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## The Field.

### On the Cultivation of Hops.

THE Hop (*Humulus lupulus*) is a perennial diocious plant of the natural order *Cannabaceae*, and is found growing in a wild as well as in a cultivated state, in many parts both of Europe and North America. In England, hops are very extensively raised, principally in a few of the Southern counties, and both the plant and its mode of culture have been brought, of late years, to a high degree of improvement. As the raising of hops is already attracting considerable attention among farmers in several sections of Canada, and has been accompanied by a promising degree of success, we propose giving, in two or three papers, a pretty full outline of the most approved modern principles of their cultivation, and preparation for market.

(I.) CLIMATE.—Hops delight in a warm and dry atmosphere, which is not subjected during the season of growth to great and sudden changes of temperature. Like wheat and the vine, they require bright and warm sunshine to bring them to perfection; but they will do with a less summer temperature than the latter requires to ripen its fruit in the open air. In high and exposed situations in Canada, especially at considerable distances from the St. Lawrence and the lakes, the early autumnal frosts would prevent the full growth and ripening of the flowers; but all along the frontier, from Montreal to Windsor, experience satisfactorily shows that this valuable crop may, by good management, be brought to a great degree of perfection. Natural shelter against high and prevailing winds, such as elevated ground and trees, is an important condition to secure in selecting a site for a hop-plantation; as high winds are often exceedingly destructive to the crop, particularly during the latter stages of growth.

(II.) SOIL.—Hops may be successfully grown on several classes of soils, but it requires both judgment and experience in the way of manuring and cultivation, so to treat the various soils as to make them yield a remunerative return. Gerard, an old herbalist of the latter part of the 16th century, observes:—"The hop joyeth in a fat and fruitful ground, and prospereth the better by manuring." Tusser, a quaint old rustic writer of a somewhat earlier date, thus speaks of the hop in his renowned *Five Hundred points of good Husbandry*:

"Choose soil for the hop of rottenest mould,  
Well dooned and wrought as a garden plot should,  
Not far from the water (but not overflowed),  
This lesson well noted, is meet to be knowned.

"The sun in the South, or else Southth and West,  
Is joy to the hop as w'comed west;  
But wind in the North, or else Northerly East,  
To hop is as ill as fray in a feast.

The soil most congenial to the growth of the hop is calcareous loam, resting on a dry and open subsoil.

Wet clays are wholly unsuitable; yet by thorough draining, deep tillage, and liberal manuring, there are thousands of acres of very stiff soils in Kent and Sussex, (England), that are made to provide very heavy crops of the coarser kinds of hops; but it is the greensand formation, immediately underlying the chalk, abounding in many places in phosphate of lime, that produces hops of the richest qualities, and commanding, consequently, the highest prices. In England, and also on the continent of Europe, the character of the soil and the geological formation on which it rests can generally be pretty well determined by observing the kinds or varieties of the hops under cultivation. The *Goldings* are mostly found on the friable calcareous soils of Kent, and the roots have been found to descend from ten to fifteen feet and upwards, in search of food and moisture, into the fissures of the subjacent limestone rock. At Farnham, in Surrey, and also in the vicinity of Canterbury, on soils somewhat similar, the *White Bines* are the prevailing variety;—these with the former are most esteemed for the brewing of the pale bitter ales which England exports in such immense quantities to the principal and most distant parts of the world. On the clay loams of Kent and Sussex the *Grape* and *Jones* varieties are principally cultivated; but within the last few years the *Colegates*, and one or two new kinds that ripen earlier, have been introduced with satisfactory results. All these sorts of hops are hardy and very productive, but inferior in quality to the *Goldings* and *White Bines*, and are generally used in the manufacture of the ordinary sorts of beer. The soils of Worcester and Hereford, formed from the debris of the calcareous marls belonging to the new red sandstone and Silurian system, produce a hop possessing a peculiarly mild and pleasant bitter, supposed to have been derived from the *Fleishish red bine*. The hops grown on the heavy land of Redford, in Nottinghamshire, designated "*North clays*" are coarser than those of the weald of Kent and Sussex, imparting a peculiar flavour to beer, almost nauseous to those unaccustomed to its use.

From this brief description of the more common varieties of hops, it will be seen that differences in soils produce corresponding differences in the quality, quantity, and value of this crop; and therefore it becomes necessary to ascertain the character of the soil, and also to some extent the climate of a given locality, before it is decided what particular variety of hop should be introduced. In Canada, however, we have no such diversities of soil within small areas, such as characterize the physical features of the hop districts of England; yet in looking at this subject in a practical point of view, we must learn to form a correct estimate of the value of those differences in the organic and mineral composition of Canadian soils, which do actually obtain. A loam

of moderate tenacity, through which are interspersed small calcareous stones, resting on a dry and permeable subsoil, will produce hops of the finer varieties; but a low-lying, heavier and damper soil, rich in organic matter, will generally yield heavier crops, but of inferior quality.

(III.) PREPARATION OF THE SOIL.—It is a matter of primary importance, before commencing to plant, that the ground should be brought into the best possible state favourable to that operation. If the land be wet, the first thing will be to drain it; and the more thoroughly this work is done the better. It will be in vain to attempt to raise hops on soils in which water stagnates; they may grow well at first, but in a short time the roots will become enfeebled, the plant will exhibit a yellow, sickly appearance, and cease to be productive. It will be found advantageous to plough the land as deep as may be practicable in the fall, so as to expose the largest surface to the action of air, frost and snow. If the subsoil be close and retentive, it also should be broken up eight or nine inches, either by an ordinary plough deprived of its mould, or by what is better, a proper subsoil plough, which no farmer of the present day, having a tenacious soil, should be without. Subsoiling, however, should always be preceded by underdraining, whenever that operation is necessary. Hops delight in land that has been long down in pasture; in such case, the old sod should be completely buried by the plough early in the fall, to facilitate decomposition. In that case, no manure is really required; but when arable land is appropriated, a good dressing of rough farm-yard manure should be incorporated with the fall ploughing. As soon as the ground gets sufficiently dry in spring, the cultivator and harrow may be applied, so as to leave a smooth and clean surface.

(IV.) PROPAGATION.—This is effected either by seeds or cuttings; the former method is very rarely used, except for purely experimental purposes. Cuttings are obtained from the hills of old plants that have been earthed up during the preceding season of growth. That portion of the lower end of the bine growing from the crown of the stock being surrounded by earth thrown into the hill about mid-summer, assumes a form somewhat in appearance to roots, having two or three joints, at which eyes or buds are developed. In pruning the hops early in spring, what has remained of the old bine since the previous autumnal gathering, is cut off close to the crown of the stock, or nearly so; thus affording a cutting with joints and buds, which, when put into the ground, will produce a new plant, having, in all respects the same properties and characteristics as its parental stem. This is the almost universal method practised in England in raising new hop grounds. But on this side of the Atlantic, it is a common practice to raise hops from what are termed "runners;"