

Curculionidae Ceutorrhynchinae from the Canaries and Macaronesia (Coleoptera)

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ABSTRACT: This paper deals with the 15 species of Ceutorrhynchinae of the Atlantic Islands. *Parethelcus nescicola* n. sp. from Tenerife and Gran Canaria and *Mogulones pseudopollinarius biondii* n. ssp. from Gran Canaria are described. *Parethelcus* Dieckmann is considered a valid genus. New combinations are: *Mogulones pseudopollinarius* (Hr. Lindberg) and *Thamiocolus wollastoni* (Uytenboogaart), both from *Ceutorhynchus*. The names *Ceutorhynchus obstrictus* (Marsham) and *Stenocarus ruficornis* (Stephens) are changed according to the International Code. *Ceuthorhynchus lineatotessellatus* Wollaston, 1854 is designated type-species of the genus *Hesperorrhynchus* Peyerimhoff. A key to the genera and the species is given. The faunistic relationships of these weevils in Macaronesia are also shortly discussed. Key words. Coleoptera, Curculionidae, Ceutorrhynchinae, Canaries, Macaronesia.

RESUMEN: Se tratan en este trabajo las 15 especies de Ceutorrhynchinae de la Macaronesia. Se describen *Parethelcus nescicola* n. sp. de Tenerife y Gran Canaria, y *Mogulones pseudopollinarius biondii* n. ssp. de Gran Canaria. El género *Parethelcus* Dieckmann se considera como válido. Son nuevas combinaciones: *Mogulones pseudopollinarius* (Hr. Lindberg) y *Thamiocolus wollastoni* (Uytenboogaart), los dos pertenecientes hasta ahora a *Ceutorhynchus*. La nomenclatura de *Ceutorhynchus obstrictus* y de *Stenocarus ruficornis* (Stephens) se rectifica conforme al Reglamento Internacional.

Se elige *Ceuthorhynchus lineatotessellatus* Wollaston, 1854 como tipo del género *Hesperorrhynchus* Peyerimhoff. Se presentan también una clave de identificación y algunas consideraciones sobre la distribución de estos gorgojos en las islas Atlánticas. Palabras clave. Coleoptera, Curculionidae, Ceutorrhynchinae, Canarias, Macaronesia.

Ceutorrhynchinae of Macaronesia are only few species by comparison with the whole of the weevil fauna, nevertheless the present state of our knowledge of them is still unsatisfactory as these insects are often difficult to collect without a particular technique.

The late investigation namely of the Canary Islands led both to a better knowledge of the distribution and ecology of the known species and to a discovery of some new taxa. As in the meanwhile the taxonomy of this subfamily and the nomenclature of many species was corrected, it seemed necessary

to revise the Ceutorhynchinae of this zoogeographic subregion as a whole.

Since the Canarian fauna is by far more complex and better known than that of the Azores, Madeira and Cape Verde, the distribution of each species will be indicated analytically (islands by islands) for the Canaries, while the relatively few data on the other Atlantic islands will be listed together after the name of each archipelago.

The species followed by an asterisk are considered to be introduced by man. The exclamation mark after a locality name means that material from the site was actually studied.

The material studied was partly collected during three field trips to the Canaries supported by a grant of the Italian Ministry of Education.

KEY TO THE GENERA AND SPECIES

- | | | |
|----|---|--|
| 1 | - Hind femora much stouter than middle femora; rostrum about 3 times longer than wide. On Portulacaceae (<i>Portulaca</i>)..... | <i>Hypurus bertrandi</i> (Perris) |
| 1' | - Hind femora about as stout as middle femora; rostrum more than 3 times longer than wide..... | 2 |
| 2 | - Antennal funiculus 6-jointed | 3 |
| 2' | - Antennal funiculus 7-jointed | 4 |
| 3 | - Base of pronotum straight; antennal club lengthened; a small postscutellar, T-shaped patch of whitish scales (fig. 6). On Papaveraceae (<i>Fumaria</i>)..... | <i>Sirocalodes nigroterminatus</i> (Wollaston) |
| 3' | - Base of pronotum bisinuate; antennal club fusiform; a stripe of white scales along the entire sutural interval (fig. 7). On Brassicaceae..... | <i>Ceutorhynchus canariensis</i> Hr. Lindberg |
| 4 | - Tibia with apical comb of setae (corbel) ascending about 1/3 of tibial length (figs. 1 and 2)..... | 5 |
| 4' | - Tibia with apical comb of setae (corbel) ascending much less than 1/3 of tibial length..... | 6 |
| 5 | - Integument rufous. On Ericaceae (<i>Erica</i>)..... | <i>Micrelus ferrugatus</i> (Perris) |
| 5' | - Integument piceous. On Lamiaceae (<i>Sideritis</i>)..... | <i>Thamiocolus wollastoni</i> (Uytenboogaart) |
| 6 | - Sternal channel deep and extending behind procoxae into mesosternum and here with abrupt posterior margin. On Papaveraceae (<i>Papaver</i>)..... | <i>Stenocarus ruficornis</i> (Stephens) |
| 6' | - Sternal channel shallow and/or not extending behind procoxae | 7 |
| 7 | - Wings reduced; humeri with fairly protuberant tubercles giving to the elytra a heart-shaped or nearly oval outline; odd-numbered intervals with tufts of brownish half-lifted scales. On Crassulaceae. Genus <i>Hesperorrhynchus</i> Peyerimhoff..... | 8 |
| 7' | - Wings normally developed; humeri with well protuberant tubercles; the same kind of vestiture on all intervals..... | 11 |
| 8 | - Size not exceeding 3 mm .On <i>Aichryson</i> | 9 |
| 8' | - Size at least 3, 5 mm..... | 10 |
| 9 | - Elytra heart-shaped, widest immediately after humeri and strongly convex dorsally (fig.9); legs longer; elytral and tibial setae moderately lifted; aedeagus asymmetrical (figs. 12 and 13)..... | <i>Hesperorrhynchus phytobioides</i> (Wollaston) |
| 9' | - Elytra more rectangular, widest at mid-point and moderately convex dorsally (fig.8); legs shorter; elytral and tibial setae evidently lifted; aedeagus symmetrical (figs.10-11)..... | <i>Hesperorrhynchus hesperus</i> (Wollaston) |

