

GYMNOCOLEA INFLATA (HUDS.) DUMORT., ON TERCEIRA ISLAND (AZORES, PORTUGAL)

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Gymnocolea inflata (Huds.) Dumort has been discovered in 2 localities around the Serra da Santa Barbara (Terceira, Azores), on permanently wet pseudogley soil covered with a thin layer of an moor, between 860 and 990 m in altitude. The species is new for Terceira: it was only know from old, not certified records from S. Miguel. Synecological data are provided with 2 phytosociological relevés.

Key words: *Gymnocolea inflata*, Macaronesia, Terceira Island, Azores.

Schumacker, R. & Gabriel, R. (2002). *Gymnocolea inflata* (Huds.) Dumort., uma nova espécie para a Ilha da Terceira (Açores, Portugal). *Portugaliae Acta Biol.* 20: 101-104.

Gymnocolea inflata (Huds.) Dumort foi descoberta em 2 localidades na Serra da Santa Barbara (Terceira, Açores), numa camada de solo plácido, permanentemente molhado e coberto por uma fina camada de turfa, situadas entre os 860 e 990 m de altitude. A espécie é nova para a Ilha da Terceira, só conhecida de antigas referências não certificadas, da Ilha de S. Miguel. São apresentados dois levantamentos fitossociológicos.

Palavras chave: *Gymnocolea inflata*, Macaronésia, Ilha Terceira, Açores.

INTRODUCTION

Terceira Island belongs to the Central Group of the Azorean archipelago. It covers 402 km² and culminates at 1021 m in altitude on the Serra da Santa Barbara.

Compared with the ca. 153 hepatics and the ca. 280 mosses, recorded with certainty from the Archipelago, Terceira has today the richest bryological flora with 133 hepatics (86 %) and ca. 175 mosses (62 %) (SJÖGREN 2001, SCHUMACKER 2001), due to the large areas of protected (sub)natural *Juniperion*-forests and the high altitude of the main caldeira.

On the top of the caldeira, the direct precipitation may reach 5000 mm.y⁻¹ and the occult precipitations (fog and dew) are estimated to be of the same importance (DIAS 1996, E. Dias, pers. comm, 1999; MENDES 1998). There, the relative air humidity is almost continuously over 90-95%.

These factors explain the extensive development of different types of mires and *Sphagnum*-bogs, even on the steepest slopes, as inside the *Juniperus brevifolia*¹-cloud forest and the exuberance of the epiphytic, epiphyllous and epigeic bryophytes communities (SJÖGREN 1978, 1997, 1999; MENDES 1999; GABRIEL 2000).

GYMNOCOLEA INFLATA ON TERCEIRA

Gymnocolea inflata is fairly common in wet heaths and bogs in Western Europe.

It was reported by Mitten (in GODMAN 1870) from the Azores on S. Miguel, without any indication of locality; no specimen could be traced. Another collection made by E. Sjögren (priv. herbarium) in 1965 on S. Miguel belongs to *Cladopodiella francisci*.

On 12th August 2000, when exploring the bryophyte flora of the highlands surrounding the northern edge of the caldeira de Santa Bárbara, we were very fortunate to discover *Gymnocolea inflata* on the SW bank of the Lagoa do Pinheiro, as well as along the track leading to it and to the extreme edge of the caldeira (UTM 26S MH 72 88 and 72 89, between 860 and 920 m in altitude).

Two weeks later, we could also find this species in the surroundings of the top of Santa Barbara on the southern highlands of the caldeira, along two tracks mostly used by the biologists of Angra studying this highly interesting area (UTM 26S MH 72 86 and 71 86; between 950 and 990 m in altitude).

The vegetation where *Gymnocolea* occur on Terceira Isl. is documented in Table 1 by 2 phytosociological relevés using the classical Braun-Blanquet's method.

Investigations in suitable habitats around Morro Alto on Flores Isl., the westernmost island, were unsuccessful.

¹ Nomenclature follows HANSEN & SUNDING (1985) for vascular plants, CORLEY *et al.* (1981), CORLEY & CRUNWELL (1991) for mosses and GROLLE & LONG (2000) for the hepatics.

Table I. Vegetation with *Gymnocolea inflata* and *Sphagnum auriculatum* at Serra de Santa Bárbara (Terceira)

Relevé number	1	2
Area (m ²)	1	0.4
Slope (%)	1-2	1-2
Total cover (%)	100	90
Grass and forb layer (%)	40	20
Moss layer (%)	85	85
Algae layer (%)	-	20
List of species		
<i>Gymnocolea inflata</i>	1.2	+1
<i>Odontoschisma</i> cf. <i>prostratum</i>	-	+1
<i>Sphagnum auriculatum</i>	3.3	4.3
<i>Sphagnum palustre</i>	-	+1
<i>Sphagnum subnitens</i>	3.3	2.2
<i>Campylopus setaceus</i>	+2	3.3
<i>Deschampsia foliosa</i>	+1	1.1
<i>Holcus rigidus</i>	2.2	+1
<i>Eleocharis multicaulis</i>	2.2	2.2
<i>Isoetes azorica</i>	+1	-
Close to the relevé		
<i>Hydrocotyle vulgaris</i>	(+1)	-
<i>Potentilla erecta</i>	(+1)	-
<i>Sibthorptia europaea</i>	(+1)	-
Algae (on bare soil)		
cf. <i>Zygnema ericetorum</i>	-	2.3

Rel. 1. Terceira, Serra de Santa Bárbara, Lagoa do Pinheiro; alt. 916 m; UTM 26S MH 72 88. Water characteristics: pH 4.6-5; conductivity at 20 °C 34-43 $\mu\text{S}\cdot\text{cm}^{-1}$; global mineralization 39-48 $\text{mg}\cdot\text{l}^{-1}$ (Mendes 1998).

Rel. 2. Terceira, Serra de Santa Bárbara, E of the television antenna; alt. 990 m; UTM 26S MH 72 86).

Note. Both relevés on \pm base-poor, waterlogged pseudogley to podzolic, bare soils or covered with a thin layer of anmoor, developed on compact volcanic ashes.

DISCUSSION

No authentic specimen of *G. inflata* (indicated by MITTEN 1870; MONTAGNE 1839-1842 and PITARD 1907) could be traced in spite of intensive research in many herbaria; these records of *G. inflata* are the two first certified for the Azores.

As for most of the species recently discovered on the Azores, to give a threat status to *G. inflata*, would be just an informed guess. It occurs in places that are now under strict protection and no longer disturbed by the extensive agro-

pastoral activities. Nevertheless, it seems that *G. inflata* needs free space on more or less bare soil, regularly disturbed.

Presently, it seems to be restricted along the paths more or less regularly used by some tourists and by the biologists studying the caldeira. This species is not able to compete with rapidly invading *Sphagnum* species, and also not - especially - with *Campylopus setaceus*.

The species may also be dispersed by the omnipresent rabbits and some seabirds visiting the small montane lakes and the bogs.

Careful research should be made on the different islands in potential habitats.

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