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Editorial

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In 2018, *Kew Bulletin* publishes the first paper in a new series ‘The Kew Review’. We are pleased to present a Conifers of the World review article by Aljos Farjon, outlining the history, taxonomy, ecology etc. of the group, as well as ideas for future research. Aljos specialised in gymnosperms during his long botanical career including publishing several books on the group (e.g., Farjon [1998](#), [2008](#), [2010](#)), chairing the conifer specialist group of the World Conservation Union, as well as receiving the Engler Medal in silver from the IAPT. Whilst he has now ‘finished’ working on gymnosperms, his love for trees endures and has recently written an award-winning book on the ancient oaks of England (Farjon [2017](#)). We will have more ‘Kew Reviews’ in future issues, and would be happy to receive ideas for prospective review articles from interested authors.

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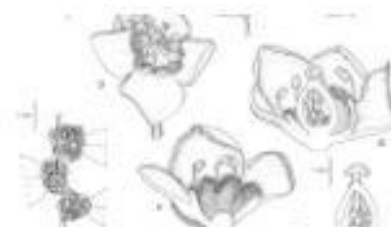
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Two new species of *Syzygium* (Myrtaceae) from North and West Sumatra

Pudji Widodo¹ & Eve Lucas²

Summary. Two new species of *Syzygium* from Sumatra, namely *S. namosialangense* and *S. padangense* are described and illustrated. These species are proposed based on observation of the specimens kept in BO, K and L, including those from Sumatra and its surrounding islands and adjacent regions.

Key Words. Bukit Lawang, Indonesia, Malesia, Padang, taxonomy.

Introduction

Syzygium Gaertn. is the largest genus of Myrtaceae, comprising c. 1,200 species (Govaerts *et al.* 2018) restricted to the Old World. *Syzygium* occurs in tropical or subtropical regions, from lowland to high mountainous rain forests, including fresh-water swamp forests, ultramafic forest, savannah and limestone forests (Soh & Parnell 2011). *Syzygium* is an important genus of South-East Asian trees providing nectar, pollen, and fruits for a wide range of insects, birds and mammals (Parnell *et al.* 2007). Several *Syzygium* species are of economic importance for their flowers, fruits, timber and tannins that are used medicinally (Heywood *et al.* 2007).

Recent phylogenetic analysis (Biffin *et al.* 2006) in *Syzygium* s.l. (*sensu* Hyland 1983) and allied genera, based on three chloroplast markers, provides little evidence to recognise distinct genera and recommends all species to be incorporated into a more broadly circumscribed *Syzygium*. That study however, did recognise a revised taxonomy of subgenera that distinguished *Syzygium* subgenus *Syzygium* (Biffin *et al.* 2006; Craven & Biffin 2010) from the other subgenera (comprising previously accepted genera). *Syzygium* subgenus *Syzygium* is distinguished in having anther sacs opening by parallel longitudinal slits, axile-central placentation with axile or scattered ovules or rarely in 2 longitudinal rows, seeds with no intercotyledonary inclusion, and free or fused sepals and free or coherent petals (calyptrate sepals and coherent petals can fall as a single unit). The two species described in this paper are related to species with coherent petals within *Syzygium* subgenus *Syzygium* and were uncovered as part of an ongoing revision

of Sumatran *Syzygium* (Widodo 2011). Craven & Biffin (2010) note that *Syzygium* subgenus *Syzygium* includes the majority of *Syzygium* species; it is here estimated that there may be c. 110 species occurring in Sumatra.

Sumatra is the sixth-largest island in the world at 473,481 km² (not including adjacent islands such as the Riau Islands and Bangka Belitung Islands). Sumatra is an elongated landmass spanning a diagonal northwest–southeast axis. The Indian Ocean borders the west, northwest, and southwest coasts of Sumatra with the island chain of Simeulue, Nias and Mentawai located off the western coast. Sumatra is one of the richest islands in terms of biodiversity (Whitten 1999) but unfortunately one of the least known. Some decades ago, Sumatra was densely forested, however palm oil plantations, the timber and pulp industry, illegal logging, and extensive damage to forests by fire, have exerted serious pressure on the biodiversity of Sumatra (Widodo & Chikmawati 2016). At present, the remaining forests in the northern and western parts of Sumatra are still in good condition as these areas are mountainous and difficult to exploit.

