

one or more poisonous alkaloids, whose chief function is to produce a slow chronic reaction in the liver, rendering that organ what is technically known as cirrhotic. Actually, instead of being friable the liver becomes paler than normal in colour, and hard. This is due to the destruction of true liver-cells and their replacement by coarse white fibrous tissue—a condition similar to that occurring in man in chronic alcoholic poisoning.

Having regard to the chronic nature of the condition, it will be easily realized that the process of liver-destruction has reached a fairly advanced stage before symptoms are shown by the animal. That the toxic principles are operative long after the ragwort has ceased to be a portion of the diet is frequently evident in many cases noted, often where an interval of three or four months must have elapsed before the first appearance of symptoms. Curative treatment is therefore practically out of the question. Symptoms appear gradually: affected animals become dull and lose condition; later the gait becomes staggy, and there is often a tendency to fall into obstacles—a period of intoxication. They gradually drift into a hopeless condition of semi-consciousness, eventually falling down and becoming unable to rise, and so death takes place.

Sheep appear to be more resistant than horses and cattle, but they also cannot be permitted to ingest ragwort indefinitely. They are often used successfully for keeping down the growth, and for this purpose it is most suitable to stock them heavily on ragwort-infested pasture in the spring. If sheep have been on ragwort too long without a change deaths may take place quite suddenly; these are notably increased if such sheep are driven distances. A condition of jaundice is often noticed during life, though not always, but there is considerable tendency for the carcass to assume a yellow appearance after death. This is due to the absorption of bile, and has nothing whatever to do with the fact that ragwort has a yellow flower, as is sometimes popularly supposed.

In consequence of the general hopelessness of individual treatment, work should be concentrated on means of effective control if not complete eradication of the ragwort. This must be an accomplished fact before poisoning from this cause will cease altogether.

Tutu.—This shrub (*Coriaria ruscifolia*) is commonly seen in the bush and on hillsides and banks in many parts of this country. As a rule stock do not eat tutu unless there is a shortage of natural feed. Poisoning is often noted after stock have been driven and then eaten the shrub on empty stomachs. The symptoms are those of excitement, with unsteady gait and nervous twitchings, and the animal is frequently blown. If discovered alive treatment is possible by relieving the blown condition by puncturing. Suitable medicinal treatment is the administration of 1 oz. of carbonate of ammonia dissolved in thin oatmeal gruel.

GENERAL.

There are a few other causes of poisoning of less importance, but space will not permit a detailed description of them here. Many of the types of symptoms are common to more than one