PRIMITIAE AFRICANAE VIII
A REVISION OF THE GENUS CADIA FORSKÅL (CAES.) AND SOME REMARKS REGARDING DICRAEOPETALUM HARMS (PAP.) AND PLATYCELYPHIUM HARMS (PAP.)

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SUMMARY

The history of the nomenclature of *Cadia* has been compiled. *Cadia*, which is judged to belong in *Caesalpiniaceae*, has six species, all except one indigenous in Madagascar. A key is given, the geographical distribution mapped; *Platycelyphium* Harms and *Dicraeopetalum* Harms, which belong in *Papilionaceae*, are surveyed.

NOMENCLATURE

The genus *Cadia* (*Caes.*) was founded by FORSKÅL (descriptio generico-specifica). No specific epithet occurs in the protologue. Forskål referred to what later became known as *Cadia purpurea*, it seems. He discovered the shrub in "Arabia felix" which concept covers the Yemen and South Arabia. In 1775 the name *Cadia* was published posthumously in Flora Aegyptiaco-Arabica. A single specimen is present in the Forskål Herbarium (C) and was labeled as *C. varia* l'Hér. by BENTHAM in 1867. This authentic specimen was not studied when specific epithets were published. L'HÉRITIER judged the description by Forskål sufficient for publishing *C. varia*.

PICCIUOLI described *Panciatica purpurea* in 1783. *Panciatica* is a monotypic genus, represented by *P. purpurea*. Forskål's Flora Aegyptiaco-Arabica was not present in the library of the Marquis PANCIATICHI near Florence (*cf.* ZUCCAGNI). The gardener Picciuoli honoured his master by the name *Panciatica*. The purple colour of the flowers as indicated by the specific name he dedicated to the Marcese's brother, the Cardinal Bandini Panciatichi. *Panciatica purpurea* is the only species newly described in Hortus Panciaticus, which is a catalogue also containing some lectures.

The shrub was cultivated in Hortus Panciaticus, seeds had been brought by JAMES BRUCE, who visited Florence in 1773 on the way back from Ethiopia. The Botanical Gardens in Paris and at Kew also received seeds from the same expedition and it is stated that their shrubs were also raised from Bruce's consignment of seeds. Bruce indicated the species by the name "*Acacia nova Abissinica*".

AITON rejected *Panciatica* and adopted *Cadia* Forsk., the earlier name, forming the new combination *Cadia purpurea* (Picc.) Ait. in 1789. His cultivated specimen was of the same origin as the specimen *Panciatica purpurea* referred to in Hortus Panciaticus. The publication of Aiton's Hortus Kewensis was issued in the first quarter of 1789 (according to Flora Malesiana I, 4, p. CLXVI, 1954).

Also in 1789 VITMAN published the name *Cadia purpurea* (Summa Plantarum 3: 141) while he referred to Forskål, and to Zuccagni (Cat. Hort. Panc.) by quoting *Panciatica*. The third part of his Summa Plantarum was published, most probably, later than March 1789, the printing of the preceding parts taking up much time. No publication attributes the new combination to Vitman, though in some herbaria some sheets are labeled *C. purpurea* (Picc.) Vitman.

GMELIN published the name *Cadia arabica* in 1791 with a single reference, Forskål's earlier publication of the genus *Cadia*.

In 1795 L'HÉRITIER DE BRUTELLE wrote an article about a new genus of plants, grown from seeds received at Paris from Bruce. The "citoyen" Thonin attended the plants, grown from different kind of rare seeds. At that time the Paris' Gardens contained several undescribed Ethiopian species. L'Héritier expressed regrets concerning Forskål's early death in Arabia and, moreover, that he had not mentioned a specific name. L'Héritier described *Cadia varia*, supposing that he had the taxon discovered by Forskål. He made no mention of Picciuoli's or Aiton's names.

In the same year DESFONTAINES dedicated the plant to the memory of Gerard van Spaendonck, at the time famous painter of flowers and Professor of Iconography at the National Museum of Natural History at Paris. The name *Spaendoncea tamarindifolia* would recall forever the name of this painter, born in the Netherlands. Desfontaines observed that the cultivated specimen flowered the first time in 1795 in the Museum's Garden grown also by Thonin from Bruce's seeds. No doubt the two Paris' botanists described the same shrub. The apparent neglect of English botanical literature (Aiton) is possibly due to the at the time prevailing circumstances of war.

Already the next year ZUCCAGNI, president of the Botanical Garden at Florence, in a letter to Annalen der Botanik, edited by USTERI, united the previous three descriptions by Picciuoli, l'Héritier and Desfontaines while referring to Forskål and Vitman for the name of *Cadia*. Although he quoted the earlier name *C. purpurea* he headed his own description by the name *Cadia arabica*, not mentioning Gmelin who published the same epithet before, of course an inadmissable name-change. The name *C. arabica* was repeated by RAEUSCHEL in 1797 but without any reference.

Still another name, never accepted by later authors, was used by JAUME ST. HILAIRE in 1805. He described *Cadia pendula* (on account of the pendent flowers). Although he referred not only to Forskål and to Ventenat (who did not give a specific name) but also to l'Héritier (who described *C. varia*).

The delay in communications, aggravated by the French Revolution, was largely the cause of the publication of many names for *Cadia purpurea*, which

is the only species outside of Madagascar. *C. purpurea* does not occur in Madagascar.

I saw only one *C.purpurea* specimen said to be from Madagascar and collected by Commerson (F). This may be an error; *C. purpurea* was never again collected on Madagascar. Commerson's collection was poorly labeled and probably for the larger part after his death. On the same sheet a specimen without geographic explication was attached, also derived from Herb. Desfontaines. Both specimens were derived from cultivated specimens, probably at Paris.

Cadia Forsk.

Cadia Forskål, Fl. Aeg.-Ar. 90. 1775; Scopoli, Intr. Hist. Nat. 298. 1777; De Jussieu, Gen. Pl. 348. 1789; Vitman, Summa Pl. 3: 141. 1789; Hedwig, Gen. Pl. 305. 1806; Sprengel, Anl. Kenntn. Gew. 769. 1818; Bronn, Form. Pl. Leg. 130. 1822; DC., Prodr. 2: 486. 1825; Reichenbach, Consp. Regn. Veg. 156. 1828; Sprengel - Linn., Gen. Pl. 352. 1830; Dietrich, Syn. Pl. 2: 1374. 1840; Endl., Gen. Pl. 1314. 1840; Endl., Ench. Bot. 647. 1841; Brongniart, Enum.132. 1843; Lindley, Veg. Kingd. 555. 1847; Benth. & Hook., Gen. Pl. 1: 560. 1867; Baillon, Hist. Pl. 2: 73. 175. 1870; Taubert *in* Engl. Prantl, Nat. Pfl. fam. 3 (3): 187. 1892; Harms *in* Engl. Bot. Jahrb. 33: 164. 1902; Hutchinson, Gen. Fl. Dic. 1: 314. 1964; Brenan *in* Webbia 19: 545–578. 1965; Burger, Fam. Fl. Pl. Ethiopia 90. 1967.

Shrubs or small trees. *Leaves* alternate, on young twigs only (sometimes deciduous?), imparipinnate or rarely paripinnate; leaflets shortly petiolulate; stipules minute; no stipellae. *Flowers* actinomorphic, pendent, in few-flowered axillary racemes. *Hypanthium* narrowly cylindric, in the upper part campanulate. *Calyx* campanulate, lobes 5(–6–7), triangular, acute. *Petals* 5(–6–7), free, equal, obovate, more or less clawed, edge wavy to erose or irregularly shallowly incised, creamwhite to red or purple; aestivation variable. *Stamens* 10 (12–14), free, equal; filaments gibbous near the base; anthers versatile. *Ovary* linear, laterally compressed, pubescent. *Pods* glabrous, 2-valved, 1-chambered; valves coiling after dehiscence.

Type species: *Cadia purpurea* (Picc.) Ait.

Synonyms: *Panciatica* Picc., *Spaendoncea* Desf., *Caëla* Adans. (cf. Index Kew.) see note; *Mozambe* Rafin. (cf. Index Kew.) see note.

Distribution: 1 species in SW Arabia, Ethiopia, Somaliland and N Kenya; 5 other species on Madagascar.

Note. Caëla and *Mozambe* are declared to be synonyms of *Cadia* in Ind. Kew. 2: 1272 (Add.). 1896. This is a printing error because *Mozambe* Rafinesque (Sylva Telluriana 112. 1838) is a synonym to *Cadaba* Forsk., a *Capparidacea*, as is correctly stated in Ind Kew. 2: 268. *Caëla* Adanson (Fam. Pl. 2: 209) is a synonym to *Torenia* L., a *Scrophulariacea*. The name *Caëla* has not been printed in the correct type, so errors might occur.

I did not find a rectification in Index Kewensis, either as regards *Mozambe* or *Caëla*. *Mozambe* was mentioned again by Hutchinson, Gen. Pl., Dicot. 1: 314. 1964 in synonymity to *Cadia*, which is a continuation of the error in Index Kewensis indicated above.

