

GROUND BEETLES OF MACARONESIA, AN OVERVIEW (COLEOPTERA, CARABIDAE)

By ANTONIO MACHADO¹

With 1 table

Our knowledge of the Carabid fauna of the Macaronesian archipelagoes has increased considerably in the last few years, due to the contributions of several authors: GILLERFORS (1986), BORGES (1992), ISRAELSON (1990) and BORGES & OROMÍ (1991) for the Azores; SERRANO (1987), ERBER & WHEATER (1988), ERBER & HINTERSEHER (1988, 1990) and ERBER (1990) for Madeira; SERRANO (1983, 1987) and ERBER & HINTERSEHER (1987) for the Salvages; MACHADO (1992) with a revisionary work, for the Canaries; and FRANZ (1987), GEISTHARDT (1982, 1988) and MATEU (1990) for the Cape Verde.

The present contribution is a compilation of the species recorded in the works mentioned, offering a synoptic list of all Carabid beetles inhabiting Macaronesia, in its geographical sense. No such global list has been published, if we exclude the classic WOLLASTON'S (1865) "Coleoptera Atlantidum" where the Cape Verde was missing, and the individual lists incorporated in MACHADO (1992).

Only the Canarian fauna can be considered as revised; our knowledge of the Azorean and Cape Verdean is rather accurate, but Madeiran fauna requires a revision, in particular, some conflictive genera such as *Trechus*.

The catalogue below has been compiled following the faunal lists included in Machado's monograph (1992), with some additions and corrections.

Additions: *Cedrurum azoricus* s.l. BORGES & SERRANO (in litt.) for the Azores, and *Paradromius linearis* for Madeira, recorded by ERBER (1990).

Corrections: MACHADO (o.c.) recorded *Acupalpus brunneipes* for Madeira, but it was not included in the faunal list (all *Acupalpus* species in Madeira should be thoroughly revised). He also mentioned *Ocydromus obliquum* for Azores, but BORGES (in press) found that the species is in reality *O. semipunctatum* (Donovan).

Deletions: *Ocydromus siculum* was mentioned for Madeira by JUNK (1938) probably

¹ IBCER, Urb. Agüere 2, 38208 La Laguna, Tenerife

based on the assumption of NETOLITZKY (1918) that *atlanticum* could be the western race of *siculum*, and other authors have considered *atlanticum* as a "Mischart". Based on MÜLLER-MOTZFELD'S (1986) revision of the *siculum*-complex, it is better to remove the species from the Madeiran list. *Acupalpus flavicollis* (Sturm) listed by BORGES (1990) with no further reference has been also removed from the present catalogue, as well as several Canarian species which have an uncertain status: *Dyschirius uytenboogaarti* KLYNSTRA 1937, *Bembidion inconspicuum* WOLLASTON, 1864, *Stenolophus lanzarotensis* KLYNSTRA 1937 and *Syntomus brevipennis* (WOLLASTON, 1864).

CONCLUSIONS

The total number of carabids species present in Macaronesia is 380, 19 of which are clearly introduced ones. Using these numbers one could deduct a native fauna of 361 species, but the amount of introduced species is probably higher than stated. A total of 28 species have developed inter- or intransular subspecies, which total 68. Therefore, if one adds species and subspecies as separate faunistic elements, the gross total is 420.

Table I summarizes the composition of the fauna of each archipelago.

TABLE I - Faunistic elements in the Carabidae of Macaronesia

CONCEPT	Azores	Madeira	Salvages	Canaries	Cape Verde	Macaronesia
SPECIES TOTAL	48	109	9	226	61	380
introduced species	11	9	1	12	5	19
NATIVE SPECIES	37	100	8	214	56	361
<i>Endemic</i>	15	58	2	143	16	241
monotypic species	14	50	2	128	12	207
polytypic species	1	6	-	13	1	23
end. geogr. races	-	2	-	2	3	11
<i>Macaronesian</i>	2	6	2	7	2	
monotypic	-	1	-	1	-	
polytypic species	2	5	2	6	2	
<i>Non endemic</i>	20	36	4	64	38	120
European	3	7	-	1	-	8
Palaearctic	13	8	1	6	-	19
Mediterranean	2	16	1	34	7	41
North-African	1	3	2	19	3	21
African	-	1	-	3	5	8
Sahelian	1	1	-	1	22	22
Afro-tropical	-	-	-	-	1	1

The degree of endemicity of the fauna is highest in the Canaries (70%), decreasing in Madeira (63%), Salvages (50%), Azores (46%) and Cape Verde (32%). The little archipelago of Selvagens has a poor carabid faunula, and could be considered as an appendix of either the Canarian or Madeiran fauna. There is a trend from North to South in which the percentage of Palearctic and European elements decrease, while the importance of North-African and Ethiopian species increases. The Mediterranean element is maximum in the intermediate archipelagoes: the Canaries and Madeira.

Each archipelago has a rather "closed" fauna; that is, very few species inhabit two (8%) or more than two (5%) archipelagoes at one time. Most of them are introduced or widely spread common species (winged). However, there is also a small group of "Macaronesian" species (usually with archipelago-endemic vicariant subspecies): *Aepus gracilicornis*, *Ocydromus schmidtii*, *Paradromius insularis*, *Dromius angustus*, etc.

The carabid fauna of the Azores, Madeira and the Canaries can be regarded as a subset of the West-Palearctic fauna, with a notorious entity and affinity between the endemic component of Madeira and the Canaries. The proportion of Cape Verdean paleoendemics which show relations to past common colonization with the other archipelagoes is today very small and the main character of the fauna is clearly Ethiopian. Therefore, the geographical Macaronesia can be split in two zoogeographical realms, the Palearctis and Ethiopis.

