

ADDITIONAL NOTES ON THE ERIOCAULACEAE. XV

Harold N. Moldenke

ERIOCAULACEAE Lindl.

Additional bibliography: Melchior in Engl., Syllabus Pfl., ed. 12, 2: 19, 20, 24, 26 & 554--556, fig. 230. 1964; M. E. S. Morrison, Journ. Ecol. [Brit.] 56: 373, fig. 5. 1968; D. Walker, Journ. Ecol. [Brit.] 56: 451. 1968; Moldenke, Phytologia 17: 372-395. 1968.

Morrison (1968) reports the finding of eriocaulaceous pollen in Uganda swamps, which he feels is not from the genera Mesanthemum or Syngonanthus, since these genera are recorded only from swamps at lower elevations.

BLASTOCAULON Ruhl.

Additional bibliography: Melchior in Engl., Syllabus Pfl., ed. 12, 2: 556. 1964; Moldenke, Phytologia 17: 373. 1968.

COMANTHERA L. B. Sm.

Additional bibliography: Melchior in Engl., Syllabus Pfl., ed. 12, 2: 556. 1964; Moldenke, Phytologia 17: 376--377. 1968.

ERIOCAULON Gron.

Additional bibliography: Melchior in Engl., Syllabus Pfl., ed. 12, 2: 555 & 556, fig. 230 A--K. 1964; M. E. S. Morrison, Journ. Ecol. [Brit.] 56: 373, fig. 5. 1968; D. Walker, Journ. Ecol. [Brit.] 56: 451. 1968; Moldenke, Phytologia 17: 377--395. 1968.

ERIOCAULON ABYSSINICUM Hochst.

Additional bibliography: Moldenke, Phytologia 17: 382--383 & 387. 1968.

ERIOCAULON ACHITON Körn.

Additional bibliography: Moldenke, Phytologia 17: 383--384 & 386. 1968.

ERIOCAULON ALPESTRE Hook. f. & Thoms.

Additional bibliography: Moldenke, Phytologia 17: 385--386 & 390. 1968.

ERIOCAULON AMBOËNSE Schinz

Additional bibliography: Moldenke, Phytologia 17: 383 & 387. 1968.

ERIOCAULON ATRUM Nakai

Additional bibliography: Moldenke, Phytologia 17: 386 & 390. 1968.

ERIOCAULON AUSTRALASICUM (F. Muell.) Körn.

Additional bibliography: Moldenke, Phytologia 17: 382 & 391. 1968.

ERIOCAULON BLUMEI Körn.

Additional bibliography: Moldenke, Phytologia 17: 395. 1968.

Additional citations: INDONESIA: GREATER SUNDA ISLANDS: Java: Backer 12567 (Ut—53018, Z), 26071 (Ut—52813); Pulle 3079 (Ut—2666, Ut—2667). Sumatra: Bünnemeyer 9728 (B).

ERIOCAULON BOMBAYANUM Ruhl.

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 23 & 32. 1946; Moldenke, Résumé 161 & 480. 1959.

Additional citations: INDIA: Bombay: Warburg 876 (B—type, Z—isotype).

ERIOCAULON BONGENSE Engl. & Ruhl.

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 20, 21, & 33. 1946; Moldenke, Résumé 133, 134, 136, 138, 146, & 480. 1959; Moldenke, Phytologia 2: 6 (1960) and 4: 6. 1962; J. & A. Raynal, Adansonia 7: 329. 1967; Berhaut, Fl. Sénégal, ed. 2, 311. 1967; Moldenke, Résumé Suppl. 16: 7. 1968; Moldenke, Phytologia 17: 385. 1968.

The Raynals found this plant growing on alluvium of the Niger River on inundated prairies, flowering in December; they report (1967) that the species is common in Gambia and Sénégal. On the label of their no. 5306 ter they claim that this specimen is identical with their no. 5230; a splendid series of drawings of the plant accompanies their no. 5306 ter collection deposited in my personal herbarium. Berhaut (1967) cites his no. 6662 from Sénégal.

Additional citations: MALI: Soudan: Jaeger 5126 (Gg); Raynal & Raynal 5306 ter (Z). CHAD: Schweinfurth 2539 (S), 2722 (B—type, Z—isotype). SÉNÉGAL: Winkoren 2 (Z). REPUBLIC OF GUINEA: Pitot s.n. [24.IV.1949] (An).

ERIOCAULON BONI H. Lecomte

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 26 & 61. 1946; Moldenke, Résumé 175 & 480. 1959.

Additional citations: INDOCHINA: Tonkin: Eberhardt 3834 bis (Mg).

ERIOCAULON BRACHYPEPLON Körn.

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 33. 1946; Moldenke, Phytologia 3: 184. 1949; Moldenke, Résumé 204 & 480. 1959.

ERIOCAULON BREVIFOLIUM Klotzsch

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 6 & 33. 1946; Moldenke, Phytologia 3: 322 (1950) and 4: 341. 1953; Moldenke, Résumé 75 & 480. 1959.

Gleason, in his unpublished notes for a Flora of British Guiana, describes this species as: "Leaves all basal, cespitose, 5—7 cm. long, 1.5—2.5 mm. wide, thinly pubescent toward the base; peduncles 1—4, 1—4 dm. high, straight or somewhat twisted, glabrous, the basal sheaths somewhat exceeding the leaves; heads subglobose, 5—8 mm. in diameter; bracts broadly ovate or subrhombic; subtending bracts similar in shape, acute, hirsute at the apex." He says that it inhabits savannas, and cites only the type collection (Rob. Schomburgk 107) and Appun 1538 & 2218.

An isotype, Rob. Schomburgk 107, in the Delessert Herbarium at the Conservatoire et Jardin Botaniques in Geneva, was photographed there by Macbride as his type photograph number 25158. The E. brevifolium of Martius is a synonym of E. sellowianum Kunth.

Additional citations: BRITISH GUIANA: Dirven LP.186 (Ut—283788); Rob. Schomburgk 107, in part [Macbride photos 25158] (B—type, N—isotype, W—702519—isotype, Z—photo of isotype). MOUNTED ILLUSTRATIONS: drawings & notes by Kőrnicke (B).

