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## Gouan and Guérin: Professor and student

Roger L. Williams

### Abstract

This article is divided into two parts, one on the professor, the other on his student. The professor, however, published the plant lists of both men in appendices of his book, *Herborisations des Environs de Montpellier* in 1796, a placement that led inadvertently to both lists being overlooked by subsequent readers. Gouan's list, in Part 1 of the article, described species he had planted in the arid region around Montpellier to re-vegetate the deforested terrain, a remarkable undertaking by an individual. Part 2 is devoted to the route his student, Guérin, followed during the first major botanical exploration of Mont Ventoux, the prominent peak in western Provence. His plant collections were grouped by distinct locations on the mountain and published by Gouan using Guérin's nomenclature. I have reduced a few of Guérin's plant names to synonymy to conform to current usage in Europe. The absence of any mention of either man's efforts in Charles Martins' lengthy description of the Jardin des Plantes of Montpellier, 1854, testified to their obscurity.

### Part 1

Antoine Gouan (1733–1821; Fig. 1), born in Montpellier, chose medicine for a career, having perceived that it was still the key to the study of natural history, his first love. He completed his doctoral degree in 1752, the doctoral committee chaired by Antoine Magnol (1676–1759). François Boissier de la Croix de Sauvages (1706–1767; Fig. 2) had been Gouan's primary instructor in medicine, also teaching him botany. Upon graduation, Gouan became a plant demonstrator in the Jardin du Roi in Montpellier (Fig. 3), never establishing a medical practice.

Sauvages had received his medical degree in 1726 and had been a professor of medicine beginning in 1734. Almost at once, he began the composition of a flora of Montpellier, arranging the plants according to the form of their leaves: *Methodus Foliorum, seu Plantae Florae Monspeliensis juxta Foliorum Ordinum* (The Hague, 1751). Thereafter, he came under the influence of Linnaeus (1707–1778; Fig. 4), achieving a close friendship with him, and began featuring the Linnaean system in his teaching. Sauvages then also introduced the Linnaean plant order into the Jardin du Roi of Montpellier.

Linnaeus learned about Gouan from Sauvages. Forty-two letters from Linnaeus to Gouan, between 1759 and 1772, were preserved in the medical school archives of Montpellier. The initial letter concerned insects that both men were studying at the time, especially silkworms. The correspondence next turned to fish, a blenny in the genus *Blennius*, revealing that both men were using the ichthyological method of Peter Artedi, Linnaeus' closest friend when the two were university students in Uppsala. At the time both students were seeking natural orders of classification. After Artedi's sudden death in 1735, his *Ichthyologia* was prepared for publication in 1737 by Linnaeus (Blunt 1971, pp. 31–32, 105).

In a letter dated 15 December 1761 Linnaeus indicated that he had been able to obtain seeds from his plantings of *Linnaea borealis* L. but that the seeds had never germinated. That northern European species, said to be the favorite plant

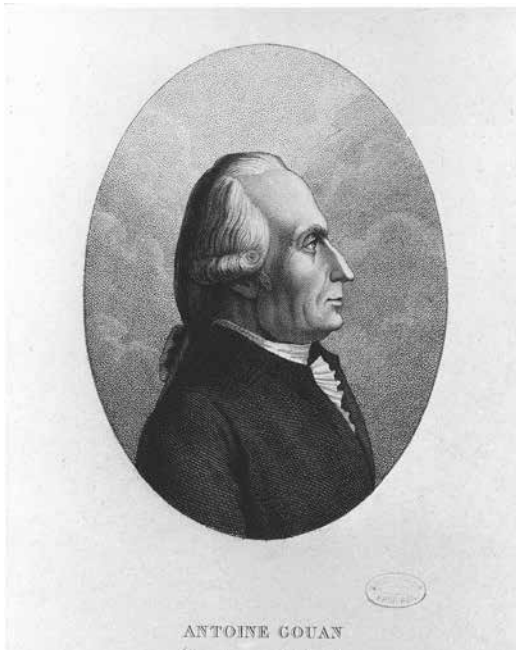


Figure 1. *Above*, Antoine Gouan (1733–1821), photographic reproduction, 17.5 × 12.5 cm, after a stipple engraving by Ambroise Tardieu (1788–1841), Hunt Institute for Botanical Documentation Archives portrait no. 1.



