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The cultivation of hops, and their preparation for market, as practiced in Sauk County, Wisconsin. 1868

Rudd, D. B.; Rudd, E. O.

Reedsburg, Wisconsin: D. B. and E. O. Rudd, 1868

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THE
CULTIVATION OF HOPS,

AND THEIR

PREPARATION FOR MARKET,

AS PRACTICED IN

SAUK COUNTY, WISCONSIN. ✓

CONTAINING INSTRUCTIONS FOR SELECTING AND PREPARING THE SOIL,
PLANTING, MANURING, POLING, GRUBBING, TRAINING, CULTIVATING,
PREPARING FOR MARKET, BUILDING, DRYING, AND STORE
HOUSE, PLANS OF DRYING HOUSE, DIRECTIONS FOR
CONSTRUCTING AND SETTING BOXES, STOCKING
POLES, PICKING, DRYING, BAILING, ETC.

BY D. B. & E. O. RUDD.

REEDSBURG, SAUK CO., WIS.:
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REEDSBURG, SAUK CO., WIS.:
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TO OUR PATRONS.

In compliance with our promise to our patrons, we herewith present such information as we deem necessary to enable them successfully to grow hops and prepare them for market. We have not confined ourselves, in this treatise, to generalities, such as can be learned from any of the hundred newspaper articles on the subject, but have endeavored to explain minutely, some of the most difficult to be understood processes of the business, which no writer on the subject has attempted to do, so far as we are able to learn. Among these are the directions for grubbing, setting boxes, sharpening and stacking poles, baling the hops, &c., and, in connection with the other subjects treated of, embodies our experience of eight years in the business. Of course, in many of these operations, there are different methods pursued by different men, but we have given what we deem to be the best. We would say, however, to those about to embark in the business, that there are many things about hop raising which can be learned in no other way so well as by actual observation, and that the time and expense of a trip to this section, from the first to the middle of September next, would be more than balanced by the practical knowledge which might be obtained. Should any of you conclude to visit Reedsburg, your nearest railroad point would be Kilbourn City, from whence a daily line of stages runs to this place.

D. B. & E. O. RUDD.

REEDSBURG, Sauk Co., Wisconsin, March 30, 1868.

PRACTICAL DIRECTIONS
FOR THE
CULTIVATION OF HOPS,
AND THEIR PREPARATION FOR MARKET.

OF THE SOIL FOR HOPS.

Medium loam is best, though any of the loam mixtures between sand and clay will do; but the more sandy the soil, the more manure is required to keep up the necessary fertility and protect the plant from the effects of the drouth and frosts; while the clayey soils require much manure to give them mellowness and prevent the ground from baking. In consequence of its porous condition, a sandy soil requires heavier and steady manuring; while, after the first season, clay, as it retains its fertilizing properties, requires much less. Land upon which one or two crops have been raised is best, as the vegetable fibres are well decomposed and the soil is in a fresh and vigorous condition. A medium loam, exhausted by a series of wheat or corn crops, not having been drained of some of the essential properties, requires only the usual amount of manuring to bring it into fit condition. Elevated locations should be selected, as in low, moist places, hops are exposed to the frost and liable to rust.

PLANTING.

The root planting season is from the earliest period at which hops can be grubbed in the spring until the middle of May, and in this latitude they are occasionally planted as late as the first of June. Early spring planting is advisable, as it admits of the plant growing beyond harm from the cut worm, and it will better withstand the early drouths.

Seed roots are cut into pieces containing two sets of eyes each, and are valuable in proportion to their soundness, the quantity of thread fibres they contain, and the species to which they belong. The majority of the yards of Wisconsin are of the English Cluster, the vigorous habits, prolific condition, and richness in lupulin of which give it preference in this climate, and unless it should prove to be unusually liable to attacks of disease or vermin, it will probably never have a rival in this State.

