

## CHECK-LIST OF THE PIPERACEAE OF EQUATORIAL GUINEA

by

MAXIMILIANO FERRO<sup>1</sup>, FRANCISCO CABEZAS<sup>2</sup>, CARLOS AEDO<sup>2</sup> & MAURICIO VELAYOS<sup>2</sup>

<sup>1</sup> Escuela Universitaria de Estudios Agropecuarios, Pesca y Forestal  
de la Universidad Nacional de Guinea Ecuatorial. Malabo  
<sogosote@yahoo.es>

<sup>2</sup> Real Jardín Botánico, CSIC. Plaza de Murillo, 2. E-28014 Madrid  
<cabezas@ma-rjb.csic.es> <aedo@ma-rjb.csic.es> <velayos@ma-rjb.csic.es>

### Resumen

FERRO, M., F. CABEZAS, C. AEDO & M. VELAYOS (2003). Catálogo de las Piperaceae de Guinea Ecuatorial. *Anales Jard. Bot. Madrid* 60(1): 45-50 (en inglés).

Se presenta el catálogo florístico de la familia Piperaceae para Guinea Ecuatorial, en el que se recogen un total de 13 especies englobadas en tres géneros. En Annobón están presentes tres especies, 13 en Bioko y cinco en Río Muni. *Peperomia* es el género mejor representado, con 10 especies. Los otros dos géneros, *Pothomorphe* y *Piper*, están representados por una y dos especies, respectivamente. Se han recopilado y revisado las referencias bibliográficas previas para la zona hasta un total de 223 citas. *Peperomia molleri* y *Piper capense* se citan por primera vez para Río Muni.

Palabras clave: Piperaceae, Guinea Ecuatorial.

### Abstract

FERRO, M., F. CABEZAS, C. AEDO & M. VELAYOS (2003). Check-list of the Piperaceae of Equatorial Guinea. *Anales Jard. Bot. Madrid* 60(1): 45-50.

A check-list of the Piperaceae from Equatorial Guinea is presented, with 13 species. Three species are known from Annobón, 13 species from Bioko and 5 species from Río Muni. The best represented genus is *Peperomia*, with 10 species. The other two genera, *Piper* and *Pothomorphe*, are represented by two and one species, respectively. Additionally, bibliographic references on Piperaceae of Equatorial Guinea (223 records) have been gathered and revised. *Peperomia molleri* and *Piper capense* are recorded as new to Río Muni.

Key words: Piperaceae, Equatorial Guinea.

### INTRODUCTION

Piperaceae grow in tropical forests from S Asia to Tropical America, including those of Africa and Australia. Although TEBBS (1990) reduced Piperaceae to only 5 genera, most authors (YUNKER, 1958; DINIZ, 1997; IMMELMAN, 2000) include the 3000 species of the family in at least 7 genera.

Tropical Africa's Piperaceae were studied by BAKER & WRIGHT (1913), VERDCOURT (1996), DINIZ (1997), and especially by HUTCHINSON & DALZIEL (1927-28, 1954) and BALLE (1940-42; 1948) in West Tropical Africa. Further studies on Equatorial Guinea refer only to Bioko (ESCARRÉ, 1969; FERNÁNDEZ CASAS 1992, 1995). There is no account of Piperaceae in Río Muni, though they were

included in Guinea's complete catalogue of vascular plants (GUINEA, 1946).

Over the last twenty years the Real Jardín Botánico, Madrid, has performed intensive fieldwork in both Bioko and Río Muni, in order to prepare a vascular Flora of Equatorial Guinea. First results with the identifications of these collections are those of VELAYOS & *al.* (2001) or this check-list of Piperaceae.

The aim of this study is to update the catalogue of Piperaceae of the whole of Equatorial Guinea using both bibliographic records and herbarium material.

#### MATERIAL AND METHODS

This check-list is primarily based on herbarium specimens. We have studied the whole collection of Piperaceae of Equatorial Guinea from MA, including the collections of earlier Spanish expeditions (Guinea, Carvalho, Fernández Casas, etc.). In addition, we have included the collections made under the Agencia Española de Cooperación Internacional project "Inventario florístico de Guinea Ecuatorial" –from 1998 to 2001– by Aedo, Pérez Viso and Velayos. These materials are deposited in MA. Bibliographic references on Piperaceae of Equatorial Guinea have been gathered too (AEDO & *al.*, 1999). We include one species based only on literature records, *Peperomia pellucida* (L.) Kunth, since its distribution area makes probably the presence of this species in Equatorial Guinea.

