Notas do Herbário da Estação Florestal Nacional (LISFA): Fasc. XVIII

∫2. ***De Vegetatio Lusitana Notae* – I.**

1**. Juresian riparian birch woodlands:** ***Carici reuterianae-Betuletum celtibericae* as. nova.**

The Portuguese areas of the Juresian Sector (sensu Rivas-Martínez *et al.*, *Itinera Geobotanica*, 2002) include a considerable diversity of deciduous woodlands predominated by the Iberian birch (*Betula celtiberica*). In a recent study of the vegetation of the Peneda-Gerês mountain range (Honrado, *Flora e Vegetação do Parque Nacional da Peneda-Gerês*, 2003), six different birch-woodland types were recognised and classified according to both dynamic (climactic vs. secondary/seral formations) and synecologic (climatophilous vs. edapho-hygrophilous formations) characters. In the same study, riparian birch woodlands of the Juresian Sector were preliminarily described as a new association (*Carici reuterianae-Betuletum celtibericae*).

Juresian *Carici-Betuletum* woodlands usually include three distinct strata (layers). The tree layer is clearly predominated by birch, sometimes also by grey-willow (*Salix atrocinerea*). Tree--heather (*Erica arborea*) is usually the most common shrub, with climbing taxa (*Hedera hibernica*, *Lonicera periclymenum* subsp. *periclymenum*) also regularly present. The herb layer includes a wide variety of ferns (*Athyrium filix-femina*, *Blechnum spicant* subsp. *spicant*, *Osmunda regalis*, etc.), nemoral grasses and herbs (*Omphalodes nitida*, *Luzula sylvatica* subsp. *henriquesii*, *Calamagrostis arundinacea*, *Euphorbia dulcis*, etc.), several hygrophi-lous phorbs (*Oenanthe crocata*, *Paradisea lusitanica*, *Scrophularia balbisii* subsp. *balbisii*, *Cirsium palustre*, *Heracleum sphondylium*, etc.) and the riparian sedge *Carex elata* subsp. *reuteriana* (Table 1).

The interpretation of these birch woodlands as riparian (and, therefore, their inclusion in the alliance *Osmundo-Alnion*) is supported by both structural, synecologic and floristic parameters. That is, they consist of gallery formations colonising permanently wet and seasonally flooded soils which are naturally disturbed through mechanical stress by streams; floristic differentiation regarding non-riparian edapho-hygrophilous birch woodlands is based on territorially riparian species such as *Carex elata* subsp. *reuteriana* and *Osmunda regalis*. *Deschampsia gallaecica*, *Oenanthe crocata*, *Calamagrostis arundinacea*, *Vicia sepium* and *Anemone nemorosa* also distinguish these riparian formations from all other birch-woodland types in the territory (Honrado, *op. cit.*). On the other hand, the dominance of birch and the complete absence of black-alder (*Alnus glutinosa*) clearly differentiates *Carici-Betuletum* from all other syntaxa within the alliance.

Carici-Betuletum celtibericae woodlands could be regarded as secondary formations within the climactic domain of black-alder forests. We believe this is not the case, as i) no alder formations (nor even scattered individuals) were ever found in the surroundings of sampled areas, and ii) shallow colluvial soils colonised by riparian birch woodlands in juresian river margins are not suitable for alder.

So far, *Carici-Betuletum* woodlands have only been sampled in supratem-perate areas belonging to the Juresian Sector and in neighbouring upper-mesotemperate areas of the Galician-Portuguese Sector. However, some riparian birch formations have already been observed by the authors in other mountain areas of Northern Portugal belonging to the Galician-Portuguese Sector (Alvão, Marão). The possibility that *Carici-Betuletum* also occurs in the Estrela mountain range (Estrelensean Sector, Mediterranean Region) has not yet been confirmed.

Syntaxonomical scheme

SALICI PURPUREAE-POPULETEA NIGRAE (Rivas-Martínez & Cantó ex Rivas-Martínez, Báscones, T.E. Díaz, Fernández-González & Loidi 1991) Rivas-Martínez & Cantó in Rivas-Martínez, T.E. Díaz, F. Fernández-González, J. Izco, J. Loidi, M. Lousã & A. Penas 2002
Populetalia albae Br.-Bl. ex Tchou 1948
Osmundo-Alnion (Br.-Bl., P. Silva & Rozeira 1956) Dierschke & Rivas-Martínez in Rivas-Martínez 1975
Carici reuterianae-Betuletum celtibericae as. nova

Nomenclature

Scientific names of plant taxa are mostly according to Castroviejo *et al.* (*Flora Iberica*, 1986-2002) as far as issued, and Franco and Franco & Rocha Afonso (*Nova Flora de Portugal*, 1971-

2003) for other groups. Syntaxonomic nomen-clature is according to Rivas-Martínez *et al.*, *Itinera Geobotanica*, 2002).

