Peter Kalm, the first trained scientist to visit North America, arrived in Philadelphia in September, 1748, for a two and one half year visit. A student of Linnaeus, his mission was to search for plants of sufficient economic significance to merit their introduction into Sweden and Finland, and to supply scientific information and specimens to Linnaeus and to fellow members of the Kongl. Svenska Vetenskaps Academien. Kalm, with his scientific training, wide interests, and natural curiosity, left for posterity records not only of the natural phenomena which he observed, but also a detailed account of the cultural history of the period. His journal *En Resa till Norra America* (A Journey to North America), published in three volumes in Stockholm, 1753-1761, is invaluable to the student of colonial history because it includes details which the chronicler of the familiar scene tends to omit.

Linnaeus, judging the climate of like latitudes in North America to be the same as those in Sweden, was insistent that Kalm explore the region of Hudson's Bay. Surely here plants would be found which would make agriculture possible in Lapland. Linnaeus had no conception of the inaccessibility of Northern Canada. He most certainly had no idea that he was attempting to drive Kalm into the tundra. He did travel twelve Swedish miles north of Quebec, and was convinced that the vegetation beyond this point held nothing of economic consequence. He had hoped to visit Maryland and Virginia, but these plans never materialized, possibly because he felt duty-bound to restrict his investigations to those regions which produced plants more compatible with the climate of Northern Europe.

The results of Kalm's scientific observations were published in a series of articles which appeared in Kongl. Svenska Vetenskaps Academiens Hand-

*Esther Louise Larsen (Mrs. Kenneth D. Doak) became interested in Peter Kalm while doing graduate work at the University of Pennsylvania. In 1934 she began editing and translating Kalm's many articles on American subjects, her scientific background and her knowledge of Swedish specially fitting her for the task. The present paper was prepared with the support of a grant from The American Philosophical Society.
PORTRAIT OF AN ABO PROFESSOR, PROBABLY PEHR KALM


Courtesy Swedish R. Academy of Sciences
lingar from 1749 to 1778. In them he discusses American agriculture, climate, animals, insects, and the economic value of trees, shrubs, and herbs together with their characteristic and medicinal uses. Some of his observations are also found in the theses of his student respondents. As presiding officer he should definitely be given the credit for those which deal with American subjects. As Professor of Economics at the University of Finland, he quite naturally directed the attention of his students to the economic significance of America to the colonial powers.

Two papers dealing with the subject were issued in small octavo pamphlets. One of these was presented by Daniel And. Backman on July 13, 1754. Entitled “Nyttan som kunnat tillfalla wart Kjära Fäderseland, af Des Nybygge i America fordom Nya Swerige kalladt” (The Benefits which our Dear Fatherland might have derived from the Colonies in America formerly called New Sweden), it is fifteen pages long and bears the imprint, “Abo Tryckt, hos Directeuren och Kongl. Boktr. i . . . Finland, Jacob Merckel.” A translation of it was published in the *Pennsylvania Magazine of History and Biography*, Volume 74 (1950), pages 500-511, under the title “Peter Kalm, Preceptor.” The other, “Nyttan som England kan hafva af sina Nybyggen i Norra America,” was presented by Sven Gowinius on June 20, 1763. This thesis, which is here given in translation, is twenty-two pages long and bears the imprint, “Abo, Tryckt hos [printed by] Johan Christopher Frenckell.” It is the more comprehensive of the two theses, and is particularly interesting because it predicts the possibility of the separation of the North American Colonies from England.

RECENT gazetteers show what an advantageous peace England obtained at the close of the war with France and Spain and the extensive lands she acquired. If any of the belligerent nations, after so much bloodletting, can be said to have gained anything and received some compensation for the great expense and trouble, it is undoubtedly England. She might become formidable to Europe and in particular to the colonies of the remaining European powers in America because of the astounding increase in the lands which she controls. She is now in a position to do without the goods which she formerly purchased from foreign countries.

1. All records show that the motherland can derive great benefits from colonies which are wisely ruled. They help make a land rich and powerful. Ancient Tyrus, France and Portugal, but more especially England and Holland of recent times, prove this fact. It is not true of Spain, who, because of many political blunders, is poor in spite of large, rich colonies in America. If Sweden, Denmark and other favorably-situated European countries had as
many advantageously-located and well-established colonies as England and Holland, they would doubtless be more powerful. Economy between motherland and colony, if it is to be harmonious, should be based on the premise that the motherland obtain from the colony the wares and products which she can not produce and which she formerly obtained through foreign trade. On the other hand, the colony should not occupy itself, except in emergency, with those branches of economy which nature designates as those of the motherland. There should be a mutually beneficial exchange. Now we shall see to what extent England will be able to achieve this object through her colonies on the North American continent. We shall confine our discussion to the mainland, because brevity does not permit us to include the islands which belong to England in America.

