DICOTYLEDONS

KEY TO FAMILIES

KEY TO GROUPS

1a. Perianth of 2 or rarely more whorls, distinguished usually into calyx and corolla, the outermost and inner whorls sharply distinguished by any or all of the following: position, colour, size, texture, shape 2
b. Perianth of a single whorl or rarely of 2 whorls which are not sharply distinguishable as above (there may be a relatively smooth transition from outer to inner), or completely absent 10
2a. Ovary partly or fully inferior 3
b. Ovary totally superior 4
3a. Most of the petals free from each other at the base **Group I**
b. All petals united into a tube or cup at the base **Group II**
4a. Corolla made up of petals at least some of which are free from each other at their bases, falling individually except rarely when either attached individually to a ring formed by the united bases of the filaments or joined loosely at the apex 5
b. All petals united into a tube at the base 9
5a. Ovary of a single carpel with a single style and/or stigma, or made up of several carpels which are entirely free from each other (including their styles) **Group III**
b. Ovary of 2 or more carpels which are united to each other at least by their styles, more usually the bodies of the carpels united 6
6a. Stamens more than twice as many as petals **Group IV**
b. Stamens up to twice as many as petals 7
7a. Placentation parietal **Group V**
b. Placentation axile, apical, basal or free-central 8
8a. Leaves alternate, or reduced to alternate scales **Group VI**
b. Leaves opposite or whorled **Group VII**
9a. Corolla actinomorphic **Group VIII**
b. Corolla zygomorphic **Group IX**
10a. At least the male flowers borne in catkins which are usually deciduous as a whole **Group X**
b. Flowers not borne in catkins as above 11
11a. Ovary of a single carpel with a single style and/or stigma, or made up of several carpels which are entirely free from each other (including their styles) **Group XI**
b. Ovary of 2 or more carpels which are united to each other at least by their styles, more usually the bodies of the carpels united 12
12a. Stamens borne on the perianth, or ovary inferior **Group XII**
b. Stamens free from the perianth, ovary superior **Group XIII**

Group I

1a. Petals and stamens numerous; plants succulent 2
b. Petals 10 or fewer, stamens usually fewer than 10; plants usually not succulent 3
2a. Stems succulent, usually with spines; leaves usually absent **88. Cactaceae**
b. Leaves succulent; spines usually absent **81. Aizoaceae**
3a. Anthers opening by terminal pores **218. Melastomataceae**
b. Anthers opening by longitudinal slits or by valves 4
4a. Placentation parietal, placentas sometimes intrusive 5
b. Placentation axile, apical, basal or free-central 9
5a. Leaves with translucent, aromatic glands **215. Myrtaceae**
b. Leaves without translucent, aromatic glands 6
6a. Aquatic plants with large, floating, peltate leaves **109. Nymphaeaceae**
b. Combination of characters not as above 7
7a. Stamens 8 or more; leaves usually opposite **142. Hydrangeaceae**
b. Stamens 4–6; leaves alternate 8
8a. Disc present; leaves usually with gland-tipped teeth **143. Escalloniaceae**
b. Disc absent; leaves without gland-tipped teeth **140. Grossulariaceae**
9a. Placentation free-central; sepals 2 **82. Portulacaceae**
b. Placentation axile, apical or basal; sepals usually more than 2 10
10a. Stamens as many as and on the same radii as petals; trees or shrubs with simple leaves **187. Rhamnaceae**
b. Stamens more numerous than petals or if as many, then not on the same radii as them; plants herbaceous or woody, leaves simple or compound 11
11a. Leaves with translucent, aromatic glands **215. Myrtaceae**
b. Leaves without translucent, aromatic glands 12
12a. Style 1 13
b. Styles 2–numerous 24
13a. Floating aquatic herbs with inflated leaf-stalks **214. Trapaceae**
b. Terrestrial herbs, trees or shrubs; leaf-stalks not inflated 14
14a. Inflorescences borne on the surfaces of the leaves (by adnation of the peduncle to the leaf main vein) **229. Helwingiaceae**
b. Inflorescences not borne on the leaf surfaces 15
15a. Ovule 1, apical in each cell of the ovary (the ovary may be 1-celled) 16

b. Ovules 2–many in each cell of the ovary (the ovary may be 1-celled) 21
16a. Stamens with swollen, hairy filaments; petals rolled and recurved downwards **224. Alangiaceae**
b. Stamens without swollen, hairy filaments; petals often borne horizontally, but not as above 17
17a. Ovary with 2 or more cells **228. Cornaceae**
b. Ovary single-celled 18
18a. Petals 5 (or rarely more), imbricate 19
b. Petals 4, valvate 20
19a. Stigmas 3; leaves evergreen **227. Griseliniaceae**
b. Stigmas 2; leaves deciduous **225. Nyssaceae**
20a. Flowers unisexual; petals brownish; leaves evergreen **230. Aucubaceae**
b. Flowers bisexual; petals various, not brownish; leaves usually deciduous **228. Cornaceae**
21a. Stamens more than 10; ovary with 8–12 superposed cells; plant a spiny shrub **216. Punicaceae**
b. Combination of characters not as above 22
22a. Stamens 8–10; plants woody **219. Combretaceae**
b. Stamens 4–8; plants herbaceous 23
23a. Sap watery; petals 2 or 4; ovary usually 4-celled **220. Onagraceae**
b. Sap milky; petals 5; ovary 3-celled **283. Campanulaceae**
24a. Flowers borne in umbels, these sometimes modified, or in superposed whorls; leaves usually compound or much divided 25
b. Flowers not borne in umbels; leaves usually simple, little divided 26
25a. Fruit a schizocarp splitting into 2 mericarps; flowers usually bisexual; petals imbricate in bud and inflexed; usually aromatic herbs without stellate hairs **233. Umbelliferae**
b. Fruit a berry; flowers often unisexual; petals valvate in bud, not inflexed; plants mostly woody, often with stellate hairs **232. Araliaceae**
26a. Plants herbaceous 27
b. Plants woody 28
27a. Leaves deeply dissected; stamens usually 8; ovules 1–4, apical **221. Haloragaceae**
b. Leaves not as above; stamens usually 10; ovules numerous, axile **139. Saxifragaceae**
28a. Anthers opening by valves; stellate hairs often present **135. Hamamelidaceae**
b. Anthers opening by slits; stellate hairs absent 29
29a. Leaves opposite, evergreen **144. Cunoniaceae**
b. Leaves mainly alternate and deciduous, never both evergreen and opposite **149. Rosaceae**

Group II

Dicotyledons with perianth of 2 distinct whorls (calyx & corolla), ovary partly or fully inferior; petals united to each other at the base.

