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The Herbarium of Antoine Bras (1803-1883)

Abstract

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Bras, distinguished French amateur botanist and author of a catalogue of the flora of his home province (département de l'Aveyron), built a considerable personal herbarium through 50 years of active collecting (1833-1882). That herbarium, long believed lost, was auctioned in 2008 and acquired by the first author for the Palermo Herbarium (PAL-Gr). Its c. 25,000 specimens are being mounted and databased, with a view of making the digital images and label data available for online consultation. An analysis based on a first sample of 1550 specimens is presented, with explanations of Bras' labelling and numbering systems and a list of other collectors and correspondents (81 to date) who contributed to the herbarium.

Introduction

Antoine Bras, MD, distinguished French amateur botanist, was a prominent citizen of his home town, Villefranche de Rouergue (Aveyron), of which he was Lord Mayor for many years (1846-1848, 1849-1866) and which, for a period, he represented in the Conseil Général of the Aveyron Department. As a botanist, Bras' name remains attached to his single major work, "Catalogue des plantes vasculaires du Département de l'Aveyron" (Bras 1877), which follows the sequence of Grenier & Godron's "Flore de France" (Grenier & Godron 1848-1856).

Bras also built a considerable personal herbarium, the fate of which was long unknown. It was rediscovered in 2007, auctioned on 15 November 2008 in Rodez (Aveyron), and adjudicated for 15,200 € to the first author. The sale to "abroad" caused quite an emotional stir in the media. A comment on the internet, by the renowned author of a regional flora, may serve as example: "*Pour quelques centaines d'euros manquants ... ce patrimoine historico-botanique de l'Aveyron et de la France partira à l'étranger. ... Ce soir, je suis amer, très amer! et si je reste fier d'être botaniste, je ne suis plus très fier d'être français!*" Other comments expressed the concern that the Bras Herbarium, just rediscovered, might again be lost for botanical science.

That concern, fortunately, is unfounded. The declared purpose of the purchase was to turn the herbarium into public property and make it generally accessible for research purposes. To that effect, the plants are being cleaned and remounted. Duplicates, of which there are many, will be made available to interested French and other Mediterranean institutions on an exchange basis.

The herbarium

In December 2008, the Bras Herbarium was donated to the Herbarium Mediterraneum, Palermo University, together with the first author's personal collections (now PAL-Gr: see Raimondo 2009), and is being kept as a separate unit within these collections. It consists of a main portion of 84 numbered parcels, arranged in the order of Bras' (1877) "Catalogue" and Grenier & Godron's (1848-1856) "Flore"; plus 2 parcels of mosses and lichens, 2 of "exotic" plants, 9 of mixed material, including duplicate sets, and 37 convolutes of various formats not directly associated with Bras. On the basis of the sample already treated (see below), the total number of vascular plant specimens in Bras' own herbarium, discounting duplicates, can be extrapolated to be 22,600 (certainly not 100,000 as the auctioneers had claimed).

Restoration

The specimens are reasonably well preserved but very dirty, with limited insect damage, not mouldy but often with foxed labels. Some parcels were gnawed by rats. The plants are loosely placed on sheets of, mostly, rag paper within similar folders, none being mounted. It is a happy circumstance that the herbarium has barely if at all been consulted after Bras' death, so that the original arrangement has not been disturbed. This makes it possible to associate with confidence the plants with their labels, even when there are several labels on one sheet, or several sheets of duplicates with a single label.

The specimens are currently being restored under the personal care of the first author. This a lengthy process that will take years for completion. So far, 1560 specimens of the main collection have been processed, corresponding to the twelve families *Ranunculaceae*, *Berberidaceae*, *Nymphaeaceae*, *Cruciferae*, *Cistaceae*, *Violaceae*, *Resedaceae*, *Droseraceae*, *Polygalaceae*, and *Caryophyllaceae* (*Caryophylloideae* only). That sample, corresponding to c. 7 % of the total Bras herbarium, provides the basis for the assessment that follows.

Almost all labels (97 %) are handwritten. Bras' own handwriting is tidy but not always easy to interpret, that of some of his correspondents is all but impossible to decipher. Numerals present their own problems and are sometimes outright ambiguous. To make label information reliably accessible, it has therefore been decided to produce clean printed copies in addition, which also serve for duplicate material. In so doing, the spelling of geographical names is checked, correct modern spellings are added in brackets when they differ, and geographical co-ordinates are recorded when they are at hand. Also, whenever possible, illegible or missing names of collectors are identified by means of the handwriting. Nomenclature is updated in the process, and misidentifications are occasionally corrected.

