

1877.

NEW ZEALAND.

REPORT ON OLIVE CULTURE,

BY MR. JOHN GLYN, OF LEGHORN.

Presented to both Houses of the General Assembly by Command of His Excellency.

Leghorn, August, 1875.

IN accordance with the instructions I received from the Hon. Dr. Featherston, Agent-General for New Zealand, I have visited several of the olive districts of Tuscany, such as Montopoli, San Romano, the Pianura di Pisa, and the hills in the neighbourhood of Leghorn, and herewith give in detail the results of my inquiries.

I have had much interesting conversation with cultivators of the olive of all classes, labourers as well as proprietors, and especially with those living near San Romano, the very centre of a large olive-oil-making industry. The country around is undulating and very beautiful, the soil appearing mostly of an argillaceous sandy nature, of some two metres in depth, resting upon gravel or tufa, and in some cases upon the blue Staffordshire clay, such as is now made into those hard bricks that are frequently used in London for foot-paving, &c., &c. The olive trees on these hills have been in their present positions from time immemorial; in fact, it is almost believed by the educated that some of them may have been the actual descendants of those planted by the Phœnicians 600 B.C. I say descendants, because, although an olive may be utterly damaged above ground, either by intense cold, fire, lightning, or other causes, there is so much vitality and tenacity of life in the roots, that within a short time it sends up fresh shoots, which soon become prolific trees. No one appeared to be able to fix a limit to its longevity: Bouche gives it upwards of 1,000 years. They grow to large dimensions when very old. There was in Provence some few years ago an old olive tree still bearing fruit, although quite hollow and able to contain as many as twenty persons in its cavity; and even in Tuscany, where every care is given to the culture, you constantly see the remains of trees which have been struck by lightning get vigorous and productive, even when in the surviving half a large portion of the centre may have been worn away. There is no doubt that the olive is one of the most profitable plants that a farmer or landed proprietor can put into the ground, as, if once planted and carefully attended to in its earlier years, it will become a source of perennial income, living on as it does from generation to generation. This tree is found within a few miles of the sea, in nearly all parts of the Mediterranean coasts. Even in Africa it grows in the highlands, but only to a short distance inland. Here the yield of oil is not great, owing to the heat, which frequently dries up the sap, and what is collected is only fit for the purposes mentioned below. The best of all climates for this tree is a temperate one, such as that of Tuscany and, I may add, of Liguria, where the trees are cultivated to the summits of the hills to an altitude of from 700 to 1,000 feet above the sea level, where the cold sometimes is intense in winter and not unendurably hot in summer. The general opinion is that it thrives best within a short distance of the sea, on hills with rocky or argillaceous gravelly soil. The aspect is of no consequence. Too great heat or drought materially reduces the quantity as well as the quality of the oil, rendering it thick, rank, and greasy; nor is severe cold favourable to good crops. Temperate heat and mild winters are best suited to rapidity of growth and large yields of oil. Hence I should infer, from all I have heard and read of the climate of New Zealand, that the Northern Island especially is admirably suited for the reception of this tree.

The soil should not be too rich, as that makes the oil fatty and rank; neither should the trees be planted in a plain, as when the drainage is defective the ground is apt to become sodden or wet, which is injurious to the roots. Hills admit of natural drainage. In some parts of Tuscany, in the plains, where the soil is damp, in order to insure a perfect drainage, which is absolutely necessary, an artificial bed of gravel, stone, or broken rocks or tufa, is prepared of some depth, and thick layers of rich earth laid above this, so that superfluous moisture may drain off. Provided the plantations admit of an entirely free circulation of air to all parts, and the drainage is perfect, a moist, rainy, or windy climate, if not too cold in winter, is anything but prejudicial to this plant; in fact, the oil is likely to become of a more fluid character in consequence, a great desideratum with Italians. In many parts of this province, as well as in Lucca, the hills, that have but little earth on the rocks of which they are composed, are formed into terraces by walls of loose stones; on these platforms they collect all the earth they can, and successfully plant their olives, which are renowned for the quality of the oil. Even where the soil is poor they will dig a large hole, fill it with rich manure, and put their trees therein. Winds are considered favourable when coming from the sea: they are supposed to contain saline