THE SYSTEMATIC POSITION OF CADIA FORSKÅL

The leguminous genus *Cadia* has always troubled botanists whether it ought to be referred to *Papilionaceae* or to *Caesalpiniaceae*. In fact *Cadia* offers an argument not to separate *Papilionaceae* and *Caesalpiniaceae*, but to keep these two "families" together ("*Fabaceae*") while allowing *Caesalpiniaceae* the rank of a subfamily. But this does not solve, in reality, the problem, because *Cadia* in that case hovers between two subfamilies in *Papilionaceae* (cf. Baillon, Hist. Pl. 2: 73. 1870).

In the artificial system of LINNAEUS it is placed without difficulty; many botanists did do so until about 1850. FORSKÅL, L'HÉRITIER and others placed *Cadia* in the "Decandria Monogynia", L'HÉRITIER added that *Cadia* might be placed in the "Lomentaceae", a branch of *Papilionaceae*, in LINNAEUS' natural system.

REICHENBACH, BARTLING, SPACH, BAILLON, ENDLICHER, BRONGNIART, ROSS, and EICHLER judged *Cadia* to be Caesalpiniaceous. BENTHAM and HOOKER, LINDLEY, OLIVER, PFEIFFER, BAKER, TAUBERT, HUTCHINSON, SCHWARTZ, CUFODONTIS, and BURGER did place *Cadia* in the *Papilionaceae*.

BAILLON judged that the position of the vexillum depended on the way the flower happened to develop and even might change during the life of the flower whether it is Papilionaceous (outermost) or Caesalpiniaceous (innermost).

ROSS studied 114 flowers from one single shrub, cultivated in "Orto Botanico" at Palermo (Sulla struttura fiorale della *Cadia varia*; 1893). He found 27 ways of aestivation, arranged in 4 groups:

1. Petals in imbricate, contort aestivation (9 flowers).
2. Vexillum outmost, 9 flowers typical Papilionaceous (28 flowers).
3. Vexillum covered by the alae, 13 flowers typical ascendent (*Caesalpiniaceae*) prefloration, 22 flowers with lower petals covered by the alae, 13 flowers with one lower petal covered by a lateral petal and the other lower petal covering the other lateral petal (in total 48 flowers).
4. Vexillum covering a lateral petal and covered by the other one (29 flowers).

Obviously, the morphological arrangement of the petals is not decisive for the systematical place of *Cadia*, as demonstrated by Ross's research. Statistically, however, Ross referred *Cadia* to the *Caesalpiniaceae*.

The habit of *C. purpurea* also suggests *Caesalpiniaceae*, and several botanists and collectors agree in stating that at first sight they accepted *Cadia* as Caesalpiniaceous.

Other species in *Cadia* have a smaller number of leaflets, and this characteristic is more often found in *Papilionaceae*.

HARMS discussed the question whether to retain the tribe "*Sophoreae*" which appears to consist of very different genera. An intermediate group might seem more convenient, and this would preclude the necessity of placing many *Papilionaceae*. He surveyed the literature on *Cadia*, and compared *C. purpurea* with *C. anomala* Vatke, which resulted in that *C. anomala* was referred to *Pseudocadia* Harms (see note).

On a herbariumsheet at Kew (Schweinfurth 270) I found noted by an unknown hand that the radicles in the embryo are neither folded (Papilionaceous) nor straight (Caesalpiniaceous). A curious intermediate position. This agrees with my own observations.

According to PELTIER, *Cadia* is a *Caesalpiniacea*, which he concludes from his observations in vivo on Madagascar. He stated that he never saw the upper petal outmost (Papilionaceous) when he examined *C. pubescens* or *C. ellisiana*. However, he met with many intermediate aestivations.

Under the circumstances I prefer to adopt *Cadia* as belonging in *Caesalpiniaceae*, although it might be argued e.g. for phylogenetic reasons that *Papilionaceae* and *Caesalpiniaceae* should not be segregated as separate families.

KEY TO THE SPECIES

1. Leaflets over 40, linear, mucronulate. Hypanthium longer than the pedicel. Filaments at the base transversely disc-shaped swollen. NE African continent, Arabia . . . . . **purpurea**
   Leaflets up to 30, as a rule oblong to elliptic. Hypanthium often shorter than the pedicel. Filaments transversely or lengthwise swollen at the base. Madagascar 2
2. Leaf-rachis densely pubescent, not grooved above, angular. Hypanthium shorter than the pedicel. Leaflets pubescent-villose below. Tree . . . . . **pubescens**
   Leaf-rachis glabrous or puberulous, as a rule grooved above, ± terete. Hypanthium longer or shorter than the pedicel. Leaflets glabrous or thinly puberulous. Shrubs or shrubly treelets 3
3. Leaflets 11–30 4
   Leaflets 7–11. Stipules minute, ½ mm long 5
4. Leaflets 20–30, linear to oblong. Filaments at the base transversely disc-shaped increased. Stipules 1½ mm long . . . . . **commersoniana**
   Leaflet 11–20, elloptic. Filaments longitudinally subgeniculately swollen. Stipules subulate, 5 mm long . . . . . **pedicellata**
5. Leaflets sparsely puberulous below. Calyx campanulate, not spreading . . . . . **rubra**
   Leaflets quite glabrous, 3½–8 cm long, 1½–3 cm wide. Calyx campanulate, slightly widening . . . . . **ellisiana**

1. **Cadia commersoniana** Baill. **Fig. 1.**

Cadia commersoniana Baillon *in* Bull. Soc. Linn. Paris 1: 370. 1883; Drake *in* Grandidier, Hist. Mad. 30-1-1-1, fasc. 50: 96. 1902.

Cadia catati Drake *in* Grandidier, Hist. Mad. 30–1–1–1, fasc. 50: 96. 1902.

Shrub or small tree. *Young branchlets* soft greyish pubescent where foliolated. *Leaves* imparipinnate; rachis 2.5–10 cm, almost glabrous, grooved above. *Leaflets* (11–)21–25(–27), 5–25 mm long and 1.5–7.5 mm wide, opposite or alternate, linear to oblong, ± elliptic, symmetrical, coriaceous, yellowish

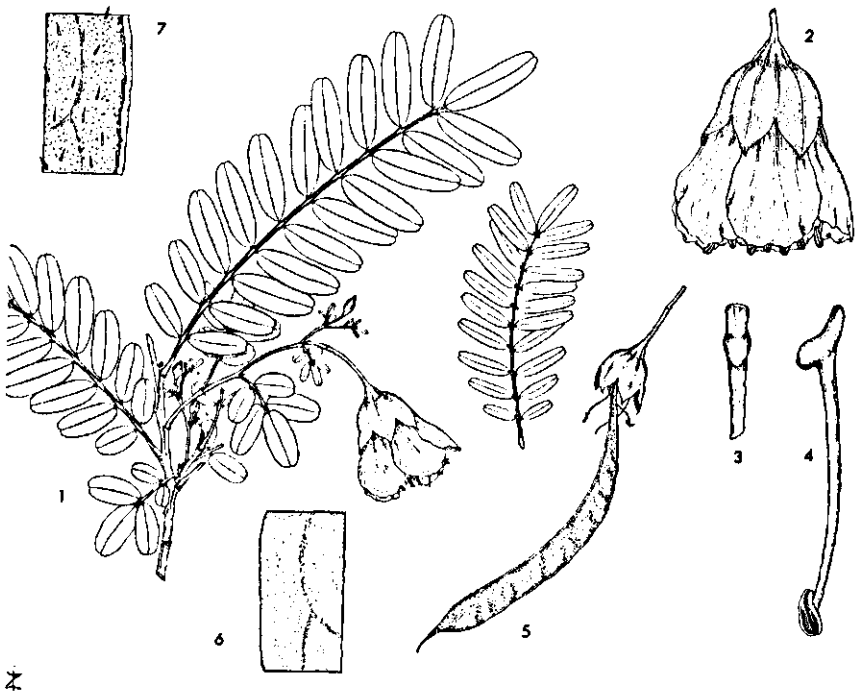


Fig. 1. *Cadia commersoniana* BAILL. – 1: flowering branch (× ½); 2: flower (× 1); 3: anther, ventrally (× 2); 4. anther, laterally (× 2); 5: young pod (× ½); 6: part of leaflet, upper surface (× 10); 7: ditto, lower surface (× 10); 1–4, 6, 7: SCOTT ELLIOT 2801 b; 5: DECARY 9116 (K).

green above, dull green below, almost glabrous, top slightly incised, subsessile. *Stipules* small, 1.5 mm, pubescent. *Flowers* in 1–3-flowered racemes, pendent; pedicel 0.5 cm, jointed to the 0.5–2 cm long hypanthium. *Bracts* often trifoliolate with 2 pubescent lateral perules. *Calyx* campanulate, 5-toothed, puberulous, 1 cm long, lobes not quite half downward. *Petals* 5, obovate, veined, 22–28 mm long and 8–11 mm wide. *Stamens* 10, filaments ± as long as the petals, their base obliquely disc-shaped swollen. *Ovary* linear, shortly stipitate, style short (2.5 mm). *Pod* 2-valved, one-chambered, margins distinct, 9–12 cm long and ± 1 cm wide, ± 10-seeded. *Seeds* ovate-suborbicular, laterally compressed, brown or reddish brown.

Syntypes: *Commerson s.n. Madagascar bor.* (P); *Bojer 15*, Madagascar (P).

Distribution: see map 2; South and Central Madagascar.

