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RESEARCH ARTICLE

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An updated identification guide to the species of *Amorphophallus* (*Araceae*): new synonyms and a set of global dichotomous keys

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Key words

Amorphophallus
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identification
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Abstract This work presents updated dichotomous keys to the *Amorphophallus* (*Araceae*) species of the world based on morphological characters of the inflorescence. It is a compilation of data derived from herbarium specimens, living specimens, protologues, and following papers outlining taxonomic updates to the genus. Three new synonyms are proposed and a general key including 239 species of *Amorphophallus* distributed across the African, Asian, and Australian continents is included. Ten additional subkeys are provided by geographical subregion, making identification streamlined if the locality of the specimen is known. The aim of this paper is to make identification of *Amorphophallus* species accessible through a single manuscript, serving not only the research sector, but also citizen science. This guide provides a rapid and accurate means of species identification, directly benefiting data collection and assisting in species conservation.

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INTRODUCTION

On the global scale, *Amorphophallus* Blume is a genus of *Araceae* with remarkable morphological, taxonomic, geographic, and ecological variation (Mayo et al. 1997). Total species estimates vary, but based on protologue searches, taxonomic checklists, and previous regional treatments, 239 accepted species are included here. Recent fieldwork endeavors have recovered many more undescribed species, which brings the estimated total number of species potentially over 300, making *Amorphophallus* one of the most species-rich genera in *Araceae* (Boyce & Croat 2011). The genus inhabits tropical and subtropical zones of the Palaeotropics from West Africa to Melanesia with the most taxonomic diversity occurring in Southeast Asia and notable diversity also occurring in Central Africa (Fig. 1).

The morphological diversity found within *Amorphophallus* is among the highest of all genera of *Araceae*, particularly with respect to plant size, inflorescence forms, and volatile emission (Hetterscheid & Ittenbach 1996). Leaf size is perhaps the most remarkable, ranging from 2 cm–5 m long and 3 cm–7 m diam between the smallest (*A. pusillus* Hett. & Serebryanyi) and largest species (*A. titanum* (Becc.) Becc.) followed by extensive variation also in peduncle patterning, appendix shape, staminodal morphology, and spathe coloration (Claudel et al. 2017) (Fig. 3–8).

Amorphophallus was first characterized by Blume (1837) and recharacterized to incorporate the inclusion of *Thomsonia* Wall. and *Plesmonium* Schott (Bogner et al. 1985) and later *Pseudodracontium* N.E.Br (Hetterscheid & Claudel 2012a). The first reclassification was conducted exclusively on morphological data, while the second incorporated the inclusion of molecular data. Since, abundant molecular data has been used in phylogenetic context to support the recent reclassifications (Grob et al. 2004, Sedayu et al. 2010, Claudel et al. 2017).

Despite the high species richness, morphological diversity, and allure by hobbyists, shockingly few professional botanists are actively researching and publishing new phylogenetic and taxonomic knowledge in *Amorphophallus*, with most of the molecular research being focused on *A. konjac* K.Koch and *A. muelleri* Blume, two agriculturally-important species (Zhao et al. 2010, 2021, Deng et al. 2011, Zhao 2012, Arofatun Nikmah et al. 2016, Behera & Ray 2016, Gao et al. 2022). In the past fifteen years, several important efforts have been underway to understand the phylogenetic relationships within *Amorphophallus* (Sedayu et al. 2010, Claudel et al. 2017, Kite & Hetterscheid 2017), but much less about the taxonomic and morphological relationship between these species is known. The cause of the above knowledge gap is likely rooted in the fast capacity to generate publishable results from molecular data whereas taxonomic and morphological studies require more time and are assembled by fewer specialists (Tripp & Darbyshire 2017).

Throughout the past 30 years, less than ten individuals are making active contributions to the taxonomic and morphological knowledge of the genus, delaying our progress to further understand the morphological evolution, species boundaries, and diversity of *Amorphophallus*. Recent progress has been most notable in Africa (e.g., Malaisse & Bamps 1993, Ittenbach & Lobin 1997, Hetterscheid et al. 1999, Bogner 2003, Hetterscheid & Mangelsdorff 2006, Hetterscheid & Claudel 2014), Eastern Asia (e.g., Van Alderwerelt 1920, Hetterscheid 1994, Long & Li 2000, Li & Dao 2006, Yin et al. 2016), Southeast Asia (e.g., Bogner & Hetterscheid 1992, Hetterscheid 1994, 2003, 2006, Hetterscheid & Van der Ham 2001, Ipor et al. 2004, 2007,

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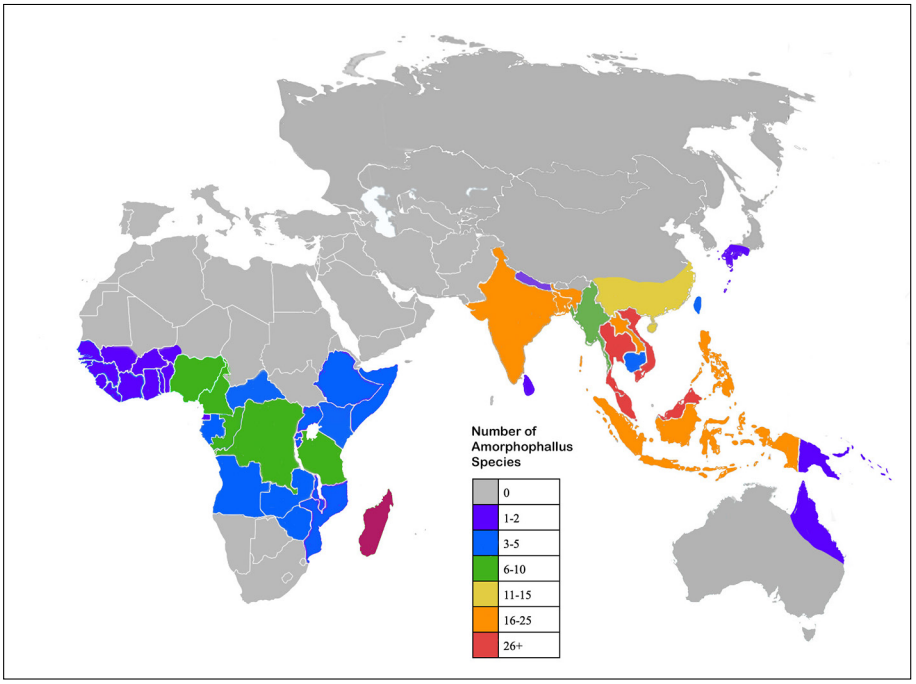

Fig. 1 Global species richness of *Amorphophallus* by country. Countries are partially colorized where *Amorphophallus* species are localized to only specified regions.

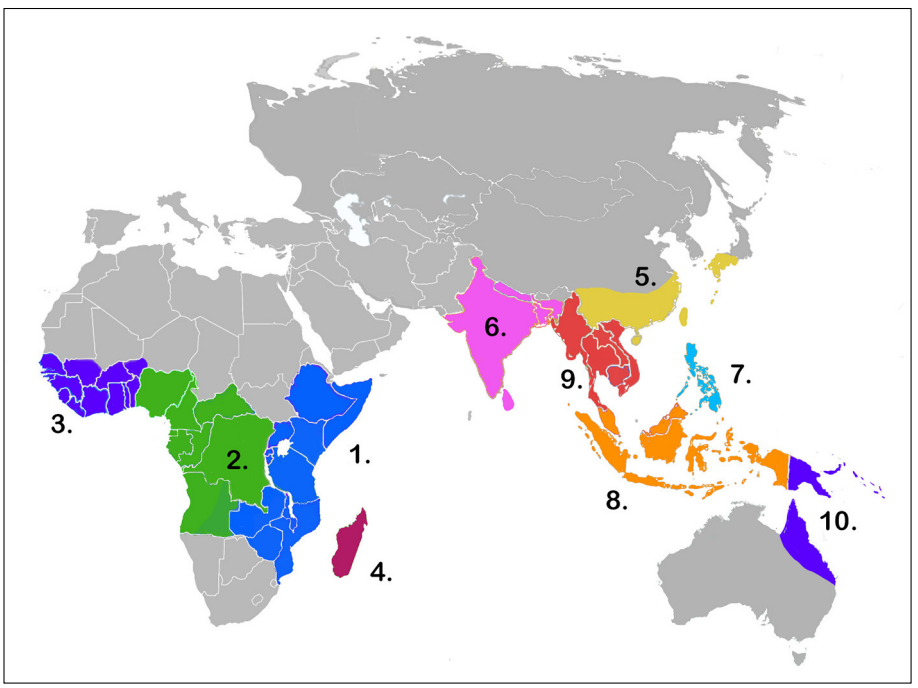

Fig. 2 Geographical dichotomous subkey assignments corresponding with species range (i.e., if a taxon is found in region 1, subkey 1 is to be used).

2010, Boyce et al. 2010, 2012, Gong & Li 2012, Galloway 2012, 2015, Hetterscheid & Claudel 2012a,b, 2013, Hetterscheid et al. 2020, Magtoto et al. 2013, Nguyen et al. 2016, 2018, Galloway et al. 2019a,b,c, Yuzammi & Hetterscheid 2020, Bustamante et al. 2020, 2021, Tamayo et al. 2021, Bulawin et al. 2022, Calaramo et al. 2022), and Western Asia (e.g., Hetterscheid 1994, Sivadasan et al.1994, Bogner 1995, Sivadasan & Jaleel 2009, Yadav et al. 2009, Gadpayale et al. 2017). These works have largely formed the contemporary understanding of morphological species boundaries in the genus.

The identification key to the species of *Amorphophallus* included here encompasses the synthesis of information from the past 185 years of taxonomic, phylogenetic, floristic, and morphologic research in the genus. For the first time, a dichotomous key to all 239 recognized species of *Amorphophallus* is presented, along with numerous additional geographically-structured subkeys and new synonyms.

METHODS

Keys to the species of *Amorphophallus* were prepared based on the extensive survey of: 1) protologue descriptions (see Appendix); 2) recent morphological works; 3) living specimens; and 4) herbarium specimens. A list of accepted species was prepared based on the opinion of the author, which was informed by numerous published works (see Appendix).

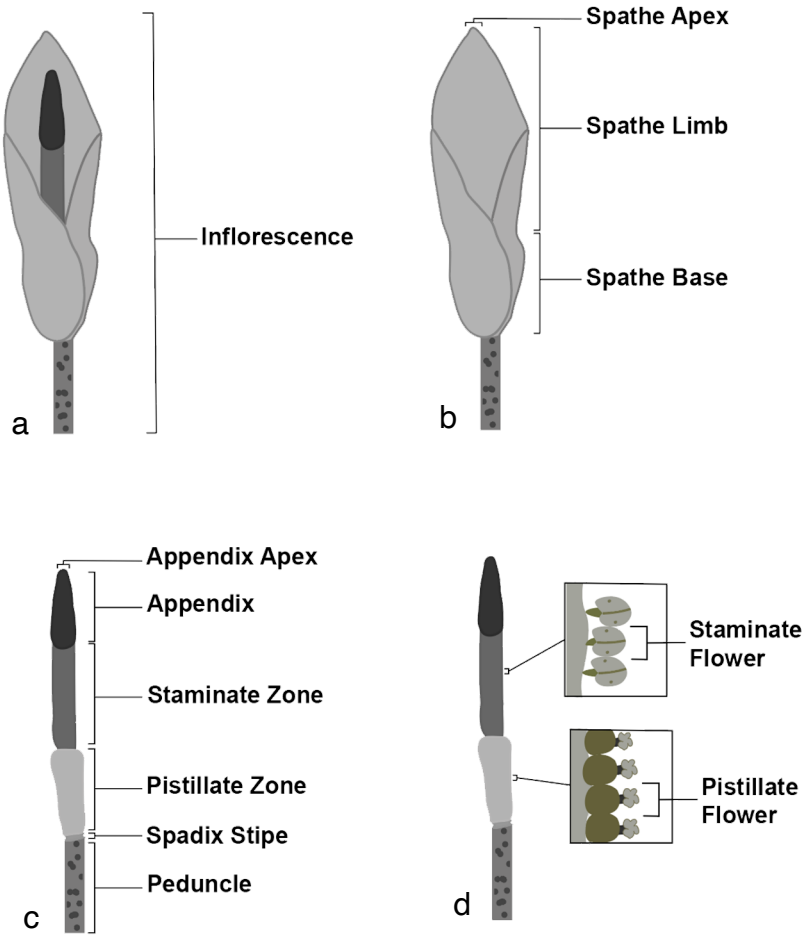

Fig. 3 Anatomy of an *Amorphophallus* inflorescence. a. Inflorescence; b. morphological terms for basic spathe anatomy; c. morphological terms for basic spadix anatomy; d. individual staminate and pistillate flowers.

Morphological features of the inflorescence were exclusively used during the construction of the dichotomous keys. Phenotypic features of the leaf and tuber are subject to environmental conditions causing them to often be variable and of little taxonomic value. Inflorescence morphology has long been utilized for the taxonomic diagnoses of nearly every species in *Amorphophallus* and is subsequently adopted here. The subkeys are divided by geographic region (Fig. 2). For the definition of included morphological terms, an illustrated glossary of common *Amorphophallus* inflorescence morphology is provided (Fig. 3–8).

RESULTS

New synonyms

Amorphophallus angolensis (Schott) N.E.Br.

Amorphophallus angolensis (Schott) N.E.Br. (1901) 156. — *Hydrosme angolensis* Welw. ex Schott (1865)35. — *Corynophallus angolensis* (Welw. ex Schott) Kuntze (1891) 741. — Type: *F. Welwitch 228_2* (holo LISU [LISU224515]), Angola, Malanje, Pungo Andongo.

Amorphophallus hetterscheidii Ittenb. & Lobin (1997) 152. — Type: *W.L.A. Hetterscheid H.AM 266-T* (holo L! [spirit coll.]). Cultivated from *Van der Maesen & De Wilde s.n.*, Gabon, Libréville, Sibang Forest, 20 January 1993, *syn. nov.*

Discussion — *Amorphophallus angolensis* was described from northwestern Angola in a lowland habitat of the Pungo Andongo Black Rocks formation near the town of Malanje, whereas the type locality of *A. hetterscheidii* Ittenb. & Lobin is east of Libréville in northwestern Gabon. The diagnostic features of *A. hetterscheidii* that differentiate it from *A. angolensis* (as outlined by Ittenbach & Lobin 1997) are a less sigmoid spadix, stigmas that are not as strongly lobed, and a spathe in which the base and limb are separated by a slightly shallower constriction. After studying several specimens from both regions, it is found that *A. hetterscheidii* is indistinguishable from *A. angolensis* when herbarium material is compared. Living collections of individuals from each region displayed minor detectable differences in the degree of stigma lobing and spathe constriction. However, these differences were not significant and are further obscured by the existence of intermediate specimens. Ergo, the recognition of *A. hetterscheidii* as a distinct species is inadvisable and here synonymized with *A. angolensis*.

Amorphophallus bufo Ridl.

Amorphophallus bufo Ridl. (1909) 89. — Syntypes: *C.B. Closs s.n.* (K [K000291438]), [Malaysia,] Selangor, Langut; *H.N. Ridley 13846* (SING [SING0043531, SING0043532]), [Malaysia,] Pahang, Telom).

