

ATLAS FLORAE ROMANIAE - FERNS

ȘTEFĂNUȚ Sorin*, POPESCU Aurel*, SANDA Vasile*,
MIHĂILESCU Simona*, TĂCINĂ Aurica *, BIȚĂ Claudia*, JALBĂ Adriana*

Abstract: This paper is a method paper, presenting the way, which we use to process the chorological data.

Key words: Atlas, Flora, Romania, databases, geocode, ferns, chorology

Introduction

The Atlas Florae Romaniae is based on the analysis of many records from literature, field and herbaria and the distribution of information was made on geographical coordinates system.

Material and methods

For the first version (*Corolog 2001 software*) we created a current Atlas for the *Lycopsidea* and *Sphenopsida* ferns classes. The late version of software (*Atlas 2002*) was designed for Atlas Florae Romaniae – Ferns on the geographical coordinates system (GEOCODE), the UTM coordinates system and the *Atlas Florae Europaeae* mapping system.

Results and discussions

The *Atlas Florae Romaniae - Ferns* was developed to represent the Romanian ferns chorology on the geographical coordinates system (GEOCODE), 6' latitude / 10' longitude grid (species distribution mapping system for Central Europe). The geocodes nomenclature is applicable in Romania only (Oltean & Ștefănuț 2002).

In the achievement of the work it was necessary to follow some ways that provide the harmonization with similar works and even the uniformity of used nomenclature. For this aim following options were made:

- the standard list of Romanian ferns is according to Tutin et al. 1996, Ciocârlan 2000 and Popescu 2003;
- all used nomenclature (378 records including synonyms) is concordantly to Grințescu 1952a, 1952b, Grințescu et al. 1952, Țopa 1952a, 1952b, 1952c;

*Institutul de Biologie al Academiei Române, Spl. Independenței 296, RO-060031-București

• the documentary material was systematized in species and subspecies, but varieties and forms were classified according to the corresponding species and subspecies.

A particular performance of software (*Atlas 2002*) allows visual representation of taxa chorology on 18 cartographical supports at 1:6,000,000 scale (the administrative map, the geomorphological maps at three different detailing degrees, the hydrological basins map, the map of the European biogeographical regions, the hypsometric map (Fig. 5) and eleven climatic maps: the annual mean temperature map (Fig. 1), the January mean temperature map, the April mean temperature map, the July mean temperature map, the October mean temperature map, the annual mean value of the thermic amplitude map (Fig. 3), the annual precipitation map (Fig. 2), the cold half-year precipitation map, the warm half-year precipitation map, the annual number of ≥ 0.1 mm precipitation days map (Fig. 4) and the annual number of snow-cover days map).

The second version of software (*Atlas 2002*) can make the chorology of the Romanian species on the UTM coordinates system (Fig. 5) and also use the *Atlas Florae Europaeae* mapping system.

The next version of the software will include new cartographical supports (the soil map, geological map, vegetation map and other).

Now, it is available the electronic version of the *Atlas Florae Romaniae - Ferns* and the volumes: *Atlas Florae Romaniae. I. Pinophytina* (Sanda & Ștefănuț 2003) and *Atlas Florae Romaniae. II. Betulaceae* (Sanda & Ștefănuț 2004).

This work is an open project; all the researchers with activity in this field can be involved. The information will be available on the Institute of Biology Bucharest web site (<http://www.ibiol.ro>).

This paper is dedicated to dr. Tăcină Aurica.