MADAGASCAR: *Bojer 15* (P); *Catat 4313*, Fort Dauphin (P); *Commerson s.n.* (d.d. 1772) (K, P); *Decary 4224*, Fort Dauphin (P); *id. 4285*, Fort Dauphin (P); *id. 9116*, Ambovombe (K, P, S); *Desfontaines s.n.*, cult. (Fi); *Poisson 2654*, Fort Dauphin (P, WAG); *Scott Elliot 2801*, Fort Dauphin (K); *id. 3013*, Fort Dauphin (P).

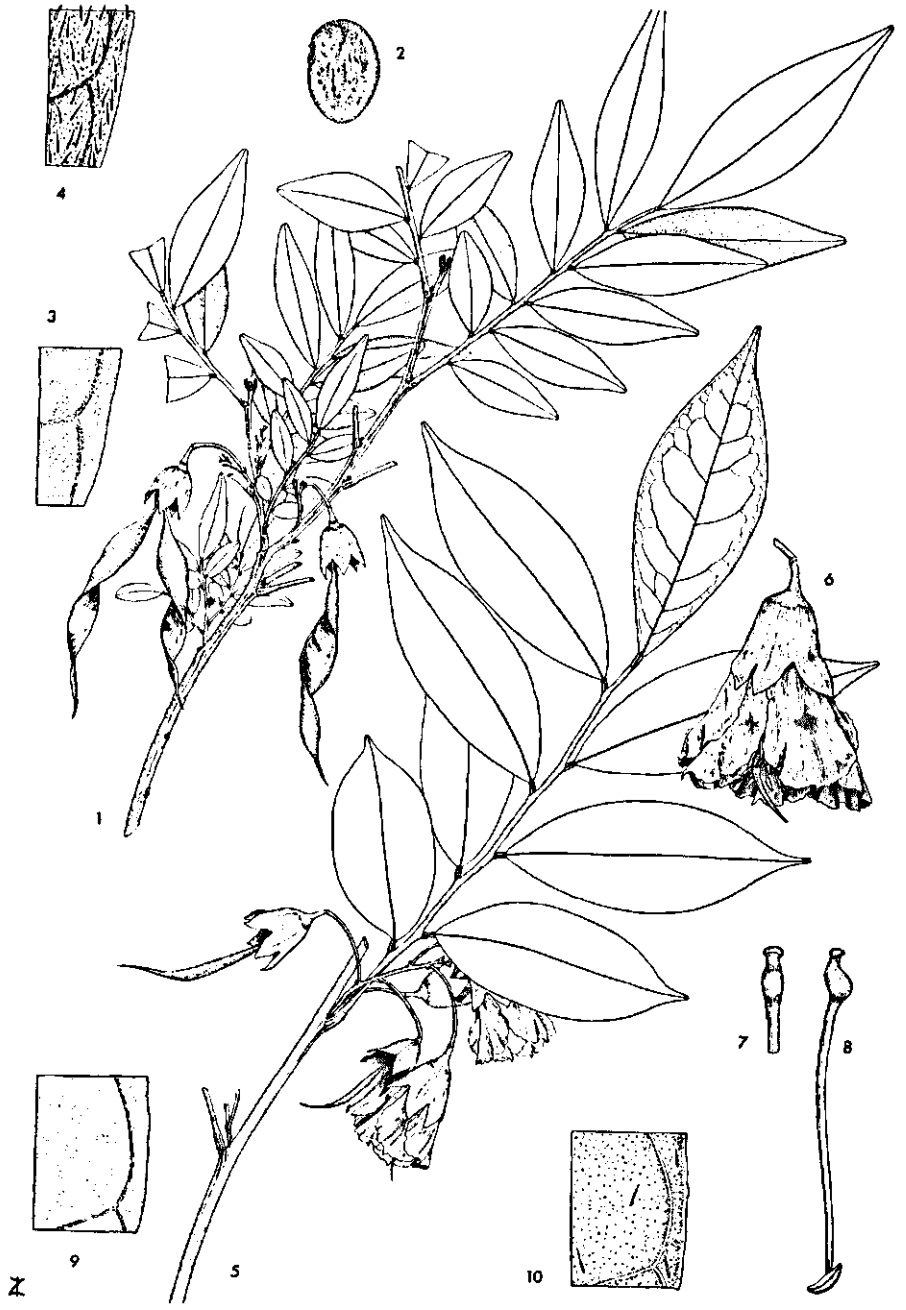


Fig. 2. *Cadia rubra* R. VIG. – 1: branch with pods (× ½); 2: seed (× 2); 3: part of leaflet, upper surface (× 10); 4: ditto, lower surface (× 10); 1–4: PERRIER 1314, isotype (P); *Cadia ellisiana* BAK. – 5: flowering branch (× ½); 6: flower (× 1); 7: anther, ventrally (× 2); 8: anther, laterally (× 2); 9: part of leaflet, upper surface (× 10); 10: ditto, lower surface (× 10); 5–10: HERB. JARD. BOT. TANANARIVE 3223 (P).

Cadia ellisiana Bak. **Fig. 2.**

Cadia ellisiana Baker *in* Journ. Linn. Soc. 20: 135. 1883; Hooker *in* Curtis Bot. Mag. 109: pl. 6685. 1883; Drake *in* Grandidier, Hist. Madag. 30–1–1–1, fasc. 50: 96. 1902; Louvel *in* Bull. Econ. Madag. 1st trim.: 121. 1922.

Small tree, 6–7 m. *Branchlets* woody, only last internodes puberulous. *Leaves* imparipinnate; rachis 8–12 cm, glabrous, grooved above. *Leaflets* 5–7(–10), 3.5–8 cm long, 1.5–3 cm wide, alternate, obovate (or elliptic), acuminate, top often subfalcate, glabrous, on the lower surface a few small widely spaced hairlets. Midrib stout, glabrous; veins slender; petiolule ± 3 mm, somewhat swollen. *Stipules* small, up to 1 mm, puberulous. *Flowers* in 4–7-flowered racemes (buds up to 11 per raceme), pendent; pedicel puberulous, thin, slender, 2–3 cm, jointed to the hypanthium ± 3 mm below calyx. *Bracts* minute, 0.5 mm, a single perule. *Calyx* 5-toothed, 10–18 mm long, teeth about ⅓–0.5 as long as the tube. *Petals* 5, obovate, gradually narrowing towards the insertion, 2¼ cm long, rose-red. *Stamens* 10; filaments ± 2 cm, swollen and geniculate near the narrow base. *Ovary* shortly stipitate, margins very distinct; style rather long (6 mm); stigma terminal. Ripe pods not seen.
Type: Ellis s.n. (1870, K); syntypes: Baron 1488 & 1540 (K).
Distribution: see map 2; Central and East Madagascar.
Vernacular names: Fanamba, Famano, Fanamo, Fanamozony.

MADAGASCAR: *Baron 1488*, Centr. Madag. (Fi, K); *id. 1540* (K, P); *Capuron* 11956 SF, Analamazaotra (P, WAG); *id. 18750* SF, Manakambahiny (P, WAG); *Cours 1510*, Didy (P, WAG); *Day s.n.*, cult. 1882 (K); *Ellis s.n.* (K); *Gouv*[1] *de Madagascar 62* (P); *Herb. Jard. Bot. Tananarive 3223*, cult. (P); *Humbert & Capuron 30.330*, Analamazaotra (P); *Perrier 4728*, Analamazaotra (P, WAG); *id. 17178*, Onive/Mangoro Riv. (P); *Service Forestier 6095*, Manaka Est, Ambatondrazoka (P); *id. 8344* (P); *id. 12751*, Tamatave-Analamazaotra (P); *id. 14105*, Fianarantsoa (P, WAG); *id. 15416*, Ampamaherana (P, WAG); *id. 19079*, Analamazaotra (P); *Rakotorar 9677*, Manakambakiny-Est.

3. **Cadia pedicellata** Bak. **Fig. 3.**

Cadia pedicellata Baker *in* Journ. Linn. Soc. 21: 338. 1884; Drake *in* Grandidier, Hist. Madag. 30–1–1–1, fasc. 50: 96. 1902.

Shrub, 3–4 m tall. *Leaves* crowded, imparipinnate or paripinnate; rachis (3–)7–15 cm long, almost glabrous, grooved above. *Leaflets* 11–19, 1–3 cm long and ½–1½ cm wide, alternate or opposite, elliptic, coriaceous, green and glabrous above, dull olive-green and thinly puberulous below, subsessile, top slightly incised. *Stipules* relatively large, subulate, pubescent, ± 5 mm long, no lateral perules. *Flowers* in 2–6-flowered racemes, rachis 2–4 cm long, glabrous, pendent; pedicel slender, up to 3 cm long, jointed to a short hypanthium. *Bracts* 1- or 3-partite perules, up to 5 mm long. *Calyx* campanulate, glabrous, 10–15 mm long, 5-toothed, teeth ± 4 mm long. *Petals* 5, obovate, veined, 1½–2½ cm long. *Stamens* 10, filaments somewhat exceeding the petals, gibbous (± geniculate) near the base, anthers versatile. *Ovary* linear, shortly stipitate; style up to 5 mm; ovules ± 8. *Pod* 2-valved, one-chambered, ripe pods not available.

