

had to be removed from the whole area, due to their keeping the *Poa pratensis* plot too closely fed down. There is every indication that *Poa pratensis*, although theoretically only suited to soils fairly well provided with lime, is one of the most valuable grasses for the Murchison district.

Chewings fescue: This has done well both on hill-faces and lower lands.

Crested dogstail: This is only sparsely distributed through the hill-faces, but in moist places where the land is inclined to be heavy it has a strong hold, forms a close sole, and is to be found closely fed down.

Yarrow: This plant is freely distributed over all the area, and is kept closely fed down, forming a compact turf in combination with the grasses.

*Danthonia pilosa*: The seedings with this grass have been more or less unsatisfactory, although when sown in combination with fog its resistance to the attacks of grass-grub was most marked, the fog being completely destroyed and isolated plants of *Danthonia* alone remaining. Could it be established rapidly *Danthonia* would certainly prove valuable, but the difficulty of sowing and the high cost of the seed would always be a drawback. Sowing down small areas on the flat ground, allowing the grass to seed, and then stocking with sheep which would carry the seed in their fleeces on to the hill country, according to the practice adopted in certain parts of New Zealand, seems perhaps the only way of inexpensively introducing *Danthonia* into these pastures.

#### CONCLUSION.

The future of these experimental seedings will be of great interest, and their development will be watched carefully. At the present time it is fairly safe to say that rye-grass and cocksfoot should be eliminated from mixtures used on such country, and that a combination of Chewings fescue, fiorin, *Poa pratensis*, yarrow, and perhaps crested dogstail is likely to provide quite fair permanent grassland. It is particularly to be regretted that the sowings did not include tall fescue, a grass that in certain poor hill country is giving promise of being the most valuable dominant grass that should be sown. The great weakness of a combination of the grasses mentioned is the absence of clovers, but the soil with its present deficiency in lime and phosphates does not give any immediate promise of the successful establishment of permanent clovers.

---

*Balled Red-clover Seed.*—An interesting specimen of red-clover seed, in which masses of the seed were balled together with some syrupy matter, was submitted recently to the Chemistry Section for examination. The substance dissolved in water, and reduced Fehling's solution without previous inversion. It now appears from information received by the Department's Biologist while in America that the phenomenon is well known there, and is caused by an aphid (*Aphis Bakeri*).