1a. Leaves whorled, mostly basal, leathery, spiny; inflorescence a spike of many-flowered whorls; calyx 2-lobed **282. Morinaceae**
b. Combination of characters not as above 2
2a. Inflorescence a head surrounded by an involucre of bracts; ovule always solitary 3
b. Inflorescence and ovules not as above 4
3a. Each flower with a cup-like involucel; anthers not united into a tube around the style **281. Dipsacaceae**
b. Involucel absent; anthers united into a tube around the style **287. Compositae**
4a. Stamens 2, united tot he style to form a touch-sensitive column; leaves linear **286. Stylidiaceae**
b. Combination of characters not as above 5
5a. Leaves alternate or all basal 6
b. Leaves opposite or whorled 15
6a. Anthers opening by pores; fruit a berry or drupe **237. Ericaceae**
b. Anthers opening by longitudinal slits; fruit various 7
7a. Evergreen trees or shrubs; corolla white, campanulate; ovary half-inferior; placentation free-central, ovules few **241. Myrsinaceae**
b. Combination of characters not as above 8
8a. Climbers with tendrils and unisexual flowers; stamens 1–5; placentation parietal; fruit berry-like **212. Cucurbitaceae**
b. Combination of characters not as above 9
9a. Stamens 10–many; plants woody 10
b. Stamens fewer than 6; plants woody or herbaceous 12
10a. Leaves with translucent glands smelling of eucalyptus; corolla completely united, unlobed, falling as a whole **215. Myrtaceae**
b. Combination of characters not as above 11
11a. Hairs stellate or scale-like; stamens in 1 series, anthers linear **246. Styracaceae**
b. Hairs absent or not as above; stamens in several series; anthers broad **247. Symplocaceae**
12a. Stigmas surrounded by a sheath formed from the top of the style **284. Goodeniaceae**
b. Stigmas not surrounded by a sheath 13
13a. Stamens as many as and on the same radii as the petals **242. Primulaceae**
b. Stamens not as above **14**
15a. Stamens 2 or 4, borne on the corolla; sap not milky **274. Gesneriaceae**
b. Stamens 5, free from the corolla; sap usually milky **283. Campanulaceae**
15a. Placentation parietal; stamens 2, or 4 and paired **274. Gesneriaceae**
b. Placentation axile or apical; stamens 1 or more, if 4 then not paired 16
16a. Stamens 1–3; ovary with a single ovule **280. Valerianaceae**
b. Stamens 4 or 5; ovary with usually 2 or more ovules 17
17a. Leaves divided into 3 leaflets; flowers few, in a head; herbaceous **279. Adoxaceae**
b. Leaves simple or rarely pinnate; inflorescence various, usually not as above; usually woody 18
18a. Stipules usually borne between the bases of the leaf-stalks and sometimes looking like leaves; ovary usually 2-celled, more rarely 5-celled; corolla usually actinomorphic; fruit capsular, fleshy or schizocarpic **255. Rubiaceae**
b. Stipules usually absent, when present not as above; ovary usually 3-celled (occasionally 2–5-celled), sometimes only 1 cell fertile; corollas often zygomorphic; fruit a berry or drupe **278. Caprifoliaceae**

Group III

1a. Ovary apparently consisting of a single carpel, with a single style and/or stigma and a singe cell within, with 1–many ovules 2
b. Ovary consisting of 2 or more carpels which are entirely free from each other, each with its own separate style and stigma 8
2a. Corolla radially symmetric; stamens usually more than 10 3
b. Corolla bilaterally symmetric; stamens usually 10 or fewer 4
3a. Petals valvate; stamens usually much exceeding petals; leaves bipinnate **151. Mimosaceae**
b. Petals imbricate; stamens not greatly exceeding petals; leaves various, not bipinnate **149. Rosaceae**
4a. Leaves often pinnate, bipinnate, trifoliolate or palmate, rarely simple or reduced to phyllodes, with stipules 5
b. Leaves often simple, without stipules 6
5a. Upper petal interior (rarely petal 1 or petals absent); seed usually with a straight radical **152. Caesalpiniaceae**
b. Upper petal exterior; seed usually with an incurved radical **153. Fabaceae**
6a. Corolla zygomorphic **104. Ranunculaceae**
b. Corolla actinomorphic 7
7a. Resinous tree or shrub; style set obliquely on the ovary **170. Anacardiaceae**
b. Non-resinous shrubs or herbs; style not set obliquely on the ovary **106. Berberidaceae**
8a. Calyx, corolla and stamens perigynous **149. Rosaceae**
b. Calyx, corolla and stamens hypogynous 9
9a. Aquatic plants with floating or emergent peltate leaves (submerged leaves may be of different shape) 10
b. Terrestrial plants, no leaves peltate 11
10a. Carpels sunk individually in a top-shaped receptacle; sepals 4–5, petals 10–25 **111. Nelumbonaceae**
b. Carpels not sunk in a receptacle; sepals 3, petals 3 **110. Cabombaceae**
11a. Leaves conspicuously succulent **136. Crassulaceae**
b. Leaves not succulent 12
12a. Plants completely herbaceous 13
b. Plants woody 16
13a. Petals fringed; fruits borne on a common gynophore **132. Resedaceae**
b. Petals not fringed; gynophore absent 14
14a. Sap milky **128. Papaveraceae**
b. Sap clear, watery 15
15a. Sepals not all the same size and shape; stamens borne on a nectar-secreting disc **118. Paeoniaceae**
b. Sepals all similar in shape and size; stamens not borne on a disc, nectar secreted on the petals **104. Ranunculaceae**
16a. Leaves opposite; each petal keeled inside **169. Coriariaceae**
b. Leaves alternate; petals not keeled inside 17
17a. Leaves simple, entire or toothed 18
b. Leaves compound or deeply lobed or divided 21
18a. Woody climbers with unisexual flowers; petals 3, 6 or 9 19
b. Shrubs; flowers not as above 20
19a. Stamens united into a fleshy mass; ovules 2–3 per carpel **95. Schisandraceae**
b. Stamens free; ovules 1 per carpel **108. Menispermaceae**
20a. Leaves dotted with translucent glands; petals in 2 or more series **91. Winteraceae**
b. Leaves without translucent glands; petals in a single whorl **117. Dilleniaceae**
21a. Flowers unisexual; mostly woody climbers, if shrubs, then with blue fruits **107. Lardizabalaceae**
b. Flowers bisexual; shrubs, fruits never blue 22
22a. Sepals not all the same size and shape; stamens borne on a nectar-secreting disc **118. Paeoniaceae**
b. Sepals all similar in size and shape; stamens not borne on a disc, nectar secreted on the petals **104. Ranunculaceae**

