

813 314  
345  
1874  
67

# ICONES PLANTARUM INDIÆ ORIENTALIS

OR

PLATES AND DESCRIPTIONS OF NEW AND RARE PLANTS

FROM SOUTHERN INDIA AND CEYLON

BY

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CONSERVATOR OF FORESTS, MADRAS

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300 PLATES

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PLATES 1-100

MADRAS: GANTZ BROTHERS

LONDON: J. VAN VOORST

1874



# INDEX

## TO THE PLATES FIGURED.

(*The Italics are synonyms.*)

	Tab.
RANUNCULACEÆ.	
Clematis triloba, Heyne	278
Thalictrum Dalzellii, Hook. f.	274
ANONACEÆ.	
Bocagœa Thwaitesii, H. f. et T.	41
„ coriacea, Thw.	71
„ Dalzellii, Bedd.	42
„ obliqua, Thw.	72
<i>Sagerœa Thwaitesii</i> . See Bocagœa.	
„ <i>Dalzellii</i> . See Bocagœa.	
Uvaria Zeylanica, Linn.	78
„ macropoda, H. f. et T.	79
„ sphaerocarpa, H. f. et T.	80
„ macrophylla, Roxb.	81
„ semicarpifolia, H. f. et T.	82
Cyathocalyx Zeylanicus, Champ.	47
Artabotrys Zeylanicus, H. f. et T.	48
Unona elegans, Thw.	50
„ discolor, Vahl.	51
„ pannosa, Dalz.	52
„ Lawii, H. f. et T.	73
„ Zeylanica, H. f. et T.	74
„ viridiflora, Bedd.	158
Polyalthia coffeoides, H. f. et T.	53
„ fragrans, Dalz.	54
„ persicœfolia, H. f. et T.	55
„ suberosa, Dun.	56
„ acuminata, Thw.	57
„ Moonii, Thw.	83
Anaxagorea Leuzonensis, A. Gray	46
„ <i>Zeylanica</i> .	46
Popowia Beddomeana, H. f. et T.	75
„ <i>ramosissima</i>	75
Phœanthus Malabaricus, Bedd.	76
Goniothalamus Thwaitesii, H. f. et T.	58
„ Thomsoni, Thw.	59
„ Gardneri, H. f. et T.	60
„ Wynadensis, Bedd.	61
„ cardiopetalus, Dalz.	62
„ Wightii, H. f. et T.	63
„ reticulatus, Thw.	64
„ salicinus, H. f. et T.	65
„ Hookeri, Thw.	66

				<i>Tab.</i>
Mitrephora Heyneana, H. f. et T.	...	...	...	77
"    grandiflora, Bedd.	...	...	...	101
Xylophia parviflora, H. f. et T.	...	...	...	43
"    nigricans, H. f. et T.	...	...	...	44
"    Championii, H. f. et T.	...	...	..	45
Miliusa Indica, Lesch	...	...	...	84
"    montana, Gard.	...	...	...	85
"    Wightiana, H. f. et T.	...	...	...	86
"    Zeylanica, Gard.	...	...	...	87
"    velutina, H. f. et T.	...	...	..	88
"    Nilagirica, Bedd.	...	...	...	89
Saccopetalum tomentosum, H. f. et T.	...	...	...	49
Alphonsea Zeylanica, H. f. et T.	...	..	...	90
"    lutea, H. f. et T.	...	...	...	91
"    Madrasapatana, Bedd.	...	...	...	92
Orophea uniflora, H. f. et T.	...	...	...	69
"    Thomsoni, Bedd.	...	...	...	67
"    erythrocarpa, Bedd.	...	...	...	68
"    Zeylanica, H. f. et T.	...	...	...	70
<i>Orophea coriacea</i> . See <i>Bocagea</i> .				
" <i>obliqua</i> . See <i>Bocagea</i> .				
CAPPARIDÆ.				
Capparis parviflora, H. f. et T.	...	..	...	276
"    pedunculosa, Wall.	...	...	...	277
"    longispina, H. f. et T.	...	...	...	281
VIOLARIÆ.				
Ionidium Travancoricum, Bedd.	...	...	...	230
BIXINÆ.				
Erythrospermum phytolaccoides, Gard.	...	...	...	105
Aberia Gardneri, Clos.	...	...	...	194
Asteriastigma macrocarpa, Bedd.	...	...	...	242
GUTTIFERÆ.				
Garcinia purpurea, Roxb.	...	...	...	270
DIPTEROCARPEÆ.				
Hopea Malabarica, Bedd.	...	...	...	185
MALVACEÆ.				
Dicellostyles axillaris, Thw.	...	...	...	279
Julostylis angustifolia, Thw.	...	...	...	280
GERANIACEÆ.				
Impatiens parasitica, Bedd.	...	...	..	140
"    viridiflora, Wight	...	...	...	141
"    parviflora, Bedd.	...	...	...	142
"    Travancorica, Bedd.	...	...	...	143
"    scabriuscula, Heyne	...	...	...	144
"    elegans, Bedd.	...	...	...	145
"    Wightiana, Bedd.	..	...	...	146
"    Taugachee, Bedd.	...	...	..	147
"    phœnicea, Bedd.	...	...	...	148
"    ligulata, Bedd.	...	...	...	149
"    Anamallayensis, Bedd.	...	...	..	150
"    Denisonii, Bedd.	...	...	...	151
"    orchioides, Bedd.	...	...	...	152

				<i>Tab.</i>
<i>Impatiens grandis</i> , Heyne.	...	...	...	153
„ <i>Ballardi</i> , Bedd.	...	...	...	192
RUTACEÆ.				
<i>Toddalia bilocularis</i> , WA.	...	...	...	167
<i>Paramignya armata</i> , Thw.	...	...	...	275
MELIACEÆ.				
<i>Aglaia minutiflora</i> , Wight	...	...	...	193
<i>Lansium Anamallayanum</i> , Bedd.	...	...	...	104
CELASTRINEÆ.				
<i>Euonymus serratifolius</i> , Bedd.	...	...	...	171
<i>Glyptopetalum grandiflorum</i> , Bedd.	...	...	...	102
RHAMNEÆ.				
<i>Ventilago Bombaiensis</i> , Dalz.	...	...	...	114
<i>Zieyphus Wymadensis</i>	...	...	...	114
<i>Colubrina</i> ? <i>Travancorica</i> , Bedd.	...	...	...	188
SAPINDACEÆ.				
<i>Schmidelia allophylla</i> , DC.	...	...	...	286
„ <i>acuminata</i> , Thw.	...	...	...	287
„ <i>varians</i> , Thw.	...	...	...	288
<i>Nephelium stipulaceum</i> , Bedd.	...	...	...	103
„ <i>bifoliatum</i> , Thw.	...	...	...	289
<i>Euphoria Gardneri</i> , Thw.	...	...	...	285
SABIACEÆ.				
<i>Sabia Malabarica</i> , Bedd.	...	..	..	177
ANACARDIACEÆ.				
<i>Semicarpus auriculata</i> , Bedd.	...	...	...	187
LEGUMINOSÆ.				
<i>Crotalaria lanata</i> , Bedd.	...	...	...	105
„ <i>elegans</i> , Bedd.	...	...	...	106
<i>Sophora interrupta</i> , Bedd.	...	...	...	165
<i>Tephrosia calophylla</i> , Bedd.	...	...	...	166
<i>Derris eualata</i> , Bedd.	...	...	...	186
<i>Smithia setulosa</i> , Dalz	...	...	...	243
„ <i>capitata</i> , Dalz.	...	...	...	244
<i>Alysicarpus racemosus</i> , Benth.	...	...	...	292
<i>Geissaspis cristata</i> , WA.	...	...	...	293
<i>Stylosanthes mucronata</i> , Willd.	...	...	...	294
<i>Millettia splendens</i> , WA.	...	...	...	295
<i>Vigna Wightii</i> , Benth.	...	...	...	296
<i>Rhynchosia Codoorensis</i> Bedd.	...	...	..	297
<i>Bauhinia Benthami</i> , Bedd.	...	..	..	107
<i>Humboldtia unijuga</i> , Bedd.	...	...	...	108
ROSACEÆ.				
<i>Parinarium Indicum</i> , Bedd.	...	...	...	109
„ <i>Travancoricum</i> , Bedd.	...	...	...	189
COMBRETACEÆ.				
<i>Quisqualis Malabarica</i> , Bedd.	...	...	...	155

## MYRTACEÆ.

Tab.

<i>Eugenia Calcadensis</i> , Bedd.	...	...	...	...	162
„ <i>terpnophylla</i> , Thw.	...	...	...	...	283
„ <i>Singampattiana</i> , Bedd.	...	...	...	...	273
„ <i>Wynadensis</i> , Bedd.	...	...	...	...	161
<i>Careya herbacea</i> , Roxb.	...	...	...	...	284

## MELASTOMACEÆ.

<i>Osbeckia alveolata</i> , Bedd.	...	...	...	...	163
<i>Kendrickia Walkeri</i> , Hook. f.	...	...	...	...	271
<i>Sonerila Travancorica</i> , Bedd.	...	...	...	...	156
„ <i>rotundifolia</i> , Bedd.	...	...	...	...	169
„ <i>Gardneri</i> , Thw.	...	...	...	...	298
„ <i>lanceolata</i> , Thw.	...	...	...	...	299
„ <i>Arnottiana</i> , Thw.	...	...	...	...	300
<i>Medinilla Malabarica</i> , Bedd.	...	...	...	...	157
„ <i>radicans</i> , Don. ?	...	...	...	...	184
<i>Memecylon amabile</i> , Bedd.	...	...	...	...	163
„ <i>gracile</i> , Bedd.	...	...	...	...	164
„ <i>terminale</i> , Dalz.	...	...	...	...	163

## SAMYDACEÆ.

<i>Casuaria Wynadensis</i> , Bedd.	...	...	...	...	160
------------------------------------	-----	-----	-----	-----	-----

## BEGONIACEÆ.

<i>Begonia minima</i> , Bedd.	...	...	...	...	110
„ <i>floccifera</i> , Bedd.	...	...	...	...	111

## RUBIACEÆ.

<i>Stephegyne tubulosa</i> , Arnt.	...	...	...	...	18
<i>Nauclea elliptica</i> , Dalz.	...	...	...	...	19
„ <i>peduncularis</i> , Wall.	...	...	...	...	235
<i>Nauclea tubulosa</i> .	...	...	...	...	18
<i>Acranthera Anamallica</i> , Bedd.	...	...	...	...	23
„ <i>Zeylanica</i> , Arnt.	...	...	...	...	24
„ <i>grandiflora</i> , Bedd.	...	...	...	...	25
<i>Leucocodon reticulatum</i> , Gard.	...	...	...	...	94
<i>Schizostigma hirsutum</i> , Arnt.	...	...	...	...	95
<i>Byrsophyllum ellipticum</i> , Thw.	...	...	...	...	96
„ <i>tetrandrum</i> , Bedd.	...	...	...	...	20
<i>Stylocoryne elliptica</i>	...	...	...	...	96
<i>Randia Deccanensis</i> , Bedd.	...	...	...	...	237
„ <i>speciosa</i> , Bedd.	...	...	...	...	37
„ <i>Gardneri</i> , Thw.	...	...	...	...	38
<i>Griffithia</i> . See <i>Randia</i> .					
<i>Gardenia tetrandra</i>	...	...	...	...	20
<i>Scyphostachys coffeoides</i> , Thw.	...	...	...	...	240
<i>Diplospora apiocarpa</i> , Dalz.	...	...	...	...	40
<i>Discospermum</i> . See <i>Diplospora</i> .					
<i>Timonius Jambosella</i> , Gærtn.	...	...	...	...	190
<i>Plectronia macrocarpa</i> , Thw.	...	...	...	...	238
„ <i>Travancorica</i> , Bedd.	...	...	...	...	239
<i>Ixora calycina</i> , Thw.	...	...	...	...	97
„ <i>jucunda</i> , Thw.	...	...	...	...	98
<i>Pavetta angustifolia</i> , Thw.	...	...	...	...	99
„ <i>involucrata</i> , Thw.	...	...	...	...	100
<i>Prismatomeris albidiflora</i> , Thw.	...	...	...	...	93
<i>Psychotria Anamallayana</i> , Bedd.	...	...	...	...	236
<i>Lasianthus truncatus</i> , Bedd.	...	...	...	...	9

	<i>Tab.</i>
<i>Lasianthus obovatus</i> , Bedd.	10
„ <i>oblongifolius</i> , Pedd.	11
„ <i>cyanocarpus</i> , Jack.	12
„ <i>dichotomus</i> , Wight.	13
„ <i>acuminatus</i> , Wight.	21
„ <i>Blumianus</i> , Wight.	22
<i>Lasianthus Jackianus</i>	12
<i>Saprosma fragrans</i> , Bedd.	14
„ <i>Wightii</i> , Gard.	15
„ <i>glomerata</i> , Gard.	16
„ <i>corymbosa</i> , Bedd.	17
<i>Serissa</i> . See <i>Saprosma</i> .	
<i>Fergusonia tetracocca</i> , Thw.	39
<i>Borreria tetracocca</i>	39
<i>Hedyotis buxifolia</i> , Bedd.	1
„ <i>hirsutissima</i> , Bedd.	2
„ <i>albo-nerva</i> , Bedd.	3
„ <i>viscida</i> , Bedd.	4
„ <i>purpurea</i> , Bedd.	5
„ <i>lentiginosa</i> , Bedd.	6
„ <i>Travancorica</i> , Bedd.	7
„ <i>quinquenervia</i> , Thw.	8
„ <i>auicularia</i> , L.	27
„ <i>triocryia</i> , Room. and Sch.	29
„ <i>Lessertiana</i> , Arnt.	31
„ <i>cymosa</i> , Thw.	35
„ <i>glabella</i> , Br.	36
„ <i>capitata</i> , Bedd.	191
<i>Hedyotis nummularia</i>	26
„ <i>quadrilocularis</i>	28
„ <i>caerulea</i>	30
„ <i>aspera</i>	32
„ <i>Heynii</i>	33
„ <i>nudicaulis</i>	34
<i>Oldenlandia caerulea</i> , WA.	30
„ <i>aspera</i> , Heyne.	32
„ <i>Heynii</i> , Brown.	33
„ <i>nudicaulis</i> , WA.	34
<i>Anotis nummularia</i> , Arnt.	26
„ <i>quadrilocularis</i> , Thw.	28
MYRSINÆ.	
<i>Ardisia serratifolia</i> , Bedd.	113
„ <i>amplexicaulis</i> , Bedd.	170
EBENACEÆ.	
<i>Diospyros sylvatica</i> , Roxb.	121
„ <i>Toposia</i> , Ham.	122
„ <i>foliolosa</i> , Wall.	123
„ <i>calycina</i> , Bedd.	123
„ <i>nigricans</i> , Dalz.	124
„ <i>paniculata</i> , Dalz.	125
„ <i>crumentata</i> , Thw.	126
„ <i>affinis</i> , Thw.	127
„ <i>quæsitâ</i> , Thw.	128
„ <i>pruriens</i> , Dalz.	129
„ <i>insignis</i> , Thw.	130
„ <i>oppositifolia</i> , Thw.	131
„ <i>Gardneri</i> , Thw.	132
„ <i>buxifolia</i> , Bl.	133

<i>Diospyros microphylla</i> , Bedd.	...	...	...	...	133
„ <i>Canarica</i> , Bedd.	...	...	...	...	134
„ <i>Thwaitesii</i> , Bedd.	...	...	...	...	135
„ <i>Nilagirica</i> , Bedd.	...	...	...	...	136
„ <i>hirsuta</i> , L.	...	...	...	...	137
„ <i>Moonii</i> , Thw.	...	..	...	...	138
„ <i>attenuata</i> , Thw.	...	...	..	...	139
STYRACEÆ.					
<i>Symplocos rosea</i> , Bedd.	...	...	...	...	115
„ <i>Anamallayana</i> , Bedd.	...	...	...	...	116
„ <i>acuminata</i> , Bedd.	...	...	...	...	117
„ <i>oligandra</i> , Bedd.	...	..	...	...	272
APOCYNÆÆ.					
<i>Chilocarpus Malabaricus</i> , Bedd.	...	...	...	...	175
ASCLEPIADEÆÆ.					
<i>Ceropegia fimbriifera</i> , Bedd.	...	...	...	...	172
„ <i>ensifolia</i> , Bedd.	...	...	...	...	173
„ <i>brevitubulata</i> , Bedd.	...	...	...	...	174
GENTIANÆÆÆ.					
<i>Eracum Anamallayanum</i> , Bedd.	...	...	...	...	154
„ <i>Travancoricum</i> , Bedd.	...	...	...	...	118
„ <i>atropurpureum</i> , Bedd.	...	...	...	...	119
CONVOLVULACEÆÆ.					
<i>Neuropeltis racemosa</i> , Wall.	...	...	...	...	291
GESNERIACEÆÆ.					
<i>Didymocarpus repens</i> , Bedd.	...	...	...	...	120
„ <i>membranacea</i> , Bedd.	...	...	...	...	176
ACANTHACEÆÆ.					
<i>Asystasia Travancorica</i> , Bedd.	...	...	...	...	178
<i>Phlogacanthus grandis</i> , Bedd.	...	...	...	...	179
„ <i>albidiflorus</i> , Bedd.	...	..	...	...	180
<i>Strobilanthes Neilgherrensis</i> , Bedd.	...	...	...	...	196
„ <i>parviflorus</i> , Bedd.	...	..	...	...	197
„ <i>gossypinus</i> , Anders.	...	...	..	...	198
„ <i>paniculatus</i> , Anders.	...	...	..	...	199
„ <i>Bolampattianus</i> , Bedd.	...	...	...	...	200
„ <i>papillosus</i> , Anders.	...	...	..	...	201
„ <i>extensus</i> , Nees.	...	...	..	...	202
„ <i>ixiocephalus</i> , Benth.	...	...	...	...	203
„ <i>anceps</i> , Nees.	...	...	...	...	204
„ <i>violaceus</i> , Bedd.	...	...	...	...	205
„ <i>sexennis</i> , Nees.	...	...	...	...	206
„ <i>gracilis</i> , Bedd.	...	...	...	...	207
„ <i>Andersonii</i> , Bedd.	...	...	...	...	208
„ <i>calycinus</i> , Nees.	...	...	...	...	209
„ <i>auriculatus</i> , Nees.	...	...	...	...	210
„ <i>ciliatus</i> , Nees.	...	...	...	...	211
„ <i>barbatus</i> , Nees.	...	...	...	...	212
„ <i>tetrapterus</i> , Dalz.	...	...	...	...	212
„ <i>caudatus</i> , Anders.	...	...	...	...	213
„ <i>Jeyporensis</i> , Bedd.	...	...	...	...	214
„ <i>Canarius</i> , Bedd.	...	...	...	...	215



					<i>Tab.</i>
<i>Strobilanthes consanguineus</i> , Nees.	...	...	...	...	216
„ <i>nigrescens</i> , Anders.	...	...	...	...	217
„ <i>deflexus</i> , Anders.	...	...	...	...	218
„ <i>Thwaitesii</i> , Anders.	...	...	...	...	219
„ <i>helicoides</i> , Nees.	...	...	...	...	220
„ <i>cuspidatus</i> , Benth.	...	...	...	...	221
„ <i>Walkeri</i> , Nees.	...	...	...	...	222
„ <i>laxus</i> , Anders.	...	...	...	...	223
„ <i>Zeylanicus</i> , Anders.	...	...	...	...	224
„ <i>adenophorus</i> , Nees.	...	...	...	...	225
„ <i>Gardnerianus</i> , Nees.	...	...	...	...	259
„ <i>vestitus</i> , Nees.	...	...	...	...	260
„ <i>Arnotianus</i> , Nees.	...	...	...	...	261
„ <i>Hookeri</i> , Nees.	...	...	...	...	262
<i>Lepidagathis grandiflora</i> , Dalz.	...	...	...	...	226
„ <i>cuspidata</i> , Nees.	...	...	...	...	227
„ <i>fasciculata</i> , Nees.	...	...	...	...	228
„ <i>rupestris</i> , Nees.	...	...	...	...	229
<i>Ruellia prostrata</i> , Poir.	...	...	...	...	282
<i>Ebermaiera ligulata</i> , Bedd.	...	...	...	...	245
<i>Adenosma pinnatifida</i> , Dalz.	...	...	...	...	246
<i>Rungia apiculata</i> , Bedd.	...	...	...	...	247
„ <i>longifolia</i> , Nees. and Arnt.	...	...	...	...	266
<i>Calophanes Dalzellii</i> , Bedd.	...	...	...	...	248
<i>Gymnostachyum hirsutum</i> , Anders.	...	...	...	...	249
„ <i>ovatum</i> , Anders.	...	...	...	...	250
„ <i>glabrum</i> , Dalz.	...	...	...	...	251
„ <i>paniculatum</i> , Anders.	...	...	...	...	252
„ <i>latifolium</i> , Dalz.	...	...	...	...	253
„ <i>serrulatum</i> , Nees.	...	...	...	...	254
„ <i>Thwaitesii</i> , Anders.	...	...	...	...	255
„ <i>Ceylanicum</i> , Arnt. and Nees.	...	...	...	...	265
<i>Barleria pilosa</i> , Wall.	...	...	...	...	256
„ <i>montana</i> , Nees.	...	...	...	...	257
„ <i>Beddomii</i> , Anders.	...	...	...	...	258
„ <i>vestita</i> , Anders.	...	...	...	...	263
„ <i>nutans</i> , Nees.	...	...	...	...	264
<i>Ptyssiglottis radicata</i> , Anders.	...	...	...	...	267
<i>Justicia Hookeriana</i> , Nees.	...	...	...	...	268
<i>Monothecium aristatum</i> , Wall.	...	...	...	...	260
LABIATÆ.					
<i>Pogostemon Travancoricum</i> , Bedd.	...	...	...	...	159
EUPHORBIACEÆ.					
<i>Croton Malabaricum</i> , Bedd.	...	...	...	...	181
„ <i>reticulatum</i> , Wall.	...	...	...	...	233
<i>Trigonostemon nemoralis</i> , Thw.	...	...	...	...	182
<i>Cyclostemon Malabaricus</i> , Bedd.	...	...	...	...	183
<i>Claoxylon Indicum</i> , Müll.	...	...	...	...	231
<i>Mallotus distans</i> , Wall.	...	...	...	...	232
<i>Agrostistachys Indica</i> , Dalz.	...	...	...	...	241
ORCHIDEÆ.					
<i>Cypripedium Drurii</i> , Bedd.	...	...	...	...	112
DIOSCOREACEÆ.					
<i>Trichopodium Zeylanicum</i> ? Thw.	...	...	...	...	290
GRAMINEÆ.					
<i>Oxytenanthera monostigma</i> , Bedd.	...	...	...	...	239



## RUBIACEÆ.

**HEDYOTIS BUXIFOLIA.** (Bedd. Linn. Trans. Vol. XXV.) A large shrub, branches terete, leaves short petioled, 4-6 lines long, 3 lines broad, ovate shining glabrous, very coriaceous, veinless, margins recurved; stipules broad sheathing, connate at the base, divided into filiform teeth, ciliate on the margins and with a line of hairs down the centre; peduncles terminal or in the upper axils  $\frac{1}{4}$  inch long, 3 flowered, flowers subsessile, bracts filiform ciliate, calyx cyathiform with 4 erect teeth, subsessile, coral villous in the mouth and on the segments, filaments included or exerted, anthers oblong, style longly exerted; capsule splitting into 2 bony cocci. Seeds numerous.

Anamallay Mountains, higher ranges.

### PLATE No. I.

**HEDYOTIS HIRSUTISSIMA.** (Bedd. Madras Journ. of Lit.) Shrubby, leaves  $1\frac{1}{2}$  to  $3\frac{1}{2}$  inch long by  $\frac{3}{4}$  to 1 inch broad, elliptic lanceolate to ovate lanceolate, mucronato-acuminate and attenuated into the petiole which is 2 lines to  $\frac{1}{2}$  an inch long, prominently veined, on both sides as well as the panicles densely adpresso-hirsute with yellowish hairs; stipules pectinately pinnatifid, very hairy, panicles axillary corymbiform, few flowered shorter than the leaves, bracts linear leaf-like, calyx deeply 4-cleft, segments lanceolate acuminate very hairy, corol tube long, very hairy outside and bearded within. Seeds numerous.

Nilgiri Mountains between Avalanche and Sisparah (7,000 ft.)

### PLATE No. II.

**HEDYOTIS ALBO-NERVA.** (Bedd.) Shrubby glabrous, leaves sub-membranaceous, pale beneath, slightly lineolate, lanceolate acuminate at both ends, 2-4 inches long (petiole  $\frac{1}{2}$  to  $\frac{3}{4}$  of an inch) about 1 inch broad, veins prominent; stipules broad-ovate deeply pinnatifid flowers sub-glomerate; peduncles axillary very short, pedicles numerous, very slender, 2-3 lines long; calyx with 4 erect acute lobes half the length or nearly as long as the corol; corol pilose within, anthers exerted and style included, or vice versa.

In foliage much resembling *H. cinereo-viridis* (Thwaites), but the inflorescence and stipules are different.

Tinnevely Mountains (rare) 3,000 ft.

### PLATE No. III.

**HEDYOTIS VISCIDA.** (Bedd.) Shrubby glabrous, leaves ovate to lanceolate acuminate, 3-5 inches long 1 to  $1\frac{1}{2}$  broad; petioles  $\frac{1}{2}$  to 1 inch long; stipules ovate entire and very viscid as are the bracts; corymbs terminal and from the upper axils, calyx glabrous 4 parted, segments lanceolate acute erect both in flower and fruit; corol pilose within; cells of the ovary. 8 seeded.

A large handsome shrub—beds of rivers on the Tinnevely Mountains 3,000 feet.

### PLATE No. IV.

**HEDYOTIS PURPUREA.** (Bedd.) Shrubby glabrous, leaves lanceolate acuminate at both ends, 2 to  $3\frac{1}{2}$  inches long  $\frac{3}{4}$  to  $1\frac{1}{4}$  inch broad, stipules ovate entire, ending in a mucro or pectinate (but not deeply); panicles terminal corymbose calyx 4-cleft with the segments foliaceous erect and slightly enlarging in fruit; flowers, calyx and peduncles of a fine purple color, capsule elongate slightly ribbed crowned with the erect, very foliaceous segments of the calyx.

A very large shrub. Calcad Hills and elsewhere on the Tinnevely Mountains, the fine purple tint of the whole of the panicle makes it very conspicuous and showy.

### PLATE No. V.

**HEDYOTIS LENTIGINOSA.** (Bedd.) Herbaceous glabrous except the inflorescence and young parts, leaves lanceolate acuminate attenuated at both ends, 2-3 inches long by  $\frac{1}{2}$  to  $\frac{3}{4}$  of an inch broad; stipules pectinate with long filiform teeth; panicles terminal corymbose all the inflorescence and younger parts of stem, &c., covered with a minute dense yellowish pubescence, calyx segments 4 small more or less recurved.

Backwaters about Quilon and Trevandrum.

PLATE No. VI.

**HEDYOTIS TRAVANCORICA.** (Bedd.) Shrubby glabrous, leaves ovate-lanceolate about 1 inch long by  $\frac{1}{2}$  an inch broad, shortly petiolate; stipules lacerated densely hoary with matted scaly pubescence; peduncles axillary 1 flowered,  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long, filiform solitary or 2-3 together, calyx 4 parted, segments erect with a long acumination.

Travancore and Tinnevely Mountains 3,000 to 4,000 feet elevation.

PLATE No. VII.

**HEDYOTIS QUINQUENERVIA.** (Thw.) Shrubby erect, branches compressed, leaves ovate 3-8 lines long coriaceous sub-glabrous, shortly and bluntly acuminate, 5 nerved sessile margins revolute; stipules connate, cupuliform more or less lacerated into filiform teeth, externally pilose and setose; capituli terminal sessile, calyx 4 cleft, segments sub-acute ciliated, corol white, purple outside, pilose in the jaws, anthers oblong purple.

Ceylon Mountains 7—8,000 feet.

PLATE No. VIII.

**LASIANTHUS TRUNCATUS.** (Bedd.) Shrubby, ramuli terete and with the petioles slightly strigose, leaves (on petioles 2-3 lines long) narrow lanceolate about 5 inches long by  $1\frac{1}{2}$  broad ending in an acumination with a ciliated mucro glabrous and shining above, strigose on the veins beneath, secondary veins numerous and parallel; stipules triangular acute strigose; flowers axillary sessile; solitary or two together; calyx cupuliform, truncated and sub-entire, and together with the corol strigose, corol tube elongate slightly recurved.

Myhendra Mountains near Berhampore (Ganjam District), elevation 4,500 feet.

PLATE No. IX.

**LASIANTHUS OBOVATUS.** (Bedd.) Shrubby glabrous ramuli terete, leaves (on petioles 2-3 lines long), obovate glabrous and shining  $1\frac{1}{4}$  to  $1\frac{1}{2}$  inch long, secondary veins inconspicuous; stipules triangular; capituli sessile few flowered, calyx segments ovate, corol tube short, very villous inside.