Amorphophallus manta Hett. & Ittenb. (1994) 263. — Type: *Ittenbach s.n.* (in cult.) (holo BONN [spirit coll.]), [Germany,] Bonn Botanical Garden, 23 Feb. 1994, from *Kielmann s.n.*, [Indonesia,] Sumatera, Harau Gorge, July 1992, *syn. nov.*

Discussion — *Amorphophallus bufo* was described from Peninsular Malaysia, whereas *A. manta* was described from the neighboring island of Sumatera. *Amorphophallus manta* was distinguished from *A. bufo* in having a spadix equally long as the spathe, an indistinct style, and distant anthers with longer filaments. The description (Ridley 1909) in the protologue explicitly states that the spadix is as long as the spathe, and that the stigma is discord (presumably to be interpreted as variable in shape); therefore, the first pair of aforementioned diagnostic characters are subsumed by the variability encompassed by

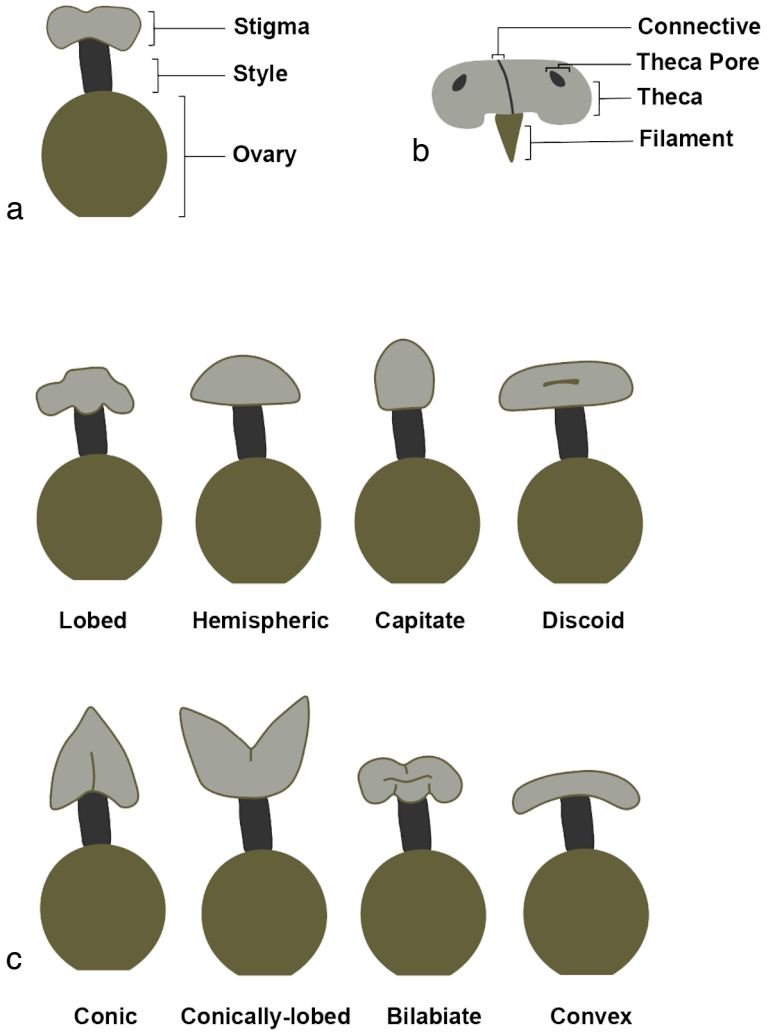

Fig. 4 Basic morphological terms for features of the sexual organs. a. Pistillate flower; b. staminate flower; c. common variations in stigma morphology.

A. bufo. Filament length and anther density were also found to be quite variable in both living and herbarium specimens of individuals from either region, with specimens displaying intermediate phenotypes for both characters; ergo, *A. manta* is here synonymized with *A. bufo*.

Amorphophallus konjac K.Koch

Amorphophallus konjac K.Koch (1858) 166. — Neotype (designated by Hetterscheid 1994): *Forrest 20812* (neo E [E00279694, E00317887]), [China,] Fa-Ping-Pee, Yang-Pi.

Amorphophallus rivierei Durieu ex Carrière (1871) 573. — Type: *Collection unknown* (in cult.), [France,] Paris, Jardin de Luxembourg (orig. col. [Vietnam,] Cochinchine).

Amorphophallus nanus H.Li & C.L.Long (1988) 8. — Type: *Hen & Long Chun-lin 8804* (holo KUN), [China,] Yunnan, Gejiu, 15 Apr. 1988, *syn. nov.*

Discussion — *Amorphophallus nanus* was described from type material from southern China, which is within the accepted range of *A. konjac*. *Amorphophallus nanus* was distinguished from *A. konjac* in having a short peduncle and paler (purple) spathe. *Amorphophallus konjac* is one of the most widely cultivated species of *Amorphophallus*, with a plethora of agricultural and horticultural uses (Gao et al. 2022). As a result, at least a dozen cultivars of *A. konjac* exist in cultivation, which has made parsing the natural morphological variation of this species a challenge to systematists. *Amorphophallus nanus* is indistinguishable from several short-peduncled cultivars of *A. konjac*, specifically *A. konjac* 'Pinto' (AGA-2450) and *A. konjac* 'Dwarf' (AGA-1408), supporting its taxonomic reclassification as a synonym and perhaps a short-peduncled ecotype of *A. konjac*.

GLOBAL KEY TO THE SPECIES OF AMORPHOPHALLUS

1. Spadix distinctly longer than spathe 2
1. Spadix shorter or approximately equal to spathe . . . 161
2. Appendix covered in filiform processes 3
2. Appendix not covered in filiform processes 11
3. Appendix light yellow or orange 4
3. Appendix red or dark green 5
4. Spathe limb interior mottled . . . . . *A. longicomus*
4. Spathe limb interior not mottled . . . . . *A. natolii*
5. Appendix apex subacute or obtuse . . . . . *A. hirtus*
5. Appendix apex acuminate 6
6. Spathe with slight or no constriction between base and limb . . . . . *A. pilosus*
6. Spathe constricted between base and limb 7
7. Peduncle longer than 45 cm 8
7. Peduncle shorter than 20 cm 9
8. Stigmas yellow/beige . . . . . *A. laoticus*
8. Stigmas grey/purple . . . . . *A. villosus*
9. Appendix bent with the apex facing away from spathe limb . . . . . *A. cirrifer*
9. Appendix erect 10
10. Spathe limb without mottling . . . . . *A. barbatus*
10. Spathe limb densely mottled . . . . . *A. crinitus*
11. Peduncle shorter or approximately equal to spadix . . 12
11. Peduncle distinctly longer than spadix 68

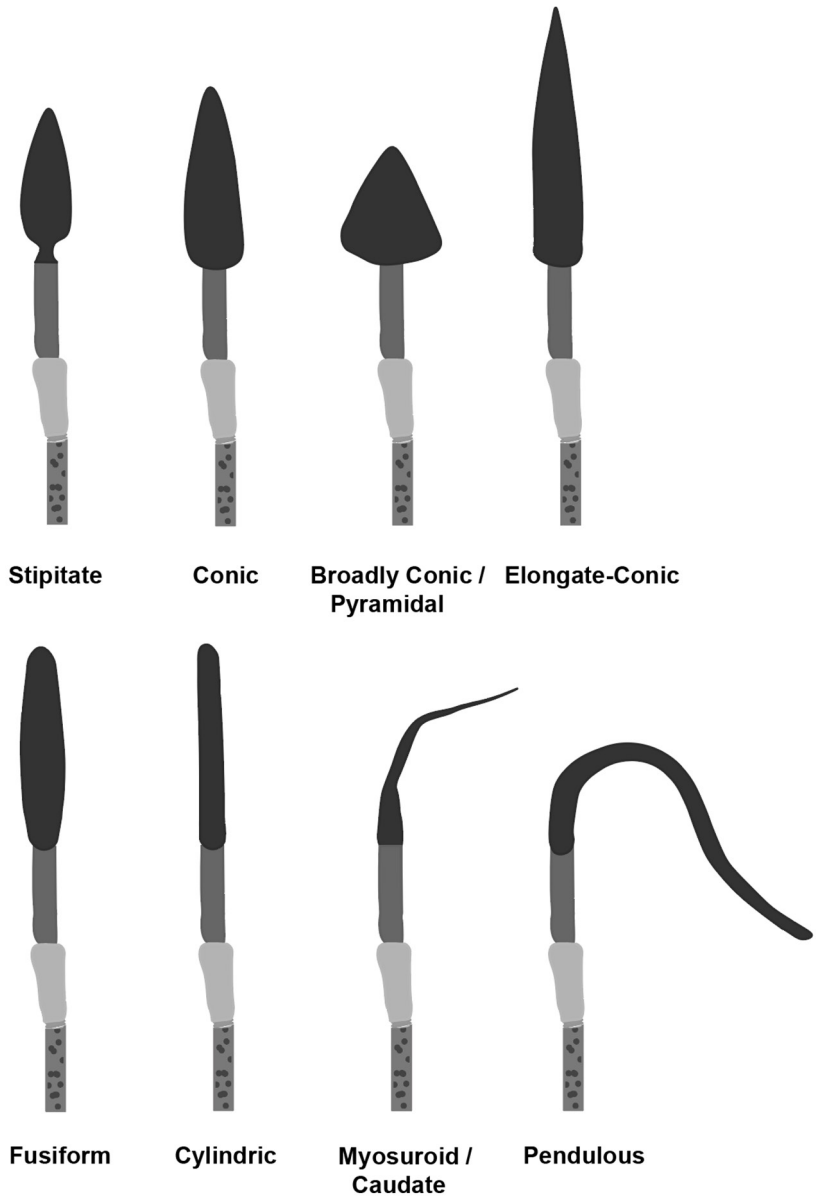

Fig. 5 Morphological terms for common variations in appendix shape.

12. Staminate zone shorter or approximately same length as pistillate zone 13
12. Staminate zone distinctly longer than pistillate zone . . 30
13. Appendix apex very acuminate or myosuroid 14
13. Appendix apex not as above 18
14. Spathe base interior with filiform processes 15
14. Spathe base interior without filiform processes 17
15. Spathe limb nearly absent; base campanulate *A. staudtii*
15. Spathe limb clearly present, separated from base by shallow constriction 16
16. Spadix short, less than 15 cm long . . . . . *A. barthlotii*
16. Spadix long, up to 60 cm long . . . . . *A. zenkeri*
17. Stigmas 4-lobed . . . . . *A. forbesii*
17. Stigmas shallowly bilobed . . . . . *A. yaoi*
18. Appendix cylindric 19
18. Appendix conic or elongate-conic 21
19. Spathe strongly constricted between base and limb . . 20
19. Spathe has slight or no constriction between base and limb . . . . . *A. infundibuliformis*
20. Stigmas subsessile . . . . . *A. canaliculatus*
20. Stigmas on pronounced red/purple styles . . . . *A. plicatus*
21. Stigmas sessile or subsessile 22
21. Stigmas on pronounced styles 23
22. Appendix free of verrucose staminodes . . . . . *A. eichleri*
22. Appendix covered in verrucose staminodes . . *A. lewallei*
23. Spadix stipitate 24
23. Spadix sessile 25
24. Spathe limb whitish with green margins, reflexing strongly as anthesis progresses . . . . . *A. prainii*
24. Spathe limb red, remaining erect throughout anthesis . . . . . *A. urceolatus*
25. Ovaries unilocular 26
25. Ovaries bilocular or trilocular 27
26. Spathe limb dark purple . . . . . *A. flammeus*
26. Spathe limb greyish pink . . . . . *A. konjac* (var. *nanus*)
27. Base of appendix distinctly broader than staminate zone 28
27. Base of appendix as broad or narrower than staminate zone . . . . . *A. tinekeae*
28. Peduncle less than 15 cm long 29
28. Peduncle greater than 25 cm long . . . . . *A. hewittii*

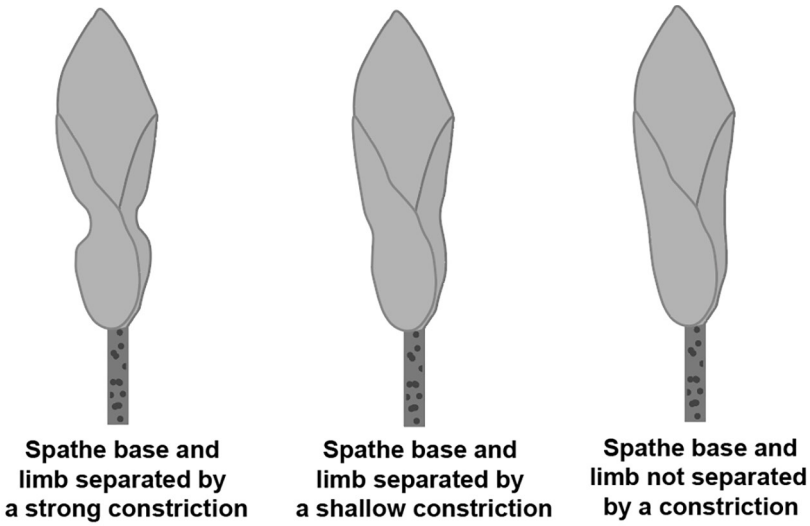

Fig. 6 Common morphologies describing the separation of the spathe base and limb.

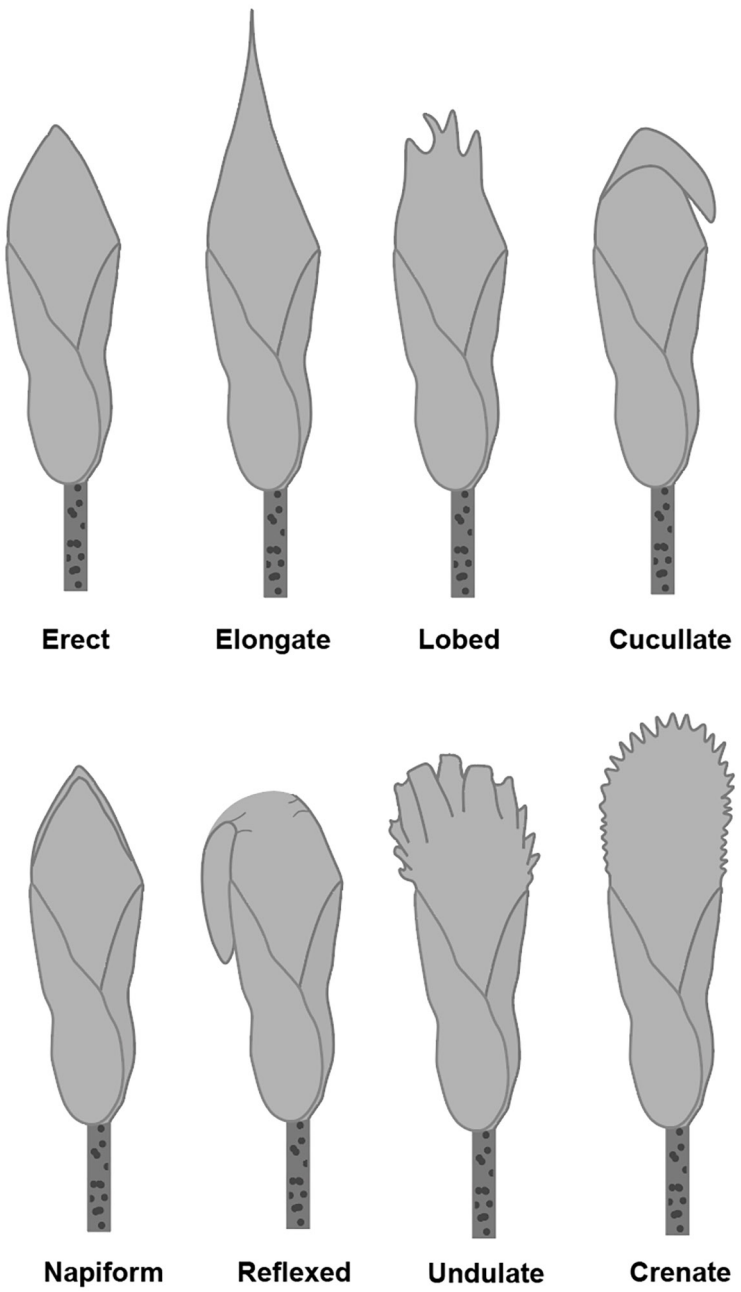

Fig. 7 Morphological terms describing common variations in the spathe limb.