matter, but the olive does not benefit by being exposed to the sea-spray. From all this it will appear to be the opinion of the generality of these people that proximity to the sea is useful, although I have proved to them that the plants thrive beyond Florence, some sixty or seventy miles inland. In Tuscany we have frequently as much as from 4 to 8 degrees of cold (Reaumer) in the winter, and in 1709 the cold was so intense as to prove disastrous to the olives, depriving many families of their chief support for several years—in fact, until the trees that had suffered had time to grow and bear again. From what I can ascertain respecting the introduction of this plant into New Zealand, the Italians inform me that they would carefully cut out the knots or eyes growing out of the trunks of the trees near the base or ground; these they would cover up in earth and moss, then put them into casks filled with sand, which is then watered and closed up, and if sent a long voyage by sea it would be beneficial to sprinkle them occasionally, so as to keep them fresh and cool within the tropics. In this way they would bear exclusion from the light for several months. On arrival in the colony they would require to be taken out with care and put into well-prepared ground until such time as they had taken root, when they should be dug up with as much surrounding earth as possible, and put into the sites intended for their permanent abodes. These sites, however, should be holes 6 feet square and 4 feet deep, filled with a manure of ground-bone, horns, hoofs, well-fermented horse-dung, and sheep's or bullocks' blood. They would require skilled treatment, as the future well-being of the trees depends entirely on this period of their existence, and hence the necessity of employing only Italians, and more particularly those thoroughly experienced in this culture. Great care is also required in pruning them; in fact, this is an art quite by itself, and can only be done by those whose knowledge has been acquired by years of practice. The trees will begin to bear fruit in five or six years, and the only care they would need would be the cutting of a trench round their bases, and dosing them in the spring with liquid manure. They will flourish if treated with potash, soda, lime, silica, or manures containing these salts: feathers and the scrapings of tanneries are often used by the Italians, as these things take long in decaying.

They should be planted out in rows at a distance from each other from 8 to 10 feet. I calculate an acre would contain from 400 to 500 trees.

Good-sized trees will produce from 20 lbs. to 75 lbs. of oil, the average may be taken at 40 lbs. This, at present prices, which rule low, would give about 20s. sterling per tree, so that the possible produce of an acre of olive trees of good size may be estimated as being worth at from £300 to £500 sterling per annum, and once arrived at maturity would be a desirable and permanent property.

The finest oil in the world is grown in the Province of Lucca, about twenty miles from this city; the next in quality is the Tuscan; then may be classed in order the Ligurian, Provence, Neapolitan, Sicilian, Spanish, Smyrna, and Tunisian, the last only used for soap-making and machinery, being thick, strong in odour, and greasy.

From this it will be seen that the temperate climate of Italy is that best adapted to this tree. The forest oil is of a beautiful straw-colour, slightly tinged at times with green of extraordinary brightness, very liquid, almost odourless, and of exquisite flavour. It is used by the best families on the Continent for cooking purposes in place of butter, and for salads, &c.

I should estimate the value of the entire yield of oil in Italy at not less than £30,000,000 sterling. The exports from Leghorn only were for the years—

	Kilos.	Francs.
1869	10,295,833	
1870	685,800	
1871	9,889,780	
1872	4,564,404	value 6,846,600
1873	9,390,113	„ 14,000,000
1873—export of the whole kingdom	60,260,000	„ 104,000,000

The statistics of 1874 I have not yet been able to obtain, but am in a position to state, however, that the yield of last year was unusually abundant. The olive may be propagated from the stones; these would require alternate steeping and exposure to the sun for many days until they showed signs of sprouting, when they should be put into rich beds of manure, and at the proper time planted out. These would be only the “wild” olives, into which would have to be grafted the true olive tree.

The wood is very beautiful, and is of a delicate cream colour, in some cases almost white, is susceptible of a high polish, and is much used by cabinet-makers.

