

APIARY.

HANDLING BEES, SMOKER, ETC.

To be a successful bee-keeper, the persons keeping them should see their bees often, and know at all times their actual condition. To do this satisfactorily we must have the movable frame hive in some form, and be able to open it and take out the frames at pleasure. "But," says one, "the bees will sting." Yes, we know the bees will sting if you are not careful, and in taking out the frames you hit them one against another, thus jarring and smashing the bees and honey. But if you will be careful, and use a little smoke when needed, there will be no trouble. When you wish to open a hive, step to the back side of it, so as not to interfere with the bees flying out and in, remove your cap, and with your knife or something else, pry gently. If the weather is warm the propolis will be soft, and the honey-board will come off without jarring a particle. Have on hand some smoke, and as soon as you raise the honey-board blow in some, to keep them quiet. Begin two or three frames from the one you wish to take out, and with your knife or fingers move them away a little, then take the one you wish out. After the first you can take out any you wish by setting one down on the outside of the hive. With the blacks and hybrids you will want smoke; but as far as my experience goes, with the pure Italians you will need no smoke.

I will describe a smoker which works with me like a charm, and what suits me I think will suit any one. Take a piece of sheet iron and make a tube eight inches long and two inches in diameter. This is easily done with small rivets used by tinnermen, and almost any person can make it. Now, make a plug for each end, tapering each down to a point. Bore a quarter-inch hole in the plugs, and cover the large ends of the plugs with wire cloth, which should be bent so as to raise them in the centre; this keeps trash from filling the holes in the plugs. Next, one end is nailed fast, and the other is left moveable, so that it may be taken out when the pipe or tube thus prepared is to be filled with decayed wood, which is to be kindled at the open end, of course. You yet want a handle, which is made by boring a two-inch hole in a piece of half-inch board, and shaping it to suit you. Then slip the tube into it, and it may be fastened by inserting a nail between the wood and the tube. One plug should be shaped convenient to be held in the mouth when blowing smoke through the tube. When you wish to use the smoker, insert the plug made for the mouthpiece, and then you can smoke the bees sufficiently in a short time. By adding fuel occasionally, you can keep it burning any length of time, keeping one end open when not in use. Do not use tobacco for smoke, as it stupefies the bees and makes them irritable for several days after.

Now a word for the Italians. I find them very peaceable when compared with the black bees. I can open a hive of Italians at any time when they are raising brood, without smoke, and not have one offer to sting me, unless by some mishap I jar them so as to arouse them, which takes considerable. Beside this, you can find the queen readily; the young bees do not drop from the comb as the black ones do, and as far as my experience goes, they will make one-third more honey. I have one stock of Italians that gave me one good swarm and 125 pounds box honey the first season. The Italians, to be pure, should all have three yellow bands, and some will occasionally show the fourth.—G. M. Doolittle, in *National Bee Journal*.

Chinese Mode of Taking Honey.

Mr. Fortune, the well-known English botanist, thus describes the mode adopted by the Chinese for taking honey from bee-hives. He says: "The Chinese hive is a very rude affair, and looks very different from what we are accustomed to use in England. It consists of a rough box, sometimes square and sometimes cylindrical, with a moveable top and bottom. When the bees are put into a hive of this description it is rarely placed on or near the ground, as with us, but is raised eight or ten feet, and generally fixed under a projecting roof of a house or out-building. My landlord, who had a number of hives, having determined one day to take some honey from two of them, a half-witted priest, who was famous for his powers in such matters, was sent for to perform the operation. This man, in addition to his priestly duties, had charge of the buffaloes which were kept on the farm attached to the temple. He came around in high glee, evi-

dently considering the qualification of no ordinary kind for the operation he was about to perform. Curious to witness his method of proceeding with the business, I left some work with which I was busy, and followed him and the other priests and servants of the establishment to the place where the hives were fixed. The form of the hive in this instance was cylindrical; each was about three feet in length, and rather wider at the bottom than at the top. When we reached the spot where the hives were placed, our operator jumped upon a table there for the purpose, and gently lifted down one of the hives and placed it on its side on the table. He then took the moveable top off, and the honey-comb, with which the top was quite full, was exposed to our view. In the mean time an old priest having brought a large basin, and everything being ready, our friend commenced to cut out the honey with a knife apparently made for the purpose, and having the handle almost at right angles with the blade. Having taken about one-third of the contents of the hive, the top was put on again, and the hive elevated to its former position. The same operation was repeated with the second hive, and in a manner quite satisfactory. "But," it may be asked, "where were the bees at that time?" and that is the most curious part of my story. They had not been killed by the fumes of brimstone, for it is contrary to the Buddhist creed to take animal life; nor had they been stupefied with fungus, which is sometimes done at home; but they were flying about over our heads in great numbers, and yet, although we were not protected in the slightest degree, not one of us was stung; and this was more remarkable as the bodies of the operators and servants were completely naked from the middle upwards. The charm was a simple one; it lay in a few dry stems and leaves of a species of *Artemisia* wormwood, which grows wild on these hills, and which is largely used to drive the pest, mosquito, out of the dwellings of the people. This plant is cut early in the summer, sun-dried, then twisted into bands and it is ready for use. At the commencement of the operation which I am describing one of the substances was ignited, and kept burning slowly as the work went on. The poor bees did not seem to know what to make of it. They were perfectly good-tempered, and kept hovering about our heads, but apparently incapable of doing us the slightest injury. When the hives were properly fixed the charm was put out, and my host and his servants carried off the honey in triumph."

