FOREIGN ANIMAL
DISEASES REPORT

SEPTEMBER 1973

EXOTIC NEWCASTLE DISEASE ACTIVITIES REPORT

During the period from July 27 to September 1, 1973, there were no cases of exotic Newcastle disease diagnosed in the continental United States. As stated in our August report, the last positive case of exotic Newcastle disease was confirmed on June 28, 1973, in a flock of approximately 55,200 turkeys in the Romoland area of Riverside County, Calif. Subsequent epidemiological studies, investigations, inspections, and laboratory tests were conducted on all other flocks which could have possibly been involved. Investigations were conducted in over 90 flocks consisting of about 800,000 birds with no evidence of exotic Newcastle disease.

Laboratory tests of dead birds submitted weekly from commercial egg-laying flocks is a highly reliable means for continued flock surveillance. This is part of Epidemiological Necropsy Surveillance Program. During this period, over 90 percent of the commercial flocks in Orange, Los Angeles, Riverside, San Bernardino, San Diego, and Ventura Counties in southern California were covered.

On August 6, 1973, the U.S. Department of Agriculture and the State of California removed a 75 square mile area in Riverside County from the quarantine restrictions for exotic Newcastle disease. This action reduced the area-wide quarantine to 125 square miles located in the Highland, Mentone, Redlands, and Yucaipa areas of San Bernardino County. The last positive case of exotic Newcastle disease in the 75 square mile area in Riverside County, which was released from quarantine, occurred on February 3, 1973. The commercial egg ranches in the area participated with negative results in the regular weekly check of normal death losses for approximately 7 months.

On August 30, 1973, a press conference was held in Riverside, Calif. Assistant Secretary Dr. Clayton Yeutter, and Mr. C. B. Christensen, Director, California Department of Food and Agriculture, announced the removal of the last area quarantine in California. This action ended the controls on poultry shipments imposed in March 1972 when the national animal disease emergency was

declared and California's eight southern counties containing approximately 45,000 square miles were quarantined to halt the spread of this disease. Officials of USDA's Animal and Plant Health Inspection Service indicated that the disease has been contained and that the goal of eradication seems to be within sight. They also warned of the possibility that the disease could still be brought in from abroad despite existing precautions. These precautions include a ban on commercial pet bird imports, the source of the California outbreak. There are also restrictions on imports of live poultry, poultry meats, and eggs. If exotic Newcastle disease had been allowed to spread nationwide, USDA officials estimate that the disease could have cost the U.S. poultry industry more than $230 million annually. The cost of eradication to date amounts to about $47 million which includes imdemnities paid to poultry owners whose flocks were destroyed, and operational costs of the State-Federal Newcastle Disease Task Force.

The disease surveillance program in California will continue until the task force officials are convinced that the disease has not reoccurred. The program involves the continuation of the monitoring of commercial poultry flocks in California's eight southern Counties through the system of collecting, examining and testing dead birds.

Lifting the area quarantine leaves only three individual poultry ranches under quarantine in southern California. These properties were involved in the last outbreaks of the disease.

The entire Commonwealth of Puerto Rico remains under quarantine for exotic Newcastle disease.

HOG CHOLERA REPORT

Since early in the hog cholera eradication program, the watchword has been "suspect cholera first!" The meaning, of course, is that any suspicious illness in swine should be reported immediately to veterinary officials so that the herd could be examined by a trained hog cholera diagnostician.

Fewer and fewer suspicious cases are being reported so that hog cholera appears to be the least suspected disease today. Veterinary Services, APHIS, urges continued reporting in this stage of the eradication campaign, to prevent a repetition of last year's setback.

Since January 1, 1973, there have been 16 confirmed cases, compared with 91 confirmed cases during the same period last year. Forty six States are now classified as "hog cholera free", compared with 45 in that category a year ago.

The most recently confirmed case of hog cholera occurred on June 28 when low-virulence virus was detected in an Indiana herd. The absence of cases during July and August this year may be compared with the eight confirmed cases in July followed by 25 more in August of 1972.

It was in early August last year that infected hogs moved undetected through a Kentucky market--leading to costly hog cholera outbreaks in Indiana and Ohio.

A total of 54 cases were recorded during September last year. Secretary Butz declared hog cholera a national emergency on October 11, 1972.

According to current figures, September has been the highest-incidence month for hog cholera since accurate record-keeping began in 1964. Each year since then, 20 percent or more of the cases have occurred during September and October.

APHIS, therefore, is urging veterinarians, producers, and others involved in hog raising and marketing to be specially alert during the next few months. This action may be critical in attaining our goal of a hog-cholera-free United States.

During the months ahead, we must remember the events of 1972 and keep on looking for hog cholera. It's not yet time to retire the slogan "suspect cholera first!"