ERIOCAULON BREVIFOLIUM var. PROLIFERUM Moldenke

Additional bibliography: Moldenke, Mem. N. Y. Bot. Gard. 9: 78. 1957; Moldenke, Bull. Jard. Bot. Brux. 27: 130. 1957; Moldenke, Résumé 71 & 480. 1959.

The Vareschi & Maegedfrau 6698, distributed as E. brevifolium var. proliferum, is actually Syngonanthus xeranthemoides (Bong.) Ruhl., while their 6706 & 6717 [Herb. Nac. Venez. 42557 & 42558] are actually something in the Cyperaceae.

ERIOCAULON BREVIPEDUNCULATUM Merr.

Synonymy: Eriocaulon acaule Fosberg, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 286. 1965 [not E. acaule Pennell, 1959].

Additional & emended bibliography: Moldenke, Known Geogr. Distrib. Erioc. 26, 27, & 61. 1946; Moldenke, Bull. Jard. Bot. Brux. 27: 130. 1957; Moldenke, Résumé 184, 192, 201, & 480. 1959; Moldenke, Résumé Suppl. 1: 14 (1959) and 8: 3. 1964; Moldenke, Biol. Abstr. 45: 5019. 1964; F. R. Fosberg, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 286. 1965; Moldenke, Résumé Suppl. 13: 7. 1966.

Recent collectors have found this plant growing in open barren country on the west side of a clay-stone plateau, in boggy meadows by pools, in wet pools, on wet and cold bare windswept granite, and in swamps surrounded by treefern grasslands, at altitudes of 8000—12,500 feet, flowering in June and November, fruiting in May and November, and called "pehndigi" and "poio" by the natives of the region. Collectors report that it is "tuft-forming", "densely cespitose", or "grows in mats". The E. acaule Pennell, referred to in the synonymy above, is a synonym of Syngonanthus peruvianus Ruhl.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Mindoro: E. D. Merrill 6214 (B—isotype, N—isotype). IN-

DONESIA: GREATER SUNDA ISLANDS: Celebes: Eyma 863 (Ut--11517b). Sabah: M. S. Clemens 10504 (Ca--214441), 10611 (Ca--214439, Z); Clemens & Clemens 32336 (Ca--541311), 51120 (Ca--557560). MELAN-ESIA: NEW GUINEA: Dutch New Guinea: Hoogland & Schodde 7031 (W--2393235). Northeastern New Guinea: M. S. Clemens 7409 (B), 9942 (B).

ERIOCAULON BREVIPEDUNCULATUM var. ANGUSTIFOLIUM Moldenke

Additional bibliography: Moldenke, Biol. Abstr. 27: 984. 1953; Moldenke, Bull. Jard. Bot. Brux. 27: 131. 1957; Moldenke, Résumé 201 & 480. 1959; Moldenke, Résumé Suppl. 1: 14. 1959.

Mrs. Clemens found this plant growing in boggy marshes and open alpine places, at 7000--9000 feet altitude.

Additional citations: MELANESIA: NEW GUINEA: Northeastern New Guinea: M. S. Clemens 5584 (B), 5655a (B), 9368 (B).

ERIOCAULON BREVIPEDUNCULATUM var. LONGIPES Moldenke

Bibliography: Moldenke, Phytologia 9: 360. 1963; Hocking, Excerpt. Bot. A.7: 455. 1964; Moldenke, Biol. Abstr. 45: 5019. 1964; Moldenke, Résumé Suppl. 8: 3. 1964.

Citations: MELANESIA: NEW GUINEA: Dutch New Guinea: Hoogland & Schodde 7647 (W--2377945--type).

ERIOCAULON BREVISCAPUM Körn.

Synonymy: Eriocaulon breviscapum Körn. ex Thanikaimoni, Pollen & Spores 7: 184. 1965.

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 23 & 33. 1946; Moldenke, Phytologia 3: 184. 1949; Moldenke, Résumé 161 & 480. 1959; Moldenke, Résumé Suppl. 3: 17 & 19. 1962; Thanikaimoni, Pollen & Spores 7: 184. 1965; Moldenke, Résumé Suppl. 14: 8. 1966.

Recent collectors state that this is a common herb on rocks in streams in Cambodia, the flowers being "dirty-white", blooming in February, at 1000 meters altitude.

Additional citations: INDOCHINA: Cambodia: Smitinand & Abbe 6450 (Z). MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

ERIOCAULON BROMELLOIDEUM H. Lecomte

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 26 & 61. 1946; Moldenke, Résumé 175 & 480. 1959.

ERIOCAULON BROWNIANUM Mart.

Synonymy: Eriocaulon brownianum Wall., Numer. List 207. 1832. Eriocaulon brownianum R. Br. ex Moldenke, Résumé Suppl. 1: 16, in syn. 1959.

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 131--132. 1957; Moldenke, Résumé 159, 161, 167, 176, 286, 294, & 480. 1959; Moldenke, Résumé Suppl. 1: 11 & 16. 1959; Panigrahi & Naik, Bull. Bot. Surv. India 3: 383. 1961; Thanikaimoni, Pollen & Spores 7: 184. 1965; Moldenke, Phytologia 17: 395. 1968.

Recent collectors have found this plant growing in old fields, at altitudes of 5900—6000 feet, flowering in August and November, and fruiting in November. Chand describes it as 20 inches tall, with "grayish-white" flowers. Koorders claims that E. blumei Körn. is a synonym of this taxon, but it is glabrous!

Material has been misidentified and distributed in herbaria as E. nilagirens Steud.

Additional citations: PAKISTAN: East Bengal: De Silva 2 [Wallich 6066] (B—isotype); Griffith 5574 (S). INDIA: Assam: Chand 7993 (Mi). Khasi States: Hooker & Thomson 32 (B), s.n. [Mont. Khasia, 3-5000 ped.] (S, Ut—306). Madras: Herb. Presid. Coll. Madras 3331 (B). State undetermined: Collector undesignated 123 [Mons Pangerango] (S, S); Herb. Univ. Mich. s.n. [Mountains of India] (Mi); Wight s.n. [Ind. or.] (V—41209, V—41339). CEYLON: Börjesen s.n. [13/3/1928] (Cp); H. Saint John 24128 (B1).

