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Cartier, Champlain, and the Fruits of the New World: Botanical Exchange in the 16th and 17th Centuries

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Abstract: Much has been written of the Columbian exchange, the transfer between New World and Old of people, pathogens, flora and fauna. The biota of two hemispheres, once seemingly irredeemably separated, were interpenetrated, both through accident and through human agency. Part of this exchange involved medicinal and food plants, discovered in the New World and adopted into the Old. This paper examines the translation of a number of New World plants that were part of the 'Cartierian' or 'Champlainian' exchange that followed the voyages to North America by Jacques Cartier (1491-1557) between 1534 and 1541, and the explorations and settlements undertaken by Samuel de Champlain (1580?-1635) from 1603 to his death at Quebec in 1635. During this period, a number of North American plants were propagated in European nurseries and even found their way into everyday use in gardens or kitchens. How were these new plants viewed on their introduction and how were they incorporated into Europe's "vegetable" consciousness? Where did these new plants fit in the classification of the edible and the exotic?

Résumé : L'échange colombien, le transfert de personnes, de pathogènes, de flore et de faune entre le nouveau et le vieux continent ont déjà fait couler beaucoup d'encre. Le biote des deux hémisphères, paraissant jadis irrémédiablement séparés, s'interpénètre, à la fois par accidents et par l'entremise de l'homme. Une partie de cet échange implique des plantes médicinales et comestibles, découvertes sur le nouveau continent et adoptées dans l'ancien. Cet article examine la translation de certaines plantes du nouveau monde faisant partie de l'échange 'Cartierien' et 'Champlainien' qui a suivi les voyages en Amérique du Nord de Jacques Cartier (1491-1557) entre 1534 et 1541, et les explorations et les premiers établissements dirigés par Samuel de Champlain (1580?-1635) de 1603 jusqu'à sa mort à Québec en 1635. Au cours de cette période, certaines plantes nord-américaines sont propagées dans les pépinières européennes et trouvent même leur voie dans les jardins et les cuisines pour un usage quotidien. Comment ces nouvelles plantes sont perçues au moment de leur introduction et comment sont-elles incorporées dans la conscience 'alimentaire' européenne ? À quel endroit de la classification du comestible et de l'exotique ces plantes s'insèrent-elles?

Alfred Crosby coined the term ‘Columbian exchange’ to describe the transfer between New World and Old of people, diseases, flora and fauna. The biota of two hemispheres, once seemingly separated by the natural barriers of distance and ocean, was interpenetrated through human agency, both deliberate and unintentional. Old World plants arrived in the Americas by both accident and design. Some seeds arrived in the manure of cattle imported by Spaniards and others came with the conquistadores themselves. Oranges and peaches, for example, spread northwards from Florida, where their seeds were carelessly tossed away by fruit-loving explorers.¹ Aboriginal people referred to the widespread common plantain (*Plantago major*) as “white man’s (or Englishman’s) foot,” since its introduction seemed to follow the route of colonists. Other plants, like sugar cane and bananas, were more deliberately introduced from Old World to New. The mitigated success that followed the introduction of sugar cane to Brazil in the mid-sixteenth century and to the West Indies a century later has been well documented.² Bananas were also an early import, the Spanish historian Oviedo y Valdés asserting in his *Historia general y natural de las Indias...* that they were brought from the Canary Islands to Hispaniola in 1516 by the priest Tomás de Berlanga.³

The exchange, of course, also worked in reverse, but intention played a larger role. Explorers and colonists returned to Europe bearing the exotic fruits and curative herbs of strange lands. Intrepid mariners and merchants supplied aristocratic gardeners and their nurserymen with vegetable novelties from “the Indies, Americans, Taprobane [Java] Canarie Islands, and all parts of the World...”⁴ Some of these novelties, like the New World potato, whose history and unexpected effects on European diet are well documented,⁵ were easily portable. Others, like the pineapple, were found to be too fragile to survive long sea crossings, and could only be imagined by Europeans from explorers’ accounts. The hardier specimens

1. For introduction of European plants, see Alfred W. Crosby, *Ecological Imperialism and the Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 1986), 145-70. Also by the same author, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport: Greenwood Publishing Co., 1972).

2. See Sidney W. Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York: Viking, 1986).

3. Cited in Paul Popenoe, “Origin of the Banana,” *Journal of Heredity* 5, 6 (1914): 278. See also Gonzalo Fernández de Oviedo y Valdés, *Historia general y natural de las Indias*, <http://www.ems.kcl.ac.uk/content/etext/e026.html#d0e50> (accessed 28th October 2008).

4. William Harrison, *The Description and History of England* (1577), quoted in Richard Drayton, *Nature’s Government: Science, Imperial Britain, and the ‘Improvement’ of the World* (New Haven: Yale University Press, 2000), 32.

5. See the magisterial work by Redcliffe Salaman, *The History and Social Influence of the Potato*, ed. J.G. Hawkes (Cambridge: Cambridge University Press, 2000 [1949]).

were imported as seeds or cuttings, suckers, tubers or roots, and found their way first to apothecaries' shelves, then to nurseries, and eventually to gardens or tables. This paper explores some aspects of the 'Cartierian' or 'Champlainian' botanical exchange that followed the voyages to North America by Jacques Cartier (1491-1557) between 1534 and 1541, and the explorations and settlements undertaken by Samuel de Champlain (1580?-1635) from 1603 to his death at Quebec in 1635. How were these new plants viewed on their introduction to the Old World, and how were they incorporated into Europe's 'vegetable' consciousness? Where did these novel plants fit in the classification of the useful, the edible and the exotic?

The Northern voyages did not have the same sharp impact on the European imagination as those first explorations of tropical America. Carl Sauer has noted the colonists of New England were at no loss to identify the plants and animals they encountered on the western shores of the Atlantic.⁶ Both Cartier and Champlain, familiar with the temperate broadleaf forests of France, were able to describe in general terms most of the vegetation they saw on their initial voyages, though for both, the abundance of the cedars (white and red) and the stands of white pines tall as ships' masts, were novel. As were the boreal vegetation and barren landscapes mariners encountered in the first port of call for most northern Atlantic crossings, Newfoundland and Labrador. On his 1534 voyage, following the established routes of the transatlantic cod fishery,⁷ Cartier made landfall in May at Catalina harbour on the Bonavista peninsula, where he passed ten days waiting for weather. Leaving Bonavista Bay, he passed the bird islands (the Funks), and made his next landfall among the icebergs at Kirpon (Quirpon) Harbour at the top of the Strait of Belle Isle. He then coasted along southern Labrador, which boasted active Basque whaling stations and a fishery, stopped at Blanc Sablon and Red Bay, and explored harbours along what he found a most rocky and inhospitable shore. He complained that with the exception of Blanc Sablon, he did not see enough soil to fill a cartload, and he looked for it in numerous spots, but found only moss and small stunted trees.⁸ It was a landscape, he

6. Carl Sauer, "The Settlement of the Humid East," in US Department of Agriculture, *USDA Yearbook. Climate and Man* (Washington: US Department of Agriculture, 1941), 159.

7. Laurier Turgeon, "French Fishers, Fur Traders, and Amerindians during the Sixteenth Century: History and Archaeology," *The William and Mary Quarterly* 55, 4 (1998): 592.