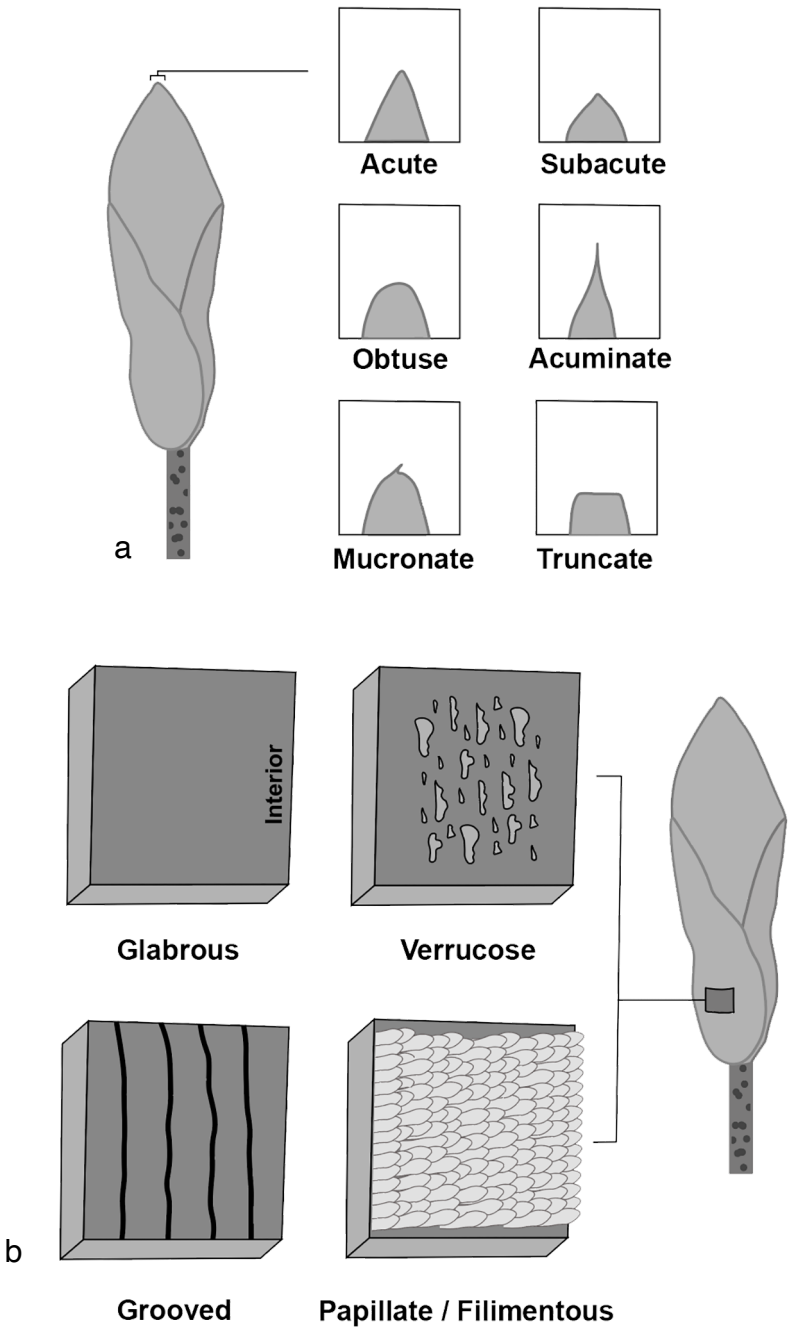

Fig. 8 Additional common spathe morphologies. a. Morphological terms describing common variations of the spathe apex; b. morphological terms describing common surface features of the spathe base interior.

29. Spadix shorter than 70 cm; spathe exterior greenish orange . . . . . *A. lambii*
29. Spadix longer than 100 cm; spathe exterior red . . . . . *A. titanum*
30. Stigmas on pronounced styles 31
30. Stigmas sessile or subsessile 45
31. Width of appendix exceeding width of staminate zone 32
31. Appendix narrower or approximately as broad as staminate zone 38
32. Inflorescence less than 10 cm long 33
32. Inflorescence greater than 20 cm long 34
33. Appendix dark purple/black. . . . . *A. aphyllus*
33. Appendix beige/light brown. . . . . *A. terrestris*
34. Spathe base interior smooth or grooved 35
34. Spathe base interior verrucose 36
35. Spathe pinkish white; limb extends well beyond staminate zone. . . . . *A. ferruginosus*
35. Spathe green; limb does not extend past staminate zone . . . . . *A. subpedatus* sp. inq.
36. Stigmas light red/purple . . . . . *A. henryi*
36. Stigmas yellow or beige. 37
37. Spathe limb reddish pink, erect . . . . . *A. paeoniifolius*
37. Spathe limb greenish white, strongly reflexive . *A. prainii*
38. Peduncle less than 2 cm long 39
38. Peduncle greater than 5 cm long 41
39. Sterile zone present between staminate and pistillate zones . . . . . *A. hemicryptus*
39. Sterile zone not present between staminate and pistillate zones 40
40. Appendix cylindric . . . . . *A. pusillus*
40. Appendix fusiform . . . . . *A. serrulatus*

41. Spathe interior and exterior green . . . . . *A. harmandii*
41. Spathe not as above 42
42. Elliptical synandrodes present between staminate and pistillate zone . . . . . *A. rayongii*
42. Synandrodes not present 43
43. Spathe limb whitish orange . . . . . *A. hottae*
43. Spathe limb dark red/purple 44
44. Appendix yellowish brown . . . . . *A. costatus*
44. Appendix reddish purple . . . . . *A. maxwellii*
45. Appendix conic or narrowly conic 46
45. Appendix cylindric or fusiform 52
46. Spathe base interior covered in filiform processes . . . 47
46. Spathe base interior smooth, grooved or verrucose . . 48
47. Spathe base interior dark red/purple . . . . . *A. goetzei*
47. Spathe base interior green . . . . . *A. johnsonii*
48. Spathe covered in large ovoid mottles . . . . . *A. muelleri*
48. Spathe not mottled 49
49. Spathe base and limb separated by strong constriction . . . . . *A. impressus*
49. Spathe base and limb not separated by strong constriction 50
50. Spathe exterior bright green . . . . . *A. sinuatus*
50. Spathe exterior grey or light purple 51
51. Sterile staminodes present between staminate and pistillate zone . . . . . *A. dzui*
51. Sterile staminodes not present . . . . . *A. brevipetiolatus*
52. Spadix stipitate 53
52. Spadix sessile 57
53. Appendix pendulous . . . . . *A. pendulus*
53. Appendix erect 54
54. Female flowers congested 55
54. Female flowers sparse 56
55. Spathe limb 10 cm or longer . . . . . *A. eburneus*
55. Spathe limb less than 1 cm long . . . . . *A. juliae*
56. Appendix white or beige . . . . . *A. brachyphyllus*
56. Appendix pink or red . . . . . *A. julaihii*
57. Sterile zone present between staminate and pistillate zone 58
57. Sterile zone not present between staminate and pistillate zone 59
58. Stigmas bilobed . . . . . *A. obscurus*
58. Stigmas 3–5-lobed . . . . . *A. smithsonianus*
59. Anthers on pronounced filaments . . . . . *A. reflexus*
59. Anthers sessile or subsessile 60
60. Staminate flowers with one apical pore 61
60. Staminate flowers with two apical pores 64
61. Spathe base interior smooth . . . . . *A. polyanthus*
61. Spathe base interior verrucose or shallowly verrucose 62
62. Spathe dark red with strong constriction between base and limb . . . . . *A. richardsiae*
62. Spathe whitish pink with no constriction 63
63. Stigmas bright yellow . . . . . *A. boyceanus*
63. Stigmas dark red/purple . . . . . *A. infundibuliformis*
64. Appendix pendulous . . . . . *A. pendulus*
64. Appendix erect 65
65. Strong constriction between spathe base and limb . . . 66
65. Very shallow or no constriction between spathe base and limb 67
66. Appendix less than 3 cm long . . . . . *A. mildbraedii*
66. Appendix longer than 20 cm . . . . . *A. mullendersii*
67. Anthers whitish yellow . . . . . *A. fontarumii*
67. Anthers red/purple . . . . . *A. ranchanensis*
68. Stigmas sessile or subsessile 69
68. Stigmas on pronounced styles 109
69. Sterile zone present between staminate and pistillate zone 70
69. Sterile zone not present between staminate and pistillate zone 73
70. Sterile zone composed of narrowly conic filaments . . . . . *A. longiconnectivus*
70. Sterile zone not as above 71
71. Appendix less than 4 cm long, strongly attenuate . . . . . *A. bhandarensis*
71. Appendix longer than 4 cm long, cylindric or subulate 72
72. Staminate zone 1.5–3 cm long; flowers slightly distant . . . . . *A. konkanensis*
72. Staminate zone up to 6.5 cm long; flowers congested . . . . . *A. myosorensis*
73. Spadix stipitate 74
73. Spadix sessile 78
74. Spathe limb dark red 75
74. Spathe limb not as above 76
75. Stigmas are hemispheric or slightly depressed . . . . . *A. declinatus*
75. Stigma contains one lobe that is elongate-conic . . . . . *A. rostratus*
76. Ovaries purple/red . . . . . *A. niahensis*
76. Ovaries green 77
77. Anthers yellow/beige . . . . . *A. baumannii*
77. Anthers red/pink . . . . . *A. hayi*
78. Appendix cylindric or fusiform 79
78. Appendix conic or elongate-conic 88
79. Peduncle longer than 40 cm long 80
79. Peduncle shorter than 25 cm long 82
80. Staminate zone covered in translucent filiform processes . . . . . *A. lanuginosis*
80. Staminate zone not covered in filiform processes 81
81. Appendix longer than 25 cm . . . . . *A. gliruroides*
81. Appendix shorter than 10 cm . . . . . *A. purpurascens*
82. Appendix covered in shallow staminodes . *A. verticillatus*
82. Appendix not as above 83
83. Spathe limb apex mucronate 84
83. Spathe limb apex acuminate 86
84. Staminate zone and pistillate zone approximately equal in length . . . . . *A. gracilis*
84. Staminate zone approximately 10 times the length of the pistillate zone 85
85. Appendix greenish yellow; arching upwards . *A. claudelii*
85. Appendix off-white/beige; pendulous . . . . . *A. pulchellus*
86. Spathe limb erect at anthesis . . . . . *A. ongsakulii*
86. Spathe limb strongly reflexed at anthesis 87
87. Stamens becoming thinly distributed toward the appendix . . . . . *A. gracilior*
87. Stamens densely arranged throughout the staminate zone . . . . . *A. mangelsdorffii*
88. Appendix stipitate 89
88. Appendix sessile 92
89. Appendix very elongate, 2–3 times the length of the spathe . . . . . *A. elatus*
89. Appendix not as above 90
90. Ovaries red/purple . . . . . *A. bufo*
90. Ovaries green 91

91. Spathe base lightly convolute; limb apex acute . . . . . *A. angustispathus*
91. Spathe base heavily convolute; limb apex obtuse . . . . . *A. cruddasianus*
92. Spathe base interior covered in filiform processes . . . . . *A. calabaricus*
92. Spathe base interior not as above. 93
93. Spathe base and limb separated by clear constriction 94
93. Spathe base and limb separated by little or no constriction. 96
94. Spathe densely covered in beige ovoid mottles . . . . . *A. kiusianus*
94. Spathe not as above 95
95. Spathe base exterior dark red/purple . . . . *A. maximus*
95. Spathe base exterior bright green . . . . . *A. merrillii*
96. Spathe limb short, constitutes less than 1/3 of spathe length 97
96. Spathe limb long, constitutes at least 2/3 of spathe length 102
97. Spathe exterior dark red . . . . . *A. bequaerti*
97. Spathe exterior white, green, or pink 98
98. Anthers bright pink . . . . . *A. elegans*
98. Anthers white/beige 99
99. Appendix orangish red . . . . . *A. rhizomatosus*
99. Appendix white or green 100
100. Peduncle mottled . . . . . *A. tuberculatus*
100. Peduncle not mottled 101
101. Peduncle uniformly green . . . . . *A. brevispathus*
101. Peduncle reddish brown . . . . . *A. prolificus*
102. Appendix slender, nearly half as broad as the staminate zone . . . . . *A. macrorhizus*
102. Appendix not as above 103
103. Appendix dark red or purple 104
103. Appendix green, yellow, or whitish 105
104. Spathe limb whitish . . . . . *A. ankarana*
104. Spathe limb dark red . . . . . *A. commutatus*
105. Staminate zone as long or much longer than appendix 106
105. Staminate zone distinctly shorter than appendix. . . 107
106. Appendix lacks staminodes . . . . . *A. carneus*
106. Appendix with shallow staminodes toward base . . . . . *A. excentricus*
107. Peduncle more than 120 cm long . . . . . *A. asper*
107. Peduncle shorter than 40 cm 108
108. Spathe exterior covered in green or purple mottles . . . . . *A. nicolsonianus*
108. Spathe exterior not mottled; greenish white . . . . . *A. vogelianus*
109. Spadix stipitate 110
109. Spadix sessile 119
110. Sterile zone present between staminate and pistillate zone 111
110. Sterile zone not present between staminate and pistillate zone 113
111. Appendix absent . . . . . *A. margaritifer*
111. Appendix present 112
112. Spathe interior whitish pink . . . . . *A. sylvaticus*
112. Spathe interior dark red . . . . . *A. shyamsalilianum*
113. Pistillate zone covered in filiform processes *A. aberrans*
113. Pistillate zone not as above 114
114. Appendix very short, less than 4 cm long *A. perakensis*
114. Appendix longer than 10 cm 115
115. Base of appendix covered in dense, well-defined staminodes . . . . . *A. caudatus*
115. Base of appendix not as above 116
116. Spathe exterior bright green . . . . . *A. coaetaneus*
116. Spathe exterior grey, red, or pink 117
117. Spadix fusiform . . . . . *A. gomboczianus*
117. Spadix cylindric or caudate 118
118. Spathe base interior dark red . . . . . *A. fuscus*
118. Spathe base interior greenish . . . . . *A. wasa*
119. Styles green or yellow 120
119. Styles red or purple 138
120. Sterile zone present between staminate and pistillate zone 121
120. Sterile zone not present between staminate and pistillate zone 124
121. Appendix covered in well-defined staminodes . . . . . *A. salmoneus*
121. Appendix surface glabrous 122
122. Spathe whitish pink . . . . . *A. ochroleucus*
122. Spathe bright green. 123
123. Stigmas broadly conic with a rounded apex *A. opalinus*
123. Stigmas bilabiate . . . . . *A. interruptus*
124. Spathe limb comprising less than 1/3 of total spathe length 125
124. Spathe limb comprising more than 1/2 of total spathe length 126
125. Stigmas yellowish green . . . . . *A. kienluongensis*
125. Stigmas off-white . . . . . *A. prolificus*
126. Spathe exterior densely mottled 127
126. Spathe exterior with few to no mottling 128
127. Spathe base interior maroon . . . . . *A. consimilis*
127. Spathe base interior whitish . . . . . *A. variabilis*
128. Spathe base interior red or dark purple 129
128. Spathe base interior green, white, or whitish pink . 131
129. Appendix apex obtuse . . . . . *A. fuscus*
129. Appendix apex acute 130
130. Stigmas 2–3-lobed . . . . . *A. allenii*
130. Stigmas 4–6-lobed . . . . . *A. pygmaeus*
131. Stigma lobes triangular and elongate . . . . . *A. variabilis*
131. Stigma lobes not as above 132
132. Peduncle mottled or striped 133
132. Peduncle without mottles or stripes 134
133. Staminate zone fusiform; appendix dark green . . . . . *A. linearis*
133. Staminate zone cylindric; appendix beige . . . *A. lunatus*
134. Peduncle uniformly green or grading up to green . . 135
134. Peduncle uniformly reddish brown 136
135. Appendix twice as broad as staminate zone, apex obtuse . . . . . *A. glossophyllus*
135. Appendix equally broad as staminate zone, apex acute . . . . . *A. josefbogneri*
136. Spathe base and limb separated by strong constriction . . . . . *A. saururus*
136. Spathe base and limb separated by shallow or no constriction 137
137. Lower staminate flowers operculate . . . *A. operculatus*
137. Lower staminate flowers not operculate *A. sizemoreae*
138. Spathe base interior covered in filiform processes . 139
138. Spathe base interior smooth, grooved, or verrucose 141

