

The Commissionership 1862-89

THE MAIN POINT which boosters of a national department of agriculture stressed during the 1850's was the great value of plant introduction work to the nation's agriculture. Farmers, agricultural societies, and periodicals all joined in advocating a separate government organization devoted to agriculture, and equal in importance to any other department. The Board of Agriculture in England and similar organizations in France and Prussia were cited as precedents. Commissioner Holloway of the Patent Office urged that agriculture be separated from the Patent Office so that it might become more than an appendage designed "to furnish members of Congress cuttings and garden seeds to distribute among favored constituents."

After more than a decade of agitation for such a measure, Congress established the Department of Agriculture, May 15, 1862. The Department, as organized, was headed by a Commissioner of Agriculture. Not until 1889 did Congress give the Department a Secretary enjoying a seat in the President's Cabinet.

The act establishing the Department of Agriculture followed hard on the heels of the secession by the southern states. The new western states now reaped their reward for siding with the North, for the Department quickly turned its attention to the agricultural needs of the West. The Homestead Act and Morrill Land Grant College Act also became laws shortly after the founding of the Department of Agriculture.

AIMS AND METHODS OF THE COMMISSIONERS

Isaac Newton, a dairy farmer from Pennsylvania, was the first man to head the new Department of Agriculture. Before his appointment as Commissioner, Newton had become acquainted

with Lincoln. He was detailed to watch the President's food supply when Lincoln was threatened with poisoning. He also became a confidant of Mrs. Lincoln, who sometimes abused her charge accounts at the stores, and he carried out the ticklish business of interceding in her behalf with the President.

Criticism of Newton—As Commissioner, Newton became the center of a storm of controversy; some considered him a person of wisdom, others thought him unlearned and incompetent. The farm journals of the time criticized him viciously. Earlier, they had been highly critical of the agricultural activities of the Patent Office. Now they looked upon the increased dissemination of agricultural information and free seed as competition from the government, in what they considered their own special province. Probably only Newton's death, due to sunstroke while supervising work at the experimental farm, prevented his dismissal by President Johnson. The substantial objections to Newton were based on his political scheming and on his failure to appreciate the needs of scientific specialists under him.

During his term as Commissioner from 1862 until his death in 1867, Newton worked hard to carry out the provisions of the act establishing the Department of Agriculture. These aims were: first, to educate the public by collecting and presenting agricultural information, and second, to collect valuable plant materials at home and abroad for distribution under the postal franking privilege. Foreign ministers, consuls, merchants, missionaries, travelers, and naval officers were urged to collect materials from foreign countries.

Plans for the South—The war with the South, and "postwar" plans for the reconstruction of its agriculture after the North should conquer, gave Newton the opportunity to plan a modification of the South's dependence on its staple agricultural crops. Newton realized that the agricultural possibilities of the South were yet to be exploited. Tropical and sub-tropical plants as well as the cereals, grasses, fruits, and vegetables of the temperate zone offered a wide variety of potential crops for the South. Solving the food problems of this area might help to create entire new crop industries. The great staples would continue to be grown, Newton thought, but the notoriously limited diet of the South could be varied by the production there of an abundance of every kind of food. Newton believed that smaller farms, managed by intelligent and interested labor, would make it feasible to produce

imported crops, some of which required intensive cultivation.

Many of the plants Newton investigated were later subjected to extensive experimentation.¹ Some of them were found to be economically impractical while others became the bases of new crop industries. Newton worked closely with diplomatic representatives abroad to obtain new seed stocks for America, for millions of dollars were leaving the country each year—spent on foreign agricultural products.

An important auxiliary to plant introduction work was the Division of Gardens and Grounds for purposes of experiment and propagation of untried plants. William Saunders became superintendent in September, 1862, and remained in that office for thirty-seven years. He helped to promote many new introductions, and in contrast to some other enthusiasts, used guarded judgment in the evaluation of new plants. He furnished plans for conservatories, and other structures were erected under his direction. Saunders, born in Scotland in 1822, was well prepared for his fruitful career in America by studies in the plant sciences at Edinburgh and by his services to the Royal Gardens at Kew. He came to America in 1844 and became horticulturist for the Department in 1862. As a landscape architect, he designed the park and garden system of Washington and landscaped many cemeteries in the eastern United States, including Gettysburg.

