recommended is 1½:3:50. If used stronger, roughening and russeting of the skin may result. Here, again, thoroughness of application is the key-note to success. Pay attention to the lead arsenate spray for the control of codling moth, especially with the earlier varieties.

#### Stone Fruit Spraying.

Applications of sulphur sprays for the prevention of brown-rot will be necessary on peaches, nectarines, and plums from now on to the end of the season. Humid conditions, favourable for the production of brown-rot, are liable at this time. Consequently, lime sulphur at strength 1:180 to 1:200 plus colloidal sulphur at 2:100 should be applied at intervals of from two to three weeks. Any fruits seen on the trees affected with brown-rot should be destroyed to stop the spread of infection, and in no case should clean fruit be handled at the same time as diseased fruit. It will be necessary to apply nicotine sulphate at strength 1:800 for the control of black and green aphis, while leaf-roller caterpillar can be controlled by an application of lead arsenate 12:100 plus hydrated lime 3.100

#### Thinning of Fruit

The judicious thinning of fruit is not carried out as much as it should be. Good quality fruit is always in demand, and any money spent in this

## Citrus Notes

important operation will be more than recovered when grading and packing. Not only will size be increased by proper thinning, but uniformity of size will be achieved, another important factor when considering handling costs. All diseased and malformed fruits should be eliminated at thinning time, leaving only those which will be of marketable value.

While there is no hard and fast rule regarding thinning, as much depends on the size of the crop and the capabilities of the tree to carry the crop, generally speaking, it is advisable to reduce the crop of apples to, at most, two or three fruits in a bunch of five and often to a single fruit, especially with short-stemmed varieties, to prevent them from being pushed off the spur as the fruit grows, and also to prevent damage to fruit by rubbing against each other. Fruits which are allowed to remain in close contact with one another make spraying more difficult, and also create a good harbour for codling moth and leaf-roller caterpillar. As the centre fruit in a cluster of apples is usually short stemmed. this is the first to be eliminated, the others being reduced as necessary to produce good, average-sized fruits.

Care should be taken not to damage the fruit spurs when thinning. If thinning shears are not available the work can be done quite easily without damage to fruit or spurs by the pressure of the thumb and forefinger, severing

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the stalk at the base of the apples. In fact, many growers prefer this method because of the damage which sometimes occurs in the piercing of the remaining fruits by pruning shears, especially when in the hands of an inexperienced thinner.

With peaches, apricots and nectarines, the best time to begin thinning is soon after the stoning period. If left later, much value will be lost in the size and quality. These fruits should be reduced to singles, and if the crop is very heavy with close fruit spurs, it is often advisable to denude some spurs entirely.

### Attention to Grafts

Fruit trees grafted during the season will require some attention during November. Scions will be starting to grow, and it will be necessary to release any ties to prevent injury to and possible death of the scion by strangulation. This release can be done very simply by drawing the sharp edge of the knife through the tying material. Should the newly-grafted trees be in an exposed position, protection from wind damage can be obtained by tying the new shoots to stakes until they have grown sufficiently strong to withstand any chance of breakage.

> -G. STRATFORD, District Supervisor, Dunedin.

# **Recognition of Mandarins**

CONTINUING with the recognition of the varieties of citrus fruits most commonly grown in New Zealand, we have now to consider the mandarins.

The mandarin species is characterised by small foliage; the rind of the fruit is easily separated from the pulp and the sections of the pulp from each other. As a general rule, the smoother the rind, the more juicy the fruit. As a class, mandarins dry out more quickly than sweet oranges. It is not possible to subdivide the mandarin varieties according to growth habit, as the habit is inclined to vary according to soil conditions.

#### Satsuma or Oonshiu

This was formerly the standard Japanese variety. It is thornless and a pendulous dwarf grower, and is the most frost-resistant of all mandarins. The fruit is at its best just as it reaches maturity. If pulled, the rind is readily broken, and part remains attached to the pedicel or fruit stalk. The fruit is flat in shape, bright orange colour, rind rough, loose, and easily separated from the pulp. There is almost no core, but a small cavity of 3-8in. is present; there are few seeds, the flesh is orange colour, darker than the rind, and not very juicy.

Three Satsuma sports—Wase, Owari, and Silverhill—have arisen, and two of these are being distributed in New Zealand.

