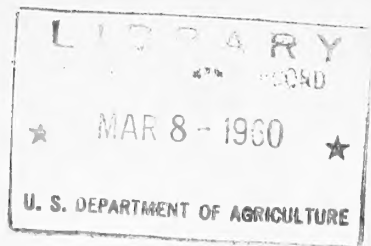


Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

31.5
R31A
Cop. 2



Enlisting Public Cooperation In Keeping Out Foreign Animal and Plant Pests

ARS 22-54

February 1960

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

SUMMARY

Agricultural pests cost the people of the United States \$9 billion a year, and most of this expense is chargeable to insects, disease organisms, and other small destructive agents from other lands that have come as stowaways in transport and travel. Trained inspectors and quarantine officers guard our ports of entry and achieve an impressive record of protecting agriculture against new pest invasions. But the task is too great for this "thin line" of specialists alone, and the United States necessarily relies also on the public to help prevent the entry of agricultural pests. Laws and regulations spell out public responsibilities.

The U. S. Department of Agriculture is making special efforts to broaden public understanding as an approach to tightening defense against costly pest invasions. Travelers' baggage in particular is known to be a hazard. People far more often fail to do their part from lack of understanding or from thoughtlessness than from any deliberate intent to foil the law.

This report compiles information which may be useful to those who deal with the public and who have need or opportunity to build understanding. It describes aims and activities of two divisions in the Agricultural Research Service of the U. S. Department of Agriculture that carry responsibility for protecting the Nation from foreign agricultural pests: the Plant Quarantine Division and the Animal Inspection and Quarantine Division. Some background is included to point up the importance of tightening our pest barriers and to cover topics about which questions are often asked.

ENLISTING PUBLIC COOPERATION IN KEEPING OUT FOREIGN ANIMAL AND PLANT PESTS¹

All-out help from the public is needed by the U. S. Department of Agriculture in a task vital to everybody's interest: keeping foreign agricultural pests from slipping into the United States.

Many agencies and individuals that contact the public are in positions enabling them to explain the agricultural quarantines and their importance. The assistance of such persons in channeling information is needed on an increasing scale. This report presents information which may be useful in building understanding.

The United States inspection and quarantine system has helped to make this country one of the world's safest places in which to grow animals and plants. Yet, agricultural pests are costing the people of this country \$9 billion a year. And most of this expense is chargeable to pests that are not native to the United States but have traveled here from other lands.

These roving pests are varied small forms of life. A rogues' gallery of the worst would show a varied crew of insects, mollusks, and worms, as well as bacteria, viruses, and fungi that cause diseases. Many are so small that their portraits would have to be magnified hundreds of times to be visible. If allowed free entry, such pests--added to those we already have--would overrun farms, forests, and gardens of this country. Agricultural products from food to flowers would soon be poor in quality, or even scarce.

Most of these immigrants that nobody wants hide readily in cargo shipments, mail, travelers' baggage, even lunches.

This country relies on its official pest detectives--trained inspection and quarantine officers--to halt every pest invasion that they possibly can at seaports, international airports, and border stations. They achieve an impressive record of protecting this country's agriculture. But the task is too big for these specialists alone.

The United States necessarily relies also on the public to help prevent entry of foreign agricultural pests, and laws and regulations spell out public responsibilities. Experience shows that stowaway pests in travelers' baggage represent one of the greatest agricultural hazards. Travelers entering this country are responsible for making known to U. S. baggage inspectors any agricultural material in their belongings. As travel and transport grow in volume, pest exclusion is a responsibility for increasing millions of people. Those concerned include civilians and military personnel and great numbers of commuters, particularly those crossing the Mexican border.

Letting stowaway pests escape is expensive. A "ten million dollar foreign orange" that someone tossed aside near an airport or waterport

¹In official usage, the word "pest" describes all small enemies of plant life, including diseases; whereas the words "pests and diseases" are used to describe similar foes of animals, emphasizing the major importance of the diseases. In this report, for brevity, the word pest is used at times to include diseases of animals as well as of plants.

at Miami may have launched the invasion of the Mediterranean fruit fly into the United States in 1956. During April of that year, a Miami homeowner discovered Medflies infesting his backyard grapefruit trees. The alarm, "The Medfly is coming!" was frightening news for the entire South, because this Old World insect can wreck citrus and 100 other southern crops. Before the invasion could be halted, the flies spread damage through the Florida citrus belt. Wiping out every living Medfly in Florida required a Federal-State campaign that took a year and a half and cost more than \$10 million--to safeguard southern fruit and vegetable crops worth \$400 million a year.

From contact with the public, U. S. officials believe that people far more often fail to do their part in pest exclusion because they do not understand their responsibilities or because of thoughtlessness than from deliberate intent to foil the law. An informed public is one approach to tightening defense against costly pest invasions.

THE MASSIVE POWER OF SMALL PESTS

Why People Must Fight Pests

The world's 2.8 billion people are far outnumbered and outweighed by agricultural pests. Insect populations are so tremendous that numbers are beyond meaning. The descendants of one female aphid, if all lived, would amount to 1,560,000,000,000,000,000,000,000 by the end of the season.

Kinds of insects on earth may exceed a million. Of these, the United States has about 85,000 known kinds and considers 10,000 as undesirables and several hundred as destructive enough to agriculture to be of major importance.

Human beings have always had to struggle against pests. Insects were on earth millions of years before man. Insects have never taken over the earth because natural foes tend to keep some balance among the forms of life in an area. The old jingle on insects puts it neatly:

"Big bugs have little bugs upon their backs to bite 'em;
Little bugs have littler bugs, and so ad infinitum."

