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A French Scientist
on the American Frontier**

by

Samuel E. Dicks

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Antoine Saugrain (1763-1820): A French Scientist on the American Frontier

by

Samuel E. Dicks *

Benjamin Franklin received two young Frenchmen as guests at Philadelphia in the summer of 1787. One was Antoine François Saugrain de Vigny (1763-1820) who was destined to be an interesting and important physician and scientist at St. Louis and other places in the early west. Franklin, then eighty-one years old, had returned from his famous mission to Paris two years earlier. Franklin's reputation in science was at least as high among European intellectuals as his reputation as a statesman. His scientific activities, particularly his work in electricity, had resulted in his election to virtually every learned society in western Europe. When he journeyed to France following the American declaration of independence, he was already a member of the English Royal Society and one of eight foreign members of the French Academy. Furthermore, he had become personally acquainted with many figures of the French Enlightenment during his years at the French court.

J. N. Picque, a botanist, and Saugrain, a twenty-four-year-old physician and scientist, gave Franklin laudatory letters of introduction from Joseph Ignace Guillotin,¹ a brother-in-law of Saugrain, Le Veillard,² and Jean D'Arcet.³ Guillotin and D'Arcet, both physicians, had become acquainted with Franklin at least by 1784, if not earlier, because they had been chosen by the king to serve on a commission to investigate mesmerism, with two other physicians, and with five members of the Academy including Franklin and the founder of modern

* Dr. Dicks is an associate professor of history at Emporia Kansas State College.

¹ Letter of June 18, 1787, Franklin Collection (American Philosophical Society Library, Philadelphia), *Letters to Dr. Franklin*, XXXV, pt. 1, no. 78, as copied in Saugrain-Michau Collection, Missouri Historical Society. The author is indebted to the late J. Harold Pettus of St. Louis for permission to use the Saugrain-Michau Collection, and also wishes to express his appreciation to Frances H. Stadler, Archivist, Missouri Historical Society, and the other members of the Society staff for their kind assistance.

² Letter of June 13, 1787, Franklin Coll., no. 77. They also carried a letter of the same date from Le Veillard to William Temple Franklin (Franklin Coll., *Letters to William Temple Franklin*, CVII, no. 29).

³ Letter of June 19, 1787, Franklin Coll., *Letters to Dr. Franklin*, XXXV, pt. 1, no. 80.

chemistry, Antoine Lavoisier. Le Veillard had been Franklin's neighbor in Paris.

Saugrain had been born into a learned upper middle-class family active in the intellectual life of Paris for generations. Since the mid-sixteenth century, members of the Saugrain family had been prominent as booksellers and publishers in Paris. As a bookseller, his father, Antoine Claude Saugrain, not only published books, but often employed the men who wrote them. This was at a time in Paris when the world of books included a large number of an intellectual and scientific nature.⁴ The connections of the Saugrain family with Parisian intellectual life can be seen by the marriages of family members. Thérèse Angélique, Antoine's sister, married Henri Didot (1765-1852), the son of a famous printer and noted engraver. Another sister, Marie Louise, married the noted physician Joseph Guillotin, Regent of the Faculty of Medicine in Paris. A brother of Antoine, Claude Marin, married Louise Josephine Chalgrin, god-daughter of King Louis XVIII and a sister of Jean François Chalgrin, architect of the *Arc de Triomphe*. A third sister married Pierre Plassan, a bookseller and publisher. Family connections also included J. B. Huet and Horace Vernet, painters, the designer and engraver Jean Moreau, and the sculptor Jean B. Beuillet. Antoine Saugrain had been born into an environment conducive to intellectual and scientific attainment.⁵

Guillotin's letter of introduction discussed his early education:

He has lived since early childhood, in the medical schools, under my observation in the amphitheatres, laboratories, etc., and, as young as he is, he has taken, for a number of years, not only my lessons, but also courses in anatomy, surgery, chemistry, natural history, physics, etc. from Messrs. A. Petit, Noux, D'arcet, Buquet, Fourcroy, Briffon, Charles, Etc. He practiced surgery at the Hotel-Dieu, and with all great success.⁶

⁴ William Vincent Byars, *The First Scientist of the Mississippi Valley, A Memoir of the Life and Work of Doctor Antoine Saugrain* (St. Louis, c. 1902), p. 8. Jean Saugrain went from Lyon to Paris where he was a printer to Charles IX, under letters patent dated June 10, 1568, and later a royal bookseller under Henry IV. He died childless, but the family tradition was maintained by his brother Abraham and his descendants. The Saugrains were succeeded by the Didots, a family connection.

⁵ Memoranda, Saugrain-Michau Collection. Guillotin, Saugrain's most famous relative, took part in the early revolutionary movement in France. His name was forever connected to the most terrible events of the revolution, because he suggested a decapitating machine as a less painful form of criminal execution. He took no part in the Reign of Terror, and was jailed during the latter part of it. He resumed his medical practice after the rise of Napoleon, and was one of the earliest proponents of the Jenner smallpox vaccine.

⁶ Guillotin to Franklin, June 18, 1787, Franklin Collection, as translated in John Francis McDermott, "Guillotin Thinks of America," *Ohio State Arch. and Hist. Quarterly*, XLVII (1938), 129. Hereafter referred to as "Guillotin." The "Briffon" mentioned by Guillotin was probably Mathurin-Jacques Brisson (1723-1806) who abandoned the pursuit of natural history and was appointed professor of physics in Paris in about 1757. He was the author of *Éléments ou Principes Physico-Chymiques* (Paris, 1800), a

He also had "the usual course of classical studies," prior to his scientific training, and attended the lectures at the *Jardin du Roi*.⁷ Saugrain's mother later wrote that at the age of ten "Vigny was an assistant of Professor Bouquet, taking care of his apparatus."⁸ Saugrain then had experienced a thorough scientific education from some of the outstanding minds of Paris.

This was not Saugrain's first trip to the New World. At the age of nineteen, he had been placed by Guillotin with Gilbert Antoine de St. Maxent, a wealthy merchant-official in Louisiana.⁹ Saugrain had been admitted to the practice of surgery at New Orleans¹⁰ and remained there for about three years.

