BIOGRAPHICAL MEMOIR

OF

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François André Michaux, the subject of this memoir, belonged essentially to that class of scientific explorers who, by their devotion to science and their energy in promoting the welfare of mankind, may, justly, be viewed in the light of benefactors of their race.

When we consider the noble spirit with which such men enter upon their hazardous enterprises; when we witness the fortitude with which they encounter the fatigues and inconveniences of their distant voyages in regions as yet unexplored, we cannot withhold from them the expression of our admiration. It is not a spirit of egotism that moves them onwards; it is not for their personal gratification, nor with the view of enriching themselves by their discoveries, that they desert their family-hearth and separate themselves from the father-land. Their object is disinterested and of the noblest character. They labour for the advancement of science, and, above all, for the benefit and enjoyments of their fellow-beings.

To what toils, to what privations and dangers, must they not necessarily expose themselves in order to attain the object they have in view? Behold them wending their way through inextricable forests; through pestilential marshes; over grounds untrodden by the human foot—struggling and panting under the rays of a torrid sun, or shivering under heavy showers of rain—now clambering over steep rocks, and next descending into deep precipices, constantly exposed to dangers of every description.

To men of this class we already owe many of those succulent vegetables which cover our tables; those delicious fruits which enrich our gardens and orchards; those fine trees, shrubs and flowering plants which grow by the side of our native trees, ornament our parterres and pleasure grounds, or are cultivated in our green-houses. The Peach, the Apricot, the Cherry, the Almond, as well as the greater part of our most valuable garden vegetables, were obtained from Asia, the cradle of the human race; the Walnut came from the Black Sea; the Pear, the Apple, the Chestnut, from the forests of Europe; the Orange from India; the sugar-cane from China; the Maize and Potato from South America, &c. And, ere long, through the persevering exertions of François Michaux, Europeans will en-

joy, in their own fields, the refreshing shades of the finest and most useful trees of our native forests, of those, especially, which are employed in civil and naval constructions, or in cabinet work. As Americans, we are ourselves under peculiar obligations to him for an accurate knowledge of our forest trees and for the good advices which his experience has enabled him to give us on points of national economy connected with arboriculture.

François André Michaux was born on the 16th of August, 1770, at Satory, a royal domain situated in the vicinity of Versailles, which, for several generations, had been intrusted by the Crown to the administration and management of his ancestors. He was the only son of André Michaux, who, with Catesby, Clayton, Bartram, Kalm and Walter, was one of the pioneers of botanical explorations in the North American regions. His mother, Cecile Claye, was a daughter of a rich farmer of Beauce. She died, eleven months after her marriage, leaving behind her a son, the subject of this notice.

Of the early life of François André Michaux, I have not been able to collect much information. It is probable that he was brought up on the farm of Satory, in the practical school of his father and of one of his uncles, upon whom devolved, after the departure of the former, the sole management of this extensive royal estate. It may be inferred also from his writings and instructive conversation, that his collegiate education had not been neglected.

His father, whose history is inseparably linked with that of his son, had devoted all his life to the progress of agriculture and the sciences; his main ambition had been to effect something that might redound to the advantage of his native country, and, with this view, he had early turned his attention to agriculture, the advancement of which, he had soon perceived, could not be more securely attained, than by enriching its domain with such products of foreign climes as were unknown to his own country, and susceptible of acclimation. In order to accomplish his object, he determined to visit new regions, possessing climates similar to that of France, and to bring back thence such of their productions as might prove of advantage to his native land.

To effect that purpose, he prepared himself by a proper course of studies, and by devoting his particular attention to the science of Botany, under the great Bernard de Jussieu. He first visited England; he next made several explorations in the mountains of Auvergne, and in the Pyrennees; then in Spain, and embarked afterwards for Persia, in the capacity of Secretary to the French Consul at Ispahan; but, in reality, for the sole purpose of exploring that country, then almost unknown to scientific men. From 1782 to 1785, he surveyed the whole of the Persian provinces, between the river Tigris and the Euphrates, and returned to France, with an extensive collection of specimens, and a large quantity of seeds of every kind.

During the absence of the elder Michaux, the French government had been agitating the important question of introducing into the forests of France, such exotic trees as would be calculated to increase the national resources, with respect to naval constructions. The information which had been received from the United States in this regard, had been exceedingly encouraging, and Michaux, who had just returned from Asia, was chosen for that particular errand, with instructions to procure, for the royal nurseries, all the young trees, shrubs and seeds he could possibly send. In consequence, he made all proper dispositions, and embarked at Lorient, on the 25th of August, 1785, taking with him his son, then only fifteen years of age, and a journeyman gardener of the name of Paul Saulnier, of whom I shall speak hereafter. They landed at New York on the first of October following.