- 10 - All the femora with a strong tooth; elytral sides slightly convex.....
.....*Hesperorrhynchus dentipes* Israelson
- 10' - Tooth of the anterior femora almost obsolete; elytra with strongly rounded sides. On *Aeonium*..
.....*Hesperorrhynchus lineatotessellatus* (Wollaston)
- 11 - Elytral interval 9 from base to apex with acute rasp-shaped granules; preapical calli strongly prominent (fig.14); all the femora with a very sharp tooth; two patches of white scales on elytral declivity; lateral tubercles of pronotum sharp; elytra flattened dorsally and with a vague pattern of whitish and grey-brownish scales. On Urticaceae (*Urtica*).....*Parthelcus nescicola* n. sp.
- 11' - Without the whole of the above characters.....12
- 12 - Elytral pattern as in fig.33, size about 4 mm. On Boraginaceae (*Echium*).....
.....*Mogulones geographicus* (Goeze)
- 12' - Elytra without such a pattern; size smaller than 4 mm.13
- 13 - Femora with a weak tooth; male and female antenna inserted approximately in the rostrum mid-point. On Brassicaceae. Genus *Ceutorhynchus* Germar.....14
- 13' - Meso and meta femora with a strong sharp tooth; male antenna inserted at the base of the first third of rostrum. On Boraginaceae (*Echium*). Genus *Mogulones* Reitter.....15
- 14 - Elytra with erect setae and with a whitish postscutellar spot.....
.....*Ceutorhynchus pallidactylus* (Marsham)
- 14' - Elytra without erect setae and with no postscutellar spot.....
.....*Ceutorhynchus obstrictus* (Marsham)
- 15 - Elytra dorsally with an uniform vague pattern of white and brown scales; no white spot on intervals 6-7; patches of whitish scales on elytral declivity not much striking.....
.....*Mogulones pseudopollinarius pseudopollinarius* (Hr. Lindberg)
- 15' - Elytra dorsally with a more evident pattern of white and brown scales; a small but distinguishable lateral white stripe on intervals 6-7; patches of white scales on elytral declivity obvious....
.....*Mogulones pseudopollinarius biondii* n.ssp.

Hypurus bertrandi (Perris, 1852)*

Hypurus bertrandi Geisthardt, 1986

A mediterranean leafmining weevil now spreading in many warm regions of the world; it was recently discovered in Cape Verde (GEISTHARDT, 1986). This species lives on *Portulaca oleracea* L.

CAPE VERDE, São Tiago: S. Jorge!

General distribution. France, Italy, Morocco, Algeria, Tunisia, Egypt, Java, California, Puerto Rico, Marianne, Hawaii, Nigeria.

Ceutorhynchus (*Ceutorhynchus*) *pallidactylus* (Marsham, 1802)*

Curculio quadridens Panzer, 1795 nec Fabricius, 1775

Ceutorhynchus quadridens Wollaston, 1854 and 1857

Ceuthorhynchus quadridens Wollaston, 1864 and 1865

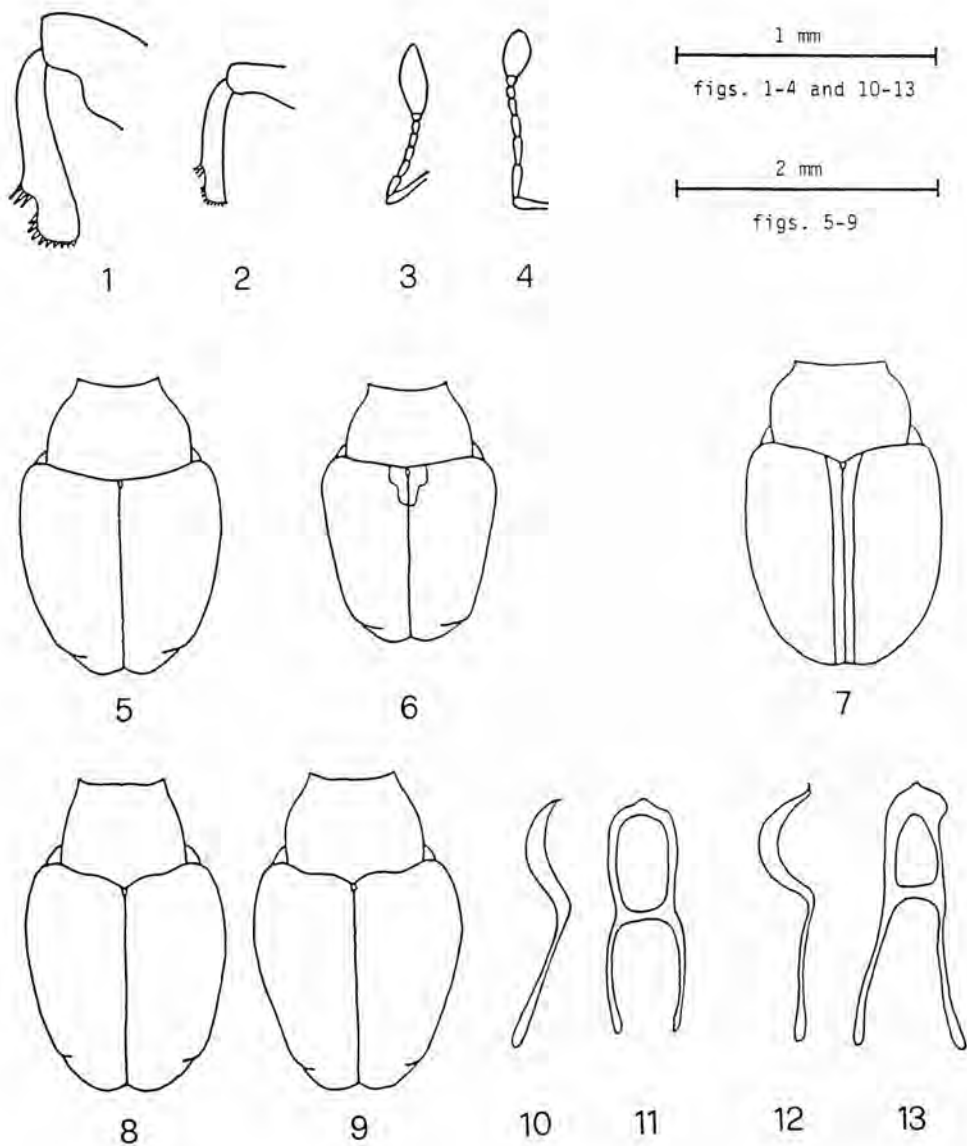
Ceuthorrhynchus quadridens Fauvel, 1897

Ceuthorrhynchus quadridens Uyttenboogaart, 1937 and 1940

Ceutorrhynchus (*Marklissus*) *quadridens* Uyttenboogaart & Zumpt 1940

Ceutorrhynchus (*Marklissus*) *quadridens* Hr. & Hk. Lindberg, 1958

Ceuthorrhynchus quadridens Roudier, 1963



Figs. 1-13. Mesotibia of *Micrelus ferrugatus* (1); *Thamiocolus wollastoni* (2). Antenna of *Sirocalodes nigroterminatus* (3); *Ceutorhynchus canariensis* (4). Outline of the body of: *Sirocalodes mixtus* (5); *S. nigroterminatus* (6); *Ceutorhynchus canariensis* (7); *Hesperorrhynchus hesperus* (8); *H. phytobioides* (9). Aedeagus of *Hesperorrhynchus hesperus* from the side (10) and from above (11); the same of *H. phytobioides* from the side (12) and from above (13). Schematic drawings.

A common euro-mediterranean weevil injurious to many Brassicaceae and namely to all varieties of cabbage (JOURDHEUIL, 1963). The species was introduced in many countries. In the Canary Islands this weevil is particularly common on the northern slope in the gardens of the houses on *Brassica* and *Sinapis*.

HIERRO. near Valverde! (WOLLASTON, 1864); El Golfo; Frontera (Hr. & Hk. LINDBERG, 1958)

PALMA. "La Palma" (WOLLASTON, 1864)

GOMERA. "Gomera" (WOLLASTON, 1864); San Sebastián; El Cedro (Hr. & Hk. LINDBERG, 1958).

