ARTIFICIAL KEY TO THE ORCHID GENERA OF THE NETHERLANDS INDIES, TOGETHER WITH THOSE OF NEW GUINEA, THE MALAY PENINSULA AND THE PHILIPPINES

by

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(Oegstgeest).

It is often a very difficult task for the many amateurs and cultivators of Orchids, and I may add hardly in a less degree to students of the flora of the Netherlands Indies, to classify properly the Orchids they come across. The reason for this lies not only in the fact that the generic characters in this large order are often not easily distinguished, but also in the fact that nearly every genus counts a certain number of more or less anomalous species, so that the limits between the genera are not always easy to determine. Besides, many descriptions are, even in principal points, incomplete, either because the authors had no sufficiently good material at their disposal, or because they did not take the trouble to draw up good descriptions. For these reasons species are unavoidably often placed into a wrong genus, to which fact a great deal of the prevailing confusion is to be ascribed.

Although in the course of years many questions have been solved, it cannot be denied that new problems did arise. Only very accurate and complete descriptions, the best, of course, elucidated by figures after fresh or alcohol material, can put us in a position to decrease these difficulties.

In order to meet at least in some way the wishes of many, I have tried to make a key to the genera of *Orchidaceae* occurring in the Netherlands Indies. It is far from me to think, that I have solved with this the difficulties, alone already for the reason that I am not acquainted with some of these genera by my own study so that I have to rely in such cases upon often incomplete data, and even because the limitation of genera which I know from personal experience in some cases have not yet become quite clear to me.

It is hardly necessary to state that this key does not claim the least scientific value; it is intended only as an effort to open in some degree a way to those who want to arrange the Orchid species in the right genera. Although it is meant only for the genera of the Netherlands Indies I have included those of New Guinea, the Malay Peninsula and the Philippines.

1. Two or three fertile anthers; three fertile stigmata 2
   One fertile anther; two fertile stigmata, the third transformed into a rostellum 4
2. Lip saccate or shoe-shaped; staminode large, disklike; anthers globose ..... **Paphiopedilum** PFITZ.
   Lip not saccate; staminode 0 or filiform; anthers elongate, not globose 3
3. Three fertile stamens ..... **Neuwiedia** BL.
   Two fertile stamens ..... **Apostasia** BL.
4. Saprophytes 5
   No saprophytes; leaves sometimes reduced to scales 19
5. Anther inserted with a broad base; pollinia with caudicles towards the base of the anther 6
   Pollinia without or with appendages towards the top of the anther 7
6. Lip entire, spurred; flowers pale ... **Platanthera** L. C. RICH.
   Lip 3-lobed, not spurred; flowers coloured **Silvorchis** J. J. S.
7. Lip with 2 bubbles or 2 spurs at the base 8
   Lip without bubbles, without or with 1 spur 9
8. Lip with two bubbles at the base; flowers in a spike ..... **Cystorchis** BL.
   Lip with 2 spurs; flowers large, solitary ... **Corybas** SALISB.
9. Stems more or less climbing, rooting; inflorescence much ramified ..... **Galeola** LOUR.
   Stems (not the rhizome) not climbing, not rooting 10
10. Pollinia 8; flower with green markings on the lip ..... **Pachystoma** BL.
    Pollinia less than 8 11
11. Sepals and petals connate 12
    Sepals and petals free 13
12. Stigma below the top of the column **Didymoplexis** GRIFF.
    Stigma at the base of the column ..... **Gastrodia** R. BR.

13. Flowers at the base with a toothed cup.... **Lecanorchis** Bl.
Flowers without a toothed cup at the base 14
14. Lip with a usually short spur 15
Lip without a spur 16
15. Inflorescence nodding at the top; flowers pale (a spurless form not rarely occurs) ..... **Epipogum** Gmel.
Inflorescence not nodding, tinged with green; spur short; flowers coloured ..... **Eulophia** R. Br.
16. Ovary abruptly contracted in the much thinner pedicel ... **Stereosandra** Bl.
Ovary not abruptly contracted in the pedicel 17
17. Lip with a distinct, bilobed hypochile ..... **Aphyllorchis** Bl.
Lip without such like hypochile 18
18. Peduncle, roots and fruits thick; pollinia without a stipes ... **Galeola** Lour.
Peduncle thin; pollinia on a thin stipes ..... **Tropidia** Bl.
19. Anther inserted with a broad base, immobile; pollinia with caudicles towards the base of the anther 20
Pollinia without or with appendages towards the top of the anther 25
20. Fertile stigmata flat or concave, confluent, at best separated by a furrow 21
Stigmata separated, not flat 23
21. Lip spurred ..... **Platanthera** L. C. Rich.
Lip not spurred 22
22. Leafy plants, flowers green; lip entire ..... **Herminium** L.
Saprophyte; flowers coloured; lip threelobed ..... **Silvorchis** J. J. S.
23. Small plant with one sessile leaf and a few-flowered inflorescence; lip not spurred ..... **Disperis** Sw.
Larger plants; leaves more than one; lip spurred 24
24. Claw of the lip adnate to the borders of the column and of the stigmata ..... **Peristylus** Bl.
Stigmata free, on two shorter or longer processes ..... **Habenaria** Willd.
25. Leaves reduced to scales 26
Normal leaves present, though sometimes very small 30
26. Stem elongate, climbing, rooting, green; flowers large, in few-flowered racemes ..... **Vanilla** Sw.