On the Athraymallay, Travancore Mountains 5,000 feet

PLATE No. X.

**LASIANTHUS OBLONGIFOLIUS.** (Bedd.) Shrubby, ramuli terete glabrous, leaves 6-7 inches long (of which the petiole is about  $\frac{1}{2}$  an inch) by 2 inches broad, oblong with a sudden long narrow acumination, glabrous above, slightly strigose on the costa and primary veins beneath and on the terminal acumination, very prominently veined, secondary veins parallel, tertiary very numerous and prominent; stipules triangular and with the petioles and inflorescence strigose; capituli sub-sessile, 2-5 flowered, calyx segments lanceolate acute, corol tube very short.

Paupanassum Hills (Tinnevely) 3—4,000 feet elevation.

PLATE No. XI.

**LASIANTHUS JACKIANUS.** (Wight.) Shrubby; clothed with long yellow hairs which spring from enlarged bases, branches terete, internodes short; stipules triangular short broad at the base, glabrous within; leaves sessile, ovate lanceolate shortly and abruptly acuminate, 4-5 inches long  $1\frac{1}{2}$  broad; flowers axillary sessile aggregated 3-4 supported by 2 foliaceous lanceolate bracteas which are  $\frac{1}{2}$  to  $1\frac{1}{4}$  inches long; calyx deeply 4-cleft, divisions ovate lanceolate, hairy on both sides; corol about the length of the calyx, glabrous within, lobes ciliate; ovary 3-5 celled, stigma 3-5 lobed, dupe small. *Mephitidea Jackiana* (Wight.)

Sisparah Ghat (Nilgiris.)

PLATE No. XII.

**LASIANTHUS DICHOTOMUS.** (Wight.) Shrubby, branches glabrous, terete except at the joints which are compressed; leaves short petioled, elliptic ovate or slightly cordate at the base, cuspidate glabrous except the short petiole and a few scattered hairs on the veins, stipules lanceolate about the length of the petiole pointed; cymes axillary solitary longish peduncled, once or twice dichotomous, divisions racemose, flowers secund, bracteas subulate sprinkled with bristly hairs; calyx deeply 4-cleft, divisions lanceolate acute often tipped with a tuft of bristly hairs, about the length of the tube of the corol; corol funnel-shaped, 4-cleft throat and laciniae hairy, stamens 3-4 included, style exserted. Stigma 3-4 lobed, ovary 3-4 celled. *Mephitidea dichotoma*. (Wight.)

Shevagherry and Courtallum Hills.

PLATE No. XIII.

**SERISSA FRAGRANS.** (Bedd.) Shrub; 10-12 feet, branches dichotomous, leaves glabrous, penninervous oblong to oblongo-lanceolate acuminate, attenuated at the base 3-4 inches long  $1\frac{1}{2}$ -2 inches broad, petioles 3 lines long; stipules entire or toothed, peduncles terminal very short bracteolate, pedicels 1-5, ebracteolate about 2 lines long, calyx cup-shaped sub-entire or slightly 4-lobed, ebracteolate at the base; corol infundibuliform, tube very long, minutely papillose on the outside, slightly villous within; stigma 2-lobed lobes elongate, fruit oblong.

Western slopes of the Nilgiris. A handsome shrub, with deliciously fragrant large flowers; the stems and leaves are very fetid when crushed as in the other species.

PLATE No. XIV.

**SERISSA WIGHTII.** (Gardn.) Shrub, 8-12 feet and more, branches terete dichotomous, leaves glabrous penninervous, lanceolate acuminate, attenuated at the base 3-3 $\frac{1}{2}$  inch long, 10-15 lines broad, petioles  $\frac{1}{2}$  an inch, stipules connate toothed, peduncles 1 flowered, axillary or terminal 4 lines long, bibracteolate a little above the base and at the apex; calyx tube obovate adherent glabrous ebracteolate at the base, limb 4-toothed, teeth broad acute, corol purplish infundibuliform very minutely papillose on the outside, about 6 lines long, deeply 4 cleft, stamens included or very slightly exserted, fruit obovate to oblong, deep blue, very fetid. *Lasianthus*? *fœtens*. Wight.; *Dysodidendron*. *Wightii*. *Gardn.*

In moist woods Nilgiris 6,000 feet, Anamallays 4,000 feet, Coimbatore hills 3,000 feet, Tinnevely hills 3,000—(my specimens from the Tinnevely hills are much smaller leaved) a large shrub or small tree.

PLATE No. XV.

**SERISSA GLOMERATA.** (Gardn.) Shrub 3-4 feet, branches terete dichotomous, leaves glabrous ovate or elliptic acuminate sessile  $1\frac{1}{2}$ -4 $\frac{1}{2}$  inch long,  $\frac{1}{2}$ -2 inches broad, penninervous; stipules connate entire or toothed, flowers few terminal sessile, calyx with 4-5 acute lobes, corol white infundibuliform 2-3 lines long, anthers included 4-5. Stigma with 2 flattened lobes, fruit globose, deep blue, very fetid as is the whole plant. *Dysodidendron glomeratum*. *Gardn.* *Saprosma India*. *Dalz*;—*Serissa Gardneri*. *Thw.*

Very common in the moist forests of all the Western part of the Madras Presidency at an elevation of 2,000 to 4,000 feet.

PLATE No. XVI.

**SERISSA CORYMBOSA.** (Bedd.) Shrub, branches 4 angled, leaves glabrous elliptic acuminate 3-6 inches long, 1 to 2 $\frac{1}{2}$  broad, penninervous petioles,  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch long; stipules connate toothed, panicles terminal and axillary, 2-3 inches long, dichotomously branched bracteolate at the ramifications; calyx bracteolate at the base, 4 lobed or sub-entire; corol tube 3 lines long papillose on the outside, hairy within, obsolete induplicate, anthers on longish filaments considerably exserted. Stigma with two flattened lobes.

Tinnevely Hills, south of Courtallum. The induplication of the lobes of the corol so conspicuous in the other species is present in a minute membranaceous fold, which however does not apparently expand, and is scarcely visible without a lens.

## PLATE No. XVII.

**NAUCLEA TUBULOSA.** (Arnt.) A small tree, leaves glabrous (except the nerves of the young ones which are slightly puberulous) sub-membranaceous, minutely reticulated, ovate obtuse or slightly acuminate, rounded or sub-cordate at the base, 2-6 inch long, petioles 4-6 lines long, stipules large membranaceous obovate; peduncles terminal, generally 3; the intermediate one short or sessile, capitula about  $\frac{1}{2}$  inch in diameter, calyx cylindrical sub-entire 1 to  $1\frac{1}{2}$  lines long, bracteoles obtuse, corol purple, anthers apiculate, stigma long truncated, capsule large oblong, many seeded.

Ceylon.

## PLATE No. XVIII.

**NAUCLEA ELLIPTICA.** (Dalz.) A large tree, leaves elliptic acuminate at both ends, glabrous shining coriaceous about 6 inches long, 2 to 3 broad, minutely reticulated; stipules large foliaceous triangular; peduncles axillary and terminal solitary, 2-2 $\frac{1}{2}$  in long, capitula about 1 inch in diameter, calyx divisions subulate hairy, corol yellowish white, tubular wider upwards, 4 $\frac{1}{2}$  lines long, divisions short, oval obtuse with a mucro, style much exserted. Stigma globose.

South Canara, Malabar and Bombay ghats.

## PLATE No. XIX.

**GARDENIA TETRANDBA.** (Bedd.) Shrub unarmed glabrous, leaves oblong slightly attenuated at the base, perfectly rounded at the apex, dark green and shining above and prominently veined, pale beneath and veins inconspicuous, 2-5 inches long, 1-2 inches broad, petioles  $\frac{1}{2}$  to 1 inch long; stipules connate caducous; peduncles terminal, 1—several flowered with 2 large foliaceous bracts at the base, pedicles bracteolate, bracteoles sheathing or connate; calyx tubular, limb truncate sub-entire, corol with a long tube swollen at the apex, 4 cleft (white tinged with rose), hairy within the jaws, stamens 4 attached by a very short filament at the back; stigma clavate elongate, fruit size of a cherry smooth globose.

Travancore mountains (Athraymallay), lately discovered by Captain Davidson, Nair Brigade.

## PLATE No. XX.

## RUBIACEÆ.

**LASIANTHUS ACUMINATUS.** (Wight.) Shrubby branches terete pubescent; stipules short subulate pubescent; leaves coriaceous shining, except the slightly pubescent nerves, lanceolate acuminate at both ends, mucronately cuspidate at the apex,  $2\frac{1}{2}$  to  $4\frac{1}{2}$  inches long,  $\frac{3}{4}$  to  $1\frac{1}{2}$  inches broad; flowers axillary subsessile 2—3 together, bracts inconspicuous, calyx hairy 4 cleft, segments triangular; corol tubular 4 cleft glabrous, hairy within, style equalling the tube or slightly exerted stigma 3—5 cleft, ovary 3-5 celled. (Wight.)

Pulney Hills, in sholas at Kodinkarnal and elsewhere on the higher ranges, (7,000 feet.)

## PLATE No. XXI.

**LASIANTHUS BLUMIANUS.** (Wight.) Shrubby glabrous branches terete; stipules short triangular pointed slightly hairy; leaves glabrous short petioled elliptic lanceolate ending in a long acumination; flowers aggregated few, bracts short subulate hairy, calyx limb deeply 4-cleft, divisions lanceolate acute persistent glabrous except a slight tuft of hairs at the apex, corol 4-cleft hairy within, stamens 4 subsessile in the throat, ovary 4-celled, style equalling the corol stigma hairy 4-cleft; drupe globose. (Wight.)

Courtallum Mountains (3,500 feet elevation.)

## PLATE No. XXII.

**ACRANTHERA ANAMALLICA.** (Bedd.) Herbaceous, leaves petioled obovato-spathulate attenuated at the base, rounded at the apex and furnished with an inconspicuous nnero, up to 7 inches long (of which the petiole is nearly 1 inch) by 2 broad near the apex, ciliate and furnished with a few scattered hairs on the upper side, densely hairy on all the veins beneath but glabrous in between; stipules undivided triangular ovate acute, flowers congested towards the apex, peduncles very short, furnished with a few small linear bracts and each bearing 3—5 pedicelled flowers, calyx cup-shaped, segments short obovate glabrous within, very hairy on the outside, with a small yellow gland in each sinus; corol infundibuliform about  $1\frac{1}{2}$  inches long, slightly hairy on the outside, connectivum scarcely produced beyond the anther cells, style a little longer than the filaments, stigma clavate verrucose; ovary pseudo-bilocular, dissepiments opposite but not joined in the axis, seed very numerous papillose.

Anamallays: banks of streams in moist woods at about 4,000 feet elevation, not observed elsewhere. A low very showy plant, with numerous thick wiry roots, some of which often proceed from the stem above the lower leaves; flowers of a very deep blue.

## PLATE No. XXIII.

**ACRANTHERA ZEYLANICA.** (Arnt.) Herbaceous, leaves petioled oblongo-obovate obtuse, furnished above with a few rather rigid hairs and densely hairy on the veins beneath, calyx tube oblongo-turbinate, segments linear erect not furnished with glands, corol densely hairy on the outside about 1 inch long, connectivum apiculate and produced far beyond the anther cells.—*Arnt. in Ann. of Nat. Hist.* iii. p. 21. *Endl. Suppl.* i. p. 1394.

Ceylon, on shady banks in the Central Provinces at 3,000 to 5,000 feet elevation.

## PLATE No. XXIV.

**ACRANTHERA GRANDIFLORA.** (Bedd.) Herbaceous, leaves petioled obovato-oblong, retuse or sub-mucronate up to 10—12 inches long (petiole scarcely 1 inch) by 3 broad, furnished with a few scattered weak hairs or nearly glabrous above except the midrib, densely villous with matted woolly hairs on the veins beneath; stipules broad connate; peduncles axillary and terminal up to 3 inches long corymbiform, calyx with a pair of bracts near the base of the tube, segments long linear erect without glands, corol infundibuliform about 3 inches long, densely lanate on the outside, connectivum apiculate and produced far beyond the anther cells, stigma clavate verrucose sub-bilobed at the apex.

Tinnevely Mountains, south of Courtallum in moist forests 2,000 to 3,000 feet elevation—flower pale blue turning white.

## PLATE No. XXV.

**HEDYOTIS NUMMULARIA.** (Arnt.) Herbaceous diffuse stems 4-sided hirsute elongate, leaves subsessile orbicular-ovate, densely hirsute on both sides with jointed hairs, or glabrous, 3-10 lines long and about the same in breadth, margins often revolute; stipules inconspicuous; flowers subcapitate, capituli terminal pedunculate, calyx segments lanceolate, corol infundibuliform purple anthers exerted.—(Arnt. Pug. 23 (341); Walp. Rep. 11. p. 492.)

Vary  $\alpha$  hirsuta—leaves densely hirsute.

Vary  $\beta$  glabra—leaves glabrous, *H. nummulari formis* Arnt. l. c.—Walp. l. c. p. 493.

Ceylon, Central Provinces, wet rocky places 5,000 to 8,000 feet elevation.

PLATE No. XXVI.

**HEDYOTIS AURICULARIA.** (L.) Stems 4-angled, hirsute towards the extremities and under the joints; leaves short petioled or subsessile, ovate lanceolate acute glabrous, 2 to  $4\frac{1}{2}$  long,  $\frac{3}{4}$  to  $1\frac{1}{2}$  inches broad, under-side strongly marked with the prominent more or less pubescent nerves; stipules with several bristles; flowers axillary nearly sessile crowded and somewhat verticillate, scarcely exceeding the stipules, calyx limb 4-partite, segments in fruit spreading with the sinus scarcely acute, corol short tubular, tube scarcely exceeding the calyx segments; capsule spherical glabrous crowned with the spreading lanceolate calyx segments, hard and nut-like indehiscent. *W. A. Prod.* p. 412—*H. hirsuta*; *Lam. Enc. Meth.* 3. p. 79—*Rheede. Mal.* 10. t. 32.

Malabar, South Canara, and all the western forests up to 3,000 feet elevation. Ceylon, common. In Ceylon the leaves are chopped up, boiled and eaten by the natives with their rice.

PLATE No. XXVII.

**HEDYOTIS QUADRILOCULARIS.** (Thw.) Herbaceous, procumbent ramous slightly pilose, stems subterete; leaves membranaceous ovato-lanceolate petiolate,  $\frac{1}{2}$  to  $1\frac{1}{2}$  inches long,  $\frac{1}{4}$  to  $\frac{3}{4}$  inch broad, petiole 1-5 lines long; stipules membranaceous rotundate ciliate; flowers axillary or terminal sessile, calyx turbinate lobes oblong ciliate subpilose recurved, corol infundibuliform, glabrous inside, lobes oblong acute, anthers sessile, style filiform exerted, stigmas as many as the cells of the ovary long subelavate reflexed; ovary 4-celled rarely 2-3 celled; capsule depressed, cells several seeded. *Thw. En. Pl. Zey.* p. 144.

Ceylon, Badulla District rare.

PLATE No. XXVIII.

**HEDYOTIS TRINERVIA.** (Roem and Sch.) Herbaceous, branched procumbent, rooting near the base, stems slender from glabrous to slightly hairy, leaves petioled roundish ovate or oval glabrous sprinkled with a few hairs on the margin, up to  $\frac{1}{2}$  an inch long and nearly as broad, somewhat 3-nerved; stipules slightly hairy, bipartite; segments acuminate; flowers shortly pedicelled, usually in pairs 1-4 in the axils of the leaves; corol rotate 4-partite glabrous within, tube scarcely any; capsule hirsutely villous crowned with the remote calycine teeth. *Roem. and Schult.* 3. p. 197;—*W. A. Prod.* p. 414;—*H. serpyllifolia. Poir*;—*H. orbiculata Wall.*;—*Oldenlandia trinervia, Retz.*;—*O. repens, Burm.*

Not uncommon in damp places in the plains throughout the Presidency. Wight says the same plant is found in the Mauritius.

PLATE No. XXIX.

**HEDYOTIS CÆRULEA.** (W.A.) Annual branched from the root diffuse; leaves setaceous bristle-pointed; up to  $\frac{1}{2}$  an inch long and with the stems minutely hairy, stipules with several bristles; flowers nearly sessile, arranged in axillary or terminal peduncled, sparingly dichotomous leafy corymbs; lower ones solitary in the forkings of the corymbs, upper ones approximated and somewhat capitate; capsule glabrous nearly globose, crowned with the rigid lanceolate erect calyx segments, dry delhiscent at the apex within the calyx transversely to the dissepiment. *W. A. Prod.* p. 412.

From the plains up to 6,000 feet, not uncommon. Brumagherries, Pulney Hills, South Canara Ghats, Denkinacottah, Tanjore district.

PLATE No. XXX.



**HEDYOTIS LESSERTIANA.** (Arnt). Shrubby, glabrous, branches compressed, leaves oblongo-lanceolate acuminate petioled rigid, veins simple, very prominent beneath; stipules, marcescent, lower ones sheathing tubular with a few teeth at the apex, upper ones triangular scarious; panicles corymbiform, peduncles elongate, pedicels shorter than the calyx; calyx cupulate 4-toothed, corol without subpuberulous, villous in the jaws; capsule oblong obovate dicoccus. *Arnt. Pug.* 22 (339)—*Walp. Rep.* 11. p. 492.

Anamallay Mountains (higher ranges.) Ceylon 3,000 to 8,000 feet. A very variable plant in regard to the size of the leaves and the inflorescence, the latter being sometimes rather lax as in the plate and in other forms densely conferted. Mr. Thwaites mentions four varieties from Ceylon, but says they merge insensibly into one another.

PLATE No. XXXI.

**HEDYOTIS ASPERA.** (Heyne). Annual erect simple or with a few straight simple erect branches, all over rough with minute points: leaves linear acuminate; stipules membranous, with 1-3 longish subulate points; cymes terminal long peduncled, usually of one short central branch and two longish lateral ones; flowers usually in pairs, shortly pedicelled with or without a short partial peduncle, racemously and rather distantly arranged along the branches of the cyme; calyx-teeth approximated during flowering, in fruit distant with the sinus wide; corol long infundibuliform, anthers included; capsule nearly globose, somewhat didymous truncated. *Heyne in Roth. Nov. Sp.* p. 94;—*W. A. Prod.* p. 417. *Oldenlandia aspera.* *D. C. prod.* 4. p. 428.

Anamallay Mountains, Dindigul hills, Arcot, Coimbatore and elsewhere. The plant figured is the mountain form (Anamallays 4,000 feet) and is much larger flowered than the form abundant in the plains about Coimbatore.

PLATE No. XXXII.

**HEDYOTIS HEYNEI.** (Br.) Annual or biennial, erect or decumbent with erect branches, dichotomous glabrous, stems sometimes terete at the base above and the branches acutely 4-angled; leaves linear or linear lanceolate; stipules with several short bristles or often truncated and naked; pedicels slender 1-flowered axillary solitary or in pairs in the opposite or alternate axils, from shorter to a little longer than the leaves 4-8 times longer than the fruit; calyx segments in fruit distant with the sinus wide, from triangular-acuminate and small to oblong-lanceolate and elongated; corol infundibuliform, anthers somewhat included; capsule roundish-ovate gibbous at the base crustaceous, opening with a very elevated compressed widely dehiscent ridge across the apex, lips of the opening erect, flowers bluish or white.—*Br. in Wall. L. n.* 867—*W. A. Prod.* p. 416;—II. herbacea, *Willd. (not Linn.); Rheed. Mal.* 10. t. 23.

Anamallay forests up to 3,000 feet and many other localities on the western side of the Presidency. Very similar to *H. dichotoma*, but a more delicate plant.

PLATE No. XXXIII.

**HEDYOTIS NUDICAULIS.** (W. A.) Annual with a filiform root; leaves 4-5 all radical roundish ovate, slightly attenuated at the base, sessile sprinkled with short hairs particularly on the margin and nerves underneath, scapes 2-3 slender scabrous from close short fuscous hairs, bearing each about the middle a lax corymbose spreading 3-4 dichotomous panicle, pedicels bristle-shaped glabrous; corolla with a very short tube bearded in the throat with white hairs; capsule somewhat globose; *W. and A. prod.* p. 416; *H. scapigera*, *Br. ? in Wall. L. n.* 881.

Anamallay forests up to 2,500 feet elevation. Wynad, Pulney Hills, &c.

PLATE XXXIV.

**HEDYOTIS CYMOSA.** (Thw.) Shrubby erect (turning black in drying) ramuli slightly angled; leaves glabrous, shining, narrow lanceolate, acute at both ends, 2-3 inches long 3-7 lines broad, primary veins inconspicuous, stipules triangular with a longish acumination carinate, glandularly dentate on the margin, cymes terminal, lax, puberulous, calyx glabrous, 4 partite, segments lanceolate acute at length recurved, corol externally glabrous, pilose in the jaws.—*Thw. En. Pl. Zey.* p. 142.

Ceylon, at an elevation of 1,000 feet.

PLATE XXXV.

**HEDYOTIS GLABELLA.** (Br. ?) Stems acutely 4-angled, glabrous except near the joints, leaves oblongo-lanceolate to linear lanceolate, short petioled, or subsessile, shining above but scabrous at and near the margin, at length often quite glabrous, margins often recurved, glabrous and pale colored beneath and veins often not visible; stipules with about 6 filiform ciliated teeth nearly as long as the flowers; flowers solitary or in pairs in the axils of the leaves, calyx segments ciliate triangular, erect in flower and fruit, segments of the corol ciliated at the apex, stamens and style exerted; capsule oblong with 2 hard bony cocci indehiscent. *Brown in Wall. L. n.* 886 ?—*H. hispida*, *Heyne ?*

Anamallay teak forests and other localities in the western side of the Presidency.

PLATE XXXVI.

NOTE.—Mr. Bentham separates *Oldenlandia* from *Hedyotis* on account of its loculicidal dehiscence. Of the above species, *quadricularis*, *trinervia*, *caerulea*, *aspera*, *Heynei* and *nudicaulis*, belong to *Oldenlandia*.

**GRIFFITHIA SPECIOSA.** (Bedd.) Scandent unarmed branches terete, slightly hairy at the joints under the stipules; leaves glabrous shining broad ovato-lanceolate up to 10 inches long by 4 broad, acuminate, attenuated at the base, petioles nearly 1 inch long; stipules triangular glabrous caducous, corymbs leaf opposed (alternate with pairs of leaves) much shorter than the leaves, peduncles up to  $\frac{1}{2}$  an inch long, pedicels elongate bracteolate at the base, calyx truncated and with the peduncles and pedicels slightly pilose (splitting like a spathe) furnished with 5 small teeth at the apex, corol glabrous outside, hairy in the jaws, cream colored, up to  $1\frac{1}{2}$  inch in diameter, anthers subsessile, stigma clavate muriculate; berry subglobose, 6-8 lines in diameter.

Western slopes of the Nilgherries (up to 4,500 feet). Coorg, South Canara, Travancore, &c. A very handsome creeper with large fragrant flowers. *Mr. Bentham unites the genus Griffithia with Randia.*

PLATE No. XXXVII.

**GRIFFITHIA GARDNERI.** (Thw.) A small tree 15-20 feet, unarmed, branches terete, a little compressed; leaves glabrous shining lanceolate acuminate narrow at the base, petiolate 2-4 $\frac{1}{2}$  inches long  $\frac{3}{4}$ -1 $\frac{1}{2}$  inches broad, petioles 2-3 lines long; corymbs axillary shorter than the leaves, shortly peduncled sparingly pilose, at length glabrous, pedicels elongate, bracteoles small, calyx truncated slightly 5-toothed, externally slightly pilose or glabrous, corol externally subglabrous pilose in the jaws within, lobes linear lanceolate 4 lines long; yellow, tube 2 lines long; placentæ 8-12 ovuled, berry subglobose 4-5 lines in diameter. *Th. En. Pl. Zey. p. 158. Stylocoryne Ceylonica. Gard. MSS.*

Ceylon, Central Provinces 2,000 to 4,000 feet elevation.

PLATE No. XXXVIII.

**BORRERIA TETRACOCCA.** (Thw.) Herbaceous procumbent, branches elongate acutely 4-angled slightly compressed, rooting at the joints and with numerous small lateral branchlets; leaves lanceolate subsessile scabrous; stipules lanceolate densely hispidociliate on the margins and dorsal nerve; flowers small axillary 2-3, calyx hispid with 4 lanceolate teeth, one of which is sometimes bifid, corol tube longish, segments ciliated at the apex and in the jaws, ovary 4-celled, cells one-seeded, stigma bifid pilose. *Thw. En. Pl. Zey. p. 442.*

Foot of the Sampajee Ghat, Coorg—Ceylon.

NOTE.—*Mr. Bentham unites the genus Borreria with Spermacoce.*

PLATE No. XXXIX.

**DISCOSPERMUM APIOCARPUM.** (Dalz. ?) A tree, polygamo-diceous, branches subtetragonal, leaves glabrous ovato-lanceolate with a blunt acunination up to 6-7 inches long (of which the petiole is  $\frac{1}{2}$  an inch) by 2-3 inches broad, furnished with hollow hairy glands in the axils of the veins beneath; stipules triangular glabrous; flowers male and hermaphrodite on different trees, peduncles very short (2 lines), axillary each with 3-8 subsessile flowers, calyx urceolate entire or minutely toothed or fimbriated at the apex and furnished with a sticky gumlike substance (as are the stipules), glabrous or with a few weak hairs on the outside, corol yellowish fragrant (similar in both male and hermaphrodite), tube short segments spreading glabrous or with a few weak hairs on the outside, hairy within at the insertion of the filaments, anthers on longish filaments which are hairy at the base, stigma with 2 spreading flattish lobes; cells of the ovary 4-seeded; berry ?

Sisparah ghat, Nilgherries,—*Mr. Ouchterlony's* ghat near Nedduvattam, Wynad—Coimbatore hills 5,000 feet.

I am not sure whether this is the *apioarpum* of *Dalzell* or a new species, it has much larger flowers than the *D. Dalzellii* of *Thwaites* from Ceylon, which is apparently the same as *Dalzell's sphaerocarpum*, and has the calyx deeply 4-lobed. My specimens from the Coimbatore hills differ from the Nilgiri and Wynad specimens, in having much smaller flowers (same size as *Thwaites's Dalzellii*) and smaller leaves, but the calyx is the same as in the species here figured, and I can discover no other difference; all the species seem to be closely allied. *Diplospora D. C.* is an older name for this genus, but is false to the structure.

PLATE No. XL.

## ANONACEÆ.

**SAGERÆA THWAITESII.** (H. f. et T.) A small tree, leaves narrow oblong, 8-12 inches long  $3-4\frac{1}{2}$  broad (petiole  $\frac{1}{2}$  -  $\frac{2}{3}$  inch) coriaceous, glabrous, pale beneath; flowers hermaphrodite, yellow, in axillary fascicles on the thicker branches, pedicels 2-4, about an inch long, squamulate at the base, sepals imbricated short obtuse, petals rounded, exterior larger, stamens about 18 on an elevated torus, ovaries 3-6, strigose, stigma 2 lobed, ovules 8-10 in two rows, carpels subsessile about the size of a nut, many or few seeded, seed compressed, with a furrow all round. *Hook and Thom. Fl. Ind. p. 93.*

Ceylon, at an elevation of about 1,000 feet.

## PLATE No. XLI.

**SAGERÆA DALZELLII.** (Bedd.) A small tree, branches glabrous, leaves glabrous and shining above, oblong, rounded or slightly attenuated at the base, obtuse or sub-acute at the apex, 6-10 inches long  $2\frac{1}{2}$  to  $3\frac{1}{4}$  broad (petioles nearly  $\frac{1}{2}$  an inch,) pedicels 4-8, squamulate at the base from axillary woody tubercles on the older branches about 1 inch long, ebracteolate, sepals rounded cohering at the base ciliate at the margin, flowers yellow hermaphrodite, petals concave, exterior larger  $\frac{1}{4}$  inch long, stamens about 28 all fertile, outer ones larger and anther cells distant, torus scarcely elevated; ovaries 3-5 hairy, stigma small capitate entire, ovules about 12 in two rows.

Anamallay forests in dense moist woods 2,500 feet elevation (in the Karian Shola). It flowers in March, the calyx differs from the other species, its sepals cohere at the base instead of being imbricated, the anthers are more numerous and the stigma is entire in this whereas it is 2 lobed in *S. Thwaitesii*—otherwise they much resemble each other. A third species of this genus, *S. laurina* Dalz. is found in the Concan, my specimens are unfortunately only in fruit, so I do not figure it; the only other Indian species is the *S. elliptica*. H. f. et T. from Tenasserim, which has diœcious flowers.