TENERIFE. Santa Cruz; El Sauzal (WOLLASTON, 1864); Las Mercedes! (UYTTENBOOGAART, 1940); Los Rodeos (UYTTENBOOGAART & ZUMPT, 1940); Barranco San Antonio; Aguamansa!; La Laguna!; Agua García!; Ortigal; San Diego (Hr. & Hk. LINDBERG, 1958); El Bailadero!; Las Canteras!; Bajamar!; Puerto de la Cruz!; near La Guancha!; Orotava!; Masca!; Casa Blanca!; between Casa Blanca and Punta de Teno!

GRAN CANARIA. Santa Brígida (UYTTENBOOGAART, 1937); Bandama; Arucas; Las Lagunetas (Hr. & Hk. LINDBERG, 1958); near Valsequillo!

FUERTEVENTURA. Río Palmas (WOLLASTON 1864)

MADEIRA. Funchal; Santa Anna; Deserta Grande (WOLLASTON, 1854); Garajãu; Ribeira Brava (ROUDIER, 1963)

General distribution. Europe, Middle East, Canaries, Madeira, Connecticut, Massachusetts, New York, Rhode Island, South Africa.

Ceutorhynchus (Ceutorhynchus) canariensis Hr. Lindberg, 1950

Ceuthorrhynchus canariensis Hr. Lindberg, 1950

Ceuthorrhynchus pyrrhorhynchus Wollaston, 1864 nec Marsham, 1802

Ceuthorrhynchideus pyrrhorhynchus Wollaston, 1865 nec Marsham, 1802

Ceutorhynchus (Sirocalus) canariensis Hr. & Hk. Lindberg, 1958

Ceutorhynchus (s. str.) *canariensis* Colonnelli, 1984 and 1987

Many specimens of this species closely related to the euro-mediterranean *C. pyrrhorhynchus* (Marsham) were collected between Casa Blanca and Punta de Teno, Tenerife on the flowers of the endemic *Erucastrum cardaminoides* (Webb ex Christ) O.E. Schulz and *Descurainia millefolia* (Jacq.) Webb & Berth. Possibly on *Erucastrum canariense* Webb & Berth. in Lanzarote and Fuerteventura.

TENERIFE. El Balaidero!; Punta del Hidalgo!; Casa Blanca!; between Casa Blanca and Punta de Teno!

GRAN CANARIA. Arucas (Hr. LINDBERG, 1950); Bandama (Hr. & Hk. LINDBERG, 1958)

FUERTEVENTURA. Matilla; Vallebrón; Betancuria! (Hr. LINDBERG, 1950); Agua Bueyes; La Oliva (WOLLASTON, 1864); Tegú!

LANZAROTE. Haría (Hr. LINDBERG, 1950)

General distribution. Canary Islands.

***Ceutorhynchus (Ceutorhynchus) obstrictus* (Marsham, 1802)*, resurrected name**

Curculio assimilis Paykull, 1792 nec Fabricius, 1775

Ceuthorhynchus assimilis Israelson, 1985

Ceutorhynchus assimilis Gillerfors, 1986

Since the name *Curculio assimilis* was first employed by FABRICIUS (1775) for a species of Brenthididae, currently a synonym of *Lasiorrhynchus barbicornis* (Fabricius, 1775) (KUSCHEL, 1970), the species of Curculionidae described as *Curculio assimilis* by Paykull (1792) must be called *Ceutorhynchus obstrictus* (Marsham, 1802). The synonymy and nomenclature of this species as well as of the others of its group will be more completely discussed in a paper now in preparation.

This *Ceutorhynchus*, recently discovered in the Azores and Madeira, is a widespread pest namely of the plants of the genus *Brassica* (JORDHEUIL, 1963).

MADEIRA. Cancela (ISRAELSON, 1985); Machico (RUSSELL, pers. comm.)

AZORES. São Miguel: Ponta Delgada (ISRAELSON, 1958); Faial: Horta (GILLERFORS, 1986)

General distribution. Europe, Madeira, Azores, North America.

***Sirocalodes nigroterminatus* (Wollaston, 1854)**

Ceutorhynchus nigroterminatus Wollaston, 1854 and 1857

Ceuthorhynchus nigroterminatus Wollaston, 1864 and 1865

Ceuthorhynchus nigroterminatus Crotch, 1867

Ceutorhynchus Crotchi C. Brisout, 1869 (from Madeira, not from England)

Ceuthorhynchidius nigroterminatus Champion, 1895

Ceuthorrhynchidius nigroterminatus Schultze, 1895

Ceuthorrhynchus nigroterminatus Fauvel, 1897

Ceuthorrhynchus nigroterminatus Uyttenboogaart, 1940

Ceutorhynchus (Sirocalus) nigroterminatus Uyttenboogaart & Zumpt, 1940

Ceuthorrhynchus (Sirocalus) nigroterminatus Méquignon, 1942

Ceuthorrhynchus (Sirocalus) nigroterminatus Hr. & Hk. Lindberg, 1958

Coeliastes? lapalmaensis Voss, 1965

Ceuthorhynchus nigroterminatus Israelson, 1984

Sirocalodes nigroterminatus Colonnelli, 1986

This weevil can be commonly found on Papaveraceae of the genus *Fumaria*. Species closely allied to *S. mixtus* (Mulsant & Rey, 1858) from Europe, Caucasus and North Africa, with which was confused even by WOLLASTON himself (1865); it differs however from the continental species by the smaller body, the darker upper vestiture mottled with small patches of whitish oval-shaped scales, the shorter tarsi. The aedeagus of both species is instead extremely similar.

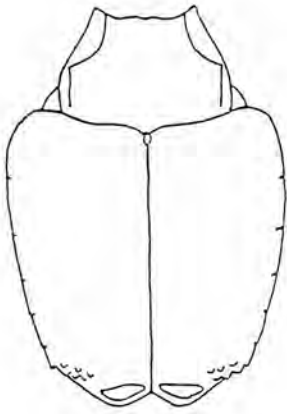
HIERRO. near Valverde! (WOLLASTON, 1964)

PALMA. Mazo! (Hr. & Hk. LINDBERG, 1958; VOSS, 1965)

GOMERA. "Gomera" (WOLLASTON, 1965); Barranco Monteforte!; El Cedro!; Chorros de Epina!; Fortaleza de Chipude!; Hermigua!

TENERIFE. El Sauzal; Agua García; near Orotava!; Aguamansa! (WOLLASTON, 1864);

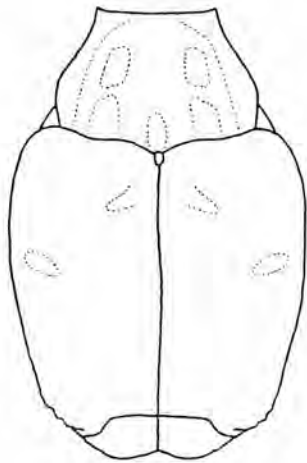
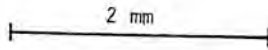
Agua Guillén (UYTTENBOOGAART, 1940); Los Rodeos (UYTTENBOOGAART & ZUMPT, 1940); Puerto de la Cruz; Realejo Alto; Barranco San Antonio; Tacoronte; Las Mercedes; Monte



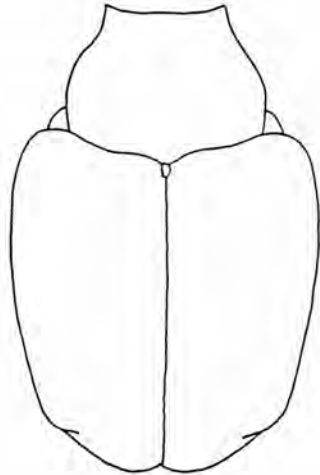
14



15



16



17

Figs. 14-17. Outline of the body of: *Parethelcus nesicola* n. sp., holotype (14); *P. pollinarius* from Italy (15); *Mogulones pseudopollinarius biondii* n. ssp., holotype (16); *M. pseudopollinarius pseudopollinarius* from Tenerife (17). Schematic drawings.