2. According to the latest peace terms, France relinquished all Canada to England, together with the greater part of Louisiana across the Mississippi River. We can not readily determine what is meant by the latter. The English accuse the French of making the boundaries so vague in their North American treaties that they can interpret them as they see fit, thus making it possible for them to claim whole provinces. Spain has ceded Florida to England. England is in possession of a piece of land which stretches from the southernmost tip of Florida at about 25° North latitude in a continuous line north to Hudson’s Bay at about 62° of the same latitude or possibly further to the northernmost limits of the continent. With the exception of those localities at the southern end of the Mississippi River, one might say that the English possessions begin in the east at the Atlantic Ocean and stretch west, reaching nearly to the Southern Ocean or at least to the Spanish Colonies, if there are any, on the Southern Ocean. It is true that the larger part of the interior is inhabited by several tribes of wild Indians, but we know that, as soon as Europeans become owners of the land along the coast in America, they consider all the land to the interior their own. They have many ways of becoming masters of these wild Indians and undisputed owners of their property. This situation will be discussed in chapter 9. England now owns a tract of land in North American which in length and breadth is larger than Europe. This extensive area is, according to the geographical and travel books at our disposal, exceed-
ingly variable. Thus, with the exception of those regions nearest to Hudson's Bay, where few plants grow because of the extreme cold, the soil is quite productive in most places since it is not used by the Indians, except for the most primitive type of agriculture. Most of the region has always been covered with forest and the mold has accumulated for hundreds of years. Therefore, when the Europeans cut away the forests and use the land for fields, it can be cultivated for a number of years without fertilizers. The summers are so warm in Montreal, Canada, and Boston, New England, that they not only grow all kinds of pumpkins but also melons and watermelons, just as we grow cabbage and turnips. It becomes warmer the farther south you go. Choice fruits which grow wild in the forests will be listed in chapter 4. The entire country is cut by large rivers, most of which are navigable for from 10 to 15 miles not only by yachts but also by large ships. Some rivers are navigable for 30 to 60 Swedish miles and where they can not be navigated by vessels, smaller boats get through. There are five large fresh water lakes, which resemble oceans, located right in the heart of the continent. According to the account of Charlevoix in his History of Canada, Lake Ontario is 80 French miles long and about 25 miles wide. The lakes Erie, Huron and Michigan are each about a hundred miles long and 30 miles wide. Lake Superior is the largest of all, being 200 French miles long and at most points 80 miles wide. The lakes are all so deep and clear that they can be navigated by large yachts, but the channels connecting them are so shallow that only small boats can pass through. Between Lake Erie and Lake Ontario boats and cargos must be carried overland for three French miles or about 1½ Swedish miles because of the Niagara waterfalls, which are 135 feet high and carry all the water from Lake Superior, Michigan, Huron and Erie. According to Prof. Kalm's account, the limestone, which forms the precipice of the waterfall, is not very hard. Therefore a canal with locks could be made for boats. In addition to the lakes mentioned above, there are a great many smaller lakes, some of which surpass in size Saiman and Peijenden in Finland. In the

1 The original letter which Pehr Kalm wrote to Benjamin Franklin on September 2, 1750, describing Niagara Falls is preserved in the manuscript collection of the library of the American Philosophical Society. It is the first description of Niagara Falls in English and was published in the Pennsylvania Gazette on September 20, 1750.
main this is a healthful land. Plagues are unknown. The Europeans living here are not usually troubled by famine. The summers are long and the climate is such that, if one species does not mature, another will. Now we shall see what the products of the land are.