To insure success against disease and worms, from three to four pieces are put in a hill, while really two good sound roots are suf-

ficient. The planting is done in rows, eight feet apart each way, making six hundred and eighty hills to the acre, though only six hundred and fifty hills are commonly reckoned—a vacant space on either side, left for turning the team, being considered.

The ground should be prepared thoroughly, in about the same manner as for corn, and well pulverized. Too much stress cannot be laid upon this: and especially the ground should be plowed *deep*, to allow the bed roots to go down. The hills should not be less than eight feet apart each way; and as the yard once planted lasts for years, great pains should be taken to make the hills at a uniform distance, so as to be in a perfect line in all directions.

The selected piece is accurately squared, stakes stuck at the four corners, and a row of short stakes stuck, eight feet apart, the entire length of each side. A wire or rope—a wire is preferable, as it will not stretch—with a piece of red yarn attached to it every eight feet, and a sharpened stake attached to each end to manage it by, is stretched across the end of the piece. A man at each end carries the wire along, and stops long enough at each stake to strengthen it, and give time for one or two boys, with baskets of pins, eight or ten inches long, to pass along and place a pin at each piece of yarn. These stakes should be of some light colored wood, so as to be easily distinguishable, as thereby any deviation from straight lines would be more easily detected.

Our method of planting is as follows: We take a stick, sharpened, about eighteen inches long, and about an inch and a half in diameter, and make a hole large and deep enough to receive the roots, into which we put them, in a bunch, eyes up, upper ends even, to the depth of an inch or an inch and a half below the surface. Still holding them in this position, with the stick we firmly press the earth down beside them, taking pains to bring it in contact with them throughout the whole length, otherwise a dead air cell will be left, which is often fatal to them. Now we fill the hole to the surface and replace the stake, which had been removed to allow of planting.

The planting completed, commence at the fifth hill of the fifth row and take up every tenth hill therein, to within five hills of the other side. Do the same with every tenth row thereafter, to within five rows of the opposite end, and replace with male roots, (which are furnished in proper proportion), and put two stakes to the hill to distinguish them. The cost of cultivating the first season can be turned into profit by planting corn, potatoes or beans between the rows, and cultivating with the hops. Our preference is for potatoes, or alternate rows of potatoes and corn, as they shade the young plants from the sun less than corn alone. To raise part of a crop of hops the first season, (which we do not recommend, as we think the result rarely justifies the expense), no other crop should be planted with them, and but one pole, ten or twelve feet long, placed to the hill. One, two or three vines can be trained to the pole, according to the strength of the hill. If some judgment is not used, too many vines

will be poled, and the productive powers so overtaken as to enfeeble 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 diagonally 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 interfere 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

the trainers, as in that case the work is trebled; the vines twisting and roping around each other. When they do become entangled in this manner, before tying up it is necessary to disentangle them—a tedious and delicate job, as they must not be broken, and are exceedingly brittle while young.

Select the thriftiest vines (two or three to a pole, as before explained,) and wind them two or three times round the *nearest* pole. This prevents crossing the vines on the hill, which would endanger their chafing each other. Care should be taken not to let the vines cross each other on the pole, as the upper would strangle the lower one. They are now fastened with a piece of yarn raveled from an old woolen stocking, the ends of which should be *twisted*, not *tied*, together. In putting the yarn around, it must be put *below* the second joint.

When the vines on the poles are about four feet high, gather all the surplus vines, twist them into a bunch, and bury them at the foot of the pole. Cutting is practiced by some, and pulling off by others, but the first bleeds the vines, and the latter might seriously injure the root.

When the vines are once all tied up, the labor of training is mostly done, but the yard requires attention every day for three or four weeks, in order to observe and tie up any vine which might have escaped from its fastening, or which, for any reason, refused to cling to the pole. Should the heads of the vines get broken off by hail or otherwise, after the surplus vines have been destroyed, cut off one of the uppermost arms and train the other round the pole, and it will soon become the main vine.

CULTIVATION.

