

CHINESE-AMERICAN
JOINT COMMISSION ON RURAL RECONSTRUCTION

Animal Industry Series : No. 1

THE RINDERPEST EPIDEMIC OF 1949-50
TAIWAN (FORMOSA)

By

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TAIPEI, TAIWAN, CHINA

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The Rinderpest Epidemic of 1949-50

Taiwan (Formosa)

Historical Background

Wherever there is any large number of livestock there is bound to be disease. This is especially true in an area where there is a lack of adequate, scientific disease control. This was the situation in Taiwan when the Japanese assumed control in 1895. Most of the livestock had been brought in by the Chinese from the mainland over a period of two or three hundred years, and along with these animals various diseases had been imported. Of these, rinderpest was perhaps the most serious.

For the first ten years of occupation very little effective work in the control of this disease could be carried out due to the difficulties in establishing complete control of the country, the almost entire lack of any system of disease control and the shortage of trained veterinarians. Sick cattle were carelessly moved from one place to another and the meat from animals which died of disease was sold for food, thus spreading the virus to other places.

By 1906 the Japanese had developed the beginnings of disease control in the different local governments, had trained more veterinary technicians and had invited Dr. Tokishige, a veterinary specialist, to take charge of this work. Anti-rinderpest serum was introduced at this time to be used in controlling areas where outbreaks occurred. Quarantine measures were gradually enforced, including the incineration of infected animals.

Along with the manufacture of anti-rinderpest serum, research work was conducted at Pingtung and Taipei; these centers were later combined in the Provincial Veterinary Serum Institute at Tamsui.

The worst areas for the epidemic were on the west side of the island especially in Kachsiung and Tainan Prefectures. However, in 1916 it invaded Taitung Prefecture claiming a total of 5,073 head of cattle in three years, but never invaded Hualien Prefecture. The years 1906, 1908 and

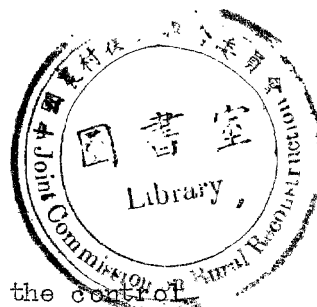
and 1917 were the worst for the whole island but from 1918 on, the control measures were progressively successful so that in 1920 only five cases were discovered and no more were found thereafter. A total of 47,854 head of cattle were lost during the 25 years, of which 18,305 were in Kao-hsiung Prefecture. In 1920 the government erected a stone tablet in the Pingtung City Park to commemorate the eradication of rinderpest in Taiwan.

The Rinderpest Outbreak in 1949

Unfortunately the disease was inadvertently imported again in 1949. On October 13th, four cattle at the dairy farm of the Animal Products Company, Chungshan District, Taipei, suspected of having this disease, were reported to the Department of Agriculture and Forestry. A careful investigation was made immediately and a strict quarantine established around the area after it was found that 22 head of dairy cattle had already died within a very short time. As soon as the disease was actually identified as rinderpest all of the cattle (73 head) left on the dairy farm were slaughtered, incinerated and buried.

During this time J.C.R.R. had wired to their Chengtu Office where a program of rinderpest vaccination was underway, asking that lapinized virus and a veterinary be sent immediately. The office of the Food and Agriculture Organization in Bangkok was also requested to forward some lapinized virus. It was due to their work with rinderpest vaccines in East Asia during the previous two years that made it possible to secure tested strains of lapinized virus from three different centers (Chengtu, Hongkong and Bangkok) within a very short time after the outbreak was discovered.

As no veterinary experienced in combatting rinderpest could be secured from either Chengtu or Bangkok, it was most fortunate that Dr. Robert C. Reisinger arrived at that time. JCRR had started negotiations for securing a qualified veterinarian to take the place of Dr. Hugh N. Spears, who returned to England about the first of June, but it was not until the end of October that Dr. Reisinger was secured to fill the post of JCRR veterinarian. He arrived in Taiwan



on November 22 just in time to take charge of the control of the outbreak.

With the assistance of veterinaries from the Provincial Department of Agriculture and Forestry, he learned that shortly before the sick cattle were discovered at the dairy farm, a number of hogs imported from Hainan to Keelung had been transferred to the dairy farm where they were held for a time before they were slaughtered. Before the war the quarantine service would have isolated these hogs at Keelung for veterinary examination before they were moved inland, which presumably would have prevented the introduction of the disease. However, since the surrender of the island this quarantine service had not been functioning so that there was no effective protection. By the time that the disease was discovered the hogs had been slaughtered, making it impossible to determine whether they had been infected with rinderpest, but the circumstantial evidence seemed quite conclusive. Hogs rarely succumb to rinderpest, but it was discovered by Dr. Tokishige and also by others# that hogs are susceptible to rinderpest virus; that they will react to it and may even carry the virus. As rinderpest is known to be epidemic in Hainan, there can be little doubt that the virus was brought with the hogs slaughtered at the dairy farm and that cattle which had never been exposed to the disease were immediately susceptible.

