

ANIMAL PATHOLOGY

Cattle Disease War

A million animals are doomed to death in Mexico's all-out war against foot-and-mouth disease being fought with the aid of U. S. veterinary forces.

By WATSON DAVIS

► IF THE DEVIL himself went these days to central Mexico, he would be caught and slaughtered along with all the other cloven-hoofed animals.

For he would be exposed to the greatest danger to America's livestock industry—foot-and-mouth disease. The fate of all the cloven-hoofed animals that can catch and carry "fiebre aftosa," as the cattle disease is called in Spanish, is decreed to be death.

Mexico is waging a full-scale war against an enemy which is a virus. Rifle fire, chemicals, road blocks, jeeps and bulldozers, ambulances, tank trucks and sprayers are used in the fight. The Mexican army is in action.

In the midst of the territory invaded by the virus from abroad is the Mexico

City GHQ of the combined American-Mexican veterinary forces that are fighting the invasion with slaughter and disinfectants.

Seventy top U. S. veterinarians and engineers have joined the battle. More than 90 carloads of heavy machinery, power shovels, bulldozers, jeeps, trucks, tank trucks, sprayers and trailers have been rushed into the Mexican battle area from U. S. surplus war stores. American dollars, Mexican pesos and manpower from both countries are working side by side.

At present the war is a gigantic holding operation. A major effort is being made to keep the infection within the large area that it has already invaded. Barriers against its spread are flung across the country north and south. Veterinary scouts are alert to discover and swiftly

stamp out any outbreak of the disease in any other areas. American veterinarians and officials are particularly anxious to prevent at all costs any possible spread across the Mexican-U. S. border northward.

A finish fight of long duration is being organized. Only by ruthlessly wiping out all the cattle in an infected area, whether they are ill or not, can aftosa be eliminated. A million animals—two-thirds of them cattle—are in the area and all are doomed.

Vaccines, which are used in Europe where the disease is always present, cannot be used to eliminate the disease in Mexico. Extermination by death to all cloven-hoofed animals is the only method being used in the joint American-Mexican campaign. Anything less is considered by the experts as temporizing and too dangerous. Unless the disease is eradicated, sooner or later the cattle disease will spread to the whole of the North American continent, with disastrous food and financial effects.

A large new building, in the heart of Mexico City's older section, houses the joint Mexican-U. S. staffs. A northern Mexico stockman and lawyer, Oscar Flores, Mexican undersecretary of agriculture, is director of the aftosa organization, while Dr. M. S. Shahan, a top-flight scientist of the U. S. Department of Agriculture, is the co-director in charge of the American participation.

Millions Being Spent

Millions of dollars are being spent on equipment, supplies and personnel and as indemnities for cattle, hogs, sheep and goats slaughtered. The U. S. Congress appropriated \$9,000,000 for use up to July 1 of this year and the Mexican government is spending \$9,350,000 up to the same time. Before the fight is over it may cost \$250,000,000, an investment to save the U. S. \$12,000,000,000 cattle industry.

American government officials and stockmen are apprehensive and determined in the fight. Never before has the North American continent had such a widespread foot and mouth disease invasion. But there have been serious invasions before, notably the one that invaded 21 states and the District of Columbia in the United States in 1914. These were stopped by the same meth-



DISEASE WAR—In the fight against foot-and-mouth disease in Mexico all travelers must walk through sawdust wetted with caustic soda solution. Even a little Mexican girl must tread the disinfecting sawdust trail under the eye of a Mexican soldier.



ods—rigorous quarantine and killing of all exposed animals that can get the disease and can carry it—cattle, pigs, sheep, and all other cloven-hoofed creatures, domestic and wild.

Thousands of Mexicans, by day and by night, are reminded of the war on the cattle plague when they have to walk along a sawdust trail, saturated with lye, whenever they leave a quarantine zone. Every automobile, bus, and truck must ford a little pond of caustic soda solution. This disinfection method is an attempt to prevent the infected dirt of barnyards from carrying the very contagious disease to uninfected parts of the nation. Every road leaving Mexico City has aftosa quarantine blocks where, under the watchful eyes of soldiers, all who travel must be purified by getting out of their vehicles and trudging through the mushy disinfecting trough. Some of the country people walk through the caustic with their feet bare, since it is usual for them to go shoeless.

