

## VIRGIN FORESTS OF ROMANIA

**Les Forêts Vierges de Roumanie.** V. Giurgiu, N. Doniță, C. Bândiu, S. Radu, R. Cenușă, R. Dissescu, C. Stoiculescu and I.-A. Biriș, ASBL Forêt Wallone, 2001, 206 pp., ISBN 2-9600251-1-3.

Comprehensive publication on forests and forestry in the Eastern European countries published in world languages are in fact not very numerous. This statement is valid especially for the publications on the state of natural forests of Carpathians. Except two publications published on virgin forests in the Czech Republic published by Průša<sup>1</sup> (1985) and that on virgin forests in Slovakia published by Korpeľ<sup>2</sup> (1990 and 1995), very few information were known on the distribution on the virgin forests in the Eastern part of Carpathians, e.g. Ukraine and Romania.

It was an excellent idea and a product of cooperation between the Romanian and Wallonian foresters to publish this premier information about the distribution of virgin forests in Rumanian Carpathians. The authors of the book are Romanian forestry specialists, whereas the translation of the book, its structure and the final version was designed by the Wallonians.

The publication is organized in 5 chapters, each with a separate preface, afterword, and bibliography.

The first chapter describes Romania in general. From the whole surface of the country, about 30 % are represented by mountains, 37 % by colline regions and 33 % by lowlands. Approx. 80 % of the area are suitable for forest vegetation, mainly in the hills and the lower and middle elevations of the Carpathians (500 to 1,400 m a.s.l.).

The history of Romanian forest communities during the Holocene is described in detail. This development led to the formation of vertical vegetation zones, from the steppe and forest-steppe zones in the lowlands, through the zone of oak forests with *Quercus cerris*, *Q. frainetto* and *Q. robur*, the zone of broadleaved forests with subdivision to forests with the predominance of pedunculate oak and beech forests, Norway spruce zone, subalpine and alpine zones. The supposed natural vegetation of the country comprised 80 % of forests (approx. 18 millions hectares), approx. 15 % of steppes and meadows and the remaining 5 % were represented by subalpine, alpine and aquatic vegetation. At present, the area of forests is 6.37 millions of hectares, i.e. 26.7 % of the country's total area. Approximately 400,000 ha are virgin or natural forests. They are concentrated in the southwestern part of Carpathians and partially dispersed over Carpathian ridges.

The second part of the book describes Romanian forests. It deals with changes of tree species composition in association with the management of forest stands, the

problems of stability of forest ecosystems, and the issues of forest policy in Romania.

The third chapter deals with issues immediately related to virgin forests. The terms like 'virgin forest', 'natural forest' and 'human-affected forest', as well as the principal traits of the forest ecosystem are defined. The attributes of a virgin forest are not necessarily associated with a climax community, but can be applied to different ontogenetic stages as well. The main traits characterizing a virgin forest are tree species composition, horizontal and vertical structure, biomass production, regeneration processes and stability. The biodiversity of forests is described in terms of the species diversity of plant animal species with a special regard to Tertiary relics and endemics.

The history of the research and protection of Romanian virgin forest is rich and controversial. It starts in 1881, when first reserves were established. In 1930, the first act on the protection of nature and cultural heritage was endorsed. In 1978, IUCN recognized three biosphere reserves. In 1990, 13 national parks with a total area of 394,000 ha were established: Rodna, Calimani, Ceahlau, Cheille Bizacului-Hasmas, Bucegi, Piatra Craiului, Cozia, Retezet, Domogled-Valea Cernei, Semenice-Cheille Carasului, Ceille Nerei-Beusuita, Apusenia and Delta de Danube.

The fourth part is the most valuable one, describing the most representative virgin forests of Romania. For each reserve, the basic data on tree species composition, herbaceous plant community, climatic and soil characteristics, as well as dendrometrical characteristics of the tree layer are provided.

The book should encourage Romanian foresters and scientists to investigate and protect this immense wealth. However, it is important for scientists and forest practitioners from other countries as well. It also testifies that also states on different development levels can cooperate fruitfully. Despite the fact that the descriptions of virgin forests are quite static, they provide good prerequisites for the future research.

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<sup>1</sup> PRŮŠA, A., 1985: Die böhmischen und mährischen Urwälder – ihre Struktur und Ökologie. Academia, Praha, 578 pp., ISBN

<sup>2</sup> KORPEĽ, Š., 1995: Urwälder der Westkarpaten. Gustav Fischer Verlag, Stuttgart – Jena – New York, 310 pp. ISBN 3-347-30702-9