Stem short; inflorescence more-flowered 27
27. Inflorescence 70—80 cm high; pollinia on a bifid stipes ..... **Dipodium** R. BR.
Inflorescence much shorter; pollinia with a simple stipes ... 28
28. Lip inserted on the top of the column foot **Chiloschista** LNDL.
No column foot 29
29. Pollinia 4 ..... **Taeniophyllum** BL.
Pollinia 2 ..... **Microtatorchis** SCHLTR.
30. Plants with annual tubers (stem- or roottubers), rarely the tubers longer lived 31
Plants without tubers or with pseudobulbs 37
31. Lip with two conical spurs .....**Corybas** SALISB.
Lip without or with one spur 32
32. Inflorescence not terminal on the leafy stem, usually developing before the leaf; leaf more or less reniform ... **Nervilia** GAUD.
Inflorescence terminal on the leafy stem 33
33. Leaf terete ..... **Microtis** R. BR.
Leaf flat 34
34. Lip nearly similar in form to the sepals and petals; column on both sides with a tuft of hairs ..... **Thelymitra** FORST.
Lip distinctly different from the sepals and petals; column without tufts of hairs 35
35. Lip inserted on the top of the column foot, entire, with an appendage at the base; flower large ..... **Pterostylis** R. BR.
No column foot; lip without an appendage at the base; flowers small; leaf linear 36
36. Lip with numerous clavate appendages; column without petaloid wings ..... **Caladenia** R. BR.
Lip without clavate warts; column with two petaloid wings ..... **Diuris** SW.
37. Sprouts one-leaved; inflorescence an erect raceme; flowers non resupinate (thus lip turned upward); lip entire, with a small cavity at the base, in which the short column is hidden ..... **Cryptostylis** R. BR.
Otherwise 38
38. Inflorescences exclusively terminal on the leafy stems or pseudobulbs 39
Inflorescences axillary or lateral, sometimes besides terminal 96

39. No pseudobulbs; stems elongate, climbing, rooting 40
Stems not climbing, whether or not ramified, without aerial roots (sometimes rhizome climbing) 41
40. Inflorescence a short, (apparently) lateral raceme; lip adnate to the column rather over a long distance ..... **Vanilla** Sw.
Flowers in terminal panicles; lip very shortly or indistinctly adnate to the column ..... **Galeola** Bl.
41. Young leaf convolutive, the margins overlapping one another 42
Young leaf duplicative, with the margins not overlapping; to this series belong also the terete and laterally compressed leaves 80
42. Terrestrial orchids with fascicled, fleshy roots; leaves radical, narrow; flowers small, second or spirally arranged ..... **Spiranthes** L. C. Rich.
Otherwise 43
43. No real sympodium, stems after flowering emitting one or a few side branches near the inflorescence between the leaves; pollinia sectile 44
Rhizome covered with scales or sheaths without a blade; pollinia not sectile 67
44. Stigmata 2, separate 45
Stigma 1 53
45. Lip inside with hairlike appendages (perhaps a monstrous form of **Goodyera**) ..... **Eucosia** Bl.
Lip without hairlike appendages within 46
46. Sepals and petals connate ..... **Cheirostylis** Bl.
Sepals and petals free 47
47. Spur of the lip projecting between the lateral sepals 48
Base of the lip concealed by the lateral sepals 49
48. Spur inside with 2 distinctly stipitate glands; margins of the lip not laciniate ..... **Vrydagzynea** Bl.
Spur inside with 2 sessile glands; margins of the lip laciniate ..... **Anoectochilus** Bl.
49. Claw of lip on both sides laciniate ..... **Odontochilus** Bl.
Claw of lip entire or wanting 50
50. Blade of lip long clawed; flowers pure white **Myrmechis** Bl.
Blade of lip without or with a short claw 51
51. Column recurved; lip in the anterior part tubular and papillose ..... **Tubilabium** J. J. S.

Column not recurved; lip otherwise 52

52. Lip turned downward; stipes of the pollinia broad; laciniae of the rostellum large ..... **Zeuxine** LNDL.
Lip turned upward, or more or less oblique; stipes of the pollinia narrow; laciniae of the rostellum small **Hetaeria** BL.

53. Lip and column twisted 54
Lip and column not twisted; lip sometimes turned upward 55

54. Lip blade slightly broadened; column with two longitudinal lamellae in front ..... **Macodes** BL.
Blade of lip strongly broadened; column without lamellae in front ..... **Haemaria** LNDL.

55. Lip turned upward ..... **Papuaea** SCHLTR.
Lip turned downward 56

56. Lip without appendages at the base within 57
Lip with glands, warts, lamellae or hairlike appendages at the base within 60

57. Spur long, bilobed at the top 58
Spur short, wide, not bilobed 59

58. Lip with 2 longitudinal thickenings on the blade ..... **Herpysma** LNDL.
Lip without thickenings ..... **Erythrodes** BL.

59. Column with 2 subulate teeth near the stigma ..... **Dicerostylis** BL.
Column without teeth near the stigma ... **Hylophila** LNDL.

60. The ventricose part of the lip inside covered all over with or provided at the base only with 2 tufts of hairlike appendages 61
Lip without hairlike appendages, but inside at the base with glands or warts 63

61. Ventricose part of lip inside allover covered with hairlike appendages ..... **Goodyera** R. BR.
Lip inside at the base with 2 tufts of hairlike appendages ... 62

62. Lip at the base adnate to the column, with a short, dorsally compressed spur, 3-lobed, with the midlobe clawed ..... **Orchipedum** BREDA
Lip not spurred, very concave, constricted on both sides above the base; blade sessile ..... **Platylepis** BL.