As soon as the surplus vines have been destroyed, the plow should be started. In new yards we advise throwing a light furrow *towards* the hill the first plowing. Use a very short whiffletree, made on purpose, to avoid injury to the vines. Plow four furrows to a row each way of the yard; then clean up around the hill with the hoe, taking pains to keep the ground loose and free from weeds.

The second and third plowing is done with the cultivator, or double shovel plow, the latter time diagonally. The fourth plowing, throw the earth toward the hill with the hop plow, going four times through each way as at first, and finish with the hoe. Hilling is practiced by some, but in our judgment it is better not to hill much. There ought to be absolutely *no* weeds in the yard when this course of cultivation is completed, which should be before the "burr" sets, which, in this latitude, takes place about the 20th of July. After the first year, the earth should be thrown from the hill at the first plowing. Subsequent cultivation as above.

PREPARATIONS FOR THE HARVEST.

During the spring and summer, the hop-grower, if just commencing the business, must make ample preparations for the harvest, as the

crop must be secured within a very short time, and requires more than usual energy and care in the gathering and curing, or it will become wholly or partially worthless. The first thing he will require will be a

DRYING AND STOREHOUSE,

Of which several plans have been made. The one subjoined, which, for a small one, we consider a model of convenience, is twenty by forty, with twenty foot posts. It is divided into four rooms—two down and two up stairs—by a partition running from top to bottom across the building in the centre. One room on the ground floor is the stove-room. It has no floor other than the natural ground. It is plastered on the ends and sides in order to prevent the escape of heat, but has no ceiling. Four openings are made close down to the ground, one on each of the four sides, about ten by twenty inches, to allow of the entrance of cold air to supply the stove and keep up a draft through the hops above. These openings are supplied with sliding doors, by which the amount of air entering the stove-room can be regulated. The hop-stove stands in the middle of this room. It should be large enough to take in cord wood, unless, as some prefer, two stoves are used, in which case the arrangement would be different from that here described. The pipe should be twelve inches in diameter, passing around the entire room at a distance of four feet from the sides and six feet from the slats of the drying floor, before entering the chimney, which is in the partition already alluded to. This immense pipe serves as a drum to distribute the heat evenly to all parts of the room. Above the stove-room is the kiln, or drying-room, separated from the stove-room simply by an open floor. This floor is made of strips of one and a quarter inch lumber, two inches wide, placed one and a quarter inches apart, and covered with coarse (eleven ounce) burlaps, having a very open mesh; or, what is on some accounts preferable, thin factory cloth.

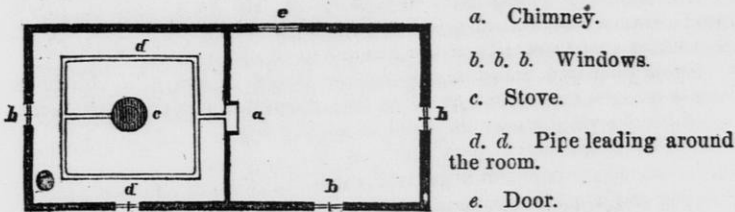
Upon this floor the green hops are spread to dry; and, the stove-room having no ceiling, the warm air rises up through the open floor and circulates through the bed of hops. The sides and ends are plastered to the roof, but here the bare shingles are left exposed. The kiln is provided with a large opening in the top of the roof, to create a draft and allow of the escape of the clouds of vapor which rise from the green hops when drying. This opening is surmounted by a square cupola, the sides of which are made of thin strips of wood, so arranged as to keep out the rain, but offering no impediment to the escape of vapor. Another form of ventilator, which is growing in favor here, is in the form of a large funnel, which is open upon one side to allow of the escape of vapor, and so constructed that it will revolve with the wind, and provided with a vane, which whirls it around when the wind changes, always keeping the escape upon the opposite side from the quarter from which the wind comes. Back (or in front, as convenience dictates,) of the drying-room is the

storing-room, with doors communicating between the two. The strips, of which the floor of the drying-room is composed, should be so arranged that in shoving the hops from the kiln to the storing-room, they can be pushed lengthwise of these strips, as the rake-head (which we find to be the most convenient) cannot well be pushed crosswise of them. The floor of the storing-room should also be made some four feet lower than the floor of the kiln, as it facilitates matters greatly when it comes to shoving off the hops.

