

A PROVISIONAL CHECKLIST OF THE CONTINENTAL AFRICAN TAXA  
OF THE GENUS *BULBOPHYLLUM* THOUARS (ORCHIDACEAE)

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This study, mainly based on literature, presents a checklist of all the described taxa of continental African *Bulbophyllum*, divided as much as possible into groups of taxa that belong together, firstly because of corresponding characteristics of the flowers and secondly because of vegetative characteristics.

It appears to be rather easy to split them into such "natural" groups, but it is hardly possible to give good definitions of these groups, so that, after a few fruitless attempts, I gave up. All I shall do here is give the name of the best known, best illustrated or most typical taxon of each group and a few notes on the most important characteristics of the other taxa.

Future users of this list, which to me has already proven its worth for determining African bulbophyllums, will do best first to compare their plants with the typical taxon of each group, and after that to check all the taxa of the group to which their plant fits best. In case no name applies to the plant examined, one must not conclude too easily that the plant is a new species, because many taxa have been only very briefly described, and it may well be that, as a result, I have placed certain taxa in wrong groups. Those taxa on which so little information is available have been listed separately, together with a few *nomina nuda* and other problematical taxa. Some taxa are so different in so many respects that they could not be placed in any group. In these cases I have considered the sections of Mascarene species into which they fit best.

Many of the taxa will without doubt prove to be conspecific. I estimate that among the 272 taxa described, there are not more than some 100 to 120 species.

Of every taxon listed I give the name of the author and the year in which it has been described. This is done in order to facilitate finding the name in the Kew Index. For those taxa which are, for some reason, not included in the Kew Index, a short list of the literature is given at the end of the article. These taxa are marked with a +.

The reason that I use the word "group" and not the word "section" is that it is not my intention to introduce here a number of new sectional names. My knowledge of the African bulbophyllums is insufficient to make such a division. The word "group" has been used deliberately to underline the provisional nature of the list, which is simply meant to be a tool for determining African bulbophyllums.

This article will also be published in the magazine of the Netherlands Orchid Society (*Tijdschrift van de Nederlandse Orchideeën Vereniging*). In the same magazine I started a series of articles in which detailed descriptions and drawings of the African species of *Bulbophyllum* are given.

1. *Bulbophyllum nigritianum*-group:

The taxa listed below belong to one species which is easily recognizable because of the two extra points below the steldia of the column. In this respect it shows a resemblance to many South American species of the section *Didactyle* Lindl., and with a Mascarene species, *B. lyperocephalum* Schltr. The habitus and the floral structure of these species, however, are

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entirely different from the African species.

- B. africanum* Hawkes, 1956 (= *albidum* De Wild., 1921, not Hook. f., 1890).  
*B. nigritianum* Rendle, 1913

## 2. *Lyperostachys* Schltr.

Represented on the African continent by one species which also occurs on the Seychelles. It closely resembles those belonging to the next group from which it is distinguished by the lip which has a long-haired margin, and a very swollen column.

- B. amauryae* Rendle, 1913  
*B. intertextum* Lindl. 1862  
*B. triaristellum* Krzl. & Schltr., 1908  
*B. viride* Rolfe, 1893

## 3. *Bulbophyllum cocoinum*-group:

The species of this group are usually rather small plants (up to 25 cm high), with densely grown one-leafed pseudobulbs and, in each inflorescence, numerous small, white or colored flowers of simple structure. The floral parts are in many cases short-papillose or even more or less ciliate, but never long-haired. The group can be subdivided into two:

### 3a. *Bulbophyllum flavidum*-subgroup:

The tips of the sepals are somewhat thickened and short-papillose or short-haired on the ventral side. The lip consists of a thickened central part and two much thinner lateral lobes which are attached along virtually the entire length of the lip.

