

***Syzygium* (Myrtaceae): Monographing a taxonomic giant via 22 coordinated regional revisions**

SYZYGIUM WORKING GROUP¹

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Syzygium Gaertn. is the largest woody genus of flowering plants in the world. Unpublished but extensive recent herbarium surveys suggest 1200–1800 species distributed throughout the Old World tropics and subtropics (Table 1). Until recently, *Syzygium* exemplified a recurring taxonomic impediment among megadiverse genera, wherein few taxonomists worked on the group in any sustained manner, a majority of the herbarium specimens remained undetermined or misidentified, few if any attempts were made to look at the genus globally, and limited or no molecular studies were available to provide a predictive phylogenetic context of the genus. The situation with *Syzygium* has slowly begun to change as allied genera have been absorbed into the genus (Biffin *et al.*, 2006; Craven & Biffin, 2010), and predictive phylogenetically-based infrageneric classifications are emerging. Taxonomic outputs on *Syzygium* also have been increasing across its range with the description of new species, resolution of nomenclatural and typification issues, and some regional revisions being initiated or updated. However, virtually all regional treatments (which some areas lack) need urgent revision because they are severely outdated, have limited molecular sampling and are error-ridden. We are coordinating a genus-wide taxonomic update of *Syzygium* through a series of 22 regional revisions, including 9 in the *Flora Malesiana* region (Figure 1). Each treatment will include a phylogenetic framework with species descriptions, type information, synonymy, distributions, ecological notes, and keys. Field images (Figure 2) and/or line drawings will be included with the goal of every species being illustrated. This working group has been formed to encourage a coordinated effort to document this unwieldy taxonomic giant and regional botanists working on the group are encouraged to be involved. A robust taxonomy of the genus is a prerequisite for testing the many complex questions about evolution and ecology that *Syzygium* could help address.

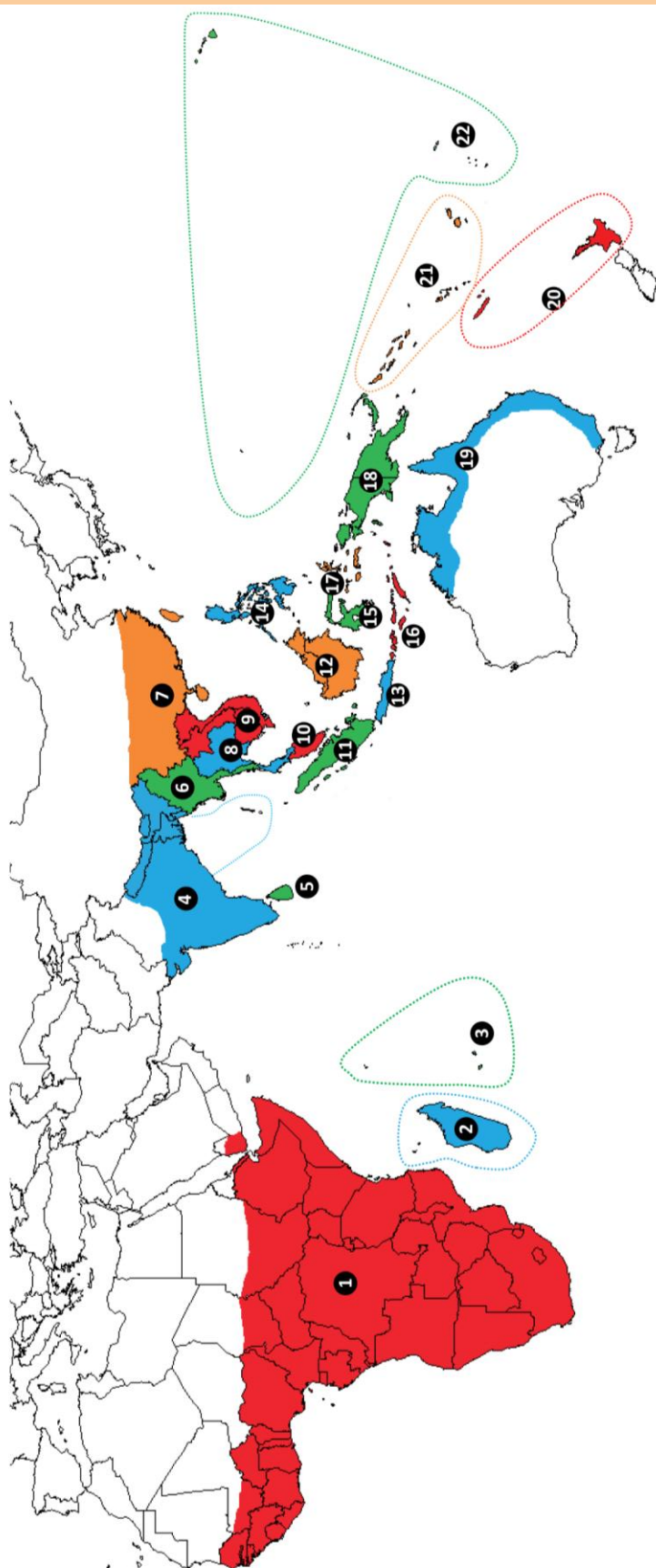


Figure 1. The regional revisions being prepared.

