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PROTECTING AMERICAN AGRICULTURE

Inspection and Quarantine of Imported Plants and Animals

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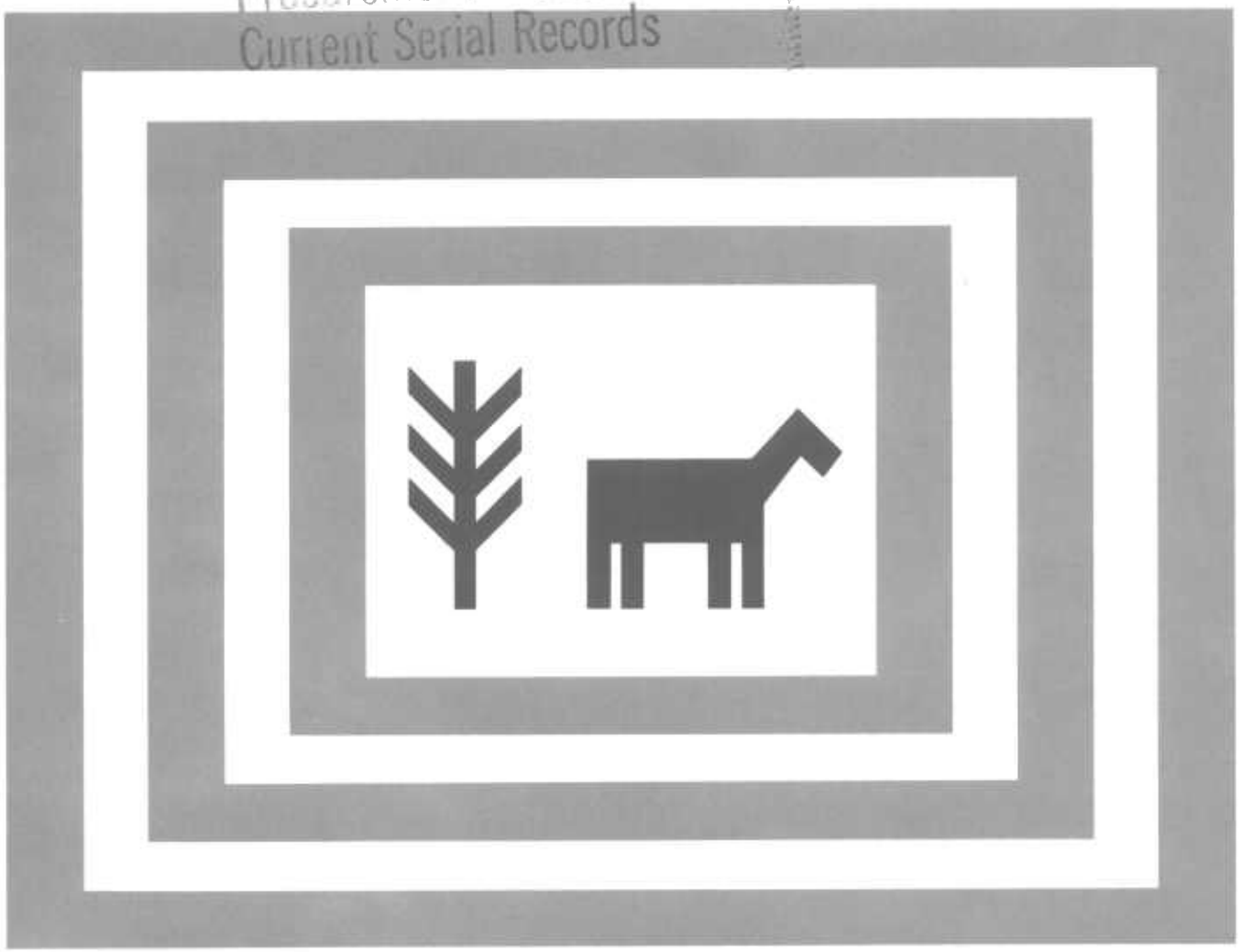

AGRICULTURAL ECONOMIC REPORT NO. 266
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ABSTRACT

Improved transportation has facilitated the international movement of crops and livestock, but has placed greater burdens upon our inspection and quarantine system. Roots of the Department of Agriculture's involvement in this area are imbedded in more than a century of its history. Implementation of legislation has also involved the U. S. Postal Service, the Department of the Treasury, the Department of Defense, and other agencies to a lesser degree. Scientists in the Department of Agriculture have worked closely with their counterparts in the States and private industry.

Keywords: Inspection, quarantine, livestock diseases and pests, plant diseases and pests.

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HIGHLIGHTS

Preventing the introduction of animal and plant pests and diseases from abroad is becoming increasingly difficult. Modern transportation methods have greatly increased the possibility that pests might enter the country, in travelers' baggage or cars as well as in agricultural shipments.

Efforts by the Federal Government to prevent the entry of pests and diseases began more than a century ago. Following an outbreak of pleuropneumonia in Massachusetts, which was traced to imported cattle, Congress enacted legislation in 1865 prohibiting the importation of cattle. Later, imported cattle were quarantined. In 1884 the Bureau of Animal Industry was established in the Department of Agriculture and assigned jurisdiction over quarantine stations for imported livestock as well as research in animal diseases.

The first meat inspection act was passed in 1890. It provided for the inspection and quarantine of certain imported animals to protect our livestock against communicable diseases. In 1913, a tariff act made imported meat subject to the Meat Inspection Act of 1906. Another tariff act, in 1930, strengthened the controls over imported livestock and meat. Legislation has extended the coverage, authorized the establishment of research and other facilities, and enabled the United States to cooperate with other countries.

Meanwhile, others were concerned about plant diseases and pests. Not until 1912 was authority given, by the Plant Quarantine Act, for inspection and quarantine of imported plant materials.

Inspectors pursuing seemingly routine duties have been protecting American agriculture from the destruction that followed the introduction of plant and animal diseases and pests. At the same time, scientists have studied diseases of animals and plants, destructive insects, and methods of control or eradication, including biological measures.

More cooperation between Government agencies and bureaus of the Department of Agriculture has been required as the scope of these regulatory activities has expanded. With the increased and accelerated travel of the 1960's and 1970's, the feasibility of continuation of this work has been questioned.

The agencies administering the congressional directives have evolved as the Department's organizational structure has developed. In 1972, most domestic and foreign inspection and quarantine work was consolidated in the Animal and Plant Health Inspection Service.

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by

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Agricultural abundance in the United States owes much to the rest of the world. The early English settlers brought with them livestock and seeds, so important to the survival of their colony. Once here, they planted crops grown by the Indians, such as corn or maize, beans, pumpkins, squashes, sweetpotatoes, tomatoes, and tobacco. They collected many nuts and berries including blackberries, cranberries, blueberries, raspberries, and strawberries that the Indians had harvested. The settlers also continued to obtain seeds, plants, nursery stock, and livestock from the homeland or the Continent.

In the early years of the Georgia colony, its leaders hired a botanist to collect plants in the West Indies and in Central and South America. Some 50 years later, Thomas Jefferson sent back from Italy some upland rice seed (31, pp. 24-52). By this time, some other agricultural producers were importing livestock to improve their cattle, hogs, and sheep. 1/

The Departments of State, Navy, and Treasury all played a role in bringing in seeds, plants, and associated materials, and then assisted the Patent Office after it assumed the function. On March 26, 1819, Secretary of the Treasury William L. Crawford urged consuls stationed abroad to send new or superior plants to customs collectors at U. S. ports for distribution. Eight years later a similar letter was sent to consuls and to naval officers (8, pp. 26-32; 31, pp. 26-34). A number of naval officers, who had farms of their own, had been collecting seeds and plants, and bringing home livestock to be used on their own farms, given to friends or relatives, or sold. Some naval vessels were described as floating farms and their men were subject to courts-martial. Officially, such importations were prohibited by a general order dated November 28, 1834. 2/

1/ Underscored numbers in parentheses refer to items in Literature Cited on p. 40.

2/ Interview with Alma Lawrence, Naval Records and Library, Navy Department, May 17, 1960; Circulars and General Orders, 1798-1842, pp. 272 and 282; Letters to Officers, Ships of War, 18:464; Orders, Circulars and Instructions and Regulations, Nov. 28, 1833, Record Group 45, National Archives, hereafter cited as RG-, NA.

A number of naval squadrons and expeditions cooperated as the Patent Office took over the seed distribution functions, cooperating with agricultural societies.

From 1839 to 1862, the Patent Office instituted and administered agricultural activities that included purchasing seeds abroad and receiving seed and plants from consuls abroad, from foreign governments, and from naval officers, as well as from agents sent for that specific purpose. The Navy Department gave specific instructions to its officers in charge of expeditions to collect seeds and plants. Agricultural journals and nurserymen were also engaged in introducing new plants, nursery stock, and seeds.

New plants and seeds, animals, and immigrants have sometimes brought pests and diseases that have plagued the American farmer. It is probable that early vessels, as they discharged their ballast, at the same time threw out along the shores insects and other pests that caused undisclosed damage. Stem rust of wheat is reported to have been introduced about 1726. The Hessian fly, that was supposedly introduced in straw used by Hessian mercenaries for their horses during the American Revolution, threatened wheat production and prompted producers to experiment to offset its damage. Thomas Jefferson used another approach when he ordered seeds of wheat varieties from Europe that were reputed to withstand the fly (18, pp. 161-67; 5; 7; 13; 81, pp. 5-6). All sorts of production practices and crop shifts were attempted to control this and other pests or diseases that continued to plague producers. 3/

One wonders whether some of the materials sent by naval captains that "spoiled" on the voyage may not have been diseased or infested with insects. We do know that the 1,000 boxes of cane cuttings, plantain, bananas, eddo, yam, and other plants collected in 1856 by Townend Glover, who later served as Entomologist for the Department of Agriculture, had cane borers in them. 4/ While the Patent Office reported that its cuttings were thriving, others decried the danger from introducing such a pest (31, pp. 33-35; 111, p. viii).

EARLY ANIMAL INSPECTION AND QUARANTINES

Similarly, livestock movements, be they imports or interstate, have presented problems. Peter Dunn, a New York city milkman, has been given the dubious honor of bringing in pleuropneumonia when he purchased an infected cow from an English ship in 1843. Four years later, another infected cow was brought into New Jersey. An importation into Massachusetts in 1859 of infected Dutch cattle prompted Massachusetts to take official action of quarantine and destruction. Appalled at the cost, the Massachusetts Legislature appealed to to the U.S. Congress to establish a national agency to work with the disease

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3/ i.e., Journal of Charles Carroll of Carrollton, Maryland Historical Society.

4/ Wayne D. Rasmussen, United States Plant Explorers in South America during the Nineteenth Century, Ph.D. Dissertation, George Washington University, 1950.

and prevent its entry by imposition of a quarantine. Even without such Federal assistance, Massachusetts eradicated the disease by 1865 (21, pp. 3-5).

Although the agriculture section of the Patent Office was not involved in any specific way in livestock work, its annual report for 1860 included two articles on pleuropneumonia. In his first report on the work of the Department of Agriculture after the end of the Civil War, Commissioner Isaac Newton asked that Congress prohibit the importation of cattle. On December 18, 1865, such a law was approved, but the Secretary of the Treasury was to administer it and the President could terminate such prohibitions by proclamation. 5/ Ironically, in less than 4 months, the same Congress asked Newton for information on the spread of the disease in Europe and for recommendations to prevent its entry into the United States. He urged State and National legislation that would keep out diseases or, if they entered, provide for isolation and immediate slaughter of infected herds (49; 88, 1865, p. 4).

It was not surprising that Newton's successor, Horace Capron, who had become well known as a livestock breeder, engaged John Gamgee of the Albert Veterinary College of London to make a study of livestock diseases by visiting areas of infestation. In 1869, Capron recommended that a veterinary division be established (88, 1868, pp. 4-6, 1876, pp. 321-22, 1877, pp. 382-526; 92; 94). Then came the first known outbreak of foot-and-mouth disease in 1870, attributed to cattle from England. Another outbreak occurred in 1880, to be followed by others in 1884, 1902, 1908, 1912, 1924, and 1929 (15; 21, pp. 18-19). In the 1860's to 1880's, the Department, in the absence of a regular veterinary staff, had a number of prominent nongovernment veterinarians studying various diseases, writing their findings up as Departmental bulletins. 6/

There was considerable criticism of the animal quarantine work of the Treasury Department. Not until July 31, 1875, did it issue the first prohibition against the importation of cattle and hides from Spain, to be followed 4 months later by one against Ireland and England where foot-and-mouth disease existed. Probably, some criticism of this order prompted the Secretary of the Treasury to ask the Commissioner of Agriculture whether rinderpest or foot-and-mouth disease could be introduced on dried hides, a question referred to James Law, a cooperating veterinarian at Cornell University. His affirmative answer included a recommendation that skins be disinfected and that all ruminant animals from abroad be examined and quarantined, a stand he continued to hold. Duncan McEachran, Chief Veterinary Inspector in Canada, in a speech before the U.S. Veterinary Medical Association on September 20, 1876, urged that a quarantine system be established to prevent the importation of diseased cattle from Europe (35; 21, pp. 29-31; 33; 34).

Even if the proponents of a quarantine system could get congressional approval for such an extension of Federal authority, there was still the problem of "Who would administer the program?" A Bureau of Sanitary Science or

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5/ 14 Stat. 1, 3.

6/ E. R. Mackery, "Basic Authorities, Animal Quarantine and Humane Laws," Files, Agricultural History Group, U.S. Department of Agriculture.

a National Board of Health had been proposed in the early 1870's to deal with both human and animal diseases. However, when the National Board of Health was established in 1879, it was created to work especially on yellow fever (46). Subsequently it attempted to extend its work into the area of animal diseases, but could not get such authorization. 7/

Both the Treasury Department and the Department of Agriculture were involved in studies of contagious diseases of livestock and published reports that alarmed European countries. Highlighting the fact that the infected cattle were in the eastern part of the country, writers urged restriction of movement, and some States imposed quarantines. On the other hand, Henry F. French, acting Secretary of the Treasury, on February 26, 1879, directed the Collector of Customs at New York not to admit any cattle from England, since there had been an outbreak of pleuropneumonia at Hull, England. Upon the revocation of this order on July 19, 1879, French directed all customs collectors to quarantine any European cattle for 90 days at the importers' expense.

Criticism of the Treasury Department's administration of the existing control procedures was increasing. Foreign countries placed restrictions on imports of American livestock that presented both economic and biological threats to them. However, when the Secretary asked for authority to inspect exports, Congress failed to act. Again, on February 19, 1880, John Sherman, Secretary of the Treasury, urged Congress to establish a commission to collect information on the existence of pleuropneumonia in the United States and then to cooperate with State and municipal authorities in its eradication (14; 21, pp. 7-8; 97; 98, 1880, pp. xxxiii-iv, 1881, xxx-xxxi; 99, p. 1).

In an attempt to get at the roots of some of the problems of disease control at home and abroad, the Secretary of the Treasury appointed a three-man cattle commission on July 16, 1881. It consisted of James Law from Cornell University, E. F. Thayer from Massachusetts, and J. H. Sanders from Chicago. 8/ Working on a part-time basis and responsible to the Secretary of the Treasury, Law and his associates had little authority. They traveled extensively to determine the nature, extent, and potential threat of diseases in livestock. Their reports stressed the importance of prompt action, condemning the existing haphazard situation. They recommended the establishment of a Federal import quarantine system with a 90-day quarantine for all foreign cattle, under the direct supervision of either the Treasury Department or the Department of Agriculture.

