

not greater than $1\frac{1}{2}$ per cent., owing to the tendency to scorch. Molasses proved satisfactory, and is easily dissolved. Possibly a simple soap solution may be found equal to the agents tested.

The experiments with Vistolene were not sufficiently extensive to warrant a definite opinion, but it did not seem as effective as nicotine.

The results of the various trials viewed in general were disappointing, but suggest that in the use of a deterrent spray the solution of the problem may be found.

WHITE BUTTER FROM HEIFER'S MILK.

E. E. ELPHICK, M.R.C.V.S., D.V.H., Veterinarian, Wellington.

AN interesting local case of abnormality in a cow's milk has recently come under the writer's notice. The animal concerned, a $3\frac{1}{2}$ -year-old Friesian-Ayrshire cross, calved for the first time on 30th January last. A feature of her first milk, which at once drew the owner's attention to it, was the entire absence of visible colostrum. Later there appeared to be no cream on the milk, which had a uniform fixed white colour throughout. The owner, who happens to sell a little milk, thinking perhaps there was a considerable deficiency in butterfat, had the milk tested, when it gave a 4.35-per-cent. test. The heifer was running on good pasture, and was not getting hay or other dry feed. A proportion of her milk has since been set for cream and churned, with the result that the product has been a perfectly white butter.

According to Palmer (Missouri Circular 74, 1915) the natural yellow colour of butter is derived from two yellow pigments—carotin and xanthophyll—which are also present in the green chlorophyll of plants. These pigments, particularly carotin, are found in the cow's blood, and in this way pass from the feed to the udder, where they colour the milk-fat. Certain feeds are classified according to their carotin content, this explaining why cows fed on green pasture produce a yellower butter than when they receive dry fodder and grain by-products in winter. It is further stated that the high-coloured fat of the Channel Island breeds is due largely to the fact that they make use of more feed carotin than others. It is also common knowledge that the colour of butter varies with the period of lactation. There is no difference, however, immediately after parturition in any breeds, the colostrum of all cows being highly coloured. As the period of lactation advances the intensity of the colour decreases.

The peculiarities of the present case may be summarized as—(1) A newly calved heifer giving a milk apparently free of colostrum, or if colostrum was present it was entirely lacking in pigment; (2) the feed is green pasture, which is rich in high-colour carotin; (3) the heifer is at the commencement of her lactation period and not at the end, when a low-coloured butterfat would be expected, particularly in a cow of her breed.

The explanation appears to be a physiological one. Either the yellow pigment from the feed has not been assimilated during the process of digestion, or there is some deficiency or peculiarity in the cellular elements of the milk-glands which has rendered them incapable of extracting these pigments from the blood-stream.