Figure 2. *Above right*, François Boissier de la Croix de Sauvages (1706–1767), bust in Jardin des Plantes, Montpellier, France, photograph by Walter H. Hodge (1912–2013), Hunt Institute for Botanical Documentation Archives portrait no. 1.

Figure 3. *Page 7, left*, Antoine Gouan (1733–1821), bust in Jardin des Plantes, Montpellier, France, photograph by Walter H. Hodge (1912–2013), Hunt Institute for Botanical Documentation Archives portrait no. 2.

Figure 4. *Page 7, right*, Carolus Linnaeus (1707–1778), engraving by C. E. Wagstaff after an oil painting by L. Pasch after an original by A. Roslin, 1775, at the Royal Swedish Academy of Sciences, Stockholm, for John Eadie (1810–1876) and John Francis Waller (1810–1894), *The Imperial Dictionary of Universal Biography: A Series of Original Memoirs of Distinguished Men of All Ages and All Nations* (London, W. Mackenzie, 1857, vol. 3, after p. 206), Hunt Institute for Botanical Documentation Archives portrait no. 20 and Library call no. L15 I34.

of Linnaeus, extended southward only in high mountains. Gouan replied that he had only one specimen of the species in his herbarium and that it had come from the Esperou region in the Cévennes.

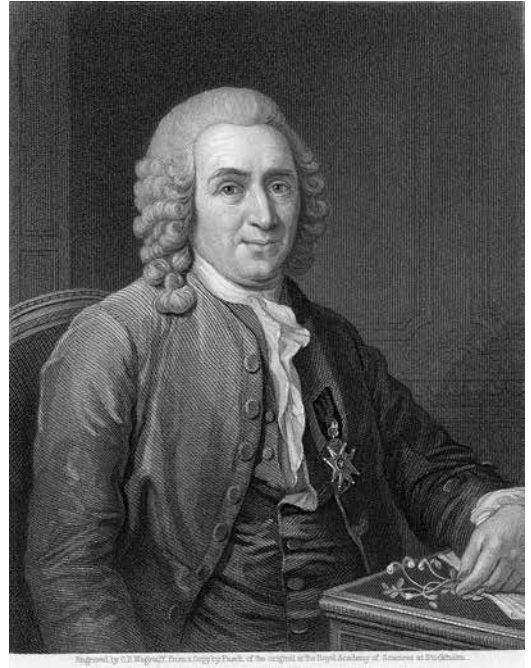
The following year Gouan published the first of his major works, his description of the Jardin du Roi in Montpellier, reflecting the Linnaean plant order introduced by Boissier de Sauvages. Thus, Gouan became the first author to publish a flora in France using both the Linnaean system and binomial nomenclature (Gouan 1762). Upon receiving a copy, Linnaeus replied: “Your work pleased me all the more as it opened the route to the natural orders by describing the regular habit of plants” (Martins 1854, pp. 36, 41). It seems apparent that Linnaeus referred to the preparation of the final version of his *Methodi Naturalis Fragmenta*, 58 natural orders published in 1764.

Gouan’s stubborn adherence to the Linnaean sexual method for the remainder of his life, despite the growing influence of the Jussiean



natural method, eventually aroused criticism, perhaps accounting for why a chair of botany, which he anticipated, was never created for him at Montpellier. Charles Martins' observation that Gouan had all the qualities of an excellent naturalist describer, gifted with great sagacity in the distinction of species, but lacked the philosophical (intellectual) genius of his predecessors at Montpellier, reflected contemporary opinion.

Gouan's second major work on the flora of the Montpellier region in 1765 stimulated increasing correspondence and exchanges of specimens with notable botanists: Albrecht von Haller (1708–1777), Jean-François Séguier (1703–1784) and Dominique Villars (1745–1814; Fig. 5) in particular, reflecting the fame of the Montpellier area as a collecting site since the 16th century (Gouan 1765; Amoreux 1822). The death of Boissier de Sauvages in 1767 intensified an unseemly squabble over succession to positions begun the previous year following the death of Dr. Antoine Fizes,



which was only resolved by the intervention of Louis XV, who appointed Gouan to Sauvages' chair on the faculty of medicine of the University of Montpellier. If not a chair in botany, Gouan would use the position to give lessons on natural history. He would retain that position until the closure of the university by the Revolution in 1792 (Dulieu 1967).

