

Even cultivated plants are weeds when they intrude upon one another, or rise anywhere where they are not wanted. A weed may be either useless or useful; suitable for cultivation or unsuitable, occupy the richest or the poorest soils, a greedy consumer of manurial values, or a feeder principally upon air, indig'nous to the region it infects, or an imported hardy exotic.

Very few weeds are exotics; not many, even, are imported from very different soils or from considerably distant localities; the great majority are simple, natural, but usually stubborn and persistent inhabitants of the ground where they appear, having probably been occupants of the spot before cultivation began, and still continuing to maintain the occupancy in spite of the cultivator's efforts to banish them.

Many of the most common weeds may be classified into groups according to the soils and situations they severally prefer, and are indicators of the constitution or condition of the land on which they are found, some of them supplanting one another according to the changes brought about by cultivation.

It is quite possible for the careful observer to determine, in some measure, the nature and quality of the land by the growth of the weeds. Various groups and families of plants affect peculiar conditions of land or water, or elevation, and thus intimate the presence of these conditions wherever they exist. The grand principle of vegetation is simple in its design, but viewed in detail its complication are bewildering. To become the abode of animals, it was necessary that the earth should be covered with vegetation. As these animals were found, some to inhabit the regions of tropical America, and others the more barren plains of the north; to suit their requirements vegetation varies with the region in which it grows, and the magnificent growths of the tropics are replaced in the temperate climates by plants quite as useful in their places, but of smaller growth. The same sun calls forth, and gives vigor to vegetation; the same earth supports it; the same moisture swells its vessels; it lives in the same air, and yet how various are its forms and uses; and how adapted to the purposes for which they were created.

An observer of Nature could be led blindfolded to a spot, and when he could open his eyes he would know, not only in what part of the world he could form a tolerable correct idea of the

nature of the soil and the quality of the climate by the weeds he would notice.

What we call weeds can thus be made useful as guides as to what crops will be most likely to succeed, and what the tillage should be. On sandy soil will be found tufts of *Arundo arenaria* a coarse, innutritious grass, with millefoil and other useless herbs which indicate dryness, and others, as, for instance rushes, sorrel etc., which indicate the presence of water, and which no longer infest the land after it has been drained and cultivated. Peat soils are known by the presence of heaths intermixed with lichens. As a rule, the land poorest for crops exhibits the least valuable natural plants for forage.

Weeds may be classified in various ways, but the most practically useful is that which has reference to their extermination, and this purpose can be best served by dividing them into annuals, biennals, and perennials, according to the duration of their roots or prevailing mode of self propagation.

They can then be subdivided into the degress in which they are most dreaded, and the vigor with which they must be kept down. To do this a list should be made according to the amount of injury which they do on a farm, or the trouble they give to a farmer.

This list will vary in different districts and in different situations and circumstances, even in the same district, and on differently managed farms. On good soil, the thistles may be placed at the head of this list, but on light sandy and alluvial soil, the common couch grass will come first, for if neglected it will soon run riot, and not only destroy the crop which it infests but render the land unfit to receive another until it has been thoroughly eradicated. The sorrels are also bad weeds to destroy and, if left alone, would soon cause a pasture to be unproductive. Ox-eye-daisy is among the most troublesome, and with this may be placed the charlock or wild mustard, chiefly a nuisance on account of the rapidity with which it propagates itself from its numerous seeds. Wild vetch would also do much mischief if not checked, but does not propagate so rapidly, and is therefore not so troublesome as the above.

Weeds abound most on light soils and in dry localities, and while such soils are easier to work, mechanically, than more retentive ones, they require greater diligence as to the destruction of weeds, which can only be kept under by care-