

Flora and vegetation of Beira-Duriense mountains – an introduction

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On a PhD project on Ecology of vascular plants, I have been studying the flora and vegetation of a group of mountains and highlands (above 700 m), situated South of the river Douro and North of Mondego River and Central System. This area can be divided in four major groups of mountains: 1) Caramulo; 2) Arada/Freita; 3) Montemuro/Nave/Lapa; 4) Penedono/Trancoso; and some other minor sierras. The height of this large area (c. 2000 km²) ranges from 700 m to 1382 m (the top of the Serra de Montemuro). Granites and schists are the dominant rocks.

Oak woods, from the class *Quercus-Fagetea*, still occur in some places, mainly on rocky slopes of difficult access. *Quercus pyrenaica* and *Q. robur* are frequently accompanied by *Pteridium aquilinum* and other ferns (*Asplenium onopteris*, *A. trichomanes*, *Blechnum spicant*, *Dryopteris* spp., *Polystichum setiferum*), *Anemone trifolia* subsp. *albida*, *Aquilegia dichroa*, *Arenaria montana*, *Stellaria holostea*, *Viola riviniana*, *Erica arborea*, *Saxifraga granulata*, *S. spathularis*, *Rubus ulmifolius*, *Pyrus communis*, *Genista florida*, *Polygala vulgaris*, *Heracleum sphondylium*, *Physospermum cornubiense*, *Omphalodes nitida*, *Ajuga pyramidalis*, *Linaria triornithophora*, *Veronica officinalis*, *Jasione montana*, *Lobelia urens*, *Lepidophorum repandum*, *Crepis lampanoides*, *Hieracium latifolium*, *Picris hieracioides*, *Polygonatum odoratum*, *Hyacinthoides hispanica*, *Crocus serotinus*, *Arrhenatherum elatius*, *Holcus mollis* and other species.

Pteridium aquilinum is the most common fern, covering large areas or among scrubs and woods (mainly on cultivated pinewoods, with *Erica umbellata*, *Simethis mattiazzi*, *Agrostis curtisii*, where the rare saprophyte *Monotropa hypopitys* occasionally occurs).

Scrubs are the dominant vegetation, covering very large areas. *Pterospartum tridentatum* is very frequent, forming scrubs with *Calluna vulgaris*, *Erica arborea*, *E. australis*, *E. cinerea*, *E. umbellata*, *Halimium lasianthum* subsp. *alyssoides* and *Ulex minor*, sometimes with small bulbous plants (*Crocus carpetanus*, *C. serotinus*, *Gagea soleirolii*, *Gladiolus illyricus*, *Merendera montana*, *Narcissus bulbocodium*, *N. cyclamineus*, *N. triandrus*, *Ornithogalum* spp., *Romulea bulbocodium* and, rarely, *Erythronium dens-canis*, *Fritillaria nervosa* or *Tulipa sylvestris* subsp. *australis*). *Cytisus striatus* and *C. multiflorus* are also very common, forming vaste scrub areas.

Wet heaths and bogs with *Sphagnum*, ferns like *Blechnum spicant* and *Pteridium aquilinum*, *Caltha palustris*, *Viola palustris*, *Erica ciliaris*, *E. tetralix*, *Calluna vulgaris*, *Potentilla erecta*, *Ulex micranthus*, *U. minor*, *Pedicularis sylvatica* subsp. *lusitanica*, *Wahlenbergia hederacea*, *Narcissus bulbocodium*, *Anthoxanthum odoratum* and *Carex* spp. are not infrequent, but carnivorous plants like *Drosera rotundifolia* and *Pinguicula lusitanica* are very rare.

Meadows dominated by *Holcus lanatus* are very frequent, sometimes with large populations of *Carum verticillatum*, *Achillea millefolium*, *Arnica montana* subsp. *atlantica*, *Paradisea lusitanica*, *Narcissus bulbocodium*, *Cynosurus cristatus*, *Danthonia decumbens*, *Festuca* spp., *Nardus stricta* and conspicuous orchids as *Dactylorhiza caramulensis* and *Serapias cordigera*.

There are some Portuguese endemic species as *Anarrhinum longipedicellatum*, *Ceratocarpus claviculata* subsp. *picta*, *Murbeckiella sousae* and *Teucrium salviastrum*. Many more are the Iberian endemisms, as for example *Anemone trifolia* subsp. *albida*, *Aquilegia dichroa*, *Cytisus multiflorus*, *Dactylorhiza caramulensis*, *Linaria triornithophora*, *Narcissus cyclamineus*, *Ranunculus bupleuroides*, *R. nigrescens*, *Silene marizii*, *Ulex micranthus*, etc. It is expected that the final number of taxa (species and subspecies) of this area will not be far from a thousand.