A peculiar genre of criticism emerged in Gouan's correspondence with Jean-Jacques Rousseau (1712–1778), expressions of Rousseau's preference for a sentimental rather than a scientific botany; as well as his hostility to medicinal references, unpleasant reminders of diseases. "I have bad eyes," Rousseau wrote on 28 May 1769, "a bad loupe, extremely clumsy fingers, the analysis of fructification wearies me, repels me, exhausts me, and loses me. I believe the methods of botanists are very good for the classification of plants already known. But I am convinced that one for their study is lacking. That is why you other savants, who only write for each other, have been



Figure 5. 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.

unable to see [the matter] up to now. [John] Ray seems to have approached that elementary method more than any others, but he ridicules us when he included the [medicinal] virtues of plants among the characters essential to know them.” In his letter of 6 October 1769 Rousseau included the author of *Hortus Monspelienis* and the *Flora Monspeliaca* “as have written only for the learned, even if very well done” (Amoreux 1822, pp. 705–706).

Gouan did not like to travel, limiting himself mainly to botanizing in the neighborhood of Montpellier. He did, however, go to Perpignan twice, in 1766 and 1767, as a member of a

commission appointed to recommend a plan for a public garden, giving him the opportunity to botanize in the eastern Pyrenees. He recorded the results in a folio of 85 pages, including 28 plates drawn by him. Albrecht von Haller had the engravings published at his own expense (Gouan 1773). Gouan honored two of his companions on the trip: Bourgat, a physician; and Raoul, a pharmacist, both with species in the Umbelliferae: *Eryngium bourgatii* Gouan, *Obs. Bot.* 7. 1773; *Angelica razulii* Gouan, *Obs. Bot.* 13. 1773.

Pierre-Joseph Amoreux (1741–1824), physician and botanist, the medical school librarian in Montpellier, was Gouan’s closest associate over many years. He seems to have been aware that Gouan’s determined adherence to the Linnaean system was not a service to students. He thought Gouan’s intransigence to be strange as Gouan had made a trip of six months to Paris in 1776. He had made an effort to meet leading savants in the capital, notably Bernard de Jussieu (1699–1777), Louis-Guillaume Lemonnier (1717–1799), André Thouin (1747–1824) and Georges-Louis Leclerc de Buffon (1707–1788; Fig. 6). Gouan, in short, could not have been ignorant of advances in natural classification, advances by which Paris soon surpassed Montpellier as the primary center for botanical research.

Having published a lengthy history of fishes in 1770, Gouan recalled his most memorable discussion in Paris to have been with Buffon on the generation of fish (Gouan 1770). Buffon had argued that copulation certainly occurred among fish as the sexes were quite apparently distinct. His cook had told him, moreover, that he had opened a carp that was hermaphrodite, the sexual organs visible. Gouan had answered only that the carp must have been a monstrosity, an exception to the general law, such as the viviparous fish that had been found in Mexico (Amoreux 1822, pp. 675–676).



Readers familiar with Gouan's published works have overlooked his guide to botanizing in the vicinity of Montpellier for the probable explanation that it was meant as a textbook for local students, not for scholars or taxonomists. That book contained, however, an epilogue that described Gouan's efforts to restore vegetation to the wastelands around Montpellier, denuded by deforestation during past centuries (Gouan 1796, pp. 227–242). By the 18th century agronomic savants suspected that repeated cuttings had reduced the fertility of timbered soils, making them unsuitable for the native trees of the past. They recommended experimentation with exotic trees and shrubs to find species suitable for naturalization.

