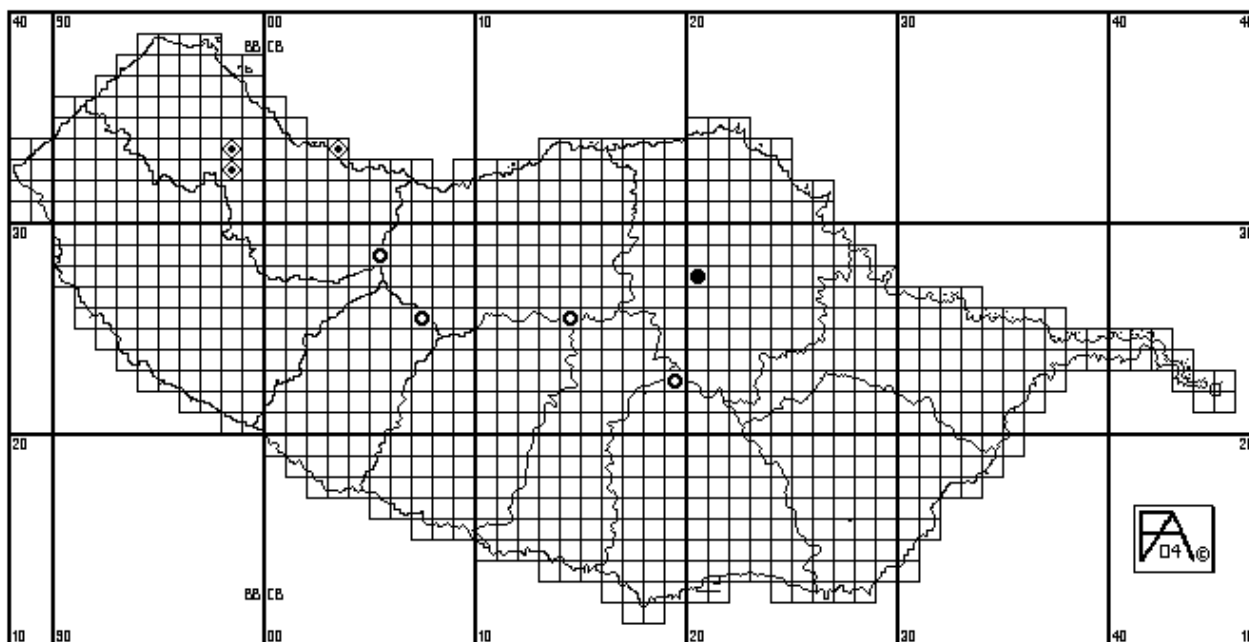


Fig. 22 - Distributions of *Geostiba ericicola* Assing (filled circle), *G. graminicola* Assing & Wunderle (open circles), and *G. lauricola* Assing & Wunderle (diamonds) in Madeira.

167. *Geostiba filiformis* (Wollaston, 1854) (Plate IV, fig. 6, Fig. 23)

References: FAUVEL (1897A: 51; 1897C: 338); SCHMITZ (1897: 154); ASSING & WUNDERLE (1996A: 123); ASSING (1997A: 346); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *Xenomma filiforme*: WOLLASTON (1854: 545; 1857: 172; 1865: 457).

As *Sipalia filiformis*: [JANSSON (1940: 16, 57; note: misidentification! See ASSING & WUNDERLE (1996A)]; LUNDBLAD (1958: 471).

As synonym of *S. formicarum*: FAUVEL (1902: 146); BERNHAUER & SCHEERPELTZ (1926: 601).

As *Sipalia waldeni* Palm (synonym): PALM (1981A: 298); see ASSING & WUNDERLE (1996A).

As *Sipalia israelsoni* Palm (synonym): PALM (1981A: 298); see ASSING & WUNDERLE (1996A).

Locus typicus: Madeira, Pico d'Arribentão [= Arrebentão], Porto Santo.

Additional records: Madeira proper: 2 exs., Ruivo do Paul, 1600-1640 m, N-slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch). Porto Santo: 32 exs., Pico Juliana, 400-440 m, *Erica*, broadleaved shrubs, 20.I.2001, leg. Schülke (cSch); 1 ex., Pico do Facho, N-slope, 450-510 m, *Erica*, *Thuya*, 20.I.2001, leg. Schülke (cSch).

Distribution: Endemic to Madeira. Madeira proper (very rare) (Fig. 23): Pico do Arieiro, Fajã da Pedra, Ruivo do Paul. Porto Santo: Pico do Facho, Pico Branco, Pico Juliana, Pico do Castelo. The record in JANSSON (1940) refers to a different species (see ASSING & WUNDERLE, 1996A).

Bionomics: The species inhabits the litter layer of natural woodland and shrubs. Teneral adults and larvae were found in the beginning of April (ASSING, 1997A; ASSING & WUNDERLE, 1996).

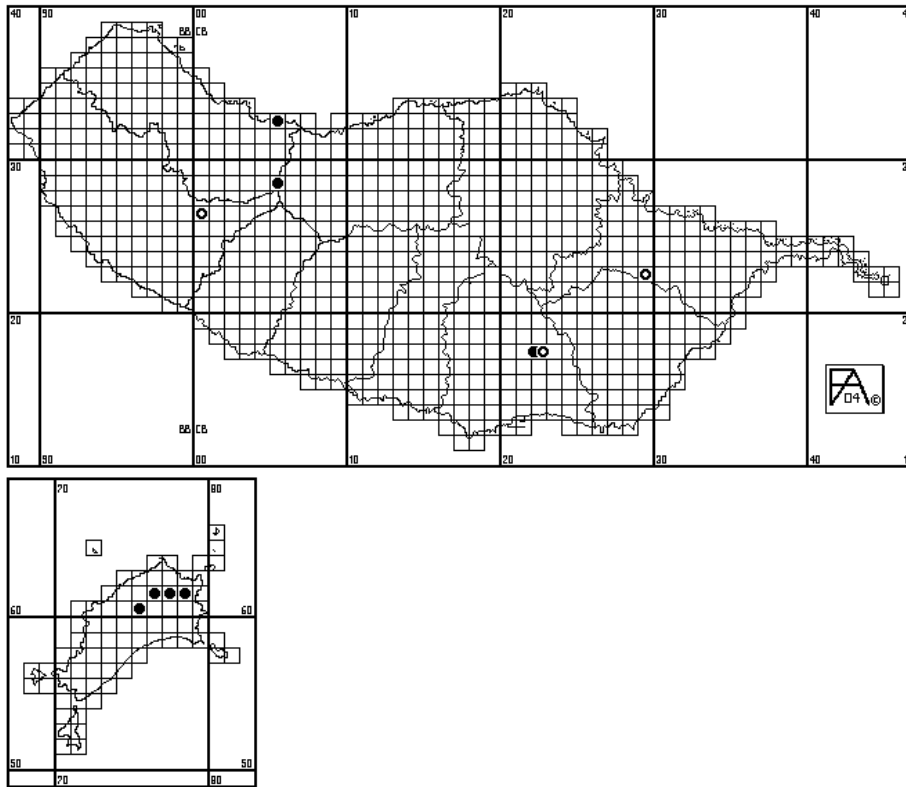


Fig. 23 - Distributions of *Geostiba filiformis* (Wollaston) (filled circles) and *G. formicarum* (Wollaston) (open circles) in the Madeira archipelago.

168. *Geostiba formicarum* (Wollaston, 1854) (Plate IV, fig. 7, Fig. 23)

References: FAUVEL (1897A: 51; 1897C: 338; 1902: 146); SCHMITZ (1897: 154); COCKERELL (1923: 695); ERBER & HINTERSEHER (1990: 144; identification doubtful); ASSING & WUNDERLE (1996A: 120); ASSING (1997A: 345); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *Xenomma formicarum*: WOLLASTON (1854: 545; 1857: 172; 1865: 457).

As *Sipalia formicarum*: BERNHAUER & SCHEERPELTZ (1926: 601, pars); JANSSON (1940: 16, 57); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 44).

Locus typicus: Funchal: Pico d'Arribentão [= Arrebentão], Lombo das Vacas.

Additional records: Madeira proper: 1 ex., Rabaçal, 1050 m, 16.-30.I.1999, leg. Lebenbauer (cAss); 1 ex., Rabaçal, 32°45'26N, 17°07'24W, 1000 m, 25.II.2003, leg. Lompe (cAss); 7 exs., Rabaçal, Levada das 25 Fontes, 900 m, 29.I.2003, leg. Erber (cErb).

Distribution: Endemic to Madeira proper (Fig. 23). Since WOLLASTON (1854) described the species based on material from “Funchal: Pico d'Arribentão” and “Lombo das Vacas”, it has been recorded exclusively from the environs of Rabaçal, where it is rather common and abundant.

Bionomics: *Geostiba formicarum* inhabits the deep and moist leaf litter of natural woodland, especially laurel woods. It was collected in spring and summer (III-VIII); teneral adults and larvae were observed in early spring (ASSING, 1997A; ASSING & WUNDERLE, 1996A).

Remarks: The record of *G. formicarum* by PALM (1981A) is based on a misidentification (ASSING & WUNDERLE, 1996). The same applies to the records by ERBER & HINTERSEHER (1990) (ERBER, *pers. comm.*), which refer to a species of *Atheta*, subgenus *Mocyta*. Remarkably, the species has never been recorded from the Pico do Arieiro again since Wollaston's days, although this locality has frequently been visited by various coleopterists.

169. *Geostiba graminicola* Assing & Wunderle, 1996 (Fig. 22)

References: ASSING & WUNDERLE (1996A: 135); ASSING (1997A: 348); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Pico do Arieiro, 1750 m.

Additional records: Madeira proper: 13 exs., Bica da Cana, 1500-1550 m, *Erica*, *Cytisus*, sifted, 14.I.2001, leg. Schülke (cSch, cAss); 4 exs., Ruivo do Paul, 1600-1640 m, N-slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch, cAss).

Distribution: Endemic to Madeira proper (Fig. 22): Pico do Arieiro, Pico do Jorge, Bica da Cana, Ruivo do Paúl.

Bionomics: This microphthalmous species was sifted from grass roots in the shade of a big rock and from litter of laurel trees and shrubs (ASSING, 1997A; ASSING & WUNDERLE, 1996A; additional records).

170. *Geostiba lauricola* Assing & Wunderle, 1996 (Plate IV, fig. 8, Fig. 22)

References: ASSING & WUNDERLE (1996A: 138); ASSING (1997A: 349); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Ribeira da Janela, 800 m.

Additional record: Madeira proper: 1 ex., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss).

Distribution: Local endemic of the Ribeira da Janela, Ribeira do Seixal, and adjacent areas in the northwest of Madeira proper (Fig. 22). Localities: Rib. da Janela: N Fanal, Fanal, S Fanal, Fanal Lagoa (32°49N, 17°09W); S Seixal: Rib. do Seixal.

Bionomics: *Geostiba lauricola* is microphthalmous and occurs in the deep litter layers and soil of laurel woods at altitudes of 500 - 1100 m (ASSING, 1997A; ASSING & WUNDERLE, 1996A).

171. *Geostiba lindrothi* Franz, 1981 (Fig. 24)

References: FRANZ (1981: 328); PALM (1981A: 297); PALM (1981B: 447); ASSING & WUNDERLE (1996A: 134); ASSING (1997A: 348); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

As *Sipalia lindrothi* Palm (synonymic homonym): PALM (1981A: 297); see ASSING & WUNDERLE (1996A).

As *Geostiba carli* Palm (replacement name for *Sipalia lindrothi* Palm): PALM (1981B: 447); see ASSING & WUNDERLE (1996A).

Locus typicus: Madeira proper, Queimadas.

Additional record: Madeira proper: 1 ex., Caramujo, 32°46'05N, 17°03'29W, 1250 m, 22.II.2003, leg. Lompe (cAss).

Distribution: Endemic to Madeira proper (Fig. 24): Queimadas, Ribeira do Inferno, Funchal: Terreiro da Luta, Caramujo, Pico do Jorge.

Bionomics: This blind species has been collected from the deep litter and soil of natural laurel woods and shrubs and from rotting laurel trunks at altitudes of 500-1300 m (ASSING, 1997A; ASSING & WUNDERLE, 1996A; FRANZ, 1981). Two females collected in April had mature eggs in their abdomen (ASSING & WUNDERLE, 1996A).

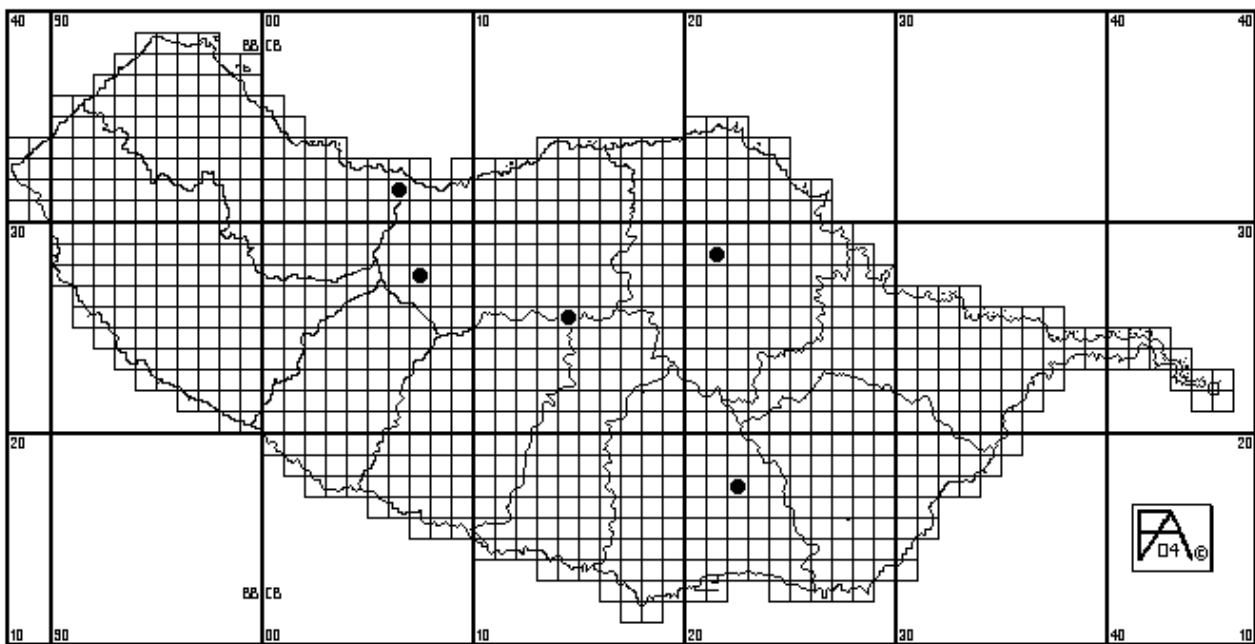


Fig. 24 - Distribution of *Geostiba lindrothi* Franz in Madeira.

172. *Geostiba noctis* Assing, 1997

References: ASSING (1997A: 353); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, E Encumeada pass, near Pico do Jorge, 1300 m.

Distribution: Madeira proper; presumably local endemic, known only from the type locality near Pico do Jorge.

Bionomics: *Geostiba noctis* has almost completely reduced eyes. The types were sifted from deep litter and soil below laurel trees and shrubs together with *G. bicacanaensis*, *G. endogea*, *G. lindrothi*, and *G. tenebrarum* (ASSING, 1997A).

173. *Geostiba occulta* Assing & Wunderle, 1996 (Plate IV, fig. 9, Fig. 25)

References: ASSING & WUNDERLE (1996A: 140); ASSING (1997A: 349); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Ribeira da Janela, 800 m.

Distribution: Madeira proper; endemic to the northwest of the island (Fig. 25): Ribeira da Janela, Ribeira do Seixal. Localities: Rib. da Janela: N Fanal, Fanal; S Porto Moniz; S Seixal: Ribeira do Seixal, Rabaçal.

Bionomics: *Geostiba occulta* is the largest of the Madeiran *Geostiba* species with almost completely reduced eyes. Numerous specimens were sifted from soil and deep leaf litter in laurel woods at altitudes of 400-1000 m, partly together with *G. lauricola* and *G. endogea*. Teneral adults and larvae were observed in March (ASSING, 1997A).

