

THE OLIGOTA (COL., STAPHYLINIDAE) OF MADEIRA

By S. A. Williams *

With 12 figures

The present work gives an account of the six species of *Oligota* that occur on the island of Madeira. A key to species is given and the aedeagus and spermatheca (where it is apparent) are figured. A lectotype is designated for *O. analis* (Wollaston) (= *Somatium anale* Woll.) and the species is transferred from s. gen. *Holobus* to *Oligota* s. str.

INTRODUCTION

Oligota are small insects, seldom exceeding 1.5 mm in length, the species often bearing a strong resemblance to one another and are included in the extensive family Aleocharinae. From other members of the family they may be distinguished by the antennae which consist of only ten segments and the tarsi which have only four segments. The broad-bodied species may also be confused with individuals of the genus *Hypocyrtus*, but may be recognised by having the antennal insertions on the top of the head and not in the front as in *Hypocyrtus*.

A brief history of our knowledge of the genus in Madeira is not without interest: Wollaston (1854) in *Insecta Maderensia*, the first authoritative account of the coleoptera of the island, gives only one species which he calls (with some uncertainty) *inflata* Mannerheim. At the same time he erected a new genus *Somatium* for a single species which he called *anale*. In his Catalogue of 1857 he adds *pusillima* (Gravenhorst). No further additions are made in his collective work *Coleoptera Atlantidum* (1865), but in 1871 he adds *ruficornis* Sharp (= *punctulata* Heer) on a single specimen detected by Dr. Sharp amongst Wollaston's material (the specimen cannot be traced but there is no reason to doubt its authenticity). On the advice of Dr. Sharp he also corrects his original determination of *inflata* to *parva* Kraatz. Sharp also pointed out to Wollaston that *anale* was congeneric with certain *Oligota*; indeed Fauvel (1897) gives it as a synonym of *O. apicata* Erichson, which was rightly not accepted by Wollaston. Two further erichsoni were made to the list by Fauvel in 1897: *flavicornis* (Lacordaire) and *pumilio* Kiesenwetter (Fauvel's interpretation of *pumilio* is incorrect, the insect is *muensteri* Bernhauer). Examples of both species were sent to Wollaston and are today housed in his collection at the British Museum (Nat. Hist.) in a special drawer along with other material from Fauvel. It should be mentioned here that a section of

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Wollaston's collection is housed at the Hope Dept. of Entomology, Oxford. Other workers have added to the knowledge of the Madeiran *Oligota* without adding any further species to the list, but it is possible that others may occur in the more inaccessible parts of the island, or more likely, further immigrant species may arrive from other regions. It appears that only *anale* is a native of Madeira, the other five species are accidental imports, probably from Europe or the African continent which is not surprising as their small size and mode of life adapts them well for transporting in shipments of foodstuffs and vegetable matter.

There appear to be no *Oligota* records from the neighbouring group of islands forming the Desertas, but from Porto Santo, another small island 39 Kilometres north east of Madeira I have seen specimens of *parva* and *muensteri* both standing as *inflata* in the Wollaston collections.

SUB-GENERA

Only two of the five recognised sub-genera of *Oligota* are represented in the Madeiran fauna: *Holobus* and *Oligota* s. str. In the present work the key used for separating the two groups is broadly that of Coiffait and Saiz (1967) (who treat them as separate genera) and based on certain mouthparts rather than on body shape as used by most earlier authors including Fenyés (1918). This results in a far more satisfactory division, in which only *flavicornis* is retained in *Holobus* and *analis* previously included in *Holobus* is transferred to *Oligota* s. str.

KEY TO SUB-GENERA *HOLUBUS* AND *OLIGOTA* S. STR.

- 1 Body broad, abdomen strongly tapering behind; labrum deeply divided in the middle; labium with a small entire lobe with bristles; mandibles simple *Holobus*
- Body shape variable, broad with abdomen strongly tapering behind, to narrow sub-parallel; labrum truncate or slightly concave at the front edge; labium small and divided into two lobules; right mandible very finely dentate *Oligota* s. str.

