

The genus *Spilomalus* Graham, 1956 (Hymenoptera: Chalcidoidea, Pteromalidae)

by

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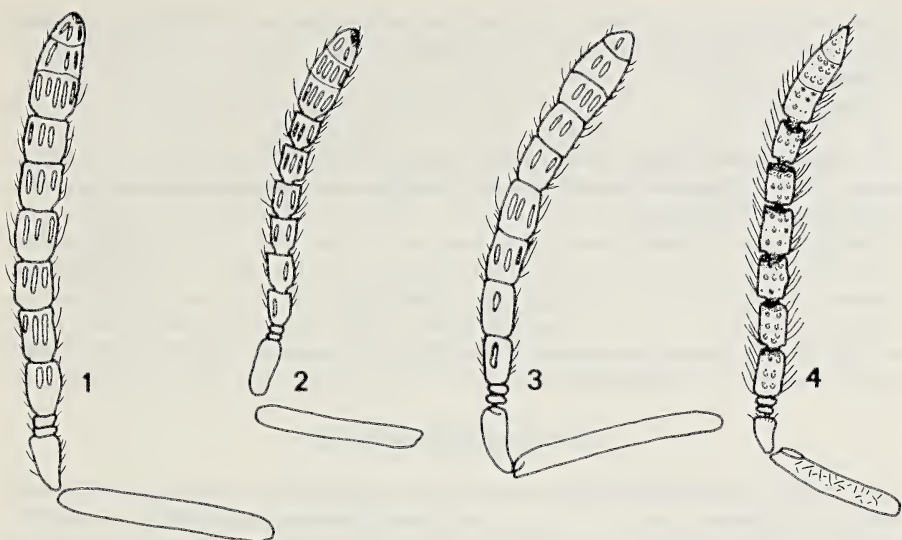
ABSTRACT. — Two new species of *Spilomalus* are described. Keys for males and females to the four species of the genus are presented.

In his monograph on European Pteromalidae the second author tentatively discussed two species of *Spilomalus* Graham, 1956 (Graham, 1969). At present more information is available: two new species have been found and the males of all species can be associated with their females.

The type-species *S. quadrinota* (Walker) is rare but widely distributed in Europe. *S. biquadratus* (Wollaston), now regarded as a good species, is located on Madeira. *S. dolichogaster* sp. n. is found in the mediterranean regions of France and Spain. *S. atlanticus* sp. n. is restricted to the Canary Islands.

Keys to the species of *Spilomalus* Graham (females)

1. Gaster $2.45\text{--}2.55 \times$ as long as broad; last tergite $1.4\text{--}1.8 \times$ as long as broad. Forewing not reaching tip of gaster when laid back. Combined length of pedicellus and flagellum almost equal to breadth of head. Eyes separated by $1.05\text{--}1.15 \times$ their length. Antennal flagellum slender proximally, not or hardly stouter than pedicellus, in dorsal view of the latter; first segment of funicle about 0.6 length of pedicellus, slightly longer than broad. Forewing with two fuscous bands, the first broad and reaching anal margin of wing, second reaching about half way across the wing. Malar space 0.4 length of eye *dolichogaster* sp. n.
- Gaster $1.55\text{--}2.2 \times$ as long as broad; last tergite at most as long as broad. Forewing reaching to beyond tip of gaster. Combined length of pedicellus and flagellum $0.85\text{--}0.93$ breadth of head. Distance between eyes and antennal characters sometimes otherwise 2
2. Antenna (fig. 1) with flagellum stouter; proximally slightly stouter than pedicellus; first funicular segment nearly or just as long as pedicellus and at least slightly longer than broad. Eyes separated by $1.20\text{--}1.42 \times$ their length. Head and thorax bluish-black. Transverse brownish clouds on forewings sometimes absent but when present of about equal intensity, neither usually reaching anal margin of wing. Malar space $0.43\text{--}0.45$ length of eye *quadrinota* (Walker)
- Antennal flagellum (fig. 2) more slender, proximally not or hardly stouter than pedicellus; first funicular segment $0.5\text{--}0.7$ length of pedicellus, usually quadrate, rarely a little longer than broad. Eyes separated by $1.05\text{--}1.28 \times$ their length. Head and thorax bronze-black ... 3
3. Gaster $1.8\text{--}2.1 \times$ as long as broad. Eyes separated by $1.25\text{--}1.28$ their length. Malar space approximately 0.5 length of eye. Funicle (fig. 2) proximally as stout or even a little stouter than pedicellus. Forewing with two incomplete dark bands which are separated by a hyaline area as wide as the bands *atlanticus* sp. n.
- Gaster $1.5\text{--}1.6 \times$ as long as broad. Eyes separated by $1.05\text{--}1.1 \times$ their length. Malar space 0.33 length of eye. Funicle proximally hardly as stout as pedicellus. Forewing slightly yellowish tinged, with two broad dark bands which are narrowly separated or even tend to coalesce *biquadratus* (Wollaston)



Figs 1-4. *Spilomalus* spp., antennae. 1, *S. quadrinota* (Walker), ♀; 2, *S. atlanticus* sp. n., ♀ paratype; 3, *S. dolichogaster* sp. n., ♀ holotype; 4, *S. atlanticus* sp. n., ♂ paratype.