Saugrain made such an excellent impression under Maxent, that when Maxent's son-in-law, Count Bernardo de Galvez (1756-86), governor of Louisiana, had been appointed Viceroy of Mexico, he requested Saugrain's services.¹¹ Galvez then sent Saugrain back to France to purchase books, clothes, and other items. Saugrain had indicated a greater interest in purchasing a "full cabinet of physical science," and had been reprimanded by Galvez for his expensive interests.¹² The proposed cabinet had consisted of 230 different items, in many cases several of each. It would have been sufficient to outfit a fairly elaborate laboratory in physics and chemistry. It had included, for example, about ten different kinds of balances, numerous mirrors of various shapes, different kinds of barometers, areometers, thermometers, electrical machines and batteries, and many other items. This list, in Saugrain's handwriting, is bound together with forty-seven lessons and experiments, and other comments, in two leather-bound volumes totaling 641 pages.¹³ Apparently, Saugrain had planned to refer to these de-

copy of which is in Saugrain's library in the Missouri Historical Society. Antoine François Fourcroy was an outstanding teacher of chemistry and a supporter of Lavoisier's arguments against the phlogiston theory. His five volume *Éléments d'Histoire Naturelle et de Chimie* (4th ed., Paris, 1791) is in Saugrain's library. His library is discussed more fully at the end of this article.

⁷ [Mrs. Waldeward Mentelle], "A Biographical Sketch of Dr. A. Saugrain by a Female Friend, with Remarks upon the French Settlement of Gallipolis," *Cincinnati Saturday Evening Chronicle*, July 14, 1827, as copied in Saugrain-Michau Collection. A memorandum in the Saugrain-Michau Collection identifies the author. She was acquainted with the Saugrain family at Lexington and there are a number of letters from her to the family at St. Louis in the Collection.

⁸ Letter in 1813 from Saugrain's mother in Paris to his wife in St. Louis, Saugrain-Michau Collection.

⁹ Guillotin to Franklin, June 18, 1787.

¹⁰ Records of the Cabildo, 1779-84, City Hall Archives, New Orleans. He passed the examination and was admitted to the practice of surgery on June 6, 1783, at the age of 20.

¹¹ Guillotin to Franklin, June 18, 1787.

¹² Letter of August 3, 1786, from Count Bernardo de Galvez in Mexico to Saugrain in Paris, Saugrain-Michau Collection.

¹³ Saugrain, *Recueil d'Observations Physiques* (Paris, 1786); *Observations physiques* (Paris, 1786-87), Saugrain-Michau Collection. The earlier volume of 222 pp. contains 20 *leçons*; the second volume of 419 pp. contains *leçons* numbered 21 through 47, and also the list of items necessary for a physics cabinet.

tailed materials in his planned laboratory in Mexico.

The eighteenth century was a period of scientific revolution, as well as political revolution; it had opened with the work of Newton in physics, and was ending with the founding of modern chemistry by Lavoisier. It is easy to understand why a young man with Saugrain's training was so full of enthusiasm about the frontiers of scientific study, as he also explored the frontiers of the New World. An interesting future under Galvez was not to happen, however, for Saugrain received word of the death of his patron shortly before his planned departure to join him. Thus it was that Saugrain became interested in Guillotin's project to found a French settlement in North America, and in the summer of 1787 was at the Philadelphia home of Benjamin Franklin.¹⁴

Guillotin wrote to Franklin that in the New World he hoped to found an asylum free from "the despotism and superstition of an empoisoned land where the honest man meets only trouble, disgust, worry, and danger." Saugrain, and his companion, Picque, were to meet these four evils on a much greater scale than they had ever known in the Old World. Before Guillotin's party of twelve or so was to set out, Saugrain and Picque were to examine the western country and choose a site. Picque was then to watch over the location while Saugrain returned to Paris for the main group, which would include Guillotin and his wife, Saugrain's brother and mother, and a cousin. Others were to follow later.¹⁵ Saugrain apparently impressed the old doctor, for Franklin later wrote Le Veillard, "I find Mr. Saugrain to answer well the good character you give of him, and shall with pleasure render any services in my power. He is now gone down the Ohio to reconnoitre that country."¹⁶

In late September, Saugrain and Picque left Franklin's home at Philadelphia for Pittsburgh. Anticipating difficulties, they carried a letter of introduction from Thomas Jefferson, Franklin's successor in Paris, to General George Rogers Clark, the Revolutionary War hero and frontiersman:

Dear Sir

The bearers hereof Doctor Sangrain [*sic*] and Monsieur Picque purposing to go to Kentucky to establish themselves, I take the liberty of recommending them to your notice and civilities. The former is recommended to me by a very good friend of mine, as a gentleman of skill in his profession, of general science & merit. The latter is associated with him in the design of procuring a considerable establishment in our new country. I beg leave to recommend them particularly to your counsel and protection against im-

¹⁴ Guillotin to Franklin, June 18, 1787.

¹⁵ *Ibid.*

¹⁶ Letter of February 17, 1788, *The Works of Benjamin Franklin* (ed. John Bigelow, New York, 1904), XI, 407-409.

position in their purchases to which as strangers they will be exposed. The services and attentions you will be so good as to shew them will be deemed obligations to him who has the honour to be with sentiments of high esteem and respect Dear Sir Your friend and servant,

Th: Jefferson ¹⁷

There is no indication the young travelers ever had an opportunity to present the letter to Clark whose career ended in the summer of 1787 in the Wilkinson affair. His aid might have been most useful.

When they reached Pittsburgh in October they found that the Ohio River was too low to proceed downstream. Later the river froze over. They wintered on an island below Pittsburgh. Saugrain later relayed his scientific activity at the head of the Ohio to Jacques Pierre Brissot de Warville (1754-93), a French traveler in North America, who made note of the young scientists:

During their rather long stay in the area they conducted a number of different experiments. M. Saugrain weighed, by means of a hydrostatic balance which he had brought with him, the different kinds of wood. He also tried to find out which kinds of wood yielded the largest quantity and best quality of potash. A number of experiments convinced him that the potash yield of corn stalks was proportionately the largest. He examined the various mines in the area and found that there were iron, lead, copper, and silver mines both on this side of Pittsburgh and down the Ohio. He was told of a rich iron mine belonging to a Mr. Murray, but he was not allowed to visit it. ¹⁸

A young Pittsburgh schoolteacher helped the Frenchmen study English. It was, perhaps, early in February that Raguet, formerly an officer in Polasky's legion, and Captain David Pierce, a Virginian, joined the two young scientists in making preparations for journeying down the river as soon as the weather permitted. ¹⁹

Apparently Saugrain did not attend to his writing obligations, for his brother, Claude Marin Saugrain, wrote from Paris, January 30, 1788, that Guillotin "is not very much pleased with you so far. I hope you succeed in carrying out the plan for which you undertook your

¹⁷ Letter of June 21, 1787, *The Papers of Thomas Jefferson* (ed. Julian P. Boyd, Princeton, 1955-), XI, 487.

