

appropriate buildings; but a good start can be made on a small scale by the culture in cottages. I am prepared to assert that a woman, without neglect of her domestic duties, can cultivate as many silk-worms as produce 100 lbs. of cocoons in thirty-five days; and, considering the average actual price paid in Europe, she would make 2s. per hour for the time employed in that cultivation, and I consider that a good return. The mulberry-tree has two other advantages—namely, in autumn the fallen leaves make excellent food for fattening sheep during winter, and the timber is considered one of the best for making receptacles for wine, spirits, &c. If once the cocoons are successfully obtained, it is an easy matter to work the raw silk. If a start is made where the experience of others ends, a rapid progress will be made without any waste of time or money; and we shall obtain oil of the purest quality for our domestic wants and our machinery, wines pure and manufactured according to our taste, and with perseverance we shall also succeed in exchanging our raw silks for manufactured ones. With the introduction of these industries the demand for labour will be vastly increased, wealth will remain in the country, and the revenues will be greatly augmented.

Now I come to the conclusion, and in that I would humbly suggest that a nursery be established to enable the owners of land to have the opportunity of introducing these cultivations. The nursery, if properly managed, would in itself amply repay the undertaking. Should you think my suggestions worthy of your consideration, I shall be happy, if requested, to go into details, both by suggestions and co-operation, as to this enterprise, using my experience in the matter as far as my position of Civil servant on the Survey Department will permit me.

I have, &c.,

G. B. FEDERLI.

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No. 31.

MEMORANDUM on the CULTIVATION of the ORANGE in New Zealand, by MR. THOMAS KIRK, F.L.S., Wellington, 8th June, 1880.

PROBABLY no cultivated fruit surpasses the orange as a remunerative crop. Certain orange-grounds in New South Wales are known to afford an annual return of over £500 per acre. It is stated that one tree has yielded 300 dozen per annum for over twenty years. No better proof of its remunerative character can be required than the fact of its culture extending every year. In this colony, good oranges and lemons have been produced for many years in the Auckland District, although no attention has been paid to the selection of sorts or to special culture. The best soil for the orange is that produced by the decomposition of basaltic rocks, although a friable, rather sandy loam is almost as good. The ground should be carefully prepared, and, if necessary, thoroughly drained. Shelter from high winds is absolutely requisite. This could be afforded by planting evergreen trees round the enclosure. There are several kinds, native and introduced, which could be procured at low rates and in any quantity. An essential point is the selection of suitable kinds; these should be worked on stocks of the Seville orange—one year old, if they can be procured. They should be kept in beds for one or two years before planting out, the surface of the soil being covered with moss in dry weather. After permanent planting, all the cultivation required is to keep the surface free from weeds, to mulch with loose stable manure or some substitute, which should be forked in after the fruit is gathered, and to remove superfluous shoots, so as to admit a free circulation of air to the centre of the tree. Should the black blight make its appearance the plant must be dressed with a mixture of soft soap and kerosene, or with some other preparation used for that purpose. There are numerous localities north of Napier in which not only the orange, but the lemon, lime, citron, and shaddock, could be advantageously cultivated. An orange orchard would come into bearing eight or ten years after planting; the trees should not be allowed to bear when too young. After the tenth year each tree is supposed to produce from 1,000 to 1,600 oranges. About one hundred trees may be planted to the acre, but the number would vary according to the mode of growth adopted, and in a lesser degree to the kind selected. Estimating the annual value of the produce of each tree at the low rate of 10s. would give a return of £50 per acre. But, as we have seen, that 1,000 oranges per tree would be a low return, the annual value per acre may be safely estimated at £100.

THOS. KIRK.

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ECONOMIC PLANTS.

No. 32.

Evidence of MR. THOMAS KIRK before the Commissioners on Local Industries at Wellington, 8th June, 1880.

*Mr. Kirk*, after reading a paper on the cultivation of the orange, says: I suggest that a properly-qualified person shall be sent to Sydney and the other Australian Colonies for the purpose of taking notes regarding the proper treatment of the orange-tree. The cost of such a matter would not be great, and would very soon recoup the expenditure.

*Grapes.*

There is an almost unlimited market in this colony for grapes preserved in sawdust. The grapes are gathered before they are fully ripe; after being hung in the shade for a few days, to free them from any extraneous moisture, they are packed in boxes or casks, as the case may be, and in this condition will keep for months; avoid sawdust containing a large proportion of resin. Experiments should be made with sawdust of various kinds before going into this as a business.

*Mimosa Bark.*

This is imported to a very great extent into this country, and it is increasing year by year, though the price is advancing. It could be grown here so as to afford remunerative outlay for labour; the plant will grow upon any ordinary soil; care would have to be taken to select the best kinds. The cost of forming a plantation is small, as the seed can be sown broadcast, at the rate of 12 to 16 ounces,