

## Checklist of the Caesalpinioideae (Leguminosae) of Equatorial Guinea (Annobón, Bioko and Río Muni)

MANUEL DE LA ESTRELLA\*, FRANCISCO J. CABEZAS, CARLOS AEDO and MAURICIO VELAYOS

*Real Jardín Botánico de Madrid, Pl. Murillo 2, 28014-Madrid, Spain*

Received May 2005; accepted for publication January 2006

This study provides a checklist of the Caesalpinioideae (Leguminosae) present in Equatorial Guinea, comprising 52 genera and 124 taxa. Seven species are known from Annobón, 33 from Bioko and 109 from Río Muni. The best represented genus is *Senna* with eight species. In addition, bibliographic references for Caesalpinioideae (Leguminosae) from Equatorial Guinea have been gathered and checked. Fourteen species are included based on literature records, because their distribution ranges suggest they may occur in Equatorial Guinea, 11 introduced species could be naturalized, and 45 taxa are recorded for the first time from the country. This represents an increase of over 35% in the floristic knowledge of Caesalpinioideae from Equatorial Guinea. A statistical summary is presented at the end of the checklist. © 2006 The Linnean Society of London, *Botanical Journal of the Linnean Society*, 2006, 151, 541–562.

ADDITIONAL KEYWORDS: biodiversity – floristic – Legumes – rain forest – tropical Africa.

### INTRODUCTION

Leguminosae is the third largest plant family in the world, comprising about 730 genera and *c.* 19 300 species. Considering the number of species, the Caesalpinioideae with *c.* 2250–3000 species in *c.* 170 genera is the second largest of the three subfamilies in which the legume family is usually subdivided. The Caesalpinioideae are especially abundant in South America, tropical Africa and South-east Asia (Heywood, 1978; Polhill & Raven, 1981). Many of the tree species in the African forests belong to this subfamily and it is the most important group in the lowland evergreen rain forest (Wieringa, 1999).

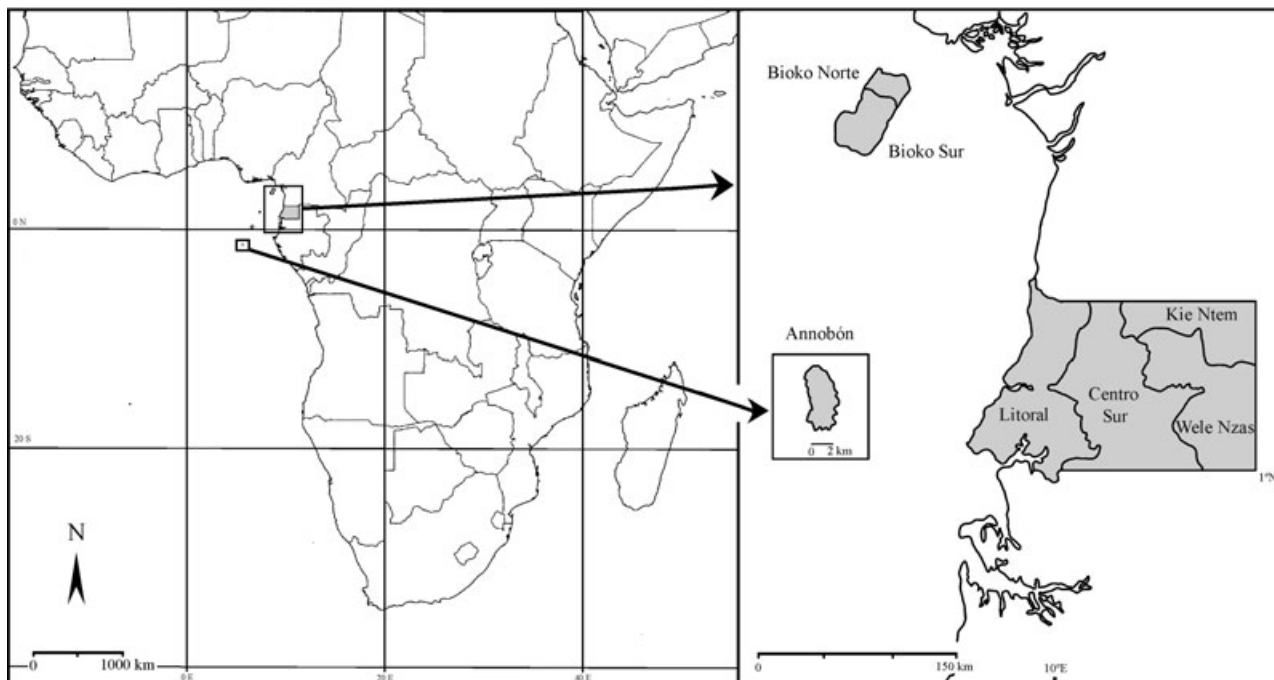
Important works on Caesalpinioideae of tropical West Africa include those of Oliver (1871) and Keay (1958). The most recent works on Caesalpinioideae from the region are those by Aubréville (1968, 1970). Other works that include this region are restricted to just a few Caesalpinioideae genera (Breteler, 1999; Wieringa, 1999).

Equatorial Guinea is located in western Central Africa. The insular region includes two islands in the Gulf of Guinea: Bioko (2017 km<sup>2</sup>), *c.* 32 km from the Cameroon coast, and Annobón (17 km<sup>2</sup>), *c.* 400 km from Gabon. The continental mainland, Río Muni (26 000 km<sup>2</sup>), is located between 1°N and 2°N latitude (Fig. 1). A compilation of data on location, phytogeography, climate and hydrogeography can be found in Guinea (1946), De Castro & De la Calle (1985), Pérez del Val (1993) or Heras *et al.* (2002). General information is also available over the internet at <http://www.floradeguinea.com/guinea.php>.

A complete account of the Caesalpinioideae (Leguminosae) of Equatorial Guinea has never been published. Although the subfamily was included in the general vascular plant catalogue of Guinea (1946), he added plants that he presumed to be present in Equatorial Guinea.

Over the last 23 years the Real Jardín Botánico has carried out intensive fieldwork in both Bioko and Río Muni. Studies of these new collections and the available historical specimens have permitted the description of new taxa and the preparation of checklists for several groups (Herrero *et al.*, 2001; Velayos, Aedo & Pérez Viso, 2001; Fero *et al.*, 2003; Parmentier &

\*Corresponding author. E-mail: mestrella@ma-rjb.csic.es



**Figure 1.** Location of Equatorial Guinea in Africa and administrative provinces.

Geerinck, 2003; Cabezas, Aedo & Velayos, 2004; Cabezas *et al.*, 2005; Estrella *et al.*, 2005). This work has been complemented with studies on the inselbergs vegetation carried out by botanists from the Université Libre de Bruxelles (Lejoly & Lisowski, 1999; Parmentier, 2001, 2003; Parmentier, Lejoly & Nguema, 2001).

The aim of this work is to update the catalogue of Caesalpinioideae for the whole of Equatorial Guinea including both bibliographic records and herbarium material. This checklist is a first step towards a modern Flora of Equatorial Guinea.

#### MATERIAL AND METHODS

The checklist is based primarily on herbarium specimens. We have studied more than 300 specimens from BM, BRLU, K, LISC, LISU, MA and WAG including both the historic collections made during British expeditions by Barter, Mann, Tessmann and Vogel, and modern collections obtained by both Belgian and Spanish expeditions. For comparative purposes some specimens from neighbouring countries were also studied.

Bibliographic references for the legumes of Equatorial Guinea have also been checked (Aedo, Velayos & Tellería, 1999). Fourteen species are included based purely on literature records, because their distribution areas make their presence in Equatorial Guinea probable. They are quoted with the number between

brackets. Eleven introduced species are presented in the checklist; they are marked with an asterisk (\*) before the accepted name.

The locality names used in this checklist have been brought up-to-date following Velayos *et al.* (2001: 147–149); this source also contains a gazetteer including geographical coordinates.

The checklist is ordered alphabetically by genera and species, with accepted names given in bold. Generic circumscription is in accordance with Lock (1989). We used monographs or regional works such as those by Breteler (1999) or Wieringa (1999), when they were available.

Under each accepted name a list of synonyms found in the literature and used in previous reports is included; these are given in italics. Specimens are ordered alphabetically by the different regions and provinces: Annobón, Bioko (provinces of Bioko Norte and Bioko Sur) and Río Muni (provinces of Centro Sur, Kie Ntem, Litoral and Wele Nzas). A description of geographical distribution follows each species, including worldwide circumscription (e.g. palaeotropical) and its distribution in Africa in accordance with Polhill (1982: 2), including a list of those African countries where the species has been previously reported.

Previous bibliographical records of each taxon are grouped under the three regions mentioned above. When the taxon was reported under a different name (synonym), it is indicated as, e.g. Guinea (1946): 294,

sub *Macrolobium palisoti*. In the case of a misidentification, the author's name is included following the cited species (Oliver, 1871: 312, sub *Crudia senegalensis* Planch. ex Benth.). Doubtful records are placed at the end of the checklist, followed by an Appendix which includes an index to scientific names and a list of collections.

## THE CHECKLIST

### AZFELIA SM.

#### 1. *Azelia africana* Sm. ex Pers.

Litoral: Corisco, camino hacia el N a 100 m de la casa de Yniestrosa, *Cabezas, Tellería & Velayos 9929* (MA); Ayamiken, *Lisowski M-928* (BRLU).

Previously reported from Río Muni (Guinea, 1946: 141, 144, 154 and 293). Distributed in tropical Africa, this species has been reported from Benin, Burkina Faso, Cameroon, Central African Republic, Chad, D.R. Congo, Ghana, Guinea, Guinea Bissau, Ivory Coast, Mali, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo and Uganda (Lock, 1989: 45).

#### 2. *Azelia bella* Harms

Bioko Sur: Luba–Malabo, km 2, *Carvalho 2991* (BM, MA). Litoral: Bata–Asonga–Ngoló, km 2, *Carvalho 5157* (MA, WAG), *5167* (MA, WAG), Bata–Niefang, km 46–47, *Carvalho 5602* (MA, WAG).

Not previously reported from Equatorial Guinea. This species is distributed in West and Central Africa, and has been reported from Angola, Cameroon, D.R. Congo, Gabon, Ghana, Guinea, Ivory Coast, Liberia and Nigeria (Lock, 1989: 45).

#### 3. *Azelia bipindensis* Harms

Litoral: Mitora, Mbini, *Obama 846* (WAG). Wele Nzaz: Nkolentagan, *Tessmann 376* (K).

Not previously reported from Equatorial Guinea. This species is distributed in tropical Africa, reported from Angola, Cameroon, Central African Republic, D.R. Congo, Gabon, Nigeria and Uganda (Lock, 1989: 45).

#### 4. *Azelia pachyloba* Harms

Bioko Sur: finca Puente, *Guinea 1740* (MA). Centro Sur: P.N. Monte Alén, transect de Monte Chocolate, *Lejoly 95T/162* (BRLU).

Previously reported from Río Muni (Guinea, 1946: 145, 154). This species is distributed in West, Central and South-Central Africa, it has been reported from Angola, Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 45).

### ANTHONOTHA P. BEAUV.

#### 5. *Anthonotha acuminata* (De Wild.) J. Léonard

Río Muni: *Tessmann 815* (K).

Not previously reported from Equatorial Guinea. Distributed in Central Africa, this species has been reported from D.R. Congo and Gabon (Lock, 1989: 1).

#### 6. *Anthonotha fragrans* (Baker f.) Exell & Hillc.

Centro Sur: P.N. Monte Alén, *Lisowski M-1428* (BRLU).

Not previously reported from Equatorial Guinea. This species is distributed in West, Central and South-Central Africa, and has been reported from Angola, Cameroon, D.R. Congo, Gabon, Ghana, Ivory Coast, Liberia, Nigeria and Sierra Leone (Lock, 1989: 2).

#### 7. *Anthonotha lamprophylla* (Harms) J. Léonard

Centro Sur: P.N. Monte Alén, 2 km au NE du site de traversée du río Uolo, *Senterre, Obiang & Ngomo 1847* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon and Nigeria (Lock, 1989: 2).

#### 8. *Anthonotha macrophylla* P. Beauv.

*Macrolobium macrophyllum* (P. Beauv.) Macbride  
*Macrolobium palisoti* Benth.

Bioko: *Barter s.n.* (K); *Mann s.n.* (K), *Mann 259* (K). Bioko Norte: Malabo–aeropuerto, estrada km 6, *Carvalho 2086* (MA). Bioko Sur: Moka–Luba–Malabo, cerca do rio Tiburones, *Carvalho 2490* (BM, K, LISC, MA, WAG); entre Luba y Malabo, a unos 15 km de Luba, *Carvalho, Fernández Casas 10278, Regueiro & Tellería* (K, MA); Ureca, *Guinea 2490* (MA), playa de Ureca, *Guinea 2506* (MA); Boloko, *Lope del Val s.n.* (MA-710759). Centro Sur: Bata–Niefang, km 40, *Pérez Viso 2719* (MA), P.N. Monte Alén, Esamalang, *Pérez Viso 3306* (MA); P.N. Monte Alén, Enkumekiem, *Velayos & Pérez Viso 9313* (MA). Litoral: Bata–Pembe–Entuba, km 27–28, area de poblação de Entuba a San Joaquin de Ndyjacón, *Carvalho 5237* (MA, WAG); Bata, Miboman, km 27 carretera Bata–Movo, *Castelo, Cabeza & Juste s.n.* (MA-319774). Wele Nzaz: Bata–Niefang, Eviam, *Pérez Viso 2585* (MA); Nkolentagan, *Tessmann 4* (K). Unknown locality: *Guinea 1176* (MA), *1177* (MA); *Lope del Val s.n.* (MA-710760, MA-710761, MA-710762).

Previously reported from Bioko (Oliver, 1871: 297–298; Hutchinson, 1928: 347, sub *Macrolobium macrophyllum*; Guinea, 1946: 294, sub *M. palisoti*; Keay, 1958: 473; Exell, 1973a: 356) and from Río Muni (Guinea, 1946: 144, 157, sub *M. palisoti*; Parmentier *et al.*, 2001: 363, Senterre, 2001: 1093). This species is distributed in West, Central and South-Central Africa, and has been reported from Angola, Cameroon, D.R. Congo, Gabon, Ghana, Guinea, Ivory Coast, Liberia, Mali, Nigeria and Sierra Leone (Lock, 1989: 2).