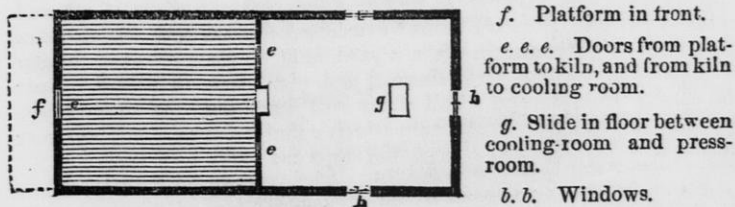
Beneath the storing-room is the press-room, into which the hops are thrown through an aperture in the floor. A small stairway leads from the press-room to the store-room. A portion of the press-room can be used as a store-room when necessary. In front (or rear, depending on the location of your kiln,) of the hop-house is a raised platform, on a level with the floor of the drying-kiln, which it communicates with by a door. This platform is provided with a swinging crane, to which a block and tackle can be attached for raising the heavy sacks of green hops preparatory to spreading them upon the kiln.

The following cuts will, perhaps, afford a clearer understanding of the plan and arrangements of the hop-house:

PLAN OF THE LOWER STORY.



PLAN OF SECOND STORY.



In large yards it is desirable to have two kilns in order to facilitate picking, for hops must be picked as rapidly as possible when once ready for it, and when picked must be dried at once, (for if allowed to stand a few hours they will commence sweating and soon become worthless,) and consequently limited drying facilities keep everything else back. In such case the same general plan of drying-house can be followed, by having the two kilns side by side, but, of course, the building would be on a larger scale. The kilns, however, should in

all cases be perfectly independent, heated by separate stoves, so that one or both can be used at pleasure at any time.

As before remarked, the hop stove is an immense affair, capable of receiving ordinary cord-wood, and as a high temperature must be constantly maintained during the process of drying, is constructed without especial reference to economy in fuel. This last should be the best quality of wood, thoroughly seasoned, as it is a great mistake to suppose that any kind of wood will do to dry hops with. Probably, however, that where coal is procurable, the desired object would be readily attained with a much smaller heater. The stove, pipe and chimney should be so arranged as to prevent smoking, or the flavor of the hops might be injured. The fumes of sulphur, which often find their way out through the best stoves where bituminous coal is used, would be no injury. We have already spoken of the manner in which the pipes are arranged, and given the reason for it, but I wish to add that they should not come nearer than four feet to any wood, as the high temperature maintained for hours would render them dangerous. Great care should also be taken in the construction of the chimney, and where it passes through wood it would be well to construct it of double-thickness of brick.

The building above described should be set on a stone or brick foundation, eighteen inches to two feet high, and there should be at least sixteen feet space from the ground to the kiln cloth.

By drying night and day, forty-five boxes to the kiln, the hops from ten acres of ground, yielding two thousand pounds to the acre, (a very large yield,) may be dried in twenty days.

RIPENING OF THE HOPS.

It is a matter of importance to know when the crop is fit to pick. If picked too soon the hops will be found deficient in lupulin, and, consequently, less valuable as well as much lighter; while, if allowed to stand too long, they are liable to rust, and the scales of the strobiles to shell off. To ascertain when a yard is fit to pick, select a number of hops from various parts thereof, and pick them in pieces. Near the core or stem several small seeds will be found. If these seeds, when freed from the purple pulp which surrounds them, are black or brown, and contains white meat, the hops are ready to pick.

PREPARATIONS FOR PICKING.