8. The editors of *Jacques Cartier, Voyages au Canada avec les relations des voyages en Amérique de Gonneville, Verrazano et Roberval* (Paris: François Maspero, 1981), C.-A. Julien, R. Herval and Th. Beauchesne, note that if only Cartier had ventured further inland, he would have found taller trees and more soil, 122, note 55.

wrote, so barren and rocky that it must be that which God gave to Cain, in retribution for his sins. The coastal areas of southern Labrador and northern Newfoundland are unlike any landscape with which Cartier might have been familiar, and although he could recognize a familiar flora in a general sense, he sought the attributes that might distinguish the European countryside, a quantity of potentially tillable soil and tall broadleaf trees, indicative of fertility. The mossy ground, that from a distance resembles meadowland, could only have been a grave disappointment.

Once Cartier entered the Gulf of St. Lawrence and landed on Brion Island in the Magdalens, he was on more familiar ground:

...the best land we have ever seen; for two acres of it are worth more than the whole of Newfoundland. We found it to be covered with fine trees and meadows, fields of wild oats, and of pease in flower, as thick and fine as ever I saw in Brittany... There are numerous gooseberry bushes, strawberry vines, Provins roses, as well as parsley and useful strong-smelling herbs.⁹

In Prince Edward Island, he also saw

...trees which are wonderfully beautiful and very fragrant. We discovered that there were cedars, yew-trees, pines, white elms, ash trees, willows, and others.... The soil where there are no trees is also very rich and covered with pease, white and red gooseberry bushes, strawberries, raspberries, wild oats like rye, which one would say had been sown there and tilled.¹⁰

9. It is likely that Cartier here is referring to the *Rosa gallica*, or Apothecary's rose, also called the Rose of Provence. This resembles the native roses of Atlantic Canada, *Rosa virginiana* or *Rosa carolina*. Jacques Cartier, *The Voyages of Jacques Cartier*, ed. Ramsay Cook, trans. H.P. Biggar (Toronto: University of Toronto Press, 1993), 14. Electronic versions of the original French texts from the voyages have been created in *Gallica*, the reference site of the Bibliothèque nationale de France, online at <http://gallica.bnf.fr>. See for example H. Michelant and A. Ramé, eds., *Relation originale du voyage de Jacques Cartier au Canada en 1534: documents inédits sur Jacques Cartier et le Canada* (Paris: Tross, 1867), 27 at <http://gallica.bnf.fr/ark:/12148/bpt6k109686j.notice> (accessed 28th October 2008).

10. Cartier, *The Voyages of Jacques Cartier*, 17-18. It is interesting to note how often explorers comment on the fragrance of the land and the trees. Robert Juet, for example, in his log of Henry Hudson's 1609 voyage along the American coast, notes that members of the crew who had ventured on shore near what is now New York City, averred that "the land was as pleasant with grass and flowers and handsome trees as they have ever seen, and that very sweet smells came from them." Cited in Donald S. Johnson, *Charting the Sea of Darkness, the Four Voyages of Henry Hudson* (New York: Kodansha, 1995), 117. This may be accounted for by the contrast sailors experience in smelling land after so long at sea, but it may also relate to a specific fragrance of the North American coastlines. Certainly in Newfoundland, the spicy scent of the fir and spruce forests and the sweet perfume of the wild roses are distinctive and aromatic.

Cartier had found on the other side of a cold and ice-strewn ocean a landscape analogous to that of Europe, where the peas of Brittany and the roses of Provins grew in profusion. He could describe the summer countryside around the Baie des Chaleurs as a land “more temperate than Spain,” where wild wheat and oats, white- and red-currant bushes, roses, useful herbs, plums, figs, nuts, apples, and even beans, “which they call sahé” grew wild. The “figs” may be the fruit of the serviceberry—*Amelanchier* species, also known as saskatoon berry, shadbush, or in Newfoundland, chuckley pear—which when ripe resembles a small fig in its dark purple colour and shape.¹¹

Coasting northern New Brunswick, near Miscou Island, he described land made for the plough, with lovely meadows and fields, and in the highlands in from the coast, were mountains covered in great trees—mast trees, suitable for vessels of 300 tons or more.¹² On his second voyage in 1535, Cartier spent the winter at what is now Quebec City, and in addition to the trees and plants he had already noted, he now found “hazel-nuts as large as ours and better-tasting, though a little more bitter,” “magnificent trees of the same varieties as in France... hawthorns, bearing a fruit as large as a damson...” and “as good a hemp as that of France, which comes up without sowing or tilling it.”¹³ When he arrived near Hochelaga (Montréal), he saw “better than all, a great quantity of grape-vines, which

11. Cartier, *The Voyages of Jacques Cartier*, 22, 25. Figs are not, of course, a New World fruit. Like Cartier, European herbalists sought for visual resemblances between Old and New World plants. Figs had been eaten and grown in France since Roman times, and given the seeming similarity of the flora, figs were a likely part of the New World plant assemblage. What did these figs look like? Gerard suggested that Prickly pear cactus (*Opuntia* species) might be the “Ficus Indica,” on account of the appearance of the fruit, which is “like unto the common Fig, narrow below, and bigger above, of a greene colour, and stuffed full of a red pulpe and iuice...” *Opuntia* does not, however, currently grow in the Gulf, its most northerly occurrence on the Atlantic coast being Massachusetts, so that Cartier saw the fig in the dark purple fruits of the serviceberry. See John Gerard, *The Herball or Generall Historie of Plantes* (London: John Norton, 1597), 1329-30.

12. “...pour faire mastz suffisans de mastez nauires de toys cens tonneaulx et plus,” Cartier as cited in Michelant and Ramé, eds., *Relation originale du voyage de Jacques Cartier*, 27. These would have been to Cartier very large trees indeed. His flagship vessel, *La Grande Hermine*, was, according to Morison, a 100- to 120-ton vessel. Samuel Eliot Morison, *The European Discovery of America: The Northern Voyages* (New York: Oxford: Oxford University Press, 1971), 389.

13. Cartier, *The Voyages of Jacques Cartier*, 49, 51. According to Ganong, “hemp” or “chanvre” was not the European hemp but the “Indian hemp,” which may have been a species of *Asclepias*. W.F. Ganong, “The Identity of Animals and Plants Mentioned by the Early Voyagers to Eastern Canada and Newfoundland,” *Transactions of the Royal Society of Canada*, serie 3, section II (1909): 209. Gerard calls the Swallow-wort or Milkweed (*Asclepias* sp.) “Virginia Silke Grasse” in his *Herball*.

were so loaded with grapes that the sailors came on board with their arms full of them.”¹⁴

The impression these accounts give is one of vegetable abundance, a natural garden yielding produce sweeter and larger than that of Europe, and without effort. Sauer has noted that the New World was for western European explorers and settlers, a “lustier land,”¹⁵ with brighter sun, warmer humid summers, taller trees, and thicker forests. Until the disastrous winter of 1535-36, the new land—exclusive of the New Found Land—had appeared to Cartier to rival the paradisaical islands of the tropics, a land of untended plenty, where crops grew without tilling. Champlain, too, was impressed by this ‘new’ France. He had read Cartier,¹⁶ and was prepared to see a land both strange and familiar, stocked with the recognizable flora of his homeland, and lacking only careful husbandry to render it even more fruitful:

