

It was not until the death of the guinea-pig that we expressed a decided opinion as to the nature of the disease from which the rat suffered, although the microscopical and macroscopical examination of the rat left no reasonable doubt that it was bubonic plague. However, the results of the experiments on the rat, the typical *post-mortem* appearance of the guinea-pig, the period which elapsed between inoculation and death, the characteristic appearance of the bacilli, and the characteristic appearance of the cultures, so far as we were allowed to examine them, were compatible with absolutely only one conclusion—viz., that bubonic plague existed amongst the rodents in Auckland. It is interesting to note at this stage that these experiments were made before any decision was announced, in view of the remarks which have been since made regarding our so-called hasty diagnosis, and it is amusing to recall the charming pertinacity of the reporters of the Auckland Press in their endeavours to elicit a definite statement in those days when experiments were being made.

As it has been freely iterated by the Auckland Press and public that the first affected rodent, that just described, came from the South in the s.s. "Flora," which at that time happened to be berthed further along at the same wharf, it may be well to here state that, although we thoroughly cross-examined all the men who had anything to do with the killing of the rat *immediately* after the occurrence, there was no mention even of a *possibility* of any connection with the "Flora." Yet nearly two months afterwards this contiguity of the "Flora" leads gradually up to the actual statement that the rat in question was *known* to have come from that ship.

But even admitting this for a moment, it could not account for the other plague-infected rats which were found on the following days and brought to us by the Harbour Board officials, and ultimately duly chronicled in the Press.

On the 20th, the day succeeding that on which the first was found, a rat was found dead in the afternoon in a shed (F) on another wharf altogether, and brought to us for examination by the Board's official rat-catcher. This was a half-grown animal. There were no external glands swollen. The liver was enlarged and pale. There was a large quantity of sero-sanguineous peritoneal fluid present, spleen dark and enlarged, and intestines congested. The spleen proved to contain, when smearings were examined under the microscope, large numbers of bacilli characteristic of those of plague, many showing distinct bipolar staining. The shed in which this rat died was that in which the sacks from the Pacific islands were found and destroyed a week previously.

On the 23rd four rats were brought for examination, results of which were as follows:—

(3.) Large brown rat, which emerged from shed which was undergoing fumigation and died afterwards. Small bubo left crural region; spleen and liver enlarged; the spleen containing a number of typical bacilli. Death probably hastened by effects of fumigation.

(4.) Small black rat from shed F. Bubo in left subscapular region; spleen enlarged and black; liver congested and enlarged; typical bacilli in spleen, bubo, and liver.

(5.) Small black rat from Quay Street Wharf. Liver and spleen slightly enlarged, the latter very dark in colour; bacilli found in spleen.

(6.) Small brown rat. Had been injured. Result of examination, negative.

*Note.*—Quay Street Wharf is distinctly separate from new Queen Street Wharf, and is distant about five minutes walk from where the first rat was found.

On the 26th two rats were brought:—

(7.) Brown rat found in shed F. Crural bubo; spleen enlarged, &c.; bacilli present in spleen, &c.

(8.) Black rat, Quay Street Wharf: Similar to above on *post-mortem* examination.

(9.) Brown rat found dead in street. Death due to injuries; no bacilli present in spleen or tissues.

Besides the above, several rats were brought in which putrefactive changes were too far advanced for any definite decision to be arrived at regarding cause of death.

*West Coast of North Island.*—While in Auckland Dr. Valintine, of Inglewood, advised us that a considerable mortality among rats had been observed in the district around Mokau. At our request Dr. Valintine kindly undertook the long journey to the locality in question, and although the deaths had diminished greatly, he succeeded in securing two specimens, which he carefully preserved for examination. At the same time he elicited some definite information regarding the phenomenon. It appears that the rats were migrating in a large body from the north, that they suddenly invaded the district in question, and almost as suddenly disappeared, but many sick and dead rodents were left in the train of the main band. Numbers of dead rats had been observed in both banks of the Awakino River and along the seashore. The visitation appeared first about the middle of May, and by the end of the month had almost disappeared. The animals evidently came from the bush lying to the northward. One individual assured Dr. Valintine he had counted over a hundred dead rats in two days. An examination of the two rats secured by Dr. Valintine disclosed the following:—

(1.) Found dead. No bubo. Spleen enlarged, other organs about normal size, though all considerably altered by putrefactive changes. The spleen and blood contained numbers of micro-organisms with similar microscopical characteristics to those of plague bacilli; many putrefactive bacilli present.

(2.) Caught and killed. *Post-mortem* examination showed no abnormality, and no bacilli could be found when tissues were examined microscopically.

As these rats had been *in toto* preserved in formalin solution no cultivations could be made. I requested Mr. F. E. Orbell, Stock Inspector for the Taranaki District, to visit Mokau and endeavour to secure specimens of the spleen-pulp of affected rats for experiment and examination. He did so, and secured specimens which he forwarded. The spleen-pulp showed microscopically bacilli similar to those of plague, and when a small quantity of the contents of the pipette was introduced under the skin of rats death resulted in from three to five days, the *post-mortem*