NEST BOXES.

Two Forms That Will Give the Farm Poulterer an Idea or Two That

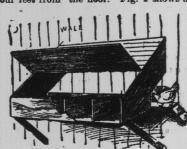
Brooding, is made by two one-foot boards for the bottom and one-foot boards for the sides. Nail the side boards inside the



inches between. Divide the nests with one-foot square boards, leaving the nests one foot in the clear. Nail a two-inch one foot in the clear. Nail a two-inch strip on top and bottom edge of the partitions to hold them in place. The balance of the space is for the alley. The nests serve two good purposes—they stop eggeating by being dark, and the hens are out of sight while they are laying. The flat top of this nest box has the disadvantage of allowing the hens to deposit their droppings on the top. The box may stand on the floor, where it would be suitable for heavy breeds of fowls, or it could be elevated as desired.

The plants used in setting a new bed are usually grown on my farm and are taken from a bed that has never been fruited. Care is used to select strong, vigorous plants. All not having good crowns and good roots are discarded. When dug, the plants are placed in bas-

we saw in use in a new henhouse on the farm of Gilmore Bros., at Nilestown, Ont. It extends along the entire length of one side of the house, and is about four feet from the floor. Fig. 2 shows a



For milk fever give the cow at one dose when first taken one and a half pounds epsom salts dissolved in water. Then give two ounces spirits of nitrous ether, one ounce aromatic spirits of ammonia at a dose in one pint cold water every half hour until five doses are taken, then give it every hour until five more doses are taken. Then cover the animal and in about ten to 15 hours the cow will be

your veterinary columns reprinted. It is dom directions of any kind prove so dom directions of any kind prove so exactly true as this remedy has with us. Saturday forenoon a cow that dropped her calf three days before showed every symptom of milk fever, became totally helpless and we gave her the first dose at 11 a.m. We followed the directions as nearly as possible and gave her the last dose at 7 p.m. Sho was a head at 5 p.m. nearly as possible and gave her the last dose at 7 p.m. She was so bad at 5 p.m. that she swallowed with difficulty. We covered her with blankets and hay and left her for the night, expecting to haul her out dead. Sunday morning at 8 o'clock the cow was on her feet and has improved every minute since. I want this remedy printed again, and I urge every farmer to preserve it.—A. A. Southwick

Very few farmers have enough stable manure to fertilize all their land as they ure mainly to the crops on which they expect to put most of their labor. It does not pay to plant, cultivate and hos poor land. Every addition of manure makes land. Every addition of manure makes the labor more effective, and therefore more profitable. With mineral fertilizers it is different. These are usually applied to grain crops, for which dressings of 150 to 250 pounds per acre are usually sufficient for the crop, besides leaving some to be taken by the clover after it. These mineral fertilizers so soon become insolu-ble in the soil that it does not pay to apply them in large amounts. A small quantity each year, sufficient to make the crop it is applied to, is much better.

—American Cultivator.

Cob and coal ashes are excellent for applying as a mulch for trees and shrubs during a drouthy season, says The Orange Judd Farmer. They contain cousiderable fertilizing element which all trees and fruits need. The matter of a mulch retarding the development of bnds in the spring is a disputed question. It is admitted, however, by most horticulturists that little can be expected from this source, as experiments show that but very little benefit has ever been derived by attempting to yetard the swelling of the budg in spring by means of mulch. very little benefit has ever been derived by attempting to vetard the swelling of the buds in spring by means of mulch. Give the trees good cultivation and feed the soil liberally if it needs it, have the plant ripen its new wood early in the fall and then if the season is at all favor-

You may sow grass seed successfully with wheat, rye, barley and oats best in the order named. Choose the varieties of grain that will not lodge and smother

Automatic Watering of Cows. There are devices on the market which keep a supply of water constantly before cows in the stable, and tests made with keep a supply of water constantly before cows in the stable, and tests made with these devices show that when used the milk yield is increased over that given by any other method of watering.—Western Plewman.

A NEW STRAWBERRY BED. Knows Gives Explicit Directions for Setting.