As for the country itself, it is beautiful and agreeable, and it brings all sorts of grain and seed to maturity. There are in it all the varieties of trees we have in our forests on this side of the ocean and many fruits, although they are wild for lack of cultivation: such as butternut trees, cherry-trees, plum-trees, vines...¹⁷

He noted there were even the *petits fruits*, so popular at the beginning of the 17th century in Europe: “quantities of strawberries, raspberries, red, green and blue currants, together with many small fruits which grow there in the thick grass,” and “hazel-nuts” (which he called “noizettes”) and “a kind of fruit like chestnuts.”¹⁸ Champlain, with his longer experience of New France, saw the land less as an edenic garden, and more as fruitful wilderness awaiting tilling. He planted gardens, observed the times at which seeds sprouted and fruit ripened. He imported seeds of wheat and rye, cleared land in meadows and in forests, sowed them to test the quality of the soil, and complained when his gardens, particularly the rosebushes he had brought from France, were neglected.¹⁹

14. Cartier, *The Voyages of Jacques Cartier*, 57. The native grape is the fox grape, *Vitis labrusca*.

15. Sauer, 159.

16. Samuel de Champlain, *The Works of Samuel de Champlain*, ed. H.P. Biggar, 6 vols. (Toronto: The Champlain Society, 1922-1936), vol. 1, 132.

17. Champlain, vol. 2, 59-61. The complete texts in French and English have been published online by the Champlain Society, at <http://link.library.utoronto.ca/champlain/search.cfm?lang=eng> (accessed 28th October 2008).

18. Champlain is describing the North American hazelnut and the American chestnut, vol. 1, 145.

19. Champlain notes that at Île Ste-Croix, he made his garden “fairly big,” vol. 1, 301. At Quebec, he sowed grains and seeds, “for the purpose of seeing how the whole thing would succeed,” vol. 2, 44. At Montreal, he had “two gardens made” in which seeds came up quickly, showing the “good quality of the soil,” vol. 2, 179; while at Three Rivers, he

What is evident is that both Champlain and Cartier are able to identify broad groups of New World plants at first sight and to find easy analogies for new varieties and even new species in the familiar products of temperate Europe. Prior to the development of Linnaean taxonomies, resemblance was the most obvious principle on which classification of plants and animals was based. Even the unfamiliar or novel could be rendered familiar and knowable by placing a plant or animal in a category to which it bore superficial resemblance. Thus, serviceberries become figs and the American chestnut (*Castanea dentata*) is identified with its European counterpart (*Castanea sativa*).²⁰ But among this familiar flora where were the New World novelties, that would amaze the French court? It has been reported that Holy Roman Emperor Charles V disdained the offer of a desiccated pineapple,²¹ but this outlandish fruit of the south was emblematic of the otherness of the New World. André Thevet, royal cosmographer in France, had illustrated a pineapple or “Nana” in *Les singularitez de la France antarctique, autrement nommée Amérique*, published in 1558. He had described its taste as “a marvel of excellence” (“merveilleusement excellent”) but also noted that once ripe, it was impossible to transport, making the pineapple the epitome of the rare and the elusive.²² The familiar flora of northern lands, no matter how seemingly lush in its natural uncultivated state, did not seem to sport productions as singular as the pineapple.

And it was singularities, the rarities and spices of the east, the original Indies, that both Cartier and Champlain were sent to find. Cartier was convinced by what Aboriginal informants told him—and what he wanted to understand—that the lands of spices were but a month’s sailing away from Hochelaga (Montreal), or so he related in the account of his first

planted rosebushes, vol. 2, 213. He is vexed over the poor care his gardens at Québec had received in his absence, vol. 2, 147. See also the article by Paul-Louis Martin, “Domestication of the Countryside and Provision of Supplies,” in *Champlain: the Birth of French America*, eds. Raymonde Litalien and Denis Vaugeois (Québec: Septentrion/McGill-Queen’s University Press, 2004), 205-217.

20. This resemblance was not always visual, and the use of other characteristics, particularly taste, was a feature of early classification that was particularly important in analyzing potential foodstuffs or elements of the materia medica.

21. Maguelonne Toussaint-Samat, *History of Food* (Oxford: Blackwell, 1992), 677. The poor condition of a pineapple after possibly months of transatlantic passage would certainly have affected its flavour, as Ovideo noted in 1535; see reference in José Pardo-Tomás and María Luz López Terrada, *Las primeras noticias sobre plantas americanas en las Relaciones de viajes y crónicas de Indias, 1493-1553* (València: Universitat de València, 1993), 186.

22. André Thevet, *Les singularitez de la France antarctique, autrement nommée Amérique, & de plusieurs terres et isles découvertes de nostre temps* (Paris: Chez les héritiers de Maurice de La Porte, 1558), 88-90.

voyage. He also included in his word list for Hochelaga and Canada what he thought were the Native words for cinnamon (“Adhotathny”) and cloves (“Canonotha”), two of the most sought-after products of the east.²³ Sixty years later Champlain too hoped to find a new route to the riches of the east. After his first voyage, he promoted in France the idea that the St. Lawrence might offer “the means of discovering the passage to China without the inconvenience of the northern icebergs, or the heat of the torrid zone...”²⁴ Both explorers were to be disappointed in their search for a northern passage to the orient; nevertheless, they and their companions sought for and chose to transport back to court fragile vegetable evidence to suggest that in these new temperate lands they had found a flora at least as useful, if not as exotic, as what might be found in the fabled Indies, or what the Spanish and Portuguese had discovered in the tropical south.

The New World through Others’ Eyes: Cartier and the Miracle Tree

When Cartier arrived in the New World, he was evidently already familiar with the three legs of the North American cooking pot—corn, beans and squash. He identified around Montréal “large fields covered with the corn of the country, which resembles Brazil millet,” and recognized a “considerable quantity of melons, cucumbers, pumpkins (*courges*), pease, and beans of various colours and unlike our own.”²⁵ Cartier described corn (*Zea mays*) as a grain “like pease, the same as in Brazil,” and Giovanni Battista Ramusio included a good illustration of an ear of corn in the account of Cartier’s first voyage in *Navigazioni et Viaggi*, published in Venice in 1556.²⁶ Columbus had first described corn in 1492, and by the time of his third voyage in 1498, he notes it was being grown in Castille.²⁷ By Cartier’s day corn was widely cultivated in countries where millet, which it superficially resembled, had already

23. “Ceux de Canadas disent qu’il faut une lune à nauiger depuis Hochelaga iusque à une terre où se prend la canelle & la girofle” in Jacques Cartier, *Discours du voyage fait par le capitaine Jaques Cartier aux Terres-neufves de Canadas, Norembergue, Hochelage, Labrador, & pays adjacens, dite Nouvelle France: avec particulieres moeurs, langage, & cérémonie des habitans d’icelle* (Rouen : de l’impr. de Raphaël du Petit Val, 1598), 14.

24. Champlain, vol. 2, 231.

25. Cartier, *The Voyages of Jacques Cartier*, 61, 69.

26. Cartier, *The Voyages of Jacques Cartier*, 25. Cartier in 1535 referred to corn as “groz mil comme poix ainsi que au Bresil,” in Jacques Cartier, *Relations*, ed. Michel Bideaux (Montréal: Les Presses Université de Montréal, 1986), 115. Bideaux relates that corn was described in Pigafetta’s account of Magellan’s voyage, a version of which had reached Paris by 1525, as the Brazilian analog of millet, *Relations*, 336, note 274.

