

*Pittosporum undulatum* Vent., VICTORIAN BOX, AUSTRALIAN MOCK ORANGE, SWEET PITTOSPORUM. Tree, evergreen, with 1–several trunks, in range to 15 m tall; ± dioecious (appearing gynodioecious); shoots pubescent with short, straight or villous hairs and puberulent glandular hairs, the nonglandular hairs commonly 2-armed (T-shaped) with unequal arms and a short stalk, becoming glabrescent (blades), somewhat aromatic when axes broken (having secretory ducts filled with resin); bark rough, dull gray, aging shallowly fissured. **Stems:** cylindric, to 3 mm diameter when green, with crescent-shaped leaf scars and narrowly fusiform, whitish lenticels; terminal buds (formed at end of growing season) each with ca. 15 scales, the bud scales tightly overlapping, 1/2 encircling stem, green with reddish brown tinge on exposed edges and surfaces, tomentose to villous on margins, expanding and deciduous with new growth, the outer and lowermost crescent-shaped and 1 × 3 mm, the inner and uppermost obovate and to 11 × 6 mm; new stem growth short (to 3 mm long), terminated with 3–5 congested leaves and an inflorescence. **Leaves:** helically alternate but not evenly spaced and often crowded at branch tip, simple, petiolate, without stipules; petiole hemi-cylindric (subcylindric at base), 9–21 mm long, puberulent with glandular hairs and ± short-villous hairs (unbranched and T-shaped), aging glabrescent; blade elliptic to oblanceolate, 45–170 × 16–55 mm, somewhat tough and leathery, broadly tapered to long-tapered and slightly oblique at base, entire and wavy on margins with a translucent strand forming edge, acute to acuminate at tip, pinnately veined with midrib raised on both surfaces, ± villous and puberulent on very young leaves becoming glabrescent, upper surface typically ± glossy dark green, lower surface dull light green. **Inflorescence:** umbel-like, terminal, 30–40 × 25–40 mm, on a short-stalk having 3–5 leaves, many-flowered on 3–7 branches, plants either producing only pistillate flowers or bisexual flowers but nearly always functionally staminate, bracteate, axes puberulent to short-villous, becoming purplish red; bracts subtending raylike branches narrowly oblanceolate to narrowly lanceolate or narrowly triangular, 5–17 × 1–2 mm, early-deciduous; raylike branches 4–15 mm long, terminated by 1 flower or a 2–4-flowered cyme (commonly umbel-like); bractlet subtending pedicel acuminate to triangular, 0.6–3 × 0.3–0.5 mm, purplish red to brownish, puberulent, deciduous; pedicel 5–8 mm long. **Structurally staminate flower (bisexual flower):** radial, 11–17 mm across, sweet-fragrant like honeysuckle (*Lonicera*) especially at nighttime; **calyx** 3–5-lobed (alternatively interpreted as sepals), bell-shaped, 6–8.5 mm long, greenish yellow, parallel-veined, short-villous with T-shaped hairs on tips; tube with sinuses between lobes extending to different levels within a single flower, usually with 1 sinus extending to base; lobes acuminate and spreading to slightly recurved, (0.5–)2–7 mm long; **petals** (4–)5(–6), erect with spreading to recurved tips, oblong-oblanceolate, 10.5–14.5 × 2.5–5 mm, cream-colored, below midpoint slightly constricted or broadly clawed, typically with 5 principal veins from base; **stamens** 5, free, alternate with petals, slightly exserted, 6.5–9.8 mm long; filaments erect, 4.5–7.5 mm long, white or pale green, tapered from base, glabrous; anthers dorsifixed, dithecal, narrowly arrow-shaped, 3.1–4 mm long, yellow or yellow orange, longitudinally dehiscent; pollen light yellow; **nectary** beneath and encircling stalked pistil, 5-angled with 5 vertical lobes, to 1 mm long, producing copious, thin nectar; **pistil** (when functionally bisexual) 1, bottle-shaped, 6–8.2 mm long including fat stalk (gynophore), gynophore 1–1.5 mm long; ovary superior, ovoid, 2.5–4 mm long, pale green to whitish, sericeous; style erect, 3–4 mm long, pale to light green, glabrous; stigma slightly exserted

and positioned between midpoint and tip of anthers, 4-lobed,  $\pm 0.7$  mm diameter, colorless to aging greenish, finely papillate, flooded with milky liquid when pollen being shed.

**Pistillate flower:** radial, 11–17 mm across, sweet-fragrant like honeysuckle (*Lonicera*) especially at nighttime; **calyx** 3–5-lobed (alternatively interpreted as sepals), bell-shaped, 6–8.5 mm long, greenish yellow, parallel-veined, short-villous with T-shaped hairs on tips; tube with sinuses between lobes extending to different levels within a single flower, usually with 1 sinus extending to base; lobes acuminate and spreading to slightly recurved, (0.5–)2–7 mm long; **petals** (4–)5(–6), erect with spreading to recurved tips, oblong-ob lanceolate,  $10.5\text{--}14.5 \times 2.5\text{--}5$  mm, cream-colored, below midpoint slightly constricted or broadly clawed, typically with 5 principal veins from base; **stamens** 5, free, vestigial or diminutive, appressed to stalk at base of pistil, vestigial stamens tongue-shaped to shallowly 3-lobed, 0.5–1 mm long, light to pale greenish yellow, diminutive stamens with filament and anther; filament to 1 mm long, green; anther dorsifixed, dithecal, arrow-shaped, to 1.4 mm long, light yellow to yellow, sterile (sometimes producing sterile pollen); **pistil** 1, stalked (gynophore), gynophore 0.5–1 mm long, sericeous; **nectary** 5-lobed on gynophore, lobes alternate with stamens, 0.5–1 mm long; ovary superior, almond-shaped,  $\pm 3$  mm long, green, sericeous, 1-chambered with many ovules on 2 intruding placentae; style cylindric, 1.8–2.3 mm long, green, glabrous; stigma 4-lobed, 0.9–1.2 mm wide, colorless aging green, moist at anthesis but not covered in liquid. **Fruit:** capsule, dehiscent by 2 valves fully spreading, 20+-seeded, before dehiscing spheroid and faintly 2-lobed (sometimes appearing faintly 4-lobed),  $10\text{--}11(\text{--}12.5) \times 8\text{--}9.5(\text{--}11)$  mm, dull light orange, 1-chambered, with persistent style, while dehiscing margins upcurved and seeds connected as mass by colorless, sticky resin, with style splitting lengthwise and 2 halves persistent and recurved; wall of immature fruit ca. 1.2 mm thick, with a wide secretory duct at each midvalve. **Seed:** variable, typically ear-shaped and wedgelike,  $2\text{--}3.5 \times 1.7\text{--}3$  mm, orange to red-orange, often with 2 flat faces, smooth. Late January–mid-April.

Naturalized. Tree (also pruned as a shrub) widely cultivated, especially for its strongly fragrant flowers. Birds eat the seeds of *Pittosporum undulatum*, which are in a sticky mass that can become glued to the bird's bill and are thereby dispersed into suitable wild habitat, e.g. shady slopes of southern oak woodland in Sullivan Canyon. Little appreciated is that this is essentially a dioecious species with fruits being formed mostly on the pistillate plants. Staminate plants form what appear to be bisexual flowers with pistils that normally do not produce fruit, but on a staminate tree can be found some fruits. The stigmas of staminate flowers exude a liquid, but that is not the case for the stigma of pistillate flowers.  
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