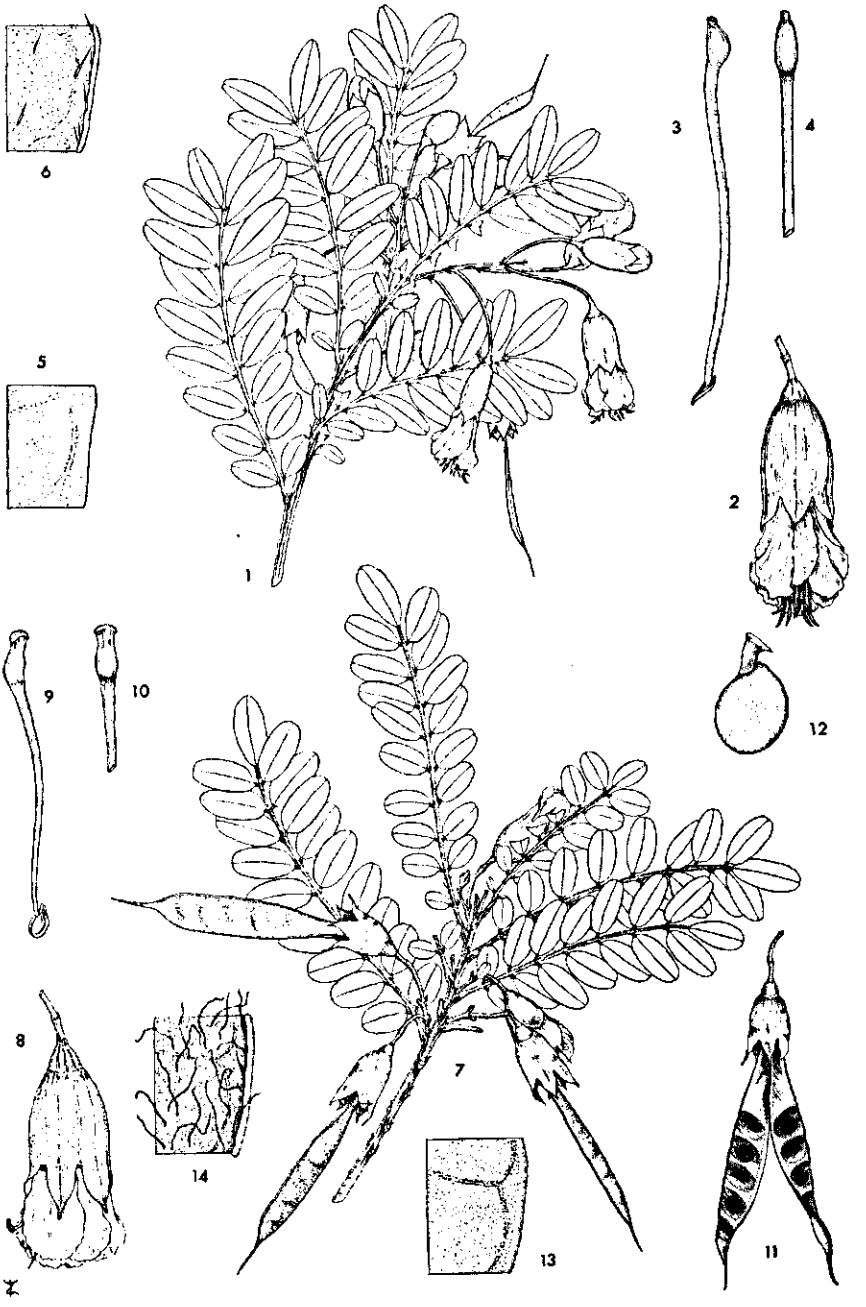


Fig. 3. *Cadia pedicellata* BAK. – 1: flowering branch (× ½); 2: flower (× 1); 3: anther, laterally (× 2); 4: anther, ventrally (× 2); 5: part of leaflet, upper surface (× 10); 6: ditto, lower surface (× 10); 1–6: PERRIER 13170 (P); *Cadia pubescens* BOJ. ex BAK. – 7: flowering branch (× ½); 8: flower (× 1); 9: anther, laterally (× 2); 10: anther, ventrally (× 2); 11: pod (× ½); 12: seed (× 2); 13: part of leaflet, upper surface (× 10); 14: ditto, lower surface (× 10); 7–14: R. CAPURON 669 SF (P).

Type: Baron 2248 (K, isotype in P).
Distribution: see map 2; NW, SE and Central Madagascar.
Vernacular name: Manadriso.

MADAGASCAR: *d'Alleizette 1402*, Majunga (L, P); *Baron 2248* (K, P); *Harmdlin 10217* RN, Ambato-Boina (Esaramandrogo) (P); *Reserves Natur. de Madag. 5136* RN, Ambato-Boina (Isaramido) (P); *id. 8775* RN, Anomavo Distr. (P, WAG); *Perrier 2125*, Tsinjoarivo (Onive Riv.); *id. 12626*, Vangaridramo (P, WAG); *id. 13170*, Manandona (P); *Service des Eaux et Forêts 5531* SF, Antsirabe (P).

4. **Cadia pubescens** Boj. ex Bak. **Fig. 3.**

Cadia pubescens Baker *in* Journ. Linn. Soc. 20: 135. 1883; Baillon *in* Bull. Mens. Soc. Linn. Paris 1: 370. 1883; Oliver, Fl. Trop. Afr. 2: 256. 1871; Drake *in* Grandidier Hist. Madag., Atlas t. 24a. 1888 & 30–1–1–1, fasc. 50: 95. 1902.

Tree. *Branchlets* slender, densely pubescent. *Leaves* imparipinnate, rachis 6–10 cm, densely pubescent, angular, at the basal part terete. *Leaflets* 15–19, 1–2 cm long, ½–1 cm wide; elliptic, coriaceous, dark green above, pubescent-villose and dull green below, obtuse, mucronulate, rounded at the base. Petiolules ± 1 mm, pubescent. *Stipules* small, 1–2 mm, linear, pubescent. *Flowers* in 2–3-flowered racemes, pedicel ± 1½ cm, jointed to the ½ cm long hypanthium. *Bracts* 1–3(–5)-foliolate, 2 lateral perules. *Calyx* campanulate, varying in length (8–22 mm), puberulous, 5-toothed; teeth 5–7 mm long (comparatively short and with a slender raised midvein). *Petals* 5, pink, ± 2–3 cm long, obovate-emarginate. Stamens 10, filaments ± as long as the petals. *Ovary* linear, very shortly puberulous, shortly stipitate, style 3 mm. *Pod* 2-valved, one-chambered, 7–10 cm long and 1–1½ cm wide, 8-seeded.
Type: Bojer 14, Mont Antongona, Tananarive (P).
Distribution: see map 2; Central and East Central Madagascar.

MADAGASCAR: *Baillon Herb. 290*, cult. (P); *Baron 960*, Central Madagascar (Fi, K, P, WAG); *Bojer*? ex Herb. Mus. Desjardins, Mauritius s.n. (P); *Bojer* ex Herb. Mus. Vindobonensis s.n. (K); *id. 14*, Monte Antoungoum (P); *Bosser 8930*, Autougona (P, WAG); *id. 9699*, Tananarive (P); *Bowles s.n.*, Mt. Antoungoum (K); *Capuron 669 SF*, Andramasina (P); *Lyall 85* (K); *Peltier 1593*, Talata, Tananarive (P); *id. 1637*, Andramasina (P); *Perrier 12444*, Ambatofiandrana (P, WAG).

5. **Cadia purpurea** (Picc.) Ait. **Fig. 4.**

Basionym: *Panciatica purpurea* Picc. 1783; Aiton, Hort. Kew. 2: 492. 1789; Vitman, Summa Pl. 3: 141. 1789; Willd., Sp. Pl. 2: 458. 1800; Persoon, Synops. Pl. 461. 1805; Lamarck, Enc. Meth. Bot. 17: 300. 1806; Zuccagni, Synops. Pl. Hort. Bot. Flor. xii. 1806; Sprengel, Syst. Veg. 2: 328. 1825; Drapiez, Herb. de l'Amat. Fleurs 7: 466. 1834; Harms *in* Engl. Bot. Jahrb. 33: 164. 1902; Fiori *in* Agric. Coloniale 5: 188. 1911; Blatter, Fl. Arabica *in* Rec. Bot. Surv. India 8(2): 175. 1921; Baker, Leg. Trop. Afr. 603. 1926; Clos & Lahitte *in* Boletin Min. Agr. Buenos Aires 30–3: 176. 1931; Cufodontis *in* Bull. Jard. Bot. Bruxelles 25–2: 225. 1955.