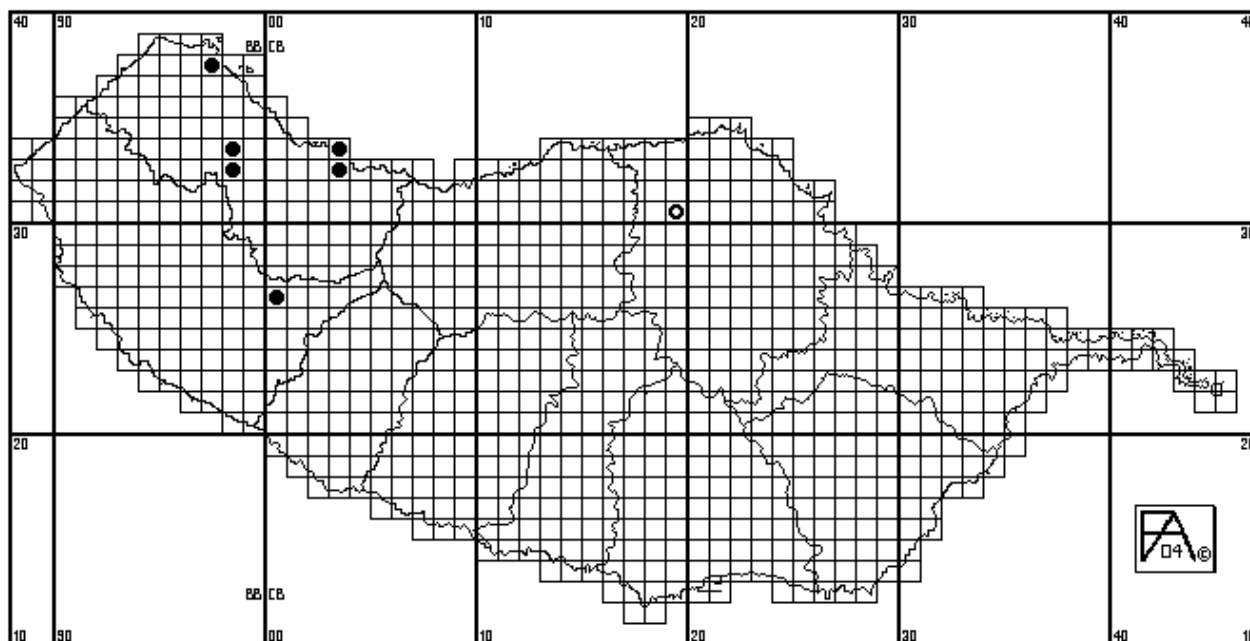


Fig. 25 - Distributions of *Geostiba occulta* Assing & Wunderle (filled circles), and *G. subterranea* Assing & Wunderle (open circle) in Madeira.

174. *Geostiba portosantoi* Franz, 1981 (Plate IV, fig. 10, Fig. 20)

References: FRANZ (1981: 329); ASSING & WUNDERLE (1996A: 130); ASSING (1997A: 348).

Locus typicus: Porto Santo, Pico Juliana, N-slope.

Distribution: Endemic to Porto Santo (Fig. 20): Pico Juliana, Pico do Facho.

Bionomics: This microphthalmous species has been found in soil under stones and dead *Pinus* (FRANZ, 1981) and from soil and deep leaf litter below pine and laurel trees, and *Erica* sp. (ASSING, 1997A). Like *G. brancomontis*, *G. portosantoi* is highly threatened by extinction, its distribution being confined to a few hectares of semi-natural woodland and shrubs (ASSING, 1997A; ASSING & WUNDERLE, 1996A).

175. *Geostiba ruivomontis* Assing & Wunderle, 1996 (Fig. 19)

References: ASSING & WUNDERLE (1996A: 128); ASSING (1997A: 346); BOIEIRO *et al.* (2001: 20; 2002: 20; 2003: 55).

Locus typicus: Madeira, Achada do Teixeira, 1350 m.

Additional records: Madeira proper: 33 exs., Achada do Teixeira, near Mirador, 1400 m, *Erica*, N-slope, 12.I.2001, leg. Schülke (cSch); 8 exs., Achada do Teixeira, N-slope, 1400 m, *Erica*, laurel, dead wood, 16.I.2001, leg. Schülke (cSch); 1 ex., Achada do Teixeira, 32°45'52N, 16°54'44W, 1350 m, 20.II.2003, leg. Lompe (cAss); 1 ex., Achada do Teixeira, 32°45'42N, 16°54'57W, 1600 m, 20.II.2003, leg. Lompe (cAss); 20 exs., Pico Ruivo, 1850 m, N-slope, *Erica*, 16.I.2001, leg. Schülke (cSch); 1 ex., Rio Silveira near Teixeira, Pico das Pedras, 1250 m, 18.III.2004, leg. Aßmann (cAss).

Distribution: Local endemic of Madeira proper (Fig. 19); known only from the peak and slopes of the Pico Ruivo to Achada do Teixeira. Localities: Achada do Teixeira (1350 m, 32°46N, 16°55W); Achada do Teixeira (near Mirador); Achada do Teixeira (32°46N, 16°55W); peak of Pico Ruivo.

Bionomics: The species has been sifted from litter of *Erica* sp. at altitudes of 1350-1850 m (ASSING, 1997A; ASSING & WUNDERLE, 1996A).

176. *Geostiba subterranea* Assing & Wunderle, 1996 (Fig. 25)

References: ASSING & WUNDERLE (1996A: 142); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

Locus typicus: Madeira, Ribeiro Bonito.

Distribution: Madeira proper; known only from the type locality (Fig. 25), presumably local endemic in the area to the north of the Pico Ruivo. According to BOIEIRO *et al.* (2003), the type locality is the Ribeira do Bonito ou das Lages Negras in the west of Madeira. This, however, is almost certainly incorrect. This stream is very small and its name is not indicated on normal (tourist) maps. In addition, it does not seem very likely that *G. subterranea* occurs in the area where *G. endogea* and *G. occulta* are common. There is little doubt that the true type locality, *i. e.* the Ribeiro Bonito that Franz referred to on the labels of the type specimens, is the much better known Ribeiro Bonito southwest of São Jorge in the northeast of Madeira.

Bionomics: *G. subterranea* is the second largest of the Madeiran *Geostiba* species with almost completely reduced eyes. The data available for the closely related congeners suggest that *G. subterranea* may live in the deep litter and soil of natural woodland. It has not been recorded again since its original discovery at least two decades ago.

177. *Geostiba temeris* Assing, 1997

References: ASSING (1997A: 351); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

Locus typicus: Madeira, E Encumeada pass, near Pico do Jorge, 1300 m.

Distribution: Madeira proper; presumably local endemic, known only from type locality.

Bionomics: The types of this blind species were sifted from very deep moist litter and soil beneath a single laurel tree. The ovaries of three females collected at the end of March contained mature eggs (ASSING, 1997A).

178. *Geostiba tenebrarum* Assing, 1997

References: ASSING (1997A: 351); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

Locus typicus: Madeira, E Encumeada pass, near Pico do Jorge, 1300 m.

Distribution: Madeira proper; presumably local endemic, known only from type locality.

Bionomics: This microphthalmous species was sifted from soil and litter in mixed stands of laurel trees, *Vaccinium padifolium* and *Erica* sp., together with *G. bicacanaensis*, *G. endogea*, *G. lindrothi*, and *G. noctis* (ASSING, 1997A).

179. *Geostiba vaccinicola* Assing & Wunderle, 1996

References: ASSING & WUNDERLE (1996A: 137); ASSING (1997A: 348); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

Locus typicus: Madeira, Pico do Arieiro, 1600 m.

Additional records: 3 exs., Pico do Arieiro, 1600 m, NE-slope, *Vaccinium*, 18.I.2001, leg. Schülke (cSch); 1 ex., Pico do Arieiro, near Achada Grande, 1500 m, *Vaccinium*, *Genista*, NE-slope, 21.I.2001, leg. Schülke (cSch).

Distribution: Madeira proper; presumably local endemic, known only from the surroundings of Pico do Arieiro.

Bionomics: *Geostiba vaccinicola* has strongly reduced eyes and was sifted from deep litter and extracted from soil on a north slope in stands of *Vaccinium padifolium* and *Erica* sp. (ASSING, 1997A; ASSING & WUNDERLE, 1996A).

180. *Holobus ignoratus* Assing, 1998

References: ASSING (1998B: 145); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

As *Oligota flavicornis* (Lacordaire) (misidentification): FAUVEL (1897A: 50; 1897C: 321; 1902: 129); SCHMITZ (1897: 153); LUNDBLAD (1858: 470); WILLIAMS (1975: 20); see ASSING (1998B).

Locus typicus: Madeira proper: Caniço de Baixo (ASSING, 1998B).

Additional records: Madeira proper: 3 exs., Caniço de Baixo, 18.X.1994, leg. Döberl (cErb); 1 ex., Funchal, 31.VIII.-14.IX.1998, leg. Schuh (cAss); 2 exs., Gaula, Fazenda, tomato greenhouse, 24.X.2000, leg. Aguiar & Jesus (cAgu); 1 ex., Ponta do Sol, Lugar da Baixo, banana culture, 11.VI.2001, leg. Aguiar (cAgu).

Distribution: Known only from Madeira proper: Caniço de Baixo, Funchal, Gaula, Ponta do Sol.

Bionomics: Most of the known specimens were collected from a window pane (ASSING, 1998B); some were found in compost (FAUVEL, 1902; WILLIAMS, 1975), in a greenhouse, and in a banana culture.

181. *Hydrosmeeta longula* (Heer, 1839)

References:

As *Homalota thinobioides* Kraatz, 1854 (synonym): WOLLASTON (1857: 175).

As *Atheta thinobioides* (synonym): BERNHAUER & SCHEERPELTZ (1926: 606); BERNHAUER (1940: 6); JANSSON (1940: 57); MÉQUIGNON (1942: 23; 1946: 114); LUNDBLAD (1958: 471).

As *Hycrosmeeta thinobioides* (synonym): BORGES (1990: 105); BOIEIRO *et al.* (2001: 20; 2002: 21).

As *Homalota longula*: WOLLASTON (1865: 464); CROTCH (1870: 88).

As *Atheta longula*: FAUVEL (1897C: 335; 1902: 143); SCHMITZ (1897: 154).

As *Homalota longula* var. *maderae* Wollaston, 1871 (synonym): WOLLASTON (1871A: 290); see FAUVEL (1902).

As *Atheta longula* var. *maderae* (synonym): FAUVEL (1897A: 51).

Additional records: Madeira proper: 4 exs., Faial, 100 m, bank of stream, 6.IV.1993, leg. Assing, Wunderle (cAss, cWun); 2 exs., Seixal, 550 m, laurisilva near stream, 31.III.1996, leg. Assing (cAss).

Distribution: Apparently West Palaearctic; Madeira: Madeira proper. There is considerable taxonomic confusion regarding the species currently attributed to *Hydrosmecta* sensu lato. Until a modern revision has been carried out, the current interpretation of the species and biogeographic data should be considered tentative.

Bionomics: The species lives in riparian habitats.

182. *Ischnoglossa prolixa* (Gravenhorst, 1802)

References: BOIEIRO *et al.* (2001: 20; 2002: 21).

As *Stichoglossa prolixa* (Gyllenhal) (sic): FAUVEL (1897A: 52; 1897C: 358; 1902: 168); SCHMITZ (1897: 154); LUNDBLAD (1958: 472).

Distribution: West Palaearctic. Madeira: One record from a park in Funchal (FAUVEL, 1897C).

Bionomics: The species lives under bark of deciduous and coniferous trees (WUNDERLE, 1990).

183. *Madeirostiba truncorum* (Wollaston, 1857) (Plate IV, fig. 11, Fig. 26)

References: ASSING & WUNDERLE (1995D: 32ff.); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

As *Homalota truncorum*: WOLLASTON (1857: 172; 1865: 466).

As *Sipalia truncorum*: FAUVEL (1897A: 51; 1897C: 349; 1902: 159); SCHMITZ (1897: 154).

As *Leptusa truncorum*: BERNHAUER & SCHEERPELTZ (1926: 560); BERNHAUER (1940: 9); JANSSON (1940: 56); LUNDBLAD (1958: 471).

As *Alpinia truncorum*: ERBER & HINTERSEHER (1988: 155, 185).

Locus typicus: Madeira proper: Cruzinhas, Fanal.

Additional records: Madeira proper: 1 ex., W Queimadas, 900 m, 25.X.1997, leg. Lompe (cAss); 1 ex., Pico do Arieiro, 1600-1700 m, *Erica*, *Vaccinium*, NE-slope, 9.I.2001, leg. Schülke (cSch); 1 ex., Ribeira da Janela, above Fanal, 1300 m, laurisilva with *Erica* sp. and *Vaccinium padifolium*, 25.III.1996, leg. Assing (cAss); 1 ex., Rabaçal, 1000 m, 27.X.1997, leg. Lompe (cAss); 1 ex., Bica da Cana, 32°45'11N, 17°03'08W, 1550 m, 25.II.2003, leg. Lompe (cAss); 2 exs., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss); 1 ex., Pico do Jorge, 32°44'57N, 16°58'48W, 2.III.2003, leg. Lompe (cAss); 19 exs., Pico Ruivo, N-slope, 1700 m, wet grass and moss, 29.III.1996, leg. Assing, Lompe, Zerche (DEI, cAss); 1 ex., Pico Ruivo, peak, N-slope, 1850 m, *Erica* litter, 29.III.1996, leg. Assing (cAss); 6 exs., same locality, 16.I.2002, leg. Schülke (cSch); 1 ex., Achada do Teixeira, N-slope, 1400 m, *Erica*, laurel trees, dead wood, 16.I.2001, leg. Schülke (cSch); 1 ex., Paúl da Serra, 1400 m, soil under fern, 12.XI.1997, leg. Lange (cErb).

Distribution: Madeira, endemic to Madeira proper (Fig. 26): Santa Madalena, Cruzinhas, Achada do Teixeira, Caramujo, Ribeiro Frio, Queimadas, Pico do Jorge, Pico das Eirinhas, Pico Ruivo, Rabaçal, Bica da Cana, Paúl da Serra, Ribeira da Janela (Fanal).

Bionomics: The species has been found in leaf litter and moss especially in stands of old *Erica* sp. (ASSING & WUNDERLE, 1995D), rarely under bark (ERBER & HINTERSEHER, 1988), usually at altitudes of 1300-1850 m, on one occasion also at 400 m. Adult beetles have been found almost throughout the year (January-August, October-November).

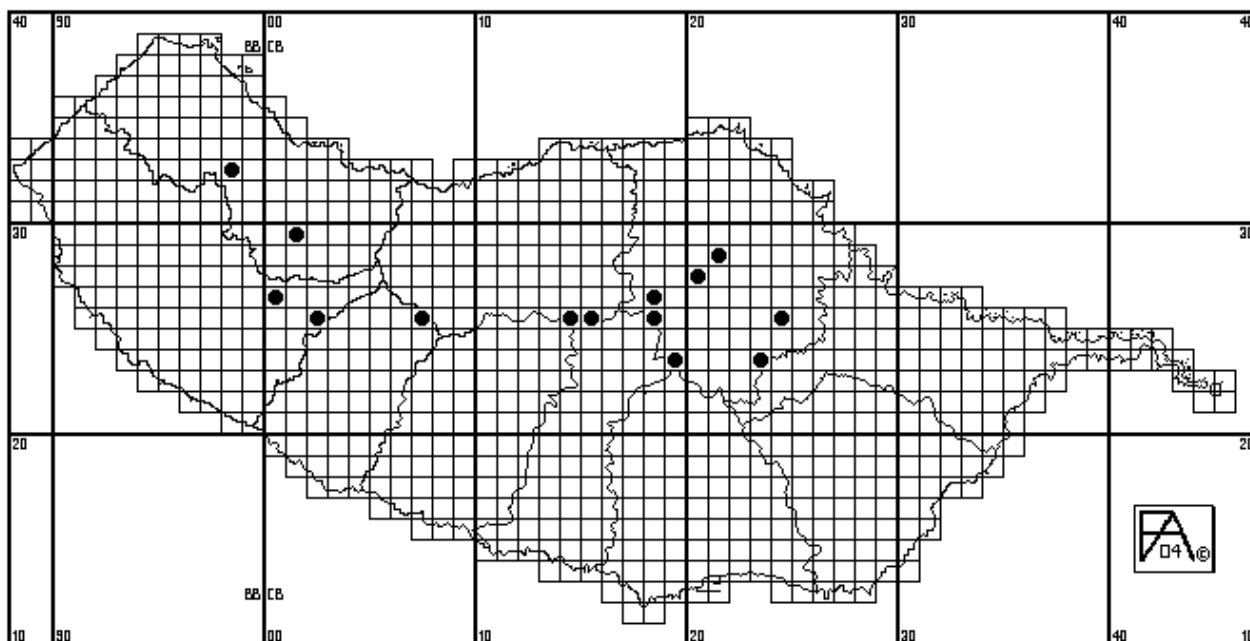


Fig. 26 - Distribution of *Madeirostiba truncorum* (Wollaston) in Madeira.