THE MECHANICAL TRANSMISSION OF ANIMAL PATHOGENS BY FLIES

Two current national emergencies have refocused attention on the potential of Diptera (two winged flies) to serve as mechanical vectors of pathogenic agents. During the exotic Newcastle disease epizootic, unpublished field and laboratory studies conducted by the ARS Western Insects Affecting Man and Animals Research Laboratory in cooperation with the Veterinary Services Diagnostic Laboratory, have incriminated the lesser house fly (Fannia canicularis) as a potential mechanical vector of the Newcastle disease virus. In the case of the hog cholera national emergency, horse flies (Tabanidae) and the house fly (Musca domestica) were previously identified as potential mechanical vectors of the virus. Recently, unpublished transmission studies at the Veterinary Services Diagnostic Laboratory in cooperation with the ARS Chemical and Biophysical Control Laboratory have confirmed the ability of house flies to transmit hog cholera virus and, furthermore, have incriminated the stable fly (Stomoxys calcitrans) as well.

Other examples of flies acting as mechanical vectors of animal disease agents should also be cited to illustrate the variety of pathogens and their vectors. House flies, in addition to the nonbiting stable fly, the stable fly, and a blowfly species, have been incriminated as potential mechanical vectors of foot-and-mouth disease virus. In some areas of the country, horse flies are recognized as the principal vectors of bovine anaplasmosis, even though available data indicate that they are capable of transmitting the pathogenic agent for only five minutes following an infective feeding. Ten different species of flies have been incriminated as potential mechanical vectors of the bacterium, Brucella abortus, which causes brucellosis of cattle. Over a century ago anthrax was shown to be mechanically transmitted by stable flies and blowflies. Although trypanosomiasis of domestic livestock is normally considered to be biologically transmitted by various species of tsetse flies, it is possible for biting flies, such as tabanids, stable flies, and horn flies, to mechanically transmit the protozoan agent, and, thus, perpetuate the epizootic. Numerous additional instances of biotic associations between flies and pathogens could be listed and those interested should consult Greenberg's "Flies and Disease", volume I, published in 1971. From these examples, it is clear that Diptera may

play an important role as mechanical vectors of both endemic and exotic diseases of animals. In fact, epidemiologists and other animal health officials would be well advised to suspect the possibility of flies serving as mechanical vectors in any epizootic which occurs during warm periods of the year.

Due to their close association with animals, the high population densities which frequently develop, and their habits, certain species or groups of flies should be singled out for their potential as mechanical vectors. The common house fly, Musca domestica, has been found associated with over 30 viruses, over 175 bacteria, 8 species of spirochaetes, 3 rickettsiae, 19 fungi, over 30 protozoa, and numerous helminths and other higher organisms. This impressive list of associations can be directly attributed to the synanthropic habits of the house fly. Numerous closely related species, such as the face fly (Musca autumnalis) and the lesser house fly (Fannia canicularis), have also been found associated with amazing numbers of different microorganisms. The haematophagous flies, too, are potential mechanical vectors of prime importance. The stable fly is ideally suited to transmit infectious blood diseases of domestic animals. The horn fly (Haematobia irritans) should be suspected as a mechanical vector of infectious blood diseases of cattle. The horse flies and deer flies (family Tabanidae) are extremely efficient mechanical vectors of livestock pathogens. Due to the relatively large size of their mouthparts, their biting habits, and their strong flying ability, tabanids are potentially capable of mechanically transmitting any septicemic disease.

Although much is unknown about the interrelationships between flies and disease transmission, there is sufficient evidence to indicate the need for fly control measures to support eradication of many animal disease epizootics. One question, which frequently arises, concerns the degree of fly involvement in disease transmission. For example, if a particular virus disease is transmitted directly from animal to animal by contact and indirectly through contaminated fomites, to what extent do flies play a role in mechanically disseminating the pathogen? There is, at present, no satisfactory answer. Many factors, such as environmental conditions, host, or hosts involved, stability of the pathogenic agent, fly species present, and population densities of both hosts and potential vectors, enter into deliberations. Even with the same disease, the degree of fly involvement undoubtedly varies from one geographic area to another and, within the same area, from week to week. All of these factors, and more, must be taken into consideration when assessing each epizootic to determine if fly suppression measures are indicated. During a total eradication effort, it is necessary to quickly eliminate, or at least reduce, all possible means of area spread. A philosophy must, therefore, be developed in which reduction of potential mechanical transmission by flies is incorporated into the total eradication scheme.

Methods of fly control are as varied as the species involved and the conditions under which control is desired. In general, cultural and sanitation practices, which reduce or eliminate conditions that encourage high population densities, are most acceptable from all standpoints. Utilization of biological control agents, such as predators and insect pathogens, may be effective and exert minimum environmental impact. Genetic control techniques, such as sterile male release or introduction of incompatible or lethal genes, have reached the operational stage in only a few instances. When faced with an emergency disease

eradication situation, it is unusually necessary to rely upon chemical control with selected insecticides for immediate results. Insecticidal applications can be initiated on short notice and can be terminated when the threat of transmission has passed. Whenever possible, cultural, biological and chemical control procedures should be integrated into a single fly control program.