Aguirre; El Bailadero (Hr. & Hk. LINDBERG, 1958); Casas de la Cumbre!; Roque Negro!; Paso!; Casa Blanca!; between Casa Blanca and Punta de Teno!; El Palmar Alto!; Ruigomez!; Erjos del Tanque!;

GRAN CANARIA. Los Laureles near Tafira (UYTTENBOOGAART, 1940); Santa Brígida!

MADEIRA. Santa Anna ((WOLLASTON, 1854); Serra da Agua; Praia Formosa; Curral das Freiras; Vasco Gil (ROUDIER 1963)

AZORES. São Miguel; Faial (CROTCH, 1867); Santa Maria: Almagreira (ISRAELSON, 1984)

General distribution. Canaries, Madeira, Azores

***Stenocarus ruficornis* (Stephens, 1831)*, resurrected name**

Ceutorhynchus ruficornis Stephens, 1831

Curculio fuliginosus Marsham, 1802 nec Gmelin, 1790

Coeliodes fuliginosus Wollaston, 1854 and 1857

Coeliodes guttula Wollaston, 1865

Ceuthorrhynchus (Coeliodes) fuliginosus Fauvel, 1897

In the Stephens collection (British Museum, Natural History) were found under the name *Ceutorhynchus ruficornis* two specimens, one freshly emerged female and one light brown male (this latter with the unusually pale antenna); this last was selected as lectoholotype and the other was labelled as lectoparatype. This species is the same described previously by Marsham (1802) as *Curculio fuliginosus* (not *C. fuliginosus* Gmelin, 1790). The correct name of this species must therefore be *Stenocarus ruficornis* (Stephens, 1831) and not *S. umbrinus* (Gyllenhal, 1837) as wrongly stated by SILFVERBERG (1979). This surely introduced weevil living on *Papaver* was only once collected by Wollaston in a garden around Funchal in Madeira.

MADEIRA. near Funchal ((WOLLASTON, 1854)

General distribution. Europe, Siberia, North Africa, Madeira

***Parethelcus nescicola* nova species**

Ceuthorrhynchus pollinarius Wollaston, 1864 and 1865 nec Forster, 1771

Ceuthorrhynchus pollinarius Uyttenboogaart, 1940 nec Forster, 1771

Ceuthorrhynchus (Ethelcus) pseudopollinarius Hr. & Hk. Lindberg, 1958 (pars)

Ceuthorrhynchus pollinarius Israelson et alii, 1982 nec Forster, 1771

Diagnosis. *Parethelco pollinario* (Forster 1771) *fallaciter similis, sed tibiis ferrugineis, striis largioribus et profundioribus, intervallis alternis largioribus et convexioribus quam ceteris, disco elytrale sat profunde impresso et setis magis erectis induto, satis ab illo differre videtur.*

Type series. GRAN CANARIA: San Mateo, 21.III.1930, 1 ♂ (holotype) and 5 exx., A. Schatzmayr leg.; near Arucas, 29.III.1984, 6 exx., P. Audisio leg. TENERIFE: "0" (=Puerto Orotava), 1 ex., coll. Wollaston; La Laguna, 27.III. 1960, 4 exx., J. M. Fernández leg. and 22.IV.1984, 3 exx., E. Colonnelli leg.; Icod-El Amparo, 3.III. 1984, 1 ex., E. Colonnelli leg.; Bajamar, 6. III. 1984, 11 exx., E. Colonnelli leg.; Monte del

Agua, 23. III. 1985, 1 ex., P. Audisio leg. HIERRO: almost surely near Valverde, 1 ex., coll. Wollaston (all these specimens are paratypes). Holotype and 5 paratypes in the Museo Civico di Storia Naturale, Milan; 2 paratypes in the British Museum (Natural History), London; 1 in the Departamento de Zoología de la Universidad de la Laguna, Tenerife; 3 in the Museo Insular de Ciencias Naturales, Tenerife; 19 in the Museo di Zoologia dell'Università di Roma "La Sapienza", Rome; 2 in the Museo Civico di Zoologia, Rome; 2 in the Dr. M. A. Alonso Zarazaga collection, Málaga; 2 in the Osella collection, L'Aquila; 1 in M. Russell collection, Peterborough; 18 in my collection, Rome.

Holotype male. Length: mm. 3.2. Integument pitchy-brown; antennae, tip of rostrum, ocular lobes, posterior margin of elytra, knees, tibiae and tarsi ferrous-red. Dorsal vestiture rather dense, of dirty-white small lanceolate scales and half lifted brownish hairlike scales; disk of elytra mottled with brownish and dirty white scales; sulcus and sides of pronotum, elytral intervals 9 and 10, posterior declivity of elytra and under surface rather densely clothed with whitish medium sized lanceolate scales. Rostrum about as long as head and prothorax, moderately curved, slightly widened apically, rugosely punctate and with fine erect setae apically. Antenna inserted about 2 times the apical width of rostrum from beak apex; scape almost straight, apex gradually clavate, club oblong-oval, acuminate. Head closely punctate, vertex distinctly carinate, interocular area impressed; erect scales near eyes. Pronotum densely and closely punctate; sulcus complete, lateral tubercles acute, base bisinuate; length 0.63 times width. Elytra about as wide as long, widest at humeri; sides moderately curved; preapical calli strongly muricate; striae deep, distinctly punctured, each point with a thin white scale; intervals roughened, the even-numbered flat and narrower than the rather convex odd-numbered ones; the scales on intervals 3-4 seriate. Femora strongly and acutely toothed, tibiae slightly bisinuate; meso and metatibiae with a mucro; tarsi slightly compressed laterally; claws bifid. Segments 1-2 of abdomen with a shallow common impression; 5th with a broad, relatively shallow fovea. Aedeagus; fig. 18.

Paratypes. Females differ from males in absence of tibial mucros and impressions on abdomen; the scape is inserted about 3 times the apical width of rostrum from beak apex. Variation in colour and density of vestiture is slight; the specimens from Gran Canaria are on average smaller than those from Tenerife and have the lateral tubercles of pronotum slightly sharper. Length: mm. 3-3.9.

Etymology. From the Latin *nesicola* (=islander). This name remarks that the new species lives in the Canaries.

Remarks. It must be firstly specified that the author of *Parethelcus* is DIECKMANN (1972). *Parethelcus* Wagner is a nomen nudum because WAGNER (1943) has neither described it nor fixed its type species; in consequence: *Parethelcus* Wagner, 1943, nomen nudum = *Parethelcus* Dieckmann, 1972 (**syn nov.**).

