

TOP GRAFTING OLD APPLE ORCHARDS

M. O. LOWNSDALE, HORTICULTURAL COMMISSIONER, TELLS HOW TO REMOVE DISEASE AND CREATE PROFITABLE NEW TREES.

BY M. O. LOWNSDALE, Horticultural Commissioner First District. THE OREGONIAN'S suggestion that a statement of the aims and methods to be pursued in the campaign against the "old apple orchards" of the Willamette Valley meets with the instant and complete approval of the State Board of Horticulture. This campaign is being vigorously pushed at the present time, but professional mischief-makers have made so many misrepresentations that although inaugurated a year ago, the movement is not even yet understood by the average farmer. It is important that owners of these trees should understand that the methods to be employed are simply vigorous means of changing conditions of soil and disease to one of cleanliness and health. These methods are absolutely necessary if we would better horticultural conditions or if we desire the apple-growing industry to survive in our Valley.

As Horticultural Commissioner for the First District, I am glad to comply with your request for a plain statement. In brief, all the "old" apple orchards of the Valley are infected with a very dangerous and contagious disease. This disease is caused by a minute fungus which gains entrance to the inner tissues of the tree and burrows along under the bark, appearing at certain spots on the face of the bark for the purpose of spore-formation. The fungus grows wholly under the bark, hence its active principle cannot be reached by any spray, and the only benefit that can possibly be derived from such a treatment (beside the natural tonic effect of a Bordeaux mixture) would be the possible prevention of spore-generation if sprays are applied at the right moment. To be effective in this direction, applications must be made with the beginning of early rains in Autumn—a time when every fruit-grower is snowed under with other work that will not be denied.

The fungus is a perennial and, having gained entrance to the inner tissues of a tree, it will follow along each succeeding year's growth and produce its debilitating canker-spots as long as the tree lives. This disease will be found rampant in every old orchard in the Willamette Valley and its disgusting sores are the principal cause of the decadence of the apple industry in this, the original "land of the big red apple." Almost every old apple tree is so badly affected with this filthy disease that all of its energies are exhausted in an effort to repair the ravages of this voracious parasite and little vital life can be put into the fruit. Thus are apples from these debilitated orchards robbed of their keeping qualities and of much of that exquisite flavor that for a generation has distinguished the fruits of vigorous trees in the same localities.

As the fungus causing this disease is at all times hidden under the bark, the only method of cure is to cut off affected branches or to cut out infected tissues. In old apple orchards this means practically the removal of the whole top. In these severe cases, half-way measures are worse than useless.

This treatment is simply a severe pruning, and in no sense is it a menace to the life of the tree. In fact, it is the only method by which the "old" apple trees can be produced from the decaying wastes that are everywhere blotching the face of the Willamette Valley. These old cripples, these foul and cankered sources of contagion that are so pitiously spoken of by the fellow who doesn't want to clean up as "old friends of a generation around whom cluster so many tender memories," etc., ad nauseum, if given a little of the care and attention that "old friendship" would demand, would in three or four years be sturdy, vigorous orchards of immense economic value to our state.

It will at once be noted that there is no desire to destroy a single tree. On the contrary, an earnest attempt is being made to make assets of great value of what are now worthless incumbrances—aye, even worse than worthless, for they are distinct menaces to a great industry, and, like other great nuisances, must be abated.

When removing these treecrops, a thought should be given to the subsequent care of the new growth. All trees should be headed back low enough that they may be properly and economically sprayed and otherwise treated, and their fruit picked easily and cheaply. Consideration should also be given to the varieties to be grown on the new growth. The vast majority of Valley trees bear fruit that is of little commercial value, and should be so changed that we will soon have a great commercial output of a staple variety. The Yellow Newtown is recommended as the best variety with which to top-graft these old trees.

The Yellow Newtown tree should never be planted in the Willamette Valley as a nursery. If it is desired to establish a Yellow Newtown orchard, some thrifty grower as the King or Ben Davis should be planted, and after five years be top-grafted. It is because the Yellow Newtown needs a thrifty and powerful root system to get it in motion in the Willamette Valley that it has been deemed wise to top-graft these old orchards with that variety. There are many other considerations that lead to the same conclusion, but they need not be cited here.