## PLATE No. XLII.

**XYLOPIA PARVIFOLIA.** (H. f. et T.) A shrub or small tree, branches fulvo-pubescent, at length glabrous white-dotted, leaves oblongo-lanceolate acuminate, acute at the base glabrous on both sides, 2-3 inches long,  $\frac{3}{4}$ — $1\frac{1}{4}$  broad, (petiole  $\frac{1}{3}$ rd inch), thickly coriaceous, above shining, pale beneath; fascicles 3-5 flowered axillary subsessile, pedicels very short, furnished with numerous small rounded imbricated bracteoles, sepal acute, petals pubescent on both sides, ovaries 3-6, ovules 4-6, carpels oblong size of a dove's egg, seeds in 2 series oblong, nestling in reddish pulp. *Hook. F. et Thom. Fl. Ind. p. 125; Patonia, Wight.*

Ceylon.

## PLATE No. XLIII.

**XYLOPIA NIGRICANS.** (H. f. et T.) A shrub, branches glabrous, young parts puberulous, leaves elliptic or lanceolate obtusely acuminate glabrous (blackish when dry), coriaceous, undulate, pale beneath, 3 inches long  $1\frac{1}{4}$  broad (petiole  $\frac{1}{3}$ th inch), flowers axillary in threes or solitary, pedicels scarcely  $\frac{1}{4}$  inch long slender, bracteoles 1-2, minute deciduous, exterior petals excavated to nearly the apex, ovaries 5, ovules 4-6, carpels size of a dove's egg or smaller dehiscing, seeds blackish smooth, attenuated towards the hilum, 4 lines long nestling in red pulp. *Fl. Ind. p. 125; Thw. En. p. 9.*

Ceylon.

## PLATE No. XLIV.

**XYLOPIA CHAMPIONII.** (H. f. et T.) A tree with slender glabrous branches, young shoots fusco-sericeous, leaves elliptic or broadly lanceolate acute at the base, acuminate at the apex, glabrous above, minutely puberulous beneath, coriaceous—pellucidopunctate,  $3-4\frac{1}{2}$  inches long  $1-1\frac{3}{4}$  broad, petioles scarcely  $\frac{1}{4}$  inch long; peduncles axillary solitary about 2 lines long, fusco-sericeous, bearing 2-3 minute squamæform bracts below the middle sepals united into an acutely 3 lobed cup, flowers yellowish marked with red, exterior petals  $\frac{1}{2}$ — $\frac{2}{3}$  inch long thick concave, int. pet.  $\frac{1}{3}$ rd shorter, cuniate at the base, and deeply concave, triquetrous above, ovary solitary pilose 4 ovuled, carpels pedicellate 5 ribbed longitudinally, seeds nestling in pulp. *Hook and T. Fl. Ind. p. 126.*

Ceylon in the Ambagamowa and Ratnapoora districts, up to 2,000 feet elevation.

This genus has not been detected on the continent, the only other Indian species described are the *X. Malayana*, H. f. et T.; and the *X. caudata*, H. f. et T., both from Malacca.

## PLATE No. XLV.

**ANAXAGOREA ZEYLANICA** (H. f. et T.) A small tree, branches and branchlets quite glabrous, leaves membranaceous glabrous on both sides pale beneath, scabrous at the costa, oblong or linear oblong, abruptly and obtusely acuminate, acute at the base 3-6 inches long,  $1\frac{1}{4}$ — $1\frac{3}{4}$  broad (petiole  $\frac{1}{4}$  inch) flowers solitary leaf opposed, pedicels about the length of petioles or shorter, bracts 2 amplexicaul 1 near the base, 1 about the middle of the pedicel, flowers  $\frac{3}{4}$  inch in diameter, sepals broad—oval, petals oval, exterior thick coriaceous, interior thinner, stamens all normal, connectivum prolonged into a short thick rounded point, style oval-oblong, carpels  $1\frac{1}{2}$  inch long spatulate mucronate, stalk compressed. *Fl. Ind. p. 144.*

Ceylon. The only other described Asiatic species of this genus is the *A. Javanica* of Blume which is closely allied, but differs in having the inner anthers abnormal; there are several S. American species.

## PLATE No. XLVI.

**CYATHOCALYX ZEYLANICUS**. (Champion.) A tree, adult branches glabrous, young ones aureo-pubescent, leaves oblongo-lanceolate with a sudden acumination 6-10 inches long 2-3 broad, shining and glabrous on both sides coriaceous, veins oblique incurved, peduncles 1-3 about  $\frac{1}{2}$  an inch long, sepals joined into a subentire or minutely 3-5 toothed cup, hoary with minute golden pubescence, petals linear oblong 1-2 inch long, more or less hoary (like the calyx) especially at the claw, torus plane glabrous with a cavity in the centre in which the solitary glabrous ovary is seated, stigma large peltate rotundate, fruit broadly oval, a little larger than a goose's egg; seeds in 2 series numerous compressed 1 inch long transversely rugose, testa reddish brown, albumen ruminant. *Champ MSS. in Herb. Hook—Hook. and Th. Fl. Ind. p. 127.*

Common in the moist shola forests on the slopes of the ghats in Malabar and S. Canara and in the Anamallays at an elevation of 1—3,000 feet; also in Ceylon and Birmah. The specimen figured is from the Karian shola on the Anamallays. It is the only species known.

## PLATE No. XLVII.

**ARTABOTRYS ZEYLANICUS**. (H. f. et T.) An enormous climber, leaves oblongo-lanceolate obtusely acuminate, glabrous on both sides and shining above, 4-7 inches long by  $1\frac{1}{2}$  to 3 broad, (petioles about  $\frac{1}{4}$  in.) peduncles leaf opposed woody and hook-like, pedicels (solitary ?)  $\frac{1}{2}$  to nearly 1 inch long adpressedly fusco-tomentose (as are the calyx and petals), sepals cohering at the base acuminate, petals thickly coriaceous, the outer ones a little larger and furnished with a dorsal keel, ovaries numerous glabrous or villous, style recurved, torus villous scarcely convex, subglobose in fruit, fusco-tomentose marked with many large cicatrices; carpels strigoso-tomentose  $\frac{3}{4}$  to 1 inch long, granulate. *Fl. Ind. p. 128.*

Common in S. Canara, Mysore, Coorg and Travancore, &c. up to 4,000 feet elevation, also in Ceylon—the specimen figured is from the Sampagee ghat in Coorg. The mucinate woody peduncles are peculiar to the genus. A 2nd sp. *A. odoratissimus* is an ornamental shrub common in Madras gardens. Three other species, all creepers, are described by Hook and Thon. *A. caudatus* from Sylhet, *A. Barmanicus* from Ava and Mergui, and *A. suaveolens* from Syliet and the Malay Peninsula. One species from tropical West Africa is the only extra Indian species recorded.

## PLATE No. XLVIII.

**SACCOPETALUM TOMENTOSUM**. (H. f. et T.) A good sized tree, young branches fulvo-tomentose, older ones glabrous, leaves oval, or ovato oblong acute rounded or cordate at the base, pubescent on both sides, 4-6 inches long,  $2\frac{1}{4}$ —3 broad; peduncles leaf opposed very short, 1 several flowered, pedicels 2-3 inches long, sepals very small linear oblong, 2 lines long, ext. petals linear longer than the sepals, int. oblong obtuse saccate at the base, downy on both sides, torus densely villous, subglobose; stamens indefinite multiseriate, ovaries broadly oval, style oval, ovules 4-6 in two series, carpels 5-15, subglobose about one inch long densely fulvo-tomentose—seeds 3-4 nestling in pulp. *Hook. and T. Fl. Ind. p. 152.*—*Uvaria tomentosa*. *W. A. prod. p. 8; Roxb. Fl. Ind. ii. p. 667.*

Common in the dry jungles at the foot of the Anamallays (specimen figured) and other hills on the western side of the Presidency, Mysore, Concan, Orissa, Central provinces and Nepal.

*Saccopetalum longiflorum* H. f. et T.—the only other Indian species is found in Bengal and in the Terai; there is also one species described from Java.

## PLATE No. XLIX.

**UNONA ELEGANS**. (Thw.) A small tree or shrub, leaves narrow lanceolate with a long acumination glabrous above and glaucous beneath, 4-6 inches long,  $\frac{3}{4}$  to 1 inch broad (petioles  $\frac{1}{4}$  inch), peduncles slender axillary solitary,  $\frac{1}{2}$  to  $\frac{3}{4}$  in. long, furnished with several bracteoles near the base and 1 about  $\frac{2}{3}$ ds up, flowers about  $\frac{3}{4}$  inch in diameter, sepals oblong lanceolate small puberulous on the outside, petals coriaceous sparingly puberulous on the outside, exterior  $\frac{3}{4}$  inch long, interior  $\frac{1}{2}$  inch, ovules 2-3, carpels much constricted

Ceylon.

## PLATE No. L.

**UNONA DISCOLOR.** (Vahl.) A small tree or shrub, leaves oblong or lanceolate, rounded at the base or cordate rarely acute, acute or acuminate at the apex, glabrous and shining above, glaucous beneath and sometimes sparingly pubescent, 2-8 inch long 1-2½ broad, (petioles scarcely ¼ inch), peduncles slender, 1-2 inches long axillary or above the axils, bearing a large oblong or lanceolate bract below the middle, flowers solitary, sepals scarcely joined at the base membranaceous glandularly dotted, sericeo-pubescent or subglabrous, ovato-lanceolate acute about ½ an inch long, petals finally 2 inches long and more, sericeous or subglabrous lanceolate from a broad base, the interior ones a little shorter and narrower, stamens oblong, anther cells unequal, interior ones shorter, connectivum oval produced beyond the anther, torus depressed somewhat excavated at the middle, ovaries 5-6 ovuled, fruit bearing peduncle sometimes thickened and the torus thickened and globose, carpels numerous monoliform, articulations 1-6. *W. A. prod. p. 9. Hook. & Thom. Fl. Ind. p. 132; Roxb. Fl. Ind. ii. 669; U. chinensis, D. C. prod. 1-90. U. undulata. Wall. Pl. As. Rar. iii. t. 265; U. Lessertiana, D. C. prod. 1-90.*

Orissa, Carnatic, Concan, (specimen figured), Ceylon—Birmah and Chittagong, Sikkim and Malay Peninsula.

PLATE No. LI.

**UNONA PANNOSA.** (Dalz.) A small tree, young branches pubescent, leaves ovato-lanceolate obtusely acuminate, 2½-4 inches long, ¾-1½ broad, (petioles 2 lines long) glabrous above, sparingly pubescent beneath at length glabrous, flowers of a dirty white color, axillary subsessile, sepals villous on the outside, ovate acute 3 lin. long, petals oblongo-lanceolate villous (like wooly cloth), 1-2 inches long, unquiculate at the base, the inner 3 slightly narrower all nearly equal in length, or the outer considerably longer, stamens short cuneate, connectivum capitate subtruncate, torus elevated, convex covered with tufts of dense hairs, ovaries 8-12 densely strigose crowned with a short style, stigma capitate, ovules 2-3, carpels 5-6 oval obtuse very short pedicelled ⅔ of an inch long, seed 1-3 large, testa shining smooth. *Dalz. in Hook. Kew Misc. iii. 207; Uvaria mollis. Wall. Cat. 6475.*

Common in moist forests on the western side of the Presidency up to an elevation of about 3,500 feet. The specimen figured is from the Anamallays.

PLATE No. LII.

**POLYALTHIA COFFEOIDES.** (Thw. MSS.) A good sized tree, young parts minutely puberulous, leaves lanceolate or oblongo-lanceolate glabrous on both sides shining above, (veins very prominent beneath) acute or rounded at the base, gradually attenuated into an obtuse point at the apex, margins slightly undulate, 4-10 inches long 1½ to 3 broad, petiole ¼ inch long, pedicels several together from woody tubercles about the trunk and larger branches or solitary or twin in the axils of the fallen leaves on the young branches, 1 to 1½ inch long, minutely adpresso-puberulous, articulated at the base, and furnished with 2-3 deciduous squamæform bracts, sepals nearly round, petals coriaceous glabrous or slightly hairy, lanceolate, acute or obtuse at the apex, about an inch long, inner ones rather larger, carpels puberulous about 1 inch long ovoid attenuated at both ends on pedicels about 1 inch long, seed oblong, 7 lines long 5 lines broad, flowers cream colored. *Fl. Ind. p. 141.*

Common in moist forests from 1 to 3,500 feet elevation on the western side of the Presidency and in Ceylon. In the Wynnad the Kurambar make a sort of rope from the bark which has a strong smell of ammonia when fresh. I have met with it in flower at all seasons. The specimen figured is from the Anamallays.

PLATE No. LIII.

**POLYALTHIA FRAGRANS.** (Dalz.) A large tree, leaves ovate, oblong or oblongo-lanceolate, rounded at the base generally oblique; very prominently veined especially beneath, glabrous above, slightly pubescent on the costa and veins beneath, 4-9 inches long, 2-5 inches broad, petioles about ¼ inch long, peduncles about an inch long, from the axils of the fallen leaves, pedicels filiform, 1 inch long (and as are the calyx and petals) hoary-puberulous, furnished with a half cup-shaped bract about the middle, sepals small rotundate, petals 1-1½ inch long narrow linear attenuated at the apex, sub-equal; torus dilated depresso globose, carpels 10-20 oblique-ovoid 1-1½ inch long, hoary puberulous long pedicelled. *Dalz. in Hook. Kew Misc. iii. 206; Hook. and Thom. Fl. Ind. p. 142.*

In the moist forests of the Anamallays 2,500 feet elevation (specimen figured), also in Malabar and the Concan.

PLATE No. LIV.

**POLYALTHIA PERSICÆFOLIA.** (H. f. et T.) Shrubby, branches glabrous, younger parts fusco-pubescent, leaves lanceolate with a long slender acumination, oblique at the base, sparingly puberulous, 2-4 inches long, ⅔-1¼ broad (petioles 1 line long) coriaceous, pale beneath; peduncles a little above the axils, scarcely 1 line long, pedicels fascicled 2-3, ¼-½ inch long, fusco pubescent; flowers small, sepals ovate acute strigoso tomentose, petals thickly coriaceous strigoso pubescent, exterior ones twice as large as the sepals, ovate or rotundate acuminate, interior ones nearly twice the size of the exterior, ¼ inch long, rotundate, ovaries densely strigose, torus in fruit small, carpels globose, 10 or more on short pedicels, 1-2 lines long, the size of a pea, puberulous, or subglabrous. *Hook. et Thom. Fl. Ind. p. 140.*

Tinnevelly and Travancore forests at an elevation of 3,000 to 4,000 feet. Attraymallay and Panpanassum hills,—Ceylon (specimen figured)

PLATE No. LV.

**POLYALTHIA SUBEROSA.** (Dun.) A small tree or shrub, bark corky, adult branches glabrous, young ones slightly pubescent, leaves oblong obtuse at both ends, or rarely a little narrowed at the base and acute at the apex, sometimes oblique at the base, submembranaceous, margin undulate, glabrous above, beneath more or less pubescent, at length glabrous,  $2\frac{1}{2}$ -5 inches long  $1-1\frac{3}{4}$  inches broad, petioles 1-2 lines long, peduncles axillary very short, pedicels solitary or two together,  $\frac{1}{2}$ -1 inch long slender, subclavate at the apex, pubescent, furnished with a linear subulate bracteole below the middle, sepals pubescent, small, sub-persistent in fruit, petals oval obtuse pubescent, interior  $\frac{1}{3}$  inch long nearly twice as long as the exterior ones, ovaries fusco strigose, torus in fruit small globose tomentose, carpels numerous mucronulate, size of a pea, subsericeous, at length glabrous. *Hook and Thom. Fl. Ind. p. 140*; *W. A. prod. p. 10*; *Uvaria suberosa, Roxb. Fl. Ind. ii. 667.*

Cumbum valley Madura district (specimen figured), Carnatic, Orissa, Bahar, Bengal, Assam, Tenasserim, Ceylon.

PLATE No. LVI.

**POLYALTHIA ACUMINATA.** (Thw.) A tree, branchlets and petioles pilose, leaves oblong or obovato-oblong, rostrate, acuminate, narrowed at the base subglabrous, channelled at the costa above, pilose on the costa and very prominent veins beneath, 6-12 inches long  $2\frac{1}{2}$ -4 inches broad (petioles 2-4 lines long), flowers cauline, large yellowish subsolitary or few, pedicels  $1-2\frac{1}{2}$  inches long fulvo-tomentose furnished with a small bract below the middle, sepals ovate 4 lines long fulvo-tomentose on the outside, petals 13 lines long, interior a little broader than the exterior, fulvo-tomentose, ovato-lanceolate acuminate; torus convex tomentose, style as long as the pilose ovary, stigma pilose, carpels ovoid tomentose, size of a nut. *Thw. En. p. 399.*

Ceylon, near Ratnapoora.

PLATE No. LVII.

**GONIOTHALAMUS THWAITESII.** (H. f. et T.) A small tree, branches glabrous, leaves oblong shortly and obtusely acuminate,  $3\frac{1}{2}$ -6 inches long  $1\frac{1}{4}$ - $2\frac{1}{2}$  broad, rigid coriaceous, glabrous on both sides, shining above, pale beneath, petioles  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch long peduncles axillary  $\frac{2}{3}$ rd to 1 inch long, subclavate at the apex, furnished with minute scale like bracts at the base, flower about 1 inch long, exterior petals ovato-lanceolate glabrous, thickly coriaceous with a short broad claw at the base, inner petals closely connivent into a mitriform ovate cup, ovaries linear oblong strigose, style subulate longer than the ovary, ovules 2, torus plane, carpels numerous or fewer by abortion, very shortly pedicelled a little more than  $\frac{1}{2}$  an inch long, oval, obtuse, seed 1. *Hook. and T. Fl. Ind. p. 106.*

In moist forests on the South Tinnevely and Travancore mountains at an elevation of 3 to 4,000 feet; it flowers in July.—also found in Ceylon. The specimen figured is from the Paupanassum hills in Tinnevely.

PLATE No. LVIII.

**GONIOTHALAMUS THOMSONI.** (Thw.) An erect shrub,  $1\frac{1}{2}$ -3 feet, leaves obovate, or obovato lanceolate, with a long abrupt acumination, 5-12 inches long,  $1\frac{1}{2}$ -3 inches broad (petioles about  $\frac{1}{2}$  inch long), peduncles cauline solitary or twin,  $\frac{3}{4}$  inch long ascending and curved down near the apex, flowers yellow, sepals persistent lanceolate  $\frac{1}{4}$  inch long, exterior petals lanceolate much narrowed towards the apex, rounded at the base,  $\frac{1}{2}$  inch long, interior connivent into a mitriform oral acute cup, which is 6 lines long, ovaries pilose, style as long or larger than the ovaries divided into 2 filiform segments, ovules 2 superposed, carpels 1 seeded oval apiculate  $\frac{1}{2}$  inch long, pedicels 2 lines long. *Thw. En. p. 7.*

Ceylon (forests between Galle and Ratnapoora).

PLATE No. LIX.

**GONIOTHALAMUS GARDNERI.** (H. f. et T.) An erect shrub, 8-10 feet high, leaves narrow oblongo-lanceolate, acute at the base, obtuse at the apex or shortly acuminate, 5-8 inches long 1-2 broad (petioles  $\frac{1}{4}$  inch) thickly coriaceous, shining above, pale beneath principal veins connected by loops near the margin (as in the other species), peduncles axillary or little above the axils scarcely longer than the petioles furnished with scales at their base, flowers greenish yellow  $1\frac{1}{2}$  inches long, sepals persistent cordate at the base, submembranaceous, with rather prominent veins (when dry) exterior petals oblongo-lanceolate glabrous scarcely unguiculate at the base, ovaries adpressedly pilose crowned with a long subulate style nearly 3 times their length, carpels oblong short pedicellate, generally 2 seeded. *Thw. En. p. 7*; *Hook and Thom. Fl. Ind. p. 107.*

Ceylon, 2,000 to 4,000 feet elevation.

PLATE No. LX.

**GONIOTHALAMUS WYNADENSIS.** (Bedd.) An erect shrub, young parts very minutely fusco-pubescent otherwise glabrous, leaves oblong to oblongo-lanceolate suddenly acuminate attenuate at the base, 8-11 inches long by 3 broad, paler beneath, petioles 4-6 lines long peduncles 2-3 lines long with 2-3 bracts at the base axillary solitary, or from small knobs on the trunk, flowers  $\frac{3}{4}$  to 1 inch long, sepals rounded obtuse or sometimes acute, fusco-pubescent when young at length glabrous, outer petals shortly unguiculate fusco-pubescent on both sides at length glabrous and prominently veined, inner petals closely connivent glabrous inside, but furnished on the inner face with a deep hairy channel round the upper portion, torus and ovaries hairy, connectivum prolonged beyond the anthers into a blunt point, ovaries numerous, style elongate stigma 2-clawed, ovule solitary from the ventral suture just above the base, carpels oblong pointed  $\frac{1}{2}$  to 1 inch long.

Hab. Wynaad, in moist woods about Devala and Cheyrambody—elevation 2,500 to 3,500 feet. I formerly looked upon this as a new genus on account of its solitary ovule and curious style, and described it *and the following* under the name of *Atrutegia* (anagram on *Guatteria*); the ovule is not erect, but close to the base on the ventral suture, and *G. Wightii* has the same style, and the ovules are occasionally solitary though generally twin.

## PLATE No. LXI.

**GONIOTHALAMUS CARDIOPETALUS.** (Dalz.) A shrub or small tree, young parts very minutely fusco-pubescent, leaves glabrous oblong to lanceolate suddenly or gradually acuminate, 4-12 inches long  $1\frac{1}{2}$  to 3 inches broad, petioles 4-6 lines long, peduncles 2-4 lines long axillary or a little above the axils solitary furnished with 4-6 bracts at the base, flowers when mature nearly one inch long densely sericeous when young, sparingly when adult, sepals rounded obtuse or acute, outer petals very thick and boat-shaped, the concavities receiving the angles of the mitriform cap, formed of the inner connivent petals, connectivum of the anthers prolonged into a blunt point, ovaries 13-25 hairy, style elongate stigma 2-clawed, ovule solitary from the ventral suture just above the base, carpels oblong pointed nearly 1 inch long. *Dalz. in Hook. Kew Journ. Bot. ii. 39*;—*H. and T. Fl. Ind. p. 108*.—*Uvaria obovata, Heyne ex Wall. Cat. 6471*.

Hab. North Wynaad and Canara from foot of the Ghats, up to 3,000 feet, very like the last species, except in the flowers.

## PLATE No. LXII.

**GONIOTHALAMUS WIGHTII.** (H. f. et. T.) A small tree, young parts minutely fusco-pubescent, leaves glabrous, narrow lanceolate, acute at both ends, 4-6 inches long by about 1 inch broad, paler beneath, petioles  $\frac{1}{4}$  inch long, peduncles axillary solitary  $\frac{1}{2}$  an inch long thickened at the apex, furnished with several bracts at the base, ebracteolate above, flowers  $\frac{3}{4}$  to 1 inch long fusco-pubescent at length glabrous, sepals ovate acute, *persistent* exterior petals ovate, shortly and broadly unguiculate, prominently veined when dry, interior petals  $\frac{1}{2}$  an inch long ovate broadly unguiculate closely connivent into a mitriform cap, trapezoid fusco-pubescent on the outside and sericeous inside on the upper half, torus truncate, ovaries 14-18 sericeous, style elongate stigma 2-clawed, ovules 1-2 from the ventral suture—carpels oblong,  $\frac{2}{3}$  inch long, blackish, glabrous.—*H. and T. Fl. Ind. p. 106*.

Hab. Paupanassum and Attroymallay hills, South Tinnevely, elevation 3,000 to 5,000 feet—very abundant.

## PLATE No. LXIII.

**GONIOTHALAMUS RETICULATUS.** (Thw.) An erect shrub 6-8 feet high, younger parts strigose, leaves membranaceous, densely glanduloso-punctate, sparingly pilose beneath, and conspicuously reticulated, lanceolate or linear lanceolate, more or less abruptly acuminate, subrotund at the base, 6-11 inches long, 1-2 $\frac{1}{4}$  broad, petioles 2-3 lines long sulcate above and slightly winged (from the decurrent base of the leaf), peduncles 1 flowered, a little above the axils deflexed  $\frac{1}{4}$  inch long, bracteate at the base, sepals acute deciduous, outer petals linear triangular much attenuated at the apex twice the length of the mitriform cap formed by the inner petals, anthers very numerous, connectivum flat triangular dilated, ovaries oblong about 12 strigose 2 ovuled, style long clavate stigma dilated 2 lobed, lobes square carpels globose reddish brown, 1-2 seeded. *Thw. En. Pl. Zey. p. 7*.

Hab. Ceylon, in forests between Galle and Rutnapoora.

## PLATE No. LXIV.

**GONIOTHALAMUS SALICINUS.** (H. f. et. T.) An erect shrub 10-12 feet, branches slender, young parts fusco-tomentose, leaves narrow lanceolate acute at the base, prolonged at the apex into a generally obtuse point, glabrous above, sub-pubescent beneath, 3-4 $\frac{1}{2}$  inches long,  $\frac{1}{2}$  to 1 inch broad, petioles scarcely  $\frac{1}{4}$  inch long strigose at length glabrous, peduncles solitary or a little above the axils,  $\frac{1}{4}$  inch long, furnished from the base to the middle with 3-4 minute oblong acuminate bracts, sepals ovate acuminate densely strigose,  $\frac{1}{4}$  inch long, exterior petals  $\frac{1}{2}$  an inch long narrow linear-triangular tomentose, interior ones connivent into a cap  $\frac{1}{4}$  inch long, ovaries 7-10, 2-ovuled, densely fusco-strigose style subulate stigma dilated 2-lobed. *Hook. and Thom. Fl. Ind. p. 106*;—*Thw. En. Pl. Zey. p. 7*.

Hab. Ceylon, 2-3,000 feet elevation.

## PLATE No. LXV.

**GONIOTHALAMUS HOOKERI.** (Thw.) A middling sized tree (about 30 feet) leaves ovato-oblong shortly and obtusely acuminate, slightly narrowed at the base, smooth 6-13 inches long,  $2\frac{1}{2}$  to  $4\frac{1}{4}$  broad, petioles  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long, peduncles equaling the petioles, axillary solitary or fasciated on the boughs or trunk, flowers pale green very sparingly rufo-hirsute, sepals persistent rotundate, acute,  $\frac{3}{4}$  inch long, exterior petals about 2 inches long  $\frac{3}{4}$  inch broad, rotundate at the base, slightly contracted above the middle, interior ones connivent into a mitriform cap about  $\frac{3}{4}$  inch high, tomentose within, ovaries about 25 style long subulate stigma small, bipartite, carpels shortly pedicellate size of small bean, seed shining testa brown. *Thw. En. Pl. Zey. p. 6.*

Hab. Ceylon, at an elevation of 1,000 feet—allied to *Goniothalamus Gardneri*.

PLATE No. LXVI.

*I have no specimen of G. Walkeri (H. f. et. T.) from Ceylon; the other described specimens are G. Malayannus (H. f. et. T.) from Malacca, G. sesquipetalis and Simonsii from the Khasya hills, and giganteus and Griffithii from the Malay Peninsula and Birmah. It is probable that more species will be detected in Southern India, in Birmah, and in the Malay Peninsula.*

**OROPHEA THOMSONI.** (Bedd. Linn. Trans. Vol. XXV.) A large shrub or small tree, glabrous except the inflorescence and the costa of the leaves beneath, leaves ovato-elliptic with a long obtuse acumination 2-4 inches long by  $1-1\frac{1}{2}$  broad, petioles 1-2 lines, peduncles very short axillary 3 flowered strigose, pedicels very short, sepals and petals strigose on the outside, sepals ovate or rounded, exterior petals rounded, interior with a long claw and puberulous at the apex on the inside, stamens 10-12 biseriata, ovaries strigose 5-6 biovulate, carpels size of a pea.

Hab. Anamallays (specimen figured), Travancore, and Tinnevely mountains and Madura District—elevation 1-4,000 feet.

PLATE No. LXVII.

**OROPHEA ERYTHROCARPA.** (Bedd. Linn. Trans. Vol. XXV.) A tree, trunk about 2 feet or so in girth, bark olive green, smooth, young parts aureo-pubescent, leaves elliptic acuminate  $2\frac{1}{2}$ -5 inches long 1-2 broad, at length quite glabrous above, sub-pubescent beneath, petioles 1-2 lines long, peduncles axillary or above the axils very variable in length, furnished with numerous bracts and bearing 3-5 pedicels (1 inch long) which are villous as are the peduncles and flower buds, and are each furnished with one deciduous bracteole, flowers about  $\frac{1}{2}$  an inch in diameter, stamens 12 in 2 series, outer row (always ?) sterile and very small, ovaries 6, two ovuled carpels oblong pointed nearly 1 inch long bright red, seed 1 scrobiculate.

Hab. Common in the Anagoondy Shola on the Anamallays—2,000 feet elevation (not observed elsewhere). In flower and fruit all the year.

PLATE No. LXVIII.