- B. calabaricum* Rolfe, 1906  
*B. dorotheae* Rendle, 1913  
*B. drallei* Rchb. f., 1885  
*B. elachon* J. J. Vermeulen, spec. nov. \*  
*B. flavidum* Lindl., 1840  
*B. gabonis* Lindl. & Rchb. f., 1865  
*B. herminiostachys* Rchb. f., 1852  
*B. imogeniae* Hamilton, 1917  
*B. leucopogon* Krzl., 1913  
*B. moliwense* Schltr., 1907  
*B. nanum* De Wild., 1903  
*B. papillosum* Fin., 1903  
*B. pavimentatum* Lindl., 1862  
*B. pendula* Lindl., 1826 (as *Tribrachia pendula*)  
*B. porphyroglossum* Krzl., 1895  
*B. recurvum* Lindl., 1830  
*B. usambarae* Krzl., 1904  
*B. violaceum* DeWild., nom. nud., not Lindl., 1835.  
*B. winkleri* Schltr., 1907  
*B. yangambiense* Louis & Mullenders ex Geerinck, 1976 +

*Bulbophyllum elachon* J. J. Vermeulen, spec. nov.

*Bulbophyllo winkleri* Schltr. affinis, in habitu minore, foliis latioribus, absentia dilatationis basalis sepalorum lateralium discreta. Typus: *Jongejan 51* (L). Figure 1.

Rhizome creeping. Pseudobulbs up to 15 mm apart, ovoid or nearly globular, with one leaf, up to 5 mm long, glossy green. Leaves oval, obtuse, up to 21 mm long, 13 mm wide, usually shorter, glossy dark green. Peduncle erect, 5 cm long, reddish with up to 6 flowers in a rather lax raceme. Ovary less than 2 mm long. Bract 3 mm long. Sepals oblong-triangular, acute, the apical part on the ventral side minutely papillose, greenish with dark red tips, the dorsal sepal 4 mm long, 1.5 mm wide, the lateral sepals 3.7 mm long, 1.6 mm wide. Petals oblong, nearly acute, margins somewhat irregular, 1.4 mm long, 0.5 mm wide, whitish. Lip with a fleshy, smooth central part and two thin, minutely papillose lateral lobes, 1.4 mm long, 0.8 mm wide, yellowish, margins red. Column with two rather long, somewhat obtuse stamens.

**Distribution:** Tropical Africa, Zaire, exact location unknown, *Jongejan* 51 (L).

3b. *Bulbophyllum cocoinum*-subgroup:

The species of this subgroup lack the combination of characteristics mentioned above. Some species have a somewhat complicated lip, e.g., *B. oxychilum*. *Bulbophyllum pipio* is the smallest species, the plant being 5 cm high, while *B. cocoinum* is the largest in this subgroup. *Bulbophyllum amanicum* (see note under "Problematical Taxa") and *B. capituliflorum* have been included here with some reservation.

*B. acutisepalum* De Wild., 1916

*B. amanicum* Krzl., 1914

*B. andongense* Rchb. f., 1865

*B. brevidenticulatum* De Wild., 1916 (= *andongense* De Wild, 1904, not Rchb. f., 1865)

*B. buntingii* Rendle, 1913

*B. calvum* Summerh., 1966

*B. capituliflorum* Rolfe, 1906

*B. cocoinum* Lindl., 1837

*B. ellipticum* De Wild., 1921

*B. elongatum* De Wild., 1903

*B. josephii* O. Kuntze, 1891 (= *aurantiacum* Hook, f., 1864, *gustavi* Schltr., 1911)

*B. mahoni* Rolfe, 1906

*B. mediocre* Summerh., 1959

*B. milesii* Summerh., 1936

*B. modicum* Summerh., 1957

*B. oxychilum* Schltr., 1905 (see Note)

*B. pipio* Rchb. f., 1876

*B. schimperanum* Krzl., 1902

*B. schlechteri* De Wild., 1921 (= *winkleri* Schltr., 1914, not 1907)

*B. vitiense* Rolfe, 1893

*B. xantoglossum* Schltr., 1907

Note: *B. buntingii* Rendle (syn.). Although I have not seen the type-specimen of *B. oxychilum* Schltr., I have little doubt that the two taxa are conspecific, the name *oxychilum* being the older.