184. *Myrmecocephalus concinnus* (Erichson, 1839)

References: BOIEIRO *et al.* (2001: 20; 2002: 21).

As *Falagria concinna*: FAUVEL (1902: 151); BERNHAUER & SCHEERPELTZ (1926: 577); BERNHAUER (1940: 6); JANSSON (1940: 56); MEQUIGNON (1942: 23; 1946: 114); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 44); BORGES (1990: 106).

As *Falagria longipes* Wollaston, 1871 (synonym): WOLLASTON (1871A: 284); FAUVEL (1897A: 51; 1897C: 343); SCHMITZ (1897: 154).

Additional records: Madeira proper: 9 exs., Caniço de Baixo, 80 m, window pane, 7.-13.IX.1989, leg. Pieper (cAss); 5 exs., same data, but 14.-20.IX.1989; 15 exs., same data, but 15.-28.IX.1995 (cAss, cErb); 1 ex., E Porto da Cruz, Larano, 350 m, 29.X.1997, leg. Lompe (cAss).

Distribution: Probably cosmopolitan. Madeira: Funchal, Caniço de Baixo, Porto da Cruz.

Bionomics: The species is a very active flyer. It is found especially in various kinds of decaying plant material (hay, compost, etc.) and in moist habitats.

185. *Myrmecopora maritima* (Wollaston, 1860)

References: FAUVEL (1902: 150, pars); BERNHAUER & SCHEERPELTZ (1926: 582, pars); JANSSON (1940: 56); LUNDBLAD (1958: 471); SCHEERPELTZ (1972: 105); ASSING (1997B: 123); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

As *Tachyusa maritima*: WOLLASTON (1860A: 51; 1865: 456).

As *Xenusa maritima*: LOHSE (1987: 138).

As *Myrmecopora uvida* (Erichson) (misidentification): FAUVEL (1897A: 51; 1897C: 342); SCHMITZ (1897: 154).

As *Myrmecopora sulcata* (Kiesenwetter) (misidentification): ISRAELSON (1990: 3); BORGES (1990: 106).

Locus typicus: Madeira proper: São Vicente.

Distribution: Endemic to Madeira proper.

Bionomics: As can be inferred from the habitats of better-known close relatives, the species probably is confined to coastal habitats. WOLLASTON (1860A) collected the two types “during December 1858, below high-water mark, on the shingly beach at São Vicente”.

Remarks: The records of *Myrmecopora sulcata* (ISRAELSON, 1990; BORGES, 1990) are presumably based on an assumed synonymy of *M. maritima* with *M. sulcata*. The reference to this species by Boieiro *et al.* (2003: 53) is misleading; it suggests that (the intertidal!) *M. maritima* is a typical example of an endemic species exclusively confined to Paúl da Serra.

186. *Nehemitropia lividipennis* (Mannerheim, 1830)

References: BOIEIRO *et al.* (2001: 20; 2002: 21).

As *Homalota lividipennis*: WOLLASTON (1854: 557; 1857: 179).

As *Homalota melanaria* (Sahlberg, 1834) (synonym): WOLLASTON (1865: 471); CROTCH (1870: 89).

As *Atheta sordida* (Marsham, 1802) (synonym): FAUVEL (1897A: 50; 1897C: 323; 1902: 131); SCHMITZ (1897: 153); BERNHAUER (1940: 9); JANSSON (1940: 20, 57); MEQUIGNON (1946: 115); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 46); SERRANO (1987B: 151); ERBER (1990: 166); BORGES (1990: 106); BOIEIRO *et al.* (2001: 20; 2002: 21).

Distribution: Probably Cosmopolitan: Palaearctic, South America, New Zealand. Madeira: Madeira proper, Porto Santo.

Bionomics: *Nehemitropia lividipennis* is widespread and common in all kinds of decaying organic material (compost, excrements, etc.).

Remark: In BOIEIRO *et al.* (2001, 2002) the species is listed both as *Atheta sordida* and *Nehemitropia lividipennis*.

187. *Oligota analis* (Wollaston, 1854) (Fig. 27)

References: JANSSON (1940: 14, 56); LUNDBLAD (1958: 470); LIKOVSKÝ (1963: 44); WILLIAMS (1975: 20); BOIEIRO *et al.* (2001: 20; 2002: 21; 2003: 56).

As *Somatium anale*: WOLLASTON (1854: 564; 1857: 184; 1865: 477; 1871A: 296).

As *Oligota apicata* Erichson, 1837 (misidentification): FAUVEL (1897A: 50; 1897C: 321; 1902: 129); SCHMITZ (1897: 153); BERNHAUER & SCHEERPELTZ (1926: 512).

Locus typicus: Madeira proper: Ribeiro Frio, Lombo dos Pecegueiros and between São Vicente and Seixal.

Additional records: Madeira proper: 4 exs., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss); 1 ex., Ribeira da Janela, Fanal, 900 m, laurisilva, 25.III.1996, leg. Assing (cAss); 1 ex., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss); 21 exs., above Porto Moniz, 400 m, laurisilva, sifted from fungi on standing trees, 28.III.1996, leg. Assing, Zerche (cAss, DEI); 1 ex., above Seixal, 550 m, laurisilva near stream, 31.III.1996, leg. Assing (cAss); 4 exs., path from Queimadas to Caldeirão Verde, laurel, *Erica*, moss, 18.I.2001, leg. Schülke (cSch).

Distribution: Endemic to Madeira proper (Fig. 27): Ribeiro Frio, Lombo dos Pecegueiros (near São Vicente), Santo da Serra, Rabaçal, Roseira, Fanal, Porto Moniz, Seixal, path from Queimadas to Caldeirão Verde.

Bionomics: *Oligota analis* is apparently associated with various kinds of fungi; it has also been collected from under bark, leaf litter, and from rotting branches overgrown with lichens. Numerous specimens were sifted from fungi growing on standing trees.

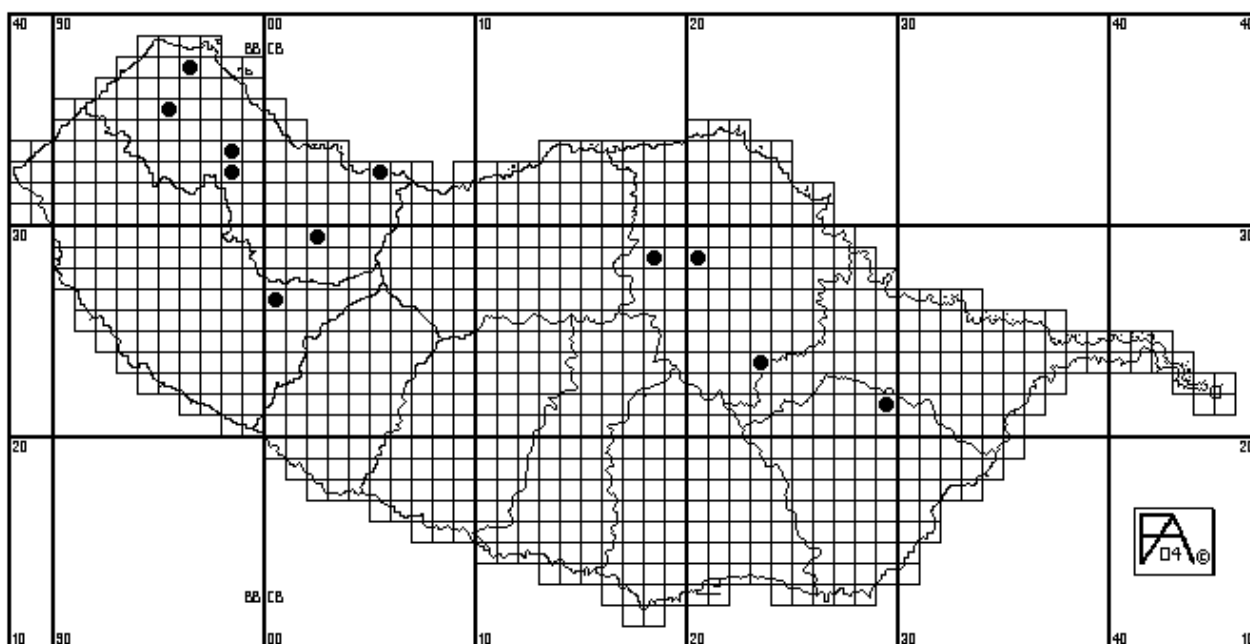


Fig. 27 - Distribution of *Oligota analis* (Wollaston) in Madeira.

188. *Oligota canariensis* Williams, 1973

References: WILLIAMS (1973: 228), ERBER & HINTERSEHER (1990: 141); ERBER (1990: 151); BOEIRO *et al.* (2001: 20; 2002: 21).

As *Oligota granaria* Erichson, 1837 (misidentification): ERBER & HINTERSEHER (1988: 155, 185).

Additional records: Madeira proper: >50 exs., Caniço de Baixo, 80 m, window pane, 4.-25.IX.1986, leg. Pieper (cAss); 75 exs., same data, but 7.-13.IX.1989; 74 exs., same data, but 14.-20.IX.1989; 30 exs., same data, but 21.-27.IX.1989; >100 exs., same data, but 13.-19.IX.1990; >50

exs., same data, but 20.-27.IX.1990; >50 exs., same data, but 7.-20.V.1992; >50 exs., same data, but 15.-28.IX.1995 (cAss, cErb). Porto Santo: 1 ex., locality not specified, 7.XI.1967, leg. Benick (cWun).

Distribution: Canary Islands; Madeira: Madeira proper, Porto Santo.

Bionomics: The species has been collected from garden refuse and in large numbers from a window pane, suggesting that it is a very active flyer and probably has a wider distribution than is currently known. Numerous specimens collected in September were teneral.

Remark: The species is not listed for Madeira in the Palaearctic catalogue (SMETANA, 2004B).

189. *Oligota muensteri* Bernhauer, 1923

References: WILLIAMS (1973: 224; 1975: 24); BOIEIRO *et al.* (2002: 21).

As *Oligota inflata* Mannerheim, 1830, pars (misidentification): WOLLASTON (1854: 562; 1857: 184; 1865: 476).

As *Oligota pumilio* Kiesenwetter, 1858 (misidentification): FAUVEL (1897A: 50; 1897C: 322; 1902: 130); SCHMITZ (1897: 153); LUNDBLAD (1958: 470); SMETANA (1970: 63); BORGES (1990: 106).

Additional records: Madeira proper: 2 exs., Pico do Arieiro, 1600 m, stand of *Erica* sp. and *Vaccinium padifolium*, 26.III.1993, leg. Assing (cAss); 1 ex., Pico do Arieiro, near Achada Grande, 1500 m, *Vaccinium*, *Cytisus scoparius*, NE-slope, 21.I.2001, leg. Schülke (cSch); 2 exs., Achada do Teixeira, 1580 m, grass and debris in shadow of big rocks, 6.IV.1993, leg. Assing (cAss); 3 exs., northern slope of Pico Ruivo, 1700 m, fern and grass in shadow of big rocks, 29.III.1996, leg. Assing (cAss); 1 ex., Caniço de Baixo, 80 m, window pane, 21.-27.IX.1989, leg. Pieper (cAss); 6 exs., same data, but 13.-19.IX.1990; 3 exs., same data, but 20.-27.IX.1990; 3 exs., same data, but 7.-20.V.1992; 1 ex., same data, but 15.-28.IX.1995 (cAss, cErb); 1 ex., Rabaçal, 1000 m, laurisilva, 23.III.1996, leg. Zerche (DEI); 1 ex., Ribeira Brava, 200 m, compost and dry grass, 27.III.1996, leg. Zerche (DEI).

Distribution: Western and northern West Palaearctic, including Azores, Madeira, Canaries. Madeira: Madeira proper, Porto Santo.

Bionomics: The species is found in various kinds of rotting plant material, also mouldy pine branches and damp leaves (WILLIAMS, 1975).

Remarks: The Madeiran records of *Oligota pumilio* may all refer to this species, but so far only those by Wollaston and Fauvel have been examined by WILLIAMS (1975). The species is not listed by BOIEIRO *et al.* (2001).

190. *Oligota parva* Kraatz, 1862

References: WOLLASTON (1871A: 294); FAUVEL (1897A: 50; 1897C: 322; 1902: 130); SCHMITZ (1897: 153); BERNHAUER & SCHEERPELTZ (1926: 515); BERNHAUER (1940: 5); MÉQUIGNON (1942: 22; 1946: 114); LUNDBLAD (1958: 470); LIKOVSKÝ (1963: 44); WILLIAMS (1973: 223; 1975: 23); ERBER & HINTERSEHER (1988: 155); BORGES (1990: 106); BOIEIRO *et al.* (2002: 21).

As *Oligota inflata* Mannerheim, 1830, pars (misidentification): WOLLASTON (1854: 562; 1857: 184; 1865: 476).

As *Oligota parva* Erichson: JANSSON (1940: 56).

Additional records: Madeira proper: 6 exs., Caniço de Baixo, 80 m, window pane, 15.-28.IX.1995, leg. Pieper (cAss).

Distribution: Apparently cosmopolitan: W-India, Europe, Africa, North America, South America, Argentina Azores, Madeira, Canaries, Cape Verde. Madeira: Madeira proper, Porto Santo.

Bionomics: The species inhabits various kinds of decaying organic matter, especially compost and similar substrates, it is also found under bark. In Madeira, it has repeatedly and in greater numbers been collected from a window pane.

Remarks: The species is missing in the list by BOIEIRO *et al.* (2001).

191. *Oligota punctulata* Heer, 1839

References: FAUVEL (1897A: 50; 1897C: 322; 1902: 130); SCHMITZ (1897: 153) BERNHAUER & SCHEERPELTZ (1926: 512); JANSSON (1940: 56); LUNDBLAD (1958: 470); WILLIAMS (1975: 23); BOIEIRO *et al.* (2002: 21).

As *Oligota ruficornis* Sharp, 1870 (synonym): WOLLASTON (1871A: 295).

Distribution: Europe, Madeira: Madeira proper, a single record from Funchal.

Bionomics: Usually found in rotting plant material, often in haystacks and reedstacks (WILLIAMS, 1975).

Remarks: The species is missing in the list by BOIEIRO *et al.* (2001). Among the above records, only the one by WILLIAMS (1973) can be regarded as certain, since a reliable identification of the species requires an examination of the genitalia.

192. *Oligota pusillima* (Gravenhorst, 1806)

References: WOLLASTON (1857: 183; 1865: 477; 1871A: 295); FAUVEL (1897A: 50; 1897C: 322; 1902: 130); SCHMITZ (1897: 153); JANSSON (1940: 15, 56); MÉQUIGNON (1942: 23; 1946: 114); LUNDBLAD (1958: 470); WILLIAMS (1975: 24); BORGES (1990: 106); BOIEIRO *et al.* (2002: 21).

Additional records: 1 ex., Caniço de Baixo, 80 m, window pane, 13.-19.IX.1990, leg. Pieper (cAss); 1 ex., same data, but 15.-28.IX.1995 (cAss).

Distribution: West Palaearctic, North and South America, Azores, Madeira, Canaries. Madeira: Madeira proper.

