FRUITS

SMYRNA FIG CULTURE IN WESTERN AUSTRALIA.

CHAS. SIMMONS,

Orchard Inspector.

The commercial dried fig is the product of the fig tree known as the Smyrna fig. This variety of fig tree differs from the Mediterranean or Adriatic fig with which we are so familiar in this State in that Smyrna varieties are not self-fertilising. They are dependent for fertilisation on the pollen of the Capri, or wild fig, and the existence in the Capri fig of a minute wasp as an agent to carry the pollen from the Capri to the Smyrna fig. There are many named varieties of Smyrna fig trees, but because of its superior appearence, flavour, size and keeping qualities the Lop Smyrna (*Lob. Injir*) has long been recognised as the fruit most suitable for commercial use. The trees of this variety that have been planted in Western Australia are making good headway. They compare favourably with the common Adriatic fig trees in growth, production, and in their adaptability to the soils of the coastal area of the State. The Lop Smyrna is a strong upright grower, and after being once pruned to shape these trees do not require any further pruning. In a commercial orchard the trees should be planted 40 feet apart, and require cultivation and manure in the same manner as other orchard trees.

Capri fig trees are planted at the ratio of one to every ten Smyrna trees to provide enough wasp bearing figs to caprify the figs on the Smyrna trees. On 20th December of each year the main part of the crop of Smyrna figs are about five-eighths of an inch in diameter. They are then awaiting fertilisation. At the same time the spring crop of Capri figs is ripe and the minute wasp, dusted with the pollen of the Capri fig, is emerging from the eye of the Capri fig. The Capri figs are gathered into small baskets made of wire netting, each holding about six figs. Three such baskets are enough to fertilise the crop of a very large Smyrna tree. These baskets are hung in the Smyrna trees, and after four days' interval are refilled with Capri figs: a third refill may be necessary to caprify the most backward of the young Smyrna fig crop. The Smyrna figs are receptive to pollen from the time they are three-eighths of an inch in diameter up to one inch in diameter, but after a certain limit of size and time without caprification the figs become yellow and fall off. The wasps come out of the eye of the Capri figs dusted with Capri pollen, seeking a place wherein to lay their eggs: after entering the Smyrna fig and while crawling over the florets and trying to oviposit, the pollen falls upon the stigma of the fig florets and produces fertility in the Smyrna fig. the wasp, unable to deposit her eggs, becomes exhausted, creeps into the scales at the eye end of the fig and dies.

In March the figs are ripe enough to cure and pack. The fig is only fit for drying when it is dead ripe: therefore, the fruits must be gathered several times as they become ready. In picking the figs care must be taken to retain the stalks. The fruit is placed in perforated buckets, and dipped in and out of a solution of three ounces of salt to a gallon of water. The brine solution must be kept at boiling point, and each pailful of fruit dipped in and out quickly four or five times. The figs are then spread upon trays, eye upward, and the trays are laid in the sun for from six to ten days. After two or three days of drying the syrup in the figs has become jellied, then the fruit is turned over to expose the under side to the sun. If picked when properly ripe it should not take longer than six days to dry the fruit, but as figs dry unevenly those not quite dry enough can be left a day or two longer. The figs are then placed in sweat boxes, having a loose lid fitting inside the box; a heavy weight is put on the lid to press the figs into a compact mass and bring them to a uniform condition. In a week's time the figs are ready to pack, but they should first be dipped in a 2½ per cent. solution of boiling brine. The fruit is then spread upon trays and dried as quickly as possible. All overdried or too poor fruit is removed, and the bulk sorted into two or three qualities. The second dipping makes the skin of the figs smooth, soft and pliable, and packing into cartons or small boxes the figs are worked to a flat shape between the finger and thumb, presenting to the buyer a large round light-brown smooth fig, and is worth from 10*d.* to 1*s.* 2*d.* per lb. wholesale.