Group IV

1a. Herbaceous climber; leaves palmately divided into stalked leaflets; petals 2, stamens 8 **157. Tropaeolaceae**
b. Combination of characters not as above 2
2a. Perianth and stamens hypogynous, borne independently below the superior ovary 3
b. Perianth and stamens perigynous, borne on the edge of a rim or cup which itself is borne below the superior ovary 31
3a. Placentation axile or free-central 4
b. Placentation parietal 20
4a. Placentation free-central; sepals 2 **82. Portulacaceae**
b. Placentation axile; sepals usually more than 2 5
5a. Leaves all basal, tubular, forming insect-trapping pitchers; style peltately dilated **125. Sarraceniaceae**
b. Leaves not as above; style not peltately dilated 6
6a. Leaves alternate 7
b. Leaves opposite or rarely whorled 19
7a. Anthers opening by terminal pores 8
b. Anthers opening by longitudinal slits 10
8a. Shrubs with simple leaves without stipules, often covered with stellate hairs; stamens inflexed in bud; fruit a berry **120. Actinidiaceae**
b. Combination of characters not as above 9
9a. Ovary deeply lobed, borne on an enlarged receptacle or gynophore; petals not fringed **121. Ochnaceae**
b. Ovary not lobed, not borne as above; petals often fringed **190. Elaeocarpaceae**
10a. Perianth segments of inner whorl (petals) tubular or bifid, nectar-secreting; fruit a group of partly to fully coalescent follicles **104. Ranunculaceae**
b. Combination of characters not as above 11
11a. Leaves with translucent, aromatic glands **162. Rutaceae**
b. Leaves without such glands 12
12a. Sap milky; flowers unisexual **160. Euphorbiaceae**
b. Sap watery; flowers bisexual 13
13a. Succulent herb with spines; bark hard and resinous; stamens 15 in groups of 3 in each of which the central is largest **156. Geraniaceae**
b. Combination of characters not as above 14
14a. Stipules absent; leaves evergreen **122. Theaceae**
b. Stipules present; leaves usually deciduous 15
15a. Filaments free; anthers 2-celled 16
b. Filaments united into a tube at least around the ovary, often also around the style; anthers often 1-celled 17
16a. Nectar-secreting disc absent; stamens more than 15; leaves simple **191. Tiliaceae**
b. Nectar-secreting disc present, conspicuous; stamens 15; leaves dissected **158. Zygophyllaceae**

17a. Styles divided above, several; stipules often persistent; carpels 5 or more **192. Malvaceae**
b. Style 1, stigma capitate or several; stipules usually deciduous, carpels 2–5 18
18a. Stamens in 2 whorls, those of the outer whorl usually sterile **194. Sterculiaceae**
b. Stamens in several whorls, all fertile **193. Bombacaceae**
19a. Sepals united, falling as a unit; fruit separating into two boat-shaped units **119. Eucryphiaceae**
b. Sepals and fruit not as above **158. Zygophyllaceae**
20a. Aquatic plants with cordate leaves; style and stigmas forming a disc on top of the ovary **109. Nymphaeaceae**
b. Combination of characters not as above 21
21a. Leaves modified into active insect-traps, the 2 halves of the blade fringed and closing rapidly when stimulated **127. Droseraceae**
b. Leaves not as above 22
22a. Leaves opposite 23
b. Leaves alternate 25
23a. Styles numerous; floral parts in 3s **128. Papaveraceae**
b. Styles 1–5; floral parts in 4s or 5s 24
24a. Style 1; stamens not united in bundles; leaves without translucent glands **202. Cistaceae**
b. Styles 3–5, free or variously united below; stamens united in bundles (rarely apparently all free); leaves with translucent or blackish glands **124. Guttiferae**
25a. Small trees with aromatic bark; filaments of the stamens all united **94. Canellaceae**
b. Herbs shrubs or trees, bark not aromatic; filaments free 26
26a. Trees; leaves with stipules; anthers opening by short, pore-like slits 27
b. Herbs or shrubs; leaves usually without stipules; anthers opening by longitudinal slits 28
27a. Anthers horseshoe-shaped; leaves simple, entire **203. Bixaceae**
b. Anthers straight; leaves palmately lobed **204. Cochlospermaceae**
28a. Sepals or rarely 3, quickly deciduous **128. Papaveraceae**
b. Sepals 4–8, persistent in flower 29
29a. Leaves scale-like; styles 5, stigmas 5 **205. Tamaricaceae**
b. Leaves not as above; styles 1, 2, 3 or absent, stigmas 1, 2 or 3 30
30a. Ovary closed at the apex, borne on a stalk (gynophore); none of the petals fringed **130. Capparaceae**
b. Ovary open at the apex, not borne on a stalk; at least some of the petals fringed **132. Resedaceae**
31a. Flowers unisexual; leaf-bases oblique **211. Begoniaceae**
b. Flowers bisexual; leaf-bases not oblique 32
32a. Aquatic plants with cordate leaves **109. Nymphaeaceae**
b. Terrestrial plants; leaves various 33
33a. Carpels 1 or 3, eccentrically placed at the top of, the bottom of, or within the tubular perigynous zone **150. Chrysobalanaceae**
b. Carpels and perigynous zone not as above 34
34a. Stamens united into bundles on the same radii as the petals; staminodes often present; plants usually rough with stinging hairs **209. Loasaceae**
b. Combination of characters not as above 35
35a. Sepals 2, united, falling as a unit as the flower opens; plants herbaceous **128. Papaveraceae**
b. Sepals 4 or 5, usually free, not falling as a unit; mostly trees or shrubs 36
36a. Stamens united into several rings or sheets **217. Lecythidaceae**
b. Stamens not as above 37
37a. Carpels 8–12, superposed **213. Lythraceae**
b. Carpels fewer, side-by-side 38
38a. Leaves with stipules 39
b. Leaves without stipules 40
39a. Leaves alternate; plants woody or herbaceous **149. Rosaceae**
b. Leaves opposite; plants woody **144. Cunoniaceae**
40a. Leaves with translucent, aromatic glands; style 1 **215. Myrtaceae**
b. Leaves without such glands; styles more than 1 **142. Hydrangeaceae**

Group V

1a. Sepals, petals and stamens perigynous, borne on a rim or cup which itself is inserted below the ovary 2
b. Sepals, petals and stamens hypogynous, inserted individually below the ovary 7
2a. Trees; leaves bi- or tripinnate; flowers bilaterally symmetric; stamens 5, of different lengths **133. Moringaceae**
b. Combination of characters not as above 3
3a. Annual aquatic herb; stamens 6 **131. Cruciferae**
b. Combination of characters not as above 4
4a. Flower-stalks slightly united to the leaf-stalks so that the flowers appear to be borne on the latter; petals contorted in bud; carpels 3 **200. Turneraceae**
b. Flower-stalks not united to the leaf-stalks; petals not contorted in bud; carpels usually 2 or 4 5
5a. Stamens 4–6 **143. Escalloniaceae**
b. Stamens 8 or more 6
6a. Ovary surrounded by a disc bearing 10 small staminode-like structures; placentas 5, very intrusive **176. Greyiaceae**
b. Disc absent, without staminodes; placentas 2–4, not intrusive **142. Hydrangeaceae**
7a. Corolla zygomorphic 8
b. Corolla actinomorphic 11
8a. Ovary open at apex; some or all petals fringed **132. Resedaceae**
b. Ovary closed at the apex; no petals fringed 9
9a. Petals and stamens 5; carpels 2 or 3 **198. Violaceae**
b. Petals and stamens 4 or 6; carpels 2 10
10a. Ovary borne on a stalk (gynophore); stamens projecting well beyond the petals **130. Capparaceae**
b. Ovary not borne on a stalk; stamens not projecting beyond petals **129. Fumariaceae**
11a. Petals and stamens numerous **81. Aizoaceae**
b. Petals and fertile stamens each fewer than 10 12
12a. Stamens alternating with much-divided staminodes **141. Parnassiaceae**
b. Stamens not alternating with much-divided staminodes 13
13a. Leaves insect-trapping and -digesting by means of stalked, glandular hairs **127. Droseraceae**
b. Leaves not as above 14
14a. Climbers 15
b. Shrubs or herbaceous plants 16

