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A new species of *Saurauia* (Actinidiaceae) from Papua New Guinea

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Abstract

Saurauia rufescens B.J.Conn & Damas (Actinidiaceae) is here described as a new species from the West Sepik region of Papua New Guinea.

Introduction

The systematics of the genus *Saurauia* (Actinidiaceae) in Papuasia is inadequately known, being based largely on the early publications of Lauterbach (1912), Diels (1922), Gilg and Werdermann (1925) and Smith (1941). The delimitation of many species is challenging because the amount of morphological variation within most species is undetermined. Hence, the delimitation of species and the recognition of undescribed taxa are problematic. As a result of this, herbaria frequently have as many unidentified specimens of *Saurauia* as identified ones. Diels (1922) classified the species that he recognised into ten series based on types of leaf vestiture, inflorescence arrangement and floral features. Gilg and Werdermann (1925) treated Diels' Old World series *Calyptratae*, *Ramiflorae* and *Uniflorae* as sections and described Section *Pleianthae* as new. They included the remaining series of Diels in the latter section. Gilg and Werdermann (1925) recognised five separate sections for Central and South American species without discussing the relationships between the sections of these two regions. The most recent comprehensive account of the genus deals with the American species (Soejarto 1980) and proposes a new infrageneric classification based on the series classification of Buscalioni (Buscalioni and Muscatello 1912; 1913a; b; 1915; 1916; 1917; 1918; 1919; 1920; 1921; 1922; 1923; 1927), without reference to Gilg and Werdermann (1925). Burtt (1936) regarded both the infrageneric classifications of Diels, and Gilg and Werdermannn as artificial. Therefore, the taxonomic usefulness of all of these classifications is, as yet, to be fully evaluated (Briggs 2011; Takeuchi 2008). The most complete, recent review of the New Guinean species (Royen 1982) deals with those occurring at elevations above 3000 m. He documented nine species of *Saurauia*, all in section *Pleianthae*.

The Papuasian region is here used as first defined in 'Beiträge zur flora von Papuasien' (Lauterbach 1913) and later illustrated by Womersley (1978). It includes the island of New Guinea (Indonesian Papua and the main island provinces of Papua New Guinea), plus the Bismarck Archipelago (New Britain, New Ireland and Manus) and the Solomon Islands (excluding Santa Cruz). Approximately 100 *Saurauia* names have been published for Papuasia (Briggs 2011). However, the number of accepted taxa is unknown. Although several undescribed species are yet to be formally recognised, it is expected that many currently recognised taxa will be reduced to synonymy. We estimate that there are approximately 50–75 species within Papuasia.

Taxonomy

Saurauia rufescens B.J.Conn & Damas ***sp. nov.***

Diagnosis: *Saurauia rufescens* differs from *S. excurrens* by its red-brown indumentum, branchlets with indistinct lenticels, leaf margin indistinctly crenulated, and flowers occurring amongst foliage.

Holotype: Papua New Guinea: West Sepik: Itomi, Amanab Block 3-4, c. 100 km (direct) S of Vanimo, *K. Damas, O. Paul, T. Magun & D. Damas LAE79589,* 4 Nov 2011 (LAE); isotypes: K, L, NSW.

