

Search for New Crops 1770-1840

MANY OF AMERICA'S early statesmen were sharply aware of the agricultural problems facing the young, growing nation. Men like Franklin, Jefferson, Madison, John Quincy Adams, and William H. Crawford took an intelligent interest in the development of agriculture, and were constantly striving to promote the economic interests of the nation. They enjoyed associating with scientists and enlightened agriculturists, and cooperated with the work of agricultural and scientific societies.

BENJAMIN FRANKLIN

Franklin's intellectual drive and broad interests brought him recognition as one of the busiest men of his time. This same activity and curiosity led him to consider agrarian problems, and he did much to promote agriculture at home and abroad. While in England from 1764 to 1775 as an agent of the colony of Pennsylvania, he carefully observed farming methods and sent back many plants to his friends in America.

As Carl R. Woodward says in his book, *Meet Dr. Franklin* (1), ". . . on excursions about the countryside to seek relaxation from the formalities of court and tension of diplomatic circles, Franklin was quick to perceive new varieties of plants, along with new ideas of culture, to pass on to his American friends. On one occasion he sent John Bartram from England seeds of new varieties of turnips, cabbage and peas; again he forwarded to his wife some naked oats, recommended for oatmeal, and some Swiss barley, 'six rows to an ear,' with the request that she divide it among his friends Hugh Roberts, Samuel Rhoades, John Bartram and others . . . then it was Penshurst peas, and again a new sort of beans that he sent home across the water."

Franklin is definitely known to have sent to this country two vegetables which are of economic value today, rhubarb and Scotch kale. John Ellis considered rhubarb among other crops as "worthy of being encouraged in our American colonies," and in 1773 remarked that it had been sent to America within the last three years. This probably refers to the seed Franklin obtained in 1772 in Scotland and sent to Bartram in Philadelphia. Franklin wrote concerning this, the first rhubarb on record in America:

I hope the Rhubarb you have sown and distributed will be taken care of. There seems to be no doubt of its doing well with us as in Scotland. Remember that for Use the Root does not come to Perfection of Power and Virtue in less than Seven Years. The Physicians here who have try'd the Scotch, approve it very much, and say it is fully equal to the best imported. (2)

Franklin's name is linked with the history of three field crops which achieved economic importance: upland rice, broom corn, and soybeans. In England he expressed a desire to have upland rice from China tried out in America. Dry rice was sought so that rice cultivation might be extended into upland areas. (3) Franklin is credited with being the first to introduce broom corn culture into America when his "shrewd eye found a single seed on an imported broom." He became enthusiastic over the soybean as a result of his membership in the French Academy of Sciences. Soybeans sent from China to France as early as 1740 were grown after 1779 in the famous Botanic Garden of Paris. From France, Franklin sent some of the seeds to the United States, but the soybean did not find a favorable reception until the technology of the twentieth century demanded it.

The culture of grapes, hemp, flax, and silk interested Franklin, but it is not known whether he procured any new stocks for propagation in America. He took an active interest in the growing of *Rhenish grapes* and worked to promote wine production through the culture of satisfactory varieties. For friends in France, he procured from Pennsylvania, scions of the *Newton Pippin apple* as well as hickory nuts, walnuts, and chestnuts.

Franklin believed there were great possibilities in America for silk and often encouraged its cultivation. Silk producers faced the problem of importing new varieties of trees, such as the mulberry, for feeding the silkworm. The British Government offered a bounty for silk produced in the Colonies, and similar

bounties were offered by the Pennsylvania and New Jersey assemblies—through Franklin's influence, it is thought. While in England, Franklin gathered information on silk for the Colonies, and, in 1773, auctioned off a shipment of American silk.

GEORGE WASHINGTON

Washington is credited with no "first introduction," probably because he did not go abroad as Franklin and Jefferson, and did not indulge in the same scientific interests. However, he is thought to have made the first recommendation that a branch of the National Government be organized to care for the interests of farmers. Washington's letters show that he wanted plants for trial and for the improvement of his estate at Mount Vernon. In them, he comments on agriculture in Virginia and its dependence upon Britain for leadership in that field.