Note: Special Pathology and Therapeutics,
Kutyra, Marek and Manning 1949
Vol. I. pp. 262.

Control Measures

After the veterinary service of the Department of Agriculture had autopsied some of the diseased animals and determined that the cause was really rinderpest, it ordered the slaughter of all the cattle on the dairy farm - about 90 head in all - disinfected all of the barns and yards and established a quarantine area around the farm within which all of the cattle were vaccinated. These measures appeared at first to be effective as there was no evidence that the

disease had spread beyond the farm until the early part of December.

In the meantime Dr. Reisinger had arrived and when sick cattle were reported on December 10th it was definitely established that the disease had spread to several different areas in Taipei Prefecture. A careful inquiry was made to trace the chain of the spread of the infection. After considerable difficulty it was learned that during the time the quarantine was being established at the dairy farm, but before all of the cattle had been destroyed, a farmer from a nearby village had brought his buffalo to be slaughtered. He was told that there was a quarantine and no cattle could be slaughtered, so after spending the night he returned to his home with his buffalo. Not long afterward, this animal became sick so that he and his neighbors became alarmed and moved several of their animals to other places. The buffalo died and was reported, but by that time the infection had spread to several places. This was the only verified case causing the spread of the virus, but there were probably others before the strict quarantine was established.

By this time JCRR in cooperation with Dr. C.C.Hsu, Commissioner of Agriculture were endeavoring to secure more accurate and immediate reporting of all diseased animals. The Provincial Government alerted all the local police in this reporting and prohibited the slaughter and the movement of all cattle, except the draft animals which were checked at quarantine stations on the highway for vaccination. Although the outbreak had occurred in Taipei Prefecture only, a protective belt was established across the southern part of the two northernmost prefectures by vaccinating 90% of the cattle in a mile-wide strip from one side of the island to the other. Whenever a case of rinderpest was located the animal was destroyed, (if not already dead) burned and buried and a protective area was promptly established, by vaccinating all cattle within the immediate vicinity of infection, then giving special attention to surrounding areas.

Very soon after the recurrence of the epidemic, the Department undertook to indemnify the owners for the loss of their cattle due to death or slaughter. If the owner of

a sick animal reported the fact immediately to the authorities, he was entitled to an indemnity of 80% of the prevailing market rate for such an animal. (half of the indemnity was paid by JCRR and half by the Department). This, together with an intensive educational program succeeded in arousing the farmers to the danger of the epidemic and secured active cooperation. Illustrated posters, stereopticon lectures, newspapers, radio and official proclamations were all used throughout the area. During all of this time a systematic program of vaccination was being carried out with the objective of vaccinating all cattle in the two northern Prefectures. Altogether a total of 62,876 cattle were vaccinated during the campaign which represented 87.43% of all cattle in the area. The mopping-up work was somewhat slower than the initial phases, but no verified case of rinderpest was reported after the 24th of January and by February 17, 1950 the Department of Agriculture and Forestry declared the emergency was over and withdrew the quarantine regulations. However, all government veterinarians continued to be on the alert for any suspicious cases.

Conclusions

Great credit is due Dr. C.C.Hsu, Commissioner of the Department of Agriculture and Forestry for the continuous, effective support which he gave to Dr. Reisinger who directed the control measures from the day he arrived until the emergency was considered past. Daily meetings on the progress of the control measures were held in Dr. Hsu's office. It was also due to his influence that the local government officials and police administration were brought into the campaign.

Even this would not have been sufficient to secure the needed cooperation had it not been for the fine work of the JCRR Information Office in providing posters, press releases, film strips and other material; and also the fact that an indemnity was promised for the loss of animals whose disease was reported to the authorities by the owner who also agreed to comply with the prescribed sanitary measures in-

cluding the incineration of the carcass.

Dr. Reisinger's experience in combatting rinderpest on the mainland while serving with UNRRA, and in Abyssinia while serving with the Food and Agricultural Organization, enabled him to direct the control measures with efficiency and success. The fact that an epidemic, which had mortally affected a herd of 90 dairy cattle within a matter of days, was completely eradicated within ten weeks from an area which had not been exposed to rinderpest for thirty years, is no small achievement.

JCRR financial support to this program was US\$11,377 which was largely for the travel and per diem of technicians. The JCRR share of the relief paid to the owners of cattle which died or were slaughtered was US\$4,032 which is included in the above sum. Other items included the cost of the rabbits and other biological material and publicity.