3. First we shall consider the products of the mineral realm. Although America is known chiefly for gold, no evidence has been found of gold deposits in the English colonies. Campanius on page 35 of his account of New Sweden tells of an Indian who promised certain governors a whole mountain of gold. The Indian disappeared and the information was unreliable. Professor Kalm received beautiful specimens of silver ore from Carolina, Virginia and several places in Canada. There are fine copper mines in Pennsylvania and New Jersey. Professor Kalm has collected and seen specimens of fine copper ore from Carolina, Virginia, Maryland, New England, Canada and Hudson’s Bay. He judged from the large collection of rich copper ore specimens which were shown him by Governor Marquis La Galissoniere, that there must be an abundance of rich copper deposits further inland in Canada. Several pieces of solid copper, some larger than the largest bricks, have been found far inland in Canada along river banks. I have seen a fine specimen of this pure copper in the Professor’s mineral collection. The richest lead ore is to be found in Illinois as well as in many places in Canada. Iron ore, in quantities equaling that of Sweden and Russia, is to be found not only in the original English Colonies but also in Canada. Professor Kahn saw several rich alum deposits. Coal, an abundance of petroleum, a variety of marble, including the beautiful red serpentine from which the Indians make their peace pipes and beautiful mill and grind stones, have been found. May not many more of the substances already discussed, and others belonging to the mineral realm, be discovered in this broad land when it is better known? The abundance of waterfalls, as well as the nearly inexhaustible forests which are found here, will make the development of these mineral resources both easy and profitable.

4. Now let us see what the plant kingdom has to offer. The country is overgrown with heavy forests containing many kinds of trees. There are 9 or 10 different oaks, nearly all of which can be used in ship building. It is true that the ships built from these do not last as long as those built from the European oak, but the
American oaks are more plentiful and less expensive. Pine forests cover large areas. White pine masts obtained here are superior to any Europe can produce. A great quantity of tar is made from other species of pine. One learns from the Philadelphia Gazette that from the first of November, 1736, to the first of November, 1737, South Carolina alone shipped out 14,617 barrels of pitch, 12,503 barrels of tar, 6,505 barrels of the so-called turpentine tar, and 133 barrels of resin. The following year, Charlestown, South Carolina, according to No. 522 of the same Gazette, shipped 16,788 barrels of tar, 845 barrels of the so called turpentine tar, and 55 barrels of resin. The forests contain fine wild fruit trees, such as the mulberry tree, chestnut, chinquapin (a small species of chestnut), various kinds of walnut trees, plums, grapevines, elm trees, pawpaw (a very fine fruit), several kinds of cherries, peaches, hazel and many other palatable fruits. There are numerous medicinal plants such as *Sassafras*, *Polygala Senega* L., *Aristolochia Virg.*, and many others. The French carry on a heavy trade with China in ginseng. Wood from black walnut, cherry and red maple is available for the finest cabinet work. There are many native dye plants. Trees, which will produce the finest of quickset hedges.

*Sassafras albidium* (Nutt.) Nees.

*Seneca-Snakeroot.*

*Aristolochia Serpentina* L. is the Virginia Snakeroot.

Pehr Kalm’s octavo pamphlet (Stockholm, 1751) with the heading “En kort berättelse om naturliga stället nyttan, samt skötseln af några växter, utaf hwilka från nylingen blifvit hembragte från Norra America, til deras tjensst, som hafwa nåja, att i vårt climat gora försok med de sammans culturende,” has been translated by Esther Louise Larsen and was published in *Agricultural History* 13:33-64 (January, 1939), under the title, “Peter Kalm’s short account of the natural position, use, and care of some plants, of which the seeds were recently brought home from North America for the service of those who take pleasure in experimenting with the cultivation of the same in our climate.” It constitutes a comprehensive summary of Kalm’s observations on American plants which he considered of economic importance.


“Rön om den Americaska so kallade Tupp-sporre hagtorns nytta til levande häckar” in *Handlingar* 34:343-349 (1773) appeared in translation under the title, “Pehr Kalm’s Observations concerning the usefulness of the American so-called Cockspur Hawthorn for Quickset hedges,” in *Agricultural History* 19:254-255 (October, 1945).
for field and meadow, are available. Huge quantities of boards and joists are exported annually to the American islands.

5. Now we shall see what profit can be derived from the animal kingdom. The woods are full of four-footed animals; the air is filled with all kinds of birds; rivers, lakes and adjoining oceans abound in fine fish. We shall only discuss the animal products important in trade. There is a fabulous population of beaver in the streams of the land. Beaver pelts, purchased from the savages for European shipment, are one of the chief exports of North America. Douglass in his *English Colonies in North America*, Vol. 1, p. 176, states that the Hudson's Bay company receives yearly from the region of Hudson Bay beaver pelts valued at 40,000 pounds sterling. To this item we must add the fabulous quantities shipped from the whole of Canada, New England, New York, Philadelphia and other regions. In Stockholm's *Postidning*, No. 42 of the current year, under the heading of Charleston, Carolina, March 9th, one reads the following: "Pelts, particularly beaver pelts, shipped from Canada in the previous year, reached a value of 60,000 pounds sterling." In addition, most ports ship quantities of deer hides to Europe every year. According to the Philadelphia *Gazette*, No. 522, Charleston, South Carolina, alone exported 1,485 unpacked deer hides in addition to 442 packed hogsheads between November 1, 1737, and November 1, 1738. Douglass says that South Carolina alone exports deer hides valued at 25,000 to 30,000 pounds sterling. In addition to these shipments large quantities of hides from wild cattle, skins of bear, fox, raccoon, marten, lynx, elk, wolf and many others are exported annually. The inhabitants of New England and Canada carry on a heavy export trade based on whaling and sealing. Douglass (p. 298) says that 10,000 barrels of whale oil were shipped from New England in 1748. Herring and cod are found in unbelievable quantities in the New World. According to Douglass (p. 298) the amount of cod received from the New World varies from 100,000 to 300,000 quintals yearly.