A letter Washington wrote in 1786 requested Arthur Young, an English agriculturist of Bury in Suffolk, to procure for him "implements of husbandry, seeds, &c." This letter, which was addressed to Wakelin Welch of London, Washington's business agent in England, reveals that Young had offered to procure these articles for Washington. He accepted because Young was careful that the seeds were "good of their several kinds; a thing of much consequence, and which does not often happen with seeds imported into this country from Europe."

Washington asked Welch to have the captain of the vessel keep the seeds in the cabin and out of the ship's hold where they would heat and spoil. (4) The next day Washington wrote Young himself, listing the seeds and implements he desired:

A little of the best kind of cabbage-seeds, for field culture
Twenty pounds of the best turnip-seeds, for ditto
Ten bushels of sainfoin-seeds
Eight bushels of the winter vetches
Two bushels of rye-grass seeds
Fifty pounds of hop clover-seeds

He also wanted burnet, if Young thought it valuable as an early food, or any other kinds of grass seeds of value, especially for early feeding or cutting.

Several months later, Washington again wrote Young requesting:

Eight bushels of what you call velvet wheat, of which I perceive you are
an admirer

Four bushels of beans, of the kind you most approve for the purposes of a
farm

Eight bushels of the best kind of spring barley

Eight bushels of the best kind of oats and eight bushels of sainfoin seed.

The first shipment of seeds arrived in a damaged condition. Apparently the captain of the vessel did not have the space or the desire to share his cabin with the twenty-one bushels of seeds Washington had ordered.

The Board of Agriculture of London sent Washington seeds of the perennial succory brought over from France by Arthur Young. In the winter of 1789, Washington received gooseberry plants from William Perse of Ireland. He thanked Perse for these, and acknowledged his obligation for Perse's offer to send "other natural Productions" of Ireland. Five thousand white thorn plants sent from England in 1794 for planting hedges arrived in late spring. Only a few survived, and they were not thrifty. The same year, Washington ordered thirty-nine varieties of tropical plants, including the breadfruit tree (an economical food in the West Indies for feeding slaves) from the trustees of the Botanical Garden of Jamaica. Washington's third misfortune in his efforts to procure seeds and plants from overseas occurred when the vessel carrying this order was lost at sea. His interest in these plants had been that they would "combine utility, ornament, and amusement."

Washington, and other persons of ample means, used greenhouses to protect tropical plants for botanical and experimental purposes. Since the glass structures maintained sufficiently uniform conditions of heat and moisture, they were used to grow grapes for wine. "The orangery" was a name often given to glass structures used to protect citrus fruits before they became available on the market at popular prices.

THOMAS JEFFERSON

Jefferson's interest in agriculture was more profound and practical, more extended and continuous in time than either Franklin's or Washington's. In Jefferson's philosophy, the agrarian way of life was the basis of national economic and political sanity. Long residence on the estates of Shadwell and Monticello gave him the opportunity to practice and experiment with various

plants. Jefferson's Garden Book, kept from 1776 to 1824, attests to his persistent, practical research for improved crops. According to the records, Jefferson took more advantage of his foreign residence to study European agriculture than did Franklin. Jefferson shared his plants and his discoveries, and went to considerable trouble to find promising new plant crops to introduce.

