

In the first case two piggeries had been run in connection with two dairies on the same farm for two years without any trouble among the pigs. These piggeries were situated alongside their respective dairies with only very short lengths of piping to convey the milk. Early in 1935 a new pipe-line 16 chains long was connected with one dairy and the pigs moved out on to clean ground at this distance. Numerous deaths occurred among the young pigs shortly afterwards. During the ensuing winter molasses and water (pumped through the same pipes) were fed to the pigs, very little milk being available, and the remaining pigs did quite well. When milk again became plentiful in the spring and was pumped in quantity through the pipes about forty to fifty pigs died. The symptoms noted were: pigs went off their feed, got up on toes with stilted gait, showed swelling of joints and lameness, became unthrifty, half-grown pigs failed to grow, young pigs died, while sows (suckling young) were mostly unaffected. During this period the pigs at the other shed (short pipe-line) were unaffected. No evidence of ordinary infectious disease could be found. Analysis of organs of a young pig that had died indicated that the zinc in the liver was more than ten times the amount normally present. Bones from this pig were found to contain 0.074 per cent. of zinc in the ash. Subsequent samples confirmed these findings, and on obtaining sections of the pipe-line before and after use it was found that the galvanizing (zinc lining) of the inner surface had been entirely removed, being replaced with a thick layer of curdy or cheesy material.

In view of the great extension in this method of feeding pigs and the apparent increase in obscure mortality and unthriftiness in pigs the matter warrants close investigation. In the meantime caution is advised in installing long pipe-lines to piggeries, particularly when galvanized pipes are used.

Several cases have occurred of cattle dying after grazing on paddocks recently sprayed with proprietary weed-killers to destroy weeds such as ragwort and blackberry. In each case it was ascertained that the weed-killer contained arsenic, and arsenic in quantity was found in the ingesta and organs of the dead animals. Farmers should be warned of the danger to stock in using arsenical weed-killers, and all stock should be kept off paddocks where weeds have been so sprayed for a minimum of several weeks to allow the dead vegetation to decay and until after plentiful rain has fallen to wash the arsenic into the soil.

In a case of pig-mortality following the feeding of roots cooked in a drum which had previously been in use for the same purpose, arsenic was found in the ingesta of the pigs and in the contents of the drum, but no evidence could be obtained as to the source of the arsenic.

Mortality in cattle which had drunk rain-water from a drum left standing after an arsenical dip had been mixed in and emptied from it, was found to be due to arsenic dissolved in the water. Dogs, lapping only the presumably unmixed surface water, were not affected. The dogs may also have vomited.

Several cases of pig-mortality following the feeding of mangels have been investigated. No inorganic poisons could be detected. In one case the stomach contents contained nitrate-nitrogen equivalent to 0.045 per cent. potassium nitrate, the boiled root-mash 0.017 per cent., and the mangel juice 0.41 per cent.

In another case the stomach contents contained the equivalent of 0.115 per cent. potassium nitrate and the mangel juice (95 per cent. of the root) 0.72 per cent.

A previous mortality occurring in cattle under similar circumstances is referred to in the *Journal of Agriculture* for October, 1911. In this case some nitrite (a more poisonous substance) was also found in the mangels, but it is possible that nitrates may be reduced to nitrites in the intestines.

Additional cases of bracken-fern poisoning continue to be reported from time to time. One farmer near Wanganui states that he annually loses a number of young and old cattle in attempting to crush out fern, despite frequent changes of the animals to clean pasture. Symptoms include emaciation, difficulty in breathing, and bleeding from the intestines.

A plant submitted by the Inspector of Stock, Whangarei, as suspected of causing periodical mortality in stock grazing along drains and other waterways in the North Auckland Peninsula, was identified as *Polygonum hydropiper*, or water-pepper.

A case was reported of a young draught horse dying after eating roots of the scarlet-runner bean that had been thrown on a rubbish heap. The scarlet runner (*Phaseolus multiflora*) is a close relative of the Java bean (*P. lunatus*), well known to be at times intensely poisonous to horses and cattle. Some authorities state that the roots of the scarlet runner are narcotic and poisonous, so that it is advisable not to allow cattle or horses access to them.

Mortality in honey bees following spraying operations in orchards nearby was considered possibly due to arsenic. Dead bees picked up near the hives contained 0.6 mg. of arsenic per 100 gm. bees, and bees dying after some time 0.13 mg. per 100 gm. bees. Bees analysed in a previous case with a result which was considered negative contained only 0.05 mg. arsenic per 100 gm. bees.

MISCELLANEOUS.

Coal-ashes from the Dobson Mine, which were reported to have given good results when used as a top-dressing, contained calcium equal to a total of 47 per cent. calcium oxide, 30 per cent. of this being present as oxide, hydroxide, and carbonate, and the remainder as sulphate and silicate. There was also 11 per cent. of magnesia. Coal-ashes of this nature should be quite useful for soil-amendment purposes, but should be stored in the weather for a little while to allow small quantities of sulphides present to be oxidized.

Samples of ash of the wood of the New Zealand mangrove (*Avicennia officinalis*), a tree growing in the shallow salt water of the northern mud-flats, were analysed as the wood was being used for burning lime. The ash was found to have an unusual composition, being very rich in phosphate. The