¹⁸ Jacques Pierre Brissot de Warville, *New Travels in the United States of America, 1788* (ed. and trans. Mara Soceanu Vamos and Durand Echeverria, Cambridge, Mass., 1964), p. 213. Saugrain related this account to Warville upon his return to Philadelphia. Warville came from France to the U.S. in 1788 and returned after a brief period. His work appeared in Paris (1791) under the title *Nouveau Voyage en Septentrionale Amérique*. He suffered death under the guillotine, October 30, 1793, with twenty other Girondists.

¹⁹ McDermott, "Gallipolis," pp. 141-42.

voyage." He reprimanded Saugrain for not writing and asked for a long letter with lots of details since he had not heard from Saugrain for four months.²⁰ Picque had written to Franklin frequently during the winter, and on March 2, 1788, he wrote that they had a new boat and had decided to depart soon.²¹

On March 19, Saugrain and his three companions embarked on the journey down the Ohio River to the falls of the river at Louisville. They were attacked by a small band of Indians five days later. The young Virginian jumped into the water when he saw a canoe of Indians gaining on them. The helmsman gone, the boat turned and soon stopped. Raguet, a poor swimmer and handicapped with a broken arm, drowned. Picque was stabbed and scalped. Instead of killing Saugrain, the Indians made him accompany them as they pursued the boat which had drifted downstream. The Frenchman, believing he would otherwise soon be killed, broke the strap binding his hands and threw himself into the water, swimming rapidly downstream. The Indians fired at him, wounding him in the neck and breaking a finger. Saugrain later wrote that he "regained shore and as I went to see if M. Picque was quite dead I perceived Mr. Pierce who had concealed himself in the ravine." Finding Picque dead, the two then set out on foot for Louisville. Saugrain had lost his shoes while swimming and his only clothing was a shirt and a pair of large breeches. His left hand was badly swollen where he had been hit and his neck was so swollen from the gunshot that he could not move his right arm. Because of his condition, they could not build a raft, a chore that required the work of two men; so they continued on foot. Saugrain was also weakened from losing blood, but they continued for most of the night.²²

In the early cold spring morning they slept. Rain and snow fell, and when Saugrain awoke his feet appeared frozen. He felt no pain, however, and they continued walking. They stayed near the river in the hope they might sight a boat. It rained again that night, and the next day his feet were in bad condition. Saugrain wrote that Pierce

who was impatient left me often very far behind him. But I found a way of making him come — it was to sit down, and he after having

²⁰ Letter, Saugrain-Michau Collection.

²¹ Letter, Franklin Collection, *Letters to Dr. Franklin*, XXXVI, pt. 1, no. 30. Picque also wrote Franklin on October 18, 1787 (pt. 2, no. 133), and on February 10, 1788 (pt. 1, no. 18).

²² Antoine Saugrain, *Dr. Saugrain's Relation of his Voyage down the Ohio River from Pittsburgh to the Falls in 1788*, trans. Eugene F. Bliss (1876), Saugrain-Michau Collection. This translation later appeared in the *Proceedings* of the American Antiquarian Society, II (1897), 369-80. The French appears in Hélène Marie Fouré Selter, *L'Odyssée Américaine d'une Famille Française: Le Docteur Saugrain* (Baltimore, 1936). (For a discussion of minor variations regarding the dates of the departure from Pittsburgh and Indian attack see McDermott, "Guillotins," pp. 145-46. According to Warville, p. 214, Saugrain "never could find out what Indians had attacked them. He suspects that there were among them white men who either through informants in Pittsburgh or even by being in the town had managed to learn of their trip and, suspecting they had money, had made plans to steal it.")

waited for me for some time, thinking that something had happened to me, retraced his steps and seeing my feet as black as coal and that I could not walk, he gave me his arm and he cut a piece from his shirt to wrap up my hand.

Pierce killed a skunk, but they were fearful Indians would see their fire if they cooked it. The Virginian skinned it, but refused to eat any. Saugrain "cut off some little bits and swallowed them like pills. This did me little good, I assure you." Saugrain rammed a stick into his foot when they heard Indians in the distance and ran. The night seemed horrible to Saugrain, who could hear and see Indians in every sound and shadow. Before dawn they moved on again.²³

They quarreled about crossing a creek, and Saugrain's personality showed through in his account of the incident:

Seeing that he wished absolutely to make the grand detour and leave the bank of the Ohio, I did as I always did. A violent part seemed to me the best. To put an end to the dispute, I went into the water. He had his back turned and could not oppose my plan. I was already in the water before he was aware of it. Thus I crossed fortunately and he did not delay to follow me.²⁴

Four miles farther down the river, they were cautiously picked up by two boats, and they arrived at the falls of the Ohio the night of March 29. The next day Saugrain went to the fort opposite Louisville where he was cordially welcomed by Colonel Ephraim Blain, whom he had met at Pittsburgh. Saugrain was unable to walk for the next three weeks. He stayed at the fort, where he received aid of an army surgeon, until May 11.²⁵

Franklin read of the tragedy in the *Kentucky Gazette* of April 4, 1788, and notified Guillotin on May 4.²⁶ Guillotin replied to Franklin on July 1. He mourned the end of his colony and asked for more news of the travelers.²⁷

Meanwhile Saugrain's health improved. Two weeks after his arrival at the fort he wrote that he would be able to walk in ten or twelve days. "I shall not lose the big toe of the same foot, my neck is quite cured and my hand could not be better. I have got off with the loss of the perfect use of the index finger of the left hand."²⁸

Saugrain observed his new environment with the mind and eyes of a scientist. He realized the unhealthy nature of stagnant water for a

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ McDermott, "Guillotin," p. 149. The text of the *Gazette* article is reproduced by McDermott.

²⁷ Franklin Collection, *Letters to Franklin*, XXXVI, pt. 1, no. 66.