139. Spathe base exterior densely mottled 140
139. Spathe base exterior without mottles . . . *A. angolensis*
140. Spadix more than 80 cm long . . . . . *A. stuhlmannii*
140. Spadix less than 50 cm long . . . . . *A. tenuistylis*
141. Spathe base interior smooth or with very few, shallow warts 142
141. Spathe base interior heavily verrucose 144
142. Staminate flowers distant . . . . . *A. margretae*
142. Staminate flowers congested 143
143. Spathe base interior green or beige . . . . *A. atrorubens*
143. Spathe base interior dark red/purple . . . . . *A. fuscus*
144. Spadix very short; less than 10 cm long 145
144. Spadix at least 15 cm long 146
145. Sterile zone present between staminate and pistillate zone . . . . . *A. myosuroides*
145. Sterile zone not present between staminate and pistillate zone . . . . . *A. perakensis*
146. Spathe base and limb separated by a strong constriction 147
146. Spathe base and limb separated by very shallow or no constriction 154
147. Spathe base exterior without mottles *A. haematospadix*
147. Spathe base exterior mottled 148
148. Sterile zone present between staminate and pistillate zone . . . . . *A. atroviridis*
148. Sterile zone not present between staminate and pistillate zone 149
149. Peduncle longer than 150 cm long 150
149. Peduncle shorter than 120 cm long. 151
150. Male flowers distant; 1–3 mm apart . . . *A. adamsensis*
150. Male flowers congested . . . . . *A. gigas*
151. Stigmatic surface with conic fleshy projections . . . . . *A. longispathaceus*
151. Stigmatic surface smooth 152
152. Spathe limb margin with few to no ruffles *A. borneensis*
152. Spathe limb heavily undulate 153
153. Female flowers distant . . . . . *A. gallaensis*
153. Pistillate flowers congested . . . . . *A. konjac*
154. Sterile zone present between staminate and pistillate zone 155
154. Sterile zone not present between staminate and pistillate zone 156
155. Styles short, 1–2 mm long . . . . . *A. saraburiensis*
155. Styles long, 3–4 mm long . . . . . *A. scutatus*
156. Appendix base nearly twice as broad as the staminate zone 157
156. Appendix base approximately as broad as the staminate zone 159
157. Discoid expansion present in the center of the staminate zone . . . . . *A. discophorus*
157. Center of staminate zone without discoid expansion 158
158. Spathe limb margin with few to no ruffles . . *A. annulifer*
158. Spathe limb margin heavily undulate . . *A. decus-silvae*
159. Styles long, greater than 5 mm long . . . . . *A. calcicolus*
159. Styles short, less than 2 mm long 160
160. Stigmas discoid without pronounced lobes . . . . . *A. andranogidroensis*
160. Stigmas deeply 2–3-lobed . . . . . *A. taurostigma*
161. Stigmas sessile or subsessile 162
161. Stigmas on pronounced styles 191
162. Sterile zone present between staminate and pistillate zone 163
162. Sterile zone not present between staminate and pistillate zone 165
163. Neuter flowers elongate-conic . . . *A. longiconnectivus*
163. Neuter flowers ovate or globose 164
164. Spathe base convolute . . . . . *A. bonaccordensis*
164. Spathe base not convolute . . . . . *A. hohenackeri*
165. Appendix densely covered in staminodes 166
165. Appendix not as above 172
166. Staminate flowers arranged in distinct disc-like spirals . . . . . *A. verticillatus*
166. Staminate flowers not as above 167
167. Spathe mottled 168
167. Spathe without mottles 170
168. Spathe limb comprises less than 1/3 of total spathe length . . . . . *A. sumawongii*
168. Spathe limb comprises at least 1/2 of total spathe length 169
169. Spathe limb whitish pink . . . . . *A. infundibuliformis*
169. Spathe limb dark red/purple . . . . . *A. venustus*
170. Spathe limb heavily cucullate . . . . *A. pseudoharmandii*
170. Spathe with little to no hood 171
171. Stigma hemispheric . . . . . *A. fallax*
171. Stigma discoid . . . . . *A. macrophyllus*
172. Appendix stipitate . . . . . *A. napiger*
172. Appendix sessile or subsessile 173
173. Appendix cylindric 174
173. Appendix conic or fusiform 179
174. Peduncle very short, less than 7 cm long 175
174. Peduncle longer than 15 cm 176
175. Spathe limb margin entire . . . . . *A. linguiformis*
175. Spathe limb margin deeply crenate . . . . *A. mildbraedii*
176. Spathe very short, less than 5 cm long . . . . . *A. malkmus-husseinii*
176. Spathe longer than 10 cm 177
177. Appendix very short, less than 3 cm long . . . . . *A. mekongensis*
177. Appendix at least 7 cm long 178
178. Spathe base and limb separated by little to no constriction . . . . . *A. galbra*
178. Spathe base and limb separated by strong constriction . . . . . *A. mossambicensis*
179. Peduncle approximately same length or shorter than spadix 180
179. Peduncle distinctly longer than spadix 183
180. Ovaries green 181
180. Ovaries pink or red 182
181. Appendix dark purple or maroon . . . . . *A. abyssinicus*
181. Appendix greenish . . . . . *A. teuszii*
182. Pistillate flowers distant . . . . . *A. angulatus*
182. Pistillate flowers congested . . . . . *A. bulbifer*
183. Spathe limb green or pale yellow 184
183. Spathe limb reddish or orange 187
184. Peduncle less than 25 cm long . . . . . *A. candidissimus*
184. Peduncle at least 40 cm long 185
185. Stigmas discoid . . . . . *A. chlorospathus*
185. Stigmas hemispheric 186
186. Spathe base interior pale yellow . . . . . *A. obovoideus*
186. Spathe base interior dark red/purple . . . . . *A. preussii*

187. Appendix stipitate . . . . . *A. bufo*
187. Appendix sessile or subsessile 188
188. Peduncle longer than 70 cm . . . . . *A. cidarioides*
188. Peduncle shorter than 45 cm 189
189. Pistillate flowers distant . . . . . *A. minor*
189. Pistillate flowers congested 190
190. Spathe base and limb separated by a strong constriction . . . . . *A. abyssinicus*
190. Spathe base and limb separated by little to no constriction . . . . . *A. purpurascens*
191. Spadix stipitate 192
191. Spadix sessile 211
192. Sterile zone present between the staminate and pistillate zone 193
192. Sterile zone not present between the staminate and pistillate zone 194
193. Appendix present . . . . . *A. amygdaloides*
193. Appendix absent . . . . . *A. margaritifer*
194. Appendix dark red/purple 195
194. Appendix pale yellow/beige 199
195. Spathe limb without hood, reflexed or erect at anthesis 196
195. Spathe limb cucullate, not reflexed at anthesis 197
196. Appendix distinctly thinner than staminate zone, myosuroid . . . . . *A. caudatus*
196. Appendix as wide as staminate zone, conic . . . . . *A. sparsiflorus*
197. Spadix does not surpass the convolute part of the spathe . . . . . *A. dracontoides*
197. Spadix surpasses the convolute part of the spathe 198
198. Appendix heavily corrugate . . . . . *A. corrugatus*
198. Appendix smooth or slightly grooved . . . . . *A. elliotii*
199. Spathe without hood 200
199. Spathe cucullate 202
200. Spathe limb strongly reflexed at anthesis . . . . *A. prainii*
200. Spathe limb erect at anthesis 201
201. Styles not as above; stigmas deeply lobed . . . . . *A. asterostigmatus*
201. Styles strongly curved toward appendix; stigmas bilabiate . . . . . *A. curvistylis*
202. Peduncle very short, less than 10 cm long . . *A. scaber*
202. Peduncle longer than 30 cm 203
203. Ovaries green 204
203. Ovaries purple 207
204. Appendix covered in shallow staminodes . . . . *A. dunnii*
204. Appendix smooth or grooved 205
205. Appendix comprising more than 2/3 of total spadix length . . . . . *A. putii*
205. Appendix comprising 1/2 or less of total spadix length 206
206. Spathe less than twice as wide as appendix; ovaries unilocular . . . . . *A. thaiensis*
206. Spathe at least twice as wide as appendix; ovaries bilocular . . . . . *A. yunnanensis*
207. Appendix covered in deep fissures 208
207. Appendix smooth or shallowly grooved 209
208. Appendix deeply corrugated with furrows in all directions . . . . . *A. corrugatus*
208. Appendix covered in few to many longitudinal fissures . . . . . *A. kachinensis*
209. Stigma hardly lobed . . . . . *A. stipitatus*
209. Stigma deeply lobed 210
210. Spathe exterior pale purple with large dark green mottles . . . . . *A. bolikhamxayensis*
210. Spathe exterior pale green with large whitish mottles . . . . . *A. yunnanensis*
211. Styles green or pale yellow 212
211. Styles pink, red, or purple 243
212. Sterile zone present between staminate and pistillate zone 213
212. Sterile zone not present between staminate and pistillate zone 217
213. Appendix pale purple . . . . . *A. synandrifer*
213. Appendix white or greenish 214
214. Appendix greenish; base covered in shallow staminodes . . . . . *A. albus*
214. Appendix whitish; surface smooth or slightly grooved 215
215. Peduncle shorter than 20 cm . . . . . *A. crispifolius*
215. Peduncle longer than 50 cm 216
216. Appendix base smooth or shallowly grooved *A. krausei*
216. Appendix base deeply rugulose . . . . . *A. zengianus*
217. Appendix absent . . . . . *A. coudercii*
217. Appendix present 218
218. Appendix densely covered in rod-like staminodes . 219
218. Appendix smooth or shallowly grooved 225
219. Spadix strongly reflexed downward at anthesis . . . . . *A. arcuspadix*
219. Spadix erect at anthesis 220
220. Appendix sessile . . . . . *A. napalensis*
220. Appendix stipitate 221
221. Peduncle approximately same length or shorter than petiole 222
221. Peduncle distinctly longer than petiole 223
222. Appendix stipe short, less than 1 cm long . . *A. lacourii*
222. Appendix stipe long, more than 2 cm long . *A. latifolius*
223. Spadix long, up to 20 cm . . . . . *A. kuznetsovii*
223. Spadix short, less than10 cm 224
224. Peduncle reddish brown, less than 35 cm long . . . . . *A. glaucophyllus*
224. Peduncle greenish, more than 50 cm long . . . . . *A. lanceolatus*
225. Appendix cylindric or fusiform 226
225. Appendix conic or elongate-conic 233
226. Spathe base interior dark red 227
226. Spathe base interior green or white 229
227. Appendix stipitate . . . . . *A. palawanensis*
227. Appendix sessile 228
228. Ovaries red or pink . . . . . *A. fuscus*
228. Ovaries green . . . . . *A. tonkinensis*
229. Style darker green than ovaries . . . . . *A. antsingyensis*
229. Style same color as ovaries 230
230. Filaments in bottom half of staminate zone connate 231
230. Filaments in bottom half of staminate zone free . . . 232
231. Anther pores elongate, ovaries 3–4 locular . . . . . *A. albispathus*
231. Anther pores apical, ovaries unilocular . . *A. tenuispadix*
232. Appendix short, less than 7 cm . . . . . *A. croatii*
232. Appendix longer than 12 cm . . . . . *A. tonkinensis*
233. Staminate zone does not exceed convolute part of spathe . . . . . *A. schmidtiae*
233. Staminate zone exceeds convolute part of spathe . 234

234. Spathe exterior red or pinkish grey 235
234. Spathe exterior green or yellow. 238
235. Peduncle mottled or striped 236
235. Peduncle uniformly colored 237
236. Constriction present between appendix and staminate zone . . . . . *A. beccarii*
236. No constriction between appendix and staminate zone . . . . . *A. longituberosus*
237. No constriction between appendix and staminate zone . . . . . *A. gallowayi*
237. Constriction present between appendix and staminate zone . . . . . *A. palawanensis*
238. No constriction between appendix and staminate zone 239
238. Constriction present between appendix and staminate zone 240
239. Staminate pores located at the center of thecae . . . . . *A. khammouanensis*
239. Staminate pores located at the periphery of thecae . . . . . *A. longituberosus*
240. Spathe exterior mottled . . . . . *A. beccarii*
240. Spathe exterior without mottles 241
241. Base of appendix twice as broad as staminate zone . . . . . *A. nicolaii*
241. Base of appendix as broad as staminate zone 242
242. Staminate pores elongate . . . . . *A. ravenii*
242. Staminate pores round . . . . . *A. symonianus*
243. Appendix red or pink 244
243. Appendix whitish or beige 256
244. Appendix covered in short stiff hairs . . . . . *A. hirsutus*
244. Appendix without hairs 245
245. Appendix densely covered in staminodes 246
245. Appendix smooth or shallowly grooved 251
246. Spathe base exterior whitish yellow 247
246. Spathe base exterior red or purple 248
247. Spathe without mottles . . . . . *A. ardii*
247. Spathe densely covered in whitish mottles *A. fornicatus*
248. Pistillate flowers distant 249
248. Pistillate flowers congested 250
249. Appendix base inflated, upper half strongly caudate. . . . . *A. caudatus*
249. Entire appendix caudate, base not inflated . . . . . *A. luzoniensis*
250. Ovaries trilocular . . . . . *A. echinatus*
250. Ovaries unilocular . . . . . *A. minimus*
251. Spadix short, not visible above convolute part of spathe . . . . . *A. hildebrandtii*
251. Spadix visible above convolute part of spathe 252
252. Styles 2–3 times longer than the height of the ovary . . . . . *A. longistylus*
252. Styles shorter than above 253
253. Spathe base exterior greyish purple . . *A. erythrorrachis*
253. Spathe base exterior greenish 254
254. Base of ovaries reddish purple . . . . . *A. suwidjianus*
254. Base of ovaries green 255
255. Anthers whitish yellow . . . . . *A. andranogidroensis*
255. Anthers dark red . . . . . *A. spectabilis*
256. Peduncle shorter than 5 cm. — Mostly subterranean 257
256. Peduncle longer than 10 cm 260
257. Spathe limb reflexed at anthesis . . . . . *A. bangkokensis*
257. Spathe limb erect at anthesis 258
258. Stigmas entire . . . . . *A. opertus*
258. Stigmas lobed 259
259. Appendix pyramidal with deep cracks at the base . . . . . *A. koratensis*
259. Appendix ovoid or fusiform with few shallow fissures . . . . . *A. scaber*
260. Pistillate flowers distant or slightly distant 261
260. Pistillate flowers congested 262
261. Staminate flowers congested without furrows *A. perrieri*
261. Clusters of staminate flowers separated by horizontal furrows . . . . . *A. rugosus*
262. Spathe limb apex cucullate 263
262. Spathe limb apex erect or reflexed 266
263. Appendix conic 264
263. Appendix cylindric or narrowly fusiform 265
264. Stigma capitate . . . . . *A. gallowayi*
264. Stigma discoid . . . . . *A. yuloensis*
265. Spathe base interior pale pink . . . . . *A. bognerianus*
265. Spathe base interior dark red/purple . . . . . *A. fuscus*
266. Spathe base interior green or whitish 267
266. Spathe base interior red or dark purple 269
267. Base of ovaries purple . . . . . *A. ferruginosis*
267. Base of ovaries green 268
268. Spathe exterior dark green . . . . . *A. bubenensis*
268. Spathe exterior reddish brown . . . . . *A. sagittarius*
269. Spathe limb interior without mottles 270
269. Spathe limb interior mottled 271
270. Spathe limb whitish pink . . . . . *A. cicatricifer*
270. Spathe limb dark purple . . . . . *A. spectabilis*
271. Appendix less than half the length of the staminate zone . . . . . *A. umbrinus*
271. Appendix distinctly longer than staminate zone . . . 272
272. Spathe exterior whitish purple . . . . . *A. erythrorrachis*
272. Spathe exterior pinkish orange . . . . . *A. xiei*