But pests, given a chance, break out in plague force. The Bible has made famous one famine caused by locusts that flew so thick in Egypt that they darkened the land and devoured crops so that "not a green thing remained." Pests on the rampage have starved out great numbers of people so often in history that pests are thought of when the world's worst fears are mentioned. Insects and diseases that attack animals, plants, and man rode with the four horsemen of the Apocalypse: war, famine, pestilence, and death.

Modern times have brought two entirely new conditions into the struggle of man against pests.

1. Science now provides man with weapons and strategy and is making these increasingly effective. Weapons against agricultural pests include pest-killing chemicals; serums, antibiotics, vaccines, and other biologicals for fighting animal diseases; and new plant varieties bred for resistance to specific pests. Strategy for pest fighting includes organized efforts to use research weapons and regulatory work of inspection and quarantine. Our twentieth century has been called the first time that man has been able to fight back aggressively against plant and animal pests.

2. Meanwhile, the volume and speed of modern transportation have enabled stowaway agricultural pests to rove the world, as never before.

Thus both man and pests have gained advantages. As the contest stands, they are about evenly matched. This represents a gain for man's side, because in all earlier ages he was practically helpless against pest outbreaks.

The United States Puts Prevention First

The United States builds its protective system against agricultural pests on three firmly held principles:

1. It is better and cheaper to keep out plant and animal pests and diseases than to have to fight those that get in. Prevention is always the preferred line of action.
2. If pests get in, it is better and cheaper to eradicate them than to live with them.
3. When pests cannot be wiped out by practical means, then the third and last line of action is to set up controls, to minimize damage.

Past Experiences Show that Prevention Pays

Records of a few of the foreign plant pests that have brought trouble and loss to people in the United States are summarized in table 1. These case histories, and others that could be mentioned, show that small incidents are enough to give plant diseases and insects a destructive foothold.

TABLE 1.--Some foreign plant pests that have invaded the United States

Name and nature of pest	When and where first found in continental U.S.	Arrived from	Small start. . .serious consequences
Stem rust fungus--bred on barberry bushes, spores spread and destroy grain	Before 1726; New England	Europe	Early colonists brought barberry with them as a pretty redberried bush. Some bushes were infected with stem rust fungus. By 1726, barberry was blamed vaguely, but rightly, for "blasted" grain, and landowners were told: destroy barberry or be fined. But barberry was still admired, and taken westward in the 1860's, to run wild. One stem rust epidemic ruined 200 million bushels of wheat and precipitated wheatless days for civilians in World War I. Currently, 19 grain-growing States are working with the U. S. Department of Agriculture to eradicate barberry, and are destroying more than 3 million bushes a year.

TABLE 1.--Some foreign plant pests that have invaded the United States--Continued

Name and nature of pest	When and where first found in continental U. S.	Arrived from	Small start. . .serious consequences
Gypsy moth--in caterpillar stage, it devours foliage, weakening or killing trees	1869; Massachusetts	France	<u>An amateur naturalist</u> brought gypsy moth eggs from France in 1869, hoping this moth could be bred to make silk. (It could not.) Some moths escaped from his laboratory and their descendants by billions began destroying Northeastern forests and timberlands, orchards, and home trees and shrubs. The longest continuous organized war on an insect pest in this country has been fought--since 1890--to get rid of the gypsy moth. As the battle stands, the pest has been kept from spreading into the South or west of the Mississippi. Strong efforts are being made to destroy the gypsy moth in large areas, to narrow down the damage.
European corn borer--worms of the moth feed on corn and certain other plants	1910; Massachusetts	Southern Europe	<u>Broom factories</u> in Massachusetts imported some broom corn infested with pinkish-brown worms in 1910. Seven years later, an agricultural experiment station scientist discovered this kind of worm infesting sweet corn in market gardens near Boston. Hiding in corn, the European corn borer spread until in 1949 its board bill reached an all-time high of \$350 million. The borer is still in cornfields in 39 States.
Japanese beetle--grubs and adult beetles feed on 275 kinds of plants	1916; New Jersey	Japan	<u>A nurseryman</u> who imported iris plants in 1916 is believed to have introduced Japanese beetle grubs in soil balled around the roots. This beetle caused little trouble in Japan, where natural enemies suppressed it. In the United States, the beetle multiplied freely and the adults ate an amazing variety of foliage--off flowering plants, fruit trees, ornamental plants, and vegetable crops--while the grubs damaged turf of pastures, lawns, and golf courses. Strenuous efforts have kept the Japanese beetle from going further west than the Mississippi. In eastern States, this pest costs \$10 million a year loss and trouble to farmers, nurserymen, and city dwellers.
Pink bollworm--eats seeds and damages bolls of cotton	1917; Texas	Mexico	<u>Oil mills</u> in Texas presumably received some Mexican cottonseed in 1916 infested with the pink bollworm--a pest originally from India--for the following year the pink bollworm was in cottonfields near the mills. This pest has been kept from spreading beyond 6 of the 20 cotton-growing States, but when wiped out in one locality it breaks out elsewhere if given half a chance. In its most destructive year in this country, 1952, the pink bollworm cost our cotton growers \$28 million. The pink bollworm got into Hawaii in 1909 and caused so much damage that the islands had to give up growing cotton.
Golden nematode--the tiny parasitic worms feed on roots of potato and tomato plants	1941; New York	Northern Europe	<u>In some unknown way</u> , foreign soil infested with the golden nematode introduced this tiny worm to Long Island soil. The all but invisible worm could wreck the United States' potato and tomato crops, if it spread freely. Thus far, teamwork of growers and officials has kept the golden nematode from getting beyond two Long Island counties. But nearly a hundred times a year, more cysts containing eggs of this pest are found and destroyed by inspectors at our ports and borders. Cysts have been found in soil clinging to foreign automobiles, army tanks, shamrocks in the mail, even tourists' hiking boots. Eggs within the cysts can stay alive in soil 10 years or even longer.