Bionomics: This common species inhabits various kinds of decaying organic matter and the leaf litter.

Remarks: *Oligota pusillima* is missing in the list by BOIEIRO *et al.* (2001). In the past, the species has frequently been misidentified and confounded with similar congeners. Therefore, records that are not based on an examination of the genitalia must be considered doubtful.

193. *Oligota selvagensis* Assing, 2000

Reference: ASSING (2000A: 317ff.).

Locus typicus: Ilhas Selvagens: Selvagem Grande, en arenal, plateau, ca. 100 m.

Distribution: Endemic to the Ilhas Selvagens.

Bionomics: The types were collected in sand, among the roots of *Nicotiana glauca*.

194. *Outachyusa raptoria* (Wollaston, 1854)

References: PACE (1999A: 76); BOIEIRO *et al.* (2002: 21).

As *Tachyusa raptoria*: WOLLASTON (1854: 542; 1857: 170; 1865: 456; 1871A: 294); FAUVEL (1897A: 51; 1897C: 341; 1902: 149); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 583); JANSSON (1940: 57); LUNDBLAD (1958: 471).

Locus typicus: Madeira proper: Ribeira de Santa Luzia, edge of stream.

Distribution: Madagascar, Mediterranean Region, Madeira, Canaries. Madeira: Madeira proper, only one record.

Bionomics: *Outachyusa raptoria* is a rare riparian species.

Remark: The species is missing in the list by BOIEIRO *et al.* (2001).

195. *Oxypoda carbonaria* (Heer, 1841)

References: ZERCHE (1996: 294); BOIEIRO *et al.* (2002: 21).

As *O. litigiosa* Heer, 1839 (misidentification): WOLLASTON (1854: 558).

As *O. rugifrons* Wollaston, 1857 (synonym): WOLLASTON (1857: 180; 1865: 473).

As *O. sericea* Heer, 1839 (synonym): FAUVEL (1897A: 52; 1897C: 360; 1902: 171); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 753); JANSSON (1940: 57); LUNDBLAD (1958: 472); LIKOVSKÝ (1963: 48).

Additional records: Madeira proper: 1 ex. (det. Zerche), Paúl da Serra, 27.XII.1987, leg. Gillerfors (cGil); 1 ex. (det. Zerche), Curral das Freiras, 25.III.1975, leg. Vit (MHNG).

Distribution: Europe, Madeira, Canaries. Madeira: Madeira proper.

Bionomics: *Oxypoda carbonaria* occurs in various kinds of decaying organic material: compost, hay, excrements of mammals and birds, etc. (HORION, 1967).

Remark: The species is missing in the list by BOIEIRO *et al.* (2001).

196. *Oxypoda lurida* Wollaston, 1857

References: WOLLASTON (1857: 179); FAUVEL (1897A: 52; 1897C: 360; 1902: 171); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 756); LUNDBLAD (1958: 472); LIKOVSKÝ (1963: 48); SMETANA (1970: 65); SERRANO & BORGES (1987: 57); ERBER & HINTERSEHER (1988: 156; misidentification); BORGES (1990: 105); ZERCHE (1996: 304); BOIEIRO *et al.* (2002: 21).

As *O. exoleta* Erichson, 1839 (misidentification): WOLLASTON (1865: 472); JANSSON (1940: 57).

Locus typicus: Madeira proper: Ribeira de Santa Luzia, upper extremety, Ribeira das Cales, and San Antonio da Serra [= Santo da Serra], head of Sta Cruz ravine.

Additional records: 3 exs., Rabaçal, 1150 m, *Erica* litter, 31.III.1993, leg. Assing (cAss); 1 ex., Terreiro da Luta, 1250 m, pine forest, 7.IV.1993, leg. Wunderle (cWun); 2 exs., Ribeira da Janela, 1100 m, edge of pond, flood debris, 25.III.1996, leg. Zerche (DEI).

Distribution: Mediterranean Region, Central Europe, Azores, Madeira, Canaries. Madeira: Madeira proper.

Bionomics: The species is found in various kinds of habitats, especially those more or less strongly influenced by human activity (gardens, parks, etc.).

Remark: The species is missing in the list by BOIEIRO *et al.* (2001). Part of the literature records of *O. lurida* may in fact refer to *O. magdalenae* Fagel (see below).

197. *Oxypoda magdalenae* Fagel, 1958

Reference: ASSING (2003D: 819f.).

As *Oxypoda lurida* Wollaston, 1857 (misidentification): ERBER & HINTERSEHER (1988: 156).

Records: Madeira proper: 7 exs., Ribeiro Frio, 850 m, laurisilva, 24.III.1996, leg. Assing (cAss); 1 ex., Ribeiro Frio, botanical garden, 900 m, 29.III.1996, leg. Zerche (DEI); 1 ex., Levada do Furado, Poço do Bezzerro, 32°43'47N, 16°52'02W, 800 m, 18.II.2003, leg. Lompe (cAss); 5 exs., Pico do Arieiro, 1600 m, stand of *Erica* sp. and *Vaccinium padifolium*, 26.III.1993, leg. Assing (cAss); 1 ex., Pico do Arieiro, 3.VIII.1999, leg. Oromí (cOro); 11 exs., Rabaçal, 1050 m, laurisilva, 31.III.1993, leg. Assing, Wunderle (cAss, cWun); 3 exs., same locality, 1000 m, 23.III.1996, leg. Assing (cAss); 1 ex., same locality, 950 m, 2.IV.1996, leg. Lompe (cAss); 5 exs., Rabaçal, 1150 m, *Erica* litter, 31.III.1993, leg. Assing (cAss); 3 exs., same data, but 1400 m (cAss); 1 ex., same data, but 1300 m, 27.III.1996 (cAss); 3 exs., Rabaçal, 1050 m, 18.-30.I.1999, leg. Lebenbauer (cAss); 6 exs., Rabaçal, 24.XII.1987, leg. Gillerfors (DEI, cGil); 6 exs., Rabaçal, 32°45'26N, 17°07'24W, 1000 m, 25.II.2003, leg. Lompe (cAss); 1 ex., Caramujo, 1220 m, Fayal-Brezal, 29.III.1993, leg. Wunderle (cWun); 4 exs., Estanquinhos, 15.III.2004, leg. Abmann (cAss); 12 exs., above Seixal, 550 m, laurisilva near stream, 31.III.1996, leg. Assing (DEI, cAss); 6 exs., Achada do Teixeira, 1350 m, stand of old *Erica* sp., 6.&7.IV.1993, leg. Wunderle (cWun); 1 ex., Caniço de Baixo, 80 m, window pane, 20.-27.IX.1990, leg. Pieper (cAss); 2 exs., same data, but 7.-20.V.1992; 1 ex., same data, but 15.-28.IX.1995 (cAss); 1 ex., Pico Ruivo, W-slope, 1850 m, 29.III.1996, leg. Zerche (DEI). Erber (pers. comm.) communicates an additional record: 1 ex., NW Machico, Levada do Caniço, 200 m, 16.XI.1999, leg. Kirschbaum (cErb).

Distribution: Mediterranean region, from northeastern Spain to Tunisia (TRONQUET, 1999); Madeira: Madeira proper. *Oxypoda magdalenae* was first recorded from Madeira only very recently (ASSING, 2003D).

Bionomics: The species inhabits the leaf litter of various kinds of woodland and shrubs. In Madeira it was found in the leaf litter of laurel woods and in stands of *Erica* sp. and *Vaccinium padifolium*. The species is evidently an active flyer; some specimens were observed at a window pane and on one occasion 19 specimens were collected from a red anorak (ERBER & HINTERSEHER, 1988; as *O. lurida*).

198. *Oxypoda* sp. 1

Records: Madeira proper: 1 ex., Câmara de Lobos, 350 m, flying, 31.III.1993, leg. Wunderle (cWun); 1 ex., Achada do Teixeira, 1350 m, 6.IV.1993, leg. Wunderle (cAss); 1 ex., Roseira, 700 m, 5.IV.1993, leg. Assing (cAss); 1 ex., Caniçal, 19.XII.1987, leg. Gillerfors (cGil).

Distribution: Spain, Morocco. Madeira: Madeira proper.

Remarks: It has not been possible to identify this species. It is not endemic to Madeira, since it also occurs in southern Spain and in Morocco (1 ex., Spain, Tarifa, XII.1995, leg. Poot, cWun; 1 ex., Morocco, Rif, N Taza, Laâtamna, Oued Larbâa river, 6.V.1998, leg. Ribera, cAss). All the examined specimens are females.

199. *Oxypoda* sp. 2

Record: Madeira proper: 1 ex., Ribeira Brava, 28.XII.1982, leg. Gillerfors (cGil).

Distribution: General distribution unknown. Madeira: Madeira proper.

Remarks: It has not been possible to identify this species. It is most unlikely to be endemic in Madeira, since it is fully winged, has not been found in natural habitats, and because its Madeiran congeners are all widespread, too.

200. *Parocyusa longitarsis* (Erichson, 1839)

References:

As *Chilopora longitarsis* (Stephens, 1832) (misidentification): WOLLASTON (1857: 171); BOIEIRO *et al.* (2001: 20; 2002: 20).

As *Ischnopoda longitarsis* (Stephens, 1832): WOLLASTON (1865: 456).

As *Calodera longitarsis* Erichson, 1839: FAUVEL (1897A: 51; 1897C: 351; 1902: 161); SCHMITZ (1897: 154).

As *Chilopora longitarsis* (Erichson, 1839): JANSSON (1940: 57); LUNDBLAD (1958: 472).

Additional records: Madeira proper: 3 exs., S Seixal, 16.-30.I.1999, leg. Lebenbauer (cAss); 1 ex., S Seixal, Chão de Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss).

Distribution: Europe, North Africa. Madeira: Madeira proper; the above specimens from the surroundings of Seixal represent the first records since Wollaston's time.

Bionomics: The species is found in damp habitats, especially banks of streams and rivers, lakeshores, but also in arable land.

Remarks: According to ERICHSON (1839), this species is neither congeneric nor conspecific with *Aleochara longitarsis* Stephens, 1832. Some recent authors attribute it to the genus *Chiloporata* Strand, 1935.

201. *Phloeopora corticalis* (Gravenhorst, 1802)

References: FAUVEL (1897A: 51; 1897C: 350; 1902: 160); SCHMITZ (1897: 154); JANSSON (1940: 22, 57); LUNDBLAD (1958: 472); BORGES (1990: 105); BOIEIRO *et al.* (2002: 21).

As *Phloeopora reptans* (Gravenhorst, 1806) (misidentification): WOLLASTON (1871A: 285).

Additional records: Madeira proper: 2 exs., Ribeiro Frio, 22.VI.1982, leg. Gillerfors (cGil, cAss); 2 exs., Supra Monte, 21.XII.1982, leg. Gillerfors (cGil); 3 exs., Serra de Água, Boca de Encumeada, leaf litter sifted, 21.III.2005, leg. Ausmeier (cAss); 2 exs., N Funchal, Passo de Poiso, under stones and under bark, 22.III.2005, leg. Ausmeier (cAss).

Distribution: West Palaearctic, North America?; Azores, Madeira, Canaries. Madeira: Madeira proper.

Bionomics: Like its congeners, *P. corticalis* is corticolous.

Remarks: The species is not listed by BOIEIRO *et al.* (2001).

[*Phloeopora teres* (Gravenhorst, 1802)]

References: MÉQUIGNON (1942: 26; 1946: 115); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 47); BORGES (1990: 105); ISRAELSON (1990: 3); BOIEIRO *et al.* (2002: 21).

Distribution: West Palaearctic. Azores, Madeira. MÉQUIGNON (1942) and BORGES (1990) also indicate the Canary Islands, but these records have not been confirmed; consequently, the species was omitted from the list by MACHADO & OROMÍ (2000).

Remarks: The species was first listed for Madeira – without reference – by MÉQUIGNON (1942); its presence in Madeira is here considered doubtful and it is deleted from the list of Madeiran

Staphylinidae. The species of *Phloeopora* have largely been confounded and misinterpreted (LOHSE, 1984; DAUPHIN, 1999).

202. *Phloeopora testacea* (Mannerheim, 1830)

References: JANSSON (1940: 57); LUNDBLAD (1958: 471); ERBER & HINTERSEHER (1988: 156, 187); BORGES & SERRANO (1989: 12: Madeira?); BORGES (1990: 105), BOIEIRO *et al.* (2002: 21).

As *P. angustiformis* Baudi, 1869 (misidentification, corresponding specimens in DEI examined): LIEBMANN (1939: 153); JANSSON (1940: 57); LUNDBLAD (1958: 471); BORGES (1990: 105); BOIEIRO *et al.* (2002: 21).

Additional records: Madeira proper: 1 ex., Lamaceiros Forest, 2 km WSW Portela, 4 km S Porto da Cruz, 13.IX.1998, leg. Schuh (cAss); 2 exs., Ribeira do Poço do Bezerro, 860 m, 12.IX.1992, leg. Erber (cErb); 1 ex., Caniço de Baixo, 80 m, window pane, 14.-20.IX.1989, leg. Pieper (cAss); 2 exs., Ribeiro Frio, 3.IV.1975, leg. Vit (cAss); 1 ex., Santo da Serra, 22.XII.1987, leg. Gillerfors (cGil); 1 ex., Santo da Serra, 700 m, 18.VIII.1983, leg. Mitter (cMit).

Distribution: West Palaearctic, ? North America; Azores, Madeira. BORGES (1990) also indicates the species for the Canaries, but without concrete reference; it is not listed by MACHADO & OROMÍ (2000).

Bionomics: ERBER & HINTERSEHER (1988) found the species under bark (once on dead *Juglans regia*).

Remarks: The species is not listed for Madeira by BOIEIRO *et al.* (2001) and SMETANA (2004B). It was first reported from Madeira by JANSSON (1940), but without references.

203. *Phytosus balticus* Kraatz, 1859

References: WOLLASTON (1865: 455); FAUVEL (1897A: 51; 1897C: 348; 1902: 157); SCHMITZ (1897: 154); JANSSON (1940: 56); LUNDBLAD (1958: 471).

As *Phytosus nigriventris* Kraatz, 1853 (synonym): WOLLASTON, 1857: 169.

Distribution: Western parts of Europe, Western Mediterranean. Canaries; Madeira: Porto Santo.

Bionomics: Littoral species; usually found on beaches under rotting debris.

Remarks: The species is not listed by BOIEIRO *et al.* (2001, 2002).

204. *Placusa pumilio* (Gravenhorst, 1802)

References: ERBER & HINTERSEHER (1988: 155, 186); BOIEIRO *et al.* (2002: 21).

As *Placusa atrata* (Sahlberg, 1834) (misidentification): LIEBMANN (1939: 153); JANSSON (1940: 56); LUNDBLAD (1958: 471).

Additional record: 1 ex., N Funchal, Passo de Poiso, under stones and under bark, 22.III.2005, leg. Ausmeier (cAss).

Distribution: Palaearctic. Madeira: Madeira proper.

Bionomics: Like its congeners, *P. pumilio* is corticolous; the species is mostly found under bark of deciduous trees (HORION, 1967). Several specimens were caught on the wing in the evening by ERBER & HINTERSEHER (*unpublished*).

Remark: The species is not listed for Madeira by BOIEIRO *et al.* (2001) and by SMETANA (2004B).

205. *Placusa tachyporoides* (Waltl, 1838)

References: FAUVEL (1897A: 50; 1897C: 323; 1902: 131); SCHMITZ (1897: 153); JANSSON (1940: 56); LUNDBLAD (1958: 471); ERBER & HINTERSEHER (1988: 155, 186); BOIEIRO *et al.* (2002: 21).

As *Homalota umbratilis* Wollaston, 1854 (synonym): WOLLASTON (1854: 554; 1857: 177; 1865: 469).

As *Atheta umbratilis*: Schmitz (1897: 154); JANSSON (1940: 57).

As *Homalota alutaria* Wollaston, 1857 (synonym): WOLLASTON (1857: 177; 1865: 469).

As *Atheta alutaria*: FAUVEL (1897A: 51; 1897C: 328); SCHMITZ (1897: 154); JANSSON (1940: 57).

