



BEECHWOOD OF RETAULE IN COLS OF TORTOSA

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THE PLANT LANDSCAPE OF THE MOUNTAINS OF TARRAGONA



THE COUNTRY'S LANDSCAPE IS A COMPLEX MOSAIC OF COMMUNITIES WITH CENTRAL-EUROPEAN OR NORTHERN AFFINITIES, GENERALLY OF LIMITED EXTENSION, FORMING PATCHES AMONGST THE MEDITERRANEAN VEGETATION.



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The mountains of Tarragona run roughly parallel to the coast in a line forming part of what is called the Catalanidic System and are the inland limit of a coastal plane with an age-old agricultural tradition, which has been conquered by tourism in the last few decades. With few exceptions, its highest points are around 1000 m., reaching 1201 m. at the Prades massif,

1156 m. at Montsant and 1447 m. at the Ports de Beseit. The rivers and their tributaries (principally the Ebro, the Francolí and the Gaià) divide the whole into a series of ranges running more or less N.E. - S.W., the most individualized of which are those of Brufaganya, An-cosa, Miramar, Prades, Montsant, Tivissa-Llaberia, Cardó, Ports and Montsià. All of these ranges are different as re-

gards both their surface area and relief and their soil and human settlement. It is precisely the remarkable wealth of geological materials and the range of orientations, altitudes and degree of human intervention that explains the heterogeneity of the country's plant cover. But all of them also present features in common, amongst them the Mediterranean climate, halfway be-



CHESTNUT GROVE IN THE MOUNTAINS OF PRADES

tween the mildness of the coastal plane and the harshness of the inland regions; the rainfall, which is higher than in the neighbouring areas and shows a marked contrast between the northern and southern slopes, and the woodland, which has been damaged in places by fires, particularly frequent these last few years, and by the agriculture, which at the end of last century made use of every corner it could, including sloping ground. It is worth remembering that charcoal-burning continued until the middle of this century and that many pine forests still carry the mark, often in the form of stone banks, of former agricultural exploitations. For all these reasons, the densest forests today are only present in the shaded areas sheltered by the abrupt terrain where farming or woodland exploitation is most difficult.

These lands offer the visitor a wide range of typically Mediterranean products, from the cereals of the high northern planes to the nuts (this is the land of the hazelnut and almond), wine and oil of the central and southern regions. If we add to this the chestnut –traditional in the mountains of Prades– and the mushrooms, the reader will have an idea of some of the gastronomical specialities typical of the country.

The water

Surrounded by dry land, the rain that falls is not only of benefit to forest and farmland, but also impregnates the subsoil and makes it into a temporary re-

servoir full of water which it later releases to the land below. The springs are therefore special sites which have often become symbols due to the presence of a shrine or monastery, or simply because they have become centres for leisure and relaxation. Thus we find, at exceptional points, the monasteries of Santes Creus and Poblet and the Carthusian monastery of Scala Dei (as well as the abbey of Benifassà, on the Valencian side of Els Ports). There are also the watering-places of Vallfogona de Riucorb, Les Masies and Cardó. There are so many shrines, though (the very name Montserrat –Holy Mountain– speaks for the abundance of hermits and hermitages), that it would be impossible to name them all; from Sant Magí de Bruçaganya, at the northern end, to Sant

Roc, at Els Ports, we hardly come across a range of hills that doesn't have its own hermitage or shrine.

The vegetation

The mountains of Tarragona are like little islands of forest in the surrounding planes of chiefly agricultural land. Forests of oak and holm-oak, Scotch pine, yew and even beech are to be found in the many untouched or scarcely altered areas, but there is also a considerable area occupied by shrubs and grasses, sometimes with a belt of Aleppo pine. The country's plant landscape is therefore a complex mosaic of communities with Central-European or northern affinities, generally of limited extension, forming patches amongst the Mediterranean vegetation. As if to illustrate the sobriety of the climate, the Mediterranean woods keep their leaves, which are generally of a dark green colour, all the year round. The plants belonging to the Central-European communities, on the other hand, do not normally keep their leaves in winter, and during the rest of the year these are of different colours, from the light green of spring and summer to the palette of autumn yellows and reds. Certain plants that are practically nonexistent in the rest of Catalonia find refuge here. Amongst the first there are various endemic species (that is to say, plants that are not found anywhere else) of very ancient origin, such as the Tarragona willow (*Salix tarraconensis*), the centaury called *Centaurea lagasca-*



