

# An historical survey of the botanical research done at the Lousã mountain system (Portugal)

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**Abstract:** Rodrigues, S. S. S. ; Ferreira, C. S. S. & Silveira, P. C. 2005. An historical survey of the botanical research done at the Lousã mountain system (Portugal). *Bot. Complut.* 29: 35-42.

This work is intended to be the first contribution to a checklist of the vascular plant flora of the Lousã mountain system. Only bibliographic records are included, specially the ones extracted from studies dating from the 19<sup>th</sup> century, for a future comparison with the present diversity. A total of 225 taxa were recorded, of which at least 86 % can still actually be found in the study area, according with our field observations. However, at least four are most probably extinct, because no population are actually known.

**Key words:** vascular plants, chorology, conservation, endangered species.

**Resumen:** Rodrigues, S. S. S. ; Ferreira, C. S. S. & Silveira, P. C. 2005. Revisión histórica de los estudios botánicos realizados en la Sierra de Lousã (Portugal). *Bot. Complut.* 29: 35-42.

Con este trabajo se publica una primera contribución para el catálogo florístico de la Sierra de Lousã. Se incluyen sólo citas bibliográficas, especialmente las extraídas de estudios de antiguos botánicos, para una comparación futura con la biodiversidad actual. Se encontraron 225 citas correspondientes a taxones de la flora vascular de las cuales por lo menos un 86 % están confirmadas en base a nuestras primeras observaciones de campo. Por lo menos cuatro de los taxones citados están, muy probablemente, extinguidos porque no se conocen poblaciones actuales.

**Palabras clave:** plantas vasculares, corología, conservación, especies amenazadas.

## INTRODUCTION

This paper aims to provide an account of the botanical research done at the «Serra da Lousã» mountain system, specially by botanists of the 19<sup>th</sup> century. This revision was motivated by the recent inclusion of most of this area in the Natura 2000 network and the general interest in the knowledge of the natural resources for conservation and management purposes. In order to establish the precise state of conservation of the vascular plant flora of this area it is essential to gather, besides information regarding the actual diversity, also ancient data. This will allow us not only to produce a more complete checklist of the species actually occurring in these mountains but also to detect probable or certain extinctions. After some introductory notes on the characterization and history of the floristic studies done on the study area the checklist is provided. Further dis-

cussion on the diversity and its conservation will be postponed to a future work, comprising also our field observations.

## Study area

With a general orientation from north-east to south-west, and a maximum altitude of 1205 m, the Lousã mountain system (Fig. 1) is the south-western most point of the Portuguese central mountain chain («Cordilheira central»). It is constituted mainly by pre-cambrian schist, and benefits from a mild Mediterranean-temperate climate, with cold wet winters and warmer dry summers. The predominant vegetation cover includes heath lands, plantations of *Pinus sylvestris* and of other cold resistant trees on the higher parts, along with *Eucalyptus globulus* on the lower parts. Several species of *Acacia* (mostly *A. dealbata* and *A. melanoxylon*) are

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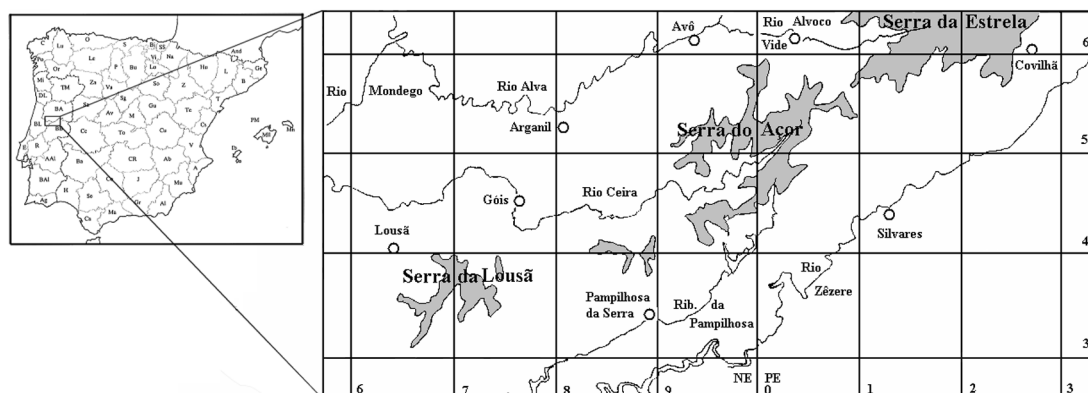