There are many methods of top-grafting these trees that are equally successful, but it will be sufficient to point out such as will give the best results to the average farmer. While all methods of grafting require a certain amount of skill, yet a knowledge of practical requirements and close attention to detail both during and after the operation will enable any earnest student to graft successfully by all the methods described herein. Any method, however, will fail if heedlessly performed and if careful attention be not given to the growing seasons.

It is not difficult to insert scions in the top of a stump as in Figure A. A perpendicular cut is made through the bark and enough of the sap-wood to give a little stiffening to the scion, care being taken to cut obliquely, so that the wood may be lifted a trifle to insert the scion. The scion should be quite thin and cut more on the side next the outside bark than on its opposite toward the heart of the tree, so that two cambium tissues may coincide when the cut is opened a trifle. Scions for this method should be cut as in Figure C. The top of the stump should be waxed as well as the wound about the scions and of course the top of the scion



Apple tree planted in 1854. Cut back to ground in 1893. Top-grafted and has been very productive since.



Scions inserted obliquely.



Old apple tree top-grafted in 1893. Two scions have completely closed across stump. Scions strengthened by woven limbs. Diameter at point of union with stump 14 inches.

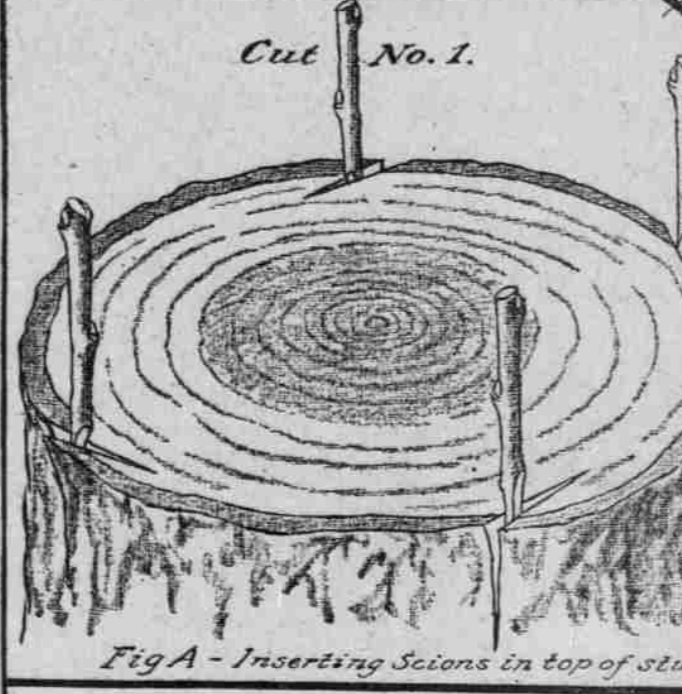
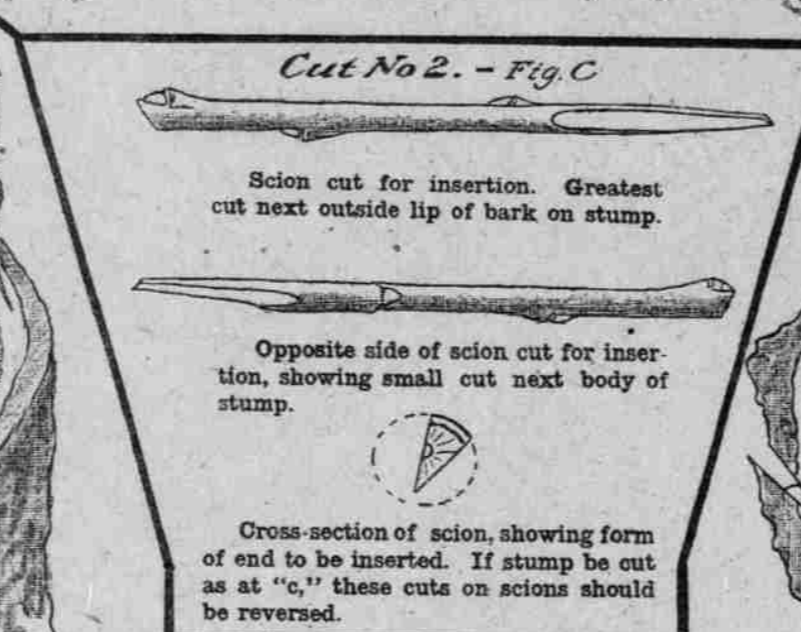


Fig. A - Inserting Scions in top of stump.