²⁸ Antoine Saugrain, *Dr. Saugrain's Notebooks*, trans. E. F. Bliss (1876), Saugrain-Michau Collection. This translation later appeared in the *Proceedings* of the American Antiquarian Society, XIX (1903), 221-38. The French appears in Selter.

community, and wrote that Louisville was a very unhealthy place because of "the negligence of its inhabitants who let the water stagnate in the lower parts, although it would be little trouble to draw it off."²⁹

Before he was able to walk he was already putting his knowledge of minerals to use. His reputation at Pittsburgh had preceded him, and on April 13 he wrote:

There are several mines they say and I have here the reputation of a great mineralogist, and as I found at Fort Pitt a little silver in a lead mine, some of which they gave me to assay, they believe in this part of America that I am going to find all the gold of Peru. So they bring specimens in abundance and the greater part are only iron or copper pyretes. I wish, my learned friend [Guillotin], you were here, for there is a lead mine which yields quite abundantly, but it is with a quantity of bismuth, as I judge. I shall bring you specimens of it and we will see together, we two men, if it is good . . . I make myself useful to all; I have made them a furnace and we make fixed alkalies for all the doctors round about. It is good to know something, one makes himself useful and I amuse them also with some experiments in electricity.³⁰

Saugrain also observed the large number of salt springs in the area and concluded:

There is no doubt in my mind that all this country has been covered by the water of the seas or has been a lake. I will bring you some stones which I think will convince you when you have seen the incrustations of sea shells which occur.³¹

By April 25 he was able to walk and discovered a mineral spring that helped his painful feet and also aided him in making ink:

This water is impregnated with a considerable quantity of iron . . . I brought back some of the water to the fort, and having put into it an infusion of oak-bark, it gave me an ink with which I am writing to you. After however bringing it over the fire and boiling it for two hours, it is as blue as at this moment but I think it will fix. I do not know whether it contains copper, but having here only fixed alkalies it gave me a precipitate of brick-color.³²

On another occasion he found a sweetgum tree. "They were very much surprised at the fort that I found any of this resin; those who had lived here three years had not found it, such good observers they are,

²⁹ *Ibid.*

³⁰ *Ibid.*

³¹ *Ibid.*

³² *Ibid.*

and to honor my sojourn in the fort they have planted one in the garden to which they have given the name Saugrain-tree."³³

A boat arrived from Vincennes and on May 11 Saugrain left to return to Philadelphia and Franklin's home. On May 13 he was in Danville, and three days later in Lexington, the capital of Kentucky. Having been asked to examine a lead mine, Saugrain spent the next two days studying minerals in the vicinity. His trip was trying but uneventful. On most days the group made thirty to forty miles, but some days less if it rained. Throughout the journey, Saugrain noted the characteristics of the settlements through which he passed, the condition of agriculture, and the springs and rivers. He had not given up his plan to settle in America.³⁴

He reached Pittsburgh June 17, over five weeks after he had left Louisville. Here he received news of Guillotin, and money Franklin had sent him. He set out with others for Philadelphia on July 11, parted with Pierce on the fifteenth, and arrived at his destination on the twentieth, the date of his last entry in his *Notebooks*:

At last here I am in Philadelphia and the first I did was to repair to Doct. Franklin's. Him I found sick, and for 23 days he had not been out of his bed. He arose to receive me. He has offered me all possible help. He finds himself much better, and has invited me to dinner tomorrow at his house. I shall not fail although I am quite ill with my foot, and have no change of clothes.³⁵

The old doctor presented the Nini medallion portrait of Franklin to Saugrain during the Frenchman's stay in Philadelphia.³⁶ Here Saugrain also met Brissot de Warville and described his experiences and observations to the French writer who recorded them in his *Nouveau Voyage en Septentrionale Amérique*.³⁷ Saugrain remained in Philadelphia until at least October, but was in France before the end of February.³⁸ On February 21, 1789, LeVeillard wrote to Franklin from Passy, acknowledging a letter delivered by Saugrain. Le Veillard indicated that Saugrain had not altered in his determination to settle on the American frontier.³⁹

Shortly after Saugrain's return to France in 1789 the Estates-General had convened, and in July the Bastille had fallen. Revolution encouraged many to look for settlement elsewhere. Saugrain did not

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ *Ibid.*

³⁶ Byars, p. 13, and other sources.

³⁷ Also see letter dated September 18, 1788, from Warville in New York to Saugrain in Philadelphia, Saugrain-Michau Collection.

³⁸ Letters dated October 23, 1788, from Franklin to Guillotin and Le Veillard, Franklin Collection, *Writings*, IX, nos. 669-70, as copied in Saugrain-Michau Collection.

³⁹ Franklin Collection, *Letters to Dr. Franklin*, XXXVI, pt. 2, no. 118.



Madame Genevieve Rosalie Michau Saugrain

(Missouri Historical Society)



Le docteur Antoine François Saugrain de Vigny

(Missouri Historical Society)

remain long in France; in 1790 he and many other Frenchmen were attracted to Ohio by the ill-fated Scioto Company.

The Scioto Company had received an option from Congress to land in Ohio, but could not pay the required sum. The company nevertheless sent Joel Barlow to France to attract settlers. He and an Englishman named William Playfair organized a French company to sell land to which the company had no title. Ohio was advertised as highly fertile, well populated, and suited for people of all kinds. While French settlers were landing in Virginia during the spring and summer of 1790, the company went bankrupt. Promised provisions and aid for the journey to Ohio and for the remainder of the first year were not forthcoming. Many of the discouraged settlers scattered to other areas, but about six hundred, including Saugrain, reached Ohio in October and formed the village of Gallipolis on the Ohio River. They later learned that the land belonged to the Ohio Company, rather than the Scioto Company, and difficulties in land titles ensued for several years.

Not all of the settlers were as suited to the rigors of the frontier as Saugrain. They were, for the most part, members of the upper middle-class, and included professional men, artists, artisans, soldiers, high nobility, and farmers. Among those unsuited for the untamed wilderness were woodcarvers, watch and clock makers, tailors, wigmakers, and dancing masters. An American traveler observed that the people were "peculiarly unfitted to sit down in the wilderness and clear away forests."⁴⁰ By 1793 the population had dwindled to about one hundred and fifty.

Saugrain apparently left the practice of medicine to two other physicians in the community and occupied himself in his scientific pursuits and as a farmer.⁴¹ Accounts of travelers to Gallipolis portray him as the most famous man in the community.⁴²

In the summer of 1792, the Reverend John Heckewelder, a United Brethren missionary among the Indians, visited the small French community and reported:

He made us a thermometer, a barometer, a glass tobacco-pipe, a small bottle (which could contain about a thimble full) He also manufactured precious medicine, nitric acid, etc. As we were on a journey and were in daily need of light and fire, he presented us with a glass full of dry stuff, which burns as soon as a match is applied. This stuff he told us was manufactured from bones.⁴³

⁴⁰ Henry Marie Brackenridge, *Recollections of Persons and Places in the West* (Philadelphia, c. 1834), p. 42.

⁴¹ Louis Houck, *The Spanish Regime in Missouri* (Chicago, 1909), I, 395-96.