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LIST OF THE CARABID BEETLES OF MACARONESIA

Carabinae

<i>Caminara chlorostica cognata</i> (CHAUDOIR, 1850)	V	Cape Verdean geographical race
<i>Caminara imbricata</i> (KLUG, 1832)	V	Sahel-Sudanian
<i>Campalita olivieri</i> (DEJEAN, 1831)	ACV	North-African
<i>Campalita maderae maderae</i> (FABRICIUS, 1775)	MC	West-Mediterranean
<i>Ctenosta senegalensis</i> (DEJEAN, 1831)	V	Sahel-Sudanian
<i>Carabus abbreviatus</i> BRULLÉ, 1835	C	Canarian
<i>Carabus faustus faustus</i> BRULLÉ, 1838	C	Canarian subspecies
<i>Carabus faustus cabrerai</i> ENDERLEIN, 1929	C	Canarian subspecies
<i>Carabus coarctatus</i> BRULLÉ, 1838	C	Canarian

Nebrinae

<i>Leistus ellipticus</i> WOLLASTON, 1857	M	Madeiran
<i>Leistus nubivagus</i> WOLLASTON, 1864	C	Canarian
<i>Nebria dilatata</i> DEJEAN, 1836	C	Canarian
<i>Nebria currax</i> WOLLASTON, 1864	C	Canarian

Notiophilinae

- Notiophilus geminatus* DEJEAN, 1831 MC West-Mediterranean
Notiophilus quadripunctatus DEJEAN, 1826 AM West-European

Lorocerinae

- Elliptosoma wollastoni* JAVET, 1852 M Madeiran

Siagoninae

- Siagona europaea* DEJEAN, 1826 C Indo-Mediterranean

Scaritinae

- Scarites buparius* (FORSTER, 1771) C West-Mediterranean
Scarites abbreviatus abbreviatus DEJEAN, 1825 M Madeiran subspecies
Scarites abbreviatus humeralis WOLLASTON, 1854 M Madeiran subspecies
Scarites abbreviatus cimensis COCKERELL, 1923 M Madeiran subspecies
Scarites abbreviatus desertarum COCKERELL, 1923 M Madeiran subspecies
Dyschirius numidicus PUTZEYS, 1846 C Saharian
Dyschirius chalybeus PUTZEYS, 1846 C Mediterranean
Dyschirius pauxillus WOLLASTON, 1864 C Northwest-African
Dyschirius zanzibaricus CHAUDOIR, 1878 V Sahel-Sudanian
Dyschirius auriculatus WOLLASTON, 1867 CV Mediterranean
Dyschirius samharicus PUTZEYS, 1873 CV Saharian-Indian

Apotominae

- Apotomus angusticollis* MÜLLER, 1946 C North-African
Apotomus chaudoirii WOLLASTON, 1860 MC African
Apotomus velox CHAUDOIR, 1876 V Sahelian

Broscinae

- Broscus crassimargo* WOLLASTON, 1865 C Canarian
Broscus rutilans WOLLASTON, 1862 C Canarian
Broscus glaber (BRULLÉ, 1838) C Canarian

Trechinae

- Canarobius chusyae* MACHADO, 1987 C Canarian
Canarobius oromii MACHADO, 1987 C Canarian
Thalassophilus azoricus OROMÍ & BORGES, 1991 A Azorean
Thalassophilus caecus JEANNEL, 1938 M Madeiran
Thalassophilus pieperi ERBER, 1990 M Madeiran
Thalassophilus whitei WOLLASTON, 1854 MC Macaronesian
Thalassophilus subterraneus MACHADO, 1990 C Canarian
Spelaeovulcania canariensis MACHADO, 1987 C Canarian

<i>Aepus gracilicornis gracilicornis</i> WOLLASTON, 1860	AM	Macaronesian geographical race
<i>Aepus gracilicornis desertarum</i> MATEU & COLAS, 1959	M	Madeiran geographical race
<i>Aepus gracilicornis meridionalis</i> MACHADO, 1992	C	Canarian geographical race
<i>Perileptus areolatus</i> (CREUTZER, 1799)	C	West-Paleartic
<i>Perileptus wollastoni</i> JEANNEL, 1925	V	Cape Verdean
<i>Perileptus hesperidum</i> JEANNEL, 1925	V	Sahelian?
<i>Trechus torretassoi</i> JEANNEL, 1937	A	Azorean
<i>Trechus montanheiorum</i> OROMÍ & BORGES, 1991	A	Azorean
<i>Trechus jorgensis</i> OROMÍ & BORGES, 1991	A	Azorean
<i>Trechus terceiranus</i> MACHADO, 1988	A	Azorean
<i>Trechus picoensis</i> MACHADO, 1988	A	Azorean
<i>Trechus maderae</i> FRANZ, 1981	M	Madeiran
<i>Trechus alecrinensis</i> FRANZ, 1981	M	Madeiran
<i>Trechus lundbladi</i> JEANNEL, 1938	M	Madeiran
<i>Trechus flavomarginatus</i> WOLLASTON, 1854	M	Madeiran
<i>Trechus debilis</i> WOLLASTON, 1871	M	Madeiran
<i>Trechus laevis</i> WOLLASTON, 1857	M	Madeiran
<i>Trechus signatus</i> WOLLASTON, 1857	M	Madeiran
<i>Trechus dilutus</i> WOLLASTON, 1854	M	Madeiran
<i>Trechus custos custos</i> WOLLASTON, 1854	M	Madeiran subspecies
<i>Trechus custos quadricollis</i> WOLLASTON, 1854	M	Madeiran subspecies
<i>Trechus alticola</i> WOLLASTON, 1854	M	Madeiran
<i>Trechus cautus</i> WOLLASTON, 1854	M	Madeiran
<i>Trechus nigrocruciatius</i> WOLLASTON, 1854	M	Madeiran
<i>Trechus umbricola</i> WOLLASTON, 1854	M	Madeiran
<i>Trechus wollastoni</i> JEANNEL, 1922	M	Madeiran
<i>Trechus minyops</i> WOLLASTON, 1862	M	Madeiran
<i>Trechus lindbergi</i> COLAS, 1963	M	Madeiran
<i>Trechus laurisilvae</i> FRANZ, 1981	M	Madeiran (bon.sp.?)
<i>Trechus ribeiranus</i> FRANZ, 1981	M	Madeiran (bon.sp.?)
<i>Trechus rabaçalensis</i> FRANZ, 1981	M	Madeiran (bon.sp.?)
<i>Trechus obtusus obtusus</i> ERICHSON, 1837	M	West-Paleartic
<i>Trechus obtusus pecoudianus</i> JEANNEL, 1952	M	Madeiran geographical race (?)
<i>Trechus gomerenis</i> FRANZ, 1986	C	Canarian
<i>Trechus laureticola</i> JEANNEL, 1936	C	Canarian
<i>Trechus cabrerai</i> (JEANNEL, 1936)	C	Canarian
<i>Trechus machadoensis</i> FRANZ, 1985	C	Canarian
<i>Trechus uytenboogaarti</i> JEANNEL, 1936	C	Canarian
<i>Trechus fortunatus</i> JEANNEL, 1927	C	Canarian
<i>Trechus tenoensis</i> ISRLAELSON & PALM, 1979	C	Canarian
<i>Trechus felix</i> WOLLASTON, 1864	C	Canarian
<i>Trechus antonii</i> JEANNEL, 1936	C	Canarian

