

**How to deal with killed-out patches.** It frequently happens, as a result of unfavourable weather, irregular seeding, patches of too wet or too hard and dry soil, or a heavy nurse crop perhaps lodging in places, that the seedling plants suffer severely or are killed out in small areas. As soon as the autumn rains commence, or, if the soil is sufficiently moist, at any time after the summer heat is past, it is well to re-seed such patches quite thickly. If necessary, apply a thin dressing of rotted barnyard manure to cover the seed, to retain moisture and to ensure vigorous autumn growth. If the killed out areas are large, it is sometimes advisable to use a sharp harrow to make a good seed bed. If the late fall is favourable and the re-seeded patches are well protected during the winter, they should make a fair growth, even for the first cutting, and succeeding crops will well repay the trouble and expense.

### THE RED CLOVER PLANT AND ITS CULTURE.\*

**Botanical description.** Red Clover is mainly biennial. The year the seed germinates, only short leaves and stems are produced and no flowers. The second year the flowers are developed and the seed formed, and after ripening the seed the plant dies. As with most biennial plants, the root is a taproot; that is, the single main root gradually tapers downward and produces numerous side branches. On these are developed the small, rounded or egg-shaped nodules which contain the bacteria necessary for the proper development of the plant. From the upper end of the taproot, which is somewhat enlarged and generally known as the crown, are formed more or less numerous buds which develop into leafy stems. These as a rule are from one-half to two feet high, strictly upright or ascending from a decumbent base, the latter being the normal growth of stems developed from the outer margin of the crown. The stems are generally branched above the middle and the leaves are single at each joint. The three leaflets of which each leaf consists are oblong or egg-shaped and usually marked with a white spot of varying size and shape.

**Biology of flower.** If Red Clover is isolated during flowering time, so that no insects can visit the blooms, no seeds will be formed, as it depends upon insects to transport the pollen from one flower to another. Bumble bees, which visit the flowers in order to secure the nectar, are especially active in this transportation. As the insect travels from one plant to another, carrying pollen from different individuals, the pistils of one are apt to be fertilized by pollen from another. Such cross-fertilization must, in fact, take place before seed can be developed.

**Cultural conditions.**—Being a resident of the temperate zone, Red Clover succeeds best where the summers are not too hot nor the winters too severe. Although the roots go rather deep, the plant is injured by long and continuous drought. It needs sufficient rain during the growing period to enable it to flourish during the whole season. As Red Clover is rather cosmopolitan, a great number of varieties, adapted to different climates, have been developed. The suitability of a variety for a northern climate like that of Canada depends to a great extent upon its hardiness. Chilean Red Clover or other varieties originating in countries with a mild climate are invariably killed by the Canadian winter, except in the southern parts of the country. It is, therefore, important to secure seed of northern origin. If possible, Canadian-grown seed should be obtained because as a rule home-grown seed gives the best results.

**Soil.**—Red Clover can be successfully grown on many kinds of soil, the most suitable being clay loams with a certain amount of lime and plenty of organic matter.

\* What appears under this heading (pages 17 to 19) is taken from "Fodder and Pasture Plants" by Geo. H. Clark, B.S.A., Seed Commissioner and M. Oscar Maite, Ph. D., Dominion Agrostologist. This book contains descriptions and coloured illustrations by Norman Criddle of more than 50 grasses, clovers and other forage plants cultivated in Canada. Copies may be had for fifty cents from the Superintendent of Stationery, Government Printing Bureau, Ottawa.