6. We have hastily reviewed the natural resources of this land which belongs to England. We shall now consider the products obtained by foreign trade which England might receive through the diligence of her colonials. In South Carolina, Georgia, and more particularly in Florida, the heat is almost unendurable; and, during the winter, there is scarcely any cold weather at all. Plantations
could be established in these provinces, for producing plants which can only be grown in mild climates. Coffee, red and yellow brazilwood, rice, indigo, sugar, cotton, olive trees, lemon, Seville orange, orange and almond trees, grapevines of all kinds, the host of the cochineal insect and many other plants important in trade and medicine might be grown in these mild climates. There is every reason to believe that these plants can be produced in Florida,

since some of them already grow there, and others come from regions where the climate is no warmer. Indigo, rice and cotton have been produced successfully in South Carolina. Professor Kalm has seen cotton mature in Pennsylvania, New Jersey and New York. A considerable amount of rice is shipped to Europe annually by South Carolina. The Pennsylvania Gazette (No. 481) informs us that during the year of 1737, South Carolina exported 45,540 barrels and 519 sacks of rice. For the year 1738, No. 522 of
the same *Gazette* makes the statement that 34,444 barrels of rice were shipped from Charlestown, South Carolina. In Georgia, North and South Carolina, Virginia, Maryland, and to a certain extent in Pennsylvania, New Jersey and New York, the useful plants listed below can be grown with amazing success: mulberry, tobacco, cotton, rice, grapevines (all European types used in wine pressing can be grown here). Since wine is said to be improved during long sea transport, it will be of a better quality when it reaches England. Douglass (p. 440) says that the tobacco trade of Virginia yearly engages over 200 ships, and brings an annual income to the crown of about 3 to 400,000 pounds sterling. The *Pennsylvania Gazette* (No. 650) says that, during the year 1741, Williamsburg, Virginia, alone shipped 40,798 hogsheads and 34 barrels of tobacco. The white mulberry will grow rapidly as far as 42° lat., which is the northernmost limit of the red mulberry. Large plantations of both red and white mulberry have already been established in Georgia, Carolina and Virginia. Silk manufactured in these colonies is not inferior to that of France and Italy. In the year 1733, England imported silk valued at 300,000 pounds sterling from Italy alone. The value of silk imported from Italy, France, India and China reached 500,000 pounds sterling. (See Reasons for establishing the Colony of Georgia, p. 7 and 12.) The English Colonies in North America will soon be able to produce all the useful plants grown in all of Europe, for they have both hotter and colder climates and in addition there are desert areas for vegetation requiring it.

7. England will now have the distinct advantage of receiving from her own colonies goods which she formerly purchased elsewhere at great cost. She will also have large quantities of goods to sell. She has complete control over the fur trade, and makes an incredibly high profit from the fisheries. Because of influence over seamen she has a large outlet for manufactured goods. When these wide lands have been settled, large fleets of soldiers could be brought to Europe, should circumstances require it.

