The Genus *Pittosporum* (Pittosporaceae) on Rapa Island and on the Austral Islands, Polynesia
Pacific Plant Studies 31

Harold St. John

Up to the present only two species of *Pittosporum* have been recorded for Rapa and the Austral Islands. F. B. H. Brown (1935: 100–101) made this single report. He described as new *P. rapense*, which is accepted though known only from the type collection. He identified Stokes 369 as *P. crassifolium* Cunn., of New Zealand, but now, with more complete material, it is clear that his was a misidentification. The following records are from the collections by the writer and his assistant, F. R. Fosberg, on the Mangarevan Expedition of the Bernice P. Bishop Museum in 1934.

There seems to be no usable scheme of infrageneric taxa in the genus *Pittosporum*. The division into the series *Bivalvae* and *Trivalvae* is here used, though it is certainly based on characters that are inconstant, artificial, and of no evolutionary significance. For the species of Papuasia, Schodde (1972) described various sections, but these are of local application and not a new general taxonomy at the subgeneric level.

### KEY TO SPECIES

<table>
<thead>
<tr>
<th>Condition</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Capsules deeply rugose, tomentose, the opened valves nearly flat, 5–10 mm thick; leaves subverticillate; blades 7–13 × 2.6–4.2 cm (flowers unknown). Raivavae I.</td>
<td><em>P. raivavaeense</em>.</td>
</tr>
<tr>
<td>A. Capsules smooth, but tomentose or glabrous; the opened valves concave, 1–2.5 mm thick; leaves alternate. Rapa I.</td>
<td><em>P. luteum</em>.</td>
</tr>
<tr>
<td>B. Petals yellow; blade margins thickened and revolute (fruit unknown)</td>
<td><em>P. purpureum</em>.</td>
</tr>
<tr>
<td>B. Petals maroon to dark purplish,</td>
<td></td>
</tr>
<tr>
<td>C. Blades plane, the margins not revolute; capsules tomentose, (2–) 3-valved, the valve margins 0.5 mm thick</td>
<td><em>P. Maireaui</em>.</td>
</tr>
<tr>
<td>C. Blades with the margins thickened and revolute,</td>
<td></td>
</tr>
<tr>
<td>D. Petioles 5–18 mm long; blades 4–10.5 cm long, elliptic or oblance-elliptic (fruit unknown)</td>
<td><em>P. Takauele</em>.</td>
</tr>
<tr>
<td>D. Petioles 3–13 mm long,</td>
<td></td>
</tr>
<tr>
<td>E. Valve lateral margins 0.8 mm thick; capsules early glabrate; petioles 3–7 mm long; blades 2.3–5.3 cm long (flowers unknown)</td>
<td><em>P. perahuense</em>.</td>
</tr>
<tr>
<td>E. Valve lateral margins 1–2 mm thick; capsules tomentose; petioles 5–12 mm long,</td>
<td></td>
</tr>
<tr>
<td>F. Valve lateral margins 1 mm thick; capsules 8–11 mm long; blades 1.3–2.6 cm wide</td>
<td></td>
</tr>
<tr>
<td>F. Valve lateral margins 2 mm thick; capsules 15–18 mm long; blades 2–3.6 cm wide</td>
<td><em>P. rapense</em>.</td>
</tr>
</tbody>
</table>

1 Manuscript received 20 October 1976.
2 Bernice P. Bishop Museum, P. O. Box 6037, Honolulu, Hawaii 96818, U.S.A.
Pittosporum luteum sp. nov. (series?)