At this remote period of time, I am altogether without record as to the movements of young Michaux, immediately after his landing on our shores. The only source where I expected, naturally, to obtain information, was the manuscript journal in which his father was in the habit of registering the daily incidents of his eventful life, and which had been deposited by his son in the library of the American Philosophical Society. Unfortunately, this journal has become incomplete, through the absence of

three of its fasciculi, containing the years 1785, 1786 and 1790, which were lost in the shipwreck of the elder Michaux on the coast of Holland. In the fasciculus of 1787, young Michaux's name appears for the first time on the date of May 6th, as accompanying his father in his exploration to the sources of the Keowee river. In the next spring, he is seen again with him, journeying into the interior of Florida. He is, afterwards, mentioned several times, as being retained at the Charleston Nursery, either on account of ill health, or intrusted with the management of the plantation, during the journeys of his indefatigable and ever-moving father.

In the further perusal of the manuscript, I learn, at the date of the 20th of September, 1789, that, on that day, his son walking along the road, was hit by a man shooting at partridges, and that a grain of shot had penetrated his left eye, below the pupil. From that date to December following, he occasionally speaks of the state of his son, of the treatment applied to his case, and, especially, of the great despondency of mind in which the patient had fallen, from the apprehension of losing his eye. But, here again we arrive at the third lost fasciculus, and I cannot ascertain the final result of the accident, nor at what time, precisely, young Michaux returned to France.

His return must have taken place in the first three months of 1790, for, in the manuscript of the following year, on the 17th of January, the elder Michaux acknowledges the receipt of a letter from his son, dated Paris, April, 1790, but nothing more is said about the wounded eye. To that accident, which is not generally known, may be attributed the partial deprivation of sight with which Michaux was afflicted.

Young Michaux, therefore, reached his country at the very outbreak of the French revolution, in which he is said to have warmly sympathized with the republican party. Such a course was not, perhaps, expected from one who had been brought up on a royal domain, and was, to a certain degree, indebted to royal munificence. But, on the other hand, how could the feelings of this generous and impressible young man be otherwise enlisted? His exalted patriotism, his ambition to serve his country, his frank and bold temper; his love of liberty, which he had imbibed in this free and happy land —all these together must have raised his spirits to a high pitch, in conjunction with the vexation he experienced when, on his return, he scarcely found a few remnants of the several hundred thousand young trees, which his father and himself had reared, in their American nurseries, and sent home for the particular benefit of his country. One half of these had been given away by the Queen to her imperial father of Austria; the rest had been squandered among the minions of the court, to embellish their grounds, or shamefully neglected in the royal nurseries of Rambouillet.

In the mean time, the elder Michaux was continuing his explorations in North America. He travelled in all directions, over more than three thousand miles, during the eleven years which he spent on this side of the Atlantic. While thus actively engaged, the political storm, raging in his country, had brought on immense changes in his situation. France, ruined by royal profligacy; invaded by famine; deluged with the blood of her best citizens; convulsed by civil war and fighting, single-handed, with the whole of Europe, could no longer afford to pay her naturalists abroad. Consequently, Michaux was forgotten, and ceased gradually to receive his salary. After having borrowed money on his own account; after having sacrificed a portion of his own, and of his son's fortunes, he found himself under the necessity of returning to his country. Unfortunately, he was shipwrecked on the coast of Holland, and, after having lost the best part of his immense collections, he arrived in Paris on the 26th of December, 1796, after an absence of eleven years and four months.

On his arrival in his native land, the elder Michaux occupied his time in the cultivation of the vegetable treasures which he had forwarded from the United States, and in arranging his materials for the *history of the North American Oaks*, and for his *Flora Boreali Americana*. In these various labours, he was assisted by his son, who, in the meantime, was studying medicine under the celebrated

Corvisart, and attending the clinical lectures of Désault, chief surgeon of the Hotel Dieu, with the view of returning to the United States, and devoting himself to the practice of medicine; but such was not his destiny!

Neither the retired habits of a student, nor the easy and monotonous life of a Parisian abode suited temperaments like those of the two Michaux. Such men needed activity and change of scenes, even with toils and perils. Both were animated with the same spirit of enterprise, with the same conviction that their efforts, employed in other directions, could afford more benefit to their country; hence, they were endeavouring, through the influence of their numerous friends, to infuse their views and projects into the minds of their fellow members of the Central Society of Agriculture, and of the ministers of Napoleon, then First Consul of the French Republic.