#### 9. *Anthonotha pynaertii* (De Wild.) Exell & Hillc.

Litoral: Miwala, a 5 km de Cogo, *Pérez Viso 3937* (MA).

Not previously reported from Equatorial Guinea. This species is distributed in Central and South-Central Africa and has been reported from Angola, Burundi, Cameroon, D.R. Congo and Gabon (Lock, 1989: 3).

10. *Anthothena stipulacea* (Benth.) J. Léonard  
Litoral: Bata–Sendje, estrada km 27, *Carvalho 6078* (MA), 6394 (MA).

Not previously reported from Equatorial Guinea. This Central African species has been reported from neighbouring Gabon (Aubréville, 1968: 201).

#### APHANOCALYX OLIV.

(11). *Aphanocalyx cynometroides* Oliv.

Litoral: Mount John, river Konqui, *Mann 1810* (K and BR: not seen).

Previously reported from Río Muni (Wieringa, 1999: 123), this species is distributed in Central Africa and also reported from neighbouring Cameroon, Congo and Gabon (Wieringa, 1999: 123).

12. *Aphanocalyx heitzii* (Pellegr.) Wieringa  
Centro Sur: P.N. Monte Alén, cerca de Misergue, alrededores del río Laña, *Pérez Viso 191* (MA).

Previously reported from Río Muni (Wieringa, 1999: 183). This species has also been reported from Gabon (Wieringa, 1999: 183).

13. *Aphanocalyx ledermannii* (Harms) Wieringa  
Litoral: Ndote Sud, près du village Etembue, *Lisowski M-511* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in Central Africa, this species has been reported from Cameroon, Congo and Gabon (Wieringa, 1999: 135).

14. *Aphanocalyx margininervatus* J. Léonard  
Centro Sur: P.N. Monte Alén, transect de Monte Chocolate, *Lejoly 95T/L3.A24* (BRLU).

Previously reported from Río Muni (Wieringa, 1999: 138–139). This Central African species has also been reported from neighbouring Cameroon and Gabon (Wieringa, 1999: 138–139).

15. *Aphanocalyx microphyllus* (Harms) Wieringa  
ssp. *microphyllus*  
Centro Sur: P.N. Monte Alén, alrededores del lago Atok, *Pérez Viso 21* (MA). Litoral: Bata–Sendje, km 24, *Carvalho 6405* (MA), 6526 (MA).

Previously reported from Río Muni (Wieringa, 1999: 146, Parmentier *et al.*, 2001: 344). This species is distributed in Central and South-Central Africa and has been reported from Angola, Cameroon, Congo and Gabon (Wieringa, 1999: 145–148).

#### BAIKIAEA BENTH.

16. *Baikiaea insignis* Benth.

Bioko: *Mann 2342* (K). Bioko Norte: Malabo–Riaba, estrada km 13, *Carvalho 2879* (MA), Malabo–Baney, km 12, *Carvalho 3783* (K, MA).

Previously reported from Bioko (Oliver, 1871: 308–309; Hutchinson, 1928: 336; Guinea, 1946: 293; Keay, 1958: 456; Exell, 1973a: 356), Río Muni (Guinea, 1946:

144) and from Equatorial Guinea (Guinea, 1946: 293). This species is distributed in tropical Africa and has been introduced in Asia; it has been reported from Angola, Cameroon, Congo, D.R. Congo, Gabon, Nigeria, Tanzania and Uganda (Lock, 1989: 46).

17. *Baikiaea robynsii* Ghesq. ex Laing  
Litoral: río Uele, *Guinea 46–207* (MA), 47 (MA); district Mbini, près du village de Sendje, *Lisowski M-584* (BRLU).

Previously reported from Equatorial Guinea (Aubréville, 1968: 178). Distributed in Central Africa, this species has also been reported from D.R. Congo and Gabon (Lock, 1989: 46).

#### BAUHINIA L.

18. (\*) *Bauhinia monandra* Kurz

Centro Sur: Evinayong, *Guinea 289* (MA).

Not previously reported from Equatorial Guinea. This species is originally from Asia (Vidigal, 2002: 40), and it has been frequently introduced throughout the tropical countries for ornamental purposes. In Africa it has been reported from Angola, Burundi, D.R. Congo, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone, Somalia, Tanzania and Zambia (Lock, 1989: 42).

#### BERLINIA SOL. EX HOOK.F.

19. *Berlinia auriculata* Benth.

Litoral: Corisco, *Pérez Viso 1874* (MA), des embocadura de Río Campo, *Pérez Viso 2172* (MA).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon and Nigeria (Lock, 1989: 4).

20. *Berlinia bracteosa* Benth.

Bioko: *Mann 1434* (K). Bioko Norte: Malabo–Rebola, km 8, *Carvalho 2939* (K, MA), Malabo–Cupapa, km 15–16, *Carvalho 3379* (K, MA); finca de Bonyoma, *Nosti 923* (MA). Bioko Sur: Luba–Malabo km 2, *Carvalho 2851* (BM, K, MA, WAG). Centro Sur: Evinanyong, *Guinea 409* (MA), 412 (MA). Litoral: Bata–Cogo, km 54, Binguro, *Pérez Viso 2889* (MA); près de la frontière gabonaise, chantier forestier à l'est de Cogo, *McPherson 14021* (WAG).

Previously reported from Bioko (Oliver, 1871: 294–295; Hutchinson, 1928: 343; Guinea, 1946: 294; Keay, 1958: 470; Exell, 1973a: 356; Fernández Casas, 1992: 60) and from Río Muni (Guinea, 1946: 141, 144 and 294; Senterre, 2001: 1091). This species is distributed in West, Central and South-Central Africa, and has been reported from Angola, Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 4).

21. *Berlinia bruneelii* (De Wild.) Torre & Hille.

Wele Nzas: Nkolentangan, *Tessmann 333* (K). Río Muni: *Tessmann 950* (K).

Not previously reported from Equatorial Guinea. This species has been reported previously from Angola (Lock, 1989: 4).

22. *Berlinia confusa* Hoyle

*Berlinia acuminata* Sol. ex Hook.f. pro parte  
Litoral: Bata–Utonde, estrada km 21–22, area de  
poblação de Ebeevang, *Carvalho 4731* (MA).

Previously reported from Río Muni (Guinea, 1946: 144 and 157, sub *Berlinia acuminata*) and from Equatorial Guinea (Guinea, 1946: 294, sub *B. acuminata*). Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon, Ivory Coast, Liberia, Nigeria and Sierra Leone (Lock, 1989: 4).

23. *Berlinia congolensis* (Baker f.) Keay

Litoral: Bata–Sendje, estrada km 24, *Carvalho 6317* (MA).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Angola, Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 4).

24. *Berlinia grandiflora* (J. Vahl) Hutch. & Dalziel  
Centro Sur: Bata-Mongo-Nosok, entre Mongo y Nosok, *Carvalho 5065* (MA). Litoral: Bata–Sendje, estrada km 18, *Carvalho 6336* (MA).

Not previously reported from Equatorial Guinea. This species is distributed in West, Central and South-Central Africa, and has been reported from Angola, Benin, Burkina Faso, Cameroon, Central African Republic, D.R. Congo, Ghana, Guinea, Ivory Coast, Mali, Nigeria, Sierra Leone and Togo (Lock, 1989: 5).

**BIKINIA WIERINGA**

25. *Bikinia grisea* Wieringa

Wele Nzaz: P.N. Nsork, Obamicu, *Nguema, Esono & Lejoly 239* (BRLU).

Previously reported from Río Muni. This Central African species has also been reported from neighbouring Gabon (Wieringa, 1999: 222).

26. *Bikinia le-testui* (Pellegr.) Wieringa ssp. *le-testui*

Monopetalanthus *le-testui* Pellegr.

Centro Sur: P.N. Monte Alén, 8.5 km à l'Est de la cabaña de Mosumo, *Senterre & Obiang 4017* (BRLU). Litoral: Bata–Bolondo, km 22–23, *Carvalho 5265* (MA).

Previously reported from Río Muni (Wieringa, 1999: 227–229; Senterre, 2001: 1091, sub *Monopetalanthus le-testui*; Senterre, Lejoly & Sonké, 2004: 503, sub *M. le-testui*). This Central African species has also been reported from neighbouring Cameroon and Gabon (Wieringa, 1999: 227–229).

27. *Bikinia pellegrinii* (A. Chev.) Wieringa

Centro Sur: Monte Alén, Moka, *Wilks 3523* (BRLU).

Previously reported from Río Muni (Wieringa, 1999: 239–240). Distributed in Central Africa, this species

has also been reported from Cameroon, Congo and Gabon (Wieringa, 1999: 239–240).

**BRACHYSTEGIA BENTH.**

(28). *Brachystegia cynometroides* Harms

Previously reported from Río Muni (Guinea, 1946: 145). We have not found any herbarium material of *B. cynometroides* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species has only been reported from Cameroon (Aubréville, 1970: 262, Lock, 1989: 6), but searching through the W3Tropicos database by the Missouri Botanical Garden (<http://mobot.mobot.org/W3T/Search/vast.html>), we also found one specimen from Gabon. We conclude that the distribution range of this species suggests it may occur also in Equatorial Guinea.

29. *Brachystegia mildbraedii* Harms

Litoral: Okorobikó, mountains near river Uele, *Sabater Pí s.n.* (K).

Not previously reported from Equatorial Guinea. This species has only been reported from neighbouring Cameroon and Gabon (Lock, 1989: 7).

**CAESALPINIA L.**

30. *Caesalpinia bonduc* (L.) Roxb.

*Caesalpinia bonducella* (L.) Fleming

*Caesalpinia crista* auct., non L.

Annobón: entre Palè y el aeropuerto, *Carvalho 3080* (BM, K, LISC, MA, WAG); *Newton s.n.* (LISU-165622); Ambo, *Wrigley 39* (MA). Bioko: *Mann 398* (K). Bioko Norte: Malabo–Bahía Venus, Mongola, *Carvalho 3428* (BM, K, MA); Bahía Venus, *Guinea 300* (MA), *303* (MA), *304* (MA). Litoral: rio Uele, cabo San Juan, *Guinea 226* (MA), cabo San Juan, *Guinea 878* (MA), *881–428* (MA), *882–427* (MA), *883–425* (MA), *884–426* (MA); Corisco, *Pérez Viso 1919* (MA).

Previously reported from Annobón (Sobrinho, 1953: 183; Exell, 1956: 17; Exell, 1973a: 356; Fernández Casas, 1992: 60), Bioko (Oliver, 1871: 263, sub *C. bonducella*; Mildbraed, 1922: 184, sub *C. bonducella*; Exell, 1944: 165; Cufodontis, 1955: 223; Keay, 1958: 481; Guinea, 1968: 130, sub *C. crista*; Exell, 1973a: 356), Río Muni (Guinea, 1946: 295, sub *C. crista*) and from Equatorial Guinea (Guinea, 1946: 295, sub *C. crista*). Oliver (1871: 263) attributed this species to 'Roxb.', probably by misprint. This species is distributed worldwide and its status (natural or introduced) is uncertain. In Africa this species has been reported from Angola, Benin, Cameroon, D.R. Congo, Egypt, Ethiopia, Ghana, Guinea Bissau, Ivory Coast, Kenya, Liberia, Mozambique, Nigeria, Senegal, Sierra Leone, Somalia, South Africa, Tanzania and Togo (Lock, 1989: 20).

31. (\*) *Caesalpinia pulcherrima* (L.) Sw.

Annobón: Ambo, Mission, *Melville 233* (K). Bioko Norte: Malabo, *Guinea 12* (MA), *15* (MA), *25* (MA), *27* (MA).

Previously reported from Annobón (Exell, 1963: 99; Exell, 1973a: 356), Bioko (Guinea, 1946: 296; Exell, 1973a: 356) and from Equatorial Guinea (Guinea, 1946: 296). This American species (Vidigal, 2002: 10) has been introduced in many African countries; it is reported from Angola, Central African Republic, D.R. Congo, Egypt, Ethiopia, Ghana, Ivory Coast, Kenya, Liberia, Malawi, Mali, Niger, Nigeria, Sierra Leone, Somalia, South Africa, Tanzania, Uganda and Zambia (Lock, 1989: 22).

## CASSIA L.

(32). *Cassia mannii* Oliv.

Previously reported from Río Muni (Guinea, 1946: 154). We have not found any herbarium material of *C. mannii* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA or WAG. This species is distributed in tropical Africa, and has also been reported from Cameroon, D.R. Congo, Gabon, Ivory Coast, Nigeria, São Tomé & Príncipe, Sudan and Uganda (Lock, 1989: 29). The distribution range of this species suggests it may occur in Equatorial Guinea.

## CHAMAECRISTA MOENCH

33. *Chamaecrista kirkii* (Oliv.) Standl.

*Cassia kirkii* Oliv.

Bioko Sur: Moka, plateau area, *Bouhey 83* (K); Moka, *Carvalho 2403* (MA), *Carvalho 2620* (MA). Centro Sur: Bata-Mitom, km 52, *Carvalho 6398* (MA); P.N. Monte Alén, alrededores del lago Atok, *Pérez Viso 14* (MA), P.N. Monte Alén, Moka-Engong, *Pérez Viso 298* (MA), P.N. Monte Alén, Misergue, senda hacia el río Laña, *Pérez Viso 1151* (MA), Niefang, Bindeng, pista hacia el río Uoro, *Pérez Viso 2409* (MA), P.N. Monte Alén, *Pérez Viso 3296* (MA), Mosumu, *Pérez Viso 3476* (MA). Kie Ntem: Engokua, Ebebiyin, *Pérez Viso 4352* (MA). Litoral: Bata-Bome, *Carvalho 5103* (MA); río Uele, *Lope del Val s.n.* (MA-712032). Wele Nzaz: Nsoc, Esumn, *Lope del Val s.n.* (MA-696925, MA-696926), Acurenam, *Lope del Val s.n.* (MA-712030). Unknown locality: *Lope del Val s.n.* (MA-712031).