4. *Bulbophyllum sangae*-group:

Summerhayes (in *Kew Bull.* 582, 1953, under *B. verecundum*) observes that *B. sangae*, *B. coriscense*, and *B. verecundum* are closely related, being plants only a few centimeters high and having sparsely flowered (1 to 8 flowers) in-

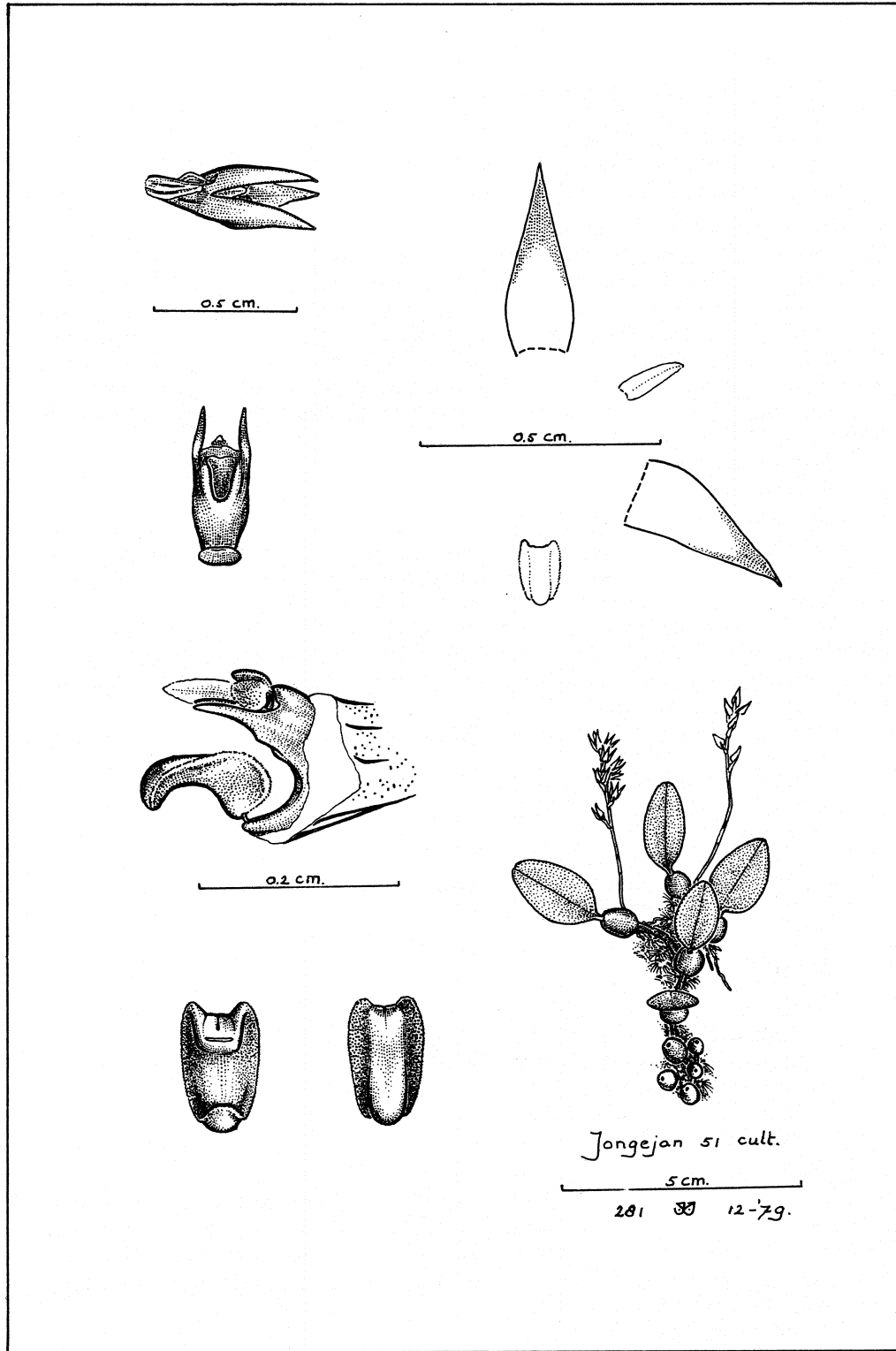


Figure 1. *Bulbophyllum elachon* J. J. Verm., spec. nov.

florescences. I have added two more taxa which, in my opinion, belong here. All the species of this group show a close relationship with the group of *B. cocoinum*.