KEY TO THE SPECIES

- 1 Body broad, strongly tapering behind (as fig. 11) 2
- Body narrow, sub-parallel (as fig. 12) 3
- 2 Body brown, apex of the abdomen flavescent *analis* (Woll.)
- Body black, unicolorous *flavicornis* (Lac.)
- 3 Body brown, apex of the abdomen flavescent. Tergite 7 (usually the 5th visible) almost twice as long as 6 (fig. 12) *parva* Kr.
- Body dark brown or black, unicolorous. Tergite 7 about as long as 6 4
- 4 Body broader, 0.45 mm (size larger) *punctulata* Heer
- Body narrower, 0.35 mm or 0.40 mm (size smaller) 5
- 5 Pronotum strongly sculptured. Antennal club with three segments. Body narrower, 0.35 mm *pusillima* (Grav.)
- Pronotum weakly sculptured. Antennal club with 4 segments. Body broader, 0.40 mm *muensteri* Bernh.

Note. The abdomen in specimens preserved in spirit usually distends whilst in dried examples it often telescopes in. For this reason body length measurements cannot be precise and are given in the notes only as a guide. Body width measurements, however, are more reliable and are taken across the widest part of the elytra.

THE SPECIES

s. gen. **Holobus** (one species)

(1) **Oligota flavicornis** (Lacordaire)

Hypocyptus flavicornis Lacordaire 1835, Faune Ent. Paris I: 521.

Oligota flavicornis Fauvel 1897, Revue Ent. Caen 16: 50 and 1902, *ibid.* 21: 219.

Body black with the extreme apex of the abdomen sometimes a little lighter. Length 1 mm, width 0.55 mm. Antennae flavous with an abrupt three-segmented club. Legs ferrugineous. Sculpture on the tergites consisting of longitudinal carinae (not unlike teeth of a comb), continuous with the anterior edge of the tergite and reaching more than halfway down the tergite, together with small low tubercles. In all the other Madeiran *Oligota* the body sculpture consists of numerous, small, flat-topped V- or U-shaped very low tubercles. Aedeagus (fig. 2) of a most distinctive shape and a coiled tube visible when the whole is cleared in clove oil. Spermatheca (fig. 8) with an almost circular bulb and a short stem.

Madeiran Distribution — Funchal Public Gardens, four specimens (Fauvel).

World Distribution — Europe.

Ecology — The Madeiran specimens are recorded by Fauvel (1902) as having been taken in compost. This is not the usual habitat for *flavicornis*. In Europe it is usually beaten from bushes or trees, where it feeds on red spider mites (*Tetranychus* sp.), it is known to occur in apple (*Malus*) orchards where it is considered to be a beneficial insect. Adults have been taken during the winter from grass tufts in or near orchards.

Oligota s. str. (five species)