In strawberry culture three things are The accompanying figures of nest boxes represent two forms, either of which answers well to prevent egg-eating, and are convenient to keep clean, gather the eggs from, and keep in general good order. They do not take up much room and are easily constructed. Fig. 1. reproduced from Artificial Incubating and Brooding, is made by two one-foot boards for the bettom and one floot boards for t state of fertility. In August of the year previous to planting, the ground is plowed to a depth of four inches, harrowplowed to a ceptal of total manues, marrow-ed smoothly, and a good coating of well-rotted manure applied. Nothing more is done till the latter part of October, when the land is again plowed, this time to a depth of about eight inches. Narrow furrows are used, setting the furrow slice somewhat upon edge, care being used to cover all green weeds. In the spring as soon as the land is in proper condition, the ground is cultivated thoroughly to a depth of six inches. It is then harrowed, planked and marked off in rows one way, four feet apart. In making the heles. four feet apart. In making the holes a garden fork is used. It is pushed into the ground with the handle sloping toward the body; the handle is then pushed for-

When dug, the plants are placed in bas-kets and covered with wet blankets, and in planting the roots are exposed as little as possible to the direct rays of the sun. No more than sufficient for a half day's No more than sufficient for a half day's planting are dug at one time. All the varieties used being strong, vigorous growers, are planted two feet apart in the row. In setting, the plant is placed in the hole made by the fork, the crown level with the surface and the roots somewhat spread out, but pointing downward. The soil is packed firmly around the plant, care being used to see there is no plant, care being used to see there is no hollow space left among the roots. A little loose dirt is then scattered around the crown of the plant, and the operation is finished.

The Care of Harness.

Before spring is right upon you overhaul the harness and get it in good shape. For this work many good farmers have a repair kit with which they can do a great deal of the work themselves. Such an outfit saves its cost many times a year. Go carefully over all your harness, a set at a time, make all the repairs you can yourself, then take what you cannot repair to a saddler. Replace all worn out the harness and get it in good shape. For this work many good farmers have a repair kit with which they can do a great deal of the work themselves. Such an outfit saves its cost many times a year. Go carefully over all your harness, a set at a time, make all the repairs you can yourself, then take what you cannot repair to a saddler. Replace all worn out the harness and get it in good shape. For this work many good farmers have a repair kit with which they can do a great deal of the work themselves. Such an outfit saves its cost many times a year. Go carefully over all your harness, a set at a time, make all the repairs you can yourself, then take what you cannot repair to a saddler. Replace all worn out the harness and get it in good shape. For this work many good shape. For th can yourself, then take what you cannot repair to a saddler. Replace all worn out pieces with new ones. Now. if not apart, separate each piece of the harness so that it can be handled easily. Soak the pieces in good soapsuds, made by dissolving a small quantity of hard soap in just enough water to cover the harness. As soon as the dirt has softened, remove every particle of dirt with a stiff brush, and then rinse well in lukewarm water. Hang up to dry, and, when all the water has dried off, but while the leather is still has dried off, but while the leather is still soft and pliable, give a good dressing of harness oil. When the oil has dried in, carefully wipe every plece so as to remove any surplus oil that may not have been absorbed in any place, for this only catches dirt, which in time becomes hard to remove. Harness thus treated once a year will last much longer than if never oiled; it would be better if oiled more frequently, but even once a year will add greatly to the lifetime of a set of harness. It is good management and wise economy to take time to oil the harness and keep it in first-class repair.

A Simple Ventilating System. At the joint meeting of the Live Stock Breeders' Associations, recently held in Winnipeg, Dr. Rutherord, M. P., in speaking on "stable hygiene," described briefly the system of ventilation that he had in his veterinary infirmary at Portage la Prairie. It was not his invention, he said, nor was it patented; it was very simple and inexpensive, but the best thing about it was that it worked. After several years' experience he found it did its work in all weathers and under all Briefly the system is as follows: In the



A SIMPLE VENTILATING SYSTEM.

shaft about 15 inches in diameter, pro vided with a damper, which can be opened or closed by rope from the stable floor. At each end of the stable are fresh air inlets, made by putting a square box or "U" pipe under the wall, as shown

I usually begin by gathering and burning all old stalks and vines and then giv

no danger of too much. I have used as grain that will not lodge and smother much as four inches of well rotted manthe small seed. We have never failed to ure on naturally rich land, and the yield get a catch of grass or clover. There are three points to bear in mind: (1st) Sow was immense. I would plow very late in the following valuable hint to The Practer, foreman Central Experimental Farm, Ottawas.