The group *Parethelcus* was hitherto considered a subgenus of the composite "genus" *Ceutorhynchus* Germar. The two species of *Parethelcus*, *P. pollinarius* (Forster) and the close *P. nescicola* n. sp. are however very different from the rest of *Ceutorhynchus*. In particular the shape of 9th interval, the subapical insertion of antenna, the structure of legs, the shape of femoral teeth and that of aedeagus approche *Parethelcus* to the genus *Mogulones* Reitter much more than to *Ceutorhynchus*. The host plants of *Parethelcus* are moreover in the family Urticaceae; this suggest relationship with *Nedyus* Schönherr (= *Cidnorhinus* Thomson), the only other genus of Ceutorhynchinae living also on Urticaceae.

The species of *Nedyus* are again evidently related to the group of genera to which *Mogulones* and not *Ceutorhynchus* belongs. For all these reasons, it seems better to regard *Parethelcus* as a separate genus (**status novus**).

The new species is so similar to the eurasian *P. pollinarius* that one might consider it a subspecies of the latter. The specimens from Tenerife and those from Gran Canaria show however slight differences (seemingly in any case no fully subspecific), and the species is furthermore know from single examples from Hierro and Gomera, what prevents more complete study of its variation. It seems therefore better to give to *P. nescicola* a full specific value, also because in a close examination *P. nescicola* is readily differentiated from *P. pollinarius* by the ferrous-red tibiae, the deeper and wider elytral striae, the more

convex alternate intervals, the more erect dorsal vestiture of elytra, the deeper impression on elytral disk. *Parethelcus nescicola* is on average slightly smaller (3-3,9 mm) than *P. pollinarius* (3-4,1mm), the sides of its elytra are in general less rounded and the lateral tubercles of pronotum are sharper than the great majority of *P. pollinarius* examples (figs. 14 and 15).

Ecology. All the paratypes collected during the years 1984 and 1985 were swept from *Urtica urens* L.

HIERRO, near Valverde! (WOLLASTON, 1864)

GOMERA. "Gomera" (WOLLASTON, 1865)

TENERIFE. Puerto de la Cruz (=Puerto Orotava) !; Agua García (WOLLASTON, 1864);
Aguamansa; Icod; Las Mercedes (ISRAELSON et alii, 1982); La Laguna!; Bajamar!; El
Amparo!; Monte del Agua!

GRAN CANARIA. "Gran Canaria" (UYTTENBOOGAART, 1940); near Arucas!; San Mateo!

General distribution. Canary Islands.

Mogulones pseudopollinarius pseudopollinarius (Hr. Lindberg, 1950), **comb. nov.**

Ceuthorrhynchus pseudopollinarius Hr. Lindberg, 1950

Ceuthorrhynchus (Ethelcus) pseudopollinarius Hr. & Hk. Lindberg, 1958 (pars)

Ceuthorrhynchus pseudopollinarius Israelson et alii, 1982

PALMA. Los Cancajos; Hoyo; La Cumbrecita (ISRAELSON et alii, 1982); Llano Negro!

TENERIFE. Barranco San Antonio (Hr. LINDBERG, 1950); San Diego (Hr. & Hk. LINDBERG,
(1958); El Bailadero!; Paso!; El Pijaral!; Casas de la Cumbre!; Monte del Agua!

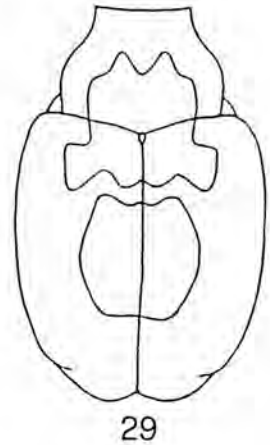
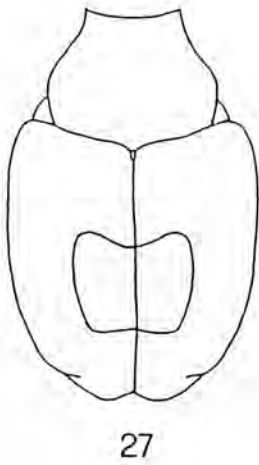
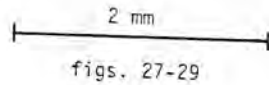
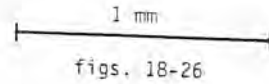
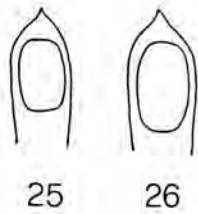
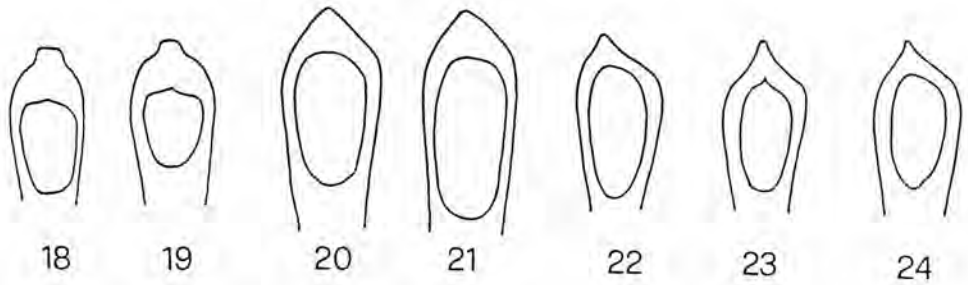
Mogulones pseudopollinarius biondii n. ssp.

Diagnosis. *A forma typica differt scapo antennarum toto ferrugineo, macula utrinque laterali perparva in interstriis 6-7 et plaga magna communi in declivitate elytrorum albidis, elytris baseos apicisque suturae vittis duobus fuscis ornatis, thorace supra ambigue sufflavo-trivittato.*

Type series. GRAN CANARIA: near Moya, 28.III.1985, 1 ♂ (holotype) and 1 ♂ (paratype), M. Biondi leg. Holotype in the Museo di Zoologia dell'Univertà di Roma "La Sapienza", Rome; paratype in my collection, Rome.

Holotype male. Length: mm 3,7. Integument pitchy-brown; antennae; ocular lobes, posterior margin of elytra, tibiae and tarsi ferrous-red. Dorsal vestiture rather dense, of yellowish and brown half-lifted hairlike scales and of white lanceolate large recumbent scales. These forming a faint pattern on elytra composed by two sutural brown stripes, the first short behind base, and the second preapical, a very small patch of white scales on each side on intervals 6-7, a large obvious apical white spot and some scattered white scales, while the ground has a salt and pepper effect due to the brownish and yellowish intermixed hairlike scales. Prothorax faintly trivittate; sulcus with recumbent white scales. The rest as in the typical subspecies. Aedeagus: fig. 20.

Paratype. Very similar to the holotype; the femora are red-brown and the lateral patches of elytra a little more evident; length: mm 3,6.



Figs. 18-29. Shape of aedeagus from above of: *Parethelaeus nasicola*, holotype (18); *P. pollinarius* from Italy (19); *Mogulones pseudopollinarius biondii*, holotype (20); *M. pseudopollinarius pseudopollinarius* from Tenerife (21); *M. annibal* (Schultze) from central Italy (22); *M. tenietensis* (Desbr.) from Morocco (23); *M. borraginis* (F.) from Slovakia (24); *Thamiocolus wollastoni* (Uytt.) from Gomera (25) and from Tenerife, El Bailadero (26). Variation of the pattern of *Thamiocolus wollastoni* from Gomera (27); Tenerife: Teno (28); Tenerife: Anaga (29). Schematic drawings.