27. C. Columbus, “... maíz... de que lleva allá, y ay ya mucho en Castilla.” Quoted in Tomás and Terrada, 145-6.

become a staple, such as Spain and Italy.²⁸ The pumpkins and squashes Cartier recognized were similar to the Old World cucurbits he already knew—cucumbers, melons, and gourds (*courges*). Like these Old World members of the family, they were readily grown from seed, and their manner of cultivation was familiar. By 1562, the botanist Leonhart Fuchs had seen over two dozen forms of the New World species *Cucurbita pepo*, a mere seventy years after their arrival in Europe with Columbus.²⁹ Cartier realized that the beans (*febves*, or *Phaseolus*) differed from the Old World bean (*Vicia faba*, fam. Fabaceae) in colour, but they still seemed to him recognizably beans.

Though originally exotics, these were now familiar plants, and what interested Cartier and the early explorers were new curative herbs that might supplement the European pharmacopoeia, based as it was largely on botanical sources. He included in a “List of Men and Effects for Canada,” prepared in September 1538, “two Apothecaries, each with an assistant, to identify plants and determine their uses...”³⁰ This inclusion may well have been the result of his dreadful experience during his first overwintering in 1535-36. Unprepared for the severity of winter at Stadacona (Quebec), Cartier watched his crew succumb to the effects of malnutrition and a terrible illness (“grosse maladie”). In extremis, he turned to his Aboriginal hosts, who provided a decoction from the bark and leaves of a tree called “Anneda” (or “Ameda”). The effect on the crew’s health was immediate, and according to Cartier, a true and obvious miracle,³¹ for not only was the brew a cure for the “grosse maladie” (scorbut or scurvy), but it also proved to be a sovereign remedy for many pre-existing ailments, including la “grosse verolle” (venereal disease). Cartier lauded the new drug and assured his readers that it had more effect in six days than all the drugs of Alexandria administered for a year by all the doctors of Montpellier and Louvain.³² This vegetable miracle was the White cedar

28. Though called Turkish wheat by the botanists (Dodoens, Boch, Fuchs, Lobel), corn did bear a superficial resemblance to cultivated millet (*Panicum* sp.), which led to its early adoption in Spain and Italy and later in Romania. Ibid, 145-6.

29. Harry S. Paris, “History of the Cultivar-Groups of *Cucurbita pepo*,” *Horticultural Reviews* 25, 2 (2001): 86

30. Cartier, *The Voyages of Cartier*, 126-7.

31. “vng vray & euident miracle,” Jacques Cartier, *Bref récit et succincte narration de la navigation faite en 1535 et 1536 par le capitaine Jacques Cartier aux îles de Canada, Hochelaga, Saguenay et autres*, ed. D’avezac (Paris: Tross, 1863 [1545]), 37.

32. “...que si tous les medecins de Louvain & de Montpellyer y eussent esté avec toutes les drogues de Alexandria, ils n’en eussent pas tant fait en vng an, que le dict arbre a faict en six jours.” Cartier, *Bref récit et succinte narration*, 38. Nicolas Monardes spoke in much the same terms about sassafras in his book, *The Joyfull Newes of the Newe Founde Worlde*, published in English in the translation by John Frampton in 1577. Noted in

(*Thuja occidentalis*), a member of the Cypress family then unknown in Europe. Cartier surely thought he had found a New World panacea to rival the rarities of the Indies, and his new conifer became known as the “Arbre de vie” or Tree of Life.

According to a note by Pierre Belon in *De Arboribus Coniferis*, published in 1553, seeds of the Arbre de vie were planted in the royal gardens at Fontainebleau the spring following that terrible winter in New France.³³ André Thévet, the royal cosmographer, also mentions the Arbre de vie in *La France antarctique*, and notes that the leaves of this tree resemble those of the “cedars that are found around the mountain of Tarare, which is in Lyonnais.”³⁴ By the time, however, that Charles de l'Écluse (Carolus Clusius) wrote about *Arbor vitae* in his *Rariorum plantarum historia*, first published in 1579, its pharmacological properties seem to have been forgotten. Clusius speculated that the tree had been named for its evergreen foliage, or perhaps because of its aromatic qualities.³⁵ Arbre de vie did make an effective anti-scorbutic but it was eclipsed as a cure-all by other more exotic New World plants, such as Sassafras or the roots of Meçhoacan (*Ipomoea jalapa*). The latter analogous to the celebrated ‘Indian rhubarb’ root, originally from China.³⁶ So thoroughly was the identity of Cartier’s Arbre de vie forgotten, that when Champlain’s people became sick at St-Croix, he could find no local remedy, and though he knew of Cartier’s miracle herb, he could not recognize the White cedar as “aneda.”³⁷ Marc Lescarbot notes that though Champlain also searched diligently for the herb at Quebec, he could not find it.³⁸ The value of the Arbre de vie as a cure-all having being lost, its history and identity were also lost to Europeans, who then failed to recognize the ubiquitous White cedar in its original habitat. Gardeners

Victoria Dickenson, *Drawn from Life, Science and Art in the Portrayal of the New World* (Toronto: University of Toronto Press, 1998), 89.

33. Pierre Belon, *Petri Bellonii Cenomani De arboribus coniseris, resiniseris, aliisque, nonnullis sempiterna fronde virentibus...* (Paris: Corrozet, 1553), 21.

34. The cedars of Lyonnais are *Cedrus atlantica*, native to the Mediterranean region. Thevet, 151.

35. See also Jacques Rousseau, “L’annedda et l’arbre de vie,” *Revue de l’histoire de l’Amérique française* 8, 2 (1954): 171-212.

36. See Nicolás Monardes, *Joyfull newes out of the newe founde worlde...*, ed. Stephen Gaselee, trans. John Frampton (New York: AMS, 1967 [1565]); and Nicolás Monardes, *Brief traité de la racine mechoacan, venue de l’Espagne nouvelle: médecine très excellente du corps humain, blasonnée en maintes régions la reubarbe des Indes* trans. J.P. Gohory (Rouen: Chez Martin & Honoré Mallard, 1588), <http://visualiseur.bnf.fr/CadresFenetre?O=NUMM-53997&M=notice&Y=Image> (accessed 28th October 2008).

37. See Champlain’s comments on “aneda,” *Works of Samuel de Champlain*, vol. 1, 322.

38. Marc Lescarbot, *History of New France*, trans. W.L. Grant, vol. 3 (Toronto: The Champlain Society, 1914 [1609]), 8.

valued it, however, as they do today, and by the seventeenth century few 'gardens of respect' were without it. It featured in the 1601 Catalogue of Jean Robin, and John Tradescant bought two arbor-vitae trees at Harlem for a shilling apiece in 1611, at the same time as he purchased 800 tulip bulbs, at 10 shillings per hundred, making the price of what was once a 'true miracle' tree equivalent to ten tulips.³⁹