Aid to Agriculture—Jefferson believed that agricultural societies should experiment with new crop productions and bring them to the attention of their members. "In an infant country, as ours is, these experiments are important. We are probably far from possessing, as yet, all the articles of culture for which nature has fitted our country." He realized that "to find out these will require abundance of unsuccessful experiments. But if, in a multitude of these, we make one useful acquisition, it repays our trouble." It was not the duty of the Federal Government, but "perhaps it is the peculiar duty of associated bodies, to undertake these experiments." (5)

In this letter to William Drayton just quoted, Jefferson offered his whole-hearted cooperation to the South Carolina Society for the Promotion of Agriculture. This institution, established in 1785, was the first agricultural association incorporated in the United States to provide a farm for testing introduced seeds and cuttings. The members were especially active in testing the olive and grape, but only the olive gave promise. ". . . I shall be attentive to procure for them the seeds of such plants, as they will be so good as to point out to me, or as shall occur to myself as worthy of their notice." Jefferson was active in the Albemarle Agricultural Society, organized in 1817 by his neighbors in the county where some of his own farms were located. He was made a member of many others because of his help in securing new plants.

Seed Collections—Jefferson was active during the greater part of his life in collecting and exchanging seeds and plants with persons abroad. He gathered prized field crops from all over the world for trial at Monticello. Jefferson also collected domesticated trees and shrubs, both native and foreign, which were able to withstand the Virginia winters. American agriculturists at first looked to Europe and especially to England for leadership. Many of the settlers sent to the Old World for plants, animals, implements, and agricultural information. Jefferson imported not only seeds, but also the English methods of cultivation and general agricultural practices.

For a period of twenty-three years, Jefferson received annually a box of seeds from his friend Thouin, Superintendent of the Garden of Plants at Paris, containing exotic plants thought suitable for the Virginia climate. Jefferson sent these seeds to public and private gardens in other states for many years, but in 1826 he proposed that they be utilized by a new school of botany at the University of Virginia. He also suggested that a botanical garden be started, and proposed that the professor make a list of trees and plants to be introduced before taking measures to secure them.

Promotion of Rice—Jefferson regarded his efforts to introduce the olive and the dry, or upland rice, as his most worth-while achievements in plant introduction. While in Paris in 1787, he became interested in rice after seeing large quantities consumed in France. He traveled to southern France to study the agriculture and to secure the *Piedmont rice* grown in Lombardy. Jefferson considered it different from the rice grown in the Carolinas and hoped to increase the demand for rice by increasing the varieties in the markets. At the same time, he secured rice seeds from the Levant at Marseilles and forwarded these to America. When he learned of the dry rice, he made arrangements to get some from Cochin, China, for trial "the young Prince of that country. . .having undertaken that it shall come to me." (5)

Jefferson shipped a quantity of Egyptian rice seed to Charleston in 1788. He dispatched two shipments, hoping that at least one of them would arrive unspoiled and in time for planting. Two years later, Jefferson secured a barrel of heavy upland rice from equatorial Africa. He hoped the upland varieties might replace the wet rice and the malarial pestilence that accompanied its cultivation. From Charleston some of the upland rice was sent to Georgia. In reviewing his plant introductions shortly before his death, Jefferson recalled that his rice had spread over upper Georgia, but he did not know to what extent it came to be grown in South Carolina. (6)

Next to a grain for bread, Jefferson considered an oil crop as especially worthy of introduction into a new country. "The olive is a tree the least known in America, and yet the most worthy of being known. Of all the gifts of heaven to man, it is next to the most precious, if it be not the most precious." He was impressed with the pervasiveness of the olive in Mediterranean cookery and thought that it might claim a preference even to bread. Jefferson thought the Society for the Promotion of Agriculture in South

Carolina should undertake the introduction of the olive and offered his services to William Drayton in securing plants. He had a number of olive plants sent from France in 1789-90 for South Carolina and Georgia.

Miscellaneous Introductions—The search for suitable pasture and cover crops in the South is an old one. In 1786 Jefferson sent Drayton seeds of the sulla of Malta, or *Spanish St. Foin*, a legume belonging to the same family as clover and alfalfa. In a letter to the editor of the *American Farmer* of May 2, 1820, Jefferson wrote that the consul at Leghorn, Italy, had sent him some of the seed, *Italian clover*, which was arousing some interest at that time. He considered it the same as the sainfoin grown in the Mediterranean region. Thirty-five years before, Jefferson had procured some of the clover seed from Malta and sent it to the Agricultural Society of South Carolina. They found it less advantageous than the Guinea grass, and did not pursue its culture.

