NOTES ON THE SPHECIDAE OF MADEIRA

(HYMENOPTERA ACULEATA)

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With 4 figures

ABSTRACT

The present paper deals with 1) a toxonomical-nomenclatorial problem in *Podalonia madeirae* (Dahlbom, 1845). Evidence is presented that clearly plead for a conception of the material recorded under that name to belong to two species, *P. tydei* (Guillou) and *P. rothi* (Beaumont). 2) Additional material of *P. tydei* is presented. 3) A few zoogeographical and biological aspects in *Sceliphron caementarium* (Drury, 1770) in relation to its occurence in Madeira are discussed.

1. **Podalonia madeirae** (Dahlbom, 1845)

The taxonomical status of that name has been discussed in the literature, and the following concepts have been contended.

The first record (apart from Dahlbom's) of this name is by Gribodo (in Emery, Gribodo et Kriechbaumer, 1894), who publishes two specimens (♀ ♂) of *Psammophila madeirae* Dahlbom from Mozambique

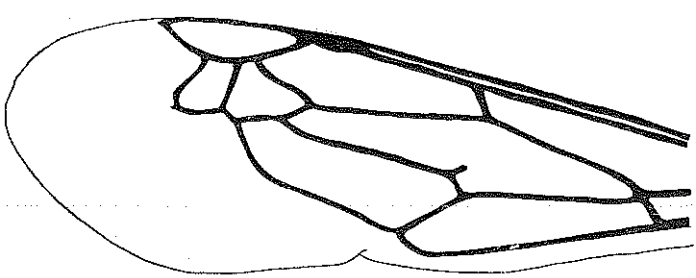

Fig. 1. — *Podalonia rothi,* left fore wing.

Saunders (1903) records 2♀ ♀, 2♂ ♂ of *Podalonia viatica* (Linné) (= *hirsuta* (Scopoli)) caught by T. V. Wollaston and named «Maderæ» Dahlbom by Smith, noting that the material is referable to the same giving a short description of distribution and morphological variation of the species.

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«variety» of *P. viatica* («pale hairs on the propodeum») that he caught himself in Jersey and at St. Briac in Great Britain.

Kohl (1907) considers Dahlbom's species conspecific with P. *tydei* (Guillou, 1841) without discussing the matter.

Beaumont (1953), elucidating taxonomical and nomenclatorial problems in some of the Specidae described by Dahlbom, shares the opinion of Kohl after having studied the type-material (a female specimen, Madeira, coll. Dahlbom).

Through the kindness of Mr. C. Vardy, British Museum (Nat. Hist.), London, I have been able to study the Wollaston material and in addition a female and a male specimen captured by the Durham expedition to Madeira, Caramuja, 1250 m., 25.VII.1954. From the Dahlbom collection at the Zoological Institute in Lund, Sweden, Mr. R. Danielsson

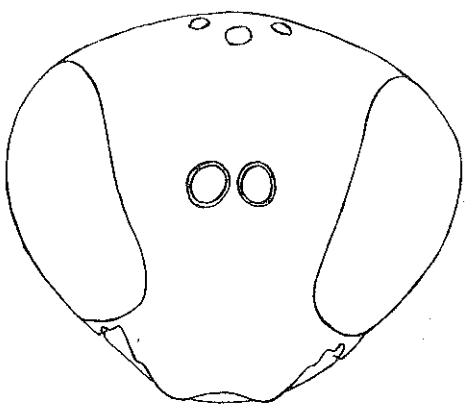

Fig. 2. — *Podalonia viatica* ♂, head in fron view

has kindly provided me with Dahlbom's Type-specimen. At the Zoological Museum in Copenhagen two specimens (♀ ♂) were found, labelled Madeira, Museum Drewsen.

By comparing the material mentioned above it is evident that it consists of two species. Dahlbom's name is with certainty to be regarded as a synonym of *Podaloni tydei* (Guillou) and that name is to be applied to the Gribodo material. It is also evident that the Wollaston and Drewsen materials are not to be regarded as conspecific with *P. viatica,* although they are closely related to that species.

Surveying the literature I stopped at a paper published by Beaumont (1949), who gives an account of the Sphecidae (part 1) captured in Morocco by a Swiss expedition in 1947. In this paper a new species, *Ammophila (Podalonia) rothi* is recorded. The description is rather complete, and supplied with the drawings of the male genitalia,

given by the same author, but in 1958, no doubt is left that *Podalonia rothi* (Beaumont) is the same species as mentioned by Saunders and acquired by Drewsen.

The three *Podalonia* species, *viatica, rothi* and *tydei* are not always easy to separate, but the following presentation of diagnostic characters may facilitate the procedure.