(males)

1. Antennal scape reaching level of vertex but not above it 2
- Antennal scape reaching slightly though distinctly above level of vertex 3
2. Legs mainly black, including tibiae. Gaster black *atlanticus* sp. n.
- Legs with trochanters, tibiae and tarsi mainly, testaceous. Proximal half of gaster testaceous *dolichogaster* sp. n.
3. Head and thorax bluish-black. Scutellum more finely reticulate than mesoscutum. Thorax about $1.45 \times$ as long as broad. Gaster with testaceous subbasal spot, sometimes indistinct. Tibiae testaceous, or more or less infuscate medially *quadrinota* (Walker)
- Head olive with weak bronze tinge on vertex; dorsum of thorax bronze. Both mesoscutum and scutellum uniformly reticulate. Thorax about $1.35 \times$ as long as broad. Gaster with testaceous subbasal transverse band. Tibiae testaceous *biquadratus* (Wollaston)

Spilomalus atlanticus sp. n.

Female. — Colour: Head and thorax with olive-greenish and bronze tints, the latter tending to predominate on mesoscutum and scutellum; gaster bronze. Antennae black; scape reddish over at least basal third, in one female reddish with dorsal edge infuscate. Coxae, trochanters mainly, femora except their tips very narrowly, black; tibiae fuscous to black with bases and tip narrowly testaceous; fore-tarsi brownish, mid- and hind-tarsi brownish with basitarsus mainly pale testaceous. Wings slightly tinged with grey and with two brownish clouds, one below parastigma and the other below stigmal vein, neither reaching anal margin.

Length: 1.7-2.7 mm.

Morphology: Besides the characters given in the key the following can be used to distinguish the females from those of the other species: POL : OOL = 1.7-1.9. Mesoscutum at most twice as broad as long (1.6-2.0). Reticulation on centre of scutellum not much different from that on mesoscutum. Propodeum in profile straight, sloping with an angle of less than 45° . Gaster about twice as long as broad.

Male. — Colour as in female except scape, which is totally black. Gaster black. Funicle (fig.

4) not much different from those of the other species of *Spilomalus*. POL:OOL = 2. Breadth of mesoscutum 1.55-1.80 $\times$ its length. Gaster oblong-obovate.

Length: 1.4-1.6 mm.

Biology: unknown.

Holotype: Female, "ISLAS CANARIAS/GOMERA/A.C. & W. N. Ellis, LA LAJA/450-950 m/1.II.1981". Deposited in the collection of Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam.

Paratypes in coll. Gijswijt: same data as holotype, 1 ♀ and 2 ♂♂. "ESPANA/Isl. Canarias/TENERIFE/A.C. & W. N. Ellis, Adeje/Bco del Infierno/7-11.I.1985", 1 ♂. "ESPANA/Islands Canarias/LA PALMA/A.C. & W. N. Ellis, MNA DE TAGOJA/4.5 km NNW/Santa Cruz 1000 m/18.VII.1985", 2 ♀♀, 1 ♂. Paratypes in Mus. Insular Ciencias Nat. Santa Cruz, Tenerife: "TENERIFE/Ladera de Güimar/11.IV.1962/J.M. Fernández", 2 ♀♀. "TENERIFE/Mte Sta Ursula/1.VII.1979/M. Báez", 1 ♀.

Spilomalus quadrinota (Walker)

Additional records: ENGLAND, Lincolnshire and Middlesex, Graham (coll. Graham). Kent, ex *Anthonomus rubi*, S. G. Jary (coll. British Museum Natural History = BMNH). ITALIA, Varazze, Ortovero and Sardinia; JUGOSLAVIA, Biograd; ESPANA, Barcelona and Castellon, Bouček (coll. Bouček). THE NETHERLANDS, Ruinen, S. v. Heynsbergen (coll. Gijswijt).

Spilomalus biquadratus (Wollaston)

Pteromalus biquadratus Wollaston, 1858: 27, ♀.

Pteromalus obscurellus Walker, 1872: 122, ♂.

Spilomalus biquadratus (Wollaston) Graham, 1969: 480; 1979: 277.

Pteromalus obscurellus Walker was placed in synonymy with *Spilomalus biquadratus* (Wollaston) by Graham (1979: 277).