The locality names used in this check-list have been brought up-to-date and made uniform, according to VELAYOS & *al.* (2001). For instance, we use Pico Basilé for "Clarence Peak", or "pico de Santa Isabel", etc.

The check-list is alphabetically ordered by genera and species. Generic and specific circumscription is in accordance with LEBRUN & STORK (1991). Under each accepted name a list with the synonyms used in the literature of Equatorial Guinea and a bibliographic reference of a drawing of the species are included.

Herbarium specimens are ordered alphabetically by collectors within the different regions and provinces: Annobón, Bioko

(provinces of Bioko Norte, and Bioko Sur) and Río Muni (provinces of Centro-Sur, Nkietem, Litoral, Wele-Nzas). New records for each region are indicated under the species.

Previous bibliographical records of each taxon are grouped under the previously mentioned three regions. When the taxon was recorded under a different name (synonym or misidentification) it is indicated (i.e.: GUINEA, 1946: 271, sub *P. mannii*).

*Pothomorphe*, which taxonomic position is unclear, is treated as a separated genus, according to LEBRUN & STORK (1991). Several authors prefer to reduce it to a section under *Piper* (TEBBS, 1990).

#### CHECK-LIST

### 1. *Peperomia fernandopoiana* C. DC.

*Icon.*: DÜLL (1973: 80).

EQG, BOKO NORTE: Malabo-Pico Basilé, km 12, *Carvalho 2951*, MA 512080, *Fernández Casas 10217*, MA 511793. BOKO SUR: Moka-Lago Loreto, *Fernández Casas 11891*, MA 513668. Belebú Balachá, *Fernández Casas 12153*, MA 513237. Alrededores del Lago Loreto, *Guinea 1828*, MA 387584.

Previously recorded from Annobón (DÜLL, 1973: 115), Bioko (DE CANDOLLE, 1866: 134; BAKER & WRIGHT, 1909: 152; MILDBRAED, 1922: 181; HUTCHINSON & DALZIEL, 1928: 79; 1954: 82; GUINEA, 1946: 271; 1968: 130; ESCARRÉ, 1969: 6-7; DÜLL, 1973: 114-115; JOHANSSON, 1974: 42; FERNÁNDEZ CASAS, 1992: 43) and Río Muni (GUINEA, 1946: 151).

### 2. *Peperomia kamerunana* C. DC.

*Icon.*: DÜLL (1973: 76).

EQG, BOKO SUR: Moka-Lago Biaó, *Fernández Casas 10416*, MA 512917.

Previously recorded from Bioko (HUTCHINSON & DALZIEL, 1954: 83; ESCARRÉ, 1969: 5; DÜLL, 1973: 95; FERNÁNDEZ CASAS, 1992: 43-44).

### 3. *Peperomia laeteviridis* Engl.

*Icon.*: DÜLL (1973: 78).

EQG, BOKO NORTE: Malabo-Pico Basilé, *Fernández Casas 10318*, MA 511668, *Fernández Casas 11228*, MA 512661.

Previously recorded from Bioko (DÜLL, 1973: 104; FERNÁNDEZ CASAS, 1992: 44; FERNÁNDEZ CASAS & MORALES, 1995: 238).

#### 4. *Peperomia molleri* C. DC.

*Icon.*: DÜLL (1973: 79).

EQG, CENTRO SUR: Bata-Niefang, Monte Alén, río Otom-Asok, *Carvalho* 5354, MA 598278.

Previously recorded from Bioko (HUTCHINSON & DALZIEL, 1954: 82; ESCARRÉ, 1969: 6; DÜLL, 1973: 108; JOHANSSON, 1974: 42; FERNÁNDEZ CASAS & MORALES, 1995: 238).

Not previously recorded from Río Muni.

#### 5. *Peperomia pellucida* (L.) Kunth

*Piper pellucidum* L.

*Peperomia vogelii* Miq.

