



GRANT. £1400
REFUNDED £180.

REPORT OF COLLECTING TRIP TO PORTUGAL & SPAIN
July/August 1998

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Objectives

The main objective of the travel was to widen our knowledge of the genus *Jasione* (Campanulaceae) in the Iberian peninsula. Previously, we had completed an almost finalised account of the genus for *Flora iberica* (taken with us) and building on this knowledge we wished to study the species further in the field. Some of the many problems associated with preparing the Flora account could not be resolved with herbarium specimens alone: some knowledge of the plants in the wild, especially their variation, was essential. For this purpose, we travelled in N Portugal and N & NW Spain covering a wide range of habitats and taxa in order to finalise our Flora account, collect plant material for DNA studies, make complementary dried voucher specimens, and collect seed material. The itinerary was worked out beforehand in order to carry out field work in areas where we knew the problematic taxa of *Jasione* grew.

Although in our original application, we referred to studying variation in the unrelated *Phyteuma spicatum* we decided to cut this and concentrate solely on *Jasione*.

Introduction.

Jasione L. is a small but distinct genus of c. 12 species of which the majority are in the Iberian peninsula and where the greatest morphological variation occurs. In the areas visited, we expected to see and collect *J. cavanellisii*, *J. laevis*, *J. maritima*, *J. montana* and *J. sessiliflora*. We also intended to visit a number of type localities of other taxa which in the Flora account we considered should be in synonymy.

J. laevis, very similar to *J. montana* but with a different growth form, grows at medium to high altitudes and was collected at a few localities.

J. maritima, restricted to sandy maritime habitats, has uncertain specific limits with a geographical distribution from SW France to NW Spain; in Portugal occurs the very similar *J. montana* var. *sabularia*. The variation within this maritime taxon is such that we considered it merited some population studies for subsequent DNA analysis.

J. montana, growing from low to medium altitudes, is an especially complex species widespread in western & northern Europe and the taxonomic treatments of it

in different Floras etc vary greatly. We hoped to collect a large number of variants from many different habitats and localities during our travels.

J. sessiliflora has previously been regarded as a subspecies of *J. crispa* (also in this area), but our researches had shown that it merited independent specific status. To this taxon belongs *J. crispa* subsp. *serpentinica* - reputedly confined to the ultra-basic serpentine areas of NE Portugal near Bragança. This was another locality on our proposed itinerary.

J. cavanellisii is a very late-flowering high alpine species and although we did not see or collect it near its type locality in Spain which we visited in Picos de Europa, we left instructions with a colleague in the Picos Park to collect it later on.

J. montana sensu lato and *J. maritima sensu lato* were the two taxa that we intended to concentrate on.

Itinerary

We left Coimbra on 26th July and returned on 8th August. Travel was by Dr Sales's Volkswagen Polo. Over 3000 km were covered during this time.

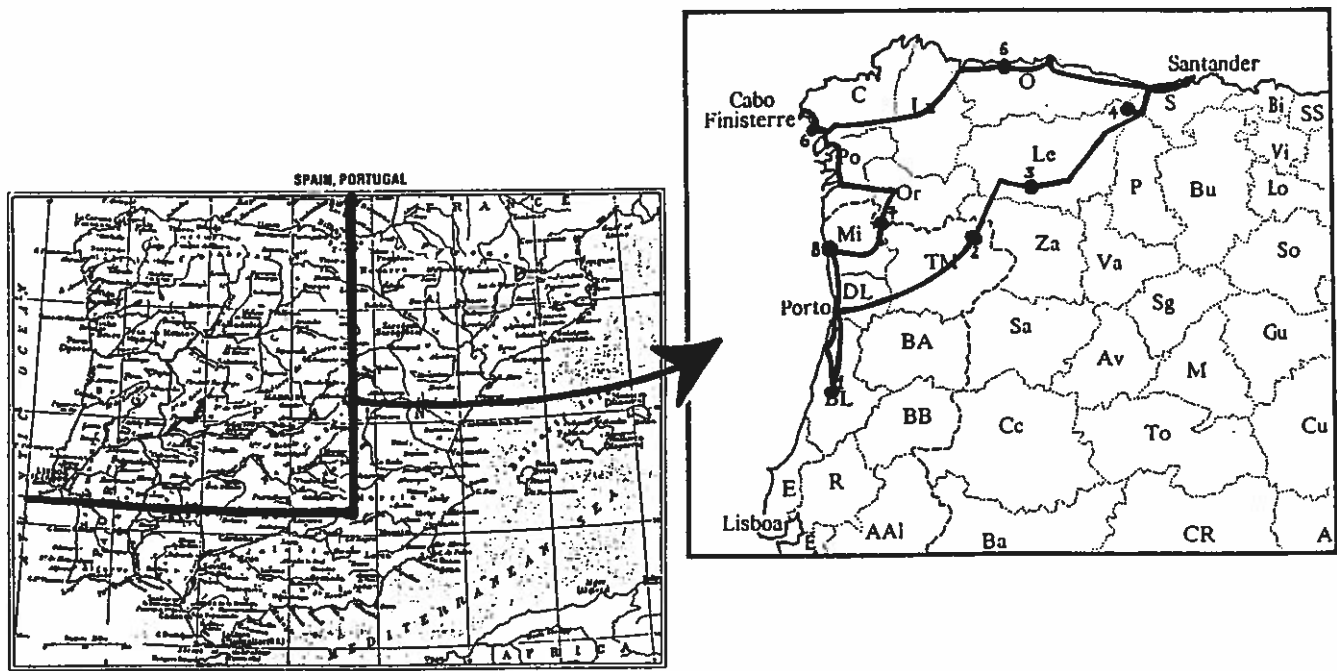


Fig. 1. The itinerary:

1, Coimbra; 2, Bragança (2 nights); 3, Astorga (1 night); 4, Espinama - Picos de Europa (4 nights); 5, Luarca (1 night); 6, Muros (3 nights); 7, Lovios (1 night); 8, Póvoa do Varzim (1 night). The initials refer to the provinces in Portugal & Spain.

Methods

For each DNA sample collected, numbered 1-100, complementary voucher specimens were made, together with relevant field-notes about localities, plant communities etc. From a number (18) of the voucher specimens, seeds were subsequently extracted for growing at a later date. In addition to the voucher specimens, a number of plants were also collected for subsequent inclusion in the Roy. Bot. Gard. Edinburgh and Coimbra Herbaria (E & COI). A photographic record was also made for the same institutes.

Results

TABLE 1: *Jasione* specimens collected in Portugal & Spain; also a few gatherings of *Globularia* (Globulariaceae); and later, on return to Edinburgh, some specimens of *J. montana* from Scotland. The accession numbers referred are those of samples for DNA analysis, voucher specimens, herbarium specimens and seed samples. Running numbers indicate collections from the same population.

Acc. no.	Taxon	Locality
DNA		
1	<i>J. montana</i> var <i>gracilis</i>	NE Portugal: Bragança
2	" "	" "
3	<i>J. montana</i> var. ?	" "
4	<i>J. sessiliflora</i>	" "
5	"	" "
6	"	" "
7	"	" "
8	"	" "
9	"	" "
10	<i>J. sessiliflora</i>	Spain: Leon, Sierra del Teleno
11	<i>J. montana</i>	" " " "
12.	<i>J. sessiliflora</i>	" " " "
13	"	" " " "
14	<i>J. laevis</i>	" Cantabria, summit Pass
15-17	<i>Globularia repens</i>	" " , Picos de Europa
18	<i>J. laevis</i>	" " " "
19	<i>Globularia nudicaulis</i>	" " " "
20 - 22	<i>J. montana</i> var. ?.	" near coast at Pimiango
23	<i>J. montana</i>	" " Picos de Europa

24 - 26	<i>J. montana</i>	" " " "
27 - 36	<i>J. montana</i> var. <i>latifolia</i>	" Asturias, Cabo de Peñas
37 - 47	<i>J. montana</i> var. ?	" La Coruña, near Muros
48 - 57	<i>J. maritima</i> var.	" " " " "
58 - 67	<i>J. montana</i> var.	" " " , Cabo Finisterre
68 - 72	<i>J. sessiliflora</i>	NE Portugal, Gerês
73 - 77E	<i>J. montana</i> var. <i>montana</i>	Scotland: Kintyre, Carradale
78 - 87	<i>J. maritima</i> var. <i>sabularia</i>	N Portugal: Douro Litoral, Vila do Conde
88 - 97	" "	" " " Furadouro
98	<i>J. montana</i> var.	Spain: Pontevedra, near Noia
99	" <i>J. ambigua</i> "	" : Ourense, Requiás
100	<i>J. montana</i> var. <i>gracilis</i>	" " Serra do Xurés

Abstract of Expenses

Air fare - Edinburgh, Brussels, Lisbon return (ICH)	£213.90
Insurance (ICH)	34.73
Films & processing (ICH/FS)	43.00
Petrol, motorway tolls	110.00
Accommodation and subsistence	800.00
Varia	18.37
TOTAL EXPENDITURE	£1220.00
GRANT AWARDED	1400.00
RESIDUE - returned to the University of Edinburgh	£180.00

Conclusions.

Field observations are often invaluable in making final taxonomic decisions and this is especially so in such a complex genus as *Jasione*. Species variation, as well as their biology, in *J. montana* and *J. maritima* was better understood as a result of our field work. Populations seem to be rather isolated from each other - though gradually drifting into each other. This results in the observed reduced variation within populations but high phenotypic differentiation between them. In terms of collections, we are now well supplied with material for DNA analysis (to be carried out by RBGE staff), anatomical (being carried out by Prof. M.H. Bokhari, Pakistan) and morphological studies; and for growing in RBGE research collections.

As a result of our field work, some corrections were made to the draft Flora


account

We were very pleased the way the trip went without incident and according to our planned timetable. We believe that this is the kind of field-work that Peter Davis would have approved of.

Picos de Europa were beautiful !!



Fátima Sales



Ian Hedge

Royal Botanic Garden Edinburgh 21 August 1998