	P. viatica	*P. rothi*	*P. tydei*
	1st m-cu proximally evenly curved, very rarely (a few Spanish specimens at Z. M. Copenhagen) with a very short recurrent vein.	1st m-cu proximally strongly curved, mostly with a short recurrent side branch (Fig. 1.).	1st m-cu proximally strongly curved, usually without recurrent vein.
♀:	The long, erect pubescence of head entirely black.	A few whitish hairs on lower face along the epistomal suture.	Pubescence of head dominated by silvery white hairs. Pubescence on lower face usually double, also consisting of dense, adpressed, felt-like hairs.
	Clypeus faintly vaulted, median lobe usually sharply delimited by right-angled, somewhat projecting corners.	Clypeus distinctly vaulted, median lobe faintly delimited, the lateral corners obtuse-angled, rounded or almost missing.	Clypeus strongly vaulted, median lobe usually sharply delimited by right-angled corners, the latter might be slightly projecting.
	Basitarsus$_1$ along the outer margin usually with alternating long and short spines.	Basitarsus$_1$ along the outer margin usually with alternating long and short spines.	Basitarsus$_1$ along the outer margin usually without short spines.
	Pulvilli very small.	Pulvilli large.	Pulvilli large.
	Pubescence of thorax and propodeum simple, only consisting of long, black hairs.	Pubescence of thorax consists of a mixture of black and white hairs, the black ones dominating ventrally. Propedeum with white pubescence.	Erect pubescence of thorax usually purely white. Intermingled blackish hairs might occur, especially dorsally. Mesopleuron mostly with a short-adpressed, silvery-white pubescence.
	Scutum of a dull appearance, punctuation on anterior half dense, interspaces smaller than the diameter of the punctures.	Scutum shining, punctuation of anterior half very regular, interspaces smaller than the diameter of punctures.	Scutum shining, punctuation of anterior half usually rather sparse, interspaces as large as or larger than the diameter of the punctures.

Petiolus with black hairs.	Petiolus with white hairs.	Petiolus with white hairs.
Petiolus about 4.5 × longer than wide.	Petiolus about 4.9 × longer than wide.	Petiolus about 6.4 × longer than wide.
♂: The erect pubescence of head uniform black. A few whitish hairs on clypeus might be present.	Frons, and genae in part, with white pubescence. Vertex with black or brownish hairs. Clypeus sometimes with a few dark hairs.	Frons and genae mostly with a dense, uniform white pubescence. Vertex with black hairs. A few dark hairs might be present on clypeus.
Clypeus anteriorly narrowing, anterior border more or less bi-lobed (Fig. 2.).	Anterior border of clypeus broad, truncate, hardly incised (Fig. 3.).	Clypeus anteriorly narrowing, anterior border more or less bi-lobed.
Thorax with dark brown and/or greyish pubescence, never with felt-patches of silvery, adpressed hairs.	Thorax with light brown and/or whitish pubescence, never with felt-patches of silvery, adpressed hairs.	Pubescence of thorax mostly pure white, only occasionally mixed with a few black hairs. Silvery felt-patches or only a few scattered adpressed hairs are usually developed laterally on mesopleuron.
Petiolus proximally with black or brownish hairs.	Petiolus proximally with whitish or greyish hairs.	Petiolus proximally with white or silvery white hairs.
Petiolus about 7.2 × longer than wide.	Petiolus about 7.5 × longer than wide.	Petiolus about 8.5 × longer than wide.
1st, 2nd, and 3rd tergum in part red coloured. (Abdomen completely black in *P. viatica mervensis* Radoszkowski).	Abdomen almost of uniform dark brown colour. 1st and 2nd tergum occasionally with faint reddish tinge.	1st, 2nd, and 3rd tergum in part red coloured. All terga might be uniform red (Kohl, 1906: 286, No. 1.).

Genitalia as Fig. 4.

2. **Podalonia tydei** (Guillou, 1841)

The only records of this species from Madeira are those published by Kohl (op. cit.). In the collections at the Zoological Museum in Copenhagen, a single female specimen, «Madeira, Museum Drewsen» is present. Unfortunately it has not been possible to get more information on this specimen.

The species has a very wide distribution in the Mediterranean, Africa (towards the south to the Cape of Good Hope), Madagascar and Western Asia. It has not been recorded from Madeira since 1894 (Gribodo), so its possible occurence on the island is to be investigated.

3. **Sceliphron** (s. str.) **caementarium** (Drury, 1773)

The first record of this species form Madeira originates from Saunders (1903) who, unfortunately, misidentified the specimens caught by T. V. Wollaston (3♀♀, 1♂) and named the material *S. tubifex* (Latreille, 1809) (= *S. madraspatanum tubifex* (Latreille) sensu van der Vecht & van Breugel (1968)). Quite unexpectedly the Madeiran *Sceliphron* is of American origin, the nearest records being from St. Thomas, about 6,000 km. away! *S. madraspatanum* has a large distribution in the Mediterranean area and expands towards the cast through southern Asia to India, Further India, China, Japan, The Philipines, Borneo, Sumatra, and Java.

