

Soils and Crops

Address communications to Agronomist, 72 Adelaide St. West, Toronto.

Improving Your Poor Fruit Trees.

Almost every farmer will find a knowledge of budding and grafting helpful. It may be to make over an apple tree from an inferior variety into a profitable and salable sort. Or it may be to add a few new varieties by putting two or three kinds on one tree.

To describe the operations of budding and grafting, it is necessary, first of all, to get straight on the meaning of the terms.

"Budding" is accomplished by taking a bud from one tree and inserting it in another tree, which is spoken of as the "stock." The stock is usually only one to three years old, and in good growing condition.

"Grafting" consists in taking a small branch, which is spoken of as the "scion," from one tree and fastening or grafting it onto another, in such a way that it will grow. The scion is generally cut from active young growth, about the size of a lead pencil. It should be cut during winter or in very early spring, while the buds are still dormant. The scion may be kept in sand or soil, in a cellar, or in an ice house.

I like to do my grafting just after the buds begin to swell in the spring, so that scions will start to grow as soon as possible after grafting. Budding may also be done at that stage, but I prefer doing it in late July or August, after the buds for the next season's growth have matured. Of course, such buds do not start to grow until the following spring, but they should unite with the stock in three or four weeks.

In budding there are three distinct steps. First, make your bud. This is done by cutting a dormant bud, of the variety wanted, with a little strip of bark three-fourths of an inch to an inch long. A sharp knife should be used, to make a clean cut, and a little sliver of the wood may be left in the curve of the bark.

Second, make a T-shaped slit in the bark of the stock, and slip the bud into this so it fits snugly under the bark.

Third, tie the bark firmly over the bud with raffia or soft twine, to hold it secure without cutting it.

In a few weeks, or as soon as the bud grows fast, cut the tie to prevent its binding the growing stock. The following spring, when growth starts, the stock is cut off clean, just above the growing bud, which forms the new leader, making a new tree or the old roots.

Grafting is of two kinds. If you have a small tree or branch to make over, say as big as your finger, you can use a "whip" graft. This consists in cutting off the stock with a long, slanting cut, and cutting a scion of the same size, and in the same way, so that the two pieces will exactly fit together like a splice. The inner bark, or cambium of the two pieces must just fit together, as this is the part

which will form the adhesion. A split or tongue in both pieces will serve still further to hold them in exact position.

When I have to make over larger trees, or add new varieties to a bearing tree, I select a number of strong new branches, an inch or two in diameter. These are cut off clean and square instead of slanting. Then they are carefully split across the middle so that the two scions can be inserted. The ends of the scions are cut to a slim, tapering wedge, so that they will fit snugly in the split, care being taken to place them flush with the outer edge of the split, so that the inner bark of both stock and scion will come together.

In both whip grafting and cleft grafting the scions should be firmly bound in place as soon as inserted, and the entire joint well covered with grafting wax. If both scions take, in a cleft graft, one may be cut off later. As the scions grow, the top branches of the tree are removed; in the case of an older tree, a few each year, until the new growth replaces the old after three or four seasons.

The Balcock Tester Who Woke Up Our Town.

Down here in a little country town of southern Illinois, is a man who has stirred up more interest in dairying than anyone here ever dreamed of, writes an Illinois farmer.

Our farmers had been shipping a little cream for some time—just taking what milk the calves did not get and selling the cream, and that was about all.

A man here, owning a few acres, decided that he would like to buy cream for some company. He knew a cream buyer in another town, and had learned how to test cream. So he took the examination and got a license to test and buy cream. He made a deal with a certain company, and they sent him an outfit.

The cream station was rigged up, and a little cream began to come in. After a few months a few more buckets came in, and occasionally a whole barrel. This man (I will call him Smith, although that is not his name), having a pretty keen brain, began to wonder if there wasn't a way to get the farmers to use more and better cows, so there would be more cream to ship. His volume was so small that the business was not paying very well, so he suggested to his patrons that they bring in a sample of each cow's milk and let him test it. They would then know which were their good cows and which were their poor ones. Three-fourths of them never had thought of such a thing. But they all gladly brought in their milk samples. Smith tested the milk with-out charge, and insisted that they bring a sample every week for a number of weeks, so he could get an average for a period of time.

