OLIVE CULTURE IN SOUTH AUSTRALIA.

(By Our Agricultural Reporter.)

SIR SAMUEL DAVENPORT'S OLIVES.

During the visit of the Vegetable Products Commission to South Australia, valuable evidence upon olive culture and kindred industries was obtained from Sir Samuel Davenport, who for many years has taken an interest in the cultivation of olives and the production of oil. Evidence was taken in Adelaide, and afterwards a visit was paid to Sir Samuel Davenport's residence at Beaumont, a few miles from the city, his olive trees and oil-making appliances being inspected. The olive plantation at Beaumont is not an extensive one, but it has served the purpose of showing that a good yield of excellent oil can be produced, and that the industry is one which could be profitably carried on in South Australia and the northern districts of Victoria. The trees, numbering 1,200 or 1,500, are planted in a grove a few acres in extent, and in rows around the vineyard, as well as around other subdivisions of the estate. All the difficulties connected with establishing a new industry have been met with, and the high rate of wages, the scarcity of skilled labour, and the drawback of only having for sale a small quantity of an unknown product, have had to be contend d against, but nevertheless Sir Samuel Davenport believes that olive culture could be profitably carried on in the colonies. A large amount of manual labour has to be employed, the picking being a tedious process, but when properly managed the returns are valuable enough to pay for the labour. This has been shown in California, and the rate of wages is not higher in these colonies, while the soil and climate have been proved to be equally suitable for the growth of the olive.

Picking is done principally by women and children at the rate of 2s. 6d. per cwt., and the pickers make good wages. Sir Samuel is of opinion that with a large plantation a grower could get the picking done cheaper by boarding and lodging the pickers during the harvest, but at present the work is not only costly, but there is a good deal of loss, arising from the hands not being under proper control. Careless pickers are apt to pull off the shoots which produce the fruit for the following crop, and to otherwise injure the trees. The use of the small rake sometimes employed in picking has been discontinued on account of the injury resulting to the trees, and picking with the fingers exclusively adhered to. A hundredweight of olives produces about two gallons of oil, so that even at the rate of 2s. 6d. per cwt., the picking does not amount to more than 1s. 3d. per gallon. A tree of average size produces about a cwt. of fruit, or about two gallons of oil, and as Sir Samuel obtains 10s. per gallon for oil of the first grade, and 8s. for oil of the second grade, the gross value of the crop is from 16s. to 20s. per acre. As picking, which is the most serious item of expense, only amounts to 2s. 6d. per tree, there is evidently a large sum left to cover other charges and add to profit. The crop was far from being as heavy a one as I afterwards saw at the Dookie School farm, so that the estimate of yield would be very moderate for the northern districts of Victoria. In planting olives it might be calculated that as the trees take six or seven years to come into profitable bearing, the difficulty of finding pickers would be diminished by the increase in the population before a large number of hands would be required, and the fact that the work forms suitable light employment for women and children is also a favourable consideration.

The natural climate of the olive is the dry northern districts of Victoria, which are in about the same latitude as Adelaide. The olive will not only grow in such districts, but it grows better than in cooler and moist localities. About Adelaide the olives thrive when other fruit trees and vines are suffering from drought. At Dookie, while many of fruit trees have only maintained a struggling existence, the olives have grown to perfection, the trees this season being literally covered with the finest fruit. Sir Samuel Davenport says that in a moist climate you will get the olive tree, but not the quantity of fruit, while the oil is inferior, and Mr. Brown, the conservator of forests for South Australia, states that there are in the colony olive trees doing well where the rainfall is not more than 10in. In the driest parts of the far north-west mallee the rainfall averages 10in., so that the greater part of that almost barren region would be suitable for such a profitable industry as olive-culture. In the settled portions of the northern districts various fruits can be produced by means of irrigation, but olive-culture could be carried on without its assistance. This fact is well worthy of consideration by landowners, who have very limited prospects of ever obtaining a supply of water for irrigation. It is one of the most hardy and easily cultivated trees. Sir Samuel Davenport is an advocate for deep cultivation in a dry climate, but no special preparation was given to the land intended for olives, the same course being followed as in the case of fruit trees and vines.

Pruning is not a tedious or laborious process, but it requires skill, and in the event of general attention being given to olive culture, the people would have to be instructed by experts in the art of pruning. In all such matters as pruning and grafting there is a great lack of knowledge among the people occupying the land, and Sir Samuel

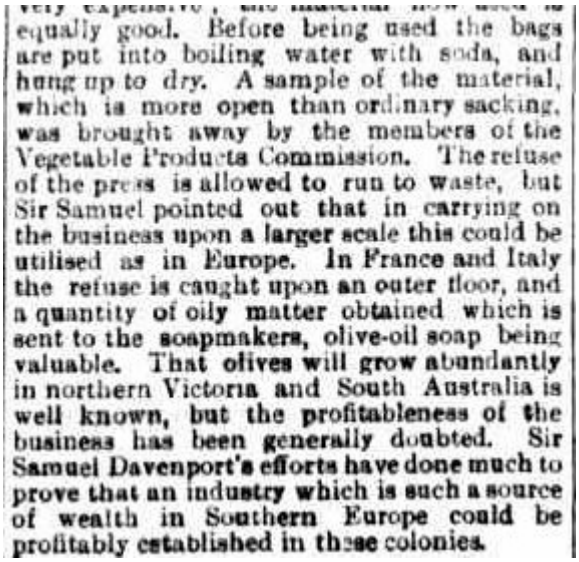
people occupying the land, and Sir Samuel Davenport considers that Government would not be going beyond its proper functions in endeavouring to disseminate instruction upon such matters. There are many varieties of olives—some better than others. Some produce larger quantities of oil, others oil of finer quality, and other varieties olives suitable for the table. He had imported several of the best varieties from Europe, and believed that all these kinds were also represented in Victoria. Truncheons were imported packed in cotton wool, and they arrived in good order. *In raising olives from* seed you cannot depend upon getting the same variety as the seed sown, but propagating by means of cuttings or truncheons is a good system. Using truncheons possesses the advantage of saving the wood, but practically budding or grafting is a good way of propagating. In carrying on upon a large scale Sir Samuel would raise seedlings, and graft or bud them with the best varieties.