Jefferson sent a parcel of acorns from the cork oak to South Carolina in 1787. No successful plantings came from these seed which were probably received in a non-viable condition, but Jefferson continued his efforts to introduce cork for another forty years. In 1803 he sent to Europe for grains of a wheat said to withstand the attacks of the Hessian fly.¹ However the wheat he received later that year and distributed among his friends never proved equal to this requirement.

WORK OF AGRICULTURAL SOCIETIES

Agricultural societies during the nineteenth century performed much the same functions for agriculture that Federal and state governments later did in communicating agricultural information to each other and exchanging seeds and plants. The first agricultural periodical published in the United States, the *Agricultural Museum*, devoted much space to the work of agricultural societies. Activities of the Columbian Agricultural Society of Washington and the Berkshire Agricultural Society of Massachusetts were frequently reported upon. As the earliest recognition of Russian wheats, the *Agricultural Museum* noted in July, 1811, that Cas-

¹ This tiny midge or fly is very destructive to wheat in the eastern United States. Wheat growers in the nineteenth century were continually searching either for wheat varieties that would resist its ravages or the means to prevent its attacks. It is said to have been brought to America in the straw used for horse feed during the Revolution by the Hessian mercenaries of George III.

pian, *Persian barley*, and *Mammoth rye* were distributed by Joel Barlow to members of the Columbian Agricultural Society.

The Albemarle Agricultural Society of Virginia, the best known of these societies, may be considered as typical of such organizations at that time. Among the thirty organizers in 1817 were Thomas Jefferson, two later governors of Virginia, a future senator and justice of the Supreme Court, and many statesmen, physicians, lawyers, and farmers. Later, James Madison joined and was chosen first president. Excerpts taken from the minutes of the society show that shipments of seeds were frequently received from abroad and distributed among the members for trial.

The South Carolina Agricultural Society was the leader of the interest in foreign plant introduction in that state. The society appointed a committee to consider what beneficial effects would accrue from the introduction of foreign seeds, plants, and implements of husbandry. In 1823 the committee pointed out that in their state such profitable crops as rice, indigo, and cotton had resulted from plant importation. Further introductions, they felt, might produce new crops for sale as well as for provisions and not merely for domestic consumption. The appointment of the committee probably resulted from the general uneasiness over a surplus of cotton, with resulting low prices for land and the cotton crop.

The Society thought that a new staple might be substituted for cotton, and a recommendation was made that a committee of three be appointed to introduce such seeds and plants as would be designated by the society as of possible value for the state. This was to be done by corresponding with consuls of the United States and other persons in foreign lands and with officers of the Navy. An appropriation of \$200 was to be made annually from the society funds to meet such expenses. The seeds and information acquired were to be distributed gratis to members.

In New York, *The Genessee Farmer* of 1836 praised the farmers of Monroe County for presenting a petition to the New York legislature for an appropriation to aid a state agricultural institution at the head of the county agricultural societies. The money was to be spent for premiums for agricultural products and for procuring useful seeds for public distribution.

DR. HENRY PERRINE

The history of tropical plant introduction during the second quarter of the nineteenth century is largely the story of Dr.

Henry Perrine, physician and plant enthusiast. His role was that of an agricultural pioneer working for the development of the newly-acquired Territory of Florida. Perrine's work came at a time when new crops were needed to diversify and bolster the agriculture of the South—before the Federal Congress had begun to bureaucratize this work in 1839.

Perrine's interest in the introduction of tropical plants began while he was in Cuba in 1826 recuperating from an illness. Here he observed agricultural practices, compiled statistics, and drew some favorable conclusions about the prospects of tropical agriculture in Florida. When Perrine was appointed the United States consul to Campeche, Mexico, in 1827, he began an intensive campaign to export Mexican plants, especially the fiber-producing agaves.