<i>Trechus flavocircumdatu</i> JEANNEL, 1922	C	Canarian
<i>Trechus minioculatus</i> MACHADO, 1987	C	Canarian
<i>Trechus flavocinctus flavocinctus</i> JEANNEL, 1922	C	Canarian subspecies
<i>Trechus flavocinctus gomerae</i> JEANNEL, 1936	C	Canarian subspecies
<i>Trechus deterrentus</i> WOLLASTON, 1864	C	Canarian
<i>Trechus flavolimbatus</i> WOLLASTON, 1863	C	Canarian
<i>Trechus benaharitus</i> MACHADO, 1990	C	Canarian
<i>Anchotrechus punctipennis</i> JEANNEL, 1927	C	Canarian
<i>Lymnastis gaudini gaudini</i> JEANNEL, 1929	C	Canarian subspecies
<i>Lymnastis gaudini gomerae</i> FRANZ, 1965	C	Canarian subspecies
<i>Lymnastis subovatus</i> MACHADO, 1992	C	Canarian
<i>Lymnastis thoracicus</i> MACHADO, 1992	C	Canarian
<i>Lymnastis niloticus</i> MOTSCHOULSKY, 1862	V	North-African
<i>Tachys centromaculatus</i> WOLLASTON, 1864	CV	West-Mediterranean
<i>Tachys dimidiatus</i> MOTSCHOULSKY, 1849	C	West-Mediterranean
<i>Tachys fortunatus</i> MACHADO, 1989	C	¿Canarian?
<i>Tachys pallidulus</i> ANTOINE, 1943	C	Northwest-African
<i>Tachys micros</i> FISCHER, 1828	A	European
<i>Tachys bisulcatus</i> NICOLAI, 1822	M	Euro-Mediterranean
<i>Tachys bistriatus</i> DUFTSCHMID, 1812	M	Mediterranean
<i>Tachys algericus</i> LUCAS, 1848	C	West-Mediterranean
<i>Tachys impressipennis atomarius</i> (WOLLASTON, 1867)	V	Cape Verdean geographical race
<i>Tachylopha feai</i> (ALLUAUD, 1925)	V	Sahelo-Sudanian
<i>Tachyura lucasi</i> DUVAL, 1852	MV	Mediterranean
<i>Tachyura variabilis</i> (CHAUDOIR, 1876)	V	Sahel-Sudanian
<i>Tachyura inaequalis</i> (KOLENATI, 1845)	A	Mediterranean
<i>Tachyura curvimana</i> (WOLLASTON, 1854)	AMCV	North-African-Sahelian
<i>Tachyura haemorrhoidalis</i> (PONZA, 1805)	C	West-Mediterranean
<i>Tachyta nana s.l.</i> (GYLLENSVÄRD, 1810)	C	Palaearctic (i)
<i>Asaphidion delatorrei</i> UYTENBOOGAART, 1928	C	Canarian
<i>Orzolina thalassophila</i> MACHADO, 1987	C	Canarian
<i>Metallina ambigua</i> (DEJEAN, 1831)	A	West-Mediterranean (i)
<i>Bembidion varium</i> (OLIVIER, 1792)	C	Palaearctic
<i>Bembidion mixtum</i> (SCHAUM, 1863)	V	African
<i>Bembidion vicinum</i> (LUCAS, 1846)	C	Mediterranean
<i>Bembidion iricolor</i> BEDEL, 1879	C	Atlantic-Mediterranean
<i>Bembidion biguttatum</i> FABRICIUS, 1779	M	Euro-siberian
<i>Bembidion semipunctatum</i> (DONOVAN, 1806)	A	West-Palaearctic
<i>Synechostictus elongatum s.l.</i> DEJEAN, 1831	M	West-Euro-Mediterranean
<i>Phyla tethys</i> (NETOLITZKY, 1926)	M	Mediterranean
<i>Ocydromus laetus</i> (BRULLÉ, 1838)	C	Mediterranean
<i>Ocydromus crotchii</i> (WOLLASTON, 1864)	C	Canarian