7/ Wyndham Miles, A History of the National Board of Health, 1879-1893, especially chapter 19, Diseases of Domestic Animals, n.d., mss, National Institute of Health.

8/ 21 Stat. 442; 22 Stat. 613; James Windom to James Law, July 16, 1881, Law Papers, Division of Manuscripts and University Archives, Cornell University.

First Quarantine Stations

The commission obtained sites, in 1883, for quarantine stations at Portland (Me.), New York, Boston, and Baltimore. Shortly thereafter, Congress appropriated funds for their operation, on March 3, 1883. Their first year of operation revealed problems. Increased trade forced the customs collectors to use private facilities when these stations were full and some importers sought to avoid their use by asking for special transfer of imported stock to their own facilities. To clarify this, the Secretary of the Treasury, on July 30, 1883, ordered that all cattle except those from other countries of North and South America be held in quarantine for 90 days at the quarantine station nearest the port of entry (21, pp. 31-32; 100; 101; 102, pp. 74-89; 103, pp. 1-2, 10).

Late in 1879 Commissioner of Agriculture William J. LeDuc had asked Charles P. Lyman, a veterinary professor at Yale University, to make a study of pleuropneumonia along the east coast. After making such a tour, Lyman went to Britain to check on the charges of exportation of diseased American cattle. At about the same time, LeDuc sent veterinarians to different sections of the country to study various diseases, a system that was to be continued until the Division of Veterinary Medicine was established in 1883. 9/ At about the same time a Veterinary Experiment Station was established in the District of Columbia (88, 1883, p. 11; 90; 91; 93; 95).

Bureau of Animal Industry

The establishment of the Bureau of Animal Industry in 1884 made possible a more effective program to keep out animal diseases. Customs officials of the Treasury Department soon had the cooperation of veterinarians of the new Bureau in the Department of Agriculture. Commissioner of Agriculture George Bailey Loring sought to strengthen the system when, on August 24, 1884, he directed that imported livestock be brought to ports having quarantine facilities. 10/ However, on occasion, customs inspectors were authorized to employ veterinarian inspectors at other ports for special shipments. The system was still probably not too effective, for as one agent of the Bureau of Animal Industry soon wrote: "It is but fair to assume that our escape from contagion is due more to the care exercised by importers in making their purchases in foreign countries than to the effectiveness of our quarantine laws" (88, 1883, p. 11; 66, 1886, p. 11).

9/ William J. LeDuc to L. McLean and Detmers, Feb. 1880, James C. Corliss, Mar. 21, 1881, and W. B. E. Miller, May 12, 1881, Letterpress Book of Appointments in National Agricultural Library, hereafter cited as NAL; E. A. Carman to William E. B. Miller, Oct. 17, 1882, Loring Letterbook (Domestic), 75:326; E. A. Carman to Isham Harris, Apr. 27, 1883, Loring Letterbook (Congressional), 5:61; LeDuc to C. P. Lyman, Dec. 12, 1879, LeDuc Letterbook 2:161; LeDuc to C. P. Lyman, Jan. 2, 1880, LeDuc Letterbook 2:397, RG 16, NA; 23 Stat. 31, 207.

10/ 23 Stat. 31, 207; G. B. Loring to A. S. Badger, Dec. 18, 1884, Appointment Book, p. 328, in NAL.

Meanwhile, although the Bureau was devoting much of its attention to research and disease eradication, foreign criticism of our exports continued. More agents were sent to investigate or counteract adverse publicity. Finally, on August 30, 1890, President Harrison signed the first meat inspection law. Although designed to insure disease-free livestock and meat exports, the act also provided for the inspection and quarantine of imported animals when necessary to protect domestic livestock. Secretary of Agriculture Rusk determined the policy, still cooperating closely with Treasury Department officials, as he issued regulations to implement the legislation. 11/ In February 1892, he suspended imports of livestock until foot-and-mouth disease was eradicated in England later in the year, thereby preventing the scourge from entering the United States. The same year producers could rejoice that the dreaded pleuro-pneumonia had been eradicated in the United States (21, p. 129; 66, 1891, pp. 73-76, 1892, p. 94; 69, v. 21, pp. 2070-74, 3056-58).

Legislation and its absence continued to be discussed. On July 5, 1893, the Secretary of Agriculture was authorized in the Appropriation Act to certify to the Secretary of the Treasury countries free of serious infectious diseases of animals, except horses. 12/ Soon the Chief of the Bureau of Animal Industry reported that the noninclusion of horses carried potential danger. He also sought authority to inspect imported meat. Although no further authority was given, activity increased. By 1898, most of the animal inspections were being made at the Mexican and Canadian borders, with large numbers of sheep and cattle crossing the southern boundary (66, 1893, p. 18, 1895, p. 20, 1897, 1898).

EXPANSION OF THE WORK IN THE 20TH CENTURY

As the Department moved into the 20th century its activities were rapidly expanding as the Nation was moving toward a more active role in world affairs. The Bureau of Animal Industry order, November 10, 1900, providing for tuberculin testing of cattle in Britain by the U.S. Department of Agriculture, was followed by another requiring such a test for all imported cattle. By this time, trade between the United States and the Philippine Islands, ceded to the United States in 1898, was opening up with the potential spread of animal diseases. Secretary Wilson sought to obviate this by his order dated December 13, 1901, prohibiting the landing of animals from the islands at any U.S. port (20, pp. 82-99).

Following another outbreak of foot-and-mouth disease in 1902, Congress authorized the Department to take new action in an attempt to prevent the introduction of diseases into the United States and to seize and destroy materials that would carry the disease, such as hay, straw, meats, hides, and other animal products. As inspectors performed their duties, they sometimes identified other diseases, such as the Malta fever discovered in 1905 in some

11/ 26 Stat. 414; 34 Stat. 419.
12/ 27 Stat. 80.

imported goats or surra in some Zebu cattle at the New York port in 1906, thereby preventing the entry of these diseases (20, pp. 90-92; 78, 1927, pp. 140-41). They were well aware of the cost of controlling or eradicating animal diseases once they gained a foothold--a hardship for the owner and expensive for the State and Federal governments, as they administered domestic quarantines and conducted slaughter of diseased animals. 13/

While some inspectors worked at ports of entry where overseas shipments came in, others worked at points along the Mexican or Canadian borders, where large numbers of animals were being moved or strayed, and where there were many illegal crossings. In 1910 Congress authorized the Secretary to erect fences along the borders to control these. 14/

Another restrictive measure was enacted on October 3, 1913, as a provision of the Underwood Tariff Act, making imported meat subject to the Meat Inspection Act of 1906, thereby attempting to keep out unwholesome meat. Some idea of the impact of this may be gained from the fact that during the year ending June 30, 1915, about 21,000 pounds out of 245,000 were condemned or refused entry. 15/

While restrictive measures had been placed on commercial imports, special provisions had been made to facilitate the importation of livestock for breeding purposes. Under the Wilson-Gorman Tariff Act of August 28, 1894, they were admitted free of duty provided they were registered in a breed book, with the Secretary of the Treasury making other regulations. Three years later, the Dingley Tariff provided that the Secretary of Agriculture was to determine and make certifications as to purebred animals or recognized breeds. The procedure was further spelled out in the Fordney-McCumber Act of September 21, 1922. The importer was to provide a certificate showing the animals' record which the customs collector was to transmit to the Secretary of Agriculture for certification. 16/

International Cooperation

The picture was becoming more and more complicated as countries tightened trade regulations. In an attempt to offset these the League of Nations established an international committee of veterinary experts in 1928 to consider the possibility of reducing the restrictive effect on international trade of the sanitary regulations affecting imports of animals and animal products. The United States had just added poultry to the livestock described in the 1884 legislation. When the Hawley-Smoot Tariff Act was approved on June 17, 1930, it included provisions placing embargoes on importation of ruminants and swine and their fresh, frozen, or chilled meat from countries having rinderpest or foot-and-mouth disease. It also prohibited the entry of meat unfit for human use. 17/

13/ 32 Stat. 791; File 381, General Correspondence, 1907-12, Bureau of Animal Industry, RG 17, Washington National Records Center.
14/ 36 Stat. 419.
15/ 38 Stat. 159.
16/ 28 Stat. 536; 30 Stat. 70; 42 Stat. 923.
17/ 46 Stat. 689.

President Hoover had pledged the cooperation of the United States in the London Economic Conference. His successor, President Franklin D. Roosevelt, designated Secretary of State Cordell Hull to head the U.S. delegation. Preparatory to the meeting, that convened on June 12, 1933, Hull asked the Department of Agriculture for a statement on "Sanitary Regulations Affecting International Trade in Products of Animals and Plant Industry." The report, prepared by the Bureau of Agricultural Economics in cooperation with the Bureaus of Animal Industry and Plant Quarantine, discussed economic problems and international motives. It stressed the necessity for cooperation in the localization and eradication of serious pests and diseases and urged that the Economic Conference take steps to implement some of the recommendations of the League committee. However, the conference broke up without any substantial accomplishments. 18/

In line with the Democratic Party Platform of 1932, the new Congress gave the President, under the Reciprocal Trade Agreements Act of June 12, 1934, authority to negotiate trade agreements with other nations. When the State Department raised the question of including modification of the sanitary quarantine and inspection regulations in the discussions, Secretary of Agriculture Wallace objected. Such regulations, he said, protected U.S. agriculture from foreign pests and diseases. However, on September 20, 1934, he appointed a committee to study the import quarantine and inspection program and to prepare a statement for inclusion in trade bargaining agreements and subsequent treaties. 19/

When the 12th International Veterinary Congress met in New York in August 1934, T. Dunlop Young of London suggested that the League of Nations appoint a committee of chief inspectors of various nations to consider sanitary regulations of the meat trade. T. P. White of the Bureau of Animal Industry was an observer at the meeting in Geneva in June 1935 (30, v. 3, p. 404). The Department made no comments but concurred in approving the International Sanitary Convention. 20/

America's livestock improvement continued to depend on imported animals. By 1943, most imported animals were coming from Mexico and Canada, but subsequently Canada imposed restrictions. With the return of peace, imports of purebred livestock increased and the year ending June 30, 1947, was a record year (66, 1947, p. 3).

Inspectors continued to watch the ports to prevent the entry of diseases. Following an outbreak of Asiatic Newcastle disease in California, traced to game birds imported from China, the Department used authority granted in 1928,

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18/ Nils Olsen to Henry A. Wallace, June 1, 1933, Secretary's Files, RG 16, NA.

19/ Henry A. Wallace to Francis B. Sayre, May 8, 1934; Statement of Henry A. Wallace, Sept. 20, 1930; L. A. Wheeler to W. G. Campbell, Files, Agricultural History Group, USDA.

20/ R. G. Tugwell to Secretary of State, Apr. 4, 1935; H. A. Wallace to Secretary of State, Nov. 16, 1935; M. L. Wilson to Secretary of State, Dec. 31, 1935, Secretary's Files, RG 16, NA.

when it included poultry in its definition of animals. 21/ On June 18, 1950, it announced that poultry would be subject to import regulations and that permits would be required for all countries except Mexico and Canada. A year later Mexico was placed on the restricted list because of the discovery there of a virulent type of Newcastle disease (66, 1950, p. 80, 1951, pp. 2-3; 56, pp. 155, 212-16; 14).

Solution of another troublesome problem was begun in 1954 when screwworms, serious livestock pests, were eradicated from Curacao. U.S. entomologists had been able to accomplish this by releasing laboratory-sterilized flies that would then mate with other flies, producing eggs that would not develop into screwworms. The technique was successfully applied in 1958 in southeastern States, with eradication completed in 1959. In 1962, the Department and the Southwest Animal Health Research Foundation undertook a similar program. Four years later a sterile fly barrier had been establishing along the Mexican border from the Gulf of Mexico to the Pacific Ocean. The disease was declared eradicated, but there was still the threat of stray female flies. Then the Agricultural Research Service dropped sterile flies in advance of expected outbreaks of the screwworm (32; 9). But in 1971 a new outbreak occurred in which more than 400 cases were reported. Thorough spray programs and sterile fly drops were used, but with less success than previously. 22/

Another facet of control was effected when, in 1962, the Secretary was authorized to quarantine any animals entering the country and to issue regulations prohibiting movement into the United States of animals affected with, exposed to, or vaccinated against diseases, when necessary to protect the domestic livestock industry (78, 1963, pt. 2, p. 563). The increasing number of regulations made inspection an increasingly complicated procedure that had many ramifications. Many zoo-bound animals were affected. The danger of handling animals such as zebras and giraffes required that they be tranquilized for examination, but always there was the question of determining the exact amount of drugs to be given and the need for antidotes to revive the animal if necessary. In 1966, the Department of Agriculture refused to permit landing of zoo-bound animals from a vessel that had docked at three African ports where foot-and-mouth disease existed. Later the animals were placed in temporary quarantine prior to regular quarantine at Clifton, N. J. Such problems were among the subjects discussed when the International Symposium on the Health Aspects of the International Movement of Animals convened August 28 to 30, 1968. 23/

21/ 45 Stat. 59.

22/ U.S. Department of Agriculture, Office of Information, Press Release 3671-68, Nov. 21, 1968; 2339-69, July 30, 1969; 166-71, Jan. 19, 1971; 4136-71, Nov. 26, 1971; 3560-72, Oct. 31, 1972.

23/ 76 Stat. 129; U.S. Dept. of Agric., Office of Information, Press Release 2443-66, Aug. 2, 1966; 2448-66, Aug. 4, 1966; 2504-66, Aug. 5, 1966; 2522-66, Aug. 8, 1966; 3201-66, Oct. 7, 1966.

Foot-and-Mouth Disease

Foot-and-mouth disease has been the most persistent and difficult of animal diseases to keep out of the country and to eradicate once it has entered. Control efforts were made difficult by the cattle trade that flowed both ways between Mexico and the United States with feeder stock coming north and breeding stock going south, together with unsettled political conditions. Revolutionary activities which depleted Mexico's breeding stock furnished a temptation for Mexican growers to import stock from Argentina where foot-and-mouth disease existed, a situation that alarmed American cattlemen (39).

The outbreak of the disease in California in 1924 was traced to garbage containing meat scraps from animal carcasses purchased in a country where the disease existed. Another outbreak, in Texas, was soon contained, only to be followed by another the following year, and a year later, still another in Tabasco, Mexico. Then Congress authorized the Department to appoint a commission to conduct studies of the disease in other countries. To prevent a recurrence, the Bureau of Animal Industry on July 1, 1926, issued an order prohibiting any vessels having as ship stores cattle, sheep, other ruminants, or swine originating in countries having foot-and-mouth disease from entering U.S. ports. Bags and bagging from such countries were to be disinfected. On September 17, 1926, an order of the Secretary of Agriculture prohibited the importation of fresh or frozen meat from any area where the dread disease existed (50; 61; 78, 1928, pp. 88-89).

Then in 1929 came another outbreak of foot-and-mouth disease around Los Angeles, attributed again to garbage from foreign ships. Again came the call for action, agitation for eradication measures by the Federal Government, and establishment of a research facility to provide more basic knowledge of the disease. Already Mexico and the United States were ironing out details of an agreement on restricting movement of cattle to prevent introduction or spread of contagious animal diseases from either country. Although ratified by the U.S. Senate on March 28, 1928, the treaty was not proclaimed until ratifications were exchanged on January 17, 1930.