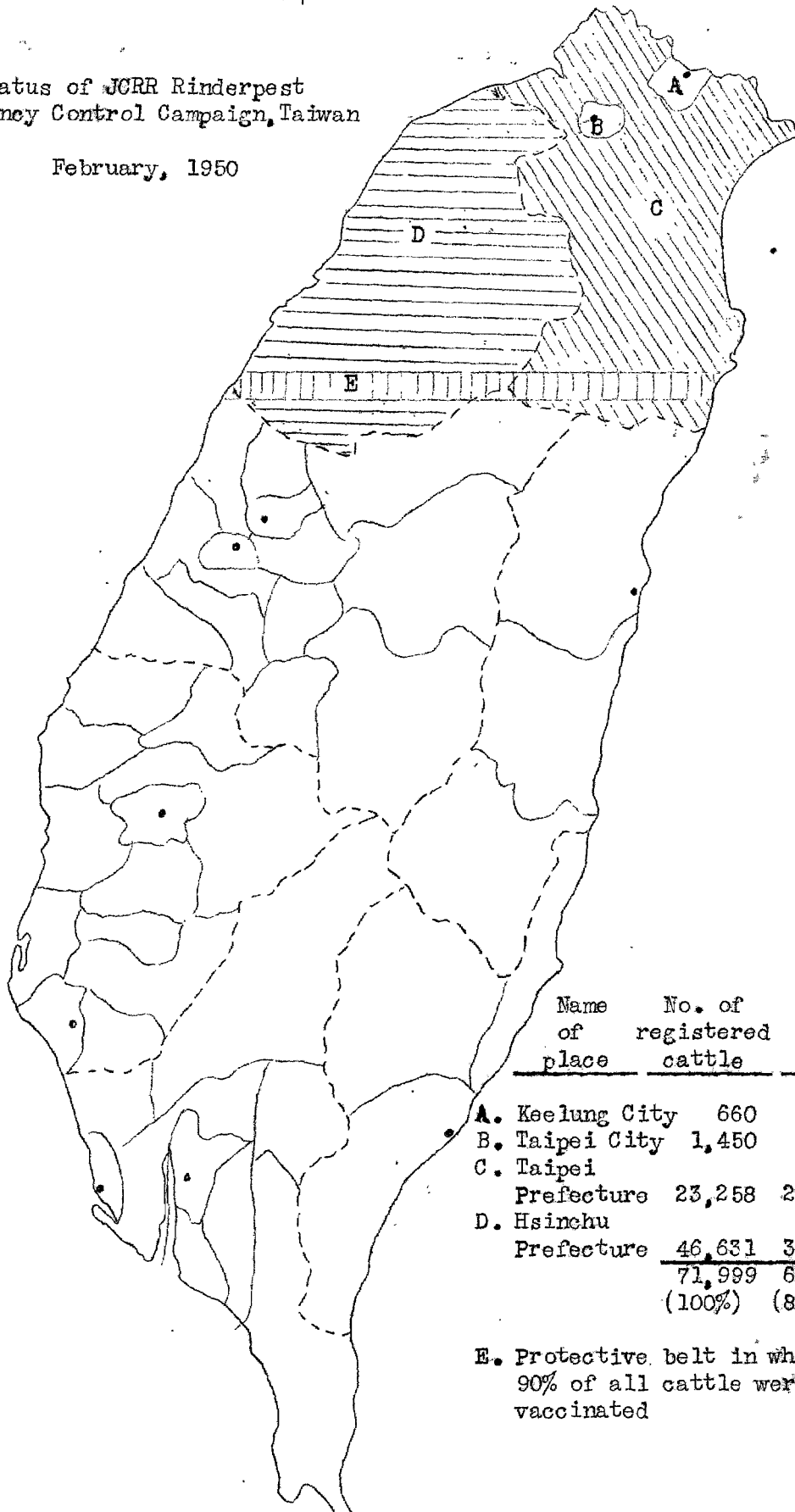
A total of 126 head of cattle died or were slaughtered due to the infection of rinderpest. An additional 104 head of cattle died following vaccination. Some of these may have been infected with rinderpest at the time of vaccination which would tend to hasten the course of the disease. The owners of all of these cattle were indemnified.

The whole campaign serves as a striking illustration of the way in which animal disease may be controlled and even eradicated. For an effective program there should be a minimum of one experienced veterinarian (depending on the area involved) in charge, supported by a staff of technicians well trained in veterinary practice, with facilities for producing an adequate supply of potent biologics, and active cooperation by the government officials so that the area affected may be absolutely under the control of quarantine regulations.

The following map shows the area affected and the statistics of the control work.