15a. Plants with tendrils; ovary and stamens borne on a common stalk (androgynophore); corona present **201. Passifloraceae**
b. Plant without tendrils; ovary and stamens not borne on a common stalk; corona absent **197. Flacourtiaceae**
16a. Petals 4, the outer pair trifid; sepals 2 **129. Fumariaceae**
b. Petals not as above; sepals 4 or 5 17
17a. Stamens usually 6, 4 longer and 2 shorter, rarely reduced to 2; carpels 2; fruit usually with a secondary septum **131. Cruciferae**
b. Stamens 4–10, all more or less equal; carpels 2–5; fruit without a secondary septum 18
18a. Petals each with a scale-like appendage at the base of the blade; leaves opposite **206. Frankeniaceae**
b. Petals without appendages; leaves alternate or all basal 19
19a. Stipules present **198. Violaceae**
b. Stipules absent 20
20a. Leaves alternate, scale-like **205. Tamaricaceae**
b. Leaves usually all basal, not scale-like **236. Pyrolaceae**

Group VI

1a. Placentation free-central; ovary of a single cell, at least above 2
b. Placentation axile, basal or apical; ovary of a single cell of 2 or more cells 3
2a. Shrubs; leaves mostly evergreen with translucent dots or stripes; style 1; sepals never 2 **241. Myrsinaceae**
b. Combination of characters not as above, sepals usually **282. Portulacaceae**
3a. Stamens (including staminodes) and petals usually of the same number and on the same radii (stamens antepetalous), rarely stamens fewer than petals 4
b. Stamens not on the same radii as the petals 9
4a. Styles 5, free or shortly joined towards the base; ovule 1, basal, borne on a long, curved funicle **243. Plumbaginaceae**
b. Combination of characters not as above 5
5a. Fertile stamens 2, staminodes 3; corolla zygomorphic **174. Meliosmaceae**
b. All stamens (4 or 5) fertile; corolla actinomorphic 6
6a. Sepals, petals and stamens perigynous **187. Rhamnaceae**
b. Sepals, petals and stamens hypogynous 7
7a. Inflorescences not leaf-opposed; usually trees **180. Corynocarpaceae**
b. Inflorescences leaf-opposed; climbers with tendrils or rarely shrubs 8
8a. Filaments of stamens free from each other at the base **188. Vitaceae**
b. Filaments of stamens united to each other at the base **189. Leeaceae**
9a. Anthers opening by clearly defined pores at the apex 10
b. Anthers opening by longitudinal or horseshoe-shaped slits or by valves 16
10a. Leaves and stems covered in conspicuous glandular hairs on which insects are often trapped 11
b. Leaves and stems without such hairs 12
11a. Carpels 2; herbs **147. Byblidaceae**
b. Carpels 3; low shrubs **148. Roridulaceae**
12a. Low shrubs with unisexual flowers; stamens 4, petals 4, some of them often 2–3-lobed **190. Elaeocarpaceae**
b. Combination of characters not as above 13
13a. Corolla zygomorphic; stamens 8 **168. Polygalaceae**
b. Corolla actinomorphic; stamens some other number 14
14a. Carpels 3; style divided above into 3 stigmas **235. Clethraceae**
b. Carpels 4 or more; style undivided or with 4 or more branches 15
15a. Petals about as broad as long, clawed; evergreen herbs or low shrubs; style divided above into 4 or 5 stigmas, rarely unlobed **236. Pyrolaceae**
b. Petals longe than broad; styles undivided, stigmas 4 or 5 borne in a cup-like sheath **237. Ericaceae**
16a. Corolla zygomorphic 17
b. Corolla actinomorphic 22
17a. Anthers cohering above the ovary like a cap **177. Balsaminaceae**
b. Anthers not cohering as above 18
18a. Stamens 8; carpels 3; usually sprawling or climbing plants with peltate or divided leaves **157. Tropaeolaceae**
b. Characters not as above 19
19a. Leaves with stipules 20
b. Leaves without stipules 21
20a. Stamens 4, free; stipules borne between the petioles and the stems **175. Melianthaceae**
b. Stamens 10 or more, filaments united into a tube around the styles; stipules borne laterally to the petioles **156. Geraniaceae**
21a. Plants herbaceous **139. Saxifragaceae**
b. Plants woody **172. Sapindaceae**
22a. Sepals, petals and stamens perigynous 23
b. Sepals, petals and stamens hypogynous 26
23a. Style 1, often divided above **181. Celastraceae**
b. Styles more than 1, often 2 and divergent 24
24a. Fruit an inflated, membranous capsule; leaves compound **182. Staphyleaceae**
b. Fruit not as above; leaves simple 25
25a. Trees or shrubs; hairs often stellate; anthers usually opening by valves; fruit a few-seeded, woody capsule **135. Hamamelidaceae**
b. Herbs; hairs simple or absent; fruit a capsule or almost a pair of separate follicles **139. Saxifragaceae**
26a. Petals and stamens both 8 or more; stamens numerous **81. Aizoaceae**
b. Petals and stamens fewer than 8; stamens usually definite in number 27
27a. Leaves with translucent, aromatic glands **162. Rutaceae**
b. Leaves without such glands 28
28a. Sap usually milky; flowers unisexual; styles 3, often further divided **160. Euphorbiaceae**
b. Combination of characters not as above 29
29a. Flower with a well-developed nectar-secreting disc below and around the ovary 30
b. Disc absent, nectar secreted in other ways 35
30a. Resinous trees or shrubs 31
b. Herbs, shrubs or trees, not resinous, occasionally aromatic 32
31a. Ovules 2 in each cell of the ovary **165. Burseraceae**
b. Ovule 1 in each cell of the ovary **170. Anacardiaceae**
32a. Plant herbaceous **183. Stackhousiaceae**
b. Plant woody 33