This legislation was consolidated and strengthened when on June 17, 1930, the Hawley-Smoot Tariff Act was approved. Section 306b imposed an embargo against the importation of cattle, sheep, other domestic ruminants, and swine, and fresh, chilled, or frozen meat from such animals from any country infected with rinderpest or foot-and-mouth disease. Section 306c prohibited the importation of any meat unfit for human food and its destruction if shipped. Before long, Secretary Hyde rejected the appeal, made through the State Department, that Argentine fresh or frozen meat be permitted entry. However, he said that the existing regulations did not exclude cured, canned, or otherwise processed meat. The 1928 convention, if its spirit had been adhered to, along with the 1930 tariff should have guaranteed protection for the United States against foot-and-mouth disease. 24/ However, both Mexico and

24/ 45 Stat. 59; 46 Stat. 689, 2451; Arthur W. Hyde to Henry L. Stimson, Oct. 19, 1931, Secretary's Files, RG 16, NA.

the United States violated the convention, in 1928 when it was signed and again in 1937 (71; 57, p. 2213; 40, pp. 1-2).

Joint Efforts with Mexico

When Secretary Wickard visited Mexico in 1942, he discussed with Ingeniero Marte R. Gomez, his Mexican counterpart, the mutual advantage of the establishment of a joint agricultural commission. Following further negotiations, the Mexican-United States Agricultural Commission was organized and met for the first time in Mexico City on July 4-11, 1944 (16). During a lengthy discussion of the cooperative programs underway, attention was directed to planning "mixed brigades" that could stamp out any outbreak of foot-and-mouth disease in either country. 25/

Then came the controversy over the importation of Zebu bulls in 1945. The threads became tangled. U.S. cattle interests were anxious to use such animals for breeding, but at the same time they did not want their work complicated by competition from abroad. Meanwhile, in Mexico, conflicting interest with concomitant pressures enabled Brazil to export to Mexico a shipment of Zebus from the ranch of President Vargas. They were taken to Sacrificios Island, a quarantine station off the coast of Mexico. When it was presumed that they were disease-free, they were sent to the mainland and the United States. A second shipment, on May 9, 1946, was followed by protests that it was a violation of the treaty with Mexico and illegal under the 1930 Tariff Act, since Brazil was a country with foot-and-mouth disease. It became an international issue, with the State Department exerting pressure against killing the cattle (72, p. 121 ff; 40, pp. 2-4).

The following outbreak of foot-and-mouth disease in Mexico touched off a period of near hysteria in the United States, with great public interest and concern for strengthening our border defense. Representatives of the State Department met with those from other agencies directly involved to agree on measures to control the disease and prevent its spread across the border. On December 26, 1946, following the positive identification of the disease in Mexico, the Mexican border was closed to all imports of susceptible livestock, livestock products, and carriers of the disease virus (10; 40, pp. 13-83; 73, p. 1; 87, p. 3).

The implementation showed how a modern program could get underway. The border patrol was strengthened. There were range riders on horseback. Foremen supervised operations in cars or jeeps with horse trailers so that they could reach inaccessible areas. Airplanes were used for reconnaissance. Camps were placed in strategic places. To alert residents, information was dropped from planes in special cloth bags. The inspection at ports of entry was conducted by customs officers and representatives of the Bureau of

25/ G. S. Messersmith, American Ambassador, to Mexican Minister of Foreign Affairs, Jan. 6, 1944; V. Santos Gjdo, Ministry of Foreign Affairs, to Herbert S. Bursley, Jan. 27, 1944, Secretary's Files, RG 16, NA.

Entomology and Plant Quarantine, with men from the Bureau of Animal Industry serving as the final authority. 26/

But a crisis like this required the ultimate in cooperation. By an act approved on February 28, 1947, the Secretary of Agriculture was authorized to cooperate with the Government of Mexico in eradicating the disease before it crossed the border. Funds for the program were approved a month later. 27/ On April 1, the Secretary appointed an advisory committee, composed of two men from each of the four bordering States and one each from Iowa and Wyoming. The following day the Mexican-United States Commission to Eradicate Foot-and-Mouth Disease was formed. The director was from Mexico and the codirector was from the United States; each country had four other members. Offices were located in Mexico City. The country was divided into districts with an American inspector working beside his Mexican counterpart.

The original program included slaughter and burial of infected and exposed cattle, quarantines, and disinfection operations. The Mexican Army aided by providing protection and enforcing the quarantine. Between 30,000 and 50,000 animals were slaughtered in some weeks. The program hit many producers who were at a bare existence level and even the compensation was of little assistance. Still the disease spread to new areas, as local quarantine restrictions were not enforced and diseased cattle were not brought in for slaughter (66, 1947, pp. 70-71; 73, pp. 29-30; 78, 1953, pp. 462-80; 83).

Sentiment continued to increase against the all-out slaughter program. Mexican officials complained to the joint commission that the country could not stand the economic impact of the wholesale destruction. After considerable study, a new program was put into effect on November 26, 1947. While slaughter of infected animals would be continued, greater emphasis would be placed on cleaning and disinfecting exposed premises and vehicles, vaccination of susceptible animals, and strengthening quarantine enforcement. But witnesses before congressional committees still insisted that slaughter and quarantine were the only way and that fencing the border was impractical. The Department, at the recommendation of the Advisory Committee on Foot-and-Mouth Disease, cooperated in a canning project as a means of using the meat and a precautionary measure against the spread of the disease. Much of the canned meat was used for relief purposes in Europe (71, p. 165; 72; 73, pp. 2-3; 74; 78, 1949, p. 677, 1953, pp. 466-67).

The program continued with vaccines imported from other countries until May 1948, when the first vaccine was produced in Mexico. Soon the Aleman-Ortiz Garza Plan for vaccinating all animals in the quarantine zone was instituted. Some animals were treated three times, but most were vaccinated four times. Repeated inspections continued. Some idea of the size of the operation may be gained from the fact that the commission was reported to have had, in 1949, 8,204 employees, a number of whom were part time. Again the

26/ U.S. Bureau of Animal Industry, Enforcement of Foot-and-Mouth Disease Quarantine on United States-Mexican Border, June 1948, 4 pp., mimeo, in NAL.

27/ 61 Stat. 7, 24.

question of the border fence was raised and construction undertaken by the commission. With the joint commission purchasing vaccine from so many sources and with the persistence of the disease in Mexico, it is not surprising that the Food and Agriculture Organization of the United Nations sponsored an international meeting on foot-and-mouth disease in London in August 1949. Other nations were well aware of the research American scientists were conducting in various parts of the world. To many in this country such work was safest done abroad, where there would be no danger of the spread of the disease to domestic livestock (66, 1949, p. 76; 73, pp. 1-19).

The program was finally making an impact. Vaccine production was discontinued on April 13, 1950, and the vaccination phase of the program ended 6 months later. The inspection continued as well as the border patrol activities. As small outbreaks occurred, the animals were destroyed and premises were cleaned, disinfected, and inspected. On August 31, 1952, the joint eradication program officially ended, and Mexico was declared free of the disease on September 1 (66, 1950, pp. 82-87, 1951, pp. 75-78, 1952, pp. 89-91, 1953, pp. 99-100).

Meanwhile, in February 1952, the disease was diagnosed in Canada and the border closed. Bureau of Animal Industry inspectors at border and ocean ports of entry were instructed to halt all ruminants and swine coming from Canada and to take every measure to prevent the entry of other materials that might harbor the virus. After an intensive eradication campaign in Canada and a waiting period, the restrictions were lifted on March 1, 1953 (60; 66, 1951, pp. 2, 91, 1952, p. 91, 1953, p. 101).

The reappearance of foot-and-mouth disease in Mexico and the closing of the border again in May 1953 emphasized the necessity for continuing the joint commission. Renamed the Mexico-United States Commission for the Prevention of Foot-and-Mouth Disease, it continued to maintain a small staff in Mexico ready to put eradication measures into effect should they be needed (66, 1951, p. 1).

At about the same time, some Charolaise cattle had been smuggled in from Puebla State in Mexico. The permit requested had been refused on the basis that the importation was in violation of Mexican law and the area of origin then had disease conditions that prohibited entry of the cattle to the United States. After a lengthy court battle the animals were returned to Mexico. From a long-range point of view the action had little effect, for the cream-colored breed (based on legal imports from various countries) is becoming increasingly important in the United States (78, 1955, pp. 576-77).

Cooperation with Other Western Hemisphere Countries

The concern about the disease has continued. In 1961 the President's Science Adviser appointed a special panel of outside scientists to study the disease in sheep and wet-cured meat. Then on July 6, 1968, the President approved legislation authorizing the Department of Agriculture to cooperate

with Central American countries in preventing, controlling, and eradicating foot-and-mouth disease. 28/ Two years later the Secretary asked that this authority be extended to other Western Hemisphere countries and broadened to work with communicable diseases to protect livestock, poultry, and related industries. The request was approved on November 5, 1971.

Meanwhile, as the occasion permitted, Department representatives have added their support to those working in international organizations. These representatives stressed the importance of other Western Hemisphere countries cooperating and recognizing the imperativeness of a responsible attitude toward animal health and disease control. In the modern world, a product for export, they insisted, should carry with it the connotation of safety, thereby in the long run breaking down walls erected by quarantines and inspection (38; 53, pp. 123-26, 131-35; 78, 1963, p. 573).

Venezuelan Equine Encephalomyelitis

Scientists in the United States had been following the progress of Venezuelan equine encephalomyelitis (VEE) since its discovery in South America in the 1930's. In the 1960's, as it left a trail of sick and dead horses and moved further north into Mexico, concern became greater for keeping it out of the United States. The U.S. Army Medical Department furnished vaccine to other countries as they attempted to control the areas of infection. In July 1969, veterinarians of the U.S. Agricultural Research Service met with representatives of the U.S. Department of Defense, the U.S. Public Health Service, U.S. AID Missions to Guatemala and El Salvador, and the Ministries of Agriculture and Health of those two countries. As a result of the effort in Guatemala, USDA began to develop a plan for action in case VEE broke out in the United States. USDA and the General Office of Animal Health of Mexico agreed that vaccine should be tested at the National Institute of Livestock Research, near Mexico City. The Department of Agriculture asked the Department of Defense to reserve 1 million doses of TC-83 vaccine for use in a U.S. outbreak (79, 1972, p. 256, 1973, p. 174; 65, pp. 1-6).

In spring 1971, many U.S. owners of horses were anxiously watching the spread of this highly contagious disease. In May the Pan-American Health Organization met in Mexico City to explore the VEE problem. Mexico and the United States discussed a cooperative approach to the vaccination of all horses in a 200-mile belt from Tampico, Mexico, to the Texas border. USDA shipped vaccine to Mexico and agreed to pay for gas, oil, and per diem expenses of the Mexican staff.

The disease continued to spread and on June 17, the United States suspended the entry from Mexico of all animals susceptible to the disease, including horses, mules, and donkeys (79, 1973, p. 174; 65, pp. 8-13).

Nonetheless, the disease entered. On July 9, 1971, the first case was confirmed near Brownsville, Tex. (69, v. 117, p. 7439). The next day,

28/ 82 Stat. 294; 85 Stat. 418; U.S. Dept. Agr., Office of Information, Press Release 2442-71, July 1971.

Air Force planes began spraying the area with malathion. Three days later, Federal quarantines were issued for Texas and later extended to Louisiana, Arkansas, Oklahoma, New Mexico, and Mississippi. On July 16, Secretary of Agriculture Hardin declared the situation a national emergency because of the threat not only to horses but to human health, since people are also susceptible. 29/ Funds were released to fight the epidemic and limit the disease through vaccination, mosquito abatement, and other measures. Supplies of vaccine were sent to Texas, Louisiana, Arkansas, New Mexico, Oklahoma, California, Arizona, Alabama, Florida, and Georgia (79, 1973, p. 175; 65, pp. 13-21).

A regional office was set up in Houston to coordinate activities. Commercial aircraft supplemented the military craft spraying to kill vectors of the disease. Then vaccine was made available to other States bordering Mexico or the Gulf of Mexico.

The work was paying off. On September 10, 1971, the first of the quarantines were lifted, but Texas had to wait over a year before it was declared "clean." Secretary Butz announced the end of the quarantine for Texas and of the emergency on October 31, 1972. The last confirmed case had been reported on November 7, 1971. About 9,000 "sentinel" animals had been tested, and 1.5 million mosquitos had been collected for laboratory analysis. The Secretary also urged all horse owners to have their animals vaccinated as a precautionary measure (79, 1973, pp. 175-76).

Fortunately, through combined Federal and State efforts the outbreak was confined to Texas. Cooperation seemed to have been a key word that made this a reality. USDA directed work; the Department of Defense supplied aircraft for spraying; the Public Health Service worked in the area of diagnosis, vector control, and epidemiology. The Council of Environmental Quality gave the Department its clearance for the use of insecticides. U.S. and Mexican scientists worked closely on evaluating a vaccine (79, 1973, p. 99, 1974, p. 176).

The program cost about $19.3 million. More than 2.8 million horses were vaccinated in 19 States. Mosquito insecticides were applied to over 13.5 million acres along the Gulf of Mexico and the lower Rio Grande Valley. The estimated loss in horses was reported as about 1,200 head. There were 88 reported cases in humans with no fatalities. Across the border, it was estimated that 49,000 horses had died in Mexico (79, 1974, pp. 873-74; 65, p. 31).

Further preventive measures have been adopted in an attempt to prevent the entrance and rapid spread of contagious diseases of livestock and poultry. The Animal and Plant Health Inspection Service now has an Emergency Programs Staff that maintains an information network on the worldwide disease situation. On the basis of the material so collected, cooperative projects can be set up with other countries before the disease arrives. A standby emergency disease eradication organization, composed of State and Federal personnel with

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29/ U.S. Dept. Agr., Office of Information, Press Release 3560-72, Oct. 31, 1972.

assistance from other agencies, can be activated to combat any emergency. The increasingly complex patterns of trade, the speed of transportation, and the changing disease situation require an alert organization (79, 1974, pp. 873-74, 876-77).

Research and Quarantine Establishments

The Department maintains facilities to accommodate quarantined animals at Miami, Fla.; Honolulu, Hawaii; and Clifton, N.J. For about a decade there has been discussion about selling and relocating the Clifton station that serves New York. On September 12, 1964, the Secretary was authorized to establish a new quarantine station for animals and birds, using the proceeds from the sale of the facility at Clifton. However, the old station was still in use at the end of 1972 and there was no sure indication when it would have its activities transferred to a new station (18, pp. 120-28; 77; 78, 1970, pp. 253-54).

A proposal of the period immediately after World War II that stimulated discussion and congressional action was for an off-shore research facility. On July 24, 1946, a joint congressional resolution authorized the Department to establish an international quarantine station on Swan Island in the Caribbean in cooperation with other American republics, breeders' organizations, and individuals. 30/ Less than 3 years later, Secretary of Agriculture Brannan urged Congress to repeal the authority. The livestock industry had protested that this was incurring too great a risk of bringing in destructive diseases. The repeal was approved on July 13, 1949 (73; 78, 1951, p. 514; 82).

While the United States was cooperating with Mexico in eradicating foot-and-mouth disease there, considerable discussion of the necessity for a special U.S. research facility continued. The consensus was that it should be located on an off-shore island. The legislative authority given April 24, 1948, was quite definite, even specifying that no tunnel should connect it with the mainland. 31/ Four years later, Plum Island off the northeast tip of Long Island was selected. Research on foot-and-mouth disease began 2 years later. The facilities and scope of work have increased to include more than a dozen other highly contagious diseases. Strict sanitary conditions are observed to prevent the escape of diseases that inspectors guard against. An Associated Press correspondent wrote of the visit of newsmen to the Plum Island Laboratory in the Buffalo Courier on October 24, 1971, and of the security in effect there to contain diseases within the laboratories (3, pt. 3, pp. 45-67; 62; 96; 110).

