COMPOSITAE NEWSLETTER

Number 23 **October 1993**

Scientific Editor: Bertil Nordenstam
Technical Editor: Agneta Lindhag
Published and distributed by The Swedish Museum of Natural History,
Department of Phanerogamic Botany,
P.O. Box 50007
S-104 05 Stockholm, Sweden.
(Director: Prof. Bertil Nordenstam)
ISSN 0284-8422

CONTENTS

Bertil Nordenstam: *Pseudocadiscus* Lisowski sunk in *Stenops* B. Nord. (Compositae-Senecioneae) 1

Ulf Swenson: The Identity of *Abrotanella christenseni* Petrie (Asteraceae) 3

Arne A. Anderberg: Cytology of *Ighermia* Wikl. (Asteraceae-Inuleae) with Notes on its Systematic Position 7

John F. Pruski, Gerardo Aymard: Compositae of the Guayana Highland-VIII 10

Book announcement 16

Request for material 18

PSEUDOCADISCUS LISOWSKI SUNK IN *STENOPS* B. NORD. (COMPOSITAE-SENECIONEAE)

Bertil Nordenstam
Department of Phanerogamic Botany
Swedish Museum of Natural History
S-104 05 Stockholm, Sweden

In 1987 Lisowski described a new monotypic genus from Zaïre. He named it *Pseudocadiscus*, because of its partial resemblance to the South African aquatic genus *Cadiscus* of the Senecioneae. However, Lisowski referred his new genus to the tribe Anthemideae and considered it related to *Chrysanthemum*, obviously misled by the white ray-florets.

However, *Pseudocadiscus zairensis* is clearly closely related to *Stenops helodes* B. Nord. from Tanzania and Zambia (Nordenstam 1978: 73 ff.). Characters in common include the uniseriate connate involucre, the conical naked receptacle, the white rays and yellow disc, the conspicuous basal swelling of the filament collar, the ecaudate anthers with radial endothecium, the shortly bilobed disc styles with truncate tips, the epappose 5-veined cypselas, and the homomorphic rectangular ovary wall crystals. Besides, both are glabrous annual herbs of wet habitats, and with stems rooting at nodes (cf. Fig. 1).

Quite clearly, *Pseudocadiscus* is congeneric with *Stenops* and has to be sunk. The two species involved seem to be rather closely allied, but sufficiently different to be upheld. The necessary new combination is given below.

***Stenops zairensis* (Lisowski) B. Nord., comb. nov.**

Basionym: *Pseudocadiscus zairensis* Lisowski, Bull. Jard. Bot. Nation. Belg. 57 (3/4): 468 (1987). - Type: Lisowski 84604 (POZG holo., BR iso.!).

Differences from *S. helodes* B. Nord. are the floating aquatic habit, the parallel-veined leaves, and the winged cypselas. In *S. zairensis* the number of ray-florets is usually c. 13, in *S. helodes* around 8.

References

Lisowski, S. 1987. *Pseudocadiscus* Lisowski (Asteraceae), genre monotypique nouveau du Zaïre. *Bull. Jard. Bot. Nation. Belg.* 57 (3/4): 467—469.

Nordenstam, B. 1978. Taxonomic Studies in the Tribe Senecioneae (Compositae). *Opera Bot.* 44, 83 pp.

Fig. 1. *Stenops helodes* B. Nord. (A—E) and *S. zairensis* (Lisowski) B. Nord. (F—J). A, F: Habit, x 0.4. B: Involucre and receptacle, x 5. C, G: Ray-floret, x 5. D, H: Disc-floret, x 5. E, I: Corolla of disc-floret, laid out, x 5. J: Winged cypsela, x 5. (A: Richards 16354 in K; B—E: Sanane 241 in K; F: de Witte 6350 in BR; G—J: Lisowski 84604 in BR, isotypus). - Del auct.

THE IDENTITY OF *ABROTANELLA CHRISTENSENI* PETRIE (ASTERACEAE)

Ulf Swenson
Department of Systematic Botany
Uppsala University
Villavägen 6
S-752 36 Uppsala, Sweden

Background

Abrotanella Cass. (Senecioneae-Blennospermatinae) is a circum-Pacific genus which includes about 20 species. Some of the species have been very poorly collected and are thus badly known, e.g. *A. christenseni* Petrie. In connection with my work on a revision of this genus, I discovered that this species should be excluded from *Abrotanella*.