33a. Flowers (or at least some of them) functionally unisexual (i.e. anthers not producing pollen, ovary without ovules) **164. Simaroubaceae**
b. Flowers functionally bisexual 34
34a. Leaves entire or toothed; stamens 4–5, filaments free, emerging from the disc **181. Celastraceae**
b. Leaves usually pinnate; stamens 8–10, filaments united into a tube, not emerging from the disc **166. Meliaceae**
35a. Plants herbaceous 36
b. Plants woody 40
36a. Leaves always simple; ovary 6–10-celled by the development of 3–5 secondary septa during maturation **159. Linaceae**
b. Leaves lobed or compound; secondary septa absent from the ovary 37
37a. Leaves without stipules 38
b. Leaves with stipules 39
38a. Ovary of 3–5 free carpels united only by a common style **154. Limnanthaceae**
b. Ovary of 5 carpels whose bodies are completely united; styles 5, free **155. Oxalidaceae**
39a. Anthers 1-celled; leaves soft and mucilaginous; nectar secreted on the inner surfaces of the sepals **192. Malvaceae**
b. Anthers 2-celled; leaves not soft and mucilaginous; nectar secreted round the base of the ovary **156. Geraniaceae**
40a. Filaments of the stamens united below 41
b. Filaments of stamens completely free from each other 42
41a. Plants succulent, spiny; stamens 8 with woolly filaments; plants unisexual **89. Didieriaceae**
b. Combination of characters not as above **194. Sterculiaceae**
42a. Stamens 8–10 43
b. Stamens 2–6 45
43a. Petals long-clawed, often fringed or toothed; stamens 10; usually some or all of the sepals with nectar-secreting appendages on the outside **167. Malpighiaceae**
b. Petals neither clawed nor toothed; stamens 8; sepals without nectar-secreting appendages 44
44a. Leaves pinnate, exstipulate **172. Sapindaceae**
b. Leaves simple, toothed, stipulate but stipules soon falling **199. Stachyuraceae**
45a. Stamens 2 **248. Oleaceae**
b. Stamens 3–6 46
46a. Staminodes present in flowers which also contain fertile stamens **178. Cyrillaceae**
b. Staminodes absent from flowers which also contain fertile stamens 47
47a. Sepals united to each other at the base 48
b. Sepals entirely free from each other 49
48a. Carpels 3, 1 or 2 of them sterile, the fertile containing 2 apical ovules **186. Icacinaceae**
b. Carpels 3 or more, all fertile, each containing 1 or 2 apical ovules **179. Aquifoliaceae**
49a. Ovule 1 per cell; petals 3–4 **163. Cneoraceae**
b. Ovules many per cell; petals 5 **146. Pittosporaceae**

Group VII

1a. Petals and stamens numerous; plants succulent **81. Aizoaceae**
b. Combination of characters not as above 2
2a. Placentation free-central, ovary of a single cell, at least above 3
b. Placentation axile, basal or apical, ovary of 1–several cells 4
3a. Sepals usually 2, if more, then petals numerous **82. Portulacaceae**
b. Sepals or calyx-lobes 4 or 5, petals 4 or 5 **84. Caryophyllaceae**
4a. Corolla zygomorphic 5
b. Corolla actinomorphic 7
5a. Plants woody; leaves palmate-digitate **173. Hippocastanaceae**
b. Plants herbaceous; leaves various, not palmate-digitate 6
6a. Sepals, petals and stamens hypogynous **156. Geraniaceae**
b. Sepals, petals and stamens perigynous **213. Lythraceae**
7a. Small hairless annual herb growing in water or on wet mud; leaves with stipules; seeds pitted **207. Elatinaceae**
b. Combination of characters not as above 8
8a. Sepals, petals and stamens perigynous 9
b. Sepals, petals and stamens hypogynous 11
9a. Styles 2 or more; fruit an inflated, bladdery capsule; leaves trifoliolate or pinnate **182. Staphyleaceae**
b. Style 1; fruit various, not as above; leaves simple 10
10a. Perigynous zone prominently ribbed; seeds without arils; mostly herbs **213. Lythraceae**
b. Perigynous zone not ribbed; seeds with arils; shrubs or small trees **181. Celastraceae**
11a. Leaves with translucent, aromatic glands **162. Rutaceae**
b. Leaves without such glands 12
12a. Flower with a well-developed disc, usually nectar-secreting, below and around the ovary 13
b. Flower without a disc, nectar secreted in other ways 15
13a. Leaves often palmately lobed; sap sometimes milky; flowers functionally unisexual; fruit a group of winged samaras; trees **171. Aceraceae**
b. Combination of characters not as above 14
14a. Leaves entire or toothed; stamens 4 or 5, emerging from the disc; seeds with arils **181. Celastraceae**
b. Combination of characters not as above **158. Zygophyllaceae**
15a. Plant herbaceous 16
b. Plant woody 17
16a. Leaves always simple and entire; ovary 6–10-celled by the development of 3–5 false septa during maturation; fruit a capsule **159. Linaceae**
b. Leaves lobed or compound; ovary without false septa; fruit a schizocarp **156. Geraniaceae**
17a. Petals long-clawed, often fringed or toothed; stamens 10; usually some or all of the sepals with nectar-secreting appendages outside **167. Malpighiacaee**
b. Petals not long-clawed, nor fringed or toothed; stamens 5; sepals without nectar-secreting appendages outside **146. Pittosoporaceae**

Group VIII

1a. Stamens 2, anthers back to back **248. Oleaceae**
b. Stamens more than 2, anthers never back to back 2
2a. Carpels several, free; leaves succulent **136. Crassulaceae**
b. Carpels united, or, if the bodies of the carpels are free, then the styles united; leaves usually not succulent 3

