

**A CONTRIBUTION TO THE STUDY
OF THE ORCHIDACEÆ OF THE CÔTE D'IVOIRE**

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SUMMARY: Four new species of *Bulbophyllum* Thou. from the Côte d'Ivoire are described. A list is given of the new records of *Orchidaceæ* from the Côte d'Ivoire since the publication of the 2nd edition of F.W.T.A. (1968). An up-to-date list of all Orchid species recorded from the Côte d'Ivoire is provided in the appendix.

RÉSUMÉ. — Quatre nouvelles espèces de *Bulbophyllum* Thou. provenant de Côte d'Ivoire sont décrites. Une liste des nouvelles découvertes d'Orchidées de Côte d'Ivoire depuis la publication de la deuxième édition de F.W.T.A. (1968) est donnée. Une liste de toutes les espèces d'Orchidées de Côte d'Ivoire est donnée en appendice.

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The Côte d'Ivoire is included in that part of West Africa covered by the "Flora of West Tropical Africa" ed. 2 (1968). 145 species in 40 genera are recorded by SUMMERHAYES from the Côte d'Ivoire in the account of the *Orchidaceæ* in this Flora. However, at the time of compilation, specimens from this area were few and the recent collections of L. AKÉ ASSI, the botanists of O.R.S.T.O.M. and one of the authors (PEREZ-VERA) have increased the number of recorded species to 211 (an increase of over 30 %) in 45 genera.

The south west of the Côte d'Ivoire is little known botanically and still contains large areas of virgin rain forest including the extensive Forêt de Taï. One of us (PEREZ-VERA) has lived for 18 years at Daloa and has collected extensively in the south west region (for main collecting localities see figure 1). Most keys rely upon floral characters to distinguish Orchids so PEREZ-VERA has grown at Daloa many of those Orchids which were not flowering when collected. In this way, many species have been indentified from little known and seldom visited regions.

The aim of this paper is to provide an up-to-date account of the Orchid flora of the Côte d'Ivoire. Four species of *Bulbophyllum* Thou. are described for first time and a list is provided of those species which have been recorded for the first time in the Côte d'Ivoire since the publication of the second edition of F.W.T.A. in 1968. Finally, a provisional check list of the Orchids of the country has been given in the appendix.

Bulbophyllum daloaense Cribb & Perez-Vera, *sp. nov.* Pl. 2, p. 205.

B. filiformi Kraenzl. affine a quo rhachidi pubescenti, valde brevior, foliis minoribus, bracteis floralibus manifestis et pseudobulbis minoribus conicis differt necnon *B. rhizophoro* Lindl. floribus majoribus, inflorescentia longiore pseudobulbisque valde distantibus differt.

Herba epiphytica; rhizoma repens, teres, 2-3 mm diametro, radices numerosas, flexuosas, ramosas e basi pseudobulborum emittens. Pseudobulbi per spatia 1.5-2.5 cm distantes, erecti, 4-angulati, ovoidei vel conici, 1.5 cm alti, 0.8-1 cm. lati, lutei, biphylli. Folia erecta, elliptica vel oblonga, 2-3 cm longa, 0.7-1.2 cm lata, saturate viridia, apice in lobos 2 æquales, rotundos fisso, basi in petiolum brevem, ca. 1 mm longum, angustata. Inflorescentia e basi pseudobulbi exorta, suberecta, arcuata, teres, quam folia longior, usque ad 22 cm longa; pedunculus brevissimus, bracteis 2-4, scariosis, quam internodia brevioribus, 2-3 cm longis, velatus; rhachis teres, pilis brevibus purpureis oblecta, usque ad 20 cm longa; bracteæ florales distichæ, patentes, deltoideæ apiculatæ, 4 mm longæ, 3 mm latæ, membranaceæ, stramineæ, parte exteriore leviter pubescentes. Flores quam bracteæ longiores, purpurei et lutei. Sepalum intermedium leviter incurvatum, carnosum, anguste triangulare, apice acutum, 2.6 mm longum, 1 mm latum, extus pubescentia brevi dense ornatum; sepala lateralia deltoidea, erecta, apiculata, 2.7 mm longa, 2 mm lata, purpurea sed ad basin lutea, extus pubescentia ornata. Petala linearia, reflexa, 2.5 mm longa, 0.3 mm lata, purpurea, apice rotundata. Labellum carnosum, triangulare, glabrum, integrum, recurvatum, obtusum, 2 mm longum, basi 1.5 mm latum, purpureum, intus carinatum, basi depressione albo transversali ornatum. Columna 2 mm alta, distincte alata, apice manifeste tuberculata, steldia minuta; anthera galeiformis, purpurea, marginibus albis et centro papilloso notato; pollinia 2 ceracea.

TYPE : *Perez-Vera* 270, Route de Soubré à Buyo, Côte d'Ivoire (holo-, K; iso-, P, Daloa¹).
OTHER SPECIMEN : *Perez-Vera* 270 B, Forêt de Taï, Côte d'Ivoire (ABI, K, P, UCJ, Daloa).

B. daloaense may be distinguished by its gracefully arching inflorescence which is much longer than the leaves. In F.W.T.A. it keys out near *B. filiforme* but it has a shorter inflorescence, a pubescent rhachis, obvious floral bracts, and much smaller leaves and pseudobulbs. The flowers of *B. daloaense* resemble those of *B. rhizophoræ* but the former has larger flowers with a triangular lip. Vegetatively, *B. rhizophoræ* is quite distinct having more closely spaced pseudobulbs, narrowly oblong leaves and a shorter inflorescence.

