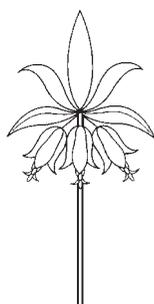


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Dr. Villars and his botanical disciples

Roger L. Williams

Abstract

Dominique Villars and his small group of botanophiles in the 1770s and 1780s, mostly of peasant origin, were plant collectors who sought to obtain proper nomenclature within a reliable system of classification until the dislocations wrought by the French Revolution turned attentions elsewhere. Such enthusiasts reflected the penetration of the ideals of the Enlightenment into a provincial backwater, Dauphiné, far from Paris. Their learning moved them into the middle class and enabled them to take community leadership when royal officials began leaving their posts in 1789. Several of them, like Monsieur Deleuze, moved into responsible positions in Paris. Several traditional misspellings of names and places are corrected along with priorities in publication.

Botany is the art of desiccating plants
between two sheets of blotting-paper
and of abusing them in Greek and Latin.
—Alphonse Karr (1809–1890)

The traditional presentation of the Enlightenment and the coming of the French Revolution in the 18th century, as portrayed within a necessary political framework, has misled in several contextual ways. We have been given an account of literary and political intellectuals, a Republic of Letters, whose criticism of royal absolutism as the definition of the Enlightenment led to the overthrow of the monarchy and its replacement by a republic. Historians of France today generally recognize that the monarchy collapsed because of its bankruptcy. Had Louis XVI been astute, he could have steered the nation subsequently into a limited, constitutional monarchy in the

British fashion, accepted reductions in royal authority and satisfied the critics of absolutism.

In the second place, that political framework inadvertently obscured the primary role of the innovative sciences in the 18th century, which were the main sources of the Enlightenment. Their emphasis on utility, on useful knowledge, based upon empirical evidence as opposed to metaphysical assertions, became the new foundation of modernity, not to speak of possible conflict with organized religion.

In contrast, the founders of the First French Republic did not become promoters of scientific knowledge. Revolutionary ideology after 1789 was derived from Rousseau, who was hostile to unromantic science after his unhappy experience with fashionable botany. His doctrine of the General Will, however, and his recommendation to require everyone to conform to it (a new absolutism) led directly to the reign of Terror.

The men in Villars' small group, if mainly unknown today, were avid plant collectors in the 1770s and 1780s, continually exchanging plant specimens in their attempts to obtain proper nomenclature and seeking to place them within a reliable system of classification that reflected the order in nature. Most of them developed gardens, or had access to a garden, where collected seeds could be planted to provide additional observations. With one exception, they gave no evidence of a commitment to political issues or reform.

Instead, such enthusiasts reflected the notable penetration of the ideas of the



Dominique Villars (1745–1814), photographic reproduction, 12.5 × 10 cm, after a lithograph, 20 × 14 cm, by Godefroy Engelmann after a portrait by Lagrenée, Hunt Institute for Botanical Documentation Archives portrait no. 2.

Enlightenment and its evangel, science, into a provincial recess far from Paris, Dauphiné, several of them in particular representing the origins of the transformation of traditional medical herbalism into the empirical science of botany. Of peasant origin, moreover, they emerged through study and learning into middle-class professionals. Emancipated from peasant obduracy, they proved to be capable of community leadership after 1789 when royal officials began abandoning their posts.

Let us get the participants’ names corrected and their home locations recorded because of occasional misuse:

Dominique Villars (1745–1814) was born in Le Villar, a hamlet of Le Noyer, hence the early

spelling of his name, *Villar*. Later, 1779, he used *Villars* in Grenoble.

Dominique Chaix (1730–1799) was curé of Les Baux, a village in Hautes-Alpes four kilometers north of La Roche-des-Arnauds, vicinity of Gap.

Jean-Joseph Serre (1762–1831) was a surgeon in La Roche-des-Arnauds. His name was spelled *Serre* despite frequent references to *Serres*, the spelling used by several members of his family, including Jean-Joseph filius, and the town south of Veyne.

Laurent Blanc (dates uncertain) was an abbé in Embrun and professor of philosophy at the Collège d’Embrun, east of Gap.

Etienne Danthoine (1739–1815) was of Manosque, not of Marseille, and his name was not spelled *Danthione* or *D’Antoine*. There is no record of him in the archives of Haute-Provence.

François Deleuze (1753–1835) was from the village of Valernes just north of Sisteron. His name was not *de Leuze*, as he was not a seigneur or an aristocrat.

Jean-Baptiste Martin (dates obscure) was curé of Le Saix, a village near Oze.

Jacques Meyer (dates obscure) was vicar of La Bâtie-Neuve east of Gap in 1790 and curé of Lachau in the Baronnies.

Among Dr. Villars’ small coterie of collectors, only he seems to have worked with a microscope, a Lionnet, whose power he found to be limited. His mechanical skills were sufficient to enable him to add pivots, adjusting screws, and tubes, so that he was able to attain a magnification of 250×. Teaching himself to draw natural objects helped him to achieve a mastery of detail. In the field he always carried his loupe, a magnifying lens of perhaps 8× or 10×, such as his disciples in Dauphiné would have had. Abbé Chaix acquired what he called a lenticular lens, that is biconvex, in July of 1779, a loupe giving him magnification for the first time. It was helpful to be sure but useless

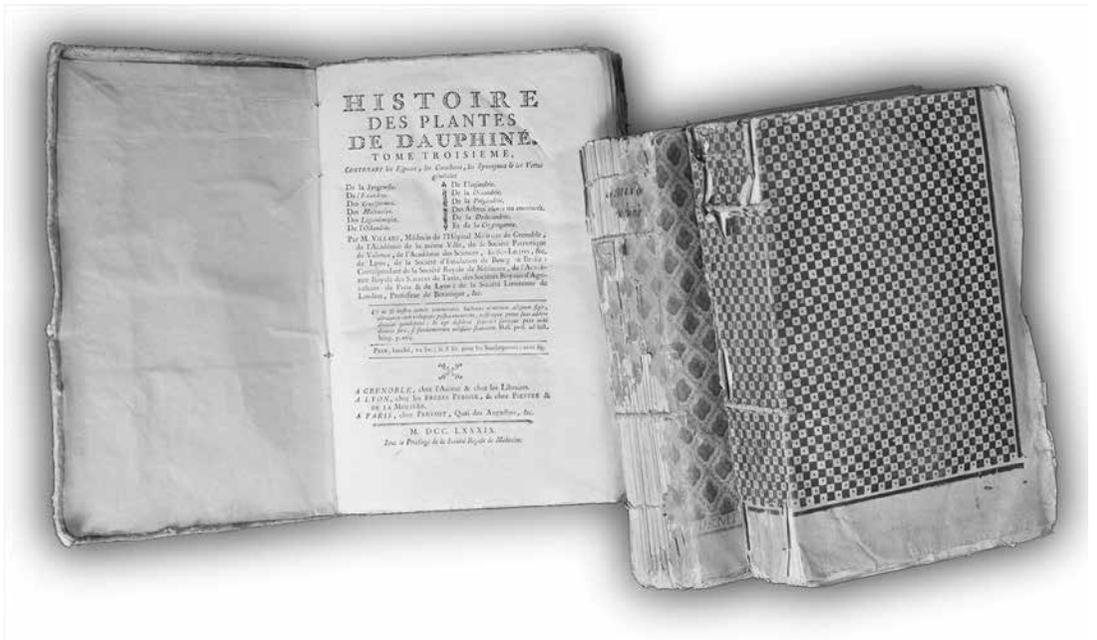
in plant dissection that requires both hands (Bally 1858, pp. 30–31; Williams 1997, p. 61).

Villars' authority as a reference was reinforced by the availability of library resources in Grenoble, such as rural villages could not match. Thus, Chaix gradually acquired a large personal library. Several of the rural collectors only referred to the *Species Plantarum* of Linnaeus. Only the abbé Chaix, in tiny Les Baux, slowly acquired a personal library of 46 volumes that enabled him to give his peers plant determinations and even to venture to publish new species. A list of his library at the time of his death was prepared by his neighbor, Dr. Serre, and sent to Dr. Villars (Williams 1997, pp. 288–289).