Now we come to the interesting part: Naturally, Jones didn't like to

The grocer who recommends to you Red Rose Tea, on which he makes less profit than he does on other teas, can be trusted when he recommends other goods.

have his neighbors know what poor cows he had. That is exactly what happened. Smith averaged these tests, giving each patron a sheet with the reports for everyone on it. Every man could see how much butterfat he had sold each week, and how his cow test averaged, and whether his was better or worse than his neighbor. It was also reported regularly in the county paper.

Did they wake up? Well, I guess so. Soon the farmers in bunches began to buy good dairy cows by the carload. Old Brindle wobbled down the lane for the last time, and was shipped to the packer. I wish I could make you visualize the changes that have taken place in that little community. Many farmers now bring in one, two, three, and more gallon cans of cream every week. Smith has a fine business, but the farmers most all have a finer one. Why, a bank has started where one never thought of before! The farms are fairly beginning to bloom since they have been better fed with cow manure. Silos are to be seen on every farm. New barns are common, and not by any means the least are the many new homes built from the proceeds.

There is keen competition between the best farmers to see which one can get the largest cream checks each week. Record-keeping is still the leading feature of interest. It takes a real force to handle the cream books now, where, at the start, Smith could handle it himself. Now he charges a

small fee for testing and making reports to each one. They are glad to pay him to keep them posted on what their cows are doing.

I wonder if there aren't other places that need a Smith to wake them up?

Give the Garden an Early Start.

In the last few years, since we've been paying more attention to our garden, we've learned two important things: The first is that garden success depends very much on getting an early start; and the second is that we can grow better plants than we can buy, with which to get that early start. Moreover, we get exactly the varieties we want, instead of having to take what the plant seller gives us. So for three years we have grown all our own plants.

For starting the plants I use earthenware seed pans, such as florists use. These may be bought at most any hardware store. At first I tried small wooden boxes, but these warped and dried out. Seed pans are much better. Enough seed for several hundred plants may be started in each pan.

I find that it makes a great difference what kind of soil is used. When possible, I get black, rotten wood from the heart of a hollow tree. Being light and spongy, this holds moisture for a long time, and is free from weed seeds. If I can't get this, I use leaf

mold, rubbed through a sieve. A little sandy soil which has first been baked in the oven to kill all weed seeds is mixed with the wood or leaf mold to give it more body.

I sow the seed very thinly, so the little seedlings will not touch when they come up. Cabbage, lettuce, beets, onions, and kohlrabi are started in March. Tomatoes, peppers, egg plant, and celery are started in April.

The soil in the seed pans is given a thorough watering before the seeds are sown and they are thinly covered. Then each pan is covered with a pane of glass, leaving a small crack for ventilation. The pans are placed in a warm bay window, where they get plenty of sun and a night temperature of 45 to 55 degrees.

As soon as the seeds are sprouted, I take off the glasses and give them all the sunshine and fresh air possible, to keep the seedlings growing short and stocky. Each pan is thinned out to about twice the number of plants we will need. This is very important, as it keeps them from crowding.

As soon as the weather gets warm I put the plants outside in a hotbed, which is covered with double-glass sash. Before they begin to crowd they are again transplanted to flats. This is usually four to five weeks after sowing the seed.

Now's the Time to Overhaul Your Tractor.

Repairs and adjustments may save time during the rush season.

First drain out all oil from crank case, transmission, and differential housings. Then remove all cover plates, so that all parts may be inspected. Badly worn parts should be replaced, or at least the new parts should be on hand. Remove the pistons and rings to see that they are working freely in the grooves. It is important that all carbon deposits be cleaned from rings and grooves. Wrist-pin bearings can be taken up or rebushed. Crank-pin bearings should be taken up or relined, and scraped if necessary.