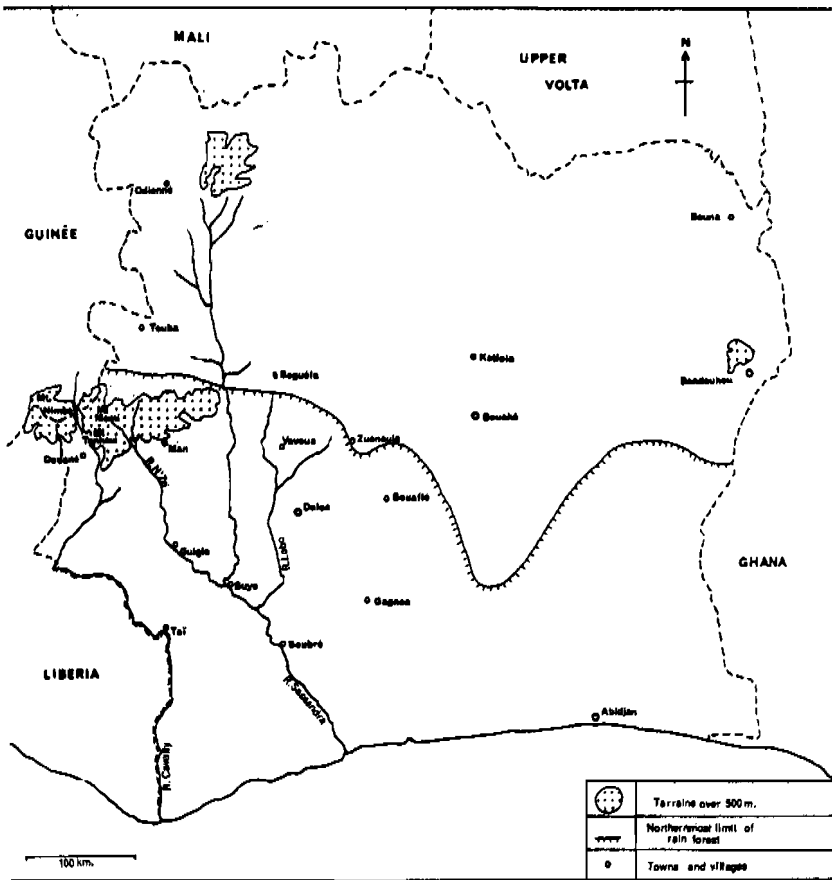
B. daloaense has been named after the town of Daloa, in the Côte d'Ivoire, where the type specimen flowered in cultivation in the collection of F. PEREZ-VERA.

Bulbophyllum irigaleæ Cribb & Perez-Vera, *sp.-nov.* Pl. 3, p. 207.

B. distanti Lindl. affine a quo labello subulato, exauriculato, callo quadripartito glabro et pilis tantum marginalibus ornato differt.

Herba epiphytica, glaberrima; rhizoma repens, teres, 2-3 mm diametro, e basi pseudobulborum radices numerosas, flexuosas, ramosas emittens. Pseudobulbi 0.5-1 cm distantes, ovato-elliptici, 3-4 angulati, ad substratum ± horizontaliter appressi, luteo-virides, monophylli. Folia anguste oblonga vel elliptica, erecto-patentia, petiolo brevi, apice subacuta, 8.5-10 cm longa, 1.5-1.7 cm lata, coriacea, obscure flavo-viridia. Inflorescentia e basi pseudobulbi exorta, simplex, 35-45 cm longa; pedunculus rigidus, curvus, 2.5-3 cm diametro, circiter 2/3 inflorescentiæ longitudine æquans; bracteæ 6-8, vaginatæ, adpressæ, valde discretæ, 15-17 mm longæ; rachis teres, 15-20 cm longa, 2 mm diametro, leviter flexuosa.

1. Herbarium of F. PEREZ-VERA, Daloa, Côte d'Ivoire.



Flores distichi, singulatim efflorescentes, luteo-virides, \pm purpureo-notati, internodia 7-12 mm longa; bractæ erectæ, rigidæ, lanceolatæ, acutæ, margine involutæ, 18.5 mm longæ, 7.5 mm. latæ, brunneo-sanguinæ. Sepala anguste lanceolata, acuminata, glabra, 12 mm longa, ad basin 2 mm lata, pars exterior sanguineo-brunneus, pars interior luteus maculis magnis purpureis marginibusque purpureis ornatus. Petala anguste lanceolata, acuminata, 4.5-5 mm longa, lutea, maculis purpureis ornata. Labellum lineari-lanceolatum, leviter flexuosum, basi latissimum, 13 mm longum, 1.5 mm latum, sanguineo-brunneum, granulatum, pars superior callo rectangulo, glabro, viride, proximaliter eburneo-luteo, cum zona centrali elliptica pallidioris notatus, labelli margines pilis purpureis multis, ad partem distalem 7-8 mm longis ad basin brevioribus obsiti. Columna 3.5 mm alta, exalata sed steliis bene evolutis, 1.5 mm longis, filiformibus, prorsum incurvis prædita; anthera lutea; pollinia 2, ceracea.

TYPE : *Perez-Vera 571*, Zone Nord de la forêt de Taï, Côte d'Ivoire (holo-, K; iso-, Daloa).

OTHER SPECIMEN : *Perez-Vera 248*, Mont Momi, Côte d'Ivoire (Daloa).

In the Flora of West Tropical Africa, *B. irigaleæ* keys out near *B. distans* but it differs from that species in having only marginal hairs on the lip which also lacks any basal hyaline auricles. Further, *B. irigaleæ* has a rectangular glossy basal callus on its lip. *B. calamarium*, like *B. irigaleæ* has only marginal hairs on its lip but the former lacks a basal callus and its lip is quite fleshy.

B. irigaleæ has been named after Sra. Irigalé PEREZ-VERA, the wife of the collector of the type specimen.

***Bulbophyllum ivorense* Cribb & Perez-Vera, sp. nov. Pl. 4, p. 209.**

B. schimperano Kraenzl affine a quo sepala latiora obtusa, petalis minutis, stelidiis bilobatis, labello angustiore apice recurvato et floribus secundis facile distinguendum.

Herba epiphytica, glaberrima; rhizoma repens, 2-3 mm diametro, ad substratum firme affixum, radices cæspitosas, flexuosas, ramosas e basi pseudobulborum emitens. Pseudobulbi per spatia 0.5-1 cm separati, ad substratum \pm horizontaliter appressi, trigoni, superne semper plani, ovati vel conico-ovati, 1.5-2 cm longi, 1.2-1.5 cm lati, sulphurei vel flavo-virides, monophylli. Folia erecta, anguste oblonga, in petiolum brevissimum angustata, apice subacuta, 7-11 cm longa, 1-1.3 cm lata, coriacea, viridia sed supra atrovirentia et leviter canaliculata. Inflorescentia erecta, e basi pseudobulbi exorta, recta vel leviter curvata, cylindrica, quam folia longior, 10-30 cm longa; pedunculus 2-6 cm longus, teres, bracteis vaginantibus 2-4 omnino velatus, bracteæ quam internodia paullo breviores, ovatae, scariosæ, acutæ vel obtusæ, 0.7-1.5 cm longæ; rachis teres, densiflora, 7-20 cm longa; bracteæ florales in spiram dispositæ, lanceolatae, 3-7 mm longæ, 1 mm, latæ, acutæ. Flores quam bracteæ paullo longiores, nivei vel eburnei, \pm penduli, secundi, per spatia 1.5-3 mm distantes. Sepala lineari lanceolata, 5.5-6.5 mm longa, 1.2-1.7 mm lata, rigida, carnosæ, concava, eburnea. Petala orbiculata, minuta, papillata, 0.4 mm longa, alba. Labellum carnosum, rigidum, lineari-lanceolatum, 2-3 mm longum, basi leviter incrassatum ac dilatatum, apice recurvatum, glabrum, sulco longitudinali ornatum. Columna 2 mm alta; stelidia valde evoluta, 0.8 mm longa, 0.4 mm lata, apice bifida; anthera sulphurea; pollinia 2, ceracea.