Systematic revision of the entire genus *Syzygium* is highly desirable, although logistically very difficult for a single author. A geographical approach revising species occurring in biogeographically distinct areas such as Sumatra, as the one in which the species described here will feature, will therefore provide much badly needed information for those seeking to conserve what little forest remains in these areas and to increase the Sumatran community's awareness of the importance of its biodiversity for future generations.

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***Syzygium namosialangense* Widodo & E. Lucas sp. nov.**

Type: Indonesia, North Sumatra, Namosialang, Bukit Lawang, Bohorok, Wiriadinata & Maskuri 709 (holotype BO!; isotypes K!, L!).

<http://www.ipni.org/urn:lsid:ipni.org:names:77187264-1>

Tree to 5 m tall, 10 cm diam. *Twigs* terete and slightly compressed below nodes, the bark peeling longitudinally, smooth, yellowish. *Leaves* obovate, 12.5 – 15.5 × 8 – 10 cm, upper surface yellowish brown when dry, lower paler, both surfaces glossy; base cordate, apex obtuse; petiole short, blackish c. 2 – 3 mm long; midrib channeled on upper surface and raised on the lower surface, rounded and longitudinally wrinkled in herbarium material; major lateral veins faint, interspersed with 1 – 2 indistinct minor veins; 15 – 20 pairs, c. 3 – 4 mm apart; dark oil dots numerous between major lateral veins, >100 per cm²; single intramarginal vein at base dividing into 2 near the middle, running to the apex 3 – 4 mm from margin. *Inflorescence* a terminal panicle, up to 15 cm long and 20 cm wide; >60 flowers per inflorescence, peduncles thick, winged in herbarium material. *Flower* pedicel short c. 1 – 2 mm long, pseudostipe 3 – 4 mm, hypanthial cup 3 – 4 mm, obconic or obovate. *Sepals* calyptrate and *petals* 1 – 1.2 mm, free but coherent and falling as a cap. *Stamens* few, c. 30 – 60. *Ovary* 2-locular; *style* c. 5 mm. *Fruits* unknown. Fig. 1.

RECOGNITION. *Syzygium namosialangense* resembles *S. cuminii* (L.) Skeels but differs in possession of coriaceous leaves that dry yellowish (vs membranaceous and brown in *S. cuminii*), coherent petals (vs free petals in *S. cuminii*) and yellowish winged peduncles (vs terete in *S. cuminii*) in herbarium material.

DISTRIBUTION. *Syzygium namosialangense* is known only from the type locality, Bukit Lawang Map 1.

SPECIMENS EXAMINED. INDONESIA. North Sumatra, Namosialang, Bukit Lawang, Bohorok, Wiriadinata & Maskuri 709 (holotype BO!; isotypes K!, L!).

ECOLOGY. *Syzygium namosialangense* is found in primary forest at c. 400 m alt.

CONSERVATION STATUS. Vulnerable (DD). This species is known only from a single locality: a ‘very small or restricted population’ of the IUCN (2017) threat criteria. Bukit Lawang is on the river Bohorok, on the eastern outskirts of the Gunung Leuser national park and is home to the WWF established Orang Utan park. Forest surrounding Bukit Lawang is now popular for tourism while the remaining primary forest remains under threat from agriculture and logging. This area has not been subject to recent floristic surveys, however, and it is impossible to determine the abundance of this taxon or specific threats to it.

ETYMOLOGY. The epithet *namosialangense* refers to the North Sumatran province, Namo Sialang, from where it is known.

NOTES. *Syzygium namosialangense* is a very distinctive small tree closely related to *S. cuminii* but the inflorescence is terminal rather than axillary and on old branches. Further field work is required in and around Bukit Lawang, to recollect this species, particularly fruiting material.

***Syzygium padangense* Widodo & E. Lucas sp. nov.**

Type: Indonesia, West Sumatra, South of Padang, Mt Teluk Taro, 40 m alt., *Ju Borssum W 1446* (holotype BO!; isotypes K!, L!).