ERIOCAULON BROWNIANUM var. LATIFOLIUM Moldenke

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 132. 1957; Moldenke, Résumé 167 & 480. 1959.

Additional citations: CEYLON: Börjesen s.n. [13/3/1928] (Cp).

ERIOCAULON BRUNONIS Britten

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 132. 1957; Moldenke, Résumé 208, 286, 292, 342, & 480. 1959.

The label of Schultz 261, cited below, also bears the inscription "Rich. Schomburgk 261".

Additional citations: AUSTRALIAN REGION: AUSTRALIA: South Australia: Schultz 261 (B—isotype, Z—isotype).

ERIOCAULON BUCHANANII Ruhl.

Synonymy: Eriocaulon buchanani Ruhl. ex Moldenke, Résumé Suppl. 1: 16, in syn. 1959.

Additional bibliography: J. Hutchinson, Botanist in South. Afr. 499. 1946; H. Hess, Bericht. Schweiz. Bot. Gesell. 67: 84. 1957; Moldenke, Résumé 144, 147, 149, 418, & 480. 1959; Moldenke, Résumé Suppl. 1: 8 & 16 (1959), 4: 6 (1962), and 16: 8. 1968.

Milne-Redhead & Taylor describe this plant as an annual, the leaves "similar to those of 10885", slightly bronzy-green, with rather parallel sides; sheathes pale- or yellow-green; scapes erect, scarcely diverging or tending to spread, green or pale-green; involucre bracts pale brownish-gray or pale-brown; floral bracts brownish-gray or blackish with grayish tips, very acute; anthers blackish or greenish-black; style white; growing in damp rather deep hollows in Brachystegia-Uapaca woodlands where water has been standing, also on sandy ground in the same woodland with Lipocarpha and Naesea species and in derelict cultivated ground in riverside grassland on boggy soil. It has been collected at altitudes of 900—1320 meters, flowering in June. Hess (1957) records it from Angola, Southern Rhodesia, and Sénégal. Hutchinson (1946) cites his no. 3647. Material has been misiden-

tified and distributed in herbaria as E. plumale N. E. Br. and as E. transvaalicum N. E. Br.

Additional citations: SENEGAL: J. G. Adam 17239 (Z); Raynal & Raynal 6946 bis (An). REPUBLIC OF GUINEA: Chillou 726 (An); Pitot 226 (An), s.n. [9.X.1950] (An), s.n. [16.X.1950] (An, An); Schuell 2154 (N, N--photo). TANGANYIKA: Milne-Redhead & Taylor 10886 (B), 10892 (B); Whyte s.n. [Post Hill] (B--cotype, Z--cotype). ANGOLA: Huila: H. Hess 52/2003 (B). RHODESIA: E. A. Robinson 5541 (N). MALAWI: Buchanan 1168 (B--cotype); Stolz 1344 (B, N--photo, S, Ut--64478, V--10809).

ERIOCAULON BUERGERIANUM Körn.

Synonymy: Eriocaulon pachypetalum Hayata, Icon. Pl. Formos. 10: 52, fig. 29. 1921. Eriocaulon nipponicum Körn. ex Moldenke, Résumé Suppl. 1: 17, in syn. 1959 [not E. nipponicum Maxim., 1892, nor Tatew., 1938].

Additional bibliography: Koyama, Philip. Journ. Sci. Bot. 84: 368. 1956; Moldenke, Bull. Jard. Bot. Brux. 27: 133. 1957; Moldenke, Résumé 132, 169, 172, 174, 176, 181, 290, & 480. 1959; Moldenke, Résumé Suppl. 1: 12 & 17 (1959) and 3: 17. 1962; Hatusima, Mem. South. Indust. Sci. Inst. Kagoshima Univ. 3 (2): 123. 1962; Koyama in Kitamura, Murata, & Koyama, Col. Illustr. Herb. Pl. Japan 183, pl. 48, fig. 308, text fig. 125 (2). 1964.

The plate in Koyama's (1964) work is in full color. The E. nipponicum Maxim., referred to in the synonymy above, is a valid species, while E. nipponicum Tatew. is a synonym of xE. perplexum Satake & Hara; the E. nipponicum of Körnicke is a cheironym which he placed on Savatier 1361 in the Berlin herbarium [it should be pointed out, however, that this and the other Savatier collection cited below may actually be Franchet numbers].

Eriocaulon buergerianum has been found growing in the retaining walls of rice terraces, but is said by Lau to be "rare" in Kwangtung. It has been collected in anthesis and fruit in August. Koyama (1956) gives its overall distribution as "China, Formosa, Liukiu, Japan" and cites Hayata s.n. from Tonkin, which he says is a new record for Indochina.

Material has been misidentified and distributed in herbaria under the names E. sexangulare L., E. sieboldianum Sieb. & Zucc., and E. wallichianum Mart. The Faber s.n. collection cited below is a mixture with E. cristatum Mart. On the other hand, the Kawakami 431, distributed as E. buergerianum, is actually E. pterospermum Hayata, while W. T. Tsang 535 [Herb. Lingnan Univ. 16034] is E. sinii Ruhl.

Additional citations: CHINA: Anhwei: R. C. Ching 4550 [Herb. Univ. Nanking 8939] (Ca--263593). Kwangsi: W. T. Tsang 23167 (V--8303). Kwangtung: Lau 708 (N); W. T. Tsang 20687 (B, Cp, S, V--1838, V--4618), 21681a (N). Manchuria: Bohnhof 294 (N). Yunnan: Maire 2331 (Ca--222835). Province undetermined: Faber

s.n. (N). CHINESE COASTAL ISLANDS: Hainan: Tak 535 [Herb. Lingnan Univ. 16034] (Ca—326638); W. T. Tsang 535 [Herb. Lingnan Univ. 16034] (N). WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Savatier 1361 (B), 1361 bis (B).

ERIOCAULON BURCHELLII Ruhl.

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 134. 1957; Moldenke, Résumé 88 & 480. 1959; Moldenke, Résumé Suppl. 11: 4. 1964.

The type, Burchell 7812, deposited in the herbarium of the Botanisches Museum in Berlin, was photographed there by Macbride as his type photograph number 10556.