W. G. Brown of Sarnia, Ont., gives was immense. I would plow very late in the following valuable hint to The Practer, foreman Central Experimental Farm, but not over six or seven inches. I would plow which I intend to plant a row of chest-pot and the property of the p

SEEDING.

Some Wise Words and Timely About the Necessity for Thorough Prepara-

tion and Soil Tilth. tien and Seil Tilth.

The return of spring brings to the farmer a measure of anxiety about the spring work on the farm, and especially in regard to the operation of seeding. He knows that much of the success or partial failure of the prospective crop depends upon the preparation of the soil and the character of the seed sown. It is not necessary to remind the wideawake farmer of the wisdom of having his implements and tools looked over, repaired if repairs are needed, and put in first-class condition for their work, to have the teams and their harness well prepared for their part, and to have the seed grain for their part, and to have the seed grain cleaned and ready to be taken to the fields as soon as the land is sufficiently dry to work satisfactorily. All these things will naturally suggest themselves to the man who is watching every point. to the man who is watching every point with a view to making the best use of the time for seeding when it arrives.

It is generally conceded that, as a rule, by far the best results are received from the earliest sown grain crop, especially in the case of spring wheat and oats, while in regard to barley and peas early sowing is more generally approved of sowing is more generally approved of now than formerly. As early, then, as the land is sufficiently dry to work with-out poaching it is well to make a start with the cultivation and preparation of the seed-bed, which should be well work-ed and stirred to a depth of at least three inches, and it is doubtful whether there inches, and it is doubtful whether there is any advantage in the case of land that was plowed in the fall in working it to a greater depth than four inches. We are persuaded that a large proportion of Canadian farmers, especially in the older provinces and on clay or clay loam soils, are greatering, heavy bases are great plant. provinces and on clay or clay loam soils, are sustaining heavy losses every year from inferior crops owing to imperfect or insufficient cultivation of the land in the preparation of the seed-bed. The probability is that in nine cases out of ten the failure to produce reasonably profitable crops is not nearly so much owing to the lack of a sufficiency of the elements of fertility in the soil as to the fact that the mechanical condition of the soil has not been made such that the crops can appropriate them and use them soil has not been made such that the crops can appropriate them and use them for their development. In far too many cases the implements used are not calculated to do effectual work in breaking up the land, stirring and pulverizing it so as to make a proper seed-bed. In some this is due to the unsuitable construction of the implements, and in others to their not being properly sharpened and kept in the best condition to do thorough work. To skim the land with a jumping cultivator which cuts only here and there the width of its hoes, leaving one half the surface soil unbroken and making an imperfect seed-bed, is to court failure in imperfect seed-bed, is to court failure in in that case are largely in favor of the well-cultivated field, other things being equal. The farmer in his seeding operations will do well to prepare for the worst possibilities of either excessive drought or excessive rainfall by thorough cultivation and thorough drainage; then, having done his part to the best of his ability, he has no delinquencies to regret, and has good grounds to hope and trust for a satisfactory outcome. So great faith have we in the benefits of thorough tillage that we are willing to believe the time is coming when the cultivation of grain crops will not end with the seeding operations, but will be continued till

this idea might profitably be carried out in most grain crops to the extent of harrowing them once or twice after the plants are above ground, or even before they are "braided," as the Scotch say, if the land has been packed by a heavy rain and is in danger of baking. The only reasonable objections to this course is in cases where clover seed has been sown, and even in that event it is a question whether more of the clover plants would not perish in a baked soil than in a loosened and friable bed. Winter wheat, too, is often greatly benefitted by a good harrowing in the spring, followed by the roller. The difficulty of securing a catch of The difficulty of securing a catch of clover in some districts, and especially on clay soils, is to many a perplexing question and one which will bear discussion, as it is a serious matter when repeated failures are met with, the regular rotation of crops being interfered with and continued cropping resorted to, the land being thus depleted of fertility when it should be recruiting. No doubt the lack of humus in the soil is largely accountable for this difficulty, and it is certain that top dressing with short mancertain that top dressing with short man-ure worked into the surface soil is one of the best measures known for securing a catch of clover, but it is obvious that the supply of manure on the average farm is insufficient for this and the many other purposes for which it is required.—Lon-don Farmer's Advocate.

