

may be hampered by the danger of the paddock "blowing." Again, as a way of providing a future source of timber and a shelter for stock, the establishment of shelter-belts and plantations is desirable.

SUPPLEMENTARY CROPS, HAY AND CHAFF.

The area subject to cultivation is very small in comparison with the total areas of each run. In some instances no cultivation is carried out. Under both sets of conditions the hoggets are, with exceptions, wintered on the plains by farmers who grow turnips especially for this purpose. This aspect of sheep husbandry will be discussed in a subsequent section. Where cultivation is carried out, supplementary crops consist solely of the various types of turnips, but usually the white-fleshed variety is raised since the growing-season is short. The ruling practice is to plough out of grass in the late autumn or early winter, fallow until spring, and cultivate the seed-bed for sowing in December and January. The land is left in the roughest possible manner through the winter, as a fine surface lifts with the frost and "blows" with the drying north-westers. Turnips are usually sown alone the first year, fed-off during winter, and the land ploughed again the following spring. This time turnips, perennial or Italian rye-grass, and red clover are sown, and in this way the paddock is grassed down again, forming a source of hay the following year.

Oats are grown as necessary feed for the team, hacks, and pack-horses. The usual oat variety is Garton's, and the crop is spring-sown. Autumn sowing is not satisfactory, owing to the severe winter. The oat crop is sometimes sown with grass as a means of getting the land back into pasture again.

It is probable that the establishment of cocksfoot would meet with success: one or two instances of excellent cocksfoot stands have been seen. It can be said that there is need for better pasture-establishment and pasture-management, and use of hay.

The small area of turnips grown on the run country (about 1,000 acres) is, of course, quite inadequate for the needs of such country, but climatic factors are involved which may have serious consequences. For example, where turnips are relied upon in winter the paddocks are liable to be covered with snow or at least frozen hard for days, and turnips under these conditions are of little value, especially for hoggets, which are extremely difficult to handle in snow under extensive conditions where sufficient hay or chaff to feed over a period to a large number of sheep is not carried. On most runs the amount of winter country which is "safe" is inadequate to carry hoggets and ewes without a reduction of the flock or risk of serious loss. This difficulty is surmounted by migrating the hoggets to the plains from May to August, where they are placed on turnips in various localities. This can be said to be a specialized aspect of sheep-raising. Suitable areas for turnip-growing exist where farmers produce this crop and sell at so much per acre, or per week, the farmer tending the hoggets and moving them to a "run-off" when required. In a few instances a runholder has his own farm on the plains. There are some points in connection with this migration which require consideration:—

(1) The Cost: The average cost of grazing on turnips is about 2d. per head per week for hoggets and 3d. per head for ewes. The buying of turnips on the plains means a considerable cash outlay—*e.g.*, with a