Additional citations: BRAZIL: Goiás: Burchell 7812 [Macbride photos 10556] (B--type, W--photo of type).

ERIOCAULON CAAGUAZUENSE Ruhl.

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 134. 1957; Moldenke, Résumé 116, 286, & 480. 1959.

Additional citations: PARAGUAY: Balansa 564 (P); Hassler 8885 (B--type, V--1433-- isotype), 9425 (V--7011).

ERIOCAULON CABRALENSE Alv. Silv.

Synonymy: Eriocaulon cubralense Alv. Silv., Fl. Mont. pl. 5a, sphalm. 1928.

Bibliography: Alv. Silv., Archiv. Mus. Nac. Rio Jan. 23: 162, pl. 4. 1921; Alv. Silv., Fl. Mont. 17--19, pl. 5 & 5a. 1928; Moldenke, Known Geogr. Distrib. Erioc. 7 & 33. 1946; Moldenke, Résumé 88, 287, & 480. 1959.

ERIOCAULON CAESIUM Griseb.

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 5 & 33. 1946; Moldenke, Phytologia 3: 185. 1949; Moldenke, Résumé 63 & 480. 1959.

The W. E. Broadway 2145, distributed as E. caesium, is actually Paepalanthus lamarckii Kunth.

ERIOCAULON CANDIDUM Moldenke

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 134. 1957; Moldenke, Résumé 88 & 480. 1959.

ERIOCAULON CAPITULATUM Moldenke

Additional bibliography: Moldenke, Phytologia 2: 132--133. 1948; Moldenke, Résumé 35 & 480. 1959.

ERIOCAULON CARSONI F. Muell.

Synonymy: Eriocaulon submersum Tate, Trans. Roy. Soc. S. Austral. 23: 291. 1899 [not E. submersum Welw., 1899]. Eriocaulon tatei Ruhl. in Engl., Pflanzenreich 13 (IV, 30): 117. 1903. Eriocaulon carsonii F. Muell. ex Moldenke, Known Geogr. Distrib. Erioc. 27 & 33. 1946.

Bibliography: F. Muell., Proc. Linn. Soc. New S. Wales 5: 250. 1890; F. Muell., Bot. Centralbl. 44: 302. 1890; Moore & Betche, Handb. Fl. New S. Wales 440. 1893; Tate, Trans. Roy. Soc. S. Austral. 23: 291. 1899; Ruhl. in Engl., Pflanzenreich 13 (IV, 30): 98 & 117. 1903; Maiden & Betche, Census New S. Wales Pl. 38. 1916; Black, Fl. S. Austral., ed. 2, 1: 179. 1943; Moldenke, Known Geogr. Distrib. Erioc. 27 & 33. 1946; Moldenke, Résumé 208 & 480. 1959; O. D. Evans, Contrib. New S. Wales Nat. Herb., Fl. Ser., 27/28: 10 & 12. 1966; Moldenke, Résumé Suppl. 16: 12 & 21. 1968.

Evans (1966) describes this plant as follows: "Small, glabrous, scapigerous herb, possibly perennial. Leaves basal, tufted, lanceolate, gradually narrowed upward to an obtuse, often incurved apex, up to 6 cm. long and 0.5 cm. wide, the base enlarged and sheathing. Scapes rather robust, twice as long as the leaves or somewhat longer, angular. Flower-heads globose, up to 5 mm. diam. Involucral bracts ovate, obtuse, rounded, glabrous; fertile bracts obovate, obtuse, membranous, glabrous; central axis (receptacle) narrow-conical, up to 4 mm. long. Flowers scarcely numerous. Male flowers: outer tepals 3, spathulate- or linear-cuneate, somewhat lacerated at the apex; basal parts of the inner tepals fused into an obconical tube conspicuously longer than the lobes which are slightly fringed and each marked by a dark glandular spot. Stamens mostly 6; anthers rounded and almost black. Female flowers: outer tepals often 2 only, broad, cymbiform-conduplicate, whitish, opaque; inner tepals 3, ovate- to narrow-lanceolate, apiculate, brownish upward. Style short; stigmatic branches 3, filamentous. Fruit a membranous, turgid capsule, 3-valved. Seeds ellipsoid, shining, almost smooth, brown, ca. 0.6 mm. long." He states that the type was collected in New South Wales and that the species forms ample tufts in wet ground adjoining a somewhat saline spring, called by the aborigines Wee Watta spring, on Kallara Station, Darling River, near Louth. The type was collected by Carson in March, 1888, and is no. 66346 in the New South Wales National Herbarium. He adds "Also in South Australia where it is reported to have formed dense mats in a bog at springs between Lakes Blanche and Frome. In New South Wales it is known only from the type locality. Search is desirable at appropriate sites in the far west for further occurrence of this species. Recent endeavours to find it have been unsuccessful. The original description of E. submersum Tate is incorrect in several respects. It stated that the female flower is tetramerous, with 2 sepals, 4 petals and a 2-branched style, also that the glabrous flower-heads and the form of the bracts distinguished it from all other Australian species. Tate noticed, however, that the fourth 'petal' was distinct from the others. Careful examination of the type shows that it agrees with the description above under E. carsonii."

ERIOCAULON CAULIFERUM Mak.

Additional & emended bibliography: Moldenke, Known Geogr.

Distrib. Erioc. 25 & 61. 1946; Moldenke, Bull. Jard. Bot. Brux. 27: 134—135. 1957; Moldenke, Résumé 172 & 480. 1959; Koyama in Kitamura, Murata, & Koyama, Col. Illustr. Herb. Pl. Japan 178, text fig. 120 (2). 1964.

ERIOCAULON CEYLANICUM Körn.

Additional synonymy: Eriocaulon zeylanicum Körn. ex Moldenke, Résumé 294, in syn. 1959.

Additional & emended bibliography: Fyson, Journ. Indian Bot. 2: 310 & 312. 1921; Moldenke, Known Geogr. Distrib. Erioc. 24 & 33. 1946; Moldenke, Bull. Jard. Bot. Brux. 27: 135. 1957; Moldenke, Résumé 167, 286, 294, & 480. 1959; Thanikaimoni, Pollen & Spores 7: 184. 1965.