Previously reported from Bioko (Keay, 1958: 452, sub *Cassia kirkii*; Exell, 1973a: 356, sub *C. kirkii*) and Río Muni (Parmentier *et al.*, 2001: 346, sub *C. kirkii*). This species is distributed in tropical and subtropical Africa, it has been reported from Angola, Cameroon, D.R. Congo, Ethiopia, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Malawi, Nigeria, Sierra Leone, Tanzania, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 31).

34. *Chamaecrista mimosoides* (L.) Greene

*Cassia mimosoides* L.

Litoral: Bata, Asonga, *Castelo & Juste s.n.* (MA-712105); Diádive, *Guinea 196–748* (MA), Bata, *Guinea 1056* (MA), *1058* (MA); río Uele, camino de Nkogosi, *Lope del Val s.n.* (MA-712052, MA-712053, MA-712054, MA-712055); Bome, *Pérez Viso 1728* (MA); Ayamiken, Río Campo, *Pérez Viso 2832 bis* (MA). Río Muni: Neu-Kamerun, Alto Tuar, *Tessmann 2688* (K).

Previously reported from Bioko (Mildbraed, 1922: 184, sub *Cassia mimosoides*; Exell, 1944: 166, sub *C. mimosoides*; Exell, 1973a: 356, sub *C. mimosoides*), Río Muni (Guinea, 1946: 295, sub *C. mimosoides*; Parmentier *et al.*, 2001: 346, sub *C. mimosoides*) and Equatorial Guinea (Guinea, 1946: 295, sub *C. mimosoides*). This is a palaeotropical species (Vidigal, 2002: 39) and it has been reported from many African countries including Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Chad, D.R. Congo, Ethiopia, Gabon, Ghana, Guinea, Guinea Bissau, Ivory Coast, Kenya, Liberia, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, São Tomé & Príncipe, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Gambia, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 32).

## COPAIFERA L.

35. *Copaifera religiosa* J. Léonard

Centro Sur: P.N. Nsork, Obamicu, *Nguema, Esono & Lejoly 243* (BRLU).

Not previously reported from Equatorial Guinea, although there is a report of the genus without a specific name from Río Muni (Guinea, 1946: 144). This Central African species has been reported from Cameroon and D.R. Congo (Lock, 1989: 47).

## CRUDIA SCHREB.

36. *Crudia gabonensis* Pierre ex Harms

Litoral: Bata-Niefang, km 35, en la zona de Adjape y Comaya, *Carvalho 5829* (MA). Río Muni: *Tessmann 248* (K).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon, Ghana and Ivory Coast (Lock, 1989: 47).

37. *Crudia klainei* Pierre ex De Wild.

Bioko: *Mann 14* (K).

Previously reported from Bioko (Oliver, 1871: 312, sub *Crudia senegalensis* Planch. ex Benth.; Hutchinson, 1928: 337; Guinea, 1946: 293; Keay, 1958: 467; Exell, 1973a: 357). The specimen *Mann 14* kept at K seems to be the voucher supporting Oliver's (1871: 312) record, because he explained that the *Flora of Tropical Africa* was based on the material deposited at

Kew. Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon, Nigeria and Sierra Leone (Lock, 1989: 47).

(38). *Crudia senegalensis* Planch. ex Benth.

Previously reported from Bioko (Guinea, 1946: 294). We have not found any herbarium material of *C. senegalensis* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species is distributed in West and Central Africa, and it has been also reported from Cameroon, Gabon, Ghana, Guinea, Guinea Bissau, Ivory Coast, Liberia, Nigeria, Senegal and Sierra Leone (Lock, 1989: 48). The distribution range of this species suggests that it may occur in Equatorial Guinea.

#### CRYPTOSEPALUM BENTH.

##### 39. *Cryptosepalum staudtii* Harms

Wele Nzaz: Nkolentagan, *Tessmann 307* (K).

Previously reported from Equatorial Guinea (Guinea, 1946: 295; Keay, 1958: 480). Distributed in West and Central Africa, this species has also been reported from Cameroon, Gabon and Nigeria (Lock, 1989: 10).

#### CYNOMETRA L.

##### 40. *Cynometra mannii* Oliv.

Annobón: *Newton s.n.* (LISU-165620). Litoral: Bata-Bolondo, nas margens del río Boara, *Carvalho 4759* (MA, WAG), Bata-Bolondo, km 16–17, *Carvalho 5936* (MA); prairies du Baga, *Eneme 338* (WAG); río Uele, *Guinea 231–1012* (MA).

Previously reported from Annobón (Sobrinho, 1953: 183; Exell, 1956: 18) and from Río Muni (Guinea, 1946: 144). This species is distributed in West, Central and South-Central Africa, and has been reported from Angola, Cameroon, D.R. Congo, Nigeria and São Tomé & Príncipe (Lock, 1989: 49).

#### DANIELLIA BENN.

##### 41. *Daniellia klainei* Pierre ex A.Chev.

Centro Sur: P.N. Monte Alén, transect du Monte Chocolate, *Lejoly 95T/L3.14* (BRLU), *95T/160* (BRLU).

Previously reported from Río Muni (Guinea, 1946: 293; Senterre *et al.*, 2004: 503). Distributed in Central and South-Central Africa, this species has also been reported from Angola, Cameroon, D.R. Congo and Gabon (Lock, 1989: 51).

##### 42. *Daniellia oblonga* Oliv.

Bioko: *Barter 2074* (K).

Previously reported from Bioko (Oliver, 1871: 300–301; Hutchinson, 1928: 341, sub *Daniellia thurifera* Benn.; Guinea, 1946: 293; Keay, 1958: 463; Exell,

1973a: 357). Distributed in West and Central Africa, this species has also been reported from Cameroon and Nigeria (Lock, 1989: 51).

##### 43. *Daniellia ogea* (Harms) Rolfe ex Holland Bioko: *Mann 166* (K).

Previously reported from Bioko (Oliver, 1871: 300, sub *Daniellia thurifera* Benn.; Hutchinson, 1928: 341, sub *D. thurifera* Benn.; Keay, 1958: 463; Exell, 1973a: 357). Oliver (1871: 300–301) explained that the *Flora of Tropical Africa* was based on the material deposited at Kew; hence, this record is most probably based on *Mann 166*. This species is distributed in West and Central Africa, and it has been reported from Gabon, Ghana, Guinea Bissau, Ivory Coast, Liberia, Nigeria, Senegal and Sierra Leone (Lock, 1989: 51).

##### 44. *Daniellia oliveri* (Rolfe) Hutch. & Dalziel

Bioko Norte: Malabo–Sampaca, km 4–5, *Carvalho 3789* (BM, K, MA, WAG).

Previously reported from Bioko (Fernández Casas, 1992: 60; Fernández Casas & Morales, 1995: 236). This tropical African species has been reported from Angola, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, D.R. Congo, Ghana, Guinea, Guinea Bissau, Ivory Coast, Mali, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Gambia, Togo and Uganda (Lock, 1989: 51).

#### DELONIX RAF.

##### 45. (\*) *Delonix regia* (Bojer ex Hook.) Raf.

*Poinciana regia* Bojer ex Hook.

Bioko Sur: cerca de Luba, en dirección a Batete, *Carvalho & Fernández Casas 10269*, *Regueiro & Tellería* (MA, WAG).

Previously reported from Bioko (Guinea, 1946: 295, sub *Poinciana regia*; Exell, 1973a: 357). Originally from Madagascar, this species has been introduced throughout the tropics. In Africa it has been reported from Angola, Burundi, Cameroon, Chad, Djibouti, D.R. Congo, Egypt, Ethiopia, Ghana, Guinea, Kenya, Libya, Mali, Mozambique, Niger, Somalia, South Africa, Tanzania, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 23).

#### DETARIUM JUSS.

##### (46). *Detarium macrocarpum* Harms

Previously reported from Río Muni (Guinea, 1946: 144) and from Equatorial Guinea (Guinea, 1946: 293). We have not found any herbarium material of *D. macrocarpum* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species is distributed in West and Central Africa, and has been reported from Cameroon, Gabon and Nigeria (Lock, 1989: 52). The distribution range of this species suggests it may occur in Equatorial Guinea.

47. *Detarium microcarpum* Guill. & Perr.  
Río Muni: Neu-Kamerun, Basuma Uham, *Tessmann 2501* (K).

Not previously reported from Equatorial Guinea. Distributed in tropical Africa, this species has been reported from Cameroon, Central African Republic, Chad, Ghana, Guinea, Guinea Bissau, Ivory Coast, Mali, Niger, Nigeria, Senegal, Sudan, Gambia and Togo (Lock, 1989: 52).

#### DIALIUM L.

48. *Dialium bipindense* Harms

Centro Sur: sud est du P.N. Monte Alén, au nord du rio Laña, près de la cabaña de Ecofac de Misergue, *Senterre & Obiang 3163* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from neighbouring Cameroon and Gabon (Lock, 1989: 33).

49. *Dialium dinklagei* Harms

Centro Sur: P.N. Monte Alén, près du village Monte Alén, *Senterre, Obiang & Esono 2841* (BRLU).

Not previously reported from Equatorial Guinea. This species is distributed in West and Central Africa and has been reported from Angola, Cameroon, D.R. Congo, Gabon, Ghana, Guinea, Ivory Coast, Liberia, Nigeria and Sierra Leone (Lock, 1989: 34).

50. *Dialium gossweileri* Baker f.

Río Muni: *Sabater Pí s.n.* (K).

Not previously reported from Equatorial Guinea. Distributed in Central and South-Central Africa, this species has also been reported from Angola, D.R. Congo and Gabon (Lock, 1989: 34).

51. *Dialium pachyphyllum* Harms

Wele Nzas: Nkolentangan, *Tessmann 43* (K).

Previously reported from Equatorial Guinea (Rojo, 1982: 199; Senterre, 2001: 1091; Senterre & Lejoly, 2001: 231). This species is distributed in West, Central and South-Central Africa, and has been also reported from Angola, Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 35).

52. *Dialium tessmannii* Harms

Litoral: Campo region, *Tessmann 730* (K).

Previously reported from Equatorial Guinea (Guinea, 1946: 295). Distributed in West, Central and South-Central Africa, this species has also been reported from Angola, Cameroon, D.R. Congo and Gabon (Lock, 1989: 36). Aubréville (1970: 36) included *Tessmann 730* as collected in Cameroon. We ascribe this record to Equatorial Guinea because Río Campo territory belongs to Río Muni, near the Cameroon border.

53. *Dialium zenkeri* Harms

Centro Sur: nord du P.N. Monte Alén, transect Ecofac de Monte Chocolate, *Senterre & Ngomo 3451* (BRLU). Wele Nzas: Nkolentangan, *Tessmann 355* (K).

Previously reported from Equatorial Guinea (Rojo, 1982: 209). This species is distributed in West and Central Africa, and has been reported from Cameroon and D.R. Congo (Lock, 1989: 36).

#### DIDELOTIA BAILL.

54. *Didelotia africana* Baill.

Centro Sur: P.N. Monte Alén, Mosumo, du rio Laña et du Uele, *Lejoly 95T/181* (BRLU). Litoral: Elong-Long (près de Mbini), *Wilks 3511a* (BRLU).

Previously reported from Equatorial Guinea (Guinea, 1946: 294). This species is distributed in West and Central Africa, and has been reported from Cameroon, Gabon and Nigeria (Lock, 1989: 10).

55. *Didelotia brevipaniculata* J. Léonard

Centro Sur: P.N. Monte Alén, transect de Monte Chocolate, *Lejoly 95T/L3.1108* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon, Ivory Coast and Liberia (Lock, 1989: 10).

56. *Didelotia letouzeyi* Pellegr.

Litoral: sur Sofoge-Mbini, *Obama 882* (BRLU).

Not previously reported from Equatorial Guinea. This species has only been reported from neighbouring Cameroon and Gabon (Lock, 1989: 11).

57. *Didelotia unifoliolata* J. Léonard

Litoral: Nco, 5 km vers ENE, *Lejoly 165* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, D.R. Congo, Gabon, Ghana and Nigeria (Lock, 1989: 11).

#### DISTEMONANTHUS BENTH.

58. *Distemonanthus benthamianus* Baill.

*Distemonanthus laxus* Oliv.

Litoral: Corisco Bay, 1°N, *Mann 1844* (K).

Previously reported from Bioko (Guinea, 1946: 295; Exell, 1973a: 358), Río Muni (Oliver, 1871: 282, sub *Distemonanthus laxus*; Guinea, 1946: 141 and 144; Parmentier *et al.*, 2001: 363; Senterre & Lejoly, 2001: 231) and from Equatorial Guinea (Hutchinson, 1928: 336; Guinea, 1946: 295; Keay, 1958: 449). Distributed in West and Central Africa, this species has also been reported from Cameroon, Gabon, Ghana, Ivory Coast, Liberia, Nigeria, Sierra Leone and Togo (Lock, 1989: 36).

#### DUPARQUETIA BAILL.

59. *Duparquetia orchidacea* Baill.

Centro Sur: carretera Monte Bata-Río Campo, antigua trocha forestal, *Pérez Viso 2425* (MA), Bata-Niefang, carretera forestal km 40, *Pérez Viso 2718 bis*



(MA). Litoral: Bata–Ayamiken, estrada km 18–19, *Carvalho 4804* (MA, WAG); près de la frontiere gabonaise, chantier forestier à l'est de Cogo, *McPherson 14028* (WAG). Wele Nzaz: Alum, Mikomeseng–Nkue, *Pérez Viso 3044* (MA).

Not previously reported from Equatorial Guinea. Distributed in West, Central and South-Central Africa, this species has been reported from Angola, Cameroon, D.R. Congo, Gabon, Ghana, Ivory Coast, Liberia and Nigeria (Lock, 1989: 36).

#### **ERYTHROPHLEUM** AFZEL. EX R. BR.

##### 60. *Erythrophleum ivorense* A. Chev.

Centro Sur: Evinayong, *Guinea 68, 70, 210* (MA). Wele Nzaz: Nkolentagan, *Tessmann 217a* (K). Río Muni: *Tessmann 1095* (K).