The intrusion of revolution in 1789 could not affect the completion of Villars' three-volume *Histoire des Plantes du Dauphiné* (1786–1789), which was ready for publication in 1788. The revolution, however, soon curtailed the peaceful exchanges of plants and seeds in the

province. Attention had to be diverted to the local implications of national dislocations and how to accommodate to them for survival. The botanophilia that captivated the learned in France after 1750 had produced a flood of local floras. The most impressive of them all, in scope and scholarship, was Villars' flora for Dauphiné, in which he frequently acknowledged the contributions of his rural collectors. Its examination today reveals arresting testimony to his labor, his learning and his integrity. Thereafter, the intellectual zeal of the Enlightenment gave way to the ideological zealotry of the Rousseauan Revolution.

The origin of Villars' interest in botany and medicine, if drawn generally from information based upon the introduction to the first volume in his flora, is fragmentary but seemingly accurate. His father grazed sheep on his own property for income, and Dominique was placed in the village school taught by the



Dominique Villars (1745–1814), *Histoire des Plantes du Dauphiné* (Grenoble, Chez l'Auteur, 1786–1789, 3 vols.), Hunt Institute for Botanical Documentation Library call no. DS255 V723H.

curé Honoré Arnaud. Thus, he could read by the age of seven. Between the ages of nine and eleven, when he was learning writing, arithmetic and Latin, Arnaud took him along when he was botanizing in the mountains (Joyeux and Dejarnac 1969, pp. 126–127).

The death of his father in 1760, and of his grandfather in 1761, left Villars the head of a family of eight children with only his mother to guide him. She, having no sympathy for the boy's scientific interests, placed him with an attorney in Gap in the hope that he would learn something of practical matters to enable him to manage the meager inherited patrimony. The ploy failed, as he acquired several medical manuals in Gap. One, edited by Meyssonier, included 300 drawings of plants taken from P. A. Mattioli, a 16th-century Venetian translator of Dioscorides.

Villars' mother again sought to counter these interests by summoning him to Le Noyer, to resume the tutelage of abbé Arnaud in Greek and Latin. When finally informed by the priest that nothing could deflect Villars from his botanical and medical interests, she had him married on 8 June 1763, at the age of 18, to Jeanne Disdier. She brought a dowry of nearly 2,000 livres, a small fortune by the rural standards of Le Noyer. He became a secretarial-clerk for the village and would likely have been permanently enshrined in domesticity had it not been for the visit of Dominique Chaix, then a vicar in Gap, to give several sermons. Chaix and Arnaud were friends, and Chaix was made aware of Villars' bright promise. They would become friends for life, beginning in 1765 (Bally 1858, pp. 2–8; Manteyer 1922, pp. 129–137).

Chaix was born on 8 June 1730 on a farm called Berthaud at La Crotte, an alpine region northwest of Gap still remote today, where his family survived on sheep-raising. He began his study of Latin at the age of 13 with a local curé, the only instruction available

in such a location. At 16 he was sent to the Collège des Jésuites in Grenoble, leading to his ordination in 1755. For the next four years he was a vicar in Gap where his interest in botany was awakened. One of his duties in Gap was to say mass in a local convent dedicated to the education of young girls. The superior, Marguerite de Colvin, cultivated medicinal plants in her garden. Chaix was drawn to her interest in plants and always remembered her as an admirable person.

On 4 July 1758 he was named curé of Les Baux, a small parish of perhaps 150 inhabitants, whose spiritual requirements left him much free time. During summers thereafter, he worked his garden of about 800 square meters, no more than one quarter of which was his kitchen garden. The remaining three quarters were devoted to unusual plants or to those seemingly new or unknown to botanists, about 40 to 60 plants each year. Their development was recorded in his notes, then confined to his collection of dried plants. This experience, added to his study of Linnaeus, made him skillful as a gardener and in caring for seeds. His annual income was roughly 600 livres, but he refused a promotion to a more lucrative post by giving his garden priority. During winters, he joined other curés on evangelical missions to other parishes where instruction was desired. On such a mission Chaix had met Villars in Le Noyer in 1765 (Villars 1884, pp. 298–300).¹

Villars' first field trip, accompanied by Chaix, was in the early summer of 1769 in the mountains around Gap, namely, Les Baux, Rabou, Chauden, on Mont-Bayard and through Ancelle and Orcières, collecting live plants and seeds for Chaix's garden. In 1770 the two went higher: through Valgaudemar to La Chapelle, to Rif-de-Sap and Le Clot, returning south through Champoléon and Orcières. Later that summer Villars went to Grenoble to see the herbaria of both Dr. Pierre

Clappier and the gardener Pierre Liottard. It seems likely that Clappier was the first to encourage Villars to seek medical training (Villars 1786–1789, 1:x–xii).

The following year, he made the decision to study medicine in the Ecole de Chirurgie in Grenoble, created that year by the royal intendant of Dauphiné, Christophe Pajol de Marcheval, and staffed by the Frères de St. Jean de Dieu de la Charité. Villars expected to stay only six months, enough time to learn a little surgery and about bleeding, meaning to return to home country (Champsaur) to devote his life to the care of the sick and to take advantage of the knowledge of medicinal properties of plants he had acquired there.

The intendant, however, a man of some learning, soon heard of Villars and had him presented. After testing his botanical knowledge, and learning that Villars genuinely wanted to study medicine, the intendant granted him a pension of 500 livres, which allowed him to spend three years of training in Grenoble, leaving the entire income from his property in Le Noyer to his family (Villars 1786–1789, 1:xiv–xv; Bally 1858, pp. 9–11). This apprenticeship ended with the granting of the degree of *Surgeon* on 23 May 1774. The intendant responded by making Villars' fund of 500 livres permanent and authorizing him to travel anywhere to perfect his botanical knowledge with the proviso that he exercise his surgical profession occasionally in his native region. He would provide a detailed account of his extensive field trips thereafter until 1780, occasionally with abbé Chaix, in the introduction to his *Histoire des Plantes du Dauphiné* (Villars 1786–1789, 1:xv–xxxix).

As he frequently prescribed treatments with plants for his subsequent surgical patients, Villars aroused the ire of colleagues who accused him of the illegal practice of medicine. To escape the danger of prosecution, he enrolled in the Faculté de Médecine in

Valence. During November and December of 1778, he passed three examinations that qualified him not only for a bachelor's degree but also for a doctorate in medicine, the latter on 9 December 1778 (Joyeux and Dejarnac 1969, pp. 129–130).

His credit had been further enhanced following a trip to Paris in 1777, recommended by his friend, Jean-Etienne Guettard, where he was able to consult with Bernard de Jussieu; his nephew, Antoine-Laurent de Jussieu; Guillaume Lemonnier; and André Thouin. Numerous herbaria and manuscripts were made available to him (Villars 1786–1789, 1:xxxv; 1884, pp. 301–302). He had also published an article on epidemics in Champsaur and Valgaudemar, interesting for its portrait of social and cultural conditions of a very primitive population virtually inactive for four months of the year because of snow and frozen ground. Subsequently, he was elected to be a corresponding member of the Société Royale de Médecine in Paris, 9 July 1779. The certificate spelled his name *Villars* and accounts for his adoption of it (Villars 1777–1778; Manteyer 1922, pp. 148–149).

Despite such intrusions, Villars had been preparing his *Prospectus* for the plants of Dauphiné, perfecting it during 1778–1779 (Villars 1799). A valuable copy of it in proof was given to the Municipal Library in Grenoble by Georges de Manteyer, an archivist of Hautes-Alpes. Annotated by Villars, but filled with corrections by the abbé Chaix, it revealed the important part Chaix had in the preparation of the work (Offner 1954, p. 12). It has been generally considered to have been published before 16 April 1779.

The date is significant in that the publication of the *Prospectus* opened lengthy controversies about the correct nomenclature for some alpine species known for a long time by Villars but also named by Lamarck in the first edition of his *Flore Française*, dated 1778. That



Map 1. The Province of Dauphiné, showing the boundaries of the present departments of Isère (Grenoble), Hautes-Alpes (Gap), and Drôme (Valence). Designed by Ronald Hansen.

first volume received the approbation of the Académie des Sciences, signed by Condorcet, on 10 February 1779. It was presented to the king in March and could have been accessible to the public only after 21 March 1779. Quite probably, however, Villars' publication before 16 April 1779 was prior to the *totality* of Lamarck's three volumes. Priority of discovery

certainly belonged to Villars; and in many cases, priority in actual publication belonged to Villars (Aymonin 1980).