G. Gardner 934 appears to be the type collection of E. ceylanicum Körn. and a cotype collection of the so-called E. subcaulescens Hook. f. I therefore feel now that the latter name is not worthy of recognition and that it should be reduced, along with E. ceylanicum var. subcaulescens (Hook. f.) Fyson, to synonymy under E. ceylanicum Körn.

Saint John found this species growing in a swamp at 7500 feet altitude, flowering in November. Material has been misidentified and distributed in herbaria under the name E. argenteum Bong. Fyson (1921) is of the opinion that E. ceylanicum and E. cristatum Mart. are related.

Additional citations: CEYLON: G. Gardner 934 (B—type, B— isotype, N— isotype, N—photo of isotype); Herb. Bentham s.n. (Ut—313); H. Saint John 24154 (Bi); Uzel s.n. [1902] (V—10086).

ERIOCAULON CHINOROSSICUM Lom

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 61. 1946; Moldenke, Résumé 132 & 480. 1959.

ERIOCAULON CHRISTOPHERI Fyson

Additional bibliography: Moldenke, Known Geogr. Distrib. Erioc. 23 & 61. 1946; Moldenke, Résumé 161 & 480. 1959; Moldenke, Résumé Suppl. 11: 6. 1964; Thanikaimoni, Pollen & Spores 7: 184. 1965.

Thanikaimoni (1965) regards this taxon as a synonym of E. colinum Hook. f.

ERIOCAULON CILIIPETALUM H. Hess

Additional bibliography: Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1955: 30. 1956; Moldenke, Bull. Jard. Bot. Brux. 27: 135—136. 1957; Moldenke, Résumé 145 & 480. 1959.

ERIOCAULON CINEREUM R. Br.

Emended synonymy: Leucocephala spathacea Roxb., Hort. Beng. 68, hyponym (1814), Fl. Ind. 3: 613. 1832. Eriocaulon nitidum Buch.-Ham. ex Wall., Numer. List 207, no. 6073, hyponym. 1832. Eriocaulon tenue Buch.-Ham. ex Wall., Numer. List 207, no. 6073,

hyponym. 1832. Eriocaulon sieboldtianum Sieb. & Zucc. ex Steud., Syn. Pl. Cyp. 2: 272. 1855. Eriocaulon sexangulare var. α Körn., Linnaea 27: 613. 1856. Eriocaulon sexangulare var. φ Körn., Linnaea 27: 613. 1856. Eriocaulon sexangulare var. γ Körn., Linnaea 27: 613. 1856. Eriocaulon heteranthum Benth., Fl. Hong-kong 382. 1861. Eriocaulon sieboldianum Sieb. & Zucc. ex Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 879. 1893. Eriocaulon stuhlmanni N. E. Br. in Thiseit.-Dyer, Fl. Trop. Afr. 8: 255. 1901. Eriocaulon formosanum Hayata, Icon. Pl. Formos. 10: 49, fig. 27. 1921. Eriocaulon cinereum Merr. apud Satake, Rev. Jap. Eriocaul. 11, in syn. 1940. Eriocaulon sexangulare Mart. apud Satake, Rev. Jap. Eriocaul. 11, in syn. 1940. Eriocaulon sieboldianum Steud. ex Moldenke, Phytologia 3: 181, in syn. 1949. Eriocaulon sieboldianum Sieb. & Zucc. apud Koyama, Philip. Journ. Sci. Bot. 84: 373, sphalm. 1955. Eriocaulon hexangulare Wall. ex Moldenke, Résumé 288, in syn. 1959. Eriocaulon sieboldianum Sieb. & Zucc. ex Moldenke, Résumé 292, in syn. 1959. Eriocaulon setaceum Willd. ex Moldenke, Résumé 292, in syn. 1959. Eriocaulon sexangulare Auct. ex Moldenke, Résumé 292, in syn. 1959. Eriocaulon tenue Hamilt. ex Moldenke, Résumé 293, in syn. 1959. Eriocaulon quinquangulare var. φ Körn. ex Moldenke, Résumé Suppl. 1: 18, in syn. 1959. Eriocaulon quinquangulare β pusillum Körn. ex Moldenke, Résumé Suppl. 1: 18, in syn. 1959. Eriocaulon setaceum Rottler ex Moldenke, Résumé Suppl. 2: 9, in syn. 1960. Eriocaulon cinerea S. & Z. ex Moldenke, Résumé Suppl. 3: 31, in syn. 1962. Eriocaulon sieboldii S. & Z. ex Moldenke, Résumé Suppl. 3: 32, in syn. 1962. Eriocaulon sieboldianum S. & Z. ex Moldenke, Résumé Suppl. 3: 32, in syn. 1962. Eriocaulon cinereum var. sieboldianum (Sieb. & Zucc.) Murata ex Koyama in Kitamura, Murata, & Koyama, Col. Illustr. Herb. Pl. Japan 178--179, pl. 48, fig. 304, text fig. 121 (1). 1964. Eriocaulon sieboldianum Sieb. ex Sebastine & Ramamurthy, Bull. Bot. Surv. India 8: 182. 1966. Eriocaulon sieboldianum "Sieb. & Zucc. ex Steud." apud J. L. Ellis, Bull. Bot. Surv. India 8: 339. 1966.

Additional & emended bibliography: Kawakami, List Pl. Formos. 130. 1910; F. M. Bailey, Compreh. Cat. Queensl. Pl. 584. 1913; Moldenke, Known Geogr. Distrib. Erioc. 23--27, 33, 35, 38, 40, 44, & 61. 1946; Koyama, Philip. Journ. Sci. Bot. 84: 373. 1955; Masa Ikusi, Pollen Gr. Jap. 1956; E. H. Walker, Proc. 8th Pacif. Sci. Cong. 4: 406. 1957; Moldenke, Résumé 32, 144, 159--161, 165, 167, 169, 171, 172, 174, 176, 178, 181, 184, 188, 190, 207, 208, 287, 288, 290, 292, 293, 309, & 480. 1959; Moldenke, Résumé Suppl. 1: 12 & 18 (1959), 2: 9 (1960), 3: 17, 18, 21, 31, & 32 (1962), and 4: 7. 1962; G. L. Shah, Bull. Bot. Surv. India 4: 237. 1962; Hatusima, Mem. South. Indust. Sci. Inst. Kagoshima Univ. 3 (2): 123. 1962; J. Joseph, Bull. Bot. Surv. India 5: 297.

