

Experiments.

A large number of various kinds of rats, black, brown, and what were apparently crosses, were experimentally fed by saturating food such as bread in dilute and even in pure cultures. Many died, the time elapsing being from two to twenty-eight days after feeding; but, though from two to four were as a rule fed at each experiment, each rat being in a separate hutch, there was no uniformity in the results.

For example, four rats were fed with the same doses of the same culture. Two were found dead on the seventh day, but microscopical examination failed to demonstrate the presence of the bacillus, and culture-media inoculated from the system and blood remained sterile; while the remaining two both survived till the twenty-seventh day, with similar results *post-mortem*. Yet on the same day that these were fed experimentally a number of portions of bread saturated with the same culture were placed in various parts of the outbuilding where mice and rats had been frequently seen; and a few days later they disappeared, so far as could be observed, although no dead animals could be found. Whether the rats and mice died, or were only sick and migrated, cannot be stated, though the latter is probably the correct conclusion, for later a reappearance of the rodents occurred, and further attempts did not have the same results. Again two animals were fed: one remained alive for weeks; the other died on the fifth day, with general symptoms of illness, the bacilli being isolated from the blood and spleen.

Rats, however, are very unsatisfactory animals with which to experiment. Even in health they remain bunched in a corner of the hutch, and very frequently die without apparent cause if confined. Feeding even on the bodies of dead rats I did not find give satisfactory results, and contact experiments always gave negative results. Common mice I found even more unsatisfactory, death generally resulting in a few days from confinement. I waited several months for the arrival of the white mice I had ordered when in London, but through some misunderstanding there they only arrived a few weeks ago.

Two large experiments were tried in meat-works. Quantities of bouillon culture prepared direct from the original cultures were sprinkled over portions of meat, bread, &c., the baits being left in likely places. During the night this food was all eaten by the numerous rats infesting the buildings. As a result, however, no diminution in the number of rats was observed, and there was no indication of any epidemic having occurred.

So far as my experiments here are concerned, the indications are that as a means of extermination this method is not satisfactory. It must be admitted, however, that the delay necessitated before experiments could be conducted, the transmission of the original cultures, &c., militated greatly against satisfactory results being obtained, hence deductions are not very reliable.

GENERAL SPECIMENS.

Fifteen samples of urine for various examinations were received. The suspected conditions were tuberculosis, tube-casts, pyo-nephritis, &c. The remainder of the materials submitted was of many varieties, such as suspected gonorrhœal discharges, vomit, fecal discharges, discharges from wounds, expectorations (one of which contained typical actinomyces nodules), a large filter, and, lastly, what was termed a sanitary coffin. On all these specimens special reports have been submitted to you, but none are of such importance as to be dealt with in detail here.

In conclusion, I wish to add a word of recognition of the aid I have received from my assistant, Mr. G. H. Barker, F.R.M.S. Much of the preliminary work in examinations has naturally fallen to him, and in addition he has had to prepare for distribution to different officers and others quantities of media, such as agar, gelatine, and particularly serum, the preparation of which requires particular care and patience.

The Chief Health Officer.

J. A. GILRUTH, M.R.C.V.S., Pathologist.

APPENDIX D.

ANALYSES BY THE COLONIAL LABORATORY FOR THE PUBLIC HEALTH DEPARTMENT.

SIR,—

Colonial Laboratory, Wellington, 28th June, 1902.

I have the honour to report on the analyses made in this laboratory for the Department of Public Health from the 15th November, 1901 (the date of my appointment as Analyst to the Department), to the 31st March, 1902. The nature and number of these analyses are shown in the following table:—

Nature of Samples.							Number of Samples.
Potable waters	...	...	...	...	...	...	14
Mineral water	...	...	...	...	...	...	1
Urine	...	...	...	...	...	...	1
Beach-shingle for sewage contamination	...	...	...	...	...	...	3
"Preservaline"	...	...	...	...	...	...	1
Bread	...	...	...	...	...	...	1
Total	...	...	...	...	...	...	21

Of the potable waters, eleven were of good or fair quality for household purposes, two were of inferior quality, and one very impure.

I have, &c.,

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Analyst to the Department of Public Health.

The Chief Health Officer, Department of Public Health, Wellington.

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