Figure 1. – Localization of the study area. Shaded areas are above 800 m of altitude.

invading these mountains, constituting an important treat to the diversity and integrity of the ecosystems. Only a few and small areas persist with traces of the primitive woodlands, including areas with *Quercus robur* and *Castanea sativa*, *Ilex aquifolium*, and some riparian vegetation with *Prunus lusitanica* and *Salix* spp.

### Historical background

The richness of the Portuguese flora has soon attracted many European botanists. During the XVII and XVIII centuries Clusio, Tournefort and Jussieu travelled over the Iberian Peninsula but, according with Henriques (1883), they left just a few details about their trips. By the end of the XVIII century appeared one of the best, and undoubtedly the pioneer, of the Portuguese botanists: Felix de Avelar Brotero. Graduated in medicine by the University of Reims, in Paris, he publishes by 1788, still in this city, its first work: «Compendio de Botanica». Two years later he was nominated teacher of botany at the faculty of philosophy of the University of Coimbra, and was also uncharged of the construction of the botanical gardens of the same institution (Fernandes 1988).

In the mean time, the Portuguese government tries to convince Brotero to publish an account of the Portuguese flora (*Flora Lusitanica*), giving him a special grant and an authorization so that he could be exempted of giving classes during certain periods of the year in order to collect specimens of the Portuguese flora. In 10 years he has described 1885 species and by 1804 he has edited the expected *Flora Lusitanica* (Fernandes 1988). He was, as far as we know, the first botanist who visi-

ted Lousã, and the first to make a relevant number of precise references to the flora of this mountain system. By the same time, the count Hoffmanseg becomes interested in our flora and asked for the help of the professor Link (doctor of medicine) in order to perform some joint expeditions and detailed studies of the collected material (Fernandes, 1988). The work of these two German botanists (*Flore Portugaise*) was later published (at 1840), still incomplete and in French. We could not find any direct reference to the vascular plant flora of the «Serra da Lousã» on the above mentioned work, but on a trip report written by Link (1805) we were able to verify that they visited these mountains, but make only a few references to its flora.

Many other foreign botanists, like Boissier, Welwitsch, Nylander, Venturi, Willkomm, Lange, Lindberg, Feyn, Hackel, Nordstedt and Van Heurck have visited Portugal and studied our flora (Henriques 1883), but, as far as we know none of these have studied the Lousã mountain system. The most ancient and complete collection of material from the Lousã mountain system still available (has most of the Brotero's collections have unfortunately been lost) has been made by Henriques, another of the most relevant Portuguese pioneers in botany. Henriques was nominated director of the botanic gardens of the University of Coimbra by 1873, and, in 1880, founded the Broterian Society (in homage to Brotero), whose main objective was to gather a representative collection of the Portuguese vascular plants. Him and his co-workers, like Moller and Manuel Ferreira, made many expeditions through all the country, including the Serra da Lousã and its vicinities.

## RESULTS

The following list of floristic records resumes the result of our bibliographic research. To make queries easier, taxa is sorted in hierarchical alphabetic order by family, genus, species, etc. The currently accepted name is followed by the indication of the author and date of the work from which the record was extracted and, when appropriate, the used synonym. Probably extinct species are preceded by the symbols '†?'.

