

Notes on an Italian herbarium assembled by Giacomo Gresino (1859-1946) with some interesting lichens

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ABSTRACT

We present the study of a recently discovered herbarium in the Sant Ignasi School - Jesuits of Sarrià (Barcelona, Spain), which contains 136 specimens collected in Italy between the years 1934-1938, among them 122 cormophytes, 13 lichens and 1 algae. Among the lichens there are 5 new UTM 10x10 km localities. Part of the herbarium has been identified as the work of the Salesian botanist Giacomo Gresino (1859-1946).

Key Words:

herbarium, Giacomo Gresino, lichens, first citations and history of botany.

RIASSUNTO

Note su un erbario italiano compilato da Giacomo Gresino (1859-1946) con alcuni interessanti licheni

Presentiamo lo studio di un erbario recentemente scoperto nella Scuola Sant Ignasi - Gesuiti di Sarrià (Barcellona, Spagna), che contiene 136 esemplari raccolti in Italia negli anni 1934-1938, tra cui 122 cormofite, 13 licheni e 1 alga. Tra i licheni ci sono 5 nuove località UTM 10x10 km. Parte dell'erbario è stata identificata come opera del botanico salesiano Giacomo Gresino (1859-1946).

Parole chiave:

erbario, Giacomo Gresino, licheni, prime citazioni e storia della botanica.

INTRODUCTION

The Sant Ignasi School - Jesuits of Sarrià (Barcelona, Spain) preserves a natural history museum with several biological collections, which are part of the history of the school and the teaching of natural sciences in Spain. Several botanical collections are preserved within the museum, the largest being the herbarium of the former Biological Institute of Sarrià, with about 3,800 specimens (Burguera et al., 2020). While we were studying the herbarium, we found some other small collections, like the one being presented in this work. The herbarium primarily collected in Italy during the late 1930s.

During the Second Spanish Republic (1931-1939) and the Spanish Civil War (1936-1939) religious or-

ders were banned in Spain (Alcalá-Zamora, 1932), therefore religious and novices were forced to leave the country. The Society of Jesus was expelled from Spain in 1932, and part of the Jesuits from the Sant Ignasi School moved to different schools and convents in Italy, where they remained until the dictator readmitted the religious orders in 1939. In these years of exile, the novices continued their studies in theology and teaching, between their subjects there was one of botany (Burguera et al., 2022). Notorious Jesuits lived during this period in Italy, as Fr. Joan Cañigueral SJ, Joaquim Julià Masriera SJ, Jaume Capell SJ, Longí Navàs SJ... It was probably then that they established a relationship with the Salesian Giacomo Gresino, participating in botanical trips or consulting doubts about the Italian flora. After the Society of Jesus was

allowed to return to Spain, the Jesuits brought with them the herbarium here presented. In this work we add a brief biography of the herbarium collectors Fr. Cañigueral SJ, Masriera SJ and Gresino.

METHODOLOGY

The herbarium specimens have been mounted on a cardboard support and have been numbered in the order in which they were found, following the numbering of the herbarium of the Biological Institute of Sarrià (HIBS). The samples were not removed from the original paper due to the fragility of them. The herbarium has been cleaned and the fragments separated from the specimens have been preserved in paper envelopes.

The herbarium has been informatized using Elysia (Pando et al., 2023). Taxonomy, nomenclature and distribution have been revised according to the Portal to the Flora of Italy (see website 1) and World Flora Online (see website 2) for vascular plants. The nomenclature of lichens follow the latest standards (see websites 3 and 4), while their distribution has been revised according to Nimis (1993, 2016). The lichens substances were extracted by Thin Layer Chroma-

tography (TLC), following the technique of Elix and Ernst-Russell (1993) and the identification protocol of Schumm and Elix (2015). The lichens specimens referenced in this work are from Erbario del Museo Civico di Storia Naturale Giacomo Doria (GDOR) and Herbarium Universitatis Tergestinae (TSB).

Regarding the collectors and the relationship between some of the localities and the Society of Jesus, we consulted the Catalogus Provinciae of the Society (cited in this work as CPA for Catalogus Provinciae Aragoniae and CPT for Catalogus Provinciae Tarraconensis).

RESULTS AND DISCUSSION

The herbarium contains 136 specimens belonging to cormophytes (122), lichens (13) and algae with 1 specimen. The size of the herbarium sheets is 16 x 10 cm (fig. 1) and could have been elaborated from a quarter of DIN A4 paper. The herbarium specimens were found grouped into small folders by families. In general, the specimens are not in good preservation conditions, with some partial or total parts degraded in some of the samples. This herbarium could have been elaborated as teaching material or as a personal



Fig. 1. Detail of the restored herbarium sheets (a) and two lichens specimens: *Arthopyrenia salicis* A. Massal. (b) and *Letharia vulpina* (L.) Hue (c).

herbarium with the aim of studying the flora, like other herbariums studied at the Sant Ignasi School - Jesuits of Sarrià (Burguera et al., 2020).

