DEEP PLOUGHING.

Horace Greeley read the following paper before the Farmer's Club of the American Institute. After citing a few instances where there was a poisonous subsoil that it was injudicious to disturb, he advocated a disturbance of the soil more than is generally practiced by farmers:

"I have thus fully conceded that deep plowing is not everywhere requisite. Now let me show where and why it is needed: 1. It has been abundantly demonstrated that the roots of plants are often found at a distance of several feet from the stem. Any of us may have seen that this is as true of Indian corn as of Canada thistles. With a microscope and due patience, the roots of wheat may be traced from four to six feet. Of course, these roots seek nourishment and find it. Nature, in the broad view, makes no abortive, at least no wanton effort. Roots wander in search of food not otherwise to be found. 2. Our subsoils are generally compact and repellant. Wherever a ditcher would naturally use a pick, there few roots can make their way except very slowly and by wasting effort. Few or no cereals or edible roots can feed and flourish on the penetration of such subsoils. And while our sands and looser gravels are more easily traversed, they seldom contain the plant-food whereof the roots are in search. They either remain unpenetrated, or the effort is unrewarded by any gain of nutrition to the plant. 3. Our summers and autumns are often persistently hot and dry. The continuously torrid suns, which this year destroyed half the later crops of Europe, are here encountered as often as every third year. Drouth is one of the foremost causes of the failure of our crops. Our ancestors mainly migrated hither from the British Isles, from Holland, and the coasts of Northern and Western Europe, where humidity is the rule, protracted drouth the exception. Sixteen inches of soil in our climate is hardly equal, as an antidote to drouth, to six inches in Ireland and Holland. And yet the best farmers of those countries agree in commending deeper plowing. 4. What we advocate is not the burying of the vegetable mould or natural surface sod under several inches of cold, lifeless clay, sand or gravel. If the subsoil is not to be enriched, it may better remain a subsoil. But that does not prove that it ought not to be lifted, stirred, aerated, pulverized. The right thing to do is to enrich as well as mellow and aerate the entire soil to the depth of fully eighteen inches, though twelve may answer as a beginning. Use a Michigan or a subsoil plow, if you will, and keep the various strata where nature placed them. But give your plants, like your cattle, a chance to reach food and drink at all times. Let down the bars that would keep them from the life-springs. 5. Plants look to the soil for (1) anchorage; (2) moisture; (3) most of their food. If they cannot find these more certainly in twelve to eighteen inches of soil than in six, then reason is a fool, mathematics a conjectural science, and a farmer should prefer a balance in bank to his credit of $600 to one of $1,000. 6. We are told that the roots prefer to run near the surface, loving the warmth of the sun. Let them run there, then. We do not hinder them. Make the soil rich as well as deep, and let them run near the surface for warmth and descend for moisture, or both, as they see fit. We proffer them freedom of choice. If a wet season attracts them to the surface, a dry one must constrain them to dive for moisture. It is our duty so to provide that they may flourish however wayward the season. 7. I have a steep hillside, which I choose to cultivate, the soil being warm and kind. Plow this six inches deep, and the first hard shower sweeps its soil by cart-loads into the brook below, where it is useless. Plow it twice as deep and not a peck of soil will be flooded off in a lifetime. 8. In a wet season plowing does, at the worst, no harm. In a dry season it doubles the crop. 9. Unless a small army is more effective than a large one, an empty pocket-book better than a full one, a lean crop preferable to a large one, then a deep soil must be more productive than a shallow one."

THE RAINING TREE.—The island of Fierro is one of the largest in the Canary group, and it has received its name on account of its iron bound soil, through which no river or stream flows. It has also but very few wells, and these not very good. But the great Preserver and Sustainer of all remedies this inconvenience in a way so extraordinary that man will be forced to acknowledge that he gives in this an undeniable demonstration of his wonderful goodness. In the midst of the island there grows a tree, the leaves of which are long and narrow, and continue in constant verdure winter and summer, and the branches are covered with a cloud which is never dispelled, but, resolving itself into a moisture, causes to fall from its leaves a very clear water in such abundance that cisterns placed at its foot to receive it are never empty.

It is said that of the nineteen million acres of land in the State of South Carolina, only one-fourth is under cultivation. The remainder, some 14,500,000, is mainly in primeval forest, Fully half of the 4,500,000 now under *quasi* cultivation is for sale, some of it even so low as $1 per acre, and ranging from that up to $20.