After cleaning the carbon from the cylinder walls, head, and valves, carefully grind the valves. Adjust valve push rods so that valves open with proper clearance. Valve guides may be bushed to save compression. Examine valve springs for wear, and replace if tension is weak or wear is excessive. Go over the ignition system and repair all breaks in insulation on wires; test magneto for strength of spark. Adjust breaker points. Test spark plugs after cleaning them.

Adjust thrust bearings in differential, if any. Adjust all main bearings of axles and transmission. Be sure that all oil openings are clear and free. Clean fuel lines and fuel tank and carburetor. Examine radiator, and rinse out thoroughly. Go over entire machine for loose bolts, nuts and rivets. Give all exposed parts a coat of good paint. Last, but not least, refill all grease and oil cups and oil reservoirs with the best lubricant you can buy.

Solomon Grundy joined a bull club Monday. Sold his scrubs Tuesday. Bought purebreds Wednesday. Tested his cows Thursday. Sold the "boarders" Friday. Joined "Better Sires" campaign Saturday. Praised the Lord Sunday! This is the story of Solomon Grundy.

A Practical Hog House

The profits from the hog crop form a very important item of the total profits from many farms. These profits depend in large measure upon the care of the hogs, and good care of the hogs calls for an up-to-date and sanitary hog house.

Money put into a good hog house is well invested under any circumstances, but when market hogs are up around fifteen cents, good shelter is all the more important. The floor plans here shown illustrate a popular arrangement which is proving very satisfactory on a great many farms throughout the corn belt.

The outside dimensions of this house are twenty-four feet by thirty-seven feet six inches. It contains twelve separate pens each six feet by eight in the clear, with an alley four feet, ten inches wide, running the full length of the building between the two rows of pens. Practically all hog raisers have agreed that a pen six by eight feet is large enough for a sow and her litter, indeed a five by eight-foot is used by some with good results.

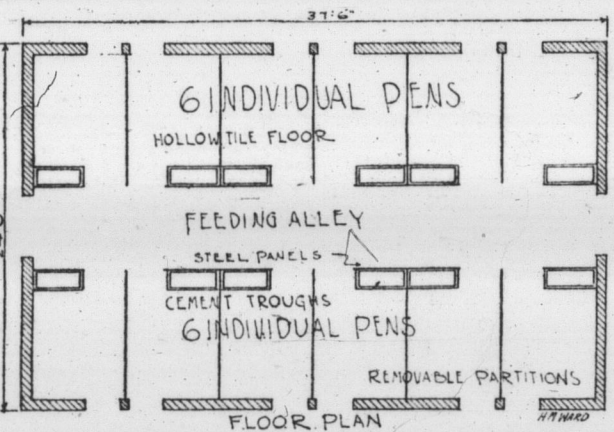
There is an outside door at each end of the alley. Then a door opens outward into the alley from each pen,

hogs are more comfortable in cold weather and do not require so much feed to keep them in good condition.

Wood is the most commonly used because of the ease with which it is worked into a finished building. But if a wood building is constructed as warmly as one built of hollow tile or concrete blocks the cost would possibly be the same or higher.

The roof in all cases will be of wood and two-by-four number one yellow pine rafters, twenty-four inches on center, sheathed with one-by-four roof boards, number two lumber spaced two inches apart if wood shingles are used. If prepared roofing is used one-by-six dressed and matched boards should be used. A heavy three-ply prepared roofing covered with crushed slate will give a good roof for twenty to twenty-five years without any attention. This makes a very warm roof for winter use.

The metal roof windows let the sunshine strike every part of the building during the day. There is no better disinfectant for a hog house, no more efficient destroyer of disease germs known, than plenty of bright sunlight. Plenty of sunshine is better and cheaper than buying medicine



so that the hogs may be separated, and moved from one pen to another with convenience inside the building. Each pen is also supplied with an outside door so that separate runs or yards may be built on the outside for each. In decent weather this door could be left open so that the pigs could have the use of the outside run and inside shelter at will.

These small doors should be twenty-four inches wide and thirty-six to forty-two inches in the clear. In cold weather a piece of burlap or ducking hung at the top of the door, with a stick a little shorter than the width of the door nailed across the bottom to prevent the wind from blowing it back, will help materially to keep the pigs warm. The pigs will soon learn to lift the curtain when they want to go through. The board doors would not then need to be closed except in very bad weather, or while the pigs are very small.