3a. Corolla papery, translucent, 4-lobed; stamens 4, projecting from the corolla; leaves with parallel veins, often all basal **277. Plantaginaceae**
b. Combination of characters not as above 4
4a. Central flowers of the inflorescence abortive, their bracts forming nectar-secreting pitchers; petals completely united, the corolla falling as a whole as the flower opens **123. Marcgraviaceae**
b. Combination of characters not as above 5
5a. Stamens more than twice as many as corolla-lobes 6
b. Stamens up to twice as many as corolla-lobes 12
6a. Leaves with stipules; filaments of stamens united into a tube around the ovary and style **192. Malvaceae**
b. Leaves without stipules; filaments free 7
7a. Anthers opening by pores **120. Actinidiaceae**
b. Anthers opening by longitudinal slits 8
8a. Leaves with translucent, aromatic glands; calyx cup-like, unlobed **162. Rutaceae**
b. Leaves without such glands; calyx not as above 9
9a. Placentation parietal leaves fleshy **258. Fouquieriaceae**
b. Placentation axile; leaves not fleshy 10
10a. Sap milky; ovules 1 per cell **244. Sapotaceae**
b. Sap not milky; ovules 2 or more per cell 11
11a. Ovules 2 per cell; flowers usually unisexual **245. Ebenaceae**
b. Ovules many per cell; flowers bisexual **122. Theaceae**
12a. Stamens as many as petals and on the same radii as them 13
b. Stamens more or fewer than petals, if as many then not on the same radii as them 20
13a. Tropical trees with milky sap and evergreen leaves **244. Sapotaceae**
b. Tropical or temperate trees, shrubs, herbs or climbers, with watery sap and usually deciduous leaves 14
14a. Placentation axile 15
b. Placentation basal or free-central 16
15a. Climbers with tendrils; stamens free **188. Vitaceae**
b. Upright shrubs without tendrils; stamens with the filaments united below **189. Leeaceae**
16a. Trees or shrubs; fruit a berry or drupe 17
b. Herbs (occasionally woody at the extreme base); fruit a capsule or indehiscent 18
17a. Leaves with translucent glands; anthers opening towards the centre of the flower; staminodes absent **241. Myrsinaceae**
b. Leaves without such glands; anthers opening towards the outside of the flower; staminodes 5 **240. Theophrastaceae**
18a. Sepals 2, free **82. Portulacaceae**
b. Sepals 4 or more, united 19
19a. Corolla persistent and papery in fruit; ovule 1 on a long stalk arising from the base of the ovary **243. Plumbaginaceae**
b. Corolla not persistent and papery in fruit; ovules many, on a free-central placenta **242. Primulaceae**
20a. Flower compressed with 2 planes of symmetry; stamens united in 2 bundles of ½+1+½ **129. Fumariaceae**
b. Combination of characters not as above 21
21a. Leaves bipinnate or replaced by phyllodes; carpel 1; fruit a legume **151. Mimosaceae**
b. Combination of characters not as above 22
22a. Anthers opening by pores (rarely by short, pore-like slits); pollen never in coherent masses 23
b. Anthers opening by longitudinal slits or pollen in coherent masses (pollinia) 24
23a. Stamens free from corolla-tube, often twice as many as corolla-lobes **237. Ericaceae**
b. Stamens borne on the corolla-tube, as many as lobes **266. Solanaceae**
24a. Leaves alternate or all basal; carpels never 2 and free or almost so but united by the common style 25
b. Leaves opposite or rarely alternate, when the carpels are 2 and almost completely free, united by the common style 45
25a. Flowers unisexual; male flowers with a corolla, female flowers without a corolla **160. Euphorbiaceae**
b. Flowers bisexual, all with corollas 26
26a. Plant woody; leaves usually evergreen, often spiny-margined; stigma sessile on top of the ovary **179. Aquifoliaceae**
b. Combination of characters not as above 27
27a. Shrubs with stellate hairs or lepidote scales **246. Styracaceae**
b. Herbs or shrubs, without stellate hairs or lepidote scales 28
28a. Procumbent herbs with milky sap and stamens free from the corolla-tube **283. Campanulaceae**
b. Combination of characters not as above 29
29a. Ovary 5-celled 30
b. Ovary 2–4-celled 32
30a. Placentation parietal; softly wooded tree **208. Caricaceae**
b. Placentation axile; herbs 31
31a. Leaves fleshy; anthers 2-celled; fruit often deeply lobed **265. Nolanaceae**
b. Leaves leathery; anthers 1-celled; fruit a capsule or berry **239. Epacridaceae**
32a. Ovary 3-celled 33
b. Ovary 1-, 2- or 4-celled 36
33a. Trees; stamens free from the corolla-tube **74. Olacaceae**
b. Shrubs, herbs or climbers; stamens borne on the corolla-tube 34
34a. Dwarf, evergreen shrublets; staminodes 5; petals imbricate **234. Diapensiaceae**
b. Herbs or climbers, not evergreen; staminodes absent; petals contorted 35
35a. Climber with tendrils **257. Cobaeaceae**
b. Herbs, without tendrils **256. Polemoniaceae**
36a. (33) Stamens with filaments united into a tube; flowers in heads; stigmas surrounded by a sheath **285. Brunoniaceae**
b. Combination of characters not as above 37
37a. Flowers in spirally coiled cymes, or the calyx with appendages between the lobes; style terminal or arising from between the lobes of the ovary 38
b. Flowers not in spirally coiled cymes, calyx without appendages; style terminal 39
38a. Style terminal; fruit a capsule, usually many-seeded **260. Hydrophyllaceae**
b. Style arising from the depression between the 4 lobes of the ovary; fruit of 4 nutlets or more rarely a 1–4-seeded drupe **261. Boraginaceae**

39a. Placentation parietal 40
b. Placentation axile 41
40a. Corolla-lobes valvate in bud; leaves simple and cordate or peltate, or of 3 leaflets, hairless; aquatic or marsh plants **252. Menyanthaceae**
b. Corolla lobes imbricate in bud; leaves never as above; terrestrial plants **274. Gesneriaceae**
41a. Ovules 1–2 in each cell of the ovary 42
b. Ovules 3–many in each cell of the ovary 44
42a. Arching shrubs with small purple flowers in clusters on the previous year's wood **267. Buddlejaceae**
b. Combination of characters not as above 43
43a. Sepals free; corolla-lobes contorted and infolded in bud; twiners, herbs or dwarf shrubs **259. Convolvulaceae**
b. Sepals united; corolla-lobes not as above in bud; trees or shrubs **261. Boraginaceae**
44a. Corolla-lobes folded, valvate or contorted in bud; septum of the ovary oblique, not in the horizontal plane **266. Solanaceae**
b. Corolla-lobes variously imbricate but not as above in bud; septum of ovary in the horizontal plane **268. Scrophulariaceae**
45a. Trailing, heather-like shrublet **237. Ericaceae**
b. Plant not as above 46
46a. Milky sap usually present; fruit usually of 2 almost free follicles united by a common style; seeds with silky appendages 47
b. Milky sap absent; fruit a capsule or fleshy, carpels united; seeds without silky appendages 48
47a. Pollen granular; corona absent; corolla-lobes valvate in bud **253. Apocynaceae**
b. Pollen usually in coherent masses (pollinia); corona usually present; corolla-lobes valvate or contorted in bud **254. Asclepiadaceae**
48a. Flowers in coiled cymes; usually herbs **260. Hydrophyllaceae**
b. Flowers not in coiled cymes; herbs or shrubs 49
49a. Placentation parietal; carpels 2 50
b. Placentation axile; carpels 2, 3 or 5 51
50a. Leaves compound; epicalyx present **260. Hydrophyllaceae**
b. Leaves simple; epicalyx absent **251. Gentianaceae**
51a. Stamens fewer than corolla-lobes **262. Verbenaceae**
b. Stamens as many as corolla-lobes 52
52a. Carpels 5; shrubs with leaves with spiny margins **250. Desfontainiaceae**
b. Carpels 2 or 3; herbs or shrubs; leaves not as above 53
53a. Leaves without stipules; carpels 3; corolla-lobes contorted in bud; herbs **256. Polemoniaceae**
b. Leaves with stipules (often reduced to a ridge between the leaf-bases); corolla-lobes variously imbricate or valvate in bud; plant usually woody 54
54a. Corolla usually 5-lobed; stellate and/or glandular hairs absent **249. Loganiaceae**
b. Corolla 4-lobed; stellate and glandular hairs present **267. Buddlejaceae**