Plea for More Land—During the 1850's, while agricultural work was still under the control of the Patent Office, officials in charge of the Agricultural Division had frequently urged that the area devoted to experimental work be increased. But the country at that time was not prepared for any such extension of Federal paternalism. When Newton took office he repeated the request for more land, and suggested that the Department set up a model farm to test the adaptability of seeds and plants before sending them to farmers. It was becoming more apparent each year that superior varieties and other means of increasing agricultural production must be found. Tests of 576 varieties of garden seeds were conducted in 1867, but the area available was still too limited for

¹ Tea, coffee, opium poppy, vanilla, ginger, castor bean, assafoetida, quassia, silk, gum arabic, mastic, camphor, the Chinese yam, sweet chestnuts, chufa (or earth almond), the almonds of southern Europe, the Persian walnut, the cork and gall-nut oaks, arrowroot, licorice and orris roots, and various hems and grasses; fruits included were the prune, fig, date, pomegranate, olive, tamarind, guava, nectarine, shaddock, and pineapple; other productions were the pistache nut, Iceland moss, cochineal, indigo, dyer's madder, frankincense, balsam, and Egyptian senna.

the best results. Newton realized that enough land was needed to enable the Department to propagate forty to fifty thousand plants each year. Congress did not appropriate money for more land, however, and later commissioners also tackled this problem without success.

Growth of Seed Distribution—The account of the free distribution of seeds and plants by the Department of Agriculture is parallel to that of the changing motives and aims of plant introduction. Seed distributions came to be abused by members of

TABLE 1
SEED DISTRIBUTION BY THE FEDERAL GOVERNMENT 1862-89

Year	Total Distribution	Annual Appropriation	Year	Total Distribution	Annual Appropriation
	<i>No. of packages</i>			<i>No. of packages</i>	
1862.....	306,304	.....	1876.....	1,520,207	\$ 65,000
1863.....	1,200,000	.....	1877.....	2,333,474	65,000*
1864.....	1,000,000	.....	1878.....	1,115,886	75,000
1865.....	763,231	.....	1879.....	1,545,739	75,000
1866.....	992,062	.....	1880.....	1,581,253	75,000
1867.....	1,426,637	.....	1881.....	1,878,772	80,000
1868.....	592,398	.....	1882.....	2,396,476	80,000
1869.....	317,347	.....	1883.....	2,467,230	80,000
1870.....	358,391	\$25,000	1884.....	3,622,738	75,000
1871.....	647,321	45,000	1885.....	4,667,826	100,000
1872.....	814,565	45,000	1886.....	4,267,165	100,000
1873.....	1,050,886	55,000	1887.....	4,561,741	100,000
1874.....	1,286,335	65,000	1888.....	4,655,519	100,000
1875.....	2,221,532	65,000	.....	.....	.....

* An additional \$20,000 was appropriated for a special distribution of seeds to aid farmers in the area blighted by a grasshopper plague. Approximately one million of the seed packages distributed in 1877 were for this special purpose.

Congress, and valuable materials often were sent to persons not qualified to test them. Increased congressional appropriations for this purpose were frequently made over the commissioners' protest, and many growers complained that very ordinary seeds were being distributed. Statistics of distributions indicate in a rough measure the growing or declining interest in specific new crops and the local adaptation of varieties. The policy was to test plants in localities where they might become known for their merits. Attempts to eliminate the wasteful distribution of varieties of no particular value led to intermittent retrenchment of the program.

As mentioned earlier, agricultural journals of the day—which distributed free seeds of new varieties to subscribers—resented the

competitive liberality of the government. Seed firms also disliked the competition, and taxpayers always opposed what seemed to be wasteful expenditure. But Isaac Newton, unlike former agriculture chiefs, found no fault with the practice of liberal seed distributions. He argued that no equal sum of money expended by the government gave so large a proportion of the people so much "substantial enjoyment."

The result of Newton's expanded program was an increasing demand for seeds. In 1863, Newton had made the sweeping statement that all correspondents reported good results obtained from seeds tried, and in 1864 he asserted that the imported seeds had been of immense benefit. He pointed to the large national acreage of sorghum then being grown as an example of the value of the Department's plant introduction work.

However, by 1864 Newton had admitted his dissatisfaction with the large orders of vines and trees. A new propagating house was erected in 1865, but Newton strengthened his resolution to prevent the propagating garden from degenerating into a commercial nursery. He suggested that members of Congress distribute more seeds to agricultural societies to encourage these associations and to lessen the evils of indiscriminate distribution.