In 1796 Gouan warned that his region no longer provided the abundance of plants described by earlier authors, such as Pierre Magnol (1697). In particular, the Bois de Grammont, which the Bauhin brothers, Jean (1541–1612) and Gaspard (1560–1624), had mentioned with such enthusiasm in the 16th century, no longer provided all the plants they found there. The Bois de Grammont, or Aigremont, had been at the base of the Montaubero, the long extended hill running from the northwest to the southeast of Montpellier. It had been covered by live-oak (*Quercus ilex* L.), an evergreen tree that could reach a height of 25 meters, as well as some pine. That woodland had been cleared by the early 18th century, leaving only arid wastelands in many places, locally called *garrigues*.

Beyond the species already lost, another threat to the propagation of plants, about which Linnaeus had earlier warned, was the *insatiable avidity* leading botanophiles to make great collections, taking plants in great quantity when in flower, removing the resources for the following years. Consequently, *for the love of science and the public utility*, Gouan, aided by Amoureux, undertook a personal campaign to spread the seeds of non-native plants (exotics)



Figure 6. Georges-Louis Leclerc de Buffon (1707–1788), stipple and line engraving, 22.5 × 15.7 cm, by Zecchino after an original by Bosio, Hunt Institute for Botanical Documentation Archives portrait no. 3.

to counteract the losses (Gouan 1796, pp. vii–ix, 135).

The seedings began in 1767, continuing until 1772. The lists of the species published by Gouan showed a total of 781 plantings, the seeds evidently harvested from the Jardin du Roi. Since a substantial portion of the species listed can be identified as indigenous to other regions in France, Gouan's conception of the *exotic* is unclear. The species listed below, consequently, were unmistakably exotic. Any of them found naturalized today may well date from Gouan's and Amoureux's introductions (Gouan 1796, pp. 227–242).

7 February 1767: In the vineyards and garrigues between La Colombière and Castelnaud, northeast of Montpellier:

- Solanum bonariense* L. Argentina
- Belamcanda chinensis* (L.) DC. East Asia
- Hemerocallis fulva* L. China
- Canna indica* L. West Indies
- Polygonum orientale* L. East Asia
- Heliotropium indicum* L. Brazil
- Physalis pubescens* L. North and South America
- Datura ferox* L. East Asia
- Nicandra physalodes* (L.) Gaertn. Peru
- Panicum miliaceum* L. China and Central Asia
- Sorghum bicolor* (L.) Moench Tropical Africa
- Abutilon theophrasti* Medik. East Asia
- Abelmoschus esculentus* (L.) Moench Tropical Africa

17 March 1767: In the garrigue and ravines from Pont de Ricoulon to the right of the main road from St. Jean de Védas, southwest of Montpellier:

- Sesamum indicum* L. Southeast Asia
- Acorus calamus* L. Turkey
- Silene gigantea* L. Near East
- Hemerocallis fulva* L. China

13 February 1768: Plants sown in a line along the small road from Montpellier to the town above Castelnaud, northeast of Montpellier:

- Trifolium melilotus cretica* L. → *Melilotus tauricus* (M. Bieb.) Ser. Turkey
- Phalaris canariensis* L. Canary Islands and Northwest Africa
- Hyoscyamus pusillus* L. Southwest or East Asia
- Lepidium sativum* L. Egypt
- Senecio elegans* L. South Africa
- Atropa physalodes* L. → *Physalis peruviana* L. South America
- Datura fastuosa* L. → *Datura metel* L. Central America
- Malva coromandeliana* L. → *Malvastrum*

*coromandelianum* (L.) Garcke North America

- Trifolium melilotus polonica* L. → *Melilotus polonica* (L.) Pall. Central Asia
- Rudbeckia laciniata* L. North America
- Calendula hybrida* L. → *Calendula stellata* Cav. North Africa
- Sinapis juncea* L. Asia

8 April 1769: Within 100 paces from the Pont de Ricoulon, along the right side of the road, into the garrigue above the bridge, southwest of Montpellier:

- Dracocephalum moldavica* L. Siberia and East Asia
- Pastinaca balearica* [sic] → *Pastinaca lucida* L. Balearic Islands
- Hesperis africana* L. North Africa
- Convolvulus scammonia* L. Turkey
- Astragalus galegiformis* L. Caucasus
- Cynosurus indicus* L. → *Elensine indica* (L.) Gaertn. Tropics
- Trianthema portulacastrum* L. West Indies
- Malva caroliniana* L. → *Modiola caroliniana* (L.) G. Don North America
- Ixia chinensis* L. India
- Crepis alpina* L. Southwest Asia
- Bidens pilosa* L. South America
- Atropa physalodes* L. → *Nicandra physalodes* (L.) Gaertn. Peru
- Dracocephalum nutans* L. Central Asia
- Trifolium melilotus indica* L. → *Melilotus indica* (L.) All. India
- Garidella nigellastrum* L. Southwest Asia