- B. coriscense* Rchb. f., 1881
- B. pertenuae* Krzl., 1914
- B. quintasii* Rolfe, 1892
- B. sangae* Schltr., 1905
- B. verecundum* Summerh., 1953

5. *Bulbophyllum stolzii*-group:

The two species listed below fit best into the section *Loxosepalum* Schltr., consisting mainly of Mascarene species, and especially into the subsection of two-leafed species (*Diphylia* Perr. = *Lemuraea* Schltr.). The African members are small plants with a very long, creeping rhizome and two-leafed pseudobulbs, like many species of the *B. oreonastes*-group. The rhachis, however, is very slender and bent in a zigzag fashion. The flowers are somewhat reminiscent of those of species from the *B. cocoinum*-group, differing notably in the dorsally keeled sepals.

- B. prorepens* Summerh., 1953
- B. stolzii* Schltr., 1915

6. *Bulbophyllum oreonastes*-group:

Members of this group can easily be recognized by the special nature of the rhachis which is thickened, flattened and more or less leaflike. The flowers are placed along the margins of the rhachis and not along the median line, as in *Megaclinium*, and are striking because of the very succulent lip. The petals are always very narrow. The plants are fairly small to small, with a rather long, creeping rhizome and usually two-leafed pseudobulbs (*B. encephalodes* and *B. unifoliatum* are one-leafed).

- B. acutebracteatum* De Wild., 1921 (= *platirhachis* De Wild., 1906, not Rolfe, 1898)
- B. encephalodes* Summerh., 1951
- B. fuscooides* Petersen, 1952
- B. fuscum* Lindl., 1839
- B. hookerianum* Krzl., 1893
- B. infundibuliflorum* Petersen, 1952
- B. melinostachyum* Schltr., 1899
- B. obanense* Rendle, 1913
- B. ogoouense* Guillaumin, 1924
- B. oreonastes* Rchb. f., 1881
- B. planiaxe* Petersen, 1952
- B. rhopalochilum* Krzl., 1914
- B. rubrobrunneopapillosum* De Wild., 1921
- B. unifoliatum* De Wild., 1921
- B. zenkerianum* Krzl., 1913
- B. sp.* Hook f., 1864<sup>+</sup>

7. *Bulbophyllum denticulatum*-group:

A few taxa are included here which cannot be placed in the *B. oreonastes*-group because they lack the flattened raceme and have somewhat different flowers. The species do not seem to be very closely related to each other.

Ball 258 has later been made type-specimen of *B. ballii*; Williamson 141 is probably identical with this species.

- B. ballii* Cribb, 1977<sup>+</sup>
- B. denticulatum* Rolfe, 1891

*B. linguiforme* Cribb, 1977<sup>+</sup> (= *humblottii* Grosvenor, 1976<sup>+</sup>, not Rolfe, 1893)

*B. sp.* (Ball 258) Grosvenor, 1976<sup>+</sup>

*B. sp.* (Williamson 141) Williamson, 1977<sup>+</sup>

8. *Bulbophyllum calamariukn*-group:

This group comprises a number of species from the African mainland and from the Mascarene Islands. The mainland representatives are, after a little practice, easy to distinguish from all the other African bulbophyllums by the following combination of characteristics: a sometimes thickened but never flattened rachis, rather fleshy sepals, very narrow petals and a fleshy labellum with, in nearly all cases, a long-haired margin. Many species have large floral bracts, more or less enveloping the flower. The flowers are usually yellowish-green suffused with red or entirely red. The mainland taxa can be divided into three subgroups:

8a. Plants with two-leafed slender cylindrical pseudobulbs (*B. pholidotoides* and *B. rugosibulbum* being exceptions) and long slender peduncles with racemes in which the flowers are arranged in two rows. The flowers open well and have a labellum with a thinly textured epichilum. The taxa *B. bequaertii* and *B. brachyanthum* are remarkable within this subgroup for their somewhat more fleshy peduncle. Moreover, the former may have a labellum with a nearly smooth margin.