Scraping Apple Trees.

We hardly take up a work on horticulture, or even an agricultural paper, without seeing an article advising scraping apple trees.

My orchards are from ten to sixteen years planted, and until within three years I have always scraped the bark in the spring or mid-summer. Now for the results. I often found small patches of bark, about the size of a fingernail, discolored, having the appearance of being sunburnt on applying a knife, cutting dry and hard—dead to all appearances. Now my trees look like shag-bark hickory, all the old bark hanging by a small part in the middle so loosely that it can be taken off by the thumb and fingers better than with a scraper. These little pieces of bark, about the size of my hand, act as a perfect sunshade for the tender new bark underneath, which is smooth, thrifty, of a pale brown color, with no more indications of diseased portions in it than is found in the bark of a maiden tree of the same variety.

I have never allowed grass to grow under my trees. I feed them well, keep the soil mellow, shoe deep, all through the growing season, with a small harrow made for the purpose—with five (of Ford's) teeth, that will not catch the roots—drawn by two horses, the driver riding on a seat to shun the fate of Absalom among the limbs, the horses going at a quick pace. One day will do up four acres, going both ways; leaving the soil, if dry, light and pliable, and as porous as granulated sugar, five inches deep.

A horse may be groomed until doomsday, but if he does not have good food he makes a sorry figure and is unable to work. So with an apple tree; it may be scraped and washed, but if it does not have food and culture, it soon becomes a painted sepulchre, a receptacle for the labor lost trying to coax Nature to violate her great immutable law of compensation.

Some theorists entertain the idea that the elements necessary to produce a good crop of apples are deficient in the soil of late years. Is not the law of compensation violated? If we draw off the yearly crop, can we replace all the elements in the soil by manure, unless that manure is made of that kind of material? The inquiry has often been suggested to my mind, while rambling through the woods where no cattle roam: "Why is it that those apple trees found among the woods are such constant bearers?" Is it because all the fruit perishing, leaves all its organic and inorganic elements to pass into the soil as food, to be taken up by the tree to make its crop? The fairest apples I grew last year were on a tree under which a lot of cider apples rotted the previous year. The original Fall Harvey tree sprang up and grew

(in this town) within six feet of a cider mill. It yielded yearly great crops. After the mill was removed from the building, the tree commenced to fail, and is now gone. Had the elements of the acids anything to do for these trees, or were they accidental circumstances?

I have a lot of pomace from five or six thousand bushels of apples, that I shall mulch a part of my orchard with next June, after my second harrowing. As a manure for grass or any hoed crops, it is worthless.

This matter may all be a crotchet, a whim of my brain, but I am going to give it a good trial, and perhaps I may report the results to you some future time.

I know it is getting out of the old rut, but the old ruts are so deep there is no prospect of success in pulling in them. When the hub rubs it is time to look at your ways. I have fought the battle, won the trees, and good ones too; now I want the fruits of the victory.—J. S. NEEDHAM, in *Tilton's Journal of Hort.*

Smut in Wheat.

Mr. Hope, of Fentonbarns, a distinguished Scotch agriculturist, expresses the following opinion on pickling seed wheat as a preventive of the above difficulty:—

I have long been of opinion that ball-smut is a fungus propagated by adhering to the seed, and unless this fungus is destroyed before being sown, all the grains infected by it are sure to produce diseased ears. I must remark here that smut is of two kinds. In one of them the smut or black powder flies or wastes away before the sound wheat becomes ripe, while in the other the powder is enclosed in a skin frequently strong enough to remain unbroken when passing through the threshing machine. The larger number of balls, however, do get broken, the powder discoloring the sample, giving it a disagreeable smell, and a peculiar oily feeling, which judges know at once. It is this variety which is destroyed by pickling. The other appears to be propagated in some other way; at least as yet no remedy has been found for checking it. Many years ago, I rubbed smut balls among clean wheat, then pickled part and sowed both. The result was the pickled seed produced a healthy crop, while of the unpickled portion there was hardly one sound ear. I have again and again seen the sowing of fields finished with unpickled seed tell to the spot where the dressed and undressed seed met. Old wheat should not be pickled, as its vitality is sometimes totally destroyed by it, and the fungus itself seems incapable of growth when upwards of twelve months old. I am far from saying that ball invariably follows when undressed wheat is used for seed, as by a careful selection of seed this may be avoided for years. But the little trouble and expense saved by not pickling seed is trifling, indeed, in comparison to the security given. I have tried pickling barley for blackheads, where the powder blows off before the grain is ripe, but, as in wheat, without success. Still, I think it is worthy of further trial, as it has appeared to me, for the last two or three years, that many of the blackheads in both oats and barley are more nearly allied than formerly to the true ball in wheat. I should like to see experiments made by steeping grain different lengths of time in sea water, or in water salted to the strength of swimming an egg. This is said to be a remedy against mildew and rust in warm climates, and possibly it may prove equally efficacious here.