Group IX

1a. Stamens more numerous than the corolla-lobes, or anthers opening by pores 2
b. Stamens as many as corolla-lobes or fewer, anthers not opening by pores 6
2a. Anthers opening by pores; leaves undivided; ovary of 2 or more united carpels 3
b. Anthers opening by longitudinal slits; leaves dissected or compound; ovary of a single carpel 5
3a. The 2 lateral sepals large and petal-like; filaments united **168. Polygalaceae**
b. No sepals petal-like; filaments free 4
4a. Shrubs with alternate or apparently whorled leaves; stamens 4–27 **237. Ericaceae**
b. Herbs with opposite leaves; stamens 5 **251. Gentianaceae**
5a. Leaves pinnate or of 3 leaflets; perianth not spurred **153. Fabaceae**
b. Leaves laciniate; upper petal spurred; upper sepal helmet-like or spurred **104. Ranunculaceae**
6a. Stamens as many as corolla-lobes; zygomorphy of corolla usually weak 7
b. Stamens fewer than corolla-lobes; zygomorphy of corolla pronounced 14
7a. Stamens on the same radii as the corolla-lobes; placentation free-central **242. Primulaceae**
b. Stamens on different radii from the corolla-lobes; placentation axile 8
8a. Leaves of 3 leaflets, with translucent, aromatic glands; stamens 5, the upper 2 fertile, the lower 3 sterile **162. Rutaceae**
b. Combination of characters not as above 9
9a. Ovary of 3 carpels; ovules many **256. Polemoniaceae**
b. Ovary of 2 carpels; ovules 4 or many 10
10a. Flowers in coiled cymes; fruit of up to 4 1-seeded nutlets **261. Boraginaceae**
b. Flowers not in coiled cymes; fruit a many-seeded capsule 11
11a. Annual or shortly-lived perennial climber; corolla scarlet at first, fading yellow-white **259. Convolvulaceae**
b. Combination of characters not as above 12
12a. Corolla-lobes variously imbricate in bud; stamens 2, 4 or 5 and unequal; leaves usually alternate **268. Scrophulariaceae**
b. Corolla-lobes contorted in bud; stamens 5, equal 13
13a. Leaves opposite; woody climber **249. Loganiaceae**
b. Leaves alternate; annual or perennial herbs **266. Solanaceae**
14a. Placentation axile; ovules 4 or many 15
b. Placentation parietal, free-central, apical or basal; ovules many or 1 or 2 22
15a. Ovules numerous but not in vertical rows in each cell of the ovary 16
b. Ovules 4, or more numerous but then in vertical rows in each cell of the ovary 18
16a. Seeds winged; mainly trees, shrubs and climbers with opposite, pinnate, digitate or rarely simple leaves **270. Bignoniaceae**
b. Seeds usually wingless; mainly herbs or shrubs with simple leaves 17
17a. Corolla-lobes imbricate in bud; septum of the ovary in the horizontal plane; leaves opposite or alternate **268. Scrophulariaceae**

b. Corolla-lobes usually folded, contorted or valvate in bud; septum of ovary oblique, not in the horizontal plane; leaves alternate **266. Solanaceae**
18a. Leaves all alternate, usually with blackish, resinous glands; plants woody **276. Myoporaceae**
b. At least the lower leaves opposite or whorled, none with glands as above; plants herbaceous or woody 19
19a. Fruit a capsule; ovules 4–many, usually in vertical rows in each cell of the ovary 20
b. Fruit not a capsule; ovules 4, side-by-side 21
20a. Leaves all opposite, often prominently marked with cystoliths; flower-stalks without swollen glands at the base; capsule usually opening elastically, seeds usually on hooked stalks **271. Acanthaceae**
b. Upper leaves alternate, cystoliths absent; flower-stalks with swollen glands at the base; capsule not elastic, seeds not on hooked stalks **272. Pedaliaceae**
21a. Style arising from the depression between the 4 lobes of the ovary, or if terminal then corolla with a reduced upper lip; fruit usually of 4 1-seeded nutlets; calyx and corolla often 2-lipped **264. Labiatae**
b. Style terminal; corolla with well-developed upper lip; fruit usually a berry or drupe; calyx often more or less actinomorphic, not 2-lipped **262. Verbenaceae**
22a. Ovules 4–many; fruit a capsule, rarely a berry or drupe 23
b. Ovules 1–2; fruit indehiscent, often dispersed in the persistent calyx 28
23a. Ovary containing 4 ovules side-by-side **262. Verbenaceae**
b. Ovary containing many ovules 24
24a. Placentation free-central; corolla spurred; leaves modified for trapping and digesting insects **275. Lentibulariaceae**
b. Placentation parietal or apical; corolla not spurred, rarely swollen at base; leaves not insectivorous 25
25a. Leaves scale-like, never green; root-parasites **268. Scrophulariaceae**
b. Leaves green, expanded; free-living plants 26
26a. Seeds winged; mainly climbers with opposite, pinnately divided leaves **270. Bignoniaceae**
b. Combination of characters not as above 27
27a. Capsule with a long beak separating into 2 curved horns; plants sticky-velvety **273. Martyniaceae**
b. Capsule without beak or horns; plant velvety or variously hairy or hairless **274. Gesneriaceae**
28a. Flowers in heads surrounded by an involucre of bracts; ovule 1 **269. Globulariaceae**
b. Flowers not in heads, often in spikes; ovules 1 or 2 **268. Scrophulariaceae**

Group X

1a. Stems jointed; leaves reduced to whorls of scales **61. Casuarinaceae**
b. Stems not jointed; leaves not as above 2
2a. Leaves pinnate 3
b. Leaves simple and entire, toothed or lobed (sometimes deeply so) 4
3a. Leaves without stipules; fruit a nut **63. Juglandaceae**
b. Leaves with stipules; fruit a legume **152. Caesalpiniaceae**
4a. Leaves opposite, evergreen, entire; fruit berry-like **231. Garryaceae**
b. Leaves alternate, deciduous or evergreen; fruit not berry-like 5
5a. Ovules many, parietal; seeds many, cottony-hairy; male catkin erect with the stamens projecting between the bracts, or hanging and with fringed bracts **64. Salicaceae**
b. Ovules solitary or few, not parietal; seeds few, not cottony-hairy; male catkins not as above 6
6a. Leaves dotted with aromatic glands **62. Myricaceae**
b. Leaves not dotted with aromatic glands 7
7a. Styles 3, each often branched; fruit splitting into 3 mericarps; seeds with appendages **160. Euphorbiaceae**
b. Styles 1–6, not branched; fruit and seeds not as above 8
8a. Plant with milky sap **70. Moraceae**
b. Plant with clear sap 9
9a. Male catkin simple, i.e. each bract with a single flower attached to it; styles 1 or 3–6 **67. Fagaceae**
b. Male catkin compound, i.e. each bract with 2–3 flowers attached to it; styles 2 10
10a. Nuts small, borne in cone-like catkins; perianth present in male flowers, absent in female, ovary naked **65. Betulaceae**
b. Nuts large, subtended by leaf-like bracts or involucres (cupules); perianth present in female flowers, absent in male; ovary inferior **66. Corylaceae**