There are 43 families of cormophytes, 6 of lichens, 4 of pteridophytes, and 1 of algae, the most represented being Ranunculaceae (10 specimens), Asteraceae and Brassicaceae (8 specimens each). The identification of the specimens has been possible at the species level for 102 herbarium sheets and only at the genus level for 26, the other specimens had been identified to the family level.

The specimens were collected between 1912 and 1938. Only 38 specimens (28%) have collection dates, the first 3 specimens having been collected in 1912, 1923 and 1924. The rest of the herbarium was collected between 1934 and 1938. The years of the collections in Italy correspond with the period of political and religious instability in Spain during the 1930s, a fact that relates the collectors with the prospected localities, the relationship with the Society of Jesus and the Sant Ignasi school where the herbarium is preserved.

Only 53 specimens (39%) have the collection locality. All of them were collected in Italy except 1 specimen from Mallorca (Spain) (tab. 1). The most prospected areas are Gressoney (27 specimens), Bollengo and Varazze (6 specimens respectively). Many of these localities coincide with Jesuit houses or schools where they were exiled (CPA, 1930-1936, 1937-1939, 1939-1940) or with the school where Giacomo Gresino was teaching (Allasia, 2003).

Collectors are indicated in 14 specimens: G. Gresino (11 lichens specimens), Fr. Julià SJ (2 cormophytes specimens) and Fr. Cañigüeral SJ (the algae specimen). Giacomo Gresino (1859-1946) entered the Salesian Society in 1872 and was ordained in 1882. After working in different schools, he joined the Collegio Civico Don Bosco in Varazze in 1895 as a priest and teacher, where he began his botanical career. Gresino became one of the most influential Salesian botanists in Italy, focusing his career on the study of lichens. The various Gresino herbaria that have been preserved include about 10,000 lichens specimens and another 10,000 botanical specimens (Allasia, 2003). Joaquim Julià Masriera (1899-1987) entered the Society of Jesus in 1916 and was ordained in 1934. Throughout his life he was at the Sant Ignasi School, teaching Natural Sciences and in charge of the school's Natural Science Museum (CPA, 1930-1936, 1937-1939, 1939-1940, 1941-1947; CPT, 1948-1949). Joan Cañigüeral Cid (1912-1980) entered the Society of Jesus in 1928 and was ordained in 1947. He moved to the Nostra Senyora de Mont-sión School in Mallorca (CPA, 1930-1936, 1937-1939, 1939-1940, 1941-1947; CPT, 1948-1949), where he published important studies on botany and archaeology of the island (Cañigüeral, 1952, 1953). At the end of 1960 he moved to Bolivia where he died at the age of 68.

Locality	Specimens
Gressoney	27
Bollengo	6
Varazze	6
Avigliana	4
Lagonegro	3
Alps valley	2
Monte Rosa	2
Monte Barone	1
Biella	1
Mallorca (Spain)	1

Tab. 1. Localities cited in the herbarium and number of specimens (83 specimens are without a specific locality).

Comparing the handwriting of the herbarium sheets, 113 (83%) have the same author, including the lichens showing a collector. This handwriting matches with that of Gresino when we compare the labels with those of the images in Allasia (2003) (fig. 1). In addition, some of these localities correspond to Varazze, the city where he was teaching (Allasia, 2003). With this evidence, we can affirm that the herbarium was assembled by Giacomo Gresino.

From the herbarium, 11 specimens show Spanish common names, and 41 specimens (30%) have a correlative number written on the paper, 165 being the highest number. Considering that the herbarium has only 136 specimens, it is possible that this collection is a fragment of a larger herbarium.

We have some information on the collection locality, date and/or its collector from 89 specimens (65%). Here we present the transcription of the 43 herbarium specimens that contain the collection locality, some of them with the date and the collectors (see box on page 71). The revised specimens show the verbatim synonym in parentheses, the UTM 10x10 km coordinates attributed to the localities, the reference to the collector (Det.), the name of the reviewer (Rev.), the revision date and some comments. The specimen's list is grouped by algae, cormophytes and lichens.

CONCLUSIONS

The Italian herbarium contains 136 specimens, 89 of them presenting relevant botanical information. Among lichens, 5 specimens represent new UTM localities for Italy. It can be confirmed that the herbarium was assembled by the Salesian Giacomo Gresino (1859-1946). The herbarium was elaborated during the years of the Second Spanish Republic and the Civil War (1931-1939), years when the religious orders were banned from the country and some of them went into exile to Italy. This collection is a testimony of the naturalistic tasks of Spanish Jesuits and the relationship with the Italian Salesians and the botanical community.