### ASPIDIACEAE

**Dryopteris filix-mas** (L.) Schott - (Henriques 1895: *Polystichum filix-mas* (L) Roth).

**Polystichum setiferum** (Forssk.) Woynt. - (Henriques 1895: *Aspidium aculeatum* (L) Swartz).

### ASPLENIACEAE

**Asplenium adiantum nigrum** L. - (Henriques 1895).

**Asplenium bilotii** F. W. Schultz - (Silva 1959: *Asplenium obovatum* Viv. subsp. *lanceolatum*; Henriques 1895: *Asplenium lanceolatum* Hudson).

**Asplenium trichomanes** L. subsp. **quadrialeans** D.E.Mey. - (Henriques 1895).

**Ceterach officinarum** Willd. subsp. **officinarum** - (Henriques 1895).

†?**Phyllitis scolopendrium** (L.) Newman - (Henriques 1895: *Scolopendrium vulgare* Sm).

### ATHYRIACEAE

**Athyrium filix-femina** (L.) Roth - (Henriques 1895).

**Cystopteris viridula** (Desv.) Desv.-(Rocha Afonso 1982).

### BLECHNACEAE

**Blechnum spicant** (L.) Roth subsp. **spicant** - (Henriques 1895).

### BORAGINACEAE

**Myosotis secunda** A. Murray - (Coutinho 1905: *Myosotis welwitschii* Boiss. & Reut.).

**Omphalodes nitida** Hoffmanns. & Link - (Coutinho 1905: *Omphalodes lusitanica* Pourr. ex Lange.).

### CAMPANULACEAE

**Campanula lusitanica** L. subsp. **lusitanica** - (Coutinho 1901).

**Jasione montana** L. subsp. **montana** - (Coutinho 1901).

**Wahlenbergia hederacea** (L.) Rchb. - (Coutinho 1901).

### CAPRIFOLIACEAE

**Lonicera periclymenum** L. subsp. **periclymenum** - (Mariz 1901).

**Sambucus nigra** L. - (Mariz 1901).

### CARYOPHYLLACEAE

**Arenaria quereioides** Pourr. ex Willk. - (Mariz 1887: *Arenaria capitata* Lam).

**Cerastium glomeratum** Thuill. - (Mariz 1887: *Cerastium viscosum* Schur).

**Cerastium fontanum** subsp. **vulgare** (Hartman) Greuter & Burdet - (Mariz 1887: *Cerastium vulgatum* L.).

**Corrigiola litoralis** L. subsp. **litoralis** - (Mariz 1888).

**Dianthus lusitanus** Brot. - (Brotero 1804; Mariz 1887).

**Herniaria scabrida** Boiss. subsp. **scabrida**-(Mariz 1888).

**Illecebrum verticillatum** L. - (Mariz 1888).

**Silene latifolia** Poiret - (Mariz 1887: *Melandrium pratense* (Rafn) Röhling).

**Petrorhagia saxifraga** (L.) Link. - (Mariz 1887).

**Polycarpon tetraphyllum** (L.) L. subsp. **tetraphyllum** - (Mariz 1888).

**Silene acutifolia** Link ex Rohrb. - (Coutinho 1939).

**Silene gallica** L. - (Mariz 1887).

**Silene nutans** L. subsp. **nutans** - (Mariz 1887).

**Stellaria media** (L.) Vill. - (Mariz 1887).

### CISTACEAE

†?**Xolantha guttata** (L.) Raf. - (Daveau 1886: *Tuberaria variabilis* Wilk.).

### COMPOSITAE

**Anthemis arvensis** L. subsp. **arvensis** - (Mariz 1891).

**Arnoseris minima** (L.) Schweigg. & Körte - (Brotero 1804: *Lapsana minima* All.; Mariz, 1893: *Arnoseris pusilla* Gaertn.).

