upon ordinary soils the spring plowing may usually be omitted. The advantage of fall plowing is undoubtedly owing to the fact that the frosts of winter break down and thoroughly comminute the soil, allowing a free passage for the water to run off through the dead furrows, as also a more free percolation through the soil itself. A soil so acted upon, not only takes up from the atmosphere the floating elements of fertility it contains, but its porosity allows it to take up heat also and store it more surely than on less disintegrated or lumpy soils.—*Working Farmer.*

Deep Ploughing.

It has been truly said that an increase of one inch in the average depth of ploughing throughout the United States would produce a larger amount of profit, as compared with present results, than all the gold received from California. We believe in this assertion; but we do not believe that all soils, without being previously subsoiled, are fit for this immediate increase in depth. We know that even clay subsoils, which approach within a few inches of the surface, after being thoroughly sub-soil-d, are so ameliorated as to be capable of admixture with the immediate surface-soil; and we are equally well aware that sub-soiling cannot be performed with any profit in clay sub-soils containing excessive amounts of water that such soils must be first underdrained and the sub-soiling precede an increase of depth in surface plowing. But there are millions of acres capable of being plowed to double the depth to which they have ever received an incision from a tool of any kind, with increased profit. Even in the State of New York there are thousands of acres at this time, which have never been plowed to a greater depth than four inches, composed of a loam entirely ready to be disintegrated by a surface plowing to the depth of twelve or fifteen inches with increased profit, and there are few soils that may not be at once plowed to a depth of an inch or more than its former depth. The adage "that many farmers own another farm immediately under that which they now cultivate," cannot be too often repeated, and the judicious farmer, whose will has been so often quoted, as having informed his sons that he had buried a sum of money at a depth of twelve inches somewhere on his farm and that they must find it, improved the quality of their products by the disturbance of the soil more than he would benefit them by the supposed legacy by direct bequeathment. Less manure will produce a larger amount of crops in a deeply disintegrated soil; and it is not true that the deeper you plow the more manure you require It is true that the more thoroughly manure is divided, the greater will be the amount of the crops produced, and this is the more certainly brought about by deep than it is by shallow plowing.

No practical farmer can doubt that in deeply plowed soils, crops are less annoyed by drouth and by insects; and if plowing is useful at all, it must be useful precisely in the same ratio to the amount of soil disturbed, provided that the roots are capable of appropriating a greater amount of soil by its disturbance. Who doubts that roots will travel to the depth of twelve or fifteen inches, or even double that distance? Who doubts that the lime passing down through the soil, will rest on the surface of a cold and undisintegrated sub soil? Who does not know that many farms supposed to be worn out have been revived by the increase of a few inches in the dedth of plowing? Who will longer be contented to use a pitiful one-horse plow, skating it through the soil like a harrow with one tooth, when by deep plowing he can more than double his crops?—*Working Farmer.*

Mulching Trees.

The greatest source of death or want of health in trees is the absence of mulching, or perhaps the proper kind and quantity.

As before stated, many things are ruined in summer time, by either drying out of the ground or the growth of weeds and grass that get the lion's share of the moisture. This is true, especially the first season after planting. We are not unmindful of the fact that some have good trees without mulching. In such cases, as a rule the soil is well cultivated, the grass and weeds are kept down, and the earth gets a stirring up occasionally.

In the case of newly planted trees, winter protection is of great importance. In the first place a good mulching of manure for instance will keep the ground from hard freezing a long time. Hence the roots become healed over a measure, and well established for their work in spring.

This is one of the great reasons for planting all very hardy things in autumn, such as forests, the many kinds of Siberian apples, currants, gooseberries, as well as the hardy shrubs. As a matter of course, if the planting is done early in autumn it is very much better, while very late transplanting we never recommend in this latitude.

Another advantage that we gain in mulching is protection against frequent thawing out, which causes the death of many things that are really hardy.

Nature, we all know, provides the best of protection in the way of leaves, that shed about the roots annually Why not, therefore, imitate her example, and thus deal justly with the trees we plant?

Coarse manure is good for all fruit and forest trees except the various evergreens. This acts also as a fertilizer, which is very essential, except in case of wonderful rich soil. Leaves in many cases are splendid, as they do not cause rotting, as is the case of some things. Earth is frequently piled up a foot high about the trunk of trees in autumn, especially where there is danger of injury by mice. If straw is used it should not be put up next to the tree, but earth instead, as it is better in case of leaves. Some use sawdust, which we think a very good thing for the evergreens.