Figure 1

DIAGNOSIS HOLOTYP: Frutex 5 m alta est, ramis vetustioribus 3 cm diametro obscure badiis asperis glabratis ligno succoso albo, ligno centrali badio, ramis unusquisque (3-) 2-furcatis, ramulis foliosis 1–2 cm longis 2–3 mm diametro teretibus cum tomento denso adpresse hinulei-colorato velatis, internodis 2–5 (–15) mm longis, nodis paululum incrassatis, cicatricibus foliorum 1–2.5 mm latis pallidis fere prostratis oblatiore hemisphaericis, cicatricibus fasiculorum 3, folis alternatis adscendentibus 5–8 in apice brevi ramulae congregatis fere imbricatis, petiolis 5–12 mm longis supra late canaliculatis hinulei-tomentosis tarde glabratis, laminis 3.7–7 cm longis 1.4–3 cm latis obovato-obovatis obtusis integris subtiliter coriaceis plane, nervis secundariis 7–10 in dimidio quoque curvatis adscendentibus remote ex margine incurvatis interconnectentibus supra obscuris infra evidenteris midnervo uterque elevato, inflorescentia terminali umbellata cum 6–9 floribus, alabastris cum squamis inferis 2 mm longis hemisphaericis glabris sed ciliatis, alteris majoribus, eis superis 10 mm longis 1 mm latis supeplatis infra tomentosis supra glabratis pilosi-ciliatis, in flore pedicelis 3–7 mm longis hinulei-tomentosis, 5 sepals 5–6 mm longis 1.3–2 mm latis lineari-lanceolatis extra hinulei-tomentosis infra glabras, 5 petals 12 mm longis 4 mm latis spatulatis integris luteis, staminibus 5 filamenti 5 mm longis subulatis, anthers 2.5 mm longis anguste lanceo-oblongis, pistilis 6.2 mm longis, ovario 3 mm longo oblongo-oboioveides dense adscendente subbadi-pilosis, stylo remote piloso, stigmate vadose obtuso (fructibus incognitis).

DIAGNOSIS OF HOLOTYPE: Shrub 5 m tall; older branches 3 cm in diameter, dark brown, roughened, glabrate; sapwood white; heartwood brown; branches (3-) 2-forked repeatedly; leafy branchlets 1–2 cm long, 2–3 mm in diameter, terete, concealed by the dense fawn-colored appressed tomentum; internodes 2–5 (–15) mm long; nodes little enlarged; leaf scars 1–2.5 mm wide, pale, nearly flush, very oblate hemispheric; bundle scars 3; leaves alternate, ascending, 5–8 crowded on the short branchlet tips, somewhat imbricate; petals 5–12 mm long, broadly channelled above, tawny tomentose, but finally glabrate; blades 3.7–7 cm long, 1.4–3 cm wide, spatulate oblongate, obtuse, entire, thin coriaceous, plane, but the margins thickened and revolute, in youth the upper surface loosely tomentose, but soon glabrate, and shiny dark green, below in youth densely tawny tomentose, later sparsely so, and pale brownish green, secondary veins 7–10 in each half, curved ascending, inarched and interconnected well in from the margin, obscure above, distinct below, the midrib elevated on both sides; inflorescences terminal, 6–9-flowered umbels; lowest bud scales 2 mm long, hemispheric, glabrous but ciliate, increasing upwards to ones 10 mm long, 1 mm wide, spatulate, tomentose below, glabrous above, pilose ciliatus; pedicels in flower 3–7 mm long, tawny tomentose; 5 sepals 5–6 mm long, 1.3–2 mm wide, linear lanceolate, tawny tomentose without, glabrous within; 5 petals 12 mm long, 4 mm wide, broadly spatulate, entire, yellow, above the middle saccate inflated; 5 stamens; filaments 5 mm long, subulate; anthers 2.5 mm long, narrowly lance oblong; pistil 6.2 mm long; ovary 3 mm long, oblong obovoid, densely ascending brownish pilose; style remotely pilosulous; stigma low obtuse (fruit unknown).

HOLOTYPUS: Southeastern Polynesia, Rapa Island, Karapo Rahi Island, crest of ridge, edge of forest, 100 m alt., only tree seen, July 18, 1934, H. St. John & J. Maireau 15,602 (BISH).

DISCUSSION: The new epithet is the Latin adjective luteus, yellow, and it is given with reference to the yellow petals of the species.
FIGURE 1. *Pittosporum luteum* St. John, from holotype. a, habit, × ½; b, flower, × 4; c, sepal, distal view, × 4; d, sepal, proximal view, × 4; e, petal, × 4; f, pistil, × 4; g, h, stamen, × 4.
**Pittosporum Maireaui** sp. nov. (species?)