In this they both succeeded finally. The elder Michaux accepted a commission of naturalist in the scientific expedition led by Captain Baudin, and bound to the Australian seas, on condition, however, that he would be permitted to remain at the Isle of France, if he desired so to do. Disgusted with Baudin's haughty manners and want of courtesy to the scientific corps, André Michaux abandoned the expedition at Mauritius, where he remained six months, and thence started for the island of Madagascar, which, he thought, would afford him better opportunities of advancing the science of Botany, and making himself more useful to his country.

After sundry explorations along the coast, he established a botanical garden at Tametave, in which he planted all the trees and plants which might be objects of usefulness or curiosity. The climate, unfortunately, was exceedingly unhealthy, and trusting too much to his good constitution, and habits of exposure, he neglected the proper precautions, was taken sick with fever, and died at the end of December, 1803.

François André Michaux, on his own account, had not remained inactive. Aroused by the example of his father, and now fully arrived at manhood, he could not look back to the unfinished work of his father in the United States, without becoming alive to the most ardent desire to achieve the object which they had both in view. Conversant with several States of the Union, confident in his own experience and abilities further to serve his country, he was, on his side, earnestly soliciting a commission to the United States.

This opportunity was at last afforded to him through the celebrated De Chaptal, then Minister of the Interior, who feeling dissatisfied with the result of the nurseries of New Jersey and Charleston, since the departure of the elder Michaux, and thinking more benefit would accrue from the appointment of native correspondents in the principal seaports of the Union, consulted François A. Michaux in the matter, and appointed him to effect those objects. He gave him instructions, at the same time, to sell the properties, when he should have forwarded home all the trees and shrubs remaining in the two French nurseries above mentioned.

Michaux, highly gratified, set out immediately for Bourdeaux, at which port he embarked for Charleston, with the same Captain, and on the same vessel that had brought him home thence, some ten years previous. After a short and pleasant passage, he landed at his place of destination, on the ninth of October, 1801. He occupied himself almost immediately, and during the following winter, in sending to France the trees and shrubs of the nursery, and this part of his instructions being fulfilled, he embarked for New York on the same errand.

As soon as the season became favourable, he began his herborizations in New Jersey, and along the banks of North River. In these explorations, he discovered several new species of Oaks and Hickories, the acorns and nuts of which he sent to France in abundance. He had also the opportunity of determining with more accuracy, the botanical characters of the Black Oak (*quercus tinctoria*,) one of the largest trees of the American forests, and, also, one of the most valuable for the good quality of its wood, as well as for its dyeing properties.

He next visited Philadelphia, where he had the pleasure of becoming acquainted with some of her most celebrated men, among whom he mentions the Rev. Dr. Collin, Dr. Benj. S. Barton, Messrs. Vaughan, Peale, Wm. Bartram, &c. He visited with great satisfaction, the botanical garden of the latter gentleman, and the magnificent green houses of Mr. Wm. Hamilton, which contained a rich collection of exotics, principally New Holland plants. His attention was more particularly attracted by the latter gentleman's romantic grounds, called Woodland, wholly planted with every American tree and shrub that could withstand the severity of a Philadelphia winter. Then, finding he had a few months to dispose of, he took advantage of this circumstance to visit the states of Kentucky and Tennessee, about which he had so frequently heard his father speak in the most enthusiastic terms.

Accordingly, he set out from Philadelphia, on the 27th of June, 1802; passed through Lancaster, Columbia, York, Carlisle and Shippensburgh; then crossing the Allegheny mountains, he reached Pittsburgh in ten days, travelling alternately in stage, on horse-back or on foot. He left Pittsburgh on the 14th of July, on foot, for Wheeling, and there purchased a canoe to descend the Ohio river, in company with an American officer of the name of Craff. In three days, they reached Marietta, and, on the tenth day, they landed at Limestone, now Maysville. From that place, he travelled alone to Lexington, which he left on the 10th of August for Nashville.

Michaux remained in Nashville four weeks, which were employed, principally, in herborizations around the town and along the banks of the Cumberland river. On the fifth of September, he set out on his journey back to Charleston, by way of Fort Blunt, West Point and Knoxville, which latter place he reached on the 17th, after stopping several days at the Falls of Roaring River, to explore the beautiful country around. From Knoxville he travelled to Greenville, and thence to Jonesborough, the last town of Tennessee. On the 21st he began crossing the high ridge which divides the State of Tennessee from North Carolina, and after two days of the most toilsome journey through the mountains, he reached the farm of old Davenport, who had been formerly his father's guide in that rugged region.—There he remained a week, for the double purpose of resting and conversing with him about his dear father, who, shortly after, on the inhospitable coast of Madagascar, died a victim to the climate and to his zeal for the progress of science. On the second of October, Michaux reached Morgantown, two hundred and eighty miles from Charleston, and arrived in the latter city, on the 18th, by way of Lincolntown, Chester, Winnsborough and Columbus, after having travelled over eighteen hundred miles in three months and a half.