Subkey 1. *Key to the species of Eastern Africa*

1. Spathe base and limb separated by shallow or no constriction 2
1. Spathe base and limb separated by a strong constriction. 4
2. Spadix sessile . . . . . *A. stuhlmannii*
2. Spadix stipitate 3
3. Spathe base undulate . . . . . *A. gallaensis*
3. Spathe base without ruffles . . . . . *A. gomboczianus*
4. Spathe base interior covered in filiform processes or papillae 5
4. Spathe base interior grooved or verrucose 6
5. Staminate zone extending above the convolute part of the spathe . . . . . *A. goetzei*
5. Staminate zone does not supersede the convolute part of the spathe . . . . . *A. impressus*
6. Appendix densely covered in conic staminodes . . . . . *A. lewallei*
6. Appendix smooth or shallowly grooved. 7
7. Spadix distinctly longer than the spathe . . . *A. maximus*
7. Spadix approximately the same length or shorter than the spathe 8
8. Peduncle uniformly colored . . . . . *A. abyssinicus*
8. Peduncle densely covered in mottles 9
9. Ovaries unilocular . . . . . *A. mossambicensis*
9. Ovaries 2–3-locular. . . . . *A. richardsiae*

Subkey 2. ***Key to species of Central Africa***

1. Spathe base interior covered in filiform processes 2
1. Spathe base interior smooth or verrucose. 6
2. Stigmas on pronounced styles . . . . . *A. angolensis*
2. Stigmas sessile or subsessile 3
3. Peduncle longer than 25 cm . . . . . *A. calabaricus*
3. Peduncle shorter than 10 cm. 4
4. Spathe base and limb interior separated by a whitish band . . . . . *A. zenkeri*
4. Spathe interior without whitish band 5
5. Appendix comprises more than 9/10ths of spadix length . . . . . *A. canaliculatus*
5. Appendix comprises c. 1/2 of the spadix length *A. staudtii*
6. Stigmas on pronounced styles 7
6. Stigmas sessile or subsessile 8
7. Spadix stipitate . . . . . *A. dracontoides*
7. Spadix sessile . . . . . *A. margretae*
8. Spadix distinctly longer than the spathe 9
8. Spadix approximately as long or shorter than the spathe 11
9. Base of the appendix distinctly wider than staminate zone. . . . . *A. eichleri*
9. Base of the appendix as wide or narrower than the staminate zone. 10
10. Peduncle longer than 40 cm . . . . . *A. bequaerti*
10. Peduncle shorter than 10 cm . . . . . *A. mullendersii*
11. Stigmas lobed . . . . . *A. abyssinicus*
11. Stigmas unlobed 12
12. Appendix elongate-conic . . . . . *A. teuszii*
12. Appendix cylindric 13
13. Spathe base and limb separated by a strong constriction . . . . . *A. mildbraedii*
13. Spathe base and limb separated by little to no constriction. . . . . *A. preussii*

Subkey 3. ***Key to the species of Western Africa***

1. Spathe base interior covered in filiform processes 2
1. Spathe base interior smooth, grooved, or verrucose . . 5
2. Spathe base interior green . . . . . *A. johnsonii*
2. Spathe base interior purplish brown 3
3. Spadix stipitate . . . . . *A. barthlotii*
3. Spadix sessile 4
4. Peduncle longer than 20 cm . . . . . *A. calabaricus*
4. Peduncle less than 8 cm long. — Mostly subterranean. . . . . *A. zenkeri*
5. Spadix sessile 6
5. Spadix stipitate 8
6. Appendix as long or shorter than spathe. *A. abyssinicus*
6. Appendix distinctly longer than spathe 7
7. Appendix cylindric or elongate-conic . . . . . *A. consimilis*
7. Appendix fusiform . . . . . *A. gracilior*
8. Spathe base interior covered in whitish vertical stripes. 9
8. Spathe base interior without stripes 10
9. Spadix is as long or distinctly longer than the spathe . . . . . *A. aphyllus*
9. Spadix is less than half the length of the spathe . . . . . *A. dracontoides*
10. Stigmas with two conoidal lobes . . . . . *A. baumannii*
10. Stigmas unlobed . . . . . *A. elliotii*

Subkey 4. ***Key to the species of Southern Africa***

1. Stigmas sessile or subsessile 2
1. Stigmas on pronounced styles. 3
2. Appendix red or purple . . . . . *A. ankarana*
2. Appendix greenish white . . . . . *A. mangelsdorffii*
3. Peduncle distinctly shorter than spadix . . *A. paeoniifolius*
3. Peduncle distinctly longer than spadix 4
4. Spadix distinctly longer than spathe 5
4. Spadix distinctly shorter than spathe 6
5. Stigmas convex-discoid. . . . . *A. andranogidroensis*
5. Stigmas 2- or 3-lobed . . . . . *A. taurostigma*
6. Spathe base interior whitish green . . . . *A. antsingyensis*
6. Spathe base interior reddish brown 7
7. Spadix does not extend past convolute part of spathe . . . . . *A. hildebrandtii*
7. Spadix extends past convolute part of spathe. 8
8. Stigmas 2- or 3-lobed . . . . . *A. erythrorrachis*
8. Stigmas discoid . . . . . *A. perrieri*

Subkey 5. ***Key to the species of Eastern Asia***

1. Spadix distinctly longer than spathe 2
1. Spadix as long or shorter than spathe. 7
2. Appendix whitish or green 3
2. Appendix red or purple 4
3 Spadix sessile . . . . . *A. coaetaneus*
3. Spadix stipitate . . . . . *A. hayi*
4. Spathe limb margin without ruffles . . . . . *A. kiusianus*
4. Spathe limb margin undulated. 5
5. Appendix covered in filiform processes. . . . . *A. hirtus*
5. Appendix without filiform processes 6
6. Peduncle less than 10 cm long. — Mostly subterranean . . . . . *A. henryi*
6. Peduncle longer than 20 cm . . . . . *A. konjac*
7. Staminodes present between the staminate and pistillate zone. 8
7. Staminodes not present between the staminate and pistillate zone 10
8. Spathe base interior purple/red. . . . . *A. zengianus*
8. Spathe base interior greenish or light pink 9
9. Appendix verrucose. . . . . *A. albus*
9. Appendix glabrous. . . . . *A. krausei*
10. Spadix sessile 11
10. Spadix stipitate 13
11. Ovaries green . . . . . *A. dunnii*
11. Ovaries dark purple 12
12. Appendix covered in deep fissures . . . . . *A. kachinensis*
12. Appendix smooth or shallowly grooved . . . . . *A. stipitatus*
13. Appendix with large irregular depressions. . . . . *A. yunnanensis*
13. Appendix without depressions. 14
14. Spathe dark green . . . . . *A. bubenensis*
14. Spathe pink or pinkish white 15
15. Spathe limb interior covered in large orangish mottles . . . . . *A. xiei*
15. Spathe limb interior without mottles . . . . . *A. yuloensis*

Subkey 6. ***Key to the species of South Asia***

1. Spadix distinctly longer than spathe 2
1. Spadix shorter or approximately equal to spathe 12

2. Sterile zone not present between staminate and pistillate zones . . . 3
2. Sterile zone present between staminate and pistillate zones . . . 5
3. Spadix stipitate . . . *A. longistylus*
3. Spadix sessile . . . 4
4. Appendix dark red/purple . . . *A. commutatus*
4. Appendix light pink or beige . . . *A. muelleri*
5. Spadix sessile . . . *A. smithsonianus*
5. Spadix stipitate . . . 6
6. Appendix absent . . . *A. margaritifer*
6. Appendix present . . . 7
7. Appendix at least twice as long as fertile staminate zone 8
7. Appendix distinctly shorter than fertile staminate zone . 9
8. Synandrodes rhomboidal . . . *A. bhandarensis*
8. Synandrodes spherical . . . *A. myosorensis*
9. Peduncle longer than 90 cm . . . *A. shyamsalilianum*
9. Peduncle shorter than 60 cm . . . 10
10. Staminate flowers sparsely arranged . . . *A. sylvaticus*
10. Staminate flowers crowded . . . 11
11. Synandrodes semi-flattened . . . *A. konkanensis*
11. Synandrodes distinctly globose . . . *A. myosorensis*
12. Staminodes present between staminate and pistillate zone . . . 13
12. Staminodes not present between staminate and pistillate zone . . . 17
13. Synandrodes protruding from spadix . . . 14
13. Synandrodes semi-flattened . . . 15
14. Synandrodes narrowly conic . . . *A. longiconnectivus*
14. Synandrodes broadly cylindric . . . *A. margaritifer*
15. Barren axis between synandrodes and pistillate zone present . . . *A. bonaccordensis*
15. Barren axis not present between synandrodes and pistillate zones . . . 16
16. Appendix distinctly shorter than staminate zone . . . *A. bhandarensis*
16. Appendix at least twice the length of staminate zone . . . *A. hohenackeri*
17. Appendix globose with truncate apex . . . *A. hirsutus*
17. Appendix conic, cylindric or fusiform . . . 18
18. Appendix covered in rod-like staminodes . *A. napalensis*
18. Appendix glabrous or shallowly corrugated . . . 19
19. Spathe base interior glabrous . . . *A. nicolsonianus*
19. Spathe base interior lightly verrucose . . . 20
20. Ovary yellowish green . . . *A. longistylus*
20. Ovary pinkish red . . . 21
21. Spathe limb apically cucullate . . . *A. bognerianus*
21. Spathe limb not cucullate . . . 22
22. Stigma distinctly broader than ovary . . . *A. bulbifer*
22. Stigma as broad or narrower than ovary . . . *A. muelleri*

Subkey 7. ***Key to the species of Eastern Southeast Asia***

1. Spadix shorter or approximately equal to spathe . . . 2
1. Spadix distinctly longer than spathe . . . 8
2. Appendix glabrous or shallowly corrugated . . . 3
2. Appendix covered in flattened or rod-like staminodes . . 5
3. Appendix broadly conic and deeply corrugated . . . *A. paeoniifolius*
3. Appendix glabrous and cylindric or fusiform . . . 4
4. Stigmas sessile with rod-like protrusions . *A. cidarioides*
4. Stigmas glabrous on pronounced styles *A. palawanensis*
5. Appendix broadly conic or cylindric . . . 6
5. Appendix caudate or narrowly attenuated . . . 7
6. Ovaries dark purple . . . *A. fornicatus*
6. Ovaries green . . . *A. minimus*
7. Peduncle longer than 40 cm . . . *A. caudatus*
7. Peduncle shorter than 15 cm . . . *A. luzoniensis*
8. Ovaries green or pale yellow . . . 9
8. Ovaries purple or red and white . . . 16
9. Appendix covered in filiform processes . . . *A. natolii*
9. Appendix without filiform processes . . . 10
10. Synandrodes present between staminate and pistillate zones . . . 11
10. Synandrodes absent between staminate and pistillate zones . . . 12
11. Stigmas reddish brown and shallowly lobed . *A. rayongii*
11. Stigmas yellowish beige and strongly lobed . . . *A. salmoneus*
12. Appendix caudate . . . 13
12. Appendix narrowly conic . . . 14
13. Ovary fusiform with 2- or 3-lobed stigma . . . *A. caudatus*
13. Ovary globose with peltate stigma . . . *A. fontarumii*
14. Spathe limb margin without ruffles . . . *A. merrillii*
14. Spathe limb margin rugose . . . 15
15. Stigma conic and yellow . . . *A. declinatus*
15. Stigma semi-hemispheric and purple . . . *A. rostratus*
16. Peduncle is distinctly shorter than spadix . . . 17
16. Peduncle is distinctly longer than spadix . . . 20
17. Appendix broadly pyramidal . . . *A. paeoniifolius*
17. Appendix elongate-conic . . . 18
18. Spathe limb margin distinctly rugose . . . *A. flammeus*
18. Spathe limb margin shallowly undulate or without ruffles . . . 19
19. Appendix broader than staminate zone, shorter than 20 cm . . . *A. urceolatus*
19. Appendix as broad as staminate zone, longer than 30 cm . . . *A. yaoi*
20. Appendix caudate . . . *A. caudatus*
20. Appendix erect and narrowly conic . . . 21
21. Spathe limb heavily costate with greenish exterior ribs 22
21. Spathe limb without distinct longitudinal ribs or shallowly costate . . . 23
22. Spathe limb lobed or auriculate . . . *A. adamsensis*
22. Spathe limb unlobed . . . *A. longispathaceus*
23. Spathe limb shorter than spathe base . . . *A. calcicolus*
23. Spathe limb elongate, twice as long as spathe base . . . *A. merrillii*

Subkey 8. ***Key to the species of Southern Southeast Asia***

1. Spadix shorter or approximately same length as spathe 2
1. Spadix distinctly longer than spathe . . . 19
2. Stigmas sessile . . . 3
2. Stigmas on pronounced styles . . . 9
3. Appendix covered in staminodes . . . 4
3. Appendix not covered in staminodes . . . 5
4. Spathe limb whitish pink . . . *A. infundibuliformis*
4. Spathe limb dark red/purple . . . *A. venustus*
5. Appendix cylindric . . . *A. linguiformis*
5. Appendix conic or fusiform . . . 6
6. Peduncle as long or shorter than spadix . . . *A. angulatus*
6. Peduncle distinctly longer than spadix . . . 7

