

his arrival Gilruth had recognised the presence of anthrax, the first cases being seen in the Auckland Province. During 1899 four outbreaks occurred, one in the Bay of Plenty and three in Taranaki. Even earlier than this Gilruth had concluded that the infection was being introduced in imported bone manures, either green-bone manure or that which had not been sufficiently sterilised. An extract from his report of 1900 reads: "We have come to the conclusion that the introduction was due to the importation by some means of infected bones, for the following reasons:—

1. The outbreaks occurred on turnip paddocks;
2. These paddocks formed only a small area of the farm;
3. The stock on other paddocks on the same farms were unaffected, unless indirectly from the turnip paddocks;
4. All these paddocks had been recently dressed with manure containing a proportion of bones;
5. It was only when the turnips were eaten fairly well down that the disease appeared, that is, when it was possible that the soil had gained entrance to the system with the feed; and
6. The manures were all supplied by the same firm, which is one that

imports large quantities of Australian bones.

"Raw bones imported from Australia are landed in sacks, taken to certain premises, where they are sterilised under pressure at a temperature of 250° F. for two hours. The introduction of anthrax, however, proves that these precautions have been insufficient."

From 1900 to 1907 outbreaks of anthrax were reported from widely-separated parts of the North Island, and an outbreak was confirmed in Southland in 1903. Meanwhile regulations prescribing specific sterilisation (281° F. for three hours) of all bone manures from India and Australia had been introduced, a New Zealand officer being stationed in India to supervise this procedure. Later on import of bone manure from India ceased. Concurrently with this, cases of anthrax in New Zealand decreased, its occurrence eventually disappearing altogether. For practically 20 years following 1907 no anthrax was recorded, which can definitely be attributed to the action taken regarding importation of bone manure. Of later years two outbreaks in the Auckland Province could be regarded as recrudescence of infection on farms where the disease had occurred previously. The last occurrence of anthrax took place in 1944, on a dairy farm in the

Manawatu district, resulting in the death of 13 cows. In this instance the actual origin of the infection has not been satisfactorily determined.

### *Swine Fever*

The virus diseases present the most formidable difficulties in quarantine control. The presence of swine fever was recorded by Gilruth between the years 1895 to 1902. For 30 years following New Zealand enjoyed complete immunity from this serious disease of pigs. In 1933, however, an outbreak occurred among garbage-fed pigs in the environs of Wellington. The following extract from the writer's annual report of 1933 summarises the features of the outbreak:—

**Swine Fever:** An outbreak of this disease during the year on some farms in the Johnsonville and Lower Hutt districts, near Wellington, has to be recorded. A brief history of the outbreak is as follows: During May investigation of some reported mortalities in pigs in the Johnsonville district led to the discovery of the existence of swine fever, confirmation of the disease being established by blood-transmission tests carried out at the Wallaceville Laboratory. As a result of intensive inspection of all farms in the district, further unreported centres of the disease

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