The source of the controversy can be traced to the Dauphinois geologist, Barthélemy Faujas, who accompanied Villars on field trips in 1775 and 1776, and who was appointed to the staff of the Jardin du Roi in Paris by



Map 2. Localities often cited by Dominique Chaix. Designed by Ronald Hansen.

Buffon in 1778. Faujas had asked Villars for duplicate specimens collected on those field trips. As Villars later remorsefully wrote to Laperouse, Villars had felt unable to refuse. Given Lamarck's well-known cooperation with Buffon, Faujas had found it politic to give the specimens to Lamarck for insertion in his *Flore Française* (Timbal-Lagrave 1860, p. 681).²

Villars' submission to Faujas's request for specimens had led to irritating consequences for Villars, but it was merely one instance of similar acts of deference he revealed in correspondence. Even after the Revolution, he never overcame the social implications of his peasant origin despite his intellectual achievements, and equality remained yet to

be established by legislation. For him, Faujas was Faujas de Saint-Fond; Lamarck was the chevalier Lamarck. The editor of Villars' letters to baron Picot de Lapeyrouse, the specialist on the plants of the Pyrenees, noted they were deferential in tone, no matter that he knew plants better than Lapeyrouse (Timbal-Lagrave 1860, p. 683).

The taxonomic method Villars invented for the prospectus was also subject to legitimate criticism. Especially after his trip to Paris, he quite recognized the superiority of the recent Jussiean natural classification over the Linnaean sexual system. Both of those methods were meant to encompass all species yet known in the world, whereas his flora would only describe the species of one province. Moreover, he wanted as simple a system as possible so as to attract students to botany, a system appropriate to his own region. As a result, he grouped the natural plant families of Dauphiné into 13 classes, each class defined by its number of stamens, the 13th being plants with no apparent stamens, the cryptogams. He called this compromise "a mixed method, a *juste milieu*" between the other two (Villars 1779, pp. 9–12). When publishing the first volume of the completed flora in 1786, he omitted Classes I and XII, explaining there are no natural families with one or twelve stamens, thus beginning with Class II (Villars 1786–1789, 1:116–125).

The satisfaction the intendant Pajol de Marcheval gained from this evidence of botanical progress moved him to adjoin a botanical garden to the Ecole de Chirurgie in Grenoble, 1781–1782. The garden was ordered to contain 3,000 plants, of which 1,600 were to be indigenous. Of the remainder, priority was to be given to useful plants native to the province rather than to exotics. Villars, with a doubling of his income to 1,000 livres, was put in charge of organizing the garden

and named professor of botany. Marcheval, hoping to move Villars permanently from Le Noyer to Grenoble, also secured for him the commission of Médecin de l'Hopital Militaire in 1782, which required a clinical practice in addition to teaching in the Ecole de Chirurgie (Villars 1786–1789, 3:viii–ix; Gras 1844; Bally 1858, p. 13).

Meanwhile, we encounter the names of aspirant provincial botanists, eager for guidance and the acquisition of helpful books. Without exception, they initiated a correspondence with abbé Chaix and Villars and ultimately an exchange of specimens in their search for correct determinations of nomenclature. On 2 September 1776 Chaix notified Villars that a very young man in neighboring La Roche-des-Arnauds (he was 14) was very interested in botany: "Please have François Rozier's *Démonstrations élémentaires* sent to him. I will reimburse," he wrote (Williams 1997, pp. 38, 51–52).

He was Jean-Joseph Serre, born to prosperous farming parents in La Roche-des-Arnauds. Recognizing his precocious intelligence, they sent him for classical studies at the Collège de Gap. Upon completion of his studies there, however, the predominance of his botanical interest made him determined to go to medical school. He entered that school in Montpellier, completing with honors and a degree in surgery. It is evident from Chaix's correspondence that young Serre had become the protégé of Mme de Flotte, comtesse de La Roche-des-Arnauds. The House of Flotte had possessed La Roche-des-Arnauds since the 11th century, a family described as *peu riche mais honorable* (Rivoire de La Batie 1867; Roman 1899, p. 169; Allemand 1906, pp. 255–256).

In 1778 Joseph Serre entered the Ecole de Chirurgie in Grenoble as an apprentice surgeon. Mme de Flotte, through Chaix, asked

Villars to take an interest in her protégé, who was then 17. Two years later, 1780, Chaix notified Villars in Le Noyer that he had learned that young Serre had enlisted as a naval surgical assistant and had left Grenoble at the beginning of April to take ship with his company. As no explanation was ever provided, he may have believed that the resumption of war against England during the American Revolution offered the opportunity for a military career.

He served in a fleet commanded by Pierre-André Suffren, dispatched initially to South Africa to support the Dutch who anticipated a British attack. The fleet went on to India in search of British ships. The Treaty of Paris, 1783, concluded the War for Independence and ended any French hope of recovering India. The fleet was recalled, and Serre was landed at Toulon on 25 March 1784. He produced a manuscript, unpublished, "Relation sur l'expédition des Indes, 1782–84," revealing his abandonment of any idea of a military career (Allemand 1906, pp. 255–257; Williams 1997, p. 73).

A second provincial botanist made himself known to Chaix in 1779, the abbé Laurent Blanc of Embrun, to whom Chaix had sent a copy of Linnaeus's *Philosophia Botanica*. When Blanc proposed to visit Chaix on 23 September 1779, Chaix asked him to bring some stones of the white-plum of Briançon that he wanted to grow in his garden. Blanc did come for dinner on the 23rd and spent the night, bringing a number of plants for correct labeling. Chaix reported to Villars that Blanc had a genuine taste for botany, a good memory, and all the other aptitudes. Blanc promised to have white-plums sent and anything else Chaix wanted. The result was *Prunus brigantiaca* Chaix, Pl. Vap., 76 (1785), published invalidly later as *Prunus brigantina* Vill. (1786). Blanc indicated he would be delighted to meet Villars and be pleased to join them for botanizing in his region (Perret and Burdet 1981, p. 407; Williams 1997, pp. 58, 68–69).

Except for such botanical records, Blanc remains an obscure figure, even his vital dates unknown. He was born in Caléryère, a tiny village across the Durance from Embrun. He became an ecclesiastic and taught philosophy at the Collège d'Embrun. In that capacity he published two essays on local medicinal plants but apparently in such limited editions that they can rarely be found today (Rochas 1856, 1:141). It would appear from his citations that the library of the Collège d'Embrun served him well. That institution, Jesuit from 1606, was absorbed by the diocese of Embrun after the interdiction of the Jesuit order in 1764 by royal decree.

To avoid being regarded a charlatan, as were many apothecaries in that day, Blanc relied on the authority of Pliny, whose natural history was really a record of medicinal plants in a Roman garden. He also cited Dr. Pietro Andrea Mattioli, the translator of Dioscorides; Thomas Bartholin, the 17th-century Danish scientist; the venerable John Ray; the work of the 18th-century chemist, Antoine Baumé; Dr. Joseph Lieutaud, physician to Louis XV; and especially the work of Dr. Pierre-Jean-Baptiste Chomel, whose herbal was standard in France from 1715 through the rest of the century.

Blanc's initial essay of 30 pages, which served as an introduction to his more extensive second essay, was favorably noticed by Villars as a reminder of the physician's duty to provide the public information on the medicinal and nutritional properties of plants (Blanc 1781; Villars 1781; Williams 1997, p. 91). Blanc expressed his gratitude in the introduction to his second essay, saying it had been his duty to consult a living author whose talents and capacity, whether in botany or in medicine, had merited public praises for a long time (Blanc 1784, pp. vii–viii).

The arrangement of his second essay, really an herbal, revealed Blanc's intention to reach a public audience rather than physicians, whose

traditional herbals arranged plants according to their medicinal usage. Blanc's arrangement was that of a dictionary, alphabetical. Its introduction provided a glossary of medical terms used, as concepts unfamiliar to the public. The work was divided into two parts, the first subdivided into two sections: one on herbs and low shrubs, the second on low and high trees. In part 2 he gave a list of illnesses against which one could find remedies in part 1. He concluded with observations relating to the successful cultivation and harvest of plants.

Let us note only one example of a familiar plant to illustrate his technique, *Garlic*:

The common garlic is an excellent antidote. For that reason, it is called the peasants' cure-all. Some allege that it suffices to have one clove in the mouth, or to carry some garlic on the person, to provide a shelter from contagion. Garlic has abundant volatile and penetrating salts. For that reason, its use is recommended in times of plague and when epidemic illnesses dominate.

