the condition of his fruit buds, but also the weather, and attempt to get the spray on ahead of general storm periods if possible. Some growers delay the spraying until after the rain is over if rainy weather happens to be threatening at the time, thinking that the rain will wash off the spray. No worse mistake than this can be made, for it is during wet weather that the spray is needed to protect the tree from infection. The spray will not wash off so easily as is supposed; if it has twenty-five minutes in which to dry before any washing rain occurs, it will adhere well. In wet seasons, an application about August 1st may be necessary to prevent late infection.

Prof. Wallace does not find any evidence to prove that a dormant spray of lime-sulphur has any effect whatever in controlling scab. In two different years' experiments, it was impossible to detect any difference on sprayed and unsprayed trees, using a strong lime-sulphur wash.

The importance of making each application at the proper time is emphasized very strongly. Any grower having from fifty to one hundred acres of mature apple orchard who expects to do all his spraying with a single outfit, will find it absolutely impossible to comply with this requirement, since as can be seen, the time limit for the most effective application of each spraying usually does not exceed from four to five days. Every grower, therefore, should have equipment to spray his entire orchard within this time. The spray may entirely fail to control scab if delayed one or two days too long, thus permitting the infection to occur before the application is made. The effect of continued spraying from year to year is most important, and seems to have a cumulative effect on the vigor of the tree, and thus enables it to set a larger crop of fruit. The foliage being protected remains healthy and vigorous, and consequently the trees are able to produce a larger number of strong fruit buds. This bibliography, "The scab disease of apples," should be carefully read by every grower of apples.

Kings Co., N. S. MANNING ELLS.

Regarding Late Cabbage.

Editor "The Farmer's Advocate":

I note in a recent issue of your valuable paper, the question and answer regarding spring cabbage seed in drills, and leaving it there to mature. My experience is that it pays better to transplant, even if the labor is considerable. I have for several years sown my late cabbage seed in drills with a seed drill, around the middle of May. When from three to five inches high, I select good transplanting weather if possible, that is dull moist weather, before or after or even during a rain, if it is not too heavy, and transplant to thoroughly prepared ground, but always leave strong plants at proper distances along the row. These I cultivate equally as well as the transplanted ones, but they never produce the crop that do the transplanted ones. The labor of thinning and the waste of seed, and the possibility of having the plants not properly spaced to get good strong plants at the proper distances, especially if the seed is old or of poor germination, makes it much more profitable in my experience to transplant.

Regarding winter, or late cabbage, I was greatly impressed when on the market at London, twice in January, to note the great quantity of Danish Ball Head cabbage offered there. I believe this is the best late winter cabbage in existance, but it should be grown on strong clay, or clay-loam soil, to get best results. The soil should be rich in potash and phosphoric acid, and they should receive high cultivation. The tendency to grow very long stems or stalks, is an objection to this variety, but there is another variety now on the market, the Danish Round Head, short stemmed that overcomes this difficulty, and this latter is not so particular as to soil, as the long stemmed variety. Perhaps the most popular variety of cabbage at the present time, is the Copenhagen Market, an early variety, a very even header of large size, and even maturity, points of great consequence to the market gardener, but owing to crop failure this past season, seed is exceedingly scarce this year and no doubt a great deal of substitution will be practiced. An excellent list of cabbages for the market gardener, given in order of maturity, are: Early Jersey Wakefield, select strains as Burpee's Select; Copenhagen Market; Henderson's Succession; Danish Round Head, or Danish Ball Head. There are very many strains of Early Jersey Wakefield, some of which are not very desirable, but Burpee's Select is a strain of early even maturing cabbage, very profitable to the market gardener, who may cut his entire crop in two or three cuttings. Henderson's Succession is a very fine cabbage, large and solid, but very much inclined to crack open.

I was much impressed with the amount of garden truck offered on London Market at the time I visited it. It seemed to indicate sane market regulations in force in the city. So many cities, Ottawa for instance pass restrictive selling regulations, and try to enforce them, such as are intended to prevent the farmer or gardener selling to any but householders before a certain hour. For instance Ottawa has a by-law supposed to prevent the producer selling to householders before 8.30 in the morning. Then the progressive gardener who wants to get a favorable location on the market, must get there about 4 o'clock in the morning during the summer months. There he must wait till 8.30 before he can sell anything of consequence, as the householders, whom this ridiculous by-law is intended to protect by keeping the stuff there for them till 8.30, do not get around in any numbers till nine or later, but at 8.30 the dealers buy their supplies, which they should have been permitted to buy as early as they wish and get them away out of the road, when the householders do begin to come, thus permitting the grocers to be home, in time to supply their customers who cannot get out to the market. While, at present, the grocer cannot legally buy till too late to get his goods home for that day's delivery, consequently his customers are constantly getting stale goods, and kicking about the quality. Then while he may buy illegally, he cannot load up his stuff till the bell rings at 8.30, and this causes a terrible crush and hubbub for half an hour or so. The result of the inconvenience of this by-law, causing the producer to either stand around the market till 8.30 doing nothing without he does it illegally, as very many of them do, has driven a number of the largest growers off the market altogether. They now sell altogether to the shops. There is no doubt in my mind, that had the London City Fathers tried to enforce a restrictive selling by-law, the growers would do as they do at Ottawa, sell to the grocers, and leave the market altogether.

Carleton Co., Ont. W. J. KERR.

How to Spray.

Formulae for Fungicides.

I.—BORDEAUX MIXTURE:

Copper Sulphate (Bluestone)	4 lbs.
Unslaked Lime	4 lbs.
Water	40 gals.

Dissolve the copper sulphate in a wooden or brass vessel with hot water, pour into a barrel and add cold water to make 20 gals.; slake the lime, preferably with hot water; add cold water to make 20 gals. Stir both barrels well, and pour lime into the copper sulphate barrel. (Never mix concentrated milk of lime and copper sulphate solutions.)