63. Lip inside with a transverse row of warts; big plants with a thick stem and linear leaves ..... **Lepidogyne** BL.

Lip inside at the base with 2 glands or warts 64
64. Blade of lip with a long, pectinate or crenate claw .....
Pristiglottis CRETZ. et J. J. S. (**Cystopus** BL.)
Blade of lip not clawed or claw entire 65
65. Spur of lip distinctly projecting between the lateral sepals
Eurycentrum SCHLTR.
Spur short, entirely or nearly entirely concealed by the lateral sepals 66
66. Column with 2 longitudinal lamellae in front **Dossinia** MORR.
Column without lamellae ..... **Kuhlhasseltia** J. J. S.
67. No pseudobulbs; stems more-leaved 68
Pseudobulbs 1—2-leaved 71
68. Stems short, remote on the rhizome, c. 4-leaved; pollinia 4
Claderia Hook. f.
Stems approximate 69
69. Lip entire; pollinia 2 ..... **Tropidia** BL.
Lip 3-lobed; pollinia 8 70
70. Petals broader than the sepals; fruit elongate **Arundina** BL.
Petals not broader than the sepals; fruit globose .....
Dilochia LNDL.
71. Lip adnate to the column ..... **Gynoglottis** J. J. S.
Lip free 72
72. Lateral sepals connate at the base and forming a twolobed mentum, narrowly enclosing the 2-lobed sac of the lip .....
Bracisepalum J. J. S.
Mentum not bilobed, not narrowly enclosing the base of the lip 73
73. Column with one terminal and 2 lateral wings, which are distinctly separate, the latter sometimes very small, rarely wanting ..... **Dendrochilum** BL.
Column often winged at the top, without lateral wings ... 74
74. Lip entire, strongly sigmoid ..... **Sigmatochilus** ROLFE
Lip otherwise 75
75. Lip distinctly saccate at the base 76
Lip more or less concave at the base (saccate in a few species of *Coelogyne*) 78
76. Column not or slightly winged, or broadly winged along nearly the whole length 77
Column winged at the top only ..... **Nabaluia** AMES.

77. Blade of lip nearly entire or if 3-lobed with a sessile midlobe ..... **Pholidota** LNDL.
Blade of lip 3-lobed; midlobe broadly clawed ..... **Coelogyne** LNDL. sect. **Chelonistele.**
78. Column not winged ..... **Acoridium** NEES.
Column slightly to strongly winged 79
79. Column slender; petals not abruptly clawed; flowers often large ..... **Coelogyne** LNDL.
Column short; petals abruptly clawed ..... **Basigyne** J. J. S.
80. Pollinia 4 or 6, on one bifid or on 2 stipites which are each more or less spathulate at the top, inserted at the base of the broadened portion 81
Otherwise 82
81. Pollinia 4 ..... **Podochilus** BL.
Pollinia 6 ..... **Appendicula** BL.
82. Pollinia 2 ..... **Bromheadia** LNDL.
Pollinia 4 83
Pollinia 8 93
83. Pollinia without gland and stipes 84
Pollinia with a gland and/or stipes 88
84. Column foot present; plants very multiform **Dendrobium** SW.
No column foot 85
85. Leaves laterally compressed 86
Leaves not laterally compressed, often apparently convolutive 87
86. Column very short; stems usually crowded **Oberonia** LNDL.
Column somewhat elongate; stems very or moderately remote ..... **Hippeophyllum** SCHLTR.
87. Column very short; flowers not resupinate, thus lip turned upward ..... **Microstylis** NUTT.
Column long or short; lip turned downward ..... **Liparis** L. C. RICH.
88. Lip without a sac or spur 89
Lip with a sac or spur 91
89. Inflorescence long peduncled, panicled... **Polystachya** JUSS.
Inflorescence sessile, one- or few-flowered, fascicled 90
90. Lip concave, sessile, entire; no column foot ..... **Aglossorhyncha** SCHLTR.
Lip clawed, 3-lobed; column foot present ... **Sarcostoma** BL.
91. The strongly broadened base of the lateral sepals adnate to

the long spur of the lip into a long spurlike mentum (thus nearly like in many *Dendrobiums*..... **Sepalosiphon** SCHLTR.
Base of the lateral sepals not adnate to the spur of the lip into a long mentum 92

92. Lip at the base shortly adnate to the column **Glomera** BL.
Lip apparently not adnate to the column ..... **Ischnocentrum** SCHLTR.

93. Sepals connate, only free at the tops ... **Mediocalcar** J. J. S.
Sepals not connate 94

94. Stems more or less elongate, more-leaved; flowers in head-like, paniculate or spikelike, few- or many-flowered inflorescences; lip more or less saccate at the base, the cavity separated from the other part by a transverse lamella or thickening ..... **Agrostophyllum** BL.
Sprouts one-leaved at the top; lip without a cavity separated by a transverse lamella at the base 95

95. Lip adnate at the base to the column foot by a longitudinal keel; column not divided in two arms... **Epiblastus** SCHLTR.
Lip not adnate to the column foot; column with arms or lobes containing the stigmata ..... **Ceratostylis** BL.