1 October 1769: On the left side of the Pont de Ricoulon, near the river bed [47 seedlings, mostly natives]:

- Malva caroliniana* L. → *Iliamna rivularis* (Douglas ex Hook.) Greene North America
- Cineraria siberica* L. → *Othonna siberica* L. → *Senecio integrifolius* (L.) Clairv. ssp. *tundricola* (Tolm.) Chater Siberia
- Anethum graveolens* L. India, Southwest Asia
- Panicum coloratum* L. North America

8 October 1769: Along the Lez River, below Mon-plaisir, opposite the Guilhens:

*Hemerocallis fulva* (L.) L. China

*Panicum coloratum* L. North America

*Malva caroliniana* L. → *Iliamna rivularis* (Douglas ex Hook.) Greene North America

8 October 1769: Above Mon-plaisir, opposite le Valette:

*Astragalus canadensis* L. North America

*Sisyrinchium bermudiana* L. Eastern North America

*Conium maculatum* L. North America

*Crepis alpina* L. Southeast Asia

*Senecio elegans* L. South Africa

*Zinnia* [*Crassina*] *multiflora* L. → *Zinnia peruviana* (L.) L. South America

*Malva verticillata* L. North America

*Cerastium perfoliatum* L. Black Sea region

19 October 1769: Beyond the Pont Masson on the Chemin de St. George, on the right in a field surrounded by olive trees:

*Elymus sibiricus* L. Temperate Asia

*Cynosurus indicus* L. → *Eleusine indica* (L.) Gaertn. Subtropics

*Cotula coronopifolia* L. South Africa

The reduction in exotic seeds available to Gouan and Amoreux became evident during the autumn of 1769, and duplications became more frequent. Their efforts ceased during 1770, only to resume on 19 January 1771, 1 February 1771 and 18 March 1782, when they ended. Indigenous European species had become predominant. It has been noted that the obscurity of their remarkable campaign for re-vegetation of deforested terrain was attributable to Gouan's placement of its record in an epilogue to a book meant as a text for medical students.

## Part 2

Gouan's similar placement of the plants collected during the first major botanical

exploration of Mont Ventoux in Provence, put in an appendix of that same book, also led inadvertently to the loss of that record. In publishing an account of that trip, Gouan stated briefly that the explorer was a medical student at Montpellier, his name given only as Guérin. Gouan noted that neither J. Pitton de Tournefort (1656–1708) nor Pierre Garidel (1658–1737) had explored the mountain earlier in the 18th century. Nor had M. Palum of Avignon or Dominique Villars of Grenoble included the mountain in their later trips in the 18th century. Jacques Barrelier (1606–1673), who had medical training before becoming Dominican, had botanized extensively in Provence and Languedoc in the 17th century, but his plant collections had been lost. All that remained were 324 copperplates that had been discovered and published by Antoine de Jussieu (1686–1758), covering a much larger area than the two French provinces (Barrelier 1714).

Aside from five or six specimens allegedly sent by Antoine de Jussieu to Linnaeus, the mountain remained largely unknown in the later 1770s when Guérin's undated exploration occurred. Dominique Villars would note later, in 1786, that during his field trips in Dauphiné, when descending from Serres through l'Épine and Bellecomb to Buis-des-Baronnies, he had turned aside to Mont Ventoux in 1776 to see in nature some species already known to him from Barrelier and Jussieu, but adding that the mountain was not in Dauphiné. Alpine species, later published by Villars, were invariably attributed to sites in Dauphiné, even though he would occasionally remark "seen on Mont Ventoux" (Villars 1786, 1:xxxii). Guérin's occasional use of Villars' name only indicates his familiarity with plant specimens sent to Montpellier in prior years by Villars. Consequently, Gouan was essentially correct in attributing the first recorded exploration of Mont Ventoux to his student, Guérin (Gouan 1796, pp. 223–226).