The Sugar maple, *Acer saccharum*, also grew at Fontainebleau, and was presumably also imported by Cartier, who, according to Thevet, drank the sap of the tree that the Native people called "Coton." Thevet reports that the "suc" or juice of the Sugar maple was reported to be of as good and delicate a taste as the wine of Orléans or Beaune.⁴⁰ Maple sugar from North America was also imported to France in the seventeenth century, and refined at Rouen, according to a report in the *Philosophical Transactions* in 1685. The sugar was used particularly to make a syrup of "Maiden Hair" fern or *Adiantum capillus-veneris*, a drink known as "Capillaire," and popular in the seventeenth and eighteenth centuries.⁴¹ Though the Sugar maple would seem to be a tree as useful to the gardener as the White cedar, it did not become a popular garden variety in Europe, though John Tradescant the younger did introduce the Red or Virginian maple (*Acer rubrum*) into England in 1654. The flaming colour of the Sugar maple in autumn was still a wonder to Europeans as late as the mid-eighteenth century when Thomas Davies issued a series of engravings of the falls of Canada, one of which when coloured was designed to show the true colours of the autumnal Canadian woods.⁴²

The New World through Others' Eyes: Champlain and the Fruits of New France

Utility as well as rarity was thus an important criterion by which botanical novelties were evaluated, and utility could be defined by culinary as well as medicinal value. Samuel de Champlain appeared to have been especially interested in plants. He was certainly an avid gardener, who took both pains and pleasure in creating and maintaining gardens in New France. He also had a venturesome appetite. On his voyage down the New England coast in 1605, the Aboriginal inhabitants

39. See Rousseau, 151. For Tradescant, see the January 3, 1611 bill, noted in Anna Pavord, *The Tulip* (London: Bloomsbury, 1999), 97.

40. Thevet, 158.

41. Anonymous, "An Account of a sort of Sugar made of the Juice of the Maple, in Canada," *Philosophical Transactions* 15, 171 (1685): 988. The Tradescants had grown *A. capillus-veneris* in their gardens, but Cornut had illustrated *A. pedantum*, or Canadian maidenhair, in his herbal, and it had evidently been brought from Canada before 1635.

42. See discussion in Dickenson, 195-6.

sent him “little squashes as big as your fist, which we ate as a salad like cucumbers, and they were very good.” On the same voyage he ate “roots that they cultivate, the latter having the taste of artichoke.”⁴³ He was thus the first European to describe the Jerusalem artichoke; his colleague Marc Lescarbot also noted that it was “most excellent to eat, tasting like chards, but more pleasant...”⁴⁴ In 1613, after almost a decade in New France, Champlain, the gardener and gourmet, published in France *Les Voyages*, which included a decorative map intended not just for mariners but also for general readers. His map includes a cartouche with Aboriginal people, and depictions of plants in an unusual “horticultural border” that reveals, I think, something of Champlain’s own interests, and also of what he presumes might be the interest of his readers in the botanical “exotics” of New France that might find favour in kitchen or apothecary shop. I have assumed that Champlain chose to depict the nuts and berries and roots that figured among the food or medicinal plants of the Aboriginal inhabitants of eastern North America. I have also assumed that they are those that Champlain himself probably ate, might have dried and sketched, or even attempted to bring back to France to be planted in Old World gardens.

Some of the plants on Champlain’s map certainly made the transatlantic crossing in the first years of exploration, and by the early seventeenth century had become commonplace in Europe, as Cartier’s account revealed. The corn and squash, held by the Almouchicois woman in the map cartouche, had already been illustrated in the works of herbalists like Leonhart Fuchs and Rembert Dodoens half a century before. Corn was so well known to Europeans by the mid-sixteenth century that Dodoens in his *Cruijdeboeck* (1554) could provide excellent naturalistic renderings of the plant itself.⁴⁵ He called it, however, “Milium Indicum” or “Turkie corne” and ascribed its origin to “Turkie,” where he says it was eaten in times of dearth.⁴⁶ The new world squash, *Cucurbita pepo*, also took root in the gardens of Europe, as can be seen through its inclusion in many herbals between 1542 and 1700 (Fuchs, L’Obel, Theodorus, Dodoens,

43. Champlain, vol. 1, 341, 351.

44. Lescarbot, vol. 3, 254. Lescarbot actually confused Jerusalem Artichoke with Ground nut (*Apios americana*), as is explained by Redcliffe Salaman, “Why ‘Jerusalem’ Artichoke?,” *Journal of the Royal Horticultural Society* 65 (1940): 342-343.

45. Dodoens describes corn as a “marvellous strange plant, nothing resembling any other kind of grayne: for it bringeth forth his seede cleane contrairie from the place whereas the Floures grow.” Rembert Dodoens, *A New Herbal, or Historie of Plants [Cruijdeboeck]*, trans. Henry Lyte (London: printed by Edward Griffin, 1619 [1554]), 333.

46. Exotic plants had arrived for millennia from the east, often through trade with the Levant, so that the assumption that ‘Turkey’ was the origin for this new millet-like grain was not unreasonable, though again, the rapid loss of knowledge of country of origin is surprising, and points to what was valued in botanical scholarship of the period.

Gerard, Bauhin, etc.), and in early gardening books such as Parkinson's *Paradisi in Sole Paradisus Terrestris* (1629). It was grouped with the other cucurbits, including melons and cucumbers, already long familiar to Europeans.⁴⁷

The tall single-flowered plant in the cartouche resembles the Jerusalem artichoke (*Helianthus tuberosus*), which Champlain had tasted in New England in 1605 (fig. 1). A generation later, the invasive sunflower was so prolific in European gardens, that the English gardener John Parkinson could write that the "Potato's of Canada by reason of their great increasing, have growne to be so common here with us at London, that even the most vulgar begin to despise them, whereas when they were first received among us, they were dainties for a Queene."⁴⁸ Other plants pictured in the border, while less familiar, also survived their passage and appeared in Europe (fig. 2). In the left-hand section, the first plant with a bulbous root attached to two four-petalled "flowers" may depict the Evening Primrose (*Oenothera* sp.), introduced into Europe by 1614 and cultivated for its edible roots.⁴⁹ The plant labelled "astemara" may be "asarabacca," also known as "asaron," or Wild Ginger. It featured in Vespasien Robin's 1623 *Enchiridion*, a catalogue of plants at Jardin du roy in Paris. It was also described by the Parisian doctor Jacques-Philippe Cornut in his illustrated herbal *Canadensium Plantarum...* in 1635.⁵⁰

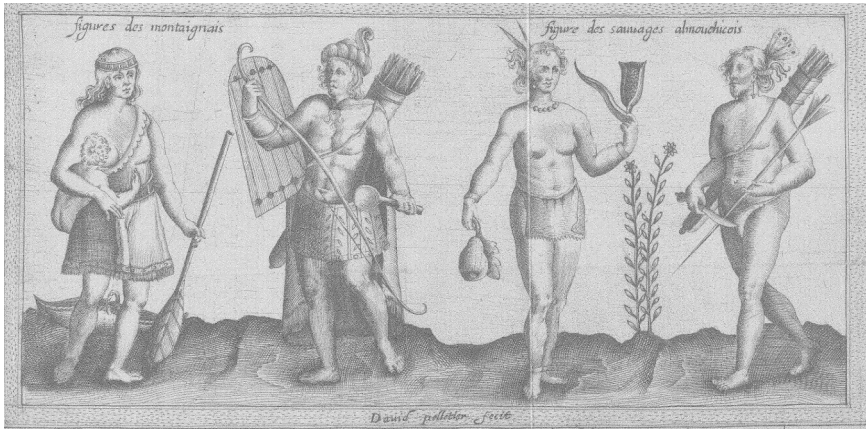
47. See for example Leonhart Fuchs, *Den nieuwen Herbarius, dat is dat boeck van den cruyden* (Basel: M. Isingrin, 1543), http://caliban.mpiz-koeln.mpg.de/~stueber/fuchs/herbarius/high/IMG_7219.html (accessed 28th October 2008).