Scientists were finding that they could, with caution, work with the diseases that were so dreaded in this country. Therefore, on May 6, 1970, Congress authorized the Department to establish a quarantine station where animals from countries having foot-and-mouth disease might be quarantined before being imported. Thus the United States would be able to use previously unavailable sources for improving its livestock (75). On December 15, 1971,

30/ 60 Stat. 633; 63 Stat. 410.
31/ 62 Stat. 198; U.S. Bureau of Animal Industry, "Foot-and-Mouth Disease Research Laboratory," [1948], 6 pp. [1952], 3 pp., in NAL.

the Secretary announced the selection of Fleming Key, off Key West, Fla., as the site of this maximum-security animal quarantine station. 32/

A somewhat parallel station is being developed at Fort Detrick, near Frederick, Md., to do research on foreign plant diseases of concern to American agriculture. This laboratory, under the jurisdiction of the Agricultural Research Service, has access to scientists skilled in handling exotic pathogens of crop plants under containment, without danger of the escape of the pathogens (37, p. 87).

PLANT QUARANTINES AND INSPECTION

During the Civil War, the Department of Agriculture, which had been established in 1862, had little opportunity for growth, although a Division of Entomology was established in 1863. The immediate postwar period involved many changes in the new Department and in American agriculture. Horace Capron, appointed Commissioner in 1867, fostered the introduction of new plants and new crops from abroad. A Massachusetts naturalist, intent on promoting silk culture, in 1869 brought in the gypsy moth to cross with the silkworm. A century later the moth is defoliating forests in a large number of States.

Charles V. Riley, who served as entomologist for the Department, assisted the French botanist Planchon who came to America in 1873 to see the phylloxera-resistant grapevines of the eastern United States, that soon were to play an important role in saving the French vines infested with the tiny aphid. By 1881, a number of European countries concerned about its spread were considering imposing restrictions on movement of plant materials (48; 79, 1973, pt. 3, pp. 118-20).

Already a pest, the San Jose scale had been introduced from the Orient and was causing extensive damage in California. On March 4, 1881, the California legislature instituted its system of plant inspection at ports of entry that was to be continued for nearly a century, even after the Federal Government had set up a national program. But otherwise, in the United States, there were no restrictions on movements of plants (28; 115, pp. 7-8).

Entomologists in Washington and the States nonetheless were interested in controlling plant diseases and insects. Such work enabled agents of the Department's Division of Entomology to experiment in California, in 1886, with remedies for destruction of the cottony cushion scale that was presumed to have been brought from Australia about 20 years earlier. The following year the State Department sent an entomologist to Australia to study parasites of the scale--an anticipation of biological control that is being studied today as an alternative to the use of insecticides. The Australian Vedalia ladybird, a type of beetle, proved to be the solution. In fact, it was so successful that in 1892 some were sent to South Africa, and then to Egypt, New Zealand, and elsewhere. The groundwork thus was laid for foreign interchange of fruits of achievements that the United States was to continue on a larger

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32/ 84 Stat. 202; U.S. Dept. Agric., Office of Information, Press Release 4136-71, Dec. 15, 1971.

scale as it attempted to find natural enemies of plant pests. Scientists were certain that a number of plant diseases and pests were naturally controlled in areas of origin (26; 27; 59; 114, p. 18).

Men like L. O. Howard, who headed the entomology work of the Department for more than 30 years, were becoming increasingly vocal and stressed the fact that many of the producers' problems with fruit and other plants, as well as animal disease, had been introduced and were coming in from other countries. In 1889, he complained that 23 of the worst scale insects in the United States were of foreign origin. The list continued to grow; the shot hole borer in 1890, club root, bean rust, and cotton bollweevil in 1892. As California enforced its quarantine law and Howard and others began studies of Mexican insects, demands for a Federal inspection and quarantine system increased. Pests were coming in not only on nursery stock but also in packing materials and as accidental passengers or stowaways. On January 15, 1892, a bill to prohibit importation or transportation of plants was introduced in Congress (23; 81, pp. 6-7; 115).

In the mid-1890's Massachusetts, unable to obtain Federal assistance, was forced to undertake extensive work in an attempt to control or exterminate the gypsy moth. The 1896-97 Department appropriation did, however, provide funds for an investigation of the pest. On March 5 and 6, 1897, representatives of State horticultural and agricultural societies met in Washington to consider State and Federal legislation. Beverly T. Galloway, Chief of the Division of Vegetable Physiology of the Federal Department of Agriculture, questioned the advisability or feasibility of general State or Federal legislation, favoring instead specific legislation for emergency situations. L. O. Howard, the other speaker from Washington and Chief of the Division of Entomology, was convinced that an inspection and quarantine system to prevent the introduction and spread of plant diseases, insects, and pests was not only practical but essential. Other papers were prepared by representatives from California and North Carolina. After considerable discussion the convention endorsed a proposal for a Federal inspection system against insects and fungus pests in interstate and foreign shipments. The National Nurserymen's Convention meeting in June urged similar action. On January 1, 1898, such a bill was introduced in Congress (89, p. 112; 12).

The discussions of plant diseases, insects, and pests in the United States had repercussions abroad. One European country after another adopted measures to require rigid inspection of fruit or plants from the United States or prohibited their entry. On February 5, 1898, Germany forbade the importation of American fruit and "living plants." Canada adopted a similar measure on March 18 and then Austria-Hungary and others joined. This action prompted Howard to write: "Foreign nations are just beginning to do what we ourselves might long ago have done with advantage." Soon the Department compiled a set of the foreign regulations, but no Federal legislation was enacted (23; 104; 105).

Foreign pests continued to appear in various places and even those entomologists who sought to import natural enemies were playing a potentially dangerous game. The Division of Entomology (which on July 1, 1904, achieved Bureau status) continued its work with insects, experiments with insecticides, introduction of natural enemies of insects, cooperation with entomologists in

other countries, inspection of farm products under State quarantine, and the like.

The first Federal legislation against injurious insects was approved on July 1, 1905. This Insect Pest Act prohibited such importations except by special arrangement by the Secretary of Agriculture--a measure that if it had been enforced might have stifled materials needed for scientific research. 33/ The Department was by this time receiving large quantities of materials from its plant explorers who were roaming the globe in search of stock to improve America's crops. In 1906, realizing that these materials were hosts for enemies, it began to inspect plants imported for its own use and found the action justified (115, p. 3).

In the absence of a Federal inspection system, the Bureau of Entomology encouraged commercial plant importers to participate in a voluntary cooperative inspection program in 1909. Aware that the gypsy and browntail moths were coming in on European nursery stock, it asked the Bureau of Customs to inform it of plants being brought in. It would then relay the information to State officials who could take further action. It seemed as though this country was becoming the dumping ground for stock not salable in Europe. 34/ Citrus canker and European corn borer were identified in 1910. Later that year the oriental fruit worm was discovered on flowering cherry trees that were being given to America by the Japanese, creating an embarrassing situation and necessitating the destruction of the trees. The agitation for countermeasures to combat plant diseases and pests and for virtual exclusion of nursery stock increased, with Federal entomologists taking a leading role (41; 44; 83; 114, p. 3).

Plant Quarantine Act

On August 20, 1912, the Plant Quarantine Act was approved, the culmination of a long effort. It provided for the establishment of the Federal Horticultural Board, composed of two representatives from the Bureau of Entomology, two from the Bureau of Plant Industry, and one from the Forest Service, to administer the inspection system and the control and eradication measures. The Act permitted the importation of nursery stock from countries maintaining an inspection service. State employees performed most of the actual examination of materials from other countries, acting as collaborators of the Board but at State expense. Since some States had no inspection system, the controls were unevenly applied (115; 78, 1927, pp. 689-92). The law also provided for the control or eradication of new pests having a limited foothold. 35/

In practice, the Secretary announced his intention to impose a quarantine, called a public hearing, and then issued the quarantine, be it domestic or foreign. Then the Federal Horticultural Board issued the implementing rules and regulations. State and Federal inspectors reported periodically on pests

33/ 33 Stat. 1269; Testimony of Lobject, Comptroller of Horticulture, Great Britain, Plant Quarantine Conference, 1922, p. 103, in NAL.

34/ R. W. Williams to Secretary, July 12, 1922, Secretary's Files, RG 16, NA.

35/ 37 Stat. 315, 506.

found; the Board then summarized and circulated the list to alert all inspectors. The Post Office Department cooperated by issuing an order on May 27, 1913, prohibiting the importation of plants and plant products by mail from foreign countries, except field, vegetable, and flower seeds. 36/ During the first year, nine quarantines were issued, the last of which was against the pink bollworm. From 1912 to 1918, many shipments of plants subject to inspection and certification came in under blanket authorization without the necessity of inspecting individual consignments (107, Mar. 11, 1914, 1908, 1909).

The concern about international movements of pests continued. The International Conference on Phytopathology, under the cognizance of the International Institute of Agriculture, met in Rome in February 1914, with A. C. True representing the Department, to discuss the problems of the spread of plant diseases and pests. When the International Forestry Conference was convened early in 1917, C. L. Marlatt, Chairman of the Federal Horticultural Board, advocated an absolute quarantine on plants, trees, and nursery stock to safeguard the Nation's resources (29; 43).

But new pests managed, in spite of the legislation, to get through. The Southern cornstalk borer and the oriental fruit fly were reported in 1913; the mosaic virus, in 1915; the Japanese beetle which at first seemed a novelty appeared in 1916; the pink bollworm in 1917; and the potato wart in 1918, just to mention a few of the more spectacular. Many of these had come in when wartime restrictions precluded the enforcement of control measures for civilian as well as military shipping (106, 1916, pp. 11-12).

Probably the greatest effort was launched against the pests attacking cotton. In June 1913, a quarantine was issued against importation of cottonseed and seed hulls to keep out the pink bollworm. Because of the threat of the bollworm that had spread in the Laguna district of Mexico, all cotton was fumigated at ports of entry beginning in 1916. Following a number of infestations in Texas, the Mexican Border Act, approved October 6, 1917, provided an appropriation for surveys to determine the distribution of the pest in Mexico, to establish cotton-free zones in States adjacent to Mexico, and to cooperate with Mexico in exterminating local infestations near the U.S. border. The Federal Horticultural Board drew up plans for inspecting, cleaning, and disinfecting cargo or transferring it to clean freight cars to prevent accidental movement of infected cotton or cottonseed from Mexico. Fumigation houses were built to facilitate the fumigation of railroad cars at the border. The owner of each car paid a service charge. A further step was taken when, on February 18, 1918, Texas established no-cotton zones where no cotton was to be produced for 3 years, or so long as the bollworm menace continued. Soon airplanes were used to locate cotton fields as part of the control program. Congress provided funds in February 1923 for inspecting, cleaning, and disinfecting railway cars crossing the Mexican border. The authority was expanded in subsequent acts to cover other vehicles and surveys and to control operations in Mexico in cooperation with that Government or local agencies. 37/

36/ B. T. Galloway to Postmaster General, Dec. 3, 1913, Secretary's Files, RG 16, NA.

37/ 40 Stat. 374; 42 Stat. 1316.

But much of the effort was one-sided after 1920, due to unsettled conditions in Mexico (106, 1918, pp. 6-7, 1919, pp. 4-5; 78, 1920, p. 748, 1931, p. 574; 115, pp. 47-48).

Not until 1936 was an informal agreement reached for cooperation with Mexico in pink bollworm control. Following the heavy infestation of the 1937 cotton crop in the Big Bend area of Texas and Mexico, authorities representing Texas, Mexico, and the United States developed a control program. Congress provided the authority for the formal discussions between heads of U.S. agencies and responsible officials in Mexico on cooperative efforts to control the pink bollworm in both countries. But the inspection aspects of the overall program have been complicated as more bridges and highways have been built to facilitate vehicular movement. Some of the loopholes were closed when the Mexican Border Act was approved on January 31, 1942, clarifying earlier legislation for inspecting, cleaning, and disinfecting railroad cars and other vehicles, passenger baggage, express shipments, and so on. 38/ Mexican laborers and their families, moving back and forth across the border, frequently not at crossing points, even swimming the Rio Grande, have continued to be problems (67, 1939, p. 76, 1940, p. 87).

Quarantine 37

The Department of Agriculture aroused opposition when, at the urging of horticultural and forestry associations, State plant inspectors, and many American growers, it proposed tightening the controls over the importation of seeds, nursery stock, and other plants. A public hearing was held on May 28, 1918; details were discussed with nurserymen and florists; a tentative draft was submitted to them; a final conference was held by the chairman of the Federal Horticultural Board on October 18, 1918. Quarantine 37, providing strict regulations, was announced by Secretary David F. Houston on November 18, 1918. The new rules for permits or exclusion went into effect on June 1, 1919. They were followed by protests from florists who feared that their supplies would be cut off. The Florists' Exchange in New York printed a four-page flyer, "Quarantine 37 and the Plant Supplies of the United States." Henry A. Dreer of Philadelphia sent a printed circular, "Protest Against the Horticultural Prohibition," to nurserymen all over the country. The Department then received a flood of letters that repeated the statements made in Dreer's circular letter. The Secretary met with a committee representing the New York Florists' Club, the Society of American Florists, and the American Association of Nurserymen. But the order was allowed to stand (17; 108, Feb. 1920; 109, Oct.-Nov. 1918). Those opposed to it had their own conference and organized a committee on horticultural quarantine on June 12, 1920, to continue the fight to remove the newly imposed restrictions, objecting to what they claimed was the negative approach of the Federal Horticultural Board. 39/

38/ 53 Stat. 1273; 56 Stat. 40.

39/ R. W. Williams to H. C. Wallace, July 12, 1922; Dept. of Agric., Office of Information, undated circular, "Secretary of Agriculture Replies to Protesting Committee of Nurserymen and Florists," enclosing Federal Horticultural Board Memo, Feb. 1, 1919, Secretary's Files, RG 16, NA.

Meanwhile, the increased work under this and other new quarantines and restrictive orders meant an expansion of the port inspection service and close cooperation with other bureaus of the Department of Agriculture and customs officers of the Treasury Department. As inspectors checked vessels, their stores, crews' quarters, and passengers' baggage, they continued to intercept various plant pests and diseases, preventing their entrance into the United States. Records of these were used as justification for the continuation of the controls (42; 106).

The controversy over Quarantine 37 continued to boil. After several postponements, in May 1922 Secretary Henry C. Wallace presided over a special conference of approximately 200 representatives of State departments of agriculture, State entomologists, fruit growers, nurserymen, florists, and foreign concerns. The last three groups opposed the quarantine and sought its removal. An advisory committee, appointed by the Secretary, sat in on the meeting. In its report, it recommended no "material" change be made in the quarantine or the related regulations, but suggested that committees be appointed representing the various groups. When the USDA Solicitor reviewed the report, he saw no legal difficulties. 40/ Another conference was held in the Department on October 30, 1922. Changes made in the regulations as a result of the conference did little to quiet the opposition that continued after Secretary Henry C. Wallace announced in December 1922 that importation of narcissus bulbs would be curtailed after December 31, 1925 (106, 1922, pp. 11-12, 1925, pp. 12-13; 108, Apr. 5, 1923; 109, Jan.-June 1922).