1963; Prain, Bengal Pl., ed. 2, 2: 848. 1963; Koyama in Kitamura, Murata, & Koyama, Col. Illustr. Herb. Pl. Japan 178—179, pl. 48, fig. 304, text fig. 121 (1). 1964; Bhattacharyya, Bull. Bot. Surv. India 6: 208. 1964; Panigrahi, Chowdhury, Raju, & Deka, Bull. Bot. Surv. India 6: 260—261. 1964; C. M. & D. S. Patel, Vidya 7: [58]—70, fig. 1—59. 1964; Moldenke, Résumé Suppl. 11: 6 (1964) and 12: 9. 1965; Thanikaimoni, Pollen & Spores 7: 182 & 184. 1965; J. S. Beard, Descrip. Cat. W. Austr. Pl. 9. 1965; S. V. Ramaswami, Study Flow. Pl. Bangalore (thesis) 219—221 & 1407. 1966; Subramanyam & Henry, Bull. Bot. Surv. India 8: 214. 1966; Sebastine & Ramamurthy, Bull. Bot. Surv. India 8: 182. 1966; Shinnars, Sida 2: 441. 1966; Kral, Sida 2: 310—312 & 330. 1966; J. L. Ellis, Bull. Bot. Surv. India 8: 329 & 339. 1966; Moldenke, Résumé Suppl. 15: [1], 8, & 10 (1967) and 16: 9 & 21. 1968; Moldenke, Phytologia 17: 395. 1968.

Recent collectors have found this plant growing in mud of dried ponds and paddy-fields, in rice fields, in open places by the sides of fields, and in drained rice paddies after the grain is harvested, at altitudes of 200—2000 meters, flowering in January, February, and August to November, fruiting in August and September. Raizada describes it as a "small herb in damp depressions" in Bashahr; Smitinand found it "common in wet localities in savannas" in Thailand; Ellis says "marshy plants near fringes of puddles formed in rainy season of January to February" in Andhra Pradesh; Steward & Cheo say "cultivated in field" in Kwangsi, but surely they mean "in cultivated field"; Sebastine & Ramamurthy (1966) tell us that it is common in Madras, citing their no. 15644. Bhattacharyya (1964) found it to be "common in marshy areas" in Uttar Pradesh; Joseph (1963) found it "common on riverbanks" in Madhya Pradesh; and Panigrahi and his associates (1964) report it as "common" in Orissa. Prain (1963) assures us that in Bengal it is "In most of the provinces. A herb of rice-field and marshy ground". Ellis (1966) records it from Andhra Pradesh and cites no. 15788, while Subramanyam & Henry cite no. 18707 from Madhya Pradesh. Koyama (1955) cites Hayata s.n. from Annam and gives the over-all distribution of the species as "Tonkin, Cochinchina, Philippines, Formosa, Liukiu, China, Japan, Malaysia, Africa, India".

Kral (1966) describes the species as follows: "Solitary or in small tufts, the leaves narrow, linear-attenuate, to 9 cm. long, green, thin, tapering very gradually to a filiform tip. Scape of the sheath 2—4 cm. long, definitely shorter than the leaves, scarious and bifid-acute above. Mature scape filiform, 15—30 cm. long, slightly twisted, 6—8 ridged. Mature head subglobose to very broadly ovoid, about 4 mm. broad, silvery-gray, somewhat chaffy in appearance. Outer involucrel bracts ranging from obovate to lanceolate, ca. 2 mm. long, scarious, pale, the tips acute, often lacerate or erose. Receptacular bractlets linear-oblong, ca. 2 mm. long, scarious, pale save for a grayish mid-region, the tips acute. Surface of the receptacle of the head with a few long, very slender, transparent, multicellular tri-

chomes. Male flower: sepals united into a single spatulate, lustrous, scarious, 3-lobed scale which is gray-translucent toward the apex, pale toward the clawed, tubular base, glabrous save for a few white, short-linear trichomes at or toward the tip. Petals 3, joined into a yellowish tubular-clavate androphore ca. 2 mm. long whose base is enveloped by the calyx tube and whose apex is divided into 3 small, scale-like, white-hairy (the hairs tapering) glanduliferous lobes. Central glands 3, white or yellowish-white. Stamens 6. Anthers broadly ellipsoidal, ca. 0.25 mm. long, yellow, on white filaments about as long as the corolla lobes. Female flowers: perianth consisting of 2 or 3 (if 3, one much narrower and shorter) linear, flat, pale, translucent scales ca. 1.5 mm. long whose margins or connivent, acute tips may bear a few multicellular clear trichomes. Gynophore at least 1 mm. long, usually somewhat longer, smooth. Gynoecium 3-carpellary; style branches 3. Seeds ovoid, slightly less than 0.5 mm. long, pale brown, reticulate, the rectangular compartments of the reticule oriented perpendicularly to the axis of the seeds."

If it can be assumed that this description has been taken from the California specimen cited by this monographer, then it should be compared carefully with descriptions of the Old World material of E. cinereum. The California plant has quite a different aspect from at least most of the Old World material and I am not at all sure that the California specimens are properly placed in this species. Kral goes on to say "Adventive in rice paddies, Stanislaus County, California. Reported as native in northern Australia and in the rice growing regions of the south Pacific. I have so far examined only one U. S. collection of this species, the citation for it being: 'Krause rice fields, Modesto. Plants submersed except for upper part of flowering stems, Stanislaus County, California, Basil G. Markos, Sept. 18, 1947'. I visited the rice areas around Modesto during the summer of 1964 but was unable to find the plants."

Vernacular names reported for the species are "hoshikusa" or "hoshi-kusa". Ruhland, on a label of Pringle 3855 in the Berlin herbarium, states that E. bilobatum Morong is probably conspecific with this taxon. In this I cannot agree with him. The plate in Koyama's (1964) work is in full color.