Similarly, foreign animal diseases have been spread from some small beginning, such as an infected cow added to a dairy herd or the use of meat scraps from ships' garbage as an uncooked feed for livestock. To show the importance of animal inspection and livestock protection, a few case histories of animal diseases are cited in the following paragraphs. They include some diseases that the United States has never had, or has successfully wiped out. But all are causing destruction in some parts of the world, and it could happen here.

Contagious bovine pleuropneumonia was the first livestock-killing disease to rouse the United States to united action on the animal disease front. In 1843, a "bargain" cow from Europe brought the organism that causes this lung-sickness of cattle. A New York milkman innocently bought the ailing cow from a British ship captain and from this small beginning the disease spread through valuable herds. Additional cattle importations from Europe are known to have further established this disease in the United States. By the 1880's, European countries were refusing to buy our cattle or beef because of the danger of spreading the disease.

Facing this trade crisis, Congress in 1884 established the Bureau of Animal Industry in the U. S. Department of Agriculture--with its first assignment that of stamping out contagious bovine pleuropneumonia. The same year, Congress established the first Federal quarantine law for detaining and testing livestock that enter or leave the United States. It cost the U. S. Government five years' work and more than a million dollars to eradicate pleuropneumonia. Since then, our livestock growers have never had to fight this disease, although it remains prevalent in cattle of some foreign countries, and therefore a constant threat.

Cattle tick fever (pyroplasmosis) got into the United States in Spanish colonial times, with livestock brought from the West Indies and Mexico. The fever spread gradually when sickened cattle were moved on foot, and faster when railroads began hauling livestock. Eventually, tick fever made cattle raising impractical in the South. The only clue to the cause of the disease was that a particular kind of tick was found where the disease occurred.

Early in its history, the Bureau of Animal Industry began a study of this tick. The scientists found that when one of these bloodsucking fever ticks bit an infected animal, the tick took up parasites that are the cause of the disease. Later, if the same tick bit a healthy animal, it transferred fever parasites to this animal's blood. For fifty years, cattle growers have had to spend time and money ridding animals of the cattle fever tick by dipping and spraying treatments. The tick has been virtually eliminated from the United States, but at times it is found infesting some herd and necessitates swift quarantine and eradication measures. Many times each year, the cattle fever tick is caught hitchhiking on various species of animals that arrive for inspection and quarantine at one of the United States ports of entry for livestock.

Foot-and-mouth disease and rinderpest are often mentioned together because they are alike in some ways. When the worst-feared animal diseases on earth are cited, these two generally head the list. Both are virus-caused. Both have thus far defied research efforts to find a satisfactory cure.

Taking these two diseases separately--

Rinderpest is a disease that many Americans have never heard of, because it has been kept out of this country thus far. It has been killing oxen, cows, and pigs in Old World countries since ancient times. Rinderpest is a problem in many parts of the world today.

Foot-and-mouth disease, unlike rinderpest, has been introduced into the United States, and not merely once but nine times since 1870. Each time it has been fought to a finish by slaughtering infected and exposed animals. If allowed to spread, foot-and-mouth disease would attack all kinds of cloven-hoofed animals on farms, in zoos, in wildlife ranges. The virus can survive, not only in an animal, but in its bedding or feed or in dirty equipment. In uncooked meat, the virus can remain alive for several months. Two of this country's outbreaks of foot-and-mouth disease were traced to ships' garbage fed uncooked to hogs. The United States has not had to fight this disease in its own animals since 1929. In 1946 foot-and-mouth disease broke out in Mexico and, because this was close to the United States, our country joined with Mexico in the drastic program of slaughter and quarantines necessary to safeguard animal life of both countries. For seven years, a patrol was maintained along the 2,100 miles of the United States-Mexico land boundary with such vigilance that no animal evaded the patrol to infect this country. Not until 1954 was the border reopened. The program cost the United States \$130 million dollars, the price of avoiding much greater loss. It has been estimated that foot-and-mouth disease in the United States today could cost our livestock industry and the public more than \$200 million a year.

Newcastle disease is an example of the importance of quarantine to protect this country's poultry and game birds. The virus that causes Newcastle disease is like a family with a criminal streak: some members act as weak offenders, some as violent killers. Weak forms of the Newcastle virus have been in the United States for years, accepted as a nuisance but less serious than some other poultry ills. But in 1950, game birds from China brought a virulent Asiatic strain of Newcastle virus into the United States, endangering the entire poultry industry. The virus was wiped out but only constant vigilance can keep it out. The Asiatic virus is deceptively like its milder cousin and, therefore, foreign birds that might harbor this virulent form are quarantined for 21 days or longer under veterinary supervision.

Defenses Are Strong, But Need Strengthening

Federal animal quarantines have kept the United States from acquiring new kinds of animal diseases for more than half a century with almost 100 percent success.

Federal plant inspection and quarantine measures were established considerably later than the first animal quarantine law of 1884. The Federal Plant Quarantine Act of 1912 was the basis of the protective system against the entry of foreign plant pests. Later, that system was greatly strengthened by the enactment of the Federal Plant Pest Act of 1957. The system is credited with reducing new pest arrivals to a marked extent. In the fiscal year ending June 30, 1959, inspectors intercepted more than 25,000 lots of destructive plant pests, an average of some pest halted

every 20 minutes around the year. Most of these were found in travelers' baggage.