*Icon.*: DÜLL (1973: 73).

This species has been previously recorded from Bioko: Bioko, unknown collector, (GUINEA, 1946: 271; CUFODONTIS, 1953: 3); Bioko Norte: *Guinea 609* (HUTCHINSON & DALZIEL, 1954: 82; ESCARRÉ, 1969: 6; DÜLL, 1973: 70; FERNÁNDEZ CASAS, 1992: 44), *Escarré 395, 397* (ESCARRÉ, 1969: 6), *Boughey 188* (DÜLL, 1973: 70; FERNÁNDEZ CASAS, 1992: 44) and *Wrigley & Melville 687* (FERNÁNDEZ CASAS, 1992: 44); Bioko Sur: *Mildbraed 6805* (MILDBRAED, 1922: 181, sub *Peperomia vogelii*); *Mildbraed 6803* (DÜLL, 1973: 70, probably is the same collection that Millbraed recorded as *Millbraed 6805*), *Fernández Casas 11424* (FERNÁNDEZ CASAS, 1992: 44).

We have not found any herbarium material of this species. Its distribution area suggests as acceptable the presence of this species in Equatorial Guinea (BALLE, 1940-42: 386; 1948: 22; ESCARRÉ, 1969: 6; VERDCOURT, 1996: 11; DINIZ, 1997: 33; CABLE & CHEEK, 1998: 98).

#### 6. *Peperomia retusa* (L. f.) A. Dietr.

*Piper retusum* L. f.

*Peperomia retusa* var. *mannii* (Hook. f) Düll

*Peperomia mannii* Hook. f.

*Peperomia buëana* C. DC.

*Icon.*: DÜLL (1973: 75).

EQG, BIKO SUR: Moka-Ureka, *Fernández Casas 11735*, MA 513500. Moka-Lago Biaó, *Fernández Casas 11951*, MA 513588. Belebú Balachá-Ureka, *Fernández Casas 12177*, MA 512907.

Previously recorded from Bioko (HOOKER, 1864: 217, sub *Peperomia mannii*; BAKER & WRIGHT, 1909: 153, sub *P. mannii*; MILDBRAED, 1922: 181a, sub *P. mannii*, 181b, sub *P. buëana*; HUTCHINSON & DALZIEL, 1928: 80, sub *P. retusa* var. *mannii*; 1954: 82, sub *P. mannii*; GUINEA, 1946: 271, sub *P. mannii*; ESCARRÉ, 1969: 7, sub *P. mannii*; DÜLL, 1973: 91, sub *P. retusa* var. *mannii*; FERNÁNDEZ CASAS, 1992: 44, sub *P. retusa* var. *mannii*).

#### 7. *Peperomia rotundifolia* (L.) Kunth

*Piper rotundifolium* L.

*Icon.*: DÜLL (1973: 74).

EQG, BIKO NORTE: Malabo-Pico Basilé, km 3-4, *Carvalho 4487*, MA 511707.

Previously recorded from Bioko (FERNÁNDEZ CASAS, 1992: 44; FERNÁNDEZ CASAS & MORALES, 1995: 238).

#### 8. *Peperomia tetraphylla* (G. Forst.) Hook. & Arn.

*Piper tetraphyllum* G. Forst.

*Icon.*: DÜLL (1973: 74).

EQG, BIKO NORTE: Malabo-Pico Basilé, km 12, *Carvalho 2642*, MA 512233. Km 3-4, *Carvalho 4524*, MA 511682. BIKO SUR: Moka, *Guinea 2277*, MA 387562. Moka-Lago Loreto, *Fernández Casas 11887*, MA 513574; Lago Biaó, *Fernández Casas 11970*, MA 513435.

Previously recorded from Bioko (FERNÁNDEZ CASAS, 1992: 44; FERNÁNDEZ CASAS & MORALES, 1995: 238).

#### 9. *Peperomia thomeana* C. DC.

*Peperomia vacciniifolia* C. DC.

*Icon.*: DÜLL (1973: 80).

EQG, BIKO SUR: Lago Biaó, *Fernández Casas 11966*, MA 513443.