As *Placusa infima* Erichson, 1839 (synonym): WOLLASTON (1871A: 292).

Distribution: Palaearctic, North America; Azores, Madeira: Madeira proper.

Bionomics: The species is common under bark.

Remark: The species is missing in the list by BOIEIRO *et al.* (2001).

206. *Stenomastax madeirae* Assing, 2003

References: ASSING (2003A: 539).

As *S. immigrator i. l.* (manuscript name): ERBER (1990: 151); BOIEIRO *et al.* (2002: 21).

Distribution: Madeira: Madeira proper; probably more widespread

Bionomics: All the known specimens have been collected at a window pane.

Remarks: The species was recorded as *Stenomastax immigrator i. l.* by ERBER (1990). Apparently, Israelson intended to describe the species, but the description was never published.

207. *Tinotus morion* (Gravenhorst, 1802)

References: JANSSON (1940: 57); LUNDBLAD (1958: 471); LIKOVSKÝ (1963: 47); BOIEIRO *et al.* (2002: 21).

As *Aleochara morion*: WOLLASTON (1854: 561; 1857: 183; 1865: 476); FAUVEL (1897A: 52; 1897C: 355; 1902: 165); SCHMITZ (1897: 154).

Additional records: Madeira proper: 2 exs., Caniço de Baixo, 80 m, 4.-25.IX.1986, leg. Pieper (cAss, cErb); 1 ex., same data, but 7.-13.IX.1989; 1 ex., same data, but 20.-27.IX.1990; 1 ex., same data, but 7.-20.V.1992 (cAss, cErb); 1 ex., Terreiro da Luta, 1250 m, pine forest, 7.IV.1993, leg. Wunderle (cWun). Porto Santo: 1 ex., locality not specified, 7.XI.1967, leg. Benick (cAss).

Distribution: Palaearctic, ? Central America; Canaries, Madeira: Madeira proper, Porto Santo.

Bionomics: The species occurs in decaying organic matter, especially in faeces.

Remark: In Madeira, the species had been recorded only once since Wollaston's time by LIKOVSKÝ (1963). It is missing in the list by BOIEIRO *et al.* (2001).

208. *Trichiusa immigrata* Lohse, 1984

Records: Madeira proper: 1 ex., Achada do Teixeira, N-slope, 1400 m, *Erica*, laurel trees, dead wood, sifted, 16.I.2001, leg. Schülke (cSch); 3 exs., Achada do Teixeira, 32°45'42N, 16°54'57W, 1600 m, 20.II.2003, leg. Lompe (cAss); 1 ex., S Seixal, Chão da Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss). Porto Santo: 1 ex., Pico Branco, W-slope, 430 m, sifted *Erica* litter, 1.IV.1996, leg. Zerche (DEI).

Distribution: Adventive species originating from the New World; introduced in Europe some decades ago. Widespread in Europe; also recorded from the Canary Islands (ASSING, 2000B, 2002). Madeira: Madeira proper and Porto Santo.

Bionomics: The species occurs in various kinds of decaying organic matter.

Remark: First record from Madeira.

209. *Xenomma convexifrons* Assing & Wunderle, 1996 (Plate IV, fig. 13, Fig. 28)

References: ASSING & WUNDERLE (1996B: 155, 162); BOIEIRO *et al.* (2002: 21; 2003: 56).

Locus typicus: Madeira proper: Pico do Arieiro, 1600 m.

Additional records: 4 exs., Madeira (locality not specified), leg. Franz (NHMW, cAss); 2 exs., Bica da Cana, 32°45'11N, 17°03'08W, 1550 m, 25.II.2003, leg. Lompe (cAss); 2 exs., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss); 1 ex., Ruivo do Paul, 1600-1640 m, N slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch); 3 exs., path from Achada do Teixeira to Pico Ruivo, 1700 m, N-slope, 29.III.1996, leg. Zerche (DEI).

Distribution: Endemic to Madeira proper (Fig. 28). Localities: Pico do Arieiro, Caramujo, Queimadas, Rabaçal, Ribeiro Frio, Fajã da Nogueira, Fonte Vermelha, Ribeiro Bonito, Pico do Jorge, Ruivo do Paul, Bica da Cana, Pico das Eirinhas, Pico Ruivo, Achada do Teixeira.

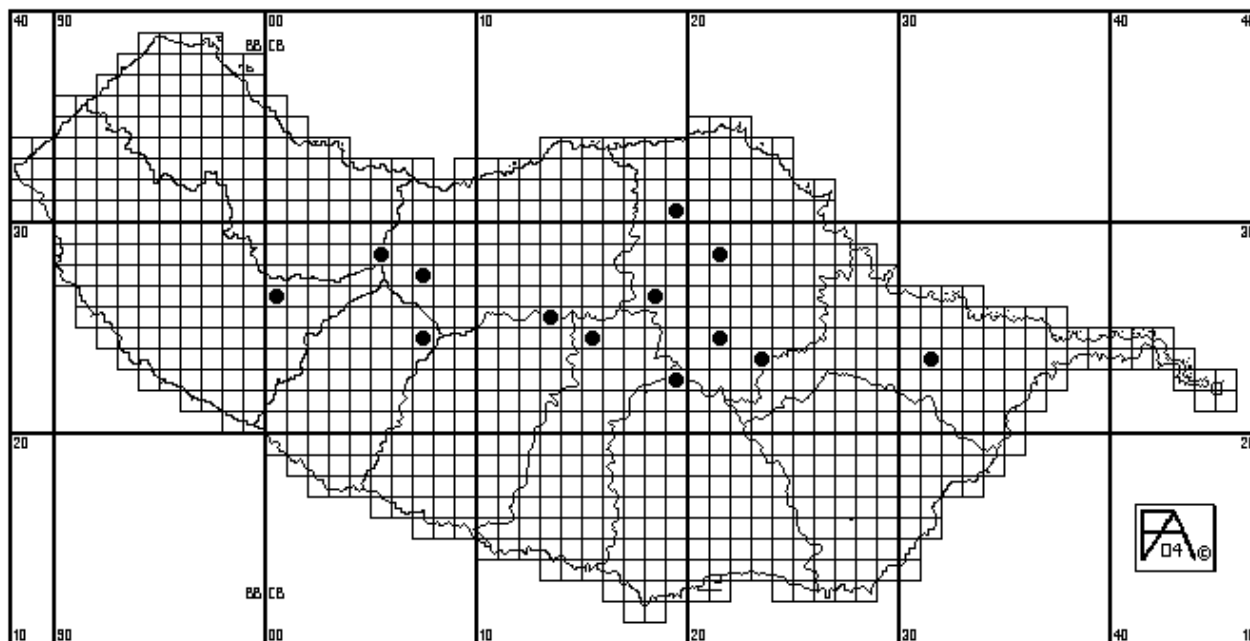


Fig. 28 - Distribution of *Xenomma convexifrons* Assing & Wunderle in Madeira.

Bionomics: *Xenomma convexifrons* is much rarer than the following species. It inhabits the litter layer of natural woodland (laurel woods) and of shrubs (*Erica* sp. and *Vaccinium padifolium*) at higher elevations (1000-1850 m) (ASSING & WUNDERLE, 1996B).

Remarks: The genus *Xenomma* is probably endemic to Madeira. Recently, species of *Xenomma* were also described from South America by PACE (1987, 1999B), but they are most unlikely to be congeneric with the Madeiran taxa. Like the following species, *X. convexifrons* is not listed by BOIEIRO *et al.* (2001).

210. *Xenomma planifrons* Wollaston, 1854 (Plate IV, fig. 14, Fig. 29)

References: WOLLASTON (1854: 544; 1857: 172; 1865: 457); FAUVEL (1897A: 51; 1897C: 352; 1902: 162); SCHMITZ (1897: 154); BERNHAUER & SCHEERPELTZ (1926: 747); LIEBMANN (1939: 154); BERNHAUER (1940: 9), JANSSON (1940: 57); LUNDBLAD (1958: 472); LIKOVSKÝ (1963: 48); SERRANO (1987B: 152); ERBER & HINTERSEHER (1988: 156); ASSING & WUNDERLE (1996B: 156, 162); BOIEIRO *et al.* (2002: 21; 2003: 56).

Locus typicus: Madeira proper, Cruzinhas.

Additional records: 13 exs., Ribeiro Frio, 800 m, 26.X.1997, leg. Lompe (cAss); 2 exs., Ribeiro Frio, 16.-30.I.1999, leg. Lebenbauer (cAss); 5 exs., Ribeiro Frio, botanical garden, 900 m, laurisilva, 24.&29.III.1996, leg. Zerche (DEI); 2 exs., Ribeiro Frio, 32°43'59N, 16°52'20W, 900 m, 18.II.2003, leg. Lompe (cAss); 2 exs., 2 km E Ribeiro Frio, Levada do Furado, 900 m, laurisilva, 24.III.1996, leg. Zerche (DEI); 2 exs., Levada do Furado, Ribeira do Poço do Bezerra, 32°43'47N, 16°52'02W, 800 m, 18.II.2003, leg. Lompe (cAss); 1 ex., Ribeiro Frio, Levada do Furado, leaf litter sifted, 18.III.2005, leg. Ausmeier (cAss); 5 exs., Achada do Teixeira, 1350 m, litter of *Erica* sp., 29.III.1996, leg. Zerche (DEI); 1 ex., Achada do Teixeira, 32°45'42N, 16°54'57W, 1600 m, 20.II.2003, leg. Lompe (cAss); 1 ex., Rio Silveira near Teixeira, Pico das Pedras, 1250 m, 18.III.2004, leg. Aßmann (cAss); 1 ex., W Queimadas, 900 m, 25.X.1997, leg. Lompe (cAss); 3 exs., Queimadas, Achada do Roque Ribeira da Silveira, 32°46'35N, 16°54'09W, 900 m, 28.II.2003, leg. Lompe (cAss); 1 ex., Encumeada, Folhadal, Levada do Norte, 1000 m, 28.X.1997, leg. Lompe (cAss); 2 exs., E Boca da Encumeada, Pico da Cabra, N-slope, moss, fern, *Erica*, *Rhododendron*, 1250 m, 11.I.2001, leg. Schülke (cSch); 1 ex., Serra de Água, Boca de Encumeada, leaf litter sifted, 21.III.2005, leg. Ausmeier (cAss); 2 exs., Rabaçal, 1000 m, 27.X.1997, leg. Lompe (cAss); 2 exs., Rabaçal, 1050 m, 16.-30.I.1999, leg. Lebenbauer (cAss); 5 exs., Rabaçal, 1000 m, laurisilva, 23.III.1996, leg. Zerche (DEI); 2 exs., same data, but litter of *Erica* sp. (DEI); 1 ex., same data, but laurisilva, 3.IV.1996 (DEI); 1 ex., Rabaçal, 32°45'26N, 17°07'24W, 1000 m, 25.II.2003, leg. Lompe (cAss); 7 exs., Ribeira da Janela, 1025 m, litter of *Erica* sp., 25.III.1996, leg. Zerche; 6 exs., same data, but 900 m, laurisilva (DEI); 1 ex., Fanal Lagoa, 32°48'35N, 17°08'41W, 1025m, flood debris, 27.II.2003, leg. Lompe (cAss); 1 ex., Ruivo do Paul, 1600-1640 m, N-slope, *Erica*, fern, grass, rock niches, 21.I.2001, leg. Schülke (cSch); 11 exs., S Seixal, 16.-30.I.1999, leg. Lebenbauer (cAss); 1 ex., path from Encumeada to Pico do Jorge, 1300 m, laurisilva, 26.III.1996, leg. Zerche (DEI); 1 ex., Pico do Jorge, 32°44'57N, 16°58'48W, 2.III.2003, leg. Lompe (cAss); 3 exs., Pico das Eirinhas, 32°45'22N, 16°57'39W, 1500 m, 2.III.2003, leg. Lompe (cAss); 2 exs., Ribeira do Seixal, 500 m, laurisilva, 31.III.1996, leg. Zerche (DEI); 1 ex., S Seixal, Chão da Cancela, 32°47'23N, 17°06'30W, 500 m, 1.III.2003, leg. Lompe (cAss); 3 exs., Cabeço da Esmoutada, 32°49'07N, 17°08'59W, 900 m, 27.II.2003, leg. Lompe (cAss).

Distribution: Endemic to Madeira proper (Fig. 29): Rabaçal, Pico da Tina, Fajã da Nogueira, Ribeira do Seixal (SW Seixal), Chão da Cancela, Cabeço da Esmoutada, Queimadas, Ribeiro Frio,

Levada do Furado, Bica da Cana, Ruivo do Paul, Caramujo, Ribeira da Janela, Fanal, Pico do Arieiro, Encumeada, Pico do Jorge, Pico das Eirinhas, Pico da Cabra, Roseira.

Bionomics: *Xenomma planifrons* is hygrophilous and rather common in the litter layer of woodland and shrubs; it has been found at altitudes of 550-1600 m. Teneral adults and larvae were observed in early spring (March, April) (ASSING & WUNDERLE, 1996B).

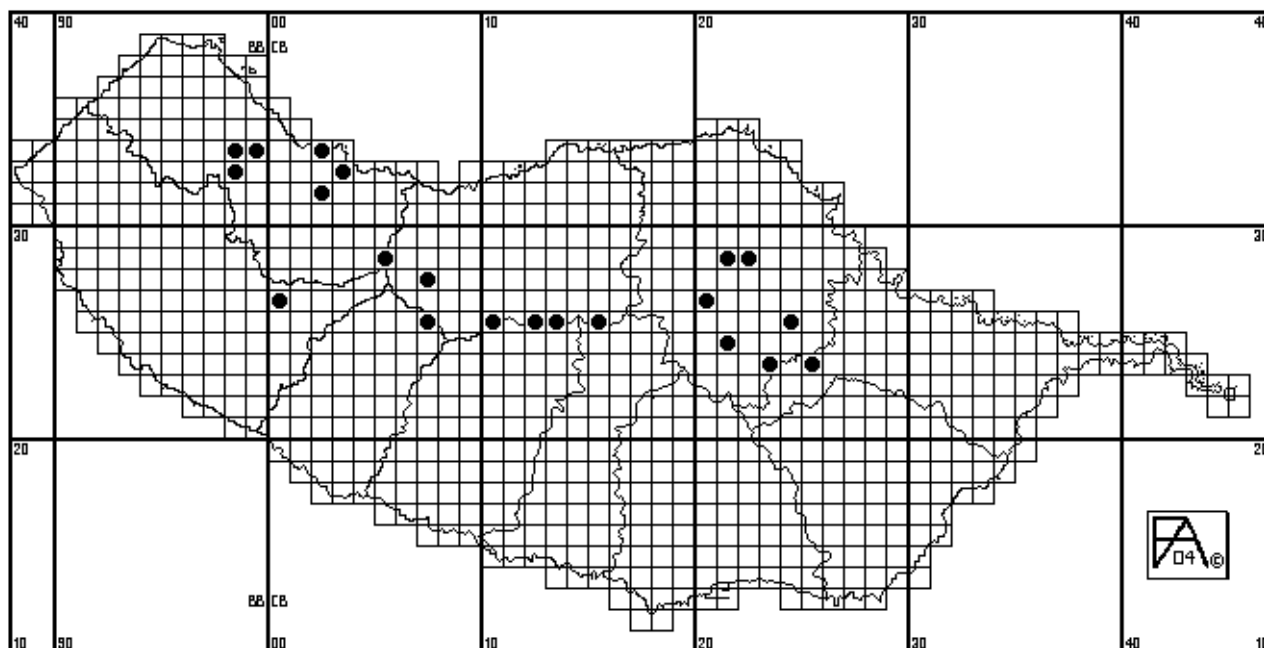


Fig. 29 - Distribution of *Xenomma planifrons* (Wollaston) in Madeira.