Table 1 - *Carici reuterianae-Betuletum celtibericae*

Releve n.	1	2	3	4	5	6	7	8	9
Altitude (m)	910	470	880	870	960	1050	620	880	1025
N. of taxa / releve	20	22	24	28	32	33	36	37	48
Character and differential taxa									
Athyrium filix-femina	2	1	2	1	2	+	2	1	1
Betula celtiberica	5	3	5	4	4	4	4	5	3
Carex reuteriana	3	1	2	2	1	1	1	2	1
Salix atrocinerea	1	3	1	2	2	2	2	1	3
Omphalodes nitida	1	1	1	1	+	.	1	2	2
Blechnum spicant	1	2	1	.	.	+	1	1	1
Lathyrus linifolius	1	.	1	1	+	+	.	1	+
Luzula henriquesii	1	.	2	1	2	.	.	1	2
Oenanthe crocata	2	.	1	2	.	.	.	1	1
Calamagrostis arundinacea	3	.	2	.	2	.	.	.	2
Osmunda regalis	.	2	.	.	.	.	1	+	+
Viola palustris	.	.	1	.	.	1	1	.	+
Deschampsia gallaecica	.	.	1	.	.	1	.	.	1
Paradisea lusitanica	+	.	.	1	.	.	.	+	.
Dryopteris borreri	.	2	.	.	1	.	.	.	.
Galium broterianum	.	.	.	.	.	.	+	.	1
Scrophularia balbisii	.	.		1	.	.	.	.	+
Vicia sepium	.	.	1	.	.	.	.	1	.
Anemone nemorosa	.	.	.	.	.	2	.	.	.
Euphorbia hyberna		.	.	.	1	.	.	.	.
Fraxinus angustifolia	.	1	.	.	.	.	.	.	.
Ornithogalum pyrenaicum	.	.	.	.	.	.	.	+	.
Thalictrum speciosissimum	.	.	.	.	.	.	.	.	1
Companion taxa									
Erica arborea	.	2	2	1	1	1	1	1	2
Euphorbia dulcis	1	.	2	1	2	1	2	2	1
Lonicera periclymenum	.	1	1	1	1	.	1	+	1
Arrhenatherum bulbosum	+	.	.	+	.	3	+	1	+
Crepis lampsanoides	+	.	+	+	.	.	1	+	1
Teucrium scorodonia	.	1	.	1	+	.	1	+	1
Cirsium palustre	.	.	+	1	.	1	1	.	1
Dryopteris affinis	1	.		1	.	.	1	1	1
Agrostis x fouilladei	.	1		1	.	2	.	.	1
Aquilegia dichroa	.	.	.	.	+	+	1	+	.
Dactylis glomerata	+	.	.	.	.	.	+	1	+
Digitalis purpurea	.	.	.	1	.	+	+	.	+
Dactylis glomerata	+	.	.	.	.	.	+	1	+
Digitalis purpurea	.	.	.	1	.	+	+	.	+
Hedera hibernica	.	2	.	2	1	.	2	.	.
Rumex acetosa	.	.	.	.	.	+	1	+	+
Allium scorzonerifolium	.	.	.	.	+	1	.	.	+
Anemone albida	.	.	.	.	.	+	.	1	+
Brachypodium rupestre	.	.	.	2	.	.	1	.	1
Carex laevigata	.	.	.	.	.	.	1	+	+
Centaurea rivularis	.	.	1	.	.	1	.	.	+
Frangula alnus	.	.	.	2	.	.	2	.	2
Genista polygaliphylla	.	.	+	.	1	.	.	.	1
Heracleum sphondylium	.	.	1	.	.	.	2	2	.
Holcus mollis	1	.	.	.	.	.	.	1	1
Polypodium vulgare	.	.	+	+	.	.	.	+	.
Primula acaulis		.	.	.	1	+	.	.	+
Saxifraga spathularis	.	2	.	.	1	.	.	.	1
Agrostis capillaris	1	.	.	.	.	.	.	2	.
Brachypodium sylvaticum	.	2	.	.	2	.	.	.	.
Caltha palustris	1	.	.	.	.	1	.	.	.
Corylus avellana	.	.	.	.	2		.	1	
Crataegus monogyna	.	1	1	.	.	.	.	.	.