Previously recorded from Bioko (HUTCHINSON & DALZIEL, 1954: 82, sub *Peperomia*

*vaccinifolia*; ESCARRÉ, 1969: 7, sub *P. vac-*  
*cinifolia*; DÜLL, 1973: 105; FERNÁNDEZ  
CASAS, 1992: 44).

**10. *Peperomia vulcanica* Baker & C.H.  
Wright**

*Peperomia hygrophila* Engl.

*Peperomia annobonensis* Mildbr.

*Icon.*: DÜLL (1973: 80).

EQG, ANNOBÓN: Pico Surcado, *Wrigley & Melville* 70,  
MA 294800. BIOKO NORTE: Malabo-Pico Basilé, km 5-6,  
*Carvalho* 4226, MA 514147. BIOKO SUR: Moka, fuentes  
de Míoco, *Fernández Casas* 11893, MA 513669.

Previously recorded from Annobón (MILDBRAED, 1922: 160, sub *Peperomia annobonensis*; EXELL, 1944: 276, sub *P. annobonensis*; GUINEA, 1946: 271, sub *P. annobonensis*; EXELL, 1963: 110, sub *P. hygrophila*; 1968: 134, sub *P. hygrophila*; DÜLL, 1973: 103) and Bioko (FERNÁNDEZ CASAS, 1992: 44-45; FERNÁNDEZ CASAS & MORALES, 1995: 238).

**11. *Piper capense* L. f.**

*Coccolobium capense* (L. f.) Klotzsch

*Icon.*: ENGLER (1910: 649); BALLE (1948: 19).

EQG, BIOKO NORTE: Malabo-Pico Basilé, *Carvalho* 2368, MA 512226; *Fernández Casas* 10169, MA 511711; *Fernández Casas* 11233, MA 512666. BIOKO SUR: Moka-Riaba, camino viejo, *Fernández Casas* 11808, MA 513252. Moka-Lago Biaó, *Fernández Casas* 11942, MA 513595. Musola, servicio agronómico, *Guinea* 1194, MA 412217. Musola, Finca Puente, *Guinea* 1752, MA 294858; *Guinea* 1753, MA 412216. CENTRO SUR: Bata-Monte Alén, río Otom-Asok, *Carvalho* 5331, MA 598178.

Previously recorded from Bioko (HOOKER, 1864: 217, sub *Coccolobium capense*; BAKER & WRIGHT, 1909: 146; MILDBRAED, 1922: 181; HUTCHINSON & DALZIEL, 1928: 80; 1954: 84; GUINEA, 1946: 271; CUFODONTIS, 1953: 3; ESCARRÉ, 1969: 8; FERNÁNDEZ CASAS, 1992: 45).

Not previously recorded from Río Muni.

**12. *Piper guineense* Schum. & Thonn.**

*Piper clusii* C. DC.

*Icon.*: ENGLER (1910: 649); BALLE (1940-42: 379).

*Common names.* Spanish: pimienta de Guinea (GUINEA, 1946). Bubi dialect: Topotótopo, Tökolo to muan.

EQG, BIOKO NORTE: Malabo-Pico Basilé, km 3, *Carvalho* 2269, MA 512203. Malabo-Cupapa, km 18-19, *Carvalho* 3476, MA 511908; km 22-23, *Carvalho* 4131, MA 655094. Malabo-Basilé, Finca Vigatana, *Fernández Casas*, *Carvalho*, *Regueiro & Tellería* 10103, MA 399760, 407526. Malabo-Riaba, Bariobé, *Fernández Casas* 10219, MA 511794. Cupapa, *Fernández Casas* 11494, MA 512919; Malabo-Punta Hermosa, km 11-12, *Fernández Casas* 12090, MA 513360. Misión Católica de Malabo, *Guinea* 778, MA 412218; *Guinea* 780, MA 294879. BIOKO SUR: Ruiché, *Fernández Casas* 11346, MA 512790. Luba-Malabo, km 40, *Fernández Casas* 12215, MA 512647. CENTRO SUR: Bata-Niefang, km 35, Mboete, *Carvalho* 5548, MA 598581; *Carvalho* 5590, MA 598813. P. N. Monte Alén, *Pérez Viso* 95, MA 655093.

