

black types may occur locally in open meadows and in park areas. Depression podzols, peat and muck occur in many poorly drained depressions and solonchic soils may also be found locally on certain kinds of mineral materials.

The grey-wooded soils are considerably lower in fertility than the degraded black and the grassland soils. They are particularly low in organic matter and nitrogen. Their reaction is generally slightly acid. Due to their lower fertility levels these soils deteriorate rapidly under continuous grain growing. The production of legumes and grasses in conjunction with mixed farming and the use of fertilizers is essential for the improvement and maintenance of the productivity of these soils.

High Lime Soil Zone.—The distribution of this Zone in Manitoba and Saskatchewan is largely determined by the highly calcareous nature of the drift material and the close proximity of limestone bed rock to the surface of the soil, rather than by climatic factors or vegetation. The soils in this area vary considerably and they may consist of grey-wooded, degraded black and black types but in most cases shallowness over limestone and the highly calcareous nature of the soil are the major characteristics governing the use of the land. Many of the local depressions in this area are filled with peat and muck.

The productivity of the high lime soils is generally low and the crops often suffer from drought and from phosphorus deficiency. Some of the soils are better suited for certain crops, such as alfalfa for seed production, than for general farming. A large percentage of the soils in this area is marginal or submarginal agricultural land.

Grey-Brown Podzolic Soil Zone.—The Grey-Brown Podzolic Zone occurs in southern Ontario where it occupies approximately 15,000,000 acres. The soils of this Zone have developed in a humid-temperate climate under a deciduous or mixed forest cover. The typical well-drained soils have a greyish-brown, mildly acid surface soil, a brown, somewhat heavier sub-surface horizon and a calcareous, greyish subsoil. They may vary widely in texture. The imperfectly to poorly drained soils of this Zone, often referred to as "dark-grey gleisolic" soils, are generally darker in colour, are somewhat higher in reaction and lack the brown sub-surface horizon. Black muck and peat occur in many of the more poorly drained depressions.

The soils of this Zone, although not as fertile as some of the soils in the grassland region, are quite productive when properly managed and fertilized. Under the favourable climatic conditions prevalent in this Zone diversified types of farming may be practised on the different soils. Certain soils are best adapted to dairying, others to mixed farming, while some are particularly well suited for special crops, such as fruit-growing, market-gardening, tobacco growing, etc.

Grey-Brown Podzolic-Podzol Transition Zone.—This Transition Zone lies in the St. Lawrence and Ottawa lowland area of eastern Ontario and Quebec where it occupies approximately 10,000,000 acres. The climate of this area may be designated as humid-temperate. It is somewhat more humid and cooler than that of the Grey-Brown Podzolic Zone. The natural tree cover varies locally from deciduous to coniferous according to site.

The most important soils of this Zone are of the dark-grey gleisolic type. They are generally heavy in texture and imperfectly drained. In addition to these a large variety of other soils are found in this area depending on the nature of the