48. John Parkinson, *Paradisi in paradisus terrestris* (London: Humfrey Lownes and Robert Young, 1629), 518.

49. Champlain in his journals refers only to "roots." For the Evening Primrose and its culinary use, see Oliver Perry Medsger, *Edible Wild Plants* (New York: Collier, 1966 [1939]), 199. The drawing might also depict the Spring Beauty (*Claytonia* sp.), equally prized by the Aboriginal community, Medsger, 198, though it is uncertain whether Champlain might have eaten it. Merriweather Lewis described *Claytonia* as "of an irregularly rounded form, something like the smallest of the Jarusalem (sic) artichoke, which they also resemble in every other appearance. they had become very hard by being dried these I also boiled agreeably to the instruction of the Indians and found them very agreeable. they resemble the Jerusalem Artichoke very much in their flavor and I thought them preferable, however there is some allowance to be made for the length of time I have now been without vegetable food to which I was always much attached. these are certainly the best root I have yet seen in use among the Indians." Joseph Mussulman, "Discovering Lewis and Clark," The Lewis and Clark Fort Mandan Foundation, <http://www.lewis-clark.org/content/content-article.asp?ArticleID=2136>, (accessed September 3, 2007).

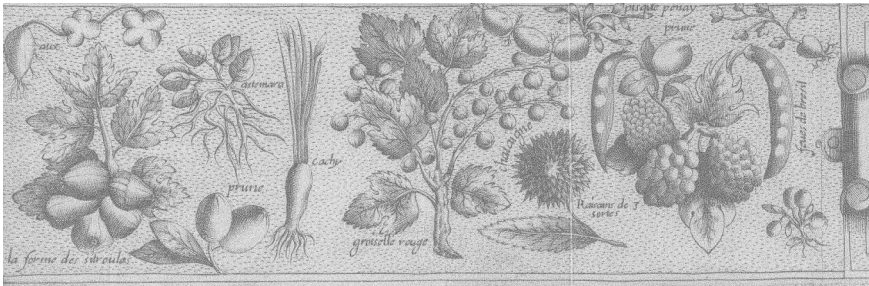
50. See James S. Pringle, "How Canadian is Cornut's *Canadensium Plantarum Historia*? A Phytogeographic and Historical Analysis," *Canadian Horticultural Review* 1, 4 (1998): 190-209. Jacques-Phillippe Cornut, *Canadensium Plantarum aliarumque nondum editarum Historia* (New York: Johnson reprint Co., 1966 [1635]). Cornut has also been published more recently in French translation. See Jacques Mathieu, ed., *Le premier livre de plantes du Canada*, trans. André Daviault (Québec: Presses de l'Université Laval, 1998 [1635]).

Figure 1. Detail; Cartouche.



Source: David Pelletier, after Samuel de Champlain Carte de la Nouvelle France, engraving in Samuel de Champlain, *Les voyages du sieur de Champlain Xaintongeois, capitaine ordinaire pour le Roy...* (Paris: Jean Berjon, 1613). Courtesy Rare Book and Special Collections Division of the Library of Congress, F1030.1 .C446.

Figure 2. Detail; Horticultural border.



Source: David Pelletier, after Samuel de Champlain Carte de la Nouvelle France, engraving in Samuel de Champlain, *Les voyages du sieur de Champlain Xaintongeois, capitaine ordinaire pour le Roy...* (Paris: Jean Berjon, 1613). Courtesy Rare Book and Special Collections Division of the Library of Congress, F1030.1 .C446.

Above “astemara” is the “pisque penay.” On his 1603 voyage Champlain had described ‘certain small roots, the size of a small nut’ that tasted like truffles.⁵¹ Lescarbot says that the “savages call them Chiquebi, and they grow in abundance near oak trees.”⁵² Ganong identifies them as “Chicamin,” Indian Potato or Ground nut (*Apios americana*; referred to as *Apios tuberosa* in Ganong). *Apios* is associated with mixed oak woods, but the truffle taste may have encouraged Lescarbot to associate the

51. Champlain, vol. 1, 131.

52. Lescarbot, vol. 3, 254.

climbing plant and its underground tubers with the oak, an analogy to the classic European association of truffles (an underground fungus) and oaks. The illustration in Cornut shows the vine growing on a trellis, as it was likely cultivated at the Jardin du roy in Paris. The characteristic tubers growing in strings are pictured below. Vespasien Robin apparently grew the plant from a seedpod (*ex siliquis*) brought from America. Since seed-bearing *Apios* does not grow in the more northerly part of its range, the seedpods must have been collected on these early voyages down the New England coast.⁵³ Next are “Raisains de 3 sortes,” (grapes), which grown from cuttings, as well as “fèves de bresil,” the New World phaseolus bean. The latter were part of the first Columbian exchanges, being mentioned in a Turkish document written before 1513. William Turner named them in English “kidney” beans, alluding to their shape, to distinguish them from the Old World bean.⁵⁴ By the early seventeenth century Parkinson could declare—in agreement with his near contemporary the French gardener Nicolas de Bonnefons, author of *Le jardinier françois*—that the Old World fava bean was a dish fit only for the poor, but the “French or Kidney beane,” was esteemed as “a savory meate to many mens palates... a dish more oftentimes at rich mens Tables than at the poore.”⁵⁵

The plants on the right side of the border bear no labels, but next to an anomalous frog is a small-berried plant that may be *Gaultheria hispidula*, or Creeping snowberry. In his account of the third voyage in 1611, Champlain describes an unusual small fruit: “Amongst others there is a very fine one with a sweetish taste, like that of the plantains (a fruit of the Indies) as white as snow, with leaves like those of the nettle, and it creeps up the trees and long the ground like ivy.”⁵⁶ The description, at first glance, appears to be that of Poison ivy (*Toxicodendron radicans*) with its nettle-like leaves. Poison ivy is illustrated in *Candensium Plantarum*, and was grown in Paris (fig. 3). Cornut says, however, that the white berries of Poison ivy have little flavour and are considered toxic, although they were an Aboriginal remedy for stomach ailments; the

53. Mathieu, 327. Daviault translates “ex siliquis” as “à partir de gousse.” For the distinction between the diploid and triploid varieties of the plant, see Pringle, 194.

54. Noted in Jean Andrews, “Diffusion of Mesoamerican Food Complex to Southeastern Europe,” *The Geographical Review* 83, 2 (1993): 200. For Turner, see Victor R. Boswell “Two New Beans from America,” *Aggie Horticulture*, <http://aggie-horticulture.tamu.edu/plantanswers/publications/vegetabletravelers/beans.html> (accessed September 3, 2007). William Turner published the first part of *A new Herball...* in 1551.

55. Parkinson, 521.

56. Champlain, vol. 2, 177. Champlain uses the word “ortie” for nettle. *Ortie blanche* is White dead nettle (*Lamium album*).

poisonous plant may have been imported for its purported medicinal properties or perhaps for its decorative foliage.⁵⁷ Snowberry, on the other hand, is an evergreen that grows rampant along the ground in cool wet woods, and in appearance resembles in a very cursory way White dead nettle (*Lamium album*). The white berries were gathered and eaten by Aboriginal people and do indeed have the texture and taste of bananas.⁵⁸

Figure 3. *Edera trifolia Canadensis*, or Poison ivy (*Toxicodendron radicans*).