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Index to scientific names

A

Achenium 16, 49
Actobius 62
advena (*Oxytelus*) 34
aequivocus (*Astenus*) 50
aequivocus (*Mecognathus*) 50
aequivocus (*Sunius*) 50
aethiops (*Ocypus*) 17, 62
aethiops (*Pseudocypus*) 62
affinis (*Rugilus*) 54
affinis (*Stilicus*) 54
agilis (*Philonthus*) 72
Alapsodus 77
albovillosa (*Aleochara*) 8, 96
Aleochara 8, 18, 95, 96, 97, 98, 132, 134, 147
Aleocharinae 8, 18, 95
Aloconota 12, 18, 98, 99, 100, 101, 166
Alpinia 124
alutaceus (*Platystethus*) 38
alutaria (*Atheta*) 134
alutaria (*Homalota*) 134
amicula (*Atheta*) 18, 103
Amischa 18, 102
amnigena (*Atheta*) 100
amnigena var. *β maderensis* (*Homalota*) 100
ampliata (*Metopsia*) 15, 21
ampliatum (*Phloeobium*) 21
anale (*Somatium*) 126
analis (*Amischa*) 18, 102
analis (*Atheta*) 102
analis (*Homalota*) 102
analis (*Oligota*) 19, 126, 127
angustatus (*Astenus*) 50
angustatus (*Gyrophypnus*) 16, 59, 60
angustatus (*Mecognathus*) 50
angustatus (*Sunius*) 50
Anotylus 15, 32, 33, 34, 38
Anthobium 26
apicalis (*Lithocharis*) 52
apicalis (*Medon*) 16, 52
apicata (*Oligota*) 126
arieiroensis (*Geostiba*) 18, 113, 114
arieiroensis (*Othius*) 17, 65, 66
armitagei (*Aleochara*) 97
Astenus 16, 49, 50
aterrimus (*Philonthus*) 57
Atheta 8, 12, 13, 18, 19, 98, 99, 100, 101, 102, 103, 104,
 105, 106, 107, 108, 109, 110, 112, 119, 123, 124,
 126, 134, 166
atlantidum (*Atheta*) 106

atomarius (*Proteinus*) 15, 21
atramentaria (*Atheta*) 18, 103
atramentaria (*Homalota*) 103
atrata (*Placusa*) 133
atriceps (*Tachyporus*) 92
atriceps ab. *signifer* (*Tachyporus*) 92
atriceps var. *signifer* (*Tachyporus*) 92

B

baculifer (*Othius*) 17, 65, 66, 162
balticus (*Phytosus*) 19, 133
basale (*Achenium*) 49
bicacanaensis (*Geostiba*) 18, 114, 120, 123, 166
bilineata (*Aleochara*) 96
bilineatus (*Carpelimus*) 15, 35
bilineatus (*Trogophloeus*) 35
bimaculatus (*Astenus*) 16, 49
bimaculatus (*Mecognathus*) 49
bimaculatus (*Sunius*) 49
binotata (*Aleochara*) 18, 95
biplagiatum (*Ischnosoma*) 17, 79
bipustulata (*Aleochara*) 95
bipustulatus (*Philonthus*) 71
Bisnius 16, 56, 71
Bolitobius 80, 81
brancomontis (*Geostiba*) 13, 18, 115
brevicornis (*Othius*) 66
brevipes (*Lithocharis*) 5, 6, 54
brunneus (*Stenus*) 5, 6, 43
brunneus (*Tachyporus*) 91
Bryaxis 15

C

Cafius 77
caligicola (*Geostiba*) 18, 115
Calodera 132
cambrica (*Aloconota*) 100
canariensis (*Oligota*) 19, 127
canariensis (*Philonthus*) 57
capillaricornis (*Habrocerus*) 17, 94
carbonaria (*Oxyroda*) 19, 130
Cardiola 113
carli (*Geostiba*) 119
caroli (*Ocypus*) 65
caroli (*Staphylinus*) 5, 6, 64, 65
Carpelimus 15, 16, 29, 35, 36, 37
caucasicus (*Tachyporus*) 17, 88
celer (*Tachyporus*) 17, 89, 90, 164
cephalotes (*Bisnius*) 16, 56
Chilopora 132
chimaera (*Astenus*) 16, 49

<i>chimaera (Mecognathus)</i>	49
<i>Chloecharis</i>	51
<i>Chloeocharis</i>	51
<i>chrysomelinus (Tachyporus)</i>	89, 90
<i>cicindeloides (Stenus)</i>	16, 41
<i>Cilea</i>	17, 79
<i>clavicorne (Homalium)</i>	27
<i>clavicorne (Omalius)</i>	27
<i>clavicornis (Aleochara)</i>	18, 95
<i>clavicornis (Mycetopus)</i>	84
<i>clavicornis (Paraphloeostiba)</i>	15, 27
<i>clavicornis (Phloeonomus)</i>	27
<i>clavicornis (Xylostiba)</i>	27
<i>clientula (Atheta)</i>	19, 105, 109, 110
<i>clientula (Homalota)</i>	110
<i>cognatus (Philonthus)</i>	17, 69
<i>collaris (Tachinus)</i>	88
<i>complanatus (Anotylus)</i>	15, 32
<i>complanatus (Oxytelus)</i>	32
<i>concinna (Falagria)</i>	125
<i>concinnum (Homalium)</i>	29
<i>concinus (Myrmecocephalus)</i>	19, 125
<i>concinus (Philonthus)</i>	69
<i>concinus (Xylodromus)</i>	15, 29
<i>Conosoma</i>	84, 86, 87
<i>Conosomus</i>	87
<i>Conurus</i>	84, 86, 87
<i>convexifrons (Xenomma)</i>	19, 135, 136, 166
<i>Coproporus</i>	17, 79
<i>Cordalia</i>	18, 113
<i>coriaria (Atheta)</i>	18, 104
<i>coriaria (Homalota)</i>	104
<i>cornutus (Platystethus)</i>	38
<i>cornutus var. beta alutaceus (Platystethus)</i>	38
<i>corticalis (Phloeopora)</i>	19, 132
<i>corticinus (Carpelimus)</i>	16, 35
<i>corticinus (Tachinus)</i>	88
<i>corticinus (Trogophloeus)</i>	35
<i>crassicornis (Atheta)</i>	18, 104
<i>Creophilus</i>	16, 56
<i>cupreus (Ocybus)</i>	63
<i>currens (Homalota)</i>	110
<i>curtipennis (Quedius)</i>	17, 74
<i>Cypha</i>	18, 113

D

<i>debilicornis (Chloecharis)</i>	51
<i>debilicornis (Chloeocharis)</i>	51
<i>debilicornis (Hypomedon)</i>	16, 51
<i>debilicornis (Lithocharis)</i>	51
<i>debilicornis (Medon)</i>	51
<i>debilis (Philonthus)</i>	70
<i>decipiens (Amischa)</i>	18, 102
<i>degener (Platystethus)</i>	16, 38
<i>Delopsis</i>	32
<i>devillei</i>	29

<i>dilutipennis (Atheta)</i>	104
<i>discoideus (Philonthus)</i>	17, 70
<i>dispar (Tachyporus)</i>	17, 89, 90
<i>dissimilis (Heterothops)</i>	60
<i>dissimilis var. brunneipennis (Heterothops)</i>	60
<i>diversa (Aleochara)</i>	96
<i>Dolicaon</i>	51

E

<i>ebeninus (Philonthus)</i>	70
<i>elegans (Stenus)</i>	41
<i>Emus</i>	56
<i>endogea (Geostiba)</i>	18, 116, 166
<i>ericicola (Geostiba)</i>	18, 116, 117
<i>Euplectus</i>	15, 23, 24
<i>Eusphalerum</i>	15, 26
<i>exiguus (Carpelimus)</i>	36
<i>exiguus (Trogophloeus)</i>	36
<i>exilis (Carpelimus)</i>	16, 36
<i>exilis (Trogophloeus)</i>	36

F

<i>Falagria</i>	113, 125
<i>fenestratus (Philonthus)</i>	17, 70, 71
<i>fenestratus a. concolor (Philonthus)</i>	71
<i>filiforme (Xenomma)</i>	117
<i>filiformis (Geostiba)</i>	18, 117, 118, 166
<i>filiformis (Philonthus)</i>	62
<i>filiformis (Sipalia)</i>	117
<i>fimetarius (Philonthus)</i>	71
<i>flavicornis (Oligota)</i>	123
<i>formicarum (Geostiba)</i>	18, 111, 118, 119, 166
<i>formicarum (Sipalia)</i>	110, 117, 118
<i>formicarum (Xenomma)</i>	118
<i>fortunatarum (Ocybus)</i>	17, 63
<i>fortunatorum (Staphylinus)</i>	63
<i>fossor (Platystethus)</i>	39
<i>fracticornis (Gyrohypnus)</i>	16, 60
<i>fulgidus (Gauropterus)</i>	16, 59
<i>fulvescens (Stenus)</i>	47
<i>funebri (Aleochara)</i>	18, 96
<i>fungi (Atheta)</i>	19, 104, 105, 109, 110
<i>fuscula (Lithocharis)</i>	52

G

<i>Gabrius</i>	16, 57, 58
<i>Gabronthus</i>	16, 58
<i>gagatina (Atheta)</i>	18, 105
<i>Gauropterus</i>	16, 59
<i>gayndahensis (Paraphloeostiba)</i>	8, 15, 27
<i>Geostiba</i>	8, 12, 13, 14, 18, 19, 111, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 166
<i>glareosa (Delopsis)</i>	32
<i>glareosus (Anotylus)</i>	15, 32, 33
<i>glareosus (Oxytelus)</i>	32
<i>globulifer (Staphylinus)</i>	77

<i>globulifer (Tasgius)</i>	77
<i>gracilis (Astenus)</i>	50
<i>gracilis (Sunius)</i>	50
<i>graminicola (Geostiba)</i>	18, 117, 119
<i>granaria (Oligota)</i>	127
<i>granulatum (Omalius)</i>	28, 29
<i>granulosa (Aloconota)</i>	18, 98, 99, 166
<i>granulosa (Atheta)</i>	98
<i>granulosa (Homalota)</i>	98
<i>gregaria (Aloconota)</i>	18, 99
<i>gregaria (Atheta)</i>	99
<i>gregaria (Homalota)</i>	99
<i>gridellii ibericum (Pseudobium)</i>	16, 54
<i>guttula (Stenus)</i>	16, 41, 42
<i>Gyrophypnus</i>	16, 59, 60

H

Habrocerinae.....	17, 94
<i>Habrocerus</i>	17, 94
<i>haligena (Atheta)</i>	18, 105
<i>haligena (Homalota)</i>	105
<i>halophilus (Trogophloeus)</i>	37
<i>hartungii (Achenium)</i>	16, 49
<i>harwoodi (Atheta)</i>	18, 105
<i>heeri (Stenus)</i>	16, 42, 43, 47, 160
<i>heeri var. β (Stenus)</i>	47
<i>heres (Gabrius)</i>	57, 58
<i>hesperius (Lepidophallus)</i>	16, 61
<i>hesperius (Xantholinus)</i>	61
<i>hesperus (Xantholinus)</i>	61
<i>Heterothops</i>	8, 16, 60, 61
<i>hispanicus (Quedius)</i>	76
<i>Holobus</i>	19, 123
<i>Homalium</i>	26, 27, 28, 29, 30
<i>Homalota</i>	98, 99, 100, 101, 102, 103, 104, 105, 106, 109, 110, 123, 124, 126, 134
<i>humile (Philorhinum)</i>	28
<i>humile (Philorinum)</i>	28
<i>huttoni (Trichophya)</i>	17, 93
<i>hydropathicus (Stenus)</i>	41
<i>Hydrosmecta</i>	19, 123, 124
<i>Hypocyptus</i>	113
<i>Hypomedon</i>	16, 51, 54, 55

I

<i>ignoratus (Holobus)</i>	19, 123
<i>immigrata (Trichiusa)</i>	19, 135
<i>immigrator (Stenomastax)</i>	8, 134
<i>immucronata (Atheta)</i>	18, 106
<i>impressicollis (Lispinus)</i>	31
<i>impressicollis (Nacaeus)</i>	8, 15, 31
<i>indigena (Lithocharis)</i>	53
<i>indigena (Medon)</i>	16, 53, 162
<i>inflata (Oligota)</i>	128
<i>insecta (Aloconota)</i>	99
<i>insecta (Atheta)</i>	99

<i>insignis (Atheta)</i>	18, 106, 107, 166
<i>insignis (Homalota)</i>	106
<i>insignitus (Anotylus)</i>	15, 33
<i>insignitus (Oxytelus)</i>	33
<i>intermedius (Euplectus)</i>	15, 23, 24
<i>irregularis (Nacaeus)</i>	31
<i>Ischnoglossa</i>	19, 124
<i>Ischnopoda</i>	132
<i>Ischnosoma</i>	17, 79, 80
<i>israelsoni (Sipalia)</i>	117

J

<i>jansoni (Othius)</i>	17, 66, 67, 162
<i>johnsoni (Mycetoporus)</i>	17, 81, 83, 164
<i>johnsoni ab. lubricus (Mycetoporus)</i>	81
<i>johnsoni var. lubrica (Mycetoporus)</i>	81
<i>johnsoni var. lubricus (Mycetoporus)</i>	81
<i>juengeri (Atheta)</i>	108
<i>jurgans (Philonthus)</i>	17, 71

K

<i>karsteni (Euplectus)</i>	15, 23
-----------------------------------	--------

L

<i>laevicollis (Quedius)</i>	75
<i>lathrobioides (Neobisnius)</i>	17, 62
<i>Lathrobium</i>	52
<i>laticollis (Atheta)</i>	106
<i>lauricola (Geostiba)</i>	18, 117, 119, 121, 166
<i>leileri (Atheta)</i>	18, 107, 108
<i>leileri (Sipalia)</i>	108
<i>Lepidophallus</i>	16, 61
<i>Leptacinus</i>	16, 61, 69
<i>Leptobium</i>	16, 51
<i>Leptusa</i>	124
<i>Leucoparyphus</i>	79
<i>levicollis (Quedius)</i>	17, 75
<i>liebei (Gyrophypnus)</i>	59
<i>liebei (Xantholinus)</i>	59
<i>lindebergi (Aleochara)</i>	18, 96
<i>lindrothi (Geostiba)</i>	18, 119, 120
<i>lindrothi (Sipalia)</i>	119
<i>linearis (Leptacinus)</i>	61
<i>linearis (Xantholinis)</i>	78
<i>linearis (Xantholinus)</i>	78
<i>Lispinus</i>	31
<i>Lithocharis</i>	5, 6, 16, 51, 52, 53, 54, 55
<i>liitoreus (Sepedophilus)</i>	87, 88
<i>lividipennis (Homalota)</i>	126
<i>lividipennis (Nehemitropia)</i>	19, 126
<i>Lobrathium</i>	16, 52
<i>longelytrata (Astenus)</i>	50
<i>longelytratus (Astenus)</i>	50
<i>longicornis (Atheta)</i>	18, 108
<i>longicornis (Homalota)</i>	109
<i>longicornis (Megarthrus)</i>	15, 21, 160

<i>longicornis (Mycetoporus)</i>	80
<i>longicornis (Philonthus)</i>	17, 71
<i>longicornis (Spatulonthus)</i>	72
<i>longicornis (Philonthus)</i>	71
<i>longipes (Falagria)</i>	125
<i>longitarsis (Calodera)</i>	132
<i>longitarsis (Chilopora)</i>	132
<i>longitarsis (Ischnopoda)</i>	132
<i>longitarsis (Parocyusa)</i>	19, 132
<i>longiventris (Xantholinus)</i>	17, 78
<i>longula (Atheta)</i>	123, 124
<i>longula (Homalota)</i>	123, 124
<i>longula (Hydrosmecta)</i>	19, 123
<i>longula var. maderae (Atheta)</i>	124
<i>longula var. maderae (Homalota)</i>	124
<i>Lordithon</i>	17, 80, 81
<i>lundbladi (Euplectus)</i>	15, 23, 24
<i>lurida (Oxypoda)</i>	19, 130, 131
<i>luridipennis (Atheta)</i>	18, 109
<i>luridipennis (Homalota)</i>	109
<i>lusitanicus (Bryaxis)</i>	15, 23
<i>lusitanicus (Sepedophilus)</i>	17, 84, 86
<i>luticola (Homalota)</i>	109
<i>lyonessius (Astenus)</i>	16, 50