**OROPHEA UNIFLORA.** (H. f. et. T.) A shrub, branches slender glabrous or the young parts only slightly puberulous, leaves glabrous sub-coriaceous elliptic or oblongo-lanceolate obtusely acuminate, acute or rounded at the base  $1\frac{1}{2}$  to  $4\frac{1}{2}$  inches long  $\frac{3}{4}$  to  $1\frac{3}{4}$  broad, petioles 1-3 lines, peduncles axillary scarcely  $\frac{1}{4}$  inch long furnished with several bracts, and bearing 1 rarely 2 long slender pedicels  $\frac{1}{2}$  to 1 inch long, which are furnished with a minute deciduous bracteole at or above the middle, sepals rotundate or ovate acute, ciliate, exterior petals 3 lines long rotundate membranaceous, interior trapezoid obtuse or acute long clawed stamens 12 in 2 series, ovaries 6, two ovuled, stigma oblong, carpels globose blackish glabrous about  $\frac{3}{8}$  of an inch in diameter on pedicels 1-2 lines long.

Hab. The Western Ghats, from Coorg down to Travancore, in moist forests up to 3,500 or 4,000 feet—not very common, (the specimen figured is from Wynnaad.)

PLATE No. LXIX.

**OROPHEA ZEYLANICA.** (H. f. et. T.) A shrub, or small tree much branched, young parts fusco-pubescent, leaves sub-coriaceous oval-oblong obtusely acuminate, 2-3 $\frac{1}{2}$  inches long  $1-1\frac{3}{4}$  broad, young ones puberulous beneath, petioles  $\frac{1}{2}$  inch long, peduncles axillary bearing several pedicels very variable in length and furnished with small bractcoles at their base, and together with the peduncles fusco-pubescent, flowers about  $\frac{1}{2}$  an inch in diameter, sepals orbicular obtuse or pointed, tomentose, exterior petals rotundate ciliate, interior trapezoid, thickened at the apex ciliate, stamens 6 in one row all fertile, ovaries about 15 glabrous obovate, ovules 2, stigma capitate, carpels globose smooth glabrous about  $\frac{1}{2}$  an inch in diameter on pedicels 1 line long.

Hab. In North Canara (specimen figured), and in Ceylon—2,3,000 feet elevation.

PLATE No. LXX.

**OROPHEA CORIACEA.** (Thw.) A middling sized tree, branches rigid, leaves very coriaceous ovato-lanceolate sub-acute, rounded at the base intensely green 2-5 inches long,  $1-2\frac{1}{4}$  broad, veins inconspicuous, petioles 1-2 lines long, peduncles  $\frac{1}{4}$  inch long 1 flowered, furnished at the base with 3-4 strigose bracts, flowers about 4 lines in diameter, sepals minute deltoid ciliate, exterior petals rounded obscurely acuminate, externally purple internally yellowish, interior petals purple joined into an obtuse mitriform cap  $1\frac{1}{2}$  lines high, stamens 9 (6 ext. 3 int.) ovaries 1-2, two-ovuled, carpels sessile subglobose oblique, 1-2 seeded. *Thw. En. Pl. Zey. p. 8.*



Hab. Ceylon, at an elevation of about 3,000 feet. Mr. Thwaites describes the ovary as solitary; I have found 2 in the only two flowers I have examined.

## PLATE No. LXXI.

**OROPHEA ? OBLIQUA.** (H. f. et. T.) A middling sized tree, branches smooth glabrous, leaves oblong or lanceolate acute, rigidly coriaceous, unequal at the base, glabrous on both sides, 4-5 inches long  $1\frac{1}{4}$ -2 broad, shining above, pale beneath, petioles about 1 line long, flowers terminal 1-3 fascicled, or fascicled from the trunk, minute, glabrous purple very shortly pedicelled, sepals minute ciliate petals 6 subequal carnose, exterior open interior converging imbricate or subvalvate, stamens 6 in 2 series, ovaries 3, two-ovuled, stigma depressed torus plane, carpels sessile globose  $\frac{1}{2}$  inch in diameter smooth glabrous reddish 1-2 seeded, seeds rotundate sub-compressed testa shining brown scrobiculate. *Hook. and Thom. Fl. Ind. p. 112*;—*Thw. En. Pl. Zey. p. 8.*

Hab. Ceylon (near Galle), and in the Ratnapoora district at no great elevation.

The frequent imbrication of the petals is unlike any other species of Orophea, and this plant will probably have to be removed from the genus.

## PLATE No. LXXII.

In the "Flora Indica" two other species are described from Birmah, *O. polycarpa* and *O. acuminata*, and the genus is well represented in the Malay Archipelago—other species will probably be found in Southern India and in Birmah.

**UNONA LAWII.** A large shrub, branches slender, young ones pubescent, leaves sub-coriaceous oblongo-lanceolate, rounded at the base, acuminate at the apex, sparingly sub-puberulous above at length glabrous, very pale beneath and pubescent,  $2\frac{1}{2}$ - $4\frac{1}{2}$  inches long,  $\frac{3}{4}$ - $1\frac{1}{2}$  broad, petiole  $\frac{1}{2}$  inch long pubescent, peduncles pubescent slender about 1 inch long, nearly opposite the leaves, furnished with 1 ovate small bract about the middle, sepals ovato-lanceolate subtomentose  $\frac{1}{2}$  inch long, exterior petals  $1\frac{3}{4}$ - $2\frac{1}{2}$  inches long scarcely  $\frac{1}{4}$  inch broad, adpressedly pubescent, rounded and concave at the base, interior petals similar but a little shorter, ovaries 2-3 ovuled, torus convex, depressedly concave at the apex, carpels oblong mucronate numerous, on pedicels  $\frac{1}{4}$  inch long, 1-3 articulated. *Hook. and Thom. Fl. Ind. p. 132.*

Hab. Wynaad, common about Manantoddy (specimen figured) and on the Carcoor ghat—elevation 2,500 to 3,000 feet. Concan. Very like *Unona discolor*, but with much narrower petals and fewer ovules.

## PLATE No. LXXIII.

**UNONA ZEYLANICA.** (H. f. et. T.) An erect shrub, 3-6 feet, branches elongate slender, young parts pubescent, leaves elongate lanceolate acute at the base, acuminate at the apex, sub-membranaceous, glabrous on both sides or sub-puberulous beneath, 5-8 inches long  $1\frac{1}{4}$ -2 broad, petioles  $\frac{1}{2}$  inch long glabrous, peduncles on the trunk or axillary or above the axils solitary or twin slender  $\frac{1}{2}$ - $\frac{3}{4}$  inch long, squamellate at the base, the rest naked and glabrous, sepals oblongo-lanceolate puberulous on the outside 2 lines long, petals coriaceous glabrous, oblongo-lanceolate acute, exterior 1 inch long  $\frac{1}{4}$  inch broad, interior narrower  $\frac{2}{3}$  inch broad, stamens very broad, short, ovules 2-4, torus slightly excavated at the apex, globose in fruit, carpels 10-20 reddish (pedicels 2 lines long) contracted between the seeds, articulations 1-4 seeds oval smooth 4 lines long. *Hook. and Thom. Fl. Ind. p. 132*;—*Thw. En. Pl. Zey. p. 9.*

Hab. Ceylon, at an elevation of 1,500 to 3,000 feet.

## PLATE No. LXXIV.

The other described Indian species are *U. Dunalii* (Wall) from the Concan, Chittagong, and Malay Peninsula; *U. Desmos*, *stenopetala*, and *Dasymaschala* from Birmah; *U. dumosa* from Sylhet; *U. longiflora* and *præcox* from Assam; and *U. cauliflora* from Singapore; which are all described in the Flora Indica.

**POPOWIA RAMOSISSIMA.** (H. f. et. T.) A shrub or small tree, branches rugulose, young parts ferrugineo-tomentose, leaves ovate or oblong with a long acumination, rounded or subcordate or attenuated at the base, veins and costa tomentose beneath and whole surface punctate, 2 to  $3\frac{1}{2}$  inches long  $\frac{3}{4}$  to  $1\frac{1}{2}$  broad, petioles 2 lines long, peduncles leaf-opposed filiform 3-4 lines long tomentose 1 flowered, furnished with a bract at the middle, flowers about  $\frac{3}{8}$  of an inch in diameter densely tomentose, sepals small ovate, outer petals much larger than the inner ones, interior concave thick ovate broadly sub-unguiculate at the base, inflexed at the apex, stamens about 24, connectivum truncato-capitate, ovaries 4-7 oblong, hairy at the base, style large obovate recurved, ovule solitary on the ventral suture. *Hook. and Thom. Fl. Ind. p. 105*;—*Guatteria ? ramosissima, Wall. Cat. 7, 294.*

Hab. South Tinnevely and South Travancore mountains, 3-5,000 feet elevation, common in the moist forests below Aghasteer peak. The locality of Penang given in the Flora Indica is probably a mistake—in all flowers that I have examined, I find the ovule solitary and from the ventral suture, not erect from the base; the position of the genus seems to be near *Goniothalamus*. It is the only described Indian species of the genus.

## PLATE No. LXXV.

**PHŒANTHUS MALABARICUS.** (Bedd.) A shrub or small tree, young parts ferrugineo-pubescent, leaves (adult) glabrous on both sides except the midrib below, oblongo-lanceolate gradually attenuated at the apex into a fine point, more or less cordate at the base, 4-7 inches long 1-2 inches broad, petioles 2 lines long peduncles ferruginous leaf-opposed or on the boughs between the leaves,  $\frac{3}{8}$  to  $\frac{1}{2}$  an inch long furnished with 2 bracts at the base, subclavate at the apex, sepals small ovate pointed densely ferrugineo-pubescent, outer petals about double the size of the sepals ovate acute, inner petals more than double the size of the outer, very thick and fleshy cymbiform reflexed and meeting at the apex, stamens about 170, connectivum truncate capitate, ovaries about 50 strigose, style obovate, ovules 2, rarely 1, on the ventral suture.

Hab. South Wynaad, abundant in the moist forests of the Tambacherry ghat about 2,000 feet elevation; the flowers are reddish, the venation of the leaves is the same as in *Goniothalamus*. This is the first species found on the Continent—one species is described from Malacca.

## PLATE No. LXXVI.

**MITREPHORA HEYNEANA.** (Thw.) A small tree, leaves glabrous coriaceous, ovate to lanceolate, often attenuated into an obtuse point at the apex, or obtuse,  $1\frac{1}{2}$  to 3 inches long, by about 1 inch broad, shining above, pale beneath, veins oblique, venules reticulated, peduncles leaf-opposed short 1-3 flowered, sepals rotundate, puberulous outside, deciduous in fruit, exterior petals plane membranaceous parallel-veined  $\frac{3}{8}$  inch long, cuneato-lanceolate acuminate, puberulous on both sides, interior petals villous trapezoid acute, with a claw nearly  $\frac{1}{2}$  an inch long, torus strigose, stamens numerous all fertile broadly cuneate, ovaries 6-9 densely strigose 2-4 ovuled, carpels 4-8 ovoid or sub-globose  $\frac{1}{2}$  an inch long grey with hoary pubescence. *Orophea Heyneana*, *Hook. and Thom. Fl. Ind. p. 110*;—*Thw. En. p. 8*.

Common about the foot of the Tinnevely Hills, also in Ceylon; it flowers in July. The specimen figured is from the foot of the Chokampatty Hills in Tinnevely—it is the only species known from S. India. One is described from Assam, and two from the Malay Peninsula, and there are several species in Java.

## PLATE No. LXXVII.

**UVARIA ZEYLANICA.** (Linn.) A scandent shrub, young branches adpressedly tomentose adult glabrous, leaves elliptic or lanceolate acuminate glabrous, 2 to  $3\frac{1}{2}$  inches long,  $\frac{3}{4}$  to  $1\frac{1}{4}$  broad, coriaceous rigid, veins inconspicuous, petioles 1-2 lines long, peduncles solitary terminal or leaf-opposed scarcely  $\frac{1}{2}$  an inch long tomentose, furnished with 2-3 small oblong bracteoles near the base, bud globose, flowers reddish about  $\frac{1}{2}$  an inch in diameter, sepals ovate membranaceous, petals ovato-oblong pubescent on the outside, glabrous within, stamens short oblongo-cuneate, torus subglobose hairy, carpels 4-12 ovoid or oblong, very shortly mucronulate at the apex, hoary with a tawny pubescence, seeds 3-6. *L. Sp. ii. 756*;—*Hook. and Thom. Fl. Ind. p. 102*;—*U. Heyneana*, *W. A. Prod. p. 8*;—*Guatteria montana*, *D. C. Prod. 1:94*;—*Rheed Mal. v. t. 17*.

The specimen figured is from the jungles near Quilon (in the plains), where it is common; it is also found in Malabar and Ceylon.

## PLATE No. LXXVIII.

**UVARIA MACROPODA.** (H. f. et. T.) A large climber, young parts subsabrous, with a few stellate hairs, leaves coriaceous oblong or lanceolate, with a rather sudden acumination glabrous on both sides, shining above paler beneath, 3-6 inches long 1-2 inches broad, petioles  $\frac{1}{4}$  inch long, peduncles terminal solitary or leaf-opposed  $\frac{1}{2}$ -1 inch long, furfuraceous with stellate hairs as are the flower buds, sepals tuberculate on the outside, hairy within rotundate mucronate  $\frac{1}{2}$ - $\frac{3}{4}$  inch long, petals oval-oblong nearly 1 inch long tomentose on both sides (sometimes all joined at the base), stamens truncate at the apex connectivum scarcely produced beyond the anther ovules about 10 in 2 series, torus in fruit thickened subglobose, carpels 15-30 very long pedicelled (3-6 inches) oblong mucronate 1-2 inches long glabrous granulose 3-ribbed, reddish colored, seed compressed smooth white oblong 5 lines long. *Hook. and Thom. Fl. Ind. p. 101*;—*Thw. En. Pl. Zey. p. 6*.

Hab. Ceylon, up to 1,500 feet elevation. The petals are all joined at the base in the specimen figured—(the only open flower I have seen.)

## PLATE No. LXXIX.

**UVARIA SPHENOCARPA.** (H. f. et. T.) A scandent shrub, branches elongate flexuose slender, young parts fulvo-tomentose, leaves narrow obovate or cuneato-oblong ending in a long acumination, rotundate or retuse at the base, above minutely scabrous, beneath stellato-tomentose 3-5 inches long  $1\frac{1}{4}$ - $2\frac{1}{4}$  broad, petiole 1-2 lines long, peduncles leaf-opposed,  $\frac{1}{2}$  an inch long tomentose 1 flowered, bracts rotundate imbricate squamiform, flowers dull yellowish green scarcely  $\frac{1}{2}$  an inch in diameter, sepals joined into an obtusely 3 lobed or subentire cup densely fulvo-tomentose, subsistent in fruit, petals oval obtuse cinereo-tomentose, torus in fruit depresso-globose ovaries elongate, ovules about 10 in 2 series in the lower half, stigma sub-bilobed involute, carpels 8-10 or less, 1 inch long rounded at the apex densely tomentose, above the middle irregularly tuberculate.—*Hook. and Thom. Fl. Ind. p. 99*;—*Thw. En. Fl. Zey. p. 6*.

Hab. Ceylon, up to 1,500 feet elevation.

## PLATE No. LXXX.

## ANONACEÆ.

**UVARIA MACROPHYLLA.** (Roxb.) A scandent shrub, branches ferrugineo-tomentose, leaves coriaceous (or young ones membranaceous) oval or broadly oblong cordate at the base abruptly acuminate, nearly glabrous or only minutely puberulous above, fusco-tomentose beneath 6-12 inches long, 3-6 broad, petioles  $\frac{1}{4}$  to  $\frac{1}{2}$  inch long, peduncles leaf-opposed many flowered tomentose, an inch long, furnished with numerous oval tomentose bracts, pedicels 1 inch long with a bractcole at the middle, bud globose densely cinereous, sepals united up to the middle, petals oval reddish  $\frac{2}{3}$  inch long more or less united at the base, stamens very numerous, all fertile (always ?) connectivum produced beyond the anther into a large foliaceous process, ovaries very numerous hairy gradually broader upwards with a truncated style, carpels 15-20 inserted on to the subglobose torus oval-oblong or subglobose 1-1 $\frac{1}{2}$  inches long, nearly black when ripe, pedicels scarcely 1 line long, seed in 2 series. *Roxb. Fl. Ind. ii. page 663*;—*Hook, and Thom. Fl. Ind. p. 97*;—*U. cordata, Wall. U. rufescens, Alph. Dc.*

Ceylon, S. E. of the Island common (specimen figured), Sylhet, Chittagong, Ava, Tenasserim, Malay Peninsula and Java.

## PLATE No. LXXXI.

**UVARIA SEMECARPIFOLIA.** (H. f. et T.) A scandent shrub, branches fulvo-tomentose, leaves oblong or obovate-oblong, subcordate at the base, obtuse at the apex with a short mucro, coriaceous rigid, puberulous above, chiefly on the costa and nerves, at length glabrous, pubescent beneath with stellate hairs, 6-10 inches long 2 $\frac{1}{2}$ -4 $\frac{1}{2}$  broad, petioles  $\frac{1}{4}$  inch, peduncles leaf-opposed about  $\frac{1}{2}$  inch long, furnished with numerous round bracts, 3-6 flowered, pedicels about  $\frac{1}{2}$  inch long, bracteolate about the middle, sepals cinereous united into a slightly 3-lobed or subentire cup, petals ovate or oblong cinereous, stamens truncated at the apex, connectivum not produced beyond the anthers; ovaries numerous longitudinally striated hairy, style oblique subrotund; carpels oval to subglobose fulvo-tomentose nearly an inch in diameter on pedicels  $\frac{1}{3}$  inch long. *H. f. et T. Fl. Ind. p. 97.*

Ceylon, central and S. E. parts of the Island up to 3,000 feet elevation (specimen figured), also in Malacca ?

*Uvaria Narum*, a common Peninsula species, has been figured by Dr. Wight. *U. lurida H. f. et T.* occurs in the Peninsula and in Assam, but I have no specimens; the following species described in the Flora Indica, are all scandent shrubs. *U. purpurea Bl.*, *hirsuta Jack*, *dulcis Dunal*, *Lobbiana H. f. et T.*, *subrepanda Wall.*, and *parviflora H. f. et T.*, all from the Malay Peninsula; *bracteota Roxb.*, from Sylhet and Tenasserim, *Hamiltonii H. f. et T.* from Behar and Assam, *ferruginea Ham.* from Birma, and *micrantha H. f. et T.* from Birmah and Malay.

I have observed one or two species, lofty climbers, in the forests of Malabar and the Anamallays, but I have not obtained them in flower.

## PLATE No. LXXXII.

**POLYALTHIA MOONII.** (Thw.) A shrub 8-10 feet, young parts fulvo-strigose, branches rigid, bark rugose white speckled, leaves lanceolate with a longish acumination, rounded and oblique at the base 3-6 inches long  $\frac{3}{4}$  to 2 inches broad, petioles about 1 line long, peduncles cauline or leaf-opposed; 1-1 $\frac{1}{2}$  inches long furnished with 2-3 bracts at the base; fulvo-strigose, 1-3 flowered, flowers reddish 4 lines across slightly pilose on the outside, sepals acuminate 1 line broad, exterior petals rounded acuminate, inner ones rounded obtuse and a little broader than the outer, stamens very numerous cuneate closely compact, ovaries about 14 oblong pilose, style rounded slightly recurved  $\frac{1}{2}$  length of ovary, ovules 1-2 from the ventral suture very near the base, carpels globose 1-seeded or oblong 2-seeded, 2-4 lines long, pedicels about 2 lines long. *Thw. En. Pl. Zey. p. 9.*

Ceylon.

*Polyalthia cerasoides Dunal*, a common tree in the Peninsula, has been figured in the Flora Sylvatica, and Dr. Wight has figured *P. longifolia* (Wall), a common avenue tree at Madras. The following species, described in the Flora Indica, are all from Northern India, Birma, and the Malay Peninsula:—*P. bifaria Dc.*, *Jenkinsii H. f. et T.*, *Simiarum Ham.*, *membranacea Dc.*, *nitida Dc.*, *biglandulesa Bl.*, *costata H. f. et T.*, *cinnamomea H. f. et T.*, *obliqua H. f. et T.*, *cauliflora H. f. et T.*

## PLATE No. LXXXIII.

**MILIUSA MONTANA.** (Gard.) A shrub 2 to 8 feet much branched, all the younger branches densely fusco-pubescent, leaves ovate to oblong or elliptic with an unequal cordate base, and generally with a blunt acumination ciliate on the margin glabrous above except the costa, pubescent on all the nerves beneath, 1 $\frac{1}{2}$  to 3 inches long by  $\frac{3}{4}$  to 1 inch broad, petioles about 1 line broad peduncles solitary axillary  $\frac{2}{3}$  to  $\frac{3}{8}$  of an inch long, furnished with 2-3 bracts at the base and often with 1 about  $\frac{1}{2}$  up, flowers  $\frac{1}{2}$  to nearly 1 inch long, dull cream colored sepals and outer petals all equal or subequal ciliate linear-lanceolate acute 1-2 lines long, inner petals glabrous or subglabrous  $\frac{1}{3}$  to nearly 1 inch long and  $\frac{1}{4}$  inch broad, stamens very numerous in 5-6 series round the cylindrical strigose torus, ovaries about 14 sparingly furnished with distant hairs, stigma oblong about  $\frac{1}{2}$  the size of the ovary, ovules 2 on the ventral suture, carpels sessile or on short stalks, glabrous? *Gard. MSS. in Herb. Hook.*;—*Hook, and Thom. Fl. Ind. p. 148.*

In the moist forests of the Anamallays (Ponachy waterfalls) 4,000 feet (specimen figured), in the ravines on the Carcoor ghat (2,500 feet), Malabar, also in Ceylon. None of my specimens are in fruit.

## PLATE No. LXXXIV.

**MILIUSA INDICA.** (Lesch.) A large shrub, branches tomentose, at length sub-glabrous, leaves slightly coriaceous very variable in shape, from sub-rotund to oblong or ovate rounded or cordate at the base, obtuse or subacute at the apex, pubescent beneath, and also above when young, but at length glabrous and shining above, 1-2½ inches long,  $\frac{3}{4}$  to 1¼ broad, petioles pubescent scarcely 1 line long, flowers  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long, exterior petals about twice the size of the very small sepals or sub-equal in length, interior ones ovate, nerved pubescent deep purple, torus strigose, stamens numerous in 3 series, ovaries numerous densely pilose oblong, stigma oblong, carpels numerous, sessile, densely cinereo-tomentose. *W. A. Prod.* I. 10;—*Hook. and Thom. Fl. Ind.* p. 149.

Foot of the Tinnevely ghats about Chokampatty and elsewhere (specimen figured) varying,  $\beta$ . subglabra. Foot of the Palney Hills, Denkinacottah Hills, Mysore. More glabrous and generally with smaller flowers.

## PLATE No. LXXXV.

**MILIUSA WIGHTIANA.** (H. f. et T.) A small tree, branches glabrous, leaves narrow oblongo-lanceolate or linear-oblong, with a longish obtuse acumination attenuate or slightly rounded at the base, glabrous on both sides, 1½ to 4 inches long,  $\frac{3}{4}$  to 1 inch broad, petioles 1-2 lines long, peduncles slender, 1 to 1½ inch long (elongating in fruit) furnished with about 3 bracts at the base and 1 below the middle, sepals and exterior petals very small, equal, ciliate, interior petals about  $\frac{1}{2}$  an inch or a little more long, glabrous or subglabrous, stamens about 22 in 3 series, ovaries glabrous about 20, style oblong nearly as long as the ovary, ovules 1-2 on the ventral suture, fruit bearing peduncles 2 inches long, pedicels  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch, carpels glabrous globose 1 seeded, or oblong 2 seeded, the latter  $\frac{1}{2}$  an inch long, all mucronate. *Hook. and Thom. Fl. Ind.* p. 149.

On the banks of streams in moist forests on the Tinnevely and Travancore Hills, South of Courtallum, elevation 3,000 to 5,000 feet. All the flowers I have examined were hermaphrodite.

## PLATE No. LXXXVI.

**MILIUSA VELUTINA.** (Dunal.) A good sized tree, branches densely tomentose, leaves ovate or oblong, cordate at the base acute or obtuse at the apex, velvety-tomentose on both sides 3-6 inches long,  $\frac{3}{4}$  to 4 broad, petiole 2-3 lines long, peduncles short, pedicels 3-6, elongate, slender, densely tomentose ebracteate 2-4 inches long, flowers hermaphrodite, densely tomentose, sepals ovate equal to the exterior petals, interior petals broadly ovate  $\frac{1}{4}$  to  $\frac{1}{2}$  inch long, densely tomentose outside, subglabrous within and blackish, stamens numerous in 4-5 series, ovary downy 2 ovuled, carpels purplish-black, puberulous about  $\frac{1}{2}$  an inch long on very short pedicels, seeds 1-2.

In the Gollavery forests and Sircar mountains, also in Bengal and Birmah.

## PLATE No. LXXXVII.

**MILIUSA NILAGIRICA.** (Bedd.) A large shrub, perfectly glabrous, branches rugose tuberculate, leaves coriaceous glabrous, linear-lanceolate to lanceolate or elliptic, attenuate at both ends with an obtuse point at the apex 2-4 inches long by  $\frac{3}{4}$  to 1¼ broad, petioles  $\frac{2}{3}$  or  $\frac{3}{4}$  of an inch long, peduncles axillary furnished with 2-3 bracts at the base glabrous, from a little longer to 3 times as long as the petioles, sepals and exterior petals equal or subequal ciliate, interior petals  $\frac{3}{4}$  of an inch long, glabrous except the thickened margin near the apex, stamens 8 in a single series, ovaries glabrous about 13, stigma oblong or globose,  $\frac{1}{2}$  the size of the ovary glabrous, ovules 1-2 on the ventral suture, carpels globose the size of a large pea, quite glabrous on pedicels, 2-3 lines long.

The northern slopes of the Nilgiris (5,000 feet elevation.)

## PLATE No. LXXXVIII.

**MILIUSA ZEYLANICA.** (Gard.) A small tree, branches rugose tuberculate and together with all the young parts fusco-tomentose, leaves coriaceous, rigid opaque, oblongo-lanceolate, obtuse acute, or acuminate, rounded at the base and often oblique adpressedly puberulous beneath, 2-4 inches long, by 1-1½ broad, petiole 2 lines long more or less tomentose, peduncles short,  $\frac{1}{2}$  the length of the flowers, tomentose furnished with bracts at the base, flowers hermaphrodite, sepals and exterior petals tomentose about equal, oblong or acute, pilose, ciliate, interior petals linear oblong adpressedly puberulous, torus strigoso-pilose, ovaries numerous, strigose broadly oval, stigma oval, ovules 1-2 on the ventral suture, carpels subsessile glabrous, minutely granulate.—*Hook. and Thom. Fl. Ind.* p. 149;—*Thw. En. Pl. Zey.* 11.

Ceylon, south of the island, at no great elevation. Very similar to *M. montana*, but distinguished by its larger more acute leaves shorter peduncles and narrower petals; both these species and *M. Indica* are all closely allied.

Three other species are described in the Flora Indica, viz. *Wallichiana*, *Roxburghiana*, and *macrocarpa*, all from Sikkim or Sylhet.

## PLATE No. LXXXIX.

**ALPHONSEA ZEYLANICA.** (H. f. et T.) A tree, young branches puberulous, buds fusco-sericeous, leaves coriaceous-glabrous on both sides shining above, petiole and costa beneath pubescent when young, lanceolate or elliptico-lanceolate, acute at the base, often with a long blunt acumination  $2\frac{1}{2}$ -4 inches long,  $\frac{3}{8}$ - $1\frac{1}{4}$  broad, petioles slender  $\frac{1}{4}$  inch long, peduncles leaf-opposed or above the axils, scarcely  $\frac{1}{4}$  inch long tomentose, pedicels 1-3 about  $\frac{1}{2}$  an inch long pubescent, with minute ovate bracts at the base, petals  $\frac{3}{8}$  inch long puberulous, stamens about 30 in 3 series, ovaries 5-6, style depressed, torus in fruit large globose, carpels subglobose irregularly tuberculate fulvo-tomentose  $1\frac{1}{4}$  inch in diameter, pedicels thick  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch long, seeds 4-6 in a single series. *Fl. Ind. Hook. Fil. et Thom. p. 153*;—*Uvaria lutea, W. and A. Prod. 1, 8.* (excl. syn.)? *Gnatteria acutiflora, Wall, Cat. 6438 D.*

Ceylon—elevation 2-3,000 feet (specimen figured.) Travancore and Tinnevely hills.

PLATE No. XC.