Once mounted, the specimens are numbered, bar-coded, and high-resolution digital images of them are made. The label information is now being databased, and the combined specimen and label data will be made accessible for online consultation in the near future, together with similar information currently produced at the Herbarium Mediterraneum Panormitanum (PAL) for its Sicilian holdings.

Bras' own collections

Bras himself collected for 50 years (1833-1882) not only in Aveyron but also extensively in the surrounding departments, in the French and Spanish Pyrenees and as far as the Alps, Jura mountains, and Corsica. He started early in 1833 (the specimens of that first year are not precisely dated but include early spring flowers) and gathered his latest specimen traced so far on 18 August 1882 at Lexos in the Tarn-et-Garonne Department, about one year before his death on 2 September 1883 (Fournier & Chatin 1883). Remarkably, the rate of his collecting remained fairly balanced over the whole half-century of his botanical activity, allowing for a few so far unexplained lows (1841, 1847, 1855, 1873, 1879), and a pronounced peak in the years 1840, 1842 and 1843 correlated with summer campaigns in the Pyrenees (see Fig. 1).

Bras' labelling system is worth a study of its own, only just begun. Three series of numbers were used in labelling, sometimes all three together on one and the same label. Two series are of species numbers, to serve as sorting device; the third designates Bras' own gatherings or foreign herbarium accessions, as the case may be.

Bras must originally have arranged his herbarium in the sequence of the second edition of "Flora gallica", by Loiseleur-Deslongchamps (1828), which in turn was based on the good old sexual system of Linnaeus. Loiseleur used no species numbering, so Bras must have numbered the species by hand in his personal copy of the Flora. These numbers appear

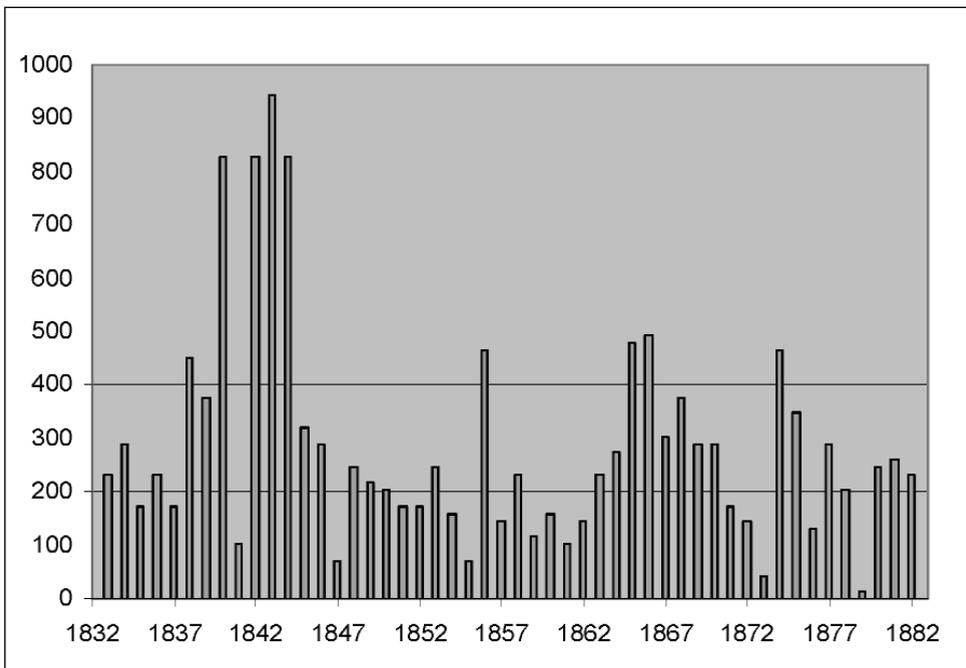


Fig. 1. Yearly number of Bras' own gathering, extrapolated from the processed sample (total: c. 14,300; average: 286 per year).

on most of Bras' own labels for plants collected up to and including 1853, but only very erratically if at all on later gatherings [the break-off date is valid only for our sample, i.e., for families treated in the first volume of Grenier & Godron's *Flora*, published in 1848].