Much Soda Used

Large amounts of sodium hydroxide (caustic soda or lye) disinfectant are being used. It is sprayed freely on barnyards and cattle runs when extermination of the disease is undertaken. Already over 120 tons of the chemical have been imported from the United States. This caustic is the best disinfectant against aftosa and in most cases only a 2% solution need be used.

Such quarantine measures may prevent foot-and-mouth disease from spreading. But slaughter is the real weapon against the epidemic. Eventually all animals in the infected area that can get the

disease will be killed. Those that are not yet sick are being sent to market as fast as possible, at the rate of a couple of thousand a day. Fortunately human beings do not often contract the disease by eating meat or by contact with diseased animals. When they do, it is a very minor trouble.

Sick animals and those in contact with them are killed and buried in deep trenches, dug by bulldozers and power shovels. Owners are paid for the animals that have to be killed.

Payment a Problem

Indemnifying the owners is one of the difficult parts of the program. If too much is paid for sick animals, some unscrupulous cattlemen might find it profitable to spread the disease in hope of collecting more than the animals are worth. If too little is paid, the owners might not let them be killed. They might hide them in the mountains, where they would remain a danger.

No animal is paid for until it is killed and buried. Wealthy ranchers have seen whole pedigreed herds driven into mass graves and shot. A poor peon will lose his yoke of oxen used for plowing.

Paymasters carry hundreds of thousands of pesos in cash to where the killing is done and they pay off in cash on the spot. Remodeled U. S. army ambulances with their red crosses painted out are used as paymaster cars. Some of the Mexican farmers have had put in their hands more cash than they had ever seen before.

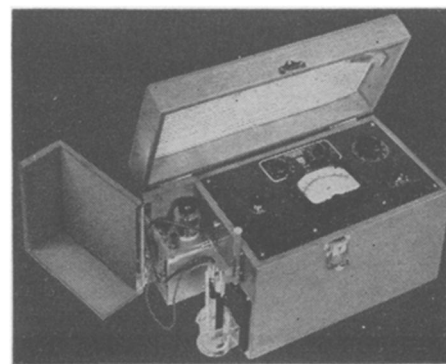
If the oxen that plowed the land are killed, crops can't be raised. Cash can't raise food. So mules are being bought

in the United States and rushed into Mexico to replace the slaughtered oxen. Twenty thousand mules are on the way and double or triple that number will be needed. Mules are not the same as oxen, but mules, like horses, don't get aftosa. The Mexicans will change their ways and use mules. They may raise more crops as a result. For mules are more active animals and work faster.

May Modernize Farming

The aftosa calamity may bring about a revolution in Mexican agriculture. Tractors, drawing modern plows, may replace oxen in some cases. Power farming may directly supersede cultivation methods that were outmoded in the middle ages. A disease disaster may become a blessing in disguise, although the campesino who has his little plot of land, thanks to the Revolution, can not be expected to think so.

There will be some unusual hunting in Mexico in the aftosa infected regions. Wild animals that can contract the disease must be eliminated. Deer, antelope, and wild pigs or peccaries must be



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Catalog E-96(2) gives further details.



Jr Ad E-96 (25e)

Do You Know?

Less than half as much *wood* is used in America for fuel as 50 years ago.

Otters sometimes take over *burrows* dug by muskrats or beavers, some naturalists claim.

"Radiant heating" of homes means that *warmth* is supplied from steam or hot water pipes built into the floors or sidewalls.

The Keystone or Treaty *oak* at Jacksonville, Fla., is so large that 4,000 persons can stand in its shade at noon, it is estimated.

New fountain pen *ink* writes dry by vertical penetration into the paper and not by evaporation or drying of the solvent, the makers claim.

Television broadcasts are available today to some 25,000,000 people living in eight metropolitan areas; by 1948 they will be available to an additional 10,000,000.