Scion cut for insertion. Greatest cut next outside lip of bark on stump.

Opposite side of scion cut for insertion, showing small cut next body of stump.

Cross-section of scion, showing form of end to be inserted. If stump be cut as at "c," these cuts on scions should be reversed.

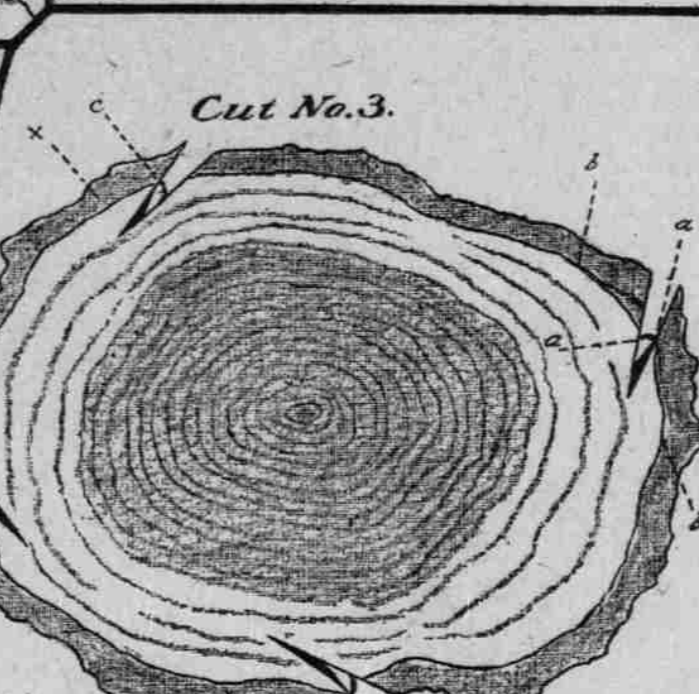


Fig. D - Cross section of a stump.

Cross-section of old stump with grafts inserted, a cambium tissue of grafts, coinciding with b b, cambium of stump. Scions at c and a with largest cut on opposite sides.

must also be covered. In methods of grafting into large stumps, when scions begin growth care should be taken to wax about the scions if the wax cracks in the least. Many grafts are lost by neglect of this precaution. This operation should be performed in May or at the earliest during the latter part of April. There is very little danger in cutting off the entire top of trees at that time and

scions will start more quickly than if the tops are removed earlier in the year. Scions should not start their growth much before the 6th or 10th of May, as our early May frosts are very fatal to the tender grafts. On May 7, 1894, a belated frost robbed me of about 90 per cent of growing scions in 4000 top-grafted apple trees. I have good cause for advising delay. Figure D is a cross-section of the

same method shown in Figure A. Care must of course be taken that scions are so cut and placed that the cambium tissues should coincide on each side of the graft. Some grafters try simply for a "cross" in this method of grafting—that is to attempt only to secure a crossing of the cambium tissues at some point attaining this end by an oblique setting of the graft. Often this method succeeds well, but it is much better to take more care with the cut and unite all the cambium tissues for a long distance. After making the cut in the stump, the wound will be opened a trifle by a turn of the wrist, before withdrawing the knife. Care should be taken at that moment that the wood is not split as in Figure D.

Another detail of grafting at the season I advise is that scions should be kept moist in the fields before insertion and should be protected from the sun and from winds. They should always be whitened at the tree and preferably as each graft is set.