Feed Trough for Hogs. The trough shown in the illustration I have found quite convenient. The board



FEED TROUGH FOR HOGS. in an opening in the fence as in the cut, the slops can be poured in from the out-side. If used in the open lot the middle board keeps the hogs out of the trough.

-Orange Judd Farmer. Keeping Tree Roots Out of Drains but not over six or seven inches. I would not harrow down until spring. I like to harrow well, then disk thoroughly, then harrow again and then smooth with a float. The ground is then in good condition. Rows should be about three feet apart for horse cultivation, or 18 inches for hand cultivation. If berry bushes are to be planted there should be about six feet between rows after the first year.—

1. Tatum in American Agriculturist.

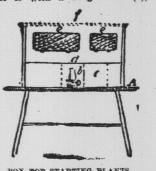
Which I intend to plant a row of chesting the rows of the tile with roots of the trees from entering the joints I paint the roots touch the joints they will stop right there. This is much cheaper and simpler than covering the joints with cement. Easily done while tile is piled up, and lets in the water while it keeps out all growing roots.

FOR STARTING PLANTS. Device That Gives Them All a Vigorous Start.

Nearly everyone tries to start a fer

plants early in the spring in the house, and expends a world of labor, in the aggregate, carrying them from the win-dow to stove shelf at night to keep them from chilling, and oftentimes freezing. The accompanying cut shows a way by which to avoid all this trouble, and, at the same time, grow more and better plants. Take a box of any size desired, about two feet in height, and arrange it on a movable stand or bench (a) so that

it can be set before the sunniest window on bright, clear days. In one side of this box, at the bottom, cut an opening (b) through which to insert the lamp, and provide it with a hinged door (c), for



LIGHT ON SPRAYING.

tionally favorable. A protracted drouth may defeat the best of cultivation and management, but the probabilities even in that case are largely in favor of the well-cultivated field, other things being equal. The farmer in his seeding operations will do well to prepare for the worst possibilities of either excessive drought or excessive rainfall by thorough cultivation and thorough drainage; then, having done his part to the best of his ability, he has no delinquencies to regret, and has good grounds to hope and trust for a satisfactory outcome. So great faith have we in the benefits of thorough tillage that we are willing to believe the time is coming when the cultivation of grain crops will not end with the seeding operations, but will be continued till the crop is half-grown. In view of the manifest advantages of hoeing in the case of roots, corn, and garden stuff, why should we doubt that similar tillage would produce proportionate results in other crops? We are fully persuaded that this idea might profitably be carried out in most grain crops to the extent of harrowing them once or twice after the sufficiently to float in the arr, and as soon as the young leaf begins to expand they find a lodgment there and begin their life work. It is, therefore, useless to spray at the earliest time indicated in most of our books on spraying. This discovery will add much to the comfort of the orchardist, for it will decrease his thread arraying. It also adds greatly to the orchardist, for it will decrease his times of spraying. It also adds greatly to his hopes, for if the spores live over on the dead leaves the proper way to get rid of them is to destroy the leaves. This may be done by clean cultivation, plowing under the leaves that escape the housing. Provide Evymen burning.—Prairie Farmer.

When it comes to putting up cows for winter, the cow that has no horns will be found to take much less room than her neighbor who is tempted to and generally does hook and fight all those near her. In the stable, of course, each stall will accommodate its cow, horns or no horns. But we believe that horned cattle are often kept in stables on bright, pleasant, winter days, to keep them from hooking one another, when they would be much healthier if allowed to run in a small yard. Most barnyards are made much larger than would be necessary if all horns were removed. This wastes much larger than would be necessary if all horns were removed. This wastes manure, as more surface is exposed to rain, and the droppings in a large yard are often so scattered that they are never gathered into heaps and carried where they are needed.—American Cultivator.

Main Essentials of a Hotbed.

