

and the difficulties and loss of money sometimes encountered in stocking with cattle have tempted, and will always tempt, farmers to use the match. The motto of the danthonia hill-country farmer should not be "Leave your matches at home," but always remember that "Every match used means loss of some of the fertile top-soil."

Stocking with Cattle.

Some farmers with danthonia country on which it is possible to use fertilizer and on which ti-tree is not a great

menace can check erosion by "keeping the matches at home" and by stocking with cattle. On danthonia swards under such management suckling clover and some *Lotus major* make a timid appearance and may be encouraged by top-dressing. Such top-dressing does not improve carrying-capacity a great deal, but it does improve the feeding value of the pasture. Lambs do better, and the pasture can be graded up more definitely from dry sheep to wet sheep country.

If white clover and subterranean clover, which are of higher production

than suckling clover and *Lotus major*, could be established in danthonia swards prior to or at the beginning of top-dressing, then top-dressing would have still greater results, and better grasses, such as crested dogstail and perennial rye-grass, would appear. The results from top-dressing would then become so great that most farmers with the more easy danthonia country would be encouraged to use it.

Establishing Clovers.

The present problem is the establishment of such clovers. When simply broadcast on the danthonia sward the strike has been poor and much seed has been wasted. The Fields Division is at present experimenting with methods of establishing white clover, subterranean clover, and *Lotus major* on danthonia swards on hilly country. One method under trial is the closing-up of the danthonia from stock from October until March and the sowing of the seed in the autumn among the danthonia roughage. It is expected that the seed will be tramped into the ground by cattle feeding on the roughage in the autumn, and, being shaded by the roughage, the little seedlings will not succumb to spells of hot sunny weather.

If a good cover of clover can be accomplished it is hoped that much of our marginal danthonia country will be improved in carrying-capacity until the stage is reached when the fertility of the soil will be on the upgrade instead of in the other direction. The improved sward will result in less soil being exposed to sheet erosion and a greater production of grass which, by dying down or through the stock, improves the humus content of the soil.

The steps, then, in improvement in the danthonia sward are first, no burning and the use of cattle, and, secondly, top-dressing preceded, if possible, by clover establishment.



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