The administrative setup had become more complicated when Walter G. Campbell was appointed Director of Regulatory Work in October 1923, in effect placing him over Marlatt and the Federal Horticultural Board. Campbell was critical of the general attitude that the Board had taken and, on occasion, urged the chairman not to be "too extravagant in the advancement of reasons to justify its stand." There continued to be considerable pressure on the Department to abandon the proposed restrictions. Campbell urged the Secretary to make a definite decision, to keep the question from becoming a political football. He asked R. A. Oakley, vice chairman of the Board, to investigate the situation on the West Coast where many of the domestic bulbs were produced. 41/

Marlatt, who had gone to Europe, urged the Secretary not to act until he returned in the fall. Meanwhile, a writer for World's Work recommended that another board be appointed to counteract Marlatt's authority. Marlatt held a hearing on restrictions on the importation of narcissus on November 16, 1925, and on December 30, Secretary Jardine announced his decision to allow the

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40/ R. W. Williams to Secretary, July 12, 1922 (2 letters), Secretary's Files; Press Release 4-23, July 5, 1922, Office of Information, RG 16, NA; Report of Plant Quarantine Conference, May 15-16, 1922, 189 pp., typed, in NAL.

41/ W. G. Campbell to C. L. Marlatt, Mar. 20, 1925; R. A. Oakley to W. G. Campbell, June 2, 9, and 10, and Aug. 26, 1925; W. G. Campbell to R. A. Oakley, June 2 and 15 and Aug. 31, 1925, Secretary's Files, RG 16; Minutes, Federal Horticultural Board, July 2 and Oct. 1925, RG 54, NA.

restrictions, authorized by Secretary Wallace 3 years earlier, to go into effect on January 1, 1926. Oakley had disagreed with the other members of the Board and protested to the Secretary. 42/ Importers also continued their protests (6; 36; 45; 52; 54).

Another section of Quarantine 37 that evoked discussion in 1925 related to the importation of fruit and rose stock. Following the usual procedure, a conference was called at the request of nurserymen and florists. The basic question was the proposed exclusion of these materials in 1930 (109, Apr.-June 1925, pp. 39-40, Oct.-Dec. 1925, pp. 93-94).

Following the reorganization of 1928, the Federal Horticultural Board was abolished and its regulatory work was assigned to the newly established Plant Quarantine and Control Administration. A year later, Marlatt relinquished this position to concentrate on his task as Chief of the Bureau of Entomology. While an advisory plant quarantine board replaced the earlier board, it had little impact. In fact, by this time, the Department followed a less aggressive policy while still keeping a watchful eye. Moreover, while protesting that the quarantine had not been trade barriers, Department officials found that groups that had benefited by the restrictions were resisting their removal. Quantity limitations on narcissus bulbs were invoked and then removed. In January 1931, Lee Strong, Marlatt's successor, called a conference to review the situation (4; 76, pp. 4-5; 113, Apr.-June 1929). His decision to continue the controls provoked a protest from the Netherlands Ambassador, but the Secretary upheld his bureau chief. 43/

An announcement in 1933 that the Department was reviewing Quarantine 37 with a view to ironing out inconsistencies raised another storm. At a time when trade agreements were being considered, some charged that nurserymen and bulb producers were using the quarantine to protect their interests rather than to control pests and diseases of plants and plant products. Producers, especially from West Coast States, viewed with alarm the attitude that controls would be relaxed and charged that the existing inspection was inadequate. 44/ The Senate Committee on Agriculture and Forestry held hearings on an amendment that would have placed a virtual embargo on narcissus bulbs. Strong agreed to continue the permit system in effect, with the proviso that bulbs be sterilized, at the risk and expense of the importer, under the supervision of the Department of Agriculture (84).

42/ C. L. Marlatt to Secretary, July 2, 1925; R. A. Oakley to Secretary of Agriculture, Jan. 14, 1926, Secretary's Files; U. S. Dept. of Agriculture, Office of Information, Press Release 242-26, Nov. 15, 1925; 391-26, Dec. 30, 1925, RG 16, NA.

43/ Arthur W. Hyde to Secretary of State, Mar. 26, 1931, Secretary's Files, RG 16, NA.

44/ Lee Strong, "Past, Present, and Future of Quarantine 37," Convention of American Association of Nurserymen, July 20, 1933, Mimeo., 8 pp., in NAL; Avery Hoyt to Assistant Secretary, July 29, 1933; Paul Appleby to F. C. Atherton, Nov. 20, 1933; H. A. Wallace to Simeon D. Fess, Nov. 1, 1933, Secretary's Files, RG 16, NA.

One member of the Senate committee, which had been considering imposing further restrictions, objected that he thought Strong was not keeping faith with the committee. At the request of the Netherlands Minister to the United States, under the Trade Agreement with the United States, a committee was appointed to consider the necessity for the hot water treatment of narcissus bulbs. The group met at The Hague and then visited the fields to see the measures used to combat diseases. As a result, it recommended that the hot water treatment was unnecessary. On November 10, 1938, the Bureau of Entomology and Plant Quarantine announced that after August 15, 1939, non-infested bulbs would be admitted without the treatment. Secretary Henry A. Wallace received many protests that he attributed more to a desire of the industry for trade protection than for plant pest and disease protection. 45/ The Secretary and other Department officials soon had to justify their action before the Senate Agriculture Committee, in the spring of 1940. At that time they said the old regulations were ineffective and unnecessary, since the pests they sought to exclude were already here (85).

After the close of World War II, the question of revising the quarantine was raised again. In 1949, a revision was adopted listing genera prohibited entry or permitted only for growing under post-entry quarantine, providing for entry of nursery stock in the stage easiest to inspect and least likely to harbor pests, and requiring treatment of most imported stock on arrival. But there were still some who wanted complete exclusion under the quarantine. Each year the subject was discussed at the meeting of the National Plant Board. Representatives of the board went to Europe in 1956 to see how the preinspection of bulbs in the producing countries, that had been started 5 years earlier, was operating. They saw people from the U.S. Department of Agriculture working beside the Netherlands inspectors in the bulb fields. When it was proposed that this procedure be expanded and that the exporters pay for the service, there was almost a solid wall of opposition, except from the Agricultural Research Service and the Belgian Azalea Growers Association (60, p. 9; 81). By 1971 preentry inspection of bulbs had been expanded to include Belgium, France, Germany, Italy, Japan, and South Africa. Bulbs from those countries could go directly to purchasers. 46/

Mediterranean Fruit Fly Quarantine

The Mediterranean fruit fly that attacks a large variety of fruits and vegetables has received prompt attention whenever it has gained a foothold. The first all-out program to combat it was precipitated by its discovery in Orange County, Fla., on October 6, 1929. The State set up a $50,000 emergency fund as soon as the identity of the insect was confirmed in Washington; Marlatt went to Florida and found growers and State officials at work. On April 15, the Secretary announced a public hearing to consider the

45/ Henry L. Brown to Lewis B. Schwellenbach, July 5, 1938; Report of Conference at The Hague of Technical Experts of the Netherlands and the United States, Aug. 5, 1938; M. L. Wilson to Arthur Vandenburg, Feb. 17, 1939; Henry A. Wallace to Hiram Johnson, Feb. 16, 1939, Secretary's Files, RG 16, NA.

46/ National Plant Board, Minutes, 1951-64, National Agricultural Library.

advisability of quarantining the State. When the quarantine became effective on May 1, the Post Office Department notified Florida postmasters not to accept "nursery stock, plants of any kind, and host vegetables" for mailing. 47/ Notices were sent to newspapers across the country to alert the public. Because some infested material was already in the trade channels, nearby States were urged to inspect and destroy suspect goods. Regulations were also issued to prohibit the reshipment of goods from Florida to other States in the South and Southwest (113, July-Sept. 1929).

Upon the recommendation of the Secretary of Agriculture, Congress appropriated $4,250,000 for control and eradication work. Experienced men were drawn from other projects of the Plant Quarantine and Control Administration and other Bureaus of the Department. Others were taken from the State plant board, experiment station, and National Guard. Conversely, the State deputized Federal employees to act as State agents. Inspection, sterilization, spraying, and cleaning up and destruction of fruit from infested groves involved as many as 5,647 men in August 1929.

Washington kept close watch on the Florida situation in this belt-tightening era. The Secretary of Agriculture appointed a committee of seven experts on July 5, 1929, to study the program to determine whether it should be continued or turned over to commercial control. Later that month, Secretary Hyde, Walter Campbell, and Marlatt traveled through the infested area. Thus, the Secretary had personal experience as he read the report of the committee that the work was an economic necessity and should be expanded. A second committee, also drawn from State agencies and colleges, was appointed on October 12 to determine the future needs for control. It, too, reported that the campaign was efficiently carried out (113, 1930, p. 5, 1931, pp. 3-8; 78, 1931, pp. 657-68; 112, Jan.-Mar. 1930). The threat continued and on January 9, 1930, Secretary Hyde named a Federal Fruit Fly Board to consider "all biological and entomological questions and to determine policies in the actual fruit fly eradication work and to supervise and control Federal expenditures." 48/

Nearby States kept a close watch and prevented any widespread infestation. The campaign was continued until the fly was eradicated and the quarantine removed on November 15, 1930. Even then a force was maintained to continue the surveillance. The cost for the project was $6,800,000 to the Federal Government and $748,800 to cooperators, or a total of $7,548,800.

In 1956, another outbreak occurred in Florida. All news media were used to launch a new campaign. About 14 million pounds of insecticide were used on 7 million acres to eradicate the fly in 18 months at a cost of $5,000,300 to the Federal Government and $8,034,500 to cooperators, or a total of $13,034,800. The systematic survey program that was continued as a

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47/ C. L. Marlatt, "Memorandum on the Mediterranean Fruit Fly Prepared for the House Committee on Appropriations," Feb. 20, 1930, Mimeo., 97 pp., in NAL.

48/ C. L. Marlatt, Memorandum on the Mediterranean Fruit Fly, 1930. Prepared for the use of the Subcommittee of the House Committee on Appropriations, 97 pp., in NAL.

precaution enabled the Department to shift into high gear when the fly was discovered in Dade County on June 8, 1962, having presumably arrived in the baggage of an airline passenger. Within 48 hours spraying was started and trapping intensified. Nearly 723,000 acres were treated in Broward, Dade, and Palm Beach Counties before the campaign was successfully terminated in April 1963. Another small outbreak was found near the Miami International Airport 2 months later, and eradication treatments were completed in October 1963 (78, 1964, pp. 498-99, 1965, pp. 155-56; 81; 55, p. 220).

Of course, these were only two of many plant quarantines imposed by the Department of Agriculture. Moreover, although the inspection and quarantine work was primarily the responsibility of the Federal Horticultural Board, contributing or supportive activities were furnished by other bureaus. In 1921, the Bureau of Entomology began its insect pest survey that has been continued, providing the latest information on insect conditions. The following year Congress passed the Honey Bee Act that prohibited their importation except for experimental use by the Department or for scientific purposes. 49/ A year later Quarantine 56 to regulate the importation of fruits and vegetables from most countries was issued. These and other actions taken focused some attention on the international implications of the question. However, when L. O. Howard, who had been one of the prime advocates of the Plant Quarantine Act, spoke before the International Conference of Phytopathology and Economic Entomology in Holland in 1923, he had little to add (47, pp. 32-33; 109, July-Sept. 1923; 22).

Other Developments

As the discussion of the necessity for the expansion of coverage of Quarantine 37 boiled, so also did the question of State and Federal plant quarantine and cooperation between the two levels of government. A Plant Quarantine Conference met from April 28 to 30, 1924, to iron out some of the difficulties that the increasing number of automobiles presented (106, 1925, pp. 12-13; 169, Jan.-Mar., Apr.-June 1924).

But the real tie between the Federal and State authorities came when the National Plant Board was organized on June 25, 1926. 50/ Established to represent State inspection activities, it had no authority or legal status, but over the years it has provided a platform for debate, has had considerable weight in policy matters, and has presented a united voice to the Department of Agriculture and Congress (115, pp. 26-27).

There was still the cry for more protection or enforcement of existing regulations, and even international cooperation. Quarantines were imposed and lifted as circumstances required. The May 1, 1928, amendment to the Plant Quarantine Act simplified for the inspectors at ports of entry the question of disposal of goods entered in violation of the Act (25). Inspectors were authorized to destroy infested goods, whereas previously they had to hold them or return them to the sender.

49/ 42 Stat. 833.
50/ National Plant Board, Minutes.

During the mid-1930's the Department gave special attention to natural control of some of the insect pests by introduction of foreign parasites. Insecticides and other chemicals had been killing off the natural enemies of plant pests (67, 1935, p. 79; 78, 1938, p. 696).

Plant materials imported for Department use or by special permit under Quarantine 37 had been sent from the ports of entry to Washington for inspection. But the process was time consuming, and it became more so in the 1930's when the Department was planning on moving its greenhouses from downtown Washington to a more suitable location. There had long been agitation for inspection as soon as possible after entry. In 1938, a modern inspection plant was built in Hoboken, N.J., not far from the New York port of entry. It was ready for use in 1940, enabling importers to have their materials handled more expeditiously (78, 1942, pp. 875-80; 85; 67, 1940, pp. 1-2).

The outbreak of World War II placed an added burden on the plant inspection staff at a time when many staff members were being drawn off for military duty. When Avery Hoyt of the Bureau of Entomology and Plant Quarantine spoke on "Foreign Plant Quarantines" before the National Plant Board in 1944, he stressed this increased burden. 51/

The postwar world with the aura of the United Nations and international cooperation was to influence deliberations on plant quarantines. When the Conference of the National Plant Board and the Bureau of Entomology and Plant Quarantine met in February 1946, P. N. Annand, Chief of the Bureau, spoke on the effect of international changes on quarantine policy. A period of national isolationism and self-sufficiency was being replaced by one of eliminating international trade barriers. Plant quarantines and regulations, he said, were justifiable when there was a biological basis. They should not, in any case, serve merely as trade barriers. 52/

The United States affirmed this policy when it became one of the signers of the General Agreement on Tariffs and Trade in 1947. When the House of Representatives Committee on Agriculture held hearings in June of that year, many representatives from garden clubs vigorously opposed continued stringent control of importation of plant materials, stating that the procedure was primarily a protection to domestic producers since many of the pests were already here (70).

The resumption of normal trade and improved transportation in the postwar years accentuated problems for administrators of quarantine and inspection regulations. These were enforced against U.S. insular areas as though they were foreign countries. Thus, from 1946 to 1957 entry of Hawaiian citrus nursery stock was prohibited. In 1951, when the Department was conducting hearings on a number of plant quarantine orders and regulations, the need for extending some to the Virgin Islands was stressed and in 1952, this was done (67, 1953, p. 69).

51/ National Plant Board, Minutes, 1944.

52/ U.S. Bureau of Entomology and Plant Quarantine, Conference of the National Plant Board and the Bureau of Entomology and Plant Quarantine, Feb. 18-19, 1946, Mimeo., 24 pp., in NAL.

The year 1951 also marked the drawing up of the International Plant Protection Convention to provide a forum for discussing and alleviating some of the problems arising from the quarantine and inspection programs of various countries. The Senate held hearings on the convention endorsed by the National Plant Board but did not ratify it until June 12, 1972, although the United States has basically observed the provisions (69). Moreover, the United States has been training foreign nationals in plant quarantine procedures. 53/

Much of the inspection work fell on the inspectors of the Customs Service. In 1953, the Service notified the Department of Agriculture that it would no longer be able to inspect 100 percent of the incoming baggage. Nevertheless, some Congressmen objected to any increase in the inspection staff of the Bureau of Entomology and Plant Quarantine. One suggested that industry should bear part of the increased cost. Because reduction in the scope of inspection was a matter of great concern to the Department, several approaches to the problem were used. Inspections were concentrated on persons arriving from certain areas, especially the Mediterranean; special questioning was instituted. Then in 1954, a 30-day, 100-percent test inspection at New York was undertaken. The number of violations revealed the importance of reinstating more inclusive coverage (78, 1954, pt. 2, pp. 837-49, 1957, pt. 2, pp. 512-513).