In the case of large planting of forest trees a thin layer of straw can be laid upon the ground, and if any kinds are relished by the mice, the snow must be tramped down in the fore part of winter. Fine manure, leaves or sawdust are good for one year old seedlings, which are badly killed sometimes when we have but little if any snow. The roots of old fruit trees are sometimes killed for want of winter protection.—*St. Paul Press.*

Encouragement of Birds.

I hardly know what we could do without birds, for they destroy nearly all the injurious insects in an orchard. I have found in my father's orchard this year about 75 birds' nests, about 30 of which are chipping birds. They have laid about 300 eggs, and hatched about 380 young ones. How many of these would have been destroyed by hawks and owls had they been in the woods, and how many would have been destroyed by bad boys and cats had I not looked after them? And I think every one ought to encourage the birds the best he can. I like the blue-birds best; they feed mostly on bugs, cut-worms and grasshoppers. The wren is also a favourite of mine. It is a very active and industrious little bird. They destroy a great many insects that other birds do not. Each kind of bird destroys a certain class of insects. Wrens destroy millers mostly. And for this reason all birds should be encouraged. Wrens and blue-birds will build in most any little house. The house should be put up out of the reach of mischievous pussies. The house for the wren should be made small so the blue-birds will not occupy it. The robin feeds mostly on cutworms, and in the spring picks out of the ground cutworm chrysalis. Swallows and martins live mostly on flies and bugs. The orioles and red tanagers eat tent caterpillars and curculios. The nuthatches prey on bugs and worms on trees. The ground birds live mostly on worms on the ground; and are often destroyed by snakes. The woodpeckers hunt out the apple tree borers and destroy many beetles. The blue-jays destroy the tent caterpillars' eggs. The cedar or cherry birds destroy cankerworms. The chipping birds are easier tamed than most other birds. They live principally on bugs and worms Nearly all the birds I have mentioned live on insects and worms that are injurious to all kinds of vegetation and fruit. And most of these birds remain with us during the growing season, and raise two families of young, which also remain on the premises if not driven away by noisy boys and dogs. The number of insects and worms destroyed in a small orchard annually is immense; and were it not for the birds, any one can see in a few years we could not raise any fruit.

A New Wheat.

A week or two ago Mr. Shirrif, of Saltcoats, East Lothian, called the attention of farmers to the excellence of a new red wheat which was named "square-head." This wheat, it was stated, was wonderfully strong in the straw, very prolific, and of good quality. It is fond of manure, and should be sown thick, at any rate 4 or 5 bushels to the acre We scarcely think that Mr. Mechi would agree with the desirability of scattering so much seed over the ground even in the case of "square-head." However, this is Mr Shirrif's idea about the proper quantity to deposit in the soil. Mr Hope, Fenton Barns, who has long been a grower of wheat himself—Fenton—at the last meeting of the Haddington farmers' Club, testified to the superior excellence of the new wheat over others; and as this testimony was not tending to his own advantage, but the reverse, it may be presumed that the cereal is all that it was at first stated to be. Mr Hope stated he had experimented with it on a small scale last year with a parcel sent from Mr Scholey, of Eastcroft, near Goole, and he found that it yielded 6 bushels more per imperial acre than Fenton wheat, and did not *lodge* nearly so much—an important consideration in such a treacherous climate as ours. The quality Mr Hope expressed his belief would certainly not be inferior to any other variety of red. Mr Hope quoted an experiment conducted by Mr Scholey, of Eastcroft, with four different varieties—the square-head, Fenton, woolly-eared, and Browick red—the results being—square-head, 150 stones; Fenton, 138 stones, woolly-eared, 112½ stones; and Browick red, 124 stones; but in a hollow where the square head was sown the grain was destroyed, so that Mr. Scholey calculated it exceeded the Fenton by nearly 6 bushels per imperial acre, as he himself found it to do. You would hardly, said Mr Hope, believe the crops Mr Scholey had grown in the two previous good years He would, therefore, recommend the members of the club to make a trial of it. He intended to sow all he had grown himself.—*Scottish Farmer, 11 Nov., 1872.*