*B. bequaertii* De Wild., 1921

*B. brachyanthum* Summerh., 1953<sup>+</sup>

*B. burtii* Summerh., 1953

*B. cochleatum* Lindl., 1862

*B. gravidum* Lindl., 1862

*B. jungwirthianum* Schltr., 1922

*B. mannii* Hook. f., 1864

*B. monticolum* Hook. f., 1864

*B. pholidotoides* Krzl., 1914

*B. rugosibulbum* Summerh., 1960

*B. talbotii* Rendle, 1913

*B. tenuicaule* Lindl., 1862

*B. thomense* Summerh., 1937

*B. vulcanicum* Krzl., 1914

*B. sp.* (aff. *gravidum*) Morris, 1968<sup>+</sup>

*B. sp.*, (Williamson 18) Williamson, 1977<sup>+</sup>

8b. Plants with two-leafed, much fatter pseudobulbs, fleshy peduncles with, in most cases, a biserial inflorescence (*B. malawiense* being an exception), with large, connivent floral bracts which cover, in some cases, the scarcely opening flowers. The labellum is fleshy and in some cases lacks the hairy margin.

*Bulbophyllum malawiense* seems to be aberrant but is closely related to other taxa. This can be observed after examining the Mascarene species of this subgroup (*B. occultum* Thouars., *B. sambiranense* Schltr., etc.) which are of intermediate shape.

*B. ituriense* De Wild., 1921

*B. lupulinum* Lindl., 1862

*B. malawiense* Morris, 1968

*B. prophyrostachys* Summerh., 1951

*B. tetragonum* Lindl., 1862

*B. urbanianum* Krzl., 1900

8c. Plants with one-leafed pseudobulbs (*B. inopinatum* W. W. Smith, which was described in error as African, is excluded here).

- B. albociliatum* Fin. 1910<sup>+</sup>
- B. barbigerum* Lindl., 1837
- B. calamarium* Lindl., 1843
- B. distans* Lindl., 1862
- B. flexiliscapum* Summerh., 1966 (= *gracilliscapum* Summerh., 1953)
- B. gentilii* Rolfe, 1904
- B. kindtianum* De Wild., 1904
- B. mildbraedii* Krzl., 1909
- B. miniatum* Hort., 1904
- B. nudiscapum* Rolfe, 1909
- B. phaeopogon* Schltr., 1907
- B. rupicola* Rchb. f., 1865
- B. saltatorium* Lindl., 1837
- B. schinzianum* Krzl., 1899

9. *Bulbophyllum-nigericum*-group:

Plants of this group closely resemble those of the second subgroup of the *B. calamarium*-group. They are characterized, however, by the raceme, which is always biserial with large spreading bracts which are standing perpendicular to the rhachis. This group can be split into two subgroups:

9a. The taxa in this subgroup have narrow petals and can, in fact, be placed in the second subgroup of the *B. calamarium*-group.

- B. resupinatum* Ridley, 1887
- B. wrightii* Summerh., 1962

9b. The taxa in this subgroup have differently shaped petals and cannot be placed in the *B. calamarium*-group without inacceptably stretching the definition of that group. *B. nigericum* has a rhachis which has a certain resemblance with taxa of the *B. oreonastes*-group.

- B. bifarium* Hook. f., 1864
- B. nigericum* Summerh., 1962
- B. pallescens* Krzl., 1914
- B. pandanetorum* Summerh., 1953
- B. scariosum* Summerh., 1953

10. *Megaclinium* Lindl.:

Plants that show one or more of the following features can be included here:

- a. The rhachis is swollen or flattened, with sharp or rounded edges, more or less leaflike. The flowers are arranged at both sides along the central nerve.
- b. The dorsal sepal is longer and narrower than the laterals and has a different shape: it is spatulate with two marginal calli at the apex.
- c. The labellum is broad and triangular, fleshy but very soft, with a concave basal part and with a longitudinal keel on the dorsal side. It never has a papillose or hairy surface.
- d. The column has very short stielidia, in many cases hardly developed, and below them two blunt wings which are sometimes folded inward. The column itself is very much broadened except for the apical part.