**Bellis sylvestris** Cirillo - (Mariz 1891).

**Centaurea herminii** Rouy subsp. **lusitanica** (J. Arènes) Franco - (Mariz 1892: *Centaurea coerulescens* W.).

**Crepis capillaris** (L.) Wallr. - (Mariz 1893: *Crepis virens* L.).

**Doronicum plantagineum** L. subsp. **plantagineum** - (Brotero 1804).

**Galactites tomentosa** Moench - (Mariz 1892).

**Helichrysum stoechas** (L.) Moench subsp. **stoechas** - (Mariz 1891).

**Hispidella hispanica** Lam. - (Mariz 1893).

**Lapsana communis** L. subsp. **communis** - (Mariz 1893).

**Leontodon taraxacoides** (Vill.) Mérat subsp. **hispidus** (Roth) Kerguélen-(Mariz 1893: *Thrinicia hispida* Roth.).

**Logfia minima** (Sm.) Dumort. - (Mariz 1891: *Filago minima* (Sm.) Pers.).

**Picris hieracioides** L. - (Mariz 1893).

**Serratula tinctoria** L. subsp. **seoanei** Willk. - (Brotero 1804: *Serratula tinctoria* L.; Mariz 1892: *Serratula seoanei* Willk.).

**Sonchus asper** (L.) Hill - (Mariz 1893).

**Sonchus oleraceus** L. - (Mariz 1893).

**Tolpis barbata** (L.) Gaertn. - (Mariz 1893).

#### CRASSULACEAE

**Sedum anglicum** Huds. - (Mariz 1888).

**Sedum brevifolium** DC. - (Mariz 1888).

**Sedum forsterianum** Sm. - (Mariz 1888: *Sedum elegans* Lej.).

**Sedum hirsutum** All. subsp. **hirsutum** - (Mariz 1888).

#### CRUCIFERAE

**Cardamine pratensis** L. - (Brotero 1804).

**Coincya monensis** (L.) Greuter & Burdet subsp. **orophila** (Franco) Aedo, Leadlay & Muñoz Garm. - (Mariz 1884: *Brassica valentina* DC.).

**Lepidium heterophyllum** Benth. - (Mariz 1884).

†? **Murbeckiella sousae** Rothm. - (Coutinho 1939: *Phryne pinnatifida* Bub.).

#### CYPERACEAE

**Carex depressa** Link subsp. **depressa** - (Daveau 1891).

**Carex distachya** Desf. - (Daveau 1891: *Carex longiseta* Brot.).

**Carex muricata** L. subsp. **lamprocarpa** Celak. - (Daveau 1891).

#### DIOSCOREACEAE

**Tamus communis** L. - (Coutinho 1898).

#### ERICACEAE

**Erica arborea** L. - (Mariz 1901).

**Erica cinerea** L. - (Mariz 1901).

**Erica scoparia** L. subsp. **scoparia** - (Mariz 1901).

**Erica umbellata** Loefl. ex L. - (Mariz 1901).

#### EUPHORBIACEAE

**Euphorbia amygdaloides** L. subsp. **amygdaloides** - (Daveau 1884).

#### FAGACEAE

**Castanea sativa** Mill. - (Brotero 1804).

**Quercus faginea** Lam. - (Vasconcelos J. C. & Franco J. F. 1954: *Quercus faginea* Lam. var. *faginea*).

**Quercus pyrenaica** Willd. - (Brotero 1804: *Quercus pubescens* Brot; Vasconcelos J. C. & Franco J. F. 1954).

**Quercus robur** L. - (Vasconcelos J. C. & Franco J. F. 1954).

#### GENTIANACEAE

**Centaurium maritimum** (L.) Fritsch - (Mariz 1899: *Erythraea maritima* (L.) Pers.).

**Cicendia filiformis** (L.) Delarbre - (Mariz 1899).

#### GERANIACEAE

**Erodium botrys** (Cav.) Bertol. - (Mariz 1890).

**Erodium cicutarium** (L.) L'Hér. subsp. **cutarium** - (Mariz 1890).

**Geranium columbinum** L. - (Mariz 1890).

**Geranium lucidum** L. - (Mariz 1890).

**Geranium purpureum** (Vill.) Velen - (Mariz 1890: *Geranium robertianum* L. subsp. *purpureum* (Vill.) Nyman).

†? **Geranium sanguineum** L. - (Mariz 1890).