Gouan, in publishing Guérin's plant list, gave no indication that he had altered any of Guérin's nomenclature. On occasion, Guérin omitted an author's name, which has been added for clarity; as well as transfers in nomenclature for contemporary identification.

*First Botanical Exploration of Mont Ventoux*, by Guérin of Montpellier

I began collecting plants between Carpentras and Malaucène:

1. *Plantago alpina* L.
2. *Plantago subulata* L.
3. *Cnicus ferox* L. → *Cirsium ferox* (L.) DC.
4. *Cnicus acarna* (L.) L. → *Picnomon acarna* (L.) Cass.
5. *Carthamus carduncellus* L. → *Carduncellus monspelliensium* All.
6. *Prunella laciniata* (L.) L.
7. *Carlina vulgaris* L.
8. *Carduus acaulis* L. → *Carlina acaulis* L.
9. *Ranunculus monspeliacus* L.

Between Malaucène and Beaumont-de-Ventoux, the following plants were collected:

10. *Carlina chamaeleon* Vill. (1789) → *Carlina acaulis* L.
11. *Campanula rotundifolia* L.
12. *Campanula alpina* Jacq.

On the three hours of walk through difficult terrain from Beaumont-de-Ventoux to the dark pine forest, additional species were collected:

13. *Nepeta nepetella* L.
14. *Digitalis lutea* L.
15. *Campanula persicifolia* L.
16. *Rumex acetosella* L.
17. *Rumex scutatus* L.
18. *Lavandula spica* L. → *Lavandula angustifolia* Mill.
19. *Rubus idaeus* L.
20. *Lichen aphtosus* L.

After passing through the dark woods, one enters the meadows of the Serein, situated two-thirds of the way up the [north] side of

the mountain, providing many alpine plants, including those from a vale ahead called *la fourcadare*:

21. *Carduus aurosicus* Vill. (1786) → *Carduus aurosicus* Chaix (1785)
  22. *Eryngium spinalba* Vill. (1788)
  23. *Brassica alpina* L. → *Arabis alpina* L.
  24. *Pyrola secunda* L. → *Orthilia secunda* (L.) House
  25. *Gentiana lutea* L.
  26. *Gentiana campestris* L. → *Gentianella campestris* Börner
  27. *Carlina acaulis* L. ssp. *acaulis*
  28. *Carlina caulescens* Lam. → *Carlina acaulis* L. ssp. *simplex* (Waldst. & Kit.) Nyman
  29. *Moehringia muscosa* L.
  30. *Aquilegia alpina* L.
  31. *Bupleurum falcatum* L.
  32. *Convallaria multiflora* L. → *Polygonatum multiflorum* (L.) All.
  33. *Convallaria polygonatum* L. → *Polygonatum odoratum* (Mill.) Druce
  34. *Thalictrum foetidum* L.
  35. *Prenanthes muralis* L. → *Mycelis muralis* (L.) Dumort.
  36. *Prenanthes purpurea* L.
  37. *Rumex acetosella* L.
  38. *Rumex scutatus* L.
  39. *Lilium martagon* L.
  40. *Laserpitium latifolium* L.
  41. *Heracleum sphondylium* L.
  42. *Juncus niveus* L. → *Luzula nivea* (L.) DC.
  43. *Anemone hepatica* L. → *Hepatica nobilis* Mill.
  44. *Astrantia major* L.
  45. *Thymus alpinus* L. → *Acinos alpinus* (L.) Moench
- When climbing on up toward the mountain top, one finds:
46. *Cerastium strictum* L. → *Cerastium alpinum* L.
  47. *Leontodon hispidus* L.
  48. *Myosotis scorpioides* L.
  49. *Myosotis grandiflora* ? → *Myosotis alpestris* ?F. W. Schmidt