This group can be divided as follows:

- B. angustum* Rolfe, 1922
- B. arnoldianum* De Wild., 1921
- B. bakossorum* Schltr., 1905
- B. bambiliense* De Wild., 1916
- B. brixhei* De Wild., 1916

- B. buchenavianum* Krzl., 1905
- B. bufo* Lindl., 1841
- B. calyptratum* Krzl., 1895
- B. carnosilabium* Summerh., 1953
- B. dahlemense* Schltr., 1919
- B. deistelianum* Krzl., 1902
- B. ealaense* De Wild., 1916
- B. endotrachys* Krzl., 1905
- B. falcatum* Lindl., 1830
- B. flaccidum* Hook. f., ?
- B. graminifolium* Summerh., 1957
- B. intermedium* De Wild., 1916
- B. kewense* Schltr., 1914 (= *minutum* Rolfe, 1893)
- B. lanuriense* De Wild., 1921
- B. leptorrhachis* Schltr., 1905
- B. lepturum* Krzl., 1916
- B. lindleyi* Rolfe, 1898 (= *maximum* Lindl., 1837, not 1830)
- B. lubiense* De Wild., 1921 (= *gentilii* De Wild., 1902, not Rolfe, 1904)
- B. lucifugum* Summerh., 1957
- B. melanorrhachis* Rchb. f., 1875
- B. millenii* Rolfe, 1898
- B. mooreanum* Robyns, 1955 (= *pusillum* Rolfe, 1894)
- B. oxyodon* Rchb. f., 1888
- B. purpureum* De Wild., 1911
- B. sereti* De Wild., 1916
- B. simoni* Summerh., 1935 (= *lasianthum* Krzl., 1912)
- B. solheidi* De Wild., 1916
- B. ugandae* Rolfe, 1913
- B. velutinum* Lindl., 1847

10b. The taxa included here have a narrow triangular dorsal sepal which has no calli. Those listed under I) have a rhachis that is thickened and flattened but with two rounded margins. The bracts are attached along the whole width of the rhachis. Those under II) have a rhachis which has at least one sharp edge and bracts which are differently attached while those under III) have a terete rhachis.

- I) *B. bibundiense* Schltr., 1907
- B. congolense* De Wild., 1903
- B. gillettii* De Wild., 1903
- B. hebetatum* Krzl., 1923
- B. imbricatum* Lindl., 1841
- B. kamerunense* Schltr., 1905
- B. laurentianum* Krzl., 1899
- B. leucorrhachis* Rolfe, 1891
- B. linderi* Summerh., 1935
- B. magnibracteatum* Summerh., 1935
- B. stenopetalum* Krzl., 1895
- B. stenorrhachis* Krzl., 1895
- B. tentaculigerum* Rchb. f., 1878
- B. triste* Rolfe, 1898
- II) *B. cercoglossum* Summerh., 1953
- B. chevalieri* De Wild., 1921
- B. colubrinum* Rchb. f., 1855