Material has been misidentified and distributed in herbaria under the names E. diana Fyson, E. merrillii Ruhl., E. minimum Lam., E. parvum Körn., E. sexangulare L., and E. truncatum Hamilt., as well as "Eriocaulon sp.", "Eriocaulon affine sexangulare L." [by Miquel], and even Xyris microcephala.

On the other hand, the R. C. Ching 4550 and Herb. Univ. Nanking 8939, distributed as E. cinereum, are actually E. buergerianum Körn., while Tanaka & Shimada 13574 is E. kiusianum Maxim., Stocks, Law, &c. s.n. and Wight 2366 are E. redactum Ruhl., Clemens & Clemens 3275 and Squires 91 are E. robinsonii Moldenke, and J. S. Drummond 15053 and Saulière 71 are E. sollyanum Royle. Koelz 19398 is a mixture with E. luzulaefolium Mart., E. oryze-

torum Mart., and E. sollyanum Royle, and Dorsett & Morse 6328 is a mixture with something in the Cyperaceae.

Additional citations: CALIFORNIA: Stanislaus Co.: Markos s.n. [Modesto, Sept. 18, 1947] (Ca--754280, Gg--341592). PAKISTAN: East Bengal: "Br. 6073a" (B); Griffith 5565 (S); Hooker & Thomson s.n. [Chittagong, 0-1000 ped.] (S). INDIA: Assam: Chand 2472 (M1). Bashahr: Raizada 19970 (Gg--398815). Bombay: Hohenacker 131bb (S, Ut--319). Kashmir: Polunin 381 (B); R. R. Stewart 3268 1/2 (Ca--322687). Madras: E. W. Erlanson 5652 (M1); Herb. Presid. Coll. Madras 5127 (S); Herb. Roth s.n. [Trankenbar] (B); Mace s.n. [Coromandel] (B); Perrottet 1168 (V, V--96881). Mysore: S. N. Ramaswamy 2 (Ac), 3 (Ac), 14 (Rf), 15 (Rf), 31 (Ac), 1745 (Lw); G. Thomson s.n. [Maisor & Carnatic] (S). Pondichery: Lépine s.n. [Pondichery] (V--6092). Surguja: Koelz 19398, in part (M1). West Bengal: Herb. Roth s.n. [Bengala] (B). State undetermined: Hornemann s.n. [ex Ind. orient.] (B); Rottler 17 [India orientalis] (S); Wight 2365 (B). CEYLON: Thwaites C.P.795 (B). CHINA: Fukien: H. H. Chung 2574 (Ca--232825), 2599 (Ca--232907), 3842 (Ca--288515); Han 8347 (Ws). Kiangsi: Ip 14 [Herb. Univ. Nanking 7649] (Ca--259186). Kwangsi: R. C. Ching 7263 (Ca--410041); Steward & Cheo 1097 (S). Kwangtung: E. D. Merrill 10948 (Ca--300937); Tak & Chow s.n. [Herb. Canton Chr. Coll. 14389] (Ca--319067). Kweichow: Y. Tsiang 7010 (Ca--503635), 7011a (S). CHINESE COASTAL ISLANDS: Hainan: W. Y. Chun s.n. [Herb. Univ. Nanking 5795] (Ca); S. K. Lau 3061 (Bi, S). Honam: E. D. Merrill 9846 (Ca--291647). THAILAND: Hansen, Seidenfaden, & Smitinand 10839 (Cp); Smitinand 5018 [Herb. Roy. Forest Dept. 18585] (Gg); Vesterdal 465 (Cp). INDOCHINA: Annam: Clemens & Clemens 3652 (Ca--339257). Vietnam: E. H. Walker 8019 (W--2395270). KOREA: Dorsett & Morse 6328, in part (M1, S). WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Collector undesignated s.n. [Tokyo] (S); Furuse s.n. [27 Sept. 1955] (S), s.n. [2 July 1956] (S), s.n. [8 Oct. 1959] (S); Hashimoto 1624 (Go, N, S); Ito & Koyama 826 (B, Ca--55778, Go, Mg, N, S); Maximowicz s.n. [Yokohama, 1862] (S); Murata 8342 (Ws), 12194 (Ut--89477b); Sugimoto s.n. [25/IX/1927] (B); Suzuki UG.489 (Ca--928743); Wichura 709 (B). FORMOSA: Faurie 796 (V--8309), s.n. [22.6.09] (S); Herb. Govt. Formosa 21620 (Ca--344141); Simada 430 (Ca--344948). PHILIPPINE ISLANDS: Luzon: Loher 13901 (Ca--242826); E. D. Merrill 293 (Ut--22491); M. Ramos s.n. [Herb. Philip. Bur. Sci. 24089] (Bi, Bi); Reillo 1276 (N). Island undetermined: Cuming 670 (V). INDONESIA: GREATER SUNDA ISLANDS: Java: Herb. Galathea Exped. s.n. [Buitenzorg] (Cp); Müller s.n. [Goenoeng Pautjar, 6.1897] (S, S).

ERIOCAULON CIPOENSE Alv. Silv.

Additional bibliography: Moldenke, Résumé 88 & 480. 1959.

Additional citations: BRAZIL: Minas Gerais: Silveira 343 (B—isotype, Z—isotype).

ERIOCAULON COERULEUM Van Royen

Bibliography: Van Royen, Blumea 10: 128. 1960; G. Taylor, Ind. Kew. Suppl. 13: 52. 1966.

This species is said by Van Royen (1960) to be endemic to the island of Celebes.

ERIOCAULON COLLETTII Hook. f.

Additional bibliography: Moldenke, Bull. Jard. Bot. Brux. 27: 139. 1957; Moldenke, Résumé 165 & 480. 1959; Thanikaimoni, Pollen & Spores 7: 184. 1965.

ERIOCAULON COLLINUM Hook. f.

Additional synonymy: Eriocaulon luzulifolium Thwaites ex Moldenke, Résumé Suppl. 1: 17, in syn. 1959. Eriocaulon collinum Hook. ex Thanikaimoni, Pollen & Spores 7: 184, sphalm. 1965.