A common hotbed is a simple thing. The following are main essentials: An excavation from one to two feet deep. This filled with heating (horse or sheep) manure. Upon this a frame of plank, say eight inches high in front (south) and 13 inches high at the rear (north), with gradual slant, so that the sashes slant slightly from back to front. The usual size of sash is three feet wide by six feet long. This frame is filled with good loam. long. This frame is filled with good loam to within a few inches of the top, so that the glass is rather close to the soil. In this soil sow the seeds of early plants, or of forcing lettuce, radishes, etc. No farmer can make the most of his gardening opportunities unless he uses at least a small hotbed.—Practical Farmer.

Four Feet of Horseradish. A home plot of horseradish is desirable for every farm or garden. Eaten in modto promote appetite and invigorate digestion. A plot of rich ground three by four

tion. A plot of rich ground three by four feet will supply a large amount of roots. The location should be not too dry and the ground should be very deeply spaded. Roots can then be set—small pieces of root four or five inches long and a quarter of an inch in diameter make the best growth—at a depth of two or three inches and 18 inches apart. The plants should be kept hoed and the ground free from weeds until their leaves shade the ground, when they will need no further oultivation and their shade will also keep the soil moist.—Prairie Farmer.

In five cases of twins the average was 275 days. The shortest period was 264 days and 296 the longest.

SOIL MOISTURE.

pertant Problems of Modern Farming-Theory and Practice.

Of all the problems that the farmer has to consider, this one forces itself to the front. There is no subject so important in agriculture, says Charles Mortur-eux in The Journal of Agriculture, and one which has received so much atten-tion of late years as the one which touches the conservation of soil-moisture. We know that a certain quantity of water in the soil is necessary to render its fer-tile constituents available, and that a deficiency in this required amount makes a difference between a good crop and a none which has received so much attention of late years as the one which touches the conservation of soil-moisture. We know that a certain quantity of water in the soil is necessary to render its fertile constituents available, and that a deficiency in this required amount makes a difference between a good crop and a poor one. A few figures will help us to understand the importance of this fact: 60 to 98 per cent. of water enters into the composition of plants, and this amount, large as it is, is but a fraction of the total sum required during the growth of the plant. It has been calculated, from reliable experiments, that in raising oats 60 to 98 per cent. of water enters into the composition of plants, and this amount, large as it is, is but a fraction of the total sum required during the growth of the plant. It has been calculated, from reliable experiments, that in raising oats every ton of dry matter represents an expenditure of 522 tons; potatoes use 422 tons for the same amount and corn results of 502 tons amount and corn results of 502 tons.

Constructed in this way a very small flame will keep everything warm and growing all night. Hence the housewife may plant tomatoes, peppers and the like, or any kind of flower seeds, early enough to have them get a good start, and that without experiencing any serious setbacks, no matter though the meroury is found some morning down near zero.—Frederick O. Sibley, in N. Y. Tribune.

results were as follows: 1st ft. 2nd ft. 3rd ft. From loose surface. 17.7 19.6 18.7 From compact surface. 17.1 17.6 17.9 From plot growing. 17.1 17.6 17.9 From loose surface. 17.7 19.6 18.7 From compact suroats...... 17.2 18.9 16.6

ing grounds:

1. Field growing turnips, clay soil, well cultivated during the period of

growth. 2. Field growing wheat; clay soil. 3. Field growing barley; sandy soil. 1st ft. 2nd ft. 3rd ft.

22.7

2..... 20. 2 9.2 If we compare these results with the

theories that scientific investigations have furnished upon the subject, we see that they perfectly agree. In order to understand these theories, a study of the movements of the water in the soil is movements of the water in the soil is necessary; water in the soil is held under three forms, as hygroscopic, free, and capillary. The first is in intimate connection with the molecules of earth and can be driven off only by heat. The second, or free water, is not held by any force, but yielding to the law of gravitation, descends to a certain depth, varying with the permeability of the sub-soil. It forms the supply from which capillary water is drawn. The last one is so called because, acting under the force of capillarity—the drawn. The last one is so called because, acting under the force of capillarity—the same which causes oil to go up in the wick of a lamp—it moves through the soil in all directions, from moist to dry places, by means of the capillary (1) tubes—or interstices between the molecules of earth. The rapidity with which these tubes, that is upon the fineness of these tubes, that is upon the degree of fineness and compactness to which the earth has been reduced by tillage. In its ascending movement the water meets the roots of the plant, and what is not absorbed reaches the top of the ground absorbed reaches the top of the ground and evaporates. But if the soil is stirred by the harrow or the cultivator to the depth of two or three inches, the connection between these capillary tubes is broken, thus preventing the water from rising any higher than the roots of the plants.

plants. Accordingly, we find in the plot with a loose surface a higher percentage of water than in the compact one; and we see that the well cultivated field of we see that the well cultivated field of turnips retains more moisture than the field of wheat or barley.