Such was François André Michaux's exploring journey to the Western states, of which he published a very detailed account, two years afterwards, in a work entitled "*Voyage à l'Ouest des Monts Alleghany, &c. &c.*" During this journey, he did not merely devote his attention to botanical pursuits; but, with his usual habits of observation and extraordinary sagacity of mind, he diligently inquired into the state and modes of agriculture; the nature of the different soils; their particular vegetable productions, and the commercial relations existing between those remote regions and the Atlantic cities. He always felt, afterwards, a considerable pleasure in relating the episodes of this long and toilsome journey through these regions, then but thinly settled, and yet the abode of the roving Indian tribes.

He spoke with enthusiasm and in terms of unreserved gratitude, of attentions of which he was the object; his name was a passport which insured to him a most hearty welcome, and every assistance from those who had known his father, and had received from him seeds for planting, or instructions in farming. To the new settlers, he was always provided with letters of introduction, which procured him the same good reception. Every where he was hailed with manifestations of respect for the memory of his father, and with unanimous expressions of a desire to be useful to the son in any way within their power.

Michaux remained in Charleston until the first of March, 1803, when he embarked again for France,

in the same vessel on board of which he had sailed from the port of Bordeaux, eighteen months before, and landed at that port on the 26th of the same month. On his arrival in Paris, he made every effort in hastening the publication of his father's "*Histoire des chênes d'Amérique*," which had been printed in 1801, but the plates of which had not yet been completed. He attended also to the publication of the "*Flora Boreali Americana*," under the supervision of Claude Richard, an eminent botanist and a superior writer. Both these works were finally announced to the scientific world in the years 1803 and 1804, and were eagerly expected by those who took an interest in the vegetable productions of North America.

In the latter year, Michaux published his "*Journey to the West of the Allegheny Mountains*," and the following year his memoir "*Sur la Naturalisation des Arbres Forestiers de l'Amérique du Nord.*" In this memoir, addressed to the Central Society of Agriculture of Paris, of which he was a prominent member, he endeavoured to prove the great advantage which might accrue to France from the acclimation of better trees than those which her native forests actually possess, and of such, principally, as might well succeed in soils too poor for any of the French trees to thrive therein. In support of his opinion, he pointed out the swampy lands of France, as producing no wood of any value, whilst similar lands in America are covered over with noble and valuable trees, such as the Red Elm, Willow Oak, white Cedar, white and black Cypress, &c. He, likewise, pointed at the sandy, and certain cretaceous soils of France, as giving growth to nothing but dwarfish and insignificant pines, while the equally arid lands of the southern states produce an abundance of the live Oak, a tree exceedingly valuable in naval architecture, and which might also well succeed in the sandy maritime soils of the southern departments of France.

Besides these advantages, Michaux proposed to increase the number of forest trees which, in France, is limited to thirty-six, attaining the height of thirty feet; eighteen of which form the bulk of the forests, and seven only are employed in civil and naval constructions—whilst he alone had observed in the North American forests as many as one hundred and forty species of similar height and utility.

The means proposed by Michaux to attain these desiderata, were simply "to send a naturalist to the United States, with the mission to collect seeds and young trees, and to forward the same to the national nurseries of France." His propositions were forcibly supported in a report made to the Central Society of Agriculture by Messrs. De Perthuis, Correa de Serra and Cels, and he was, finally, intrusted with this mission, under the special patronage of the Duke De Gaëte, then minister of Finance and for the account of the Administration of the Forests.

He, subsequently, embarked at Bourdeaux, on the 5th of February, 1806, in a vessel bound to Charleston. After being three days at sea, they were boarded by the British man of war Leander, Commander Witheby, who, suspecting the vessel to be laden for the account of French merchants, sent her to Halifax, there to be disposed of by the court of Admiralty, which would decide whether she was a legitimate prize, or should be liberated. Of all the passengers, Michaux was the only one ordered on board the Leander, where he remained during a cruise of forty-three days, after which they reached the Bermuda Islands. While in port, he was permitted freely to go ashore, and had thus the opportunity to make some interesting observations, the details of which he addressed to the Professors of the Paris Museum of Natural History, in a memoir entitled "*Notice sur les Iles Bermudes, et, particulièrement, sur St. Georges.*"

