

The sheep which died stored large amounts of cobalt in the liver (400 to 1,100 parts of cobalt per million (p.p.m.) of dried liver, as compared with normal sheep (0.15 p.p.m.)).

Copper and Molybdenum.—Continuation of work on the etiology of peat-scours has added further confirmation to the hypothesis that this disease is caused by a moderate dietary excess of molybdenum superimposed on a moderate deficiency of copper. The molybdenum content of peat-scours pastures varies from 3 to 7 parts per million in summer to up to 16 parts per million in the spring scouring season, compared with a figure for normal pastures of 1 to 3 parts per million throughout the year. Feeding molybdenum to stock on copper-deficient pastures reduces growth rate, causes scouring, and increases a tendency to broken bones. Some anomalies have yet to be investigated.

An examination of pastures from leached coastal sands and podsolized sandy gum-land soils has disclosed a marked copper and molybdenum deficiency in many parts of the North Auckland district and in coastal areas in other parts of New Zealand, notably near Foxton. Further work on this new development in copper-deficient areas is being carried out, especially the study of stock health on those areas.

In the third season of experimental dosing of molybdenum to ewes at Wallaceville, where pasture copper is normal, it has been found that liver copper of new-born lambs is reduced to about 10 parts per million. This is in the region of values at which enzootic ataxia occurs, but no cases developed in the lambs.

Molybdenum is so far the only element which shows any appreciable effect on storage of copper in bovine or sheep's livers; feeding molybdenum reduces the storage more in cattle than in sheep. It has been found in sheep that the effect of extra dietary molybdenum is more to cause reduction of copper already stored in the liver than to prevent further storage when large doses of copper are fed.

Parasitology

Distribution of Haemonchus contortus (Large Stomach Worm).—Observations on the distribution of *H. contortus* were briefly reported in last year's report. The examinations have now been completed on 407 specimens of lamb stomachs collected from December, 1947, to February, 1948, from five selected freezing-works in various parts of the Dominion.

The following table gives the results of the worm counts, and from it an indication can be obtained of the incidence and intensity of infestations in the districts concerned. The corresponding figures for *Ostertagia* (small stomach worm) are also given.

THE PERCENTAGE OF LAMBS CARRYING INFESTATIONS OF HAEMONCHUS,
DECEMBER, 1947, TO FEBRUARY, 1948

District.	Number of Lambs Examined.	Number of Worms.			
		0.	1-100.	101-500.	Over 500.
		Per Cent.	Per Cent.	Per Cent.	Per Cent.
North Auckland ..	31	6	47	33	14
Waikato	116	5	60	30	5
Poverty Bay ..	93	17	63	11	9
Taranaki	90	6	52	29	13
Southland	77	72	27	1	..

These figures indicate that *Haemonchus* is fairly widespread throughout the North Island, though few heavy infestations (over 500) were seen. In Southland the parasite was less frequently seen and the worm burdens were much smaller.