Previously reported from Río Muni (Senterre, 2001: 1093) and Equatorial Guinea (Keay, 1958: 484). Distributed in West and Central Africa, this species has also been reported from Cameroon, Gabon, Ghana, Guinea Bissau, Ivory Coast, Liberia, Nigeria and Sierra Leone (Lock, 1989: 24).

##### 61. *Erythrophleum suaveolens* (Guill. & Perr.) Brenan

*Erythrophleum guineense* G. Don

Kie Ntem: Adyap, *Guinea 837–191* (MA). Litoral: Bata–Pembe, km 133, margens do rio Otong Eyang, *Carvalho 4851* (MA, WAG).

Previously reported from Bioko (Exell, 1973a: 358, sub *Erythrophleum guineense*; Guinea, 1946: 291, sub *E. guineense*), from Río Muni (Guinea, 1946: 141, 144, sub *E. guineense*) and from Equatorial Guinea (Guinea, 1946: 291, sub *E. guineense*). This Palaeotropical species has also been reported from Cameroon, Central African Republic, Chad, D.R. Congo, Ghana, Guinea, Guinea Bissau, Ivory Coast, Kenya, Malawi, Mali, Mozambique, Nigeria, Senegal, Sierra Leone, Sudan, Tanzania, Gambia, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 24).

#### **EURYPETALUM** HARMS

##### 62. *Eurypetalum tessmannii* Harms

Litoral: Ndote Sud, *Lisowski M-570* (BRLU), Ndote Sud, environs de Etembue, *Lisowski M-1071* (BRLU).

Previously reported from Equatorial Guinea (Guinea, 1946: 293). This Central African species has been also reported from Gabon (Aubréville, 1968: 110).

#### **GILBERTIODENDRON** J. LÉONARD

##### (63). *Gilbertiodendron brachystegioides* (Harms)

J. Léonard

*Macrolobium brachystegioides* Harms

Previously reported from Equatorial Guinea (Guinea, 1946: 294, sub *Macrolobium brachystegioides*). We have not found any herbarium material of *G. brachystegioides* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species is distributed in West and Central Africa and has been also reported from Cameroon and Gabon (Lock, 1989: 12). The distribution range of this species suggests it may occur in Equatorial Guinea.

##### 64. *Gilbertiodendron demonstrans* (Baill.) J. Léonard

Litoral: RíoCampo, cerca de Bongoro, *Pérez Viso 2227* (MA).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon and Nigeria (Lock, 1989: 12).

##### 65. *Gilbertiodendron dewevrei* (De Wild.) J. Léonard

*Macrolobium dewevrei* De Wild.

Litoral: Sendje pa Ogamnsok, *Lejoly 01/64* (BRLU); village Mayang, bord de la rivière du Mitong, *Lisowski M-812* (BRLU).

Previously reported from Equatorial Guinea (Guinea, 1946: 294, sub *Macrolobium dewevrei*). Distributed in West, Central and South-Central Africa, this species has also been reported from Angola, Cameroon, Central African Republic, Congo, D.R. Congo, Gabon and Nigeria (Lock, 1989: 12).

##### 66. *Gilbertiodendron klainei* (Pierre ex Pellegr.) J. Léonard

Litoral: Bicubini, *Wilks 3565* (BRLU).

Not previously reported from Equatorial Guinea. This West and Central Africa species has been reported from neighbouring Cameroon and Gabon (Lock, 1989: 12).

##### 67. *Gilbertiodendron ogoouense* (Pellegr.) J. Léonard

Centro Sur: Handje Engong, *Lejoly & Elad 98/209* (BRLU). Litoral: Sofoge (Ndote), *Wilks 3582* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in West, Central and South-Central Africa, this species has been reported from Angola, Cameroon, Congo, D.R. Congo and Gabon (Lock, 1989: 13).

##### 68. *Gilbertiodendron stipulaceum* (Benth.) J. Léonard

*Berlinia stipulacea* Benth.

Río Muni: Lat. 1°N, *Mann 1827* (K).

Previously reported from Río Muni (Guinea, 1946: 294, sub *Berlinia stipulacea*) and from Equatorial Guinea (Oliver, 1871: 296, sub *Berlinia stipulacea*). This species is distributed in Central Africa and has been also reported from D.R. Congo and Gabon (Lock, 1989: 13).

##### (69). *Gilbertiodendron straussianum* (Harms) J. Léonard

*Macrobium straussianum* Harms

Previously reported from Equatorial Guinea (Guinea, 1946: 294, sub *Macrobium straussianum*). We have not found any herbarium material of *G. straussianum* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. Record based on *Tessmann B 32*, possibly destroyed in B. We have studied an illustration deposited in BM.

**GILLETIODENDRON** VERMOESEN

(70). *Gilletiodendron escherichii* (Harms) J. Léonard

*Macrobium escherichii* Harms

Previously reported from Río Muni (Harms, 1915: 458, sub *Macrobium escherichii*). We have not found any herbarium material of *G. escherichii* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA & WAG. According to Léonard (1951: 408), record supported only by *Escherich 3003*, possibly destroyed in B. We have studied an illustration deposited in BM.

(71). *Gilletiodendron pierreanum* (Harms) J. Léonard

Previously reported from Río Muni without any precise voucher (Senterre, 2001: 1091). We have not found any herbarium material of *G. pierreanum* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species from West and Central Africa has been reported from neighbouring Cameroon and Gabon (Lock, 1989: 53). The distribution range of this species suggests it may occur in Equatorial Guinea.

**GRIFFONIA** BAILL.

72. *Griffonia physocarpa* Baill.

*Bandeiraea tenuiflora* Benth.

Centro Sur: Bata–Niefang–Mogom, km 6, *Carvalho 5670* (MA). Litoral: Bata–Pembe, km 25–26, *Carvalho 4831* (MA, WAG), Bata–Niefang, km 35, *Adjape, Carvalho 5691* (MA).

Previously reported from Bioko (Oliver, 1871: 285, sub *Bandeiraea tenuiflora*; Hutchinson, 1928: 328, sub *B. tenuiflora*; Guinea, 1946: 295; Keay, 1958: 446; Exell, 1973a: 358) and from Río Muni (Guinea, 1946: 149). Distributed in West and Central Africa, this species has also been reported from Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 43).

73. *Griffonia tessmannii* (De Wild.) Compère

Centro Sur: SO du P.N. Monte Alén, sur le transect Ecofac de Mosumo, *Senterre & Ngomo 176* (BRLU).

Previously reported from Equatorial Guinea (Guinea, 1946: 295; Aubréville, 1968: 22). Distributed in Central Africa, this species has also been reported from D.R. Congo and Gabon (Lock, 1989: 44).

**GUIBOURTTIA** BENN.

74. *Guibourtia demeusei* (Harms) J. Léonard

*Copaifera demeusei* Harms

Litoral: Monte Bata, 1 km du N de la route Bata–Niefang route au niveau de Santa Marta, *Senterre & Obiang 4306* (BRLU).

Previously reported from Río Muni (Guinea, 1946: 144, sub *Copaifera demeusei*). Distributed in West and Central Africa, this species has also been reported from Cameroon, Central African Republic, Congo, D.R. Congo and Gabon (Lock, 1989: 53).

75. *Guibourtia ehie* (A. Chev.) J. Léonard

Litoral: Bata–Pembe, km 26–27, en margens de río Ué, *Carvalho 5183* (MA).

Not previously reported from Equatorial Guinea. This species is distributed in West and Central Africa, and has been reported from Cameroon, Gabon, Ghana, Ivory Coast, Liberia and Nigeria (Lock, 1989: 54).

76. *Guibourtia tessmannii* (Harms) J. Léonard

*Copaifera tessmannii* Harms

Centro Sur: Monte Alén, *Ngomo 955* (BRLU); P.N. Monte Alén, près de la cabaña Ecofac de Esamalan, *Senterre, Obiang & Ngomo 2122* (BRLU).

Previously reported from Equatorial Guinea (Guinea, 1946: 293, sub *Copaifera tessmannii*; Keay, 1958: 466). This West and Central African species has also been reported from neighbouring Cameroon and Gabon (Lock, 1989: 54).

**HYLODENDRON** TAUB.

77. *Hylodendron gabunense* Taub.

Centro Sur: P.N. Monte Alén, *Ngomo 257* (BRLU).

Previously reported from Río Muni (Guinea, 1946: 141 and 154; Senterre, 2001: 1091) and from Equatorial Guinea (Guinea, 1946: 294). Distributed in West and Central Africa, this species has also been reported from Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 54).

**HYMENOSTEGIA** (BENTH.) HARMS

78. *Hymenostegia afzelii* (Oliv.) Harms

*Hymenostegia dinklagei* Harms

Bioko Norte: Malabo–Punta Hermosa, km 14–15, *Carvalho 4338* (MA). Litoral: Bata–zona de Bomodi, *Carvalho 5473* (MA, WAG).

Previously reported from Río Muni (Guinea, 1946: 292, sub *Hymenostegia dinklagei*). This species is distributed in West and Central Africa, and has been reported from Cameroon, Ghana, Guinea, Ivory Coast, Liberia, Nigeria, Sierra Leone and Togo (Lock, 1989: 55).

79. *Hymenostegia felicis* (A. Chev.) J. Léonard

Centro Sur: P.N. Monte Alén, transect de Nkumenkie, *Lejoly 95T/L4.44* (BRLU); SE du P.N. Monte Alén,

près du transect Ecofac de Nkumekie, *Senterre & Obiang 3579* (BRLU).

Not previously reported from Equatorial Guinea. This species has also been reported from neighbouring Cameroon (Lock, 1989: 55).

80. *Hymenostegia floribunda* (Benth.) Harms  
*Cynometra floribunda* Benth.

Centro Sur: transect de Nkumekie, *Desmet, R. Nguema & N. Nguema 118* (BRLU). Monts de Cristal, 15 km NE d'Okuamkas, *Wilks 1820* (WAG). Río Muni: Lat. 1°N, *Mann 1719* (K).

Previously reported from Río Muni (Oliver, 1871: 318, sub *Cynometra floribunda*; Guinea, 1946: 292; Léonard, 1951: 441). This Central African species has also been reported from D.R. Congo and Gabon (Lock, 1989: 55).

81. *Hymenostegia normandii* Pellegr.

Centro Sur: transect Monte Alén, *Desmet, R. Nguema & N. Nguema 207* (BRLU); Mbini, P.N. Monte Alén, *Lejoly 93/380* (BRLU), P.N. Monte Alén, *Lejoly 95T/L2.75* (BRLU).

Not previously reported from Equatorial Guinea. This Central African species has been reported from neighbouring Gabon (Lock, 1989: 56).

82. *Hymenostegia pellegrinii* (A. Chev.) J. Léonard  
Centro Sur: inselberg de Akoak Ebanga, village de Ngong Mocomo, à 10 km de Nsork, *Parmentier & Esono 3523* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in Central Africa, this species has been reported from neighbouring Gabon (Lock, 1989: 56).

#### ISOMACROLOBIUM AUBRÉV. & PELLEGR.

83. *Isomacrobium conchyliphorum* (Pellegr.)  
Aubrév. & Pellegr.

Litoral: Bata–Bome, *Carvalho 6046* (MA).

Not previously reported from Equatorial Guinea. This Central African species has been also reported from Gabon (Aubréville, 1968: 190).

(84). *Isomacrobium graciliflorum* (Harms)  
Aubrév. & Pellegr.

*Macrobium graciliflorum* Harms

This species has been reported previously from Equatorial Guinea (Guinea, 1946: 294, sub *Macrobium graciliflorum*; Aubréville, 1970: 181). We have not found any herbarium material of *I. graciliflorum* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. The type specimen of this name is *Tessmann B. 57*, from Equatorial Guinea. This species is distributed in West and Central Africa, and has also been reported from Cameroon and D.R. Congo (Lock, 1989: 2).

85. *Isomacrobium isopetalum* (Harms) Aubrév. & Pellegr.

Wele Nzaz: Ebo–Ngoo Nsomo, Añisok–Mongola–Niefang, *Pérez Viso 3197* (MA).

Not previously reported from Equatorial Guinea. This West and Central African species has been reported from neighbouring Cameroon and Gabon (Aubréville, 1970: 184).

#### JULBERNARDIA PELLEGR.

86. *Julbernardia letouzeyi* Villiers

Centro Sur: Bicurga, *Lejoly 99/503* (BRLU); inselberg de Bicurga, *Parmentier 1674* (BRLU); inselberg de Akoak Ebanga, 1 h du village de Ngong Mocomo, *Parmentier & Esono 3499* (BRLU).

Not previously reported from Equatorial Guinea. This West and Central African species has been reported from neighbouring Cameroon (Lock, 1989: 15).

87. *Julbernardia pellegriniana* Troupin

Litoral: Río Campo region, 5 km west of Anguma, chantier forestière ABM, *Issembe 16* (WAG).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, D.R. Congo and Gabon (Lock, 1989: 15).

88. *Julbernardia seretii* (De Wild.) Troupin

Centro Sur: Monte Alén, Moka, *Wilks 3525* (WAG). Wele Nzaz: inselberg de Piedra Nzaz, 9 km from Aconibe, *Parmentier & Nguema 19* (BRLU).

Not previously reported from Equatorial Guinea. This species is distributed in West and Central Africa, and has been reported from Angola, Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 16).

#### LEONARDOXA AUBRÉV.

89. *Leonardoxa africana* ssp. *gracilicaulis* Mckey  
*Schotia africana* (Baill.) Keay

*Schotia humboldtioides* Oliv.

Centro Sur: P.N. Monte Alén, senda hacia lago Atok, *Pérez Viso 1311* (MA). Litoral: Corisco, playa al SW de la isla, *Pérez Viso 1983* (MA). Wele Nzaz: Nkolentagan, *Tessmann 284* (K).

Previously reported from Río Muni (Guinea, 1946: 144, sub *Schotia humboldtioides*; Mckey, 2000: 103) and from Equatorial Guinea [Guinea, 1946: 293, sub *S. humboldtioides*; Keay (1958: 459) reported *S. africana* without any precise voucher. Mckey (2000: 100) recorded the subspecies 'africana' on the Cameroon coast near Río Muni border]. This West and Central African taxa has also been reported from Cameroon, Congo and Gabon (Mckey, 2000: 103).