For acute abdominal pain, some glasses of warm water into each one you have put a clove of chopped garlic, in order to make it infuse a bit, alleviates pains very promptly. The plant is also helpful for scorbutics, hydropics, and asthmatics, taken in an infusion of white wine, a single clove being sufficient. ... Garlic, moreover, favors digestion, ridding the stomach of those viscosities with which it can become coated, restoring the appetite and stimulating perspiration. Garlic also favors digestion when used to combat the bad effects from laxative foods: sauerkrauts, melons, cucumbers, etc. (Blanc 1784, pp. Biii–Biv).

The abbé Blanc's efforts were apparently ineffectual, however well-intentioned. By the end of that century, Félix Bonnaire, the enlightened prefect of Hautes-Alpes, figured that the average life of males in that department was 28 years, 2 months, 19 days; that of females 29 years, 11 months, 28 days. Despite the purity of the alpine air, living conditions produced a putrid atmosphere. The peasants slept in stables during the long winter

to benefit from animal heat, but three to four feet from manure. Woolen blankets for sleeping were never washed, if occasionally aired to remove insects, remaining impregnated with sweat. Skin diseases! Galls! Houses were placed too close to each other, preventing circulation of air, with manure in the streets. An ignorant and illiterate rural population was devoted to ancient remedies and practices, contributing to popular resistance to vaccination, against small pox in particular (Bonnaire Year IX, pp. 10, 17–21).

Laurent Blanc, whatever were his intentions and remedies, preached to a small choir, perhaps accounting for the survival of so few copies of his works. At least, that endeavor did not terminate his botanical fieldwork. During the week of Pentecost in 1783, he spent two days in Les Baux with Chaix, and they made plans to botanize together around Embrun in mid-May (Williams 1997, p. 109). Meanwhile, two other provincial botanists had come into view: Etienne Danthoine of Manosque and Jean-Philippe-François Deleuze of Valernes, who were already acquainted before entering the orbit of Dominique Chaix.

In 1781 Danthoine wrote Chaix regarding a thistle he had found, revealing that Danthoine worked not only from Linnaeus but also from a copy of a 17th-century classic by the Dominican Jacques Barrelier, *Plantae per Galliam, Hispaniam et Italiam*. Its manuscript had been lost in a fire, but its copperplates had been recovered by Antoine de Jussieu and published in 1714; dated but still useful for its drawings of plants (Williams 1997, p. 83). In June of 1782 Deleuze made repeated visits to Chaix in Les Baux seeking instruction. Chaix reported to Villars the following year that Deleuze was working intently on botany and was a very good observer. During 1784 Chaix repeatedly reported receiving specimens from Deleuze (Williams 1997, pp. 96, 113, 118, 120, 131).

Late in 1783 Danthoine also sent Chaix a shipment of unusual plants that he had been unable to find in Linnaeus, several of which also gave Chaix trouble. A camomile that Danthoine did not believe to be their common species, *Matricaria chamomilla* L., Chaix thought could be *Chrysanthemum inoderum* L., a *nom. illegit.*, which proved to be *Matricaria perforata* Mérat. (1812), found throughout Europe, especially in disturbed soils. Chaix was unsure about a *Galium* among Danthoine's plants, describing it as erect, tufted, and not over 1.5 inches tall. Villars suggested *Galium jussiei* Vill., which Chaix disputed. We find it published in 1788 as *Galium verticillatum* Danth. in Lamarck, stems 8–18 centimeters tall, erect (Williams 1997, pp. 113, 120, 131).

In 1786 Danthoine sent Chaix a *Melica* labeled *Melica imberbis folius setacis rigidis, panicula pyramidalis* Danth. Villars published it as *Melica ramosa* Vill. (1787), but it was likely one of the recognized variations within *Melica minuata* L. (1767), a Mediterranean species (Villars 1787, 2:121; Williams 1997, p. 179).

Chaix and Villars believed incorrectly that *Lonicera caprifolium* L. was the common honeysuckle of Dauphiné. When both Danthoine and Deleuze gave Chaix differing specimens of *Lonicera* in June of 1786, he apparently failed to recognize two species that were indigenous in Dauphiné and Provence: *Lonicera etrusca* Santi and *Lonicera implexa* Ait., both published after 1786 but likely collected by both Danthoine and Deleuze (Verlot 1872, p. 155; Williams 1997, p. 179).

When Villars published his *Prospectus de l'Histoire des Plantes du Dauphiné*, he explained his organizational method as “a mixed system” he believed to be appropriate for the limited number of plants in one province, the method he utilized again in the three volumes of the complete work, 1786–1789. In the preface of the first volume, submitted for examination to the Société Royale de Médecine, he

reiterated the description of his method and the justification for its compromises in considerable detail (Villars 1786–1789, 1:xxxiv–lxxiii).

The reviewing committee, Geoffroy, Jussieu and the abbé Tessier, issued a very fair summary of the volume but were quite properly critical of the new method:

According to him, this method is easier, simpler, and a more appropriate way to conserve the natural families. It should be pointed out to him that, as the number of stamens is not uniform in many plant families, they can be used in his method only by noting numerous exceptions, rendering the method less perfect and more difficult. . . . The art of simplifying a system of Botany lies not in the reduction of classes, but in distributing them according to a methodical order based upon well chosen genera characters, making them clear, precise, well characterized.

Except for the method, the critics believed that the work would be useful to botanists and recommended approval of the work by the Société and published under its privilege: 13 January 1786.

The critics also noted the catalogue of plants from the region around Gap by Monsieur Chaix, “a very learned botanist and one of Villars’ first teachers. Several critical notes regarding the determination of some questionable species indicate the good observer and an unpretentious man.” Villars inserted the entire report, unpagged, ahead of his preface.

In November of 1784 Villars had invited Chaix to prepare that catalogue as a measure of his gratitude for Chaix’s contributions, for such a specialized list was inconsistent with the general provincial organization. Chaix was delighted, putting together the first draft of his list by the following February with the title *Plantae Vapincenses, sive Enumeratio plantarum in agro Vapincensi a valle Valgaudemar adamiculum le Buech propè Segesteronum spontè nascentium, aut oeconomice securum* (Plants of Gap, or list of

plants in the area of Gap from the Valgaudemar Valley to the Beuch River near Sisteron, or in the house garden). It appeared in Villars, 1786, 1: 309–377, and reflected the organization in Chaix's herbarium (Villars 1884, pp. 305–306; Williams 1997, pp. 130–131, 133). The shadow over that happy publishing event was the prior loss of Villars' patron, Pajol de Marcheval, who had been transferred in 1784. It meant that Villars had to finance his publication and depend upon subscriptions and sales for any recovery.

Villars' kindness, moreover, had unanticipated consequences. On 13 December 1785, thus before the publication of the first volume, Chaix acknowledged receiving copies of his catalogue that he had not anticipated. They were separates, but repaged 1–78, and dated 1785. On 31 December 1785, he wrote to Villars that he had sent those copies to his bishop, to the subdelegate in Gap, to abbé Blanc; to his close friend, abbé François Gaude; and to Jean-Pierre Reynaud, curé de La Roche-des-Arnauds, keeping one for himself. If he had a seventh copy, he would send it to François Deleuze; a copy received and acknowledged by Deleuze (Williams 1997, pp. 162–163, 170).

Those seven separates, an alternate publication, had long been known without any botanist perceiving their significance (Rochas 1856, 1:194).³ The new species Chaix had published in his contribution were always cited as Chaix in Villars, 1786; whereas the separates had been published under an abbreviated title, *Plantae Vapincenses sive Enumeratio in Agro: Vapincensi Observatarum Stirpium*, and dated 1785. Since those separates had been distributed to readers, his new species required acknowledgement as his alone, as Chaix, 1785. This was first made clear by H. M. Burdet in 1981 by publishing a list of all the species on those 78 pages. To be sure, neither Villars nor Chaix intended an independent publication, nor were there international rules in the 1780s.

The modern international rules, however, are inflexible on priority (Perret and Burdet 1981).