S. caementarium is primarily distributed in North America, but the species has widened its distribution area quite extraordinarily,

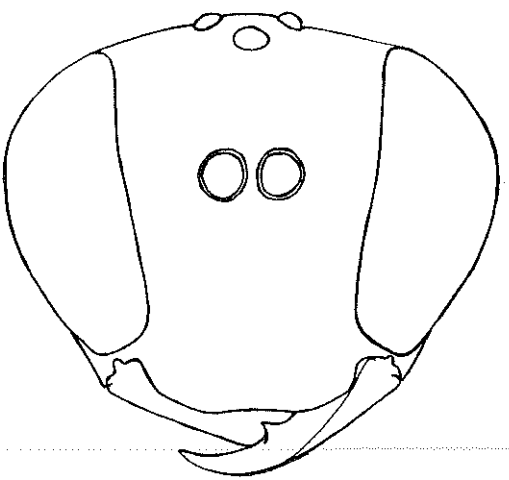

Fig. 3. — *Podalonia rothi* ♂, head in front view.

nowadays occuring in Mexico, Bermuda Islands, Puerto Rico, Lesser Antilles, Peru, Japan, Hawaii Islands, Wallis Islands, Samoa, Society Islands, Marshall Islands, Marianas, Fijii, and at Brisbane in Australia. In a parenthesis it should be mentioned that the species has been caught once in Europe. At the Zoological Museum in Copenhagen a female specimen is kept, named *P. (Pelopoeus) pensilis* Lefev. Southern France. Lefebre. Mus. Westermann. This specimen is, as far as I have been able to discover, the only specimen of *S. caementarium* ever caught in Europe proper. Perhaps because of competition from the Old World species inhabiting Southern France this otherwise extremely expansive species has not been able to establish stable populations in the Mediterranean.

In addition to the material mentioned by van der Vecht & van Breugel (op. cit.) the Madeiran material consists of 2 ♀ ♀, Funchal, 12.VII.1959 and 16.VII.1967, kept in the Museu Municipal do Funchal, Madeira, and 3 ♀ ♀, Funchal, 2.IX.1973, O. Lomholdt leg.

4. **Notogonia nigrita** (Lepeletier, 1845)

The first record of this species from Madeira originates from Gardner & Classey, 1959, who captured a single female specimen at Gorgulho. Although the species was mentioned by Smith (1856), no

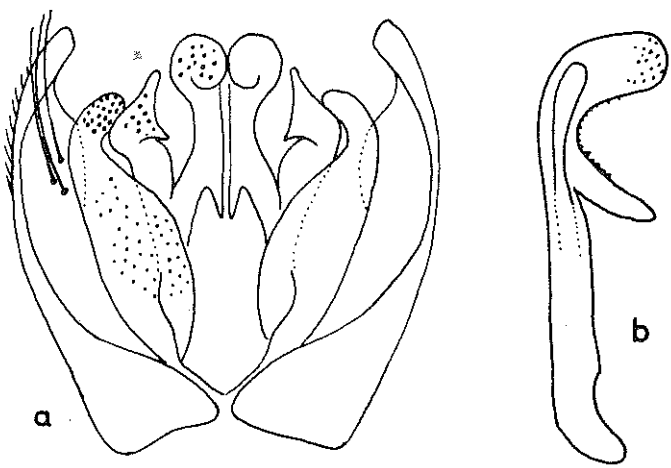

Fig. 4. — *Podalonia rothi* ♂. a) Ventral view of genitalia. b) Lateral view of aedeagus.

further informations are available. The species is widely distributed in the Mediterranean area and north-west Africa, from where the possible Madeira population might originate.

DISCUSSION

It is incomprehensible to me that although Madeira has been visited on several occasions by scientific expeditions and by entomologists with inquiring minds spending their holidays there, only the above mentioned four species have been recorded from the island. It seems that the only species that has been able to get a real «foothold» in Madeira is *Sceliphron caementarium*. This might be elucidated by the following statements.

The nesting conditions and the habitat of the prey in *S. caementarium* is not dependent on dry soils and ground-living insects, as is the case in most Mediterranean Sphecidae incl. *Podalonia* and *Notogonia*. *S. caementarium* constructs its nests on stone walls and the like, up

to several meters above ground level, using mud as building material. The prey was found to consist of webspinning Aranea (juvenile specimens of *Metargiope trifasciata* (Forskål)).*) In this behaviour there might lie a rather effective precaution against the possible most harmful predator, *Lacerta dugesii*. Another way to escape this voracious, omnivorous, and extremely abundant lizard on Madeira is to construct its nests in wood, as several Sphecidae do, especially in cooler climates. In this connexion I very much regret that I did not succeed in capturing a female specimen of *Ectemnius (Clytochrysus)* sp., apparently nesting in a hole in a window frame in the Pousada dos Vinháticos below the Encumeada Pass. The specimen was observed several times during two days during my visit in September, 1973, but avoided my net repeatedly with an impressive precision of manoeuvring.

*) *Mangora acalypha* (Walker), *Araneus crucifer* (Lucas) ? and *Araneus* spp. (preparator S. Langemark, Zoological Museum, Copenhagen, is kindly thanked for having identified this material, found in pieces in nests of *S. caementarium*, Funchal, Lido, 15.9.1973, N. L. Wolff leg.).

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ERRATA

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Pages 6, 8, & 10: read *Art. 126* instead of *Art. 125*.