

GARDEN AND ORCHARD.

Spraying of Fruit Trees.

[Comment on letter of E. Edwards in issue of June 15th.]

The discussion with Mr. Edwards has, I trust, been profitable to the readers of the ADVOCATE; to myself it has also been profitable—and pleasant too, with the exception of the personal element introduced occasionally by my valued Island correspondent. The practical experience cited by Mr. Edwards is, indeed, very satisfactory, and certainly worthy of record. That plum trees in Prince Edward Island have not been injured by the use of the formula recommended—1 lb. each of copper sulphate and lime to 10 gals. of water—is well worthy of note; and more important than this is the fact that two applications of Bordeaux mixture—the first presumably about June 10th, and the second three weeks later—were sufficient to protect the trees and fruit from insect and fungous attack throughout the entire summer. I sincerely trust that this experience is general on the Island.

The statements made by Mr. Edwards emphasize the desirability of individual research and experiment by Canadian farmers and fruit-growers.

In my experience in Ontario the formula mentioned by Mr. Edwards has proved injurious to the foliage of peach trees. In Ontario and Quebec injury by the same mixture has been frequent if not invariable—often enough, though, to justify the statement that it is unsafe. For this reason, in connection with the publication of the results of spraying experiments carried on in 1894, I recommended the following formula:—4 lbs. each of copper sulphate and lime to 50 gals. of water for all fruits trees except peaches. If, however, more than three applications of this strength are made to plum foliage, injury may result—at least in Ontario and Quebec. Therefore, in experiments superintended by myself, where four or five applications were made, a weaker mixture was used.

In regard to Mr. Caston's article, I took the liberty of calling it *sensible* not because the work of a government or of a government official, but because his letter was calculated to popularize the practice of spraying, and because he had the good sense to recommend the accepted formula adopted by the Department of Agriculture for Ontario. The spraying experiments carried on by this Department have thus far been directed against the enemies of the apple. Mr. Caston resides in an apple-growing section, and no doubt wrote also from the standpoint of an apple-grower.

In conclusion, I must express my gratification in knowing that spraying has been practiced so long in Prince Edward Island, and that it has an adherent so well able to defend and urge its advancement. I trust Mr. Edwards will, through his Provincial Fruit Growers' Association and the FARMER'S ADVOCATE, give us his experience from time to time in carrying on this important part of the fruit growers' annual programme.

Ithaca, N. Y., June 20, '08.

JOHN CRAIG.

Purchasing Nursery Stock.

BY ELLIS F. AUGUSTINE, LAMBTON CO., ONT.

It has long been a matter of wonder to me why it is that farmers, with scarcely an exception, purchase their nursery stock through traveling agents, instead of dealing direct with nursery owners. Perhaps one principal reason is, that the majority of farmers give little thought to the planting of trees and plants until approached by an agent with magnificent illustrations and glowing accounts of some new and high-priced fruits, which, when planted, often prove to be entirely unadapted to the purchaser's locality. But in some instances the farmer himself decides to set out a good-sized orchard. He makes out a list of varieties wanted, and gives his order to some well-known agent, which certainly is much better than dealing with an utter stranger. But if the farmer is not an authority upon fruit-growing, he will be most certain to choose a number of unprofitable varieties, or such as are unsuited to his locality. He will also pay from forty to sixty per cent. more for his stock than he could have purchased it for from some reliable nursery direct. I am not disparaging the tree agent, for undoubtedly there are numbers of farmers who are indebted to his visits for now possessing orchards, who otherwise would never have set out a single tree. But it is to the interest of the progressive farmer to deal in as economical a manner as possible.

A nursery can well afford to ship stock direct to a cash customer for one-half the sum demanded when ordered through an agent. I shall now endeavor to show why such is the case: First, the agent receives a commission of 25% to 30% for canvassing orders; next, about 10% is paid for delivering the stock. Sometimes in addition to this a commission is paid for collecting; and I believe I am safe in saying that at least 10% of the stock delivered is never paid for. From this it should not be inferred that the parties ordering the stock are dishonest; but not infrequently the trees are carried about the country in delivering by persons knowing little about the care required in handling nursery stock, and caring less, until they are so damaged that the grower would be ashamed to own them as his product, and the purchaser feels justified in refusing to pay for them. This is not mere theorizing, as my statements are the outcome of personal experience.