Some time during 1854 Bras must have decided to rearrange his herbarium using a "natural" system, and settled on that used in Grenier & Godron's (1848-1856) *Flora*, even though at that time it was only two-thirds complete. That *Flora*, again, has no printed sequential species numbers, and obviously Bras, once more, numbered the species of his personal copy by hand. From 1855 onward Bras wrote only Grenier & Godron's numbers on his labels, and he often added it on the original label of earlier specimens.

The species numbers of either set often have additions in superscript: Greek letters for varieties recognised in the corresponding *Floras*, "var." for additional varieties, and "bis", "ter", etc. for additional species. There is, however, considerable variation in these additions.

The third series of numerals is the most important. They are originally genuine collector numbers, and point to a numbered inventory of Bras' gatherings. Unfortunately that inventory, if still extant, has not so far been traced. Its former existence can however be demonstrated, both directly and indirectly. Direct proof is found on the label of one of Bras' early (spring 1833) gatherings, where the number is given as "Catalogue N° 19 herborisations"; and again much later, on a label dated 16 July 1872, where the following note is added: "voir obs. dans mon m[anuscri]t. des herborisations". The indirect proof comes from Bras' own relabeling of his early collections. As explained below, the original (type A) labels did not specify the locality and date of collecting, but the full subsequent labels do. The additional data can only have originated from a separate document to which the collecting number refers.

Unfortunately for us, Bras later discontinued the numbering of his labels. Up to 1845 almost all his plants are numbered, but after that date the numbering became erratic and came to a complete stop in 1848 (last seen so far: N° 9722, collected on 28 September 1848). From 1845 to 1848 the numbers were not written at the same time as the labels but were added later, usually in pencil and in a different hand, perhaps in an attempt to catch up with a backlog. Nevertheless in the background the numbering and listing may have continued (see below).

The labels themselves are a further interesting feature of the Bras herbarium. The study of the chronology of use of the various types of labels, described below (see Table 1), is complicated by the fact that Bras had the habit of relabeling earlier collections, either keeping both labels or, more often, discarding the earlier one. He may also have set apart critical specimens for study, writing the definitive, clean labels at a much later date, and the same may have happened for whole year's harvests when he was short of time. On the other hand, it is evident that he kept stocks of old label types, using them at a later date when the then current type was running short or was not ready at hand. For all these factors, the following reconstruction of events is to some degree hypothetical.

Bras' labels fall into two main categories, those with a printed head and those on plain paper. In the early years, only the latter were used. The labels are of rectangular shape, mostly cut into uniform formats, rarely torn. One can distinguish three main types of plain labels. The two first types (A and B) present two neat parallel cuts in the upper third, so that they could be slid onto the stalk or root of a plant (as indeed often happened). The labels were presumably stacked, then cut with a sharp knife or scalpel. They were not

Table 1. Label types associated with Bras' own specimens in any one year. When multiple labels are present in a specimen only the oldest is counted. Main type = most frequent type (in parenthesis when in < 50 % of cases); 2nd type = second most frequent type when found in > 33 % of the cases (or, if in parenthesis, in 20 % to 33 % of the cases), otherwise omitted; n = total number of specimens in each year (extrapolated from processed sample). – Subtypes: Bc = yellowish-brown paper, Bp = pink paper.

Year	Main type	2 nd type	n	Year	Main type	2 nd type	n	Year	Main type	2 nd type	n
1833	A		232	1850	(B)	II	203	1867	(III)	(II)	304
1834	A		290	1851	C	(B)	174	1868	(III)	II	377
1835	A		174	1852	B	(IV)	174	1869	II		290
1836	A		232	1853	B		246	1870	II		290
1837	A		174	1854	III		159	1871	II	C	174
1838	A		449	1855	C		72	1872	II		145
1839	Bc	(B)	377	1856	C	I	464	1873	II	C	43
1840	Bp		826	1857	C		145	1874	II	C	464
1841	B		101	1858	II	C	232	1875	II	C	348
1842	Bp		826	1859	I		116	1876	II		130
1843	Bp	(B)	942	1860	(I&C)	(II)	159	1877	II		290
1844	B		826	1861	I		101	1878	C		203
1845	B		319	1862	I		145	1879	C		14
1846	B		290	1863	II		232	1880	(C)	(II&IV)	246
1847	B		72	1864	C		275	1881	C		261
1848	B		246	1865	I	II	478	1882	C		232
1849	B		217	1866	II		493				

intended as preliminary, scrappy field labels (these also existed, but very few have survived) but as definitive, clean labels for the collection. The clean writing, which always respects the position of the cuts, suggests that they were written on an office desktop.