<i>Ocydromus fortunatus</i> (WOLLASTON, 1871)	C	Canarian
<i>Ocydromus derelictus</i> (ALLUAUD, 1926)	A	Azorean (paleoendemic)
<i>Ocydromus tabellatus</i> (WOLLASTON, 1854)	M	Madeiran
<i>Ocydromus hesperidum</i> (WOLLASTON, 1867)	V	Cape Verdean
<i>Ocydromus schmidti azoricus</i> LINDROTH, 1960	A	Azorean geographical race
<i>Ocydromus schmidti schmidti</i> (WOLLASTON, 1854)	M	Madeiran geographical race
<i>Ocydromus schmidti subcallosus</i> (WOLLASTON, 1864)	C	Canarian geographical race
<i>Ocydromus schmidti ssp.</i>	V	Cape Verdean geographical race?
<i>Ocydromus atlanticus atlanticus</i> (WOLLASTON, 1854)	MC	Macaronesian geographical race
<i>Ocydromus andreae</i> (FABRICIUS, 1787)	C	Palaearctic
<i>Ocys harpaloides</i> (SERVILLE, 1821)	AM	West-Palaearctic
<i>Pogonus chalceus</i> MARSHAM, 1802	C	Southwest-Palaearctic
<i>Pogonus gilvipes</i> DEJEAN, 1828	CV	Atlanto-Mediterranean
<i>Syrdenus grayi</i> (WOLLASTON, 1862)	CV	West-Mediterranean

Perigoninae

<i>Perigona nigriceps</i> DEJEAN, 1831	AMCV	Oriental/cosmopolitan (i)
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Pterostichinae

<i>Olisthopus ericae</i> WOLLASTON, 1854	M	Madeiran
<i>Olisthopus madeirensis</i> WOLLASTON, 1854	M	Madeiran
<i>Olisthopus humerosus</i> WOLLASTON, 1858	M	Madeiran
<i>Olisthopus glabratus glabratus</i> BRULLÉ, 1838	C	Canarian subspecies
<i>Olisthopus glabratus tamaranus</i> MACHADO, 1992	C	Canarian subspecies
<i>Olisthopus palmensis</i> WOLLASTON, 1864	C	Canarian
<i>Olisthopus elongatus</i> WOLLASTON, 1854	MC	West Mediterranean
<i>Olisthopus inclavatus</i> ISRAELSON, 1983	A	Azorean
<i>Agonum marginatum</i> (LINNAEUS, 1758)	AMC	West-Palaearctic (i)
<i>Agonum muelleri</i> HERBST, 1784	A	Palaearctic (i)
<i>Pseudanchomenus aptinoides</i> TARNIER, 1860	A	Azorean (paleoendemic)
<i>Paranchus nichollsii</i> (WOLLASTON, 1864)	C	Canarian
<i>Paranchus debilis</i> (WOLLASTON, 1864)	C	Canarian
<i>Paranchus ruficornis</i> GOETZE, 1777	AMC	Palaearctic (i)
<i>Abacetes natalensis</i> CHAUDOIR, 1869	V	Afro-tropical
<i>Pedius figuratus</i> (WOLLASTON, 1864)	C	Canarian
<i>Angoleus crenatus freyanus</i> (UYTTENBOOGAART, 1940)	C	Northwest-African
<i>Angoleus wollastoni</i> (WOLLASTON, 1854)	MCV	North-African
<i>Lagarus vernalis s.l.</i> (PANZER, 1796)	A	Palaearctic (?)
<i>Omaseus aterrimus nigerrimus</i> DEJEAN, 1828	AM	Southwest-Palaearctic
<i>Orthomus berytensis</i> (REICHE & SOULCY, 1854)	MSC	Mediterranean
<i>Orthomus discors</i> (WOLLASTON, 1864)	C	Canarian
<i>Cedrorum azoricus azoricus</i> BORGES & SERRANO i.p	A	Azorean subspecies