#### GRAMINEAE

**Agrostis castellana** Boiss. & Reut. var. **castellana** - (Henriques 1903).

**Agrostis curtisii** Kerguélen - (Henriques 1903: *Agrostis setacea* Curt.).

**Agrostis pourretii** Willd. - (Henriques 1903: *Agrostis pallida* DC.).

**Aira caryophyllea** L. subsp. **caryophyllea** - (Henriques 1903).

**Airopsis tenella** (Cav.) Aschers. & Graebn. - (Henriques 1903: *Airopsis globosa* Desv.).

**Anthoxanthum aristatum** Boiss. subsp. **aristatum** var. **welwitschii** Ricci - (Henriques 1903).

**Arrhenatherum elatius** (L.) P.Beauv. ex J. & C. Presl subsp. **baeticum** Romero Zarco - (Henriques 1903).

**Avenula lodunensis** (Delastre) Kerguélen subsp. **albinervis** (Boiss.) D.Rivera & M.A.Carreras - (Henriques 1903: *Avena albinervis* Boiss.).

**Avenula lodunensis** (Delastre) Kerguélen subsp. **lodunensis** - (Romero Zarco 1984: *Avenula sulcata* Dumort. subsp. *sulcata*).

**Briza maxima** L. - (Henriques 1903).

**Briza minor** L. - (Henriques 1903).

**Bromus diandrus** Roth - (Henriques 1903: *Bromus maximus*).

**Bromus hordeaceus** L. - (Henriques 1903: *Bromus mollis* L.).

**Bromus madritensis** L. - (Henriques 1903).  
**Bromus racemosus** L. - (Henriques 1903: *Bromus commutatus* Bieb.).  
**Bromus sterilis** L. - (Henriques 1903).  
**Cynosurus echinatus** L. - (Henriques 1903).  
**Dactylis glomerata** L. subsp. **hispanica** (Roth) Nyman - (Henriques 1903).  
**Danthonia decumbens** (L.) DC. - (Henriques 1903: *Triodia decumbens longiglumis*).  
**Gaudinia fragilis** P. Beauv. - (Henriques 1903).  
**Holcus lanatus** L. - (Henriques 1903).  
**Lolium multiflorum** L. - (Henriques 1903: *Lolium italicum* A. Br.).  
**Lolium perenne** L. - (Henriques 1903).  
**Micropyrum patens** (Brot.) Rothm. ex Pilger - (Brotero, 1804: *Triticum patens* Brot.; Henriques 1903: *Festuca patens* C. Richt.).  
**Micropyrum tenellum** (L.) Link var. **tenellum** - (Henriques 1903: *Festuca lachenalii* Spenn.).  
**Poa annua** L. - (Henriques 1903).  
**Poa trivialis** L. - (Henriques 1903).  
**Pseudarrhenatherum longifolium** (Thore) Rouy - (Henriques 1903: *Arrhenatherum thorei* Desm.).  
**Stipa gigantea** Link - (Henriques 1903: *Stipa arenaria* Brot.).  
**Vulpia myuros** (L.) C.C.Gmel - (Henriques 1903: *Festuca myurus* Gouan).  
**Vulpia myuros** (L.) C.C.Gmel subsp. **sciuroides** (Roth.) Rouy - (Henriques 1903: *Festuca bromoides* L.).

#### GUTTIFERAE

**Hypericum androsaemum** L. - (Brotero 1804).  
**Hypericum elodes** L. - (Brotero 1804).  
**Hypericum humifusum** L. - (Coutinho 1895).  
**Hypericum linariifolium** Vahl - (Brotero 1804).