Evidence that all-out public help is needed to tighten the barrier is the fact that serious agricultural pests occasionally slip in.

During the 1950's, people in the United States made unwilling acquaintance with five plant pests of other countries, each capable of costly destruction. The best measures known have been applied to eradicate or control each of the five, but some are still serious problems. These new troublemakers are:

The khapra beetle. From its home in India, this beetle, known as one of the worst pests of stored grain, is now roving the world. It was identified in stored grain on our West Coast in 1953, and since then more than 600 storage buildings in the West and Southwest have been found to be infested. Eradicating the khapra beetle by fumigating entire buildings has cost more than \$5 million.

The spotted alfalfa aphid. This forage pest appeared in the Southwest in 1954 and--being light enough to ride the wind--it spread into 30 States in three years. In 1956, the spotted alfalfa aphid cost forage growers \$42 million.

Witchweed. This harmless-looking weed from Africa and Asia sends out roots from its seed underground to feed on the roots of corn and other grass-family crops. When the strange weed was found growing in our Southeast in 1956, scientists soon warned that it must be fought as a worse threat to corn crops than the European corn borer.

The soybean cyst nematode. This tiny eel-like worm from Asia multiplies enormously in the soil and attacks soybean roots. It appeared first in North Carolina in 1954, and five years later had been found on 700 farms in eight soybean-growing States.

Hoja blanca (Spanish for white leaf). A virus spread by a plant hopper causes this serious disease of rice plants. Hoja blanca has been of concern to rice growers in widening areas of Latin America since it was first found in the Western Hemisphere in 1952. Since the fall of 1957, hoja blanca has been discovered in three of our Southern States.

The exact way in which these new pests entered the United States is not known.

HOW THE PROTECTIVE SYSTEM WORKS

The Agricultural Research Service of the U.S. Department of Agriculture is the Federal agency responsible for protecting the Nation from foreign agricultural pests. This regulatory work is assigned to two divisions of the Research Service: the Plant Quarantine Division and the Animal Inspection and Quarantine Division.

The First Line of Defense

A few hundred USDA inspectors are the first line of defense against pest entry. About 100 men--veterinarians and trained lay inspectors--make up the port and border personnel assigned to halt the introduction of animal diseases. About 400 trained inspectors are guardians in a similar way to keep out plant pests. All are stationed at those ports of entry where they can do the most good. The headquarters from which the work is directed is at the U.S. Department of Agriculture in Washington, D.C. Some of the ways and means by which the two agencies keep out pests and diseases are shown on the following page.

The Second Line of Defense

Cooperation by other officials and by the public--individuals and groups--is so essential to success that it is considered the second line of defense. Continuing efforts are being made to expand this participation, which has proved so helpful "to multiply the hands" of the USDA inspectors.

Besides the U.S. Customs Service, which does teamwork by formal arrangement, many agencies cooperate by notifying USDA inspectors of any clue to a pest-risk situation that they encounter around an international port or border station. This help is given by such agencies as the Armed Forces, the U.S. Immigration and Naturalization Service, the U.S. Public Health Service, U.S. Food and Drug Administration; also by many industry groups, such as cargo forwarders, longshoremen, and treating-plant operators. The U.S. Postal Service makes efforts to detect unauthorized plant and animal materials--and often halts some agricultural pest--in the course of its mail handling work. State and local quarantine officers also give valuable cooperation.

The traveling public is increasingly helpful as it gains understanding of the serious consequences that can come through introducing agricultural pests in baggage.

Efforts to enlist cooperation are extended to other countries, to strengthen our pest barrier and theirs also. For example, scientists and research stations in a number of countries now forward reports on pest outbreaks in their countries to one central agency. This agency alerts the cooperating countries to be on the lookout for spread of these pests. Another example of international cooperation is the training of foreign technicians in plant quarantine principles at our school at the port of New York and the training of foreign veterinarians at various locations in the United States. This has been done since 1951, using funds provided by the State Department's International Cooperation Administration. Students from 36 countries have taken this opportunity to strengthen the protection of agriculture in their own lands. The United States has benefited through the improved protection abroad of agricultural goods we import.

A Year's Work

The workload accomplished in hunting for foreign pests is greater each year, because travel and transport continue to set new records for volume. Each year more pests are caught.



(N-16803)

Inspectors board planes and other carriers arriving from foreign ports, to examine and safeguard stores of food aboard and destroy garbage safely; also to look for any fruit, meat, or other agricultural materials left by travelers, and to disinfect premises, if necessary.



(N-10609)

U. S. Customs officers, who inspect passenger baggage, refer agricultural materials to a USDA inspector. The plant shown was brought over the Mexican border. If it is not a prohibited kind, it may be treated to kill any pests present and returned to the traveler.



(N-9070)

Inspectors examine infested plant material and identify the pests. Their findings are guides to official action. Regulations are changed when some pest becomes an agricultural threat or when a once-threatening pest need no longer be feared.



(N-16813)

Imported nursery stock, seeds, and cuttings are routed to a plant inspection station to be examined and treated to kill any pests. The picture shows plants being put into a chamber for methyl bromide gas fumigation at the Hoboken, N. J. station.



(13077-A)

All cattle shipped to the United States from a tick-infested area of Mexico are given a precautionary dipping in Mexico by USDA inspectors, and the cattle are then brought into this country in sealed trucks to safeguard our livestock against the cattle fever tick.