96. Leaves convolutive 97
Leaves duplicative 113

97. Leafy stems elongate, climbing, rooting ..... **Vanilla** SW.
Stems not climbing and rooting, the rhizome sometimes... 98

98. Pollinia 2, often furrowed or split 99
Pollinia 4 105
Pollinia 8 107

99. Pseudobulbs one-leaved; inflorescences on rudimentary leafless pseudobulbs ,alternating with the normal ones 100
Pseudobulbs or stems two- or more-leaved 101

100. Column with 2 alae or arms ..... **Chrysoglossum** BL.
Column without appendages ..... **Diglyphosa** BL.

101. Pseudobulbs few-leaved; inflorescence elongate 102
No pseudobulbs; stem usually elongate and more-leaved, rarely short and c. two-leaved; inflorescence short 103

102. Lip faintly 3-lobed; inflorescence nodding at the top..... **Geodorum** JACKS.
Lip more or less 3-lobed; inflorescence not nodding..... **Eulophia** R. BR.

103. Pollinia without appendages; column foot very short; lip with 2 longitudinal ridges, which are confluent in front ... **Pseuderia** SCHLTR.
Pollinia with stipes and gland; no column foot; lip with 2 longitudinal, free ridges 104
104. Lip not clawed, saccate or spurred at the base **Tropidia** BL.
Lip spathulate, blade crisp ..... **Corymborchis** THOU.
105. Lip elastically adnate to the column; flowers usually yellow and red; terrestrial ..... **Plocoglottis** BL.
Lip not adnate to the column; colour of the flowers usually otherwise; usually epiphytes 106
106. Column very short; flowers small ... **Pseudacoridium** AMES
Column long; flowers usually medium sized or large ..... **Coelogyne** LNDL.
107. Sepals united in a ventricose tube; column foot very long, strongly bent, the upper portion free; flowers large ..... **Acanthephippium** BL.
Sepals not forming a ventricose tube 108
108. Lip more or less adnate to the column (the spur leaving out of account) 109
Lip not adnate to the column 110
109. Column over the whole length adnate to the claw of the lip ..... **Calanthe** R. BR.
Column adnate to the lip at the base only ..... **Phajus** LOUR.
110. Pseudobulbs one-leaved 111
Pseudobulbs 2- or more-leaved 112
111. Flowers not resupinate; lip turned upward ..... **Nephelaphyllum** BL.
Lip turned downward ..... **Tainia** BL.
112. Lip with a 2-lobed callus between the lateral lobes; terrestrial ..... **Spathoglottis** BL.
Lip with longitudinal ridges; epiphytes ..... **Eria** LNDL. sect. **Goniorhabdos**
113. Stems with unlimited top growth, often ramified; no rhizome 135
Stems with limited top growth, the basal portions forming a sympodium (rhizome) covered with scales or sheaths 114
114. Pollinia 4 or 6, on one bifid or on 2 stipites which are each more or less spathulate broadened at the top, inserted at the base of the broadened portion 115

Pollinia otherwise 116
115. Pollinia 4 ..... **Podochilus** Bl.
Pollinia 6 ..... **Appendicula** Bl.
116. Pollinia 2 117
Pollinia 4 124
Pollinia 8 127
117. Claw of the lip adnate to the inferior portion of the column or to a projecting appendage of it, forming a tubular cavity; with pseudobulbs 118
Lip not adnate to the column in such a way 119
118. Lateral sepals connate; pseudobulbs few-leaved ..... **Acriopsis** Reinw.
Lateral sepals free; pseudobulbs one-leaved ..... **Thecostele** Rchb. f.
119. Stems more or less climbing, rooting; no rhizome..... **Dipodium** R. Br.
Stems not climbing and rooting; rhizome present 120
120. Inflorescence very short, dense, sometimes besides terminal **Bromheadia** Lndl.
Inflorescence more or less elongate, loose 121
121. Column with 2 arms; inflorescence very long and loosely ramified ..... **Porphyroglottis** Ridl.
Column without arms; inflorescence simple 122
122. Lip with 3 ridges; pollinia each on a lobe of the short stipes ..... **Grammatophyllum** Bl.
Lip with 2 ridges; stipes of the pollinia not lobed 123
123. Lip free from the column; stipes of the pollinia broad ..... **Cymbidium** Sw.
Lip with a very short claw adnate to the column; stipes narrow ..... **Cyperorchis** Bl.
124. Inflorescences from the pseudobulbs or stems ..... **Dendrobium** Sw.
Inflorescences from the rhizome or at the base of the pseudobulbs 125
125. Pollinia with caudiculae ..... **Dendrochilum** Bl. sect. **Eudendrochilum**
Pollinia without appendages, rarely with a viscous mass. ... 126
126. Pollinia sometimes with a viscous mass (in section **Sestochilos**); lip polymorphous ..... **Bulbophyllum** Thou.

Pollinia without a viscous mass; lip strongly saccate ..... **Pedilochilus** SCHLTR.

127. Inflorescence from the base of the pseudobulbs, paniculate **Ridleyella** SCHLTR.

Inflorescence simple 128

128. Concave base of lip separated from the anterior portion by transverse thickenings between the lateral lobes ..... **Agrostophyllum** BL.

Lip without transverse thickenings 129

129. Sepals connate in a tube; pseudobulbs depressed globose ... **Porpax** LNDL.

Sepals sometimes connate at the base but not forming a tube; pseudobulbs otherwise 130

130. Pollinia on a common, thin stipes 131

Pollinia not on a common thin stipes 133

131. Floral parts parallel, at least at the base, flowers usually hardly opening; lip at the base with a longitudinal thickening, with a little, probably nectariferous groove on both sides; anther rather long, more or less acuminate ... **Thelasis** BL.

