

Observations on Wintering Bees.

The *Last Western Rural* contained our opinions on the subject of wintering bees. An Ohio correspondent of the *American Bee Journal*, gives his experience in that direction. He says:

Last Fall I dug a cave, or outdoor cellar, 10x14 feet, and six deep. Through the centre was set a row of posts, and on these, and the dirt sides, rested a roof composed of poles, brush, hay and dirt. This roof was about two feet thick, and two ventilators 4x6 inches were inserted in it, one of which reached to the floor of the cave. The doorway was large, with loose inner and outer door, the intervening space filled with hay. In this cave, 30 stands of bees were wintered from the 22d and 24th of November to the 20th and 22d of March. During the winter, the temperature in the cave varied from 34 to 40 degrees.

Once a week we went into the cave to see that all was right, generally raising some or all of the hives to examine them. Five times, at intervals of about two weeks, fire was blift in the cave, and the temperature raised to fifty or sixty degrees for a short time. Twenty-six stocks were in the Quinby hive, covered with cotton cloth, well gummed down with propolis, and with rather tight, flat roofs. To these stocks no ventilation upward was given until January 13th, when considerable upward ventilation was given, as much moisture had collected. Plenty of ventilation was given the four box hives at all times. Following Burch's suggestions, some hives were raised, of boxes twelve inches from the shelf, some four inches and some were set flat on the shelves.

Now the results. No signs of disease appeared in any hive, but all were bright when set out. All wintered on honey gathered in August and September, and consumed from ten to fifteen pounds per hive. Out of thirty hives nearly three quarters of the bees died, but this loss was quite unevenly distributed. The box hives lost almost none, the strongest stocks in moveable combs next least, and the weak stacks most. Those hives raised on boxes lost more than those sitting directly on the shelves.

Harrowing Wheat in Spring.

Having harrowed my wheat fully, and half of it twice, and been hardly stared and wondered at for so doing, during the late drought, I may offer you a few of my facts and opinions thereon. I say my facts, because no one else in this section seems to have any of the kind, either facts or practice. I suppose all our maize, potatoes and most cereals and vegetable plants are enlarged and improved by cultivation. We appreciate fully the necessity as well as economy of cultivating maize after it is planted. Not to do so would seem strange and absurd. In England wheat is generally hoed once, and sometimes twice, and also harrowed; and light soils are rolled in March.

Now, if the annual maize or corn is benefited by hoeing or working the soil, why will not the annual wheat also receive benefit from stirring the soil, even if only an inch or so of the surface mould? It is as true of corn as of wheat, that if both receive a steady and constant supply of nutrition, they will grow daily till ripe for harvesting. If a shower of rain forms a crust on corn ground, and maize will not grow much if the crust be not broken, the same is true of wheat. To make either grow large and steadily, a full, steady supply of plant food is equally necessary. And it must be quite obvious that a full or regular supply of gaseous or other plant food is possible only when air and heat can freely enter the soil; for the decomposition of vegetable matter which supplies carbonic acid, is promoted by admitting heat to the soil. Mineral disintegrations result both from chemical affinity and the expansion of water in the fissures and among the joinings of mineral particles. Rain, in growing weather, carries much heat down into the soil; but if the surface be caked or crusted over, the rain runs off as surface water, instead of soaking regularly the surface mould, and carrying heat into it to form new compounds—gases and others—to feed the crops.

Again, when a soil is loose and mellow, so the air can penetrate freely, gases and various elements of plant food can be, and are formed by the heat diurnally entering the porous mould; and the mould being porous, gives facilities for these elements to ascend to leaves as gases, or descend to roots, according to their character and natural uses. But when a crust shuts out air, this rapid process of feeding plants is retarded or arrested, and the result is a light or unprofitable crop.

Certainly wheat, the standard of all food, as gold is the standard of exchangeable values, pays as well for being supplied with additional quantities of food, by reason of cultivating or stirring the soil after the crop is up and growing, as corn or beans or cabbage. I have harrowed five years out of seven, the other seasons being wet, and always with well paying results. Last year I had 21 bushels per acre, the average hereabout being not over 12. This season, where I have harrowed twice, the wheat is more even and better balanced than where I harrowed but once, and all is growing very rapidly, as fast as corn itself, or more so. I perceive no such rapid growth in the vicinity, except in a single instance where the ground was well manured—by a Dutchman—on land I used to own. Yet my soil is not rich, but a warm, light loam. The reasons my wheat is doing so well are—it was put in early, uniformly distributed over the surface, well covered, but quite lightly, on fall plowed ground, that was plowed in early enough to admit of chemical disintegration in the surface mould by heat and cognate agents, before cold weather arrested fermentation, when, of course, any but mechanical changes cease.