Abrotanella christenseni was first collected 1912 at Hanmer Plains, Nelson, on the South Island, New Zealand by C. E. Christensen. Petrie (1915) described the species and named it after the collector, who did much botanical research in the district of Amuri on New Zealand. When Cheeseman published his flora "Manual of the New Zealand Flora" in 1925, he had seen only two specimens of *A. christenseni*. He further stated that the material was insufficient to convince him that it was a true *Abrotanella*. Almost 40 years later, when the "Flora of New Zealand" was published, no additional material had been collected and the alliance to *Abrotanella* was still unclear (Allan 1961). Allan then suggested a possible affinity to *Cotula* L.

I have received material from the herbaria in Australia, England, Holland, New Zealand and Sweden. I conclude thus that no more collections than the two cited by Cheeseman (1925) exist, i.e. the type specimens: C. Christensen, March 1912 (lectotype WELT). However, I have only been able to locate one of these sheets, the one deposited in Wellington (WELT). The second was presumably deposited in Auckland (AK) by Dr. Petrie, but no type is held according to the herbarium.

Diagnostic characters

The original description (Petrie 1915) is very brief. No characters are given of neither the ray nor the disc florets, but only of the leaves and the cypselas. The type material I have seen does not correspond to the usual *Abrotanella* habit. However, it matches well with that of *Solenogyne gunnii* (Hook. f.) Cabrera

(Table 1), although Christensen's collection is a very small plant and has small cypselas (c. 1 mm instead of 2 mm).

Table 1. Some characters of the genus *Abrotanella*, *A. christenseni* and *Solenogyne gunnii*.

Character	*Abrotanella*	*A. christenseni*	*S. gunnii*
Leaves			
outline	linear or ovate	±spathulate	± spathulate
margin	entire	dentate	dentate
apex	retuse	truncate	truncate or obtuse
Hairs	absent	white septate-pilose	white septate-pilose
Involucral bracts	2—3 series	3—4 series	3—4 series
Cypselas	terete	flattened	flattened

The leaf outline of *Abrotanella* is generally linear or ovate, with an entire margin and a retuse apex, and that of *S. gunnii* is more or less spathulate or obovate, with a dentate margin and a truncate or obtuse apex. Species of *Abrotanella* are most often glabrous, but brown hairs can occur sparsely. *Solenogyne gunnii* has always septate whitish hairs on the leaves as well as on the flowering stem. Moreover, the involucral bracts (phyllaries) are in 3—4 series, not in 2 as stated by Petrie (1915). Cypselas of *Abrotanella* are often terete and ribbed, but those of *Solenogyne* are flattened (Davis 1950).

Solenogyne gunnii (Hook. f.) Cabrera

The genus *Solenogyne* Cass. comprises three, often very variable species endemic to Australia (Adams 1979). The status of *Solenogyne* to *Lagenifera* Cass. is still unclear and they have even been united (Hooker 1860). These genera belong in the Astereae - Asterinae (Zhang and Bremer 1993). Two species of *Solenogyne* are reported to be introduced to New Zealand, one of them being *S. gunnii* (Hook. f.) Cabrera. This species was first reported in New Zealand from the North Island in 1880 and Kirk (1899) considered it to be naturalised on the hills near Wellington and Paikakariki. Later in the 1880's it was also reported from

Banks Peninsula on the South Island (Drury 1974). The habitats are often in tussock grassland on mountain slopes, parks and sown pastures near the coast (Drury 1974, Kirk 1899).

I conclude that *Abrotanella christenseni* Petrie is synonymous with *Solenogyne gunnii* (Hook. f.) Cabrera.

Solenogyne gunnii (Hook.f.) Cabrera, Blumea 14(2): 307 (1966).

Syn.: *Abrotanella christenseni* Petrie, Trans. & Proc. N.Z. Inst. 47: 51 (1915).