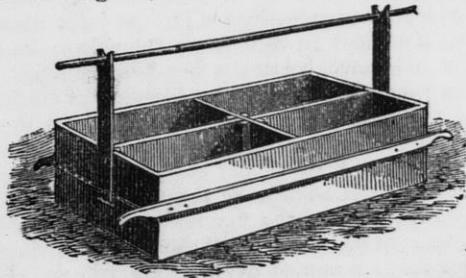
The labor of picking hops is mostly performed by women and children, and in the hop region, no lady, however refined or wealthy, considers herself at liberty to decline to assist in securing the great staple, unless other duties imperatively forbid. And in truth it is necessary they should help, when every available matron, maid, lass and lad within a hundred miles has been pressed into the service, and thousands brought from the lake cities and from points in other States.

The hop-growers should secure sufficient help in advance of the

time for commencing to pick, to enable them to complete the work within three weeks, for the hops are usually not ripe in this latitude before the first of September, and when once ripe they rapidly deteriorate. Experienced pickers average, one with another, about two and one-half boxes each per day, some few picking four to five boxes, while many more do not exceed two boxes. Therefore, if the grower designs to dry but one kiln of forty-five boxes per day, he should engage about sixteen pickers; while if he is to dry two kilns per day, he will need double that number. It will, of course, also be necessary to make due preparation to board and lodge the help thus engaged, which is no small item in the expense of hop-farming. These and many other things will, however, naturally occur to the new beginners.

BOXES.

The number of hop boxes which should be provided depends upon the number of pickers to be employed, for there must be one to each picker. The hop box is generally estimated to contain seven bushels, but the one legalized by statute in this State is three feet long, two feet high, and eighteen inches wide, which will hold a trifle over seven bushels. These boxes are not made singly, however, but a box is made sufficiently large to divide into four compartments of this size. These four boxes, in one, are called "gangs." The "gang" should be made of some light, half-inch lumber, in order that it may be moved from place to place without too much trouble. The top board on each side should be six inches wide; the next one, the same width, should project about eighteen inches at each end, and should be of inch lumber. These projections may be shaved to one's liking, and serve as handles to move it by. At each end a board projects some two feet above the box, with holes through which a pole can be placed when in use to support the hop-poles while the pickers are at work. In constructing the "gang," light corner posts should be used, which should project six or eight inches to serve as legs. They are not shown in the following cut, which, in other respects, is correct.



SETTING BOXES.

A day or two before commencing to pick it will be well to set the boxes in their proper position in the yard. For the purpose of illus-

trating the method of setting boxes, we will suppose that the grower desires to commence at the southwest corner of the yard, and pick towards the north, (though any other corner would do as well.) Count off three rows towards the east, and carry the box into the alley between the third and fourth rows, and carry it north into the alley between the third and fourth rows running east. Call this gang No. 1. Carry another gang six rows further north in the same alley as No. 1, which will be in alley running east between rows nine and ten. Going back to No. 1, count off six rows to the east and deposit No. 3 between rows nine and ten, counting from the west, and three and four counting from the south. No. 4 is placed at the intersection of alley in which Nos. 2 and 3 are. No. 5 is in same alley as Nos. 1 and 3, and six rows east of No. 3. No. 6 is at the intersection of the alley in which are Nos. 2 and 5. Other boxes would go to the east in the same manner.

When No. 1 has picked out its sett, it is removed by a couple of box-tenders six rows to the north of No. 2. No. 3, in like manner, is moved six rows to the north of No. 4, and so of the rest. Each gang is thus located in the centre of a square of thirty-six hills, which we consider the most convenient in practice, though some set in the centre of a square of sixty-four hills. This is too far, however, to carry poles.

Each two gangs has one foreman, called here a box-tender, whose duty it is to pull, strip and stack the poles, empty the boxes—the pickers holding the sacks—assist in loading the hops, and sometimes keep the accounts of pickers. Quite work enough for one man. It is also his duty to see that the orders relating to picking clean, etc., are carried out. In order to produce a prime hop, (which is the lowest grade of Wisconsin hops,) *all large leaves and stems must be kept out of the box.* Pickers will be just as careless in this respect as they are allowed to be, and much firmness is required to secure clean picking. Keeping the hops picked up around the boxes should also be insisted on, as many hops are often wasted by not attending to this.