(N-33127)

At the Federal quarantine station in Clifton, N. J., animals and poultry are detained when necessary, to allow time for any contagious diseases to show symptoms. These pheasants from India look healthy, but died in quarantine of the much-feared Newcastle disease.

In the most recent accounting, for the fiscal year ending June 30, 1959, these were some of the inspection totals in round numbers: pieces of passengers' baggage--21 million; automobiles--21 million; airplanes--133,000; vessels--60,000; animals--1,150,000; pounds of animal by-products, such as wool and hides--a billion; cargo importations of plant material--70,000.

From all sources, unauthorized plant material was intercepted 320,000 times--more than half of this was in travelers' baggage; more than 100,000 pounds of restricted or prohibited meat were seized and disposed of; 24,000 animals and birds were refused entry because of harboring pests or diseases.

A few of the more important plant pests intercepted during the year were these: the khapra beetle halted 44 times; the Mediterranean fruit fly, 99 times; the golden nematode, 75 times; the Mexican fruit fly, 130 times; citrus canker, 82 times; the Mediterranean land snail 87 times.

KNOWING HOW TO PROCEED, WHOM TO CONTACT

Understanding how to proceed, and whom to contact for a permit or when questions arise, is the practical basis for effective cooperation. Following is general information on procedure in different situations. A little background is added--covering questions commonly asked about policy and procedure.

When Traveling

It is a responsibility of all travelers entering the United States to make known at customs clearance any plant or animal materials brought to this country in their belongings.

Travelers are informed by bulletin boards, leaflets, sometimes by lectures, so that they may know their responsibilities about fruit, flowers, uncooked meat, and other plant and animal items. Certain fruits, for example, that may be brought in safely from one country are prohibited when brought from another country.

To save travelers the inconvenience of presenting baggage twice, the USDA and the U.S. Customs Service cooperate in joint customs and agricultural inspection.

Commuters who cross the Canadian or Mexican border have the same responsibilities as other travelers to comply with agricultural inspection. Lunches are the most common type of "baggage" of thousands of workers and school children. Agricultural pest conditions in Canada are so similar to those in the United States that fewer restrictions on bringing in plant and animal items from Canada are imposed than are needed at our southern border.

Military personnel have the same responsibilities as civilians to comply with the laws and regulations for keeping out foreign agricultural

pests and diseases. Regulations of each branch of the armed services summarize agricultural quarantine restrictions, and each branch assists in their enforcement.

Outlying areas of the United States--Hawaii, Alaska, Puerto Rico, Guam, the Virgin Islands--share with the continental area the protective system for preventing the entry of agricultural pests. The USDA has inspection and quarantine officers at ports in these areas.

Harmless-looking souvenirs sometimes constitute a serious hazard in pest introduction. Baggage inspectors are continually alert for the popular items that tourists acquire in foreign market places, that contain "plant and animal" material in disguise. Tourists can give valuable aid by looking over their acquisitions and presenting for inspection such trinkets as these: beads made from foreign seeds or berries; dolls made of yarns; any souvenir that shows signs of being stuffed with raw cotton or straw; and varied other mementoes that travelers, as well as officials, can learn to recognize.

Animal trophies, such as heads, horns, hide, bones, hooves may harbor organisms of serious animal diseases.

Some of these mementoes pass inspection and can safely be brought in. Some may be fumigated and returned to the owner. Those that are prohibited entry are destroyed.

Permit requirements rather often cause problems for tourists, through lack of understanding.

The most common situation in which tourists require a permit is to bring in foreign material to grow--such as cuttings, bulbs, seed. Tourists who plan to bring in such material are strongly advised to apply for a permit in advance of a trip. A permit for permissible material is issued free. Having a permit in advance speeds clearance on arrival. If the material wanted is a prohibited kind, knowing this in advance saves loss of the goods. If a traveler presents material without the necessary permit, a U.S. inspection officer at the port of entry will assist him to obtain a permit, provided the material is not a pest risk.

Small quantities of approved fruits, vegetables, cut flowers, and meats brought in by a traveler for personal use may be released on an oral permit, if found upon inspection to be free of pest risk.

Tourists occasionally present animals or birds for entry as pets, and the loss of a prohibited kind may be a keen disappointment. A permit is required to bring in poultry, both domestic and wild, including eggs for hatching; also any cloven-footed animal except from Canada or from certain States in Mexico. A permit for any of these items should be applied for in advance.

Addresses of USDA headquarters offices that issue plant permits and animal permits are given on page 12.

Pets such as cats, dogs, parrots or parakeets, and monkeys must meet certain health requirements established by the U.S. Public Health Service. Added information about their importation may be obtained from

the Public Health Service, U.S. Department of Health, Education and Welfare, Washington 25, D.C.

When Importing by Other Means Than Baggage

It is becoming more commonplace yearly for individuals and groups within the continental United States to acquire foreign plant or animal goods. In whatever way these goods are acquired and however they are shipped, the receiver has responsibility for making sure that the USDA inspection and quarantine regulations have been complied with.

A permit is required in most of these import situations. Even a partial listing covering the most common situations requiring a permit indicates the many segments of the general public that are concerned personally in this country's effort to keep out foreign pests and diseases that threaten agriculture.

A USDA permit is necessary:

- To import most kinds of animals,² (including birds and eggs for hatching, for breeding, farming, or personal ownership).

- To import nursery stock and any other plant materials for farming, gardening, parks, or other kinds of planting.

- To import most kinds of fruit, vegetables, and other plant products.