Cadia arabica Gmelin, Syst. Nat. 8: 667. 1791; Zuccagni *in* Ann. Bot. Usteri 19: 10. 1796; Raeuschel, Nomencl. Bot. 3: 117. 1797. *Cadia varia* l'Héritier de Brutelle *in* Mag. Encycl. 17–V: 29. 1795; (also *in* Ann. Bot. Ust., l.c.); DC., Prodr. 2: 486. 1825; Don, Gen. Hist. Pl. 2: 435. 1832; Spach, Hist. Nat. Veg. Phan. 108. 1834; Richard, Tent. Fl. Abyss. Atlas t. 46. 1847; Baillon, Hist. Pl. 2: 73, 175. 1870; Oliver, Fl. Trop. Afr. 2: 256. 1871; Baillon,

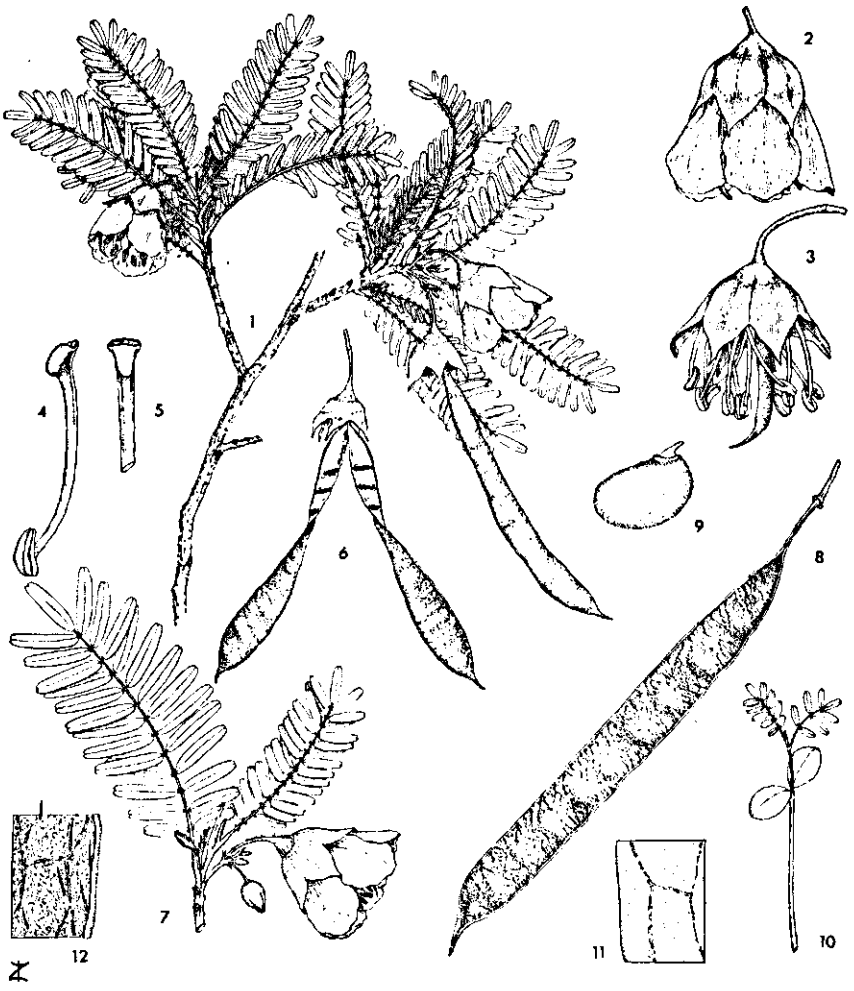


Fig. 4. *Cadia purpurea* (Picc.) Ait. – 1: flowering branch (× ½); 2: flower (× 1); 3: 12-anthered flower, petals removed (× 1); 4: anther, laterally (× 2); 5: anther, ventrally (× 2); 6: pod (× ½); 7: flowering branch (× ½); 8: pod (× ½); 9: seed (× 2); 10: seedling (× ½); 11: part of leaflet, upper surface (× 10); 12: ditto, lower surface (× 10); 1–6: W. J. J. O. de Wilde et al. 9826, Ethiopia (WAG); 7–9, 11–12: J. G. B. Newbould 3415, Kenya (K); 10: J. J. F. E. de Wilde 4103, Ethiopia (WAG).

Dict. Bot. 1: 542. 1877; Taubert *in* Engl. & Prantl, Nat. Pfl. fam. 3(3): 187. 1892; Ross *in* Malpighia 7 (6): 397. 1893; Schweinf. *in* Bull. Herb. Boiss. 4, App. 2: 223. 1896; Schwartz, Fl. Trop. Arab. 93. 1939. *Cadia pendula* Jaume de St. Hilaire, Expos. Fam. Nat. 2: 206. 1805. *Spaendoncea tamarindifolia* Desfontaines in Dec. Phil. 7–56: 259. 1795; (also *in* Ann. Bot. Ust., l.c.); Lamarck, Enc. Meth. 17: 300. 1806; Loiseleur-Deslongchamps, Herb. Gen. de l'Amat. 6: 394. 1822; Redouté, Choix Fl. 16. 1827. *Panciatica purpurea* Picciuoli, Hort. Panc. 9. 1783. Shrub or small tree (in Ethiopia and Arabia 1–2 m, in Kenya up to 5 m). Young branchlets slender, softly pubescent, woody nearly until the end, sometimes (especially in cultivation) more herbaceous.

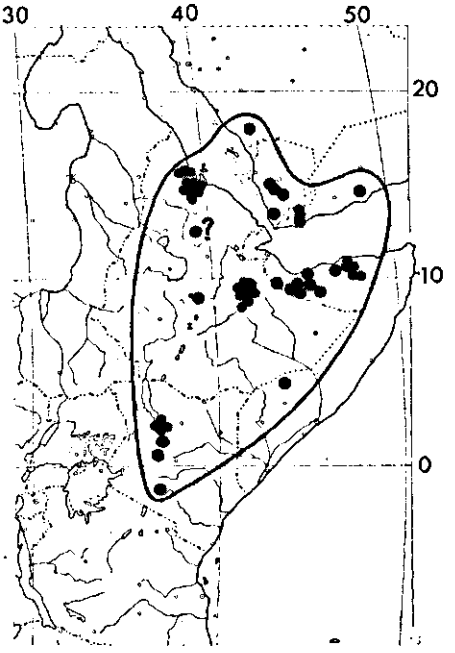
Imparipinnate *leaves*; rachis 2–12 cm, yellowish pubescent, grooved above or in the basal part terete. *Leaflets* (9)21–51(69), 3–22 mm long, 1–5 mm wide, opposite or alternate, linear-oblong, coriaceous, glabrous and green above, thinly puberulous (hairs white), glaucous-green below. Midrib below with white and some yellow hairs, ending in a small, yellowish pubescent mucro in the notched top of the leaflet, subsessile, in dry specimens margins recurved. *Stipules* small (1 mm), pubescent, often hidden by indument, deciduous. No stipellae.

Flowers in 1–3-flowered axillary racemes. If the first or second flower is fertilized, the other buds usually abort. Flower pendent; pedicel jointed to the equally thick hypanthium, as a rule much shorter than the narrow stipe-like part of the hypanthium.

Bracts one- or trifoliolate with two pubescent lateral perules. *Calyx* 5(6–7)-toothed, 8–10 mm long, teeth ± as long as the tube, puberulous, persistent. Veins along margins and midrib clearly visible, green to purplish green. *Petals* 5(6–7), obovate, distinctly veined, symmetrical, 12–25 mm, gradually narrowing towards the insertion. Aestivation variable (see note). Colour changing from white to pink to purple or reddish purple during flowering. *Stamens* 10(12–14), free; filaments ± as long as the petals, swollen to a disc-shaped base, purple. *Ovary* shortly stipitate; style short (1.5 mm); stigma terminal, the ending of the style. Ovary at the opening of the flower ± as long as the stamens, soon much longer, reddish. *Pod* 2-valved, 1-chambered, margins distinct, 10–15 cm long, and 1–1½ cm wide, narrowly elliptic-oblong, slenderly beaked, surface more or less smooth. *Seeds* 8–14; 5–6 mm long, 3–4 mm wide, ovate or semi-suborbicular, strongly laterally compressed, reddish brown, shining, smooth. Funicle often tardily detaching form the walled hilum, which is situated laterally on the straight ventral side.

Type in Hort. Panciatico lost; *neotype* Forskål herb. 267 (C), labeled by Bentham "1867 *Cadia varia* l'Hér." Distribution: see map 1; SW Arabia, Aden, W.Hadhramaut, Ethiopia and Eritrea, Somaliland, N. Kenya.

Ecology: Alt. 1000–1300 m, in open scrub vegetations with scattered trees and in dense bushes, stony places, slopes, wadi's. The shrub seems not to be palatable to goats etc. Dr. J. J. F. E. de Wilde noted (1969) that the shrubs which are very common on rocky slopes near Alemaya (Dire Dawa), Ethiopia, appear to have 2 flowering seasons and that the young flushes of leaves are strictly



Map 1. Geographical distribution of *Cadia purpurea* (Picc.) Ait. in East Africa and Arabia.

avoided by browsing animals which eat, in that region, practically everything under the sun. Dried leaves sent by de Wilde from Ethiopia were subjected to a preliminary test by Prof. Dr. O. F. Uffelie (Utrecht) and proved to contain an unusually high amount of alcaloids.

Vernacular names: Gadi, Kadi, Nahb, Nahdiya (Arabia); La'tta'h, La'ffa'h, Khomar, gadi (Yemen); Hasaüs, hezaus, schilén (Eritrea); Salalma, Salelma, Selelma (Somali); Alkujal (Serrut); Saele (Harar).