CHOIR SINGER PAID \$4000 A YEAR BY NEW YORK CHURCH



CORINNE RIDER KELSEY. NEW YORK, March 20.—(Special.)—Corinne Rider Kelsey gets a big salary for choir singing—probably the biggest ever paid. She is to receive \$4000 a year from a New York church. Miss Rider Kelsey is always doing unusual things. She went to London entirely without experience in operatic singing, was heard by one of the directors of Covent Garden Opera-House and induced to sign for the opera season last year at a record-breaking salary for a beginner. She is known in America chiefly as a concert singer.

Perhaps the easiest method of top-grafting these old trees is shown in Figure G. Scions are cut as in Figure E and cuts are made through the bark as if for budding. Grafts are slipped under as in budding and an elliptical opening is cut for the scion by trimming the bark lips a trifle. The bark lips are then laid down again behind the scion and tied with raffia as at f, in Figure G, or are held in position by some other simple device. The purpose of this tying is to prevent the swelling of the bark lips when the graft begins to draw up sap. Sometimes grafts are pushed out if the bark is not tied. The opening for the scion at g, in Figure G, should be only large enough to permit the bark to fit snugly around the scion. Otherwise wax would flow in under the scion and prevent a union.

Another and a very sturdy and satisfactory method is to insert scions in an oblique cut as shown at k, in Figure G. This method requires a little practice in order to be sure of setting the scion so that the cambium tissues shall coincide. Success in that endeavor will give a splendid and hardy branch. Of course in all these methods, waxing all wounds and the tips of scions is imperative. As soon as scions begin to swell, the wax should receive attention and in these large stumps, the grafts will probably all demand re-waxing, perhaps several times.

After grafts have grown about eight inches the terminals should all be pinched off in order to escape the winds of about July 6 to 10, and to give sturdiness to the new wood and the union. When they have grown another 10 inches they should be pinched again—twice in the first Summer; the pruning of two years in one.

An example of the growth obtained by the method shown in Figure A is shown in Figure F. This is a sketch of an apple tree planted in 1854 on my place and which I top-grafted in 1893 after the manner shown. The tree has been in bearing for many years and is as sturdy as any in my orchard.

Figure O is a sketch of a tree grafted the same year as Figure F. In this case, only two scions were used and they have completely covered the stump, which is now 14 inches in diameter. These two scions were tied together by weaving limbs around each other and fastening them for about two years. The ends were then cut off with the result shown. Old trees may be cut back in May and be allowed to throw out a new top which

ONE OF THE FAMOUS SHOW GIRLS OF NEW YORK CITY



MISS JEANETTE HORTON. NEW YORK, March 20.—(Special.)—Miss Jeanette Horton is one of the most famous of the show girls on the stage. Her principal qualification for histrionic honors is her beauty and her ability to dress well. There is a curious contrast exciting comment at the present time, between the show girls of a certain English musical comedy on Forty-second street, and one or two American musical comedies on Broadway. The English show girls are as beautiful as their American cousins, but they are dressed as dowdily as the average Englishwoman usually is. The American girls are as smart as though they were members of the Newport set.

horticultural development in Oregon, especially in the growing of apples. The apple orchards of the Eastern, Middle and Middle Western states are being rapidly destroyed by San Jose scale. The pest is not understood nor is it studied in those states and spraying measures are ineffective and for the most part are carelessly employed. Great acreages have already been abandoned and many more will go the same way. The market for apples is the out of business each succeeding year. The apples raised, for instance, in the Virginia section, the Albemarle pippin (four Yellow Newtown) are what we would call seconds and growers look at you blankly when you ask them about the effects of scale and scab. They say, "Oh, we have some kind of blight on our fruit," but that is all they seem to know. This slowly condition prevails over large scopes of country as far west as Missouri. Although millions of barrels of inferior apples, and at the same time many prime apples are still produced in these states, yet on this Coast we are already beginning to feel the effect of the lessened-output in those decaying orchards. Demand for our fruit is increasing with startling rapidity. For instance, at the present moment it would only be a question of hours to market 100 cars of Ben Davis apples. The market is changing also, a great demand having arisen for apples of the Ben Davis type, every condition pointing to the failure of Eastern and Middle Western orchards, thus putting upon us the burden of supplying the trade with the types of fruit hitherto marketed from those debilitated sections.