Material seen: *Abrotanella christenseni* Petrie; C. Christensen, March 1912 (WELT, lectotype). *Solenogyne gunnii* (Hook.f.) Cabrera; A. M. Buchanan No. 1113 (HO); P. Collier No. 2330 (HO); M. J. Brown No. 245 (HO); T. Kirk No. 640 (BM); L. G. Adams & R. Schodde No. 2500, 2518 (K); J. A. Rodway No. 774 (K); R. Coveny No. 913 (K); H. J. Comber No. 1772 (K).

Acknowledgements

I thank Dr. K. Martinsson at the Botanical Garden, Uppsala University, for valuable comments. The study was supported by a Swedish Natural Science Research Council grant to Kåre Bremer for Asteraceae phylogeny.

References

Adams, L.G. 1979. A review of the genus *Solenogyne* (Asteraceae) in Australia and New Zealand. *Brunonia* 2: 43—65.

Allan, H.H. 1961. Flora of New Zealand, vol. 1. Government Printer, Wellington.

Cheeseman, T.F. 1925. Manual of the New Zealand Flora. Government Printer, Wellington.

Davis, G.L. 1950. Revision of the genus *Solenogyne* Cass. *Proc. Linn. Soc. N.S.W.* 75:188—194.

Drury, D.G. 1974. A broadly based taxonomy of *Lagenifera* sect. *Lagenifera* and *Solenogyne* (Compositae - Asteraceae) with an account of their species in New Zealand. *N.Z. J. Bot.* 12: 365—395.

Hooker, J.D. 1860. Flora Tasmaniae, vol. 1. London.

Kirk, T. 1899. Student's Flora of New Zealand. Government Printer, Wellington.

Petrie, D. 1915. New native phanerogams. *Trans. & Proc. N.Z. Inst.* 47: 51.

Zhang, X. and K. Bremer 1993. A cladistic analysis of the tribe Astereae (Asteraceae) with notes on their evolution and subtribal classification. *Pl. Syst. Evol.* 184: 259—283.

CYTOLOGY OF *IGHERMIA* WIKL. (ASTERACEAE-INULEAE) WITH NOTES ON ITS SYSTEMATIC POSITION

Arne A. Anderberg
Department of Phanerogamic Botany
Swedish Museum of Natural History
S-104 05 Stockholm, Sweden

Abstract

The chromosome number of *Ighermia pinifolia* (Maire & Wilczek) Wiklund has been determined for the first time. The chromosome number that was found to be 2n=14 supports the earlier proposed systematic position of the genus as the sister-group of *Asteriscus* and *Nauplius* of the Inuleae.

Introduction

Ighermia, a monotypic genus endemic to southern Morocco was described by Wiklund (1983) for *Asteriscus pinifolius* Maire & Wilczek (1935). Wiklund placed this species in a separate genus because it could not be shown to be most closely related to the other *Asteriscus* species, but rather to some other genus or group of genera. Wiklund later (1985, 1987) found that *Asteriscus* and *Nauplius* form a monophyletic group diagnosed by a single synapomorphy, i. e. the crested ray-floret epidermis cells. Anderberg (1991) corroborated Wiklund's hypothesis of a close phylogenetic relationship between *Asteriscus* and *Nauplius*, but also found an additional synapomorphy for the group, viz. the characteristically low chromosome numbers (2n=10, 12, 14). The only other genera of the tribe with 2n=14, i.e. *Anisopappus* (Auquier and Renard 1975) and *Anvillea* (Anderberg 1982) were found to be more distantly related. Anderberg (1991) also found that *Ighermia* is the sister-group of *Asteriscus* and *Nauplius*. This relationship was supported by the shared presence of a continuous sclerenchymatic tissue in the cypsela wall, a multi-state feature that was represented with an autapomorphic conditional in *Asteriscus*. The chromosome number of *Ighermia*, which was potentially informative, was at that time unknown, and therefore coded as a question-mark in the cladistic analysis.

A chance to obtain the necessary cytological data needed to test the hypothesis presented itself, when a recently collected specimen of *Ighermia pinifolia*, with

mature cypselas, was presented as a gift to the herbarium in Stockholm (S), by Dr. D. Podlech, Munich.

Material and Methods

Mature cypselas taken from "Podlech No. 49163, S." germinated successfully in the greenhouses of the Department of Botany, University of Stockholm.

Root tips were treated with 0.2% colchicine for 2 hours in refrigerator, fixed in Carnoy's solution (99% ethanol and glacial acetic acid 3:1), stained in aceto-orcein, squashed, and mounted in euparal.