SPECIMENS EXAMINED: *Aiton*? *s.n.*, Cult. Hort. Kew, 1994/1798 (BM); *Anonymus 10.1*: Cult. Hort. Bot. Berol. (K); *id. 953*: Cult. Hort. Bot. Florence (Fi); *id. s.n.*, 26-12-1864: Cult. Hort. Bot. Florence (Fi, K); *id. s.n.*, oct. 1843: Cult. Hort. Bot. Muteoni (Fi); *Baldrate 45*?: Eritrea, Dorfu (Fi); *id. 161*: Eritrea, Dorfu (Fi); *id. 475*: Eritrea, Corbesa (Fi); *Bally 4095*: Kenya, Nairobi, ex Horr Valley (K); *id. 5626*: Kenya, Mt. Kulal (K); *id. 9952*: Br. Somalia, Dunkasia (Borama) (K); *Barbey 1063*: Eritrea, Acrour (Fi, P, S, K); *id. 451*: Yemen, Jebel Bura (Br, P, K); *id. 822*: Yemen, Jebel Melhan, Okeber (Br, K, P); *Bally 11053*: Br. Somaliland, Agasur (Fi); *Benardelli-Reghini 34*: It. Somaliland, Monte Ellot; *Bourbon & Dunant s.n.* (K); *Brongniart* (cult.) *s.n.* (P); *Burger 202*: Ethiopia, Dangago (Fi, K); *id. 436*: Ethiopia, Dangago (K); *id. 2131*: Ethiopia, Kolsubi (Fi, K); *id. 3187*: Ethiopia, Harar (Fi); *Caruel s.n.*: Hort. Bot. Florence (Fi); *Cole s.n.*: Somalia, Aalyra? (K); *Collenette 231*: Somalia, Sugli (Fi, K); *Commerson s.n.*: Madagascar (Fi); *Courbon s.n.*: Ethiopia (P); *Dainelli & Marinelli 244*: Eritrea, Embaloca; *Dainelli & Marinelli 247*: Eritrea, Soira (Fi); *Decaisne s.n.*: Cult. (K); *id.* (Herbier-) *290*: Cult.? (Br); *Dedit-Franqueville s.n.*: Ethiopia (K); *Deflers 211*: Yemen, Usil, Wadi Hidjan (P); *id. 535bis*: S. Arabia, Wadi Subud (K, P); *id. 651*: Yemen, El Mekhader (N. of Ibb) (P); *Delile* (Herb. Maire, Durand & Cosson) *s.n.*: cult.? (K, P);

Donaldson Smith 65: Somalia, Berbera (BM); *Drake Brockman 192*: Somalia, Golis Range (K); *id. 95*: Ethiopia. Dire Dawa (K); *Fiori 118*: Eritrea, Acrour (Fi); *Gandoger 927*: Algeria cult.! (B, Fi, M); *Gillett 4251*: Somalia, Hargeïsa (Fi, K, P, S); *id. 5459*: Ethiopia, Kolubi (Fi, K, P); *Giugno ? s.n.*: Hort. Bot. Florence (Fi); *Glover & Gilliland 478*: Somalia, Tawar & Berde Pass (BM); *id. 541*: Somalia, Erigavo (BM, K); *Godding 12611*: Somalia (K); *Godman 44*: Somalia, Zadir & Zadona (BM); *Groszovsky 81 & 82*: Yemen, Taiz, Jebel Sabra (BM); *Guichard 198*: Hadramaut, Moola Mutar Pass (BM); *Hemming 1940*: Somalia, Erigavo (Fi, K); *id. CFH 54*: Somalia, Goze (K); *Hildebrandt 1384*: Somalia, Serrut Mts. (K); *Huibaryal? 188*: Aden (K); *Imperial Coll. Agric. Ethiopia C 49*: Dangago Mt. (K); *Ingrams 10 & 11*: S. Arabia, Wadi Hisi (BM); *Jex Blake 29, 30, 69 & 51*: Kenya, Mt. Nyiro (K); *Kerfoot 1905*: Kenya, Mt. Nyiro (K); *Lort Phillips s.n.*: Somalia (K); *id. 1384*: Somalia, Wagga Mt., Serrut Mts. (BM); *Massa 737*: Eritrea, Dorfu (Fi); *McKennon S 193*: Somalia, Surud (K); *Moony 8270*: Ethiopia, Asba Tefari (Fi, K, S); *Newbould 960*: Somalia, Ghasirh (K); *id. 3415*: Kenya, Sirwan (Fi, K, S); *Pappi 953*: Hort. Bot. Florence (Fi); *id. 2609*: Eritrea, Assaorta, Haddas (Fi); *id. 2864*: Eritrea, Assaorta, Bosco del Caribozzo (BM, Fi, K); *id. 2990*: Eritrea, Assaorta, Monte Dyot (BM, Fi, L, S, U); *id. 3524*: Eritrea, Assaorta, Halai-Majo (Fi); *id. 3752*: Eritrea, Saganeiti (Fi); *id. 5181*: Eritrea, Addas-Illalia (Fi); *id. 5245*: Eritrea, Halai (Fi); *Peck 207*: Somalia (K); *Philby 55*: Arabia, Am Amshush ravine (BM); *id. 93*: Arabia, Wadi Muhaishira, Jadaliya (BM); *id. 136*: Arabia, Arif (BM); *Persoon s.n.*: Egypt (L/901280); *Quartin, Dillon & Petit*, Herb. Drake *s.n.*: Ethiopia (P); *id. 111*: Ethiopia, Oued Jerad (BM, K, P, WAG); *Rammell 3329*: Kenya, Leroki Plateau (B, K, P); *Ricasoli s.n.*: Cult. Hort. Bot. Semphii (Fi); *id. s.n.*: Cult. Hort. Bot. Casa Bianca (Fi); *Robecchi-Brichelli 277*: Ethiopia, Harar (Fi); *Ruspoli-Da Riva 1440*: It. Somaliland, Monte Ellot (Fi); *Salt s.n.*: Ethiopia (BM); *Schweinfurth 269*: Eritrea, Taconda (K); id. *270*: Eritrea, Kohaito Plateau (K); *Scott & Britton 32*: Aden, Dhala (BM); *id. 54*: Aden, Dhala-Jebel Jihaf (BM); *Senni 241*: Ethiopia, Dire Dawa (Fi); *Simmons 53*: Somalia, Erigo (K); *Tanfani 953*: Cult. Hort. Bot. Florence (Fi); *Thomson 10*: Somalia, Sheikh (K); *Verdcourt 2268*: Kenya, Mt. Kulal (K, UPS); *id. 3625*: Kenya, Nairobi ex Mt. Nyiro (K); *Westphal & Westphal-Stevels 832, 839*: Ethiopia, Alemaya-Kulubi (WAG); *id. 1271*: Ethiopia, Asba Tefari (WAG); W.J.J.O. *De Wilde 9826*: Ethiopia, Alemaya-Dire Dawa (WAG); *id. 10991*: Ethiopia, Addis Abeba (WAG); *Williams 540*: Kenya, Nairobi Arboretum (K).

6. **Cadia rubra** R. Vig. **Fig. 2.**

Cadia rubra R. Viguier in Not. Syst. 14: 185. 1950–1952.

Shrub 2–3 m. *Branchlets* finely puberulous. *Leaves*: rachis (2–)4–8 cm, puberulous, grooved above. *Leaflets* 7–11, 2–7½ cm long and ½–2 cm wide, alternate, lanceolate, coriaceous, shining olive green and glabrous above, dull olive green and subglabrous below, top subacuminate, subemarginate; petiolule very short (1 mm), thickened, darker brown than the rachis. *Stipules* minute (½ mm), pubescent. *Flowers* in 1–2-flowered racemes, perhaps pendent; pedicel 1½–2 cm, jointed ½ cm below the calyx. *Bracts* minute, pubescent, accompanied by a perule at either side. *Calyx* 5-toothed, up to 1 cm long, teeth ⅓ as long as the calyx, reddish. *Petals* 5, equal, only seen in bud. *Stamens* 10, gibbous near the base (shape of callosity in young bud undecided). *Ovary* linear, shortly stipitate, style short (in bud). *Pod* 2-valved, 1-chambered, ± 7 cm long, smooth, glossy, 2–5 seeded. Seed oval, laterally compressed, dark red, ± 7 mm long.
Type: Perrier 1319 (P).
Distribution: see map 2; Ankara plateau, Madagascar (46°E, 17°S).

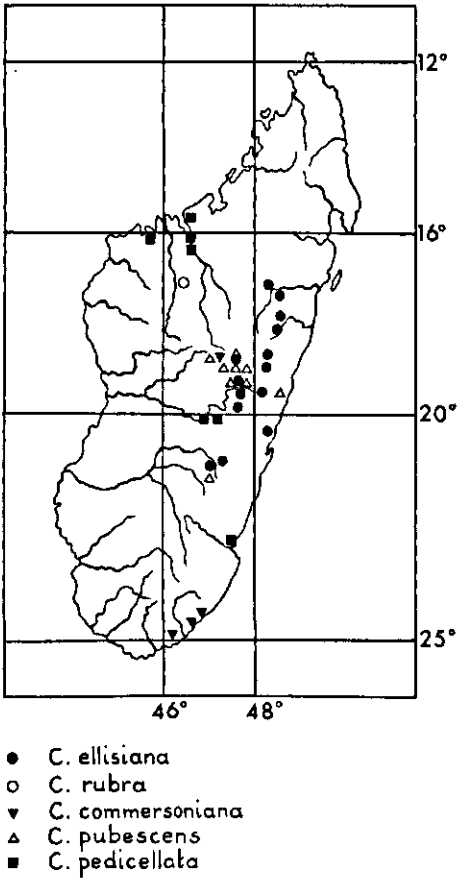
MADAGASCAR: *Perrier de la Bathie 1319*, Ankara (P).