#### LIBREVILLEA HOYLE

90. *Librevillea klainei* (Pierre ex Harms) Hoyle  
*Brachystegia klainei* Pierre ex Harms

Litoral: Bata–Mbini, estrada km 24 en el poblado de Anquok, en dirección a la antigua explotación forestal

de Exfosa, *Carvalho 6366* (MA); distrito de Mbini, de 5 a 7 km al W del patio Sofoge, *Nguema & Obiang 11* (WAG), *12* (WAG); Etembue, espigón (réserve de Ndote), *Obama & Lejoly 606* (MA).

Previously reported from Equatorial Guinea (Guinea, 1946: 294, sub *Brachystegia klainei*). Distributed in West, Central and South-Central Africa, this species has also been reported from Angola, Cameroon and Gabon (Lock, 1989: 57).

#### NEOCHEVALIERODENDRON J. LÉONARD

91. *Neochevalierodendron stephanii* (A. Chev.) J. Léonard

Litoral: Bata–Bome, entre río Boara, km 10 de estrada madeireira con Mbini, *Carvalho 4869* (MA, WAG).

Not previously reported from Equatorial Guinea. This Central African species has been reported from Gabon (Lock, 1989: 57).

#### ODDONIODENDRON DE WILD.

(92). *Odoniodendron micranthum* (Harms) Baker f.

Centro Sur: Monte Alén, *Senterre & Ngomo 3545* (BRLU: not seen).

Previously reported from Río Muni (Ngok Banak & Breteler, 2004: 248). This Central African species has been also reported from Cameroon and Gabon (Ngok Banak & Breteler, 2004: 247–248).

#### PACHYELASMA HARMS

(93). *Pachyelasma tessmannii* (Harms) Harms

Previously reported from Equatorial Guinea (Guinea, 1946: 295; Keay, 1958: 484). We have not found any herbarium material of *P. tessmannii* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. According to Aubréville (1970: 322) the type specimen of this species is *Tessmann 819*, from Equatorial Guinea. This West and Central Africa species has also been reported from Cameroon, D.R. Congo, Gabon and Nigeria (Lock, 1989: 25).

#### PELLEGRINIODENDRON J. LÉONARD

94. *Pellegriniodendron diphyllum* (Harms) J. Léonard

Centro Sur: P.N. Monte Alén, Mosumo, confluencia du río Laña et Uele, *Lejoly 95/178* (BRLU); P.N. Monte Alén, cataratas río Laña, Mosumo, *Pérez Viso 1612* (MA). Litoral: Bata–Bicomo, sobre el río Ecu, *Carvalho 4985* (MA, WAG); Ndote Sud, près du village de Etembue, *Lisowski M-519* (BRLU); 2 km north-east of Elendé, Cocoloondo riverside, *Wieringa & Haegens 2265* (WAG).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from Cameroon, Gabon, Ghana and Ivory Coast (Lock, 1989: 19).

#### PELTOPHORUM (VOGEL) WALP.

95. (\*) *Peltophorum pterocarpum* (DC.) K. Heyne  
*Peltophorum ferrugineum* (Decne.) Benth.  
Bioko Norte: Malabo–Luba, km 11, *Carvalho 2041* (MA); Malabo–Cupapa, km 10–11, *Carvalho 3409* (BM, MA); cerca de Sampaca, finca Magdalena Mora, *Carvalho, Fernández Casas 10445, Regueiro & Tellería* (BM, LISC, MA, WAG).

Previously reported from Bioko (Guinea, 1946: 296, sub *Peltophorum ferrugineum*; Exell, 1973a: 359). Originally from Asia this species has been introduced in several African countries, reported from Burundi, D.R. Congo, Ghana, Guinea, Kenya, Liberia, Mozambique, Nigeria, Sierra Leone, South Africa, Sudan, Tanzania, Gambia, Togo and Uganda (Lock, 1989: 26).

#### PILIOSTIGMA HOCHST.

(96). *Piliostigma reticulatum* (DC.) Hochst.  
*Bauhinia reticulata* DC.

Previously reported from Bioko (Guinea, 1946: 295, sub *Bauhinia reticulata*; Exell, 1973a: 359) and from Equatorial Guinea (Guinea, 1946: 295, sub *B. reticulata*). We have not found any herbarium material of *P. reticulatum* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This tropical Africa species has been reported from Burkina Faso, Cameroon, Central African Republic, Chad, Ethiopia, Ghana, Ivory Coast, Mali, Niger, Nigeria, Senegal and Sudan (Lock, 1989: 46). The distribution range of this species suggests it may occur in Equatorial Guinea.

97. *Piliostigma thonningii* (Schumach.) Milne-Redh.

Bioko Norte: servicio agronómico de Malabo, *Guinea 10* (MA), *8–10* (MA).

Not previously reported from Equatorial Guinea. This Palaeotropical species has been reported from many African countries, including Angola, Benin, Botswana, Burkina Faso, Cameroon, Chad, D.R. Congo, Ethiopia, Gabon, Ghana, Guinea, Guinea Bissau, Ivory Coast, Kenya, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Sudan, Tanzania, The Gambia, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 44).

#### PLAGIOSIPHON HARMS

98. *Plagiosiphon emarginatus* (Hutch. & Dalziel) J. Léonard

Litoral: Bata–Bicomo, margens del río Ecucu, *Carvalho 5208* (MA), *Carvalho 5457* (MA), Bata–Sendje, antigua explotación forestal de Exfosa, *Carvalho 6094* (MA).

Not previously reported from Equatorial Guinea. This species is distributed in West and Central Africa, and has been reported from Cameroon, Gabon, Ivory Coast, Liberia and Sierra Leone (Lock, 1989: 58).

99. *Plagiosiphon gabonensis* (A. Chev.) J. Léonard Centro Sur: SO du P.N. Monte Alén, 2 km du site de traversé du río Uele, *Senterre & Nguema 3031* (BRLU); P.N. Monte Alén, entre le transect dit Monte Alén et la cabaña Bang, *Senterre & Obiang 2560* (BRLU).

Not previously reported from Equatorial Guinea. This West and Central African species has been reported from neighbouring Cameroon and Gabon (Lock, 1989: 58).

100. *Plagiosiphon longitubus* (Harms) J. Léonard Centro Sur: Monts du Cristal, 10 km NE d'Okuamkas, *Wilks 1802* (WAG).

Not previously reported from Equatorial Guinea. This West and Central African species has also been reported from Cameroon (Lock, 1989: 58).

101. *Plagiosiphon multijugus* (Harms) J. Léonard Centro Sur: P.N. Monte Alén, confluence Laña et Uele, *Lejoly 95/179* (BRLU).

Not previously reported from Equatorial Guinea. Distributed in West and Central Africa, this species has been reported from neighbouring Cameroon and Gabon (Lock, 1989: 58).

#### PRIORIA GRISEB.

102. *Prioria buchholzii* (Harms) Breteler Wele Nzas: Nkoletangan, *Tessmann 105* (K).

Previously reported from Río Muni (Breteler, 1999: 26–28). Distributed in West, Central and South-Central Africa, this species has also been reported from Angola, Cameroon, Congo and Gabon (Breteler, 1999: 26–28).

103. *Prioria joveri* (Normand ex Aubrév.) Breteler *Gossweilerodendron joveri* Normand ex Aubrév. Centro Sur: P.N. Monte Alén, transect de Monte Chocolate, *Lejoly 95/170bis* (BRLU); Monte Alén, *Lisowski M-347* (BRLU); SO du P.N. Monte Alén, transect Ecofac de Mosumo, *Senterre & Ngomo 911* (BRLU).

Previously reported from Río Muni (Aubréville, 1968: 150, sub *Gossweilerodendron joveri*; Breteler, 1999: 32–33; Senterre *et al.*, 2004: 503, sub *G. joveri*). Distributed in Central Africa, this species has also been reported from Cameroon and Gabon (Breteler, 1999: 32–33).

104. *Prioria mannii* (Baill.) Breteler *Eriander engleri* H. Winkler *Oxystigma mannii* (Baill.) Harms

Litoral: Kongui river, *Mann 1822* (K).

Previously reported from Río Muni (Guinea, 1946: 148, 156, sub *Eriander engleri*, 154, sub *Oxystigma mannii*; Breteler, 1999: 35) and from Equatorial Guinea (Hutchinson, 1928: 336, sub *O. mannii*; Keay, 1958: 466, sub *O. mannii*; Guinea, 1946: 293, sub *O. mannii*). Distributed in West and Central Africa, this species has also been reported from Cameroon, Gabon and Nigeria (Breteler, 1999: 34–35).

#### SCORODOPHLOEUS HARMS

105. *Scorodophloeus zenkeri* Harms

Centro Sur: P.N. Monte Alén, transect de Monte Chocolate, *Lejoly 95/173T19* (BRLU). Río Muni: Eman-Ngos, *Obama 814* (BRLU).

Previously reported from Bioko (Guinea, 1946: 292; Exell, 1973a: 360) and from Río Muni (Guinea, 1946: 142, 144, 292). This West, Central and South-Central African species has also been reported from Angola, Cameroon, D.R. Congo and Gabon (Lock, 1989: 59).

#### SENNA MILL.

106. (\*) *Senna alata* (L.) Roxb.

*Cassia alata* L.

Bioko Norte: Malabo, *Guinea 128* (MA), servicio agronómico de Malabo, *Guinea 124* (MA), *126* (MA). Kie Ntem: Engokua, Ebebiyin, *Pérez Viso 4350* (MA).

Previously reported from Bioko (Guinea, 1946: 295, sub *Cassia alata*; Exell, 1973a: 356, sub *C. alata*) and from Equatorial Guinea (Guinea, 1946: 295, sub *C. alata*). Originally from America this species has been introduced throughout the tropics. It has been also reported from Burundi, Cameroon, Chad, D.R. Congo, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Malawi, Mali, Nigeria, Senegal, Sierra Leone and Tanzania (Lock, 1989: 36).

107. (\*) *Senna hirsuta* (L.) H.S. Irwin & Barneby Centro Sur: Niefang, Bindeng, *Pérez Viso 2367* (MA), Bindung, km 17 de la carretera de Niefang, *Pérez Viso 3790* (MA). Litoral: Bata–Niefang km 61, zona de Abang, *Carvalho 5705* (MA, WAG).

Not previously reported from Equatorial Guinea. Originally from America, this species has been introduced throughout the tropics. It has also been reported from Burundi, Cameroon, Central African Republic, D.R. Congo, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Malawi, Mali, Nigeria, South Africa, Tanzania, Togo, Uganda and Zimbabwe (Lock, 1989: 37).

108. (\*) *Senna obtusifolia* (L.) H.S. Irwin & Barneby *Cassia obtusifolia* L.

Annobón: path between St. Juan Cappelle and San Pedro, *Wrigley 230A* (BM, MA). Bioko: Punta Fernanda, *Lope del Val s.n.* (MA-710953). Bioko Norte:

Malabo, *Guinea 56* (MA), servicio agronómico de Malabo, *Guinea 67, 65, 68b, 70b* (MA). Centro Sur: Niefang, Bindeng, alrededores de las instalaciones de Matroguisa, *Pérez Viso 2368* (MA). Litoral: Río Campo region, *Tessmann 694* (K). Wele Nzaz: Nkoletangan, *Tessmann 324* (K).

Previously reported from Annobón (Exell, 1973a: 356, sub *Cassia obtusifolia*; Exell 1963: 99, sub *C. obtusifolia*) and from Bioko (Exell, 1973a: 356, sub *C. obtusifolia*). Originally from America, this species has been introduced throughout the tropical and subtropical regions of the world; it has also been reported from Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, D.R. Congo, Ethiopia, Gabon, Ghana, Guinea, Guinea Bissau, Ivory Coast, Kenya, Liberia, Libya, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, São Tomé & Príncipe, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Gambia, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 38).

109. (\*) ***Senna occidentalis*** (L.) Link  
*Cassia occidentalis* L.

Annobón: path between St. Juan Cappelle and San Pedro, *Wrigley 230* (K, MA). Bioko Norte: Malabo-Baney, estrada km 5–6, *Carvalho 4335* (MA), Malabo-Bahía Venus, *Carvalho 4343* (MA); carretera al pico Basilé, *Fernández Casas 11993* (MA); Sampaca, *Lope del Val s.n.* (MA-696927, MA-389591, MA-712057). Bioko Sur: Riaba–Luba–Malabo, cruce para Moka, *Carvalho 2669* (MA). Litoral: Bata, Asonga, *Castelo, Cabeza & Juste s.n.* (MA-319751), Bata-Movo, Miboman, km 27 *Castelo, Cabeza & Juste s.n.* (MA-319728). Wele Nzaz: Akok, carretera Acurenam-Aconibe, *Pérez Viso 2041* (MA), *2401* (MA); Nkoletangan, *Tessmann 187* (K).

Previously reported from Annobón (Exell, 1973a: 357, sub *Cassia occidentalis*), Bioko (Guinea, 1946: 128 h, 295, sub *C. occidentalis*; Keay, 1958: 455, sub *C. occidentalis*; Exell, 1973a: 357, sub *C. occidentalis*) and from Equatorial Guinea (Guinea, 1946: 295, sub *C. occidentalis*). Originally from America this species has been introduced throughout the tropical and subtropical regions of the world. It has been also reported from Angola, Burundi, Cameroon, Central African Republic, Chad, Djibouti, D.R. Congo, Ethiopia, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Libya, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda and Zambia (Lock, 1989: 38).

110. ***Senna podocarpa*** (Guill. & Perr.) Lock  
*Cassia podocarpa* Guill. & Perr.

Bioko: *Mann s.n.* (K), *Mann 638* (K).