Table 1 – Cont.

Releve n.	1	2	3	4	5	6	7	8	9
Companion taxa									
Cytisus scoparius	.	.	.	1	.	+	.	.	.
Epilobium obscurum	.	.		+	.	.	.	.	+
Hieracium vulgatum	.	.	.	.	+	.	.	.	1
Hyacinthoides sp.	.	.	.	.	.	+	.	+	.
Juncus effusus	.	.	.	.	.	1	.	.	+
Lotus pedunculatus	.	.	.	.	.	.	1	.	+
Potentilla erecta	.	.	.	.	.	1	.	+	.
Prunella pyrenaica	.	.	.	.	.	+	.	+	.
Prunus avium	.	1	.	.	.	.	1	.	.
Quercus pyrenaica	.	.	.	1	1	.	.	.	.
Quercus robur	.	1	.	.	.	.	1	.	.
Saxifraga lepismigena	.	.	.	.	+	.	+	.	.
Silene vulgaris	.	.	.	.	.	.	+	.	+
Sphagnum sp.	.	.	.	.	.	+	.	.	1
Stellaria holostea	.	.	.	1	1	.	.	.	.
Viola riviniana	.	.	.	.	.	.	1	+	.
Acer pseudoplatanus	.	.	.	.	1	.	.	.	.
Angelica laevis	.	.	.	.	+	.	.	.	.
Angelica sylvestris	.	1	.	.	.	.	.	.	
Carex leporina	.	.	.	.	.	.	.	.	+
Castanea sativa		.	.	.	.	.	1	.	.
Cirsium filipendulum	.	.	1	.	.	.	.	.	.
Cytisus striatus	.	.	.	.	.	.	.	.	+
Echium lusitanicum	.	.	.	.	.	.	.	+	.
Hieracium dumosum	1	.	.	.	.	.	.	.	.
Knautia nevadensis	.	.	.	.	.	.	.	+	.
Laserpitium thalictrifolium	.	.	.	.	+	.	.	.	.
Lilium martagon	.	.	.	.	.	.	.	+	.
Linaria triornithophora	.	.	.	.	+	.	.	.	.
Luzula multiflora	.	.	.	.	.	.	+	.	.
Melittis melissophyllum	.	.	.	.	+	.	.	.	.
Myosotis caespitosa	.	.	.	.	.	.	+	.	.
Narcissus bulbocodium	.	.	.	.	.	1	.	.	.
Peucedanum gallicum	.	.	.	.	+	.	.	.	.
Peucedanum lancifolium	.	.	.		.	1	.	.	.
Pseudarrhenatherum longifolium	.	.	.	.	.	.	.	.	1
Pteridium aquilinum	.	.	.	.	.	+	.	.	.
Pyrus cordata	.	1	.	.	.	.	.	.	.
Ranunculus repens	.	.	.	.	.	1	.	.	.
Scrophularia herminii	.	.	.	.	.	.	.	.	1
Senecio legionensis			.		.	+	.	.	.
Sibthorpia europaea	.	.		.	.	.	+	.	.
Ulex minor		1	.	.	.	.	.	.	.

Sites: **1**: MONTALEGRE: Paredes, Corgo de Sendão, 29TNG9028; **2**: TERRAS DE BOURO: Covide, Ribeiro de Freitas, 29TNG6520; **3**: MONTALEGRE: Sezelhe, Ribeira da Lama Chã, 29TNG9328; **4**: MONTALEGRE: Tourém, 29TNG9139; **5**: MONTALEGRE: Pitões das Júnias, Ribeiro das Aveleiras, 29TNG8632; **6**: MELGAÇO: Rodeiro, Corga da Conda, 29TNG7156; **7**: PONTE DA BARCA: Bilhares, 29TNG6330; **8**: MONTALEGRE: Travassos, Ribeiro de Rio Mau, 29TNG9129; **9**: MONTALEGRE: Pitões das Júnias, near the monastery, 29TNG8731

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