

Type specimens of names of species authored by Pourret conserved in the Salvador herbarium (BC)

Neus Ibáñez^{1,2*}, Josep M. Montserrat¹ & Ignasi Soriano²

¹ Institut Botànic de Barcelona (CSIC-ICUB). Passeig del Migdia s/n. 08038 Barcelona, Spain. *nibanez@ibb.csic.es (author for correspondence)

² Departament de Biologia Vegetal (Botànica), Universitat de Barcelona, Diagonal 645, 08028 Barcelona, Spain

The Salvador herbarium, conserved in the Botanical Institute of Barcelona, is one of the oldest in Spain, with 4,025 sheets gathered between the end of the 17th century and the middle of the 18th. We designate four lectotypes (for *Acer hispanicum*, *Achillea chamaemelifolia*, *Rumex pyrenaicus* and *Vicia pyrenaica*) and note the existence of seven isotypes of species names authored by Pourret that are conserved in BC-Salvador and in MAF-Pourret herbaria. The taxa involved were described under the pre-Linnaean system by Joan Salvador, and then Pourret used duplicates of some of them to publish new taxa in his “*Chloris narbonensis*”.

KEYWORDS: Botanical Institute of Barcelona, Pourret, Salvador herbarium, type specimens

INTRODUCTION

This work shows some results of a wider study whose objective is the classification, computerization, documentation, revision and, as a final aim, the making available to the scientific community of the historical herbaria of the Botanical Institute of Barcelona.

These collections, segregated from the general herbarium, contain specimens collected from the 17th century to the 19th. The principal ones are the herbaria of the Salvador family (17th–18th century, 4,025 sheets), Costa (19th century, 15,000 sheets), Vayreda, Trèmols (19th century, about 30,000 sheets each) and the Sociedad Botànica Barcelonesa herbarium (19th century, 1,211 sheets).

In this study, we focus on some original specimens of taxa initially described through the pre-Linnaean method by Joan Salvador and finally authored under the Linnaean system by Pourret, all of them conserved in the herbarium of the Salvador family or their duplicates in MAF-Pourret.

THE SALVADOR HERBARIUM AND POURRET'S REVISION

The Salvador family was a lineage of apothecaries who settled in Barcelona from the early 17th to the mid 19th century. One of its members, Joan Salvador i Riera (1683–1725), should be considered the most important figure in the family and even in the scientific world of Spain at that time. His correspondence with Boerhaave, Sloane, Petiver, Barrère, Nissole and Vaillant confirms this. The Salvador herbarium, the oldest and best-documented pre-Linnaean one in Spain, consists of 4,025 sheets of plants collected by the brothers Joan and Josep Salvador and their father Jaume, or acquired

by exchange with important contemporary botanists such as Boerhaave, Tournefort, Antoine and Bernard de Jussieu, Petiver, Magnol, Nissole, Triumfetti, Vaillant, Garelli, and Garidel (Ibáñez & al., 2006). Its labels bear pre-Linnaean names used in the works of Tournefort, Bauhin, Lobel, Dodoens, Magnol or Clusius, among others.

Around 1782, the collection was revised for the first time by Pierre André Pourret (1754–1818), a French clergyman who lived in exile in Spain at Santiago de Compostela from 1789 until his death (Timbal-Lagrange, 1875; Colmeiro, 1891). Pourret added the Linnaean name of the species to the labels of the collection (Camarasa, 1989) and, in some cases, took out duplicates for his own herbarium (Bolòs, 1946), now conserved in MAF as an independent historical collection (Gutiérrez-Bustillo & Navarro, 1989), and including 7,763 sheets, originally arranged according to the system of classification of Linnaeus (1753).

Some specimens in MAF-Pourret coming from the Salvador herbarium are among the most interesting in this collection. They can be easily recognized through the word “Salv” on the label, indicating a new pre-Linnaean description and thus a new taxon proposed by Joan Salvador. Moreover, Pourret published some of these taxa in his “*Chloris narbonensis*” (Pourret, 1788) as new species under the Linnaean system. Also, he sent some of these specimens to Lamarck in Paris and to Willdenow in Berlin and they are now preserved in the P and B-Willdenow herbaria (Bonnet, 1916).

METHODS

We have documented the Salvador herbarium through the publications of Pourret (1844), Bolòs (1946), Camarasa

(1988) and Romo (1995), and the Pourret voucher specimens through the works of Pourret (1788) and Timbal-Lagrave (1875). We have also studied the correspondence of Petiver with Joan Salvador conserved in the Botanical Institute of Barcelona and in the British Library in London (Camarasa & Ibáñez, 2007).