**ALPHONSEA LUTEA.** (H. f. et T.) A large tree, branches glabrous, buds fulvo-tomentose, leaves oval-oblong rounded or attenuated at the base, obtusely acuminate coriaceous, glabrous on both sides and very shining above, pale beneath, young ones puberulous about the costa beneath, 3-4 inches long,  $1\frac{1}{2}$ - $2\frac{1}{2}$  broad, petioles 2-3 lines long, flowers congested in several flowered leaf opposed fascicles, sessile or shortly peduncled, pedicels short fulvo-tomentose, sepals rounded deciduous, petals externally pilose, scarcely  $\frac{1}{2}$  an inch long, ovate, exterior a little the larger and pilose within on the upper portion, the interior glabrous on the inside, stamens numerous in 3 rows, ovaries 4 strigoso-pilose, style very short, torus in fruit dilated globose, carpels 4-6, broadly oval, obtuse at both ends, very shortly pedicelled  $1-1\frac{1}{2}$  inches long, fulvo-puberulous seed 3-6. *H. et T. Fl. Ind. p. 153*;—*Uvaria lutea, Roxb. Fl. Ind. ii. 666*—(non W. A.)

In Ceylon, Reigam corle. C. P. 3826 (specimen figured). In Orissa, Sylhet and Ava. In all the flowers I have examined of the Ceylon plant, there are only 4 ovaries and the style is very short, almost truncated. Can it be distinct from the India and Birmah plant?

PLATE No. XCI.

**ALPHONSEA MADRASAPATANA.** (Bedd.) A tree, leaves glabrous, very shining on the upper surface, lanceolate or elliptico-lanceolate or occasionally oblong or ovate, coriaceous prominently reticulated beneath, obtuse at the apex, about  $3\frac{1}{2}$  inches long by  $1\frac{1}{2}$  broad, petioles about  $\frac{1}{4}$  inch long, rugulose glabrous or slightly puberulous, peduncles leaf-opposed or above the axils, very short, pedicels 1-6,  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch long, puberulous furnished with a bract below the middle, flowers bright yellow, sepals ovate small, petals about  $\frac{3}{8}$  of an inch long, puberulous on the outside, stamens 12 in 2 series, ovaries 3-4, style subglobose, slightly curved, ovules about 8 in 2 rows, carpels ovoid fulvo-tomentose.

In ravines on the Tripatty hills and similar localities in North Arcot and Cuddapah, abundant on the banks of streams, a very handsome shade-yielding tree. I have specimens of apparently the same tree (only in fruit) from the Tinnevely mountains.

*A. ventricosa* from Chittagong is the only other described Indian species.

PLATE No. XCII.

RUBIACEÆ.

**PRISMATOMERIS ALBIDIFLORA.** (Thw.) A shrub or small tree glabrous, leaves oblong to elliptic, ending in a sudden acumination 3-4 inches long by about  $1\frac{1}{2}$  inch broad, petioles about  $\frac{1}{4}$  inch long, peduncles axillary 2-4 together  $1\frac{1}{4}$  to  $1\frac{1}{2}$  inch long, calyx cupuliform slightly 5 divided at the apex segments of the corol fleshy, filaments attached to the tube of the corol close to the base.—*Thw. En. Pl. p. 154*, and in *Hook. Kew. Journal Bot. VIII. p. 268.*

Ceylon, southern and central districts, up to 4,000 feet elevation.

PLATE No. XCIII.

**LEUCOCODON RETICULATUM.** (Gardn.) An epiphytic scandent shrub, leaves oblongo-lanceolate acute at both ends, 3-6 inches long, 1-2 inches broad, petioles  $\frac{1}{2}$ - $\frac{3}{4}$  inch long, stipules membranaceous oblong, bidentate at the apex, connate at the base, about one inch long, involucre large, campanulate shortly pedunculate terminal solitary white turning green dentate on the margin, calyx tubular subentire, corol infundibuliform, white about 8 lines long, lobes lanceolate acute, filaments very short attached to the centre of the anther, style simple stigma 2 lobed, lobes oblong obtuse, bacca white, 4 lines long, seed striated brown, black in the middle, about  $\frac{1}{2}$  a line long. *Gard. Calc. Journal of Nat. Hist. Vol. VII. p. 5.*—*Thw. En. Pl. Zey. p. 138.*

Ceylon. Central districts at 3,000 to 5,000 feet elevation.

PLATE No. XCIV.

**SCHIZOSTIGMA HIRSUTUM.** (Arnt.) *Herbaceous* decumbent or subrepent hirsute, stems simple, leaves opposite oblongo-lanceolate, entire pilose pale beneath, 2-3 inches long by 1 or a little more broad, stipules broadly ovate acute membranaceous, flowers white axillary 1-3 together about 1 inch long, subsessile with 2 bracts at the base, style filiform much exserted, cleft into 4-7 divisions (according to the number of the cells of the ovary) filaments short attached to the centre of the anther, berry as large as a small cherry. *Arnt. Ann. of Nat. Hist.* iii. p. 20;—*End. Suppl.* I. p. 1393;—*Thw. En. Pl. Zeyl.* p. 139.

Ceylon. South of the Island, up to an elevation of 2,000 feet.

PLATE No. XCV.

**STYLOCORYNE ELLIPTICA.** (Thw.) A small glabrous tree 12 feet, leaves subcoriaceous entire elliptic or oblong acuminate attenuated at the base turning black in drying, 4-10 inches long, by 2-3 broad, petioles  $\frac{1}{2}$ -1 $\frac{1}{2}$  inches long, stipules large oblong acute involute, peduncles terminal 3 together, pedicels 3 about as long as the peduncles, bracteoles few about the base of the pedicels small squamiform, calyx entire or slightly toothed, tube about 1 line long, corol white, tube 12 lines long hairy in the jaws within lobes oblong obtuse, 6-8 lines long, anthers sessile affixed by their middle, style shorter than the tube, stigma 2 cleft lobes acute; berry about 1 inch long fleshy about 10 seeded. *Coffea?* elliptica. *Thw. En. Pl. Zey.* p. 154;—*Stylocoryne elliptica*, *l. c.* p. 421.

Ceylon, at no great elevation.

PLATE No. XCVI.

**IXORA CALYCINA.** (Thw.) A small tree, glabrous, leaves ovate or lanceolate acuminate cordate rounded or acute at the base, 1 $\frac{1}{2}$ -4 inches long by  $\frac{1}{2}$ -2 inches broad, petioles 1-2 lines long, corymbs terminal trichotomous, pedicels short crowded, bracteoles long linear, calycine segments entire lanceolate acute 3-5 times longer than the ovary, corol white, tinted with red, lobes oblongo rotundate acute much shorter than the cylindrical tube, berry ovoid or spherical crowned with the calyx. *Thw. En. Pl. Zey.* p. 155.

Ceylon, central districts up to 7000 feet.

PLATE No. XCVII.

**IXORA JUCUNDA.** (Thw.) A small tree 10-20 feet, leaves glabrous lanceolate or ovato-lanceolate acuminate attenuated at the base 4-8 inches long 1-4 inches broad, petioles 2-5 lines long, corymbs terminal pilose many flowered trichotomous at the base, primary division elongate, bracteoles small acute, calycine segments truncated shorter than the ovary, flowers white tinted with red, lobes about 2 lines long oblong acute, tube in variety  $\alpha$  &  $\beta$  7-14 lines long, in variety  $\gamma$ . 2-3 lines long; berry subspherical, blackish-red. *Thw. En. Pl. Zey.* p. 155.

Variety  $\beta$ , leaves narrow lanceolate, calycine segments sub-acute, narrower than the lobes of the corol.

Variety  $\gamma$ , corol tube very short.

Ceylon up to 4,000 feet.

PLATE No. XCVIII.

**PAVETTA ANGUSTIFOLIA.** (Thw.) A small shrub, leaves glabrous (young ones pilose of the veins beneath) linear lanceolate, acuminate at both ends, 3-7 inches long,  $\frac{1}{2}$ -1 inch broad, petiole 1-5 lines long, stipules membranaceous apiculate hispid on the outside glabrous within, corymbs short trichotomous at the base pilose, pedicels longish, calycine teeth acute recurved at the apex shorter than the tube, corol white tube 7-10 lines long internally pilose, lobes acute 5 lines long, style very long, berry as large as a pea. *Thw. En. Pl. Zey.* p. 156.

Ceylon. Central districts, banks of streams (specimen figured). I have the same or a closely allied species from Tinnevely and Coorg.

PLATE No. XCIX.

**PAVETTA INVOLUCRATA.** (Thw.) Shrub 10-12 feet turning black in drying, leaves glabrous obovate or obovato-lanceolate, shortly acuminate, rounded or acute at the base 2 $\frac{1}{2}$ -5 inches long, 1-2 inches broad, petioles  $\frac{1}{4}$  to  $\frac{1}{2}$  inch long, capituli axillary solitary, pedunculate, involucre, peduncles shorter than the leaves, involucre leafy, divisions imbricate membranaceous internally pilose, lobes of the calyx acute internally pilose shorter than the corol, corol white lobes acute equalling the short tube, style twice as long as the corol, berry spherical black, the size of a pea. *Thw. En. Pl. Zeyl.* p. 156.

Ceylon. Central districts 5,000—7,000 feet.

PLATE No. C.



*Hedyotis lucifolia* (Bedd.)

Govindar del.

Dumphy Lith.







*Hyptis hirsutissima* (Bedd.)

42100 del

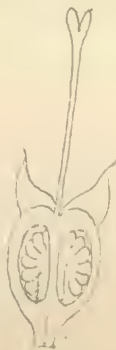
Curry, Ind.





*Hedyotis allo-nerva* (Budd.)





*Gouania* fol.

*Halimolobos viscuta* (Kidd.)

Zunzky Lith.





*Hedyotis purpurea* (Budd.)

Griseb., del.

Dumort., Lith.







*Hedyotis lentiginosa* (Bedd.)





*Hydnocallis Travancorica* (Bedd.)



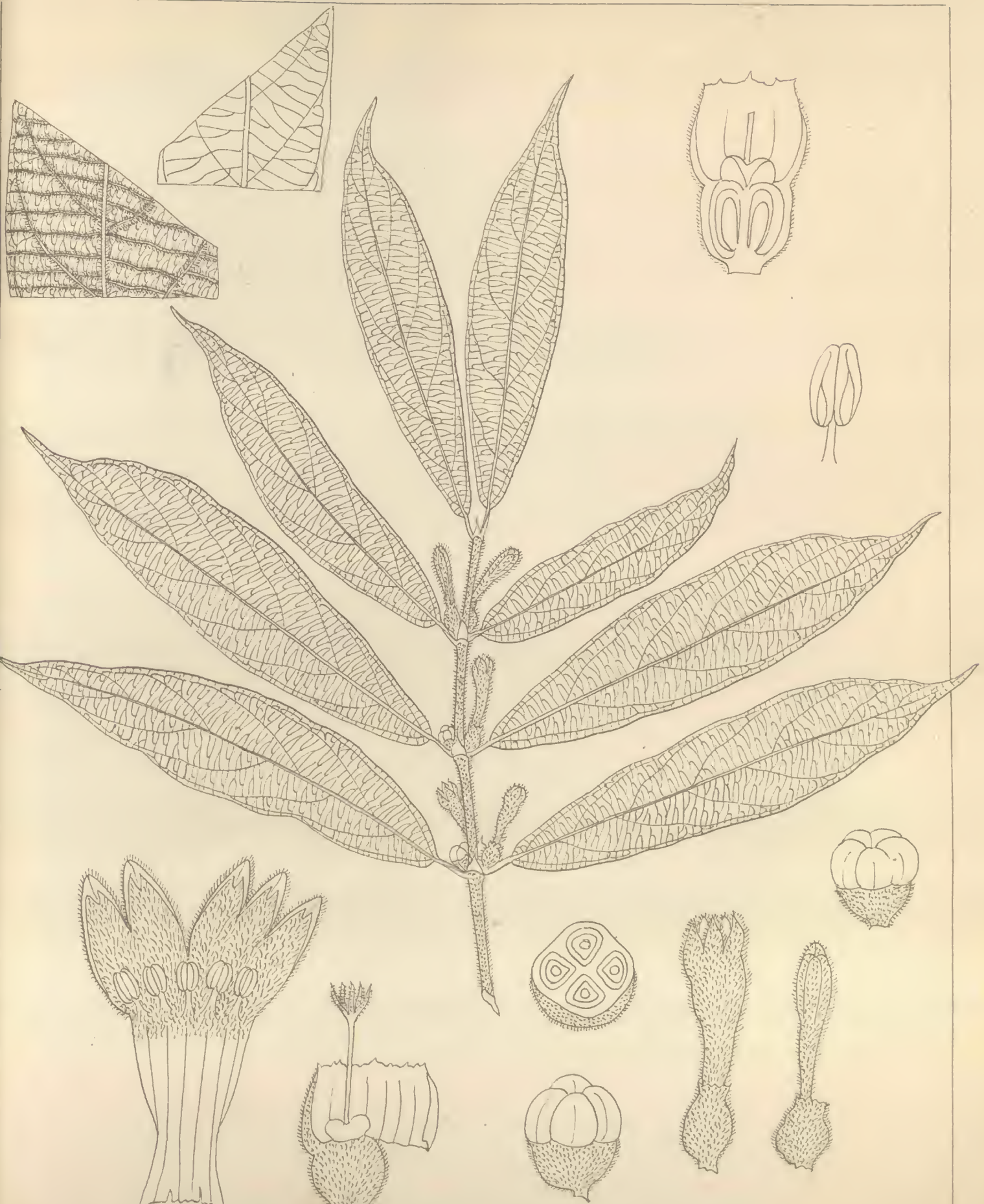


*Hedyotis quinquenervia* (Chen)

indos. det.

Samuelson 1892





*Lasiacanthus truncatus* (Radd.)







*Lasianthus serratus* (Bedd.)





Govindoo, del.

*Lasianthus oblongifolius* (Bedd.)

Dumphy, Lith.





*Lasiacanthus Jackianus* (Wight.)

opposita dit.

Dumortier. 1844





*Passianthus dichotomus* (Wight.)

Howland del.

Dumphy lith.







*Serissa fragrans* (Bedd.)

Grindoo, del.

Dumphy, lith.





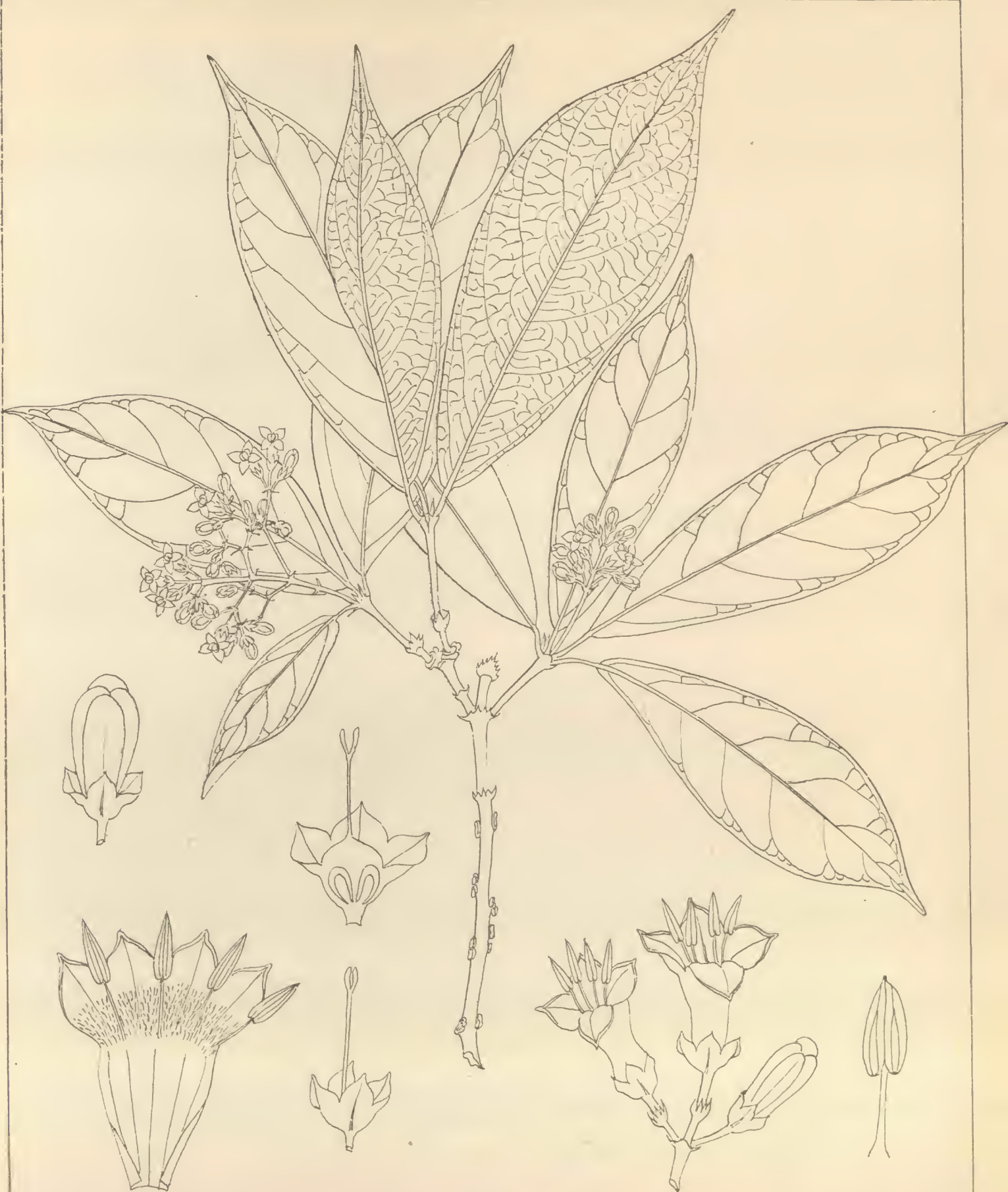
*Serissa Wightii* Gardn.





*Serissa glomerata* (Gardn.)





*Socrassa corymbosa* (Bedd.)







*Nandea tubulosa* (Arn.)



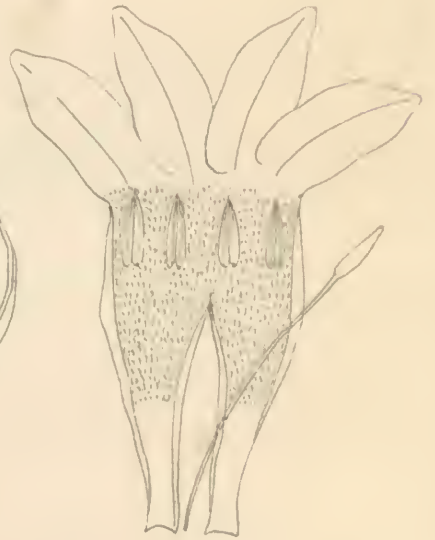


Spivinos del.

*Nandea elliptica* (Daly.)

Trumphy, Indi.





*Gyneria tetrandra* (Bedd.)

Lyons, del.

Thompson, lith.





*Desorthis acuminatus* (Hort.)

Desorthis ac.







*Lasianthus Blumianus* (Wight.)





*Annona muricata* (L.) Mill.

Smiley Lit.





Goussier, del.

*Acranthera Lecynioides* (A. cranthora)

Dumby, Lith.





Savinio, del.

Dumphy, Lith.

*Acoranthera grandiflora* (Budd)







Gravand. del.

*Scutycos nummularia* (Arn.)

Dumphy del.





Griseb., l.

*Hedysotus auricularia* Linn.

Desimpby. Lohr.





L. G. S. del.

*Lobelia quadrilocularis* Sm.

Summby del.





Gravado del

*Hedyotis trinervia* (Po & Sch.)

Dumphy Lith.







Gouin, del.

*Hedyotis coccinea* (J.H.)

Dumphy, lith.





Goussier del

*Hedychotis Laxertiana* (Arndt)

Quoy del





*gossypium* vel

*Artemisia aspera* L.

Dumortier del.





Govindoo, del.

*Hedyotis Boyncei* (B.)

Dumortier, Lith.







Goussard, del.

*Hedyotis nudicaulis* (Walt.)

Goussard, del.





Govindoo, del

*Hedyotis cymosa* Thun.

Bampfey, lith.





Govindoo del.

*Hedyotis glabella* (Brown?)

Quincy Lit.





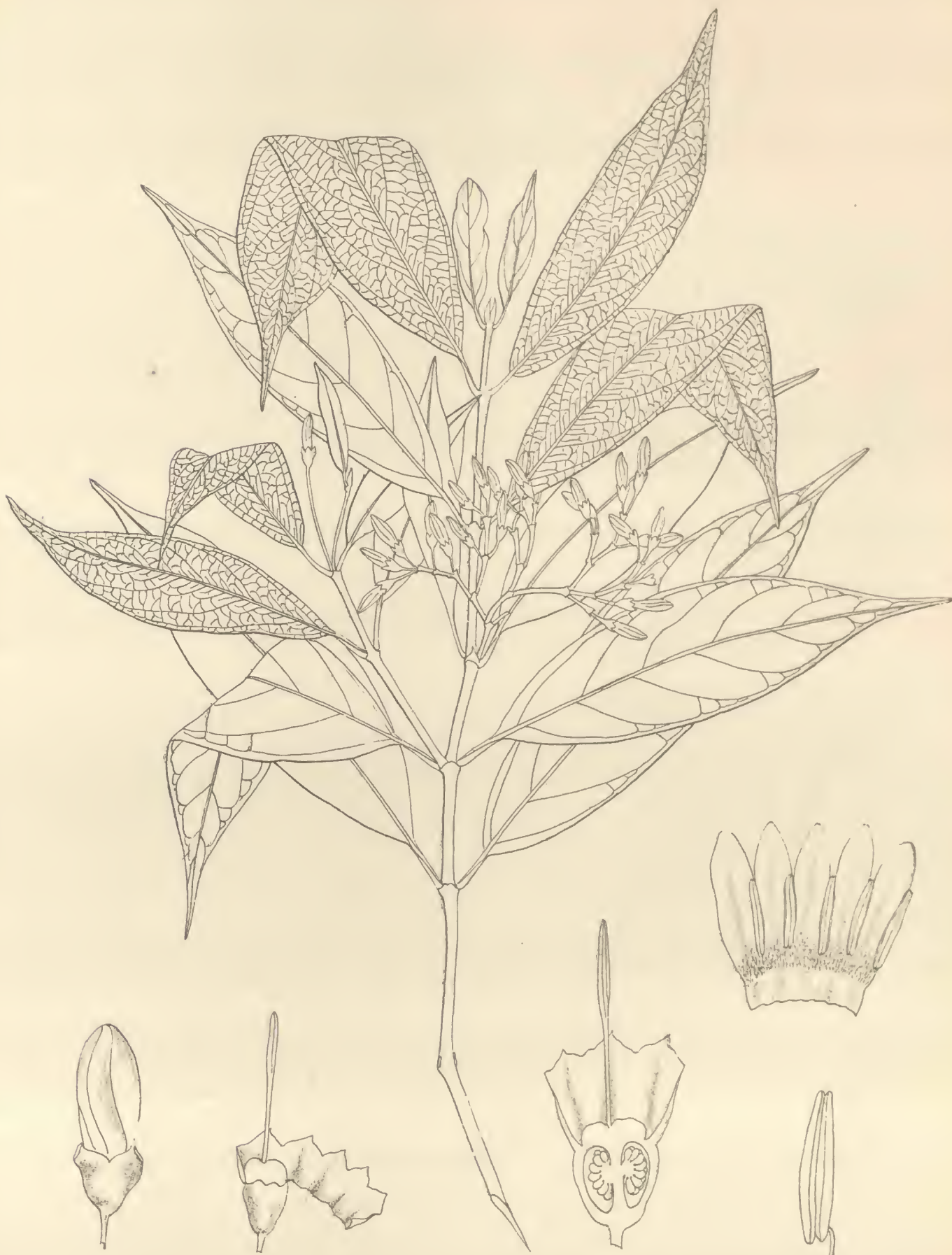
Gouardoc, det.

*Griffithia speciosa* (Bidd.)

Quamby Lith.







Gardner, del.

*Griffithia gardneri* (Thunb.)

Lambert, del.



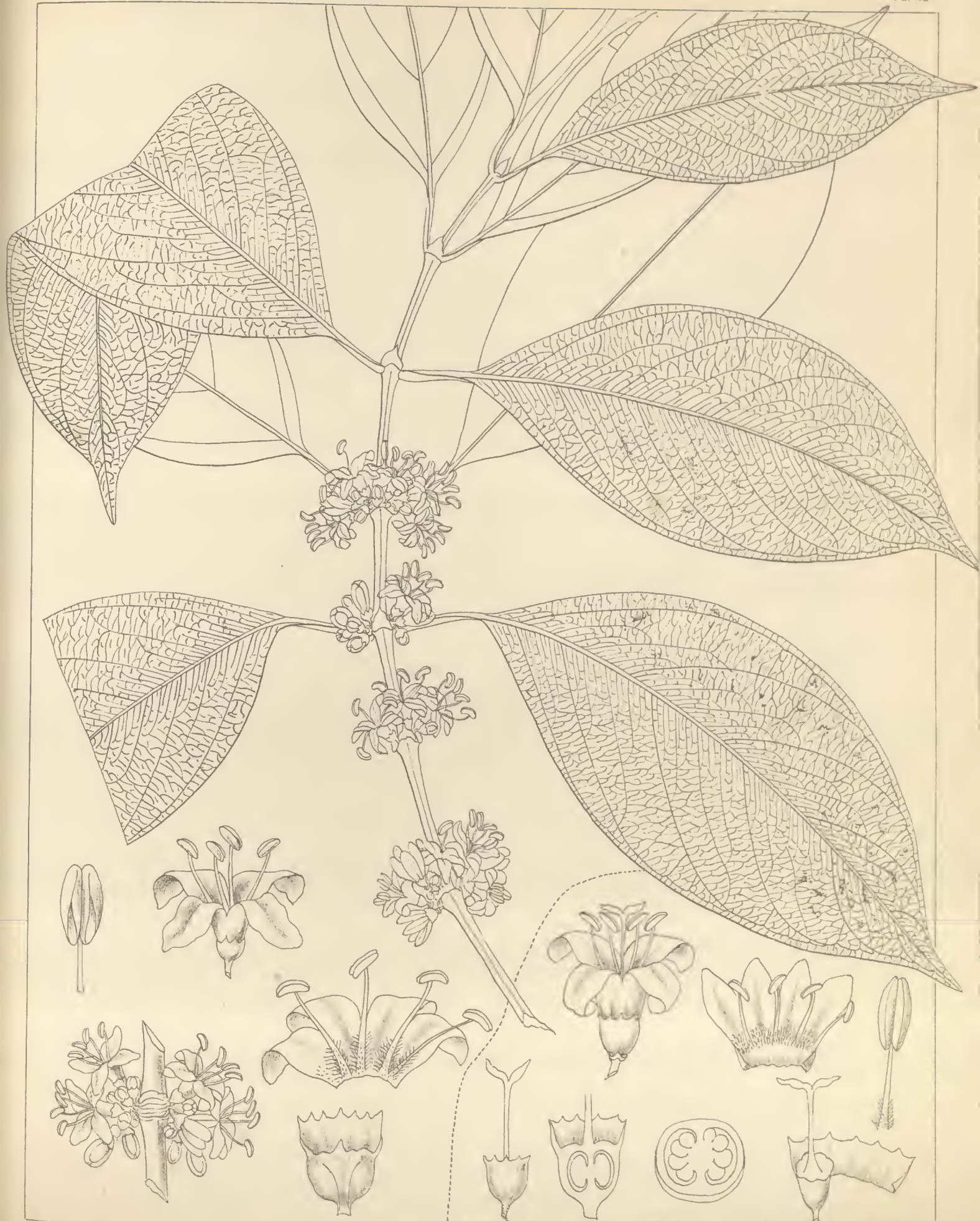


Goindon del.

*Borreria tetraocera* (Thunb.)

Lamberg Lith.





Griseb. det.

*Dicoupermum apiocarpum* (Dalb.) ?

Dumphy, Lith.





GOVINDO, DEL.

DUMPHY LITH.

*Sageraea Shwantesii* (Hook. fil. et Thoms.)







*Lagera Dalzellii* (K. Bodd.)





*Xylopia parvifolia*, (Hook. fil. et Thonn.)





GOVINDOO, DEL.

SUMPHY, LITH.

*Nylotia nigricans* (Hook. fil. et Thoms.)





*Xylopia championii* (Hook. & Thoms.)







*Anacagorea hyspanica* (Hook. & Thoms.)