Previously recorded from Bioko (BAKER & WRIGHT, 1909: 145; MILDBRAED, 1922: 181; HUTCHINSON & DALZIEL, 1928: 80; 1954: 84; GUINEA, 1946: 271a; 271b, sub *Piper clusii*; 1968: 130; ESCARRÉ, 1969: 9; FERNÁNDEZ CASAS, 1992: 45a; 45b, sub *Piper capense* L. f.) and Río Muni (GUINEA, 1946: 142, 149, 151, 155).

**13. *Pothomorphe umbellata* (L.) Miq.**

*Piper umbellatum* L.

*Piper subpeltatum* Willd.

*Heckeria subpeltata* (Willd.) Kunth

*Icon.*: HUTCHINSON & DALZIEL (1954: 83); DINIZ (1997: 26).

*Common names.* Fang dialect: Abomenjan, Abomenchan, Abomndzan (GUINEA, 1946). Bubi dialect: Lootáotá, Mëvotö.

EQG, ANNOBÓN: S Lago A Pot, *Wrigley & Melville* 147, MA 294974. BIOKO NORTE: Malabo-Rebola, km 10-11, *Fernández Casas* 11262, MA 512639. Malabo-Riaba, Baloeri, *Carvalho* 2493, MA 512114. Baó Basuala, *Fernández Casas* 11506, MA 513519. Monte Balea, *Guinea* 366, MA 412215. BIOKO SUR: Basacato del Oeste, *Fernández Casas*, *Carvalho*, *Regueiro & Tellería* 10060, MA 425807. Malabo-Luba, km 32, *Fernández Casas* 11318, MA 512583. Ruiché-Luba, *Fernández Casas* 11357, MA 512783. Basacato del Oeste, *Lope del Val* 469, MA 389402. Playa de Arenas Blancas, *Fernández Casas* 11652, MA 513750. Luba-Veiga y Avenida, límite Batete-Luba, *Fernández Casas* 12024, MA 513362. Moka-Riaba, km 7-8, *Fernández Casas* 11601, MA 513218. Belebú Balachá, *Fernández Casas* 12127, MA 513229. CENTRO SUR: P. N. Monte Alén, *Pérez Viso* 54, MA 655092. P. N. Monte Alén, Ocuam, *Pérez Viso* 618, MA 655090. P. N. Monte Alén, Miser-

gue-Churu, *Pérez Viso 1641*, MA 655089. Bata-Niefang, Nhogo Ebañ, *Pérez Viso 2671bis*, MA 655088. Niefang-Evinayong, Bisun, *Pérez Viso 3427*, MA 655087. Bindung, *Pérez Viso 3781*, MA 655086. LITORAL: Bata-Kogo, km 67, *Pérez Viso 1846*, MA 655091.

Previously recorded from Annobón (MILDBRAED, 1922: 160, sub *Heckeria subpeltata*; EXELL, 1944: 276, sub *Piper umbellatum*), Bioko (BAKER & WRIGHT, 1909: 145, sub *P. umbellatum*; MILDBRAED, 1922: 181, sub *P. subpeltatum*; GUINEA, 1946: 271, sub *P. subpeltatum*; 1968: 130, sub *P. umbellatum*; HUTCHINSON & DALZIEL, 1954: 84, sub *P. umbellatum*; ESCARRÉ, 1969: 8, sub *P. umbellatum*; FERNÁNDEZ CASAS, 1992: 45, sub *P. umbellatum*) and Río Muni (GUINEA, 1946: 142, sub *Heckeria subpeltata*, 151, sub *H. subpeltata*, 157, sub *H. subpeltata*; 1946: 271, sub *P. subpeltatum*).