<http://www.ipni.org/urn:lsid:ipni.org:names:77187265-1>

Tree to 8 m tall, up to 10 cm diam. *Twigs* compressed, smooth, yellowish brown. *Leaves* thinly coriaceous, elliptic to oblong, 10 – 19 × 6 – 9 cm; upper surface greyish dark brown, lower surface yellowish brown when dry; base cordate, rounded or truncate, apex shortly acuminate; petiole sometimes swollen, 3 – 6 mm long, sometimes curved, resembling a ‘comma’, blackish when dry; midrib impressed or narrowly channeled on the upper surface and raised on the lower surface; major lateral veins faint, interspersed with indistinct minor veins; 15 – 24 pairs, 5 – 7 mm apart, curving just before margin; intramarginal veins 2, 1 and 2 mm from margin. *Inflorescence* solitary or in fascicles or crowded slightly above the axis of the leaf. *Flowers* almost sessile, white, pseudostipe up to 3 mm long; hypanthial cup funnel shaped, up to 3 mm long including sepals. *Sepals* calyptrate and *petals* 0.3 – 0.5 mm, free but coherent falling as a cap. *Stamens* many (more than 100), 4 – 6 mm long, *style* c. 8 mm long. *Ovary* 2 locular. *Fruits* unknown. Fig. 2.

RECOGNITION. *Syzygium padangense* resembles *S. pseudoformosum* (King) Merr. & L. M. Perry, differing in possessing blackish petioles rather than yellowish in the latter species and 15 – 24 pairs of faint major lateral veins rather than 9 – 11 inconspicuous pairs.

DISTRIBUTION. *Syzygium padangense* is known only from the type locality, Mt Teluk Taro, Padang Map 1.

SPECIMENS EXAMINED. INDONESIA. West Sumatra, South of Padang, Mt Teluk Taro, 40 m alt., *Ju Borssum W 1446* (holotype BO!; isotypes K!, L!).

ECOLOGY. *Syzygium padangense* is known from secondary forest at c. 40 m alt. but is likely to also occur in associated primary forest.

CONSERVATION STATUS. Vulnerable (DD). *Syzygium padangense* is known from only a single locality. This specimen was found in the District of Bungus Teluk