Floral parts not parallel; lip without a longitudinal thickening, but with 2 glands near the base; anther short and obtuse 132

132. Stems elongate; leaves laterally compressed; lip not clawed; no column foot ..... **Octarrhena** THW.

Leaves usually not laterally compressed; if so stems very short; lip more or less distinctly clawed; column foot present, though usually very short ..... **Phreatia** LNDL.

133. Stems elongate; leaves laterally compressed; column recurved, ventricose in front, with a cavity; no column foot ..... **Chitonanthera** SCHLTR.

Leaves very rarely laterally compressed; column otherwise; column foot present 134

134. Leaves very rarely laterally compressed; pollinia firmly attached to the caudicles..... **Eria** LNDL.

Leaves not laterally compressed; rachis filiform; anther 2-lobed at the top; pollinia very loosely inserted ..... **Poaephyllum** RIDL.

135. Pollinia 8 136

Pollinia 2 or 4 139

136. Floral parts strongly connivent, only the tips sometimes recurved; anther rather long, acuminate ..... **Thelasis** Bl.
Flowers usually well opened, anther short, blunt 137
137. Leaves usually not compressed, but if so stem very short; flowers usually white; lip more or less clawed; column foot present though usually very short ..... **Phreatia** Lndl.
Stems elongate; leaves laterally compressed; lip not clawed; no columnfoot 138
138. Pollinia on a common stipes; column not recurved, not ventricose in front ..... **Octarrhena** Thw.
Pollinia not on a common stipes; column recurved, ventricose in front, with a cavity ..... **Chitonanthera** Schltr.
139. Leaves with 3 nerves prominent beneath... **Dipodium** R. Br.
Nerves not or only the midrib prominent beneath 140
140. Pollinia 4, nearly equally large, free one from another 141
Pollinia 2, often furrowed or more or less deeply split, or 4 joined in 2 bodies, often unequal 143
141. Leafless; inflorescences more or less elongate, at least the peduncle ..... **Taeniophyllum** Bl.
Leafy plants; inflorescences very short 142
142. Leaves laterally compressed; inflorescences 2-flowered; flowers tender, white; lip spurred ..... **Microsaccus** Bl.
Leaves thick, often triangular in section, channelled above; inflorescence one- or more-flowered; flower fleshy; lip not spurred ..... **Adenoncos** Bl.
143. Sepals and petals more or less connate in a tube which is split up between the lateral sepals; lip spurred; pollinia 2; not rarely leafless ..... **Microtatorchis** Schltr.
Sepals and petals free 144
144. Pollinia 4, equal or unequal, united in 2 bodies 145
Pollinia 2, often furrowed or more or less deeply split 164
145. Petals inserted on the column foot; leafless or sometimes with a few small leaves ..... **Chiloschista** Lndl.
Petals not inserted on the column foot or no column foot; leafy plants 146
146. Column foot distinct though sometimes rather short 147
Column foot wanting or obsolete 151
147. Lip not spurred 148
Lip spurred 149

148. Anther at the base with a broad, reverse appendage, which covers the back of the column; pollinia unequal ..... **Calymmanthera** SCHLTR.
Anther without appendage; pollinia equal ..... **Cordiglottis** J. J. S.

149. Spur thin, not forming a continuation of the narrow column foot; pollinia unequal ..... **Ornithochilus** WALL.
Spur wide saccate, the back-side forming the continuation of the broad column foot 150

150. Pollinia equal; lip inside without a callus ... **Bogoria** J. J. S.
Pollinia very unequal, the posterior ones the smallest; lip inside with a callus ..... **Thrixspermum** LOUR.

151. Lip movable or elastically inserted ..... **Arachnis** BL.
Lip immovable 152

152. Flowers not resupinate, thus lip turned upward, and with the tip of the spur directing upward or towards the top of the inflorescence 153
Flowers resupinate; lip turned downward 154

153. Lip 3-lobed; lobes small, closing together and with the spur distinctly shoe-shaped; spur with a longitudinal septum ... **Camarotis** LINDL.
Lip not shoe-shaped; spur without a septum but with a transverse scale usually dentate at the apex from the back side ..... **Pomatocalpa** BREDA

154. Rostellum very large, ovate triangular, connected with the column only with the middle of the broad base; spur conic, inside with a tranverse wall; flowers very small ..... **Abdominea** J. J. S.
Otherwise 155

155. Lip with appendages near the base of the back-side, that manifestly narrow the entrance of the spur 156
Lip not with such appendages 157

156. Lip at the base of the back-side with a projecting, horizontal, usually pubescent and more or less linear lamella, usually very complicate in shape and rather a long way adnate to the column ..... **Trichoglottis** BL.
Lip at the back-side with a callus variable in shape..... **Sarcanthus** LINDL.

