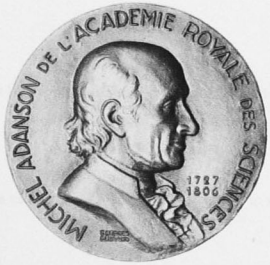
ADANSON

The Bicentennial of Michel Adanson's «Familles des plantes»

Part Two



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Franco-American activities in botany

Roger de Vilmorin

We have now come to the end of a brilliant symposium. We have reached the last minutes of two days that will remain famous in the past and in the future history of science.

It is probably strange to all of you, botanists of America, Britain, and France, at this solemn moment, to be addressed by someone unknown to most of you, but by a man who has devoted his career to the minor science of genetics of cultivated plants, and only his spare time to botany. It seems to me therefore that I owe you an explanation: you may deem it worthless, and I must admit that it does not satisfy me completely, that it does not succeed in clearing my conscience completely in the presence of Professor Roger Heim, of Professor Théodore Monod, and of other compatriots a thousand times better than I for the honor of addressing such an eminent assembly.

Friendship, more than anything else, has brought me this honor. You are no doubt aware of the existence of an international and rather shady organization whose mission is to draw up and publish the *International Code of Nomenclature of Cultivated Plants*. Amongst the most fierce, the most pitiless, leaders of this Commission are four persons here present: George Lawrence, John Gilmour, Frans Stafleu, and myself. The work undertaken and moreover provisionally realized, involved, apart from the plenary sessions, a certain number of restricted meetings, in London, Cambridge, Utrecht, Montreal, and where there was occasion for our getting together. This implied a lot of work, but also a certain amount of tea, coffee, whiskey, tobacco, music, and good stories; and as a result, the foundation of an unmovable friendship, which I am delighted to be able to say to George, and to the others, is for me an extremely precious gift. Friendship, like love, renders us blind and unreasonable. You are this evening the victim of this collective blindness and unreasonableness which has designated me to preside at the International Committee for the Bicentenary of Michel Adanson. If you are displeased, Ladies and

Gentlemen, please be so kind as to aim your shots as the man responsible for this celebration, and not at me.

We are here in Pittsburgh, Pennsylvania, in the United States of America, to honor Michel Adanson, an extraordinary man who was an authentic product of France and who, in addition, never set his foot on the American continent. Why Pittsburgh and not Aix-en-Provence (where he was born), or Paris (where he lived), or Versailles (where he sometimes worked), or Dakar (his port in Africa)? That is the kind of question that might have been asked with anxiety, and perhaps a certain ill-temper, less than a century ago, at a time when science, apart from happily numerous exceptions, remained inside narrow boundaries and each country jealously kept the secret of its discoveries, as still happens nowadays in the explosive political and military disciplines. But in the year of grace 1963, nobody, it seems to me, in France has the right to be irritated because the Rachel McMasters Miller Hunt Botanical Library owns an immense amount of documents concerning Michel Adanson. It would be the proof of a dusty, out of date, despicable susceptibility, if, for purely material reasons, in no way due to the French botanists, an important part of the Adansonian archives are localized in Pittsburgh. It is quite legitimate that we, as Frenchmen, feel a certain bitterness, but this bitterness is tempered and, as far as I am concerned, is rubbed out by a moment's reflections. As things are, they bring us the proof that the Muséum National d'Histoire Naturelle, whose presence is felt in all the seas and over all the continents, hereafter has a branch here in the United States, a fact of which it can be proud; on the other hand, it is obvious that without the intervention of the Hunt Botanical Library, hundreds of precious documents would have been hopelessly dispersed. International botany would thus have suffered a severe loss from which neither Professor Heim nor Madame Duprat, nor Mr. Jean-Paul Nicolas would have never recovered: three eminent persons to whom we are deeply attached. And finally, with the abolition of distances characteristic of our epoch, Pittsburgh is a part of the Paris District. I can hardly believe that, the day before I arrived here, I was in the south of Corsica, sharing my time between the study of lichens and the often vain attempt to catch a few fat fish with which to feed my large family.