Notes. Only one fruiting specimen (with young flower-buds) known. It is not possible to decide whether *C. rubra* Vig. is conspecific with *C. ellisiana* Bak. or not. Provisionally these species are kept apart but additional specimens are needed for a final conclusion. The type specimen of *C. rubra* was collected on Jurassic calcareous soil, which is not mentioned for any of the specimens of *C. ellisiana.*

REJECTED SPECIES OR NAMES

Cadia anomala Vatke

Baillon *in* Adansonia 9: 293. 1870; Benth. & Hooker, Gen. Pl. 1: 455. 1865; Baker *in* Oliver, Fl. Trop. Afr. 2: 253. 1871; Vatke *in* Linnaea 43: 337. 1880; Taubert *in* Engl., Pfl. fam. 3 (3): 333, 348. 1894; Harms *in* Engl. Bot. Jahrb. 33: 162. 1902; Drake *in* Grandidier, Hist. Pl. Madag. 30.1: 97, 190 & 2 pl. 43.



Map 2. Geographical distribution of the 5 Madagascar *Cadia* species.

1902; Harms *in* Engl., Pfl. welt Afr. 9, 3 (1): 522. 1915; Dumaz le Grand *in* Bull. Soc. Bot. Fr. 99: 313. 1953.

Cadia anomala Vatke (1880), a record for Madagascar was placed into a new genus: *Pseudocadia* Harms (*Ps. anomala* (Vatke) Harms) in 1902. TAUBERT found that ?*Sophora zambesiaca* Baker belonged in *Pseudocadia* and so made the new combination *Ps. zambesiaca* (Bak.) Harms. Many herbarium specimens were accordingly labeled.

Pseudocadia, however, was rejected in favour of the earliest name for the genus, viz. *Xanthocercis* Baillon by Mlle DUMAZ LE GRAND (1952). The genus *Xanthocercis* appeared to cover two species:

X. madagascariensis Baill. (= *Cadia anomala* Vatke = *Pseudocadia anomala* (Vatke) Harms). N, NE Madagascar.

X. zambesiaca (Bak.) Dumaz le Grand (= ?*Sophora zambesiaca* Bak. = *Pseudocadia zambesiaca* (Bak.) Harms. Mozambique, Nyassaland, Rhodesia, N Transvaal.

Xanthocercis differs from *Cadia* by being a tree, the inflorescences bear many little not-pendent flowers, the standard is broader than the other petals; the petals have a villous midrib, the calyx is entire or nearly so. Harms judged that the resemblance of the ovaries indicated a close affinity between *Cadia* and "*Pseudocadia*", but like Vatke he was not familiar with the ripe fruit of *Xanthocercis*, a one- or few-seeded drupe, which sets *Xanthocercis* clearly apart.

Cadia catati Drake

Cadia catati Drake *in* Grandidier, Hist. Pl. Madag. 30. 1: 96. 1902.

In 1902 DRAKE DEL CASTILLO based another species of *Cadia* on the specimen Catat 4313 of Madagascar. This belongs beyond any doubt in the earlier described *C. commersoniana*. This was also found by PELTIER (Paris Herbarium) who will publish this on occasion of his treatment of *Leguminosae* in the Flore de Madagascar. Catat 4313 has more or less obovate, only one one-flowered raceme and larger bracts, but these differences are caused by the growing conditions.

? *Cadia baroni Drake*

Cadia baroni Drake del Castillo *in* Grandidier, Hist. Fl. Madag. 30. 1: 97. 1902; Viguier *in* Not. Syst. 14: 3. 1951.

In 1902 DRAKE published a description of a new *Cadia* species, *C. baroni* Drake, based on the sheets of Baron 6321 (type at K, isotype at P). Only flowers and fruits were present.

VIGUIER attached a note to the sheet, mentioning that the specimen resembled another species belonging in a new genus *Neoharmsia* R. Vig. *Neoharmsia* was based on a single species, *N. madagascariensis* R. Vig., published posthumously (1951). *C. baroni* Drake has a papilionaceous flower, the standard being outmost and larger than the other petals.

Peltier kindly informed me (in 1967) that in his treatment of Madagascar *Leguminosae*, and after studying more material, he concluded that *C. baroni* indeed belongs in *Neoharmsia*, and Peltier intends to publish the necessary new combination.

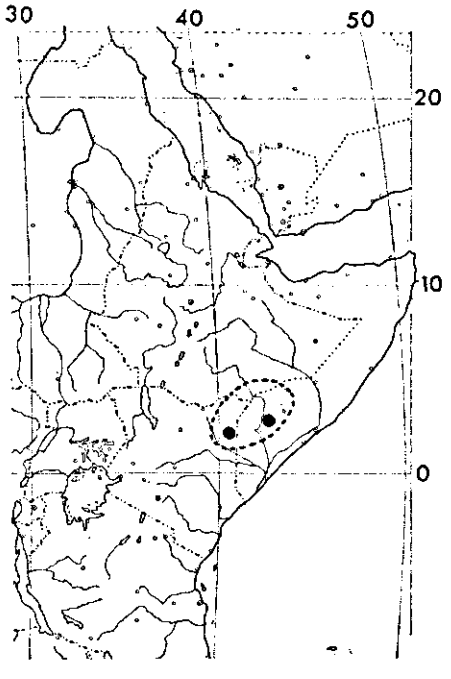
THE GENUS DICRAEOPETALUM HARMS

In 1902 HARMS described a new *Leguminosae*-genus, consisting of one species: *Dicraeopetalum stipulare* Harms. The tree has its young (dwarf-)branchlets crowded with persistent stipules, bearing 2–3 terminal leaves. The branches are deep-brown coloured and rather stout.

So far the tree seems to be very rare, at least confined to a small area. Only two specimens have been mentioned in literature, a third one was secured in 1953, when GILLETT collected a flower- and fruitless specimen in Sable (N. Kenya). He remarks: "–. . . . this is a peculiar tree which I saw only once and which requires hunting for again".

The type specimen Ellenbeck 1108 (Adjabo-plateau, Somalia) was (most probably) destroyed at Berlin; Paoli 870 (Degder Hill, Somalia) is proposed by the Kew Herbarium as the neotype.

HARMS referred *Dicraeopetalum* to *Papilionaceae-Sophoreae* (see also above, final note to *Cadia* on the systematical place) because of its free stamens in the ± regular flowers and its affinity to *Cadia* Forsk. (differing by its small calyx-



Map 3. Geographical distribution of *Dicraeopetalum stipulare* Harms in East Africa.

dents, bilobed petals, and few-ovuled ovary) and to *Sweetia* Spreng. (small calyx-dents differing from *Sweetia*-sepals).

Dicraeopetalum stipulare Harms **Fig. 5.**

Harms, Engl. Bot. Jahrb. 33: 161. 1902; Taubert *in* Engl. & Drude, Veg. d. Erde 9: 3 (1): 524. 1915; Baker, Leg. Trop. Afr. 2: 604. 1926; Cufodontis *in* Bull. Jard. Bot. Brux. 25: 226. 1955; Hutchinson, Gen. Fl. Pl. 1: 315. 1964.

Tree, 5–12 m. *Branches* stout, dark-brown coloured, bark fissured. *Branchlets* short, thickened, few leaved, leaf-bases clear, ± 1 cm at the top of the leaflet crowded with stipules. *Leaves* imparipinnate, 9–11 leaflets, almost in pairs. Rachis thinly pubescent, (3–)5–8 cm. *Leaflets* (5–)9–35 mm long, 7–18 mm wide, obovate-elliptic, top slightly emarginate, pedicels 1–3 mm, pubescent. *Stipules* very persistent, 2–4 mm, greyish-silkenly pubescent. *Flowers* (teste HARMS) terminal in multiflowered racemes, yellowish pubescent, pedicel 10–13 mm long, bract lanceolate; situated 1–4 mm above the base of the pedicel. *Calyx* cupulate, 5-toothed, pubescent, ½ cm long, lanceolate teeth half downward base slightly thickened, (hypanthium?). *Petals* 5, subequal, oblong-obovate, 5–6 mm, top emarginate or shortly bilobed, base shortly ungulate. *Stamens* 10, filaments filiform; somewhat exceeding the petals, anthers small, ovate, dorsi- or basifix. *Ovary* linear, shortly stipitate, densely villose; style short, thickened, glabrous; stigma small, capitellate; ovules 1–2. *Pod* 1–2-seeded, somewhat recurved, flat, inflated at the places where seeds ripen. Seeds somewhat rounded; laterally compressed but not flat, emarginate at the hilum.

Holotype: Ellenbeck 1108, Adjabo-plateau, Somalia.

Neotype: Paoli 870, Degder Hill, Somalia.

Distribution: see map 3; Somalia, N Kenya, Ethiopia.