⁴² McDermott, "Gallipolis as Travelers Saw It, 1792-1811," *Ohio State Arch. and Hist. Quarterly*, XLVIII (1939), 286-94.

⁴³ John Heckewelder, *A Narrative of the Mission of the United Brethren Among the Delaware and Mohegan Indians* (Cleveland, 1907), pp. 66-67.

Saugrain's fire-producing device was probably similar to the "pocket luminary" which had been invented in Italy in 1786. A small bottle was lined with oxide of phosphorus. A sulphur-tipped piece of wood would ignite when rubbed on this coating and withdrawn.

Henry Marie Brackenridge spent a year in the Saugrain home in 1795. Although only eight years of age, he had spent three years among the French at Ste. Genevieve in order to learn the language. He was on his way to Pittsburgh to join his father, Hugh Henry Brackenridge, when he became ill and so stopped at Saugrain's home. He did not write about his visit until he was forty-eight, but his observations do not conflict with other visitors and appear accurate. The young Brackenridge was deeply impressed:

The Doctor had a small apartment which contained his chemical apparatus, and I used to sit by him as often as I could, watching the curious operations of his blow-pipe and crucible. I loved the cheerful little man, and he became very fond of me in turn. Many of my countrymen used to come and stare at his doings, which they were half inclined to think had too near resemblance to the black art. The doctor's little phosphoric matches, igniting spontaneously when the glass tube was broken, and from which he derived some emolument, were thought by some to be rather beyond mere human power.⁴⁴

The matches mentioned by Brackenridge were probably "phosphoric candles" or "ethereal matches" which had appeared in France in 1781. Paper tipped with phosphorus was sealed in a glass tube. Contact with air when the tube was broken caused the paper to flame. Brackenridge also mentioned his manufacturing of thermometers and barometers "with the scale neatly painted with the pen, and the frames richly carved."⁴⁵

Another traveler, the Reverend James Smith, described the type of performance that Saugrain gave to many mystified westerners. In October of 1795, Smith and Thomas Porter were traveling down the river and stopped at Gallipolis to lay in a supply of bread. The most memorable part of Smith's visit was the half-hour spent in Saugrain's laboratory:

While we were here a civil and well bred Frenchman obligingly entertained us with a number of curiosities. *He first kindled a fire of a small clear flame, which, by means of a foot bellows, he increased or diminished at his pleasure.* He then took a piece of glass about the shape and size of a pipe-stem (of which he had a great number of pieces); he held this glass in the flame till it began

⁴⁴ Brackenridge, p. 43.

⁴⁵ *Ibid.*

to melt, then applied it to his mouth and blew it up like a bladder; this he gave a fillip with his finger and it burst with an explosion like the report of a pistol. Another glass he blew up in the same manner and thro a tube as fine as a hair filled it with water, running upward in a strange manner and filling the globe at the top. Other pieces he wired as fine as a hair; indeed it appeared as if he taught this brittle substance so far to obey him, that it took any form he pleased. He showed us a number of thermometers, barometers, spirit proofs etc., all of his own make. The virtue of the spirit proof I tried on different kinds of spirits, and found it to answer the purpose for which it was intended by showing the real strength of the liquor. He terminated these shows by exhibiting a chemical composition which had the peculiar quality of setting wood on fire. The polite and agreeable manner in which he entertained us for about half an hour was not the smallest gratification to me; for while it marked the general character of his nation, it placed his own in a very conspicuous point of view.⁴⁶

The flame controlled by a foot-bellows in Saugrain's laboratory, as referred to by Smith, was the result of careful planning and construction. Before Saugrain had left France for Gallipolis, he apparently jotted down in small writing detailed notes on how to construct and operate a laboratory olive oil lamp with a foot-bellows attached. Weights were used to balance the foot pressure on the bellows, and an air pipe led from the bellows to the lamp beak above. Saugrain wrote that, by controlling the air to the lamp, he could obtain a white flame.⁴⁷

Saugrain also greatly impressed the Indians of Ohio, and later of Missouri, with his scientific apparatus and especially with his electric battery. Saugrain would place a coin on an electric plate and tell the Indians they might keep it if they would pick it up. "One of the Indians after some hesitation ventured to lay hold of it and received such a shock that he rushed out of the room terribly frightened." Saugrain then picked up the coin with no shock and left the "Indians impressed with the most profound awe for the magician who could work such wonders."⁴⁸

According to a family friend, he also administered smallpox inoculations to a great many people in the area. If so, this would have been the more dangerous practice of inoculating material from a lesion of a sick person; Jenner did not bring forth the cowpox vaccine until 1798.

⁴⁶ McDermott, "Gallipolis," p. 294. Italics mine.

⁴⁷ Memorandum Book [1790?], Saugrain-Michau Collection. I have dated the book by lists of clothing and other purchased items containing partial dates (no years), and by events in Saugrain's life. The only other possible date is 1792, but it is more likely that he made the notes before his voyage so he could construct the lamp after his arrival. The lists of purchases may refer to items obtained en route from Virginia to Ohio when he might have carried no other convenient writing material.

⁴⁸ Mentelle.

He was not primarily a medical practitioner at Gallipolis, however, but manufactured articles in his laboratory for the use of western travelers and settlers. These included phosphorus matches, thermometers, and barometers. A friend graduated the weather instruments, "all of which were disposed of either by wholesale for Kentucky and elsewhere or in retail to the traders or those who came from different parts to visit the Colony."⁴⁹

On March 20, 1793, Saugrain married Genevieve Rosalie Michau, daughter of John (Jean) and Jeanne Genevieve Rosalie Chevalier Michau. The Michau family had also journeyed from France to settle in Ohio, and on May 7, 1791, John Michau had been appointed Justice at the French community.⁵⁰

Saugrain, his wife, and his wife's family went to Lexington, Kentucky, in 1796 or the early part of 1797. He was asked to come to Lexington by a "society in Kentucky owning iron works . . . to enlighten them in making good bar iron which they could not produce."⁵¹ There is no other record of the young Frenchman's pursuits in Lexington except two advertisements appearing in the *Kentucky Gazette*, published at Lexington. One advertisement announced shot, of different sizes, "made by A. F. Saugrain, in Lexington, and sold wholesale and retail, at ANDREW W. HOLMES'S STORE." The other advertised "Vinegar for Sale, At my still house in Lexington, by the large or small quantity," and was signed "SAUGRAIN."⁵² The manufacturing of shot was no doubt made possible by the iron works in the area. Two daughters were born to the Saugrain family in Lexington.⁵³

Antoine Saugrain had probably heard encouraging reports of the assistance given by the Spanish government to foreigners who settled in Upper Louisiana. At any rate, he wrote to Lieutenant Governor Zenon Trudeau at St. Louis on the subject, and received a letter from Trudeau, September 12, 1797, inviting him to the country, and, perhaps, offering him land.⁵⁴ Saugrain immediately came to St. Louis, the capital of Upper Louisiana, and in November of 1797, petitioned for 20,000 arpents of land near St. Charles. Trudeau asked that 7,006 arpents be surveyed for "Don Antonio Saugrin." Saugrain moved his family to St. Louis late in 1799, after his second child was born, or in 1800.⁵⁵

⁴⁹ *Ibid.* Mentelle might have confused his later inoculation with the Jenner vaccine at St. Louis (see below) with his stay at Gallipolis; there is no other indication he used the earlier sometimes fatal vaccine.