The searches also extended to the protologues of the names of which we had identified possible type specimens. We have looked for papers including information about the process of typification of these taxa.

For the revision of the pre-Linnaean nomenclature we have followed Richter (1835–1839), and for modern identifications *Flora Iberica* (Castroviejo, 1986–2006), *Flora dels Països Catalans* (Bolòs & Vigo, 1984–2002), *El poblament vegetal de la vall de Ribes* (Vigo, 1983) and *Flora del valle de Núria* (Romo & Panareda, 2000).

Moreover, we have computerized the information available on every sheet such as taxon name and author, collector, locality and date. We have brought up-to-date the locality data and the nomenclature and, in some cases, we have also checked and sometimes revised the identifications.

RESULTS

Among the plant material conserved in the BC-Salvador herbarium we designate below four lectotypes and recognise the presence of two isotypes (see the definitions of these terms in McNeill & al., 2006). We also record five further isotypes (or isolectotypes) of the same names conserved in MAF-Pourret herbarium, corresponding to duplicates of specimens in the Salvador herbarium.

For all of them we indicate the name, place of publication and author of the taxon, the indication in the protologue of the original locality, the lectotype and a transcription of the original label, the author of the label in parentheses (m = manuscript), the BC-Salvador or MAF-Pourret herbarium number, the country, province and locality in brackets, and some remarks on the typification process or on nomenclatural or geographical matters.

Acer hispanicum Pourr. in Mém. Acad. Sci. Toulouse 3: 305. 1788.

Ind. loc.: "...sur le Montserrat".

Lectotype (designated here): [Spain. Catalonia, Montseny, Montserrat] "Acer montanum candidum / C.B. Pin. 430 / In monte Signato, et Serrato frequens" (m. Joan Salvador) "Acer hispanicum Pourr." (m. Pourret) (BC-Salvador 3835!); isolectotype: "Acer hispanicum P. / act. tolos. tom. III. [...] m. Serrato" (m. Pourret) (MAF-Pourret 7341!).

Remarks. – According to Bolòs & Vigo (1989: 340), a synonym of *Acer opalus* Mill. subsp. *opalus*.

Achillea chamaemelifolia Pourr. in Mém. Acad. Sci. Toulouse 3: 305. 1788.

Ind. loc.: "... dans les Pyrénées, aux environs de Notre-Dame de Nouris".

Lectotype (designated here): [Spain. Catalonia, Núria] Left-hand specimen "Millefolium Pyrenaicum saxatile, Abrotani foliis, flore albo / In rupibus montium Nuriae juxta fontem vulgo dels asots Julio mense frequens cum flore" (m. Joan Salvador) "Achillea abrotanifolia-anoides Pourr." (m. Pourret) (BC-Salvador 3019!).

Remarks. – In the protologue Pourret applied to this taxon a different epithet from that on the label, maybe to avoid confusion with *A. abrotanifolia* L. We have not found any specimen of this taxon in MAF-Pourret but there is one in P herbarium, without mention of locality.

Convolvulus argenteus Pourr. in Mém. Acad. Sci. Toulouse 3: 316. 1788.

Ind. loc.: "Dans le Catalogne, au Montserrat" [sic].

Lectotype (designated by Saad, 1967: 118): [Spain. Catalonia, Montserrat] "Pourret s.n., Montserrat, Spain (P)"; isolectotypes: "Convolvulus argenteus umbellatus supinus / Inst. rei. herb. 84 / Lychnidis sylvestris species Myco- / ni Lugd. 817 / Lychnis sylvestris campanula flo- / re C.B. Pin. 206 / Campanula Lychnidea J.B. 2.803 / In monte Serrato frequens occurrit" (m. Joan Salvador) "Convolvulus argenteus Pourr." (m. Pourret) (BC-Salvador 55!); "Convolvulus argenteus umbellatus / supinus inst. 84. cum aliis synonym / mis institutionem / Convolvulus capitatus Pour. / idem a Convolv. argenteus Pour. / act. tolos. [...] nomen" (MAF-Pourret 1322!) "Convolvulus lanuginosus / Dict." (m. Lamarck) "Convolvulus argenteus, / umbellatus, supinus Inst. / 84 / Ex monte Serrato In catalonia [...]" (m. A. Jussieu) "Convolvulus argenteus umbellatus / supinus Inst. / In monte Serrato" (m. Joan Salvador) (P-Jussieu-6859 !)