Part 2

The following species from Burdet's list, arranged alphabetically, are those still held to be good. Their places in Villars (1786–1789) are added as the traditional reference for botanists:

- Carduus aurosicus* Chaix, Pl. Vap., 60. 1785; in Vill., Hist. Pl. Dauphiné, 1: 364. 1786.
Dianthus scaber Chaix, Pl. Vap., 27. 1785; in Vill., Hist. Pl. Dauphiné, 1: 331. 1786.
Gentiana ramosissima Chaix, Pl. Vap., 25. 1785; in Vill., Hist. Pl. Dauphiné, 1: 329. 1786; 2: 530. 1787.
Herniaria alpina Chaix, Pl. Vap., 75. 1785; in Vill., Hist. Pl. Dauphiné, 1: 379. 1786; 2: 556. 1787.
Hypericum hyssopifolium Chaix, Pl. Vap., 25. 1785; in Vill., Hist. Pl. Dauphiné, 1: 329. 1786; 3: 505. 1789.
Iberis aurosica Chaix, Pl. Vap., 45. 1785; in Vill., Hist. Pl. Dauphiné, 1: 349. 1786.
Juncus alpino articulatus Chaix, Pl. Vap., 74. 1785; in Vill., Hist. Pl. Dauphiné, 1: 378. 1786. *Juncus alpinus* Vill. (1787) is a synonym.
Juniperus communis var. *alpina* Chaix, Pl. Vap., 70. 1785 [*depressa*]; in Vill., Hist. Pl. Dauphiné, 1: 374. 1786. Var. *montana* Aiton is a synonym.
Lilium croceum Chaix, Pl. Vap., 18. 1785; in Vill., Hist. Pl. Dauphiné, 1: 322. 1786. → *Lilium bulbiferum* L. var. *croceum* (Chaix) Pers.
Pedicularis gyroflexa Chaix, Pl. Vap., 49. 1785; in Vill., Hist. Pl. Dauphiné, 1: 353. 1786; 2: 426. 1787.
Picris sprengeriana (L.) Chaix, Pl. Vap., 65. 1785; in Vill., Hist. Pl. Dauphiné, 1: 369. 1786. *P. s.* (L.) Poiret in Lam. (1804) is a synonym.
Plantago argentea Chaix, Pl. Vap., 72. 1785; in Vill., Hist. Pl. Dauphiné, 2: 302. 1787.

Prunus brigantiaca Chaix, Pl. Vap., 76. 1785; in Vill., Flor. Delph., 49. 1786.

Ranunculus trichophyllus Chaix, Pl. Vap., 31. 1785; in Vill., Hist. Pl. Dauphiné, 1: 335. 1786.

Rosa montana Chaix, Pl. Vap., 42. 1785; in Vill., Hist. Pl. Dauphiné, 1: 346. 1786; 3: 547. 1789.

Salix sericea Chaix, Pl. Vap., 69. [Dec.] 1785; in Vill., Hist. Pl. Dauphiné, 1: 373. 1786. [non Marshall, Dec. 1785]. *Salix glaucosericea* B. Flod. (1943) is a synonym.

Sedum ochroleucum Chaix, Pl. Vap., 21. 1785; in Vill., Hist. Pl. Dauphiné, 1: 325. 1786; 3: 680. 1789.

Viola pumila Chaix, Pl. Vap., 35. 1785; in Vill., Hist. Pl. Dauphiné, 1: 339. 1786.

Other species merit mentioning, usually published by others, but based upon material found later in his herbarium:

Androsace chaixii Gren. & Godren (1853), collected by Chaix in the Loubet Woods above Les Baux.

Centaurea ×*chaixiana* Rouy (1905), collected by Deleuze near Ventavon and sent to Chaix. He had published it as *Centaurea hybrida* Chaix, non All., Pl. Vap., 61 (1785), correctly calling it a hybrid of *C. calcitrapa* and *C. aspera*, thus restored by Rouy (Williams 1997, pp. 131, 182–183).

Hieracium chaxianum Arvet-Touvet & Gaut. (1902). Collected by Chaix in the Alps above Gap.

Lactuca chaixii Vill. → *Lactuca quercina* L. subsp. *chaixii* (Vill.) Celack (1960). Collected by Chaix near Les Baux, Rabou and Chaudun (Villars 1786–1789, 3:154).

Poa chaixii Vill. in L. (1786). Collected by Chaix near Chaudun (Williams 1997, p. 70).

Finally, Villars had published several of Chaix's species earlier in his *Prospectus*, which did not reappear in Chaix's plant list of 1785, but remain good species:

Potentilla cinerea Chaix ex Vill., Prosp. Hist. Pl. Dauphiné, 46. 1779, but inexplicably excluded from Vill., Hist. Pl. Dauphiné, 3, 1789.

Verbascum chaixii Vill., Prosp. Hist. Pl. Dauphiné, 22, 1779, collected by Chaix near Les Baux and Rabou.

Part 3

Preparing to publish the second volume of his immense flora, Villars submitted it for review by the committee of the Société Royale de Médecine. Despite some quibbles about specific descriptions, the review, 23 January 1787, was favorable: “The work proves that M. Villars is truly a botanist; that he knows the plants of Europe well, above all those of his province; and that he has studied them in nature through frequent botanizing, and also in both old and recent books. The work merits approval” (Villars 1786–1789, 2:unpagged). Villars was unable to rest on such approval from Paris and move on. He devoted several introductory pages to the defense of his mixed method and other perceived criticisms and did not give an inch. One senses his notion that he must enjoy some liberty from authority to form an independent system suitable to his province and intended readers. Was this simply a manifestation of provincial defiance of Paris or a democratization of taxonomy (Villars 1786–1789, 2:vi–ix)?

Among Villars' botanical disciples, Laurent Blanc was the first to disappear from correspondence. In the spring of 1785 he had found a borage at Baratier near Embrun and sent it to Chaix, who thought it to be *Lycopsis arvensis* L., very likely given the location; later transferred to *Anchusa arvensis* (L.) Bieb. (1808). Chaix sent him one of his seven separates in early 1786 but received no response (Williams 1997, pp. 141, 165).

By then a new correspondent had made his botanical interest known, Jean-Baptiste Martin, curé of the village of Le Saix. Martin had a good knowledge of Rozier's *Elémentaire*, Chaix reported to Villars, 23 July 1784, but needed Linnaeus to progress. A year later, 9 May 1785, Chaix asked Villars to order copies of *Philosophia Botanica*, *Genera Plantarum* and the two volumes of *Species Plantarum* for Martin. On 1 July 1785 he indicated he had carried the books to the village of Oze, to which Martin came from nearby Le Saix to pay the 30 livres requested by Villars (Williams 1997, pp. 119, 140, 144).

Chaix walked to Le Saix again that December to get the specimen of *Iberis linifolia* L. he had previously identified for Martin, that identification having become uncertain. Villars would publish it as *Iberis garrexiana* All., but one must suspect it was *Iberis saxatilis* L. (1756; Williams 1997, p. 161). Martin's desire to meet Villars induced Chaix to take him for a visit to Grenoble at the end of May, 1786, a lengthy and painful walk for Chaix. Martin took specimens he had collected to Villars, which Villars would acknowledge in his flora: *Lepidium latifolium* L. and *Telephinum imperati* L. (Villars 1786–1789, 1:349, 375; Williams 1997, p. 181).

In the summer of 1787 Chaix led Martin and Joseph Serre on a botanizing trip to La Grangette under the Pic de Bure, the region of Chaix's origin, but with an additional disciple, Jacques Meyer, vicar of La Bâtie-Neuve. The trip was for their instruction, Chaix not expecting to find anything new in a region so familiar to him (Williams 1997, p. 200). Serre, who had returned to Grenoble after his naval episode, had been recommended by Villars in 1785 to the new intendant, Gaspard-Louis Caze de la Bove, to provide medical service in La Roche-des-Arnauds, as there was no longer a surgeon between Gap and Serres. The assignment was made. A year later, 12 September 1786, Chaix reported to Villars that Serre had quite enough work, succeeding

with his operations and treatments, his patients being very satisfied with him (Williams 1997, pp. 147, 189).

Serre's first political experience followed in 1787 when he was sent to Grenoble during the establishment of the Provincial Assembly of Dauphiné, the new royal creation meant to administer the province under the supervision of the royal intendant. Sent by the comtesse de La Roche to make representations for her aristocratic interests, Chaix recorded that Serre was also chosen by his fellow citizens to reflect the interest of the Third Estate. Even so, he did not abandon his botanical interests. The following summer, June 1788, he accompanied Chaix on a trip to the Carthusian monastery of Durbon for an exchange of specimens with the vicar Dom Grangier. They found that he had been copying Villars' history of plants by hand from the copy in the monastic house to have a personal copy in case he should be transferred (Williams 1997, pp. 205–206, 212, 224).