50. *Hieracium prunellaefolium* ?Vill. [*Hieracium lactucifolium* Arv.-Touv. is known today on Mont Ventoux.]
51. *Saxifraga oppositifolia* L.
52. *Saxifraga cespitosa* L.
53. *Aconitum anthora* L.
54. *Aconitum napellus* L.
55. *Aconitum lycoctonum* L. nom. ambig. → *Aconitum septentrionale* Koelle
56. *Lonicera alpigena* L.
57. *Lonicera dubia* ? → *Lonicera alpigena* L.
58. *Pimpinella saxifraga* L.
59. *Primula vitaliana* L. → *Vitaliana primuliflora* Bertol.
60. *Erigeron uniflorus* L.
61. *Biscutella coronopifolia* L.
62. *Illecebrum paronychia* L. → *Paronychia argentea* Lam.
63. *Phyteuma orbiculare* L.
- The top of the mountain provides interesting and rare plants found in the Pyrenees and the Alps. One also sees a hovel, the vestige of a church:
64. *Astragalus tragacantha* L. → *Astragalus massiliensis* (Mill.) Lam.
65. *Astragalus uralensis* L. → *Oxytropis uralensis* (L.) DC.
66. *Astragalus montanus* L. → *Oxytropis jacquinii* Bunge
67. *Myagrum saxatile* L. → *Kerneria saxatilis* (L.) Rchb.
68. *Myosotis lappula* L. → *Lappula deflexa* (Wahlenb.) Garcke
69. *Iberis garrexiana* All. → *Iberis sempervirens* L.
70. *Iberis saxatilis* L.
71. *Papaver alpinum* L. nom. ambig. → *Papaver rhaeticum* Leresche
72. *Ononis cenisia* L. → *Ononis aristata* Mill.
73. *Viola cenisia* L.
74. *Viola biflora* L.
75. *Teucrium pumilum* L. → *Teucrium polium* L.
76. *Aquilegia alpina* L.
77. *Aquilegia viscosa* Gouan
78. *Euphrasia officinalis* L. nom. ambig. → *Euphrasia rostkoviana* Hayne ssp. *montana* (Jord.) Wettst.
79. *Silene vallesia* L.
80. *Silene saxifraga* L.
81. *Dianthus virgineus* L. → *Dianthus caryophyllus* L.
82. *Dianthus alpinus* L.
83. *Antirrhinum alpinum* L. → *Linaria alpina* (L.) Mill.
84. *Trifolium alpestre* L.
85. *Trifolium alpinum* L.
86. *Sempervivum arachnoideum* L.
87. *Saxifraga bryoides* L.
88. *Saxifraga aizoides* L.
89. *Saxifraga cespitosa* L.
90. *Saxifraga cotyledon* L.
91. *Saxifraga tridactylites* L.
92. *Saxifraga oppositifolia* L.
93. *Sedum rupestre* L. → *Sedum reflexum* L.
94. *Arenaria triflora* Vill. (1789) → *Minuartia villarsii* (Balb.) Chenevard
95. *Arenaria laricifolia* L. → *Minuartia laricifolia* (L.) Schinz & Thell.
96. *Arenaria aristata* ? → *Arenaria grandiflora* ?L.
97. *Anthyllis montana* L.
98. *Alchemilla alpina* L.
99. *Alchemilla vulgaris* L. → *Alchemilla xanthochlora* Rothm.
100. *Galium hypnoides* Vill. (1788) → *Galium anisophyllum* Vill. (1779)
101. *Galium minutum* L. nom. ambig. → *Galium glaucum* L.
102. *Galium aristatum* L.
103. *Valeriana montana* L.
104. *Valeriana tripteris* L.
105. *Gentiana utriculosa* L.
- After a half-hour walk descending on the southeast side of the mountain, one reaches the spring of water called *la font das pastrés*, whose temperature, in the month of August, was only 3½ degrees on the Reaumur thermometer [Celsius = 38 degrees Fahrenheit]. Around the rocky escarpments nearby, valuable plants were to be found:

106. *Papaver alpinum* L. nom. ambig. → *Papaver rhaeticum* Leresche  
 107. *Allium nigrum* L.  
 108. *Allium grandiflorum* Chaix (1785) → *Allium narcissiflorum* Vill. (1779)  
 109. *Veronica alpina* L.  
 110. *Veronica aphylla* L.  
 111. *Viola cenisia* L.  
 112. *Viola biflora* L.  
 113. *Aquilegia viscosa* Gouan  
 114. *Calcia alpina* L. → *Adenostyles alpina* (L.) Bluff & Fingerh.  
 115. *Ranunculus nivalis* L.  
 116. *Ranunculus alpestris* L.  
 117. *Solidago minuta* L. → *Solidago virgaurea* L. ssp. *minuta* (L.) Arcang.  
 118. *Cheiranthus alpinus* L. → *Cheiranthus cheiri* L.  
 119. *Cheiranthus erysimoides* L.  
 120. *Valeriana tripteris* L.  
 121. *Valeriana montana* L.  
 122. *Campanula allionii* Vill. (1788) → *Campanula alpestris* All.  
 123. *Campanula bocconei* Vill. (1788) → *Campanula scheuchzeri* Vill. (1779)  
 124. *Arenaria triflora* Vill. → *Minuartia villarsii* (Balb.) Chenevard  
 125. *Cerastium strictum* L. → *Moenchia erecta* (L.) Gaertn., Meyer & Scherb.  
 126. *Athamanta cretensis* L.  
 127. *Athamanta* ? (*rupestris*) → *Ligusticum ferulaceum* ?All.  
 128. *Polypodium fontanum* L. → *Polypodium vulgare* L.  
 129. *Galium minutum* L. nom. ambig. → *Galium glaucum* L.  
 130. *Senecio doronicum* (L.) L.  
 131. *Doronicum pardalianches* L.  
 132. *Arnica scorpioides* L. → *Doronicum grandiflorum* Lam.  
 133. *Hieracium amplexicaule* L.  
 134. *Crepis sibirica* L. → *Crepis pyrenaica* (L.) Greuter

Still collecting rare plants when following the mountain down, I reached Fontaine de

Vaucluse (*vallis clusa*) after six or seven hours of walking:

135. *Antirrhinum molle* L.  
 136. *Hesperis inodora* L.  
 137. *Hesperis sibirica* L. → *Hesperis matronalis* L. ssp. *matronalis*  
 138. *Campanula rotundifolia* L.  
 139. *Campanula alpina* Jacq.  
 140. *Teucrium polium* L.  
 141. *Isatis tinctoria* L.  
 142. *Senecio doria* L. → *Senecio doria* L. ssp. *doria*  
 143. *Cheiranthus alpinus* L. → *Cheiranthus cheiri* L.  
 144. *Sedum dasyphyllum* L.

His brief descriptions of his route on the mountain contained no observations of the deforestation that had denuded that terrain to feed naval construction in Toulon, beginning in the 16th century. The reforestation visible today did not begin until after 1860, date of the law for the *Restauration des Terrains en Montagne*, inspired by Napoleon III. This provided a coniferous cover up to 1,600 meters in elevation on Mont Ventoux, 300 additional meters in elevation remaining above timberline.

Dr. Joseph Guérin later established a medical practice in Serres, 41 kilometers southwest of Gap, in what is now the Département des Hautes-Alpes. Although he never became known as a published botanist, Guérin never lost his interest in alpine flora. He made himself known to the leading botanists of old Dauphiné, Dr. Dominique Villars of Grenoble and the abbé Dominique Chaix (1730–1799) of Les Baux; and he was also a friend of Dr. Jean-Joseph Serre (1762–1831) of la Roche-des-Arnaud, an energetic botanist and agronome.

In August of 1798 Guérin spent two weeks in the company of abbé Chaix, who notified Villars that Guérin had been on the Montagne d'Aurouze and de Céüse and would be exploring the high mountains of Champsaur, Valgaudemar and Oisans. Chaix concluded: "This young natural philosopher,

blessed with wealth, talent, and taste, will elevate himself to the apogee of the sciences and make himself capable of fulfilling the tasks that will be confided to him with distinction” (Williams 1997, pp. 276, 278). As far as botany was concerned, that prediction was never realized. The abbé Chaix, however, who died in 1799, did not live to see that Dr. Guérin began publishing meteorological observations in 1802 meant to contribute useful information to farmers and botanists, continuing until 1812 (Guérin 1813). A copy is still held in the municipal library of Grenoble.

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