If, Ladies and Gentlemen, you would be so kind as to cast a glance towards the near and distant past, you will see that Pittsburgh's Adanson Symposium is a perpetuation of an ancient and precious tradition. France is a vast and varied country, but I must admit that the American

continent is of slightly superior size. It contains a considerable number of species, and of those biological and microbiological sceneries that we now call biotypes. All of this, at the time of the pioneers of botany, before Bernard de Jussieu, before Linné, before Adanson, at the time of Tournefort must have been prodigiously tempting to adventurous spirits. Now, the taste for adventures for exploration, contrary to a very superficial and readily adopted opinion, is not entirely the monopoly of the British. At the beginning of the 18th century, in 1704 to be exact, Michel Sarrazin drew up a *Catalogue des plantes envoyées du Canada* which summarized his observations made since 1684. If you would care to consult it, please apply to Mme. Duprat here present, who, I can assure you, knows it by heart. About 1709, l'Abbé Le Maire wrote a book entitled *Relation de la Louisiane* in which he refers at length to the local flora; the great La Peyrouse in his numerous letters from America to France published later by Thorin, describes a large number of American plants new to science. You know as well as I do that André Michaux constituted in South Carolina one of the first experimental gardens and that his son, François-André Michaux, who followed in his footsteps, was so fascinated by America that he spent most of his life here, and that he bequeathed a considerable legacy to the American Philosophical Society in Philadelphia to enable the issuance of grants for research on your native woody plants. This is one of the most significant examples of the intimacy that, at this early date, existed between our countries. But there are others: the well-known agrostologist, Palisot de Beauvois, who lived in the 18th century, consecrated nearly eight whole years of his life to collecting and studying American grasses. He kept up constant and warm relations with his friends among contemporary American botanists, and published a paper entitled *Sur quatre nouveaux genres de plantes trouvées dans les Etats Unis d'Amerique,* with three plates of illustrations. More recently, a stream of exchange of students, of ideas, of methods, and of material for study, has been established between France and the United States, for the greater benefit of botany in general and of cytology, ecology, and genetics in particular. At the Botanical Congress in Paris (1959), presided over by Professor Roger Heim who sits here this evening, and of which, under his directorship, I had the honor of being one of the general secretaries, the American delegation numbered several hundred members. The excursion which ensued allowed many of us to get to know one another, to understand one another better, and to become acquainted with the very varied flora of continental France, of Corsica, and of several North African countries.

It was from America that Professor Heim brought back to France his observations of those mushrooms with strange haluciginating properties.

It would be easy to develop this theme indefinitely. The present and the past fully justify and compel this Symposium, which this evening is a well developed child, well conceived, and born without pain. We live at a time when the branches of science are so divided, so parcelled out that no great synthetic work can be realized by one man alone, as it was in the day of Adanson. It is the teamwork that counts, and the teams are all the more efficient when international. We, in France, recognize the fruitfulness of scientific emulation between nations but, as you do yourselves in America, we wish to keep to the rules of the game—a house of glass—where trust and loyalty are mutual between neighbors and friends.

By reminding you of these examples, among hundreds of others of Franco-American botanical cooperation through the ages, I am not being very original, for all of you here present are well acquainted with these facts. But this aspect of history should be better known to the greater public so that it may be better informed by the headlines of the daily press, of the exact nature of human sentiments and intentions. Particularly is this true for science and most especially in natural sciences. Nature constitutes an immense laboratory, the study of which represents a gigantic enterprise, inevitably implying intimate exchanges between nations. Surely it is more often in nature than at diplomatic conferences that the best work is accomplished towards mutual understanding and peace. Adanson, from his grave, affords us the opportunity to underline this, and for this also we should be thankful.