Which is the Best Rotation?

In some respects a rotation or system of cropping which starts from seed with a summer fallow and ends with a crop of spring grain, is superior to one that begins with a hoed crop and finishes with wheat. If a sod is turned in the spring and a hoed crop put in, there is no opportunity for enriching the soil by turning under a grass crop. Cultivation of the hoed crop must also be depended on solely for subduing the land for the spring grain which succeeds. There is no chance for fall or summer fallowing. Wheat succeeds the spring grain so closely that there is barely time to plow and mellow the soil, and not sufficient for destroying weeds. After the wheat comes clover or grass, which is usually mown or pastured, and thus some of its fertilizing powers are lost to the field. This course, however, is a good one for corn, if the sod is not too firm and old, and middling good for barley, oats or spring wheat, but without liberal manuring, is a poor one for the last crop—winter wheat. But it is a convenient rotation, and the one usually followed—where any is pursued—in Western New York.

But let us examine a somewhat different system. Suppose a summer fallow begins the rotation. The clover is then used to enrich the soil instead of being mown or pastured. There is a good chance for killing weeds and bringing the land to fine tilth, which are objects much to be desired, and to attain which some of our best farmers persistently cling to the summer fallow. The wheat crop, which is probably the most important, has the advantage of occupying the soil when under the best preparation, and in the best condition for it to succeed. After the crop is harvested, there is time to fall fallow, again giving battle to weeds, and preparing the soil in the best possible manner for a hoed crop. The two fallowings, and the cultivation of the hoed crop, should free the soil of weeds, and render the success of the last crop in the rotation—spring grain—certain. Manure should be applied to one, at least, of the two last crops, and clover sown with the spring grain. If there is considerable manure used, and the land is naturally fertile, the field may be again taken up and summer fallowed for wheat, the year succeeding the spring grain, or it may be allowed to lie in pasture or meadow as long as desirable.

How to Make a Roller.

A correspondent of the *Ohio Farmer* gives the following plan:—First, I cut a solid, smooth, white oak log, six feet long; then struck a circle on the ends and hewed it, working to a line so as to make it straight and round, taking off the sap; it was then twenty-two inches in diameter, (two feet is the right size,) then sawed it in two, then with an axe cut the inner end of each, concaving one and one-half inches, bored the ends and set one and one-fourth inch journals ten inches long, sharpened at the point, having a collar on them; the outer ones three inches from the end, driving it snug to the log; the inner ones one and three-fourth inches from the end. I mounted one at a time on bearings, then two men run it with their hands as a squirrel does his cage, and with a jack-plane set coarse turned it smooth. For a frame, I made a square sash of three by four scantlings, just long enough for the rollers to run in, and eight inches broader than they were in diameter. The tongue is thirteen feet long, four inches square at the back end, halved on to the middle of the frame and fastened with three-quarter inch bolts, bracing it with iron bars to the frame; it is cut to fit the concave ends of the roller, bored through in the middle for both journals; it is cut to one and one-half inches at the outer edge of the rollers, which leaves a space between them of two and one-half inches, which is no objection. They need no boxes, only thick plates spiked to the inside of the frame for the collar to run against with good hard seasoned wood for frame. I burn the holes with one of the journals, and provide an oil hole. It runs light and well; and it cost me just eight dollars, and is better for all practical purposes, and will probably last longer than some that I have seen work, that cost from \$40 to \$60.

Barley.

Barley draws more mineral substance from the soil than does wheat. It is an exhaustive crop, but unlike wheat or oats, its roots spread through and gather their food from a few inches in depth of the soil. The roots, running through the top soil, keep it loose, and a barley field plows easier after the crop than one sown with oats. It is a much better crop than oats to precede wheat. A light, fertile soil is required, and it should be well pulverized to the depth of four or six inches. An inverted sod is not safe; it should follow a hoed crop or a fall fallow. Weeds injure the yield. Drilling is preferable to broadcast sowing, but the seed should not be covered deeper than two inches—better shallower than deeper. The roller should be used after sowing, if the soil be suitably dry. It is the best of all spring crops to sow clover or grass seed with. Ashes are found to be an excellent special fertilizer.

ONTARIO BEE-KEEPER'S ASSOCIATION.—The annual meetings of this Association always take place at the time and place of the Provincial Show, and it is proposed to hold special sessions in London this year during the time of the Western Fair. Subjects intended to be brought up for discussion will please be forwarded to the undersigned before the 10th of September next, after which further notice will be given of the meetings. A. C. ARWOOD, Sec. & Treas., O. B. A., Vanneck P. O.