TYPE : Perez-Vera 137, Mont Tonkoui, Côte d'Ivoire (holo-, K; iso-, P, Daloa). OTHER SPECIMEN : P. Adames 588, S. W. Lamco Hq. Camp, Liberia (K).

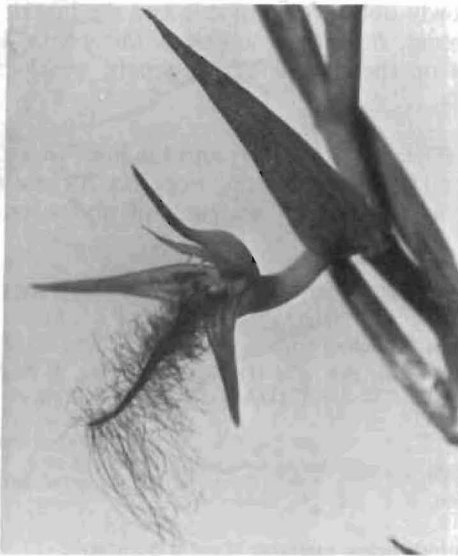
B. ivorense is easily recognised by its secund, ivory coloured flowers and its distinctly hooked lip and this combination of characters does not occur in any other West African *Bulbophyllum* species. In F.W.T.A. it keys out near to *B. schimperanum* from which it is distinguished by its hooked lip and minute petals. Another West African species, *B. buntingii*, also possesses a hooked lip and secund inflorescence but has smaller flowers and much larger stalked petals.

B. ivorense has also been collected on the Liberian side of Mont Nimba where it is said to be fairly common as an epiphyte in high forest.

***Bulbophyllum victoris* Cribb & Perez-Vera, sp. nov. Pl. 5, p. 211.**

B. rhizophoro Lindl. et B. falcipetalo Lindl. affine a quibus petalis anguste obovatis, alis ad apicem columnæ angustatis, bracteis patentibus pseudobulbisque valde separatis et purpureo-notatis differt.

Herba epiphytica; rhizoma repens, teres, 2-3 mm diametro, radices numerosas,



Pl. 1. — Parts of inflorescence: *above left*, *Bulbophyllum ivorense* Cribb & Perez-Vera; *right*, *B. daloense* Cribb & Perez-Vera; *below left*, *B. victoris* Cribb & Perez-Vera; *right*, *B. irigale* Cribb & Perez-Vera.

flexuosas, ramosas, e basi pseudobulborum emittens. Pseudobulbi per spatia 2.5-5 cm distantes, angusta elliptici vel conici, obscure 2-3-angulati, 1.5-3 cm longi, 5-8 mm lati, lutei ± purpureo-notati, basi bracteis 1-2 scariosis partim obtecti, apice biphylli. Folia anguste oblongo-elliptica, apice rotundata, biloba, 2.5-4 cm longa, 7-11 mm lata, subtus prominenter costata, luteo-viridia vel saturate viridia. Inflorescentia e basi pseudobulbi exorta, erecta, ± leviter curvata, teres, quam folia longior, 9-11 cm longa; pedunculus 2-5 cm longus, basi bracteis sterilibus 3-4, obtusis, ± imbricatis, 0.7-0.9 cm longis suffultus; bracteae florales distichae, triangulares, acutae, membranaceae, 2-3 mm longae, stramineae, pedicellos involventes. Flores quam bracteae longiores, per spatia 1.5-2 mm. distantes, lutei; sepala extus punctis purpureis ornata. Sepalum intermedium anguste lanceolatum, acutum, 5 mm longum, 0.9 mm latum, valde recurvatum; sepala lateralia reflexa, anguste oblanceolata, acuta, 3-3.2 mm longa, 0.3 mm lata. Petala reflexa, anguste oblanceolata, acuta, 3.7 mm longa, 2 mm lata. Labelium carnosum, oblongo-ellipticum, glabrum, leviter curvatum, obtusum, parte inferiore carinatum, 1.2 mm longum, 1 mm latum, luteum. Columna brevis, 1.8 mm alta; basi lata, alis latis marginata, steldia brevissima; anthera lutea. Capsula ovoidea, 5.5 mm longa, 3.5 mm lata, perianthio persistenti coronata.

TYPE : Perez-Vera 553, Forêt de Yapo, Côte d'Ivoire (holo-, K; iso-, P, UCJ, Daloa).

Although closely allied to *B. rhizophorae* and *B. falcipetalum*. *B. victoris* may be easily distinguished from both in the field by its distinctively purple spotted pseudobulbs, an inflorescence which is much longer than the leaves, narrowly oblanceolate petals and the tapering wings on the column. Furthermore, *B. victoris*, unlike *B. rhizophorae*, has yellow flowers with purple spots on the outside of the sepals, widely spaced pseudobulbs and erect bracts.

B. victoris has been named in honour of the late Victor Samuel SUMMERHAYES (1892-1974) whose work on African Orchids at Kew has provided such a stimulus to amateur and professional botanists alike.

NEW RECORDS OF ORCHIDACEAE FOR THE CÔTE D'IVOIRE, WEST AFRICA

Aerangis calantha (Schltr.) Schltr.

Mt. Tonkoui, *P.V.* 274 (DALOA); Soubré, *P.V.* 274/B (ABI, K, P, UCJ); Daloa à Zuénoula, *P.V.* 274/C (DALOA); Daloa à Man, riv. Lobo, *P.V.* 629 (ABI, K, P, UCJ, DALOA).

Aerangis laurentii (De Wild.) Schltr.

Tiapleu, *P.V.* 232 (K, DALOA).

Ancistrorhynchus capitatus (Lindl.) Summerh.