<i>Cedrorum azor. caveirensis</i> BORGES & SERRANO i.p	A	Azorean subspecies
<i>Nesorthomus berrai</i> BATTONI, 1987	M	Madeiran
<i>Nesorthomus robustus</i> (WOLLASTON, 1854)	M	Madeiran
<i>Nesorthomus dilaticollis</i> (WOLLASTON, 1854)	M	Madeiran
<i>Nesorthomus curtus</i> (WOLLASTON, 1854)	M	Madeiran
<i>Nesorthomus gracilipes</i> (WOLLASTON, 1854)	M	Madeiran
<i>Nesorthomus pecoudi</i> JEANNEL, 1942	M	Madeiran
<i>Nesorthomus lundbladi</i> JEANNEL, 1938	M	Madeiran
<i>Eutrichopus canariensis</i> (BRULLÉ, 1838)	C	Canarian
<i>Eutrichopus gonzalezi</i> MATEU, 1954	C	Canarian
<i>Wolltinerfia anagae</i> MEDINA & OROMÍ, 1991	C	Canarian
<i>Wolltinerfia tenerifae</i> (MACHADO, 1984)	C	Canarian
<i>Wolltinerfia martini</i> (MACHADO, 1984)	C	Canarian
<i>Pseudomyas doramasensis</i> UYTENBOOGAART, 1929	C	Canarian
<i>Gomerina calathiformis</i> (WOLLASTON, 1865)	C	Canarian
<i>Gomerina nitidicollis</i> (LINDBERG, 1953)	C	Canarian
<i>Pseudoplatyderus amblyops</i> BOLIVAR, 1940	C	Canarian
<i>Paraeutrichopus harpaloides</i> (WOLLASTON, 1864)	C	Canarian
<i>Paraeutrichopus pecoudi</i> MATEU, 1954	C	Canarian
<i>Platyderus alticola alticola</i> (WOLLASTON, 1864)	C	Canarian subspecies
<i>Platyderus alticola hierroensis</i> MACHADO, 1992	C	Canarian subspecies
<i>Platyderus alticola gomerensis</i> MACHADO, 1992	C	Canarian subspecies
<i>Platyderus alticola descendens</i> BEDEL, 1902	C	Canarian subspecies
<i>Platyderus lancerottensis</i> ISRAELSON, 1990	C	Canarian
<i>Platyderus gregarius</i> REICHE, 1861	C	Northwest-African
<i>Amaroschema gaudini</i> JEANNEL, 1943	C	Canarian
<i>Calathus complanatus complanatus</i> DEJEAN, 1828	M	Madeiran subspecies
<i>Calathus complanatus vandeli</i> COLAS & MATEU, 1959	M	Madeiran subspecies
<i>Calathus fimbriatus</i> WOLLASTON, 1858	M	Madeiran
<i>Calathus colasianus</i> MATEU, 1970	M	Madeiran
<i>Calathus vividus</i> FABRICIUS, 1801	M	Madeiran
<i>Calathus subfuscus</i> WOLLASTON, 1865	M	Madeiran
<i>Calathus refleximargo</i> MACHADO, 1992	C	Canarian
<i>Calathus obliteratus</i> WOLLASTON, 1865	C	Canarian
<i>Calathus pilosipennis</i> MACHADO, 1992	C	Canarian
<i>Calathus spretus</i> WOLLASTON, 1862	C	Canarian
<i>Calathus gomerensis</i> COLAS, 1943	C	Canarian
<i>Calathus cognatus</i> WOLLASTON, 1864	C	Canarian
<i>Calathus marcellae</i> COLAS, 1943	C	Canarian
<i>Calathus laureticola</i> WOLLASTON, 1865	C	Canarian
<i>Calathus appendiculatus</i> WOLLASTON, 1862	C	Canarian
<i>Calathus angularis</i> BRULLÉ, 1838	C	Canarian

<i>Calathus canariensis</i> HAROLDS, 1868	C	Canarian
<i>Calathus rufocastaneus</i> WOLLASTON, 1862	C	Canarian
<i>Calathus ciliatus</i> WOLLASTON, 1862	C	Canarian
<i>Calathus auctus</i> WOLLASTON, 1862	C	Canarian
<i>Calathus carinatus</i> BRULLÉ, 1838	C	Canarian
<i>Calathus angustulus</i> WOLLASTON, 1862	C	Canarian
<i>Calathus amplius</i> ESCALERA, 1921	C	Canarian
<i>Calathus depressus</i> BRULLÉ, 1838	C	Canarian
<i>Calathus freyi</i> COLAS, 1941	C	Canarian
<i>Calathus ascendens</i> WOLLASTON, 1862	C	Canarian
<i>Calathus rectus</i> WOLLASTON, 1862	C	Canarian
<i>Calathus abaxoides</i> BRULLÉ, 1838	C	Canarian
<i>Calathus gonzalezi</i> MATEU, 1956	C	Canarian
<i>Calathus simplicicollis</i> WOLLASTON, 1862	C	Canarian
<i>Calathus extensicollis</i> PUTZEYS, 1863	A	Azorean
<i>Calathus lundbladi</i> COLAS, 1938	A	Azorean
<i>Calathus vicentorum</i> SCHATZMAYR, 1937	A	Azorean
<i>Calathus carvalhoi</i> SERRANO & BORGES, 1986	A	Azorean
<i>Calathidium brevithorax</i> MACHADO, 1992	C	Canarian
<i>Calathidium acuminatus</i> (WOLLASTON, 1862)	C	Canarian
<i>Calathidium sphodroides</i> (WOLLASTON, 1862)	C	Canarian
<i>Licinopsis alternans</i> (DEJEAN, 1828)	C	Canarian
<i>Licinopsis oblitterata oblitterata</i> (WOLLASTON, 1865)	C	Canarian subspecies
<i>Licinopsis oblitterata franzi</i> MACHADO, 1987	C	Canarian subspecies
<i>Licinopsis gaudini</i> JEANNEL, 1937	C	Canarian
<i>Licinopsis angustula</i> MACHADO, 1987	C	Canarian
<i>Licinopsis picescens picescens</i> (WOLLASTON, 1864)	C	Canarian subspecies
<i>Licinopsis picescens gomerita</i> MACHADO, 1987	C	Canarian subspecies
<i>Licinopsis schurmanni</i> MACHADO, 1987	C	Canarian
<i>Sphodrus leucophthalmus</i> (LINNAEUS, 1758)	MSC	Indo-European (i)
<i>Laemostenus complanatus</i> (DEJEAN, 1828)	AMC	North-African (i)
<i>Amara aenea</i> (DEGEER, 1774)	AMCV	Palaearctic (i)
<i>Amara superans</i> WOLLASTON, 1854	M	Madeiran
<i>Celia cottyi</i> (COQUEREL, 1859)	MSC	Northwest-African
<i>Amathitis rufescens</i> (DEJEAN, 1829)	C	West-Mediterranean
<i>Zabrus crassus</i> DEJEAN, 1828	C	Canarian
<i>Zabrus laevigatus</i> ZIMMERMANN, 1831	C	Canarian
<i>Zabrus canaricus</i> MACHADO, 1992	C	Canarian
Harpalinae		
<i>Crasodactylus punctatus</i> GUÉRIN, 1847	C	African
<i>Anisodactylus binotatus</i> (FABRICIUS, 1787)	AM	Palaearctic (i)

