

Final trials of the suitability of the chromic oxide method are now being made, a minimum period of six collection days being employed in the work.

In the course of the work it was found that a loss of dry matter occurred in faeces stored without preservative. The most effective method of preservation was to stir in 5 per cent. of toluene.

KETOSIS

Dairy Cattle.—A study of this disease in the 1945-46 season confirmed the view that ketosis as a separate entity is relatively uncommon; it occurs chiefly as a complicating factor in other diseases such as grass staggers and, to a lesser extent, milk-fever, red-water, and metritis. Grass staggers, however, does occur without ketosis, and the view that ketosis is the factor precipitating grass staggers is not supported.

The use of Rothera's test for ketone bodies in urine proved of definite diagnostic value in differentiating simple ketosis from complicated cases. An improved and simplified form of the test has been devised for field use employing a tablet of reagent mixture which is wetted with a few drops of urine.

Carbohydrate supplementation is a satisfactory treatment of uncomplicated ketosis: successful therapy of complicated cases depends on the tractability of the complicating disease.

A study of the aetiology of ketosis is in progress on four farms, two of which normally experience an appreciable amount of ketosis diseases, while the other two are not affected. At the present stage the difference in disease incidence appears due to relatively minor factors in animal husbandry and management.

Sheep.—Chemical studies on blood and urine and chemical and histological studies on aspiration biopsy samples of liver were made on a group of pregnant ewes in which ketosis was produced experimentally by restriction of food intake. It was found that marked ketonaemia and ketonuria developed after fourteen days on the restricted diet. There was a rise in the total fat content of the liver, a slight rise in cholesterol, and a fall in liver glycogen.

A field trial was made to determine, under controlled conditions, the efficiency of a lick containing potassium iodide, dicalcic phosphate, and other ingredients in preventing ante-partum paralysis in ewes. The lick had shown promise in trials conducted the previous year. There were three groups of approximately 100 ewes, a control with no lick, a group on the test lick, and a group on salt-bone flour lick containing potassium iodide. Unusually favourable conditions of pasture growth prevented development of ketosis in any of the ewes, and in consequence no conclusions could be drawn. The test lick proved much more palatable than the salt-bone flour lick.

GENERAL BIOCHEMICAL WORK AT RUAKURA

The majority of the grass alkaloid work carried out by the chemical staff while in Wellington has been worked up and published. Fats and "solids not fat" have been estimated on bi-weekly samples from dairy experiments. The possible use of dyed plastics as "markers" in digestibility trials has been the subject of preliminary investigation, and work on the dyeing of polystyrene is under way. As an aid to improving digestibility determinations, experiments have been commenced to isolate that part of the lignin fraction of pasture plants and other feeds which is not digested. The influence of conditions of drying of pasture on composition is being studied. To avoid the reduction in nitrogen and ether extract and the increase in lignin in faeces resulting from the conventional method of drying, as compared with alcohol-preserved faeces, the whole question of drying and preservation of faeces has been made a subject for research, and alternative methods are being tried out. Freeze drying, drying with CaO, and vacuum drying at room temperature are being compared on the same samples. Work on cobalt in relation to bush sickness has been finalized