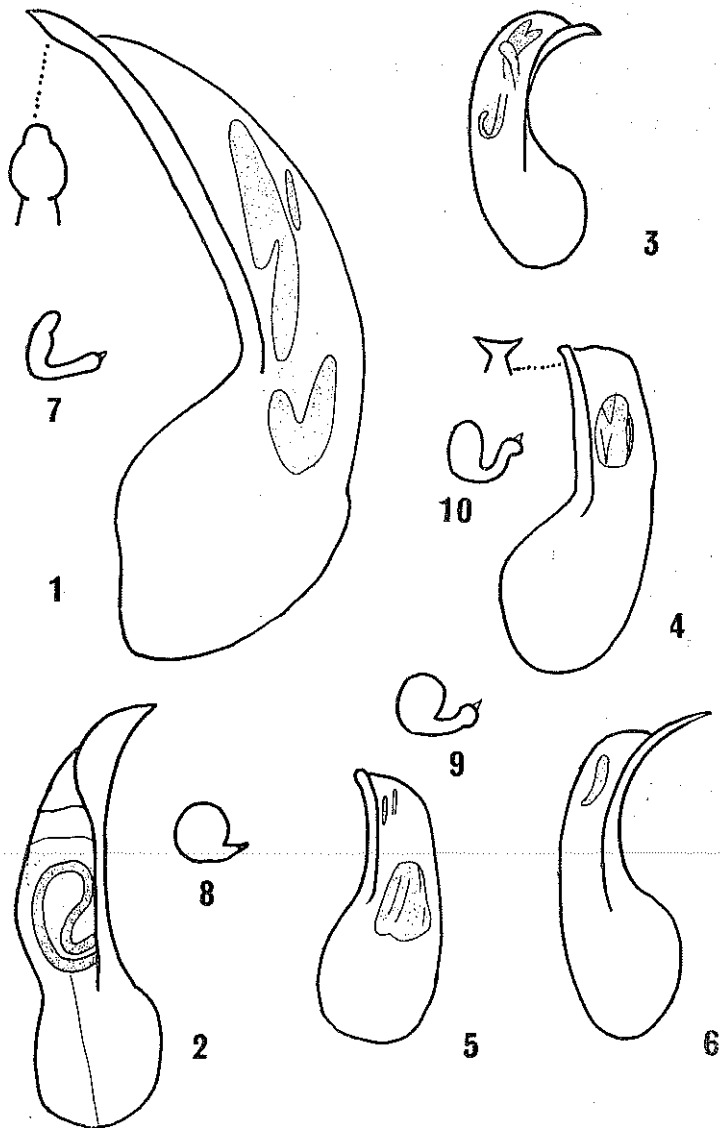
(1) **Oligota analis** (Wollaston)

Somatium anale Wollaston 1854, Ins. Mad.: 563; 1857, Cat. Mad.: 184; 1865, Col. Atl.: 477-78; 1871, Trans. ent. Soc. Lond.: 296-97.

Oligota apicata Fauvel 1897, Revue Ent. Caen. 16: 50 and 1902, *ibid.* 21: 129.

Oligota analis Jansson 1940, Arkiv. för Zoologi 32 A (24): 14-15; Likovsky 1963, Comment. Biol. Helsing. 25(2): 44.

Body brown, with the apex of the abdomen flavescens. Length 1.5 mm, width 0.65 mm. Antennae flavous with the last five segments



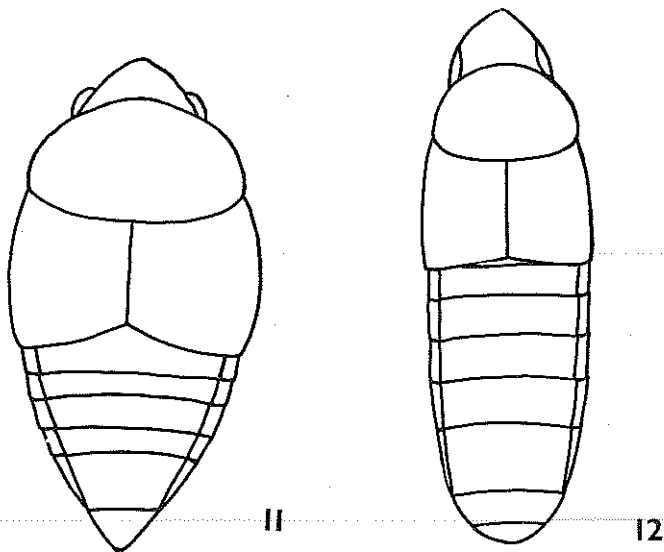
Figs. 1-10. — *Oligota* spp.: 1-6, median lobe of aedeagus, to scale: 1, *analis* (Woll.), showing also the dorsal view of the apex; 2, *flavicornis* (Lac.); 3, *parva* Kr.; 4, *punctulata* Heer, showing also the dorsal view of the apex; 5, *pusillima* (Grav.); 6, *muensteri* Bernh. 7-10, Spermatheca: 7, *analis* (Woll.); 8, *flavicornis* (Lac.); 9, *pusillima* (Grav.); 10, *punctulata* Heer.

infusate (figured by Jansson, 1940). Legs flavescent. Aedeagus (fig. 1) with a characteristic apex when seen from below. Spermatheca (fig. 7) with the inner edge of the bulb sinuate. This is a very distinct species and unlikely to be confused with any other Madeiran insect, although it is similar in general appearance to the European *O. apicata* Kr.