Known only from 3 specimens: MADEIRA, Lombada dos Pecegueiros, taken either in 1850 or 1855, T. V. Wollaston, 1 ♀; Deserta Grande, probably about 1850, T. V. Wollaston, 1 ♂ (coll. BMNH); near João do Prado, east of Poiso, 26.VII.1982, Graham, 1 ♀ (coll. Graham).

Spilomalus dolichogaster sp. n.

Female. — Black, bluish tinged. Scape fusco-testaceous, pedicellus more darkened, funicle brown-black. Mandibles fuscotestaceous, darkened towards the dents. Gaster with slight violaceous reflections. Coxae concolorous with body, femora black, fore- and mid-tibiae infuscate, hind-tibiae testaceous in apical 1/3. Fore- and mid-tarsi dark, hind-tarsi testaceous, except last segment, which is dark. Forewing with two fuscous clouds, sometimes with an indication of a third one towards the apical margin. The first cloud reaches from parastigma to hind margin. The second one tends to join the proximal cloud in the middle of the wingdisc.

Length: 2.5.-2.75 mm.

Besides by the characters given in the key, this species morphologically differs from the other *Spilomalus* species in the following combination: antennal scape not or hardly reaching lower ocellar margin; first funicle segment 1.8-2.0 $\times$ as long as broad, sixth segment quadrate or somewhat longer than broad (fig. 3). POL : OOL = 2.0-2.3.

Male. — The male differs from the female as follows: gaster oval, yellow on proximal half. Clouds on wing less obvious and not united on middle of wing-surface. Antennae with out-standing hairs; clava pointed, its length: breadth = 3.1. Scapus reaching middle of front ocellus.

Length: 1.5 mm.

Biology: unknown.

Holotype: Female, "SPAIN: Murcia/Sra. de Espuña nr/Totana, 20.VI.1973, Z. Bouček/BM 1973-312", deposited in collection British Museum Natural History.

Paratypes: same data as holotype, 1 ♀ (coll. Bouček). "SPAIN: Madrid/El Escorial/24.X.1978", 1 ♀ (coll. Bouček). "Calella de Costa/(Barcelona) SPAIN/Bouček VI.1971", 1 ♂ (coll. Bouček). "FRANCE/Alpes de Haute Provence/Gignac/26.VIII.1983", 1 ♀, Graham (coll. Graham). "FRANCE/Dépt Gard/M. J. Gijswijt, Crespian/6.VII.1977/Garrigue", 1 ♀ (coll. Gijswijt).

ACKNOWLEDGEMENT

Much of the information about the distribution of *S. quadrinota* and of *S. dolichogaster* is obtained from the collection of our friend Dr. Z. Bouček in London.

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LEMPKE, B. J., [1986] 1985, DE VLINDERS VAN FRIESLAND. 264 p., Index Friese, Nederlandse en wetenschappelijke namen. Uitgave: Fryske Akademy, Ljouwert/Leeuwarden. ISBN 90-6171-640-3 CIP. Gebonden, prijs f 50,—.

In het systematische gedeelte van dit boek worden 1283 vlindersoorten (volgens de auteur meer dan de helft van het aantal dat uit Nederland bekend is) opgesomd, waarbij voor iedere soort de vindplaatsen in Friesland worden vermeld. Soms worden de faunistische gegevens aangevuld met opmerkingen over de biologie; dikwijls ter verklaring van vindplaats of vliegtijd maar ook om de lezer aan te moedigen om de betreffende soort op te sporen teneinde er meer over te weten te komen. Hier en daar sluipen er ook wat determinatiekenmerken in de tekst. Verspreid door het systematische deel zijn 20 pagina's met in totaal 79 kleurenfoto's opgenomen. Deze foto's worden in een kleiner formaat en in zwart/wit herhaald op de pagina's waar de afgebeelde soorten worden besproken. Helaas is aan de kwaliteit van de foto's te vaak te zien dat ze niet door fotografen maar door lepidopterologen zijn gemaakt.

In de inleiding die evenals het voorwoord zowel in het Fries als in het Nederlands is opgenomen, geeft de auteur een overzicht van 130 jaar lepidopterologie in Friesland. Bijzondere aandacht wordt besteed aan de exploratie van de Waddeneilanden en aan de verzamelaars J. H. Alberda, D. ter Haar en G. Dijkstra. Lezende over de twee eerstgenoemden leert men ook veel over J. Th. Oudemans die door goede contacten met tijdgenoten vele interessante collecties voor de toekomst wist te bewaren. Onwillekeurig dringt zich een vergelijking op met de auteur! Wie anders had dit faunistisch overzicht kunnen voltooien?

Ook al omdat de nomenclatuur tot aan de laatste wijzigingen is bijgewerkt, is „De vlinders van Friesland” onmisbaar voor allen die de Friese vlinders bestuderen. — W. Hogenes.