- B. congolanum* Schltr., 1905  
*B. cyrtopetalum* Schltr., 1911 (= *ciliatum* Schltr., 1907; = *moireanum* Hawkes, 1956)  
*B. decipiens* Schltr., 1905  
*B. djumaense* De Wild., 1921  
*B. eburneum* Pfitz., 1908  
*B. fuerstenbergianum* De Wild., 1905  
*B. gabunense* Schltr., 1905  
*B. grandifolium* De Wild., 1921+  
*B. imschootianum* Rolfe, 1895  
*B. inaequale* Rchb f., 1886  
*B. injoloense* De Wild., 1916  
*B. jespersenii* De Wild., 1916  
*B. ledermannii* Krzl., 1913  
*B. makakense* Hansen, 1959  
*B. maximum* Lindl., 1830  
*B. melleri* Rchb. f., 1878  
*B. mozambicense* Finet, 1909+  
*B. nyassanum* Schltr., 1915  
*B. oxypterum* Lindl., 1839  
*B. platyrhachis* Rolfe, 1898  
*B. pobequini* Finet, 1909  
*B. purpuratum* Lindl., 1862  
*B. purpureorhachis* De Wild., 1903  
*B. renkinianum* Laurent, 1914  
*B. sandersoni* Oliv., 1871  
*B. scaberulum* Rolfe, 1888  
*B. subcoriaceum* De Wild., 1921  
*B. summerhayesi* Hawkes, 1956 (= *clarkei* Rolfe, 1891)  
*B. zobiaense* De Wild., 1916  
*B. sp.* (Stolz 454 & 667) Schltr., 1915+  
*B. sp.* (Stolz 1023) Schltr., 1915+  
*B. sp.* (Williamson 15) Williamson, 1977+
- III) *B. falcipetalum* Lindl., 1862  
*B. filiforme* Krzl., 1895  
*B. fractiflexum* Krzl., 1913  
*B. longispicatum* Krzl. & Schltr., 1908  
*B. lutescens* Rolfe, 1910  
*B. parvum* Summerh., 1957  
*B. rhizophorae* Lindl., 1862  
*B. rhodopetalum* Krzl., 1905  
*B. rubeviolaceum* De Wild., 1921

11. *Cirrhopetalum* Lindl.:

The taxa described from Africa, belonging to one species, have an umbellate inflorescence.

- B. africanum* Schltr., 1915  
*B. longiflorum* Thouars, 1822  
*B. umbellatum* Forst., 1786 (as *Epidendrum umbellatum*)

12. Problematical taxa:

Those listed under I) were collected by Bräun in Africa. However, judging from the descriptions, they are very different from other African taxa and I am not able to include them anywhere. *B. amanicum* is described from a

plant also collected by Bräun. I have included this taxon with considerable reservation in the *B. cocoinum*-group. The plants concerned are probably not of African origin. II): *B. caespitosum* (Rolfe in *Flora of Tropical Africa* 7:25, 1898: 25) is mentioned as occurring in Africa. This was caused by wrong identification. My knowledge of the taxa listed under III) is not sufficient to include them anywhere definitely; those under IV) are wrongly described as coming from Africa and those under V) are *nomina nuda*.

- I) *B. braunii* Krzl., 1889  
*B. nummularia* Wendl. & Krzl., 1894  
*B. sessiliflorum* Wendl. & Krzl., 1900  
*B. strobiliferum* Krzl., 1889
  - II) *B. caespitosum* Thouars, 1825
  - III) *B. gilgianum* Krzl., 1900  
*B. hemirhachis* Pfitz., 1908  
*B. longibulbum* Schltr., 1905  
*B. minus* De Wild., 1903  
*B. ponapense* Schltr., 1921  
*B. sennii* Chiovenda, 1940  
*B. teretifolium* Schltr., 1905 *B*  
*B. sp.* (Ball 986) Grosvenor, 1976<sup>+</sup>  
*B. sp.* (Morris 27) Morris 1968<sup>+</sup>  
*B. sp.* (Stolz 1475) Schltr., 1915<sup>+</sup>
  - IV) *B. inopinatum* W. W. Sm., 1915  
*B. nigripetalum* Rolfe, 1891
  - V) *B. apiferum* Batem., 17, nomen nudum  
*B. eurhachis* Schltr., 1922, nomen nudum  
*B. fernandopoanum* Schltr., 1922, nomen nudum  
*B. insulanum* Schltr., 1922, nomen nudum  
*B. schultzeanum* Schltr., 1922, nomen nudum
13. Excluded taxa:
- B. apetalum* Lindl., 1862 (= *Genyorchis pumila*)
  - B. cupuligerum* Krzl., 1909 (= *Stolzia cupuligerum*)
  - B. elaidum* Lindl., 1862 (= *Stolzia elaidum*)
  - B. galeatum* Lindl., 1830 (= *Polystachya grandiflora*)
  - B. micropetalum* Lindl., 1862 (= *Genyorchis micropetalum*)
  - B. peperomioides* Krzl., 1909 (= *Stolzia peperomioides*)
  - B. pumilum* Lindl., 1837 (= *Genyorchis pumilum*)

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