POBLET AND MOUNTAINS OF PRADES



SIERRA OF MONTSANT

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na subsp. *podospermifolia* and a special thyme, *Thymus willkommii*. The most outstanding communities are the groves of kermes oak *Cephalanthero-Quercetum pyrenaicae*, the primitive pine woods of Scotch pine (*Arctostaphylo-Pinetum catalaunicae*) and the scrubland of thorny *Erinaceo-Anthyllidetum montanae*. The particularities of the local flora and vegetation can be explained by the fact that in very remote times these ranges provided a refuge for plants both from the Pyrenees and from the Iberian system and the mountains of Andalusia and Valencia. All this confers an exceptional biogeographical value on the mountains of Tarragona, complemented by a locally remarkable degree of conservation. For these reasons, many of these ranges are destined to become protected areas. We shall now look briefly at some of the most remarkable plant communities.

The woods of Aleppo pine (*Pinus halepensis*) predominate up to 700 - 900 metres. They are indicative, above all, of areas where the primitive vegetation has undergone important alterations (former farmland, fires, etc.) or else particularly harsh environmental conditions (shallow soils, dry, sloping and especially sunny land). The soil characteristics mainly condition the communities appearing beneath the thin mantle provided by the pine trees. The chalky soils are dominated by thickets of rosemary, a typically Mediterranean shrub com-

munity characterized by an almost year-round flowering, small leaves to reduce water loss, a wide range of scents both from the flowers and from the aromatic glands of the leaves, etc. This is the domain of a large number of plants traditionally used for their medicinal properties, as seasoning or for perfumes: rosemary (*Rosmarinus officinalis*), thyme (*Thymus vulgaris*), savory (*Satureja montana*), the "esparnellac" (*Santolina chamaecyparissus*), the globe daisy (*Globularia alypum*), lavender (*Lavandula latifolia* and *L. angustifolia*), Everlasting Flower (*Helichrysum stoechas*), rue (*Ruta graveolens*), sage (*Salvia officinalis*), etc.

The oak groves occupy the shaded areas of high ground, above 700-800 metres. The most notable is that of the kermes oak, which is found exclusively at the head of the Tíllar valley (Prades mountains), on the northern slopes of the Tossal de la Baltasana. Today this forest is considerably affected by forestry work intended to encourage the Scotch pine to the detriment of the kermes oak. It constitutes a somewhat impoverished outpost of the Ibero-Atlantic vegetation of the wet mountains of the interior of the Iberian Peninsula. The Scotch pine woods are common in the mountain belt of the Tarragona ranges. They are generally mixed in with the oak groves, very often a result of degradation of the latter, but in the mountains of Prades and Els Ports there

are primitive pine woods with northern characteristics. These communities, characterized by an undergrowth in which the bearberry (*Arctostaphylos uva-ursi*) covers up to 90% of the ground, form small patches in certain shady spots between 1000 and 2000 metres.

The beechwoods occupy small shaded areas of Els Ports subjected to the influence of the sea, between 1150 and 1250 metres. This community, which is especially well preserved and extensive in the El Retaule ravine, reaches one of its most southerly European habitats here. For this reason, the undergrowth is enriched by plants characteristic of the dry oak groves, which give the community a very different appearance to that of the Central-European beechwoods.

On the most windswept ridges of the mountains of Prades, Cardó and Els Ports, we find a low scrub dominated by pulvinate, or cushion-shaped, plants, of which the commonest is the "eriçó" (*Erinacea anthyllis*), a spiny cushion. This type of vegetation is typical of the highest belts of the southern Iberian and North-African mountains and is not found farther north than the mountains of Tarragona. The spiny cushion form is an adaptation to life in very windy habitats and therefore reappears on the coast of the northern Balearics and the Alt Empordà, in areas often swept by the north wind, and in the Pyrenees. ■