

## SHORT COMMUNICATION

### AN INLAND POPULATION OF *Azorina vidalii* (WATSON) FEER ON FAIAL ISLAND

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An inland population of *Azorina vidalii* (Watson) Feer (Campanulaceae) near Capelo, Faial island, and the special habitat are described. The origin is discussed.

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É descrito o habitat especial de uma população Feer (Campanulaceae) terrestre de *Azorina vidalii* (Watson) perto do Capelo, Ilha do Faial. A origem é discutida.

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## INTRODUCTION

*Azorina* (Campanulaceae) is an endemic genus of the Azorian archipelago. The only species, *Azorina vidalii* (Watson) Feer (syn. *Campanula vidalii* Watson) is reported from coastal rocks at Corvo, Flores, Pico, São Jorge, Terceira, São Miguel and Santa Maria (FRANCO 1984, ORMONDE & PAIVA 1973, PALHINHA 1966, PINTO DA SILVA & PINTO DA SILVA 1974, SJÖGREN 1984). There is also an early but doubtful record for Faial (SAMPAIO 1904).

*Azorina vidalii* is a very attractive plant that was frequently used for ornamental reasons and therefore planted in gardens. Today, the origin of many populations is unknown but at least those at Pico, S. Jorge, Flores and Corvo seem to be natural (SJÖGREN 1984).

At Faial, no natural population has been known. Two small coastal populations at Monte da Guia and Porto do Castelo Branco are probably of recent introductions (Eduardo Dias

pers. comm.). A third population on the coast south of Ribeira da Cabo (LÜPNITZ 1975) could not be detected despite several days of searching. However, it may still exist and its origin is unknown.

During fieldwork for a project dealing with the distribution of introduced plants on Faial, a new *Azorina* population was discovered in June 1999 in a volcanic crater, quite a distance from the sea.

## THE LOCATION

The plants were found at Caldeirão, a small crater situated between Cabeço do Canto and Cabeço Verde north of Capelo at an altitude of 320 to 350 m (Fig. 1).

The exact position was determined by GPS: N 38°35'66", WO 28°48'26" (UTM 034285 / 427337).

The shortest distance to the coast at Capelo is about 2 km.



Fig. 1. Distribution of *Azorina vidalii* at Faial island.

## THE HABITAT

Caldeirão is a basaltic crater and one of the oldest in the western part of Faial (ZBYSZEWSKI et al. 1959).

The slopes are covered by dense shrubs of *Myrica faya* and *Erica azorica*. Other plants include *Myrsine africana*, *Hypericum foliosum*, *Viburnum tinus* ssp. *subcordatum*, *Picconia azorica*, *Hedera helix* ssp. *canariensis*, *Rubia peregrina* ssp. *agostinhoi*, *Platanthera micrantha*, *Thymus caespititius*, *Solidago sempervirens*, *Carex peregrina*, *Carex vulcani*, *Brachypodium sylvaticum*, *Pteridium aquilinum* and the neophytes *Pittosporum undulatum*, *Hydrangea macrophylla*, *Hedychium gardnerianum* and *Sporobolus africanus*.

Inside the crater, there are nearly vertical walls in the north and south. The other sides are less steep and covered by *Pittosporum undulatum*. On the ground *Hydrangea macrophylla* and *Rubus ulmifolius* form a hardly penetrable thicket.

*Azorina* occurs only in the northwest exposed vertical wall on the southern side of the crater. About 50 plants of different ages, including seedlings, were found.

In an area of 5 m length and 5 m height were recorded the species presented in table 1: (14.09.1999; alt.: ca. 330 m; exp.: NW; almost vertical, basaltic wall).

Table 1

Species recorded in an area of 5 m length and 5 m height (14.09.1999; alt.: ca. 330 m; exp.: NW; almost vertical, basaltic wall)

|  |   |
|--|---|
| <i>Polypodium macaronesicum</i>          | + |
| <i>Cyrtomium falcatum</i>                | 1 |
| <i>Erica scoparia</i>                    | + |
| <i>Hypericum foliosum</i>                | + |
| <i>Thymus caespititius</i>               | + |
| <i>Azorina vidalii</i>                   | 1 |
| <i>Leontodon taraxacoides</i>            | + |
| <i>Leontodon filii</i>                   | + |
| <i>Gnaphalium luteo-album</i>            | + |
| <i>Tolpis succulenta</i>                 | + |
| <i>Conyza canadensis</i>                 | + |
| <i>Umbilicus horizontalis</i>            | + |
| <i>Daucus carota</i>                     | + |
| <i>Apium graveolens</i>                  | + |
| <i>Centaurium erythraea</i>              | + |
| <i>Lythrum hyssopifolia</i>              | + |
| <i>Holcus rigidus</i>                    | + |
| <i>Brachypodium sylvaticum</i>           | 1 |
| <i>Polypogon maritimus</i>               | + |
| <i>Agrostis</i> cf. <i>congestiflora</i> | 1 |

The presence of *Tolpis succulenta* is remarkable, as it is probably the last population of this species at Faial Island. About 20 plants were found in the whole area.

At the foot of the wall a few plants of *Euphorbia azorica*, another coastal species occurs.

## THE ORIGIN

The question whether the presented *Azorina* population is natural or not, can not be answered conclusively, but some facts suggest a natural origin.

The locality is difficult to reach. Only a small part of the population is accessible from a recently constructed walking trail around the rim of the crater. Most of the plants are certainly older than this path.

The major part of the population is not accessible at all, as the wall is steep and the basaltic rock not very solid. Observations had to be made by telescope.

According to M. Ávila Gomes, *Azorina* was not introduced to the Caldeirão by the Direcção Regional do Ambiente. An introduction in former times at this inaccessible place without any surrounding gardens or other cultivation seems very unlikely. At the "Parque Florestal" near Capelo, the author saw several cultivated endemic species but no *Azorina*. Nor rare there any *Azorina* plantations in the gardens of the nearest settlements Capelo and Norte Pequeno.

The presence of other mainly coastal species like *Apium graveolens* and *Polypogon maritimus* indicates very special ecological conditions in the area. Unfortunately, it was not possible to carry out any further ecological investigations.

However, the presence of three typically coastal species in a crater more than 300 m high is amazing. The fact, that no other botanist ever mentioned one of these species from the Caldeirão region is rather surprising and some doubts about the origin remain.

## CONCLUSIONS

The vegetation of the walls of Caldeirão consists of a very interesting combination of coastal and mountain species although the origin of some of them is not certain. It should be protected by invasion of neophyths and any other harmful impacts.

In the future, it would be very interesting, to carry out ecological surveys of the environment at Caldeirão. Especially the influence of sea winds could be considered as an important factor.

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