7. Spathe limb green or pale yellow . . . . . *A. obovoideus*
7. Spathe limb reddish or orange 8
8. Appendix stipitate . . . . . *A. bufo*
8. Appendix sessile or subsessile . . . . . *A. minor*
9. Spadix stipitate 10
9. Spadix sessile 11
10. Appendix yellow/beige . . . . . *A. prainii*
10. Appendix dark red/purple . . . . . *A. sparsiflorus*
11. Styles green or pale yellow 12
11. Styles pink, red or purple 13
12. Constriction present between the appendix and staminate zone . . . . . *A. beccarii*
12. No constriction between the appendix and staminate zone . . . . . *A. longituberosus*
13. Appendix red or pink 14
13. Appendix whitish or beige 17
14. Appendix covered in short stiff hairs . . . . . *A. hirsutus*
14. Appendix without hairs 15
15. Spathe base exterior whitish yellow or green 16
15. Spathe base exterior red or purple . . . . . *A. spectabilis*
16. Appendix covered in rod-like staminodes . . . . . *A. ardii*
16. Appendix glabrous or shallowly grooved *A. suwidjianus*
17. Pistillate flowers distant . . . . . *A. rugosus*
17. Pistillate flowers congested 18
18. Spathe base interior green or whitish . . . . *A. sagittarius*
18. Spathe base interior dark red/purple . . . . *A. spectabilis*
19. Peduncle distinctly longer than spadix 20
19. Peduncle shorter or equal to spadix 36
20. Stigmas sessile or subsessile 21
20. Stigmas on pronounced styles 27
21. Spadix stipitate . . . . . *A. niahensis*
21. Spadix sessile 22
22. Appendix cylindric or fusiform . . . . . *A. gracilis*
22. Appendix conic or elongate-conic 23
23. Appendix stipitate 24
23. Appendix sessile 25
24. Appendix highly elongate; 2–3 times longer than spathe . . . . . *A. elatus*
24. Appendix broad; only slightly longer than spathe *A. bufo*
25. Spathe limb short; constituting less than 1/3 of spathe length . . . . . *A. elegans*
25. Spathe limb long; constituting at least 2/3 of spathe length 26
26. Staminate zone distinctly shorter than appendix *A. asper*
26. Staminate zone as long or distinctly longer than appendix . . . . . *A. carneus*
27. Styles green or yellow . . . . . *A. variabilis*
27. Styles red or purple 28
28. Spadix very short; less than 10 cm long . . *A. perakensis*
28. Spadix at least 15 cm long 29
29. Spathe base and limb separated by strong constriction 30
29. Spathe base and limb separated by shallow or no constriction 33
30. Spathe base exterior without mottles *A. haematospadix*
30. Spathe base exterior mottled 31
31. Peduncle longer than 150 cm . . . . . *A. gigas*
31. Peduncle shorter than 120 cm 32
32. Spathe limb margin with few to no ruffles . *A. borneensis*
32. Spathe limb margin heavily undulate. . . . . *A. konjac*
33. Base of appendix as broad as the staminate zone . . . . . *A. haematospadix*
33. Base of appendix nearly twice as broad as the staminate zone 34
34. Discoid expansion present in the center of the staminate zone . . . . . *A. discophorus*
34. Staminate zone without discoid expansion 35
35. Spathe limb margin with few to no ruffles . . . *A. annulifer*
35. Spathe limb margin heavily undulate . . . *A. decus-silvae*
36. Staminate zone shorter or as long as pistillate zone . . 37
36. Staminate zone distinctly longer than pistillate zone . . 44
37. Appendix apex hyper-acuminate; myosuroid . *A. forbesii*
37. Appendix apex not as above 38
38. Appendix cylindric 39
38. Appendix conic or elongate-conic 40
39. Spathe base and limb separated by shallow or no constriction . . . . . *A. infundibuliformis*
39. Spathe base and limb separated by strong constriction . . . . . *A. plicatus*
40. Spadix stipitate . . . . . *A. prainii*
40. Spadix sessile 41
41. Appendix base not exceeding width of the staminate zone . . . . . *A. tinekeae*
41. Appendix distinctly broader than staminate zone 42
42. Peduncle longer than 25 cm . . . . . *A. hewittii*
42. Peduncle shorter than 15 cm 43
43. Spadix shorter than 70 cm; spathe exterior greenish orange . . . . . *A. lambii*
43. Spadix longer than 100 cm; spathe exterior red . . . . . *A. titanum*
44. Stigmas on pronounced styles 45
44. Stigmas sessile or subsessile 48
45. Appendix distinctly broader than staminate zone 46
45. Appendix as broad or narrower than staminate zone . 47
46. Spathe limb reddish pink; margin erect . *A. paeoniifolius*
46. Spathe limb whitish green; strongly reflexed . . . *A. prainii*
47. Spathe limb dark red/purple . . . . . *A. costatus*
47. Spathe limb whitish orange . . . . . *A. hottae*
48. Appendix conic . . . . . *A. muelleri*
48. Appendix cylindric or fusiform 49
49. Spadix sessile 50
49. Spadix stipitate 52
50. Stamens with one apical pore . . . . . *A. infundibuliformis*
50. Stamens with two apical pores 51
51. Appendix pendulus . . . . . *A. pendulus*
51. Appendix erect . . . . . *A. ranchanensis*
52. Appendix pendulus . . . . . *A. pendulus*
52. Appendix erect 53
53. Female flowers congested 54
53. Female flowers sparse 55
54. Spathe limb longer than 10 cm . . . . . *A. eburneus*
54. Spathe limb less than 1 cm long . . . . . *A. juliae*
55. Appendix white or beige . . . . . *A. brachyphyllus*
55. Appendix red or pink . . . . . *A. julaihii*

Subkey 9. *Key to the species of Northern Southeast Asia*

1. Spadix as long or shorter than spathe. 2
1. Spadix distinctly longer than spathe 60
2. Stigmas on pronounced styles 13
2. Stigmas sessile or subsessile 3

3. Appendix densely covered in staminodes 4
3. Appendix not as above 8
4. Staminate flowers arranged in disc-like spirals . . . . . *A. verticillatus*
4. Staminate flowers not as above 5
5. Spathe mottled . . . . . *A. sumawongii*
5. Spathe not mottled 6
6. Spathe limb heavily cucullate . . . . . *A. pseudoharmandii*
6. Spathe limb forms little to no hood 7
7. Stigma hemispheric . . . . . *A. fallax*
7. Stigma discoid . . . . . *A. macrophyllus*
8. Appendix stipitate . . . . . *A. napiger*
8. Appendix sessile or subsessile 9
9. Appendix cylindric 10
9. Appendix conic or fusiform 11
10. Spathe very short; less than 5 cm long . . . . . *A. malkmus-husseinii*
10. Spathe longer than 10 cm . . . . . *A. mekongensis*
11. Spathe limb red or orange . . . . . *A. purpurascens*
11. Spathe limb green or pale yellow 12
12. Peduncle shorter than 25 cm . . . . . *A. candidissimus*
12. Peduncle longer than 40 cm . . . . . *A. chlorospathus*
13. Spadix stipitate 14
13. Spadix sessile 25
14. Sterile zone present between staminate and pistillate zones . . . . . *A. amygdaloides*
14. Sterile zone not present between zones 15
15. Spathe without hood 16
15. Spathe cucullate 18
16. Spathe limb strongly reflexed at anthesis . . . . . *A. prainii*
16. Spathe limb erect at anthesis 17
17. Styles straight; stigmas strongly lobed . . . . . *A. asterostigmatus*
17. Styles strongly curved toward appendix; stigmas bilabiate . . . . . *A. curvistylis*
18. Peduncle very short; less than 10 cm long . . . *A. scaber*
18. Peduncle longer than 30 cm 19
19. Ovaries green 20
19. Ovaries purple 22
20. Appendix constituting more than 2/3 of spadix length . . . . . *A. putii*
20. Appendix constituting less than 1/2 of spadix length. . 21
21. Spathe narrower than above; ovaries bilocular . . . . . *A. thaiensis*
21. Spathe at least twice as wide as appendix; ovaries unilocular . . . . . *A. yunnanensis*
22. Appendix covered in deep fissures 23
22. Appendix smooth or shallowly grooved 24
23. Appendix deeply corrugated with furrows in all directions . . . . . *A. corrugatus*
23. Appendix covered in few to many longitudinal fissures . . . . . *A. kachinensis*
24. Spathe exterior pale purple with large green mottles . . . . . *A. bolikhamxayensis*
24. Spathe exterior pale green with large whitish mottles . . . . . *A. yunnanensis*
25. Styles pink, red or purple 26
25. Styles green or pale yellow 37
26. Appendix red or pink . . . . . *A. echinatus*
26. Appendix whitish or beige 27
27. Peduncle shorter than 5 cm. — Mostly subterranean . 28
27. Peduncle longer than 10 cm 31
28. Spathe limb reflexed at anthesis . . . . . *A. bangkokensis*
28. Spathe limb erect at anthesis 29
29. Stigmas entire . . . . . *A. opertus*
29. Stigmas lobed 30
30. Appendix pyramidal with deep cracks at the base . . . . . *A. koratensis*
30. Appendix ovoid or fusiform with shallow fissures . . . . . *A. scaber*
31. Spathe limb apex cucullate 32
31. Spathe limb apex erect or reflexed 34
32. Appendix cylindric or narrowly fusiform . . . . . *A. fuscus*
32. Appendix conic 33
33. Stigma capitate . . . . . *A. gallowayi*
33. Stigma discoid . . . . . *A. yuloensis*
34. Spathe base interior green or whitish 35
34. Spathe base interior red or purple 36
35. Base of ovaries green . . . . . *A. bubenensis*
35. Base of ovaries purple . . . . . *A. ferruginosis*
36. Spathe limb interior without mottles . . . . . *A. cicatricifer*
36. Spathe base interior with mottles . . . . . *A. umbrinus*
37. Sterile zone present between staminate and pistillate zones 38
37. Sterile zone not present between zones 40
38. Appendix pale purple . . . . . *A. synandrifer*
38. Appendix white or greenish 39
39. Peduncle shorter than 20 cm. . . . . *A. crispifolius*
39. Peduncle longer than 50 cm . . . . . *A. krausei*
40. Appendix absent . . . . . *A. coudercii*
40. Appendix present 41
41. Appendix covered in rod-like staminodes 42
41. Appendix smooth or shallowly grooved 47
42. Spadix strongly reflexed downward at anthesis . . . . . *A. arcuspadix*
42. Spadix erect at anthesis 43
43. Peduncle as long or shorter than petiole 44
43. Peduncle distinctly shorter than petiole 45
44. Appendix stipe short, less than 1 cm long . . . . *A. lacourii*
44. Appendix stipe long, longer than 2 cm . . . . . *A. latifolius*
45. Spadix long, up to 20 cm long . . . . . *A. kuznetsovii*
45. Spadix short, less than 10 cm long 46
46. Peduncle reddish brown; less than 35 cm long . . . . . *A. glaucophyllus*
46. Peduncle greenish; longer than 50 cm . . . *A. lanceolatus*
47. Appendix cylindric or fusiform 48
47. Appendix conic or elongate-conic 53
48. Spathe base interior dark red 49
48. Spathe base interior green or whitish 50
49. Ovaries red or pink . . . . . *A. fuscus*
49. Ovaries green . . . . . *A. tonkinensis*
50. Filaments in bottom half of staminate zone connate . . 51
50. Filaments in bottom half of staminate zone free 52
51. Anther pores elongate, ovaries 3–4 locular . . . . . *A. albispathus*
51. Anther pores apical, ovaries unilocular . . . *A. tenuispadix*
52. Appendix shorter than 7 cm . . . . . *A. croatii*
52. Appendix longer than 12 cm . . . . . *A. tonkinensis*
53. Staminate zone not exceeding convolution of spathe . . . . . *A. schmidtiae*
53. Staminate zone exceeds convolution of spathe 54

54. Spathe exterior red or pinkish grey 55
54. Spathe exterior green or yellow 56

55. Peduncle uniformly covered . . . . . *A. gallowayi*
55. Peduncle mottled or striped . . . . . *A. longituberosus*

56. No constriction between appendix and staminate zone 57
56. Constriction present between appendix and staminate zone 58

57. Staminate pores located at the center of thecae . . . . . *A. khammouanensis*
57. Staminate pores located at the periphery of thecae . . . . . *A. longituberosus*

58. Base of appendix twice as broad as staminate zone . . . . . *A. nicolaii*
58. Base of appendix as broad as staminate zone 59

59. Staminate pores elongate . . . . . *A. ravenii*
59. Staminate pores round . . . . . *A. symonianus*

60. Appendix covered in filiform processes 61
60. Appendix without filiform processes 67

61. Appendix beige or pinkish white . . . . . *A. longicomus*
61. Appendix dark green or red 62

62. Spathe with little to no constriction between base and limb . . . . . *A. pilosus*
62. Spathe strongly constricted between base and limb . . 63

63. Peduncle longer than 45 cm 64
63. Peduncle shorter than 20 cm 65

64. Stigmas yellow or beige . . . . . *A. laoticus*
64. Stigmas grey or purple . . . . . *A. villosus*

65. Appendix bent with apex facing away from spathe limb . . . . . *A. cirrifer*
65. Appendix erect 66

66. Spathe limb without mottles . . . . . *A. barbatus*
66. Spathe limb densely mottled . . . . . *A. crinitus*

67. Peduncle shorter or equal to spadix 68
67. Peduncle distinctly longer than spathe 84

68. Stigmas sessile or subsessile 69
68. Stigmas on pronounced styles 76

69. Appendix conic or narrowly conic 70
69. Appendix cylindric or fusiform 73

70. Spathe covered in large ovoid mottles . . . . . *A. muelleri*
70. Spathe without mottles 71

71. Spathe exterior bright green . . . . . *A. sinuatus*
71. Spathe exterior grey or light purple 72

72. Sterile zone not present . . . . . *A. brevipetiolatus*
72. Sterile zone present between the staminate and pistillate zone . . . . . *A. dzui*

73. Sterile zone present between the staminate and pistillate zone . . . . . *A. obscurus*
73. Sterile zone not present 74

74. Anthers on pronounced filaments . . . . . *A. reflexus*
74. Anthers sessile or subsessile 75

75. Spathe base interior verrucose . . . . . *A. boyceanus*
75. Spathe base interior glabrous . . . . . *A. polyanthus*

76. Appendix distinctly broader than staminate zone 77
76. Appendix as broad or narrower than staminate zone . 80

77. Appendix beige . . . . . *A. terrestris*
77. Appendix purple or dark red 78

78. Spathe base interior glabrous or shallowly grooved . . . . . *A. subpedatus* sp. inq.
78. Spathe base interior verrucose 79

79. Spathe limb reddish pink; margin erect *A. paeoniifolius*
79. Spathe limb greenish white; strongly reflexed *A. prainii*

80. Peduncle longer than 5 cm 81
80. Peduncle shorter than 2 cm 82

81. Spathe green . . . . . *A. harmandii*
81. Spathe reddish . . . . . *A. maxwellii*

82. Sterile zone present between the staminate and pistillate zone . . . . . *A. hemicryptus*
82. Sterile zone not present 83

83. Appendix cylindric . . . . . *A. pusillus*
83. Appendix fusiform . . . . . *A. serrulatus*

84. Stigmas sessile or subsessile 85
84 Stigmas on pronounced styles 102

85. Spadix stipitate . . . . . *A. hayi*
85. Spadix sessile 86

86. Appendix cylindric or fusiform 87
86. Appendix conic or elongate-conic 92

87. Peduncle longer than 40 cm 88
87. Peduncle shorter than 25 cm 89

88. Appendix longer than 25 cm . . . . . *A. gliruroides*
88. Appendix shorter than 10 cm . . . . . *A. purpurascens*

89. Appendix covered in shallow staminodes *A. verticillatus*
89. Appendix not as above 90

90. Spathe limb apex acuminate . . . . . *A. ongsakulii*
90. Spathe limb apex mucronate 91

91. Appendix greenish yellow, arching upwards *A. claudelii*
91. Appendix off-white or beige, pendulous . . *A. pulchellus*

92. Appendix stipitate 93
92. Appendix sessile 95

93. Appendix very elongate, 2–3 times longer than spathe . . . . . *A. elatus*
93. Appendix not as above 94

94. Spathe base mildly convolute; limb apex acute . . . . . *A. angustispathus*
94. Spathe base heavily convolute; limb obtuse . . . . . *A. cruddasianus*

95. Spathe limb long, constituting at least 2/3 of spathe length 96
95. Spathe limb short, constituting less than 1/3 of spathe length 98

96. Appendix slender, half as broad at the staminate zone. . . . . *A. macrorhizus*
96. Appendix not as above 97

97. Spathe exterior greyish purple, mottled. . *A. excentricus*
97. Spathe exterior greenish, without mottles *A. vogelianus*