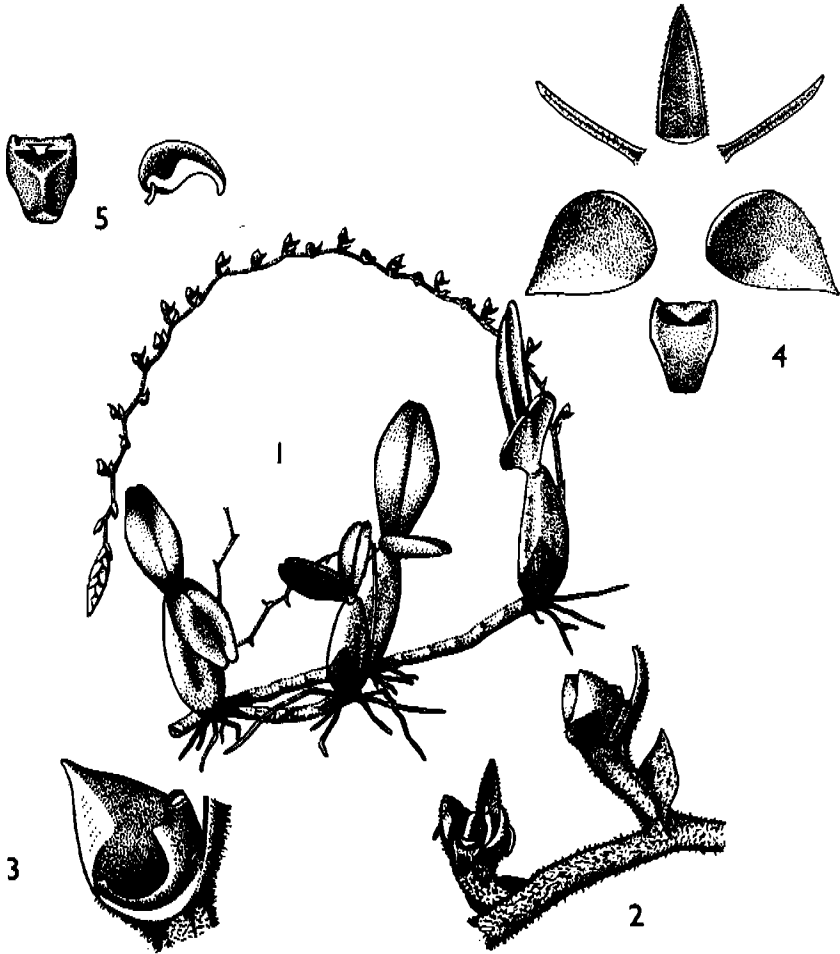
Danané, *Chevalier* 21237 (P); Mt. Mafa, *A.A.* 9033 (UCJ); Riv. Zo, *P.V.* 193 (K, P, DALOA); Banco, *Huttel s.n.* (ABI).

Ancistrorhynchus recurvus Finet

Tiapleu, *A.A.* 8825 (UCJ); entre Guezon et Buyo, *P.V.* 538 (DALOA); Adiopodoumé, *P.V.* 293 (K); Adiopodoumé, *A.A.* 3611 (UCJ); Mt. Mafa, *A.A.* 8904, 8902 (UCJ).

Angræcopsis elliptica Summerh.

Man à Danané, *P.V.* 234 (K); Mt. Tonkoui, *P.V.* 543 (ABI, K, P, UCJ, DALOA).



Pl. 2. — *Bulbophyllum dalaoense* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, part of inflorescence with two flowers $\times 4,5$; 3, part of a flower showing column and lateral sepal (side view) $\times 9$; 4, dissected flower, dorsal sepal uppermost $\times 7$; 5, lip (ventral and lateral views) $\times 7$.

***Bolusiella imbricata* (Rolfe) Schltr.**

Youkou, *Schell 1689* (P); Mt. Tonkoui, *P.V. 195* (DALOA); Danané, *P.V. 698* (K, UCJ, DALOA); N'Douci à Agboville, *P.V. 718* (ABI, K, P, UCJ, DALOA).

***Brachycorythis macrantha* (Lindl.) Summerh.**

Mt. Tonkoui, *A.A. 6266* (UCJ), *Hallé 981* (UCJ), *Nozeran s.n.* (P); Mt. Nimba, *A.A. 3696* (UCJ); Danané, *P.V. 702* (K, DALOA); Yéboué à Alangouakro, *Scaëtta 3055* (P).

***Brachycorythis paucifolia* Summerh.**

Mt. Nimba, *A.A. 3706* (ABI, UCJ).

Bulbophyllum calamarium Lindl.

Riv. Zo, *P.V.* 223 (DALOA); *P.V.* 187 (K, DALOA).

Bulbophyllum cocolnum Batem. ex Lindl.

Guessabo à Duékoué, *P.V.* 257 (DALOA); forêt de Zagné, *P.V.* 241 (K, P); Danané, *P.V.* 709 (K, UCJ, DALOA).

Bulbophyllum daloaense Cribb & Per.-Vera.

Soubré à Buyo, *P.V.* 270 (K, P, DALOA); forêt de Taï, *P.V.* 270 B (ABI, K, P, UCJ, DALOA).

Bulbophyllum inflatum Rolfe

Mt. Nimba, *P.V.* 529 (ABI, K, P, DALOA); Mt. Momi, *A.A.* 9868 (K, UCJ), *A.A.* 9200, 9147 (K, UCJ).

Bulbophyllum irigaleæ Cribb et P.V.

Mt. Momi, *P.V.* 248 (DALOA).

Bulbophyllum ivorense Cribb & Per.-Vera.

Mt. Tonkoui, *P.V.* 137 (K, P, DALOA); forêt de Taï, *P.V.* 571 (K, DALOA).

Bulbophyllum lucifugum Summerh.

Tiapleu, *P.V.* 213 (K); Mt. Momi, *P.V.* 213/B (K, DALOA); Mt. Nimba, *P.V.* 567 (ABI, K, P, UCJ, DALOA); Mt. Tonkoui, *Hallé s.n.* (ABI).

Bulbophyllum lupulinum Lindl.

Tiapleu, *P.V.* 214 (K, DALOA); Mt. Momi, *P.V.* 214/B (DALOA); Danané à Mt. Nimba, *P.V.* 568 (ABI, UCJ); Mt. Tonkoui, *P.V.* 569 (P); Soubré, *A.A.* 10453 (UCJ).