Meanwhile, Deleuze had visited Chaix for several days in June of 1786 to discuss unclear species. Villars would publish Deleuze's particularly troublesome *Arenaria* as *Arenaria hybrida* Vill., noting at least three varieties of it. Later transferred to *Minuartia hybrida* (Vill.) Schischkin (1936), the species is still regarded as quite variable, notably in height, pubescence and size and shape of sepals, justifying Deleuze's uncertainty (Villars 1786–1789, 3:633). He had also seen a rose with yellow flowers between Le Pôet and Sisteron. Chaix recognized it as *Rosa foetida* J. Hermann, an escaped cultivar often naturalized. Several months later, Deleuze sent specimens and seeds of a *Chenopodium* from La Pôet, calling it *urbicum* L., which remains a good species for that region (Williams 1997, pp. 180, 186, 190).

Deleuze and Danthoine were botanizing together late in 1786 and sent Chaix an uncertain *Euphorbia* collected near Digne. Chaix determined it to be *Euphorbia peploides*

Gouan, published by that Montpellier botanist in 1765. Today, it is regarded to be a dwarf variant of *Euphorbia pepus* L. found in dry ground in the south. The following spring, Chaix joined Deleuze for collecting in an area between Le Pôet and Rosans, sending Villars a *Lathyrus inconspicuus* L. they had been pleased to find. The occasion proved to be the last time Chaix would see Deleuze, who gave no hint he was planning to leave the region. After a silence of over a year, he belatedly let Villars know in 1778 that he was in Paris (Williams 1997, pp. 193, 197, 211).

Danthoine visited Chaix that summer when Chaix was correcting proof for the third volume of Villars' flora, correcting not only Villars' Latin, but disputing some of his specific determinations. Both Danthoine and he agreed that *Euphorbia pilosa* L. was not the species Villars claimed, but a name given by Linnaeus to a Siberian plant. It could have been what would be called *Euphorbia villosa* Waldst. & Kit in 1800. Danthoine also insisted that *Hesperis hieracifolia* Vill. → *Hesperis laciniata* All. was not a plant of wheat fields as described, but only found on rocks. That congenial visit in the summer of 1788 would be their last (Williams 1997, pp. 215–217). The growing unrest in Paris was diverting provincial minds as well. Chaix noted on 6 July 1789 that "Serre remains close to me and his reputation increases. He has supplied me with many brochures about contemporary affairs" (Williams 1997, p. 228).

The Decree Prohibiting Monastic Vows in France, adopted by the National Assembly on 13 February 1790, caused Chaix to tremble: "I should have much preferred," he wrote to Villars, "that they had all been reduced to work, to withdrawal, and to poverty in accord with their original institution, ... and that the door should not have been closed to those who should want to embrace that life. Agriculture and the arts could have gained from that [solution], and society would have found in

them asylums for a sometimes inconvenient population" (Williams 1997, p. 237). He obviously feared that the secular clergy, even if widely still regarded as exercising a necessary and useful function, could suffer a similar legislative fate.

Villars, also concerned that the professional services he represented might be similarly overlooked in Paris, addressed an appeal to the National Assembly based upon his experience caring for the illiterate and impoverished population in the Alps. It testified to a conviction of genuine solicitude for the habitual distress of the peasant population. He had never lost sight of his own peasant origin as even the title of his brochure attested (Villars 1790).

His personal affairs at that moment were also alarming. He had led Chaix to believe that the costs for printing and engraving for the flora would not exceed 5,000 livres. Consequently, Chaix was frightened to learn in 1790 that Villars had already paid 8,000 livres to cover costs and that he still had 4,000 livres to be paid (Williams, 1997, p. 238). The dates of publication, moreover, became critical. The first volume, 1786, was entirely subscribed and sold, but mostly to people who became émigrés. The subsequent volumes, 1787 and 1789, were largely unsold. Villars had inadvertently made matters worse by withholding the third volume, ready in July of 1788, until September 1789 to take account of a recent publication on cryptogams. The Bastille had fallen by then. He never recovered much from sales. Given the expenses of his many field trips and for his considerable library, his efforts for a *Histoire des Plantes du Dauphiné* had absorbed all his means (Villars 1786–1789, 3:xxviii, xxi; Manteyer 1923, pp. 191–192; Rickett and Stafleu 1961).

In contrast, his protégé, Joseph Serre, was benefiting from the revolutionary upheaval. In March of 1790 he wrote to Villars that

he expected to go to Gap for the Federative Assembly, a patriotic league endeavoring to assume responsibilities left unattended as royal officials abandoned their posts (Williams 1997, p. 237). Expressing liberal, reformist views, he was elected a captain in the Second Battalion of the Hautes-Alpes volunteers. In that capacity he addressed his fellow citizens on his ideas of emancipation and liberty that were never extreme. His most important speech was delivered on 16 May 1792 during a session of the Amis de la Constitution of Le Buis-des-Baronnies. His efforts were successful. Along with five others, including Ignace de Caseneuve, constitutional bishop of Gap, he was elected to the National Convention during the Electoral Assembly that convened in Embrun from 2 to 6 September 1792. His success may have been attributable in part to Dominique Chaix, who was a member of that Electoral Assembly representing the canton of La Roche (Archives des Hautes-Alpes, Série L 118; Allemant 1906, pp. 259–260).

Chaix had been worried since 1790, when the orders of regular clergy had been suppressed, by rumors that parishes with fewer than 40 active inhabitants would also be suppressed. That would include Les Baux and deprive him of income. Consequently, he found some relief when the electors, by a vote of 60 out of 62 voting, named him curé of La Roche-des-Arnauds, preserving his income but separating him from his beloved garden (Guillaume 1909, p. 34).

The decree of 18 August 1792, which provided for the summoning of a National Convention after the overthrow of the monarchy, also suppressed all faculties and titles in one grand egalitarian gesture. Villars was thus stripped of his degrees and titles. In effect, the practice of medicine became free, authorizing charlatanism. The resulting anarchy was intolerable, forcing the military, and then the civil, authorities to restore the

qualified to their military and civil medical titles. Villars, who had been outspoken about charlatanism, was especially affected by the experience. He was said to have become embittered, anxious and increasingly unsociable thereafter (Joyeux and Dejarnac 1969, p. 131).

For Villars was not only a physician but also a botanist, and the incident not only rekindled the pain of the financial failure of his flora but also gave evidence that his scrupulous efforts to expose the potential dangers from ignorant herbalists had gone unnoticed. A flora by a physician in the 18th century generally included commentary on the expected medicinal properties, or virtues, of the plants described. Before the 19th century, when the study of physiology and pathology first became the focus of instruction in medical schools, physicians had their instruction only in herbal or chemical remedies to soothe their patients' pains and injuries.

Dr. Villars had felt obliged to provide his readers, some of whom might be beginning medical students, with information about traditional virtues of plants in his natural families. He had remarked, almost as a rule, that the plants in the same genus have analogous virtues; those within a family also having similar rapport. Such were the general principles that appeared to serve as a base for the medical materials drawn from plants. One must not forget, he added, that there is no rule without exceptions: "These general observations can be more or less sound and can be contested" (Villars 1786–1789, 1:126–130, 150).

Within the body of his text, moreover, Villars frequently intruded remarks emphasizing caution. From extensive botanizing throughout Dauphiné, and having emerged from the peasantry, he knew peasant ignorance of medicinal plants firsthand. To cite only one example, he noted experience with *Ranunculus glacialis* L., commonly taken in a decoction of

water by alpine peasants to counter pleurisy and rheumatism. As virtually all the plants in the Ranunculaceae, the buttercup family, were well known for their vegetal poisons, he feared the results, sooner or later, were apt to be pernicious (Villars 1786–1789, 3:738). If one recalls Prefect Bonnaire's mortality figures for Hautes-Alpes, one could add the contributions of medical herbalism to widespread filth as explanations for the brevity of average lives.

A blunter assessment of the situation was given in 1807 by Dr. Joseph Roques of Montpellier, who prepared an alternative medical herbal to those that were standard in the 18th century. He rejected all plants that his experience had not validated, adding others usually ignored or little appreciated, arguing that the subject could only be successfully covered by those actively engaged in clinical medicine. He cited traditional categories as *cephalic*, *anti-epileptic* and *hepatic* plants, as usually arranged in medical-school gardens, as vague and imprecise. They provided empty verbiage to numerous practitioners who had not received the first principles of a liberal education and a boon to charlatans. He included a plant list with descriptions (Roques 1807–1808, 1:v–vii).

