

38650 to 38658—Continued.

Distribution.—A shrub with large showy yellow flowers in clusters found in tropical Africa and Asia and the islands of the Indian Ocean.

38652. *CANANGIUM ODO RATUM* (Lam.) Baill. Annonaceæ.

(*Cananga odorata* Lam.)

Ylang-ylang.

See S. P. I. Nos. 20908 and 35243 for previous introductions and description.

"A tree bearing a profusion of greenish yellow fragrant flowers with long, fringelike petals, from which the perfume *ilang-ilang* [*ylang-ylang*] is made. Leaves alternate, simple, entire, ovate oblong, finely acuminate, puberulous beneath; sepals 3; petals 6, in two series, narrowly linear; stamens many, linear, borne at the base of the ovary, the connective produced into a lanceolate, acute process; ovaries many; style oblong; ripe carpels about 12, ovoid or obovoid, black, 6 to 12 seeded.

"Bark of tree smooth, ashy; trunk straight normally, but in Guam often twisted out of shape by hurricanes. Its wood is soft and white and not very durable, but in Samoa the natives make small canoes of it, and the Malaysians hollow out the trunks into drums or tom-toms. In Guam straight trunks of sufficient size for canoes are never found.

"This tree is found in Java, the Philippines, and in many islands of the Pacific. It is widely cultivated in the Tropics. Its introduction into Guam is comparatively recent; but the fruit-eating pigeons are spreading it gradually over the island. The natives sometimes use its flowers to perfume coconut oil. In Samoa it is very highly esteemed. Its fringelike flowers are there strung into wreaths and garlands by the natives, together with the drupes of *Pandanus* and the scarlet fruit of *Capsicum*.

"*Ilang-ilang* trees may be readily propagated either by cuttings or seeds. These should be planted in orchards or groves 8 meters apart. They thrive well on most tropical islands and in countries with moist, warm climates. About the third year the flowers appear. They bloom continuously, so that flowers and fruit may be always found on the same tree.

"From the flowers a pleasantly scented volatile oil is derived, known in commerce as the oil of *ilang-ilang*. In the Philippines and the East Indies this is sometimes adulterated with an oil extracted from the flowers of *Michelia champaca*. *Ilang-ilang* oil is obtained by steam distillation. In this process steam is generated in a small boiler and passed into a closed vessel containing the flowers. The mixed water and oil vapor as it leaves this vessel is condensed, and the oil separated from the water by decantation. In the Philippines, German distillers have obtained it in the ratio of about 25 grams from 5 kilometers of flowers (0.5 per cent). It finds a ready market in Paris, Nice, and Grasse, and is used also by perfumers in London, Leipzig, Berlin, and Frankfort. The best quality of oil is perfectly clear and very fragrant. The second quality is yellowish and turbid. A perfume is also derived from the blossoms by the method known as *enfleurage*, as with jasmines and other fragrant flowers. By this process the fragrant oil is absorbed by refined fats, butter, or oil spread over trays, on the surfaces of which the flowers are sprinkled. These are changed at frequent intervals and the fat 'worked' so as to present a fresh surface each time the new flowers are laid upon it. Finally it is scraped off the tray, melted, strained, and poured into jars in the form of a pomade. When oil is used in this