Bulbophyllum magnibracteatum Summerh.

Forêt de San Pedro, *P.V.* 139 (DALOA); Tiapleu, *P.V.* 139/B (K); Oureyo, *P.V.* 139 C (DALOA); Buyo, *P.V.* 139 D (K, UCJ), *P.V.* 534 (DALOA); Balékro, *Nozeran s.n.* (P).

Bulbophyllum melanorrhachis (Rchb. f.) Rchb. f. ex De Wild.

Tiapleu, *A.A.* 9126, 9767 (K, UCJ); Tiapleu, *A.A.* 9780, 9786 (K, UCJ); *A.A.* 9820 (K, UCJ); route de Gagnoa à Sassandra, *P.V.* 222 (K, P, UCJ, DALOA); Mt. Mafa, *Bonardi 61* (P).

Bulbophyllum plpio Rchb. f.

Riv. La Lobo, *A.A.* 9797 (K, UCJ); Mt. Mafa, *Bonardi 63* (P); Brafouédi, *P.V.* 260 (DALOA); Forêt de Yapo, *P.V.* 710, 720 (ABI, K, P, UCJ, DALOA).

Bulbophyllum porphyroglossum Kraenzl.

Tiapleu, *P.V.* 267 (DALOA); Brafouédi, *P.V.* 267/B (ABI, K, P, UCJ, DALOA).

Bulbophyllum saltatorium Lindl.

Forêt de Banco, *P.V.* 665 (K, DALOA); forêt de Yapo, *P.V.* 711 (ABI, P, UCJ).

Bulbophyllum scariosum Summerh.

Mt. Tonkoui, *P.V.* 493 (ABI, K, P, UCJ, DALOA).

Bulbophyllum victoris Cribb & Per.-Vera.

Forêt de Yapo, *P.V.* 553 (K, P, UCJ, DALOA).



Pl. 3. — *Bulbophyllum irigaleae* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, part of inflorescence $\times 3$; 3, lip (dorsal view, hairs omitted) $\times 4$.

Bulbophyllum winkleri Schltr.

Tiapleu, *P.V.* 209 (DALOA); Mt. Nimba, *P.V.* 578 (K, P, UCJ, DALOA); Man, *P.V.* 607 (ABI); Riv. Zo, *P.V.* 676 (UCJ, DALOA).

Chamaeangis lanceolata Summerh.

Zagné, *P.V.* 275 (DALOA); Man à Danané, *P.V.* 275/B (K); Danané à Guinée, *P.V.* 677 (DALOA).

Chauliodon buntingii Summerh.

Brafouédi, *P.V.* 504 (K).

Cyrtorchis aschersonii (Kraenzl.) Schltr.

Oureyo, *P.V.* 277 (DALOA); Soubré, *P.V.* 277/B (DALOA); forêt de Gbotto, *P.V.* 552 (UCJ); forêt de l'Abbé, *A.A.* 8893 (K, UCJ); Mt. Mafa, *A.A.* 8899 (UCJ); Lagako à Okromodou, *P.V.* 643 (DALOA).

Cyrtorchis hamata (Rolfe) Schltr.

Daloa, *P.V.* 244 (K, P), *P.V.* 269 (UCJ, DALOA); J. Bot. Univ. Abidjan, *A.A.* 9646 (UCJ); Daloa à Guiglo, *Bernardi* 8498 (P); Mt. Mafa, *Bonardi s.n.* (P); Guitri, *A.A. s.n.* (ABI).

Diaphananthe bueae (Schltr.) Schltr.

Forêt de Dahiri, *A.A.* 9003 (UCJ); Mt. Mafa, *P.V.* 725 (K, DALOA).

Diaphananthe quintasii (Rolfe) Schltr.

Mt. Tonkoui, *P.V.* 236 (ABI), *P.V.* 696 (K, P, UCJ, DALOA).

Diaphananthe sarcorhynchoides J.B. Hall

Mt. Mafa, *A.A.* 9647 (UCJ), *P.V.* 728 (P); forêt d'Azaguié, *A.A.* 6023 (K, UCJ), *P.V.* 562 (K, DALOA).

Disperis thomensis Summerh.

Mt. Tonkoui, *P.V.* 521 (P, UCJ); *A.A.* 2696 (ABI, UCJ); *Cremers* 1091 (ABI, P); Mt. Nimba, *P.V.* 521/B (K, DALOA).

Eulophia buettneri (Kraenzl.) Summerh.

Daloa à Zuénoula, *P.V.* 207 (DALOA); Savane de Yuala, *P.V.* 597 (ABI, K, P, UCJ, DALOA); Lomo, *A.A.* 3083 (UCJ); Bouaffé, *A.A.* 7943 (UCJ).

Eulophia dilecta (Rchb. f.) Schltr.

M'Bahiakro, *A.A.* 1367 (UCJ); Seguéla, *A.A.* 2448 (UCJ).

Eulophia leonensis Rolfe

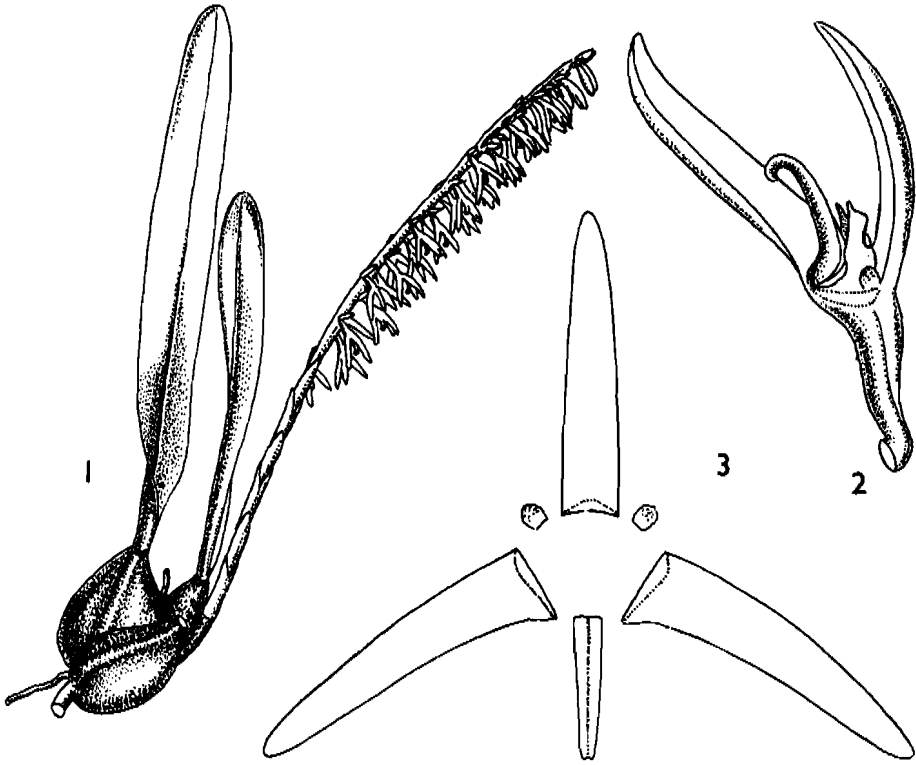
Odienné, *A.A.* 11767 (UCJ).