Group XI

1a. Ovary apparently of a single carpel 2
b. Ovary of 2 or more free carpels 15
2a. Mostly submerged aquatic herbs with at least the submerged leaves whorled 3
b. Terrestrial plants, sometimes growing in damp places; leaves not whorled 4
3a. Leaves much divided; stamens 10–20, borne beneath the ovary **112. Ceratophyllaceae**
b. Leaves simple, entire; stamen 1, borne on the upper part of the ovary **223. Hippuridaceae**
4a. Leaves with stipules 5
b. Leaves without stipules 9
5a. Rhubarb-like marsh plants with large leaves; stamens 1 or 2 **222. Gunneraceae**
b. Combination of characters not as above 6
6a. Herbs or softly-wooded shrubs, often with stinging hairs; cystoliths present in the leaves; stamens 4 or 5, inflexed in bud, exploding when ripe **72. Urticaceae**
b. Combination of characters not as above 7
7a. Leaves opposite; flowers unisexual **115. Chloranthaceae**
b. Leaves alternate; flowers bisexual 8
8a. Stamens 4; epicalyx present **149. Rosaceae**
b. Stamens 5–7; epicalyx absent **150. Chrysobalanaceae**
9a. Stamens borne on the perianth 10
b. Stamens free from the perianth 12
10a. Trees or shrubs with very hard, leathery leaves; perianth segments free, usually spoon-shaped **73. Proteaceae**
b. Shrubs; leaves deciduous or evergreen but not very hard; perianth-segments united into a tube below 11
11a. Plants covered in lepidote scales; ovule basal **196. Elaeagnaceae**
b. Plants not covered in lepidote scales; ovule apical **195. Thymelaeaceae**
12a. Large evergreen trees or shrubs 13

b. Herbs or small, deciduous shrubs 14
13a. Plants aromatic; leaves glandular-punctate; anthers opening by valves **99. Lauraceae**
b. Plants not aromatic; leaves not glandular-punctate; anthers opening by longitudinal slits **93. Myristicaceae**
14a. Flowers in racemes; fruit often fleshy; stamens 3–many **79. Phytolaccaceae**
b. Flowers in cymes; fruit an achene; stamens usually 5 **80. Nyctaginaceae**
15a. Trees with bark peeling off in plates; leaves palmately lobed, base of petiole covering the axillary bud; flowers unisexual in hanging, spherical heads **134. Platanaceae**
b. Combination of characters not as above 16
16a. Perianth completely absent 17
b. Perianth present 18
17a. Herbs **113. Saururaceae**
b. Small trees or shrubs **102. Eupteleaceae**
18a. Perianth and stamens perigynous, borne on a rim or cup itself borne below the ovary 19
b. Perianth and stamens hypogynous, borne independently below the ovary 22
19a. Leaves modified into insect-trapping pitchers **137. Cephalotaceae**
b. Leaves not modified into pitchers 20
20a. Flowers unisexual; leaves evergreen **97. Monimiaceae**
b. Flowers bisexual; leaves deciduous 21
21a. Inner stamens sterile; perianth of many segments; leaves opposite **98. Calycanthaceae**
b. Stamens all fertile; perianth of up to 9 segments; leaves usually alternate **149. Rosaceae**
22a. Leaves with conspicuous stipules which enclose the axillary buds; bark aromatic **90. Magnoliaceae**
b. Leaves without stipules; bark usually not aromatic 23
23a. Woody climbers 24
b. Herbs, shrubs or trees 28
24a. Leaves opposite; flowers bisexual; plant climbing by means of hooked, hardened petioles **104. Ranunculaceae**
b. Leaves alternate; flowers unisexual; plant twining 25
25a. Leaves compound; parts of the flower in 3s **107. Lardizabalaceae**
b. Leaves simple; parts of the flower not usually in 3s 26
26a. Leaves evergreen, leathery, wavy-margined; flowers in dense, cone-like racemes; carpels 5 or more, each 1-seeded **79. Phytolaccaceae**
b. Combination of characters not as above 27
27a. Carpels many; seeds not U-shaped **95. Schisandraceae**
b. Carpels 3 or 6; seeds usually U-shaped **108. Menispermaceae**
28a. Parts of the flower in 3s; fruits blue **107. Lardizabalaceae**
b. Combination of characters not as above 29
29a. Perianth-segments 6 or more in 2–3 whorls, sometimes differing a little in size and colour; bark aromatic **96. Illiciaceae**
b. Combination of characters not as above 30
30a. Trees with rounded, cordate leaves which are opposite on long shoots, alternate on short shoots; flowers axillary, very inconspicuous, unisexual **103. Cercidiphyllaceae**
b. Combination of characters not as above 31
31a. Each anther tipped by an enlarged connective; fruit a berry or an aggregate of berries; plants woody **92. Annonaceae**
b. Anthers not tipped by enlarged connectives; fruit not as above; plants usually herbaceous **104. Ranunculaceae**

Group XII

1a. Plants aquatic, mostly submerged 2
b. Plants terrestrial 4
2a. Stamens 8, 4 or 2; leaves deeply divided **221. Haloragaceae**
b. Stamens 6 or 1; leaves entire or slightly toothed 3
3a. Stamens 6; leaves all basal **131. Cruciferae**
b. Stamen 1; leaves opposite **263. Callitrichaceae**
4a. Trees or shrubs 5
b. Herbs, climbers or parasites 13
5a. Stamens as many as, and on radii alternating with the perianth-segments **187. Rhamnaceae**
b. Stamens not as above 6
6a. Stipules present, sometimes falling early 7
b. Stipules absent 9
7a. Styles 3–6; fruit a nut, surrounded by a scaly cupule **67. Fagaceae**
b. Styles 2; fruit not as above 8
8a. Leaves alternate; stellate hairs usually present; fruit a woody capsule **135. Hamamelidaceae**
b. Leaves opposite; stellate hairs absent; fruit a non-woody capsule **144. Cunoniaceae**
9a. Ovary superior; leaves opposite; sap sometimes milky; fruit a group of samaras; trees **171. Aceraceae**
b. Ovary inferior; combination of other characters not as above 10
10a. Ovary 1-celled, ovule 1, apical, or ovules 1–5, basal 11
b. Ovary several-celled, or if 1-celled then ovules more than 5, parietal or axile 12
11a. Epigynous zone present above the ovary, bearing the perianth on its rim and stamens on its inner face; ovule 1, apical **219. Combretaceae**
b. Epigynous zone absent, perianth and stamens not as above; ovules 1–5, basal **75. Santalaceae**
12a. Placentation parietal; flowers bisexual, variously arranged but not as below **142. Hydrangeaceae**
b. Placentation axile; flowers unisexual in heads consisting of many male flowers surrounding a single female flower, each head subtended by 2 large, white bracts **226. Davidiaceae**
13a. Plants parasitic 14
b. Plants free-living 15
14a. Two united bracteoles forming a cup-like structure, borne just below the perianth **76. Loranthaceae**
b. Bracteoles absent **77. Viscaceae**
15a. Perianth absent; flowers in spikes **113. Saururaceae**
b. Perianth present; flowers not usually in spikes 16
16a. Leaf-base oblique; ovary inferior, 3-celled **211. Begoniaceae**
b. Leaf-base not oblique; ovary not as above 17
17a. Ovary superior 18
b. Ovary inferior 23
18a. Carpels 3 or rarely 2, ovule 1, basal; perianth persistent in fruit 19
b. Combination of characters not as above 20
19a. Leaves without stipules; stamens 5 **83. Basellaceae**