



IMMUNIZING CHICKENS—A Chinese farm wife holds a frightened hen while the veterinarian inoculates it against one of the worst known enemies of chickens, Newcastle disease.

than 5,000,000 tons a year.

Foot-and-mouth disease affords still another example of the value of international cooperation in fighting animal ills. Prevalent in Europe and South America, this debilitating infection of cattle was kept off the North American continent until recently, when it became established in central Mexico. Naturally, cattle interests in the United States have become very much alarmed.

Kill-And-Bury Method

When it became evident that the complete kill-and-bury method of suppressing the disease, successfully used against two or three outbreaks on American soil, was not going to work under the quite different conditions obtaining in Mexico, the fighting forces fell back on the vaccination method. This time it is a Swiss vaccine, improved by American and Mexican scientists, that is being injected into the cattle south of the Rio Grande.

Brucellosis is a disease complex that afflicts both domestic animals and human beings, so the international attack on it is being conducted on both the veterinary and the medical fronts. It gets its name from that of the causal germ, known to bacteriologists as *Brucella*. This is an exceedingly small organism, barely visible under the highest powers of the microscope; it is intermediate in size between "regular" bacteria and the microscopically invisible viruses. Among animals, brucellosis is widely known

as contagious abortion, from one of its commonest and costliest manifestations. In human beings, whom it "drags down" but seldom kills, brucellosis is called Malta fever and undulant fever. Brucellosis is being fought in both animals and man with vaccines and antibiotic drugs.

Newcastle disease, so called because it was first detected in Newcastle, England, is one of the worst of known enemies of chickens. It is present in practically all parts of the world, including the United States. Best known weapon against it is a vaccine; American workers have developed a new and reportedly highly effective one, which is being used in other lands by FAO workers.

Swine Disease

One of the strangest yet most encouraging stories of this veterinarians' war for the saving of human lives comes from iron-curtained Czechoslovakia. Pigs were dying by the tens of thousands in the province of Teschen, from an apparently new virus malady. It was accordingly given the name, Teschen disease. Czechoslovakian scientists are working on a preventive virus, but in the meantime the only practical means of checking its spread is ruthless liquidation of all herds of swine in which it appears.

What should interest medical men most, however, is the strange similarity between Teschen disease and human poliomyelitis. Both are virus-caused. Both bring about a

muscular paralysis. Of course, afflicted pigs die; for them there are no iron lungs. But in dying they may be able to give some information about the nature and course of human poliomyelitis, hitherto unobtainable because of the lack of suitable experimental animals on which to conduct tests.

Dr. K. V. L. Kesteven, FAO adviser on animal diseases, believes that if the problem of Teschen disease can be solved, conquest of polio will be speeded. To Czech farmers losing pigs this may be scant consolation. But it may eventually save the lives of many little children.

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CHEMISTRY

Gammexane Smoke Found Not So Good for Paper

➤ SMOKE of Gammexane, or benzene hexachloride, one of the more promising of the new synthetic insecticides, isn't good for paper, S. Chakravorti of the research laboratory of the National Archives of India states in the journal, *NATURE* (April 16).

Its use was proposed as a means of getting rid of insects that infest places where valuable papers and books are kept, and that sometimes do a good deal of damage to important records. However, because nothing was known about its effects on the paper itself, Mr. Chakravorti decided it would be wise to make some tests before putting it into general use. It turned out to be a wise precaution.

Two-ounce Gammexane smoke generators were used in closed rooms where paper samples were exposed. After three days the samples were tested, and were found to have lost from one-half to nearly three-fourths of their tensile strength and resistance to breaking on being folded repeatedly.

Some of the samples were artificially aged by heating for three days at boiling temperature. Most of them yellowed, and practically all of them became less resistant to folding. One especially fine all-rag paper, used in repairing ancient manuscripts, and normally able to withstand more than 4,000 foldings before breaking, after the Gammexane-plus-aging treatment, broke the first time it was folded.

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