98. Anthers bright pink . . . . . *A. elegans*
98. Anthers white or beige 99

99. Appendix orangish red . . . . . *A. rhizomatosus*
99. Appendix white or green 100

100. Peduncle mottled . . . . . *A. tuberculatus*
100. Peduncle without mottles 101

101. Peduncle uniformly green . . . . . *A. brevispathus*
101. Peduncle reddish brown . . . . . *A. prolificus*

102. Spadix stipitate 103
102. Spadix sessile 105

103. Pistillate zone covered in filiform processes . . . . . *A. aberrans*
103. Pistillate zone without filiform processes 104

104. Spathe base interior dark red . . . . . *A. fuscus*
104. Spathe base interior greenish . . . . . *A. wasa*

105. Styles red or purple 106
105. Styles green or yellow 114
106. Spathe base interior covered in filiform processes . . . . . *A. tenuistylis*
106. Spathe base interior smooth, grooved or verrucose 107
107. Spathe base interior smooth or with very few shallow warts 108
107. Spathe base interior heavily verrucose 109
108. Spathe base interior green or beige . . . . *A. atrorubens*
108. Spathe base interior dark red or purple . . . . *A. fuscus*
109. Spadix shorter than 10 cm . . . . . *A. myosuroides*
109. Spadix longer than 15 cm 110
110. Spathe base and limb separated by shallow or no constriction 111
110. Spathe base and limb separated by strong constriction 112
111. Styles short, 1–2 mm long . . . . . *A. saraburiensis*
111. Styles long, 3–4 mm long . . . . . *A. scutatus*
112. Spathe base exterior without mottles *A. haematospadix*
112. Spathe base exterior mottled 113
113. Sterile zone present between staminate and pistillate zone . . . . . *A. atroviridis*
113. Sterile zone not present . . . . . *A. konjac*
114. Sterile zone present between the staminate and pistillate zone 115
114. Sterile zone not present 117
115. Spathe whitish pink . . . . . *A. ochroleucus*
115. Spathe bright green 116
116. Stamens arranged in distinct disk-like whorls . . . . . *A. interruptus*
116. Stamens not arranged in disk-like whorls . . *A. opalinus*
117. Spathe limb short, constituting less than 1/3 of spathe length 118
117. Spathe limb constituting at least 1/2 of spathe length. 119
118. Stigmas yellowish green . . . . . *A. kienluongensis*
118. Stigmas beige or off-white . . . . . *A. prolificus*
119. Spathe base interior dark red or purple. 120
119. Spathe base interior green, white or whitish pink . . 122
120. Appendix apex obtuse . . . . . *A. fuscus*
120. Appendix apex acute 121
121. Stigmas 2- or 3-lobed . . . . . *A. allenii*
121. Stigmas 4–6-lobed . . . . . *A. pygmaeus*
122. Peduncle striped or mottled 123
122. Peduncle without mottles or stripes 125
123. Staminate zone covered in translucent filiform processes . . . . . *A. lanuginosis*
123. Staminate zone without filiform processes 124
124. Staminate zone fusiform; appendix dark green. . . . . *A. linearis*
124. Staminate zone cylindric; appendix beige . . . *A. lunatus*
125. Peduncle uniformly green or grades up to green . . 126
125. Peduncle uniformly reddish brown 127
126. Appendix twice as broad as staminate zone; apex obtuse . . . . . *A. glossophyllus*
126. Appendix as broad as staminate zone; apex acute . . . . . *A. josefbogneri*
127. Spathe base and limb separated by strong constriction . . . . . *A. saururus*
127. Spathe base and limb separated by shallow or no constriction 128
128. Lower staminate flowers operculate . . . *A. operculatus*
128. Staminate flowers not as above . . . . . *A. sizemoreae*

Subkey 10. *Key to the species of Australia and Southern Melanesia*

1. Appendix elongate conic . . . . . *A. galbra*
1. Appendix broadly pyramidal . . . . . *A. paeoniifolius*

DISCUSSION

While this manuscript is not a monograph-level treatment of *Amorphophallus*, it is hoped that the updated species checklist and dichotomous keys provided here will encourage more taxonomic work within the genus. The keys included here represent the first attempt to cover the global species distribution of *Amorphophallus* since 1996 (Hetterscheid & Ittenbach 1996) and include 137 additional species not covered in that manuscript. This work summarizes the earliest taxonomic account of *Amorphophallus* (Blume 1837) to the most recent (Serebryanyi et al. 2023) and in doing so revealed numerous taxonomic uncertainties. Three formerly accepted species (*A. hetterscheidii*, *A. manta,* and *A. nanus*) were found to be morphologically indistinguishable from formerly described taxa and subsequently synonymized.

A number of other species were also difficult to resolve morphologically; however, their taxonomic status was not challenged at this time due to the lack of access to sufficient living or herbarium specimens to conduct the necessary comparisons. The largest group of such ambiguous taxa comprises the former *Pseudodracontium* species (comprised of *A. fallax*, *A. glaucophyllus*, *A. kuznetsovii*, *A. lacourii*, *A. lanceolatus*, *A. latifolius*, *A. macrophyllus,* and *A. pseudoharmandii*). These species co-occur in the same region of SE Asia and can only be distinguished from each other by fine differences in quantitative characters (e.g., spadix length, peduncle length, ovary diameter) which are known to vary to some degree in other species of *Amorphophallus*. The identification of these taxa is often further obscured by the existence of specimens displaying intermediate phenotypes of diagnostic characters which could indicate either a rich history of hybridization or the existence of a single ochlospecies. Many genera with examples of ochlospecies are acknowledged in *Araceae*, including *Alocasia* (Hay & Wise 1991) and *Arisaema* (Huttleston 1981), More thorough sampling of both morphological and molecular data from the former *Pseudodracontium* group of species is needed to properly address this phenomenon and further taxonomic efforts should be pointed here.

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Appendix Index of protologues referenced.

Species (distribution)	Reference	Referenced in keys: (G=Global)
A. aberrans Hett. (C Thailand)	Hetterscheid 1994	G, 9
A. abyssinicus (Rich.) N.E.Br. (W, S, SE Africa)	Oliver 1901	G, 1, 2, 3
A. adamsensis Magtoto, Mones, Ballada, Austria, R.M.Dizon, Alangui, Reginaldo, W.M.Galvan, K.T.Dizon & Hett. (Philippines)	Magtoto et al. 2013	G, 7
A. albispathus Hett. (Thailand)	Hetterscheid 1994	G, 9
A. albus P.Y.Liu & J.F.Chen (China)	Liu & Chen 1984	G, 5
A. allenii A.Galloway, Malkm.-Huss., Prehsler & Claudel (W Thailand)	Galloway et al. 2019b	G, 9
A. amygdaloides Hett. & Sizemore (C Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. andranogidroensis Hett. & Mangelsdorff (Madagascar)	Hetterscheid & Mangelsdorff 2006	G, 4
A. angolensis (Schott) N.E.Br. (Gabon, Angola, Zaire)	Oliver 1901	G, 2
A. angulatus Hett. & A.Vogel (Sarawak)	Hetterscheid 1994	G, 8
A. angustispathus Hett. (Myanmar)	Hetterscheid 1994	G, 9
A. ankarana Hett., Ittenb. & Bogner (Madagascar)	Hetterscheid et al. 1999	G, 4
A. annulifer Hett. (Indonesia [Java])	Hetterscheid 1994	G, 8
A. antsingyensis Bogner, Hett. & Ittenb. (Madagascar)	Hetterscheid et al. 1999	G, 4
A. aphyllus (Hook.) Hutch. (Senegal, Guinea Bissau, Sierra Leone, Gambia)	Hutchinson & Dalziel 1936	G, 3
A. arcuspadix A.Galloway, Ongsakul & Petra Schmidt (C Laos)	Galloway 2012	G, 9
A. ardii Yuzammi & Hett. (Indonesia)	Yuzammi & Hetterscheid 2020	G, 8
A. asper Engl. & Gehrm. (Indonesia [Sumatera])	Engler 1911	G, 8
A. asterostigmatus Bogner & Hett. (C Thailand)	Bogner & Hetterscheid 1992	G, 9
A. atrorubens Hett. & Sizemore (C Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. atroviridis Hett. (C Thailand)	Hetterscheid 1994	G, 9
A. bangkokensis Gagnep. (C Thailand)	Gagnepain 1941	G, 9
A. barbatus A.Galloway & Ongsakul (Laos)	Galloway 2015	G, 9
A. barthlotii Ittenb. & Lobin (Ivory Coast, Liberia)	Ittenbach & Lobin 1997	G, 3
A. baumannii (Engl.) N.E.Br. (Ghana, Sierra Leone, Nigeria, Togo)	Oliver 1901	G, 3
A. beccarii Engl. (Indonesia [Sumatera])	Engler 1881	G, 8
A. bequaerti De Wild. (Zaire)	De Wildeman 1922	G, 2
A. bhandarensis S.R.Yadav, Kahalkar & Bhuskute (India)	Yadav et al. 2009	G, 6
A. bognerianus Sivad. & Jaleel (India)	Sivadasan & Jaleel 2009	G, 6
A. bolikhamxayensis A.Galloway, Ongsakul & Petra Schmidt (C Laos)	Galloway 2012	G, 9
A. bonaccordensis Sivad. & N.Mohanan (SW India)	Sivadasan et al. 1994	G, 6
A. borneensis Engl. & Gehrm. (Indonesia [S Kalimantan])	Engler 1911	G, 8
A. boyceanus Hett. (S Peninsular Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. brachyphyllus Hett. (E Malaysia [Sarawak])	Hetterscheid & Van der Ham 2001	G, 8
A. brevipetiolatus A.Galloway, Ongsakul & Petra Schmidt (C Laos)	Galloway 2012	G, 9
A. brevispathus Gagnep. (C Thailand)	Gagnepain 1941	G, 9
A. bubenensis J.T.Yin & Hett. (China [Yunnan], N Vietnam)	Yin et al. 2016	G, 5, 9
A. bufo Ridl. (Malaysia [Malacca])	Ridley 1909	G, 8
A. bulbifer (Schott) Blume (India)	Blume 1837	G, 6
A. calabaricus N.E.Br. (Nigeria, Cameroon)	Oliver 1901	G, 2, 3
A. calcicolus M.N.Tamayo, Magtoto & Sumalinog (Philippines)	Tamayo et al. 2021	G, 7
A. canaliculatus Ittenb., Hett. & Lobin (Gabon)	Ittenbach & Lobin 1997	G, 2
A. candidissimus X.Gong & H.Li (Vietnam)	Gong & Li 2012	G, 9
A. carneus Ridl. (W Malaysia)	Ridley 1903	G, 8
A. caudatus R.Bustam., Mansibang, Hett. & M.N.Tamayo (Philippines [Luzon])	Bustamante et al. 2020	G, 7
A. chlorospathus Kurz ex Hook.f. (Myanmar)	Hooker 1894	G, 9
A. cicatricifer Hett. (W Thailand)	Hetterscheid 1994	G, 9
A. cidarioides J.R.Callado, Medecilo & Hett. (Philippines [Panay Island])	Hetterscheid et al. 2020	G, 7
A. cirrifer Stapf (C Thailand)	Stapf 1924	G, 9
A. claudelii A.Galloway & Ongsakul (Laos)	Galloway 2015	G, 9
A. coaetaneus S.Y.Liu & S.J.Wei (S China)	Liu & Wei 1986	G, 5
A. commutatus (Schott) Engl. (S India)	De Candolle & De Candolle 1879	G, 6
A. consimilis Blume (Senegal, Gambia)	Blume 1837	G, 3
A. corrugatus N.E.Br. (N Thailand, Myanmar)	Brown 1912	G, 9
A. costatus Hett. (Indonesia [S Kalimantan])	Hetterscheid 1994	G, 8
A. coudercii (Bogner) Bogner (C Vietnam, Cambodia)	Bogner 1985	G, 9
A. crinitus A.Galloway, Luu, Malkm.-Huss., Prehsler & Claudel (S Vietnam)	Galloway et al. 2019a	G, 9
A. crispifolius A.Galloway, Ongsakul & Petra Schmidt (C Laos)	Galloway 2012	G, 9
A. croatii Hett. & A.Galloway (Laos)	Hetterscheid 2006	G, 9
A. cruddasianus Prain (Myanmar)	King & Prain 1898	G, 9
A. curvistylis Hett. (W Thailand)	Hetterscheid 1994	G, 9
A. declinatus Hett. (Philippines [Palawan])	Hetterscheid 1994	G, 7
A. decus-silvae Backer & Alderw. (Indonesia [Java])	Van Alderwerelt 1920	G, 8
A. discophorus Backer & Alderw. (Indonesia [Java])	Van Alderwerelt 1920	G, 8
A. dracontoides (Engl.) N.E.Br. (Benin, Ivory Coast, Ghana, Niger, Nigeria, Togo, C Africa Rep.)	Oliver 1901	G, 2, 3
A. dunnii Tutcher (SE China)	Tutcher 1911	G, 5
A. dzui Hett. (N Vietnam)	Hetterscheid & Van der Ham 2001	G, 9
A. eburneus Bogner (Malaysia [Sarawak])	Bogner 1989	G, 8
A. echinatus Bogner & Mayo (E Thailand)	Bogner et al. 1985	G, 9
A. eichleri (Engl.) Hook.f. (Zaire, Angola)	Hooker 1889	G, 2
A. elatus Hook.f. (W Malaysia, Peninsular Thailand)	Hooker 1894	G, 8, 9
A. elegans Ridl. (W Malaysia, Peninsular Thailand)	Ridley 1922	G, 8, 9
A. elliotii Hook.f. (Sierra Leone)	Hooker 1894	G, 3
A. erythrorrachis Hett., Pronk & R.Kaufmann (Madagascar)	Hetterscheid & Mangelsdorff 2006	G, 4
A. excentricus Hett. (Peninsular Thailand)	Hetterscheid 1994	G, 9
A. fallax (Serebryanyi) Hett. & Claudel (S Vietnam [Con Dao Islands])	Hetterscheid & Claudel 2012a	G, 9
A. ferruginosis A.Galloway (C Laos)	Galloway 2012	G, 9
A. flammeus Calaramo, Batuyong, Bulawin & Alejandro (Philippines [Luzon])	Calaramo et al. 2022	G, 7
A. fontarumii Bulawin, Medecilo & Alejandro (Philippines [Luzon])	Bulawin et al. 2022	G, 7

Appendix (cont.)