⁵⁰ Memorandum, Saugrain-Michau Collection.

⁵¹ Mentelle.

⁵² *Kentucky Gazette*, September 27, 1797.

⁵³ Memorandum, Saugrain-Michau Collection.

⁵⁴ U.S. Congress, *American State Papers*, Class VIII, *Public Lands*, II, 460, 555.

⁵⁵ *Ibid.*, VIII, 858-59. Saugrain obtained additional land grants but had difficulty defending all of them later to the U.S. government. Many others experienced similar difficulties. On Saugrain grants also see *Ibid.*, II, 570, 656, 659, 728. An arpent was a French land measurement equal to about 0.85 of an acre.

Although St. Louis probably had a population of less than one thousand when Saugrain arrived, it was rich in culture and learning. The French villagers were not only literate, but had extensive libraries reflecting the intellectual ferment present in France at this time.⁵⁶ St. Louis was not a typical farming community, but, from its founding in 1764, an important commercial and political center. It is not difficult to understand why Saugrain spent his remaining years here.

Upon his arrival, Saugrain was appointed surgeon of the Spanish army post at St. Louis.⁵⁷ In addition to this function, he also carried on an active medical practice in the community and pursued his scientific experiments. He closed the first chapter of St. Louis medical history as the last of a line of French physicians dating back to 1765. He was the only resident physician in St. Louis from his arrival until 1807 when Dr. Bernard G. Farrar, an American, arrived.⁵⁸ He again set up his laboratory and probably continued experimenting in electricity and especially chemistry, although there are virtually no details of his work in St. Louis. He is supposed to have remarked to a daughter regarding his work in chemistry: "We are working in the dark, my child. I only know enough to know that I know nothing."⁵⁹

Saugrain lived in a large and substantial house in the center of a three-acre lot. The home faced Second Street, and was bounded by Second, Third, Mulberry, and Hazle Streets. According to a newspaper interview with his daughter, Eliza (Mrs. James Kennerly):

Its thick walls, heavy iron-clamped doors and broad shutters made it the best fortification in the little settlement. Therefore in time of panic citizens took refuge in it, and when returning trappers brought startling stories of the Indians marching on the town, Mrs. Kennerly says that then great preparations would be made for a siege; barrels of water and supplies of provisions were brought into her father's premises, and men, women and children would flock there for protection. "But," she added, "there were never any atrocities in my time. Those trappers used to make up great stories, and spread great fright among the people; but the Indians never disturbed us."⁶⁰

⁵⁶ McDermott, *Private Libraries in Creole Saint Louis* (Baltimore, 1938), pp. 1-22 *et passim*. Also see R. L. Kirkpatrick, "Professional, Religious, and Social Aspects of St. Louis Life, 1804-1816," *Missouri Historical Review*, XLIV (1950), 373; McDermott, "Culture and the Missouri Frontier," a paper read before the Missouri State Historical Society, October 7, 1955.

⁵⁷ Byars, p. 14, and other sources.

⁵⁸ Joseph Grindon, "Some Early St. Louis Physicians," a paper read before the Missouri Historical Society, May 26, 1916, Medical Collection, MHS; J. Thomas Scharf, *History of Saint Louis City and County* (Philadelphia, 1883), p. 1517.

⁵⁹ Byars, p. 16.

⁶⁰ "Mrs. James Kennerly's Recollections of Old St. Louis," St. Louis newsclip, May 7, 1888, *Brauckman Scrapbook*, MHS.

Saugrain, perhaps because of the threat of Indian violence, built a strong stone wall around his home. Vagrant and intoxicated Indians sometimes thronged the streets, and a daughter of the family was shocked at seeing an Indian remove the scalp of a victim near the home.⁶¹

Following the cession of Upper Louisiana to the United States, President Jefferson appointed Saugrain surgeon of the American army post.⁶² Saugrain also continued his private practice and scientific activities. A number of historians and others have suggested that Saugrain provided the Lewis and Clark expedition with thermometers or other supplies, but this does not appear to have been the case.⁶³ They obtained the bulk of their supplies at Philadelphia, including three thermometers and over \$90 worth of medicines. According to their journal, when they broke their third thermometer, while crossing the Rockies, they quit recording temperatures.⁶⁴ Saugrain was among a group of distinguished St. Louisans who journeyed with them as far as St. Charles, but no other connection with the expedition can be established.⁶⁵

Although it is unlikely that Saugrain supplied the Lewis and Clark Expedition, he may have continued manufacturing matches, thermometers, barometers, and other supplies while at St. Louis for western travelers and settlers. Bills to various St. Louisans indicate that he carried on a lively business of selling drugs and medicines, as was the practice of physicians in his day, and that he had an active medical practice. One bill listed a charge of one dollar for extracting a tooth. There was no dentist in St. Louis until 1807, and he was the only physician until 1807, so he probably carried on a highly profitable practice. His clientele included many of the prominent French families in the community. A careful businessman, he often added interest to unpaid bills and went to court, if necessary, to collect them.⁶⁶

⁶¹ Byars, p. 16, and other sources.

⁶² Thomas Jefferson, Certificate of Appointment, Saugrain-Michau Collection. The appointment was effective January 19, 1805, and was signed June 22, 1805. While surgeon at Ft. Bellefontaine, he was frequently called upon to serve at courts-martial. He resigned the federal appointment on October 29, 1811 (Memoranda, Saugrain-Michau Collection).

⁶³ The story appears to have originated in Eva Emery Dye, *The Conquest*, a popular fictionalized account of the expedition. See also Doane Robinson, "Lewis and Clark in South Dakota," *South Dakota History Collections*, IX (1918), 557-58; Edmond S. Meany, "Dr. Saugrain Helped Lewis and Clark," *Washington Historical Quarterly*, XXII (1931), 295-303; John Bakeless, *Lewis and Clark: Partners in Discovery* (New York, 1947), p. 110.