He gave unstintingly of his services as a doctor to the Mexicans, hoping to persuade them to part with their jealously-guarded seeds and plants. Although the natives appreciated Perrine's help during epidemics of yellow fever and cholera, they repeatedly defeated his efforts to ship live plants or seeds out of Mexico. The farmers disliked losing a valuable market for their crops by assisting in the development of a rival crop industry abroad. Often the seeds were reported either not ready to gather or already lost. Transportation of plants was delayed so that they died on the way out of the country. When plants did reach the United States, frequently there were no facilities for their care.

Perrine wrote letters to the newspapers in an attempt to interest the public in the cultivation of tropical plants. He made experimental shipments of the century plant (*Agave americana*) and other plants to friends in New York and New Orleans.

Perrine hoped to obtain a land grant from Congress, or to get permission to purchase land in Florida and there set up an experimental farm for tropical plants and seeds. He expected the results of his farm would extend the cultivation of tropical plants northwards, and hoped to find some profitable crops that would attract settlers to Florida. His plan was based upon the belief, common at that time, that tropical plants could be gradually acclimated to the colder temperatures of the north. Such plants, Perrine thought, would utilize the sterile, swampy, pestilential lands of southern Florida. What the soil lacked, he explained, the air and moisture would supply to the plants he sought to cultivate. Perrine felt that this combination would be so successful that in a few years

the West Indies would be smuggling in lower priced sugar from the United States!

Work With Plants—Perrine was quite interested in agaves, particularly the *Agave sisalana*. Many species of these plants were common in Mexico and Central America and one species, the century plant, could be used in more than a dozen different ways. Perrine claimed to have invented a method of separating the fibers from the leaves of the *Henequen Agave*, commercially known as Sisal Hemp, by means of rotary scrapers. This invention, which he compared to Whitney's cotton gin, he expected would revolutionize agriculture.

A great many tropical plants other than the agaves attracted Perrine's attention. He thought of the logwood tree in Yucatan and suggested that a monopoly on logwood be established by plantings in America. The demand for vegetable dyes caused him to study many other dye-producing plants. Among these were the cochineal cactus with its insect parasite which produces a reddish dye, the "shrub Indigo," the common indigo of Tabasco, and a tree indigo. He sent seeds of these and of nankeen colored cotton, the India rubber tree, the "Pasture tree," a soap tree (its saponaceous fruit was used as a substitute for soap), the "Purgative Pinion," "Spanish Cedar," a large ground gourd, tree-cotton, and others.

The House and Senate each originated bills in 1838 for a land grant to Perrine and each published a *Report* on his activities. (7) The grant became a law in July of 1838. Perrine and his associates were awarded a township of 23,040 acres in any portion of the public lands below twenty-six degrees north latitude. It was to be occupied within two years and each section had to be occupied within eight years from the date of the location of the tract by an actual settler cultivating useful tropical plants—otherwise the land would be forfeited.

Perrine apparently planned to spend the rest of his life on his plant work at Indian Key, a twelve-acre island in Florida where his land grant was located. Against the advice of the Secretary of War who warned him that the Seminoles were rising, Perrine landed his family on Indian Key, Christmas morning of 1838. Six months later Perrine was shot, and his home and valuable notes on his work burned by a Seminole war party. (8) Most of Perrine's plants were destroyed during the massacre, but some of them were later carried off by Army officers to greenhouses in the North or

to Army posts to be used as ornamentals. Perrine had imported nearly 200 varieties of tropical plants and made sisal plantings on every section of the grant before his death. This was the last land grant made by Congress for the purpose of encouraging plant introduction.

Perrine's zeal often led him to make overly enthusiastic statements about his work, and it is doubtful if he ever would have achieved the results he dreamed of. His attitude in plant introduction, as in medicine, had been philanthropic. The location of his land was an excellent choice climatically, for the present tropical plant introduction garden of the Department of Agriculture at Coconut Grove, Florida, is located next to the site of his grant.

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