Etmology. The subspecies is named after its collector, my colleague and friend Dr. Maurizio Biondi.

Remarks. This species was hitherto comprised into the genus *Ceutorhynchus*. The ssp. *pseudopollinarius* has indeed a faint elytral pattern (fig. 17) and much resembles a *Ceutorhynchus* s.st., while the ssp. *biondii* shows the pattern described above (fig. 16) which, even if strongly reduced, makes it possible to easily admit that this weevil belongs to the genus *Mogulones* Reitter (**comb. nov.**). On the other hand it is well known that other species in the genera *Mogulones* and *Datonychus* have reduced pattern and are therefore similar to a *Ceutorhynchus* (COLONNELLI, 1983). In any case both subspecies of *M. pseudopollinarius* have male antenna inserted in the apical third of rostrum, acute meso and metafemoral tooth, and live on *Echium*. The shape of aedeagus and that of tarsi are in addition the same as in other species of *Mogulones*, in particular to those in *M. borraginis* (Fabricius, 1792) group to which this weevil is moreover undoubtedly related (figs. 20-24). *M. pseudopollinarius pseudopollinarius* was repeatedly collected on *Echium plantagineum* L. both in La Palma by ISRAELSON et alii (1982) and in Tenerife by myself. *M. pseudopollinarius biondii* was also collected on the same *Echium*.

This weevil superficially looks like *Parethelcus nescicola*; it is a strange event that in the Canaries live three species (*Mogulones pseudopollinarius*, *Parethelcus nescicola* and *Ceutorhynchus pallidactylus*, this last introduced) which show an astonishing superficial likeness.

GRAN CANARIA. near Moya!

General distribution. Canary Islands.

Mogulones geographicus* (Goeze, 1777)

Ceutorhynchus echii Wollaston, 1854 and 1857

Ceuthorhynchus echii Wollaston, 1865

Ceuthorrhynchus geographicus Fauvel, 1897

Ceuthorrhynchus geographicus Roudier, 1963

Mogulones geographicus Colonnelli, 1983

A weevil found in Madeira on *Echium* cfr. *vulgare* L. The Madeiran population shows no differences from those of the mainland; almost surely therefore this species must be considered introduced in Madeira since in Corsica, in the Balearic Islands and in the Saharian zone of North Africa live three species so closely allied to *M. geographicus* to appear to be risen from it by processes of isolation and drifting. It seems unlikely that such an isolation did not produce any alteration in Madeiran weevils.

MADEIRA. Ribeiro de Santa Luzia; Porto Santo: Pico de Facho (WOLLASTON, 1854); Deserta Grande (WOLLASTON, 1865); Rabaçal; Praia Formosa; Caniçal; Portela; Porto Santo: Pico Conselho (ROUDIER, 1963); Machico!

General distribution. Europe, North Africa, Turkey, Caucasus, Madeira.

***Hesperorrhynchus lineatotessellatus* (WOLLASTON, 1854)**

Ceutorhynchus lineatotessellatus Wollaston, 1854 and 1857

Ceuthorhynchus lineatotessellatus Wollaston, 1864 and 1865

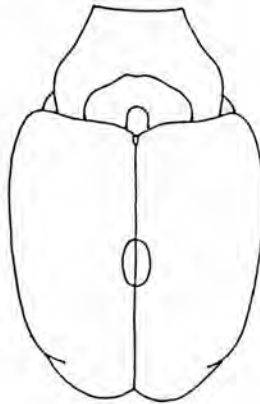
Ceuthorrhynchus lineatotessellatus Fauvel, 1897

Ceuthorrhynchus (Hesperorrhynchus) lineatotessellatus Peyerimhoff, 1926

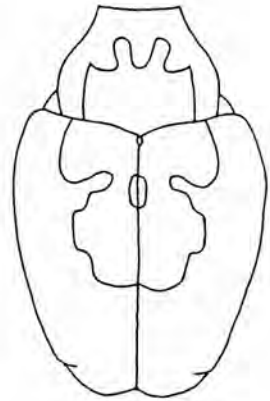
Hesperorrhynchus is a very peculiar Atlantic genus; its species have reduced wings and live on



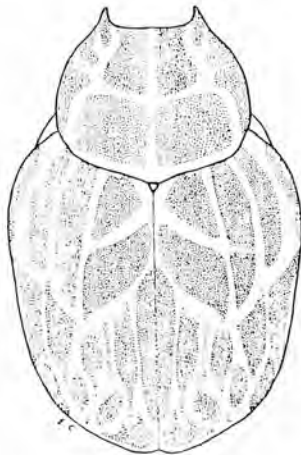
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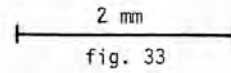
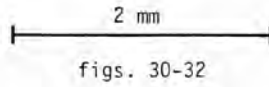
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33



Figs. 30-33. Variation of the pattern of *Thamiocolus wollastoni* from Tenerife: Te no (30); Tenerife: Anaga (31 and 32). Pattern of *Mogulones geographicus* (Goeze) from Italy (33). Schematic drawings.

Crassulaceae, these last represented by a large number of endemites in Macaronesia. The relationships of *Hesperorrhynchus* are uncertain: this genus superficially resembles *Phrydiuchus* Gozis but really it is very different from this as well as from the other Ceutorhynchini. Probably *Hesperorrhynchus* is a palaeoendemite and possibly a relict of a tertiary fauna like the weevil genus *Laparocerus* Schönherr.

Ceutorhynchus lineatotessellatus Wollaston, 1854 is here selected as type species of *Hesperorrhynchus* because the description of the genus was based on the study of this weevil (PEYERIMHOFF, 1926).

Hr. and Hk. LINDBERG (1958) followed by ISRAELSON (1980) and by ISRAELSON et alii (1982) were the first authors to rightly consider *Hesperorrhynchus* a separate genus.

H. lineatotessellatus is a very rare species, collected by WOLLASTON (1854) on *Aeonium glandulosum* (Ait.) Webb & Bert. (= *Sempervivum patina* Loewe.).

MADEIRA. Ribeiro de Santa Luzia; Ribeiro Frio (WOLLASTON, 1854)

General distribution. Madeira

Hesperorrhynchus dentipes Israelson, 1980

Hesperorrhynchus dentipes Israelson, 1980

This species is known only from the unique female holotype, sifted from the mosses of a cave.

PALMA. Cueva de la Zarza (ISRAELSON, 1980)

General distribution. La Palma

Hesperorrhynchus hesperus (WOLLASTON, 1864)

Ceuthorhynchus hesperus Wollaston, 1864 and 1865

Ceutorhynchus hesperus Marseul, 1875

Ceuthorrhynchus (Hesperorrhynchus) hesperus Peyerimhoff, 1926

Hesperorrhynchus hesperus Hr. & Hk. Lindberg, 1958

A species hitherto considered very rare as its biology was completely unknown. Many specimens were collected by myself, G. Meloni and P. Oromí in Gomera and Tenerife on the flowers of *Aichryson laxum* (Haw.) Bramwell, *A. punctatum* (Chr. Sm.) Webb & Berth. and *A. parlatorei* Bolle; the inflorescence and the small surrounding leaves were riddled by the insects.