Shrub 1 m high; branchlets terete, densely hairy, with hairs red-brown, retrorse, spreading to more frequently antrorse, 2–5 mm long, usually distinctly swollen at base; lenticels sparse, white. Leaves simple, alternate, exstipulate; petiole terete, 10–12 mm long, densely hairy (as per branchlets); lamina narrowly elliptic, (65–) 135–160 mm long, (10–)12–16 mm wide, length to width ratio (6.5–)10–11.3; base narrowly acute; margin indistinctly crenulate, with a hair-like trichome on each crenulation, hair 1–2.5 mm long, directed towards apex of lamina; apex gradually tapering acuminate into a fine, blunt point; abaxial surface green with red-brown coloration (indumentum), moderately hairy (as per branchlets), particularly on venation (including primary, secondary and tertiary veins); adaxial surface green, sparsely hairy (hairs as per branchlets), with hairs tending to be restricted to mid-vein and margin; mid-vein slightly raised on both surfaces; secondary veins moderately distinct on abaxial surface, numerous, aligned at an angle of 75–80 degrees to mid-vein; intramarginal vein faint to indistinct, often not well-developed on abaxial surface, not visible on adaxial surfaces, inserted 0.5–1.5mm from margin. Inflorescence axillary, with 1 or 2 flowers per axil; bracts rounded, 1.5–2 mm long; pedicels 10–12 mm long (rarely shorter), red-brown (indumentum), moderately hairy (as per branchlets). Sepals 5, green, ovate to oblong, equal in length, 5–6 mm long, (1.5–)2.5–3 mm wide, glabrous; margin entire, slightly incurved; apex obtuse. Petals 5, spreading, membranous, ± oblong, 5–6 mm long, c. 2.5 mm wide, white; margin entire; apex rounded, somewhat irregular to slightly emarginate. Stamens c. 30–40, in 2 series; filaments distally free, laterally flattened, 5–6 mm long, connate basally for c. 2–2.5 mm; anthers dorsifixed, oblong, c. 1.5 mm long, distally divided into 2 tapering lobes (lobes c. 0.5 mm long), subapically poricidal. Ovary 3-locular, superior, globular, c. 2 mm diam.; styles terete, 3.5–4 mm long; stigma oblique. Immature fruits globular, 4–5 mm diam., green; mature fruits unknown. Figs 1a & b.

Etymology: the specific epithet *rufescens* refers to the red-brown hairs on branchlets, leaves, pedicels and sepals.

Locality: only known from the type collection from near Vanimo, in the West Sepik region.

Habitat: occurring in disturbed lowland forest dominated by *Pometia pinnata* J.R.Forst & G.Forst., *Vitex cofassus* Reinw. ex Blume and *Intsia bijuga* (Colebr.) Kuntze. Other common trees in this forest include species of *Chisocheton*, *Dysoxylon* and *Maniltoa*. The area was logged in the last 2–3 years.

Notes: there are several morphological features that distinguish *Saurauia rufescens* from *S. excurrens*. The former species has red-brown indumentum (Figs 1a & b; compared to *S. excurrens* which is glabrous – Fig. 1d); branchlets are sparsely covered with indistinct lenticels (*S. excurrens* is densely covered with distinct lenticels – Fig. 1d); leaf margin is indistinctly crenulated with a single trichome terminating each crenulation (*S. excurrens* with margin serrate with teeth c. 1 mm long); and flowers occur amongst the foliage (Fig. 1b, compared to *S. excurrens* with flowers appearing ramiflorous after leaves fallen – Figs 1c & d).

Leaves of *Saurauia rufescens* and *S. longifolia* Oliv. are similar in shape and both are densely hairy; however the laminae of the latter species are longer (250–350 mm long) and broader (25–40 mm wide) than *S. rufescens* (mostly 135–160 × 12–16 mm). Although there is considerable variation in flower size, the sepals of *S. longifolia* appear to be longer (c. 10 mm long) than those of *S. rufescens* (5–6 mm long).

According to the infrageneric classification of Diels (1922), *S. rufescens* is a member of series *Squamulosae* (Section *Pleianthae sensu* Gilg and Werdermann 1925). Although *S. excurrens* A.C.Sm. technically would be classified as a member of series *Ramiflorae* (Diels 1922), based on the flowers being crowded along leafless branches, we agree with Smith (1941) that it is probably morphologically more similar to species of series *Squamulosae*, and hence to this new species.

Fig. 1. *Saurauia rufescens* **a,** habit showing hairy branches, reddish juvenile leaves and mature leaves; **b,** detail of branches, leaves and flowers, showing hairiness of branches, leaves, pedicels and calyces. Corolla, androecium and gynoecium are also visible. *Saurauia excurrens* **c,** showing pendulous habit with leaves tending to be clustered towards distal end of branches. Flowers occurring in small clusters on older, leaf-less part of branches; **d,** details of inflorescence showing corolla, androecium, style and stigma (a, b from *Damas et al. LAE79589*, photographs KQ Damas; c, d from *Conn 5761*, photographs BJ Conn).

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