Species (distribution)	Reference	Referenced in keys: (G=Global)
A. forbesii Engl. & Gehrm. (Indonesia [Sumatera])	Engler 1911	G, 8
A. fornicatus Hett., J.R.Callado & Wistuba (Philippines)	Hetterscheid et al. 2020	G, 7
A. fuscus Hett. (N Thailand)	Hetterscheid 2006	G, 9
A. galbra F.M.Bailey (N Australia [Queensland], Papua New Guinea)	Bailey 1893	G, 10
A. gallaensis (Engl.) N.E.Br. (Ethiopia, Somalia, Kenya)	Oliver 1901	G, 1
A. gallowayi Hett. (Laos)	Hetterscheid 2006	G, 9
A. gigas Teijsm. & Binn. (Indonesia [Sumatera])	Teijsmann & Binnendijk 1862	G, 8
A. glaucophyllus Hett. & Serebryanyi (Thailand)	Hetterscheid & Claudel 2012a	G, 9
A. gliruroides Engl. (Myanmar)	Engler 1911	G, 9
A. glossophyllus Hett. (Vietnam)	Hetterscheid 1994	G, 9
A. goetzei N.E.Br. (Tanzania, Mozambique)	Oliver 1901	G, 1
A. gomboczianus Pic.Serm. (Ethiopia)	Richi-Sermolli 1950	G, 1
A. gracilior Hutch. (Nigeria)	Hutchinson 1939	G, 3
A. gracilis Engl. (Indonesia [Sumatera])	Engler 1881	G, 8
A. haematospadix Hook.f. (E Malaysia Peninsular Thailand, Indonesia [Sumatera])	Hooker 1894	G, 8, 9
A. harmandii Engl. & Gehrm. (Cambodia)	Engler 1911	G, 9
A. hayi Hett. (N Vietnam, China [Yunnan])	Hetterscheid 1994	G, 5, 9
A. hemicryptus Hett. & J.F.Maxwell (Cambodia)	Hetterscheid & Claudel 2013	G, 9
A. henryi N.E.Br. (Taiwan)	Brown 1903	G, 5
A. hewittii Alderw. (E Malaysia [Sarawak])	Van Alderwerelt 1920	G, 8
A. hildebrandtii Engl. & Gehrm. (Madagascar)	Engler 1911	G, 4
A. hirsutus Teijsm. & Binn. (Indonesia [Sumatera], India [Nicobar Islands])	Teijsmann & Binnendijk 1862	G, 6, 8
A. hirtus N.E.Br. (Taiwan)	Brown 1903	G, 5
A. hohenackeri Engl. & Gehrm. (SW India)	Engler 1911	G, 6
A. hottae Bogner & Hett. (E Malaysia [Sabah])	Bogner & Hetterscheid 1992	G, 8
A. impressus Ittenb. (Tanzania, Malawi)	Ittenbach & Lobin 1997	G, 1
A. infundibuliformis Hett., A.Dearden & A.Vogel (E Malaysia [Sarawak])	Hetterscheid 1994	G, 8
A. interruptus Engl. & Gehrm. (N Vietnam)	Engler 1911	G, 9
A. johnsonii N.E.Br. (Ivory Coast, Burkina Fasso, Ghana, Guinea, Liberia, Mali)	Oliver 1901	G, 3
A. josefbogneri Hett. (Thailand)	Hetterscheid 2006	G, 9
A. julaihii Ipor, Tawan & P.C.Boyce (E Malaysia [Sarawak])	Ipor et al. 2004	G, 8
A. juliae P.C.Boyce & Hett. (E Malaysia [Sarawak])	Boyce et al. 2010	G, 8
A. kachinensis Engl. & Gehrm. (N Thailand, Laos, China [Yunnan])	Engler 1911	G, 5, 9
A. khammouanensis A.Galloway (Laos)	Galloway 2015	G, 9
A. kienluongensis V.D.Nguyen, Luu & Hett. (S Vietnam)	Nguyen et al. 2016	G, 9
A. kiusianus Makino (S Japan, E China, Taiwan)	Makino 1913	G, 5
A. konjac K.Koch (S China, Vietnam, E Malaysia [Sabah])	Koch & Fintelmann 1858	G, 5, 8, 9
A. konkanensis Hett., S.R.Yadav & K.S.Patil (SW India)	Hetterscheid & Serebryanyi 1994	G, 6
A. koratensis Gagnep. (Thailand, Laos)	Gagnepain 1941	G, 9
A. krausei Engl. (Myanmar, Thailand, China [Yunnan])	Engler 1911	G, 5, 9
A. kuznetsovii (Serebryanyi) Hett. & Claudel (S Vietnam)	Hetterscheid & Claudel 2012a	G, 9
A. lacourii Linden & André (Laos, Thailand, Cambodia, Vietnam)	Linden & Andre 1878	G, 9
A. lambii Mayo & Widjaja (E Malaysia [Sabah], Indonesia [Kalimantan])	Mayo et al. 1982	G, 8
A. lanceolatus (Serebryanyi) Hett. & Claudel (S Vietnam)	Hetterscheid & Claudel 2012a	G, 9
A. lanuginosis Hett. (C Vietnam)	Hetterscheid 1994	G, 9
A. laoticus Hett. (Laos)	Hetterscheid 2006	G, 9
A. latifolius (Serebryanyi) Hett. & Claudel (W Thailand)	Hetterscheid & Claudel 2012a	G, 9
A. lewallei Malaisse & Bamps (Burundi)	Bamps & Malaisse 1993	G, 1
A. linearis Gagnep. (Thailand)	Gagnepain 1941	G, 9
A. linguiformis Hett. (Indonesia [Kalimantan])	Hetterscheid 1994	G, 8
A. longicomus Hett. & Serebryanyi (Vietnam)	Hetterscheid & Van der Ham 2001	G, 9
A. longiconnectivus Bogner (C India)	Bogner 1995	G, 6
A. longispathaceus Engl. & Gehrm. (Philippines)	Engler 1911	G, 7
A. longistylus Kurz (India [Andaman Islands])	Hooker 1894	G, 6
A. longituberosus Engl. & Gehrm. (NW Malaysia, Thailand)	Engler 1911	G, 8, 9
A. lunatus Hett. & Sizemore (Thailand)	Hetterscheid 2006	G, 9
A. luzoniensis Merr. (Philippines [Luzon])	Merrill 1915	G, 7
A. macrophyllus (Gagnep. ex Serebryanyi) Hett. & Claudel (Thailand)	Hetterscheid & Claudel 2012a	G, 9
A. macrorhizus Craib (N Thailand)	Brown 1912	G, 9
A. malkmus-husseinii A.Galloway, Prehsler & Claudel (C Laos)	Galloway et al. 2019c	G, 9
A. mangelsdorffii Bogner (Madagascar)	Bogner 2003	G, 4
A. margaritifer Kunth (NE India, Nepal)	Kunth 1841	G, 6
A. margretae Ittenb. (Zaire)	Ittenbach & Lobin 1997	G, 2
A. maximus (Engl.) N.E.Br. (Tanzania, Kenya, Zambia, Zimbabwe, Somalia)	Oliver 1901	G, 1
A. maxwellii Hett. (W Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. mekongensis Engl. & Gehrm. (Vietnam)	Engler 1911	G, 9
A. merrillii K.Krause (Philippines)	Krause 1912	G, 7
A. mildbraedii K.Krause (Cameroon)	Krause 1924	G, 2
A. minimus R.Bustam., Claudel & M.N.Tamayo (Philippines [Luzon])	Bustamante et al. 2021	G, 7
A. minor Ridl. (W Malaysia)	Ridley 1903	G, 8
A. mossambicensis Klotzsch ex Garcke (Mozambique, Tanzania, Zimbabwe, Zambia)	Oliver 1901	G, 1
A. muelleri Blume (W Thailand, India [Andaman Islands], Indonesia [Sumatera, Java, Timor, Sulawesi])	Blume 1837	G, 6, 8, 9
A. mullendersii Malaisse & Bamps (Zaire, Angola)	Bamps & Malaisse 1993	G, 2
A. myosorensis E.Barnes & C.E.C.Fisch. (SW India)	Barnes & Fischer 1939	G, 6
A. myosuroides Hett. & A.Galloway (Laos)	Hetterscheid 2006	G, 9
A. napalensis (Wall.) Bogner & Mayo (N India, Nepal, Bhutan)	Bogner et al. 1985	G, 6
A. napiger Gagnep. (C Thailand)	Gagnepain 1941	G, 9
A. natolii Hett., Wistuba, Amoroso, Medecilo & Claudel (Philippines [Palawan])	Hetterscheid et al. 2012	G, 7
A. niahensis P.C.Boyce & Hett. (E Malaysia [Sarawak])	Boyce et al. 2010	G, 8

Appendix (cont.)

Species (distribution)	Reference	Referenced in keys: (G=Global)
A. nicolaii Hett. (Vietnam)	Hetterscheid & Claudel 2013	G, 9
A. nicolsonianus Sivad. (SW India)	Sivadasan 1986	G, 6
A. obovoideus Alderw. (Indonesia [Sumatera])	Van Alderwerelt 1922	G, 8
A. obscurus Hett. & Sizemore (E Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. ochroleucus Hett. & V.D.Nguyen (Vietnam)	Hetterscheid & Van der Ham 2001	G, 9
A. ongsakulii Hett. & A.Galloway (Laos)	Hetterscheid 2006	G, 9
A. opalinus Serebryanyi & Hett. (Vietnam)	Serebryanyi et al. 2023	G, 9
A. operculatus Hett. & Sizemore (Thailand)	Hetterscheid 2003	G, 9
A. opertus Hett. (S Vietnam)	Hetterscheid 1994	G, 9
A. paeoniifolius (Dennst.) Nicolson (Madagascar, Polynesia)	Nicolson 1977	G, 4, 7, 8, 9, 10
A. palawanensis Bogner & Hett. (Philippines [Palawan])	Bogner & Hetterscheid 1992	G, 7
A. pendulus Bogner & Mayo (E Malaysia [Sarawak], Indonesia [Kalimantan])	Bogner et al. 1985	G, 8
A. perakensis Engl. (W Malaysia)	Engler 1911	G, 8
A. perrieri Hett. & Wahlert (Madagascar)	Hetterscheid & Claudel 2014	G, 4
A. pilosus Hett. (C Vietnam)	Hetterscheid 1994	G, 9
A. plicatus Bok & H.J.Lam (Indonesia [Sulawesi])	Bok & Lam 1936	G, 8
A. polyanthus Hett. & Sizemore (Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. prainii Hook.f. (Thailand, W Malaysia, Indonesia [Sumatera, Kalimantan])	Hooker 1894	G, 8, 9
A. preussii N.E.Br. (Cameroon)	Oliver 1901	G, 2
A. prolificus Hett. & A.Galloway (Thailand)	Hetterscheid 2006	G, 9
A. pseudoharmandii Hett. & Claudel (Cambodia)	Hetterscheid & Claudel 2012a	G, 9
A. pulchellus Hett. & Schuit. (Laos)	Hetterscheid & Claudel 2013	G, 9
A. purpurascens Kurz ex Hook.f. (Myanmar)	Hooker 1894	G, 9
A. pusillus Hett. & Serebryanyi (S Vietnam)	Hetterscheid & Serebryanyi 1994	G, 9
A. putii Gagnep. (C Thailand)	Gagnepain 1941	G, 9
A. pygmaeus Hett. (C Thailand)	Hetterscheid 1994	G, 9
A. ranchanensis Ipor, A.Simon & Meekiong (E Malaysia [Sarawak])	Ipor et al. 2007	G, 8
A. ravenii V.D.Nguyen & Hett. (N Laos)	Nguyen et al. 2018	G, 9
A. rayongii Hett. & Medecilo (Philippines)	Hetterscheid et al. 2020	G, 7
A. reflexus Hett. & A.Galloway (Thailand)	Hetterscheid 2006	G, 9
A. rhizomatosus Hett. (N Vietnam, Laos)	Hetterscheid 1994	G, 9
A. richardsiae Ittenb. (Zambia)	Ittenbach & Lobin 1997	G, 1
A. rostratus Hett. (Philippines)	Hetterscheid 1994	G, 7
A. rugosus Hett. & A.Lamb (E Malaysia [Sabah])	Hetterscheid 1994	G, 8
A. sagittarius Steenis (Indonesia [Java])	Van Steenis 1953	G, 8
A. salmoneus Hett. (Philippines [Palawan])	Hetterscheid 1994	G, 7
A. saraburiensis Gagnep. (C Thailand)	Gagnepain 1941	G, 9
A. saururus Hett. (NE Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. scaber Serebryanyi & Hett. (S Vietnam)	Hetterscheid & Serebryanyi 1994	G, 9
A. schmidtiae Hett. & A.Galloway (Laos)	Hetterscheid 2006	G, 9
A. scutatus Hett. & T.C.Chapm. (C Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. serrulatus Hett. & A.Galloway (Thailand)	Hetterscheid 2006	G, 9
A. shyamsalilianum J.V.Gadpay., Somkuwar & A.A.Chaturv. (India [Maharashtra])	Gadpayale et al. 2017	G, 6
A. sinuatus Hett. & V.D.Nguyen (N Vietnam)	Hetterscheid 2003	G, 9
A. sizemoreae Hett. (Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. smithsonianus Sivad. (SW India)	Sivadasan 1989	G, 6
A. sparsiflorus Hook.f. (W Malaysia)	Hooker 1894	G, 8
A. spectabilis Engl. (Indonesia [Java])	De Candolle & De Candolle 1879	G, 8
A. staudtii N.E.Br. (Cameroon)	Oliver 1901	G, 2
A. stipitatus Engl. (SE China)	Engler 1923	G, 5
A. stuhlmannii (Engl.) Engl. & Gehrm. (Tanzania, Kenya)	Engler 1911	G, 1
A. subpedatus V.D.Nguyen & Hett. sp. inq.	No protologue was located	G, 9
A. sumawongii (Bogner) Bogner & Mayo (SE Thailand)	Bogner et al. 1985	G, 9
A. suwidjianus Ipor, Tawan & Meekiong (Indonesia [Kalimantan])	Ipor et al. 2010	G, 8
A. sylvaticus (Roxb.) Kunth (S India, Sri Lanka)	Kunth 1841	G, 6
A. symonianus Hett. & Sizemore (Thailand)	Hetterscheid & Van der Ham 2001	G, 9
A. synandrifer Hett. & V.D.Nguyen (Vietnam)	Hetterscheid & Van der Ham 2001	G, 9
A. taurostigma Ittenb., Hett. & Bogner (Madagascar)	Hetterscheid et al. 1999	G, 4
A. tenuispadix Hett. (C Thailand)	Hetterscheid 1994	G, 9
A. tenuistylis Hett. (C Thailand)	Hetterscheid 1994	G, 9
A. terrestris Hett. & Claudel (Laos, Thailand)	Hetterscheid & Claudel 2012b	G, 9
A. teuszii (Engl.) N.E.Br. (Zaire, Angola)	Oliver 1901	G, 2
A. thaiensis (S.Y.Hu) Hett. (N Thailand)	Boyce et al. 2012	G, 9
A. tinekeae Hett. & A.Vogel (E Malaysia [Sabah])	Hetterscheid & Van der Ham 2001	G, 8
A. titanum (Becc.) Becc. (Indonesia [Sumatera])	Beccari 1879	G, 8
A. tonkinensis Engl. & Gehrm. (N Vietnam)	Engler 1911	G, 9
A. tuberculatus Hett. & V.D.Nguyen (N Vietnam)	Hetterscheid 2006	G, 9
A. umbrinus A.Galloway, Luu, Malkm.-Huss., Prehsler & Claudel (S Vietnam)	Galloway et al. 2019a	G, 9
A. urceolatus Hett., A. Galloway & Medecilo (Philippines)	Hetterscheid et al. 2020	G, 7
A. variabilis Blume (Indonesia [Java])	Blume 1837	G, 8
A. venustus Hett., A.Hay & Mood (E Malaysia [Sabah])	Hetterscheid & Van der Ham 2001	G, 8
A. verticillatus Hett. (N Vietnam)	Hetterscheid 1994	G, 9
A. villosus A.Galloway, Luu, Malkm.-Huss., Prehsler & Claudel (S Vietnam)	Galloway et al. 2019a	G, 9
A. vogelianus Hett. & Billenst. (N Thailand)	Hetterscheid 2003	G, 9
A. wasa Naive, K.Z.Hein & Hett. (Myanmar)	Naive et al. 2022	G, 9
A. xiei H.Li & Z.L.Dao (China [Yunnan])	Li & Dao 2006	G, 5
A. yaoi A.Galloway, Hett. & Medecilo (Philippines)	Hetterscheid et al. 2020	G, 7
A. yuloensis H.Li (China [Yunnan], Laos, Vietnam)	Li 1988	G, 5, 9
A. yunnanensis Engl. (China [Yunnan], Laos, N Thailand, Vietnam)	Engler 1911	G, 5, 9
A. zengianus C.L.Long & H.Li (China)	Long & Li 2000	G, 5
A. zenkeri (Engl.) N.E.Br. (Cameroon, Equatorial Guinea, Nigeria)	Oliver 1901	G, 2, 3