A stock solution of each may be made and kept indefinitely if not mixed. Dissolve 40 lbs. copper sulphate in 40 gals. of water by suspending just below the surface of the water in a coarse sack. Each gallon of the liquid will now contain 1 lb. copper sulphate. Slake any desired quantity of lime and put into a box or barrel in shaded place, or sunk in the ground. Keep covered with water to exclude the air. Calculate how much is required for 4 lbs. lime if well stirred.

To test Bordeaux mixture, let a drop of ferrocyanide of potassium solution fall into a little of the mixture in a saucer, when ready. If this causes it to turn reddish brown, add more lime until no change takes place.

II.—LIME SULPHUR WASH.

1.—HOME BOILED (for use on dormant wood only).

Fresh stone lime	20 lbs.
Sulphur (flour or flowers)	15 lbs.
Water	40 gals.

Slake 20 lbs. of lime in about 15 gals. boiling water in a kettle or other boiling outfit. While slaking add the 15 lbs. sulphur made into paste by the addition of a little water. Boil vigorously, with stirring, for 1 hour. Dilute to 40 gals. with cold or hot water. Strain and apply at once.

2.—HOME MADE CONCENTRATED LIME-SULPHUR—This may be used as a substitute for commercial lime-sulphur, but is only about two-thirds as strong as a rule.

Sulphur (a fine grade)	100 lbs.
Fresh stone lime, high in percentage of calcium	50 lbs.
Water	40 or 50 gals.

Put about 10 gals. water in the boiling outfit, start fire, add sulphur, stir to make paste and break lumps, then add remaining water, and when near boiling put in lime. Stir frequently while slaking until all the sulphur and lime are dissolved. Add water from time to time to keep up to 40 or 50-gal. mark. Boil 1 hour, then strain through a screen of 30 meshes to inch into storage barrels. Make enough at once for a season's work. Cover well to keep out air, or pour oil of any kind over surface to depth of ¼ inch for same purpose.

To determine how much to dilute for different applications use an hydrometer with specific gravity readings, and apply the following rule:

Put the hydrometer in the clear liquid when it is cold and the sediment has all been settled for a day or two. Note the number to which it sinks. Suppose this is 1240. The strength for use before the buds burst should be about 1030. To determine how much to dilute a strength of 1240 to get 1030, divide the three figures to the right in 1240 by 30, that is 240 divided by 30=8. This means that each gallon of such a wash must be diluted to 8 gals. with water to give us a strength of 1030, the proper spring strength. For the second application 1009 is about the right strength. To get it divide the 240 by 9 which gives 26⅔, or roughly speaking 27. This means that each gallon of wash of the strength of 1240 must be diluted to 26⅔ or 27 gals. to make the right strength for the second application. For the third application and any later ones 1008 is about the right strength and to get this we proceed in the same way and divide 240 by 8=30, so that each gallon must be diluted to 30 with water for this application. If the strength of the concentrated were 1212 or any other number, you would in the same way divide the three figures to the right by 30, 9 and 8 respectively to get the proper dilutions for each spraying.

TABLE FOR CHANGING BEAUME READINGS INTO THEIR EQUIVALENT SPECIFIC GRAVITY READINGS.

Beaume.		Specific Gravity.	Beaume.		Specific. Gravity.
18	=	1141	27	=	1230
19	=	1150	28	=	1240
20	=	1159	29	=	1250
21	=	1168	30	=	1260
22	=	1178	31	=	1271
23	=	1188	32	=	1282
24	=	1198	33	=	1293
25	=	1208	34	=	1305
26	=	1219	35	=	1317

Note.—Commercial lime-sulphur should be tested with the hydrometer and diluted according to the same rules as the home-made concentrated form.

3.—SELF BOILED (chiefly for use on peach foliage).

Fresh stone lime	8 lbs.
Sulphur (flour or flowers)	8 lbs.
Water	40 gals.

Best prepared in quantities of 24 lbs. at a time to get sufficient heat. Place 24 lbs. lime in a half barrel, add enough cold water to start it slaking well and to keep the sulphur off the bottom. Dust the 24 lbs. sulphur over the lime, having first worked the sulphur through a screen to break lumps, then add whatever further amount of water is necessary to complete the slaking. Stir with a hoe to prevent the lime caking on the bottom. As soon as the slaking is over, add enough cold water to cool the whole mass and prevent further combination. Strain into spray tank. Keep well agitated while spraying.

III.—DISINFECTANTS (for pruning tools and for wounds on trees):—

1.—Corrosive sublimate, 1 part to 1,000 by weight=1 tablet to 1 pint of water. Apply with a swab on end of a stick.

CAUTION.—Corrosive sublimate is a deadly poison to man or beast if taken internally. It will also corrode iron or metal, so use in a glass or wooden vessel and be sure to wash these out very thoroughly when through using them.

2.—Lime-sulphur about twice spring strength, or bluestone, 1 lb. dissolved in about 14 gals. water, may be used to disinfect wounds or cankers, but is not satisfactory in case of Pear Blight.

STICKER

Resin	2 lbs.
Sal Soda (crystals)	1 lb.
Water	1 gal.

Boil together till a clear brown color which takes from 1 to 1½ hours. Cook in an iron kettle in an open place. Add the above to 40 gallons Bordeaux, for use on smooth foliage like onions, cabbage or asparagus. If used with arsenate of lead, Paris Green, or arsenite of lime, add 1 or 2 lbs. of fresh lime to every 40 gallons of spray. Soap is also a sticker, but cannot be used with lime-sulphur, 3 lbs. to 40 gals. liquid is sufficient. Dissolve first by slicing and boiling.