#### HEMIONITIDACEAE

**Anogramma leptophylla** (L.) Link - (Henriques 1895: *Gymnogramma leptophylla* (L.) Desv.).

#### IRIDACEAE

**Crocus serotinus** Salisb. - (Coutinho 1898: *Crocus asturicus* Herb.).

#### JUNCACEAE

**Juncus bufonius** L. - (Coutinho 1890).  
**Juncus capitatus** Weigel - (Coutinho 1890).  
**Juncus effusus** L. var. **subglomeratus** DC. - (Coutinho 1890: *Juncus effusus* auct.).

**Juncus tenageia** Ehrh. ex L.f. subsp. **tenageia** - (Fernández-Carvajal 1982).  
**Luzula campestris** (L.) DC. - (Daveau 1890).  
**Luzula sylvatica** (Huds.) Gaudin subsp. **henriquesii** (Degen) P.Silva - (Brotero 1804: *Juncus maximus* Reichard.).

#### LABIATAE

**Ajuga pyramidalis** L. - (Coutinho 1907).  
**Clinopodium vulgare** L. - (Coutinho 1907: *Satureja clinopodium* Caruel.).  
**Lamium maculatum** L. - (Coutinho 1907).  
**Lavandula stoechas** L. subsp. **luisierii** (Rozeira) Rozeira - (Coutinho 1907).  
**Lycopus europaeus** L. - (Coutinho 1907).  
**Mellitis melissophyllum** L. - (Brotero 1804).  
**Prunella grandiflora** L. - (Brotero 1804: *Prunella hastefolia*).  
**Teucrium scorodonia** L. subsp. **scorodonia** - (Coutinho 1907).

#### LEGUMINOSAE

**Coronilla repanda** (Poir.) Guss. subsp. **dura** (Cav.) Cout. - (Mariz 1884: *Ornithopus durus* Cav.).  
**Genista triacanthos** Brot - (Mariz 1884).  
**Lathyrus linifolius** (Reichard) Bässler - (Coutinho 1939: *Lathyrus montanus* Bernh.).  
**Lotus corniculatus** L. subsp. **carpetanus** (Lacaita) Rivas Mart. - (Mariz 1884).  
**Lotus parviflorus** Desf. - (Mariz 1884).  
**Lotus pedunculatus** Cav. - (Mariz 1884: *Lotus uliginosus* Schkuhr.).  
**Ornithopus compressus** L. - (Mariz 1884).  
**Ornithopus perpusillus** L. - (Mariz 1884).  
**Pterospartum tridentatum** (L.) Willk. subsp. **tridentatum** - (Mariz 1884: *Pterospartum stenopterum* (Spach) Willk.).  
**Trifolium arvense** L. var. **arvense** - (Mariz 1884).  
**Trifolium ligusticum** Balb. ex Loisel. - (Mariz 1884).  
**Trifolium pratense** L. subsp. **pratense** - (Mariz 1884).  
**Trifolium stellatum** L. - (Mariz 1884).  
**Vicia angustifolia** L. - (Mariz 1884).  
**Vicia hirsuta** (L.) Gray - (Mariz 1884).

#### LILIACEAE

**Asphodelus lusitanicus** Cout. var. **ovoideus** (Merino) Z. Díaz & Valdés - (Díaz Lifante & Valdés 1996).  
**Asphodelus macrocarpus** Parl. subsp. **macrocarpus** var. **macrocarpus** - (Díaz Lifante & Valdés 1996).



**Hyacinthoides hispanica** (Mill.) Rothm. - (Coutinho 1896: *Endymion campanulatus* Parl.).  
**Ornithogalum concinnum** (Salisb.) Cout. - (Coutinho 1896: *Ornithogalum unifolium* Ker-Gawl.).  
**Scilla autumnalis** L. - (Coutinho 1896).  
**Scilla monophyllos** Link - (Coutinho 1896).  
**Simethis mattiazzii** (Vand.) Sacc. - (Coutinho 1896: *Simethis bicolor* Kunth).