EXTRAORDINARY PIG.—Perhaps one of the largest pigs in England, if not in the world, is now the property of Mr. Lloyd, of Bredon, Worcestershire, who purchased it of a neighbor, when two months old, at 17s 6d. This wonderful animal is now 22 months old, measures 9 feet 6 inches from the end of nose to the tip of the tail, five feet round the neck, nearly 9 feet round the body, and stands 4 feet high.—[Mark Lane Express.

Bees.

WINTERING BEES.

In passing through the country during the past month we have seen a large number of hives remaining on their summer stands. Some were unprotected while others had simply a board or two leaning against the hive to shield them from the wintry blasts! Some farmers pay attention to their hives only when they wish to spoil them of their honey which they often do with an unsparing hand. They have no system and take what they want without regard to the requirements of the colony. The result is that bees are often condemned as tender and difficult to rear, whereas the fact is they have been left unprotected and consequently frozen to death or starved by being robbed of their winter stores. Believing that this inattention arises more from lack of information than design we have condensed from our exchanges the following items and trust they will be instructive to our readers:

How a Family of Bees Winter.

A family of bees, at the approach of cold weather, crowd together in a globular form, to economize the animal heat. If the cold is intense, they pack the closer. Then, suppose all the honey in the vicinity of the cluster of bees has been exhausted, and all the combs are covered over with frost, and we have a long and severe cold spell, is it not certain that if any bees leave the mass, and venture among the combs for a supply of honey, their fate is certain death?

Out Doors.

Our rules for the safe wintering of bees are: 1. Allow every colony that is to be wintered out of doors at least 25 lbs of honey in Lives 1st of November. 2. A cluster of bees sufficiently large to extend at least through two thirds of the comb in any ordinary hive. 3. One or two inch holes to be left open in the top of the hive under the cap or cover. 4. If the hive be shallow, winter passages or holes through all the combs, to enable the bees to reach their stores by a "short cut" in very cold weather without passing over frosty combs. Honey will not benefit bees if it is where they cannot get it without freezing. 5. Some protection for the hives, sufficient to prevent the sun striking them in warm days—which excites the bees and draws them out of the hive, when many perish. A few boards set up in front, or a little corn fodder placed around them, answers a very good purpose—the idea being not to protect them from the cold but from the sun.

Wintering Bees in Cellars.

Although this plan may have some objections, yet they are not so serious as the others. It is to be preferred to the other two, provided we have a suitable cellar. The cellar should be dry, dark and well ventilated. The temperature should be kept as near 36 degrees as possible. The hives should be elevated some distance from the floor, so they will not receive any dampness from the bottom of the cellar. The hives should have proper ventilation, if the box hive, bore a hole or two in the top, and cover over with wire cloth.

Mr. Cary, in the American Bee Journal, says the advantages of wintering in the cellar are, that one half less honey is consumed than when wintered in an unprotected place; and if properly cared for, no swarms are lost, and but few bees die.

How much Honey to Winter a Swarm of Bees.

A correspondent of the American Bee Journal in the December numbers of that excellent publication says:

My bees are wintered in a room about ten feet square in the second story of a large building. The room is double-boarded with a space of four inches between, filled with tan. Ventilators are so arranged as to be controlled from the outside, without entering the room.

November 27, 1861, bees were weighed and housed for the winter. March 9, 1862, they were carried out and placed on their summer stands. March 12, weighed again. Average loss, per swarm, in 105 days, 10 1-10 lbs.; greatest loss, 15 lbs.; least loss, 6 lbs.; average daily loss, per swarm, 1 1-2 oz. April 12, weighed again. Average loss, per swarm, in 31 days, 4 lbs. 13 oz.; average daily consumption, per swarm, 2 1-2 oz.

December 2, 1863, weighed and carried in bees. March 5, carried them out. Weighed again March 11. Average loss, 10 lbs. 3 oz. in 99 days; greatest loss, 16 lbs.; least loss, 8 lbs.; average daily loss, about 1¾ oz. Weighed again April 9. Average loss in 29 days, 4 lbs.; average daily loss, about 2½ oz. Previous to the last weighing they were fed freely with rye meal, and carried in perhaps one pound per swarm, which would make the loss 5 lbs. instead of 4 lbs.

About the 20th of February, 1867, I weighed three swarms, which had been housed from early December. They had become only about three pounds lighter, each. They were young swarms, and rather below medium.