#### REFERENCES

- AEDO, C., M.T. TELLERÍA & M. VELAYOS (1999). *Bases Documentales para la Flora de Guinea Ecuatorial. Plantas vasculares y hongos*. Real Jardín Botánico (CSIC). Cooperación Española. Madrid.
- BALLE, S. (1940-1942). Revision des Piperaceae du Congo Belge. *Bull. Jard. Bot. État* 16: 367-405.
- BALLE, S. (1948). Piperaceae. In: W. Robyns (ed.), *Flora du Congo Belge et du Ruanda-Urundi. Spermatophytes* 1: 15-27. Bruxelles.
- BAKER, J.G. & C.H. WRIGHT (1909-1913). Piperaceae. In: W.T. Thiselton-Dyer (ed.), *Flora of Tropical Africa* 6(1): 143-156. Lovell Reeve & Co., London.
- CABLE, S. & M. CHEEK (1998). *The Plants of Mount Cameroon. A Conservation Checklist*. Royal Botanic Gardens, Kew.
- CUFODONTIS, G. (1953). Enumeratio Plantarum Aethiopiae Spermatophyta. *Bull. Jard. Bot. État* 23(3-4) Suppl.: i-xvi, 1-112.
- DE CANDOLLE, C. (1866). Piperaceae novae. *J. Bot., ser. 2*, 4: 132-146.
- DINIZ, M.A. (1997). Piperaceae. In: G.V. Pope, S.J. Owens & I. Moreira (eds.), *Flora Zambesiaca* 9(2): 24-36. Royal Botanic Garden, Kew for the Flora Zambesiaca Managing Committee.
- DÜLL, R. (1973). Die Peperomia-Arten Afrikas. *Bot. Jahrb. Syst.* 93: 56-129.
- ENGLER, A. & O. DRUDE (1910). *Die Vegetation der Erde. Die Pflanzenwelt Afrikas insbesondere seiner tropischen Gebiete*. Leipzig.
- ESCARRÉ, A. (1969). Aportaciones al conocimiento de la Flora de Fernando Poo. 2. Piperaceae, Urticaceae. *Acta Phytotax. Barcinon.* 3: 1-23.
- EXELL, A.W. (1944). *Catalogue of the vascular plants of S. Tomé (with Principe and Annobon)*. The British Museum (Natural History). London.
- EXELL, A.W. (1963). Angiosperms of the Cambridge Annobon Island Expedition. *Bull. Brit. Mus. (Nat. Hist.), Bot.* 3(3): 93-118.
- EXELL, A.W. (1968). Príncipe, S. Tomé & Annobón. In: I. Hedberg & O. Hedberg (eds.), Conservation of vegetation in Africa South of the Sahara. *Acta Phytogeogr. Suec.* 54(11): 132-134.
- FERNÁNDEZ CASAS, F.J. (1992). Ad Guineae Aequatorialis floram texendam inventa varia. *Fontqueria* 33: 43-45.
- FERNÁNDEZ CASAS, F.J. & R. MORALES VALVERDE (1995). Proyecto de una flora de la isla de Bioko (Guinea Ecuatorial). *Anales Jard. Bot. Madrid* 52(2): 230-240.
- GUINEA, E. (1946). *Ensayo geobotánico de la Guinea Continental Española*. Dirección General de Marruecos y Colonias. Madrid.
- GUINEA, E. (1968). Fernando Po. In: I. Hedberg & O. Hedberg (eds.), Conservation of vegetation in Africa South of the Sahara. *Acta Phytogeogr. Suec.* 54: xi, 130-132.
- HOOKE, J.D. (1864). On the plants of the temperate regions of the Cameroons Mountains and Islands in the Bight of Benin; collected by Mr. Gustav Mann, Government Botanist. *J. Proc. Linn. Soc., Bot.* 7: 171-240.
- HUTCHINSON, J. & J.M. DALZIEL (1927-1928). *Flora of West Tropical Africa*. 1(1). The Crown Agents for the Colonies.
- HUTCHINSON, J. & J.M. DALZIEL (1954). *Flora of West Tropical Africa*. 2nd. ed. 1(1). The Crown Agents for Oversea Governments and Administrations.
- IMMELMAN, K.L. (2000). FSA contributions 15: Piperaceae. *Bothalia* 30(1): 25-30.
- JOHANSSON, D. (1974). Ecology of vascular epiphytes in West African rain forest. *Acta Phytogeogr. Suec.* 59: 1-129.
- LEBRUN, J.P. & L.A. STORK (1991). *Énumération des Plantes à Fleures D'Afrique Tropicale. I. Généralités et Annonaceae à Euphorbiaceae et Pandaceae*. Conservatoire et Jardin Botaniques de Genève.
- MILDBRAED, G.W.J. (1922). *Wissenschaftliche Ergebnisse der Zweiten Deutschen Zentral-Afrika-Expedition 1910-1911*. Band II: Botanik. Verlag von Klinkhardt & Biermann. Leipzig.
- TEEBBS, M.C. (1990). Piperaceae. In: K. Kubitzki, J.G. Rohrer & V. Bittrich (eds.), *The Families and Genera of Vascular Plants. II. Flowering Plants, Dicotyledons. Magnoliid, Hamamelid and Caryophyllid Families*. Springer-Verlag, Berlin.
- VELAYOS, M., C. AEDO & R. PÉREZ VISO (2001). Check-List of The Pteridophytes of Equatorial Guinea. *Belg. J. Bot.* 134(2): 145-191.
- VERDCOURT, B. (1996). Piperaceae. In: R.M. Polhill (ed.), *Flora of Tropical East Africa*: 1-23. A.A. Balkema, Rotterdam.
- YUNKER, T.G. (1958). The Piperaceae-A Family Profile. *Brittonia* 10(1): 1-7.
- YUNKER, T.G. (1964). A bibliography of the family Piperaceae. *Candollea* 19: 97-144.