The transcription of the forty-three herbarium specimens

Algae

Cladophora sp. Cladophoraceae. Spain: Mallorca (31SED). Det. J. Cañigüeral SJ, Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3454-1-2).
This taxon is wrongly identified, showing the scientific name *Conferva bombicina* Agrod. This is the specimen collected in Spain that we do not know how it could be interspersed in this herbarium. Joan Cañigüeral SJ (1912-1980) was an important Jesuit and botanist, he was in Italy during the period in which the herbarium was elaborated, and he moved later to Nostra Senyora de Mont-sión School, in Mallorca (CPA 1930-1947; CPT1948-1949). This specimen has the date blotted and had to be collected after his return in Spain in 1940.

Cormophytes

Acer campestre L. (= *A. sylvestris*). Sapindaceae. Italy: Bollengo (32TMR13). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3406-1-2).
Anemonoides nemorosa (L.) Holub (= *Anemone nemorosa* L.). Ranunculaceae. Italy: Bollengo (32TMR13). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3445-1-2).
Armeria alpina Willd. Plumbaginaceae. Italy: Gressoney (32TMR06). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3479).
Asparagus officinalis L. Asparagaceae. Italy: Gressoney (32TMR06). 1935. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3528).
Brassica napus L. Brassicaceae. Italy: Bollengo (32TMR13). March 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3434).
Bupleurum ranunculoides L. Apiaceae. Italy: Avigliana (32TLQ79). 2.300 m.a.s.l. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3495).
Cardamine plumieri Vill. Brassicaceae. Italy: Gressoney (32TMR06). July 1935. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3430).
Cardamine resedifolia L. Brassicaceae. Italy: Gressoney (32TMR06). July 1935. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3432).
Convallaria majalis L. Asparagaceae. Italy: Biella (32TMR24). June 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3532).
Crocus vernus (L.) Hill. Iridaceae. Italy: Monte Barone (32TMR36). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3530).
Dianthus cf. *sylvestris* Wulfen (= *D. caryophyllus* L.). Caryophyllaceae. Italy: Gressoney (32TMR06). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3520-1-2).
D. caryophyllus L. is not cited in Italy. The specimen of the herbarium sheet is deteriorated, and some petals are missing. Probably this taxon is *D. sylvestris* Wulfen or a close species.
Echium vulgare L. Boraginaceae. Italy: Gressoney, Alpes (32TMR06). 1935. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3500).
Erythronium dens-canis L. Liliaceae. Italy: Bollengo (32TMR13). March 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3527).
Euonymus europaeus L. Celastraceae. Italy: Bollengo (32TMR13). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3407).
Gagea serotina (L.) Ker Gawl. (= *Lloydia serotina* (L.) Rchb.). Liliaceae. Italy: Monte Rosa, glaciares (32TMR18). June 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3531-1-2).
Gentiana brachyphylla Vill. Gentianaceae. Italy: Gressoney (32TMR06). June 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3482).
Gentiana pannonica Scop. Gentianaceae. Italy: Valle de los Alpes. 1935. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3481).
Laburnum alpinum (Mill.) Bercht. & J. Presl (= *Cytisus alpinus*). Fabaceae. Italy: Gressoney (32TMR06). June 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3412-1-2).
Linaria alpina (L.) Mill. Plantaginaceae. Italy: Gressoney (32TMR06). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3509 & 3514).
Lycopodium alpinum L. Lycopodiaceae. Italy: Avigliana (32TLQ79). August 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3467-1-2).
Mentha aquatica L. Lamiaceae. Italy: Valle de los Alpes. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3508).
Noccaea corymbosa (J.Gay) F.K.Mey. Brassicaceae. Italy: Gressoney (32TMR06). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3436-1-2).
The scientific name that appears on the label, *Thlaspi alpinum*, does not correspond to the sample, and is not cited for the territory either (see websites 2). The correct identification is *Noccaea corymbosa* (J. Gay) F.K.Mey.
Pinguicula alpina L. Lentibulariaceae. Italy: Monte Rosa, Glaciares (32TMR18). August 1936. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3515).
Primula farinosa L. Primulaceae. Italy: Gressoney (32TMR06). July 1935. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3504).

Ranunculus glacialis L. Ranunculaceae. Italy: Lagonegro. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3444).
Saxifraga oppositifolia L. Saxifragaceae. Italy: Avigliana - Gressoney (32TMR06). July 1935. Det. J. Juliá SJ. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3419).
Saxifraga retusa Gouan. Saxifragaceae. Italy: Gressoney (32TMR06). July 1935. Det. J. Juliá SJ. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3420).
Silene acaulis (L.) Jacq. Caryophyllaceae. Italy: Gressoney (32TMR06). July 1935. Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3517).
Vaccinium vitis-idaea L. Ericaceae. Italy: Gressoney (32TMR06). Rev. C. Burguera & P. Fraga (January 2024) (HIBS 3534).