At one time I ordered a number of apple trees

through an agent, paying \$20 per 100. The price for a single tree was 25 cents. The same prices were asked this season by agents, and from 25 to 50 cents for pear, plum, and peach trees. This spring I purchased 107 trees from a prominent Canadian nursery, apple trees costing me 10 cents each, or \$9 per 100; pears, 18 cents each; plums, 17 cents each; and peaches from 9 to 15 cents each. The Fitzgerald peach, several trees of which were sold by an agent to nearly every farmer in this vicinity at 50 cents each, were purchased by me at 15 cents apiece. Now, the lot of trees spoken of as ordered through an agent were delivered to me in a much damaged condition, with bark badly shrivelled up, ten trees having to be replaced; also, out of the number there are sixteen trees untrue to name and of an entirely worthless variety.

On the other hand, the trees coming from the nursery this spring were an exceptionally fine lot of well-grown, thrifty ones, packed in an excellent manner, and word was sent me so that I was at the station waiting to receive them. If the trees were not as ordered, no payment was to be made. Not only this, but the nursery growers are ever ready to advise as to a suitable selection, and as to the varieties which will prove most profitable and best adapted to the purchaser's locality. If intending tree-planters will communicate with reputable nurseries direct, they will, I feel assured, be gratified at the treatment received.

Transplanting and Care of Evergreens.

[FROM THE MINNESOTA STATE FORESTRY ASSOCIATION.]

As to the best time for transplanting evergreens, my own experience has proven that while evergreens can be transplanted with comparative safety at any time between April and November, if proper precautions are used, yet for Minnesota the very best time for the operation is in the month of May, when the soil has become somewhat warm and friable and the buds are just beginning to swell, but before growth has actually commenced. If the work must be done before the proper time or during April, the trees should be protected from the effects of cold and drying winds until the middle of May, or until the roots take hold in the soil and can take up moisture, or many of them will be pretty sure to die. As the name implies, they are always in foliage, and the drying winds are searching through the branches and evaporating the natural moisture from the foliage, causing a severe draft upon the vitality of the tree, which can be greatly obviated by suitable protection, but such protection is hardly practical except in small plantations. The best size of evergreen trees for timber planting or for ornament, except it be trailing and shrubby kinds, are those from fifteen to thirty inches high that have been nursery grown and transplanted in the nursery at least twice, thus having insured a good root system. When bales of evergreens are received from the nursery they should be unpacked at once, the roots wet with water that is not too cold, and then heeled in immediately into mellow soil and kept there until they can be planted. Never allow the roots of an evergreen or any other tree to be exposed to the wind or sun while moving them to the planting place, and until they are put into the ground keep them well covered with a wet blanket, or have them standing in a tub of water. We like best to set them on land where a hoed crop was raised the previous year and that was plowed in the fall, then fitted for planting with a thorough harrowing just before planting. In setting, dig holes ample to receive the roots in natural position without cramping or crowding. Judging from actions, many persons suppose that a tree may be planted like a post, that the main object is to fix it in the ground so that it will not fall over, forgetting that it has vitality to be preserved and that the vitality is often a very delicate thing, and so they open but a small hole, jam the roots into it, and fill up with clods and sod or whatever is most convenient. After the hole is properly dug, place the tree in just the position it is designed to stand, first putting enough fine earth in the bottom of the hole so that it shall not be too deep, and with every root in the right position. Next work the finest of soil in amongst the roots, using the hands to make sure that it comes in contact with every root and fiber, and that there are no air spaces left, and press very firmly about them.

After the roots are covered the balance of the filling may be done with a spade, and the firming by tramping with the feet as the work proceeds, finishing off with an inch or so of fine loose soil on the surface. No manure should be used in the holes, and great care taken that hard lumps and sod are kept out. Of course, if the soil is so wet that it does not crumble freely, or if water is turned into the holes while setting, then tramping should be delayed until it becomes sufficiently dry, but the hand work about the roots must not be neglected. The trees should be set about one to three inches deeper than they stood in the nursery, and if the ground is in the right condition it is best to apply a mulching about them at once. If the trees were good and well rooted, carefully dug, rightly handled and properly planted, every one will live, and the principal part of the subsequent care is to keep them from being run over or broken down by stock, keeping grass and weeds from robbing them of moisture, and an occasional renewing of the mulching for a year or two, or a frequent stirring of the surface soil with hoe or rake. If it should be necessary to water at any time, the watering is best done at night or when the sun is