The box-tender commences by pulling the poles nearest the box, having first cut the vines as high up on the pole as he can conveniently reach, but, of course, below the hop-bearing arms. The object of cutting thus long is to diminish the bleeding as much as possible. Having pulled the pole, he lays the top of it across the end of the pole passing through the box. Two poles are carried to each gang, and quickly stripped of their silvery clusters. As the cream of the picking lies at the extreme tips of the vines, the butts are carried alternately upon one side of the "gang," and then upon the other, in order to give all the pickers an equal chance. The vines are not cut until just before they are wanted, as they soon wilt, and then the hops are very difficult to remove. The hops are dropped loosely into the box, and are measured as they lay. The poles being picked, the box-tenders strip the vines off and stack them as follows:

STACKING POLES.

Suppose, again, that we commence at the southwest corner of the yard. The box-tender counts off four rows to the east. Around the first hill in this fourth row he builds a half stack. He commences by tying together four poles with a stout piece of hop vine, within three or four feet of the top. He then rears these poles, placing the butt of one of them *in the centre* of the alley between the third and fourth rows, and of the other in the alley between the fourth and fifth rows. The other two butts directly south of these and about as far south of the hill as the first two are north of it. The butts of the four poles thus form a quadrangle with the first hill of the fourth row directly in the centre. In stacking, the poles are kept in four bunches, as closely together as possible, and an equal number in each bunch in order to balance the stack. The first full stack is made around the sixth hill in the fourth row, and is made precisely like the one just described. The object of building in this way instead of round stacks, is to allow a horse and plow to pass under in plowing the yard diagonally in the Spring before grubbing. Each full stack contains the poles of a setting—thirty-six hills—in the case we have supposed all the poles between Nos. 1 and 2, while those lying south of No. 1 went into the half stack.

In stripping the vines from the poles it is just as convenient for the box-tender to keep the vines of each picker by themselves, and when they are burned the piles should be burned separately, as a large fire would be likely to injure the roots. Before burning, which is done just before manuring, the long ends of vines left on the hill are cut close to the ground and added to the piles.

FIELD SACKS.

Before commencing to pick, field sacks should have been prepared for the purpose of conveying the hops to the kiln. These may be either permanent or temporary. If permanent they should be made of eleven ounce burlaps, and about the size of the temporary ones we are about to describe. Cut off from your roll of sacking, (which should have been secured before commencing,) two pieces, each one eighteen inches longer than the inside length of your hop-press, and sew them together with the sail twine used for sewing up bales, leaving one end open. The cloth will probably shrink somewhat, and when picking is over they can be ripped apart and used in baling. Each of these sacks will hold two boxes without crowding, and no more than that should ever be put into them. Enough of these sacks should be provided to hold the hops for a kiln, and a few to spare. Care must be taken not to press the hops, either in the boxes or sacks, as where they have to stand a few hours after such pressure they heat, become discolored, and lose most of their value. It is advisable to shield the full sacks from the rays of the sun when the weather is very warm, either by covering with vines or setting in the shade of a tree.

DRYING THE HOPS.

A great deal depends upon the proper drying of the hops, as a little carelessness will destroy half their value. If overdried or scorched, not sufficiently bleached, or bleached too much, their value is, to a greater or less extent, destroyed; and, if not dried enough, they are liable to heat and sweat from natural causes, which partially, if not wholly, destroys them. The process of drying requires the exercise of unremitting attention, and a good deal of sound judgment; and upon its success depends the results and profits of the whole season's labor. No matter how clean the yard may have been kept, how carefully the vines may have been trained, how rapidly and properly picked, and how neatly baled, if they are not cured just as they ought to be—if not quite enough, or a little too much is done—the whole season's labor, comparatively speaking, comes to naught.

