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## The Field.

### On the Cultivation of Hops.

**VARIETIES OR SORTS.**—Several distinct varieties of hops are cultivated in Europe, each being characterized by important differences as to style of growth, colour of the stem, quality of the fruit, length of pole, and kind of soil specially required. Sufficient attention has not yet been paid on this side of the Atlantic to these differences; many plantations are more or less mixed, and in Canada, as far as our observation has extended, a coarse, rough kind of bine, of a reddish colour, scratching the hands in the act of gathering the fruit, too commonly prevails. The best sorts of English hops, adapted to our soils and climate, would probably be, *Golding's*, *Jones's* and *Grape*; a new variety has recently been introduced there with great approval, called *Early Prolific*, which it would be very desirable to test in this country. The English *Grape*, we believe, is what is known in the State of New York as the *White Cluster*, and the few instances of it that we have seen in Canada impressed us very favourably with its adaptability to our soil and climate. The *Golding* is only adapted to dry, calcareous soils; being a tall grower, it requires poles eighteen or twenty feet long, and it is distinguished beyond, perhaps, any other sort, for its large amount of lupulin, and consequently commands the highest price. The *Jones's* and *Grapes*, (the latter so called on account of their flowers appearing in clusters) are well adapted to heavier soils, producing immense crops in England on the Wealden clays. The former we have often seen produce, on such soils, a ton and upwards per acre, with poles only nine or ten feet long, four to a hill. It would be advantageous to import some cuttings of the most approved varieties of English hops; a few thousands of each would enable us to test their relative suitability, and supply a sufficient amount of young plants for any demand that might arise.

**MANURING.**—As the culture of hops admits of no rotation, or rest to the soil, but in the large weight of fruit and bines annually extracts a great amount of mineral and organic matter from the same, liberal manuring is an indispensable condition of success. Soils naturally rich in calcareous and alkaline matter are, in point of chemical composition, admirably adapted to the growth of this plant, and consequently require a smaller amount of artificial manuring. But in the most favourable soils a yearly dressing to some extent is required, in order to sustain a uniform standard of productivity. As hops not unfrequently suffer in our climate from the effects of frost when the ground is not sufficiently covered with snow, we would suggest the following method of applying farmyard manure. After the poles are stacked, and the necessary surface drains or furrows made for the

ready carrying off surface water in spring, cover each hill, before hard frost commences, with rough dung, which will not only serve to protect the plant, when denuded of snow, from the injurious effects of frost, but will be in readiness in spring to be spread and worked in as manure for the next crop. A moderate covering will, in most seasons, be found a perfect safeguard; and this would be the only application of barn manure required. An occasional dressing of burnt lime, say seventy or eighty, or even one hundred bushels an acre, at intervals of five or six years, on soils not naturally rich in that material, will be requisite. The best way of applying it is in spring, after the hops are poled and the ground once cultivated. Place the lime in small lumps at convenient distances in the alleys, cover it slightly with earth to facilitate its slaking, and when in a powdery state spread it evenly over the surface, and cultivate it in with the horse hoe. It is not a good practice, with any crop, to plough or dig in lime deeply, as it naturally tends to sink in the soil. In case the plant assumes a weakly appearance after the growing season has fairly set in, the most economical and efficient way of manuring is to draw away the earth with a hoe around the hill five or six inches deep, and scatter a little guano or super-phosphate of lime, covering and intermixing it with the hoe. It is surprising, when the ground is at all moist, how soon portions of these substances become solvent, and are assimilated by the plant. In England well rotted dung is often used in this way; also rape cake powdered, and even woollen rags. The last are an excellent manure, but in our hot and often dry summers they would not readily decompose, and it would be better to plough them under in spring, or, still better, the previous fall.

**PRUNING.**—As early in the spring as possible, when the young buds begin to appear on the portion of stem left from the last season, the operation of pruning should be performed. Remove with a hoe the earth that covers the hill, and with a sharp knife cut off what remains of the old bines pretty close to the crown of the plant, near or very little above where the operation was performed the preceding year. Cutting high in a few years will raise the stock to an inconvenient and injurious extent above the surface of the ground, and if pruned too low will impair the strength of the plant, at least, for the current year. Where earth has been put into the hills the preceding summer, several inches of the old bine will be alive and of considerable thickness, with two or three joints of buds, affording sets or cuttings that may be used immediately for raising a new plantation, or closely planting them in the ground for nursery stock, can be set out either in the following autumn or spring. Pruning should be done carefully, and weakly hills repaired either with cuttings, or, which is better, nursery plants, and marked by putting down a stick, so that in the subsequent operation of polling, shorter poles may be placed to the weaker plants; a precaution of great practical importance.

### Familiar Talks on Agricultural Principles.

#### FLAX.

THIS plant, though it has been cultivated in many parts of the world from time immemorial, is only of recent introduction among the general farm crops of Canada. From the success which has attended its culture where it has been tried, it is fast coming into notice and favour among agriculturists. It has indeed much to recommend it. It supplies two important articles of commerce, always and increasingly in demand, viz., the fibrous substance out of which linen fabrics are made, and the seed from which linseed oil and oil-cake are obtained. For these the market is as regular and constant as for wheat, and the price has been for some time past, and is likely to be for some time to come, if not indeed forever, sufficiently high to render flax-growing as remunerative as any of the crops ordinarily grown on the farm.

Moreover, it is restorative rather than exhaustive in its effect on the soil in which it grows, provided always that a proper system of husbandry be pursued. Time was, and not long since, when the reverse of this was hastily assumed to be the fact. Careful chemical analysis has, however, shown that the fibre and seed of flax take less from the soil than the grain of a wheat crop. The fibre indeed is obtained mainly from the atmosphere, there being only about five pounds of mineral matter existing in the fibre yielded by a ton of flax. It is also largely composed of woody structure which may be returned to the soil. If in addition to giving back to the land all the waste after separating the fibre, the seed refuse left after extracting the oil be fed to cattle, a most valuable manure is obtained, and flax may fairly take rank among the class of improving crops. It is also a characteristic of this plant, that it has long, slender, tapering roots, which penetrate deeply into the earth, and derive no small amount of nourishment from the subsoil. The opinion is held by experienced flax-growers, that if clover succeed flax, and be ploughed under after the second crop, its roots will replace most of the organic matter taken up by the preceding flax crop. The actual demand made by this plant on the inorganic substance found in the soil, will be seen at a glance from the following analysis made by Johnston of the ashes of flax fibre, and of the refuse or *pod*.

	Flax	Pod
Alkaline salts, chiefly common salt and sulphate of potash.....	8.83	9.58
Phosphates, chiefly of lime and magnesia.....	17.89	14.12
Carbonate of lime.....	46.60	61.43
Carbonate of magnesia.....	6.38	9.24
Insoluble silicious matter.....	21.24	15.63
	100	100

The above table shows the importance of returning the refuse to the land as manure, and it also furnishes a guide as to the kind of fertilizers needed to make up for the demands of this crop. Lime, bone-