Previously reported from Bioko (Oliver, 1871: 276, sub *Cassia podocarpa*; Mildbraed, 1922: 184, sub *C. podocarpa*; Hutchinson, 1928: 335, sub

*C. podocarpa*; Guinea, 1946: 295, sub *C. podocarpa*; Exell, 1944: 166, sub *C. podocarpa*; Keay, 1958: 452–453, sub *C. podocarpa*; Exell, 1973a: 357, sub *C. podocarpa*). Distributed in West and Central Africa, this species has also been reported from Burkina Faso, Ghana, Guinea, Guinea Bissau, Ivory Coast, Liberia, Mali, Nigeria, Senegal, Sierra Leone, Gambia and Togo (Lock, 1989: 39).

111. (\*) ***Senna septentrionalis*** (Viv) H.S. Irwin & Barneby

*Cassia laevigata* Willd.

Bioko: *Mann 1168* (K); *Vogel 200* (K). Wele Nzaz: Bimvile, *Guinea 182* (MA), *184* (MA), *185–209* (MA); Acasakira, 3 km au sud de Nsork, *Obama & Lejoly 560* (BRLU).

Previously reported from Annobón (Exell, 1973a: 356, sub *Cassia laevigata*), Bioko (Oliver, 1871: 275, sub *C. laevigata*; Mildbraed, 1922: 184, sub *C. laevigata*; Hutchinson, 1928: 335, sub *C. laevigata*; Guinea, 1946: 295, sub *C. laevigata*; Keay, 1958: 453, sub *C. laevigata*; Exell, 1973a: 356, sub *C. laevigata*). Originally from America, this species has been introduced throughout the tropical regions of the world. In Africa this species has been reported from Burundi, Cameroon, D.R. Congo, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, Sierra Leone, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe (Lock, 1989: 39).

112. (\*) ***Senna sophera*** (L.) Roxb.

*Cassia sophera* L.

Bioko: *Mann 69* (K); *Vogel 211* (K).

Previously reported from Bioko (Oliver, 1871: 274, sub *Cassia sophera*; Mildbraed, 1922: 184, sub *C. sophera*; Hutchinson, 1928: 335, sub *C. sophera*; Guinea, 1946: 295, sub *C. sophera*; Cufodontis, 1955: 220, sub *C. sophera*; Keay, 1958: 455, sub *C. sophera*; Exell, 1973a: 357, sub *C. sophera*). Originally from America (Irwin & Barneby, 1982: 440–443) this species has been introduced in many African countries, including Benin, D.R. Congo, Ethiopia, Ghana, Ivory Coast, Kenya, Liberia, Nigeria, Sierra Leone, Somalia, South Africa and Tanzania (Lock, 1989: 40).

113. (\*) ***Senna spectabilis*** (DC.) H.S. Irwin & Barneby

Bioko Sur: Luba–Veiga and Avendaño, en el límite entre Batete y Luba, *Fernández Casas 12032* (MA); entre Luba y Moka, cerca de Musola, *Carvalho, Fernández Casas 10446, Regueiro & Tellería* (MA).

Not previously reported from Equatorial Guinea. Originally from America, this species has been introduced throughout the tropics; it has also been reported from Angola, Burundi, Cameroon, Central African Republic, Chad, D.R. Congo, Kenya, Malawi, Nigeria, South Africa, Tanzania, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 40).

**SINDORA** MIQ.

114. *Sindora klaineana* Pierr. ex Pellegr.  
Litoral: Bata–Bome, *Carvalho 5197* (MA, WAG).

Not previously reported from Equatorial Guinea. Distributed in Central Africa, this species has been reported from Gabon (Lock, 1989: 59).

**SINDOROPSIS** J. LÉONARD

115. *Sindoropsis le-testui* (Pellegr.) J. Léonard  
Litoral: distrito de Mbini, de 5 a 7 km aprox. a W del patio Sofoge, *Nguema & Obiang 13* (WAG).

Previously reported from Río Muni (Senterre, 2001: 1091; Senterre & Lejoly, 2001: 231; Senterre *et al.*, 2004: 503). This species distributed in Central Africa has been reported from Gabon (Lock, 1989: 59).

**STACHYOTHYRSUS** HARMS

116. *Stachyothyrsus staudtii* Harms  
Wele Nzaz: P.N. Nsork, Obamicu, *Nguema, Esono & Lejoly 247* (BRLU); Nkoletangan, *Tessmann 270* (K).

Previously reported from Río Muni (Guinea, 1946: 144; Parmentier *et al.*, 2001: 342; Senterre, 2001: 1091; Senterre & Lejoly, 2001: 231; Senterre *et al.*, 2004: 503) and from Equatorial Guinea (Guinea, 1946: 295; Léonard & Voorhoeve, 1964: 422). Distributed in West and Central Africa, this species has also been reported from Cameroon, D.R. Congo and Gabon (Lock, 1989: 26).

**STEMONOCOLEUS** HARMS

117. *Stemonocoleus micranthus* Harms  
Bioko Norte: Malabo–Luba, km 21, praia de Abá, *Carvalho 2172* (K, MA).

Previously reported from Río Muni (Guinea, 1946: 144). Monospecific genus which is distributed in West and Central Africa, and has been reported from Cameroon, Central African Republic, Gabon, Ghana, Ivory Coast and Nigeria (Lock, 1989: 60).

**TAMARINDUS** L.

118. *Tamarindus indica* L.  
Annobón: Palé, alrededores de Faro, *Carvalho 3067* (BM, K, MA); near Ambo, *Wrigley 255* (K, MA). Bioko Norte: Malabo, *Guinea 1170* (MA).

Previously reported from Annobón (Exell, 1973a: 360; Fernández Casas, 1992: 60), Bioko (Guinea, 1946: 293; Exell, 1973a: 360) and from Río Muni (Mildbraed, 1922: 161; Exell, 1944: 168). Pantropical species, introduced throughout the tropics. In Africa it has been reported from Angola, Benin, Burkina Faso, Burundi, Cameroon, Cape Verde Islands, Central African Republic, Chad, Djibouti, D. R. Congo, Egypt, Ethiopia, Ghana, Guinea, Guinea Bissau, Ivory Coast,

Liberia, Libya, Malawi, Mali, Mozambique, Niger, Nigeria, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia and Zimbabwe (Lock, 1989: 19).

**TESSMANNIA** HARMS

119. *Tessmannia africana* Harms  
Wele Nzaz: Nkoletangan, *Tessmann 377* (K).

Previously reported from Equatorial Guinea (Guinea, 1946: 293; Keay, 1958: 455). Distributed in West and Central Africa, this species has also been reported from Cameroon, Central African Republic, Congo, D.R. Congo and Gabon (Lock, 1989: 60).

120. *Tessmannia anomala* (Micheli) Harms  
Centro Sur: P.N. Monte Alén, *Lejoly 95T/L2.128* (BRLU).

Not previously reported from Equatorial Guinea. This West and Central African species has been reported from Cameroon, D.R. Congo and Gabon (Lock, 1989: 60).

**TETRABERLINIA** (HARMS) HAUMAN

121. *Tetraberlinia bifoliolata* (Harms) Hauman  
*Julbernardia bifoliolata* (Harms) Troupin  
Litoral: Bata–Bolondo, km 15, alrededores de Macomo, *Carvalho 4750* (MA), Bata–Sendje, km 15, cerca de la población de Enigayong, *Carvalho 6316* (MA), Bata–Sendje, km 27, hacia la zona forestal de IBOGA, *Carvalho 6396* (MA); près de la frontière gabonaise, chantier forestier a l'est de Cogo, *McPherson 14014* (WAG); Nco, 20 km NE vers la riviére Mitong, *Nguema & Lejoly 152* (MA).

Previously reported from Río Muni (Wieringa, 1999: 265; Senterre *et al.*, 2004: 503) and from Equatorial Guinea (Troupin, 1950: 320, sub *Julbernardia bifoliolata*). Distributed in Central and South-Central Africa, this species has also been reported from Angola, Cameroon, Congo and Gabon (Wieringa, 1999: 264–267).

122. *Tetraberlinia longiracemosa* (A. Chev.) Wieringa

Litoral: Bata–Sendje, km 22, *Carvalho 5714* (MA).

Not previously reported from Equatorial Guinea. This Central African species has been reported from Gabon (Wieringa, 1999: 276).

123. *Tetraberlinia moreliana* Aubrév.  
Litoral: Mayang, riviére du Mitong, *Lisowski M-849* (BRLU). Centro Sur: P.N. Monte Alén, 11 km a l'Est de la cabaña de Mosumo, *Senterre & Obiang 4106* (BRLU).

Not previously reported from Equatorial Guinea. This Central African species has been reported from Cameroon, Congo and Gabon (Wieringa, 1999: 281–282).

**ZENKERELLA TAUB.**(124). *Zenkerella citrina* Taub.*Cynometra leptoclada* Harms*Cynometra pauciflora* (Harms) Harms*Zenkerella pauciflora* Harms

Previously reported from Bioko (Mildbraed, 1922: 184, sub *Cynometra leptoclada*; Hutchinson, 1928: 331, sub *C. leptoclada*; Guinea, 1946: 292, sub *C. leptoclada* and sub *C. pauciflora*; Keay, 1958: 458; Exell, 1973a: 361, sub *Zenkerella pauciflora*). We have not found any herbarium material of *Z. citrina* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. Mildbraed 6346, type of *C. leptoclada* and originally kept at B, was collected in Bioko, but unfortunately destroyed during World War II (Léonard, 1951: 412). This species is distributed in West and Central Africa and has been reported from Cameroon, Gabon and Nigeria (Lock, 1989: 61).

## DOUBTFUL RECORDS

*Bauhinia glauca* (Benth.) Benth. ssp. *tenuiflora* (Watt ex C.B. Clarke) K. Larsen & S. S. Larsen

This species has been previously reported from Bioko (Guinea, 1946: 295, sub *Bauhinia tenuiflora*; Exell, 1973a: 356, sub *B. tenuiflora*) and Equatorial Guinea (Guinea, 1946: 295, sub *B. tenuiflora*). We have not found any herbarium material of *B. glauca* ssp. *tenuiflora* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species is originally from Asia, and not previously reported from other African country. Hence, its presence in Equatorial Guinea seems unlikely.

*Dialium guineense* Willd.

Previously reported from Bioko (Exell, 1973a: 358), Río Muni (Guinea, 1946: 144) and from Equatorial Guinea (Guinea, 1946: 295). Exell's record refers to previous works and Guinea did not report any specimen. We have not found any herbarium material of *D. guineense* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species has been reported from other African countries including neighbouring São Tomé & Príncipe (Lock, 1989: 34), but at least one specimen reported by Exell is from cultivated fields. Aubréville (1970: 34) suggested that the distribution range of this species falls over tropical Africa north of Cameroon. Hence its presence in Equatorial Guinea seems unlikely.

*Didelotia engleri* Dinkl. & Harms

Previously reported from Equatorial Guinea (Guinea, 1946: 295). We have not found any herbarium material of *D. engleri* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species only has been reported from Liberia (Lock, 1989: 10). The distribution range of the species makes its presence in Equatorial Guinea unlikely.

*Griffonia tenuiflora* Benth.

This species has been reported from Río Muni (Guinea, 1946: 155) and from Equatorial Guinea (Guinea, 1946: 295, sub *Griffonia tenuiflora* var. *valentina* De Wild.). We have not found any reference to this species in the literature or through the IPNI search web page ([http://www.ipni.org/ipni/query\\_ipni.html](http://www.ipni.org/ipni/query_ipni.html)). We also have not found any herbarium material of *G. tenuiflora* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG supporting this record. This could be a misprint by Guinea (1946). Until material or references become available, we have to place this report as a doubtful species.

*Senna tora* (L.) Roxb.

Previously reported from Bioko (Cufodontis, 1955: 221, sub *Cassia tora*; Keay, 1958: 455, sub *C. tora*). We have not found any herbarium material of *S. tora* from Equatorial Guinea in BM, BRLU, K, LISC, LISU, MA and WAG. This species is Asian in origin and it has been reported only from Tanzania in Africa (Lock, 1989: 40), moreover *S. obtusifolia* has been generally confused with *S. tora* (Brenan, 1967: 77). Its occurrence in Equatorial Guinea seems unlikely.

## STATISTICAL SUMMARY

The total number of indigenous and introduced taxa listed here for Equatorial Guinea is 124. The species list is based primarily on herbarium material, with the exception of 14 reports from the literature; species-wide distribution ranges suggest they may occur in Equatorial Guinea.

Forty-five species are reported for the first time from the country. These reports are from Río Muni which is the least explored territory (Aedo & Velayos, 2001). Although our work quantitatively increases the floristic knowledge of this country by 35%, many plants reported from Cameroon or Gabon have still not been found, reflecting the necessity of future explorations.

In the checklist, we included 11 species (8%) that may be naturalized in Equatorial Guinea; this total is lower than the 20.5% found in the Mimosoideae (Estrella *et al.*, 2005). The number of introduced species is higher in the islands of the Gulf of Guinea (Table 1), probably because they have been cultivated for a long time.

A continental bridge lasted 30,000–40 000 years in the last ice age between Bioko and Cameroon coast. This explains the high number of species found in Bioko and the low level of endemism (Pérez del Val, 1993: 14).

In spite of this continental influence (Exell, 1973b: 7) many plants reported from the continental mainland have still not been found in Bioko, unlike species of *Aphanocalyx* or *Tetraberlinia*. This group of plants is said to be absent from volcanic territories because



**Table 1.** Indigenous and introduced species of Caesalpinoideae from Mt. Cameroon and the four islands of the Gulf of Guinea (Sources: <sup>1</sup>Cable & Cheek, 1998; <sup>2</sup>Liberato, 1976)

	Mt. Cameroon <sup>1</sup>	Bioko	São Tomé <sup>2</sup>	Príncipe <sup>2</sup>	Annobón
Indigenous	43	24	6	2	2
Introduced	0	9	15	4	5

they are ectomycorrhizal species (Newbery *et al.*, 1988: 436), which may represent an advantage in non-volcanic soils where phosphorus is a limiting factor (Wieringa, 1999).

The high number of Caesalpinoideae species, the most important group in low evergreen rainforest, found in Río Muni reflects the fact that Equatorial Guinea, together with Gabon, are the best conserved territories in West and Central Africa (Hamilton, 1994; Wieringa, 1999).