Type A labels (Fig. 2, above) were used during the first 6 years (1833-1838). They are small, square and, in sequence, bear only the collector number, the Loiseleur species number, the Latin and the French plant name. Several of these old slips have survived, but almost all were either replaced or supplemented with later labels of varying age, with locality data and collecting date (and often the Grenier & Godron number, demonstrating their post-1848 origin as in Fig. 2, below). In a number of cases the missing data were subsequently added directly on the type A label, but 7 specimens were neither thus annotated nor relabelled and lack provenance.

Type B labels (Fig. 2 below & 3) had initially (1839) the same small format as type A, grew somewhat larger in 1840-1843 and reached almost the full size of imprinted labels in 1844-1854, after which date they were no longer used. The standard disposition of data is: top line (above the cuts) with collector number left, date centred in parenthesis and Loiseleur number right; below the cuts, in sequence, the plant name, synonymy, and locality. The paper used varied considerably. Apart from the normal whitish paper, one can distinguish a solid, yellowish brown “parcel paper” used in

1839, and a bright pink paper, used in 1840 and again in 1842-1843, especially for but not limited to the Pyrenean specimens.

Under type C (Fig. 4) we place all plain-paper labels that lack cuts. Their paper varies considerably, depending on what was at hand – occasionally lined paper from a note block, recycled card-equivalents of his own or of one Auguste Chevalier (not the botanist of that name, who was born in 1873). Such plain labels were used simultaneously with type B for a short period (1851-1854), with the same text arrangement; then alone, with the date now placed at the bottom (1855-1858); and later whenever the labels with imprint went out of stock – which was apparently the case in 1864 and again in 1878-1882. Otherwise, the use of C-type labels after 1858 was erratic.

Labels with an imprint were probably first produced in 1859. They invariably have a centred text of two lines, the second of which reads “(Villefranche-d’Aveyron)”. By hand, the Grenier & Godron species number is usually added in the top-right corner; below the imprint, the plant name, synonymy, locality data and last the collecting date follow. Four different label types (I-IV: Fig. 5-8) can be distinguished as follows.

- I. First line, in large bold-face capitals: **HERBIER DU D. BRAS**; beneath the second line there is a small fleuron; a twin straight line sets off the lower label third, meant to separate the name and synonymy from the locality data and date. This type is frequent in 1856 (probably due to retroactive use), almost exclusive in 1859-1862, with varying frequency until 1865, and only exceptionally later (till 1872).
- II. The text is set in smaller, plain roman font; the first line is not in full capitals, only the name BRAS is in small capitals, and the D. is replaced by D^f; the twin straight line is no longer present. This type is frequent in 1858 (likely due to retroactive use). It was probably first printed in 1863 and, disregarding plain labels, was used almost exclusively in 1866 and 1869-1878.
- III. Identical with type II except for the use of a slightly narrower font, and the name BRAS appearing in full capitals. This type is frequent in 1854 (obviously due to retroactive use). Otherwise its use was sporadic except in 1867 and 1868 when it predominated.
- IV. The font is larger than in type II, but BRAS is again in small caps; the fleuron is replaced by an undulated line. This is the most puzzling type, as it nowhere prevails but occurs sporadically from 1837 onward, being the most frequent imprinted label in 1880-1882. The most likely explanation is that it was produced in 1882 and used by Bras for retroactive (re)labelling during the last year of his life.

Other collectors

Bras received specimens, as gifts or in exchange, from many contemporary botanists. He must have registered their contributions in his “Catalogue des herborisations”, which for that aspect also became his accession book, and assigned them numbering slots alternating with his own collector numbers. This practice started at least as early as winter 1838/1839, when a first substantial addition was accessioned: a set of c. 300 specimens with scant label information, probably representing the herbarium of a certain Roux, or parts thereof. In the following years, too, the accessioning of new