The Italians sometimes manure their olive-grounds with the stuff from the cesspools. These receptacles are the monopoly of the municipality, and are periodically emptied by properly-appointed people, who take it into the country, where it is sold to the farmers, who pour it over their fields after ploughing. It is more fluid than the London sewage, and considered of excellent quality, being exclusively house drainage. It is called “bottino,” and the men who cart it “bottinai.”

The olive will not grow in Piedmont, nor in Lombardy, not from want of warmth in summer, but because the severe cold in winter too frequently kills it. It is the opinion of the Italian agriculturists that in those countries that have mild winters, and where vines, the fig-tree, and the Indian corn thrive and ripen, the olive must of necessity prosper. This opinion has been indorsed by many persons of intelligence and education, who are thoroughly conversant with all that appertain to the culture of the olive. The best time for cutting out the knots or eyes, for export, is the month of October. The time when the Italians gather in the crops is during the months of October and November, and even up to Christmas, when the fruit becomes nearly black. It is then carried to the crushing-mills, and the refuse is put into cane-bags and subjected to great pressure in a machine. The first process produces the finest oil, the second and third inferior qualities. In the kernel or stone there is a small quantity of oil that is crushed out, and the pulverized mass after boiling is generally used for fuel. Care should be taken to fence the fields where this tree grows, as cattle are fond of the bark and foliage. Rabbits are also very destructive to it. The tree, when planted in healthy soils and favourable positions, is not much plagued by insects, but it is well to examine them periodically, so as to guard against caterpillars.

Taking into consideration the great range of country—namely, from the 34th to the 46th degrees of north latitude—where the olive is found, and the infinite variety of climates in which it exists, it has been proved that between the 43rd and the 45th parallels of latitude the finest qualities are produced, and that it will flourish and grow vigorously in all this space when not too far away from the sea. Although the quality may be, and doubtless is, materially affected by such causes as climate, position, soil, &c., there is no doubt of its being capable of bearing transplantation to the Southern Hemisphere. The abortive attempt to introduce it successfully into Australia must be attributed to want of skill and experience in the people employed, and not to any fault of the climate. If necessary I would guarantee its successful introduction into New Zealand, and am convinced that no country is in point of climate better adapted for it than the greater part of the Northern Island, and can recommend it as being one of the most profitable sources of wealth that Providence can confer on a country. Further, I have no hesitation in stating that with a very moderate outlay 100,000 plants might be sent out and be put into the ground before the expiration of six months.

It is calculated that the value of a good oil crop in all the countries possessing this cultivation cannot be less than £100,000,000 sterling annually. The demand is continually increasing. The French produce large quantities, but not enough for their wants, as they took from Leghorn alone in the year 1873, 3,300,000 kilos. Owing to their enormous trade in sardines, and other articles in oil, their own supply is totally inadequate to the demand. The consumption of oil in this country is something marvellous. It is used by the Italians daily, and enters largely into nearly every dish brought to the table, even to their sauces and pastry, and when meat is scarce, or altogether absent, they will put into their pottage, that with bread, rice, or paste and tomatoes, chopped herbs and vegetables, they make a savoury mess. In Spain, the South of France, in Greece, and in the Levant, it forms one of the chief articles of diet.

In general the Italians do not plant any kind of grain or green crops under the olives. In some parts where the trees stand far asunder they cultivate the vine, but it is admitted that both the olives and the grapes suffer in consequence.

The better classes here use great quantities of oil in their lamps. Even the Opera House at Florence, the renowned "Pergola," is lighted solely by moderator lamps, the chandelier, a real work of art, containing a vast number of these lamps. The light they give is inexpressibly soft and agreeable, being brilliant without glare. Before I close, I will add that rocky and volcanic regions are particularly suited to this plant; and if by the foregoing remarks I shall have been able to conduce to the wealth and prosperity of New Zealand in the humblest way, I shall be very happy indeed.

I have, &c.,

JOHN GLYN.

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