The American Great Lakes, covering 95,000 square miles of deep water, never freeze over, but each winter heavy ice forms along shore lines, in places several miles in width.

In India, a million acres of *safflower* are grown each year; the thistle-like flower is used to make a yellow dye, the leaves are used in salads, and oil from the seeds as food and in paint.

Many new *insecticides*, germicides and fumigants have names composed of initials such as DDT; they are confusing but much simpler to the layman than their long and complicated chemical names.

Corn derivatives are used as principal *ingredients* in making candy, jellies, preserves, baked goods and other food products; they are used in brewing malt drinks, finishing textiles and in adhesives and soap.

The wartime Emergency Plant Disease Prevention Project was handled by 44 experts in the field who traveled almost constantly, investigating conditions to offset any attempts at sabotage by spreading *plant disease*.

wiped out. Airplanes will be used to locate the wild animals to be hunted, as well as domestic cattle that may have strayed into the wilderness and hills.

Meat is plentiful in Mexico now, but in coming months, as the aftosa war continues, it will become scarce. Just now cattle are being rushed to the market. Officials are hopeful that Europe can be supplied with some of the Mexican meat, since foot-and-mouth disease is already widespread there. Canning of meat in Mexico may be undertaken to save some of the excess that must be either used or wasted.

American stockmen and government officials want the United States to do more than cooperate in the actual aftosa war in Mexico. First of all, perhaps, they would like to see a good, tight, woven wire fence along the Mexican-

U. S. border that would keep hogs, cattle and people from coming over unannounced, carrying with them the dangerous foot-and-mouth and other infections.

They want to see research work on foot-and-mouth disease undertaken on a major scale in order to be better prepared if the disease can not be held in check in Mexico and does spread northward. To prevent any accidental spread, these investigations must be conducted outside the western hemisphere in countries that already have the disease.

Meanwhile, the best of our fighters against animal diseases, under the direction of the famous Bureau of Animal Industry of the U. S. Department of Agriculture are at the front in Mexico. And there are alert veterinary reserves patrolling the border.

Science News Letter, July 12, 1947

MINERALOGY

Metal Resources Limited

Known deposits in U. S. are expected to be gone in from 10 to 75 years. Present petroleum supplies will last only 15 years. Bituminous coal will last for centuries.

► AMERICA has plenty of coal to ship abroad, if miners continue to work. But the natural supply of other American mineral resources is decidedly limited, as for example, petroleum fuels.

What we can spare, what we must hold for the future and what we must import is becoming a prime national question.

There is plenty of uncertainty relative to this nation's mineral reserves.

A bipartisan committee of experts is being urged to study the situation. It will have a double-headed job: 1. To determine which and how much of the minerals produced in the United States can be spared for other countries, and 2. What foreign minerals, and in what quantities, should be obtained from abroad and stockpiled for future emergencies.

Undoubtedly there are vast deposits of minerals in America as yet undiscovered. At present, however, only known deposits can be considered in determining both exports and import needs. In the last report of the U. S. Bureau of Mines it is urged that an inventory job on a national scale be undertaken at once. It is a survey that would take years to complete. Every known scientific method of determining

mineral deposits would be employed, both in continental United States and in Alaska.

An idea of the present situation can be obtained from an unpublished report made earlier this year to Congress by the U. S. Bureau of Mines and the Geological Survey. It contains estimates of the 42 most essential minerals in known reserves. Discovery of new deposits, however, would change the picture.

Among metals, based on the average annual production and consumption during the ten years ended in 1944, magnesium, molybdenum and titanium exist in plentiful quantities. Titanium oxide is widely used as a pigment in paint; molybdenum is important in steel alloys.

Iron ore is sufficient for 76 years. Other estimates are for a greater period, but it depends upon improved methods of reducing ores of low-grade now unused. Domestic bauxite for aluminum will last 23 years. With new methods of obtaining alumina from other clays, the supply of aluminum is assured for a much greater period. There is a 50-year supply of arsenic and a 36-year supply of bismuth. (*Turn to page 30*)