**Figure 2**

**Diagnosis Holotyph**: Frutex 4 m alta est, novellis dense ferruginei-tomentosis, ramis plerumque bifurcatis, ramulis foliosis 2–2.8 mm diametro teretibus fulvi-tomentosis, ramis vetustioribus 3–5 mm diametro obscure badiis sublaevibus sed cum fugis parvis longitudinalibus et fissuris horizontalibus, internodis 2–32 mm longis, nodis non vel paulum incrassatis, alabastris cum squamis inferis 2 mm longis semioblongicubiteris midnervo elevato marginibus membranaceis ciliatis, alteris majoribus, eis superis 11 mm longis 2.5 mm latis spatulati-oblanceolatis midnervo piloso-marginibus ciliatis, cica-tricibus foliorum 1.8–3 mm latis oblate semioblongicubiteris prostratis pallidis, cicatricibus fasciculorum 3, petioli 5–18 mm longis supra late canaliculatis fusci-tomentosis, laminis 4–10.5 cm longis 2.2–5.3 cm latis ellipticus vel oblongi-ellipticus apice obtusis, in initio supra laxe tomentosis mox glabratis lucidis obscure viridibus infra in initio dense ferruginei-tomentosis pilis longe persistentibus sed in parte glabratis tum exlucidis pallide viridibus nervis secundariis 6–9 in dimidio quoque curvatis adscendentibus remote ex margine incurvatis interconnectentibus supra evidentis infra conspicuis midnervo in paginis ambis elevatis, inflorescentia terminali umbellata cum 3–7 floribus, pedicelis in flore 5–10 mm longis ferruginei-tomentosis, 5 sepalis 6 mm longis 1.7–2 mm latis ellipticosmidnervo piloso-marginibus ciliatis, extra fusci-tomentosis intra glabris, petalis 11–12 mm longis 3–3.5 mm latis anguste oblongo-lanceolatis rubiaceis marginibus erosis, 5 staminibus, filamentis 4.5–4.7 mm longis subulatis, antheris 2 mm longis...
oblongi-lanceolatus, pistilo 5 mm longo, ovario 2.5 mm longo ovoideo, stigmatic obtuso, fructu incognito.

**DIAGNOSIS HOLOTYPE:** Shrub 4 m tall; young shoots densely ferrugineous tomentose; branches mostly 2-forked; leafy branchlets 2–2.8 mm in diameter, terete, tawny tomentose; older branchlets 3–5 mm in diameter, dark brown, smoothish, but with low longitudinal ridges and horizontal fissues; internodes 2–32 mm long; nodes not or but little enlarged; lowest bud scales 2 mm long, semi-ellipsoidal, the midrib elevated, the membranous margins ciliate; scales increasing to the uppermost ones which are 11 mm long, 2.5 mm wide, spatulate, obovate, pilosulous on the midrib and ciliate on the margins; leaf scars 1.8–3 mm wide, oblate semi-ellipsoidal, flush, pale; bundle scars 3; petioles 5–18 mm long, widely canaliculate above, tawny tomentose; blades 4–10.5 cm long, 2.2–5.3 cm wide, elliptic or obovate-elliptic, the apex bluntly subacute, the base shortly cuneate, plane, but the entire thickened margin revolute, in youth the entire upper surface thinly tomentose, but early glabrate, shining dark green, below in youth densely ferrugineous tomentose, but with low longitudinal ridges and horizontal fissues; inflorescence a terminal 3–7-flowered umbel; pedicels in flower 5–10 mm long, ferrugineous tomentose; 5 sepals 6 mm long, 1.7–2 mm wide, elliptic lanceolate, tawny tomentose without, glabrous within; 5 petals 11–12 mm long, 3–3.5 mm wide, narrowly obovate, maroon, the margins erose; 5 stamens; filaments 4.5–4.7 mm long, subulate; anthers 2 mm long, oblong lanceolate; pistil 5 mm long; ovary 2.5 mm long, ovoid; stigma obtuse; fruit unknown.

**HOLOTPUS:** French Polynesia, Rapa Island, Karapo Rahi Island, upper edge of forest, common, 100 m alt., July 18, 1934, H. St. John & J. Maireau 15,601 (BISH).

**DISCUSSION:** The new epithet is chosen to honor M. Jean Maireau, school teacher on Rapa, a keen amateur in botany, who dismissed his school for a month in order to accompany me on my daily botanizing.