HORACE CAPRON

Following the death of Newton in July, 1867, John W. Stokes was acting Commissioner of Agriculture until December. Then by formal appointment, General Horace Capron succeeded Newton as Commissioner of Agriculture and served from 1867 to 1871. Capron had a record as a successful farmer and manufacturer in Maryland, as a Union army officer, and as a breeder of Devon cattle in Illinois. He continued Newton's policies and kept the confidence of the government and those interested in the Department throughout his career.

Attitude Toward Introductions—When Capron first came into office he was shocked by the growth of the government seed business. His first reaction was that the seed establishment had become a drain upon the Department's resources, but within a year he had become an enthusiastic supporter. Capron believed that seeds should be new to the community receiving them and should not be sent out unless distinctly superior varieties. Like Newton, he advocated a wider distribution to agricultural societies, and cir-

cularized them about the program. Capron stated that "the result of a single importation of wheat has alone been worth more than an annual appropriation for the whole Department." Figures were given to show that an increase in the annual production of wheat by only one bushel per acre would be worth \$30 million. In defense of seed distribution, Capron said that, "If nine-tenths of the seed distributed are sheer waste, and the rest judiciously used, the advantage to the country may be tenfold greater than the annual appropriation for agriculture."

In his first *Report*, 1867, Capron favored the extension of the various agricultural crops until "everything consumed in the country, to the growth of which our various soils and climates are adapted, shall be produced on our own lands." With regard to the South, Capron stated that there was a great search in that section for new crops and that the aid of the government in finding new fruits, grasses, and fibers would help the return of prosperity to the whole nation.

Capron was interested mainly in new crops, in contrast to Newton's emphasis on the search for better varieties of the old crops. The Department encouraged the commercial production of sugar from the sugar beet in Illinois by distributing seed imported from France and Germany. Capron favored a domestic silk industry, and the entire nation was invited to advance grape culture. Ramie, an old fiber plant of the Far East, excited the attention of growers and continued to hold interest beyond the turn of the century.

Capron wrote the congressional committees of agriculture asking for remission of duties on imported seeds in order to encourage their distribution by agricultural societies. Nevertheless, in 1870, foreign plants, trees, and seeds were made subject to duty except when introduced by the Federal government.

In 1869, Capron advocated exhibitions of plant collections of commercial value. The emphasis on diversification of crops, especially in the South, pointed to the need for a study of the various oil, gum, and sugar-bearing plants and fiber-producers. Congress voted an appropriation of \$25,000 for a glass conservatory building to protect trees and to propagate economic crops. Dr. C. C. Parry, botanist for the Department, explored for plants in San Domingo in 1871. He planned to bring back live specimens of some of the 500 items he had collected for museum purposes. The Department made an exhaustive study of western plant life to find hardy grasses and other plants of economic value.

ARGUMENTS FOR DIVERSIFICATION

The House of Representatives passed a resolution in 1870 requesting Capron to submit a report on the extent and value of foreign imports which might conceivably be produced in this country. From this report the House hoped to find foreign crops which would give diversity to American agriculture and lead to a fuller employment of labor and land. Diversification of agriculture was sorely needed, and it was closely identified in Capron's mind

TABLE 2
DISTRIBUTION OF MAJOR CROP SEEDS BY THE FEDERAL GOVERNMENT 1868-89

Year	Vegetables	Flowers	Tobacco	Turnips	Miscellaneous *
	<i>No. of packages</i>	<i>No. of packages</i>	<i>No. of packages</i>	<i>No. of packages</i>	<i>No. of packages</i>
1868.....	430,511	90,871	23,680	4,876	9,733
1869.....	196,024	37,352	20,607	6,478	4,447
1870.....	233,577	41,725	30,258	7,808	5,578
1871.....	365,933	183,259	18,560		16,691
1872.....	477,662	196,809	31,664		21,283
1873.....	617,564	227,296	24,595		29,173
1874.....	778,319	332,881	25,696		34,510
1875.....	1,654,058	337,960	56,053		30,442
1876.....	983,974	372,088	64,107		32,188
1877.....	1,811,100	302,395	45,398		36,282
1878.....	669,334	201,597	57,155		74,958
1879.....	1,270,372	71,280	36,673		64,830
1880.....					†
1881.....	1,325,922	135,269	115,199		54,715
1882.....	1,651,704	179,452	83,215	70,700	89,399
1883.....	1,884,514	233,440	76,232	86,148	60,801
1884.....	2,351,535	563,638	114,671	425,858	65,993
1885.....	2,989,655	764,950	168,295	554,732	94,506
1886.....	3,268,434	337,436	132,057	419,431	63,323
1887.....	3,609,748	394,137	100,191	375,473	57,230
1888.....	3,642,018	383,446	123,477	431,497	50,992

* Includes such crops as herbs, opium poppy, tree seeds, grasses and sorghums.