Michaux was finally released, and permitted to sail for the United States, which he reached towards the end of May. Beginning his explorations at the district of Maine, where the winter is as rigorous as in Sweden, though ten degrees farther south, he travelled over all the Atlantic States as far as Georgia, where the heat, during six months of the year, is as great as in the West Indies. Besides a journey of 1800 miles from north-east to south-west, he made five explorations into the interior of the

country.—The first, along the rivers Kennebeek and Sandy; the second, from Boston to lake Champlain, crossing the States of New Hampshire and Vermont; the third, from New York to lakes Ontario and Erie; the fourth, from Philadelphia to the rivers Monongahela, Alleghcny and Ohio; the fifth, from Charleston to the sources of the Savannah and Oconee rivers. In travelling along the sea-coast, he visited the principal dock-yards, with the view to examine the timber employed in ship-building; he also entered in all the work-shops where wood was worked into forms. As the knowledge of which he was in need, was, principally, in the possession of artisans, he, accordingly, consulted the most skilful workmen, and by means of a series of questions, previously prepared, he collected a mass of valuable information.

In his different journeys into the interior, he paid a particular attention to the trees that formed the bulk of the forests, with reference to the nature and uses of their woods, or as objects of commerce between the different states, or of exportation abroad. He ascertained the sources of the different barks employed in tanning; inquired into the quality and price of the various woods used for fuel, and formed a complete collection of polished specimens of the species employed in cabinet work or otherwise. In a word, the range of his observations was unlimited, and could not fail to interest exceedingly the people of the United States, as well as Europeans, and to become one of the main points of the splendid work which he published, almost immediately, after his return.

Michaux remained nearly three years in the United States, diligently employed in his arduous task. During his residence, he formed many valuable acquaintances. Besides the late Muhlenberg, Hamilton, Barton, Hosack, Alex. Wilson, Eddy, &c., he was on terms of friendship with others still living, among whom I may mention Dr. John Francis of New York and Major Leconte. Michaux was elected a Member of the American Philosophical Society on the 21st of April, 1809; and we have a proof of the value in which he held this honour, by the handsome provision made in favour of this institution, in his testament, bearing date of May 30th, 1852.

I should fail in my duty towards one, who was the companion and helpmate of the two Michaux, if I omitted here to mention his name. This is the humble Paul Saulnier, the same journeyman gardener who, in 1785, had accompanied them to this country, and was intrusted with the care of the New Jersey nursery. François Michaux never spoke of him but with feelings of respect and affection.

"Originally of France," says Dr. Francis in his eloquent discourse on the Natural Sciences, "his early life was absorbed in practical horticulture, as an experimenter in vegetable physiology, and as one of the subordinates of the Jardin des Plantes. Here, he had instilled into him the principles of *ordines naturales*, by their author, de Jussieu. Shortly after, he was selected for his botanical attainments, to accompany the elder Michaux to this country. He proved serviceable as a collector. By royal means, Louis XVI., by whose patronage Michaux was authorized to procure American productions, a plot of ground in New Jersey was appropriated as a suitable garden for rearing and preserving plants and trees, mainly designed for the institutions of France.

In this sequestered place, Paul, with the exception of occasional excursions to New York and to parts adjacent, passed the remainder of his days. Here he was visited by the younger Michaux, Pursh, Douglas, Bradbury and other foreign naturalists who reached our shores. Poor Wilson, the Ornithologist, often found shelter within his humble dwelling from the lowering sky and tempestuous storms, and often I have heard Michaux enlarge on the refreshing enjoyment of Paul's hospitality. Paul was a sort of Sir Oracle with them; and his responses were heeded by all who sought practical knowledge in natural history. Paul, I believe, may be estimated the first, as to time, who without much pretension, inculcated among us the classification of Jussieu, and the arboriculturist may perhaps be now, for the first time, informed that to him are we to assign the introduction into this country of the Lombardy poplar. Paul holds a place in the progress of botanical pursuits not unlike that enjoyed so long by

the venerable Wm. Bartram, though I should be reluctant to assign to him a place as conspicuous as that of our philosophical traveller.

Let Michaux speak of the goodness of his heart and of his disinterested philanthropy: "Paul was so exclusive in his attentions to his avocations, that hardly any other subject than trees and plants ever found entrance into his mind. To the day of his death, he considered his little circumscribed residence as still the property of his royal master; and ignorant of the vicissitudes of political revolution, reluctantly gave credence to the fact of the decapitation of his bountiful, but unfortunate King. Paul now lies in the Hackensac churchyard; his tomb-stone records not half his excellence."