**Pittosporum perahuense** sp. nov. (series Bivalvae)

**Figure 3**

**DIAGNOSIS HOLOTYPE:** Arbor 4 m alta est, ramulis vetustioribus 2.5–3.5 mm diametro obscure badiis teretibus laevis sed cum fugis parvis longitudinalibus, ramis semel 2–3-furcatis, novellis dense fusci-tomentosis, alabastris cum squamis inferis 2 mm longis late ovatis apiculatis in costa crassa elevata puberulis marginibus membranaceis et ciliatis, bracteis alteris majoribus, eis superis 8–9 mm longis 3 mm latis anguste ellipticis chartaceis molliter tomentosis, ramulis foliosis 2–2.5 mm diametro sparse tomentosis, internodis 3–10 mm longis, nodis paululum incrassatis, cicatricibus foliorum 2 mm latis transverse ellipticis prostratis pallidis, cicatricibus fasciculorum 3, foliis alternatis adscendentibus sed non congregatis, petiolis 5–10 mm longis supra profunde canaliculatis tomentosis, laminis 3.7–6 cm longis 1.3–2.6 cm latis coriaceis obovate-apiculatis apice acuto planis sed marginibus incrassatis revolutis in initio supra laxe tomentosis mox glabratis obscure viridibus lucidis infra in initio dense fusci-tomentosis mox paululum tomentosis et viridibus, nervis secundariis 6 in dimidio quoque in paginis ambis evidentiis adscendentibus remote ex margine inarcuatis interconnectentibus (floribus incognitis), infructescientia terminali umbellata cum 2–4 fructibus, pedicelis 8–10 mm longis sparse tomentosis, capsulis 9–12 mm longis 8–11 mm diametro subglobosis cum apice brevi umbonato laevis, frugibus viridibus ad badiis sed fusci-tomentosis (3-) 2-valvatis valvis in sectione transversali concavis cum placenta centrali elevata ea ex basi ad 3/4 punctum cum 8–12 funiculis gracilibus, seminibus 3–6 mm longis 3–3.5 mm latis subnigris irregularer rhombicus cum lateribus planis.

**DIAGNOSIS OF HOLOTYPE:** Tree 4 m tall; older branchlets 2.5–3.5 mm in diameter,
dark brown, terete, smooth, but with low longitudinal ridges; branches once 2–3-forked; young shoots densely tawny tomentose; lowest bud scales 2 mm long, broadly ovate, apiculate, puberulous on the thick raised costa, puberulous ciliate on the membranous margins, bracts increasing upwards to the uppermost ones which are 8–9 mm long, 3 mm wide, narrowly elliptic, chartaceous, softly tomentose; leafy branchlets 2–2.5 mm in diameter, sparsely tomentose; internodes 3–10 mm long; nodes scarcely enlarged; leaf scars 2 mm wide, transversely elliptic, flush, pale; bundle scars 3; leaves alternate, ascending but not crowded; petioles 5–10 mm long, deeply channeled above, tomentose; blades 3.7–6 cm long, 1.3–2.6 cm wide, coriaceous, oblanceolate, the apex acute, plane, but the thickened margin revolute, in youth the upper surface thinly
tomentose, when adult glabrate, dark green, shining; below in youth densely tawny to­mentose, but when adult inconspicuously so and green, secondary veins 6 in each half, visible on both sides, ascending, inarched interconnecting remote from the margin (flower unknown); infructescence terminal, an umbel with 2–4 fruits; pedicels 8–10 mm long, sparsely tomentose; capsules 9–12 mm long, 8–11 mm in diameter, subglobose, with a short umbonate apex, smooth, green to brown, but tawny tomentose, (3-) 2-valved, its valves concave in cross section, 2.5 mm thick near the apex, 1 mm thick along the sides; each valve with a central raised placenta bearing 8–12 slender funicles from near the base and up 3/4 way; seeds 3–6 mm long, 3–3.5 mm wide, blackish, irregularly rhombic, with flattened faces.

EXPANDED DESCRIPTION: Trunk 8 cm in diameter.


DISCUSSION: The new epithet is formed from the name of the type locality, Mt. Perahu, and -ensis, the Latin adjectival place suffix.

Pittosporum purpureum sp. nov. (series Trivalvae)