Within 10 years the supply of apples for even the great fruit-growing sections as far west as Missouri will have to come from the Coast, which practically means the Willamette Valley. Hood River has her market established, and because of her limited area will never be able to supply the demand for her fruit. The same is true of Yakima, Wenatchee, Rogue River and other apple-growing sections. Because of these conditions, the rich but undeveloped Willamette Valley is the natural source of supply for this enormous demand that must come within the next 10 years.

Farmers of the Willamette Valley, this is a psychological moment for your business—a moment which you must appreciate and from which you must begin preparations for greater things. If you would profit by this enormous demand for apples which is sure to be upon us in a moment, as it were, you must prepare your orchards for the great production that will be called for. You have everything—the soil, the climate, adaptability, the science, the trees—vast and fertile acreages sufficient to supply the needs of a nation. Give the business the necessary attention and energy, and you will go to an assured success. There is no theory, no guesswork about this proposition. The statement that I could instantly sell 100 cars of Ben Davis apples is far within the facts. I could go much farther if I had the fruit. So could any association in our Valley.

Every farmer in the Willamette Valley who has an old orchard, if for no other reason than to supply the coming demand, should put his trees into the prime condition of extraordinary health and vigor that is necessary to produce fruit that may carry the seas over. After these trees are returned to their former healthy condition, business foresight would suggest that they be top-grafted into some of the staple varieties. This advice is given argumentatively, for the State Board of Horticulture has neither desire nor authority to compel the top-grafting of trees. It is only intended to point out a business opportunity and suggest its development.

Young orchards should not be neglected along this line of preparing for an enormous demand in the near future. Even they should be worked over into varieties that may be handled in a large way and meet the calls of many markets. Ben Davis, Yellow Newtown, Rome Beauties and Spitzenbergs should be in great demand, with a distinct preference on our part for the two varieties first named. Don't try to struggle along with the old varieties that are not wanted. Such a course is suicidal and sure to bring failure. If the market calls for Ben Davis apples, top-graft your trees and give them to Ben Davis. You can grow the finest Ben Davis in the world in your Valley, and it is a more profitable apple than the Spitzenberg. With this variety, grow what is also one of your possibilities, a Yellow Newtown, whose flavor cannot be duplicated by any other section.

Farmers of Central Oregon, what a magnificent success lies in the future of your great Willamette Valley, if you but bend your energies in the right direction—develop resources that are not to be found elsewhere on the face of the earth—push out and take step in the march of progress.

The Filipino Scout.

A squadroom called by Alfred Damon Sturges. I knew him up in North Luson, when he was mustered in. (Chased him 'round the rice-fields till my nerves were gone to wreck.) His shirt-tail flappin' freely an' his panties rather thin; Meek an' lowly critter with his shoes hung round his neck. But now he's me brother in arms. A-wearin' the same uniform; But, harrin' the clothes an' harrin' the gun, He's the very same feller I kept on the run; An' I wonder where he would be at—'Not doubtin' his courage, at that. He might be all right if it came to a fight—Still, I wonder where he would be at! I've seen him move to action 'gainst his people, d'ye mind (New, I'm no reasonin' critic, an' speak for myself alone); He fought 'em pretty handy—with the white men, clost behind— But I'm a bit suspicious of the guy who fights his own! An' now he's me brother in arms. A-wearin' the same uniform; But I harrin' his fightin' his own family; Why wouldn't he turn an' go pellin' at me. Like he useter do out in the sun. When his commander said was a dem, I'm curious to know, if it came to a show, Which way he'd be aimin' his gun! I've known him since he saw the state; his chest expansion wide (His photos of the white girls wot he writes to every body— Your sister or your sweetheart—wore again his 'grazy' hide). His 'braggin' his pigskin talk, an' collar round his throat. Oh, yes, he's me brother in arms. A-wearin' the same uniform; But, harrin' the clothes an' harrin' the gun, He's the very same feller I kept on the run. Who slipped me by day an' by night; Who never stood none for a dem. I'm curious to know, if it came to a show, Just where to expect him to light!