Remarks. – In the protologue Pourret mentions Joan Salvador: "Cette espèce est désignée dans l'itinéraire manuscrit de M. M. SALVADOR & de JUSSIEU, sous le nom de Convolvulus argenteus umbellatus supinus". The botanical observations and the itinerary of this expedition—a journey around Spain and Portugal during 1716 and 1717 in which Joan Salvador and Antoine and Bernard de Jussieu took part—are recorded in two manuscripts authored by A. Jussieu and J. Salvador, nowadays conserved in Paris and Barcelona and partially published many years later (Laius, 1969; Salvador, 1972). *C. argenteus* Pourr. is a later homonym of *C. argenteus* Lam. According to Saad (1967: 118) Pourret's name is a synonym of *Convolvulus lanuginosus* Desr. var. *lanuginosus*.

Rumex pyrenaicus Pourr. ex Lapeyr., Suppl. Hist. Pl. Pyrénées 49. 1818.

Ind. loc.: "... dans les pâturages secs des Pyrénées,

notamment à Nuria, qu'on appelle Nouri en France. Pourret”.

Lectotype (designated here): [Spain. Catalonia, Núria] Left-hand specimen “Acetosa Pyrenaica pumila, foliis imis rotundioribus nobis / In montibus Nuriae, eundo ad Puigmal” (m. Joan Salvador) “Rumex pyrenaicus Pourr.” (m. Pourret) (BC-Salvador 3091!); isoelectotype: “Rumex pyrenaicus Pour. / Acetosa pyrenaica pumila foliis / imis rotundioribus Salv. / in montib. nuriae eundo ad puigmal” (m. Pourret) (MAF-Pourret 2009!)

Remarks. – Löve (1983) reported the type material as unknown. In the protologue, Lapeyrouse mentioned the Pourret publication “Chl. hisp. n° 1417” (“Chloris Hispanica”), but Pourret never published this work and this document appears to be lost. We do not know if Lapeyrouse transcribed his account from this original manuscript or described the taxon on the basis of a Pourret specimen, but we typify the name on the basis of the BC-Salvador specimen because Lapeyrouse must have used the Pourret specimen as he described the taxon based on the Salvador herbarium. Basionym of *Acetosella vulgaris* (W.D.J. Koch) Fourr. subsp. *pyrenaica* (Pourr. ex Lapeyr.) Á. Löve and *Rumex acetosella* L. subsp. *pyrenaica* (Pourr. ex Lapeyr.) Akeroyd in Bot. J. Linn. Soc. 106: 99. 1991.

Saxifraga pubescens Pourr. in Mém. Acad. Sci. Toulouse 3: 327. 1788.

Ind. loc.: “Dans les Pyrénées, à Nouris, Eynes, Anas, & c.”.

Lectotype (designated by Webb & Gornall 1989): [France. Pyrénées Orientales, vallée d'Eyne] “Saxifraga pubescens P., e Pyrenaeis hispan. et eynes” (m. Pourret) “Collection de l'Abbé Pourret, extrait de l'herbier légué par M. le Dr. Barbier, 1847” (m. in another hand) (P-without number); isoelectotype: “Saxifraga Pyrenaica, foliis partim integris, partim trifidis Inst. rei. herbar. 253 / In montibus Nuriae abundat.” (m. Joan Salvador) “Saxifraga hypnoides L.” (m. Pourret) (BC-Salvador 1352!) “Saxifraga pubescens Pourr.” (m. Pourret) “En Nuria y la Valle de Eyne” (m. F.X. Bolòs) (MAF-Pourret 2567!).

Remarks. – Pourret applied a different epithet (*hypnoides*) to the specimen of the BC-Salvador herbarium but then he changed the name to *Saxifraga pubescens* on the duplicate sheet conserved in MAF-Pourret.

Vicia pyrenaica Pourr. in Mém. Acad. Sci. Toulouse 3: 333. 1788.

Ind. loc.: “Dans la vallée d'Eynes”.

Lectotype (designated here): [France. Pyrénées Orientales, vallée d'Eyne] Bottom middle specimen “Vicia minima praecox Parisiensium / H.R. Par. / Vicia minima praecox Solo- / niensis Joncq. Hort. / malè / In montibus Nuriae, juxta fontem del Pontarró” (m.

Joan Salvador) “Vicia pyrenaica Pourr. act. tolos.” (m. Pourret) (BC-Salvador 2234!); isoelectotype: “Vicia minima praecox parisiensium / hisp. Salv. que / Ervum soloniense L. / male / Vicia pyrenaica Pourr. / In montibus Nuria, juxta fontem del Pontarró” (m. Pourret) “La Valle de Eyne” (m. F.X. Bolòs) (MAF-Pourret 5388!).