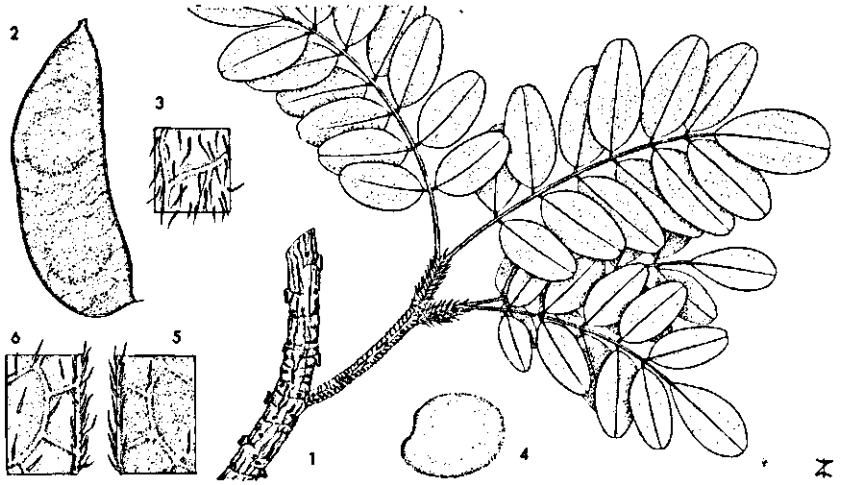


Fig. 5. *Dicraeopetalum stipulare* HARMS – 1: branch (× ½); 2: pod (× 1); 3: pod, detail of surface (× 10); 4: seed (× 2); 5: part of leaflet, upper surface (× 10); 6: ditto, lower surface (× 10); 1, 5, 6: GILLETT 13373 (K); 2–4: PAOLI 870 (K).

Ecology: single trees in open scrub vegetation, near arable area, about 1000 m. Vernacular name: Hangelolo.

SPECIMENS EXAMINED: *Gillett 13373*, N Kenya, Sable (Fi, K); *Paoli 870*, Somalia, Degder Hill (Fi, K).

THE GENUS PLATYCELYPHIUM HARMS

Platycelyphium, a monotypic genus, was founded by HARMS, on material collected by ENGLER (Engler no. 1661-Oct. 1902) in Tanganyika. HARMS published an excellent description of *P. cyananthum*. However, ENGLER had previously described a specimen collected during the same expedition as *Commiphora voënsis* Engl. This name was based on sterile material (Engler no. 1958–Oct. 1902) and was proved to be conspecific with *P. cyananthum* Harms by H. WILD, when he revised the genus *Commiphora* (1959), a conclusion supported by J. P. M. BRENAN and J. B. GILLETT (l.c.). Engler's description antedated the publication by Harms. A new combination was necessary! *Platycelyphium voënsis* (Engl.) Wild. This epithet, however, has to be put into the neutre form. The right orthography, applied to this species as prescribed in the Int. Code of Bot. Nomenclature, article 73, is:

Platycelyphium voënse (Engl.) Wild. Engler chose this epithet because Voi is the locus classicus of *P. voënse* (Engl.) Wild. The tree is endemic in East Africa (cf. Brenan).

Platycelyphium voënse (Engl.) Wild **Fig. 6.**

Engler, Engl. Bot. Jahrb. 34: 312. 1904; Harms, Engl. Bot. Jahrb. 37: 74. 1905; Engler *in* Pfl. fam. Nachträge 2/3 zum 2–4ten Teil, 159. 1908; Taubert *in* Veg. der Erde 9, 3 (1): 524. 1915; Baker, Legum. Trop. Afr. 2: 601. 1926; Lemée, Dict. Descr. Syn. 5: 383. 1934; Cufodontis in Bull. Jard. Bot. Brux. 25: 226. 1955; Wild in Bol. Soc. Brot. 33: 76. 1959; Brenan in Webbia 19: 545–578. 1965.

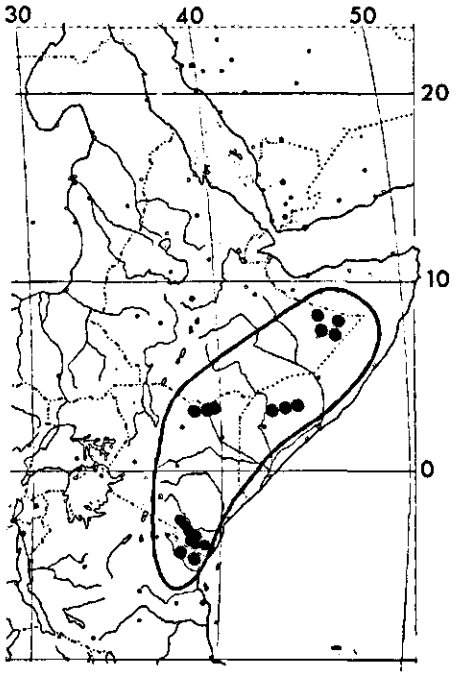
Tree or shrub, 4 m (Somalia) – 8 m (Kenya, Tanzania). *Branches* ascending occasionally. Bark brownish to pale grey, at the ending of the branches yellowish brown. *Leaves* appearing during flowering, and fully expanded when fruits are set; imparipinnate, rachis (0)–4–15 cm, slightly pubescent. *Leaflets* (1)–3–7, 2–8 cm long, 1½–5 cm wide, ovate, acuminate, more or less opposite. *Flowers* about 8–12 in racemes appearing on short, young branchlets. Pedicels 1–3 cm, slightly pubescent. *Bracts* small, linear, ± 1 mm, at the base of the pedicels. *Calyx* campanulate, persistent, 5-lobed, puberulous, margin pubescent, purplish green to nearly black. *Corolla*: 5 petals, free, clawed, veined, standard ± 15 mm long and slightly less wide, broadly ovate, top emarginate. Petals of wing and keel almost identical, on the interior surface with a narrow, lengthwise ridglet over ± half its length (see figure), 14 mm long and 5 mm wide. *Stamens* 10, free, ± 11 mm long, filaments placed in dentate margin of receptacle. *Anthers* basifix to versatile, bright to orange yellow. *Ovary* substipitate, hairy, 11 mm

Fig. 6. *Platycelyphium voënse* (ENGL.) WILD – 1: flowering branch (× ½); 2: standard; 3: wing; 4: keel, inner side (× 1); 5: anther (× 3); 6: ovary (× 3); 7: fruiting branch (× ½); 8: seed (× 1); 1–6: GILLETT 13773 (BM); 7: GLOVER & GILLILAND 310 (BM); 8: VERDCOURT 3189 (K).

long, slender, style 5 mm, recurved, stigma the ending of the style. *Pod* ovate-elliptic, puberulous, strongly laterally compressed and distinctly veined, top slightly emarginate with remainder of style, 5–6 cm long, 2½ cm wide. *Seeds*: one per pod, laterally compressed, ovate, recurved at the navel, 5 mm long and 3 mm wide.

Distribution: see map 4; Endemic to East Africa (Kenya, Tanzania, and Somalia).

Ecology: Open vegetation, altitude 300–1000 m. Scattered, never alone in dense bushes, in *Acacia-Commiphora* grass-steppes, uncommon till rather dominant with for instance *Terminalia orbicularis, Sterculia, Grewia villosa, Strychnos, Dichrostachys*. On plains, red sandy loams, whitish alluvial soil or granite sands. The flowers "smell funny like some of the houses at Kew" (teste PEGGY E. ELLIS, Ph. D.). It seems (dried specimens) that the lighter colour of the style contrasts with the ovary. The hairiness of the herbaceous parts of the tree varies from a tawny short-velvety pubescent (in the inflorescence and



Map 4. Geographical distribution of *Platycelyphium voënse* (Engl.) Wild in East Africa.

on the (young) leaf-rachis and petiolules e.g. Bally 12171 to a nearly complete glabrousness (e.g. P. E. Ellis 104; Paoli c.s. 922). All intermediates appear to be present, and with age the specimens are more or less glabrescent. The leaves are reported to be eaten by goats but not by camels (e.g. Gillett 12640).
Holotype: Engler no. 1958, Tanganyika. Taïta region, Voi; (holotype † at B; K, one leaf removed from holotype "Commiphora voënsis").
Vernacular names: Saban sabadu, Chowder (Somalia), Saban sabdo (Kenya).

SPECIMENS EXAMINED: *Bally 8660*, Kenya, Voi (Fi, K); *id.* 12171, Kenya, Tsavo Park (K); *Burtt 5330*, Tanganyika, Mkomazi Valley (BM); *Colin Barnes s.n.*, Ethiopia, Wardere (Fi); *Drummond & Hemsley 4132*, Kenya, Taru, Samburu (Fi, K); *Engler 1958*, Kenya, Voi (K); *Gillett 12640*, Kenya, Dandu (Fi); *id. 13773*, Kenya, Sololo (BM, Fi, St, UPS); *id. 13990*, Kenya, Moyale (FI); *Glover & Gilliland 310*, Somalia, Wardere (BM); *id. 1050*, Ethiopia, Domo (K); *Paoli 904*, Somalia, Oneiatta (Fi); *id. 922*, Somalia, Addan Caboba (Fi); *id. 1161*, Somalia, Saheroi (Fi); *Peggy E. Ellis 104*, Ethiopia, Ogaden (K); *Puccioni & Stefanini 337 & 389*, Somalia, Iscia Baidoa (Fi); *Ruspoli & Da Riva 568*, Ethiopia, Kalalao (Fi); *Verdcourt 3189*, Kenya, Tsavo Park (K); *id. 3870 A*, Kenya, Mtito Andei (K); *Vesey-Fitzgerald 48*, Kenya, Voi (K).

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