#### LINACEAE

**Radiola linoides** Roth - (Mariz 1890).

#### MALVACEAE

**Malva tournefortiana** L. - (Coutinho 1893: *Malva moschata geraniifolia* Blanco).

#### ONAGRACEAE

**Circaea lutefiana** L. - (Brotero 1804).

#### ORCHIDACEAE

**Orchis provincialis** Balb. - (Guimarães 1887).  
**Serapias cordigera** L. - (Guimarães 1887).  
**Serapias lingua** L. - (Guimarães 1887).

#### OROBANCHACEAE

**Orobanche amethystea** Thuill. subsp. **castellana** (Reut.) Rouy - (Guimarães 1904: *Orobanche henriquesi* Guim.).  
**Orobanche gracilis** Sm. - (Guimarães 1904).

#### OXALIDACEAE

**Oxalis corniculata** L. - (Mariz 1890).

#### PLANTAGINACEAE

**Plantago lanceolata** L. - (Henriques 1897).

#### PLUMBAGINACEAE

**Armeria beirana** Franco - (Brotero 1804: *Statice armeria* Brot; Daveau 1888: *Armeria plantaginea* Boiss. subsp. *brachylepis*).

#### POLYPODIACEAE

**Polypodium vulgare** L. - (Henriques 1895).

#### POLYGALACEAE

**Polygala microphylla** L. - (Brotero 1804).  
**Polygala serpyllifolia** José - (Coutinho 1939: *Polygala serpyllacea* Weihe).  
**Polygala vulgaris** L. - (Coutinho 1892).

#### POLYGONACEAE

**Polygonum hydropiper** L. - (Mariz 1896).  
**Rumex acetosa** L. subsp. **acetosa** - (Mariz 1896).  
**Rumex acetosella** L. subsp. **angiocarpus** (Murb.) Murb. - (Mariz 1896).  
**Rumex induratus** Boiss. & Reut. - (Mariz 1896).

#### PORTULACACEAE

**Montia fontana** L. subsp. **amportitana** Sennen - (Brotero 1804; Mariz 1888: *Montia rivularis* C.C.Gmel.).

#### PRIMULACEAE

**Anagallis arvensis** L. - (Mariz 1899).  
**Anagallis tenella** (L.) L. - (Mariz 1899).

#### RANUNCULACEAE

**Anemone trifolia** L. subsp. **albida** (Mariz) Ulbr. - (Mariz 1886).  
**Aquilegia vulgaris** L. subsp. **dichroa** (Freyn) T.E.Díaz - (Mariz 1886).  
**Ranunculus bulbosus** L. subsp. **aleae** (Wilk.) Rouy & Foucaud var. **adscendens** (Brot.) P.Silva - (Mariz 1886: *Ranunculus adscendens* Brot.).  
**Ranunculus omiophyllus** Ten. - (Mariz 1886; *Ranunculus lenormandii* F.W.Schultz).  
**Ranunculus olissiponensis** Pers. subsp. **olissiponensis** - (Mariz 1886: *Ranunculus escurialensis* Boiss & Reut. ex Freyn.).  
**Ranunculus parviflorus** L. - (Mariz 1886).  
**Ranunculus repens** L. - (Mariz 1886).  
**Ranunculus tripartitus** DC. - (Mariz 1886).  
**Thalictrum speciosissimum** L. in Loeffl. - (Mariz 1886: *Thalictrum glaucum* Desf.).

#### RESEDACEAE

**Reseda media** Lag. - (Coutinho 1892).

#### ROSACEAE

†? **Potentilla montana** Brot. - (Ficalho & Coutinho 1899).  
**Potentilla erecta** (L.) Raeush - (Ficalho & Coutinho 1899; *Potentilla tormentilla* Neck.).  
**Sanguisorba verrucosa** (Link ex G. Don) Ces. - (Ficalho & Coutinho 1899: *Poterium magnolii* Spach)

#### RUBIACEAE

**Galium helodes** Hoffmanns. & Link - (Coutinho 1900).  
**Galium mollugo** L. - (Coutinho 1900).  
**Rubia peregrina** L. - (Coutinho 1900).

