

# B O C A G I A N A

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## TWO RUST SPECIES FROM THE SALVAGE ISLANDS

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### SUMMARY

Two rust species, *Puccinia calcitrapae* on *Centaurea melitensis* and *Uromyces chenopodii* on *Suaeda vera* are reported from Selvagem Grande in the Salvage Islands.

The Salvage Islands or Ilhas Selvagens, located about 235 km S of Madeira and 160 km N of the Canary Islands, consist of the islands Selvagem Grande, Selvagem Pequena, Ilhéu de Fora, and some surrounding islets. Administratively they belong to the Portuguese district of Funchal.

The islands, which are uninhabited, have been visited from time to time by botanists, and so far, 84 species of vascular plants have been recorded (Pickering & Hansen 1969).

To my knowledge no rust fungi have so far been reported from the Salvages. By courtesy of Mr. G. E. Maul I was given the opportunity to examine the collection of Salvage plants preserved in the Museu Municipal do Funchal, Madeira (Herb. MADM). This examination yielded the two rust species mentioned below. Both specimens are preserved in Herb. MADM.

Subsequently Dr. R. W. G. Dennis has examined the Salvage plants preserved in the herbarium of the Royal Botanic Gardens, Kew, but without finding any rust.

I want to thank Mr. Maul and Dr. Dennis for their kind help, and I also want to thank Dr. A. Hansen, Botanical Museum, Copenhagen, for literature and for information about the material examined by me.

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**Puccinia calcitrapae** DC. Fl. Fr. 2: 221, 1805.

Syn. *P. centaureae* DC., Fl. Fr. 5: 59, 1815. For other synonyms, see Jørstad (1958).

On *Centaurea melitensis* L. Selvagem Grande, 27.IV.1973. Leg. G. E. Maul (No. 761). III.

↳ 448

The only teleutosorus found was hypophyllous, round, and blackish-brown. The teleutospores were cylindric to ellipsoid, rounded or more rarely attenuated toward the ends, not or only slightly constricted at the septum,  $28 - 42 \times 20 - 27 \mu$ . Wall chestnut-brown, smooth,  $2.5 - 3.5 \mu$  thick, slightly thickened at apex. Upper germ pore at apex or slightly depressed, the lower equatorial or even more depressed. Pedicel hyaline, deciduous.

In Macaronesia, *C. melitensis*, which is known to occur from Cape Verde to the Azores, has been reported as a host plant for this rust species from the Canary Islands only. Jørstad (op. cit.) has reported the rust from all the main Canarian islands but Fuerteventura. It is also recorded on this host plant in many of the western Mediterranean countries.

*P. calcitrapae*, which comprises several specialized forms, often recognized as species, has been discussed by Jørstad (op. cit.).

**Uromyces chenopodii** (Duby) Schroet. in Kunze, Fungi Sel. 214, 1880.

665 For synonyms see Jørstad (1958).

On *Suaeda vera* Forssk. ex J. F. Gmel. (syn. *S. fruticosa* auct., *S. latifolia* Lowe). Selvagem Grande 20.VII.1958. Leg. C. H. C. Pickering. I.

Only aecidia were present. The aecidiospores were subsphaerical to ellipsoid,  $29 - 38 \times 28 - 30 \mu$ . Wall hyaline to slightly yellow, less than  $1 \mu$  thick, finely and densely verruculose. No germ pores were visible.

The aecidiospores were extremely large compared with what is normally reported for *Urom. chenopodii* on *Suaeda* spp., more approaching those of *Uromyces salicorniae* de Bary (cf. e. g. Gäumann 1959). However, no *Salicornia* species is known to occur in the archipelago. When discussing this rust species, Jørstad (1958) found «no reason for considering *Urom. salicorniae* specifically different from *Urom. chenopodii*». On the other hand, Wilson & Henderson (1966) kept them separate. The size of the aecidiospores in this find supports the species concept used by Dr. Jørstad.

*Urom. chenopodii* is an aggregate species comprising several specialized forms, often recognized as separate species, and attacking several chenopodiaceous genera. It has been reported on a number of *Suaeda* spp. from western Europe to western Asia, and also from Africa and N. America. The type host is *S. maritima* (L.) Dum. (syn.

*Chenopodium maritimum* L.). In Macaronesia this rust has previously been reported by Petrak (1929) as *Urom. salsolae* Reich. on *Salsola kali* L. from Gran Canaria in the Canaries. On *S. vera* it is known in the Mediterranean from Portugal and Morocco to Cyprus and Egypt, and it is also reported from Erythrea and Pakistan. In Macaronesia the host is known from Ilha do Sal in Cape Verde, from several Canarian islands, and from Madeira, but not from the Azores.

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