† No figures are available for 1880.

Complete figures for seed distributions prior to 1868 are not given in the USDA Reports. Figures for cereals and textiles for this period are given in TABLE 3.

with plant introduction as the means of achievement. Large surpluses of staple crops, caused by overproduction, brought sharp reductions in the prices producers received. The continued planting of a single staple crop robbed soils of their fertility. Diversity would permit planning for rotation and more continuous employment of agricultural labor. "The great extent of our territory," Capron argued, "its variety of soil, climate, and capability, all

point to the want of, and the benefit desirable from, a varied cultivation."

Many Southerners were interested in supplying this home market for new crops recommended in Capron's report. These were tea, coffee, cinchona, jute, ramie, sugar beets, sumac and madder for dyes, sisal hemp, okra and esparto grass for paper, and oil-producing plants, including the castor bean, caraway, anise, and lavender.

FREDERICK WATTS

Frederick Watts of Pennsylvania, Commissioner of Agriculture from August, 1871, to June, 1877, received his appointment as a matter of political patronage to his state. He put less emphasis on the introduction of plants than Capron, but expenditures for this purpose increased during his term in office. Watts denied that plants could be acclimatized to the cold, but the demand for semi-tropical plants continued to grow in the South. Chinese tea plants were in great demand and many thousands were distributed annually. The Department's collection of exotic economic plants was increasing yearly in number and in value. The "orange-family" was cited as particularly valuable and the best commercial varieties were propagated for distribution. Attempts were made to satisfy the demands of the South for pasture grasses. Watts was enthusiastic over the importance of fiber-producing plants and believed ramie and jute were about to assume places of importance.

He also felt that the farmers were securing tremendous benefits from the distributions of wheat, oats, and grasses. As the farmers increased their requests for seed, Congress enlarged the appropriation for this work. The trial of new seeds made farmers conscious of the value of experimental work, and their reports of the results they got were helpful to all concerned.

By 1874 the Department was becoming more discriminating in its purchases of seeds from firms proved reliable by experience. By buying direct from growers, larger quantities for distribution were secured at a nominal cost. Much attention was given to the selection of seeds, and many recipients vouched for the excellence and good germination of seeds distributed by the Department.

Watts more than tripled the number of seeds distributed each year during his term, and Congress increased the appropriations for this work from \$45,000 in 1872, to \$75,000 in 1878. Roughly

one-third to one-fourth of the annual appropriation for agriculture was being spent at this time for the distribution of seeds and plants.

WORK OF COMMISSIONER LE DUC

General William Le Duc of Minnesota succeeded Watts in 1877 and served until June, 1881. A former salesman, lawyer, and land promoter, Le Duc proved an able administrator whose work won the favorable attention of Congress and of the public. His reports stressed two themes: the introduction, experimentation, and promotion of sugar-producing plants, and the need for more funds and facilities for testing new plant introductions. His promotion of sugar is discussed topically in Chapter 7.

During Le Duc's term, many plants were propagated and sent to localities where they might flourish. Buildings for and plantings of various fruit trees had taken most of the land available for experiment by 1878. Le Duc recommended the purchase of a thousand acres near Washington and the establishment of eight or ten experiment stations in different climatic and geographical regions. He enthusiastically promoted tropical and semitropical crops including tea, coffee, oranges, lemons, olives, Japanese persimmons, bananas, pineapples, cacao, tamarind, cinchona, pepper, ginger, and dates. Scions of Russian apple trees and plants of European wine grapes were distributed.

Le Duc was in turn critical of the extensive seed distributions by his predecessor. He planned to favor agricultural societies over other applicants, and devoted much space to criticism of distributions by members of Congress. Le Duc's views were endorsed by resolutions of farmers' organizations, by newspaper editors, by some members of Congress, and individual citizens.

Le Duc's interest in tropical and semitropical products was reflected in his unusually large distributions of such plants. He claimed that large increases in yields valued at millions of dollars had resulted from his efforts, and he also believed that more diversification had been achieved. The appropriation act of 1881 required that "three-fourths of plants, seeds, and cuttings" should be made available to members of Congress for distribution. The proportion thus reserved varied from year to year, but had increased to five-sixths when the distributions were discontinued in 1923.