Eulophia monile Rchb. f.

Bondoukou, *A.A.* 8695 (K, UCJ).

Eulophia orthoplectra (Rchb. f.) Summerh.

Bianfia, *A.A.* 9092 (K, UCJ).



Pl. 4. — *Bulbophyllum ivorense* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, flower (lateral view) with one lateral sepal removed $\times 7$; 3, dissected flower, dorsal sepal uppermost $\times 7$.

Eulophia sordida Kraenzl.

Daloa à Zuénoula, *P.V.* 558 (ABI, K, P, UCJ, DALOA); Séguéla, *A.A.* 11228 (UCJ).

Eulophia warneckeana Kraenzl.

Savane de Mankono, *P.V.* 242 (ABI, K, P, UCJ); Vavoua, *P.V.* 580 (K, P, UCJ, DALOA); Séguéla à Touba, *P.V.* 581 (DALOA); Boundiali à Korhogo, *P.V.* 694 (K, DALOA); Adja 2034/B (UCJ); *A.A.* 5589 (UCJ); Zuénoula à Vavoua, *A.A.* 972/B (UCJ); Ybert 355 (ABI, UCJ); Séguéla, *A.A.* 9906 (ABI, UCJ); Zoakro, *A.A.* 11668 (UCJ); Ouossou, *Pobéguin* 139b (P); *Scaëtta s.n.* (P); Lamto, *Portères* 675 (P).

Habenaria buettneriana Kraenzl.

Katiola, *A.A.* 3695 (UCJ); Danané, *P.V.* 699 (ABI, K, P, UCJ, DALOA).

Habenaria cirrhata (Lindl.) Rchb. f.

Kouibli, *A.A.* 9052 (UCJ).

Habenaria englerana Kraenzl.

Mt. Tonkoui, *A.A.* 2627 (UCJ).

Habenaria ichneumonea (Sw.) Lindl.

Mt. Tonkoui, *P.V.* 2630 (UCJ); Danané, *Nozeran s.n.* (P).

Liparis platyglossa Schltr.

Mt. Tonkoui, *P.V.* 520 (ABI, K, P, UCJ, DALOA), *A.A.* 2627 (UCJ).

Malaxis maclaudii (Finet) Summerh.

Mt. Tonkoui, *P.V.* 522 (ABI, K, P, UCJ, DALOA), *A.A.* 3693 (UCJ).

Malaxis katangensis Summerh.

Adiopodoumé, *P.V.* 652 (K).

Manniella gustavii Rchb. f.

Mt. Tonkoui, *P.V.* 501 (K); forêt de Sangouiné, *P.V.* 501/B (DALOA); Mt. Nimba, *P.V.* 501/C (UCJ).

Podangis dactyloceras (Rchb. f.) Schltr.

Gregbeu, *P.V.* 198 (UCJ); Guezon à Buyo, *P.V.* 537 (ABI, K, P, DALOA); proc. bassin de La Lobo, *A.A.* 9895 (UCJ); proc. bassin de La Lobo, *A.A.* 9886 (K, UCJ).

Polystachya affinis Lindl. var. *nana* J.B. Hall

Adiopodoumé, *P.V.* 152 (K, P, UCJ, DALOA); Tiapleu, *A.A.* 9228 (K, UCJ); forêt de Téké, *A.A.* 9308 (K, UCJ); forêt de Yapo, *P.V.* 722 (ABI, K, P, UCJ, DALOA).

Polystachya fractiflexa Summerh.

Lagako à Okromodou, *P.V.* 640 (K, P, UCJ, DALOA).

Polystachya modesta Rchb. f.

Mt. Tonkoui, *P.V.* 141 (DALOA), *P.V.* 141/B (K); Daloa à Zuénoula, *P.V.* 627 (DALOA).

Polystachya mukandaensis de Wild.

Bingerville, *P.V.* 531 (DALOA); Danané, *P.V.* 546 (K, P); Man à Touba, *P.V.* 592 (UCJ, DALOA); forêt de Banco, *P.V.* 707 (ABI).

Polystachya paniculata (Sw.) Rolfe

Forêt de San Pedro, *P.V.* 157 (DALOA); Tiapleu, *P.V.* 157/B (K, DALOA); proc. region Hiré, *A.A.* 9781 (K, UCJ).

Polystachya parva Summerh.

Mt. Tonkoui, *P.V.* 679 (ABI, K, P, UCJ, DALOA).

Polystachya ramulosa Lindl.

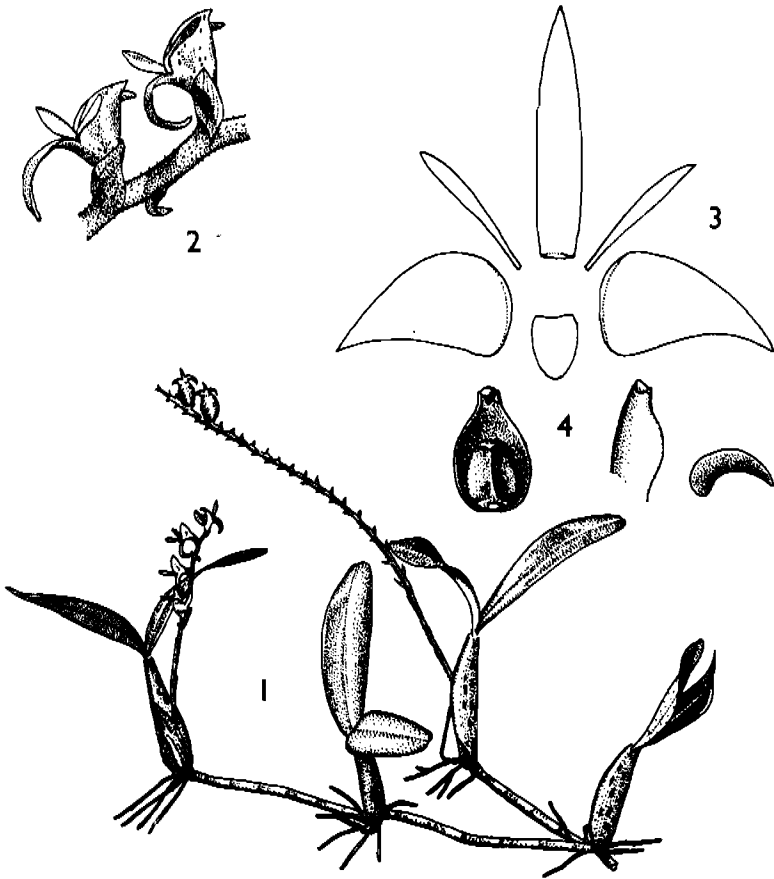
Mt. Mafa, *Bonardi* 113 (P).