<i>Notiobia cupripennis</i> (GERMAR, 1824)	C	Neotropical (i)
<i>Odontocarus cordatus</i> (DEJEAN, 1825)	C	West-Mediterranean
<i>Ditomus opacus</i> (ERICHSON, 1841)	C	North-African
<i>Daptus vittatus labiatus</i> MOTSCHOUJSKY, 1849	C	West-Mediterranean
<i>Graniger femoralis</i> (COQUEREL, 1858)	C	Mediterranean
<i>Nesarpalus gregarius gregarius</i> FAUVEL, 1897	M	Madeiran subspecies
<i>Nesarpalus gregarius atlanticus</i> SCHAUBERBERG, 1932	M	Madeiran subspecies
<i>Nesarpalus vividus</i> (DEJEAN, 1829)	M	Madeiran
<i>Nesarpalus pelagicus</i> (WOLLASTON, 1860)	S	Selvagens
<i>Nesarpalus solitarius</i> (WOLLASTON, 1863)	C	Canarian
<i>Nesarpalus fortunatus</i> (WOLLASTON, 1863)	C	Canarian
<i>Nesarpalus uytttenboogaarti</i> (VANEMDEN, 1929)	C	Canarian
<i>Nesarpalus micans</i> (WOLLASTON, 1864)	C	Canarian
<i>Nesarpalus empiricus</i> (WOLLASTON, 1985)	C	Canarian
<i>Nesarpalus sanctaecrucis</i> (WOLLASTON, 1864)	C	Canarian
<i>Platymetopus tessellatus</i> Dejean, 1829	V	Sahelian
<i>Nesiopelus serienotatus</i> (WOLLASTON, 1867)	V	Cape Verdean
<i>Aulacoryssus aciculatus</i> (DEJEAN, 1829)	V	Sahel-Sudanian
<i>Cryptophonus janinae</i> (JEANNE, 1984)	C	Canarian
<i>Cryptophonus schaumii</i> (WOLLASTON, 1864)	C	Canarian
<i>Cryptophonus paivanus paivanus</i> (WOLLASTON, 1867)	V	Cape Verdean subspecies
<i>Cryptophonus paivanus meirai</i> (MATEU, 1958)	V	Cape Verdean subspecies
<i>Cryptophonus tenebrosus</i> (DEJEAN, 1829)	MC	Euro-Mediterranean
<i>Cryptophonus fulvus</i> (DEJEAN, 1829)	C	Mediterranean
<i>Ophonus ardosiacus</i> (LUTSCHNIK, 1922)	AMS	West-Palearctic (?)
<i>Ophonus stictus</i> (STEPHENS, 1828)	AM	West-Palearctic
<i>Pseudophonus rufipes</i> (DEGEER, 1774)	AM	West-Palearctic (i)
<i>Pseudophonus griseus</i> (PANZER, 1797)	A	Palaeartic
<i>Harpalus attenuatus</i> STEPHENS, 1828	M	Atlanto-Mediterranean (?)
<i>Harpalus distinguendus</i> (DUFTSCHMID, 1812)	AMC	Palaeartic (i)
<i>Nesarpax labiatus</i> (ERICHSON, 1843)	V	Cape Verdean
<i>Bradybaenus scalaris</i> (OLIVIER, 1808)	V	Sahel-Sudanian
<i>Dicheirotichus obsoletus</i> (DEJEAN, 1829)	C	Atlanto-Mediterranean
<i>Dicheirotichus punicus</i> BEDEL, 1899	C	Mediterranean
<i>Bradycellus ventricosus</i> WOLLASTON, 1864	C	Canarian
<i>Bradycellus excultus</i> WOLLASTON, 1854	M	Madeiran
<i>Bradycellus madeirensis</i> MATEU, 1958	M	Madeiran
<i>Bradycellus feloi</i> MACHADO, 1992	C	Canarian
<i>Bradycellus harpalinus</i> SERVILLE, 1821	M	European
<i>Bradycellus chavesi</i> ALLUAUD, 1919	A	Azorean
<i>Bradycellus distinctus</i> (DEJEAN, 1867)	A	West-Palearctic (?)
<i>Acupalpus brunneipes</i> (STURM, 1825)	AM	West-Palearctic