Source: Engraving in Jacques-Phillipe Cornut, *Canadensium Plantarum aliarumque nondum editarum Historia* (Paris: S. le Moyne, 1635). Courtesy of Agriculture Canada.

57. Pringle refers to Poison ivy as *Toxicodendron rydbergi*. Virginia creeper was certainly imported for its decorative properties. Mathieu, 297.

58. Author's observation. Champlain's allusion to the taste of bananas is evidence of his strong gustatory memory, as he must have eaten bananas on his first voyage to the New World in 1599 when he visited the Caribbean and Mexico.

Two plants beside the ‘snowberry’ resemble strawberries, a fruit much esteemed in Europe since the Middle Ages. The Robins include a *Fragaria americana* in their 1624 catalogue,⁵⁹ and the Tradescants grew the Virginian strawberry (*Fragaria virginiana*). Nicolas-Claude Fabri Peiresc, a French savant, wrote in a letter to his half-brother that he had at last eaten the strawberries of Canada, which he found excellent, and more fragrant than the common, almost musky in flavour. He noted as well that there were two kinds, perhaps as Champlain depicted.⁶⁰ Peiresc also noted the table qualities of the squash and grapes from Canada. In eating “Canadian”, he was able to satisfy his desire for novel tastes, an enterprise whose difficulty no doubt only added to the savour.

Shipping and Receiving

Eating the fruits of the New World was indeed a difficult proposition. Peiresc was not only an adventurous eater, but also an ambitious gardener. He was in touch with the Robins, as well as other plant collectors and traders, and in his efforts to acquire plants from the “Indies, Canada and elsewhere,” he experienced all the vicissitudes of the 17th-century plant trade. Shipping viable plant material across the ocean was fraught with problems, but the impulse to bring back the new and strange ensured that rarities were imported almost from the moment of discovery. Seeds were dried and wrapped in paper; more delicate seeds were shipped in small boxes covered in wax, others wrapped in clay mixed with honey.⁶¹ Kept dry and away from pests and vermin, it was relatively simple to guarantee their safe arrival in good condition. Many plants grown from seed acclimatized with ease, and these were the early success stories of the Columbian exchange—corn, peppers, beans and squash. Growers readily adapted their traditional practices to the cultivation of new plants that resembled those common in Old World gardens. Squashes in particular were easily nurtured alongside the more

59. John Parkinson refers to the “Virginia strawberry,” in 1629. He complained it rarely bore ripe berries. He also referred to a plant that John Tradescant “brought with him from Brussels long agoe...” If Tradescant did bring a plant back from Brussels at the time he included the “New England” strawberry (*Fragaria nova anglia nondum descripta*) in his manuscript catalogue in 1616, it may have been derived from plants in Paris and originated perhaps in New France, Parkinson, 528. For a discussion of the early history of the strawberry, see Vivian Lee, “Early History of the Strawberry,” in *The Strawberry: History, Breeding and Physiology*, ed. George M. Darrow (New York: Holt, Rinehart and Winston, 1966), <http://www.nal.usda.gov/pgdic/Strawberry/darpubs.htm> (accessed 28th October 2008).

60. Cited in Mathieu, 169-70. The two varieties might be *Fragaria americana* and *Fragaria virginiana*, both introduced in the seventeenth century. See Lee, op. cit.

61. Mathieu, 84-6.

common European cucurbits. It is interesting to note that squash blossoms even found a place in European cuisine, as they did in Mexico. Vincenzo Campi (1536-91) depicted a box of edible squash flowers in his 1580 painting, *The Fruit Seller*.⁶² Exotic tropical fruits, such as pineapples and bananas, though brought to Europe soon after their discovery, resisted efforts at successful cultivation for centuries. The first pineapple was grown in England in 1675 by John Rose, gardener to Charles II, but it was not until the 1730s that Linnaeus nurtured the banana into flower and fruit in George Clifford's garden at Hartekamp in Holland.

What could not be imported as seed was shipped by other methods, adapted from European practices. Rootstocks, for example, were wrapped in moss or damp earth. Peiresc was evidently adept at layering Virginia creeper (*Parthenocissus quinquefolia*), since he was prepared to send to a correspondent cuttings of "la vigne du Canada," six already rooted.⁶³ But even if carefully packed, rootstocks and tubers could be desiccated by long transport, or soaked in saltwater at sea. Petrus Hondius, a Dutch gardener, planted a shrivelled tuber of Jerusalem artichoke in his garden at Terneuzen in 1613, and was amazed that it survived to reproduce. Peiresc was frustrated by the loss of plants en route through Ligorno, which were found in poor condition, and he feared, completely lost.⁶⁴ Live plants such as saplings or small shrubs, were planted in half barrels, and demanded regular watering with fresh water—often in short supply at sea—and protection from exposure in foul weather, and airing in fine. "Les fraises du Canada," which Peiresc so enjoyed, must have been transported as delicate live plants. Amédée François Frézier (1682-1773), the French engineer who introduced the Chilean strawberry to France in 1714 recounted his long voyage after which only five plants remained

62. Noted in Jules Janick and Harry S. Paris, "Early Evidence for the Culinary Use of Squash Flowers in Italy," *Chronica Horticulturae* 45, 2 (2005), http://www.hort.purdue.edu/newcrop/Squash_flowers.pdf (accessed 28th October 2008).

63. "J'ay la vigne de Canada qui nous a tapissé des maisons entieres dans trois ou quatre ans, et d' une trez belle verdure, et d' autres arbrisseaux que l' Europe ne produit point." Letter to M. le Baron d'Alegre, 21 June 1630, <http://gallica.bnf.fr/ark:/12148/bpt6k89285j> (accessed November 21, 2008); "Vous aurez eu par le retour de son postillon un oranger de la Chine, avec des marcottes de la vigne de Canada en nombre de 6 enracinées et 24 sans racine, ensemble le myrthe double....," <http://gallica.bnf.fr/ark:/12148/bpt6k89283v> (accessed November 21, 2008)

64. Anyone familiar with the growing habits of the Jerusalem artichoke would not be at all surprised that the plant survived and flourished. Salaman, "Why 'Jerusalem' Artichoke?," 346. Salaman proposes a corruption of the name of the Dutch garden as the origin of the English appellation, "Jerusalem" artichoke. For Peiresc's lament, see letter to M. le Baron d'Alegre, 21 June 1630, <http://gallica.bnf.fr/ark:/12148/bpt6k89285j> (accessed November 21, 2008).

alive, two of which he consigned to “Monsieur de Jussieu, for the King's Garden, where Care will be taken to bring them to bear.”⁶⁵