During the year ending June 30, 1957, funds were appropriated for transfer to the Customs Service for the resumption of 100 percent inspection. At the same time the Department was directed to develop a program to prevent passengers from embarking at foreign ports for the United States with dangerous materials or articles in their luggage. This was done in Hawaii and Puerto Rico and to some extent for rail traffic, cargo, and air traffic from Canada. By 1966 the practice was observed at Nassau and Bermuda (78, 1958, pt. 2, pp. 532-39).

As Congress was urging the Department to strengthen its inspection system, Florida, which had performed inspection duties under the Plant Quarantine Act, asked to be relieved of these responsibilities on July 1, 1957. Ten years later, California informed the Department that it would be unable to enforce quarantine regulations at maritime and air ports of entry, throwing an extra burden on the Federal Government (78, 1969, pt. 2, p. 35).

The year 1957 also saw the enactment of the Federal Plant Pest Act to supersede the 1905 legislation, providing for more effective control over movement of plants and pests. Instead of specifying the pests, the new legislation applied generally to pests that would be a threat to agricultural production. 54/

In August 1965, a decade and a half after the conference was held at The Hague to prepare the preliminary draft of the International Plant Protection Convention, another conference was held to discuss special attention for the Caribbean area. Nearly 2 more years elapsed before the Council of the Food and Agriculture Organization agreed to establish the Caribbean Plant

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53/ National Plant Board, Minutes, 1950, pp. 18-19, 1951, Appendix II, 1960, pp. 70-71.

54/ 71 Stat. 31.

Protection Commission. The Commission's function was to strengthen intergovernmental cooperation in developing and administering plant quarantine activities to prevent further introduction of plant pests and diseases into the Caribbean area. The first session was held July 15-22, 1968. Delegates stressed the need for reviewing the existent regulations, for proposing measures for adoption, and for further study of problems involved. Out of this and subsequent meetings came a plan for a regional post-entry plant quarantine and training station for the area, but the proposal did not become a reality. 55/

The routine of administering the quarantines and of inspection continued. However, only 5 to 10 percent of the parcel post packages entering the country were examined in 1967. By this time, the postal inspection for international mail was strengthened by a provision that packages containing prohibited meats would be returned to the sender, instead of being routinely incinerated. These inspections were being performed in cooperation with the Bureau of Customs and the Post Office Department (78, 1968, pt. 2, p. 324).

Speaking before the American Institute of Biological Sciences in 1967, Claude A. Smith of the Animal Health Division described the work from the viewpoint of a high-level veterinarian:

> Maintaining quarantines against foreign diseases is never an easy task, but it is very important to carry them out uniformly, impartially, and effectively. They must be sufficiently stringent to prevent the introduction and dissemination of disease, but never more restrictive than is absolutely necessary to accomplish this purpose (56, p. 25).

Still, the most difficult point of enforcement was the traveler from abroad. The increasing number necessitated a speeding up of the inspection system. The one-stop inspection program, instituted at Kennedy International Airport in June 1968, provided for multi-agency inspection with a single officer representing the Customs Service, Public Health Service, Immigration and Naturalization Service, and the Department of Agriculture. 56/ Because the system was found to reduce the average inspection clearance time from 45 to 15 minutes, it was extended to other ports of entry. An interdepartmental committee representing these agencies continued to evaluate procedures, and in 1971 an experimental system was inaugurated at the New York and Chicago airports to further expedite clearance. Presently various devices to detect

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55/ Plant Quarantine Report, Minutes, National Plant Board, 1969; Report of the United States Delegate, Caribbean Plant Protection Commission Meeting, July 15-22, 1968, and other related records, Agricultural Quarantine Division, Animal and Plant Health Inspection Service, USDA.

56/ F. A. Johnston, "The One Stop Inspection Concept at International Airports of Entry in the United States," Minutes, National Plant Board, 1968; 1969, p. 40.

contraband goods are being considered (78, 1970, pt. 2, p. 172, 1971, pt. 2, p. 310; 79, 1972, pt. 2, p. 296; 37, pp. 85-86, 109-17.

PROBLEMS POSED BY CHANGING TRANSPORTATION METHODS

The scope of the inspection and quarantine system has been complicated by the geographical expanse of the United States with its climatic variations. Present and former insular possessions have presented challenges in providing both them and the continental United States with the greatest protection. Those States probably most affected by trade with the islands, Florida and California, had their own separate State inspection and quarantine systems for years. By 1932, maritime inspection in California, Florida, Hawaii, and some of the ports in Puerto Rico was performed by State and territorial employees as collaborators of the Federal Government (112, 1932, p. 50).

The Nation has been served by various modes and avenues of transportation which have also had their separate effects on farming, marketing, and related activities, including inspection and quarantine.

The Highway System

During the early years of the century, the primary way of crossing the northern and southern borders was by railroad. Although the Federal Highway Act of 1916 provided for Federal assistance to States in roadbuilding, little was done until after World War I. By the midtwenties, an increasing number of automobiles were utilizing the expanding system. As the economic situation worsened, road construction became one of the alleviating measures. While the Nation profited by improved transportation, the change had implications for inspection and quarantine work at the increasing number of border crossing points on our northern and southern boundaries, as well as on an interstate basis. The growing numbers of cars were joined by increasing numbers of trucks that gradually overshadowed the railroads. The construction and projected extension of the Pan-American Highway added further problems (11). Traffic was further accelerated as States cooperated with the Federal Government in the construction of the National System of Interstate and Defense Highways under the Federal Highway Aid Act of June 29, 1956. 57/

Perhaps the greatest challenge up to that time was presented when, in 1959, the St. Lawrence Seaway opened the way for oceangoing vessels to penetrate far into the interior (78, 1958, pt. 2, p. 553). Even non-agricultural cargo could bring in dreaded pests. 58/

Air Transport

U. S. involvement in the development of air transport also has had implications for and effects on the Department's inspection and quarantine system as it sought to meet the ever-increasing threat from foreign pests

57/ 70 Stat. 374.
58/ National Plant Board Minutes, 1959, 1961.

and diseases. The problems have changed as the services of the industry have shifted from airmail and express to passengers and baggage, heavy cargo, perishable goods, and containerized shipments.

While World War I had retarded the development of commercial aviation, the postwar years saw a shift. A U.S. Navy flying boat made the first noncommercial transatlantic flight in May 1919. The following fall, the first British and U.S. airmail was carried between Miami and Nassau, the Bahamas. On October 15, 1920, the Post Office awarded the first foreign airmail contracts, one from Key West to Havana, and the other from Seattle to Victoria, British Columbia.

In 1924, U.S. Army fliers made the first round-the-world air flight, at the same time also making the first transpacific flight and the first westbound transatlantic flight. The Federal Government was further involved in this new mode of transportation when President Coolidge signed the Air Commerce Act on May 20, 1926. Thus it was committed to providing civil airway aids to air navigation and encouragement of civil aviation as well as regulating both commercial and private aviation in the interest of safety (68).

The general public, though, was most impressed when Charles A. Lindberg made the first nonstop flight in May 1927, from New York to Paris. Later that year air service was increased in the Caribbean area.

These developments had been creating no great problems for those working on plant and animal protection. However, the arrival of the German dirigible Graf Zeppelin at Lakehurst, N.J., on October 7, 1928, caused quite a commotion. Plant inspectors, as they searched this first airship carrying paying customers across the Atlantic, found bouquets of flowers in the passengers' quarters infested with insects. By the time C. L. Marlatt, Chief of the Plant Quarantine and Control Administration, submitted his next annual report, this problem was potentially many times multiplied as air traffic increased within the Caribbean islands and Central and South America. He reported that 2,240 planes had arrived from foreign countries at landing fields in Brownsville, Tex.; Miami, Fla.; San Diego, Calif.; and San Juan, Puerto Rico. Contraband plants had been intercepted on 134 occasions. He must have shuddered when he heard the news of the first noncommercial nonstop transpacific flight from Tokyo to Wenatchee, Wash., on October 3 and 4, 1931. Regular airmail service with the Orient, via Hawaii and the Philippines, was instituted during 1935, the same year in which regular passenger service between the United States and Germany was begun on the Hindenburg. The Hindenburg crashed 2 years later, ending this shortlived type of transatlantic commercial transportation. However, in 1936, regular nonpassenger transatlantic service was started (67, 1936, p. 112; 1921, p. 41; 1).

World War II erupted in Europe shortly after the inauguration of the first regular U.S. carrier transatlantic air service in May 1939. After a brief summer of peacetime operations, planes were pressed into carrying diplomats, refugees, and high-priority mail. On the other side of the world, air service was expanded into the South Pacific by the inaugural flight from San Francisco to Auckland, New Zealand, on July 10, 1940. Six days after the bombing of Pearl Harbor, the President placed all civil aviation under control of the War Department.

On November 1, 1944, representatives from 54 nations attended the International Civil Aviation Conference in Chicago to draft a multilateral convention governing international air rights and air operations. One of the facets of special interest to the Department of Agriculture was the concern for reduction of customs formalities, with which the inspection system was so closely knit.

Although the war ended on August 14, 1945, commercial airlines were slow to resume normal operations. As American war surplus planes became available, foreign air carriers were authorized to serve U.S. cities for the first time. New routes were authorized to Latin America, the Orient, Australia, and Alaska. Then on August 15, 1946, the first direct air route between points in South and West Africa was established. Five months later the first transatlantic all-cargo service by an airline linked New York with Paris, Geneva, Rome, Athens, Cairo, and Jerusalem.

Another landmark was reached on June 9, 1948, when the first international scheduled coach service was instituted between the United States and Latin America. Less than 3 months later air parcel post was started and extended to 20 countries in Central and South America. Four years later, scheduled coach service was offered across the North Atlantic. Then on April 1, 1954, worldwide coach service was instituted; a year later, the charter policy was liberalized for summer transatlantic flights.

Air traffic was further speeded up beginning June 1, 1956, with the inauguration of nonstop transatlantic service in both directions. Still more travelers were attracted and accommodated when the new and cheaper economy class replaced coach (tourist). In an effort to promote travel to the United States, the U.S. Travel Service was established by the International Travel Act, approved June 29, 1961. But another 16 months passed before nonstop flights were offered between the West Coast of the United States and the Orient, from Seattle to Tokyo, on November 2, 1963.

As the routes have crisscrossed the oceans and the service has reached an ever-increasing number of overseas passengers, these have moved in changing types of aircraft, increasing in comfort, size, and speed--from nonpressurized craft to the 747's and 747-F's, jumbo cargo ships. These are being joined by the supersonic transports.

The expansion of air traffic has necessitated action to prevent diseases, insects, and pests from entering. Aircraft have been sprayed and inspected. In spite of being sprayed with an agricultural aerosol, a plane from the Fiji Islands arrived on May 23, 1952, in Hawaii with thousands of leafhoppers, vectors of a disease of sugarcane--highlighting not only the threat of infestation but also the need for continuing research in counteracting measures, whether they be insecticides, trapping, or biological control (67, 1952, p. 72; 78, 1953, p. 965).

Air traffic comes to designated ports covered by international agreements and airports of entry are controlled by the Department of Transportation. International flights are landing at inland airports as well as those along coastal areas, discharging their passengers and freight in every part of the Nation. Added to this is the problem of containerized shipments as air cargo

as well as in container ships. In recent years, international exhibits and fairs have brought additional passengers and goods into this and other countries (37, pp. 97-109).

SOME SPECIAL PROBLEMS

Military Movements

One of the special problem areas of the animal and plant inspection and quarantine programs has involved American military movements. Return of men and equipment after the Spanish-American War involved a limited number of men and vessels at a time when there were few restrictions. By the time the United States was involved in World War I, a greater awareness of the dangers to our agricultural production had placed a number of restrictions on commercial imports. However, wartime movements precluded their enforcement for civilian as well as military shipping. For example, a cargo of cottonseed infested with pink bollworm was taken from a German prize-of-war and after considerable discussion between the Navy Department and USDA, the cargo was placed in sulphuric acid vats preliminary to conversion into fertilizer. The postwar months were, no doubt, filled with similar incidents as men and materiel were brought back from overseas (106, 1916, pp. 11-12).

While the military establishment had regulations covering communicable diseases in humans and animals, it was slow to issue regulations to incorporate the restrictions on plant and animal movements that Congress had delegated to the Department of Agriculture. On September 22, 1919, scarcely 3 months after Quarantine 37 became effective, the Acting Secretary of Agriculture asked the Secretary of the Navy to call the attention of all naval officers to the quarantine regulations on importation of plants and fruits. When Henry C. Wallace wrote to the Secretary of the Navy 2 years later, he complained that officers were, according to some reports, disregarding the copies of the 1919 letter that had been "sent to the Atlantic Fleet, the Pacific Fleet, and the Commander of European borders." As a result, Secretary Denby signed Navy General Order 90 on October 26, 1922, giving specific instructions on the importation of "fruits, vegetables, and plants." Nearly 9 more months passed before Army regulations were signed on June 1, 1923, covering importation of livestock by Army personnel.

At a time when French horses were plagued with disease and there was the ever-present threat of infection from imported horses, the regulations were being jointly issued by the Chief of the Bureau of Animal Industry and the Surgeon General of the Army. Military personnel, who consulted the regulations, had guidelines on prohibited areas from which horses might not be brought and instructions on papers, ports of entry, inspection, quarantine, and customs declarations. Subsequently other quarantine restrictions were applied to both Departments. 59/

59/ J. R. Riggs to Secretary of the Navy, Sept. 22, 1919; Henry C. Wallace to Secretary of the Navy, Nov. 21, 1921 and Sept. 1922, Secretary's Files, RG 16, NA; U.S. Navy, General Order No. 90, Oct. 26, 1922; U.S. Army Regulations, 30-95, Section III, June 1, 1923.

Commanding officers of Navy and Army vessels generally cooperated. USDA inspectors boarded vessels as they were notified of their arrival. They found some contraband food and plant items. From time to time the Secretary of Agriculture protested the infractions to the Secretaries of the Navy or War and asked that orders be revised to strengthen the protective measures. In some instances, the violations were committed by individual officers or crew members, but some officers in charge disregarded the regulations or disobeyed them. Orders were amended and reissued and given wide circulation. 60/ The Treasury Department issued similar instructions to its Coast Guard officers (109, Jan.-Mar., July-Sept., 1925, July-Sept., 1929).

World War II--the most extensive war ever waged--taxed the capacity of the inspection system of the Department of Agriculture at a time when many of the staff were being drawn off for military duty. A military force of some 4,700,000 men had served in World War I, but about 16,000,000 served in World War II. The personal mail, packages, and baggage of all these men were outside the jurisdiction of the Department of Agriculture. Alert to the danger that these presented, the Department appealed to the defense agencies and instructions were issued to provide for inspection. The war was involving many more and faster planes, landing in little-known areas. In the year ending June 30, 1941, 6,928 planes were inspected; in 1944, there were 22,306. In 1941, 117,079 packages were inspected; in 1944, 496,771 were so processed. These were only a small percentage of all the packages entering the country. 61/ About 120,000 a month were coming through Miami, but only 1 percent were inspected (67, 1942, p. 55, 1943, p. 52, 1944, p. 52; 78, 1945, pp. 405-07).