<i>Acupalpus dubius</i> SCHILSKY, 1888	AM	European
<i>Acupalpus notatus</i> MULSANT & REY, 1861	MC	Mediterranean
<i>Acupalpus maculatus</i> SCHAUM, 1860	C	Euro-Mediterranean
<i>Egaploa crenulata</i> (DEJEAN, 1829)	V	Sahel-Sudanian
<i>Egadroma marginata</i> (DEJEAN, 1829)	MC	Mediterranean
<i>Egadroma reluscens</i> (ERICHSON, 1845)	V	Sahel-Sudanian
<i>Stenolophus teutonius</i> (SCHRANK, 1781)	AMC	West-Palaeartic
<i>Anomostomus torridus</i> LAFERTÉ, 1853	V	Sahelian
<i>Amblystomus orpheus</i> (LAFERTÉ, 1853)	V	Sahel-Sudanian
<i>Amblystomus viridulus</i> (ERICHSON, 1843)	V	Sahelian
Licininae		
<i>Zargus schaumii</i> WOLLASTON, 1854	M	Madeiran
<i>Zargus desertae</i> WOLLASTON, 1854	M	Madeiran
<i>Zargus pellucidus</i> WOLLASTON, 1854	M	Madeiran
<i>Zargus monizii</i> WOLLASTON, 1860	M	Madeiran
<i>Zargus crotchianus</i> WOLLASTON, 1865	C	Canarian
<i>Eurygnathus latreillei latreillei</i> (LAPORTE, 1834)	M	Madeiran subspecies
<i>Eurygnathus latreillei wollastoni</i> COCKERELL, 1923	M	Madeiran subspecies
<i>Licinus manriqueianus</i> WOLLASTON, 1862	C	Canarian
<i>Licinus punctatulus punctatulus</i> (FABRICIUS, 1792)	A	West-Palaearctic (i)
<i>Licinus punctatulus granulatus</i> DEJEAN, 1926	C	North-African (i)
Pentagonicinae		
<i>Pentagonica hexagona</i> (WOLLASTON, 1867)	V	Cape Verdean
Callistinae		
<i>Pachydinodes conformis uncosignatus</i> WOLLASTON, 1867	V	Cape Verdean geographical race
<i>Stenodinodes boisduvali</i> (DEJEAN, 1831)	V	Sahelo-Sudanian
<i>Stenodinodes assecla</i> (LAFERTÉ, 1851)	V	Sahelian
<i>Epomis circumscriptus</i> (DUFTSCHMID, 1812)	C	Afro-Palaearctic
<i>Chlaenius spoliatus</i> (ROSSI, 1790)	C	Mediterranean
<i>Chlaenius canariensis canariensis</i> DEJEAN, 1831	C	North-African
<i>Chlaenius laeticollis</i> CHAUDOIR, 1876	V	Sahel-Saharan
Masoreinae		
<i>Masoreus alticola</i> WOLLASTON, 1864	C	Canarian
<i>Masoreus affinis arenicola</i> WOLLASTON, 1863	CS	Macaronesian geographical race
<i>Masoreus orientalis</i> ssp.	M	Madeiran geographical race?
<i>Masoreus orientalis nobilis</i> WOLLASTON, 1864	C	Canarian geographical race
<i>Masoreus orientalis ascendens</i> WOLLASTON, 1867	V	Cape Verdean geographical race
<i>Aephinidius madagascariensis</i> (CHAUDOIR, 1850)	V	African

Lebiinae

<i>Somotrichus elevatus</i> (FABRICIUS, 1792)	V	Cosmopolitan (i)
<i>Platyтарus famini</i> (DEJEAN, 1826)	CV	Mediterranean
<i>Platyтарus tessellatus</i> (DEJEAN, 1826)	V	Ethiopian
<i>Platyтарus gracilis occidentalis</i> ANTOINE, 1933	C	Northwest-African
<i>Demetrius atricapillus</i> (LINNAEUS, 1758)	C	West-palaearctic (i)
<i>Trichis maculata</i> KLUGER, 1832	V	Mediterranean
<i>Plocionus pallens</i> (FABRICIUS, 1775)	V	Cosmopolitan (i)
<i>Cymindis zargoides</i> (WOLLASTON, 1863)	C	Canarian
<i>Cymindis velata</i> (WOLLASTON, 1865)	C	Canarian
<i>Cymindis simillima</i> (WOLLASTON, 1865)	C	Canarian
<i>Cymindis amicta</i> (WOLLASTON, 1864)	C	Canarian
<i>Cymindis cincta</i> BRULLÉ, 1838	C	Canarian
<i>Cymindis anchomenoides</i> (WOLLASTON, 1867)	V	Cape Verdean
<i>Cymindis alutaceus</i> (WOLLASTON, 1867)	V	Cape Verdean
<i>Cymindis dohrnii</i> (WOLLASTON, 1867)	V	Cape Verdean
<i>Cymindis lindbergi</i> MATEU, 1964	V	Cape Verdean
<i>Cymindis marginella</i> BRULLÉ, 1838	C	Canarian
<i>Cymindis maderae</i> (WOLLASTON, 1857)	M	Madeiran
<i>Cymindis paivana</i> (WOLLASTON, 1860)	S	Salvages
<i>Cymindis moralesi</i> MATEU, 1979	C	Canarian
<i>Cymindis suturalis pseudosuturalis</i> BEDEL, 1906	MCS	Northwest-African
<i>Cymindis discophora</i> CHAUDOIR, 1873	C	Northwest-African
<i>Paradromius iucundus iucundus</i> MACHADO, 1992	C	Canarian subspecies
<i>Paradromius iucundus gillerforsi</i> MACHADO, 1992	C	Canarian subspecies
<i>Paradromius amoenus</i> (WOLLASTON, 1863)	C	Canarian
<i>Paradromius tamaranus</i> MACHADO, 1992	C	Canarian
<i>Paradromius amplius</i> MACHADO, 1992	C	Canarian
<i>Paradromius exornatus exornatus</i> MACHADO, 1992	C	Canarian subspecies
<i>Paradromius exornatus furvus</i> MACHADO, 1992	C	Canarian subspecies
<i>Paradromius purpurarius</i> MACHADO, 1992	C	Canarian
<i>Paradromius strigifrons strigifrons</i> (WOLLASTON, 1865)	C	Canarian subspecies
<i>Paradromius strigifrons tinerfensis</i> (MATEU, 1961)	C	Canarian subspecies
<i>Paradromius strig. grancanariensis</i> MACHADO, 1992	C	Canarian subspecies
<i>Paradromius linearis</i> (OLIVIER, 1795)	MC	Euro-Mediterranean
<i>Paradromius hariensis</i> MACHADO, 1992	C	Canarian
<i>Paradromius insularis insularis</i> (WOLLASTON, 1854)	M	Madeiran subspecies
<i>Paradromius insularis oceanicus</i> (WOLLASTON, 1865)	MS	Macaronesian subspecies
<i>Paradromius insularis illautus</i> MACHADO, 1992	C	Canarian geographical race
<i>Paradromius scholzi</i> MACHADO, 1992	C	Canarian
<i>Dromius meridionalis</i> DEJEAN, 1825	A	West-Palaearctic (?)
<i>Dromius angustus alutaceus</i> WOLLASTON, 1857	M	Madeiran geographical race