On Michaux's return to Paris, he presented himself before the Central Society of Agriculture, to which he was mainly indebted for his mission to the United States, and there gave an account of his voyage, of the various tasks he had performed and of the flattering results which had been already obtained:—From the seeds which he had forwarded during his absence, more than two hundred and fifty thousand young trees had already sprung up, which were fairly promising to accomplish, in succeeding times, the objects contemplated by him, and confidently expected by his fellow members of the Society of Agriculture, who appointed a committee to report on the success of his voyage. Correa de Serra, chairman of that committee, in a most flattering report, highly complimented Michaux on the faithful execution of his trust, and for the importance of the services he had rendered to his country, he called forth a vote of thanks.

During the two years following his return, Michaux was actively employed in the publication of his great work: "*Histoire des Arbres Forestiers de l'Amérique du Nord,*" so anxiously expected by all who took an interest in the Flora of the United States, and in the observations of one so well versed in agricultural pursuits. The first volume appeared in 1810; the second, in 1812, and the third, in 1813.

This magnificent work, illustrated by 144 copper plates, designed by the two Redouté and by Bessa, and engraved by such eminent artists as Gabriel, Renard, Boquet, Bessin, and Dubreuil, was translated into English by Augustus L. Hillhouse, and published in Paris in four volumes by Charles D'Hautel (1817—1819) under the title of "*North American Sylva,*" with the addition of several plates and some new observations by the author. Mr. Wm. Maclure purchased the plates in Paris, and brought them to this country. To this circumstance is owing the publication of two American editions, which are likely, soon, to be followed by a third. The first, was issued at New Harmony, Indiana, in 1842, and the second, in this city, in 1852, with notes by J. J. Smith, Esq. Mr. Nuttall, soon after, published, on Michaux's plan, an additional *Sylva Americana*, describing and illustrating as many as one hundred and twenty trees, mostly unknown to his predecessor, indigenous to the far west regions, Oregon and California included.

Of this splendid work of Michaux, the author of an article on the botany of the United States, published in the 13th Vol. of the North American Review, remarks: "It is the plan of Michaux's history of our forest trees, to unite the advantages of a work strictly botanical and one relating to the useful arts; but, especially, to collect all the scattered details which books or experience could furnish him, with respect to the application of various kinds of wood to the purposes of life. Botanical descriptions can easily be made or found; but, in order to ascertain their useful properties, it was necessary to consult artisans, in almost every branch of practical mechanics, to frequent dock-yards, or workshops in which wood was employed, and in short, to gather information from every attainable source. From these inquiries Michaux had obtained a most extensive collection of curious and important facts, which rather belonging to the application of botany than to botany itself, are nevertheless essential to the complete knowledge of the plants of the United States; for, besides the commercial and practical uses of our trees, we have a very perfect account of the inflorescence, fructification, growth and botanical habit of them individually considered, as also many interesting facts with regard to them taken together as composing forests."

In a letter, dated October, 1852, addressed through Mr. Isaac Lea, to the President of the American Philosophical Society, Michaux expresses himself in the following words, with regard to his *Sylva Americana:* "The science of botany was the principal object of my father's explorations in North America, and the *Flora Boreali-Americana*, was the result of those explorations. As for me, I took another view of the vegetable kingdom, whilst in your country—a view more limited and less scientific, it is true; but, perhaps, more generally profitable to the farmer and landholder, as well as to that class of society, so numerous in the Northern States of the Union, who employ wood in so many different ways. I do not consider my *Sylva Americana* as complete as it might be; thus, for instance, I have omitted several species which grow in lower Louisiana, and in the two Floridas. In the second place I have described and figured some trees that are deficient in the flowers and in the fruits. Had circumstances permitted, I would have returned to the United States, and, in a new edition, have corrected the errors, and filled up the omissions. I would thus have been able to present to the American nation, a work worthy of her great name, but now that I have arrived at a very advanced age, nearly 83 years, I can do nothing more, in this respect, than to express my regrets, and the hope that some native arboriculturist may complete my researches on the plan which I have adopted. The publication of such a work would be attended with much benefit to the country, and afford particular honour to him who would undertake it."

Since the appearance of his great work, Michaux has devoted all his attention to his favourite pursuits—the cultivation and propagation of trees, presenting a special object of public utility. Intrusted with the administration of a large estate belonging to the Central Society of Agriculture; experimenting largely in sylviculture on the extensive plantations of Mr. Delamarre, and owning himself a country place near Pontoise, he never ceased until his death, to be actively employed in experiments on arboriculture, either suggested by himself or others.

Michaux had retained in this country a few correspondents, who sent him occasionally new supplies of seeds, and, through a letter furnished by one of these gentlemen, I had the gratification to become acquainted with him, in the autumn of 1824.