Inspections of ships, traveling in convoys and arriving at not only the regularly designated ports of entry but others as the situation required, provided real challenges. Even when the Navy Department notified the Department of Agriculture in advance of the imminent arrival of convoys, there was still the problem of getting the inspectors when many experienced men had been diverted to military duty and there were inadequate funds for paying overtime. 62/

Realizing the problems resulting from introduction of diseases and pests from abroad, the Army, Navy, and Public Health Service undertook, in 1943, a study of quarantine problems in military traffic. The report of this Interdepartmental Quarantine Commission, on which the Department of Agriculture had two liaison officers, served as the general basis for Army Regulation 40-225, dated November 21, 1944, and War Department Circular 453, dated November 29, 1944. The two documents spelled out the responsibilities of the various

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60/ i.e. R. W. Dunlap to Secretary of the Navy, Oct. 4, 1930; R. W. Dunlap to Secretary of War, Mar. 2, 1933, Secretary's Files, RG 16, NA; Navy General Order 147, Aug. 20, 1925; 194, Aug. 13, 1929.

61/ National Plant Board, Minutes, 1944; S. A. Rohwer, "Effect of the War on Plant Quarantines and Plant Regulatory Work," Minutes, National Plant Board, 1943, pp. 82-85.

62/ S. A. Rohwer, "Effect of the War on Plant Quarantines and Plant Regulatory Work," Minutes, National Plant Board, 1943, pp. 82-85.

Departments for control of importation of animals and plants as well as for certain food products and biological agents. They listed prohibited and restricted items and placed the responsibility for permits on the shipper. They directed cooperation with civilian quarantine officers and their utilization as consultants or advisers as need arose. In some instances, the Department of Agriculture delegated authority to the military, but as one man expressed it, they would have taken this authority in any event. 63/

The surrender of Germany on May 7 and Japan on August 14, 1945, increased the number of planes, ships, and vehicles to be inspected as troops returned home. Increased speed of transportation and return to other than coastal areas complicated inspection work. Moreover, there was the continuing overseas assignment of military forces. The various branches of the armed services continued to cooperate, updating directives and issuing new ones to prevent the importation of restricted plant and animal material by military personnel (80, pt. 1, p. 85; 67, 1948, p. 51).

Before the Korean conflict erupted, the Departments of Army, Navy, and Air Force had been merged into the Department of Defense and regulations for all branches of the armed forces could be given common treatment. On July 6, 1950, such a joint document was issued on "Disease Prevention and Control" giving quarantine regulations for vessels and aircraft of the services, with section IV dealing with plants, animals, and related products. The responsibility for inspection, with the cooperation of the military, was assigned to representatives of the respective bureaus of the Department of Agriculture. 64/

In the absence of sufficient Department of Agriculture employees, military personnel had by 1961 been deputized to perform inspection duties. 65/ The cooperative program also provided for the designation of Agriculture personnel as liaison officers to enforce the regulations (63).

In April 1969, the Department of Defense, with its large movements of men and materials from Vietnam, asked that a plan for preclearance be established. In July, the Plant Quarantine Division of the Agricultural Research Service and the Public Health Service sent advisers to Vietnam to work with the Military Assistance Command in establishing and directing a program of inspecting, treating, or cleaning as required and certifying that military cargoes and carriers returning to the United States were apparently free from soil and pests of agricultural or public health significance. Military inspectors were trained and the program has been in effect at seaports since

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63/ Charles F. Brannan to Paul V. McNutt, Oct. 18, 1944, Secretary's Files, RG 16; Phillip Knies to Chairman, Army Regulation Board, Nov. 6, 1944; Secretary of War to Norman T. Kirk, Surgeon General, Aug. 26, 1944; Army Regulations 95-15, May 3, 1944; 40-225, Nov. 21, 1944 and July 24, 1947; War Department Circular 453, Nov. 29, 1944; Circular 483, Dec. 28, 1944, Records of the Adjutant General's Office, RG 407, NA; National Plant Board, Conference, February 1946, p. 24, in NAL.

64/ Disease Prevention and Control, July 6, 1950, issued jointly as Army Regulation 42-40, Navy Department General Order 20, and Air Force Regulation 160-26, Records of the Office of Adjutant General, RG 407, NA.

65/ National Plant Board, Minutes, 1961, p. 24.

November 1969 and at airports since 1970. 66/ As an educational measure, the Department of Defense puts an information leaflet in the duty orders of military personnel. The Department of Agriculture publicized the interdepartmental cooperation in its leaflet, "USDA and Military Cooperate to Stop Foreign Invaders," published in May 1973 (37, p. 124; 64, 1970; 78, 1967, pt. 2, p. 316, 1970, pt. 2, p. 309, 1971, pt. 2, p. 302; 79, 1972, pt. 2, p. 302).

Civilian Travel

The Department of Agriculture has also sought and received the cooperation of the State Department in its inspection and quarantine program. Representatives abroad have been asked to explain that the basic policy is to guard against diseases and pests affecting plants and animals rather than to restrict and protect trade. While overseas employees of the Foreign Service are not subjected to customs inspection of their baggage, they have been asked to observe the restrictions on plant and animal products. The Secretary of Agriculture also asked the State Department to inform foreign diplomats of the restrictions and request their compliance. In addition, the State Department agreed to notify the Department of Agriculture in advance of the arrival of foreign military vessels. Agriculture could request that all garbage be incinerated and that personnel not bring ashore restricted materials, without "impairing the value of visits of courtesy." 67/

When Fred Johnston of the Plant Quarantine Division of the Agricultural Research Service spoke before the National Plant Board meeting in 1967, he discussed some of the ways in which the State Department cooperates with the Department of Agriculture to carry out the "aims and objectives of sound plant quarantine work." The State Department presents problems and makes recommendations to the Department of Agriculture. As increasing numbers of Americans travel overseas, they have found, beginning in 1962, that their passports issued by the State Department have a paragraph on the agricultural quarantines. Still, there are loopholes, and the problem of transmission of packages and mail by diplomatic pouch continues to be almost insoluble. 68/

Unusual Plants and Animals

Some unique situations have arisen in connection with the administration of the Plant Quarantine Act. In 1932, a clipping of the Glastonbury thorn was

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66/ U.S. Dept. Agr., Agr. Res. Serv., Plant Quarantine Division, "Report to the National Plant Board, Minutes, 1969, pp. 40-47; Office of Information, Press Release 81-71, Jan. 1, 1971.

67/ Division of Western European Affairs, Memorandum, Dec. 2, 1927; Arthur M. Hyde to Secretary of State, Apr. 13, 1931; Henry L. Stimson to Secretary of Agriculture, May 5, 1931, General Records of the State Department, RG 59; R. W. Dunlap to Secretary of State, May 15, 1932; Arthur M. Hyde to Secretary of State, Feb. 6, 1932, Secretary's Files, RG 16, NA.

68/ F. A. Johnston, "Influence of the Executive Offices and the State Department on Current Plant Quarantine Policies," Minutes, National Plant Board, 1967.

sent from England under a special permit because of its educational value. At about the same time, Matthew Page Andrews, a Maryland historian, had ordered a bit of sod from the Yorkshire, England, estate of Lord Baltimore, the founder of the Maryland Colony. In the absence of any notification of the significance of the sod, Department inspectors at New York confiscated it as prohibited, and the Maryland Tercentenary Commission had no English sod on its banquet table. 69/

Some of the more spectacular developments have involved those at the highest levels of Government. An awkward situation arose when the Japanese Ambassador gave the city of Washington, D.C., 100 Japanese flowering cherry trees, which inspectors found had insect pests. A plan was worked out for the Japanese to purchase trees of the same varieties from American nurseries. Prize stallions given to President Eisenhower and Mrs. John F. Kennedy caused uneasy moments for officials, but the animals were quarantined for the prescribed time, like animals brought for less prestigious persons. The most recent example of caution exercised involved the two pandas given to the United States by the People's Republic of China. They were carefully examined and all bedding and food materials removed on their arrival in Honolulu (47, pp. 123-24; 96, Aug. 23, 1973).

ORGANIZATION OF THE DEPARTMENT FOR INSPECTION AND QUARANTINE WORK

When the Bureau of Animal Industry was established in 1884, it marked not only the establishment of the first bureau in the Department but also a new departure into regulatory control. Following the passage of the 1890 Meat Inspection Act, the Secretary established in the Bureau the Divisions of Inspection and Quarantine. The Food and Drugs Act of 1906 added another dimension to the new Bureau of Chemistry with its Board of Food and Drug Inspection and inspection network. When the Plant Quarantine Act was approved in 1912, the Federal Horticultural Board, composed of representatives from three bureaus, was appointed to administer the new controls.

At about the time that this new regulatory activity was underway, a new administration took a look at the expanding Department of Agriculture. Assistant Secretary Beverly T. Galloway proposed a regrouping of functions in services rather than bureaus. One of these would have been a regulatory service. However, opposition of bureau chiefs precluded the radical change (2, pp. 64-66).

Coordination of regulatory work under a Director of Regulatory Work was finally authorized in the 1922 Appropriation Act. However, Walter G. Campbell, Acting Chief of the Bureau of Chemistry, was not appointed to the position until October 1923. There is little to substantiate that this action made any great impact. C. L. Marlatt continued to direct the work of the Federal Horticultural Board until it was replaced in 1928 by the Plant Quarantine and Control Administration with a Foreign Plant Quarantine Division. Four years later, in 1932, the Administration gave way to the Bureau of Plant Quarantine (2, p. 103). Just before the coming of the New Deal, Campbell gave up the

69/ E. N. Meador to W. N. Castle, Sept. 22, 1932; R. W. Dunlap to Millard E. Tydings, Dec. 14, 1932, Secretary's Files, RG 16, NA.

position of Director of Regulatory Work to devote all of his time to the work of the Food and Drug Administration--work that he had been charge of since its organization as a separate agency in 1927. 70/

The steps taken to bring the work together were slow. On July 1, 1934, the Bureau of Plant Quarantine was merged with the Bureau of Entomology to form the Bureau of Entomology and Plant Quarantine. As part of the reorganization of 1938, the position of Director of Marketing and Regulatory Work was established. A year later "Regulatory" was dropped from the title. The next step was taken on February 23, 1942, when by Executive Order 9069, the Bureaus of Animal Industry and of Entomology and Plant Quarantine became parts of the Agricultural Research Administration. However, the Bureaus continued to operate much as before. Not until November 2, 1953, when the Agricultural Research Service was established, did the Bureaus lose their separate entities (2, p. 264). Two months later when the Administrator of the Agricultural Research Service announced the internal organization of the Service, the position of Deputy Administrator of Regulatory Programs was established. He was assisted by Directors for Crops and Livestock Programs with Plant and Animal Quarantine Branches. These were redesignated as "Divisions" when the Service was reorganized in 1957. 71/

Little other change in organization took place until August 1, 1965, when animal inspection and quarantine functions were transferred to the Animal Disease Eradication Division. This was redesignated 2 weeks later as the Animal Health Division. 72/

Another 5 years passed before the position of Associate Administrator of the Agricultural Research Service for Regulatory and Control Activities was established on May 27, 1970. Positions were established on August 25, 1970, for Deputy Administrators for Livestock Health Programs and Plant Protection and Quarantine Programs. About 6 months later the Agricultural Quarantine Division was established. This included the functions of the Plant Quarantine Division and inspection of animal products with the exception of semen, eggs, and other live animal tissues, which remained in the Animal Health Division. 73/

Over a century after the first legislation was enacted to restrict the importation of cattle, the inspection, quarantine, and regulatory work came of age as a separate agency under the Director of Science and Education. On October 26, 1971, the Animal and Plant Health Service was established. The position of Deputy Administrators for Plant Protection and Quarantine and for Veterinary Services continued with the Plant Protection, Agricultural Quarantine Inspection, Animal Health, and Veterinary Biologics Divisions supporting them (37, pp. 121-30; 79, 1972, pt. 2, p. 169). A further change

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71/ 48 Stat. 486; Secretary's Memorandum 1320, supp. 4, Nov. 2, 1953; ARS Administrative Memorandum, Dec. 28, 1952, Feb. 21, 1957.

72/ ARS Temporary Circulars, July 14, and Aug. 3, 1965.

73/ ARS Temporary Circulars, May 27, and Aug. 25, 1970; 36 FR. 7835.

was made when meat and poultry inspection work was transferred from the Consumer and Marketing Service and the Animal and Plant Health Service was redesignated as Animal and Plant Health Inspection Service. The new agency reports through the Assistant Secretary for Marketing and Consumer Service. 74/

The Department's Information Program for Inspection and Quarantine

A vital part of the quarantine and inspection work has been the information activities, with a formal program begun in 1960. Department employees had long publicized the work in speeches, bulletins, articles in professional and other journals, and the press. Press notices have been prepared giving the latest developments or summarizing activities. A number of articles have appeared in popular periodicals. Media have been utilized as they have become available and now radio, movies, and television are used to obtain public cooperation in administering the regulations, but at times the media have lost interest after a burst of enthusiasm. Brochures, leaflets, and flyers have been available to travelers and others here and abroad. Typical of these are "Protecting Farms and Gardens through Plant Quarantines," "Guarding Our Agricultural Resources in the Jet Age," "Pestina Says: Help Stop the Spread of Plant Pests," and "Campers Stop Hitchhiking Gypsy Moths." Films, such as "Hidden Menace" and "Don't Bring Your Enemy Home," have been available to military services, television stations, and public gatherings. Portable exhibits have been prepared. Inspectors at some border stations have briefed migrant laborers, commuters, and school children on prohibited products (58; 61; 64, 1974, pp. 7-8; 78, 1958, pt. 2, pp. 532-39, 1967, pt. 2, pp. 315-18). Employees of the Department of Agriculture have been alerted by articles such as "ARS' Contraband Collection Increases as Ranks of World Travelers Swell" that was published in USDA in October 1971.

The Department has sought and received at times the cooperation of industry in publicizing its quarantine and inspection program, which was expanded in the mid-1960's. It met with representatives of the maritime and airline industries, who presented examples of their cooperation with the Department of Agriculture. However, international air carriers have been less enthusiastic. A joint industry-government committee was established to implement cooperative information projects. 75/ Some of the oil companies have included Department of Agriculture notices in kits for clients traveling abroad. The American Automobile Association included a statement on the restrictions in its foreign tour books (37, pp. 125-28; 78, 1967, pt. 2, pp. 315-18).

Continuing Needs

Some idea of the importance of maintaining the foreign inspection and quarantine may be gained from the fact that in 1962, there were approximately

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74/ ARS Temporary Circular, Mar. 4, 1971; 36 FR. 20707, 22857; Secretary's Memorandum 1762, Jan. 19, 1972.

75/ U.S. Dept. of Agric., Office of Information, Press Release 3022-71, Sept. 15, 1971; F. A. Johnston, "Plant Quarantine Developments," Minutes, National Plant Board, 1966, pp. 67-71.

30,000 interceptions of diseases and pests; during 1967, over 41,000 plant pests were intercepted; (76, p. 28; 51; 79, 1973, pt. 2, pp. 144-45, 1974, pt. 3, p. 684), and in 1971 inspectors seized 655,266 lots of contraband fruits and vegetables, 3,651 tons of prohibited meat and meat products, and 42,542 pests of quarantine significance--a year in which 15.5 million airplane travelers entered the country. It has been estimated that by 1980 this will increase to 47.6 million. 76/

However, pests still sneaked through. One of these, a cereal insect that had caused serious damage in Europe, was found in Michigan and Indiana in 1962. Department scientists, those at other research institutions, and private industry continued to develop highly effective pesticides, only to have other scientists determine that insects built up an immunity to the pesticides or that they constituted or developed environmental hazards. To meet these problems, emphasis in research has been shifted to development of biological controls to anticipate emergencies or prevent them from arising. 77/

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APPENDIX A: IMPORT INSPECTION AND QUARANTINE LEGISLATION

December 18, 1865. Importation of cattle prohibited; Secretary of the Treasury directed to prepare regulations; President to announce termination by proclamation (14 Stat. 1).