Figure 4

DIAGNOSIS HOLOTYPI: Planta lignosa 3 m alta est, novellis fusi-tomentosis, ramis unusquisque 3- vel 2–6-furcatis, ramulis foliosis 1–2 mm diametro teretibus fuscito­mentosis, ramis vetustioribus 2–4 mm diametro subrubri-badiis sublaevibus sed cum fugis parvis longitudinalibus, internodis 3–12 mm longis, nodis paululum incrassatis, cicatri­cibus foliorum 1.5–2.5 mm latis oblate hemisphaericis prostratis pallidis, cicatri­
cibus fasciculorum 3, foliis alternatis adscendentibus 3–12 in apice ramulæ fere congre­gatis, petiolis 5–13 mm longis supra late canaliculatis fusci-tomentosis, laminis 3.2–8.3 cm longis 1.6–3.5 cm latis oblaneolate (vel paucis parvis obovatis) obtusis integris planis marginibus non revolutis firme chartaceis in initio supra nervis sparse pilosis et midnervo tomentoso infra dense ferrugini­tomentosis nervis secundaris 6–8 in dimidio quoque curvatis adscendentibus et remote ex margine interconnectentibus evidentis mid­nervo supra depresso infra elevato, inflores­centia terminali umbellata cum 4–7 floribus, alabastris cum squamis inferis 2 mm longis hemisphaericis apiculatis pilosi-ciliatis et midnervo incrassato lanato, alteris majoribus, superis 13 mm longis 2.5 mm latis lineari-oblanceolatis et cum pilis simulanti­bus, pedicelis in flore 7–10 mm longis fusi-tomentosis, bracteis 5 mm longis fusi­tomentosis, floribus suaveolentibus, 5 sepali­lus 5–6 mm longis 1–1.5 mm latis linear­oblancoleolatis extra fusi-tomentosis intra glabris 5 petalis 12–13 mm longis 3.8–4 mm latiss spatulatis obscure purpureis trinervosis apice undulato, 5 staminibus, filamentis 5.5 mm longis subulatis, antheris 2.5 mm longis angustis obcuneatis obtusis basi cum lobis binis descendentibus obtusis, pistillo 6.5 mm longo, ovario 3.5 mm longo lanceoloideo sparsim puberulo, stylo 3 mm longo glabro, stigmati concavo, pedicelis in fructu 10–14 mm longis glabratis, capsulis 12–15 mm longis 9–13 mm diametro subglobose apiculato plus minusve tomentoso vel subglabratissimo bado eis majoribus 3-valvatis illis minoribus 2-valvatis, valvis concavis in sectione transverso proxima apicem 0.5 mm crasso alibi 0.3 mm crasso et cum placenta elevata cum 8 funiculis ex basi ad punctum 2/3 ad apicem, seminibus 4–5 mm longis 2.5–5 mm latis subnigris lucidis subrhombicis lateribus inferioribus planis.

DIAGNOSIS OF HOLOTYPE: Woody plant 3 m tall; young shoots tawny tomentose; branch­lets 3- or 2–6-forked repeatedly; leafy branchlets 1–2 mm in diameter, terete, tawny tomentose; older branchlets 2–4 mm in diameter, reddish brown, smooth but with
FIGURE 4. Pittosporum purpureum St. John, from holotype. a, habit, × \(\frac{1}{2}\); b, infructescence, × \(\frac{1}{2}\); c, flower, × 3; d, sepal, distal view, × 3; e, petal, × 3; f, stamen, × 3; g, pistil, × 3; h, capsule, × 2; i, cross section of capsule valve, × 2; j, seed, × 2.
low longitudinal ridges; internodes 3–12 mm long; nodes but little enlarged; leaf scars 1.5–2.5 mm wide, oblate hemispheric, flush, pale; bundle scars 3; leaves alternate, ascending, 7–12 on the branchlet tips, somewhat crowded; petioles 5–13 mm long, broadly channeled above, tawny tomentose; blades 3.2–8.3 cm long, 1.6–3.5 cm wide, oblanceolate (or a few small ones obovate), obtuse, entire, plane, and the margin not revolute, firm chartaceous, in youth above the veins sparsely pale and the midrib tomentose; below densely ferrugineous tomentose, the secondary veins 6–8 in each half, curved ascending, inarched interconnecting distant from the margin, visible above and below, the midrib sunken above, raised below; inflorescences terminal, a 4–7-flowered umbel; lowest bud scales 2 mm long, hemispheric, apiculate, lanate on the thickened midrib and pilose ciliate, increasing upwards to the upper ones 13 mm long, 2.5 mm wide, linear oblongolate, with similar pubescence; pedicels in flower 7–10 mm long, tawny tomentose; bracts 5 mm long, tawny tomentose; flowers with sweet fragrance; 5 sepals 5–6 mm long, 1–1.5 mm wide, linear lanceolate, tawny tomentose without, glabrous within; 5 petals 12–13 mm long, 3.8–4 mm wide, spatulate, dark purple, 3-nerve, the upper margin undulate; 5 stamens; filaments 5.5 mm long, subulate; anthers 2.5 mm long, narrowly oblong, obtuse, the base with 2 obtuse descending lobes; pistil 6.5 mm long; ovary 3.5 mm long, lanceoloid, sparsely puberulous; style 3 mm long, glabrous; stigma concave; pedicels in fruit 10–14 mm long, glabrate; capsules 12–15 mm long, 9–13 mm in diameter, subglobose, apiculate, more or less tomentose to subglabrate, brown, dull, the larger ones 3-valved, the smaller ones 2-valved, the valves concave in cross section, 0.5 mm thick near the apex, 0.3 mm thick elsewhere, each valve with a central placenta, bearing 8 slender funicles from near the base to 2/3 way up; seeds 4–5 mm long, 2.5–5 mm wide, blackish, shining, irregularly rhombic, with flat inner faces.