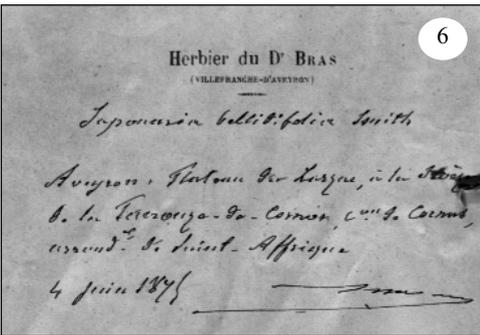
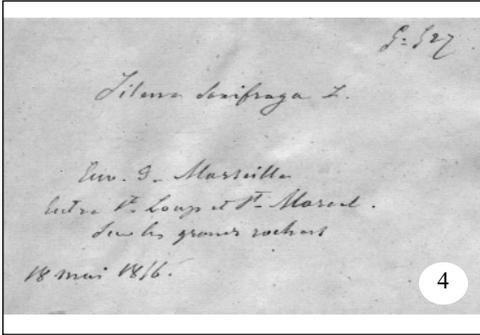
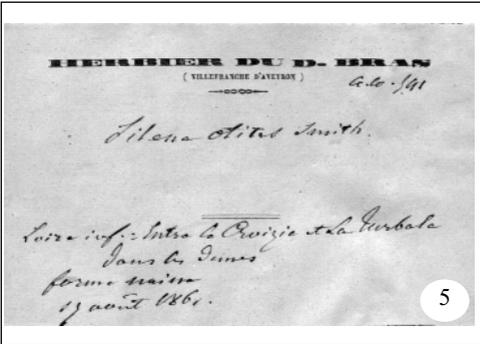
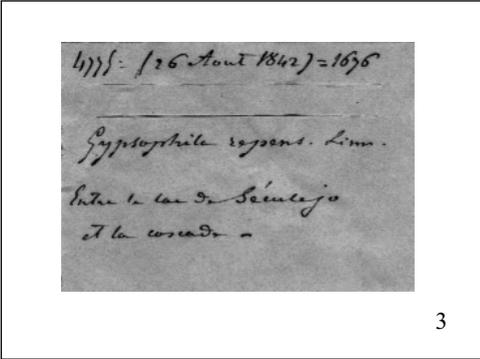
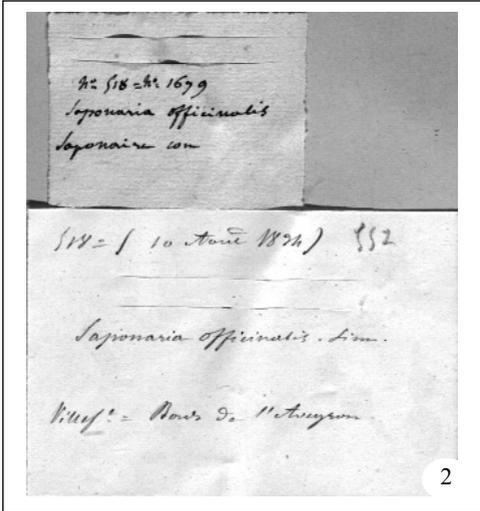


Fig. 2. Above, label of type A: Bras collector number (518) and Loiseleur species number (1679), no locality data or date. Below, type B label added later, with the missing data supplied from the manuscript Catalogue; the Grenier & Godron number (552) has been pencilled in subsequently. The cuts are visible on both labels.

Fig. 3. Label of type B: headline with Bras collector number (4775), collecting date, and Loiseleur species number (1676); plant name and locality follow beneath the cuts.

Fig. 4. Label of type C, lacking cuts. The Grenier and Godron number (G.) is 527, the date is now placed at the end.

Fig. 5. Label of type I. The Grenier and Godron number (G.G.) is 541, the locality data and date are squeezed in below the twin-line separator.

Fig. 6. Label of type II, without any numbering. Bottom right is Bras' signature (otherwise mostly lacking).

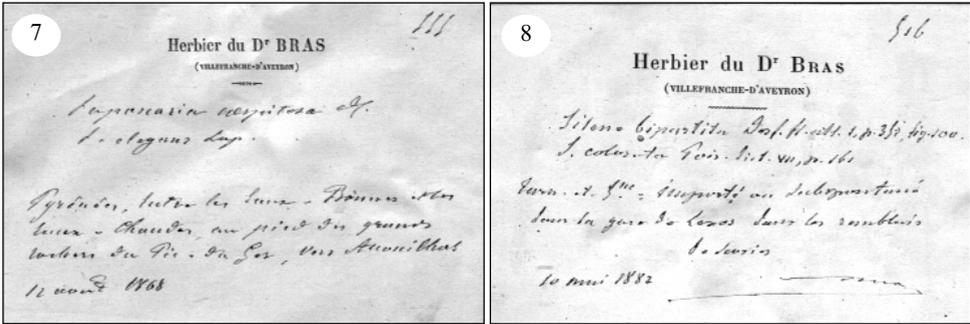


Fig. 7. Label of type III. The Grenier and Godron number is 555 (the French number 5 is easily misread; it may be reduced to an almost straight line).