March 6, 1866. Above act amended to include hides of cattle and provide fines or imprisonment for violators (14 Stat. 3).

March 3, 1883. Secretary of the Treasury authorized to establish quarantine stations for imported livestock (22 Stat. 613).

July 7, 1884. Federal Sundry Civil Bill provided funds "for establishing and maintaining quarantine stations for neat cattle" (23 Stat. 207).

August 30, 1890. Act providing for the inspection of meat for export also provided for the inspection and quarantine of certain imported animals to protect domestic animals against communicable disease (26 Stat. 414).

July 5, 1892. Secretary of Agriculture directed to certify to Secretary of the Treasury countries free from contagious and infectious animal diseases (27 Stat. 80).

February 2, 1903. Secretary of Agriculture to take measures necessary to prevent introduction of diseases including seizure and destruction of hides, animal products, and materials such as hay or straw coming from infected countries (32 Stat. 791).

March 3, 1905. Insect Pest Act (33 Stat. 1269).

August 20, 1912. Plant Quarantine Act authorized measures to prevent the entry of plant pests in imported plants and plant products and for the control and eradication of pests gaining a foothold (37 Stat. 315).

August 24, 1912. Seed Importation Act (37 Stat. 506).

March 4, 1913. Virus Serum Toxin Act provided for control of the importation of biological products to prevent the entry of worthless, contaminated, or harmful products (37 Stat. 832).

October 3, 1913. Tariff Act included a provision to make imported meat subject to the Meat Inspection Act of 1906 and forbade the importation of unwholesome meat (38 Stat. 159).

October 6, 1917. Mexican Border Act appropriated funds for surveys of pink bollworm distribution in Mexico and for border inspection and control service to control spread in the United States (40 Stat. 674).

August 31, 1922. Honey Bee Act prohibited importation of adult honey bees except for experimental or scientific use by the Federal Department of Agriculture (42 Stat. 833).

February 26, 1923. Appropriation for Federal Horticultural Board provided funds for inspection, cleaning, and disinfection of railway cars and other vehicles, freight, express, baggage, etc. from Mexico (42 Stat. 1316). Similar provision in subsequent appropriations.

May 1, 1928. Amendment to Plant Quarantine Act authorized the confiscation, destruction, or other disposal of infested products imported in violation of the Act (45 Stat. 468).

June 17, 1930. Section 306 of the Tariff Act placed an embargo on the importation of cattle, sheep, other domestic ruminants, and swine, and fresh meat from any such animals from countries infected with foot and mouth or rinderpest diseases. Importation of meat unfit for human food was to be destroyed (46 Stat. 689).

June 4, 1936. Plant Quarantine Act amended to require disinfection of infested plants at expense of sender or if plants were incapable of disinfection their destruction or return to sender (49 Stat. 1461).

August 9, 1939. Legislation authorized discussions of heads of agencies with responsible officials in Mexico on a cooperative program to eradicate or control the pink bollworm in both countries (53 Stat. 1273).

January 31, 1942. Mexican Border Act clarified earlier legislation for inspecting, cleaning, and disinfecting railroad cars and other vehicles, baggage, etc. (56 Stat. 40).

July 24, 1946. Joint Congressional Resolution provided for the establishment of an international quarantine station on Swan Island for inspection of livestock imported from countries having foot-and-mouth disease. This station in the Caribbean was to be operated in cooperation, if possible, with other American Republics, breeders' organizations, and individuals (60 Stat. 633).

February 28, 1947. Secretary of Agriculture authorized to cooperate with the Government of Mexico in the eradication of foot-and-mouth disease in Mexico (61 Stat. 7).

March 27, 1947. Funds appropriated for executing above program with Mexico (61 Stat. 24).

July 31, 1947. Plant Quarantine Act amended to authorize growth of nursery stock under post-entry quarantine (61 Stat. 680).

July 13, 1949. Authorization for construction of Swan Island Quarantine Station repealed (63 Stat. 410). This was at the urging of USDA.

May 23, 1957. Federal Plant Pest Act enacted to provide more effective control over movement of plants and pests. This superseded the 1905 Act (71 Stat. 31).

July 2, 1962. Amended act of March 3, 1905 (33 Stat. 1264) expanding coverage to any animals and authorized issuance of regulations to prohibit movement into the United States of any animals affected with, exposed to, or vaccinated against diseases, when necessary to protect domestic livestock industry (76 Stat. 129).

July 6, 1968. U.S. Department of Agriculture authorized to cooperate with Central American countries in preventing, controlling, eradicating, etc., foot-and-mouth disease (82 Stat. 294).

May 6, 1970. Offshore animal quarantine station authorized within U.S. territory to permit the use of foreign breeding stock from countries having foot-and-mouth disease (84 Stat. 202).

November 5, 1971. Secretary of Agriculture authorized to cooperate with Western Hemisphere countries in the control of communicable animal diseases (85 Stat. 419).

APPENDIX B: ORGANIZATIONAL DEVELOPMENT OF IMPORT INSPECTION AND REGULATORY WORK IN USDA

May 1, 1883. Division of Veterinary Medicine established (Annual Report, of the Commissioner of Agriculture, 1883, p. 11).

May 29, 1884. Bureau of Animal Industry established (23 Stat. 31).

April 1, 1891. Quarantine Division established in Bureau of Animal Industry.

August 21, 1912. Federal Horticultural Board, authorized in Plant Quarantine Act (37 Stat. 315), was established by a Special Order of the Secretary of Agriculture.

May 1, 1922. Quarantine functions transferred to Field Inspection Division, Bureau of Animal Industry (J. R. Mohler to H. C. Wallace, April 11, 1922).

July 1, 1928. Plant Quarantine and Control Administration established. Federal Horticultural Board abolished and an advisory plant quarantine board was established (45 Stat. 565). A Foreign Plant Quarantine Division was formed.

July 1, 1932. Bureau of Plant Quarantine established as successor to Plant Quarantine and Control Administration (47 Stat. 640).

July 1, 1934. Bureau of Plant Quarantine was merged with the Bureau of Entomology to form the Bureau of Entomology and Plant Quarantine (48 Stat. 486).

February 23, 1942. By Executive Order 9069, the Bureaus of Animal Industry and Entomology and Plant Quarantine became parts of the Agricultural Research Administration.

April 22, 1947. Inspection and Quarantine Division was established in the Bureau of Animal Industry (N. R. Bear to W. V. Lambert, April 22, 1947).

April 18, 1952. The Division of Foreign Plant Quarantine, Bureau of Entomology and Plant Quarantine, was redesignated as the Division of Plant Quarantine (W. F. Leffler to T. Roy Reid, April 18, 1952).

November 2, 1953. The Bureaus of Animal Industry and Entomology and Plant Quarantine were abolished and their functions transferred to the newly established Agricultural Research Service (Secretary's Memo. 1320, Supp. 4, Nov. 2, 1953).

January 2, 1954. The Administrator, Agricultural Research Service, announced the organization of the Service. A Deputy Administrator, Regulatory Programs, was assisted by Directors for Crops and Livestock Regulatory Programs with a Meat Inspection Branch and Plant and Animal Quarantine Branches (ARS Administrative Memorandum, December 28, 1953).

February 21, 1957. Work of ARS reorganized with former branches redesignated as divisions (ARS Administrative Memorandum, Feb. 21, 1957).

February 8, 1965. Meat inspection functions were transferred from the Agricultural Research Service to the newly redesignated Consumer and Marketing Service (Secretary's Memorandum 1567, Supplement 1, February 8, 1965).

August 1, 1965. Animal inspection and quarantine functions were transferred to the Animal Disease Eradication Division (ARS Temporary Circular, July 14 1965).

August 15, 1965. The Animal Disease Eradication Division was redesignated as the Animal Health Division (ARS Temporary Circular, August 3, 1965).

May 27, 1970. Position of Associate Administrator of ARS for Regulatory and Control Activities established (ARS Temporary Circular, May 27, 1970).

August 25, 1970. Positions established for Deputy Administrators for Livestock Health Programs and Plant Protection and Quarantine Programs (ARS Temporary Circular, August 25, 1970).

February 17, 1971. Agricultural Quarantine Division established to include functions of Plant Quarantine Division and animal product inspection with the exception of semen, eggs, and other live animal tissues (ARS Temporary Circular, Mar. 4, 1971).

October 26, 1971. Animal and Plant Health Service established (36 FR. 20707).

January 18, 1972. Secretary of Agriculture announced his intention to transfer meat and poultry inspection work from the Consumer and Marketing Service to the redesignated Animal and Plant Health Inspection Service that would report to the Assistant Secretary for Marketing and Consumer Services (37 FR. 1071).

April 2, 1972. Animal and Plant Health Inspection Service established, consolidating much of the foreign and domestic inspection and quarantine activities in one agency (37 FR. 6327, 6505).

APPENDIX C: CONSOLIDATION OF REGULATORY FUNCTIONS

1913. Committee on reorganization of USDA recommended concentration of all regulatory functions in a Regulatory Service (U.S. Congress, House Committee on Agriculture, Appropriation Hearings, 1915, pp. 718-19).

October 1, 1923. Director of Regulatory Work appointed to supervise and coordinate regulatory activities of the Department (Secretary's Memo 449, September 1, 1923).

January 30, 1933. Position of Director of Regulatory Work abolished (Secretary's Memo. 632, January 30, 1933).

October 16, 1938. Director of Marketing and Regulatory Work designated to supervise and coordinate certain marketing and regulatory activities (Secretary's Memo. 783, October 6, 1938).

June 6, 1941. Regulatory powers delegated to Robert H. Shields, Assistant to the Secretary (Secretary's Memo. 915, June 6, 1941).

September 21, 1971. Secretary announced proposal to establish an Animal and Plant Health Service whose functions would include implementing laws and regulations providing for plant and animal inspection and quarantine work (Secretary's Memo. 1744, September 21, 1971).

April 2, 1972. Animal and Plant Health Inspection Service established, consolidating much of the foreign and domestic inspection and quarantine activities in one agency (37 FR. 6327, 6505).

APPENDIX D: OTHER AGENCIES WITH RELATED FUNCTIONS

Bureau of Customs, Treasury Department

Authority:

July 20, 1789. Provided authority for collecting customs revenue, establishment of customs districts and ports of entry, appointment of customs officers, and method of collecting duty (1 Stat. 27, 29).

Organization:

March 3, 1849. Office of Commissioner of Customs established (9 Stat. 396).

March 3, 1885. Division of Customs recognized in Appropriation Act (23 Stat. 397).

March 3, 1927. Bureau of Customs established (44 Stat. 1381).

Bureau of Sport Fisheries and Wildlife, Department of the Interior

Authority:

July 24, 1897. Tariff Act prohibited importation of eggs of game birds and birds not used for food, save for scientific collections (30 Stat. 197).

May 25, 1900. Lacey Act prohibited importation of any foreign wild animal or bird except under special permit from the U.S. Department of Agriculture. The Secretary of the Treasury was to make regulations to stop importation of the mongoose, the so-called flying foxes or fruit bats, the English sparrow, the starling, or any such other birds or animals as the Secretary of Agriculture may from time to time declare injurious to the interest of horticulture (31 Stat. 187).

March 4, 1913. Migratory Bird Act (37 Stat. 847).

October 3, 1913. Tariff Act prohibited importation of aigrettes, egret plumes, or so-called osprey plumes, and the feathers, quills, heads, wings, tails, either raw or manufactured, unless for scientific or educational purposes. It did not apply to feathers and plumes of ostriches nor to domestic fowls (38 Stat. 148).

August 16, 1916. Convention between United States and Canada signed to protect migratory birds (39 Stat. 1702)

July 3, 1918. Migratory Bird Treaty Act approved (40 Stat. 755).

Organization:

July 1, 1886. Division of Economic Ornithology and Mammology established in the Department of Agriculture (24 Stat. 497).

July 1, 1896. Division of Biological Survey established as the successor to the Division of Economic Ornithology and Mammology (29 Stat. 100).

July 1, 1905. Division became the Bureau of Biological Survey (34 Stat. 688).

July 1, 1939. Bureau of Biological Survey transferred to the Department of the Interior under Reorganization Plan II.

1940. Bureau of Biological Survey consolidated with the Bureau of Fisheries to form the Fish and Wildlife Service of the Department of the Interior by Reorganization Plan III.

November 6, 1956. United States Fish and Wildlife Service established (70 Stat. 1119; 21 FR. 8513).

October 2, 1970. Bureau of Commercial Fisheries transferred to the Department of Commerce, where it became the National Marine Fisheries Service of the National Oceanic and Atmosphere Administration under Reorganization Plan IV. The rest of the U.S. Fish and Wildlife Service remained in the Interior Department as the Bureau of Sport Fisheries and Wildlife.

Food and Drug Administration, Department of Health, Education, and Welfare

Authority:

June 25, 1848. Drugs, medicines, and chemical preparations to be examined for adulteration and purity, under jurisdiction of Treasury Department (9 Stat. 237).

August 30, 1890. Importation of adulterated food and drinks prohibited, enforcement assigned to Secretary of the Treasury (26 Stat. 414).

March 2, 1897. Prohibition of importation of impure or unwholesome tea. Enforcement assigned to Treasury Department (29 Stat. 604).

July 1, 1904. Examination by Department of Agriculture of articles being imported that were suspected as dangerous to health or labeled falsely or branded either as to content or place of production. President could suspend further importation by proclamation (33 Stat. 288).

July 1, 1906. Food and Drugs Act provisions included imports (34 Stat. 768).

July 1, 1920. In accordance with the Appropriation Act, the Secretary of Agriculture was directed to perform all duties under the Tea Act of March 2, 1897 (41 Stat. 712).

March 4, 1923. Filled Milk Act prohibited shipment of such milk in interstate or foreign commerce (41 Stat. 262).

March 4, 1927. Federal Caustic Poison Act provided for the exclusion of misbranded imports (44 Stat. 1406).

June 25, 1938. Federal Food, Drug, and Cosmetic Act approved (52 Stat. 1040).

July 12, 1960. Federal Hazardous Subsistances Labeling Act included imports in its coverage (74 Stat. 379).

November 3, 1966. Fair Packaging and Labeling Act to regulate interstate and foreign commerce (80 Stat. 1296).

Organization:

July 1, 1901. Division of Chemistry, established in 1862 in the Department of Agriculture, became the Bureau of Chemistry (31 Stat. 930).

January 1, 1907. Division of Drugs established in Bureau of Chemistry (Secretary's Special Order, December 26, 1907).

July 1, 1927. Food, Drug, and Insecticide Administration established (44 Stat. 1002).

July 1, 1930. Redesignation as Food and Drug Administration (46 Stat. 422).

July 1, 1939. Food and Drug Administration transferred to the Federal Security Agency by Reorganization Plan IV.

April 11, 1953. With the abolition of the Federal Security Agency, by Reorganization Plan I, and the establishment of the Department of Health, Education, and Welfare, the Food and Drug Administration became part of the new Department (67 Stat. 631).

July 1, 1968. Food and Drug Administration operated as an agency of the Consumer Protection and Environmental Health Service.

February 1, 1970. Food and Drug Administration became a separate operating agency again in the Department of Health, Education, and Welfare (Secretary's Reorganization Order, January 5, 1970).