Even if they survived their sea crossing, exotic plants were subject to the indignities of land transport from the port of entry to the appropriate garden. In 1718, M. de Lusancay laboured on behalf of Michel Sarrazin, the great botanist of New France, to ensure that the plants shipped in two boxes filled with earth survived the ocean crossing, despite the rats and mice that infested the ships. Unfortunately, once arrived, the plants were in such poor condition, that his gardener did not think it worthwhile to send them on by messenger, since they would be shaken and turned upside down en route.⁶⁶ Even once planted in a nurseryman's garden, an exotic plant often required special care. Gardeners would enquire of those who had seen the plant in its native habitat for advice on growing conditions, and the herbals and gardening literature are replete with notes of plants that failed to thrive, despite the best efforts of the gardeners to simulate the original habitat. John Gerard, in the dedication to his *Herball*, notes that he has “laboured with the soile to make it fit for plants, and with the plants that they might delight in the soile, that so they might live and prosper under our clymat, as in their Native and proper country.” Though he tried, he could not make the Sweet potato that he had bought at the Exchange in London come into flower.⁶⁷ Other plants, however, flourished in unfamiliar ground. Parkinson noted that the Jerusalem artichoke had become common, while Lescarbot complains that Ground nuts “have increased so much that to-day all the gardens are full of them...”⁶⁸

One dimension to the survival and spread of New World flora is utility. Cartier's botanical miracles, though less useful than their promoter had hoped, survived in the catalogues of gardeners because they were agreeable to scent and sight. Another factor in adoption of exotics is, perhaps surprisingly, fashion. The success of Champlain's exotic sunflower root exemplifies the role that fashionable novelty has played in botanical exchange. During the sixteenth and seventeenth centuries the French and even the English diet was transformed by the fashion for Italian cuisine, which led to a new interest in salads and vegetables, legumes and fungi. From 1300 to 1660, the percentage of dishes

65. Cited in Vivian Lee, “The Strawberry from Chile,” in *The Strawberry: History, Breeding and Physiology*, ed. George M. Darrow (New York: Holt, Rinehart and Winston, 1966).

66. Rousseau, 154.

67. Gerard, preface, n.p., http://caliban.mpiz-koeln.mpg.de/~stueber/gerarde/high/IMG_0488.html (accessed 28th October 2008).

68. Lescarbot, vol. 3, 254.

including vegetables quadrupled, while the number of species mentioned in cookbooks doubled.⁶⁹ *Le Viandier de Taillevent*, written at the end of the fifteenth century, mentions only peas, beans (fava), leeks, onions, and cabbage. By the mid-seventeenth century Nicolas de Bonnefons could include fifty-six pages of recipes for vegetables, including such new foods as pumpkin (*citrouille*), potatoes, and haricot beans in *Les délices de la campagne*.⁷⁰ Three families were unusually prominent in this new vegetable universe: mushrooms, artichokes, and cardoons (*Cynara cardunculus*, the artichoke thistle).⁷¹ Champlain's new root was prolific and easily prepared, and perhaps more significantly it shared, with all members of the Lettuce family, the newly appreciated artichoke flavour. Like the newly prized truffle, it also grew underground.⁷² And it claimed an exotic origin, though not by birthright. The appearance in Paris in 1613 of a group of Topinamboux from Brazil created a sensation, and the street-hawkers, who were attempting to sell the new vegetable, roasted or boiled, finding perhaps that calling them "Truffes du Canada" was not exotic or appealing enough, renamed their product "topinambours."⁷³

But just as it at first benefited from a fashionable taste, the Jerusalem artichoke was also subject to the whims of fashion. By the 1620s, the English had grown tired of the "Potato's of Canada": "...too frequent use, especially being so plentiful and cheape, hath rather bred an loathing then a liking of them."⁷⁴ Like Cartier's Arbre de vie, the new was quickly supplanted by the novel, and the commonplace by the rare. Les "Truffes du Canada" were too prolific. Only a few years after its introduction to Europe, the French were using them in place of acorns and chestnuts to

69. Jean-Louis Flandrin, "Dietary Choices and Culinary Technique, 1500-1800," in *Food, A Culinary History from Antiquity to Present*, eds. Jean-Louis Flandrin and Massimo Montanari, trans. Albert Sonnenfeld (New York: Columbia University Press, 1999), 404-5.

70. Counted by the author in Nicolas de Bonnefons, *Les délices de campagne suite du Jardinier françois* (Amsterdam: Raphael Smith, 1655).

71. The cardoon is a naturally occurring variant of the more familiar Globe artichoke (*Cynara cardunculus*, also *Cynara scolymus*).

72. Harold McGee notes that the Jerusalem artichoke (sunchoke), sunflower, and artichoke, are all members of the Lettuce family and share a similar flavour. Harold McGee, *On Food and Cooking: The Science and Lore of the Kitchen* (New York: Scribner, 2004), 328. Caspar Bauhin calls them the "Artischoki sub terra," the underground artichoke. See Caspar Bauhin, *Pinax theatri botanici Caspari Bauhini* (Leiden: L. Regis, 1623), 277.

73. The Topinamboux were introduced to Parisian society by Sieur de Razilly, who twenty years later would serve under Champlain in Acadia. Salaman, "Why 'Jerusalem' Artichoke?," 345. Topinambours are still sold widely in markets in Quebec and in France though uncommon in other parts of North America.

74. Parkinson, 518.

fatten cattle and swine.⁷⁵ What was meat for pigs could be eaten by men, but perhaps not appreciated as a rarity. By 1633, thirty years after Champlain had first tasted them in the New World, the author of Gerard's *Herball* could write:

These rootes are dressed in divers waies; some boile them in water, and after stew them with sacke and butter, adding a little Ginger: others bake them in pies, putting Marrow, Dates, Ginger, Raisons of the Sun, Sacke, &c. Others some other way, as they are led by their skill in Cookerie. But in my iudgement, which way soever they be drest and eaten they stirre and cause a filthie loathsome stinking winde within the bodie, thereby causing the belly to bee pained and tormented, and are a meat more fit for swine, than men...⁷⁶

It was an ignominious end for an exotic plant that its first importers might have hoped would supplant the rare and desirable truffle. It is also perhaps emblematic of the way in which the plants of the northern New World were received in Europe, often misnamed and misattributed, their origins forgotten or obscured. Corn is Turkish or Indian, sunflowers are Brazilian. The very familiarity of the biota of the northern temperate lands encouraged explorers and colonists to seek for resemblance rather than exotica, and to avoid what Stephen Greenblatt has called the "ambiguous experience of wonder."⁷⁷ While Jean de Léry asserted that in Brazil he had truly seen a New World, where the form of animals and what the earth produces were "fantastic and prodigious,"⁷⁸ Champlain praised a country "pleasant" in summer, a climate "healthful," and fertile, a land that brought "all sorts of grain and seed to maturity." Both he and Cartier noted that the native plants lacked only cultivation to become as fruitful as those of home. Neither landscape nor vegetation seemed exotic, certainly not "fantastic." Those attributes would be reserved for the icy barrens of the arctic and the wonders of the great lakes and cataracts. The native plants of New France slipped quietly into the gardens of Paris, requiring little in the way of special nurturing and exciting little interest except among the herbalists and apothecaries. Their integration into Europe's vegetable consciousness required little imagination, and left little trace. The pineapple, not the Jerusalem artichoke, became the emblem of the newness and strangeness of the New World, its taste described and dreamt of, its image sculpted and painted, and its cultivation much desired.

75. Salaman, "Why 'Jerusalem' Artichoke?," 343. Now the prolific topinambour is being considered as a bioenergy plant!

76. *Ibid.*, 383.

77. Stephen Greenblatt, *Marvelous Possession, The Wonder of the New World* (Chicago: University of Chicago Press, 1991), 19.

78. Quoted in Greenblatt, 22.