Madeiran Distribution — Lombo dos Pecegueiros, Ribeiro Frio and Santo António da Serra (Wollaston); Rabaçal 17.7.4.8.1935 (Lundblad); Rosário 2.7.1957 (Likovsky); Cedro Gordo 24.4.1972 (Williams).

World Distribution — apparently confined to Madeira.

Ecology — a rare species recorded from damp leaves, fungus, piles of old sticks thickly covered with lichens and beneath the bark of



Figs. 11 and 12. — *Oligota* spp.: 11, *flavicornis* (Lac.); 12, *parva* Kr.

rotting trees. It appears to prefer damp areas around 1000 metres and is not found in garden refuse tips in and around Funchal as are most of the other (imported) species.

Lectotype mounted on a small piece of white card, bearing the following labels: «Type» (this is a small circular label, placed on a selected specimen by the entomology department; it has no standing as the designation was never published), «*Somatium anale* Woll» in Wollaston's own hand and my own labels. One paralectotype bearing only my own labels. Both specimens are housed in the British Museum (Nat. Hist.).

(2) *Oligota parva* Kraatz

Oligota parva Kraatz 1862, Berliner ent. Zeitschr. 6: 300.

Oligota inflata Wollaston (in part) 1854, Ins. Mad. 562-63; 1857, Cat. Mad.: 184; 1865, Col. Atl.: 467-77.

Oligota parva Wollaston 1871, Trans. ent. Soc. Lond.: 294-95; Fauvel 1897, Revue Ent. Caen 16: 50 and 1902, *ibid.* 21: 130; Likovsky 1963, Comment Biol. Helsing. 25.2.: 44.

Body brown with the apex of the abdomen flavescent. Length 1 mm, width 0.40 mm. Antennae flavescent with the apex infusate. Legs ferrugineous. Tergite seven (the last with lateral margins and usually the fifth visible) is almost twice as long as the sixth (fig. 12) whilst in the other three narrow bodied species it is only a little longer than the sixth. The pronotal sculpture is stronger and closer than that on any other Madeiran species and with a little practice this character alone will identify it. The aedeagus (fig. 3) has the apical third strongly curved downwards, pointed at the apex. There is no recognizable spermatheca.

Madeiran Distribution — probably common throughout the island at low elevations, it is by far the commonest *Oligota* in compost heaps in and around Funchal. Other records: Serra de Água, 660 metres, 20.21.4.1959 (Likovsky); Monte, 600 metres, 23.4.1972 (Williams). In the Wollaston coll. Oxford, there are specimens from the neighbouring island of Porto Santo.

World Distribution — almost cosmopolitan, first recorded in Europe in barges probably from Africa. Canaries, Cape Verde, Africa, U. S. A. and the West Indies.

Ecology — it is found in general vegetable refuse, grass cuttings and compost heaps.

(3) *Oligota punctulata* Heer

Oligota punctulata Heer 1839, Fn. Helv. I: 313.

Oligota ruficornis Wollaston 1871, Trans. ent. Soc. Lond.: 295-96.

Oligota punctulata Fauvel 1897, Revue Ent. Caen 16: 50 and 1902, *ibid.* 21: 130.

Body dark brown or black. Length 1.2 mm, width 0.45 mm. Antennae flavescent with the basal segments usually clear yellow. Legs flavescent. The aedeagus (Fig. 4) is broadened at the apex when seen from below. Spermatheca (fig. 10) with a narrow bulb and curved stem. The larger broader body form of *punctulata* together with its pale coloured antennae should readily distinguish this species.

Madeiran Distribution — Funchal area, a single specimen (Wollaston).

World Distribution — Europe.

Ecology — In Europe it is found in general vegetable refuse, but seems to prefer a drier situation than *pusillima* and is more often

found in old haystacks and reedstacks. Wollaston (1871) does not state how he took the Madeiran specimen, but as it was mixed with other material it seems likely that he did not know himself.