⁶⁴ *Original Journals of the Lewis and Clark Expedition 1804-1806* (ed. Reuben G. Thwaites, New York, 1905), III, 51; VI, 196-97; VII, 231-46, *et passim*. A small number of supplies were purchased in St. Louis, but nothing from Saugrain (Grace Lewis, "Financial Records, 'Expedition to the Pacific,'" *Missouri Historical Society Bulletin*, X, pt. 1, 486-88).

⁶⁵ *Original Journals* (ed. Thwaites), I, 20.

⁶⁶ Bills for medical services, court notices, and other memoranda, Saugrain-Michau Collection.

Saugrain had a strong interest in gardening, as was evidenced by his library.⁶⁷ He is believed to have depended largely upon herbs he grew in the garden surrounding his home or gathered in the wild state for his medical practice.⁶⁸ Another secondary source stated that he relied almost exclusively upon ptisans and vegetable remedies, regarding calomel as a virulent poison that never should be taken into the human system.⁶⁹ Little else is known of his methods of treatment.

One aspect of Saugrain's medical practice that stood out above all else as his most important contribution at St. Louis was his introduction of the Jenner smallpox vaccine in the city. Knowledge of Jenner's discovery is believed to have come to the United States by 1800. Dr. Goforth of Cincinnati used it in 1801. It was also known in eastern communities at a very early date. By 1803 the cowpox vaccine had spread to Lexington where Dr. Samuel Brown vaccinated five hundred persons. Dr. Saugrain made it available to St. Louis by 1809. The cowpox did not become generally available to the pioneer until a number of years after its use in the larger cities, and then was often opposed by the pious as contrary to the will of God.⁷⁰ A smallpox epidemic plagued St. Louis in 1801 shortly after Saugrain arrived, however, so the inhabitants of this small community were aware of the severity of the disease.⁷¹

Saugrain was urged to obtain the vaccine by his mother, by Dr. Joseph Guillotin, and by other relatives in Paris, where its use had spread shortly after it was discovered in England. Saugrain's mother wrote him in 1800 of Guillotin's use of the vaccine:

You are practicing medicine a little, are you using inoculation? The Doctor is giving it to children when they are six weeks old and he has been very successful. That is what he has done with your brother's children and in the last place of your sister's. Are they talking in your country about vaccination which the English have brought in France and which has been fully tried. The Doctor [Guillotin] is one of the Commissioners. If you can find a way of facilitating communications, he will be able to give you all the information you might need. . . . Your brother-in-law's reputation might contribute to yours. The inestimable advantage of helping

⁶⁷ McDermott, *Private Libraries*, pp. 90-107.

⁶⁸ Mary J. Klem, "The History of Science in St. Louis," *Transactions, Academy of Science of St. Louis*, XXIII (1914), 79.

⁶⁹ Scharf, p. 1518. Calomel (mercurous chloride) was used by physicians of his day as a purgative and for other purposes. Ptisan (ptisane) is a nourishing mixture made from barley which has a slight medicinal quality. For a background on the early use of calomel see: George Urdang, "The Early Chemical and Pharmaceutical History of Calomel," *Chymia*, I (1948), 93.

⁷⁰ Madge E. Pickard and R. Carlyle Buley, *The Midwest Pioneer: His Ills, Cures and Doctors* (Crawfordsville, Ind., 1945), pp. 23-24; Buley, *The Old Northwest* (Indianapolis, 1950), pp. 249-50.

⁷¹ I. H. Lionberger, *The Annals of St. Louis* (St. Louis, 1929), *passim*.

humanity should, if nothing else will, persuade you to follow my advice.⁷²

Communications were poor between France and St. Louis during most of Saugrain's years in St. Louis – the French Revolution, the Wars of Napoleon, and the War of 1812 all helped to disrupt mail service. Yet his relatives tried to keep in touch with him and urge him to use the vaccine. Letters from his mother and other members of his family occasionally reached him in St. Louis. His mother strongly urged that he vaccinate all his children. Another letter suggested that babies could be vaccinated in the soles of their feet, thereby hiding the scars.⁷³ Antoine Saugrain became one of the earliest doctors on the frontier to use cowpox vaccine. In June 1809 he gave notice in the *Missouri Gazette* that he had vaccine available:

The undersigned having been politely favoured by a friend with the genuine Vaccine infection, has successfully communicated that inestimable preventive of the Small Pox to a number of the inhabitants of St. Louis and its vicinity; and from a sincere wish which he entertains more widely to disseminate this blessing, he has taken the present occasion to inform such physicians and other intelligent persons as reside beyond the limits of his accustomed practice, that he will with much pleasure, on application, furnish them with the vaccine infection. . . . Persons in indigent circumstances, paupers, and Indians, will be vaccinated and attended gratis, on application to

A. SAUGRAIN

St. Louis, May 26, 1809

Saugrain followed his notice with a description of the horrors of smallpox and the safety afforded by vaccine.⁷⁴ He concluded in the following issue of the *Gazette* with a certificate signed by the famed Dr. Benjamin Rush of Philadelphia and fifty other prominent physicians. Saugrain also published a note from the Philadelphia Dispensary expressing the virtues of the "Cow-Pock."⁷⁵

According to his published notice, he used the cowpox vaccine in St. Louis before he advertised. It is doubtful that he used the more dangerous earlier type of inoculation before the Jenner cowpox vaccine was available, although, as mentioned above, he may have used it in Gallipolis.

In the year following his advertisement of the cowpox vaccine, Henry Marie Brackenridge, who had spent a winter in the Saugrain

⁷² Letter, Saugrain-Michau Collection.

⁷³ Letters to Saugrain from relatives in Paris, Saugrain-Michau Collection.

⁷⁴ "Vaccine Inoculation," *Missouri Gazette*, 1, No. 46 (June 7, 1809), 3.

