

APPROACH TO THE STUDY OF STEPPIC PLANTS IN THE WESTERN MEDITERRANEAN, A PROJECT

ROBERTO GAMARRA & OSCAR MONTOUTO

Abstract

A survey about the occurrence of steppic plants in the Mediterranean western countries is presented. 46 presumed steppic taxa were selected and listed for chorological analysis. At a later date their taxonomic, karyologic and ecological data will be added for each species as well as information about the characteristics of their diaspores in relation with the dispersal mechanism.

Introduction

The countries what surround the western Mediterranean held a high number of species coming from the steppes of C and E Europe and Asia.

The highest number of species occur in the eastern half of the Iberian Peninsula (fig. 1) and in northern Africa (Morocco and Algeria). Other places like southeastern France, some regions of Italy, and some inner alpine valleys of Switzerland held some steppic elements too, but in lower numbers and with lower variability.

The Mediterranean areas with higher numbers of steppic species and with under extreme conditions of continentality and aridity were called as "steppes", a rather discussed term, due to marked differences with the real eastern steppes, concerning mainly with rainfall and soil depth.

This survey is based on the study of the original steppic species occurring at the Western Mediterranean countries. Although this work is mainly phytogeographic, we are considering to include in the future information on other research fields such as Taxonomy, Karyology and Ecology in order to better understanding the occurrence of these plants in the Western Mediterranean basin.

List of species

Many sources of information for the working of the list have been consulted. In addition to the compilation of data from several sources (BRAUN-BLANQUET, 1936; O. BOLÓS, 1952; QUEZEL & SANTA, 1962-1963; BREISTROFFER & al., 1970; JÄGER, 1971; BOLDÚ & MOLERO, 1979; SUÁREZ & al., 1991), some advices supply for prestigious botanist, to whom we are strongly grateful, have been considered.

The combination of taxonomic, chorological and ecological data led us to the presentation of the enclosed list which must be considered as an approach to the study of such steppic plants:

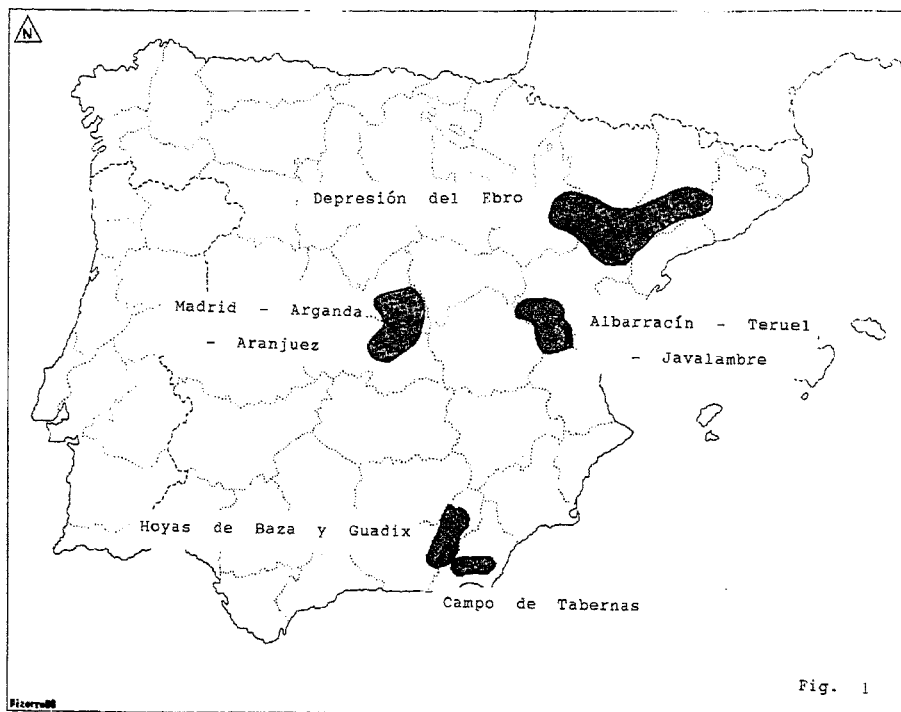


Fig. 1. Main areas of occupation of steppic plants in the Iberian Peninsula.

Adonis vernalis L.

Agropyrum cristatum subsp. *pectinatum* (Bieb.) Tzvelev

Alyssum linifolium Stephan ex Willd.

Androsace elongata subsp. *breistrofferi* (Charpin & Greuter) J. Molero & J. M.

Montserrat

Artemisia herba-alba s.l.