Apart from the friendship which I referred to previously, there is perhaps another reason for which I was chosen to address you this evening. Adanson devoted a noticeable amount of research to agriculture and to a science he introduced, one which, nearly a century after his death, received the name of genetics. Although I have endeavored this evening to avoid useless repetition of the magisterial statements made yesterday and today, or to the analysis which you have in hand, written by more competent authors than myself, I cannot refrain from recollecting that, in Senegal, Adanson demonstrated the value of the culture of indigo, tobacco, rice, coffee moka, cocoa, pepper, and ginger, and that he drew up on the subject a long report, brimful of suggestions that were never followed ; he undertook, also in Africa, experiments involving the crossing by artificial pollination on tobacco, the tuberose, and the

castor-oil plant; experiments he continued in the Jardin du Roi on strawberries, marrows, and melons. Later he undertook to collect wheat varieties, I mean cultivars (sorry, John) from all the important wheat growing regions in France, and to collect also soil samples from the field where these wheats were grown. He tried also to get similar material from other countries. He totalized about 300 cultivars of wheat, some of which he grew in pot experiments on his window ledges, others in his garden, and others in the vicinity of Paris. In an experimental garden, he made daily observations on the growth of wheat and its response to edaphic factors. An appeal to the government, which remained unheeded, prevented him from widening the field of his research as much as he would have liked, and he was unfortunately limited to a careful study of the differences between the cultivars according to his method, which, as you know, took into account all the characteristics he could see. Adanson did not publish anything on these experiments, but his data are preserved here in the Hunt collection. An observation on barley with branched culms "l'Orge de Miracle" was published in the Mémoires de l'Académie des Sciences in 1765. Later, he was similarly interested in grapes, melons, and mulberries. Particularly significant was the answer he gave, in a letter dated the 2nd of Ventose, An VIII, to Negoret who was questioning him on the mystery of variation in the peach tree. "Sow and resow annually any amount of stones from the same peach, apricot, cherry, plum trees, etc. . . . you will obtain nearly as many varieties of fruit as there were stones sown. And this applies to other fruit and flowers such as tulips, carnations, and melons, of which I have identified 92,000 possible varieties." The word "possible" is here of the greatest importance: it means that Adanson had calculated in his experiments on melons, the number of possible combinations between the characters, he had discriminated; this represents an extraordinary anticipation of the statistical methods of modern genetics. Adanson did not discover the elementary rules of genetics, but he got very near to them. Charles Darwin got very close too, and so did Naudin, but it was a century later before genes and genetics became a part of our science.

Ladies and Gentlemen, your torment has nearly reached its end. There remains for me to accomplish the most agreeable part of my task and that is to thank all those who have guaranteed the success in Pittsburgh of this Adanson Bicentennial Symposium, particularly the Rachel McMasters Miller Hunt Botanical Library and its Director, George Lawrence, who has spent a great many days and nights organizing, foreseeing, rectifying,

with the competence, the simplicity and the disregard of personal glory that characterizes him. My dear George, I have known you for many years. I am well aware of your erudition, of your attachment to botany, the most amiable of sciences. What you have accomplished is exactly what all who know you expected of you: perfection.

In my capacity as representative of the French members of this assembly, I offer my thanks and my congratulations to Frans Stafleu, who has analyzed at great length *Les Familles des Plantes* with the care of a benedictine monk and in a way that no one could have done so perfectly as he; and also Mr. Willem Margadant, who has prepared an annotated inventory of the Hunt Botanical Library's collection of Adanson's printed books and papers, together with Adanson's very large assemblage of letters and manuscripts. I am confident that this catalogue will be most useful to scholars in France and elsewhere.

I am deeply grateful to Dr. Peter Sneath, to Professor Monod, to Mr. Jean-Paul Nicolas, and to Madame Duprat for their very valuable contributions to the Symposium, and to all the members of the International Committee particularly Dr. Frederick Seitz, President of the American Academy of Science, and Professor Roger Heim, Président de l'Académie des Sciences de France.

Although much has been said and written about Michel Adanson, illustrious scientist and philosopher, the subject is far from being exhausted, and more meetings will be held in France which I most sincerely hope, Ladies and Gentlemen, you will be able to attend and with you, all those who, thanks to the radiance of this Symposium in Pittsburgh will feel, born in them, an interest in our genial forerunner. When you have crossed the Atlantic, which used to be an ocean but today is no more than a river, we will endeavor to receive you as cordially, as amicably, as we Frenchmen have been received in Pittsburgh; we will do all we can to assure that the memory of your sojourn in France will be as precious as that, which we have and will keep of our only too short visit with you in Pittsburgh.