

Session 'Warm-temperate deciduous forests' / ORAL

WARM-TEMPERATE FORESTS OF CENTRAL PORTUGAL: A MOSAIC OF SYNTAXAPedro Bingre^{1,2}, José Carlos Costa², Dalila Espírito-Santo²¹ Instituto Politécnico de Coimbra, Coimbra, Portugal, ² Instituto Superior de Agronomia, Centro de Botânica Aplicada à Agricultura, Lisbon, Portugal (dalilaesanto@isa.utl.pt).

Keywords: temperate forests, Mediterranean forests, lauroid, semi-deciduous, central Portugal

In spite of extensive afforestations with allochthonous tree species, the Atlantic facade of the mountain chain that extends through central Portugal still presents several examples of autochthonous forests that show significant floristic and ecophysiological diversity. Along an N-S transect of no more than 100 km across the range, zonal forest types may vary from deciduous *Quercus robur* or *Q. pyrenaica* formations with an evergreen understory (*Viburnum tinus* or *Arbutus unedo*, respectively) to semi-deciduous *Qu. broteroi* woodland, in which some malacophyllous shrubs may also be found in the undergrowth. Sclerophyllous forests of *Qu. suber* are also present in certain locations. Adding further diversity to the vegetated landscape are extra-zonal groves of non-sclerophyllous evergreens like *Prunus lusitanica*, *Rhododendron ponticum*, *Laurus nobilis* and *Myrica faya*, relics of a Tertiary laurisilva.

Whereas data suggest that a macroclimatic gradient (from meso-temperate to meso-Mediterranean) may be responsible for such a variety of habits in forest formations, a convoluted set of orographic, edaphic, hydrologic, microclimatic and paleohistorical variables also contributes to explanation of the variation in this peculiar region.

This study compares these plant communities of central Portugal, using Braun-Blanquet methodology, and attempts to ascertain which syntaxa may be considered properly to be warm-temperate forests.

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DOWNY OAK WOODS OF ITALY: PHYTOGEOGRAPHICAL REMARKS ON A CONTROVERSIAL TAXONOMIC AND ECOLOGICAL ISSUERiccardo Guarino¹, Giuseppe Bazan¹, Bruno Paura²¹ University of Palermo, Dept. of Environmental Biology and Biodiversity, via Archirafi, 38 – 90123 Palermo (Italy); ² University of Molise, Dept. S.A.V.A., via De Sanctis, 1 – 86100 Campobasso (Italy) - (corresponding author: riccardo.guarino@unipa.it)

Keywords: Downy oak, syntaxonomy, phytogeography, variability, distribution patterns.

The importance of downy oak as an integral component of the "sub-mediterranean" woods has been underscored by many studies. Nevertheless, terms like "submediterranean" and "downy oak" are some of the most faintly understood concepts in European phytogeographical and taxonomical research. Downy oak is well known to be a problematic taxon. The name "*Quercus pubescens*" (= *Q. humilis*) piles together populations characterized by increasing phenotypic and genomic polymorphisms along north-south gradients, which is commonly explained as the result of a "founder effect" given by a relatively fast post-glacial re-colonization of the northern stands through rare long-distance dispersal events.

On the other hand, the southern polymorphisms of the downy oak provides evidence for geographic/environmental selection driven by different edaphic conditions along clinal gradients of cold and drought stress, even if the distinction of different species is blurred by systematic hybridization and introgression that have been enhanced by the recent deforestation.

Because downy oak occurs widely throughout the Italian Peninsula, we tried to detect some ecological and geographical borders which might be useful to identify climate-vegetation feedback mechanisms as well as to sharpen the syntaxonomical and systematic investigation of such a critical species complex. Our work is based on a well-distributed geo-referenced set of vegetation data, combined with layers of environmental variables (elevation, climate and soil chemistry). The statistical significance of the correlation between vegetation and environmental data has been evaluated through the Mantel's test. Our results suggest that there are some borders in the distribution/prevalence of morphologic traits of "*Q. pubescens*" (regarded here as a species complex). These borders are not limited by sharp ecological or geographical gaps but instead reflect patterns of selection and phenotypic variability in key traits of the geographical range.