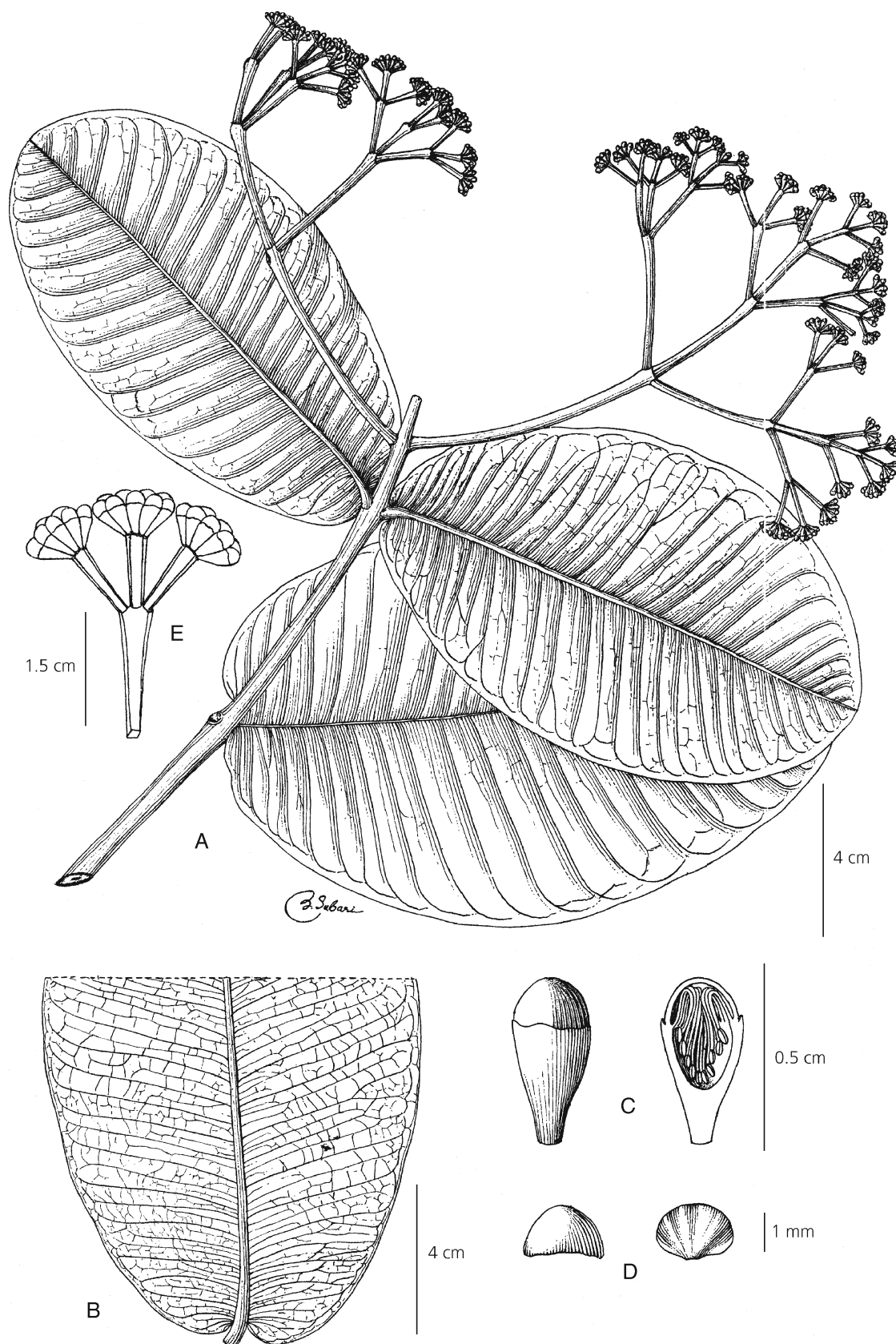


Fig. 1. *Syzygium namosialangense*. A leafy twig with inflorescence; B abaxial side of leaf base; C flower buds; D petals; E winged peduncle. From H. Wiriadinata & Maskuri 709. DRAWN BY SUBARI.