## COLLECTION INDEX

The species is indicated by a number in parenthesis corresponding to the number in the check-list.

Carvalho 2493: (13); 2642: (8); 2951: (1); 3476: (12); 4131: (12); 4226: (10); 4487: (7); 4524: (8); 5331: (11); 5354: (4); 5548: (12); 5590: (12).  
Escarré 395: (5); 397: (5).  
Fernández Casas 10060: (13); 10103: (12); 10169: (11); 10217: (1); 10219: (12); 10318: (3); 10416: (2); 11228: (3); 11233: (11); 11262: (13); 11318: (13); 11346: (12); 11357: (13); 11424: (5); 11494: (12); 11506: (13); 11601: (13); 11652: (13); 11735: (6); 11808: (11); 11887: (8); 11891: (1); 11893: (10); 11942: (11); 11966: (9); 11951: (6); 11970: (8); 12024: (13); 12090: (12); 12127: (13); 12153: (1); 12177: (6); 12215: (12).  
Guinea 366: (13); 609: (5); 778: (12); 780: (12); 1194: (11); 1752 (11); 1753: (11); 1828: (1); 2277: (8).  
Lope del Val 469: (13).  
Mildbraed 6805: (5).  
Pérez Viso 54: (13); 95: (12); 618: (13); 641: (13); 1846: (13); 2671bis: (13); 3427: (13); 3781: (13).  
Wrigley & Melville 70: (10); 147: (13); 687: (5).

*Peperomia annobonensis* Mildbr., 48  
*Peperomia buëana* C. DC., 47  
**Peperomia fernandopoiiana** C. DC., 46  
*Peperomia hygrophila* Engl., 48  
**Peperomia kamerunana** C. DC., 46  
**Peperomia laeteviridis** Engl., 46  
*Peperomia mannii* Hook. f., 47  
**Peperomia molleri** C. DC., 47  
**Peperomia pulchra** (L.) Kunth, 47  
**Peperomia retusa** (L. f.) A. Dietr., 47  
*Peperomia retusa* var. *mannii* (Hook. f.) Düll, 47  
**Peperomia rotundifolia** (L.) Kunth, 47  
**Peperomia tetraphylla** (G. Forst.) Hook. & Arn., 47  
**Peperomia thomeana** C. DC., 47  
*Peperomia vacciniifolia* C. DC., 47  
*Peperomia vogelli* Miq., 47  
**Peperomia vulcanica** Baker & C.H. Wright, 48  
**Piper capense** L. f., 48  
**Piper guineense** Schum. & Thonn., 48  
*Piper pellucidum* L., 47  
*Piper retusum* L. f., 47  
*Piper rotundifolium* L., 47  
*Piper subpeltatum* Willd., 48  
*Piper tetraphyllum* G. Forst., 47  
*Piper umbellatum* L., 48  
**Pothomorphe umbellata** (L.) Miq., 48

## INDEX TO SCIENTIFIC NAMES

*Coccobryon capense* (L. f.) Klotzsch, 48  
*Heckeria subpeltata* (Willd.) Kunth, 48

Editado por Juan José Aldasoro  
Aceptado para publicación: 29-XI-2002