M

<i>madeiras (Stenomastax)</i>	9, 19, 134
<i>Madeirostiba</i>	12, 19, 124, 125, 166
<i>maderae (Alapsodus)</i>	77
<i>maderae (Scopaeus)</i>	55
<i>maderae (Staphylinus)</i>	5, 6, 77
<i>maderae (Tasgius)</i>	77
<i>maderense (Atheta)</i>	8, 112
<i>maderensis (Aloconota)</i>	18, 100
<i>maderensis (Gabrius)</i>	57
<i>maderensis (Stenus)</i>	43, 44
<i>magdalena (Oxypoda)</i>	19, 131
<i>maritima (Myrmecopora)</i>	19, 126
<i>maritima (Tachyusa)</i>	126
<i>maritima (Xenusa)</i>	126
<i>marshami (Conosoma)</i>	86
<i>marshami (Sepedophilus)</i>	86
<i>maxilloso (Creophilus)</i>	16, 56
<i>maxilloso (Emus)</i>	56
<i>maxilloso (Staphylinus)</i>	56
<i>Mayetia</i>	15, 24, 25
<i>Mecognathus</i>	49, 50
<i>Medon</i>	12, 16, 51, 52, 53, 54, 55
<i>Megarthritis</i>	8, 15, 21
<i>melanaria (Homalota)</i>	126
<i>melanocephala (Lithocharis)</i>	55
<i>memnonius (Trogophloeus)</i>	36
<i>metasternale (Anthobium)</i>	26
<i>metasternale (Eusphalerum)</i>	15, 26
<i>Metopsia</i>	8, 15, 21
<i>minutus (Heterothops)</i>	16, 60

<i>minyops (Pselaphus)</i>	15, 25
<i>moesta (Aleochara)</i>	18, 96, 97
<i>moesta var. funebris (Aleochara)</i>	96
<i>monticola (Conosoma)</i>	86
<i>monticola (Conurus)</i>	86, 87
<i>monticola (Sepedophilus)</i>	17, 86
<i>montivagans (Atheta)</i>	19, 105, 109
<i>montivagans (Homalota)</i>	109
<i>morion (Aleochara)</i>	134
<i>morion (Tinotus)</i>	19, 134
<i>moscosoensis (Mayetia)</i>	15, 24, 25
<i>muensteri (Oligota)</i>	19, 128
<i>multipunctatum (Lathrobium)</i>	52
<i>multipunctatum (Lobrathium)</i>	52
<i>multipunctum (Lathrobium)</i>	52
<i>multipunctum (Lobrathium)</i>	16, 52
<i>Mycetoporus</i>	8, 12, 17, 79, 80, 81, 82, 83, 84, 85
<i>Myrmecocephalus</i>	19, 125
<i>Myrmecopora</i>	19, 126

N

<i>Nacaeus</i>	8, 15, 31
<i>nanus (Trogophloeus)</i>	35
<i>negligens (Atheta)</i>	105, 109
<i>Nehemitropia</i>	19, 126
<i>Neobisnius</i>	17, 62
<i>nevesi (Mayetia)</i>	15, 24
<i>nigriceps (Quedius)</i>	5, 6, 17, 75
<i>nigriceps maderensis (Quedius)</i>	75
<i>nigripennis (Sepedophilus)</i>	17, 87
<i>nigrita (Carpelimus)</i>	16, 36, 37
<i>nigrita (Trogophloeus)</i>	36
<i>nigritulus (Gabrius)</i>	16, 57
<i>nigritulus (Philonthus)</i>	57
<i>nigriventris (Phytosus)</i>	133
<i>nigrofusca (Amischa)</i>	18, 102
<i>niromaculatus (Astenus)</i>	50
<i>nitens (Platystethus)</i>	16, 39
<i>nitidifrons (Anotylus)</i>	15, 34
<i>nitidifrons (Oxytelus)</i>	34
<i>nitidulus (Anotylus)</i>	15, 34
<i>nitidulus (Oxytelus)</i>	34
<i>nitidulus (Tachyporus)</i>	17, 91
<i>noctis (Geostiba)</i>	18, 120

O

<i>obliquepunctata (Homalota)</i>	101
<i>obscura (Cardiola)</i>	113
<i>obscura (Cordalia)</i>	18, 113
<i>obscura (Falagria)</i>	113
<i>obscurcellus (Pseudomedon)</i>	5, 6, 16, 54
<i>obscuraoeneus (Pseudocypus)</i>	63
<i>obscuraoeneus schatzmayri (Ocybus)</i>	17, 63, 64
<i>obscuraoeneus schatzmayri (Staphylinus)</i>	63
<i>obsoleta (Lithocharis)</i>	54
<i>obsoletus (Hypomedon)</i>	54

<i>obsoletus</i> (<i>Medon</i>)	54
<i>obsoletus</i> (<i>Pseudomedon</i>)	54
<i>occulta</i> (<i>Geostiba</i>)	18, 120, 121
<i>ocellatum</i> (<i>Homalium</i>)	26
<i>ocellatum</i> (<i>Omaliium</i>)	15, 26
<i>ochracea</i> (<i>Lithocharis</i>)	16, 51
<i>ochraceus</i> (<i>Medon</i>)	51
<i>ochropus</i> (<i>Philonthus</i>)	69
<i>Ocypus</i>	5, 6, 8, 17, 62, 63, 64, 65, 77
<i>olens</i> (<i>Ocypus</i>)	17, 64
<i>Oligota</i>	8, 19, 123, 126, 127, 128, 129
Omaliinae	15, 26, 29
<i>Omaliium</i>	15, 26, 27, 28, 29
<i>orbiculatus</i> (<i>Rugilus</i>)	16, 54, 55
<i>orbiculatus</i> (<i>Stilicus</i>)	54
<i>orbis</i> (<i>Neobisnius</i>)	62
<i>orphana</i> (<i>Atheta</i>)	105, 109
Osoriinae	15, 31
<i>ossium</i> (<i>Stenus</i>)	16, 44, 45
<i>Othius</i>	8, 9, 12, 17, 65, 66, 67, 68
<i>Outachyusa</i>	19, 130
<i>Oxypoda</i>	19, 130, 131
Oxytelinae	15, 29, 32
<i>Oxytelus</i>	16, 32, 33, 34, 37, 38

P

<i>pachycephalus</i> (<i>Philonthus</i>)	56
Paederinae	16, 49
<i>paivae</i> (<i>Dolicoon</i>)	51
<i>paivae</i> (<i>Leptobium</i>)	16, 51, 162
<i>pallidipennis</i> (<i>Phacophallus</i>)	17, 69
<i>pallipes</i> (<i>Quedius</i>)	76
<i>pallipes</i> <i>ab. secundus</i> (<i>Quedius</i>)	76
<i>palustris</i> (<i>Atheta</i>)	18, 110
<i>palustris</i> (<i>Homalota</i>)	110
<i>pandellei curticollis</i> (<i>Bryaxis</i>)	15, 23
<i>Paraphloeostiba</i>	8, 15, 27, 30
<i>Parocyusa</i>	19, 132
<i>parumpunctatus</i> (<i>Leptacinus</i>)	69
<i>parumpunctatus</i> (<i>Phacophallus</i>)	17, 69
<i>parva</i> (<i>Oligota</i>)	19, 128
<i>parvicornis</i> (<i>Philonthus</i>)	72
<i>pavens</i> (<i>Homalota</i>)	101
<i>pedemontanus</i> (<i>Ocypus</i>)	5, 6, 17, 64, 65
<i>pedicularius</i> (<i>Sepedophilus</i>)	86, 87
<i>Phacophallus</i>	17, 69
<i>philonthoides</i> (<i>Aloconota</i>)	18, 100
<i>philonthoides</i> (<i>Atheta</i>)	100
<i>philonthoides</i> (<i>Homalota</i>)	100
<i>Philonthus</i>	8, 17, 56, 57, 58, 62, 69, 70, 71, 72, 73, 74
<i>Philorhinum</i>	28
<i>Philorinum</i>	15, 28
<i>Phloeobium</i>	21
<i>Phloeonomus</i>	15, 27, 28, 29, 30
<i>Phloeopora</i>	19, 132, 133
<i>Phyllodrepa</i>	29

<i>Phytosus</i>	19, 133
<i>piceus</i> (<i>Oxytelus</i>)	16, 37
<i>Placusa</i>	19, 133, 134
<i>planifrons</i> (<i>Aloconota</i>)	18, 101
<i>planifrons</i> (<i>Xenomma</i>)	19, 136, 137, 166
<i>Platystethus</i>	16, 38, 39
<i>plebeja</i> (<i>Atheta</i>)	110
<i>politus</i> (<i>Philonthus</i>)	17, 72
<i>portosanctanus</i> (<i>Mycetoporus</i>)	17, 82, 83, 164
<i>portosantoi</i> (<i>Geostiba</i>)	13, 18, 115, 121, 166
<i>procerulus</i> (<i>Actobius</i>)	62
<i>procerulus</i> (<i>Neobisnius</i>)	62
<i>procerulus</i> (<i>Neobisnius</i>)	62
<i>procerulus</i> <i>var. filiformis</i> (<i>Neobisnius</i>)	62
<i>prolixa</i> (<i>Ischnoglossa</i>)	19, 124
<i>prolixa</i> (<i>Stichoglossa</i>)	124
<i>pronus</i> (<i>Mycetoporus</i>)	81, 84
<i>propinquus</i> (<i>Hypomedon</i>)	55
<i>propinquus</i> (<i>Medon</i>)	55
<i>propinquus</i> (<i>Sunius</i>)	16, 55
Proteininae	15, 21
<i>Proteinus</i>	15, 21
<i>providus</i> (<i>Stenus</i>)	8, 16, 46
<i>pruinus</i> (<i>Remus</i>)	17, 77
Pselaphinae	8, 15, 23
<i>Pselaphus</i>	15, 25
<i>Pseudobium</i>	16, 54
<i>Pseudocypus</i>	62, 63
<i>pseudolaticollis</i> (<i>Atheta</i>)	106
<i>pseudolongicorne</i> (<i>Ischnosoma</i>)	79
<i>pseudolongicornis</i> (<i>Ischnosoma</i>)	80
<i>pseudolongicornis</i> (<i>Mycetoporus</i>)	79
<i>Pseudomedon</i>	5, 6, 16, 54
<i>puberula</i> (<i>Aleochara</i>)	18
<i>pubescens</i> (<i>Conosoma</i>)	84, 87
<i>pubescens</i> (<i>Conosomus</i>)	87
<i>pubescens</i> (<i>Conurus</i>)	84, 87
<i>pulchellus</i> (<i>Coproporus</i>)	17, 79
<i>pulchra</i> (<i>Atheta</i>)	19, 105, 109
<i>pumilio</i> (<i>Oligota</i>)	128
<i>pumilio</i> (<i>Placusa</i>)	19, 133
<i>punctipennis</i> (<i>Philonthus</i>)	73
<i>punctipennis</i> (<i>Phloeonomus</i>)	15, 28, 29
<i>punctulata</i> (<i>Oligota</i>)	19, 129
<i>punctulatus</i> (<i>Gyrophypnus</i>)	60
<i>punctulatus</i> (<i>Xantholinus</i>)	60
<i>pusillima</i> (<i>Oligota</i>)	19, 129
<i>pusillum</i> (<i>Homalium</i>)	28, 29
<i>pusillus</i> (<i>Carpelimus</i>)	29, 36
<i>pusillus</i> (<i>Leptacinus</i>)	16, 61
<i>pusillus</i> (<i>Phloeonomus</i>)	15, 28, 29
<i>pusillus</i> (<i>Tachyporus</i>)	89
<i>pusillus</i> (<i>Trogophloeus</i>)	29, 36

Q

<i>quadriscopulatus</i> (<i>Tachyporus</i>)	17, 92
---	--------

Quedius 5, 6, 17, 74, 75, 76

R

raptoria (Outachyusa) 19, 130
raptoria (Tachyusa) 130
rectangulus (Philonthus) 17, 72
reducta (Cypha) 18, 113
reductus (Hypocyptus) 113
Remus 17, 77
reptans (Phloeopora) 132
rigidicornis (Philonthus) 71
riparius (Trogophloeus) 35
ripicola (Lithocharis) 53
ripicola (Medon) 16, 53
rogeri (Stenus) 46
ruficollis (Lithocharis) 55
Rugilus 16, 54, 55
ruivomontis (Geostiba) 18, 114, 121
ruivomontis (Othius) 17, 67
ruivomontis (Stenus) 16, 46, 47, 160

S

sanguinolenta (Atheta) 18, 110, 112, 166
sanguinolenta (Homalota) 110
Scopaeus 16, 55
sculpturatus (Oxytelus) 38
sculptus (Anotylus) 38
sculptus (Oxytelus) 16, 37
scybalarius (Philonthus) 71
selvagensis (Oligota) 19, 129
Sepedophilus 8, 17, 84, 86, 87, 88
sericeum (Conosoma) 87
sericeus (Cafius) 77
sexstriatus (Euplectus) 15, 24
sharpiana (Atheta) 110
sharpiana (Homalota) 110
signatus (Euplectus) 24
silphoides (Cilea) 17, 79
silphoides (Leucoparyphus) 79
silphoides (Tachinus) 79
similis (Stenus) 41
simplicicollis (Carpelimus) 16, 37
simplicicollis (Trogophloeus) 37
simplicifrons (Quedius) 17, 76
simplicifrons ab. rufulus (Quedius) 76
simulans (Gabrius) 16, 57, 58, 162
simulans (Philonthus) 57
Sipalia 8, 108, 110, 117, 118, 119, 124
sodalis (Homalota) 104
solutus (Tachyporus) 88
Somatium 126
sordida (Atheta) 126
sordidum (Phlorinum) 15, 28
sordidus (Bisnius) 16, 56
sordidus (Philonthus) 56
soror (Amischa) 102

Spatulonthus 72
spec. (Aloconota) 18, 101
spec. 1 (Oxyypoda) 19, 131
spec. 2 (Oxyypoda) 19, 131
spinus (Platystethus) 16, 39
Staphylininae 16, 56
Staphylinus 5, 6, 56, 63, 64, 65, 77
Steninae 16, 41
Stenomastax 8, 9, 19, 134
Stenus 5, 6, 8, 9, 12, 16, 41, 42, 43, 44, 45, 46, 47, 48
Stichoglossa 124
Stilicus 54
strigulosus (Othius) 17, 67, 68, 162
subopacus (Scopaeus) 16, 55
subterranea (Geostiba) 19, 121, 122
sulcata (Myrmecopora) 126
sulcifrons (Aloconota) 18, 101
sulcifrons (Atheta) 101
Sunius 16, 49, 50, 55

T

Tachinus 79, 88
Tachyporinae 17, 79
tachyporoides (Placusa) 19, 134
Tachyporus 17, 88, 89, 90, 91, 92
Tachyusa 126, 130
tantilla (Homalota) 102
Tasgius 5, 6, 17, 77
temeris (Geostiba) 19, 122
tenebrarum (Geostiba) 19, 122
teres (Phloeopora) 132
testacea (Phloeopora) 19, 133
testaceum (Conosoma) 86, 87
testaceum (Sepedophilus) 87
testaceus (Conurus) 87
testaceus (Sepedophilus) 17, 87
thermarum (Gabronthus) 16, 58
thermarum (Philonthus) 58
thinobioides (Atheta) 123
thinobioides (Homalota) 123
Thinodromus 16, 39
thoracicus (Bolitoibius) 80
thoracicus (Lordithon) 17, 80
Tinotus 19, 134
torquatum (Anthobium) 26
torquatum (Eusphalerum) 26
transversalis (Thinodromus) 16, 39
transversalis (Trogophloeus) 40
Trichiusa 19, 135
Trichophya 17, 93
Trichophyinae 17, 93
tricolor (Homalium) 30
tricolor (Lithocharis) 55
tricolor (Phloeonomus) 29
tricolor (Xylostiba) 15, 29
trigonocephalus (Phacophallus) 69