157. Lip with a very wide sac, more or less basin-shaped ..... **Gastrochilus** D. Don
Spur short or long, but not basin-shaped 158
158. Inflorescence one-flowered; small plant with relatively large flowers ..... **Ceratochilus** Bl.
Inflorescence more-flowered 159
159. Rostellum very long; anther with a long, sharply reflexed beak; small-flowered ..... **Schoenorchis** Bl.
Rostellum and anther otherwise 160
160. Flowers thick, fleshy, usually yellow or yellowish, often dotted red or brown; spur short or hardly saccate 161
Flowers thin; spur distinct 162
161. No spur; base of lip concave, rounded behind; in a few species a short spur directed backward ..... **Vandopsis** Pfitz.
Lip at the base very short angular saccate... **Acampe** Lndl.
162. Pollinia very unequal; spur widened at the base; small plants ..... **Saccolabiopsis** J. J. S.
Pollinia slightly unequal; spur not widened at the base; large plants 163
163. Midlobe and sidelobes of the lip nearly on the same level; principal colour of the flowers red, often mottled ..... **Renanthera** Lour.
Lateral lobes reaching much higher than the midlobe; flowers purple ..... **Ascoglossum** Schltr.
164. No distinct spur, but the lip sometimes concave or somewhat saccate at the base 165
Lip with a distinct spur 172
165. Column foot distinct 166
Column foot wanting or very indistinct 170
166. Lip inserted immovably on the column foot ..... **Phalaenopsis** Bl.
Lip inserted movably or elastically 167
167. Lip strongly bent; leaves compressed laterally or terete ... **Cheirorchis** Carr
Lip not manifestly bent; leaves not laterally compressed or terete 168
168. Lip with a short, broad, fleshy claw ... **Chroniochilus** J. J. S.
Lip without claw 169
169. Column long, straight; column foot very short, lip with a

very small pit at the base ..... **Sarcochilus** R. BR.
Column short; column foot not very short; lip without a cavity at the base ..... **Chamaeanthus** SCHLTR.

170. Flowers very large, flat; habitus of *Vanda* **Euanthe** SCHLTR.
Flowers small, not flat 171

171. Leaves flat; inflorescences as long as the leaves ..... **Dryadorchis** SCHLTR.
Leaves terete; inflorescences very short, dense, much shorter than the leaves ..... **Luisia** GAUD.

172. Lip more or less movable, inserted on the top of the distinct column foot 173
Lip immovable 174

173. Inflorescence viscid; flowers rather fleshy, rather long lasting; spur usually conic and incurved, inside with appendages ..... **Aerides** LOUR.
Flowers tender, ephemerous; spur without appendages within **Sarcohilus** R. BR.

174. Pollinia much shorter than the stipes 175
Pollinia not or hardly shorter than the stipes 181

175. Blade of lip large and broad, fleshy, sigmoid or nearly flat, entire or shortly 3-lobed at the top; spur pointing backward and laterally compressed; leaves usually with longitudinal pale stripes ..... **Rhynchostylis** BL.
Lip 3-lobed; lobes sometimes very small; spur not or dorsally compressed; leaves without pale stripes 176

176. Side lobes of lip broad, thin, more or less fimbriate or erose at the apex; pollinia on a spathulate stipes ..... **Pennilabium** J. J. S.
Side lobes not thin, not fimbriate or erose 177

177. Column long, arched; lip with 2 calli... **Renantherella** RIDL.
Column short, straight or recurved 178

178. Stipes of the pollinia broadened towards the base, with a large gland; leaf-sheaths warty and ciliate ..... **Hymenorchis** SCHLTR.
Stipes of the pollinia not or broadened upward; leaf-sheaths not ciliate 179

179. Inflorescences erect; pedunculus muriculate; rachis thickened **Ascochilopsis** CARR
Inflorescence usually patent or directed downward; peduncle

not muriculate, glabrous or very rarely pubescent; rachis not thickened 180

180. Spur usually directed backwards or curved, inside at the base without appendages; midlobe thin and narrow (linear) ... **Malleola** J. J. S. et SCHLTR.

Spur usually incurved, the backside with longitudinal ribs or keels within ..... **Robiquetia** GAUD.

181. Inflorescence short, paniculate, wholly red; flowers very small ..... **Porphyrodesme** SCHLTR.

Inflorescence simple 182

182. Pollinia on a broad stipes 183

Pollinia on a narrow, linear stipes 184

183. Side lobes of the lip adnate to the column; midlobe acuminate **Pelatantheria** RIDL.

Lip not adnate to the column; midlobe not simply acuminate **Vanda** R. BR.

184. Lip at the base adnate to the column; spur bilobed at the top ..... **Omoea** BL.

Lip not adnate to the column; spur not bilobed 185

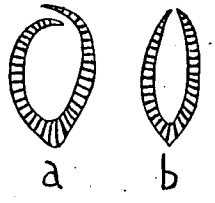
185. Midlobe of lip ligulate, sidelobes erect, pressed against the column ..... **Ascocentrum** SCHLTR.

Midlobe fleshy, callus-shaped; sidelobes not pressed against the column ..... **Saccolabium** BL.

Oakes Ames mentions the genus **Angraecum** BORY for the Philippine Islands. The shape of the column and pollinia are, however, not yet sufficiently known to incorporate it in this key.

A few remarks, which may be of some interest to the users, may find a place here.

It has become obvious to me that the expressions "convolutive" and "duplicative", which refer to the leaf vernation, are yielding difficulties to many persons. Convolutive means that the margins of the young leaf, before it is unfolded, more or less are overlapping one another (a), duplicative that they close together (b). In both cases it may occur that, besides, the leaves are wrinkled. Duplicative, wrinkled leaves have sometimes the appearance of being convolutive (*Microstylis, Liparis*).



In the following lists I have enumerated the Orchid genera with convolutive and those with duplicative leaves.

Malayan Orchid genera with convolutive vernation.

(Names in brackets refer to saprophytic plants).