- To import plants for fairs and exhibitions.

- To import animals and birds--with the exceptions explained in footnote 2--for fairs, zoos, and other exhibitions.

- To import plant materials or plant pests for research or for museums or other collections.

- To import vaccines and other animal biologicals for veterinary medical use and research.

- To import foreign soil for research or any other use.

Application forms for permits can be obtained by writing to the following offices:

Plant materials: Plant Quarantine Division, U.S. Department of Agriculture, Washington 25, D.C.; or Plant Quarantine Division, Plant Importations Branch, 209 River Street, Hoboken, N. J.

Animal materials: Animal Inspection and Quarantine Division, U.S. Department of Agriculture, Washington 25, D.C.

² The USDA requires a person in this country to obtain a prior permit for the importation of animals with the following exceptions: horses, animals from Canada, and certain animals from the northern States of Mexico. This permit is in addition to the certification of animal health authorities in the country of origin, and horses and cattle may require further testing at a port of entry.

Applicants should describe the kind of material they wish to import, and explain its intended use. This information is needed by the permit offices to determine whether the proposed importation is admissible. If so, permit arrangements are completed.

Attempting to smuggle into the United States any goods covered by agricultural quarantines is an offense subject to fine up to \$500 or imprisonment not exceeding a year, or both. Smuggling--willful violation--is regarded seriously because of the far-reaching trouble that agricultural pests can start. The thoughtless violations that officials more commonly encounter may not be penalized, but prohibited goods may be confiscated.

Points on Policy and Procedures

Placing as few restrictions as possible on trade, commerce, and the public in general is one policy of the USDA plant and animal quarantine services. Restrictions are continually reviewed and modified when changes occur in pest and disease situations abroad, when improved ways are found to combat pests and diseases, or other safeguards permit.

Ways of saving time of the public and officials alike are continually sought. Here are a few, some recently instituted, some long ago adopted:

- The supermarket system of clearing passengers' baggage through exit counters was recently installed at the New York International Airport at Idlewild, and is proving very successful.

- In certain cases, plant importers are provided mailing labels that direct parcels straight to a plant quarantine station and subsequently on to the destination.

- Quarantine facilities for treating plant materials to destroy pests have been expanded at New York, and the usual detention time is now a few hours, whereas formerly it was several days.

- U.S. Public Health officers, who are the first to board foreign vessels, look out for prohibited animals and notify U.S. animal quarantine officers, enabling the latter to take prompt action.

- In-transit cold treatment of certain fruit cargoes on shipboard kills plant pests and makes possible prompt release on arrival.

- Stopping pests before they start--the best of all protective methods--is one of the basic procedures of the animal disease exclusion work, and is accomplished by cooperative arrangements with many countries. In the more complex situation of halting plant pests, one example of cooperation is the inspection of flower bulbs in countries where they are grown. Bulbs certified pest-free can be shipped direct to buyers in the United States. This plan was started in Holland in 1951, and has proved so effective that it has been extended to a number of other European countries, to speed bulb shipments in rush season.

The need for inspection of all incoming baggage has been demonstrated. In 1953, the Customs Service found it necessary to restrict its inspection of baggage to a selective "spot-check" system, in order to handle the

growing volume of incoming baggage with the available inspection force. Because of the known pest and disease risks associated with baggage, the U.S. Department of Agriculture allotted funds to the Customs Service to resume thorough examination of passengers' baggage for unauthorized agricultural materials, starting July 1, 1956. In the following year, interceptions of unauthorized plant materials, many harboring destructive pests, increased by 19 percent over the preceding year of spot-checking. Interceptions of prohibited meat and meat products increased by 35 percent. Hence, the time spent by the public and officials on this routine is saving "trouble unlimited."

Quarantine periods are the shortest compatible with safety.

Currently, an animal detained in quarantine is observed for 30 days; a bird, for 21 days. The time must be long enough to show up serious diseases that could be developing.

Plant quarantine procedures can generally be completed within a few hours. Foreign certification that plant material is free from pests reduces the chance of stowaways. However, such certification does not eliminate all hazard; nor can trained USDA inspectors quickly detect the tiniest pests which may be speck-size. Hence, practically all plant propagative materials are treated by fumigation, hot water, or a chemical spray or dip, to destroy any hidden pests without harming valuable plants. Occasionally, plant material of a prohibited kind is admitted under strict quarantine for experimental or research purposes of the U.S. Department of Agriculture. In addition, certain plants are allowed entry for a period of isolated detention on the premises of the importer. During this time, usually two years, the plants are carefully examined and are finally released if pest free.

AIDS TO UNDERSTANDING

The USDA plant and animal quarantine divisions are extending their efforts to inform the public on the need for agricultural quarantine restrictions and how to comply. Help is solicited for the spread of information through the varied communication channels of newspapers, magazines, radio, television, illustrated talks, motion picture showings, and exhibits. Information directed to special groups is helpful, and can be conveyed by farm papers, scientific journals, trade journals, and organizations that hold meetings.

Persons directly contacting the traveling public are in key positions to use leaflets and other information with strategic timing--when travelers are en route on a carrier or arriving at a United States port or, better still, before the trip starts.

A study on ways of promoting international travel made at the direction of the President included the problem of passenger baggage as an important source of entry for foreign agricultural pests and diseases. Reporting results of the study in 1958, the chairman of the committee emphasized:

"It would be most helpful if all carriers were to cooperate in bringing plainly and repeatedly to the attention of the traveling public the rules against prohibited articles. On the part of the Department of Agriculture, I urge prominent display at ports of signs in principal languages calling attention to the penalties involved for unauthorized entries and a continuing exploration of every possible means of facilitating passenger movement."

