[*Green and Hahn Ltd. photo.*

Lucerne looking well even after a prolonged spell of hot, dry weather.

carried 400 half-bred ewes. Southdown rams were used and all lambs that did not go away fat off their mothers were fattened on rape. Ewes were wintered on turnips and, owing perhaps to the fact that hay was not always available, the death-rate was fairly high. The flock was maintained by the purchase every year of 4-year-old ewes. The practice was to breed from these ewes for 2 years and then sell them as fats.

During the 20 years from 1919 until his retirement in 1939 the late Mr. Rands concentrated his efforts on the production of wheat, wool, and lambs. The average yield of wheat from an area of 100 acres or more each year was very good for the class of land and almost equalled the returns from wool and lambs. In addition to the wheat Mr. Rands grew about 30 acres of oats each year for chaff and about the same area of rape and turnips. The rotation invariably followed was from grass to rape or turnips, with two crops of wheat following. Half the wheat area was spring sown to pasture under the crop. The other half usually went into oats and was sown down after harvest.

Pastures were thus left down for 4 or 5 years. This method of pasture establishment occasionally gave good results; eventually, however, it was found to be too uncertain, and, while pastures were still sown down after oats were harvested, they were no longer spring sown under wheat. Though a good strain of perennial ryegrass was always sown, pastures reverted to sweet vernal and other low-producing species within 2 years. During the remaining 2 or 3 years they were left down, stocking was necessarily light and, consequently, fertility declined steadily.

The years 1936 to 1940 were marked by a change-over to Certified seed of pedigree strains of perennial ryegrass and white clover and the adoption of a programme of experimental topdressing with lime and superphosphate. These two factors gave promising results—results which pointed the way to the future development.

Lucerne Hay for Winter Feed

In 1940 Mr. Rands laid down an 18-acre stand of lucerne. He realised the importance of lucerne hay for winter feed and, subsequently, by feeding this hay, found that his ewes wintered better, there were fewer losses, and it was possible to reduce the area of chou moellier and turnips. After the stand had been down for 2 years extremely dry weather was experienced and it was found necessary to utilise the lucerne for grazing. Since then it has been fed off regularly, being fenced in breaks to prevent over-grazing, and, after several years of this type of treatment, the stand is still quite good.

Though Mr. Rands realised the detrimental effects of such cropping on the soil, he continued to grow wheat through the war until the average yield over 100 acres dropped to 19 bushels per acre. He then tried to maintain production by growing barley and peas for 2 years, but met with little success. Continuous cropping over a long period had drawn on fertility to such an extent that the growing of annual cash crops was no longer payable.

This was the point at which it was decided to try to build up fertility by growing lupins and by establishing better pastures. In effect, Mr. Rands decided to change over from a mixed farm to a sheep-grazing property growing only occasional cash crops.

[*Green and Hahn Ltd. photo.*

The light, stony ground on the lower area of Mr. Rands's farm.