Acanthephippium Bl.
Acoridium Nees et Mey.
Anoectochilus Bl.
(Aphyllorchis Bl.)
Apostasia Bl.
Arundina Bl.
Basigyne J. J. S.
Bracisepalum J. J. S.
Caladenia R. Br.
Calanthe R. Br.
Cheirostylis Bl.
Chrysoglossum Bl.
Claderia Hook. f.
Coelogyne Lndl.
Corybas Salisb.
Corymborchis Thou.
Cryptostylis R. Br.
Cystorchis Bl.
Dendrochilum Bl. (excl. sect. Eudendrochilum)
Dicerostylis Bl.
(Didymoplexis Griff.)
Diglyphosa Bl.
Dilochia Lndl.
Disperis Sw.
Diuris Sw.
Dossinia Morr.
(Epipogum Gmel.)
Eria Lndl. sect. Goniorhabdos
Erythrodes Bl.
Eucosia Bl.
Eulophia R. Br.
Eurycentrum Schltr.
Galeola Lour.
(Gastrodia R. Br.)
Geodorum Jack
Goodyera R. Br.
Gynoglottis J. J. S.
Habenaria Wlld.
Haemaria Lndl.
Herminium L.
Herpysma Lndl.
Hetaeria Bl.
Hylophila Lndl.
Kuhlhasseltia J. J. S.
(Lecanorchis Bl.)
Lepidogyne Bl.
Macodes Lndl.
Microtis R. Br.
Myrmechis Bl.
Nabaluia Ames
Nephelaphyllum Bl.
Nervilia Gaud.
Neuwiedia Bl.
Odontochilus Bl.
Orchipedum Breda
(Pachystoma Bl.)
Papuaea Schltr.
Peristylus Bl.
Phajus Lour.
Pholidota Lndl.
Platanthera L. C. Rich.
Platylepis Lndl.
Plocoglottis Bl.
Pristiglottis Cretz. et J. J. S.
Pseudacoridium Ames
Pseuderia Schltr.
Pterostylis R. Br.

Sigmatochilus Rolfe
(Silvorchis J. J. S.)
Spathoglottis Bl.
Spiranthes L. C. Rich.
(Stereosandra Bl.)
Tainia Bl.
Thelymitra Forst.
Tropidia Lndl.
Tubilabium J. J. S.
Vanilla Sw.
Vrydagzynea Bl.
Zeuxine Lndl.

Malayan Orchid genera with duplicative vernation.

Abdominea J. J. S.
Acampe Lndl.
Acriopsis Reinw.
Adenoncos Bl.
Aerides Lour.
Aglossorhyncha Schltr.
Agrostophyllum Bl.
Angraecum Bory
Appendicula Bl.
Arachnis Bl.
Ascocentrum Schltr.
Ascochilopsis Carr
Ascoglossum Schltr.
Bogoria J. J. S.
Bromheadia Lndl.
Bulbophyllum Thou.
Calymmanthera Schltr.
Camarotis Lndl.
Ceratochilus Bl.
Ceratostylis Bl.
Chamaeanthus Schltr.
Cheirorchis Carr
Chiloschista Lndl.
Chitonanthera Schltr.
Chroniochilus J. J. S.
Cordiglottis J. J. S.
Cymbidium Sw.
Cyperorchis Bl.
Dendrobium Sw.
Dendrochilum Bl. sect. Eudendrochilum
Dipodium R. Br.
Dryadorchis Schltr.
Epiblastus Schltr.
Eria Lndl. (excl. sect. Goniorhabdos)
Euanthe Schltr.
Gastrochilus D. Don
Glomera Bl.
Grammatophyllum Bl.
Hippeophyllum Schltr.
Hymenorchis Schltr.
Ischnocentrum Schltr.
Liparis L. C. Rich.
Luisia Gaud.
Malleola J. J. S. et Schltr.
Mediocalcar J. J. S.
Microsaccus Bl.
Microstylis Nutt.
Microtatorchis Schltr.
Oberonia Lndl.
Octarrhena Thw.
Omoea Bl.
Ornithochilus Wall.
Paphiopedilum Pfitz.
Pedilochilus Schltr.
Pelatantheria Ridl.
Pennilabium J. J. S.
Phalaenopsis Bl.
Phreatia Lndl.
Poaephyllum Ridl.
Podochilus Bl.

Polystachya Lndl.
Pomatocalpa Breda
Porpax Lndl.
Porphyrodesme Schltr.
Porphyroglottis Ridl.
Renanthera Lour.
Renantherella Ridl.
Rhynchostylis Bl.
Ridleyella Schltr.
Robiquetia Gaud.
Saccolabiopsis J. J. S.
Saccolabium Bl.
Sarcanthus Lndl.
Sarcochilus R. Br.
Sepalosiphon Schltr.
Taeniophyllum Bl.
Thecostele Rchb. f.
Thelasis Bl.
Thrixspermum Lour.
Trichoglottis Bl.
Vanda R. Br.
Vandopsis Pfitz.

Herpysma Lndl. This genus was based on a single species from the Himalaya Mountains, *H. longicaulis* Lndl. In 1907 OAKES AMES described a second species, *H. Merrillii* Ames, from the Philippines, but transferred it to *Erythrodes* Bl. in 1909 (Orch. III, 79, pl. 54), whereas SCHLECHTER maintained it under *Herpysma*. Shortly C. E. CARR (in Journ. Str. Br. R. As. Soc. XI [1933], 69, pl. 1, fig. B) added a third species to the genus, viz. *H. sumatrana* Carr. However, there is no doubt whatever, that this species is identical with *Erythrodes bracteata* Schltr. (*Physurus bracteatus* Bl.), a plant which appears not to be rare in Sumatra. Although the coalescence of the lip with the column is only very slight and not more than in *Erythrodes*, I think it advisable to place the species in *Herpysma* for the present. Thus it should bear the name **Herpysma bracteata** J. J. S. n. comb. (*H. sumatrana* Carr, *Physurus bracteatus* Bl., *Erythrodes bracteata* Schltr.). It is not impossible that the very blunt anther forms a good generic character, as it is very different from the, so far as I know, always acuminate anther of the species of *Erythrodes*.