In 1793 Villars had published a quite different list of plants as a patriotic contribution, calling attention to plants available for nourishment in a time of economic troubles but not conventionally consumed. He explained that the project had been encouraged initially by members of the Departmental Directory of Isère for the benefit of local citizens. Villars anticipated criticism from housewives, having consulted some of them in advance, but he did not anticipate the charge that he had slandered bread. His argument had simply been that many plants growing naturally in Dauphiné had culinary merit and that bread need not be their sole vegetal nourishment. For anyone with a sophisticated knowledge

of plants (and there were almost none among the city's *sans-culottes*), his possible malicious intent could have become apparent, as he had included a number of species used for purgative purposes. In any case he aroused popular anger, a reaction to be avoided at any time, but especially in revolutionary times. Had he lived in Paris, the recommendations could have cost him his liberty, his position and even his life.

In Grenoble, however, the most public response was to the end of his plant list where he observed that mosses could be regarded as a species of vegetal wool suitable to serve as cover over Republican beds, as Linnaeus had observed among the Lapps. For that recommendation, he was lampooned in a highly ribald popular song referring to beds of moss and frolicsome adventures on them as recommended by Villars (Villars Year II, p. 23; Chabert 1897; Bonner 1959).

His disciple, the surgeon Serre, would also experience the risks to life under the new Republic. The National Convention opened on 20 September 1792, after the massacres of 2–7 September. Prisons had been opened, and many clergy had been dragged out and murdered by a frenzied mob. A general killing of prisoners followed. As this dreadful violence occurred after word that a Prussian army had reached the frontier, bent upon restoring the king, the event may have been a spontaneous outburst of popular fear and hysteria. As Danton, the new minister of justice, did nothing to interfere, Jacobin complicity was inevitably suspected. Consequently, the moderate Serre chose to sit on the right in the Convention with the Gironde (Allemand 1906, pp. 259–260; Patrick 1972, p. 51).

News of the September massacres was sent by Serre to the Electoral Assembly in Hautes-Alpes, characterized as a lurid description of his experiences and the general condition of the Convention. Curé Chaix had been elected to preside over that assembly as one of its

oldest members (Archives des Hautes-Alpes, Série L, 117). Responding to Serre's report, the electors of Hautes-Alpes signed an address in November calling for "terrible vengeance against those bloody agitators who recalled the frightful day of despotism by the furies of anarchy if their heads do not fall under the blade of the law" (Patrick 1972, pp. 218–219).

The disposition of the fallen king was among the early concerns. Both Serre and Bishop Caseneuve voted for the guilt of the king, but both sided with Girondists in opposing the Jacobins who favored execution. When the voting took place on 5 January 1793, Serre spoke to explain his vote: "I, too, love my country, and I also hate tyrants; but I also have my conscience. My fatherland, my love of liberty, and my conscience all dictate to me that the penalty should be detention during the war and banishment upon the restoration of peace." The majority voted for death. When a delay of execution was proposed, followed by an appeal to refer the verdict to the nation, the delegates from Hautes-Alpes voted for both, but in vain (Allemand 1906, p. 260; Patrick 1972, p. 333).

The rift between the Jacobins of Paris and the rural Girondists had been exposed. Any possible reconciliation was doomed when our young botanist from La Roche-des-Arnauds (he was only 31) rose in the Convention to attack the Jacobin demagogue Jean-Paul Marat, saying that he was astonished that "this being" was still in the heart of the Convention, thus provoking Marat's indictment for trial before the Revolutionary Tribunal on 5 April 1793, where he was inevitably acquitted on 24 April 1793.

After this imprudence, the most radical fringe of the Jacobin faction plotted the purge of the Girondist leaders, culminating in the decree of 2 June 1793 providing for the arrest of 43 Girondists. Both Serre and Caseneuve voted against it, thus numbering their days. They were seized and incarcerated

along with the remaining Girondists on 2 July 1793, only saved from execution by the fall of Robespierre, 27 July 1794, or 9 Thermidor (Allemand 1906, pp. 261–262; Patrick 1972, pp. 340, 344).

One of the features of the dismemberment of the revolutionary government after 9 Thermidor was the dispatch of Convention members to supervise the removal of Jacobin terrorists from local municipalities. Serre of Hautes-Alpes and Pierre Auguis of Deux-Sèvres were sent almost immediately to Marseille where the Terror had been particularly violent. Their purges and their release of suspects inflamed Jacobin resistance, requiring reinforcements to be sent to Marseille. During disturbances on 26 September 1794, Serre and Auguis were besieged in their house and roughly handled by rioters. That evening they appointed a military commission that ordered five executions. Other Jacobin terrorists were arrested and sent to Aix or Paris for disposition, and the president of the purged Jacobin club committed suicide (Lefebvre 1965, pp. 15, 25–26). Sobered by his experiences with revolutionary violence, Serre was henceforth known as a proponent of order and moderation.

The transformations brought by the French Revolution dissolved the unity of Villars' small band of Dauphiné botanists. Anyone with knowledge of political events became concerned for the preservation of position and subsistence. The parish curés among them were the most obviously confronted by the revolutionary requirement to subordinate the authority of Rome to that of Paris. Chaix had no trouble taking the civil oath in 1791 as it did not involve changes in dogma (Williams 1997, p. 245). In 1793, however, when he learned from Villars that Serre had been arrested, he was dismayed: "He may have committed some imprudence, but they will never convict him for a national crime. His patriotism is

known throughout his department. ... He may have erred in deed, but his intentions have always been upright. I am as assured of it as if I had read his soul" (Williams 1997, p. 239). A two-year lapse in the Chaix-Villars correspondence followed, unprecedented in their long collaboration.

During that interim, the inroads made in old Dauphiné by Robespierre's Cult of the Supreme Being, which treated Christianity as an intolerable enemy, led Chaix to resign from his parish in La Roche-des-Arnauds in 1794. Lacking personal property for his support, he opened proposals for the sale of his herbarium, his manuscripts and his books. As they remained unsold at the time of his death in 1799, one can only suppose, lacking evidence, that Villars or Serre provided his subsistence. On 24 July 1799 Serre wrote to Villars: "You will not learn without grief of the distressing event that deprives us of the best of friends forever. Citizen Chaix, that venerable old man, suffered an attack of apoplexy on 21 July while he was celebrating mass. He expired the following night... and is mourned quite generally by all the citizens of the commune" (Williams 1997, p. 280).

For Villars, that loss simply compounded the setbacks he had experienced since the financial failure of his flora and the infuriating egalitarian legislation that eliminated his degrees and titles. Even an encouraging letter from Emmanuel-Joseph Sieyès, 22 March 1796, the president of the Institut National des Sciences et Arts, notifying him that he had been elected *Associé non résidant*, thus a correspondent, led to a negative outcome. In response to the election, he prepared a long report to the Institut. Acknowledging that vast numbers of new species had been described in the course of the 18th century, and that immense progress had been made toward their classification thanks to the insight of Bernard de Jussieu, he asserted that such vigor had

not been matched by rigorous cataloguing. Not only were the great number of species in private herbaria unknown to the scientific establishment, but a catalogue for the Jardin des Plantes had not been made since 1626. To know what we lack, he continued, we must know what we have. Catalogues must be made for every collection, from which a new *Pinax* could be made: that is, a table of genera and species known up to the moment, with an alphabetical index, and with a simple indication of their distinctive characters.

In 1777, Villars continued, he had asked Bernard de Jussieu in Paris what had been the obstacle to producing such a rational order. He replied, "It is the florists. The garden catalogues, or the plants metamorphosed by art and culture, have so changed forms, that today one can no longer distinguish varieties from species." True enough, Villars added, the hand of man through cultivation and civilization often disfigures the productions of nature. "We have forgotten our own birthplace; the origin of wheat, our principal food, is similarly unknown. All the more reason, beginning now, to settle the characters of the vegetal productions we now possess, whether indigenous or exotic" (Villars 1801, pp. 14–19; Monteyer 1922, pp. 182–186). (For reasons obscure, the Institut did not recommend Villars' report for publication. Five years later, he had it published in Grenoble.)