A single female specimen from Wollaston collection with a red label (=Lanzarote) was seen in the Oberthür collection (Muséum National d'Historie Naturelle, Paris). As the colours used in the last century easily verge, it seems more correct to exclude this unusual and unpublished datum of Lanzarote from the chorology of this species while awaiting the possibility of detecting other specimens in the dry eastern Canary Islands.

HIERRO. El Golfo (WOLLASTON, 1964)

GOMERA. "Gomera" (WOLLASTON, 1865); El Carmen!; Chorros de Epina!; Bosque del Cedro!; El Cedro!; Ermita N.S. de Lourdes!; Espigón de Ibosa!; Cumbre J. Tomé!; Monteforte!

TENERIFE. Las Mercedes (Hr. & Hk. LINDBERG, 1958); Monte de Las Mercedes; San Diego!; Barranco San Antonio!; Casas de la Cumbre!; Las Carboneras; B. co del Río!; Cabezo del Tejo!; Monte del Agua!

General distribution. Canary Islands.

Hesperorrhynchus phytobioides (Wollaston, 1864)

Ceuthorrhynchus phytobioides Wollaston, 1864 and 1865

Ceuthorrhynchus phytobioides Marseul, 1875

Ceuthorrhynchus (Hesperorrhynchus) phytobioides Peyerimhoff, 1926

Hesperorrhynchus phytobioides Hr. & Hk. Lindberg, 1958

Hesperorrhynchus phytobioides Israelson et alii, 1982

This weevil was collected together with *H. hesperus* in Tenerife on *Aichryson laxum* and *A. punctatum*. *H. phytobioides* was however less abundant than the former.

TENERIFE. near Taganana (WOLLASTON, 1864); Barranco San Antonio; Las Mercedes (Hr. & Hk. LINDBERG, 1958); Monte Aguirre!; Taco!; Cumbres de Anaga!; El Bailadero!; Las Carboneras: B.co del Río!; Casas de la Cumbre!

GRAN CANARIA. Los Tilos (ISRAELSON et alii, 1982)

General distribution. Canary Islands

Thamiocolus wollastoni (Uytenboogaart, 1930), **comb. nov.**

Ceuthorrhynchus (s. str.) *Wollastoni* Uytenboogaart, 1930 and 1940

Ceuthorrhynchus (s.str.) *wollastoni* Hr. & Hk. Lindberg, 1958

Ceuthorrhynchus wollastoni Oromí, 1984

The shape of tibiae and the biology of this species allow us to comprise it in the genus *Thamiocolus* Thomson (**comb. nov.**). The position of *T. wollastoni* into the genus is isolated: only *T. brisouti* (Faust, 1888) and *T. sulphureus* (Faust, 1885), both from Central Asia have elytral and pronotal sides entirely covered with dense yellowish scales. *T. sulphureus* has however mutic femora, well developed lateral tubercles of pronotum, strongly muricate preapical calli, while *T. brisouti* is larger (mm 3,7-3,9 instead of mm 2,5-3), has sides of prothorax abruptly curved and without tubercles medially, elytral intervals only 1,5 times wider than the striae, and much less dense vestiture.

T. wollastoni is an extremely variable species; in a series of some 200 samples studied it is hard to find two identical specimens. The variation involves not only the colour pattern (figs. 27-32) but also the shape of rostrum, the distance of antennal insertion from beak apex, the convexity of prothorax and elytra; the shape of aedeagus is instead rather constant (figs. 25-26). The population from Gomera varies much less than those from Tenerife. In Gomera *T. wollastoni* was collected by myself at Aguajilva exclusively on *Sideritis lotoyi* (Pitard) Ceb. & Ort.; no specimens were found on the syntopic *S. gomerae* De Noe. In Tenerife the population from Teno Massif and possibly those from Aguamansa live on *S. canariensis* L. whilst in Anaga Massif the weevil can be found exclusively on *S. macrostachys* Poiret. Although the populations from Gomera, from Teno and Teide mountains, and from Anaga Massif live on different plants and are on average slightly different each other, it is impossible to recognize any subspecies because the wide range of variation.

GOMERA. Barranco de Aguajilva!; Torián!; (OROMÍ, 1984)

TENERIFE. Aguamansa (UYTTENBOOGAART, 1940); El Bailadero!; El Pijaral!; Cumbre de Bolicos!; Erjos del Tanque!

General distribution. Canary Islands.

S P E C I E S	CA	MA	AZ	CV
<i>Hypurus bertrandi</i> *				X
<i>Ceutorhynchus pallidactylus</i> *	X	X		
<i>Ceutorhynchus canariensis</i>	X			
<i>Ceutorhynchus obstrictus</i> *		X	X	
<i>Sirocalodes nigroterminatus</i>	X	X	X	
<i>Stenocarus ruficornis</i> *		X		
<i>Parathelcus nesicola</i>	X			
<i>Mogulones pseudopollinarius</i> s.lato	X			
<i>Mogulones geographicus</i> *		X		
<i>Hesperorrhynchus lineatotessellatus</i>		X		
<i>Hesperorrhynchus dentipes</i>	X			
<i>Hesperorrhynchus hesperus</i>	X			
<i>Hesperorrhynchus phytobioides</i>	X			
<i>Thamiocolus wollastoni</i>	X			
<i>Micrelus ferrugatus</i>	X			

CA = Canaries MA = Madeira AZ = Azores CV = Cape Verde

Table 1

S P E C I E S	HI	PA	GO	TE	GC	FU	LA
<i>Ceutorhynchus pallidactylus</i> *	X	X	X	X	X	X	
<i>Ceutorhynchus canariensis</i>				X	X	X	X
<i>Sirocalodes nigroterminatus</i>	X	X	X	X	X		
<i>Parathelcus nesicola</i>			X	X	X		
<i>Mogulones pseudopollinarius</i> f. typ.		X		X			
<i>Mogulones pseudopollinarius biondii</i>					X		
<i>Hesperorrhynchus dentipes</i>		X					
<i>Hesperorrhynchus hesperus</i>	X		X	X			
<i>Hesperorrhynchus phytobioides</i>				X	X		
<i>Thamiocolus wollastoni</i>			X	X			
<i>Micrelus ferrugatus</i>				X			

HI = Hierro PA = Palma GO = Gomera TE = Tenerife GC = Gran Canaria
FU = Fuerteventura LA = Lanzarote

Table 2

S P E C I E S	Canaries	Madeira	Azores
<i>Ceutorhynchus canariensis</i>	X		
<i>Sirocalodes nigroterminatus</i>	X	X	X
<i>Parethelcus nesicola</i>	X		
<i>Micrelus ferrugatus</i>	X		

Species closely related with continental ones (neoendemites) and native non-endemic species

Table 3

S P E C I E S	Canaries	Madeira	Azores
<i>Mogulones pseudopollinarius</i> s.lato	X		
<i>Hesperorrhynchus lineatotessellatus</i>		X	
<i>Hesperorrhynchus dentipes</i>	X		
<i>Hesperorrhynchus phytobioides</i>	X		
<i>Thamioecolus wollastoni</i>	X		

Species not closely related with continental ones (palaeoendemites)

Table 4

CANARIES	MADEIRA	AZORES	CAPE VERDE
I = 10,00%	I = 66,66%	I = 50,00%	I = 100,00%
N = 40,00%	N = 16,67%	N = 50,00%	N = 0,00%
P = 50,00%	P = 16,67%	P = 0,00%	P = 0,00%

Percentages of introduces (I), neoendemic (N) and palaeoendemic (P) species

Table 5

Micrelus ferrugatus (Perris, 1847)

A genus and species previously unknown from the Canaries. Some 30 specimens were collected April 13 and May 2, 1987 by myself and by Giovanna Meloni on the foliage of *Erica scoparia* L. ssp. *platycodon* Webb & Berth. at Casas de la Cumbre, Tenerife. We were not able to find *M. ferrugatus* other than in the above locality in spite of abundance of the host plant on cliffs and banks in laurel forest of Anaga Massif. Our careful searching on the same plant, locally very abundant, in Gomera failed to yield any result.