I may add a word here on the difference in results as between early and late fall plowing. Late plowed ground is changed or improved only mechanically, or by division and displacement, rendering abrasion and like causes. The change is only in form and size of the lumps and crumbs of mould.

On the other hand, early fall plowed ground is raised, divided and subdivided to a depth of several inches by alternate expansion and contraction, comparative heat and cold of day and night, while yet there are heat and moisture sufficient to insure chemical action and decomposition in the surface mould. Hence, early fall plowing is doubly beneficial, equally by new properties being chemically formed, as well as by mechanical subdivisions resulting from alternations of heat and cold. Harrowing wheat promotes both classes of results.

Seeding Down With Turnips.

A correspondent of the *New England Farmer* writes: I have made it a practice for some years of sowing flat turnips with my grass seed when I seed down in the fall, and with the best of results. I have now about two acres which were seeded in August, and notwithstanding the severe dry weather, I have a good catch of grass, and the turnips are doing well. The broad leaves of the turnip protect the young grass from the scorching rays of the sun, without which protection the grass would have been entirely dried up; as it was, I saved my grass and raised a few hundred bushels of turnips, and if as fortunate next summer, I shall cut about four tons of hay. On part of these two acres I had a crop of early potatoes, on the other a crop of oats before I seeded down. In the fall of '73 I raised a thousand bushels of turnips in the same manner. The turnip has a long root which penetrates the soil to a great depth, and what nutriment it takes from the soil is obtained at a depth to which the grass roots rarely penetrate, and through its broad leaves it obtains a large amount of its sustenance from the atmosphere. Hence, like clover, its tendency is to enrich rather than impoverish the soil.

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Potato Experiment.

H. L., of Grant County Indiana, writes to the *Cincinnati Gazette*:

"Planted, April 16, 1874; variety Early Rose; dug and gathered them partly in September, and partly in October; planted alternately; that is, two rows of large potatoes taken promiscuously, of what I would call merchantable potatoes; then two rows of small potatoes all under the merchantable size, down to as small as were worth picking up.

"I find the result to be in favor of the large to the extent of about two hills in fifty in merchantable potatoes; but even this quantity is made up in bulk of small ones. In quality there was merely a perceivable difference in favor of the large seed planted.

"But between choice selected seed, large and smooth, and small seed, I find in the product a much greater difference in favor of the selected, the difference being fully one-fourth in bulk of merchantable potatoes, and the quality very plainly better.

"In preparing the seed all was cut, as near as practicable, to two eyes to the piece, and two pieces dropped to the hill, the hills being about three feet apart. The whole patch is planted on soil ground.

"Just for an experiment I dropped three pieces each in a few hills, but the result was in favor of two pieces.

"On a piece of new ground, all planted with small seed, I raised as handsome potatoes as need be; but they were not all so; many of them were rough or knotty."

Proposed New Postal Law.

From the Government organ we learn that it is proposed to deliver papers and letters at the doors of citizens free of extra charge; also, that packages are to be sent for one cent per lb., but a monthly periodical weighing over one oz. must be charged one cent. Farmers! you have a right, and any further attempts to rob you of your right will not be readily submitted to by you. Your agricultural paper has done as much good for you as your political paper, and it should be delivered to you as cheaply as any political journal is to citizens. Every paper should pay alike, if the weight is the same. We do not want direct taxation to support citizen's literature. An equal charge to cover expenses, to be paid by the publisher, say half a cent, or a quarter of a cent, should be made on every paper. We, as farmers, do not want to be taxed for other's postage, but are willing to pay for our own mail matter as we receive it.

The Canadian Agricultural Emporium

As inquiries are increasing in regard to the stock in the above, we beg leave to state that it is not yet all taken up. Parties desiring stock may secure shares by sending us \$5.00. The shares are \$20.00 each. No person is liable beyond the number of shares subscribed for. Should any one that has sent in \$5.00 not have received a private circular regarding its progress and seed accounts, they should notify us at once. Bankers, Molsons Bank; Attorneys, Scatcherd & Meredith.

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