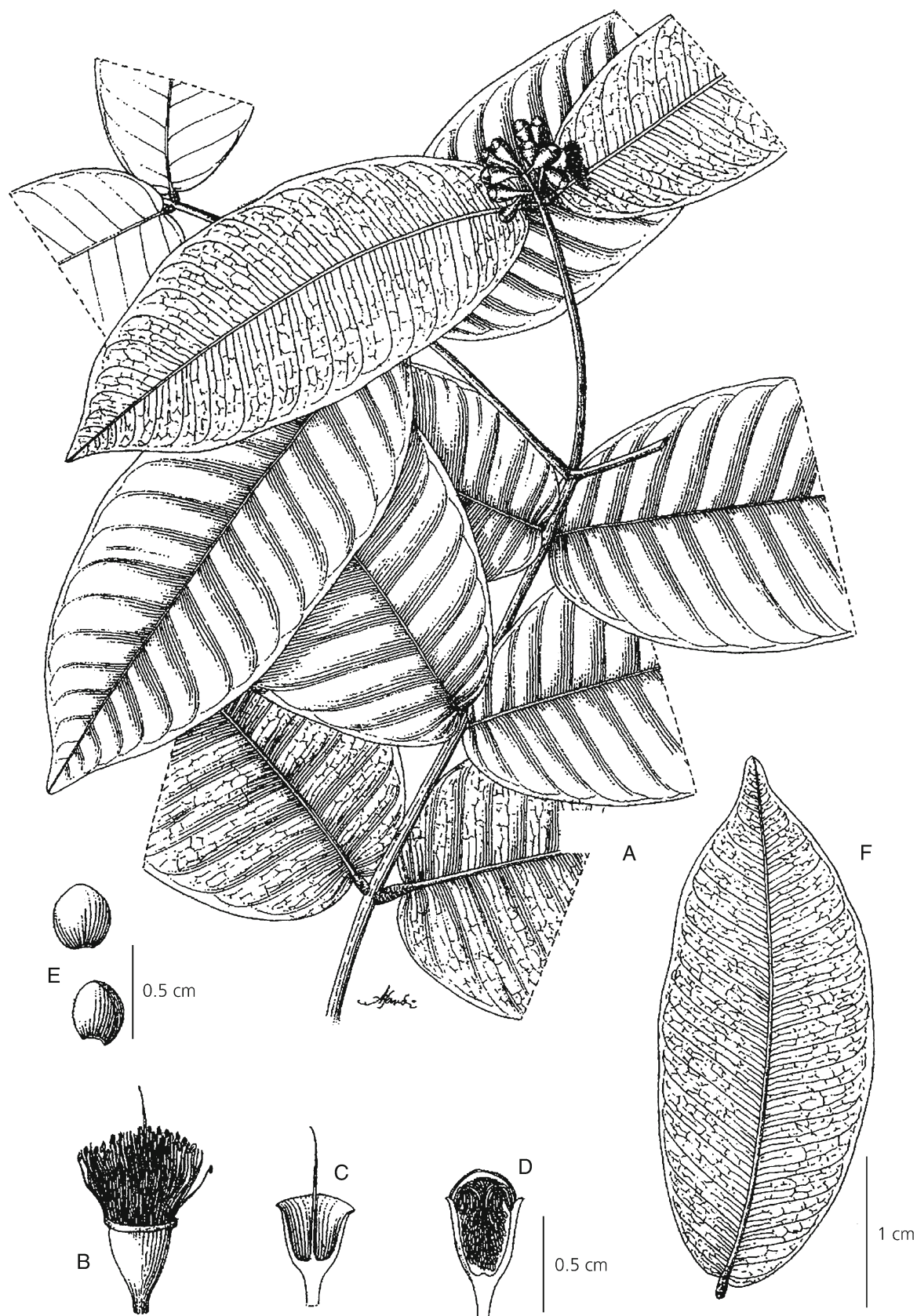
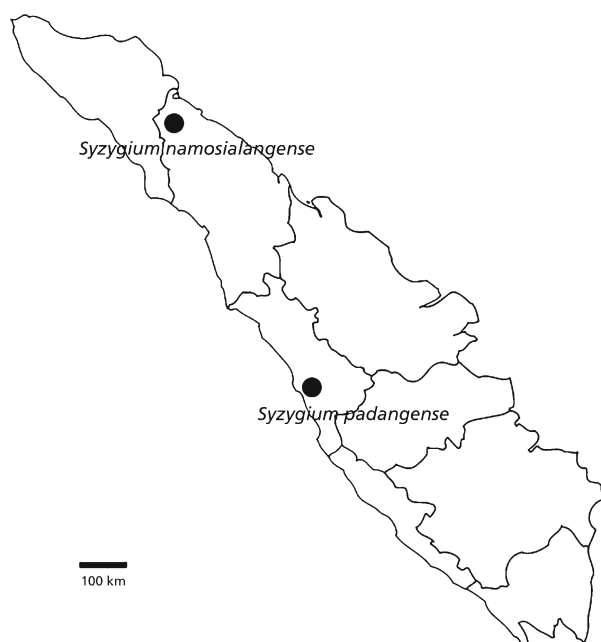


Fig. 2. *Syzygium padangense*. A flowering, leafy twig with inflorescence; B open flower; C longitudinal section of hypanthial cup with stamens removed; D longitudinal section of flower bud; E petals; F lower leaf surface. From *Jv Borssum W* 1446. DRAWN BY AFANDI AND SUBARI.



Map 1. Distribution map of *Syzygium namosialangense* and *S. padangense* (d-maps.com 2007)

Kabung, in the southernmost part of Padang City. While the area to the south of Padang remains relatively well forested, this area has no formal protection. The area has not been subject to recent floristic surveys, making it impossible to determine the abundance of this taxon or specific threats to it.

ETYMOLOGY. The epithet *padangense* refers to Padang, the capital of Indonesia's West Sumatra province, near its type locality.

NOTES. *Syzygium padangense* is a very distinctive small tree characterised by slender, flexible twigs, yellowish drying leaves, with inflorescences solitary or in clusters or crowded slightly above the axis of the leaf. Further collections must be made in the type vicinity and targeted to recollect this poorly known entity, particularly in fruit.

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