Polystachya seticaulis Rendle

Forêt de Banco, *A.A.* 10027 (K, UCJ); forêt de M'Zida, *A.A.* 3136 (UCJ); forêt de Yapo, *P.V.* 719 (K, DALOA).

Polystachya victoriæ Kraenzl.

Brafouédi, *P.V.* 512 (ABI, K, UCJ, DALOA).



Pl. 5. — *Bulbophyllum victoris* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, part of inflorescence $\times 3$; 3, dissected flower, dorsal sepal uppermost $\times 7$; 4, column and lip (ventral and lateral views) $\times 7$.

Rangaeris longicaudata (Rolfe) Summerh.

Oureyo, *P.V.* 146 (K, UCJ, DALOA); Guezon, *P.V.* 533 (P).

Tridactyle armeniaca (Lindl.) Schltr.

Mt. Momi, *P.V.* 215 (DALOA); Danané à Guinée, *P.V.* 576 (ABI, K, P, UCJ, DALOA);

Mt. Tonkoui, *A.A.* 4147 (UCJ).

Tridactyle crassifolia Summerh.

Forêt de Buyo, *P.V.* 263 (ABI, K, P, UCJ, DALOA).

P.V. = F. PEREZ-VERA; A.A. = L. AKÉ-ASSI; DALOA = Perez-Vera's herbarium, Daloa, Côte d'Ivoire.

CHECK LIST OF THE ORCHIDS OF THE CÔTE D'IVOIRE

(based on SUMMERHAYES (1968) and the new records given in this paper unless otherwise indicated).

- Swartzkoppfia pumilio* (Lindl.) Schltr. » *rufina* (Ridl.) Rchb. f.
Brachycorythis macrantha (Lindl.) Summerh. » *guineensis* Lindl.
 » *tenuior* Rchb. f. » *epiphytica* Schltr.
 » *paucifolia* Summerh. *Ansellia africana* Lindl.
 » *ovata* Lindl. subsp. *schweinfurthii* (Rchb. f.) Summerh. *Polystachya paniculata* (Sw.) Rolfe
 » *pubescens* Harv. » *fractiflexa* Summerh.
Habenaria filicornis Lindl. » *laxiflora* Lindl.
 » *buntingii* Rendle » *rhodoptera* Rchb. f.
 » *macrandra* Lindl. » *dalzielii* Summerh.
 » *leonensis* Dur. & Schinz » *pseudodisa* Kraenzl.
 » *zambesina* Rchb. f. » *pobeguinii* (Finet) Rolfe
 » *procera* (Sw.) Lindl. » *reflexa* Lindl.
 » *gabonensis* Rchb. f. » *victoriae* Kraenzl.
 » *englerana* Kraenzl. » *seticaulis* Rendle
 » *barrina* Ridl. » *adansoniae* Rchb. f.
 » *buettnerana* Kraenzl. » *polychaete* Kraenzl.
 » *genuflexa* Rendle » *ramulosa* Lindl.
 » *ichneumonea* (Sw.) Lindl. » *puberula* Lindl.
 » *cirrhatta* (Lindl.) Rchb. f. » *odorata* Lindl. var. *odorata*
 » *cornuta* Lindl. (3)¹ » *tessellata* Lindl.
 » *occidentalis* (Lindl.) Summerh. » *mukandaensis* de Wild.
Platycoryne paludosa (Lindl.) Rolfe » *modesta* Rchb. f.
Disa welwitschii Rchb. f. » *golungensis* Rchb. f.
Disperis thomensis Summerh. » *dolichophylla* Schltr. (3)
Vanilla africana Lindl. » *subulata* Finet
 » *crenulata* Rolfe » *leonensis* Rchb. f.
 » *imperialis* Kraenzl. » *parva* Summerh.
Diceratosteles gabonensis Summerh. » *affinis* Lindl.
Nervilia reniformis Schltr. (1) » *affinis* Lindl. var. *nana* J.B. Hall (2)
 » *fuertenbergiana* Schltr. (1) » *obanensis* Rendle
 » *adolphii* Schltr. var. *seposita* N. » *microbambusæ* De Wild.
 Hallé & J. Toilliez (1) » *crassifolia* Schltr. (4)
 » *kotschyi* (Rchb. f.) Schltr. (1) » *mystacoides* De Wild.
 » *umbrosa* (Rchb. f.) Schltr. (1) » *galeata* (Sw.) Rchb. f.
 » *toilliezæ* N. Hallé (1) » *tenuissima* Kraenzl.
Auxopus kamerunensis Schltr. » *inconspicua* Rendle
Maniella gustavii Rchb. f. *Ancistrochilus rothschildianus* O'Brien
Platylepis glandulosa (Lindl.) Rchb. f. *Bulbophyllum flavidum* Lindl.
Zeuxine elongata Rolfe » *cocoinum* Batem. ex Lindl.
Hetzaria heterosepala (Rchb. f.) Summerh. » *josephii* (Kuntze) Summerh.
 » *stammleri* (Schltr.) Summerh. » *nigritianum* Rendle
 » *occidentalis* Summerh. » *pipio* Rchb. f.
Corymborkis corymbosa Thou. » *buntingii* Rendle
Malaxis maclaudii (Finet) Summerh. » *winkleri* Schltr.
 » *chevalieri* Summerh. » *porphyroglossum* Kraenzl.
 » *katangensis* Summerh. » *inflatum* Rolfe
Liparis tridens Kraenzl. » *cochleatum* Lindl.
 » *platyglossa* Schltr. » *saltatorium* Lindl.
 » *distans* Lindl.
 » *calamarium* Lindl.