<i>Dromius angustus plagipennis</i> WOLLASTON, 1865	C	Canarian geographical race
<i>Dromius angustus dissimilis</i> MACHADO, 1992	C	Canarian geographical race
<i>Dromius brittoni brittoni</i> MATEU, 1957	C	Canarian geographical race
<i>Dromius geisthardti</i> MATEU, 1990	V	Cape Verdean
<i>Philorhizus ferranius</i> MATEU, 1956	C	Canarian
<i>Philorhizus bravoorum</i> MATEU, 1957	C	Canarian
<i>Philorhizus lindbergi</i> MATEU, 1956	C	Canarian
<i>Philorhizus elliptipennis</i> (WOLLASTON, 1864)	C	Canarian
<i>Philorhizus longicollis</i> (WOLLASTON, 1865)	C	Canarian
<i>Philorhizus mateui</i> MACHADO, 1992	C	Canarian
<i>Philorhizus umbratus</i> (WOLLASTON, 1865)	M	Madeiran
<i>Philorhizus wollastoni wollastoni</i> (FAUVEL, 1905)	M	Madeiran subspecies
<i>Philorhizus wollastoni nitidus</i> MATEU, 1957	M	Madeiran subspecies
<i>Philorhizus conicipennis</i> (FAUVEL, 1905)	M	Madeiran
<i>Philorhizus vieirai</i> MATEU, 1957	M	Madeiran
<i>Philorhizus atlanticus atlanticus</i> MATEU, 1957	C	Canarian subspecies
<i>Philorhizus atlanticus fortunatus</i> MATEU, 1957	C	Canarian subspecies
<i>Philorhizus atlanticus palmensis</i> MACHADO, 1992	C	Canarian subspecies
<i>Philorhizus fumatus</i> MATEU, 1961	C	Canarian
<i>Philorhizus parvicollis</i> (WOLLASTON, 1865)	C	Canarian
<i>Philorhizus franzi</i> MACHADO, 1992	C	Canarian
<i>Philorhizus incertus incertus</i> (WOLLASTON, 1864)	C	Canarian subspecies
<i>Philorhizus incertus jandiensis</i> MACHADO, 1992	C	Canarian subspecies
<i>Philorhizus insignis</i> LUCAS, 1846	C	North-African
<i>Philorhizus beidensis beidensis</i> ANTOINE, 1940	C	Northwest-African
<i>Philorhizus melanocephalus</i> (DEJEAN, 1825)	A	West-Palearctic
<i>Philorhizus notatus</i> (STEPHENS, 1827)	A	North-Palearctic
<i>Philorhizus attenuatus</i> (WOLLASTON, 1867)	V	Cape Verdean
<i>Philorhizus sigma</i> (ROSSI, 1790)	V	European (i?)
<i>Metadromius pervenustus</i> (WOLLASTON, 1864)	C	Canarian
<i>Metadromius palmi</i> MACHADO, 1992	C	Canarian
<i>Syntomus lundbladi</i> JEANNEL, 1938	M	Madeiran
<i>Syntomus inaequalis</i> (WOLLASTON, 1863)	C	Canarian
<i>Syntomus lancerotensis</i> (WOLLASTON, 1864)	C	Canarian
<i>Syntomus fuscomaculatus</i> (MOTSCHOULSKY, 1845)	MC	South-Palearctic
<i>Syntomus lateralis schrammi</i> ANTOINE, 1940	C	North-African
<i>Syntomus grayi</i> (WOLLASTON, 1867)	V	Cape Verdean
<i>Syntomus submaculatus</i> (WOLLASTON, 1867)	V	Sahelian
<i>Microlestes luctuosus chobauti</i> JEANNEL, 1942	MC	West-Mediterranean
<i>Microlestes negrita</i> WOLLASTON, 1854	AM	Mediterranean
<i>Microlestes angusteforcipatus</i> ANTOINE, 1940	C	West-Mediterranean
<i>Microlestes corticalis</i> DUFOUR, 1820	MC	Mediterranean

<i>Microlestes abeillei brisouti</i> HOLDHAUS, 1912	C	North-African
<i>Microlestes gomerensis</i> LINDBERG, 1953	C	Saharian
<i>Microlestes discoidalis</i> (FAIRMAIRE, 1892)	V	Sahelian
<i>Apristus hololeucus</i> LINDBERG, 1950	C	Canarian
<i>Zolotarewskiella strigicollis</i> (WOLLASTON, 1867)	V	Sahel-Sudanian
Zuphiinae		
<i>Dicrodontus brunneus brunneus</i> (DEJEAN, 1831)	C	Canarian subspecies
<i>Dicrodontus brunneus exilis</i> MACHADO, 1992	C	CANARIAN SUBSPECIES
<i>Dicrodontus aptinoides</i> (WOLLASTON, 1865)	C	CANARIAN
<i>Dicrodontus alluaudi</i> MATEU, 1952	C	Canarian
<i>Parazuphium baeticum mauretaniae</i> HŮRKA, 1982	M	North-African
<i>Parazuphium blandum</i> MATEU, 1990	V	Ethiopian
<i>Parazuphium debile harteni</i> MATEU, 1990	V	Ethiopian
<i>Parazuphium damascenum canariense</i> MACHADO, 1992	C	Canarian geographical race
Brachininae		
<i>Pheropsophus hispanicus</i> (DEJEAN, 1823)	C	Northwest-African (i)

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