Fig. 8. Label of type IV, signed and with Grenier and Godron number (516). This comes with one of Bras' last collection, as he died the following year.

material mostly took place in wintertime. Examples are specimen sets from Rouziers and Claude (1842/1843, with Bras' own collections of February 1843 intercalated between the two), de Rudelle (1844/1845), and abbé Revel (1846/1847 and again 1847/1848). In winter 1848/1849 Bras accessioned specimens received from Boreau, Delalande, Huard, Rancoulet, and Revel, assigning them numbers between 9797 and 10101, higher than the last documented collector number of his own (see above). It is not unlikely that Bras continued numbering his accessions in the same way after 1848, in his book, but we have no proof so far, as no higher number has yet been found on any later accession label.

The contributions of others to Bras' herbarium make up for 37.5 % of the total (586 out of 1560 processed specimens). So far, 81 collectors and correspondents who contributed to the herbarium have been identified. Those who collaborated in two series of exsiccata with printed labels ("Herbiers des flores locales de France", 1850-1857; "Flores régionales. France", 1857-1858; both edited, since 1856, by Puet & Maille) are not included in this number. At least three collectors could not so far be identified.

The following 26 can be considered as regular contributors, being represented at least 4 times (up to 50) in our sample:

Cadet de Fontenay	Lezat	Roffavier
Chambeyron (or Cham b[e]iron)	Loret, H.	Ronziers (or Rozier)
Delalande, abbé	Mardochée	Roux
Gautier, G.	Martin, D ^r	Rudelle, de
Giraudias, L.	Martrin, de	Sadde
Héribaud, frere	Rancoulet	Saltel, frère
Huet (or Huet & Jacquin)	Rendu, V.	Schindler, E.
Jordan de Puyfol	Revel, abbé J. L.	Timbal-Lagrange
	Ripart D ^r	Valon, E. de

Another 55 occasional contributors are represented in our sample with 1 to 3 specimens each:

Arnaud, M ^{me}	Huguenin	Planchon
Barrandon	Ibrahim	Puel, T.
Baudot	Jaubert, F.	Puget
Beaumier	Laguesse, D ^r	
Blanchet, M.	Lamote-Baracé, Vicomte de	Radelle, de
Bonnet, D ^r	Le Grand, A. (or Legrand)	Ranvier
Bordère, F.	Le Grand G. (or LeGrand)	
Boreau, A.	Levier, E.	Reboud
Bouiller	Lloyd, J.	Rendu (père)
Chabert	Magnier	Reverchon, E.
Chevalier	Malvesin	
Claude, D ^r	Martres (ou Martre)	Rouquès
Clerton, A.	Mazuc	Schimper, W.
Des-Etangs	Méhu, A.	Soubeiran, L.
Dubreulh	Melchior de S ^t -Remy	
Dumas, A.	Moquin-Tandon	Speiser, Nora
Durieu-de-Maisonneuve	Müller, J.	Trouillard
Galdou, D ^r	Penjardes [?]	
Garrouste, E.	Perrier, H.	Valadié
Huard, D ^r A.	Personnat, V.	Warion, A.

It would be interesting to learn more about these people, botanists and amateurs alike. Several of them are famous in their own right, but of many others little or nothing is known. We are assembling corresponding data if and when they come to hand, and would welcome contributions by and collaboration with others. A comparative study of labels and handwritings is in progress, and we hope to publish images of a comprehensive set of label samples in due course.

Conclusions

The discovery of this 19th Century herbarium in its original state offers excellent opportunities to study in context, and reconstruct, the world of contemporary French botany. It would be ideal if corollary archival documents could be traced. A portion of the draft manuscript for the “Catalogue” was recovered, corresponding to pages 267-310 and 400-539 of the printed book, but not the “Catalogue des herborisations” and accession book, nor Bras’ botanical correspondence. Help in recovering any of these would be greatly appreciated.

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Catherine Gil, Rodez, who successfully represented him at the auction of the herbarium and managed to secure him a copy of Bras' rare "Catalogue".

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