The green hops should be spread upon the kiln to a depth of about twelve inches,—although, in case of emergency, they can be spread to a depth of eighteen inches. A 20x20 feet kiln is worked to the best advantage with from forty-five to fifty boxes. It should be stated, right here, that the hop-grower should either run one kiln or two kilns in twenty-four hours, and make his calculations for picking accordingly, so as not to have the hops picked faster than he can dry them. If one kiln only is dried *per diem*, it is more advantageous to dry them at night, as the hops picked early in the morning cannot, generally speaking, be kept in the sacks until the next morning, without spoiling. When two kilns are dried, the kilns are put on at noon and at midnight. They should be spread on the kiln at a uniform depth, and should never be stepped on, as it packs them so close that the hot air cannot circulate freely among them. If necessary to pass from one part of the kiln to another while the green hops are on it, the feet should be very carefully pushed down to the kiln-cloth, and slid along it as the person advances, without the feet being lifted up.

When the hops are spread, the fire is kindled in the hop stove, very moderately at first, and increased gradually so as to get the whole mass warmed thoroughly before a high degree of heat is reached, because, if the heat is too intense before the upper hops are heated, they will not allow the steam to escape, and the lower ones will be scorched. About an hour should be consumed in raising the thermometer inside the kiln to one hundred and thirty degrees. It should never advance above one hundred and fifty degrees, and should be maintained at one hundred and thirty to one hundred and fifty degrees. When the dryer discovers that some of the hops on the top of his kiln appear to be dry, which will be in about nine hours, they should be turned. This is accomplished by taking a common hay-rake, and commencing near the door, move the hops with the head—not teeth—of the rake from the sides towards the centre of the kiln, making a path two or three feet wide around the kiln to the door

again. Now, beginning at the outside of the hops thus heaped up, the dryer shoves his feet under the hops and passes rapidly around the kiln, scuffing the hops before him, and taking a furrow about a foot wide. Continuing thus to narrow the unturned mass, he arrives at the centre and the hops are turned. They are now leveled off to a uniform depth, and allowed to remain until thoroughly dried. In order to ascertain this examine the cores in a handful of hops, and, if nearly all of them are dry and wiry, the kiln is ready to run off. If the kiln is to be immediately used, they can be shoved out into the store-room to cool; but as it is best to disturb them as little as possible while warm, it is advisable if the kiln is not wanted for immediate use, to allow them to remain until perfectly cool. If, then, they are shoved out into the store-room to cool, they should be spread around to a uniform depth. Before, however, a new kiln is shoved off, these should be shoved back to make room for them, and hot hops from the kiln should never be mixed with cool ones.

During the drying process it is customary to burn brimstone in the stove-room, as its fumes bleach out the rusty spots on the outer leaves, and also loosen up and expand the hops, and thus facilitate the drying. When the kiln has become thoroughly heated up, at the expiration of an hour from the time of firing up, and when the heat has been raised to about one hundred and thirty degrees, half a pound of brimstone to each ten boxes on the kiln should be burned in an open iron vessel on the stove. After the fumes have passed away sufficiently to allow of an examination of the kiln, if there are any considerable number of the hops still rusty, half as much more should be burned. A very good way, when the hops are very rusty or badly discolored by frost, is to set a pan or two of water on the stove when firing up, which will soon boil, and the steam permeating the hops will allow the brimstone to act upon the hops when applied, at which time the pans of water should be removed. Sulphur has no bleaching power upon dry hops. When properly bleached, they should be a straw color, and no more brimstone should be used than is necessary to produce this effect.

When removed from the kiln, the hops should always be allowed as much air as possible, but shielded from the rays of the sun, which fade them. They should be handled as little as possible, as they sell best when unbroken.

If thoroughly dried, they will be ready for baling in four or five days, but should not be baled so soon, unless absolutely necessary, although they should not be allowed to lie over three or four weeks before baling, as they lose strength rapidly by evaporation.

As long as lying in a pile in the store-room, they should be examined from time to time, to ascertain that they are not disposed to heat and sweat, and, if they are found to be so disposed, they should be shoveled over gently, in order to give them air.