#### ACKNOWLEDGEMENTS

The authors wish to thank the keepers from BM, BRLU, K, LISC, LISU, MA and WAG for their support at these herbaria and loan of selected material. We are grateful to Juan Castillo for his help in the map design, B. Senterre for his revision of several specimens and J. Wieringa for his advice and identifications on his visit to MA. We also are indebted to B. Mackinder for revision of *Berlinia* specimens and her critical and valuable review of the manuscript. We also have to thank the help and highly constructive comments by L. Rico on the first draft of the article. This work was financed by the Spanish Dirección General de Investigación Científica y Técnica (DGICYT) through the research project REN2002-011299. M. de la Estrella was first funded by a C.S.I.C.I3P research grant and afterwards by a Universidad Complutense de Madrid predoctoral grant.

#### REFERENCES

- Aedo C, Velayos M. 2001.** Exploraciones botánicas en Guinea Ecuatorial. In: Aedo C, Morales R, Tellería M, Velayos M, eds. *Botánica y Botánicos en Guinea Ecuatorial*. Madrid: Consejo Superior de Investigaciones Científicas & Agencia Española de Cooperación Internacional, 23–49.
- Aedo C, Velayos M, Tellería MT. 1999.** *Bases Documentales Para la Flora de Guinea Ecuatorial. Plantas Vasculares y Hongos*. Madrid: Consejo Superior de Investigaciones Científicas & Agencia Española de Cooperación Internacional.
- Aubréville A. 1968.** *Flore du Gabon 15: Légumineuses – Caesalpinoidées*. Paris: Muséum National d'Histoire Naturelle.
- Aubréville A. 1970.** *Flore du Cameroun 9: Légumineuses – Caesalpinoidées*. Paris: Muséum National d'Histoire Naturelle.
- Brenan JPM. 1967.** *Flora of Tropical East Africa: Leguminosae – Caesalpinoideae*. London: The Crown agents for Oversea Governments and Administrations.
- Breteler FJ. 1999.** A revision of *Prioria*, including *Gossweilero-dendron*, *Kingiodendron*, *Oxystigma*, and *Pterygopodium* (Leguminosae-Caesalpinoideae-Detarieae) with emphasis on Africa. *Wageningen Agricultural University Papers* **99-3**: 1–61.
- Cabezas F, Aedo C, Velayos M. 2004.** Checklist of the Cyperaceae of Equatorial Guinea (Annobón, Bioko, Río Muni). *Belgian Journal of Botany* **137**(1): 3–26.
- Cabezas F, Estrella M, Aedo C, Velayos M. 2005.** Marantaceae of Equatorial Guinea. *Annales Botanici Fennici* **42**(3): 173–184.
- Cable S, Cheek M. 1998.** *The plants of Mount Cameroon. A conservation checklist*. Kew: Royal Botanic Gardens.
- Cufodontis G. 1955.** Enumeratio Plantarum Aethiopiae Spermatophyta (Sequentia). *Bulletin du Jardin Botanique de l'État à Buxelles, Supplementum* **25**(2): 193–272.
- De Castro ML, De la Calle ML. 1985.** *Geografía de Guinea Ecuatorial*. Madrid: Secretaría General Técnica, Ministerio de Educación y Ciencia.
- Estrella M, Cabezas F, Aedo C, Velayos M. 2005.** Checklist of the Mimosoideae (Leguminosae) of Equatorial Guinea (Annobón, Bioko, Río Muni). *Belgian Journal of Botany* **138**(1): 11–23.
- Exell AW. 1944.** *Catalogue of the vascular plants of S. Tomé (with Príncipe and Annobón)*. London: The British Museum (Natural History).
- Exell AW. 1956.** *Supplement to the catalogue of the vascular plants of S. Tomé (with Príncipe and Annobón)*. London: The British Museum (Natural History).
- Exell AW. 1963.** Angiosperms of the Cambridge Annobon Island Expedition. *Bulletin of the British Museum (Natural History)*. *Botany* **3**(3): 93–118.
- Exell AW. 1973a.** Angiosperms of the islands of the gulf of Guinea (Fernando Po, Príncipe, S. Tomé and Annobón). *Bulletin of the British Museum (Natural History)*. *Botany* **4**(8): 325–411.
- Exell AW. 1973b.** Relações florísticas entre as ilhas do golfo da Guiné e destas com o continente africano. *Garcia de Orta. Série de Botânica. Revista da Junta de Investigações do Ultramar* **1**(1–2): 3–10.
- Fernández Casas FJ. 1992.** Ad Guineaae Aequatorialis floram texendam inventa varia. *Fontqueria* **33**: 33–85.

- Fernández Casas FJ, Morales R. 1995.** Proyecto de una flora de la isla de Bioko (Guinea Ecuatorial). *Anales del Jardín Botánico de Madrid* **52** (2): 230–240.
- Fero M, Cabezas F, Aedo C, Velayos M. 2003.** Check-list of the Piperaceae of Equatorial Guinea. *Anales del Jardín Botánico de Madrid* **60**(1): 45–50.
- Guinea E. 1946.** *Ensayo Geobotánico de la Guinea Continental Española*. Madrid: Dirección General de Marruecos y Colonias.
- Guinea E. 1968.** Fernando Po. In: Hedberg I, Hedberg O, eds. Conservation of vegetation in Africa South of the Sahara. *Acta Phytogeographica Suecica* **54**: 130–132.
- Hamilton AC. 1994.** Regional overview: Africa. In: Davis SD, Heywood VH, Hamilton AC, eds. *Centres of plant diversity. A guide and strategy for their conservation, Vol. 1: Europe, Africa, South West Asia and the Middle East*. Cambridge: The World Wide Fund for Nature (WWF)/ IUCN (The World Conservation Union)/ National Museum of Natural History, Smithsonian Institution, 101–264.
- Harms H. 1915.** Leguminosae africanae VIII. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* **53**: 458.
- Heras P, Infante M, Obama C, Gascoigne A. 2002.** Vegetación de la isla de Annobón (República de Guinea Ecuatorial). *Estudios del Museo de Ciencias Naturales de Álava* **17**: 115–123.
- Herrero A, Aedo C, Velayos M, Viane RL. 2001.** A new species of *Asplenium* (Aspleniaceae, Pteridophyta) from Equatorial Guinea. *Annales Botanici Fennici* **38**: 175–180.
- Heywood VH. 1978.** *Flowering plants of the World*. London: Oxford University Press.
- Hutchinson J. 1928.** *Flora of West Tropical Africa*. London: The Crown agents for the Colonies, vol. 1(2), 325–351.
- Irwin HS, Barneby RC. 1982.** The American Cassiniinae: a synoptical revision of Leguminosae tribe Cassieae subtribe Casiinae in the New World. *Memoirs of the New York Botanical Garden* **35**: 1–918.
- Key RWJ. 1958.** *Flora of West Tropical Africa*. London: The Crown agents for Oversea Governments and Administrations, 2nd edn, vol. 1(2), 439–484.
- Lejoly J, Lisowski S. 1999.** Novitates Guineae Aequatorialis (5). Premier aperçu sur la végétation des inselbergs au Río Muni. *Bulletin du Jardin Botanique National de Belgique* **67**: 114–121.
- Léonard J. 1951.** Notulae Systematicae XI. Les Cynometra et les genres voisins en Afrique tropicale. *Bulletin du Jardin Botanique de l'Etat à Bruxelles* **21**(3–4): 373–450.
- Léonard J, Voorhoeve AG. 1964.** Notulae Systematicae XXXV. The genera *Stachyothyrsus* Harms and *Kaoue* Pellegr. (African Caesalpinioideae). *Bulletin du Jardin Botanique de l'Etat à Bruxelles* **34**(3): 419–423.
- Liberato MC. 1976.** *Flora de S. Tomé E Príncipe. Caesalpinaceae*. Lisbon: Junta de Investigações Científicas do Ultramar.
- Lock JM. 1989.** *Legumes of Africa: a Check-List*. Kew: Royal Botanic Gardens.
- Mckey DB. 2000.** *Leonardoxa africana* (Leguminosae: Caesalpinioideae) a complex of mostly allopatric subspecies. *Adansonia, Sér.* **3** **22**(1): 71–109.
- Mildbraed GWJ. 1922.** *Wissenschaftliche Ergebnisse der Zweiten Deutschen Zentral-Afrika-Expedition 1910–11. Band II: Botanik*. Leipzig: Verlag von Klinkhardt & Biermann.
- Newbery DM, Alexander IJ, Thomas DW, Gartlan JS. 1988.** Ectomycorrhizal rain-forest legums and soil phosphorus in Korup National Park, Cameroon. *New Phytologist* **109**: 433–450.
- Ngok Banak L, Breteler FJ. 2004.** Novitates Gabonenses 50. Le genre *Oddoniodendron* (Leguminosae-Caesalpinioideae) de Basse Guinée: une révision taxonomique du genre avec description de deux espèces nouvelles du Gabon. *Adansonia, Série 3* **26**(2): 241–250.
- Oliver D. 1871.** *Flora of Tropical Africa*, 2. London: Her Majesty's Works.
- Parmentier I. 2001.** Premières études sur la diversité végétale des inselbergs de Guinée Équatoriale continentale. *Systematics and Geography of Plants* **71**: 911–922.
- Parmentier I. 2003.** Study of the vegetation composition in three inselbergs from Continental Equatorial Guinea (Western Central Africa): effects of site, soil factors and position relative to forest fringe. *Belgian Journal of Botany* **136**(1): 63–72.
- Parmentier I, Geerinck D. 2003.** Check list of the Melastomataceae of Equatorial Guinea. *Anales del Jardín Botánico de Madrid* **60**(2): 331–346.
- Parmentier I, Lejoly J, Nguema N. 2001.** La végétation des inselbergs de Piedra Nzas (Guinée Équatoriale continentale). *Acta Botanica Gallica* **148**(4): 341–365.
- Pérez del Val J. 1993.** El bosque de altura en Bioko. *África* **2000**(18–19): 9–14.
- Polhill RM. 1982.** *Crotalaria in Africa and Madagascar*. Rotterdam: A.A. Balkema.
- Polhill RM, Raven PH, eds. 1981.** *Advances in legume systematics. Part 1*. Kew: Royal Botanic Gardens/ London: Ministry of Agriculture, Fisheries and Food.
- Rojo JP. 1982.** Studies in the genus *Dialium* (Cassiae-Caesalpinioideae). Unpubl. DPhil thesis, Oxford University.
- Senterre B. 2001.** La phytogéographie des forêts denses de Guinée Équatoriale, avec une attention particulière aux forêts de Nsork. *Systematics and Geography of Plants* **71**: 1087–1096.
- Senterre B, Lejoly J. 2001.** Trees diversity in the Nsork rain forest (Río Muni, Equatorial Guinea). *Acta Botanica Gallica* **148**(3): 227–235.
- Senterre B, Lejoly J, Sonké B. 2004.** Analyse du gradient de continentalité et identification de communautés végétales en forêts denses d'Afrique centrale per la méthode du méga-transect. *Phytocoenologia* **34**(3): 491–516.
- Sobrinho LG. 1953.** Vascular plants from Ano Bom and Principe islands collected by F. Newton and J. de Souza Junior. *Portugaliae Acta Biologica. Série B, Sistemática, Ecologia, Biogeografia E Paleontologia* **4**(1): 177–190.
- Troupin G. 1950.** Contribution à l'étude systématique de Berlinia Soland et genres voisins (Caesalpinioideae – Amher-

stieae). *Bulletin du Jardin Botanique de l'Etat a Bruxelles* **20**(2): 285–324.

**Velayos M, Aedo C, Pérez Viso R. 2001.** Check-List of the Pteridophytes of Equatorial Guinea. *Belgian Journal of Botany* **134**(2): 145–191.

**Vidigal MP. 2002.** *Flora de Cabo Verde, Plantas Vasculares 44: Caesalpinaceae*. Lisboa-Praia: Centro de Botânica do Instituto de Investigação Científica Tropical (IICT).

## APPENDIX

## INDEX TO SCIENTIFIC NAMES

Accepted names are in boldface. Synonyms are in *italics*. Doubtful records are in normal type.

## A

**Afzelia** Sm., 543

**africana** Sm. ex Pers., 543

**bella** Harms, 543

**bipindensis** Harms, 543

**pachyloba** Harms, 543

**Anthonotha** P. Beauv., 543

**acuminata** (De Wild.) J. Léonard, 543

**fragrans** (Baker f) Exell & Hillc., 543

**lamprophylla** (Harms) J. Léonard, 543

**macrophylla** P. Beauv., 543

**pynaertii** (De Wild.) Exell & Hillc., 543

**stipulacea** (Benth.) J. Léonard, 544

**Aphanocalyx** Oliv., 544

**cynometroides** Oliv., 544

**heitzii** (Pellegr.) Wieringa, 544

**ledermannii** (Harms) Wieringa, 544

**margininervatus** J. Léonard, 544

**microphyllus** (Harms) Wieringa ssp.

**microphyllus**, 544

## B

**Baikiaea** Benth., 544

**insignis** Benth., 544

**robysii** Ghesq. ex Laing, 544

*Bandeiraea tenuiflora* Benth., 550

**Bauhinia** L., 544

**glauca** (Benth.) Benth. ssp. **tenuiflora** (Watt ex C.B. Clarke) K. Larsen & S. S. Larsen, 556

**monandra** Kurz, 544

*reticulata* DC., 552

*tenuiflora* Watt ex C.B. Clarke, 556

**Berlinia** Sol ex Hook.f., 544

*acuminata* Sol. ex Hook.f. pro parte, 545

**auriculata** Benth., 544

**bracteosa** Benth., 544

**bruneelii** (De Wild.) Torre & Hillc., 544

**confusa** Hoyle 545

**congolensis** (Baker f) Keay 545

**Wieringa JJ. 1999.** *Monopetalanthus* exit. A systematic study of *Aphanocalyx*, *Bikinia*, *Icuria*, *Michelsonia* and *Tetraberlinia* (Leguminosae, Caesalpinioideae). *Wageningen Agricultural University Papers* **99-4**: 1–320.