<i>trinotata</i> (<i>Atheta</i>)	18, 112
<i>trinotatus</i> (<i>Bolitobius</i>)	81
<i>trinotatus</i> (<i>Lordithon</i>)	81
<i>tristis</i> (<i>Quedius</i>)	75
<i>Trogophloeus</i>	29, 35, 36, 37, 40
<i>truncorum</i> (<i>Alpinia</i>)	124
<i>truncorum</i> (<i>Homalota</i>)	124
<i>truncorum</i> (<i>Leptusa</i>)	124
<i>truncorum</i> (<i>Madeirostiba</i>)	19, 124, 125, 166
<i>truncorum</i> (<i>Sipalia</i>)	124
<i>turbidus</i> (<i>Philonthus</i>)	17, 73

U

<i>umbratilis</i> (<i>Atheta</i>)	134
<i>umbratilis</i> (<i>Homalota</i>)	134
<i>umbratilis</i> (<i>Philonthus</i>)	17, 73
<i>undulatus</i> (<i>Stenus</i>)	9, 16, 46, 47, 160
<i>uvida</i> (<i>Myrmecopora</i>)	126

V

<i>vaccinicola</i> (<i>Geostiba</i>)	19, 123
<i>varians</i> (<i>Philonthus</i>)	72
<i>varians</i> var. <i>beta agilis</i> (<i>Philonthus</i>)	72
<i>ventralis</i> (<i>Philonthus</i>)	17, 74
<i>ventralis</i> ssp. <i>proximus</i> (<i>Philonthus</i>)	74

<i>ventralis</i> var. <i>proximus</i> (<i>Philonthus</i>)	74
<i>verna</i> (<i>Aleochara</i>)	18, 98
<i>vestitus</i> (<i>Othius</i>)	66
<i>vicentensis</i> (<i>Medon</i>)	16, 53, 162
<i>vilis</i> (<i>Lithocharis</i>)	16, 52
<i>vilis</i> (<i>Medon</i>)	52

W

<i>waldeni</i> (<i>Sipalia</i>)	117
<i>winkleri</i> (<i>Ocypus</i>)	77
<i>winkleri</i> (<i>Tasgius</i>)	5, 6, 17, 77
<i>wollastoni</i> (<i>Mycetoporus</i>)	17, 84, 85, 164
<i>wollastoni</i> (<i>Philonthus</i>)	73
<i>wollastoni</i> (<i>Stenus</i>)	16, 47, 48, 160

X

<i>Xantholinus</i>	17, 59, 60, 61, 78
<i>Xenomma</i>	8, 12, 19, 117, 118, 135, 136, 137, 166
<i>Xenusa</i>	126
<i>Xylodromus</i>	15, 29
<i>Xylostiba</i>	15, 27, 29, 30

Z

<i>zealandica</i> (<i>Atheta</i>)	18, 112
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Plate I, figs. 1-5 - Endemic Staphylinidae of the Madeira archipelago (Proteininae and Steninae): 1 - *Megarthus longicornis* Wollaston; 2 - *Stenus heeri* Wollaston; 3 - *Stenus ruivomontis* Assing & Wunderle; 4 - *Stenus undulatus* Wollaston; 5 - *Stenus wollastoni* Gemminger & Harold. Scale bar: 1.0 mm.

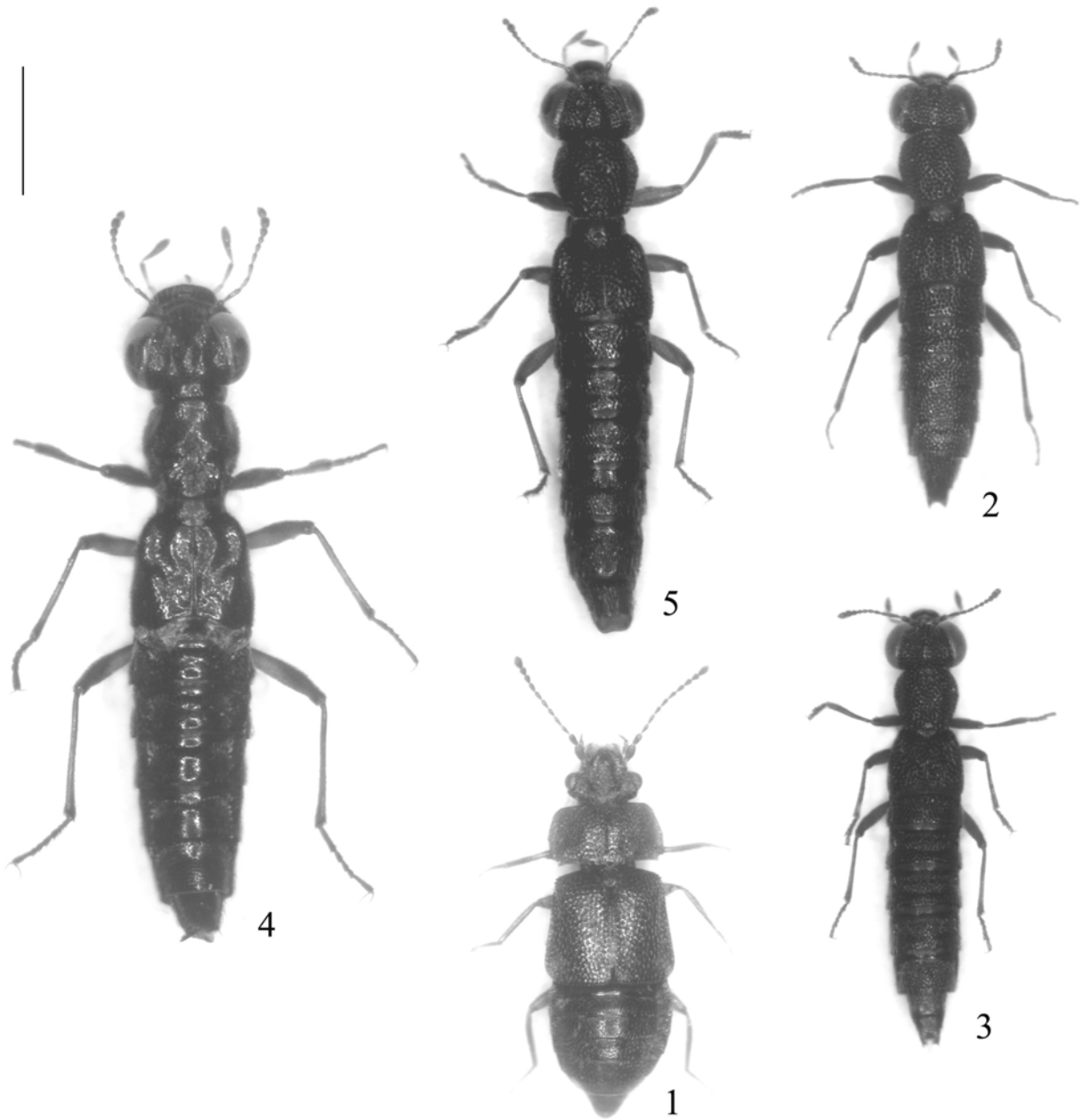


Plate II, figs. 1-7 - Endemic Staphylinidae of the Madeira archipelago and the Selvagens (Paederinae and Staphylininae): 1 - *Leptobium paivae* Wollaston; 2 - *Medon indigena* (Wollaston); 3 - *Medon vicentensis* Serrano; 4 - *Gabrius simulans* (Wollaston); 5 - *Othius baculifer* Assing & Wunderle; 6 - *Othius jansoni* Wollaston; 7 - *Othius strigulosus* Wollaston. Scale bar: 5.0 mm.

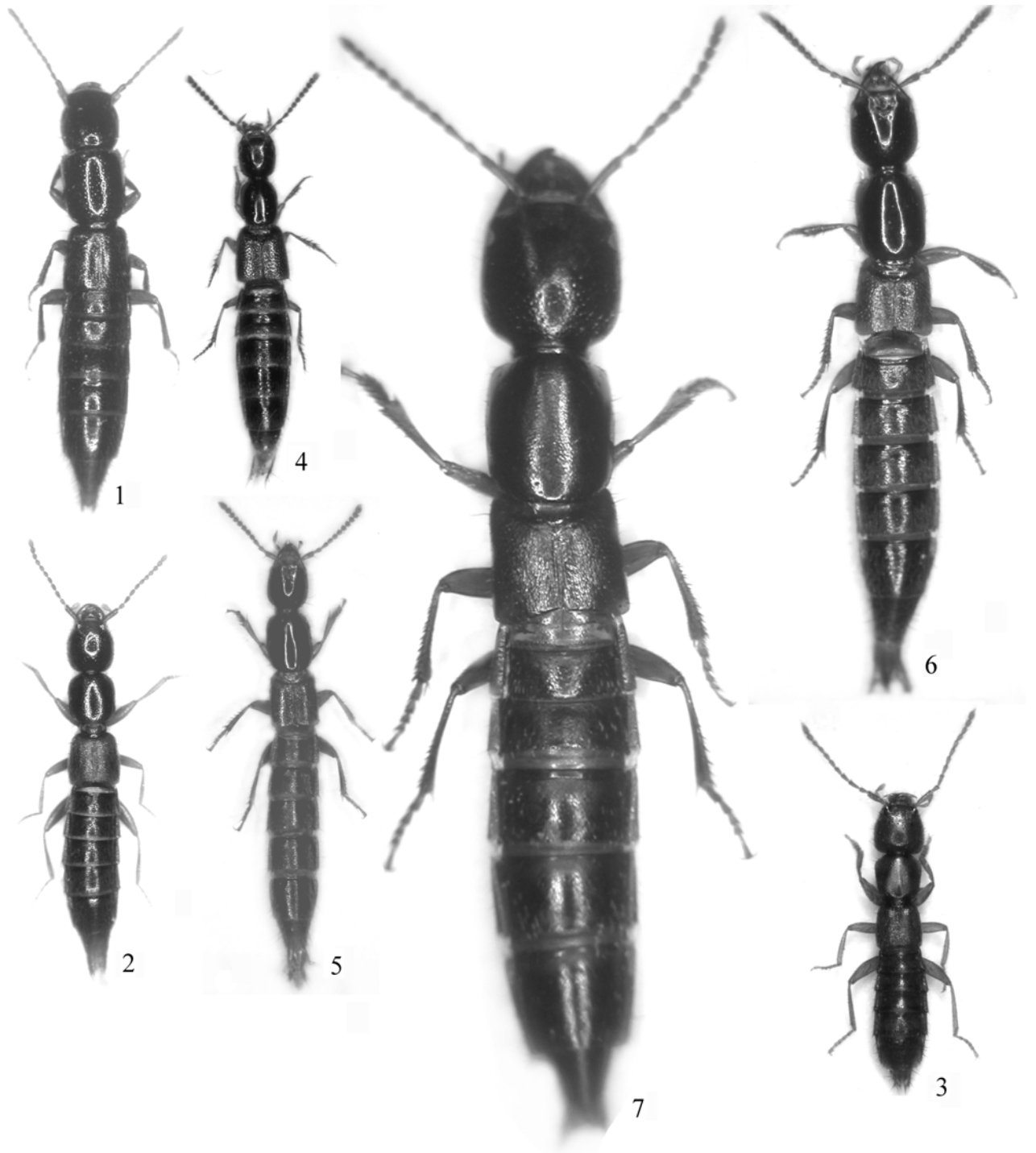


Plate III, figs. 1-4 - Endemic Staphylinidae of the Madeira archipelago (Tachyporinae): 1 - *Mycetoporus johnsoni* Wollaston; 2 - *Mycetoporus portosanctanus* Palm; 3 - *Mycetoporus wollastoni* Fauvel; 4 - *Tachyporus celer* Wollaston. Scale bar: 1.0 mm.

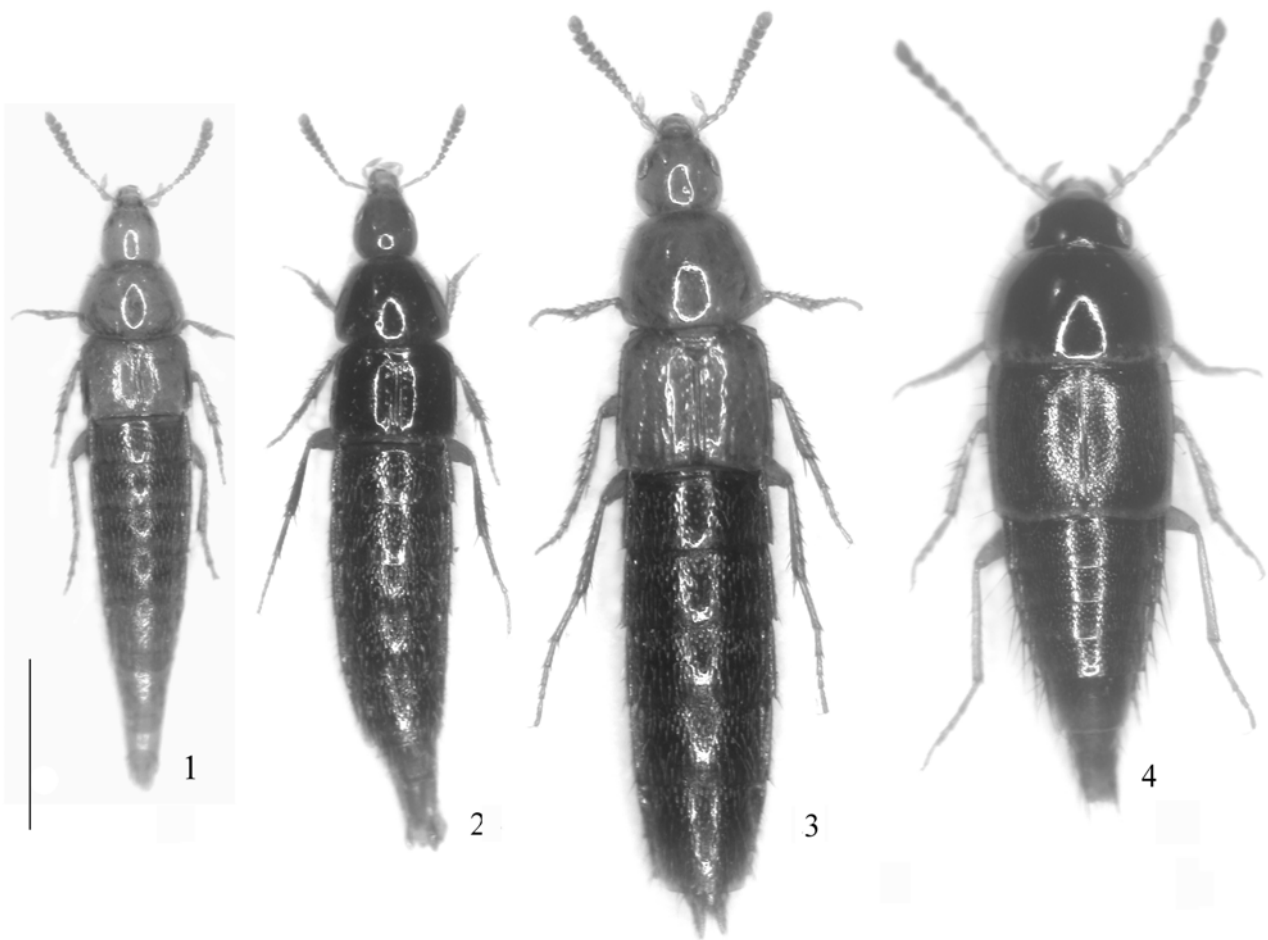


Plate IV, figs. 1-14 - Endemic Staphylinidae of the Madeira archipelago (Aleocharinae): 1 - *Aloconota granulosa* (Wollaston); 2 - *Atheta insignis* (Wollaston); 3 - *Atheta sanguinolenta* (Wollaston); 4 - *Geostiba bicacanaensis* Assing & Wunderle; 5 - *Geostiba endogea* Assing & Wunderle; 6 - *Geostiba filiformis* (Wollaston); 7 - *Geostiba formicarum* (Wollaston); 8 - *Geostiba lauricola* Assing & Wunderle; 9 - *Geostiba occulta* Assing & Wunderle; 10 - *Geostiba portosantoi* Franz; 11 - *Maiostiba truncorum* (Wollaston); 12 - *Stenomastax madeirae* Assing; 13 - *Xenomma convexifrons* Assing & Wunderle; 14 - *Xenomma planifrons* (Wollaston). Scale bar: 1.0 mm.