Additional & emended bibliography: Moldenke, Known Geogr. Distrib. Erioc. 23, 24, 33, & 34. 1946; Moldenke, Bull. Jard. Bot. Brux. 27: 139--140. 1957; Moldenke, Résumé 161, 167, 287, 290, & 480. 1959; Moldenke, Résumé Suppl. 1: 17 (1959) and 3: 17. 1962; Thanikaimoni, Pollen & Spores 7: 184. 1965; Moldenke, Résumé Suppl. 14: 8. 1966; Subramanyam & Henry, Bull. Bot. Surv. India 8: 214. 1966; Moldenke, Résumé Suppl. 16: 9. 1968.

Thanikaimoni (1965) regards E. christopheri Fyson and E. oliveri Fyson as synonyms of E. collinum. The name, E. luzulifolium Thwaites, is apparently based on Thwaites C.P.796 in the Berlin herbarium.

Eriocaulon collinum has been found growing in meadows and old fields, at 6000 feet altitude, flowering in July and August. Chand describes it as 7 inches tall, while Koelz remarks "black, opening white" [for the floral heads?]. Subramanyam & Henry record it from Madhya Pradesh and cite no. 12123.

Material has been misidentified and distributed in herbaria under the names E. quinquangulare Mart., E. trilobum Ham., and E. 5-angulare L.

Additional citations: INDIA: Assam: Chand 7991 (Mi); Koelz 23078 (Mi). Madras: Herb. Presid. Coll. Madras 7083 (S); Kofoed s.n. [Ootacamund, Oct. 1903] (Cp). State undetermined: N. E. H. Bang 6 [9] (S); Wight s.n. [Ind. or.] (V--41324, V--41345, V--41351, V--41353). CEYLON: G. Gardner 935 (B); Thwaites C.P.796 (B, B); Walker 12 (B). MOUNTED LITERATURE: Ruhl. in Engl., Pflanzenreich (B).

ERIOCAULON COMPRESSUM Lam.

Additional synonymy: Eriocaulon gnaphalodes Beauv. ex Moldenke, Résumé Suppl. 1: 17, in syn. 1959. Eriocaulon compressum

(Huds.) Morong ex Moldenke, *Résumé Suppl.* 2: 9, in syn. 1960.

Additional & emended bibliography: Britton & Br., *Ill. Fl.*, ed. 1, 1: 372 & 602, fig. 900 (1896) and 3: 537. 1896; R. M. Harper, *Ann. N. Y. Acad. Sci.* 17: 267. 1906; Robins. & Fern. in A. Gray, *New Man. Bot.*, ed. 7, 261 & 898. 1908; M. A. Day, *Check List* 39. 1908; W. H. Br., *Contrib. U. S. Nat. Herb.* 13: 323. 1911; Uphof in Karst. & Schenck, *Vegetationsbild.* 21 (1-2): n.p. 1930; Moldenke, *N. Am. Fl.* 19: 18 & 22-23. 1937; Wells, *Bot. Rev.* 8: 537. 1942; R. R. Tatnall, *Fl. Del.* 75. 1946; Moldenke, *Known Geogr. Distrib. Erioc.* [1]-3, 33, 35, & 56. 1946; Moldenke, *Bull. Jard. Bot. Brux.* 27: 140. 1957; Moldenke, *Résumé* 7-12, 14, 23, 27, 288, 320, 345, & 480. 1959; Moldenke, *Résumé Suppl.* 1: 2 & 17 (1959) and 2: 2 & 9. 1960; Fables, *Bartonia* 32: 9. 1961; Moldenke, *Résumé Suppl.* 3: 2, 3, & 7 (1962) and 4: [1]-3. 1962; Gleason & Cronquist, *Man. Vasc. Pl.* 184. 1963; Montgomery & Fairbrothers, *Bull. Torrey Bot. Club* 90: 92 & 96. 1963; Melchior in *Engl., Syllabus Pfl.*, ed. 12, 2: 556, fig. 230 i & k. 1964; Kral, *Sida* 2: 299-302 & 331. 1966; Shimmers, *Sida* 2: 441. 1966; Moldenke, *Résumé Suppl.* 14: [1]. 1966; R. M. Harper, *Castanea* 32: 17. 1967; Rickett, *Wild Fls. U. S.* 2 (1): 135 (1967) and 2 (2): 659. 1967; L. S. Thomas, *Pine Barrens* 23. 1967; Justice & Bell, *Wild Fls. N. C.* 13 & 209. 1968; Moldenke, *Résumé Suppl.* 16: 1. 1968.

Additional illustrations: Melchior in *Engl., Syllabus Pfl.*, ed. 12, 2: fig. 230 i & k. 1964; Kral, *Sida* 2: 300. 1966; Justice & Bell, *Wild Fls. N. C.* 13 [in color]. 1968.

Recent collectors have found this plant growing in shallow peaty ephemeral bogs or ponds, cypress ponds in the pinebarrens, small cypress swamps, savannas, low pine savannas, swamps, creek edges, marshy borders of ponds, river bottoms, dry white sandy loblolly pine areas, bogs, pools, boggy savannas, pinebarrens, acid bogs in pinelands, sandy open bogs, *Sarracenia sledgei* bogs, cranberry bogs, sphagnous bogs, and cypress ponds. Redfearn & Kral say that it is "frequent in shallow water of cypress swamps" and "frequent in shallow water of ponds" in Florida. Tatnall (1946) records it from the pinebarrens of Sussex and Wicomico Counties on the Delmarva Peninsula, flowering there from May to August. Harper says that it occupies the Lower Oligocene and the Altamaha Grit formations on the coastal plain of Georgia and records it from Berrien, Coffee, Irwin, Screven, Tattnall, and Wilcox Counties in that state. Fables (1961) states that it blooms earlier than *E. decangulare* L. in the New Jersey pinebarren bogs and swamps.

Harper (1967) avers that he and Berry in the autumn of 1910 found this species in bloom at the mouth of the Yellow River in western Florida. It was high water at the time and the plants were submerged, with only the flower-heads above the water. He notes that this was surprising to him because he had thought that the species blooms only in the spring. Several years later, at time of low water, Godfrey found many of the basal leaf-rosettes at the spot, but no flowers. Brown (1911) shows that the texture of the substratum is more important to this species than water depth.



Moldenke, Harold N. 1968. "Additional notes on the Eriocaulaceae. XV." *Phytologia* 17(6), 450–464.

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