Remarks. – As on the previous sheet, “vallée d'Eynes” could refer to the valley lying on the northern side of the Puigmal massif, which connects with the Núria valley to the south by the “Coll d'Eina”. This and the surroundings—well known to the French botanists—could correspond to the “montibus Nuriae” of the Salvadors. However, at present, we are uncertain as to where “Font del Pontarró” lay.

CONCLUSIONS

Besides their inherent historical value, the herbaria studied here, and the scientific collections of the past in general, are still of great use to document botanical expeditions, to investigate the process of discovering new taxa by the botanists that preceded us and to provide an essential tool to stabilize plant nomenclature.

The herbarium of the Salvador family provides a good witness to the activities and the botanical explorations made by this family. Although Jaume and Josep Salvador collected plant materials and made long collection trips to the Balearic Islands, Valencia, Montpellier, etc., the main collector and botanist was Joan Salvador.

The materials of their herbarium demonstrate a great knowledge of the flora of the country. These apothecaries had access to an extensive bibliography thanks to a large private library started by the founder of the “lineage”, Joan Salvador i Boscà (1598—1681). In addition, they exchanged a lot of books and natural curiosities, but especially plant material, thanks to their relationships with different foreign botanists such as Petiver, Sloane, Boerhaave and Jussieu.

The Salvador herbarium at present is still ordered according to the Tournefort system (1719). When no name from *Institutiones rei herbariae* was available, Joan Salvador used to refer their specimens to previous pre-Linnaean names but, in many cases, new names were proposed. Very few among them were effectively published (Petiver, 1716, 1717) because Joan Salvador was working on a Catalan flora named *Botanomasticon catalanicum*. This work is only known to us through Miguel Colmeiro (1858), who was one of the first Linnaean botanists, after Pierre André Pourret and Mariano Lagasca, who had the opportunity to study these materials. In fact, in some pre-Linnaean descriptions of the Salvador herbarium, the word “nobis” (new taxa) figures (as in the case of *Rumex pyrenaicus*) or there appears no reference to authors or reference books (as with *Achillea chamaemelifolia*), which means a new pre-Linnaean description. When Pourret copied the labels for

his herbarium, he added the word “Salv.” when he referred to a pre-Linnaean description made by Joan Salvador.

The Salvador herbarium was an effective school for Pourret who saw there many new Spanish and Portuguese species and took plants and data that were incorporated into his “Chloris Hispanica”. This work was never published, but is cited by Lapeyrouse (1818), Willkomm & Lange (1870–1893), Colmeiro (1885) and others. Most of the names proposed by Pourret and included as synonyms by the botanists who cited his work are today neglected, but the herbarium specimens on which these names were based are still kept either at Salvador Herbarium (BC) or at MAF.

ACKNOWLEDGEMENTS

This work has been possible thanks to the financial support received by a cooperation agreement between the City council and the University of Barcelona. We wish to give our warmest thanks to Professor G. Aymonin for providing us with information about the Paris herbarium, to Drs. C. Navarro and J. Pizarro for their help in checking the Pourret herbarium in MAF, to Dr. L. Sáez for his advice on the tasks of typification and to two anonymous reviewers for their very valuable comments.