In summary, numerous species of Diptera must be recognized as potential mechanical vectors of animal disease agents. During epizootics, the possibility of fly involvement in area spread must be considered and provisions to eliminate this potential incorporated into the total eradication scheme. Integrated control should be practiced, but of necessity, chemical control must be relied upon for immediate results.

FAST SPREADING EPIDEMIC OF FOOT-AND-MOUTH DISEASE THREATENING EUROPEAN LIVESTOCK

A fast-spreading epidemic of foot-and-mouth disease (FMD) in Turkey is threatening European livestock.

The epidemic poses the most serious FMD threat to Europe's livestock population since 1964.

The virus is the Asia 1 (one) type.

Since European herds have no natural immunity to this virus type, the disease could be catastrophic if it reached Europe.

Since early August, when the disease spilled over Turkey's border with Iran, Turkey has recorded 77 individual outbreaks of FMD type Asia 1.

On August 17, 1973, Turkish veterinary authorities cabled FAO officials in Paris that the disease had reached Adapazari, about 60 miles from the Bosporus.

This is the nearest FMD Asia 1 has ever come to Europe. The disease up to now has never been found outside the Asian continent.

At Turkey's request, FAO has called an emergency meeting of experts in Ankara to consider urgent measures to help Turkey fight the epidemic and to strengthen defenses along the Buffer Zone.
(From U.N. Food and Agriculture Organization Reports.)

SITE CHOSEN FOR STERILE SCREWWORM-FLY PRODUCTION PLANT IN MEXICO

The government of Mexico, on behalf of the Mexico-U.S. Commission for Screwworm Eradication, has obtained a 170-acre site near Tuxtla Gutierrez, in southern Mexico, for construction of a new sterile screwworm-fly production plant.

The site was selected by a special team of U.S. and Mexican screwworm eradication officials, working under authority of the Joint Screwworm Eradication Commission.

UNITED STATES
DEPARTMENT OF AGRICULTURE

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

National Office

MARCH 1973

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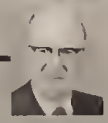

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The 10-member Commission was created under an international agreement signed on August 28, 1972, by the United States and Mexican Secretaries of Agriculture to expand USDA's screwworm eradication program into Mexico and eliminate this livestock pest from both countries.

Acquisition of this site is a major step in the joint program to eradicate screwworms as far south in Mexico as the Isthmus of Tehuantepec, where a barrier zone will be established to prevent screwworm reinfestations from Central America.

The plant, when completed, will produce about 300 million sterile screwworm flies each week for aerial release throughout Mexico. These flies will mate with native screwworm flies, causing the latter to lay eggs that will not hatch. Since female screwworm flies mate only once, the natural reproduction of the species can be stopped if enough sterile males are released to mate with all fertile female flies.

United States and Mexican screwworm eradication officials are aiming for completion of the new plant by November 1974.

Screwworm eradication efforts currently are concentrated along the 2,000 mile border between northern Mexico and the southwestern states. Some 200 million sterile flies are now being raised and released weekly from APHIS' fly production factory at Mission, Texas.

The problem of preventing screwworm migrations from Mexico into the U.S. across such a long border was a major reason for expanding the eradication program into Mexico.

IMPORTATION AND INTERSTATE MOVEMENT OF ANIMAL PATHOGENS

The importation and interstate movement of organisms and vectors of animal diseases are regulated by Part 122 of Title 9, Code of Federal Regulations. The regulation reads as follows: "No organisms or vectors shall be imported into the United States or transported from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia without a permit issued by the Secretary and in compliance with the terms thereof. As a condition of issuance of permits under this section, the permittee shall agree in writing to observe the safeguards prescribed by the Director for public protection with respect to the particular importation or transportation." To further clarify the regulation, an organism is defined as "All cultures or collections of organisms or their derivatives, which may introduce or disseminate any contagious or infectious disease of animals (including poultry)."

Importations: A permit must be obtained prior to the importation of any organism, even though the same organism occurs naturally in the United States. Tissues, blood, serum and other diagnostic specimens from another country must be accompanied by a permit. Such materials could unknowingly be infected with agents of exotic diseases and must be handled in a manner which prevents exposure of our domestic livestock. Tissue cultures of domestic animal origin from other countries are suspect for the same reason. Tissue cultures and cell lines

involving other animals are also suspect because it is usually found the growth media contains serum of domestic animals.