About eleven to twelve hours are required to dry off a kiln of hops at about one hundred and thirty to one hundred and fifty degrees of heat—the longest time, of course, being required at the commencement of the picking season, when the hops are the greenest. For the last hour before they are thoroughly dried, the fire should be allowed to slacken and the heat reduced about one hundred and twenty degrees.

During the drying process, there is great danger of the drying-house or the hops taking fire; and no grower should think of attempting it without having an insurance policy on his house and hops, covering the whole drying season. A few barrels of water and buckets should also be kept standing at the door of the stove-room, as, owing to the intense heat maintained in the kiln, and the inflammable nature of the dry hops, it is impossible to suppress a fire when it has had a moment's start. Should a fire occur, it would not be amiss to throw water on the stove, as the steam thus created would very materially aid in subduing the flames.

Enough air should be let into the stove-room, through the openings already described, to keep up a steady draft through the hops, and out of the opening in the roof, else the vapors thrown off by the hops will not be carried away, but become chilled and fall back, and the drying process be retarded.

PRESSING HOPS.

There are several kinds of hop presses in use in the hop region. The one, however, combining the most points of excellence, is the "Bellinger Excelsior Hop Press," manufactured in this county. In using this press, the following is the *modus operandi*:

The press is stationed directly under a hole in the floor of the cooling-room, which should be about twelve by twenty four inches, and provided with a bottomless sack, securely tacked around the edges, to conduct the hops into the press. The press should be taken to pieces, and a piece of sacking one foot longer than the inside of the press (or half of a temporary field sack) should be placed on the bed so there will be just the same margin on each side, and six inches on each end beyond the inside of the press when it is set up. The sides and ends should then be replaced and the fastenings secured, the movable end-boards put in place and buttoned, and the movable side-boards on top put up. About three bushels of hops are first put in the press, and two men get in and tramp them down. Dancing is a favorite pastime in hop-picking time, and if any of the men about the place are inclined to "trip the light fantastic toe," now is a good time for them to exhibit their muscle. A couple of Indian braves, dancing the war dance, to the music of their tom-toms, would do excellent service. More hops must be added from time to time, and the tramping continued until the press is full. A bale should weigh about two hundred pounds, and after pressing one bale and weighing it, a very good idea may be obtained of the amount of tramping necessary. The press being full, take the board which goes under the follower and cover it with a piece of sacking of the same size as that at the bottom, leaving the margins the same as before. Gather up the ends and sides of the cloth, (the latter being wrapped around the board,) and put in the press. Arrange the folds of the cloth so the follower will not confine it and apply the power. As soon as fairly started remove the first of the movable boards at each end, and the others as the follower descends. When the bale is about twenty-seven inches in height, remove the ends and sides and lap the upper over the lower sacking, fasten with six or eight scratch-awls, or slim iron pins about six inches long, until the sewing is completed. Large, awl-shaped needles are used; and the best soft sail twine for thread. A little piece of tallow will be found useful to grease the needles. Commence sewing about two inches outside the bale, and end about the same. Draw the stitches tight, and let them be about an inch apart. Now remove the power and carefully roll the bale out. The ends are neatly fastened by means of twelve slim hard-wood pins about six inches long, six at each end. The bale should now be set on end to be capped at leisure, care being taken to leave space between the bales for the circulation of air. In capping no larger pieces of sacking should be used than is necessary to cover the pins. The raw edges should be turned under.

MISCELLANEOUS.

The weight of hop-sacking should be about one and a half pounds to the yard, as anything lighter than that is not sufficiently strong to bear shipping long distances, and anything heavier is objected to by brewers as an unnecessary tax on them. We have known hop-farmers to use two-pound sacking, and to put in pins large enough to pin together a barn frame, but as every man's hops are marked by the buyer with lot and number, the fraud is easily traced back, and the dishonest farmer has to suffer for it. In training the vines wind to the left, or with the sun.

DATE DUE

FACULTY/STAFF

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