This species can be easily recognized among the Macaronesian Ceutorhynchinae for the integument (under surface and extreme base of the elytra black excepted) entirely ferrous-red. The study of Canarian samples revealed no differences from the continental ones. In the mainland *M. ferrugatus* live on *Erica scoparia scoparia*; one can wonder if this species may be recently arrived in Tenerife since the continental and Canarian populations of the host plant are subspecifically differentiated unlike those of weevil.

TENERIFE. Casas de la Cumbre!

General distribution. Western Mediterranean countries, Tenerife.

ZOOGEOGRAPHIC NOTES

The subfamily Ceutorhynchinae comprises in the Atlantic Islands 15 species (one of which represented by two subspecies), the distribution of which is outlined in Table 1; no Ceutorhynchinae is known from the Salvage Islands. Table 2 analytically represents the chorology of the species living in the Canaries.

The 5 introduced species are evidently of no zoogeographic significance and are thus excluded from the treatment.

The remaining 10 species can be divided into two groups. In the first (table 3) we can assemble the endemic Ceutorhynchinae which are so closely related to continental species to be safely considered as neoendemites, together with *Micrelus ferrugatus* which shows no differences between the continental and Canarian populations. The second one (Table 4) groups all the Ceutorhynchinae whose relationships with the continental fauna are not close, and for which can be assumed a longer time of isolation; these are thus considered as palaeoendemites.

A fact to be pointed out is that Ceutorhynchinae have not suffered adaptive radiation in Macaronesia.

It is out of doubt that the number of Ceutorhynchinae is too scanty for a good understanding of zoogeographic relationships between the three groups of islands in which native weevils of this subfamily can be found. At any rate it is evident that the Canarian fauna is the most complete: none of the genera of Macaronesia Ceutorhynchinae (the introduced *Stenocarus* and *Hypurus* excepted) is lacking in the Canaries, and among the Canary Islands all these genera are present in the island of Tenerife. This can be only in part explained with the ecological diversity of Tenerife, as many of the host plants of native Ceutorhynchinae are in the same way distributed at least in the five western islands of the archipelago. A careful study of the Canarian Chrysomelidae Alticinae (a Coleopteran group, the ecology and the host pattern of which are similar to those of Ceutorhynchinae) made by BIONDI (1987) pointed out as Tenerife for the height above sea (m 3718) and for the area (m² 2352) can be considered as "mainland island" toward other islands of the archipelago; the available data on distribution of native Ceutorhynchinae agree basically with this hypothesis (fig. 35) even we can admit that the fauna of some islands is still incompletely known.

The distribution of indigenous Ceutorhynchinae in the Azores and Madeira seems to be greatly influenced by the distance between the archipelago and the mainland (fig. 34). Here can be noticed that no palaeoendemites have been found in the Azores; this agrees with the hypothesis made by OROMÍ (1982) that these islands may be too young to have remains of the tertiary fauna.

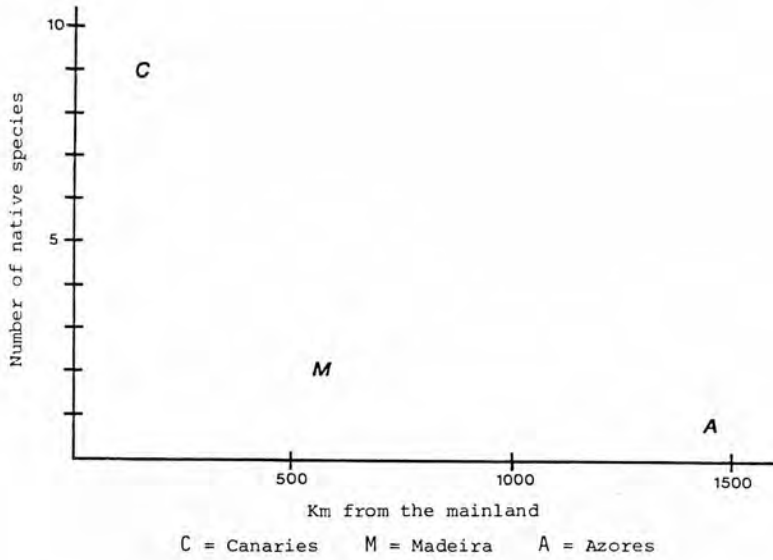


Fig. 34

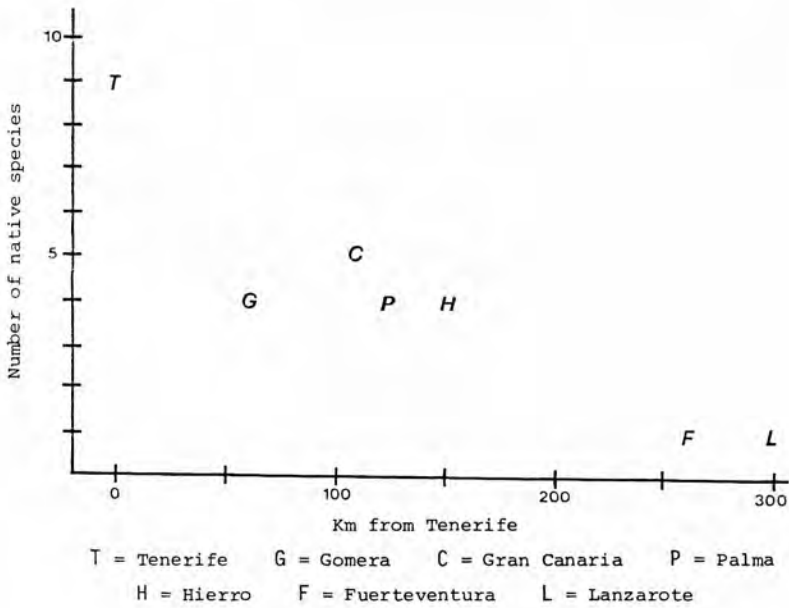


Fig. 35

I wish to gratefully thank the following Colleagues, who assisted me in various ways during the preparation of this paper: Dr. Paolo Audisio, Rome; Dr. Maurizio Biondi, Rome; Dr. Antonio Machado, Tenerife; Prof. Pedro Oromí, Tenerife; Mlle Hélène Perrin, Paris; Mark Russell, Peterborough; Richard T. Thompson, London; Prof. Augusto Vigna-Taglianti, Rome.

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