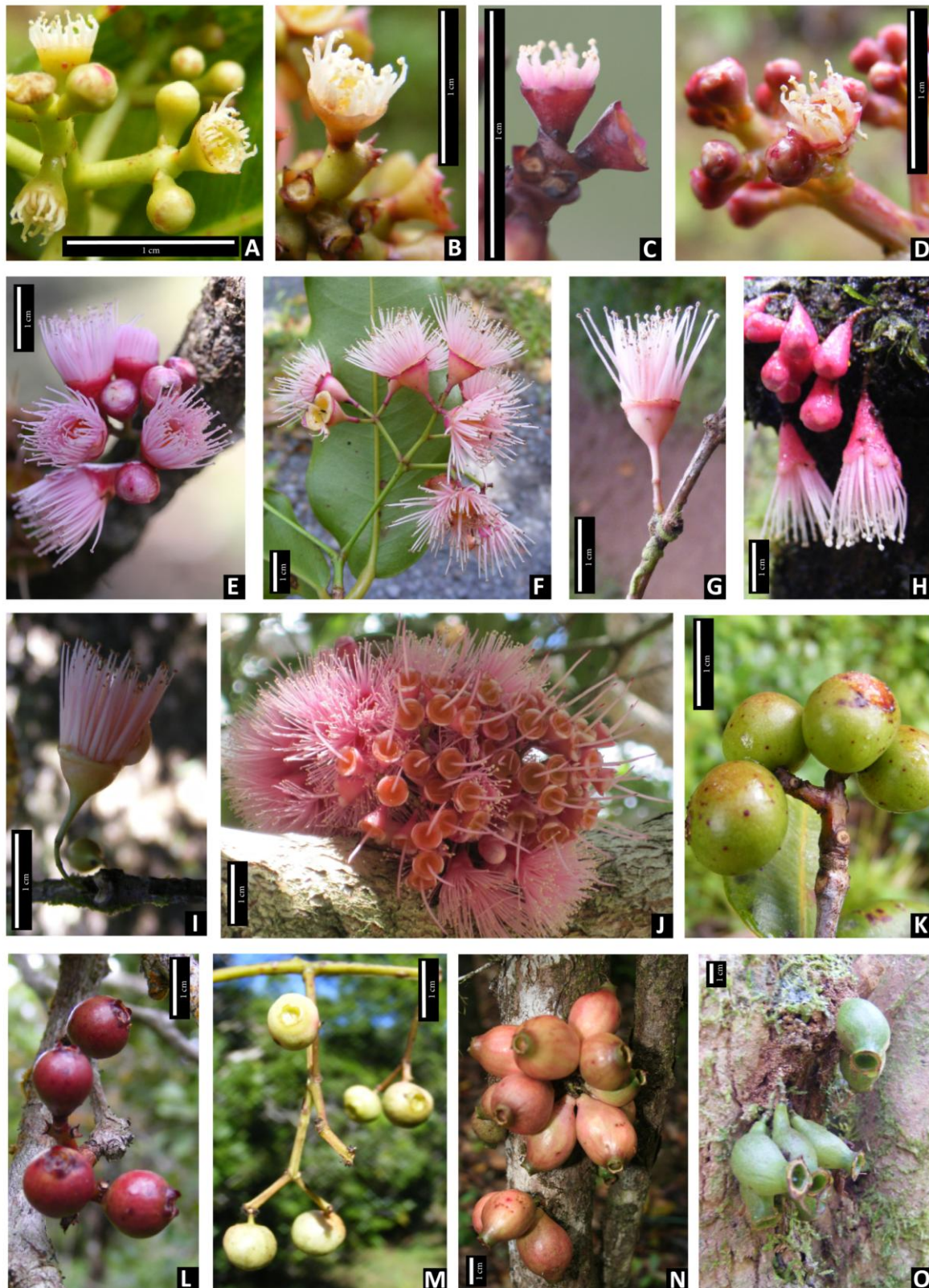


Figure 2. Example of field images of Mascarene species. **A.** *S. glomeratum*. **B.** *S. contractum*. **C.** *S. latifolium*. **D.** *S. coriaceum*. **E.** *S. mauritianum*. **F.** *S. cymosum*. **G.** *S. cadetii*. **H.** *S. mamillatum*. **I.** *S. commersonii*. **J.** *S. guehooii*. **K.** *S. glomeratum*. **L.** *S. coriaceum*. **M.** *S. rampans*. **N.** *S. mauritianum*. **O.** *S. mamillatum*. E, J & N by C. Baider and all other photos by J.W. Byng.