⁷⁵ *Ibid.*, No. 47 (June 14, 1809), 3.

home at Gallipolis, revisited Saugrain in St. Louis. Brackenridge wrote that he found Saugrain

comfortably established in a neat cottage at the lower end of the town, with pretty shrubbery in front and a kitchen garden and orchard in the rear. I was delighted with his family, his pretty little daughters and amiable wife, took soup with him, drank a glass of claret and talked over old and hard times too, at St. Geneviève [*sic*, Gallipolis?]. It was worth to me a journey to St. Louis to see him thus surrounded by his interesting family, and after all his mishaps and worldly tribulations, thus safely anchored amid the blessings of *dulce domum*.⁷⁶

Apparently Saugrain had a more leisurely and comfortable life in America than did his relatives in France, who wrote of the horror and destruction that accompanied the French Revolution and the wars of Napoleon. Before the French Revolution, Guillotin, Saugrain's brother-in-law, had been a republican. Following the Reign of Terror, however, letters to Saugrain deplored the excesses of the revolution and praised Napoleon for restoring order. After Napoleon's wars again brought destruction to Paris, his relatives endorsed the restoration of the Bourbons. Claude Marin Saugrain, Antoine's brother, heavily endorsed a return to the monarchy in his letters of 1817 and 1818. The changing political opinions of Saugrain's relatives in France followed the same pattern as the views of many of the property owners of the upper middle-class. His relatives in France also inquired of Saugrain's children and wrote news of their own.⁷⁷ The Saugrain family had two young daughters when they moved from Lexington; another daughter and two sons were added to the family in St. Louis.⁷⁸

Antoine François Saugrain died at St. Louis on March 5, 1820. His wife lived for many years after his death. In addition to leaving a large amount of real property to his family, Saugrain left personal property valued by the court at \$711.50. This included four hundred and fifty volumes of books, principally French, that were valued at \$150.⁷⁹ Three hundred and twenty volumes of the original library have been retained by the descendants of Saugrain and are presently located in the Missouri Historical Society at St. Louis. One hundred and sixteen separate titles are represented in the three hundred and twenty volumes

⁷⁶ Gilbert Chinard, "Gallipolis and Dr. Saugrain," *Franco-American Review*, I (1936/37), 205-206.

⁷⁷ Letters to Saugrain from relatives in Paris, Saugrain-Michau Collection.

⁷⁸ Memoranda, Saugrain-Michau Collection.

⁷⁹ "Inventory of the Personal Property of Doct. A. F. Saugrain Deceased," Records of the Probate Court at St. Louis, Saugrain-Michau Collection. In addition to the books and numerous small items, the inventory included one Negro woman, fifty years old; one mare and colt; three cows; one heifer; one calf; medicines and shop furniture valued at twenty dollars, and two boxes of surgical instruments valued at twenty dollars. The valuations were set by the court.

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O U
P R I N C I P E S
PHYSICO-CHYMIQUES,
Destinés à servir de suite aux Principes
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A L'USAGE DES ÉCOLES CENTRALES.

PAR MATHURIN-JACQUES BRISSON,

Membre de l'Institut national des Sciences et des Arts,
Professeur de Physique et de Chymie aux Écoles
centrales de Paris.

Presented by John H. Robinson M.D. Member U.S.M.P.S.

to his much Respected friend Anthony F. Saugrain M.D.

A P A R I S,
CHEZ BOSSANGE, MASSON ET BESSON.

A N V I I I . (1 8 0 0 .)
A. F. SAUGRAIN.

This title page from one of the numerous scientific works in Saugrain's private library contains the stamp "A. F. Saugrain." and carries the inscription "Presented by John H. Robinson M.D. Member U.S.M.P.S. to his much Respected friend Anthony F. Saugrain M.D." Robinson (1782-1819) married a sister of Madame Saugrain and accompanied Pike to the southwest. Brisson was probably one of Saugrain's instructors in Paris (see n. 6 above).

(From Saugrain Library, Missouri Historical Society)

and listed in McDermott's classic work, *Private Libraries in Creole Saint Louis*.

Thirty-two of these works, consisting of seventy-eight volumes, are of a scientific nature. The one hundred and thirteen volumes unaccounted for may have included other scientific works. Saugrain's library includes numerous volumes in medicine, botany, pharmacy, chemistry, physics, and mineralogy. The works of twenty scientists are represented. The library includes a five-volume abridgement of Buffon's *Natural History*,⁸⁰ and works by William Cullen,⁸¹ Mathurin-Jacques Brisson, Antoine F. Fourcroy,⁸² René Just Haüy,⁸³ and Abbé Nollet,⁸⁴ as well as other leading scientists.

The earliest scientific work in the library, on electricity, was printed in 1754. Only eight of the thirty-two works were published before 1775, and six works, including some of the larger ones, were printed after 1800, while Saugrain was at St. Louis. The contemporaneity of his library indicates that Saugrain did not depend on the science of the sixteenth and seventeenth centuries, but was abreast of current scientific thought.

Books of a non-scientific nature in Saugrain's library include a large proportion of works in history, a significant number of plays, and numerous works on gardening. Books on religion are almost entirely absent, although the library contains a few works by Voltaire and other *philosophes*, as was characteristic of many private libraries among the French in early St. Louis.

On the American frontier this man, befriended by Benjamin Franklin, represented the frontiers of European science. He "brought with him into the wilderness the best culture of his time and applied in his daily round the best that science could then afford for the benefit of those he was called upon to serve."⁸⁵ While he is not known to have made any discoveries which had an impact on science, his laboratory was a wonder to early westerners for whom he performed feats of magic, and manufactured such items as thermometers and matches.

⁸⁰ Georges Buffon (1707-88), one of the foremost natural historians of the eighteenth century, attacked the Linnaean classification of animals and contributed to the later development of the theory of evolution.

⁸¹ William Cullen (1710-90), a Scottish physician and medical teacher at Glasgow, was unrivaled as a lecturer. A French translation of his *Treatise on Materia Medica* is in Saugrain's library.

⁸² On Brisson and Fourcroy, instructors of Saugrain, see note 6, above.

⁸³ René Just Haüy (1743-1822), mineralogist who was noted for his geometrical law of crystalization. This law was expounded in his five-volume *Traité de minéralogie* which is in Saugrain's library. He was also known for his work in pyroelectricity.

⁸⁴ Abbé Nollet (1700-70) was noted for his work in electricity. He opposed some of the electrical work of Franklin, and was noted for demanding a mathematical electricity. There are thirteen volumes of his work in the Saugrain library.

⁸⁵ Nathaniel P. Dandridge, "Antoine François Saugrain (De Vigni)," the presidential address before the American Surgical Association at St. Louis, July, 1904, Saugrain-Michau Collection. This address later appeared in *Ohio Arch. and Hist. Quarterly*, XV (1906), 192.

The products of his laboratory, his services as a physician, and his introduction of the smallpox vaccine west of the Mississippi, all lessened the hardships of others. The career of Antoine François Saugrain de Vigny also reflects the important role played by the French in the development of the United States, and particularly, the Mississippi Valley. As the foremost scientist of his age beyond the Atlantic coastal region, he has a unique place in the history of science in early America.