(4) *Oligota pusillima* (Gravenhorst)

Aleochara pusillima Gravenhorst 1806, Mon. Col. Micr.: 175-76.

Oligota pusillima Wollaston 1857, Cat. Mad.: 183-84; 1865, Col. Atl.: 477; Fauvel 1897, Revue Ent. Caen 16: 50 and 1902, *ibid.* 21: 130; Jansson 1940, Arkiv. för Zoologi 32 A (24): 15.

Body dark brown or black. Length 1 mm, width 0.35 mm. Antennae ferrugineous with the basal segments paler. Legs ferrugineous. The aedeagus (fig. 5) is almost straight and pointed at the apex, the spermatheca (fig. 9) with a round bulb and an almost straight stem. *O. pusillima* may easily be confused with *muensteri* if the genitalia are not examined, but the stronger body sculpture, particularly apparent on the pronotum, should distinguish it. The antennal club in *pusillima* is composed of three segments, whilst that of *muensteri* is four, but it must be admitted that it is not always easy to determine the number of segments in the club, particularly if the antennae are badly set.

Madeiran distribution — Funchal (the Gorgulho and Cabo Garajau) and the lower extremity of the Ribeira da Janela (Wollaston); Rabaçal 1080 metres, 17.4-4.8.1935 (Lundblad); Funchal 2.1956 (Palm); Funchal and Cedro Gordo 20-28.4.1972 (Williams).

World distribution — Europe, Africa, Canaries and U. S. A.

Ecology — occurs in vegetable refuse, including compost heaps and cut grass. Under stones (Wollaston). In Europe it also occurs in ants nests (*Formica* spp.), grass tufts and rotting seaweed.

(5) *Oligota muensteri* Bernhauer

Oligota muensteri Bernhauer 1923, Ent. Tidsk. 44: 146.

Oligota inflata Wollaston (in part) 1854, Ins. Mad.: 562-63; 1857, Cat. Mad.: 184; 1865, Col. Atl.: 476-77.

Oligota pumilio Fauvel 1897, Revue Ent. Caen. 16: 50 and 1902, *ibid.* 21: 130.

Body dark brown or black. Length 1 mm, width 0.40 mm. Antennae ferruginous, with the apex darker. Legs ferruginous. Aedeagus (fig. 6) with the apical third curved downwards, pointed at the apex. There is no recognizable spermatheca. This species can be confused with *pusillima* if the aedeagus is not examined, however the lightly sculptured pronotum and four segmented antennal club (three in *pusillima*), which is usually darker, should enable it to be recognized without much difficulty. Pale coloured specimens also occur and these can be confused with *parva* but again the lightly sculptured pronotum of *muensteri*, as against that of *parva* which has very strong close sculpture, should separate them. The aedeagus is similar to *parva* in

that is is curved downwards towards the apex, but in *muensteri* this curved section is thinner and the curve more regular.

Madeiran Distribution — environs of Funchal (Fauvel); Terreiro da Luta, Encumeada and Cedro Gordo 20-28.4.1972 (Williams); Funchal 2.1966 (Palm). In the Wollaston coll. there are specimens from the neighbouring island of Porto Santo.

World Distribution — Norway, Finland, France, Italy, N. Africa, Malta, Corsica and the Canaries.

Ecology — occurs in rotting vegetable refuse, in particular mouldy pine (*Pinus* sp.) branches, chippings and damp leaves. At Terreiro da Luta it was particularly abundant in a heap of damp, rotting mimosa (*Acacia*) seed pods. It appears to prefer the intermediate altitudes around 1000 metres.

ACKNOWLEDGEMENTS

I am indebted to the following for their help with advice and material: A. E. Gardner, Banstead; Mr. G. E. Maul, Municipal Museum, Funchal; Messrs. R. D. Pope and P. M. Hammond, British Museum (Nat. Hist.); Dr. Thüre Palm, Uppsala; Mr. E. Taylor, Oxford University Museum.

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