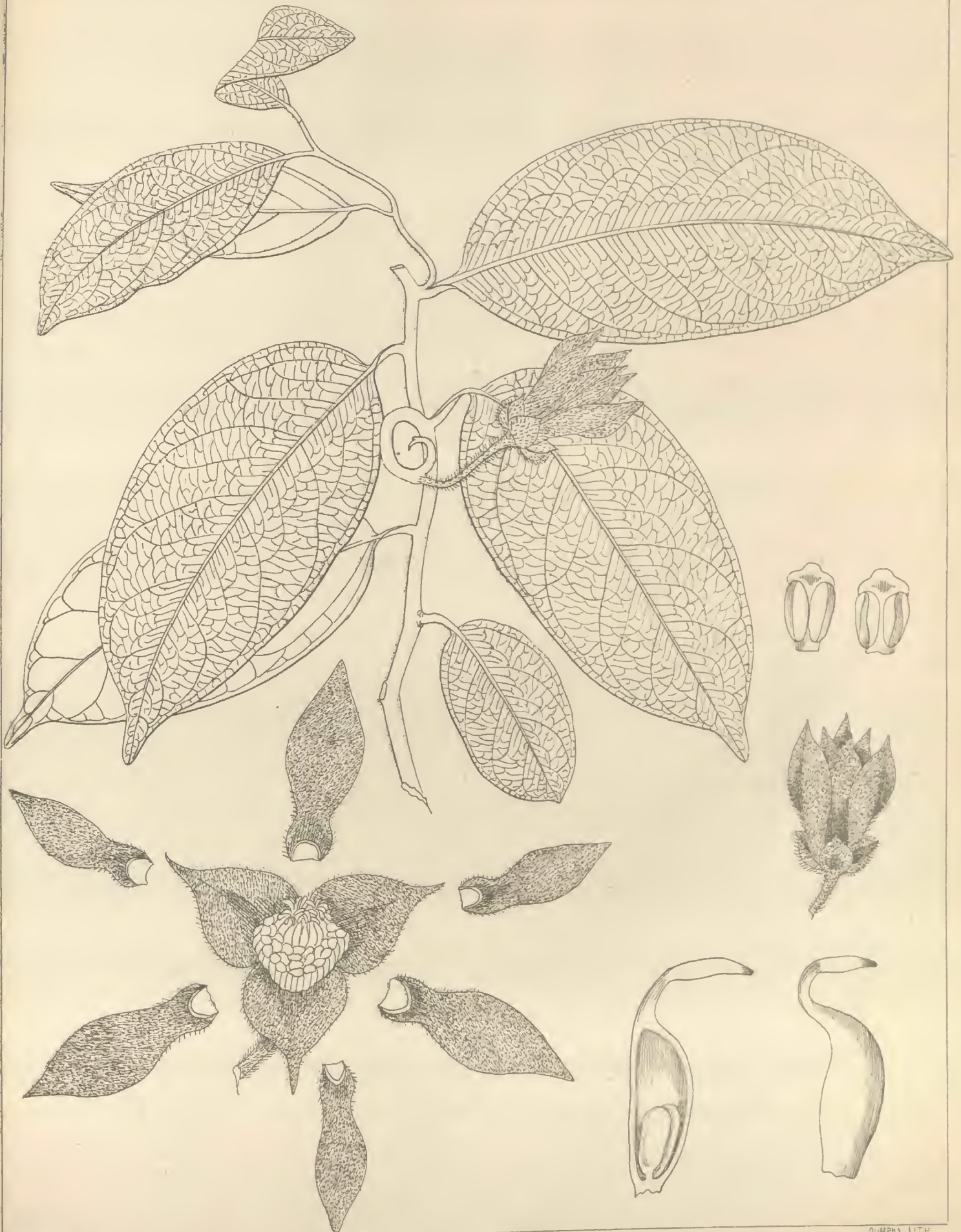


*Cyathocalyx Mozlanicus* (Champ.)

W. ANDR. DEL.

DUMPHY. LITH.





*Antabotrys Zeylanicus* (Hook. fil. & Thoms.)





Govindar. del.

*Succopetalum tomentosum* (Hook fil et Thoms.)

Dumphy. Lith.

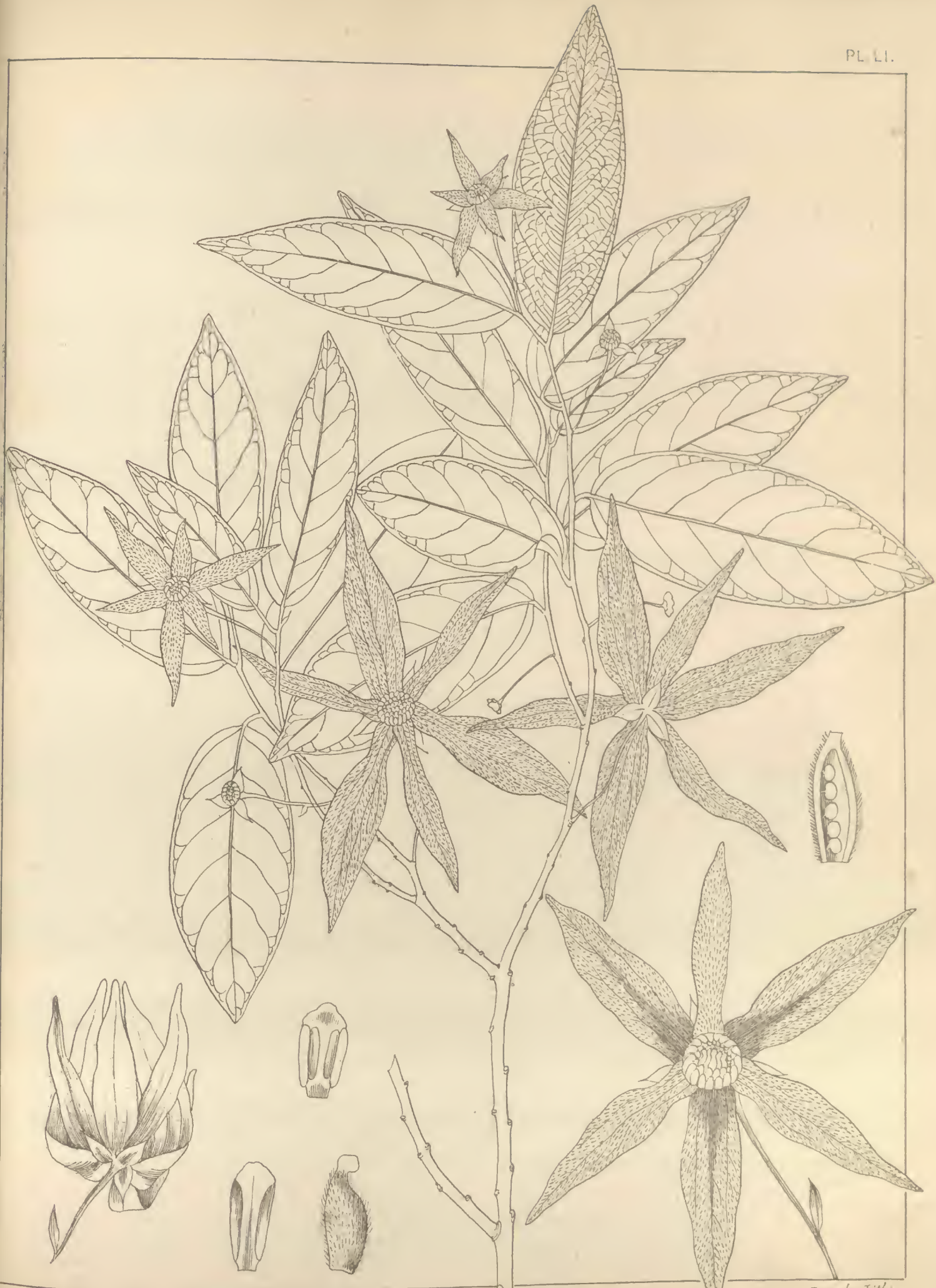






*Unona elegans* (Thu)





Govindoo, del.

*Unona discolor* (Vahl.)

Dumphy, Lith.





*Unona pannosa* (Dalzell)





G. V. ANDERSON DEL.

DUMPHY LIT.

*Polyalthia coffeoides* (Hook. fil. et Thoms.)

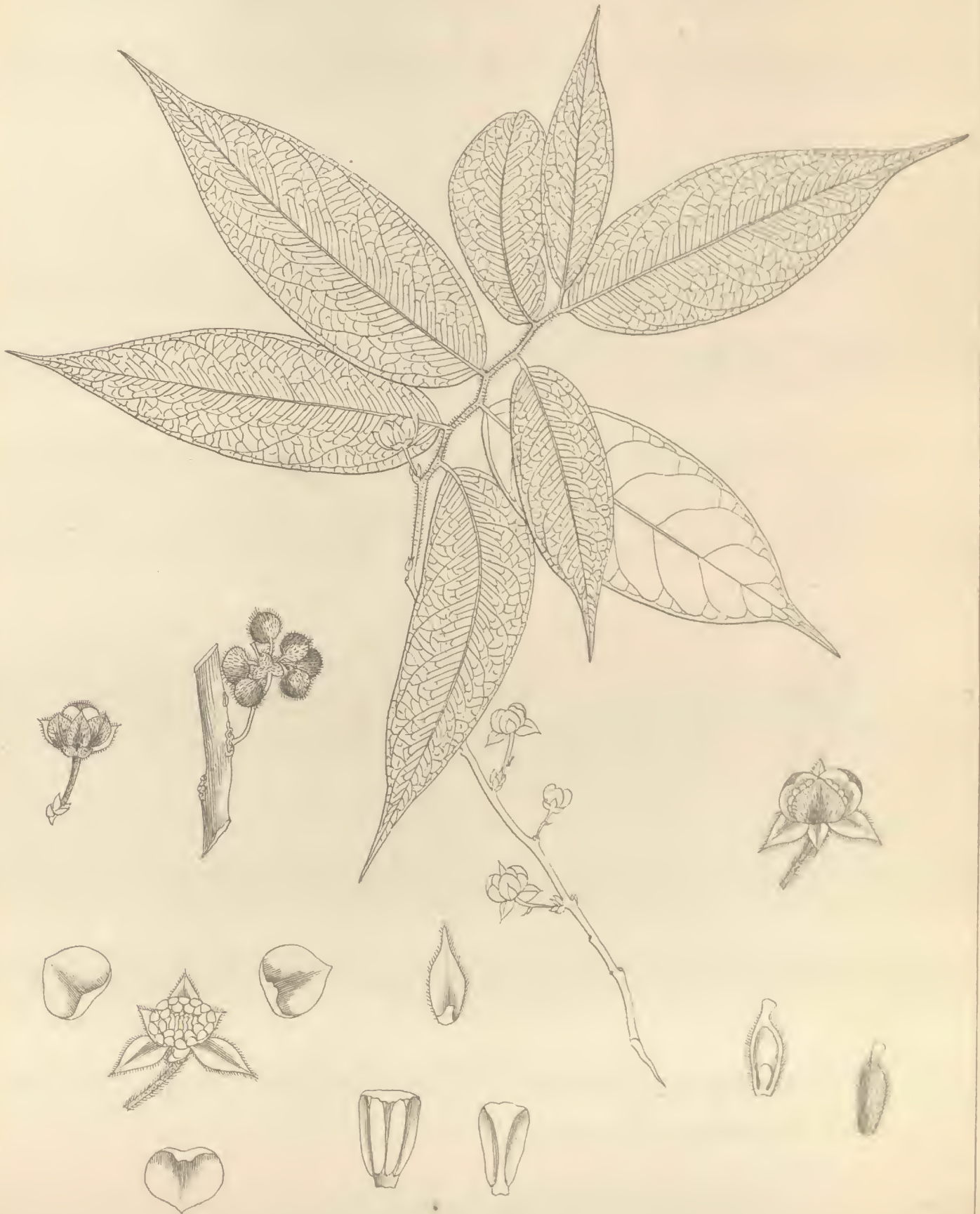






*Polyalthia fragrans* (Dorrell)









*Polyalthia suberosa* (Dun.)





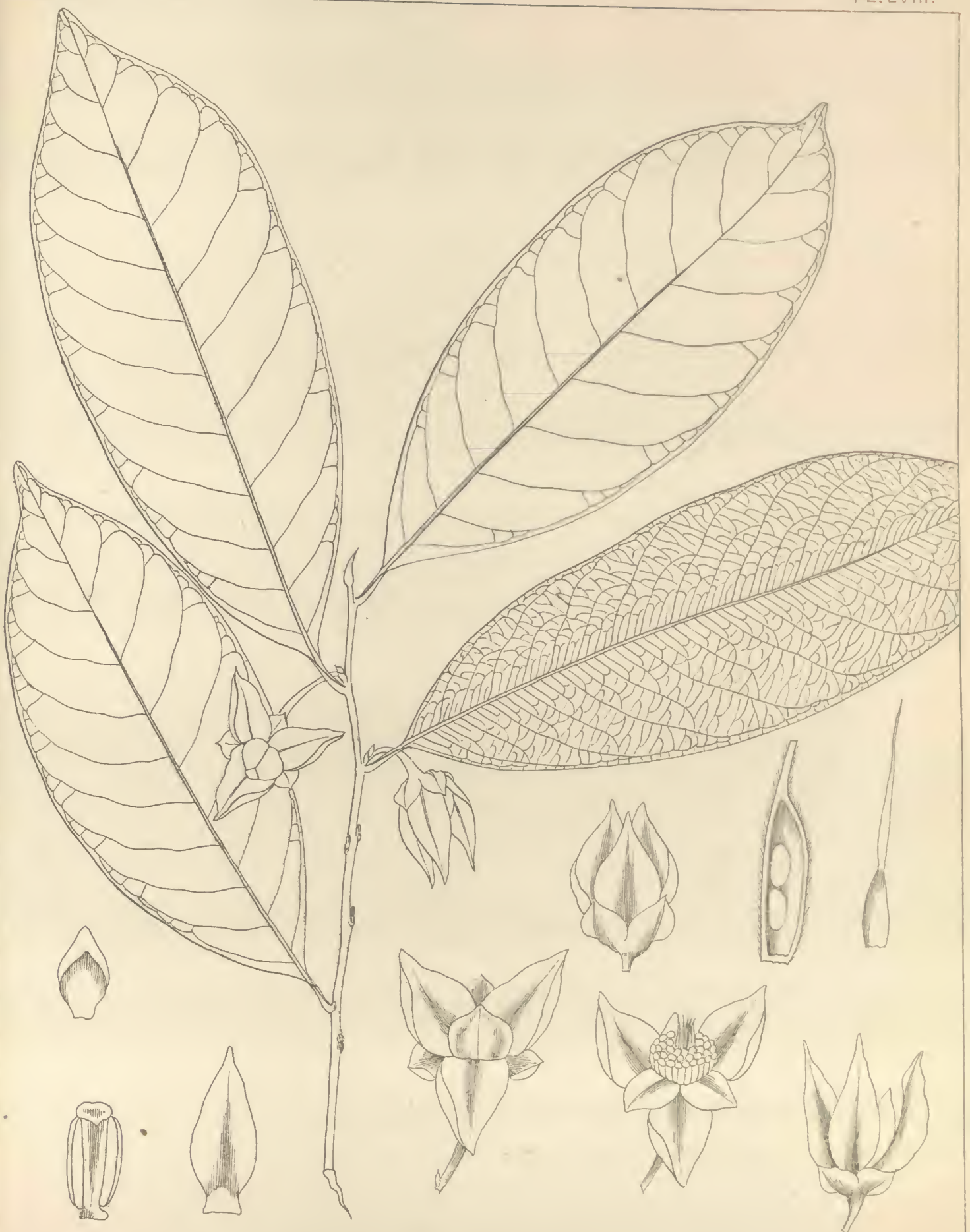
CHAMBERLAIN, DEL.

10 MAY 1874.

*Paludicola unguiculata* V.

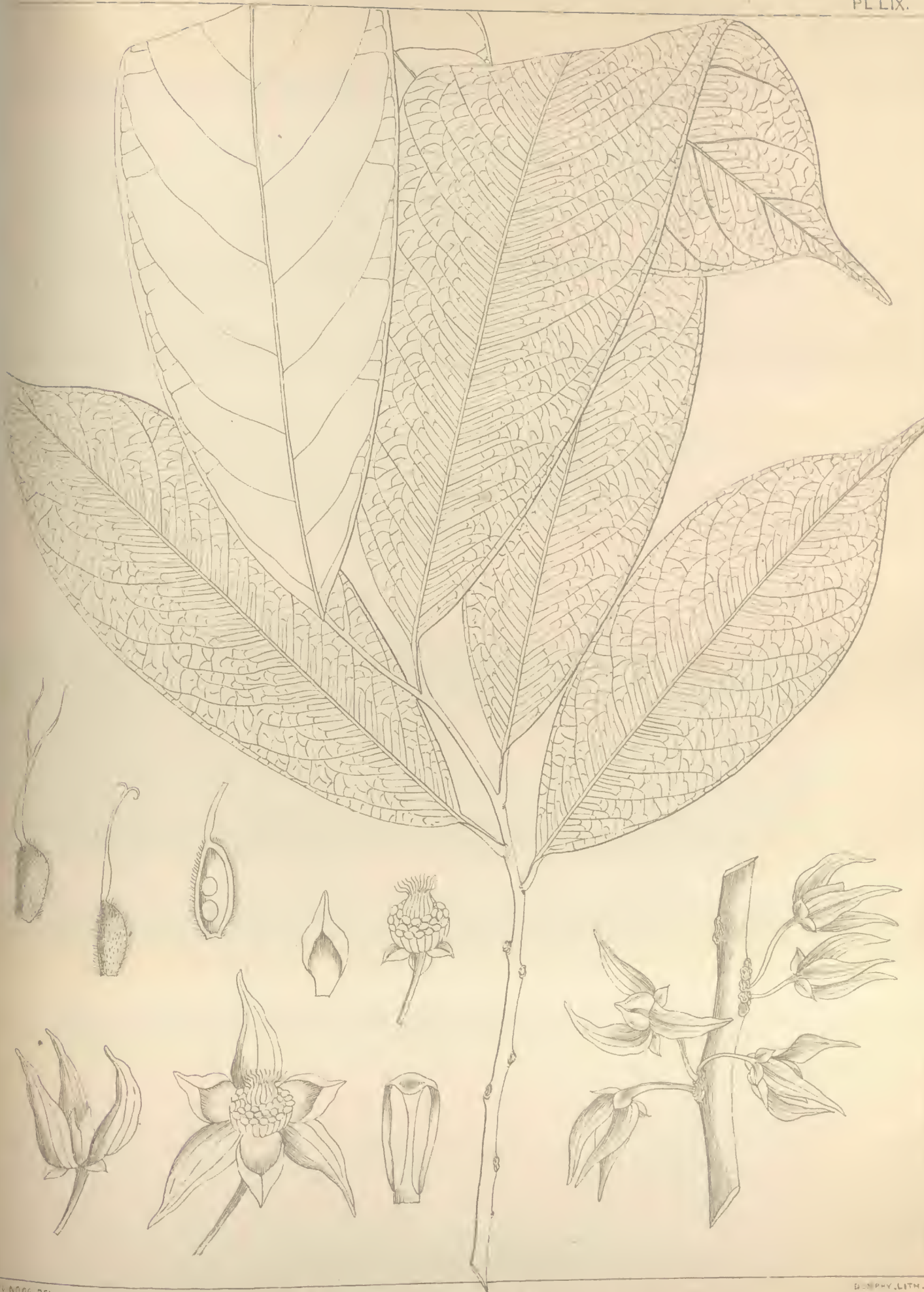






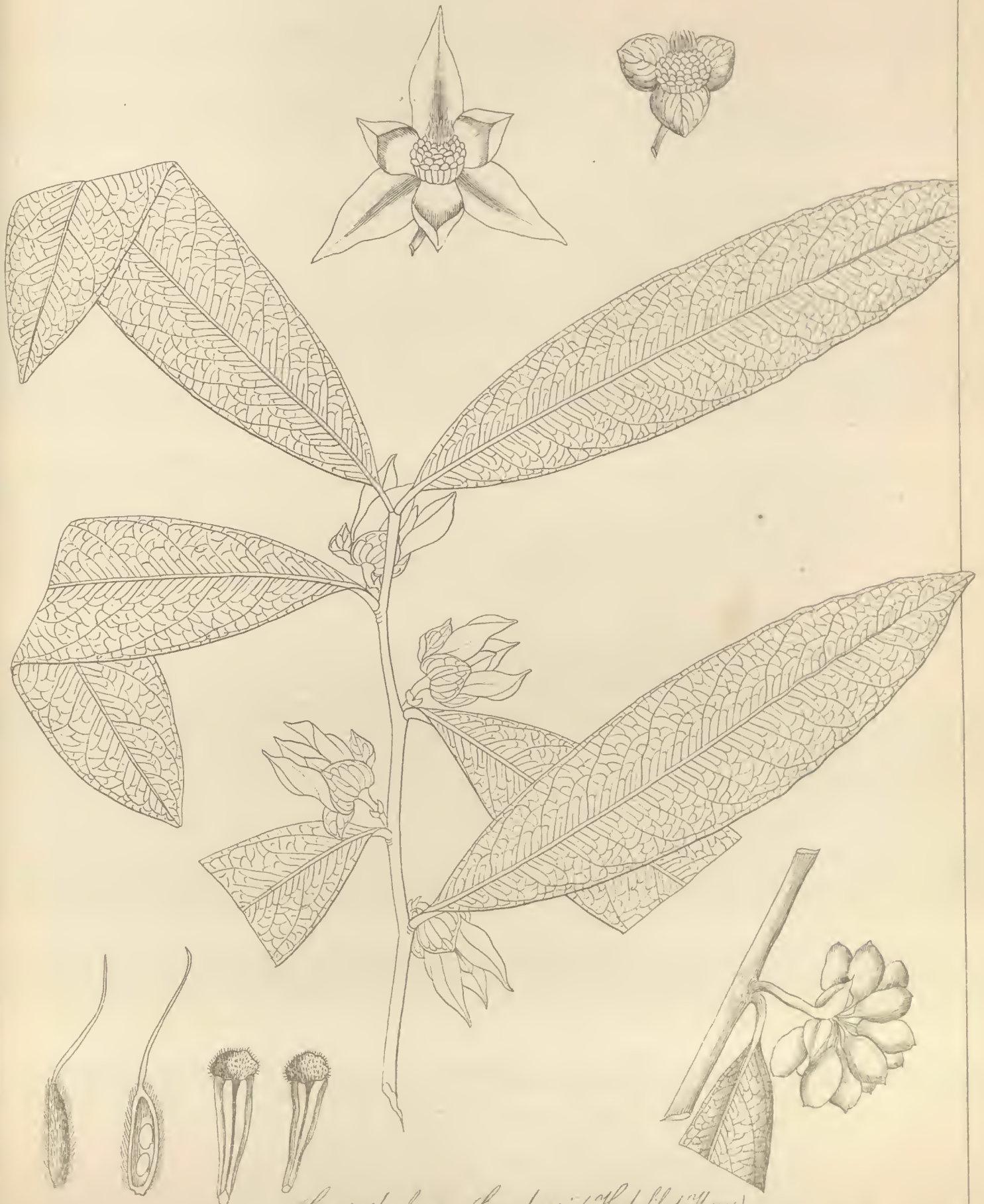
*Goniothalamus Thwaitesii* (Hook. fil. et Thoms.)





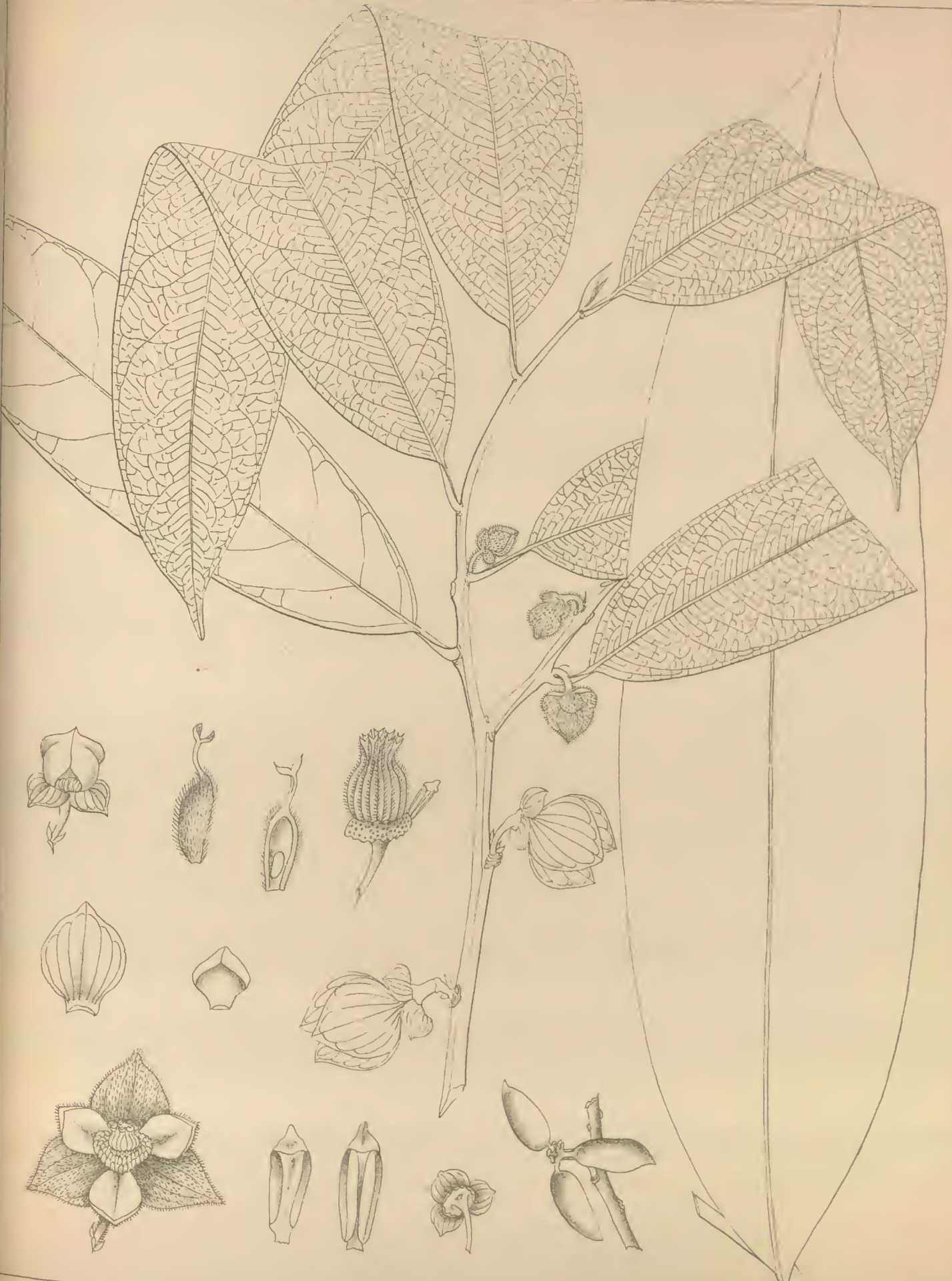
*Geniothalamus Thomsoni* (Thw.)





*Goniothalamus Gardneri* (Hook. & Thoms.)





Cuindo, del.

*Geniothalamus Wagnadensis* (Radd.)

Dumphy, lith.





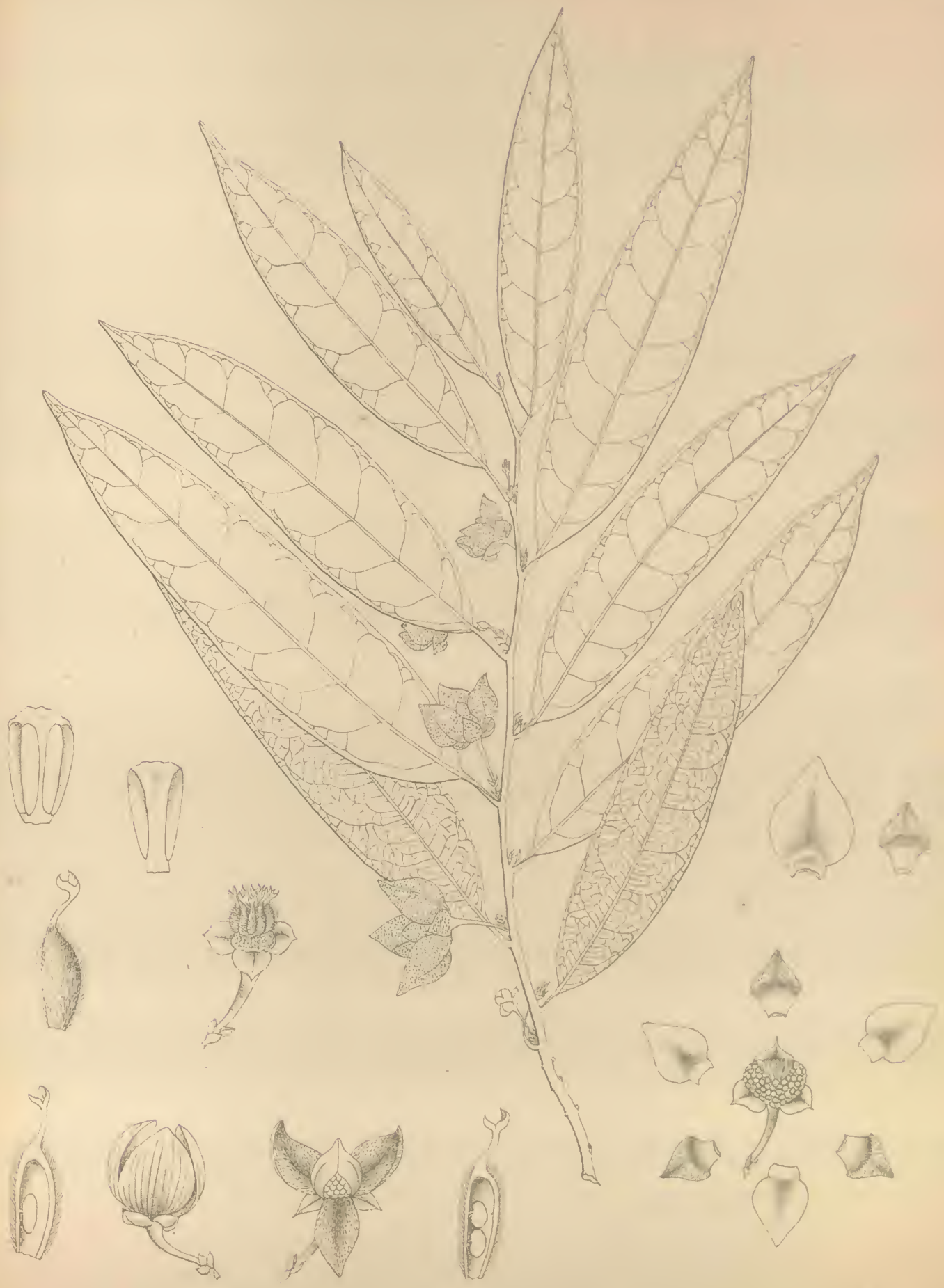


Covindoo, del.