Orchipedum Breda. This genus was first described and figured by BREDA in 1827 (Gen. et sp. Orch., fasc. II, t. 5). In 1858 BLUME (Fl. Jav. n. ser. I, 99, t. 27, fig. 1) changed the name in *Queteletia* Bl., on account of the older name *Orchipeda* Bl. (*Apocynaceae*); he redescribed the only species under the name *Q. plantaginifolia* Bl. and copied BREDA's plate. According to Dr J. TH. HENRARD, our Dutch expert for nomenclatural affairs, there is no reason why *Orchipedum* Breda should not stand.

After KUHL and VAN HASSELT the plant was not collected again and remained somewhat doubtful, until in 1929 it was redetected in Java

by Dr C. G. G. J. VAN STEENIS and Mr. R. C. BAKHUIZEN VAN DEN BRINK. Dried material and a photograph enabled me to state that the published figure and description are in general very good but that they are incorrect in a few details. In the first place the base of the lip is distinctly adnate to the column, and secondly the calli in the spur are no real calli but tufts of weak processes not unlike those which are found in the base of the lip of *Platylepis* Bl. and also which cover the inner surface of the ventricose part of the lip of *Goodyera* R. Br.

It became also clear that *Orchipedum* Breda covers entirely the genus *Philippinaea* Ames et Schltr. (in AMES Orch. VI, 1920, 278, pl. 100) from the Philippines, and that the only species should bear the name **Orchipedum Wenzelii** J. J. S. n. comb. (*Philippinaea Wenzelii* Ames et Schltr., *Adenostylis Wenzelii* Ames). According to the description and plate this species differs from the Javanese one in the much narrower leaves, the narrower anterior lobe of the lip and the appendages in the base of the lip being clavate.

The geographical distribution of the genus, at least so far as we know as yet, viz. one species in Java and one in the Philippines, is certainly remarkable.

Thelasis Bl. R. SCHLECHTER has (in Laut. Beitr. zur Fl. von Papuasien IX [1923], 148) based on his sections *Diplostypus* and *Rhynchophreatia* of *Phreatia*, which agree with my section *Hemithelasis* of *Thelasis*, his genus *Rhynchophreatia*. When proposing the section *Hemithelasis* I have expressed the opinion that this section in future perhaps should be raised to specific rank. In this way SCHLECHTER was thus with me.

Provisionally I think it correct to maintain the section under *Thelasis*, the floral structure not showing any difference with this genus, just as I have pointed out formerly. The divergence is to be found in the vegetative parts, in which the section is similar to my section *Rhizophyllum* or SCHLECHTER's *Eu-Phreatia* of *Phreatia*.

SCHLECHTER's description of the thickening of the lip is not wholly accurate. It is not "ein deutlicher, dicker, nach hinten gerichteter Kallus am Grunde des Labellums", but a thick longitudinal ridge, which is not free at the back end, but adnate to the base of the column and with a nectary on both sides, just like in other species of *Thelasis*.

Chiloschista Lndl. R. MANSFELD has (in Notizbl. Berlin XI, nr. 106 (1932), 491), chiefly following SCHLECHTER, united a few species of the

genus *Sarcochilus* R. Br., on which I based my section *Perspicilla*, with *Chiloschista* Lndl. I cannot follow him in this matter, as the principal differentiating character, the curious appendages of the anther, seems to me only of secondary value, which opinion is supported by the fact, that in one of the species these appendages are wholly lacking. In excluding the species which SCHLECHTER and MANSFELD added to it, *Chiloschista* is a sharply limited genus, whereas the limits grow unstable in adding to it a few species with a quite other flower-structure.

Rhynchostylis Bl. SCHLECHTER has (Orch. 1915, 587) founded his genus *Anota* on a few species which had been placed variously in *Saccolabium, Vanda* and *Rhynchostylis*. I have always had the idea that there was something unnatural in admitting a genus *Anota* next to *Rhynchostylis*, but for want of good material I could not judge of it definitely. Now I am much obliged to Mr. ED. QUISUMBING, Manila, for kindly forwarding to me flowers in formaline of *Rhynchostylis retusa* Bl. and *Anota violacea* Schltr. I have failed to find any differences of generic value which would justify the maintenance of a genus *Anota*. In *Rhynchostylis retusa* Bl. there is a rather distinct but short column-foot on which the lateral sepals are decurring, but in *Anota violacea* Schltr. it is not wanting, though shorter, as is clearly shown in the magnificent and accurate plate published recently by ED. QUISUMBING (in Phil. Journ. Sc., vol. 52 (1933), 271, pl. 1—3). The insertion of the lip, the column and pollinia do not show any essential characters, so that the Philippine species should bear the name **Rhynchostylis violacea** Rchb. f.

There appear to exist some differences between the specimens of *Rhynchostylis retusa* in Java and in the Philippines. QUISUMBING describes the flowers as odourless, whereas in Java they are strongly fragrant, and he describes the petals as oblong-ovate and rounded, whereas they show in the Java specimens exactly the same form as in QUISUMBING's figure of *Anota violacea*.