The walls of the building may be of three materials: wood, hollow building tile, or concrete. The cost of these different materials would be about the same, provided a good warm building is constructed.

The hollow building tile is being used by a great many with very good results. On account of the dead air spaces in the tile, such a house will not freeze if there is stock in it, no matter how cold the air is outside. The

free air is also an essential feature of any well-constructed hog house. Every farmer knows how soon the air in the ordinary pig shed becomes foul when filled with hogs. Hence to insure healthy hogs some provision must be made. This is provided for by two ventilators. These ventilators are especially valuable during the cold weather in the winter when the doors and windows are closed for protection from the cold.

Such a house is especially adapted for brood sows during the farrowing season. Each sow and litter can be provided with a separate pen and outside run, until the pigs are old enough to be together in a large lot. The individual pens are also useful for weaning purposes. The pigs can be shut in this pen and given special care during the weaning period.

The partitions can be made removable, and when the sows are through farrowing, they can be removed and it can be used for two large sleeping floors for the sows.

Altogether, this house has many advantages which recommend it to the average farmer. If the house is too large or too small for the purpose of any individual reader, he could follow the same plan of construction and fit the size to his individual needs.

ISSUE No. 10-21.

HIDES-WOOL-FURS

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Poultry

Good vigorous parent stock, the proper mating of the stock, successful incubation—all these have their influence upon the per cent. of chicks one is going to rear.

The time is past when you should be breeding from every hen on the farm. Hens selected in the fall because of their late-laying ability should be marked then and used the coming spring as breeders, provided they have the vigor and proper conformation. To these hens should be mated males from hens of known production. By this method you will be able to improve the egg-laying qualities of the flock tremendously.

After the chicks have been hatched and are ready for the brooder, the next question is the type of brooder house to use. The proper type of brooder house is the one that will give you the best results. A good size is 16 feet wide and 12 feet deep, 7 1/2 feet high in front and 4 feet in the rear. In this model house the four upper window-sashes are hinged so that when opened the cold air strikes the ceiling first and radiates throughout the room. In the case of the two central top sashes, unbleached muslin is used instead of glass.

The purpose of this muslin is to admit fresh air without any draft. At no time except in the hot summer months are the lower sashes removed. As a further means of ventilation, there is in the back of the house an opening through which the cool air can come between the roof boards and the rafters; the rafters are sealed up for a distance of perhaps six feet. Another advantage of this brooder house is the great amount of sunlight which is admitted to all parts of the house. In the case of hens, this might not and would not be desirable, because no artificial heat is employed in hen houses. But in the case of the brooder house, it is highly beneficial. At no time when the sun is shining are the chicks bunched together. The sunlight is everywhere.

At each side of the front of the house is a little door through which the chicks may come out and go in at will. An approach in the general form of a semi-circle covered with burlap bags serves as an ideal board walk for the chicks. The reason for two openings instead of one is that they cut down the labor greatly and make it easier for the chicks to find their way into the house in case of storm.

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THE LIE

"It simply wasn't true," said Kate in puzzled disgust. "What do you suppose made her tell me such a thing when there wasn't the least need to?" As Lucy laughed she caught herself up. "Oh, you know perfectly well what I mean! Of course there can't ever be any need of a lie. But there was not even the excuse of cowardice for this one. It was just an offhand invention casually thrown into the conversation. When I asked her Mrs. MacVane's opinion all she had to do was to say she didn't know. What could have possessed her to invent such a tissue of fibs? When I spoke to Mrs. MacVane and began to thank her for her appreciation of our efforts I found she'd never said a word about it to anyone. Emilia must have made it all up on the spur of the moment. I've suspected before that Emilia was careless about facts, but anything like this—well, it's the end of everything between Emilia and me. I've no use for a—"

"Don't call her that! Please, Kate! She is, in one sense; but in another she isn't anything so seriously bad, and I do hope you won't avoid her. Did you tell Mrs. MacVane?"