Frost is the most serious enemy of the olive. In France considerable damage is done by frost occasionally, but in South Australia the olive-trees are never affected. At Beaumont the trees are attacked by a kind of weevil something like a wheat-weevil, but a little larger. Seagulls were put into the grove, but they were not numerous enough to cover the ground. Fowls were next tried, with very satisfactory results. By making a fowl-run of the olive-grove the trees are not injured, while the weevils and other insects are destroyed. The weevil is supposed to have been imported upon truncheons, as it is common in Europe. It comes out at night, and in the daytime goes into the ground. Another method of destroying the weevils was to put bands of sheep-skin round the stems of the trees near the ground. The insects settled in the wool, and the bands were taken off to crush the insect. The black-scale blight also attacks the trees, but it is easily kept down by dressing them with a solution of washing-soda.

The olive oil made at Beaumont has taken high honours at the Philadelphia, Vienna, Paris, and Melbourne exhibitions. About 1,500 gallons are made annually, and it is sold for 10s. per gallon for the first pressing, and 8s. per gallon for the second pressing. About 50 gallons were sent to London, and a quantity was given away to Sir Samuel's friends. They were glad to get such excellent oil, and a number of gentlemen have been obtaining it for years, stating that they cannot get much good oil anywhere else. But upon offering the remainder of the oil to merchants they did not care to take such a small quantity except at a reduced price. Sir Samuel found that the merchants were in the habit of sending down every year to the south of Europe and purchasing at 7s. or 7s. 6d. per gallon. Even at this price there would seem to be a good margin of profit, for the gross return would be 14s. or 15s. per tree, from land which without irrigation will produce very light yields of any other crop.

Sir Samuel Davenport's appliances for making olive oil are very complete. The mill consists of two heavy stone rollers on wheels running upon a stone bed. It might be called a large Chilian mill of the kind used in the Ionian Islands and the oil countries of Europe. The stones, which are of Scotch granite, weigh a ton each, and the granite bed on which they work is 7 tons in weight. The mill is turned by a horse, a slow, steady, motion being required. It is pointed out that a quick motion, by producing heat, would impare the quality of the oil. Sir Samuel stated that Judge Casey had imported a very powerful press for the Victorian Government, and that is probably the one which is at the Dookie School farm. The press at Beaumont is a powerful lever one, the levers being very strong beams, 32ft. in length. In addition to the weight of the beams pressure is put upon the levers by an arrangement of chains. The press is for extracting the oil from the fruit, and the mill is for grinding the stones of the olives, which also contain oil. The floor of the press is formed of brick and cement with a channel around the edge to carry off the oil. The press is a double one, and one division is used for the virgin oil, and the other for the seconds. From the presses the oil runs into large tin receivers, the firsts and seconds being kept separate. The fluid which flows is a dirty-looking mixture of oil, water, and colouring matter from the skins of the berries, the oil-globules being seen floating on the top. In the receivers the oil rises to the surface, and after remaining a day, it is drawn off and put into larger (100-gallon) tanks, where it fines itself. In the fining tanks the oil remains for a few weeks, the time varying according to the weather, and then it is stored away in large tanks formed of slate slabs. The oil must not be left exposed to the light, or it deteriorates. Before being bottled or otherwise sent away it is filtered through common filtering paper obtained at the chemist's, the paper being placed for the purpose in large fillers or funnels through which the oil runs.

After passing through the Chilian mill the ground olives, which form a dark, thick mass like damson jam, are put into small bags. These bags are put into the press, and the oil is extracted under pressure. The first pressing is the purest oil, and keeps better than that which is obtained from the second pressing. The bags are made of a strong kind of open sacking imported for the purpose. Haircloth was at first used, but it was found very expensive; the material now used is equally good. Before being used the bags



very expensive; the material now used is equally good. Before being used the bags are put into boiling water with soda, and hung up to dry. A sample of the material, which is more open than ordinary sacking, was brought away by the members of the Vegetable Products Commission. The refuse of the press is allowed to run to waste, but Sir Samuel pointed out that in carrying on the business upon a larger scale this could be utilised as in Europe. In France and Italy the refuse is caught upon an outer floor, and a quantity of oily matter obtained which is sent to the soapmakers, olive-oil soap being valuable. That olives will grow abundantly in northern Victoria and South Australia is well known, but the profitableness of the business has been generally doubted. Sir Samuel Davenport's efforts have done much to prove that an industry which is such a source of wealth in Southern Europe could be profitably established in these colonies.