Status of JCRR Rinderpest
Emergency Control Campaign, Taiwan

February, 1950



Name of place	No. of registered cattle	No. of Cattle vac- cinated
A. Keelung City	660	660
B. Taipei City	1,450	1,450
C. Taipei Prefecture	23,258	20,920
D. Hsinchu Prefecture	46,631	39,846
	<u>71,999</u>	<u>62,876</u>
	(100%)	(87.43%)

E. Protective belt in which
90% of all cattle were
vaccinated

References and Source Material

1. Summary report by the J.C.R.R. Office of Information and Education, February 1950.
2. Article printed in the publication of the Taiwan Animal Products Company, May, 1950.
3. Rinderpest Control in Taiwan, Published by the Department of Agriculture and Forestry, Taipei, Tamsui, November, 1950.
4. Special Pathology and Therapeutics, Hutyra, Marck and Manninger, pp, 256 and following.



Dr. Reisinger of J.C.R.R. and Dr. S. L. Huang of P.D.A.F. discuss a recent victim of rinderpest.

Farmers bringing their cattle for vaccination by P.D.A.F. veterinary Wang (center).





Farmer (left) receiving indemnity from P.D.A.F. and J.C.R.R. representatives for buffalo which died of rinderpest.

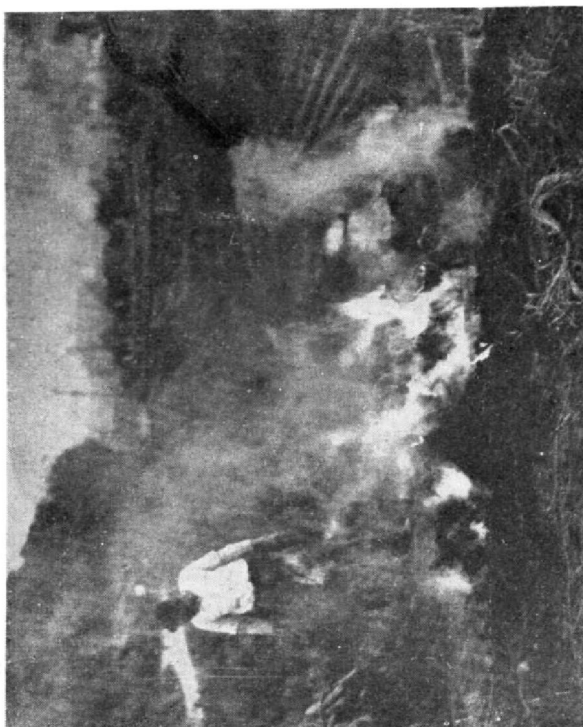
Dinner party celebrating official termination of the rinderpest emergency. Silken banners were presented.

Left to right standing are:-

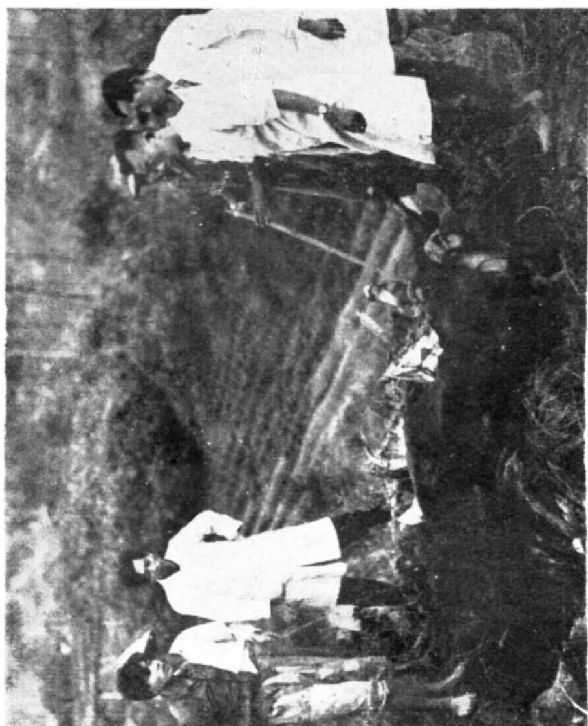
Mr. K. S. Wei, Technical Commissioner, P.D.A.F.
 Dr. Robert Reisinger, Veterinary Consultant, J.C.R.R.
 Dr. C. C. Hsu, Commissioner, P.D.A.F.
 Mr. J. A. Hunter, Chief, Animal Industry Division, J.C.R.R.
 Dr. S. L. Huang, Veterinary, P.D.A.F.



Carcass prepared for incineration following autopsy of a rinderpest victim.



Carcass practically consumed after which it will be covered with quick lime and buried to prevent spread of virus.





Stone column erected by the Japanese in Pingtung City Park commemorating the eradication of rinderpest in 1920.

Stone column erected at the Provincial Veterinary Serum Institute in Tamsui to commemorate the eradication of rinderpest, 1951.

The staff of the Animal Industry Division display a silk banner received during the unveiling ceremony.



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