EXPANDED DESCRIPTION: Tree 8 m tall, 30 cm in diameter; sapwood white; petals dark purple or madder; leaves when fresh white tomentose beneath.


SPECIMENS EXAMINED: French Polynesia, Rapa Island, valley 2/5 mile e. of Ahurei, upper woods, 50 m alt., July 1, 1934, H. St. John & Fosberg 15,270 (BISH).

DISCUSSION: The new epithet is the Latin adjective, purpureus, purple, and it is chosen in reference to the purple petals.

Pittosporum raivavaeense sp. nov. (series Bivalvae)

Figure 5

DIAGNOSIS HOLOTYPI: Arbor 5 m alta laxe ramosa est, ramis unusquisque bifurcatis, novellis subadpressae albi-lanatis, ramulis foliosis 2–5 mm diametro sparse laenis, ramis vetustioribus 3–12 mm diametro glabratis sublaevibus pallide viridibus cum lenticelis suborbicularibus prominentibus, internodis 2–65 mm longis, foliis subverticilatis et 4–14 plerumque in 1–2 nolis congregatis, nodis incrassatis, cicatricibus foliorum 3–3.5 mm latis oblate hemisphaericis pallidis paululum salientibus, cicatricibus fasciculorum 3, alabastris cum squamis superis 8 mm longis 1 mm latis elliptici-oblongis adpressae lanatis, petiolis 5–15 mm longis supra canaliculatis glabratis, laminis 7–13 cm longis 2.6–4.2 cm latis subtiliter coriaceis oblongato-latis apice subacuto basi decurrenta planis marginibus incrassatis pedunculis sublatissimis paululum revolutis (foliis juvenalibus incognitis), pedunculis glabratis supra lucidis obscure viridibus infra viridibus nervis secundariis 8–11 in dimidio quoque in paginis ambis evidentis incurvatis et remote ex margine interconnectis midnervi supra fere plano infra elevato, inflorescentia axillari et terminali composita umbellata cum floribus multis (floribus incognitis), sed sollem 1–3 fructus maturantibus, pedunculo et pedicelis 5–10 mm longis, capsulis 17–36 mm longis 20–31 mm latis et licet 16–25 mm crassis late ovoideis ad subglobose com-
pressis bivalvatis profunde rugosis in valleculis cum tomento badio persistenti sed fugis glabris, valvis in sectione transversali fere oblongis gravibus proxima apice et in lateribus 5–7 mm crassis proxima basem 7–10 mm crassis, valva cum placenta centrali humili et ex basi ad 2/3 punctum cum 8–17 funiculis (seminibus incognitis), capsulis quando apertis extra viridibus intra aurantiacis.
DIAGNOSIS OF HOLOTYPE: Loosely branched tree 5 m tall; branches bifurcate repeatedly; young shoots subappressed white lanate; leafy branchlets 2–5 mm in diameter, sparsely lanate; older branches 3–12 mm in diameter, glabrate, smoothish, light gray, with prominent suborbicular lenticels; internodes 2–65 mm long; the leaves subverticillate, 4–14 crowded at mostly 1–2 nodal clusters; nodes enlarged; leaf scars 3–3.5 mm wide, oblate hemispheric, pale, slightly salient; bundle scars 3; upper bud scales 8 mm long, 1 mm wide, elliptic oblong, appressed lanate; petioles 5–15 mm long, channelled above, glabrate; blades 7–13 cm long, 2.6–4.2 cm wide, thin coriaceous, ob lanceolate, the apex subacute, the base decurrent, plane, the margin thickened, but only slightly revolute (juvenile leaves not seen); mature blades glabrous, above shining dark green, below green, secondary veins 8–11 in each half, visible on both sides, ascending, incurved interconnected well in from the margin; midrib nearly plane above, elevated below; inflorescences axillary and terminal, of many-flowered compound umbels (flowers unknown); infructescences producing 1–3 fruits; the peduncle with pedicels 5–10 mm long; capsules 17–36 mm long, 20–31 mm wide, apparently 16–25 mm thick, broadly ovoid to subglobose, compressed, 2-valved, deeply rugose, persistently brown tomentose in the valleys, glabrate on the ridges, the valves nearly oblong in cross section, massive, 5–7 mm thick near the apex and along the sides, 7–10 mm thick near the base, each valve with a low central placenta bearing 8–17 funicules from near the base to 2/3 way up (seeds not seen); the capsules open when green outside, but orange inside.