His confidence in the significance of that report, requiring publication, was related to his recent observation of a spontaneous hybrid in the botanical garden in Grenoble. While not publishing his observations of it, he did not hesitate to express his views in private correspondence with Picot de Lapeyrouse in Toulouse. The matter arose when the latter was preparing a monograph on *Saxifraga* and requested specimens of that genus from Villars.

In a letter dated 24 July 1793 Villars described a new hybrid between *Saxifraga*

rotundifolia L. and *Saxifraga cuneifolia* L., and perhaps *Saxifraga hirsuta* L. All three alpine species had been planted along an east-west wall and had been growing undisturbed for six years. That year, however, a new hybrid species had appeared that he could describe but not explain. Nature, he added, is always pleased to cast a veil over those operations: "It likes to be concealed from our eyes in order to stimulate our imagination, and also perhaps to vary and embellish its productions. A final consideration, which escaped me earlier, is that I imagine the genus *Saxifraga* augmented among us with several species or varieties of new creation. I mean to say, hybrid species born from two other neighbors."

A few days later he wrote that the fruits of their hybrid saxifrage had aborted but that "the plant grows well, its petals persisting even longer than those of *rotundifolia*, *hirsuta*, and *cuneifolia*, its parents and neighbors." In a third letter, 9 January 1796, he reported that "our hybrid saxifrage maintains itself, multiplying by tufts without seeding, rarely flowering." On 17 May 1796 he added that the garden still contained a *trifurcatus* ranunculus, probably a cross of *Ranunculus platanifolius* L. and *Ranunculus pyrenaicus* L. "It spreads amply, branches out, flowering without reproducing." Villars, in sum, must be counted among the first to risk breaking with the strict Linnaeans on the matter of speciation. He was critical of Antoine Gouan and Pierre Cusson of Montpellier in particular for being determined to reduce everything to established Linnaean species. "Cusson," he wrote, "has only botanized in his cabinet" (Timbal-Lagrave 1858).

Villars' letters to Lapeyrouse after the death of Chaix in 1799 also exposed his deepening sadness and worry that the changes imposed by the political climate would soon deprive him of income. The Ecole Centrale of Grenoble, in which he taught natural history during the six years it functioned, 1796–1802, was succeeded

by a lycée organized without provision for a professor of natural history (Callot 1967). In 1803 the military hospital in Grenoble, where he practiced, was closed, and all military patients were transferred to the civil hospital.

His career seemed to be broken, and he contemplated for a time returning to his native country, Champsaur, to a faithful clientele and to his beloved plants. Instead, he made himself available for a position in a new medical school being opened in Strasbourg (Joyeux and Dejarnac 1969, pp. 131–132). He announced his departure for Strasbourg in a letter to Laperouse, 18 January 1805:

After thirty years of sojourn, the city of Grenoble has left me without hospital and without lodging. I created the School of Surgery and Botany; I had bought my small lodging by having it restored. This broke me away from my habits, from my friends, and from my cherished plants. . . . I have the madness to believe that I have been useful. Plants still come to me from Switzerland and from Germany, but already I have become too constrained to pay postal costs for letters and packages (Timbal-Lagrave 1860, pp. 689–690).

A letter from Nompère de Champagny, the minister of the interior, 16 February 1805, notified Villars that the emperor had appointed him professor of botany at Strasbourg (Manteyer 1922, p. 198). If Strasbourg provided him a sanctuary, and although he did publish a catalogue of its medical school garden (Villars 1807), his letters to botanical correspondents reveal that he never reconciled himself to the divorce from Dauphiné, finding Strasbourg and its climate uncongenial for the remainder of his life. He would have done better to have lived out his days, a country doctor in Champsaur (Williams 1997, p. 285).

Two of his earlier associates in Dauphiné, Joseph Serre and François Deleuze, survived the revolutionary turmoil to become useful citizens. Serre, after experiencing a second

disillusioning political moment during the Directory in the Council of Five Hundred between 1795 and 1798, thereafter devoted himself to agricultural and industrial reforms in Hautes-Alpes. Notable among his efforts was a 56-page paper on the subject of crop rotation in place of periods of fallow (Serre 1805). His arguments reflected his knowledge of the successful experiments by Picot de Lapeyrouse to create artificial meadows using lucernes and clovers to enrich soils (Amanieu 1959).

In 1813 he presented the departmental Société d'Emulation a hydraulic pump of his own invention called the Hydro-Serre, designed to raise water above its level for irrigation. It was said to provide sufficient water for the irrigation of two metric acres [about 2½ English acres]. His interest was related to his development of fine gardens and orchards in La Roche-des-Arnauds. At the time of his death in 1831 he was subprefect in Embrun. His herbarium became the property of the seminary of Embrun (Miquel-Dalton 1903; Allemand 1906).

As for François Deleuze, his last communication with Chaix, 5 December 1786, ended a congenial collaboration of over six years. Deleuze had gone to Paris sometime in 1787. The brief autobiographical details he would not publish until 1823 were not entirely reliable, given the passage of time. They give no hint how he first secured employment in the Muséum d'Histoire Naturelle (Deleuze 1823, p. 163). It is probable he introduced himself to André Thouin, the chief gardener, a supplier of plants and seeds to Chaix over many years.

The establishment of the National Assembly in 1789 had provided the professors in the Muséum Royal d'Histoire Naturelle an unauthorized opportunity to discuss an alternative organization, meaning to rid themselves of a royal intendant. Their plan for reorganization, submitted to the National Assembly in 1790, was not formally enacted

until 10 June 1793 by the Convention. By eliminating the name *royal* in the Muséum's title, the position of royal intendant was also eliminated. No more royal courtiers like the despised Buffon selected to preside over an institution of scholars! The Jardin du Roi was transformed into the Jardin des Plantes, thus also forestalling a threatened Jacobin attack on the garden as a royal threat to the Republic (Cap 1854; Hamy 1893).

Four of the revised professorships, or chairs, went to plant specialists: René Desfontaines, Antoine-Laurent de Jussieu, André Thouin and Gérard van Spaendonck; and four aides-naturalists were also designated, one of them being Deleuze. That appointment defined his botanical career over many years as an aide to Desfontaines, L'Héritier de Brutelle, A.-P. de Candolle and Adrien de Jussieu.

This accounts for how Candolle became aware of Deleuze's favorable opinion of Danthoine's botanical learning and for his decision to honor him with a new genus of grass, *Danthonia*. *Festuca decumbens* L., Sp. Pl., 1: 75 (1753), recognized as a *gramen montanum avenaceum*, a mountain oat grass, was transferred to *Danthonia decumbens* (L.) DC. in Lam. & DC., Fl. Franç., ed. 3, 3: 33 (1805). That third edition, in fact, was written by Candolle alone, as it was revised to conform to the Jussiaean classification that Lamarck would not recognize.

On 24 June 1788, curé Chaix had written: "In Les Baux recently, near the spring, I came upon the unfortunate decumbent fescue, previously unknown to me, whose discovery was very delightful" (Williams 1997, p. 213). Its better fortune dated not only with Candolle in 1805 but also with two additional genera recognized later: *Danthoniastrum* (Holub) Holub, in the Balkans and the Caucasus; and *Danthonidium* C. E. Hubbard, in India.

Deleuze's assistance extended to serving as secretary to the professors preparing for

the publication of the *Annales du Muséum National d'Histoire Naturelle*, which he edited from 1802 to 1813. He used its pages to bring honorable notice to two deserving botanists, Joseph Dombey and André Michaux (Deleuze 1804a, b), as well as to an extensive history of botanical gardens (Deleuze 1907; Williams 2011). His two volumes published in 1823 remain an important source on the troubles during the revolutionary years when the Muséum National d'Histoire Naturelle in Paris was saved from vandalism and reorganized (Deleuze 1823). Deleuze's service as librarian of the Muséum, 1828–1834, was his final appointment. He died in 1835, the last of Villars' botanical tribe in Dauphiné.

Notes

1. Written in 1800.
2. There is a hint in Bory de Saint-Vincent (1819) that Faujas's association with Buffon contributed to his later reputation as an outsider at the Jardin des Plantes.
3. I confess to be among them, having seen the copy sent to the subdelegate, Pierre-Joseph Delafont, bound with the letter of presentation, in the archives of the Département des Hautes-Alpes in Gap, catalogued Z Guillemain 6005 (53).

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