COMMISSIONERS LORING AND COLMAN

Commissioner George B. Loring of Massachusetts headed the Department of Agriculture from 1881 to 1885. Loring took only a mild interest in seed distribution, but continued appropriations by Congress assured an increase in the quantities sent out. During 1885, a record number of seed packages was shipped out. The distribution of plants, however, was not under Congress' thumb, and since Loring devoted more attention to other phases of the Department's work, plant distribution declined during his term in office.

Norman J. Colman served as the last Commissioner and the first Secretary of Agriculture from 1885 to 1889. His background as a lawyer, agricultural journalist, and legislator made him well qualified for the position, and he performed his work with great credit.

Colman accelerated the search for new crops and varieties. He felt that the West needed an abundance of new stocks, and shipments of seed packages more than doubled during his term. Reforms in the method of seed distribution were instituted to prevent the seeds from falling into incompetent hands, and to make certain that the seeds purchased were of good quality and suited to the needs of the various climates. A regular program of seed distribution to the new experiment stations established under the Morrill Act was set up, thus implementing the work of plant testing on a regional basis.

In regard to the value of distributions of new varieties, Colman asserted:

There are the most ample statistical data at hand in the carefully-kept records of the Agricultural Department to show that the increased production of wheat, oats, and other cereals and grasses, has, by reason of the wide distribution of improved varieties, paid tenfold the entire amount expended by the Department of Agriculture since it was established.

Some success was reported in meeting the demands of farmers for new grasses for summer and winter grazing on the plains. The Department looked to Egypt, India, and Japan for vegetable stocks for the arid and tropical parts of Texas and California. There was a steadily increasing demand for semitropical plants of economic value in the southern states. As the olive industry in California assumed commercial importance, the best European varieties were imported for further trial. In 1899, a site was chosen for an

experiment station at Garden City, Kansas, where grasses and forage crops for the Great Plains would be tested.

Dr. Earle D. Ross has observed in reference to the activities of the Commissioners in promoting new crops that:

These persistent efforts to introduce new crops and types of cultivation took no thought of the operation of comparative costs or of the ultimate effect upon foreign commerce; and back of each of the ventures were groups of producers who resisted any attempt to lessen the aid to such alleged sources of national treasure. Consequently measures to improve and stabilize the fullest established systems and to secure the best long-time utilization of natural resources had to compete with those for the new and unproven. (1)

An important result incidental to seed distribution was the development of seed tests for quality, germination, the presence of disease, insects or weed seeds, and proper labeling. Germination tests came to be used (to learn whether fresh seeds were adulterated with old stocks) in order to prevent low yields due to poor stands.

THE INTERNATIONAL EXCHANGE OF PLANTS

The policy of exchanging plants and seeds with foreign governments began during Commissioner Newton's term. In addition to securing rare foreign plants, it was hoped the program would promote international relations and an exchange of agricultural information. Commissioner Capron announced in 1868 that international agricultural exchanges had been set up with many of the governments of Europe, Asia, and South America. Arrangements had also been made to exchange rare agricultural products with the major botanical gardens throughout the world. The following year Capron reported that similar arrangements had been adopted with at least a dozen more countries and botanical gardens.²

Commissioner Watts continued the system of plant exchanges, and many valuable additions were made to the Department's collections. Some of the outstanding contributions came from the Kew Gardens of London, the Royal Gardens of Melbourne, and the Imperial and Royal Ministers of Agricultural Affairs of Austria-Hungary. Such exchanges were often arranged through

² Among the governments Capron mentioned were Austria, Prussia, China, Japan, India, Guatemala, British Honduras, Brazil, Bavaria, Russia, and Switzerland. The societies and botanical gardens listed were Kew, Melbourne, India museum in London, Cape of Good Hope Agricultural Society, British museum, Central Agronomical Society of the Grand Duchy of Posen, Horticultural Union Society of Berlin, Royal Society of Brussels, Royal Gardens of Madrid, Horticultural Society of Bremen, Royal Meteorological Society of Edinburgh, and the Agricultural Society of Sydney, New South Wales.

American ministers and consuls in foreign countries. The Department exchanged 3,450 packages of seed with foreign governments in 1871, and frequently received plants that could not be bought from commercial establishments.

Reports by the Department stressed the fact that this work had paid high dividends in establishing amicable relations with other countries, and that much valuable agricultural information was exchanged. This informal exchange of seeds and plants continues to the present time, and is a natural outcome of the association between plant explorers and agriculturists.

BIBLIOGRAPHY

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