8. There are several answers to the question how England can settle this large uninhabited land, without completely stripping herself of population. A study of the population of existing colonies, which vary in age from 100 to 150 years, is helpful. In the year 1628, the first settlers came to New England (see Oldmixon's
Description of the English Colonies in America, p. 53). By the year of 1722, the city of Boston had a population of 12,000, and by 1742, it had reached 16,382 (see Douglass, p. 530). The province of Massachusetts Bay, which is also a part of New England, had a population of 94,000 in 1722. By 1742 the province had 41,000 men of military age, not counting 2,600 negro slaves of the same sex (see Douglass, p. 531). In 1683, the first English settlers were sent to Maryland, whose population exceeded 30,000 by 1740 (see Oldmixon, p. 53). Amidas and Barlov were the first Englishmen to reach Virginia in 1584. They took some tobacco home with them. It is said to be the first ever seen in England, but no real interest was shown in it until 1607. By 1740 Virginia had a population of over 70,000 (see Oldmixon, pp. 347, 358, 425). From the address delivered by Professor Kalm in 1752, when he became Professor of Economics, I learn that when the English first came to New Sweden, or what is now Pennsylvania, in 1681, the European population did not exceed 1,000. Because of the wise regulations of Penn, the population has increased at an incredible rate. The government of Pennsylvania was able to show how well this country could withstand an enemy onslaught in the war between England, France and Spain in the year of 1747. Pennsylvania alone had over 80,000 men of military age. At the beginning of the year 1737, the population of New Jersey was 47,369. It had reached 61,403 by 1745, an increase of 14,034 in less than nine years (see Franklin's Poor Richard or the Philadelphia Almanac). From this brief discussion it is clear that the country is being populated quickly. I wish to place further emphasis on the prosperity of this country. Much of the land is tax free or taxed so lightly one could hardly consider it a tax. Due to the freedom which is enjoyed here, every man may be said to be a king on his own land and in his own home. There are no customs, no taxes, there is complete religious freedom, and the country is not in danger of enemy attack. Because of the many advantages, European immigrants arrive each year from England, Ireland, Scotland and Germany. 12,000 German immigrants came to Pennsylvania in the summer of 1749 (see the account in the above-mentioned Almanac). The population increases more rapidly here than in most parts of Europe. Because of the advantages listed above and because land is so easily obtained, young people are
soon on their own. The drain from home labor might cause a shortage. Fortunately the government has found a solution (see Kalm's American, Resa T. 2, p. 475). If the English government will facilitate immigration of Germans and others, the population will increase rapidly. Wise provisions for incorporating Indians into the community might also help. Many other methods for bringing about an increase in population could be discussed but time will not permit.

9. This question might be raised: Would the country not be crowded for Europeans if the Indians should unite? The answer is, even if one concedes the impossible, that the Indian tribes should form an alliance against the Europeans, they could do little. The entire Indian country is exceedingly sparsely settled. It is possible to travel 3 to 15 miles without reaching an Indian village or farm. Occasionally they are somewhat closer but for the most part there is a great sparsity of inhabitants. The number of Europeans is now practically equal to that of the Indians. Let us suppose that the Indians have become accustomed to guns, no longer respect the law, and are able to confiscate all the guns, powder and shot from the Europeans. We should soon learn how ineffectual they are. The Indians are divided into many nations or tribes. They are always out scalping, or at war with one another. The hate among them is unquenchable. They kill each other daily and hourly. Since the Europeans came to America several tribes have been completely exterminated. One thing more disastrous than sickness and war to the Indian is brandy, a drink which he did not know until the arrival of the European, and for which he has an incredible appetite. If an Indian is given as much brandy as he desires, he will drink himself to death. The ancient Romans and Greeks considered fighting and dying for the fatherland as honorable as he considers death due to drinking. Drinking has killed more Indians in North America since the arrival of the Europeans, than all deaths due to disease. Their numbers are also decreased, because of the senseless custom of either allowing themselves to be placed in, or jumping into, cold water when they run high temperatures.

Other questions arise which can be answered: When these countries become stronger, and more heavily populated, might they not separate from England, and set up a kingdom of their
own? Particularly if England restricts their right to manufacture? The answer is that the country is divided into several provinces, each with its own governor, laws, money, etc. Therefore each province is entirely independent. Each province has its own parliament. The individual governments might to a certain extent lead one province and governor to hold the other in check. Other conditions might keep these lands from falling away. It is difficult to say what might happen. Professor Kalm has told me that he noticed a great hate between the colonies and their motherland when he was there. Freedom to manufacture goods was much curtailed. He often heard it said openly that in 20 or 30 years, they could become a separate kingdom and have their own king. The fact remains, they would not enjoy the great advantages they now have under England. However, we shall permit England to solve these problems herself. From this brief account we see what great strength England gained by the last peace treaty. If we consider that all the Indians in this vast region which England now has under her domain must buy all the European goods they need from the English, we can see that the English, if they treat the Indians well, might have a great deal of help from them against their European neighbors. If a country as strong in sea power as England held a fort at the tip of Florida during war time, she could easily take a large number of ships from her French and Spanish neighbors going to and from Europe. Thus, when we consider all her colonies not only on the mainland of North America, but also in the islands, and if we also consider the enterprising husbandry of the English Nation, we would seem to have reason enough to predict that the English power might some day swallow up everything owned by other European powers in America.