**grandiflora** (J. Vahl) Hutch. & Dalziel, 545

*stipulacea* Benth., 549

**Bikinia** Wieringa 545

**grisea** Wieringa 545

**le-testui** (Pellegr.) Wieringa ssp. **le-testui**, 545

**pellegrii** (A. Chev.) Wieringa, 545

**Brachystegia** Benth., 545

**cynometroides** Harms, 545

*klainei* Pierre ex Harms, 551, 552

**mildbraedii** Harms, 545

## C

**Caesalpinia** L., 545

**bonduc** (L.) Roxb., 545

*bonducella* (L.) Fleming, 545

*crista sensu auctt* non L., 545

**pulcherrima** (L.) Sw., 546

**Cassia** L., 546

*alata* L., 553

*kirkii* Oliv., 546

*laevigata* Willd., 554

**mannii** Oliv., 546

*mimosoides* L., 546

*obtusifolia* L., 553, 554

*occidentalis* L., 554

*podocarpa* Guill. & Perr., 554

*sophora* L., 554

*tora* L., 556

**Chamaecrista** Moench, 546

**kirkii** (Oliv.) Standl., 546

**mimosoides** (L.) Greene, 546

**Copaifera** L., 546

*demeusei* Harms, 550

**religiosa** J. Léonard, 546

*tessmannii* Harms, 550

**Crudia** Schreb., 546

**gabonensis** Pierre ex Harms, 546

**klainei** Pierre ex De Wild., 546

**senegalensis** Planch. ex Benth., 547

**Cryptosepalum** Benth., 547

**staudtii** Harms, 547

**Cynometra** L., 547

*floribunda* Benth., 551

*leptoclada* Harms, 556

**mannii** Oliv., 547

*pauciflora* (Harms) Harms, 556

**D**

- Daniellia** Benn., 547  
*klainei* Pierre ex A.Chev., 547  
*oblonga* Oliv., 547  
*ogea* (Harms) Rolfe ex Holland, 547  
*oliveri* (Rolfe) Hutch. & Dalziel, 547

**Delonix** Raf., 547

- regia* (Bojer ex Hook.) Raf., 547

**Detarium** Juss., 547

- macrocarpum* Harms, 547  
*microcarpum* Guill. & Perr., 548

**Dialium** L., 548

- bipindense* Harms, 548  
*dinklagei* Harms, 548  
*gossweileri* Baker f., 548  
*guineense* Willd., 556  
*pachyphyllum* Harms, 548  
*tessmannii* Harms, 548  
*zenkeri* Harms, 548

**Didelotia** Baill., 548

- africana* Baill., 548  
*brevipaniculata* J. Léonard, 548  
*engleri* Dinkl. & Harms, 556  
*letouzeyi* Pellegr., 548  
*unifoliolata* J. Léonard, 548

**Distemonanthus** Benth., 548

- benthamianus* Baill., 548  
*laxus* Oliv., 548

**Duparquetia** Baill., 548

- orchidacea* Baill., 548

**E**

*Eriander engleri* H. Winkler, 553

**Erythrophleum** Afzel. ex R. Br., 549

- guineense* G. Don, 549  
*ivorense* A. Chev., 549  
*suaveolens* (Guill. & Perr.) Brenan, 549

**Eurypetalum** Harms, 549

- tessmannii* Harms, 549

**G****Gilbertiodendron** J. Léonard, 549

- brachystegioides* (Harms) J. Léonard, 549  
*demonstrans* (Baill.) J. Léonard, 549  
*dewevrei* (De Wild.) J. Léonard, 549  
*klainei* (Pierre ex Pellegr.) J. Léonard, 549  
*ogouense* (Pellegr.) J. Léonard, 549  
*stipulaceum* (Benth.) J. Léonard, 549  
*straussianum* (Harms) J. Léonard, 549

**Gilletiodendron** Vermeesen, 550

- escherichii* (Harms) J. Léonard, 550  
*piereanum* (Harms) J. Léonard, 550

*Gossweilerodendron joveri* Normand ex Aubrév., 553

**Griffonia** Baill., 550

- physocarpa* Baill., 550  
*tenuiflora* Benth., 556  
*tessmannii* (De Wild.) Compère, 550

**Guibourtia** Benn., 550

- demeusei* (Harms) J. Léonard, 550  
*ehie* (A. Chev.) J. Léonard, 550  
*tessmannii* (Harms) J. Léonard, 550

**H****Hylodendron** Taub., 550

- gabunense* Taub., 550

**Hymenostegia** (Benth.) Harms, 550

- afzelii* (Oliv.) Harms, 550  
*dinklagei* Harms, 550  
*felicis* (A. Chev.) J. Léonard, 550  
*floribunda* (Benth.) Harms, 551  
*normandii* Pellegr., 551  
*pellegrinii* (A. Chev.) J. Léonard, 551

**I****Isomacrolobium** Aubrév. & Pellegr., 551

- conchiliophorum* (Pellegr.) Aubrév. & Pellegr., 551  
*graciliflorum* (Harms) Aubrév. & Pellegr., 551  
*isopetalum* (Harms) Aubrév. & Pellegr., 551

**J****Julbernardia** Pellegr., 551

- bifoliolata* (Harms) Troupin, 555  
*letouzeyi* Villiers, 551  
*pellegriniana* Troupin, 551  
*seretii* (De Wild.) Troupin, 551

**L****Leonardoxa** Aubrév., 551

- africana* ssp. *gracilicaulis* Mckey, 551

**Librevillea** Hoyle, 551

- klainei* (Pierre ex Harms) Hoyle, 551

**M**

*Macrolobium brachystegioides* Harms, 549

*Macrolobium dewevrei* De Wild., 549

*Macrolobium escherichii* Harms, 550

*Macrolobium graciliflorum* Harms, 551

*Macrolobium macrophyllum* (P. Beauv.) Macbride, 543

*Macrolobium palisoti* Benth., 543

*Macrolobium straussianum* Harms, 550

*Monopetalanthus le-testui* Pellegr., 545

**N****Neochevalierodendron** J. Léonard, 552

- stephanii* (A. Chev.) J. Léonard, 552

**O****Odoniodendron** De Wild., 552

- micranthum* (Harms) Baker f., 552

*Oxystigma manni* (Baill.) Harms, 553

**P****Pachyelasma** Harms, 552

- tessmannii* (Harms) Harms, 552

**Pellegriniodendron** J. Léonard, 552

- diphyllum* (Harms) J. Léonard, 552

**Peltophorum** (Vogel) Walp., 552

- ferrugineum* (Decne.) Benth., 552

- pterocarpum* (DC.) K. Heyne, 552

**Piliostigma** Hochst., 552

- reticulatum** (DC.) Hochst., 552  
**thonningii** (Schumach.) Milne-Redh., 552  
**Plagiosiphon** Harms, 552  
**emarginatus** (Hutch. & Dalziel) J. Léonard, 552  
**gabonensis** (A. Chev.) J. Léonard, 553  
**longitubus** (Harms) J. Léonard, 553  
**multijugus** (Harms) J. Léonard, 553  
*Poinciana regia* Bojer ex Hook., 547  
**Prioria** Griseb., 553  
**buchholzii** (Harms) Breteler, 553  
**joveri** (Normand ex Aubrév.) Breteler, 553  
**mannii** (Baill.) Breteler, 553
- S**  
*Schotia africana* (Baill.) Keay, 551  
*Schotia humboldtioides* Oliv., 551  
**Scorodophloeus** Harms, 553  
**zenkeri** Harms, 553  
**Senna** Mill., 553  
**alata** (L.) Roxb., 553  
**hirsuta** (L.) H.S. Irwin & Barneby, 553  
**obtusifolia** (L.) H.S. Irwin & Barneby, 553  
**occidentalis** (L.) Link, 554  
**podocarpa** (Guill. & Perr.) Lock, 554  
**septemtrionalis** (Viv) H.S. Irwin & Barneby, 554  
**sopha** (L.) Roxb., 554
- spectabilis** (DC.) H.S. Irwin & Barneby, 554  
**tora** (L.) Roxb., 556  
**Sindora** Miq., 555  
**klaineana** Pierr. ex Pellegr., 555  
**Sindoropsis** J. Léonard, 555  
**le-testui** (Pellegr.) J. Léonard, 555  
**Stachyothyrsus** Harms, 555  
**staudtii** Harms, 555  
**Stemonocoleus** Harms, 555  
**micranthus** Harms, 555
- T**  
**Tamarindus** L., 555  
**indica** L., 555  
**Tessmannia** Harms, 555  
**africana** Harms, 555  
**anomala**(Micheli) Harms, 555  
**Tetraberlinia** (Harms) Hauman, 555  
**bifoliolata** (Harms) Hauman, 555  
**longiracemosa** (A. Chev.) Wieringa, 555  
**moreliana** Aubrév., 555
- Z**  
**Zenkerella** Taub., 556  
**citrina** Taub., 556  
**pauciflora** Harms, 556

## LIST OF COLLECTIONS

The species is indicated by a number in parenthesis corresponding to the number in the checklist.

**Barter** 2074 (42). **Boughey** 83 (33). **Cabezas, Telleria & Velayos** 9929 (1). **Carvalho** 2041 (95); 2086 (8); 2172 (117); 2403 (33); 2490 (8); 2620 (33); 2669 (109); 2851 (20); 2879 (16); 2939 (20); 2991 (2); 3067 (118); 3080 (30); 3379 (20); 3409 (95); 3428 (30); 3783 (16); 3789 (44); 4335 (109); 4338 (78); 4343 (109); 4731 (22); 4750 (121); 4759 (40); 4804 (59); 4831 (72); 4851 (61); 4869 (91); 4985 (94); 5065 (24); 5103 (33); 5157 (2); 5167 (2); 5183 (75); 5197 (114); 5208 (98); 5237 (8); 5265(26); 5457 (98); 5473 (78); 5602 (2); 5670 (72); 5691 (72); 5705 (107); 5714 (122); 5829 (36); 5936 (40); 6046 (83); 6078 (10); 6094 (98); 6316 (121); 6317 (23); 6336 (24); 6366 (90); 6394 (10); 6396 (121); 6398 (33); 6405 (15); 6526 (15). **Desmet, R. Nguema & N. Nguema** 118 (80); 207 (81). **Eneme** 338 (40). **Fernández Casas** 11993 (109); 12032 (113). **Fernández Casas et al.** 10269 (45); 10278 (8); 10445 (95); 10446 (113). **Guinea** 8–10 (97); 10 (97); 12 (31), 15 (31), 25 (31), 27 (31); 46–207 (17); 47 (17); 56 (108); 65 (108); 67 (108); 68 (60); 68b (108); 70 (60); 70b (108); 124 (106); 126 (106); 128 (106); 182 (111); 184 (111); 185–209 (111); 196–748 (34); 210 (60); 226 (30); 231–1012 (40); 289 (18); 300 (30); 303 (30); 304 (30); 409

(20); 412 (20); 837–191 (61); 878 (30); 881–428 (30); 882–427 (30); 883–425 (30); 884–426 (30); 1056 (34); 1058 (34); 1170 (118); 1176 (8); 1177 (8); 1740 (4); 2490 (8); 2506 (8). **Issembe** 16 (87). **Lejoly** 01/64 (65); 93/380 (81); 95/170bis (103); 95/178 (94); 95/179 (101); 95/173T19 (105); 95T/160 (41); 95T/162 (4); 95T/181 (54); 95T/L2.75 (81); 95T/L2.128 (120); 95T/L3a.14 (41); 95T/L3.A24 (14); 95T/L3.1108 (55); 95T/L4.44 (79); 99/503 (86); 165 (57). **Lejoly & Elad** 98/209 (67). **Lisowski** M-347 (103); M-511 (13); M-519 (94); M-570 (62); M-584 (17); M-812 (65); M-849 (123); M-928 (1); M-1071 (62); M-1428 (6). **Mann** 14 (37); 69 (112); 166 (43); 259 (8); 398 (30); 638 (110); 1168 (111); 1434 (20); 1719 (80); 1822 (104); 1827 (68); 1844 (58); 2342 (16). **McPherson** 14014 (121); 14021 (20); 14028 (59). **Melville** 233 (31). **Nguema, Esono & Lejoly** 239 (25); 243 (35); 247 (116). **Nguema & Lejoly** 152 (121). **Nguema & Obiang** 11 (90), 12 (90); 13 (115). **Ngomo** 257 (77); 955 (76). **Nosti** 923 (20). **Parmentier** 1674 (86). **Parmentier & Esono** 3499 (86); 3523 (82). **Parmentier & Nguema** 19 (88). **Pérez Viso** 14 (33); 21 (15); 191(12); 298 (33); 1151 (33); 1311 (89); 1612 (94); 1728 (34); 1874 (19); 1919 (30); 1983 (89); 2041 (109); 2172 (19); 2227 (64); 2367 (107); 2368 (108); 2401 (109); 2409 (33); 2425 (59); 2585 (8); 2718 bi (59); 2719 (8); 2832 bi (34); 2889 (20);

3044 (59); 3197 (85); 3296 (33); 3306 (8); 3476 (33); 3790 (107); 3937 (9); 4350 (106); 4352 (33). **Obama** 814 (105); 846 (3); 882 (56). **Obama & Lejoly** 560 (111); 606 (90). **Senterre & Obiang** 2560 (99); 3163 (48); 3579 (79); 4017 (26); 4106 (123); 4306 (74). **Senterre, Obiang & Esono** 2841 (49). **Senterre, Obiang & Ngomo** 1847 (7); 2122 (76). **Senterre & Nguema** 3031 (99). **Senterre & Ngomo** 176 (73); 911 (103); 3451 (53). **Tessmann** 4 (8); 43 (51); 105 (102); 187 (109); 217a (60); 248 (36); 270 (116); 284 (89); 307 (39); 324 (108); 333 (21); 355 (53); 376 (3); 377 (119); 694 (108); 730 (52) 815 (5); 950 (21); 1095 (60); 2501 (47); 2688 (34). **Vogel** 200 (111); 211 (112). **Velayos & Pérez Viso** 9313 (8). **Wieringa & Haegens** 2265 (94). **Wilks** 1802 (100); 1820 (80); 3511a (54); 3523 (27); 3525 (88); 3565 (66); 3582 (67). **Wrigley** 39 (30); 230 A (108); 230 (109); 255 (118).

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