A few of the devices for catching the public eye and ear that have proved successful are cited in the following paragraphs.

An Agricultural Research Service motion picture, "The Hidden Menace," is a story of the tremendous hazard of stowaway agricultural pests. It is a 22-minute color film, available to transportation agencies, military services, television stations, and other interested groups.

Prints of this film have been deposited in the Department film libraries in all States for lending. These libraries are usually located at a land-grant college or university in a State. The film is being shown during voyages on 50 troop ships and passenger liners, including liners of foreign registry. It is shown weekly at some Honolulu hotels. It is used in the training course at military bases for personnel heading for overseas duty.

A leaflet, "Customs Hints," issued by the U. S. Bureau of Customs, gives conspicuous notice of plant and animal quarantine regulations, and is widely distributed to travelers. Consular officers in foreign posts, who issue travel papers, are requested by the U. S. Department of State to bring "Customs Hints" to the attention of persons departing for the United States.

A flier, "Why Open Every Bag?" issued by the Bureau of Customs also gives special mention to agricultural inspection. This flier was prepared for hand distribution to passengers arriving at our international ports, to explain the importance of baggage clearance.

A bright orange sticker has been designed in Hawaii to alert air travelers to a reversed inspection procedure--inspection of baggage on departure instead of arrival. The sticker is affixed to flight envelopes when tickets are purchased or validated at Hawaiian ticket offices. It reads: "ALL PASSENGERS traveling to the United States and South Pacific must have their baggage and parcels EXAMINED by the U. S. Agriculture before departure. It will expedite your check-in if, on arrival at the U. S. Agriculture counter, your baggage is unlocked and parcels untied."

A card notice for hotel guests, designed by a Hawaiian inspector, has attracted wide notice and inspired adaptation. The card on agricultural inspection of baggage, shown on p. 16, is placed under the glass on hotel room dressers and desks, through the cooperation of the Hawaiian Hotel Association. Following its initial use before the 1958 rush season of Christmas mail, there was a marked decrease in prohibited plant and animal material intercepted in mail leaving Hawaii, compared with 1957. Inspectors believed that the hotel card could be mainly credited with this reduction.



"KOKUA"

Is a Hawaiian Word Meaning Cooperation

Your "KOKUA" may prevent the accidental transportation of certain Hawaiian insects to Agricultural areas on the Mainland. Please do not take or send unauthorized Fruit or Plants.

Upon arrival at the Airport, unlock baggage and have it ready for inspection. Ship baggage will be inspected when you reach the Mainland. All packages mailed to the Mainland receive Agricultural Inspection.

For information on Fruits and Plants you may wish to take or send to the Mainland please call:

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT QUARANTINE DIVISION
TELEPHONE 58831-EXT. 324 OR
86903 (NIGHTS, SUNDAYS & HOLIDAYS)

"MAHALO" (Thank you in Hawaiian)

BEWARE of HITCHHIKERS!

This eye-catching notice printed in blue on a yellow card has proved effective for alerting travelers in Hawaii on their responsibility in avoiding the transportation of agricultural pests.

In Puerto Rico, the hotel card was re-designed to show a hitch-hiking insect in Latin American dress, with a printed notice in English and in Spanish.

Briefing migrant workers by a talk before they leave Caribbean and Bahama Island homes is a system started several years ago. Thousands of contract laborers each year are instructed in advance what agricultural products cannot be taken to the United States. Many planes carrying these workers now land at West Palm Beach airport with no prohibited material; whereas previously large amounts of fruit and plant cuttings were intercepted.

Briefing Mexican school children and other commuters from Mexicali and Tijuana has been an educational project of inspectors at the nearby U. S. border stations. Their aim is to make clear that the only fruits that can be brought over the border in lunches are bananas, grapes, papayas, pineapples, and strawberries, because other kinds may hide fruit flies and similar pests. A sample of overall improvement was shown when three busloads crossed the border into San Ysidro, Calif., on a school celebration day. No child on the bus from Tijuana had any prohibited fruit. Inspectors had to take up about 100 oranges and apples from children on the two buses from another Mexican town.

A microscope viewing of pests in soil for several automobile dealers was tried with success by a resourceful USDA inspector at Port Everglades, Fla. He had found that local dealers did not understand the need for the supervised washing treatment now required for soil-contaminated foreign cards entering the United States. He showed the dealers egg-containing cysts of the golden nematode made visible under his office

microscope. He explained that these cysts were found in traces of European soil removed from wheels or chassis of their importations, and that cars contaminated with foreign soil, if allowed to roll through farm country, could transfer the nematodes into our soil--a threat greatly feared by potato and tomato growers.

STORIES MAKE POINTS

Experiences of quarantine officers provide many stories that make points in explaining the protective system. These are a few from recent years:

Fast teamwork by the U. S. Navy helped round up a swarm of pest-infested stuffed alligators when four destroyers reached Norfolk, Va., from a South American cruise. A U. S. plant quarantine officer who boarded the first destroyer for his tour of inspection noticed a souvenir alligator from Colombia in one compartment, and found that it was stuffed with seed cotton and rice hulls. At his request, officers of the four destroyers quickly announced by bulletin boards and public address system: "Turn in all alligators." From 200 alligators, 45 pounds of stuffing were removed, found to be insect-infested, and burned. If not cleaned up, the souvenirs could have carried to different parts of the country several kinds of rice pests and the pink bollworm that wrecks cotton.