Table 1. The twenty-two regional revisions being prepared towards a global monograph on *Syzygium*, with current and estimated diversity and notable references. † Estimated figures are following sorting of herbarium specimens at K, L, MO, P and WAG.

| Region | Current taxa | Estimated taxa [†] | Notable references |
|--|--------------|-----------------------------|---|
| 1. Continental Africa | 31 | 25 | Keay (1954), Amshoff (1966, 1970), Boutique (1968), White (1978), Verdcourt (2001), Coates-Palgrave (2002) |
| 2. Madagascar and the Comoros archipelago | 25 | 35 | Perrier de la Bâthie (1952, 1953), Labat & Schatz (2002), Snow (2010), Byng (2015), Byng <i>et al.</i> (2015b, 2016) |
| 3. Mascarenes (Mauritius, La Réunion, Rodrigues) and Seychelles Islands | 20 | 22 | Baker (1877), Scott (1980, 1990), Bosser <i>et al.</i> (1987), Friedmann (1994), Bosser & Florens (2000), Byng <i>et al.</i> (2015a) |
| 4. Indian subcontinent (Andaman Islands, Bangladesh, Bhutan, India, Nepal) | 86 | 89 | Wight (1841), Duthie (1878-9), Kanjilal <i>et al.</i> (1938), Chithra (1983), Long & Rae (1991), Saldanha (1996), Almeida (1998), Nayar <i>et al.</i> (2006), Shareef <i>et al.</i> (2012, 2013, 2014), Sujanapal <i>et al.</i> (2013), Ramana <i>et al.</i> (2014), Byng <i>et al.</i> (2015c) |
| 5. Sri Lanka | 36 | 37 | Ashton (1981), Kostermans (1981) |
| 6. Myanmar | 50 | 90 | Kurz (1873, 1877), Mason (1951), Kress <i>et al.</i> (2003) |
| 7. China | 80 | 95 | Merrill & Perry (1938a, 1939b), Chen & Craven (2007) |
| 8. Thailand | 96 | 105 | Craib (1931), Chantaranothai & Parnell (1993, 1994, 2002), Chantaranothai (2001, 2014) |

| | | | |
|---|-----|-----|---|
| 9. Indochina (Cambodia, Laos, Vietnam) | 56 | 60 | Merrill & Perry (1938b), Soh & Parnell (2011, 2015) |
| 10. Peninsular Malaysia | 140 | 180 | King (1901), Henderson (1949), Turner (1995), Kochummen (1995) |
| 11. Sumatra | 90 | 175 | Blume (1849), Widodo (2011a, b), Widodo <i>et al.</i> (2010) |
| 12. Borneo | 192 | 250 | Blume (1849), Merrill & Perry (1939a), Davis (1997), Ashton (2006, 2011) |
| 13. Java | 62 | 80 | Blume (1849), Amshoff (1944, 1945), Veldkamp (2003) |
| 14. Philippines | 190 | 185 | Robinson (1909), Elmer (1912, 1914), Merrill (1915, 1921, 1923, 1951) |
| 15. Sulawesi | 14 | 105 | Blume (1849) |
| 16. Lesser Sunda Islands | 9 | 45 | N/A |
| 17. Moluccas | 14 | 65 | Blume (1849) |
| 18. New Guinea | 190 | 250 | Ridley (1916), Diels (1922, 1916), Hartley & Craven (1977), Merrill & Perry (1942a), Hartley & Perry (1973), Takeuchi (2002, 2015), Snow & Craven (2010), Conn & Damas (2015) |
| 19. Australia | 78 | 78 | Hyland (1983), Craven (2003), Craven <i>et al.</i> (2005) |
| 20. Melanisia (incl. Fiji, Solomon Islands, Vanuatu) | 66 | 75 | Merrill & Perry (1942a, 1942b), Perry (1950), Smith (1985), Whitmore (1967), Craven <i>et al.</i> (2005), Tuiwawa <i>et al.</i> (2013) |
| 21. New Caledonia (incl. Lord Howe Island, New Zealand) | 75 | 100 | Dawson (1999), Snow <i>et al.</i> (2016, in prep.) |
| 22. Polynesia (incl. Hawaii, Niue, Samoa, Tonga) and Micronesia | 23 | 25 | Melville (1955), Yuncker (1959), Whistler (1988), Snow & Veldkamp (2010), Costion & Lorence (2012), Tornabene & Wagner (2013) |

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