When living in Baltimore, from 1816 to 1824, I formed an intimacy with a French gentleman of the name of Leroy, who had known Michaux in this country, and had been since in correspondence with him. This Mr. Leroy, who was himself an excellent arboriculturist, having been earnestly solicited by his friend to send him all the seeds and young trees which he could procure in the vicinity of Baltimore, applied to me, as a fellow botanist, to assist him in this undertaking. We, therefore, went to work together in earnest, during the autumn of 1819, rambling into the woods with a negro boy, climbing and beating Oaks, Maples, and Hickory trees; uprooting the shrubs and young trees that fell in our way, and collecting seeds of every sort. The result of our campaign filled up several large boxes which were forwarded to Michaux, in the early part of the winter.

When I visited Europe in 1824, Mr. Leroy favoured me with a letter of introduction to his friend, recommending me as his co-labourer in the collections which had been forwarded to him from Baltimore, some years previous. This letter did not fail insuring to me a hearty welcome at the hands of Mr. Michaux. I saw him frequently, and breakfasted with him at his winter quarters in Paris, on the place St. Michael, which was then a market for garden vegetables and fruits. We seldom sat at the breakfast table, without having, previously, taken an inspection round through the stalls where fruits and vegetables were sold, and he was pleased to point out to me the rarest and most beautiful with a passing notice on their origin.

Mr. Michaux was extremely desirous to show me, in detail, his fine nurseries, especially those which contained his Maryland trees, to "*contemplate*" the result of the troubles and fatigues which they had cost me, but the weather was so unfavourable, during the whole season, that I could visit but one of

them, which I found wholly planted with Maryland Oaks, and covering an extensive plot of ground. Though the young trees, then devoid of their foliage, had suffered much, the second year, from the depredations of a herd of swine that had trespassed upon these grounds, they still appeared vigorous and promising, and are, I suspect, the very same trees that are now (as I see by the Paris papers) adorning the Quai des Tuilleries, and some of the new boulevards of the French metropolis, under the denomination of *American Oaks thirty-six years old.*

In acknowledgment of the service I had thus rendered him, Mr. Michaux presented me with a copy of the French edition of his magnificent work, beautifully bound in three volumes, and containing a double set of plates, the plain and the coloured.

Mr. Michaux's person was tall, strongly built; but not corpulent. His complexion was fair; he was slightly pock-marked, and possessed prominent features. His light blue eyes had a peculiar expression which startled me at first. His countenance was stern and cold on first approach; but it smoothed off and brightened gradually, as he spoke and became more familiar; his utterance, in the beginning somewhat slow and cautious, became rapid and impressive, and his conversation gay and even humorous. All his manners were quite simple and unaffected, frank and lively—they were altogether those of an open-hearted country gentleman, in whose presence, young as I was at the time, I could feel neither embarrassment nor shyness.

I do not think that, since this interview with Michaux, his position and pursuits underwent much change. To the very last day of his life, he was fortunate enough to retain his health and remarkable activity of body and mind. The main point of his arboricultural experiments was to turn to advantage those lands, called heaths, which, in France alone do not cover less than two millions of acres, and were considered as utterly sterile. Through forty years of experiments, performed by him on the large demesnes belonging to the Central Society of Agriculture, and to Mr. Delamarre, he has ascertained that such lands could be improved and rendered productive by the cultivation of certain resinous trees, which succeed well in such soils. Of all the American and European pines with which he has experimented, Michaux gives the preference to the Russian Pine, *Pinus sylvestris*, which, in his letter to the President of the American Philosophical Society, above mentioned, he recommends warmly to the particular attention of the agriculturists of the Northern and Middle States of the Union.

With the view to remedy the scarcity of wood, under which this country is beginning to suffer, through the rapid and improvident destruction of the native forests, Michaux recommends also to the American people the cultivation of bushy or spreading trees, producing copses, or *Taillis*, to which he has applied a special mode of culture, more rational and more favourable to the development of vegetation, and, consequently, more profitable to the landholders.

We are informed by the same letter that Michaux was then preparing for publication a work in which he intended, succinctly, to develop his ideas on those interesting subjects, and to lay open the results of his observations and practical experience, for the particular benefit of the farmers and landholders of the United States.