"No, though I hardly know why. I can't see how you can excuse her, Lucy. You'd cut your tongue out of course before you'd fib yourself."

"That's right; say 'fib' instead of 'lie,'" said Lucy, with one of her sudden warm smiles. "That's what Emilia calls it to herself, I'm sure; she would think that important lies are lies, but she doesn't feel that little ones are wicked."

"Hush, hush, my child! I'm a rock-ribbed truth-teller, just as you are. I wouldn't defend Emilia if you hadn't shown that you meant to stop being friends with her. She has a fault, and it's a serious fault; but she's worth trying to help. And, Kate, in one sense it's the ruinous extreme of a virtue. She told you that yarn to please you—"

"Please me!"

"And to encourage you when she saw that you needed encouragement and were hoping to find it in Mrs. MacVane's opinion. By the way, when you'd explained to Mrs. MacVane she'd agree with you, didn't she? And say nice things?"

"Yes, she was a dear; but that doesn't alter the point."

"It doesn't in our minds, but it would in Emilia's. She was sure that was how Mrs. MacVane felt. She'd think she didn't falsify anything essential, but merely anticipated what Mrs. MacVane would say."

"Lucy Lyndon, I can't believe it's you talking! As if that justified a lie!"

"It didn't," conceded Lucy. "But I'm trying to put myself in Emilia's place. Haven't you noticed, Kate, that she's the kindest person that ever came into our set? She says the prettiest, sweetest things and means them. She gasps sometimes at our bluntness, which seems to her cruelty."

"She needn't! We understand one another."

"Yes; often we understand well enough not to mind, and when we do mind, to forgive. But there's quite a little forgiving to be done—admit that there is, Kate—and sore spots are made that take a long time to heal. We're cruel with our tongues, sometimes even to our dearest friends; but Emilia never is."

"But if you can't trust what she says—"

"We can trust her heart; she's good and loving. And if without being cruel we can make her understand how much we want to trust her word, too. Besides, if we are going to be hard because we are truthful, we are lowering our own best virtue."

"We, hard, indeed! I may be, but you're a heart like a needle!" All right, Lucy, I'll admit that with her fibs eliminated Emilia would be a darling! You can tell her I said so; but mind you add that she's neither a darling nor a friend of mine unless they are!"

"I will," said Lucy soberly.

Content.

O Thou who kindly dost provide For every creature's want! We bless Thee, God of nature wide, For all Thy goodness lent; And if it please Thee Heavenly guide May never worse be sent; But whether granted or denied Lord bless us with content! —Robert Burns.

Ontario produces 76 per cent. of Canada's fruit production.

Young hogs should be sprayed and dipped freely to keep them free from parasites and skin diseases.

Canada's oldest living Privy Counsellor is Sir George E. Foster, Minister of Trade and Commerce since 1885.

If a button comes off when you are far from needle and thread, take a small piece of string of a suitable color and, working from the under side, thrust it through the garment, using a hairpin as you would a bobbin in fancy work; slip the button on the string, work the string again through the goods and tie the two ends firmly together. This is much better than trusting to the holding qualities of a pin.

ROYAL YEAST CAKES

Good home made bread is the finest food on earth, and the wife that is a good bread maker is a real helpmate to the bread winner. Bread is the one food that perfectly combines in itself all the elements that give strength to the body. Children who eat lots of good home made bread thrive the best—they never get sick from eating good bread. Bread making is a simple operation. Bread made in the home with Royal Yeast Cakes possesses a greater degree of nourishment, and will keep fresh longer than that made with any other.

Scientists highly recommend yeast as a food and as a corrective agent for certain functional disarrangements, attributed to poor blood conditions. Soak a cake of Royal Yeast for half an hour in a cup of lukewarm water with one teaspoon sugar. Then stir well and strain once or twice through muslin and drink the liquid. BETTER results will be obtained by allowing it to soak over night and drinking half an hour before breakfast. Repeat as often as desired. Send name and address for free booklet entitled "Royal Yeast for Better Health."

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