Astragalus austriacus Jacq.

Astragalus oxyglottis Steven ex Bieb.

Bassia hyssopifolia (Pallas) O. Kuntze

Bassia prostrata (L.) G. Beck

Camphorosma monspeliaca L. subsp. *monspeliaca*

Centaurea alpina L.

Cerastium dichotomum L.

Ceratocephala falcata (L.) Pers.

Chrozophora obliqua (Vahl) A. Juss. ex Sprengel

Eremopyrum buonapartis (Sprengel) Nevs

Eremopyrum orientale (L.) Jaub. & Spach

Euphorbia arvalis subsp. *longistyla* (Litard. & Maire) Molero, Rovira & Vicens

Garidella nigellastrum L.

Gypsophila struthium subsp. *hispanica* (Willk.) G. López
Gypsophila struthium L. in Loefl. subsp. *struthium*
Gypsophila tomentosa L.
Hohenackeria polyodon Cosson & Durieu
Juniperus thurifera L.
Krascheninnikovia ceratoides (L.) Gueldenst.
Lappula patula (Lehm.) Gürke
Lappula spinocarpos (Forsskal) Ascherson
Lygeum spartum L.
Malcolmia africana (L.) R. Br.
Malva aegyptia L.
Microcnemum coralloides (Loscos & Pardo) Buen subsp. *coralloides*
Minuartia hamata (Hauskn. & Bornm.) Mattf.
Neotorularia torulosa (Desf.) Hedge & J. Léonard
Nepeta beltranii Pau
Pteranthus dichotomus Forsskal
Puccinellia pungens (Pau) Paunero
Rochelia disperma (L. fil.) C. Koch subsp. *disperma*
Salsola gemmascens subsp. *maroccana* Botsch.
Salsola gr. *vermiculata*
Spiraea crenata subsp. *parvifolia* (Pau) Romo
Spiraea hypericifolia subsp. *obovata* (Waldst. & Kit. ex Willd.) H. Huber
Sternbergia colchiciflora Waldst. & Kit.
Stipa capillata L.
Stipa gr. *pennata*
Stipa tenacissima L.
Trigonella monspeliaca L.
Trisetaria cavanillesii (Trin.) Maire
Ziziphora hispanica L.

All taxa of the list will be mapped. Literature, field and herbaria records considered as correct will be feed into a database. Records will be mapped in a UTM 10 km square grid maps. The maps produced will be illustrated by the outline area covered by each taxon. With this geographic information, several data on ecology and plant communities where they mostly survive, will be collected.

Additionally, taxonomic data (including synonyms, "indicatio locotypica" and location of the types) will be given karyologic data will be also offered. Finally, the diaspores of these species will be analyzed, by measuring their sizes and weights and by SEM observation of their surface.

The aims of our project also identify Western Mediterranean areas with a high concentration of steppic species and to propose measures for their conservation.

References

- BOLDÚ, A. & J. MOLERO (1979). Aportacions respecte de la distribució i límits d'algunes de les espècies mediterráneo-estèpiques a Catalunya. *Bull. Inst. Catalana Hist. Nat., sec. Bot.* **44**: 95-110.
- BOLÓS, O. de (1952). Algunas consideraciones sobre las especies esteparias en la Península Ibérica. *Anales Inst. Bot. Cavanilles* **10**: 445-453.
- BRAUN-BLANQUET, J. (1936). Sur l'origine des éléments de la flore méditerranéenne. *Stat. Int. Geobot. Montpellier* **56**: 8-31.
- BREISTROFFER, M., A. CHARPIN & W. GREUTER (1970). Sur quelques plantes steppo-continentales rares et critiques du Sud-Est de la France. *Candollea* **25**: 89-103.
- JÄGER, E. J. (1971). Die pflanzengeographische Stellung der "Steppen" der Iberischen Halbinsel. *Flora* **160**: 217-256.
- QUEZEL, P. & S. SANTA (1962-1963). *Nouvelle Flore de l'Algérie 1-2*. Editions du Centre National de la Recherche Scientifique, Paris.
- SÚAREZ CARDONA, F., H. SAINZ OLLERO, T. SANTOS MARTÍNEZ & F. GONZÁLEZ BERNÁLDEZ (1991). *Las estepas ibéricas*. Ministerio de Obras Públicas y Transportes, Madrid.

Address of the authors:

Dr. R. Gamarra & O. Montouto, Departamento de Biología (Botánica), Facultad de Ciencias, Universidad Autónoma, 28049 Madrid, Spain.