Fig. 1 The annual mean temperature map

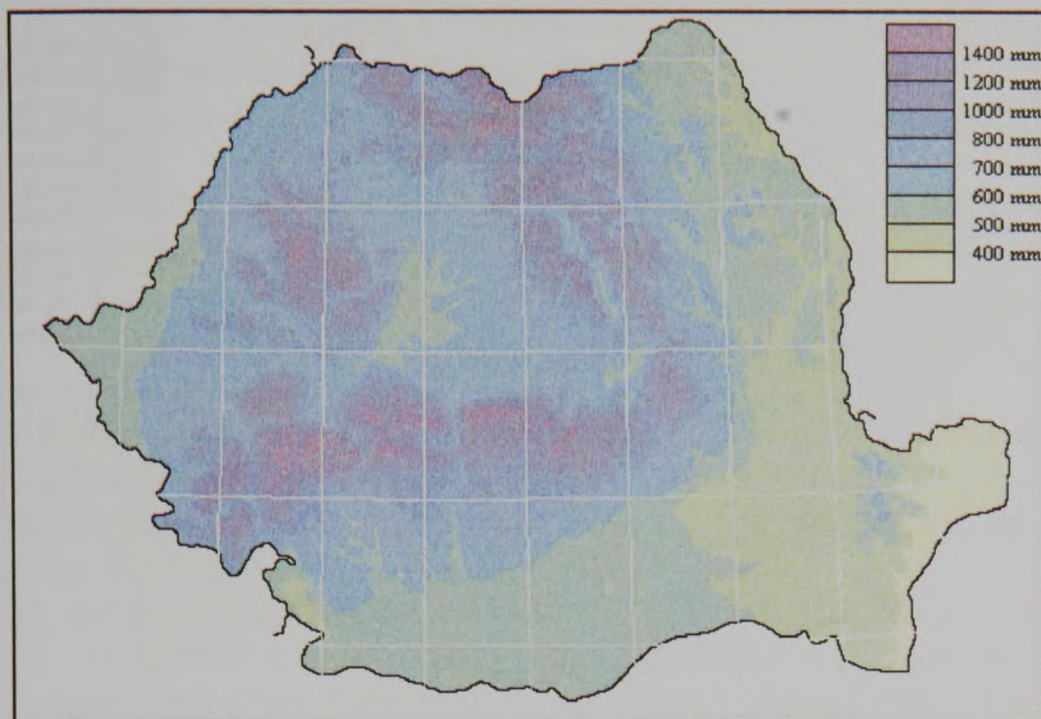


Fig. 2 The annual precipitation map

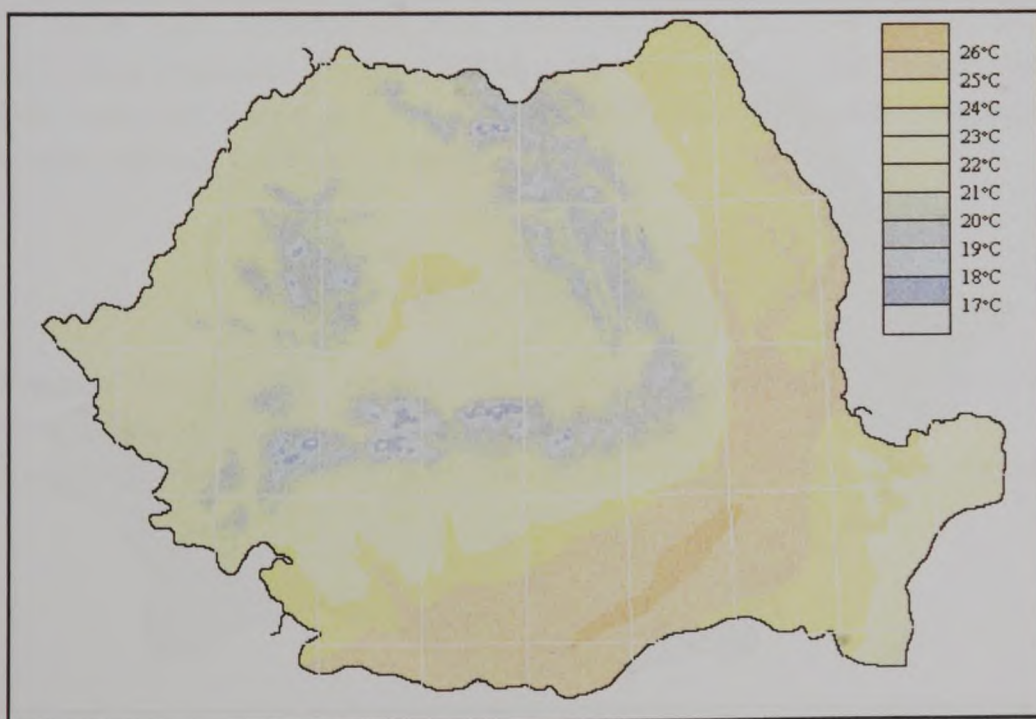


Fig. 3 The annual mean value of the thermic amplitude map

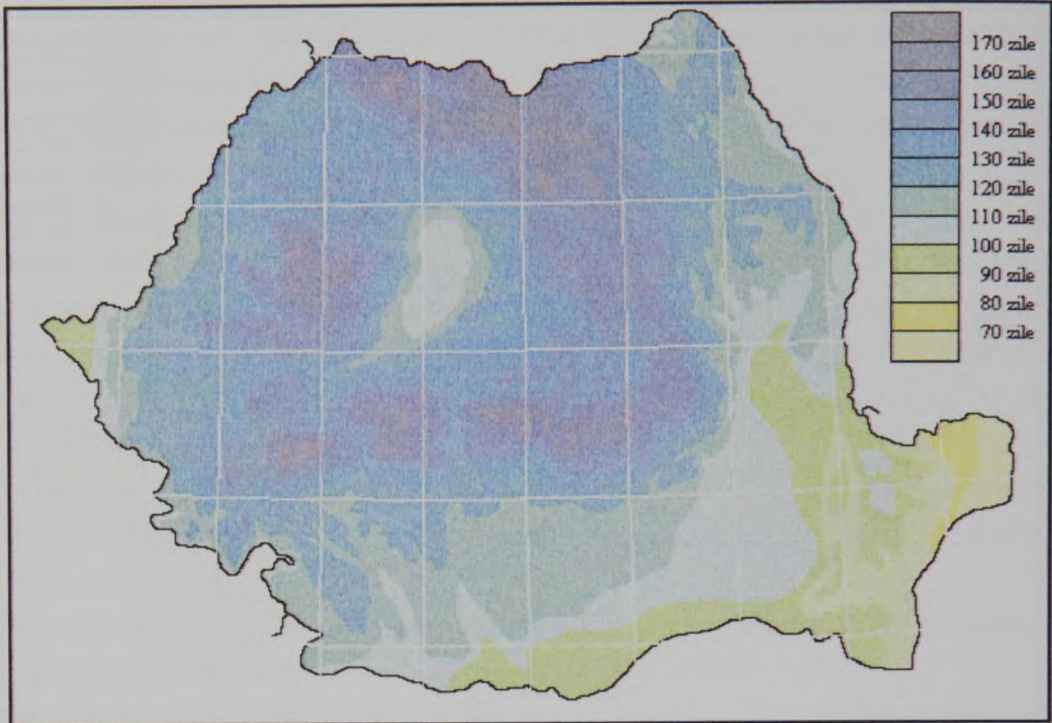


Fig. 4 The annual number of $\geq 0,1$ mm precipitation days map



Fig. 5 The hypsometric map

References

- CIOCÂRLAN V. 2000. *Flora ilustrată a României*. București: Edit. Ceres. 1139 pp.
- GRINȚESCU G. 1952a. Fam. *Lycopodiaceae, Selaginellaceae*. Pp. 31-42. In T. SĂVULESCU (ed.). *Flora Republicii Populare Române*. Vol 1. București: Edit. Academiei Române.
- GRINȚESCU G. 1952b. Fam. *Polypodiaceae*. Pp. 81-150. In T. SĂVULESCU (ed.). *Flora Republicii Populare Române*. Vol 1. București: Edit. Academiei Române.
- GRINȚESCU G., ALEXANDRESCU L. & E.I. NYÁRÁDY 1952. Fam. *Equisetaceae* Pp. 46-73. In T. SĂVULESCU (ed.). *Flora Republicii Populare Române*. Vol 1. București: Edit. Academiei Române.
- HAEUPLER H. & SCHÖNFELDER P. 1989. *Atlas der Farn- und Blütenpflanzen der Bundesrepublik Deutschland*. Stuttgart. 768 pp.
- OLTEAN M. & ȘTEFĂNUȚ S. 2002. Atlas Florae Romaniae I. *Proceedings of the Institute of Biology*, 4: 101-108.
