

CALVES TEMPORARILY BLIND AFTER PHENOTHIAZINE DRENCHING

By L. K. WHITTEN, B.V.Sc.,
*Parasitologist, Animal Research
Station, Wallaceville.*

SINCE phenothiazine was first used in New Zealand in 1941 a very large number of calves have been dosed with it with very satisfactory results. During the past two seasons, however, there have been a number of reports of the occurrence of temporary blindness following its use. No abnormality is noticeable the day the animals are dosed, but on the following day they may weep profusely and later develop a milky film over the eye. There is sometimes interference with the animals' eyesight, but in a large number of cases they seem very little disturbed by it, and many cases may pass unnoticed unless a careful examination is made of their eyes. More severe cases may reach the stage of a corneal ulcer. Some check to the growth of the animals is almost inevitable.

IN practically all cases so far examined complete recovery occurs without any treatment. In mild cases recovery takes place within 10 days, but in more severe ones a small scar may remain for from three to four months, though this will have very little effect on the animals' eyesight. As the damaged area of the eye is usually situated behind the centre of the pupil, it is less likely to interfere with vision than if it were central in position.

The proportion of dosed animals which have exhibited this condition is probably quite small in relation to the large numbers of animals dosed annually. There have been instances, however, where the majority or even the entire mob on certain farms have become affected, and in such cases its appearance causes the farmer some anxiety. Most cases reported so far have been from the Waikato, Manawatu, Taranaki, and North Auckland districts, but no cases at all have been reported to the Wallaceville Research Station from the South Island.

This condition has been investigated at Wallaceville, where it has been shown that it is caused by the presence in the fluids of the eye of compounds which are formed from phenothiazine



Heifer showing opacity of the cornea following the use of phenothiazine.

in the gut after they have been absorbed into the blood stream. These compounds cause damage under the influence of the ultra-violet light which falls on the eye when the animals are exposed to bright sunlight.

The danger period is between 12 and 36 hours after dosing, and if dull weather is experienced or the animals are kept indoors over this period, damage to the eye does not occur. Where animals are exposed and no damage occurs it is presumably because the sunlight is not sufficiently intense or the concentration of the particular substance involved in the ocular fluids is not sufficiently high.

Most cases occur in January, February, and March, about which time routine drenching is frequently begun in the new crop of calves.

In many instances repeated doses given to the same animals later in the autumn have produced no untoward effects. There are very few records so far of its occurrence in calves more than eight months old.

The prevention of this condition presents considerable difficulty where animals cannot be kept from bright sunshine, but complete protection is possible if indoor accommodation is available and the animals are kept in it the day after dosing.

As this condition occurs with comparative rarity, it is not usually necessary to keep animals indoors as a routine after each treatment, but if bright sunshine is experienced the day after dosing, especially in midsummer when the sunshine is richer in ultra-violet light, the calves should be

examined closely before the middle of the morning and if any are observed weeping profusely they should all be kept in a barn or shed for the remainder of that day. They may be turned out again in the late evening when the intensity of the sun's rays is greatly reduced. It is not necessary to keep them indoors during the second day after dosing, as by this time most of the material has been excreted.

On many properties in New Zealand on which no indoor accommodation is available some protection may be gained by running the animals in dense bush or in a timber plantation. It should be pointed out, however, that this may not give complete protection, because although the calves show some aversion to sunlight, it is not sufficiently pronounced to make them remain in the shade when only a few trees are present. One hour's exposure in the middle of the day in very fine weather may result in severe damage in susceptible animals.

It should be emphasised that the condition described above is not very common; it has been described in some detail because it presents some unusual features which were not previously recognised and which prompted the detailed study undertaken at Wallaceville. The risk of temporary blindness occurring, if the correct dose is given and proper precautions are taken, is so small that no one should be deterred from using phenothiazine where it is necessary, since it still remains the safest and most useful worm drench on the market.