SALICACEAE

**Salix atrocinerea** Brot. - (Coutinho 1899: *Salix cinerea*).

SAXIFRAGACEAE

**Saxifraga spathularis** Brot. - (Brotero 1804; Coutinho 1939: *Saxifraga umbrosa* L. var. *spathularis*).

SCROPHULARIACEAE

**Digitalis purpurea** L. subsp. **purpurea**-(Coutinho 1906).

**Linaria amethystea** (Lam.)Hoffmanns. & Link subsp. **amethystea** - (Brotero 1804: *Antirrhinum subalpinum* Brot.; Coutinho 1906).

**Linaria saxatilis** (L.) Chaz. var. **glabrescens** (Lange) Rouy - (Coutinho 1906).

**Linaria spartea** (L.) Chaz. - (Coutinho 1906).

**Linaria triornithophora** (L.) Willd. - (Coutinho 1906).

**Parentucellia viscosa** (L.) Caruel. - (Coutinho 1906).

**Pedicularis sylvatica** L. subsp. **lusitanica** (Hoffmanns. & Link) Cout. - (Coutinho 1906).

**Scrophularia grandiflora** DC. - (Coutinho 1906).

**Scrophularia scorodonia** L. - (Coutinho 1906).

**Sibthorpia europaea** L. - (Coutinho 1906).

**Verbascum thapsus** L. subsp. **crassifolium** (Lam.) Murb. - (Mariz 1907: *Verbascum linkianum* Mariz).

**Veronica arvensis** L. - (Coutinho 1906).

**Veronica officinalis** L. - (Coutinho 1906: *Veronica officinalis* Linn. f. *genuina*).

**Veronica serpyllifolia** L. subsp. **serpyllifolia** - (Coutinho 1906).

SINOPTERIDACEAE

**Cheilanthes hispanica** Mett. - (Henriques 1895).

**Cheilanthes tinaii** Tod. - (Henriques 1895: *Cheilanthes fragrans* Hook.).

SOLANACEAE

**Solanum nigrum** L. subsp. **nigrum** - (Mariz 1900).

THELYPTERIDACEAE

**Thelypteris palustris** Schott - (Henriques 1895: *Polystichum thelypteris* (L.) Roth.).

UMBELLIFERAE

**Ammi majus** L. - (Mariz 1895).

**Angelica sylvestris** L. - (Brotero 1804: *Angelica montana* Brot.; Mariz 1895).

**Apium nodiflorum** (L.) Lag. - (Mariz 1895).

**Carum verticillatum** (L.) W.D.J. Koch - (Brotero 1804: *Sison verticillatum* L.; Mariz 1895).

**Chaerophyllum temulum** L. - (Mariz 1895).

**Conopodium majus** (Gouan) Loret - (Brotero 1804: *Bunium bulbocastanum* Bert ex DC; Mariz 1895: *Conopodium denudatum* Koch).

**Heracleum sphondylium** L. subsp. **sphondylium** - (Mariz 1895).

**Hydrocotyle vulgaris** L. - (Mariz 1895).

**Oenanthe crocata** L. - (Mariz 1895).

**Peucedanum lancifolium** Lange. - (Brotero 1804: *Laserpitium peucedanoides* Brot.; Mariz 1895).

**Sanicula europaea** L. - (Brotero 1804).

**Tordylium maximum** L. - (Mariz 1895).

VALERIANACEAE

**Centranthus calcitrapae** (L.) Dufr. subsp. **calcitrapae** - (Mariz 1898).

**Valerianella carinata** Loisel. - (Mariz 1898).

VERBENACEAE

**Verbena officinalis** L. - (Coutinho 1906).

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