Scientists are not always aware of their responsibilities when acquiring foreign wild life. A New York museum curator found on his desk one morning a huge foreign beetle in a tin can, with no permit and no sign of how it arrived. He identified the live specimen as one of Africa's Goliath beetles that grow to 4-inches in length, and made the giant a featured exhibit under glass, near the museum entrance. At this point, he learned that the foreign beetle required clearance papers, and he applied for and obtained a permit to keep it alive in secure captivity.

A helping hand is given by USDA inspection officers, whenever possible, in solving import problems. A half-case of sweet limes from Guatemala that arrived at New Orleans for port clearance was marked RUSH and EXPEDITE FOR MEDICAL PURPOSES. But the agent had no permit--only telegrams explaining that the fruit was ordered for a Philadelphia woman as a life-saving aid. A phone call to the Philadelphia doctor confirmed the urgency of speed, and the agent was given permission to extract the juice at the plant quarantine station. Using a hand squeezer from his home, the agent extracted a gallon of juice and dispatched it by plane the same night.

Not realizing that a few coffee twigs and berries were a pest risk, a school teacher returning to Miami, Fla., from Brazil failed to declare this small exhibit, which she planned to show to her class. The inspector who found the berries pointed out Medfly larvae in them, and explained the trouble they could spread.

Inspectors are always alert for smugglers. The x-ray eye of a detectorscope used in customs inspection has revealed sausage crammed into an olive oil can brought from Italy. There is always a possibility that such meat may be contaminated with diseases that our animals do not have.

One Chicago motorist who tried smuggling said, "No fruits or plants," when he drove over the Mexican border, returning to the United States. But the customs inspector lifted the car hood and found 13 potted plants. On further inspection he found five packages of dried herbs in springs under the rear seat. When the plant soil was tested, it revealed cysts of the destructive golden nematode, and the plants proved to be infested with a scale insect.

FROM TODAY TO TOMORROW

The task of officials responsible for keeping out foreign agricultural pests and diseases is expected to become larger, not smaller; harder, not easier. The main hope for the future is to make the best possible use of research advances and to gain the full cooperation of the public.

Sizing up the Task

The increase of travel and transport to the United States shows no sign of slackening. This means ever-mounting quantities of baggage and cargo that must be inspected for stowaway pests and diseases. Since World War II, air traffic requiring agricultural quarantine inspection has increased nearly 600 percent; ocean traffic more than 100 percent; and vehicular traffic across the Mexican border 450 percent.

Furthermore, the network of transportation lanes is becoming more and more complex, necessitating the wider spread of official guardians of agriculture to additional strategic stations.

When the St. Lawrence Seaway was opened to deep-draft vessels in 1959, it added 2,000 miles of shipping coast to be guarded--the first major addition to our water coastlines in 70 years. Cleveland, Duluth, Milwaukee, and other places far inland are now "ocean" ports. Large freighters docking to unload foreign goods along the Seaway can be expected to carry their share of agricultural pest hazards to the heart of the Midwest grain and livestock centers. One of the first stowaways riding the seaway was the grain-devouring khapra beetle, found in the hold of a German ship at Cleveland. Importers and exporters along the seaway are being urged to become familiar with agricultural inspection and treatments necessary for varied agricultural products, and to aid U. S. Customs and quarantine officers with close cooperation. The fact that these ports are in fresh water materially increases the danger to livestock because if foreign garbage were dumped in the water it could infect livestock drinking the water.

Alaska is another large area beginning to require strong protection against stowaway pests. Several airlines already run regular scheduled flights linking Europe and the Orient by way of Anchorage. Alaskans are worried over the chance of introducing the golden nematode to their potato crops. They fear that foot-and-mouth disease may be brought to their State, realizing that this disease can destroy cattle and also the wild game that is an important source of income.

The speed of air transport adds to the problems of pest exclusion work. Each year, larger proportions of animal and plant shipments are air-borne. Cargo ships plowing across an ocean may take several weeks, allowing time for an animal to develop symptoms of almost any disease it could have contracted, so that control measures can be begun. But airflight outruns the incubation period of these diseases, and therefore quarantine stations carry a heavier burden of responsibility when air transportation is used. Similarly, a ship-crossing may be longer than the life span of certain insects that damage crops. But by plane, by egg-laying insect makes port so swiftly that it can be alive and ready to loose destruction.

Prospective Help

This country's scientific knowledge, applied in practical ways, is the firm foundation of its agricultural quarantine inspection system.

Knowledge of plant and animal pests and diseases has been accumulating through research for nearly a century and is counted on to continue strengthening our pest defense. Among the ways in which research of the future may make this work simpler, quicker, more effective are advances such as these: finding a practical quarantine treatment for ridding plants of disease without harming the plants, comparable to the methyl bromide treatment for killing insects; finding a practical way to fumigate soil that would destroy the elusive golden nematode and other soil-borne pests without injuring plants; finding a protective or curative treatment for such dreaded animal plagues as foot-and-mouth disease.

Research also may be expected to continue devising management practices that protect shipments from becoming hide-outs for pests. Insect-resistant packaging is one research line attracting attention.

Teamwork is as essential as research to future success in halting pest travels. In the nineteenth century, the United States recognized that individuals or States alone could not halt roving agricultural pests; and the Nation as a whole began developing its inspection-quarantine system to form a strong continental barrier. In our twentieth century, the whole world is having to draw together through international conferences and scientific teamwork to minimize the threat of interchanging agricultural pests. Without such efforts, no country, however remote, can hope to keep its agricultural pests to itself or to escape acquiring new ones.