Michaux's last days were thus passed tranquilly, dividing his time between his favourite occupations of arboriculture, and the society of a few friends, among whom the most intimate were President Seguier, Messrs. Macaref, D'André and Vilmorin. Louis Philippe himself, who had known him in this country, never ceased to show him the greatest esteem and affection. He was always happy to see some transatlantic acquaintance. All the Americans, who have seen him in Paris, or at his country residence of Vaurćal, can testify to the urbanity of his manners, and to the cordiality with which he received his visitors. In conversation with Americans, nothing afforded him more pleasure than the subject of this country. He listened with amazement to the wonderful accounts of its progress, of the rapid increase of its population, of its wealth and resources, of its success in war and in diplomacy. The

names of new cities and innumerable towns, located on sites which, in his time, were still covered with the native forests; the mention of the multifarious rail-ways, extending their arms in all directions and encircling the whole country in an immense net-work of iron; the speedy steam travelling by land and water, which would have rendered his long and painful journeys so short and so easy; in fine, the electro-magnetic telegraph, another offspring of American genius—all these wonderful achievements elicited from him the greatest amazement and the most emphatic exclamations: Mon Dieu, Mon Dieu, est il possible!

He felt proud to mention that he had been one of the first steam navigators, and boasted of an early acquaintance with Fulton, whom he met at Albany in 1807, under the following circumstances: He was then returning to New York city from his exploration to the lakes Ontario and Erie, and intended to take passage in a packet boat for New York; but seeing an advertisement of a steamboat to depart the same morning, he had the curiosity to examine her, and he determined to take passage on her. Strange to say, he and a Frenchman who accompanied him, were the only passengers on board; it was the first trial trip. Fulton was on board, and, as might be supposed, between two such men, speaking equally well the French language, an intimate friendship was formed, which continued through life. The ardour of this friendship on Michaux's part, was proved by his devotion to Fulton's memory.

Michaux, having found in Paris a model, in clay, of a bust of his friend by Houdon, bought it and caused it to be put in marble by the best artist he could find, at the cost of 1000 francs. He obtained permission afterwards from the Government to have it placed in the Marine Department of the Louvre, near that of Papin, who had done, himself, so much for steam.

Michaux's turn of mind was also literary. Besides his great work on *the North American trees, his journey to the west of the Allegheny Mountains* and the memoirs already mentioned, he published, in 1831, an essay *on the Planera crenata;* in 1852, a memoir on the *causes of Yellow Fever in the United States*, and another one *on the culture of the Vine*. He may have left also, at his death, some unpublished papers, among which is probably the memoir alluded to in his last communication to the President of the American Philosophical Society. This communication dated, as I have said above, Vaureal near Pontoise, October 24th, 1852, was particularly intended to inform the President and his fellow-members that, desirous of giving the American nation a testimonial of his heartfelt gratitude for the hospitality and assistance which his father and himself had received in this country, during the course of their long and toilsome journeys, he had made testamentary provisions in favour of the Society, with the view to afford the means of promoting the progress of the science of Sylviculture in the United States.

This testament which Michaux had intrusted to the care of a gentleman of this city, Mr. Isaac Lea, whom he had consulted in the matter, was deposited four years ago in the archives of the Philosophical Society; but was not to be opened until after his death. This was done, consequently, on the 20th of October last, by the Recorder of Wills of the city of Philadelphia. By this document, he bequeaths to the American Philosophical Society, the sum of fourteen thousand dollars, for special purposes connected with the particular object of his constant aspiration, "The progress of agriculture with reference to the propagation of useful forest trees." By the same instrument, he likewise endows the Society of Agriculture and Arts of Boston, with the sum of eight thousand dollars for similar purposes.

Michaux's demise was made known to the American public by Prof. Asa Gray, in the columns of the July number of the American Journal of Sciences and Arts. It had been communicated to his lady, by a friend of Mr. Michaux, who thus relates the circumstances of his death: "I have to speak to you of the death of our good friend, Mr. Michaux. He was carried off with frightful suddenness by a stroke of apoplexy, on the 23d of October, 1855. He had been occupied the whole day, planting American trees, and himself directing his journeymen. He withdrew from his work in good health,

dined moderately, but with good appetite. He went to bed as usual, and fell asleep. At about one o'clock in the morning, his wife heard him move about and calling. She instantly rose from her bed, and ran to his apartment. He was still struggling on the floor, when she entered his room; but, on reaching him, she found that he had breathed his last. Physicians were called in immediately, but all in vain, life was totally extinct. He died at the age of eighty-five years.

Michaux left no issue. He had lived single to an advanced age, when quite suddenly, he became tired of celibacy, and changed abruptly his condition, by marrying a relative of his, who, for a long time, had been the manager of his house, his attendant in sickness and companion in his solitude. They lived most happily together, and at his death, he left her a comfortable provision for the remainder of her life. Mr. Michaux was in easy circumstances; but by no means rich. To his title of Chevalier de la Légion d'Honneur, he added, those of Correspondent of the French Institute, of Member of the American Philosophical Society, of the Central Society of Agriculture of Paris, of the Society of Agriculture and Arts of Boston, &c., &c.