*Goniothalamus cardiopetalus* (Daly.)

Dumphy, Lith.





Simiadao, del.

*Goniothalamus Nightii* (Hook. fil et Thoms.)

Dumphy, Lith.



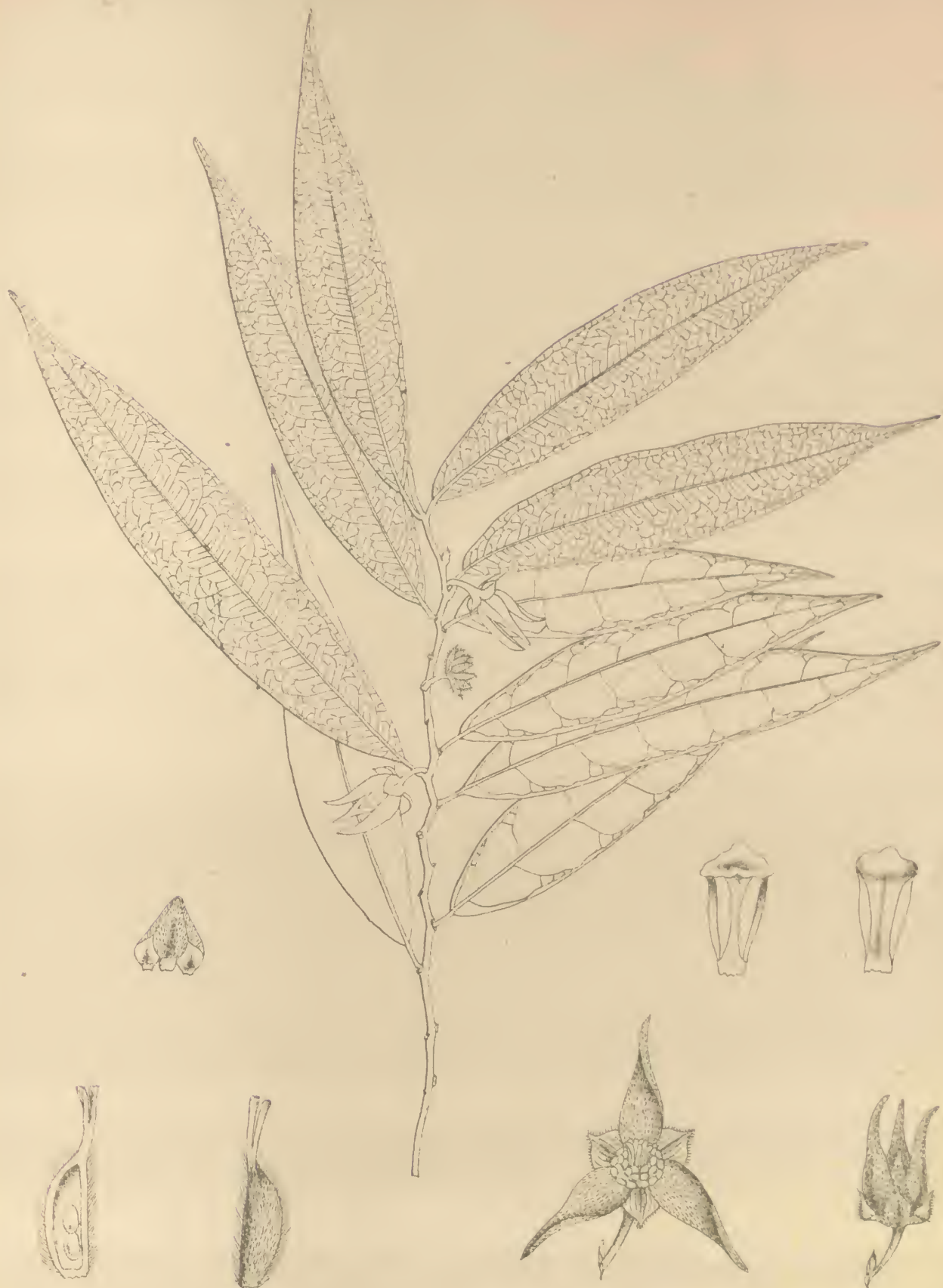


Geis. bot. del.

*Goniothalamus reticulatus* (Thunb.)

Dumort. I. 34.





Gon. salic. det.

*Goniothalamus salicinus* (Hook. & Thoms.)

Dumortier, J. & C.





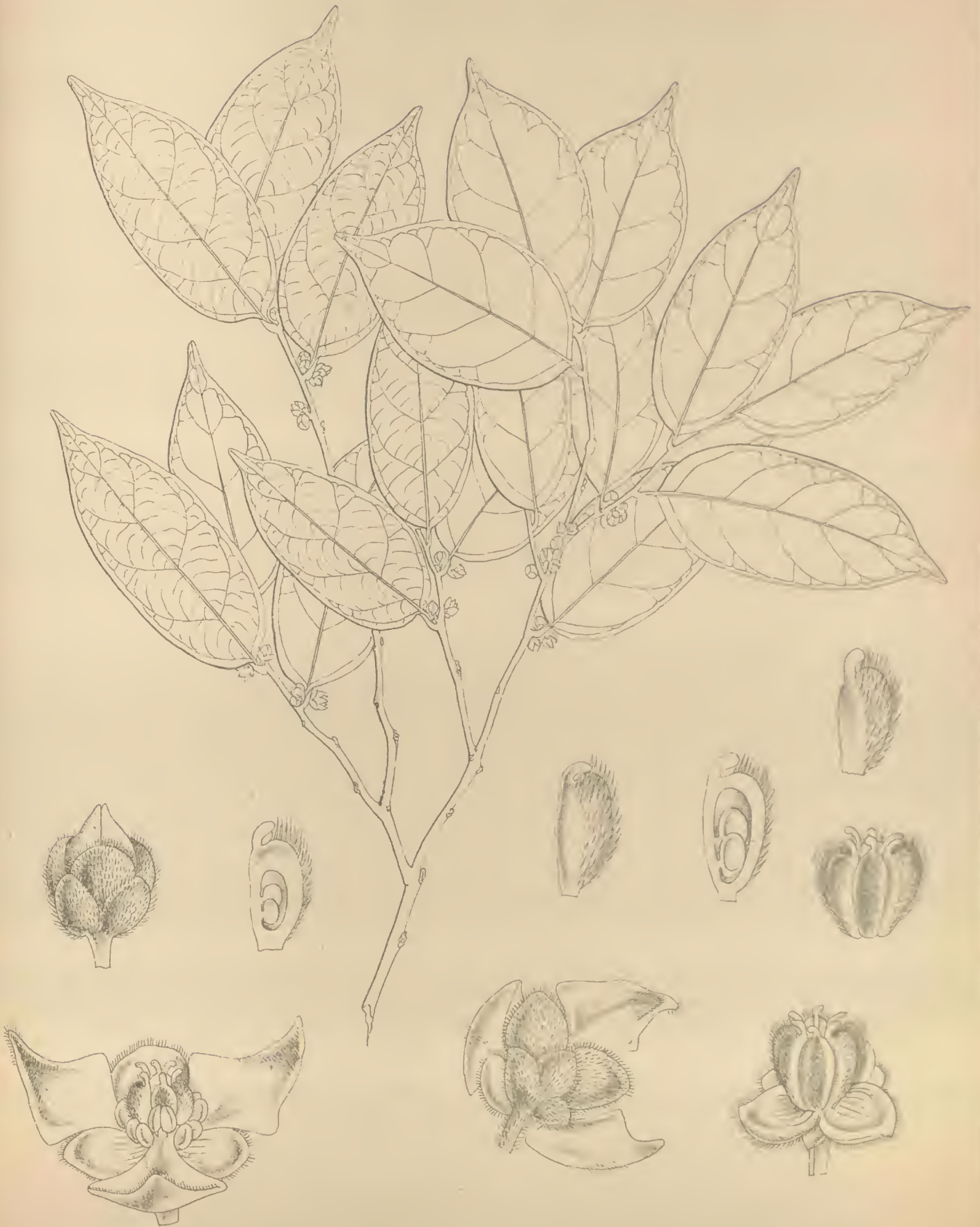


Quindoo, del.

*Lonicthalamus Hoekeri* (Thu.)

Dunphy, lith.



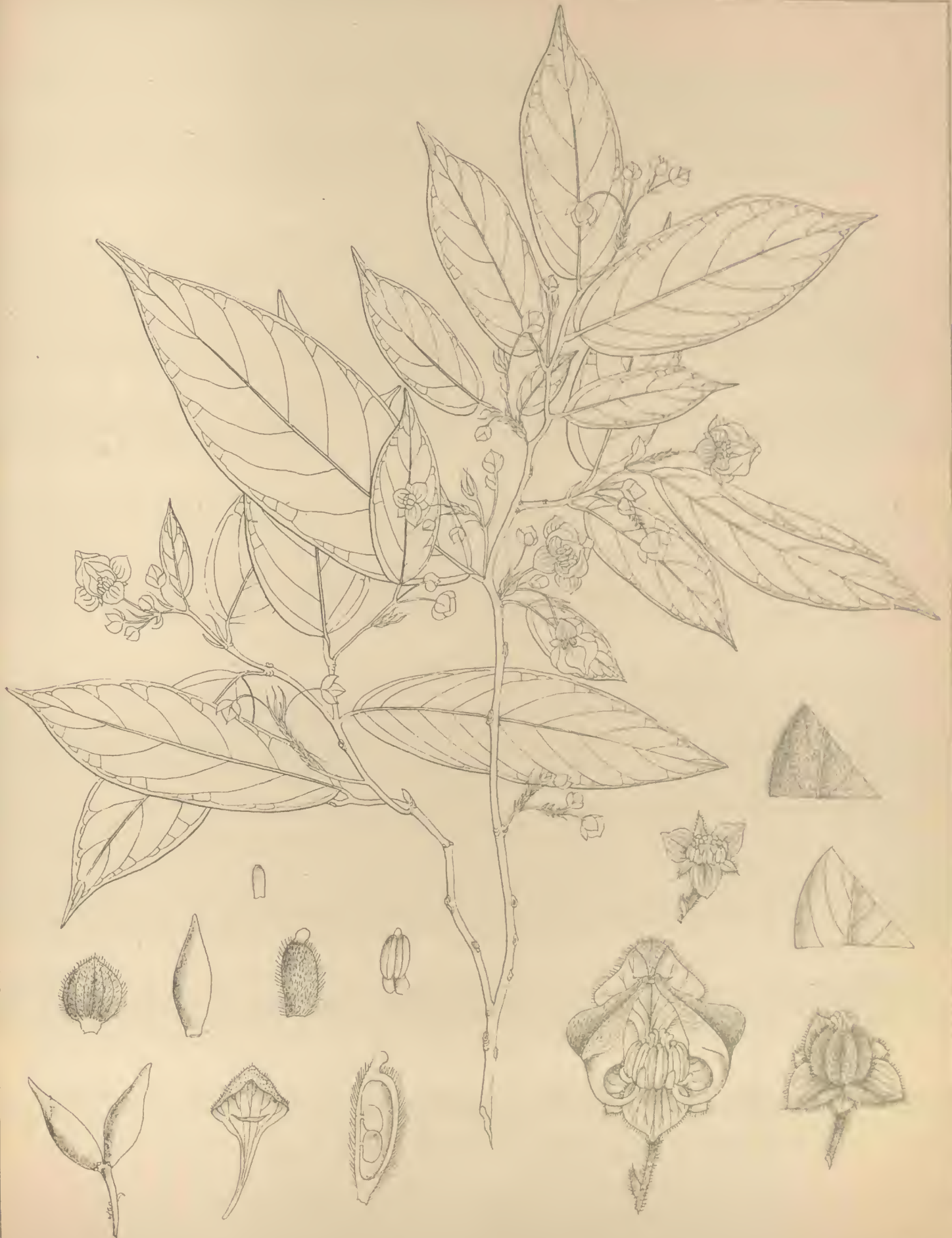


Spencer, del.

*Cnephia Thomsoni* (Ridd.)

Dunlop, Lith.



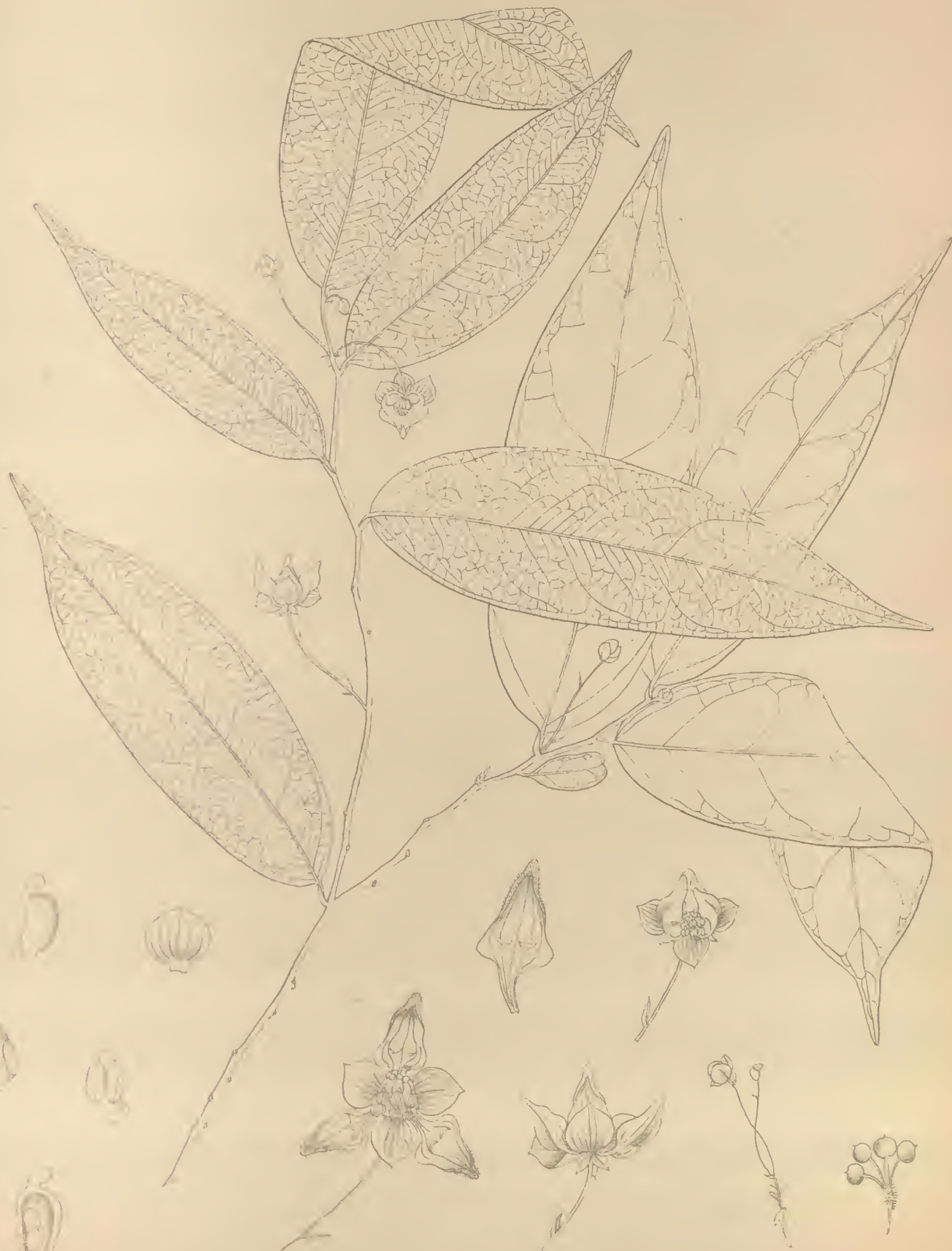


Spindler, del.

*Crophora erythrocarpa* (Red Cap)

Trompeter, lith.





*Coptea unispina* (Hook. fil. et Thoms.)







Goussier del.

*Crophora zeylanica* (Hook. fil. et Thoms.)

Dumortier del.





Spencer, del.

*Croton soriaca* (Sw.)

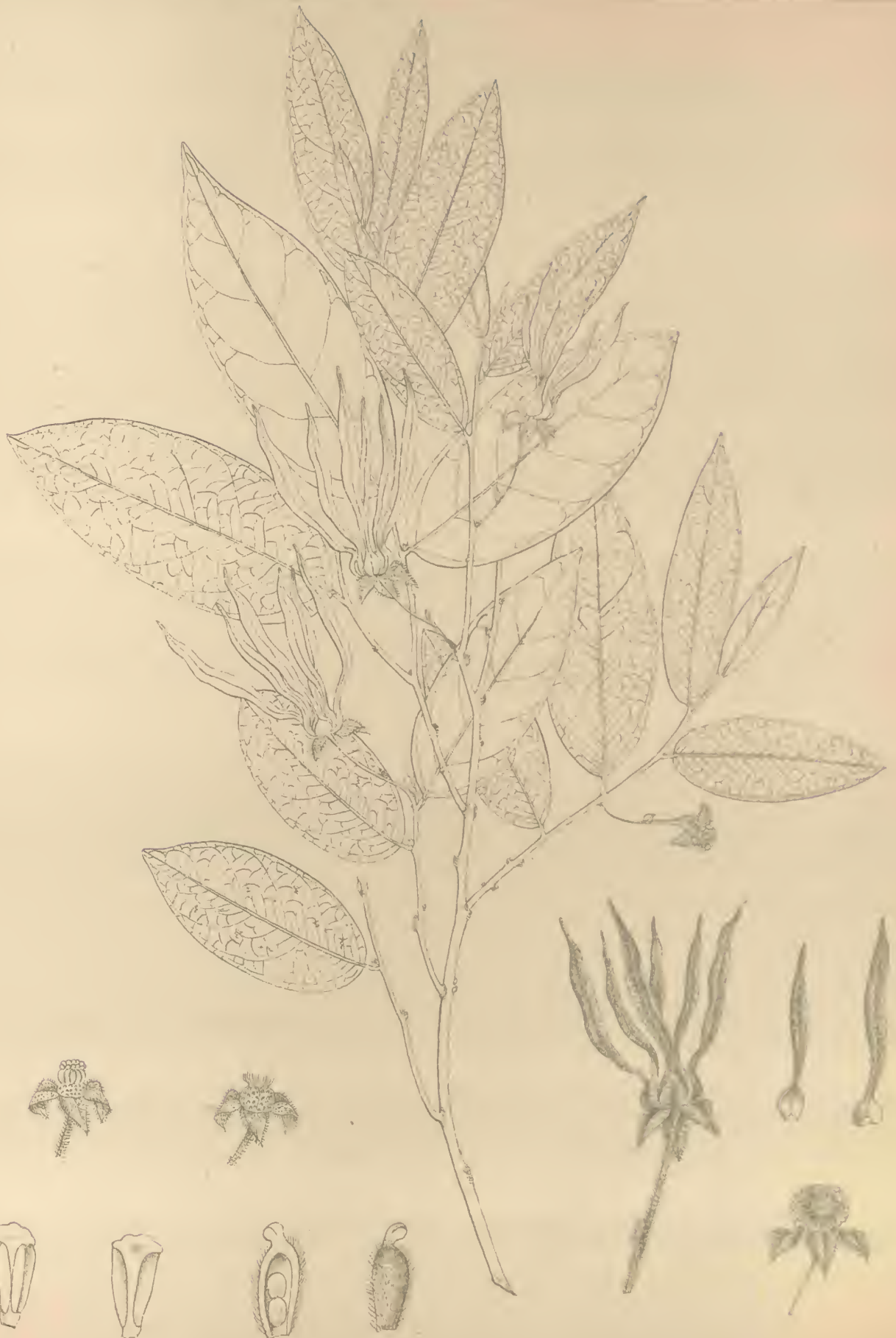
Janney, 1894





*Crophora obliqua* (Hook fil & Thoms.)





Spencer del.

*Annona laevis* (Hook. & Thoms.)

Spencer del.





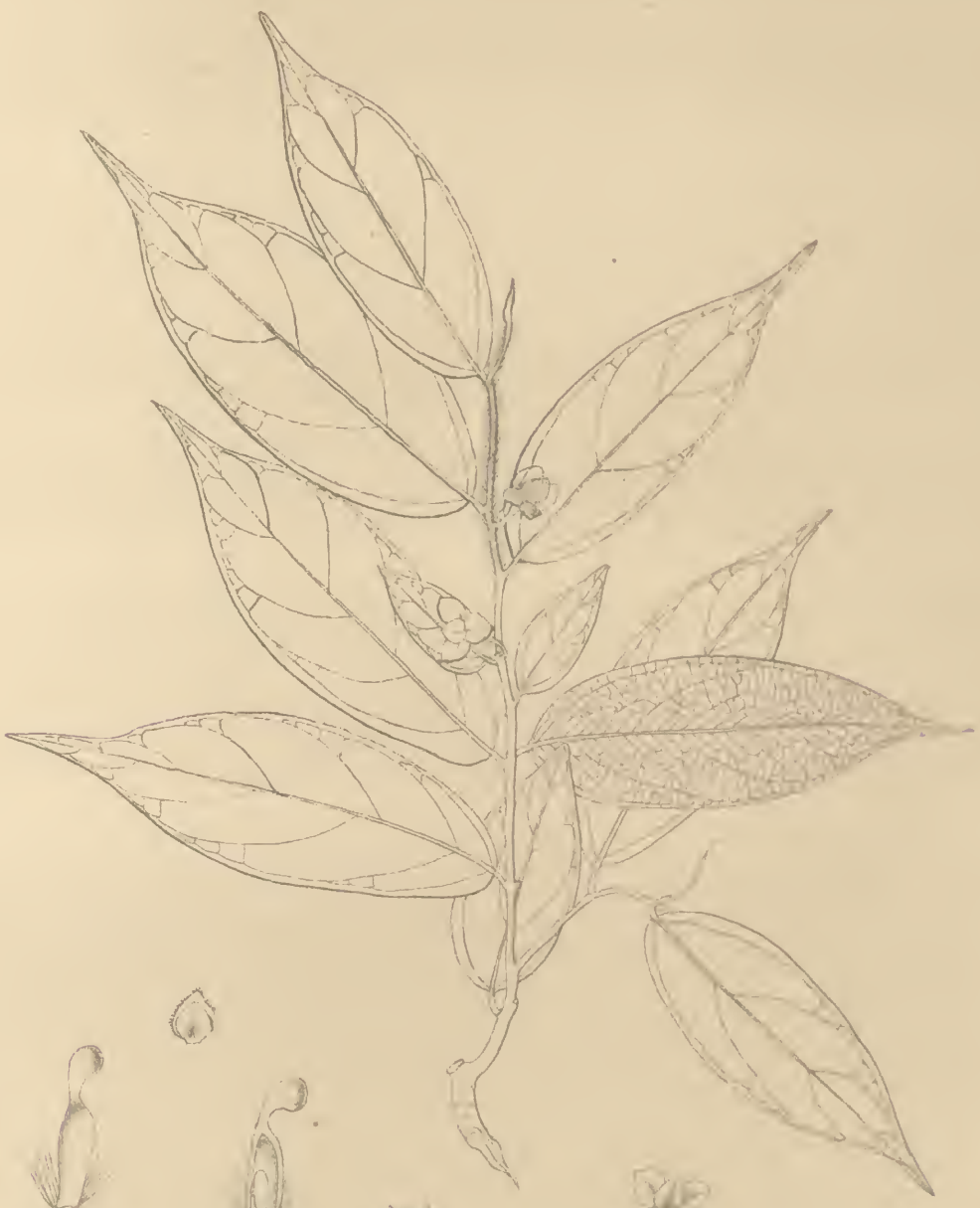


*Spencer del.*

*Passiflora cylindrica* (Lam.) Planch.

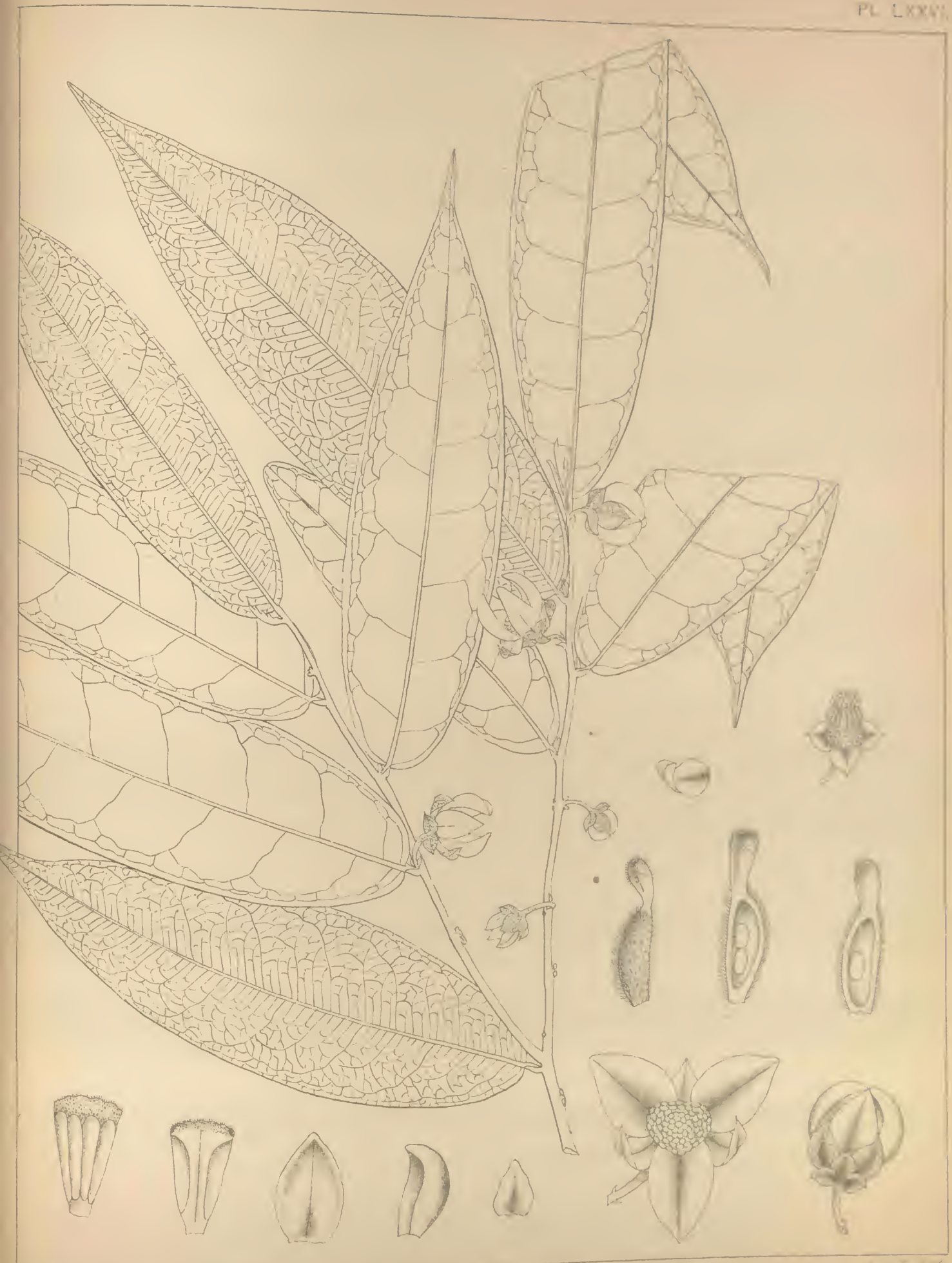
*1885. 226*





*Epilobium... (faint handwritten text)*





Spencer del.