Many other experiments conducted on the same subject have proved conclusive-ly the fact that, in all cases, an earth mulch is far preferable to a moisture wasting crust. Farmers cannot afford to let their crops suffer from drought while let their crops suffer from drought while by means of the cultivator they can store up this so precious moisture, which other-wise would escape uselessly, and thus secure far better and more abundant crops which will amply repay them for their extra labor.

Experiments in feeding and in computing the value of eggs show that if no estimate is made for labor, one dozen eggs can be produced at a cost of about six cents for food, or about half a cent per egg. If all of the food allowed to hens were converted into eggs the profit of a dozen eggs would be large, even when prices are very low, but much depends on whether the hens convert the food into eggs, flesh, or support of their bodies. It is a fact demonstrated, however, that when a dozen eggs are market. Average Cost of Eggs. ever, that when a dozen eggs are market-ed they carry from the farm but little of the nutritious elements of the soil in proportion to their value in market, and on that account they are as profitable as anything that can be produced on the farm.—Poultry Keeper.

Herticultural Notes.

Rabbits cannot guary through wire cloth if it is placed about the fruit trees. Coal ashes, if you have them, can be scattered about the bottom of trees and

SPRAYING EXPERIMENTS. by 3,500 People.

as a means of combatting the man insect pests which have proved as injur ous to fruit of late years is clearly demonstrated by the interesting and valuable report of William Ore, superintendent of experimental spraying for Ontario, just received from the Depart-

annual fall of water in our country was to give several applications at the critical period of the swelling of the bottom surface of the bottom surface of the surface and the country of the state of the bottom surface of the surface and the country of the state of the bottom surface of the surface and the country of the surface of the surface and the country of the surf

vinced of the thoroughness of the remedy provided for their ravages.

The saving to the farming community from the popularization of the spraying process will be very great, as the losses to fruit growers owing to the destruction caused by insects have been yearly grow-ing more serious. It is only to be regret-ted that the Department is unable to accommodate many who are anxious to have these experiments conducted in their localities.

Spraying arrangements for the present year are now being arranged for, and all interested can obtain a list of the orchards selected and dates by applying to William Orr, superintendent of experi-

will be found of much prac A copy of Mr. Orr's report will be forwarded on application to the Department of Agriculture, Parliament Buildings, Toronto, Ont.

One of the largest breeds of hogs is the Berkshire. Its rival as to size is the Poland-China, but it is seldom that a specimen of either breed on the general farm attains the great size of the Berkshire.



IMMENSE BERKSHIRE SOW

graph from which the illustration was made was taken the day before the aumal was killetd, says The American Agriculturist. She was owned and slaughtered by John S. Nawgel of Bed-

To get best results, have a separate house for sitters. Let them get fully determined to incubate, them prepare a fresh, clean next and remove them carefully after night. Put nest egg: (or the small gourd which every poultryman should raise) under them until they are reconciled to the change. A lath coof, one foot wide, two feet long and it inches high, is set before the nest and the hen eats, drinks and dusts in this coop until accustomed to go back to her nest. A house for sitters with the south side made open, the opening screened with two-inch mesh chicken wire, is a fin place on sunny days to open up and let the sitters come out to sun and dust themselves. At other times I found three weeks' confinement in the small coops Starting a Sitter. themselves. At other times I found three weeks' confinement in the small coops often caused diarrhoes and weakness which this freedom of the hen house every few days obviated. Do not forget to see them back to their proper nests with the coops in front and the house shut up, for a hen needs seclusion when sitting. While the weather is cold 11 to 13 eggs are enough.—S. Naomi Woloott in Orange Judd Farmer.

How Capital Is Wasted. Capital is by no means an unmixed