1. 1, N. HALLÉ & J. TOILLIEZ (1971); 2, J. B. HALL (1974); 3, L. AKÉ ASSI (1963); 4, J. GUILLAUMET (1967).

- » *phæopogon* Schltr.
» *schinzianum* Kraenzl. (3)
» *barbigerum* Lindl.
» *fuscum* Lindl.
» *oreonastes* Rchb. f.
» *scariosum* Summerh.
Bulbophyllum bifarium Hook. f.
» *nigericum* Summerh.
» *lupulinum* Lindl.
» *falcipetalum* Lindl.
» *rhizophoræ* Lindl.
» *congolatum* Schltr.
» *tentaculigerum* Rchb. f.
» *velutinum* (Lindl.) Rchb. f.
» *melanorrhachis* (Rchb. f.) Rchb. f.
 ex De Wild.
» *falcatum* (Lindl.) Rchb. f.
» *purpureorhachis* (De Wild.) Schltr.
» *bufo* (Lindl.) Rchb. f.
» *calyptratum* Kraenzl.
» *lucifugum* Summerh.
» *olubrinum* (Rchb. f.) Rchb. f.
» *maximum* (Lindl.) Rchb. f.
» *kamerunense* Schltr. (3)
» *magnibracteatum* Summerh.
» *imbricatum* Lindl.
» *linderi* Summerh.
» *daloense* Cribb & Perez-Vera
» *irigalezæ* Cribb & Perez-Vera
» *ivorense* Cribb & Perez-Vera
» *victoris* Cribb. & Perez-Vera
Genyorchis pumila (Sw.) Schltr.
Eulophidium maculatum (Lindl.) Pfitz.
» *saundersianum* (Rchb. f.) Summerh.
Eulophia guineensis Lindl.
» *gracilis* Lindl.
» *esglosua* (Rchb. f.) Rchb. f.
» *shupangæ* (Rchb. f.) Kraenzl.
» *warneckiana* Kraenzl.
» *monile* Rchb. f.
» *brevipetala* Rolfe
» *sordida* Kraenzl.
» *leonensis* Rolfe
» *alta* (Linn.) Fawcett & Rendle
» *flavopurpurea* (Rchb. f.) Rolfe
» *cristata* (Sw.) Steud.
» *caricifolia* (Rchb. f.) Summerh.
» *angolensis* (Rchb. f.) Summerh.
» *cucullata* (Sw.) Steud.
» *dilecta* (Rchb. f.) Schltr.
» *buettneri* (Kraenzl.) Summerh.
» *horsfallii* (Batem.) Summerh.
» *barteri* Summerh.
» *juncifolia* Summerh.
» *orthoplectra* (Rchb. f.) Summerh.
Graphorkis lurida (Sw.) Kuntze
Podangis dactyloceras (Rchb. f.) Schltr.
Calyptrorchilum emarginatum (Sw.) Schltr.
» *christyanum* (Rchb. f.) Summerh.
Angræcum distichum Lindl.
» *podochloides* Schltr.
» *subulatum* Lindl.
» *pyrifforme* Summerh.
» *chevalieri* Summerh.
» *birrimense* Rolfe
Listrostachys pertusa (Lindl.) Rchb. f.
Microcalia cæspitosa (Rolfe) Summerh.
» *dahomeensis* (Finet) Summerh.
Encheiridion macrorrhynchium (Schltr.)
 Summerh.
Chauliodon buntingii Summerh.
Diaphananthe pellucida (Lindl.) Schltr.
» *bueæ* (Schltr.) Schltr.
» *quintastii* (Rolfe) Schltr.
» *bidens* (Sw.) Schltr.
» *curvata* (Rolfe) Summerh.
» *rutila* (Rchb. f.) Summerh.
» *laxiflora* (Summerh.) Summerh.
» *sarcorrhynchoides* J. B. Hall (2)
Bolusiella iridifolia (Rolfe) Schltr.
» *imbricata* (Rolfe) Schltr.)
» *batesii* (Rolfe) Schltr.
» *talbotii* (Rendle) Summerh.
Chamæangis lanceolata Summerh.
» *odoratissima* (Rchb. f.) Schltr.
» *vesicata* (Lindl.) Schltr.
Plectrelminthus caudatus (Lindl.) Summerh.
Aerangis biloba (Lindl.) Schltr.
» *calantha* (Schltr.) Schltr.
» *laurentii* (De Wild.) Schltr.)
Rangaeris muscicola (Rchb. f.) Summerh.
 (3)
» *hipsalisocia* (Rchb. f.) Summerh.
» *longicaudata* (Rolfe) Summerh.
» *brachyceras* (Summerh.) Summerh.
 (3)
Cyrtorchis ringens (Rchb. f.) Summerh.
» *monteiroæ* (Rchb. f.) Schltr. (3)
» *arcuata* (Lindl.) Schltr. subsp. *whytei*
 (Rolfe) Summerh.
» *arcuata* (Lindl.) Schltr. subsp. *variabilis*
 Summerh.
» *hamata* (Rolfe) Schltr.
» *aschersonii* (Kraenzl.) Schltr.
» *brownii* (Rolfe) Schltr.
Solenangis scandens (Rolfe) Schltr.
» *clavata* (Rolfe) Schltr.
Dinklageella liberica Mansf.
Eurychone rothschildiana (O'Brien) Schltr.
Ancistrorhynchus clandestinus (Lindl.)
 Schltr.
» *recurvus* Finet
» *capitatus* (Lindl.) Summerh.
Ancistrorhynchus cephalotes (Rchb. f.)
 Summerh.
» *straussii* (Schltr.) Schltr.

<i>Angræcopsis elliptica</i> Summerh.	<i>Tridactyle oblongifolia</i> Summerh.
<i>Eggelingia clavata</i> Summerh.	» <i>tridentata</i> (Harv.) Schltr.
<i>Tridactyle anthomaniaca</i> (Rchb. f.) Summerh.	» <i>armaniaca</i> (Lindl.) Schltr.
» <i>crassifolia</i> Summerh.	» <i>tridactylites</i> (Rolfe) Schltr.
	» <i>bicaudata</i> (Lindl.) Schltr.

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