The Capri or wild fig tree is indigenous to Asia Minor. In America and Australia varieties of Capri have been cultivated and named. The best known in Australia are Roeding's California, varieties Nos. 1, 2, and 3; Robson's Special, and a local seedling called "Simon's Capri." The last named is an accidental seedling tree found growing in the yard of a house in East Fremantle, now producing enormous crops of large Capri figs, which has, by itself, afforded a home for the fig wasp since its introduction in 1900. Capri trees produce an inedible fig usually dry, but in any case, as its flowers are simply a mass of tiny insects, the figs are not fit to eat. The trees exist apparently for the sole purpose of producing figs superabundant in pollen and fruit to afford a home for the fig wasp (*Blastophaga grossorum*). This insect passes its life from the egg stage to the adult state inside the Capri fig fruits.

The female wasp comes out of the eye of a ripe Capri fig ready to lay eggs, and forcing her way through the eye of a small Capri fig enters the hollow receptacle, deposit an egg in each of the gall flowers lining the inside of the fig, and dies. The Capri fig from that time on nourishes an insect in the ovaries of the flower instead of a seed, and each fruit carries several hundred wasps. The male being the first to issue from the gall flower, immediately begins crawling over the surface of the flowers, gnaws an opening through the membrane of the gall and impregnates the female while she is still within it. The males are minute, brown, wingless insects, seldom found outside the fig. The females push their way out of the opening made by the male and issue from the eye of the ripe Capri figs, complete, winged, ready to find another fig in which to deposit their eggs, and so carry on another generation. The life cycle is accomplished in Western Australia in 12 to 13 weeks in the summer time, but in the winter season is extended to about 27 weeks.

Capri trees produce three crops of fruit during the year, and as each crop ripens the wasp emerges, and it is, therefore, necessary that as each crop ripens there must be small young figs also in the trees ready to take the wasp to carry on the next generation. The local seedling before mentioned has marked advantages over the Roeding's varieties in this particular, for whereas it was necessary to have either 1, 2, and 3 Capri or 1 and 3 Capri, the Simmon's Capri carries the wasp by itself. In the time-table following, the dates of the issue of the wasp are approximate: the date given being that on which the maximum of emergence has been observed. In reality the wasp issues in increasing, and then diminishing, quantities, as the crop gradually ripens and drops. The spring crop of Capri (or Profichi) burst out with the leaves in August; it is ready for caprification in September and is ripe in December. The wasp from this crop is coming out at maximum rate on 20th December. The summer crop (Mammoni) burst out in November; it is ready for caprification in December (from Profichi crop), and is ripe in March. The wasp from this crop is coming out at maximum rate on 12th March. The winter crop (Mammae) burst out in February, is ready for caprification in March (from Mammoni), and is ripe in September, and wasps from this crop caprify the spring or Profichi crop.

Capri figs, like the Smyrna figs, require cross-fertilisation, and the winter crop falls immature unless visited by the wasp. When a fig wasp enters a young fig it leaves its wings at the eye of the fig caught in the close scales at the eye. These can be seen, and makes it easy to judge whether the transference of wasp from Capri to Capri, or Capri to Smyrna, has been successful. Lest it should be thought that the culture of the Smyrna fig requires a good deal of technical knowledge, let me say in conclusion that from time immemorial the ignorant Turks and Syrians of Asia Minor have successfully cultivated and dried this fruit. Once the fig wasp is established, as it undoubtedly is in the Capri fig trees in this State, the remainder of the work is easy and natural. The production of the figs both in Capri and Smyrna at the right time, is a never failing seasonal occurrence. Even if the winter frosts at some time remove the figs from the Capri trees, the wasps are easily renewed by a fresh supply of figs from some adjacent district. Western Australia with its rainfall, free open soil, and its long summer is wonderfully adapted to the natural drying of fruit and will, without doubt, produce a fine quality Smyrna fig.—Journal of the Department of Agriculture, Western Australia, Vol. I. No. 4.

CHERRY TREES ON JAPANESE MAZZARD STOCK.

Mr. S. A. Thornell, Fruit Inspector in the Young district, writing of cherry trees worked on the Japanese Mazzard, said that this stock is to be found in at least two orchards at Young, but the trees are not yet in bearing. Some four-year-old trees of Burgdorf Seedling worked on Japanese Mazzard in one orchard are dying. The scion has outgrown the stock and has apparently suffered from an insufficient flow of sap. For this reason Mr Thornell does not favour the stock in the meantime.—The Agricultural Gazette of N S.W , Vol. XXXV. Part 4.