not shining, and an occasional washing of the foliage with syringe or spray pump, using clear water as warm as the atmosphere, and doing it after sundown or on cloudy days, is often very beneficial. Trees taken from swamps or forests, or that have not been transplanted in the nursery, should be partially shaded from the sun and dry winds until they become established in their new homes. A cheap way for protecting the newly set trees is to drive two stakes on the south side about three feet apart, and a few inches from the tree, tack burlap or gunny sack cloth on to them, or nail on strips of board with narrow spaces between. A favorite practice of ours for watering is to make a few holes with a crowbar a foot or so from the tree, and turn the water into them instead of over the surface of the ground; by this method it sooner reaches the roots, and a less quantity will be needed, especially if the trees are kept properly mulched.

POULTRY.

Preservation of Eggs.

U. S. CONSULAR REPORT.

The Berliner *Markthallenzeitung* reports about experiments made for the purpose of securing the most rational method for preserving eggs.

Twenty methods were selected for these experiments. In the first days of July, four hundred fresh eggs were prepared according to these methods (twenty eggs for each method), to be opened for use at the end of the month of February.

Of course, a most essential point for the success of preservation is that only really fresh eggs be employed. As the most infallible means of ascertaining the age of the eggs the experimenter designated the specific weight of same. With fresh eggs, it is from 1.0784 to 1.0942. If the eggs are put into a solution of 120 grams (4.23 ounces) of common salt in 1 liter (1.0567 quarts) of water, the specific weight of which solution is 1.073, all the eggs that swim on this liquid weigh less, and consequently are not fresh. Only those that sink should be used for preservation.

When, after eight months of preservation, the eggs were opened for use, the twenty different methods employed gave the most heterogeneous results:

- (1) Eggs put for preservation in salt water were all bad (not rotten, but uneatable, the salt having penetrated into the eggs).
- (2) Eggs wrapped in paper, 80 per cent. bad.
- (3) Eggs preserved in a solution of salicylic acid and glycerin, 80 per cent. bad.
- (4) Eggs rubbed with salt, 70 per cent. bad.
- (5) Eggs preserved in bran, 70 per cent. bad.
- (6) Eggs provided with a cover of paraffin, 70 per cent. bad.
- (7) Eggs varnished with a solution of glycerin and salicylic acid, 70 per cent. bad.
- (8) Eggs put in boiling water for twelve to fifteen seconds, 50 per cent. bad.
- (9) Eggs treated with a solution of alum, 50 per cent. bad.
- (10) Eggs put in a solution of salicylic acid, 50 per cent. bad.
- (11) Eggs varnished with water glass (Wasserglas) 40 per cent. bad.
- (12) Eggs varnished with collodion, 40 per cent. bad.
- (13) Eggs covered with lac, 40 per cent. bad.
- (14) Eggs varnished with sward, 20 per cent. bad.
- (15) Eggs preserved in ashes of wood, 20 per cent. bad.
- (16) Eggs treated with boric acid and water glass, 20 per cent. bad.
- (17) Eggs treated with manganate of potassa, 20 per cent. bad.
- (18) Eggs varnished with vaseline, all good.
- (19) Eggs preserved in lime water, all good.
- (20) Eggs preserved in a solution of water glass (silicate of soda), 20 cts. a quart retail (cheaper in larger quantities), all good.

The last three methods are consequently to be considered the best ones, and especially the preservation in a solution of water glass, as varnishing the eggs with vaseline takes too much time, and the treatment with lime water sometimes communicates to the eggs a disagreeable odor and taste.

There is, however, one drawback with eggs preserved in a solution of water glass, viz., that the shell easily bursts in boiling water; this may be avoided by cautiously piercing the shell with a strong needle.

[NOTE.—Upon enquiry we have learned that egg-packing houses use a pickle the chief ingredients of which are lime, salt, and cream of tartar. No doubt the salt and cream of tartar prevent the disagreeable odor and taste spoken of as being communicated to eggs pickled in lime water. A pickle of this sort would be much more cheaply employed than water glass or vaseline. Above all, we would recommend packing only unfertilized eggs in whatever preparation is used.]

Mr. Leonard Pauss, an egg expert, recently from Antwerp, Belgium, and now in charge of a large egg-packing establishment in London, Ont., claims that for small quantities of eggs, such as would be necessary to put down in a farmhouse for winter use, there is no better preserving material than dry sifted coal ashes. A box that is easily turned should be used. First put a layer of one inch of