wards between finger and thumb. Hard tussock, or fescue tussock, and Nassella are less easy to distinguish in the young stages, and a close examination of the leaf differences is necessary until experience is gained.

#### Area Occupied

The area at present under attack by Nassella is extensive, but the survey has already shown that infestation in the Cheviot county is more severe than had been reported. Isolated plants have been noted near Saltwater Creek, just north of Ashlev.

The most extensive area at present known to be severely affected is that near Waipara township and extending on to the western slopes of the coastal hills on both sides of the Wai-Less extensive densely para river infested areas occur near Scargill, Motunau, and elsewhere in the Waipara county.

### Plan of Survey

The following is an outline merely of the plan of survey being followed. which is subject, of course, to modification as the work proceeds.

(1) Close survey of the areas known or reputed to be under attack and

vey of neighbouring country.

- (2) Comparison of infestation on arable and on pasture land, with study of the nature of the ground and aspect most open to invasion, including study of limestone and non-limestone areas.
- (3) For the purpose of the survey the Waipara county and parts of the Kowai and Cheviot counties have been divided into blocks, and the nature and degree of infestation will be mapped out on each.
- (4) The results will be classified under the headings:-
  - (a) Areas so badly affected that they are out of production or are under distinctly diminished production.
  - (b) Areas seriously, but more lightly, affected.
  - (c) Areas with only small, local occurrences.
  - (d) Areas free, but liable to early invasion.
- (5) General information will be gathered by consultation with farmers and by observation as to methods of control adopted, the degree of success gained, the relative proportion of the holdings attacked, the relation of at-

adjacent areas. Reconnaissance sur- tack to methods of farming, the topography of the country, and the location and extent of plantations and shelter belts.

- (6) Gathering data affecting the possibilities of afforesting the worst areas.
- (7) Examination of the incidence of nassella in temporary pastures and the lucerne stands.
- (8) Observations on the relative importance of the various ways in which the tussock may be spread.

#### Attempted Control Measures

Efforts at control have so far been confined to a few areas, and have met with but little measure of success.

(1) Burning.-Indications are that a fierce fire is needed, and that the tussock rapidly recovers. Often, the centre is burnt out, but a ring of growth shoots up from the margin, while small tussocks may be little affected. Burning also opens the ground to the growth of seedlings and fresh invasion of seeds. These are disadvantages, even when no more is attempted than preventing the plants coming into flower. On some burnt areas late flowering has been noted.

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