will be poked, and the productive powers so overtasked as to enfeebles the root and endanger the prospects of the second crop.

**MANURING**

Is done in the fall, as it thus serves the double purpose of enriching the soil and protecting the plant from the winter frosts, and should on no account be omitted. Young yards require but little if any protection in winter, while old yards and bearing yards on sandy soils require much. It is, however, just as essential to manure the former as the latter. About a bushel of barn manure to the hill on sandy soil is none too much, and as the quality approaches the clay, the quantity can be reduced, till but two shovels full to the hill are required. That the hops may not be smothered, the manuring should not be done until the approach of winter, and should be removed as soon as the frost is out of the ground.

**POLES.**

The winter following the planting of the yard will naturally occur to the prospective grower as the proper time to procure and sharpen his poles. These may be of any kind of timber most easily procurable, though, of course, the more durable and symmetrical, the more valuable. Cedar and tamarack are highest in favor, and pine, poplar and basswood lowest. They should be from sixteen to twenty feet in length, and two and a half to four inches in diameter at the butt, with a true taper to the top, which should be not less than one inch through. They should be trimmed closely to enable the box-tender to remove the vines easily at picking time. The taper of the pole will prevent the vines from slipping when loaded with hops.

The poles being piled convenient to the yard, the work of sharpening commences. Tie three poles securely together within three or four feet from the tops, rear them up and spread their butts in the form of a triangle. Nearly under the centre of these poles place a block, which is commonly a section of a tree, from one and a half to two and a half feet in diameter, and about one and a half feet high. The pole to be sharpened is now reared on end, with the butt on the block and the top in the crotch of the poles. With an ax—a carpenter's hand ax is preferred by many—the pole is now sharpened to a true taper, beginning about eighteen inches from the butt. It is best to ross the pole a few inches higher up, as it is less liable to rot. As they are sharpened they should be piled ready to scatter on the yard before the ground breaks up in the spring.

**GRUBBING.**

The hop plant has two kinds of roots—the top or "bed roots," and the lateral roots, or "runners, as they are technically called. These last have eyes, like the potato, and are the roots from which the plant is propagated. They are not thrown out until the second season. The second spring after planting, these must, therefore, be
removed, as otherwise much of the strength of the plant would be
diverted for their sustenance, and the labors of cultivation would be
largely increased, as from each of the eyes a vine would spring up,
which, in order to secure a crop, would have to be destroyed. After
removing the manure from the hill—which should be spread evenly
over the ground—a light plow, called here a hop-plow, is run diagno-
superiorly between the rows, two furrows together, the earth being thrown
to the centre each way. This is done both ways of the yard, leaving
the hills diamonding to a person standing square with the yard. The
earth is then mostly removed from the hills with a hoe, or potato
hook, after which an instrument called a hop-hook is used to remove
the remainder and lift the roots into view. This implement can be
made by any blacksmith, from three-eighths round iron, the hook
being a half circle, about five inches across, with a shank about four
inches long, to which any one can fit a wooden handle. The point
should be flattened the opposite way from the line with the handle,
filed smooth and roundish, and when held horizontally, with bow up,
the point should be about an inch and a half lower than the junction
of the bow and shank. The roots being all laid bare, the “runners”
are cut close to the bed-roots with a sharp knife—a sickle-shaped
knife, made for the purpose, is best. The crown or top of the tap-
roots are then cut off, so as to leave but a few eyes from which to
produce vines for the current year. The hill is now grubbed, and
should be covered with earth to the depth of about two inches. As
this work does not have to be done the first spring, we now naturally
come to the work of

SETTING POLES.

In the spring, after the manure has been removed and the vines
have grown three or four inches high, or as soon as the hills can be
readily distinguished, and before anything has been done in the way
of cultivation, the work of setting the poles commences. For this
purpose a crowbar, with the lower end made large, and of about the
same shape as the sharpened end of the poles, is prepared. It is
plunged into the ground to the required depth and worked backward
and forward until a hole is made sufficiently large to receive the pole.
Two poles are set to each hill the first season, and three vines trained
to each pole. It is customary here to set three poles the second year,
and train but two vines to a pole. They are set one foot away from
the centre of the hills, (diagonally with the yard), so as not to inter-
fer with the bed-roots, placed from twelve to fourteen inches in the
ground, and their tops inclined away from each other, so that their
points will be about equi-distant from each other and from the tops of
the poles in the adjoining hills.

TRAINING.

When the vines are about two feet high the work of training
commences, and care should be taken not to let them get the start of