Lichens

Arthopyrenia salicis A. Massal. (= *Arthopyrenia punctiformis* Ach.). Trypetheliaceae. Italy: Varazze (32TMQ61). 04/01/1934. Note: "in castagno". Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3460-1-2) (fig. 1).
First reference in this UTM 10x10 km, the closest citation that has been possible to document is in Rezzoaglio, Villanoce (32TNQ32) (Brunialti et al., 2001).
Cladonia coniocraea (Flörke) Spreng. (= *Cladonia cornutoradiata* (Colu) Zafi.). Cladoniaceae. Italy: Gressoney (32TMR06). July 1938. Note: "Cardús". Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3458-1-2).
Spot tests: K-, C-, KC-, P+ red. TLC: fumarprotocetraric acid complex. This specimen is the first reference in this UTM 10x10 km, the closest citation that has been possible to document is in Mount Mars (32TMR15) (Piervittori et al., 2001).
Cladonia foliacea (Huds.) Willd. (= *Cladonia foliacea* Huds. v. *alcicorius* Flk.). Cladoniaceae. Italy: Varazze (32TMQ61). 19/11/1938. Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3463-1-2).
Cladonia furcata (Huds.) Schrad. subsp. *furcata* (= *Cladonia furcata* Huds v. *fissa* Flk.). Cladoniaceae. Italy: Savona, Stella, San Martino (32TMQ61). September 1923. Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3455-1-2).
Spot tests: K-, C-, KC-, P+ red. TLC: fumarprotocetraric acid complex.
Cladonia phyllophora Hoffm. (= *Cladonia furcata*). Cladoniaceae. Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3450).
Spot tests: K-, C-, KC-, P+ red. TLC: fumarprotocetraric acid complex.
Lecanora hybocarpa (Tuck.) Brodo (= *Lecanora subfusca* Ach. v. *chlaronia* Ach.). Lecanoraceae. Italy: Varazze (32TMQ61). 20/05/1912. Note: "in Cipresso". Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3459-1-2).
This taxon is included in the Italian red list of epiphytic lichens as "Data Deficient" (Nascimbene et al., 2013).
Letharia vulpina (L.) Hue (= *Chlorea vulpina* Ach.). Parmeliaceae. Italy: Aosta (32TLR66). May 1938. Note: "Alunni gesuiti. Gresino". Rev. A. Gómez-Bolea (February 2024) (HIBS 3462-1-2) (fig. 1).
Based on the note of the specimen, this lichen was probably collected by a Jesuit student.
Lobaria pulmonaria (L.) Hoffm. (= *Lobaria pulmonacea* (L. Hoffm.). Lobariaceae. Italy: Varazze (32TMQ61). June 1924. Note: "Mure al Rivà". Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3464-1-2).
This specimen is the first reference in this UTM 10x10 km, the closest citation that has been possible to document is in Liguria: Boschi di Ellera, August 1870 (GDOR 1783).
Ochrolechia parella (L.) A. Massal. Ochrolechiaceae. Italy: Varazze (32TMQ61). 02/02/1937. Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3452).
This specimen is the first reference in this UTM 10x10 km. The closest citation that has been possible to document are in Spornorno: January 1959 (GDOR 2737) and February 1955 (GDOR 2744, 2748).
Pseudevernia furfuracea (L.) Zopf (= *Evernia furfuracea* Ach.). Parmeliaceae. Italy: Aosta (32TLR66). March 1938. Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS3456-1-2).
Solorina crocea (L.) Ach. Peltigeraceae. Italy: Gressoney (32TMR06). July 1936. Det. G. Gresino. Rev. A. Gómez-Bolea (February 2024) (HIBS 3457).
Usnea dasypoga (Ach.) Nyl. (= *Usnea barbata* L. v. *dasypoga* Ach.). Parmeliaceae. Italy: Varazze (32TMQ61). May 1938. Rev. A. Gómez-Bolea (February 2024) (HIBS 3461-1-2).
This specimen is the first reference in this UTM 10x10 km, the closest citation that has been possible to document is in Alpi Liguri, July 2007 (TSB 33595).
Xanthoparmelia stenophylla (Ach.) Ahti & D. Hawksw. Parmeliaceae. Rev. A. Gómez-Bolea (February 2024) (HIBS 3451).
Spot test: medulla K+ red. This specimen is labeled as *Parmelia physodes* (L.) Arch., which is erroneously identified. The correct identification is *Xanthoparmelia stenophylla* (Ach.) Ahti & D. Hawksw.

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