*Phoranthus Malabaricus* (P. Bitt.)

Pranch del.





Goussier, del.

*Mikophora hirsuta* (Hook. f. & Thoms.)

Trappes, coll.





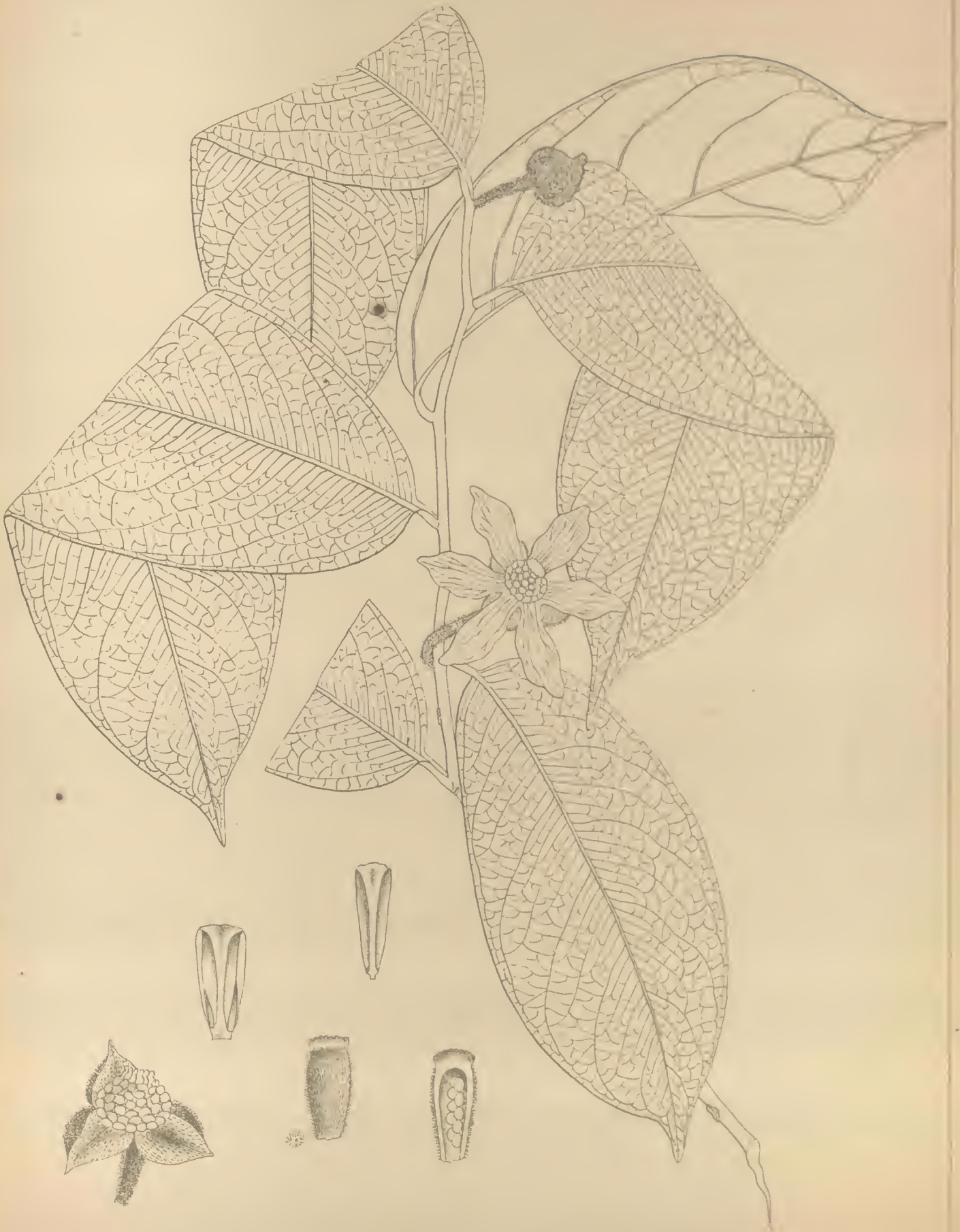


Lovindoo. del.

*Utraria boglancica* (Sinn.)

Dumortier 240





Spinulos stel

*Urtica macrospora* (Hook. fil. & Thunb.)

Thunberg





Imprimio del

*Noaria sphenocarpa* (Hook. fil. et Thoms.)

Dumort. del.





Comino, del.

*Uvaria macrophylla* (Roxb.)

Zunphy, coll.





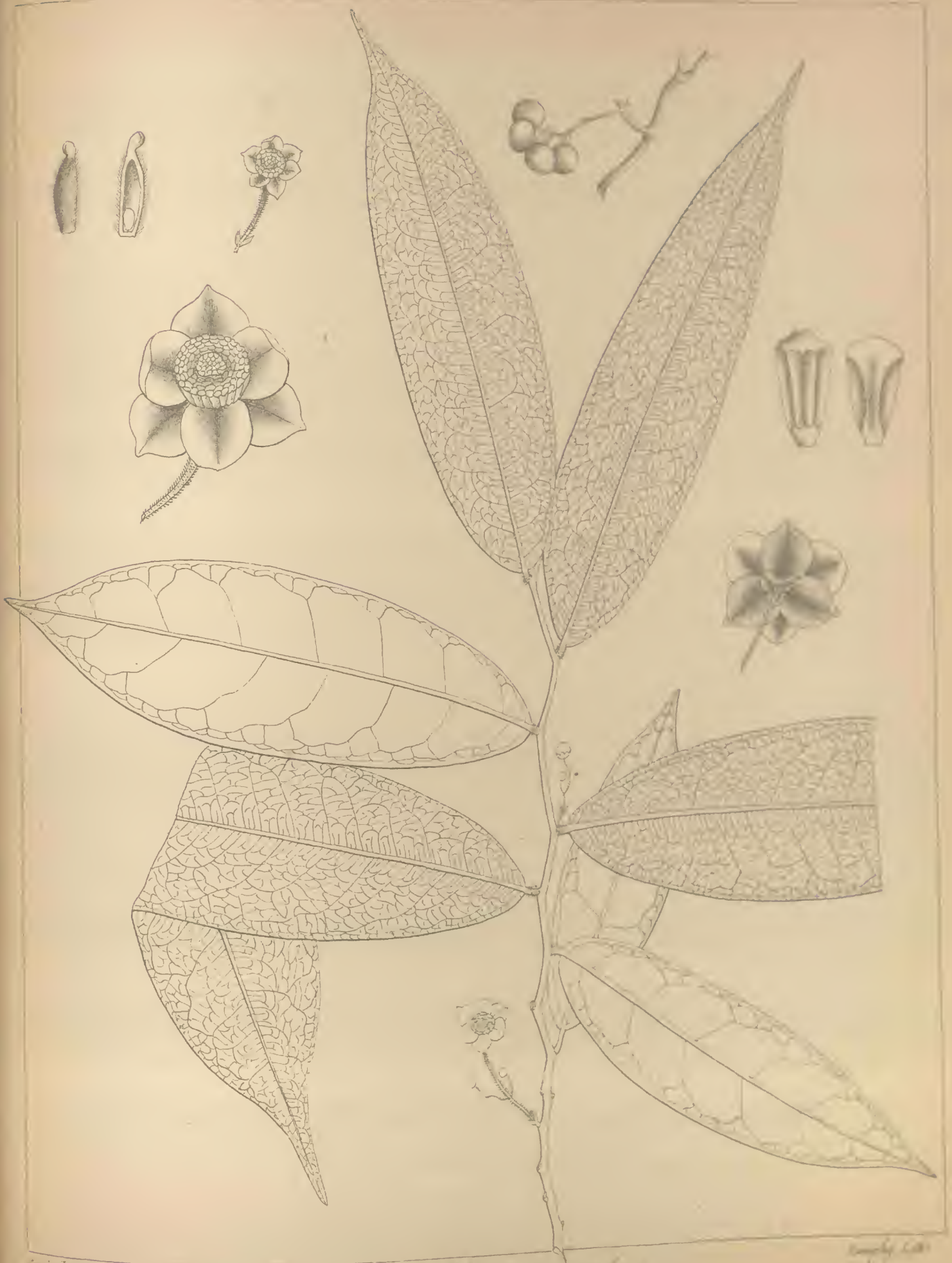


Seindos, del.

*Uvaria semicarpifolia* (Hook. & Thunb.)

Wimperley del.





W. Andoe, del.

*Petalonia Meessii* (Pae.)

W. Andoe, del.



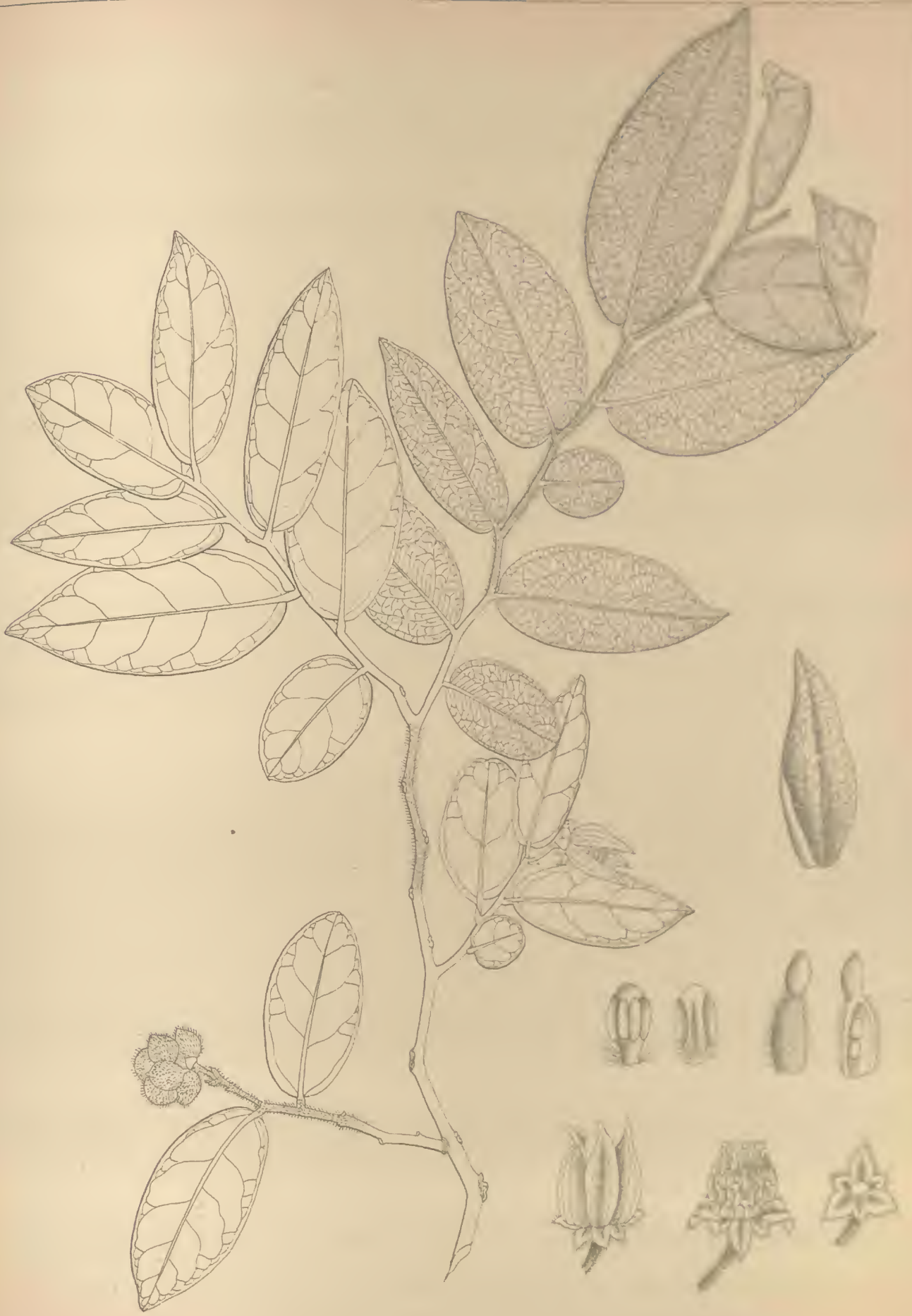


Cuando, del.

*Millettia montana* (Gardner)

Angled 2-18





Geminado, del.

*Millettia Indica* (Linn.)

W. & A. G. & Co. del.







Dumphy, Lith

*Melastoma myrsinoides* (Hook. & G. Thomson)

1000000





caudex det.

*Millettia velutina* (Ponal.)

Drachm. det.





Conrad, del.

Wiegand, lith.

*Millettia Nilagirica* (Radd.)





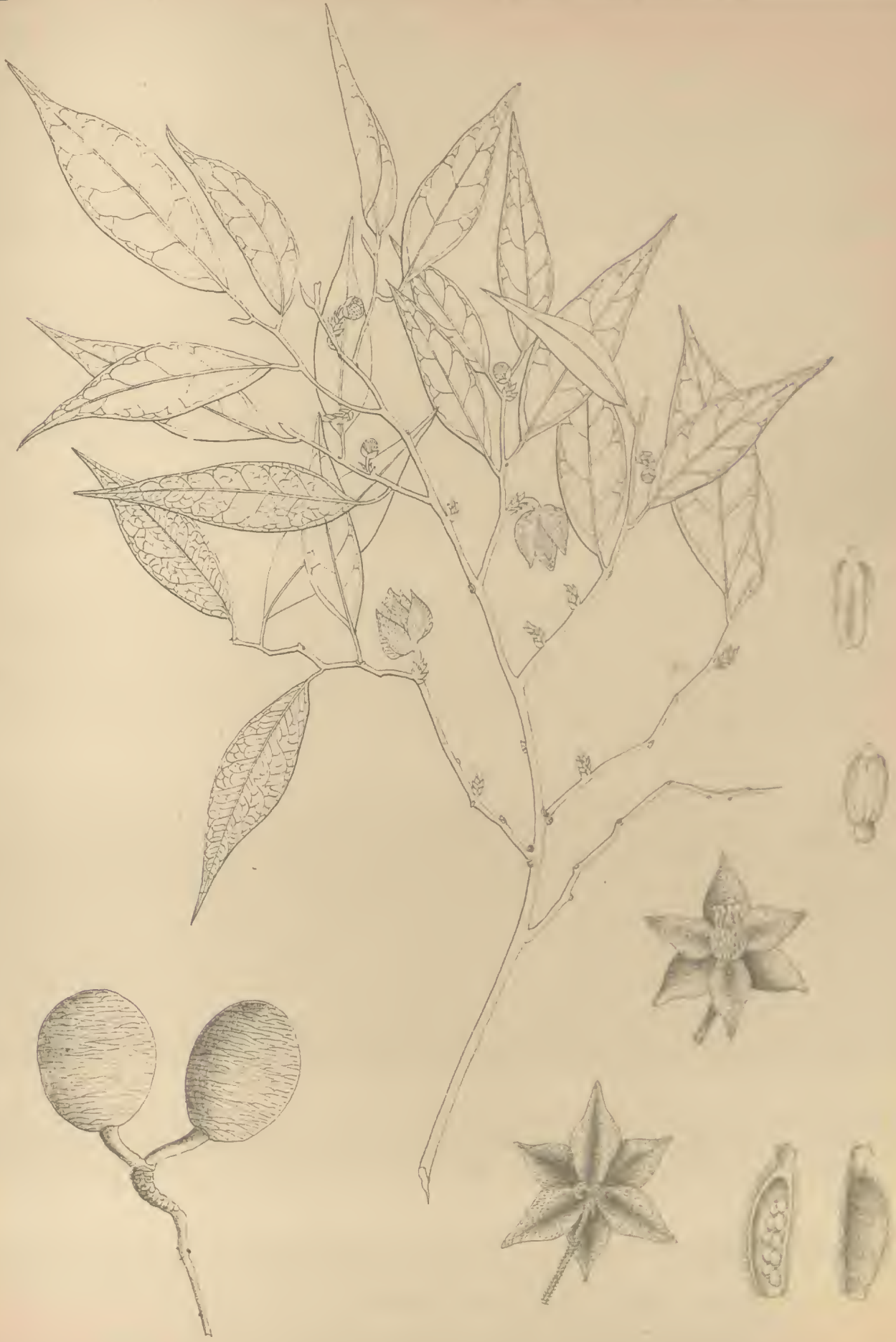
*Melinae Lyxiana* (Gardn.)

W. & A. G. S. 1850.

W. & A. G. S. 1850.





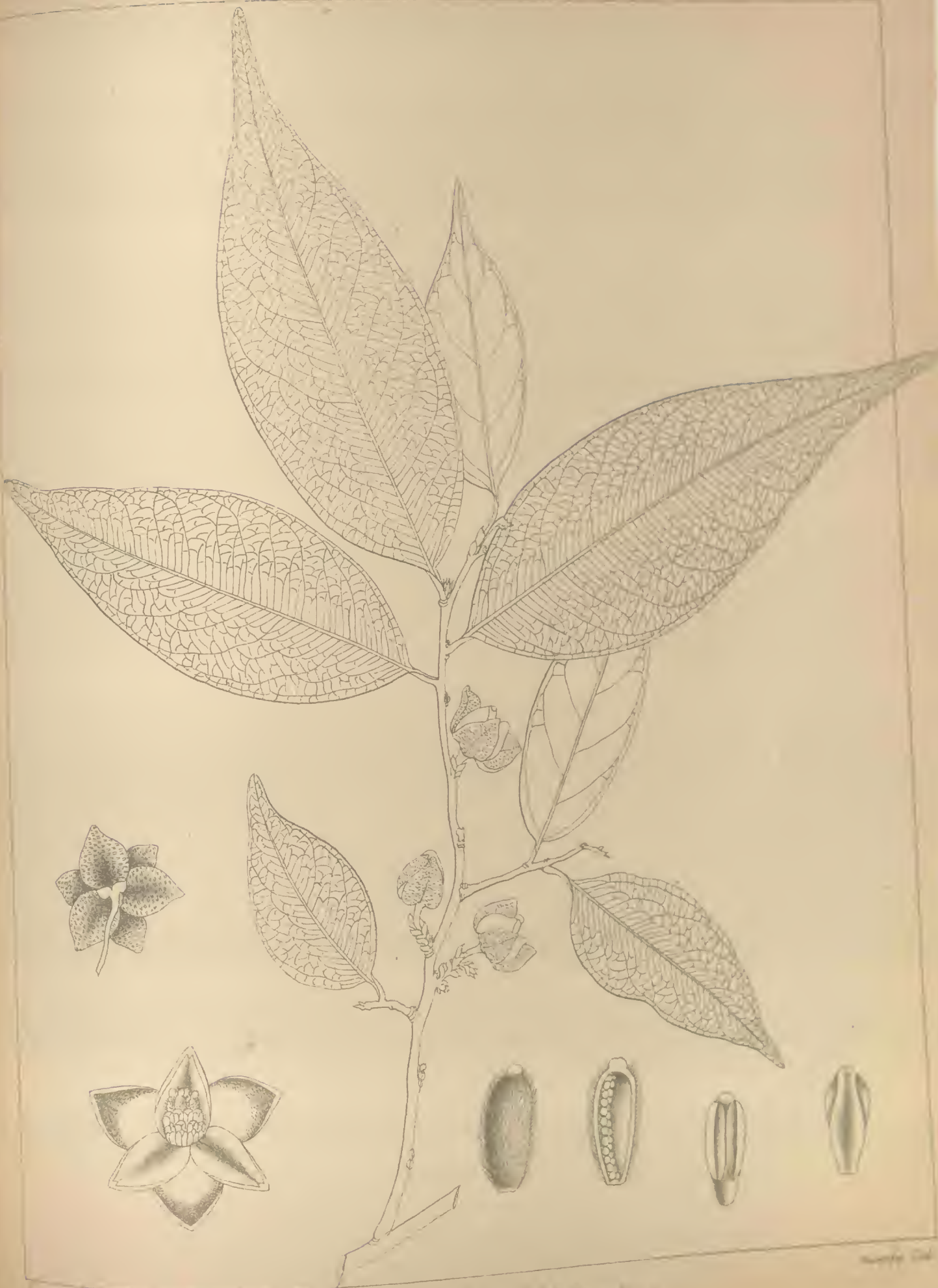


considero del.

*Alphonsoa Leylandia* (Hook. fil. et Thoms.)

George Engel





*Albizia lebbek* (Lam.) Benth.

W. & A. G. & Co. Lith.





Comadoo del.

*Alphonsea Madraspatana* (Budd.)

Wright del.





Winters del.

*Prismatomeris albidiflora* (Kau.)



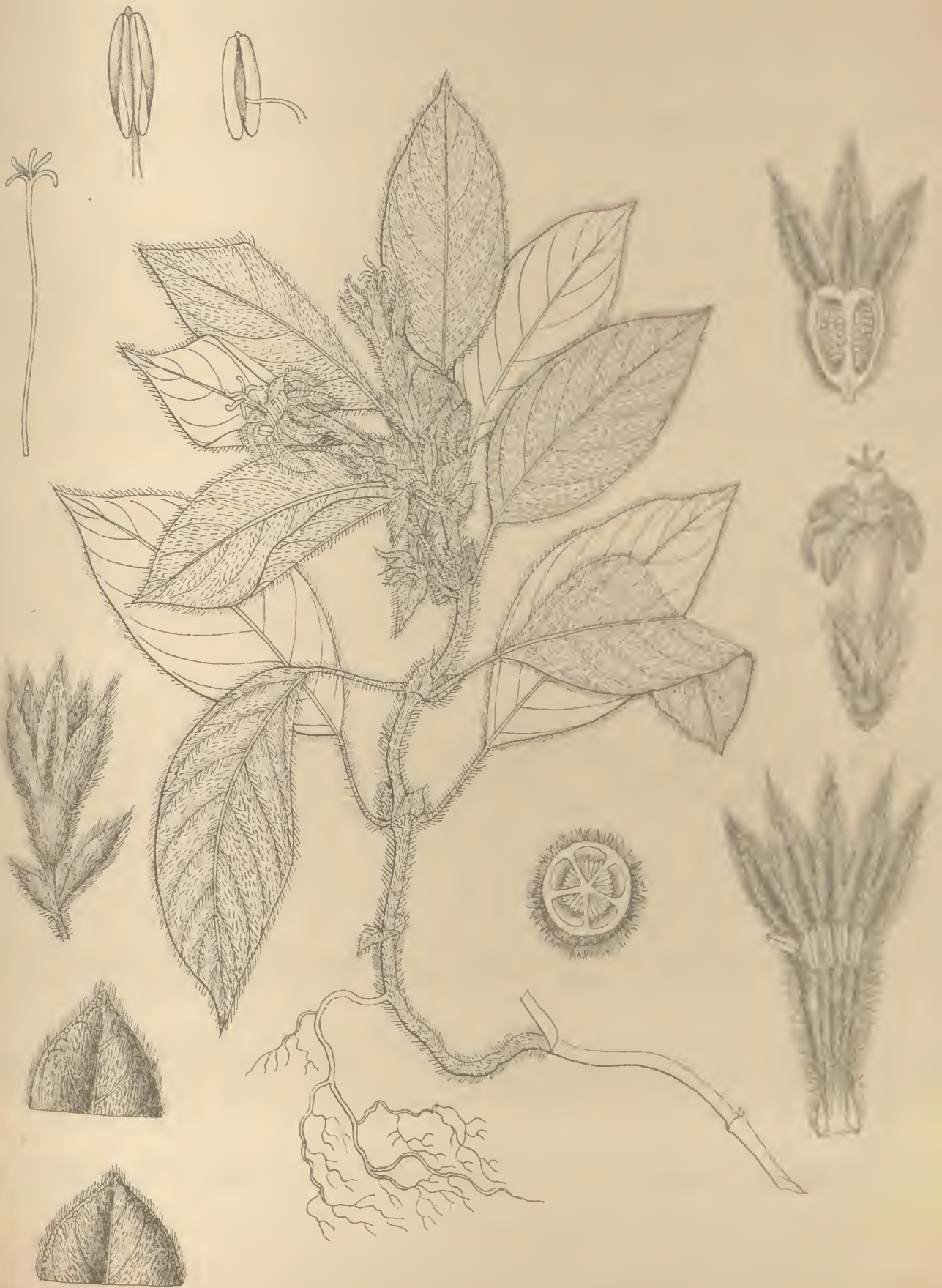




Concepcion del

*Leucocodon reticulatum* (Gardner)

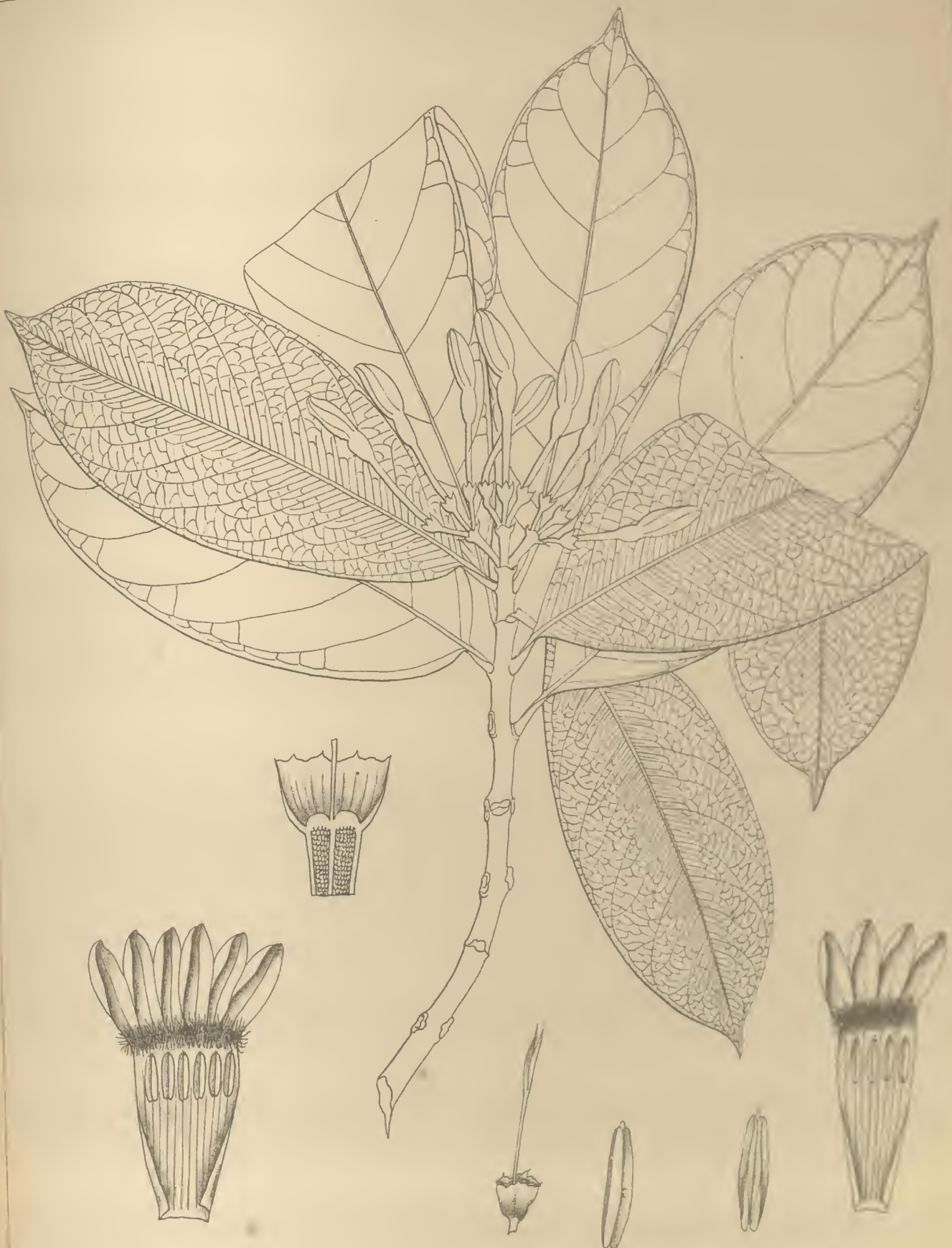




omnino del.

*Schizostigma hirsutum* (Ant.)





in color, p. 11.

*Sylocoryne elliptica* (Thu.)

Wright 1848





*Acacia calycina* (Thunb.)

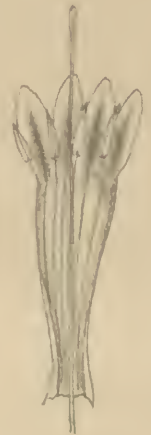
W. & A. G. & Co. del.







(33)



W. H. S. del.

W. H. S. del.

*Avraa jucunda* (Thunb.) var. *γ. longiflora*





Griseb. del.

*Parha angustifolia* (Thunb.)

Wiegand del.





Cavindoe, del.

*Pavetta involucrata* (Thunb.)

Drumh. 1. 1816