EXPANDED DESCRIPTION: Blades 7–19 cm long, 2.6–6.2 cm wide.

HOLOTPUS: French Polynesia, Austral Islands, Raivavae Island, s. slope of Mt. Muanui, dense forest, 180 m alt., Aug. 10, 1934, Fosberg 11,736 (BISH); e. slope of Mt. Muanui, moist wooded gulch, 190 m alt., Aug. 8, 1934, H. St. John 16,043 (BISH); s.w. slope of Mt. Turivao, moist woods on hillside, 190 m alt., Aug. 13, 1934, St. John & E. C. Zimmerman 16,198 (BISH).

DISCUSSION: The new epithet is formed from the name of the type locality, Raivavae, and -ensis, the Latin adjectival place suffix.


Figure 6

ORIGINAL DIAGNOSIS: ”Folia prope apicem ramorum conferti; petioli 1.5 mm, pubescentes; laminae plerumque obovatae, 10 cm longae, 3 cm latae, apice acutae ad subacuminatae, integrae, coriaceae, supra primum pubescentes demum glabrae, subitus dense lanigerae, venulis minute reticulatis. Inflorescentia terminalis, umbellata, pedunculo brevi. Capsula 1.5 cm longa, 2–3-valvata, pubescens ad subglabra; semina 5 mm longa.”

EXPANDED DIAGNOSIS OF HOLOTYPE: Arborescent; young shoots fawn-colored tomentose; leafy branchlets 2–4 mm in diameter, more sparsely hairy to glabrate; older branchlets dark brown, rather smooth; internodes 3–15 mm long; nodes not or but little enlarged; leaf scars 3 mm wide, lunate, pale, flush; leaves alternate; petioles 7–15 mm long, fawn-colored tomentose, broadly channelled above; blades 5–9.3 cm long, 1.9–4 cm wide, thin coriaceous, ob lanceolate or elliptic ob lanceolate, subacute or obtuse, the base cuneate and shortly decurrent, plane, but the thickened margin revolute, in youth above thinly white tomentose, when adult dark green, shining, glabrate except on the midrib near the base, below fawn-colored tomentose, secondary veins 9–13 in each half, ascending, slightly curved, obscure towards the margin (flowers unknown); infructescence terminal, a 2–3-flowered umbel; pedicels 12–17 mm long, tomentose; capsules 12–20 mm long, 12–17 mm wide, subglobose, tomentose,
smooth, 2–3-valved, the valves convex, the margins 2 mm thick near the apex, 1–1.7 mm thick along the sides, the placenta running up the middle, slightly raised, extending from near the base 2/3 way, bearing 8–12 slender funicles; seeds 5–7 mm long, 3.5–4.5 mm wide, irregularly rhombic, shining blackish brown, the flattened sides finely rugulose.

**HOLOTYPE:** French Polynesia, Rapa Island, Whitney Expedition, 1921?, E. H. Quayle no. X (BISH). Isotypes (BISH).

**DISCUSSION:** Brown described this species as with obovate leaves, but they are better described as oblanceolate.

Brown recorded his measurements by a unique notation, viz: “blades 10 ± cm long and 3 ± cm broad....” This notation looks scientific, until one considers it. A leaf can be 10 plus cm long, but how can it also be 10 minus cm long? The method is ludicrous. Brown did not explain it, but apparently by his ±, plus or minus, he meant about or on the average. At other places he stated a structure as 1–3+ cm long. That can be understood as 1–3 cm, the usual range measurements, and rarely a larger, unrecorded number was also observed.

This species is known only from the type collection.

Since an individual tree of this species produces both 2-valved and 3-valved capsules, it cannot be placed in either of the existing series of the genus.

**Pittosporum Takauele** sp. nov. (series Bivalvae)

Figure 7

*P. crassifolium* sensu F. Br., 1935, non Banks & Soland. ex A. Cunn. 1839.