- TUTIN T.G., BURGESS N.A., CHATER A.O., EDMONDSON J.R., HEYWOOD V.H., MOORE D.M., VALENTINE D.H., WALTERS S.M. & D.A. WEBB (eds. assist by AKEROYD J.R. & M.E. NEWTON). 1996. *Flora Europaea*. Vol. 1. Second edition. *Psilotaceae to Platanaceae*. Cambridge: Cambridge University Press, i-xlvi, 1-570. pp. +5 maps.
- ȚOPA E. 1952a. Fam. *Isoëtaceae*. Pp. 42-45. In T. SĂVULESCU (ed.). *Flora Republicii Populare Române*. Vol 1. București: Edit. Academiei Române.
- ȚOPA E. 1952b. Fam. *Marsiliaceae, Salviniaceae*. Pp. 150-154. In T. SĂVULESCU (ed.). *Flora Republicii Populare Române*. Vol 1. București: Edit. Academiei Române.
- ȚOPA E. 1952c. Fam. *Ophioglossaceae, Osmundaceae*. Pp. 73-81. In T. SĂVULESCU (ed.). *Flora Republicii Populare Române*. Vol 1. București: Edit. Academiei Române.
- ***Standard Liste der Farn- und Blütenpflanzen der Bundesrepublik Deutschland. *Flor. Rundbr. Beih.* 3, Göttingen. 478 pp.

ATLAS FLORAE ROMANIAE - FERIGI

Rezumat: Lucrarea de față prezintă o metodă pe care autorii o utilizează la procesarea datelor corologice.

Cuvinte cheie: Atlas, Flora, România, baze de date, geocod, ferigi, corologie