LITERATURE CITED

- Bolòs, A.** 1946. El Herbario Salvador. *Collect. Bot. (Barcelona)* 1: 1–8.
- Bolòs, O. & Vigo, J.** 1984–2002. *Flora dels Països Catalans*. Barcino, Barcelona.
- Bonnet, E.** 1916. Le cabinet d’histoire naturelle des frères Lomenie de Brienne, l’herbier de l’abbé Pourret et le legs fait par le Dr. Barbier au Muséum en 1847. Histoire et documents. *Bull. Mus. Hist. Nat. (Paris)* 6: 278–286.
- Camarasa, J.M.** 1988. El gabinete de curiosidades de la familia Salvador. *Metropolis Mediterrània (Barcelona)* 9: 143–147.
- Camarasa, J.M.** 1989. *Botànica i botànics dels Països Catalans*. Enciclopèdia Catalana, Barcelona.
- Camarasa, J.M. & Ibáñez, N.** 2007. Joan Salvador and James Petiver: a scientific correspondence (1706–1714) in time of wars. *Arch. Nat. Hist.* 34: 140–173.
- Castroviejo, S. (gen. ed.)**. 1986–2006. *Flora iberica. Plantas vasculares de la Península Ibérica e Islas Baleares*. Real Jardín Botánico, C.S.I.C., Madrid.
- Colmeiro, M.** 1858. *La botánica y los botánicos de la Península hispano-lusitana: estudios bibliográficos y biográficos*. M. Rivadeneyra, Madrid.
- Colmeiro, M.** 1885. *Enumeración y revisión de las plantas de la Península*. Imprenta de la viuda e hija de Fuentenebro, Madrid.
- Colmeiro, M.** 1891. *Noticia de los trabajos botánicos del abate Pourret en Francia y España*. [s.n.], Madrid.
- Gutiérrez-Bustillo, M. & Navarro, C.** 1989. El herbario de P.A. Pourret (1754–1818) conservado en el MAF. *Acta Bot. Malacit.* 14: 193–195.
- Ibáñez, N., Montserrat, J.M., Soriano, I. & Camarasa, J.M.** 2006. Plant material exchanged between James Petiver (ca. 1663–1718) and Joan Salvador i Riera (1683–1725). I. The Balearic plants conserved in the BC-Salvador and BM-Sloane herbaria. *Notes & Rec. Roy. Soc. London.* 60: 241–248.
- Laissus, J. & Laissus, Y.** 1970–1971. *À propos du voyage d’Antoine de Jussieu en Espagne et Portugal (1716–1717)*. Pp. 25–36 in: *Actes du 94e Congrès national des sociétés savantes, Pau*, vol. 1. Pau. Bibliothèque nationale, Paris.
- Lapeyrouse, P.** 1818. *Supplément à l’histoire abrégée des plantes des Pyrénées*. Bellegarrigue, Toulouse.
- Linnaeus, C.** 1753. *Species plantarum*. Facsimile ed., 1957–1959. Ray Society, London.
- Löve, Á.** 1983. The taxonomy of *Acetosella*. *Bot. Helv.* 93: 165.
- McNeill, J., Barric, F.R., Burdet, H.M., Demoulin, V., Hawksworth, D.L., Marhold, K., Nicolson, D.H., Prado, J., Silva, P.C., Skog, J.E., Wiersema, J.H. & Turland, N.J. (eds.)** 2006. *International Code of Botanical Nomenclature (Vienna Code) Adopted by the Seventeenth International Botanical Congress Vienna, Austria, July 2005*. Regnum Vegetabile 146. Gantner, Ruggell, Liechtenstein.
- Petiver, J.** 1716. Plants gathered on Mount Serrato lately sent me from Mr. John Salvadore at Barcelona. *Petiveriana seu Naturae Collectanea* 2: 8.
- Petiver, J.** 1717. *Plantae Baleares*. Plants found in the Islands Majorca and Minorca, by the curious Mr. John Salvadore, Apothecary at Barcelona, and Mr. George Bouchere, surgeon at Port Mahone. *Petiveriana seu Naturae Collectanea* 3: 9.
- Pourret, P.A.** 1788. Extrait de Chloris Narbonensis. *Mém. Acad. Sci. Toulouse*: 297–334.
- Pourret, P.A.** 1844. *Noticia històrica de la familia Salvador*. Antonio Berdeguer, Barcelona.
- Richter, H.E.** 1835–1839. *Codex Botanicus Linnaeanus*. Facsimile ed., 2003. Regnum Vegetabile 140. A.R.G. Gantner, Ruggell, Liechtenstein.
- Romo, A.** 1995. Un herbario prelinneano en el Institut Botànic de Barcelona: el herbario Salvador (finales del siglo XVII y principios del XVIII). *Bol. Asoc. Herb. Ibero-Macaronesicos* 0: 4–5.
- Romo, À. & Panareda, J.M.** 2000. *Flora del valle de Núria (Pirineos Orientales)*. Editorial Aster, Terrassa.
- Saad, F.** 1967. The convolvulus species of the Canary Isles, the Mediterranean region and the Near and Middle East. Bronder-Offset, Rotterdam.
- Salvador i Riera, J.** 1772. *Viatge d’Espanya i Portugal (1716–1717)*, edició a cura de Ramón Folch. Edicions 62, Barcelona.
- Timbal-Lagrave, M.E.** 1875. *Reliquiae Pourretianae*. Au Secrétariat Général de la Société des Sciences Physiques et Naturelles, Toulouse.
- Tournefort, J. P.** 1719. *Institutiones rei herbariae*. É Typographia Regia, Paris.
- Vigo, J.** 1983. El poblament vegetal de la vall de Ribes. *Acta Bot. Barcinon.* 35: 1–793.
- Webb, D.A. & Gornall, R.J.** 1989. *A Manual of Saxifrages and their cultivation*. Timber Press, Portland.
- Willkomm, M. & Lange, J.** 1870–1893. *Prodrum florae hispanicae seu Synopsis methodica omnium plantarum in Hispania: sponte nascentium vel frequentius cultarum quae innotuerunt*. Stuttgartiae Sumtibus E. Schweizerbart (E. Koch), Stuttgart.