Interstate Movement: Issuance of a prior permit for movement of all animal pathogens occurring in the United States is not practical because of the enormous volume. USDA policy has been to require a permit for movement of pathogens which are enzootic, such as bluetongue virus, scrapie, and vesicular stomatitis virus, or of extremely high virulence, or for which there is a national disease eradication program (except tuberculosis and brucellosis at this time). Diagnostic specimens from domestic animals suspected of having a disease caused by one of these pathogens also should not be moved interstate without authorization.

Disease agents and vectors indigenous to all states and diagnostic specimens from animals known to be or suspected of being infected with such agents usually may be moved interstate without prior permit.

A newly isolated agent is allowed to move only under prior permit until its pathogenicity for domestic animals is determined. The necessity of retaining this policy was reinforced recently when Dr. Stewart Madin and Dr. A. W. Smith, University of California, Berkeley, California, isolated sea lion picornavirus tentatively designated as the San Miguel Sea Lion Virus (SMSV). This virus has characteristics identical to vesicular exanthema of swine virus, a disease which was eradicated from U.S. swine in 1956.

Permit Application: Application for a prior permit should be submitted on VS Form 16-3, "Application for Veterinary Permit to Import or Transport Organisms or Vectors." The application forms are available at area offices of Veterinary Services and can also be obtained by writing USDA, APHIS, Veterinary Services, Federal Center Building, Hyattsville, Maryland 20782.

USDA EASES RULES FOR HORSES RE-ENTERING U.S. FROM CANADA

Horses returning to the United States from Canada within 72 hours, will no longer have to be examined by a veterinarian at the port-of-entry under new rules of the U.S. Department of Agriculture.

The only restrictions under the new rules are that the horses must reenter the United States through the same port-of-entry from which they left, and they must be accompanied by the same health certificate issued before entering Canada.

The change coincides with the action taken last month to make it easier for Canadian horses to enter and leave the United States to participate in horse shows and similar events of short duration.

WORLD DISEASE REPORTS*

Foot-and-Mouth Disease

Country	Date 1973	New Outbreaks	Country	Date 1973	New Outbreaks
Angola	April-May	1	Jordan	May	2
Argentina	May	90	Kenya	May	7
Austria	June 8-28	244	Rhodesia	May	1
	June 29-July 19	88	Spain	April	40
Brazil	March-May	2116	Turkey	May	203
Columbia	April-June	14	USSR	April	81
Czechoslovakia	May	1	Venezuela	May	4
Greece	April	2	Peru	June	2
Hong Kong	April-May	11	Ecuador	June	1
India	March	63	Paraguay	Jan.-Feb.	12
Iran	May	351			

Indonesia: An outbreak of foot-and-mouth disease, type O, was reported in July, 1973, in a very limited location in the Jembrana regency in the island of Bali. Stamping out and mass vaccination measures were carried out immediately.

Viet Nam: In June and July 1973, foot-and-mouth disease outbreaks, type O, were reported. O-A-C vaccination is in progress.

Rinderpest

India	March	11	Dahomey	Dec. 1972	3
Jordan	May	1	Ghana	February	1

Contagious Bovine Pleuropneumonia

Angola	April-May	8	Ghana	February	1
Cameroon	Oct. 1972	10	Kenya	May	1
	Dec. 1972	2			
Dahomey	Dec. 1972	3			
	February	1			

Lumpy Skin Disease

Rhodesia reported 2 cases of the disease which occurred during May.

Sheep Pox

Egypt	June	5	Iran	May	55
India	March	23	Turkey	April-May	91

Dourine

U.S.S.R. reported 3 cases of the disease which occurred during April.

African Swine Fever

Angola	May	1	Portugal	May 16-June 15	12
Malawi	February	1	Spain	May 16-June 30	74

South Africa: Two outbreaks of African swine fever have been reported in Northern Transvaal. These outbreaks are within the declared African swine fever control area. Precautionary measures have been taken and pigs in the infected focus destroyed.

Teschen Disease

Czechoslovakia reported 2 cases of the disease which occurred during May.
(*Adaped from International Office of Epizootics Monthly Circular #319, 1973).

VESICULAR DISEASES IN THE WESTERN HEMISPHERE*

		Foot-and-Mouth Disease			Vesicular Stomatitis	
Country	Period 1973	O	A	C	N.J.	Ind.
Argentina	April	44	14	1	-	-
Brazil	Feb.-April	7	23	65	-	-
Columbia	May	-	-	-	2	-
Costa Rica	May	-	-	-	1	-
Chile	May	-	1	-	-	-
Ecuador	May	2	-	-	-	-
El Salvador	April	-	-	-	1	-
Mexico	April	-	-	-	3	-
Nicaragua	May	-	-	-	2	-
Paraguay	May	1	-	-	-	-
Peru	April-May	3	-	-	1	-
Uruguay	Jan.-April	18	2	5	-	-

(*Adapted from Pan American Foot-and-Mouth Disease Center, Epidemiological Report Volume 5, No. 10).

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