**NOM. VERN.:** “takauele” (Rapan lang.)
FIGURE 7. Pittosporum Takauele St. John, from holotype. a, b, habit, × ½; c, flower, × 4; d, e, f, sepals, distal view, × 4; g, h, stamen, × 4; i, pistil, × 4; j, petal, × 4; k, capsule, × 1; l, cross section of capsule valve, × 2; m, seed, × 4.
DIAGNOSIS HOLOTYPI: Arbor 6 m alta est, novellis fusi-tomentosis, ramulis 2–3-furcati, ramulis foliosis 1.3–2 mm diametro terribus fusi-tomentosis, ramis vetustioribus 2–5 mm diametro badiis obscurae badiis sublaevibus sed cum fugis vadosis longitudinalibus, internodiis 2–9 mm longis, nodis paucis incrassatis, cicatricibus foliorum 1–2 mm latis oblatrie semiorbiculatis fere prostratis pallidis, cicatricibus fasciculorum 3, foliis alternatis 8–11 in apice rami adscendentibus vel divergentibus non congregatis, petiolis 3–7 mm longis infra late canaliculatis tomentosis vel subglabratis, laminis 2.3–5.3 cm longis 1.3–2.2 cm latis oblancoleotis obtusis (vel subacutis) integris planis subtilliter coriaceis sed marginibus incrassatis revolutis in juventum omnino tomentosis sed in maturitate supra glabratis olivaceis sublucidis infra dense fusi-tomentosis nervis secundaris 5 in dimidio quoque curvatis adscendentibus inarcuatis remote ex margine infra conspicuis, midnervo elevato, squamis inferis alabastri 2 mm longis latere deltoideis midnervo incrassato in apice puberulo marginibus membranaceis puberulenti-ciliatis, bracteis superis majoribus illis superis 8 mm longis 3 mm latis anguste lanceolate tomentosis, infructescence a 2–5-flowered umbel; pedicels in flower 5–7 mm long; bracts 5 mm long, linear, tomentose; 5 sepals 4–4.5 mm long, 1.5–2 mm wide, lance elliptic, tomentose except on the midrib; 5 petals 9.5 mm long, linear, tomentose; 5 sepalos 4–4.5 mm long, 1.5–2 mm wide, lance obtuse, tomentose; 5 stamens 6.5 mm long; filaments 5 mm long, linear, tomentose; 5 stamens 6.5 mm long; filaments 5 mm long, linear, tomentose; style 2.5 mm long, glabrous; stigma truncate, subbifid; capsules 8.5–12 mm long, 8–9 mm in diameter, subglobose, tomentose, but with an apical 1 mm beak, glabrous, brownish, smoothish but subrugose, 2-

EXPANDED DESCRIPTION: Tree 6–8 m tall, trunk 30 cm in diameter; bark black; inflorescence a 2–5-flowered umbel; pedicels in flower 5–7 mm long; bracts 5 mm long, linear, tomentose; 5 sepals 4–4.5 mm long, 1.5–2 mm wide, lance elliptic, tomentose except on the midrib; 5 petals 9.5 mm long, 3 mm wide, narrowly oblanceolate, umbonate at apex, the membranous margins puberulous, the bracts increasing upwards, and the uppermost bract 8 mm long, 3 mm wide, narrowly oblanceolate, tomentose; inflorescence terminal, with 1 (–2) fruits; pedicels in fruit 9–12 mm long, glabrate; capsules 12–13 mm long, 8–10 mm in diameter, subglobose, umbonate at apex, green to brown, early glabrate, 2-valved, the valves concave in cross section, the margin 0.8 mm thick near the apex and down the sides, but 1 mm thick near the base, each valve with a central raised placenta, bearing 5 conic funicles from the base to the middle; seeds 3–3.5 mm long, 1.5–2.5 mm wide, black, shining, irregularly rhombic, with flat inner faces.
valved, the valves convex in cross section, 0.5–1 mm thick, thickest near the base, and the apex thicker than the sides, each valve with a central raised placenta, and from 1/3–2/3 way bearing 5–6 short funicles; seeds 3.6–3.7 mm long, blackish, irregularly angular obovoid.


**SPECIMENS EXAMINED:** French Polynesia, Rapa Island, Oromanga forest, s. side of Tangikeu Mt., steep wooded s. slope, 225 m alt., July 11, 1939, St. John & Maireau 15,486 (BISH); Mititiparu, top of ridge, 950 ft elev., Oct. 26, 1921, J. F. G. Stokes 369 (BISH).

**DISCUSSION:** The two flowering sheets, Stokes 369, were identified by F. B. H. Brown as *P. crassifolium* Cunn. They resemble that New Zealand species in their ob lanceolate blades with revolute margins. However, they differ in their smaller sepals which are ascending pilosulous, and in their smaller, 2-valved capsules. Now that complete material is available, it is clear that this species of Rapa is distinct from the one of New Zealand.

**DISCUSSION:** The new epithet, Takauele, is the vernacular name of the species on Rapa Island.

**LITERATURE CITED**