Results and Discussion

The chromosome number of *Ighermia pinifolia* proved to be 2n=14, which is the same as the prevailing chromosome number in *Nauplius*. The present result supports the hypothesis that *Ighermia* is the sister-group of *Nauplius* and *Asteriscus* (Anderberg 1991), and the low chromosome numbers constitute a further synapomorphy for the three genera (Fig. 1).

Acknowledgement

I am grateful to Mr Peter Litfors and Ms Gullevi Bergqvist for technical assistance, and to Dr. D. Podlech for sending the material of *Ighermia* to Stockholm.

References

Anderberg, A. A. 1982. The genus *Anvillea* (Compositae). *Nord. J. Bot.* 2: 297—305.

Anderberg, A. A. 1991. Taxonomy and phylogeny of the tribe Inuleae (Asteraceae). *Pl. Syst. Evol.* 176: 75—123.

Auquier, P. and R. Renard 1975. Nombres chromosomiques de quelques Angiospermes du Rwanda, Burundi et Kiwu (Zaire) 1. *Bull. Jard. Bot. Nation. Belg.* 45: 421—445.

Maire, R. and E. Wilczek 1935. Sertulum austro-maroccanum austerum. *Bull. Soc. Hist. Nat. Afr. N.* 26: 128.

Wiklund, A. 1983. *Ighermia*, a new genus of the Asteraceae-Inuleae. *Nord. J. Bot.* 3: 443—446.

Wiklund, A. 1985. The genus *Asteriscus* (Asteraceae-Inuleae). *Nord. J. Bot.* 5: 299—314.

Wiklund, A. 1987. The genus *Nauplius* (Asteraceae-Inuleae). *Nord. J. Bot.* 7: 1—23.

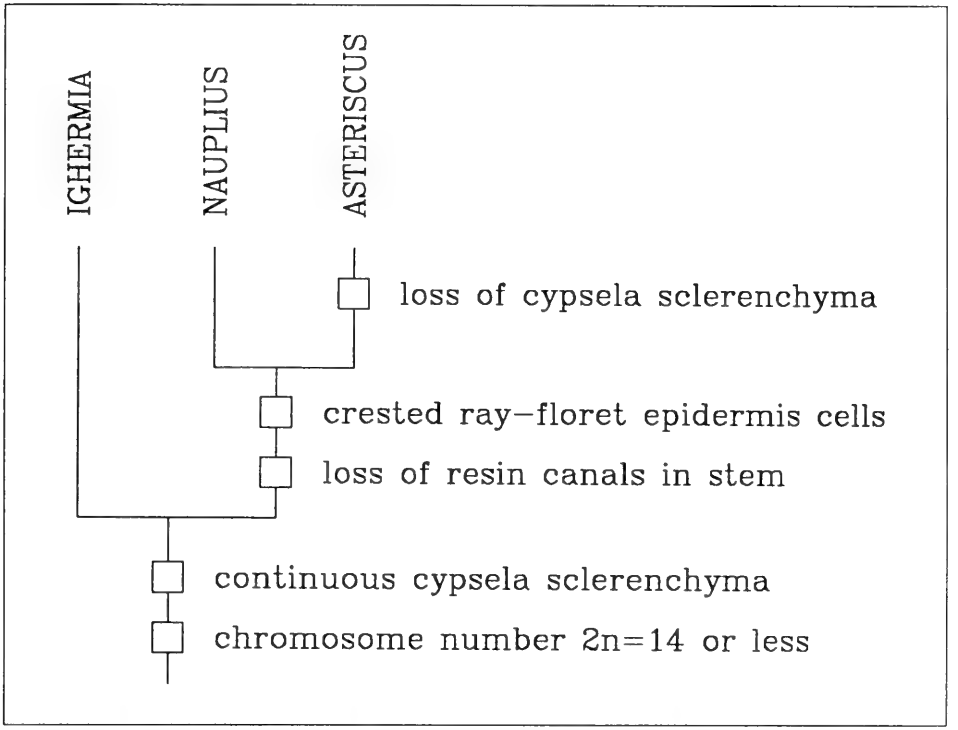

Fig. 1. Cladogram showing a revised character distribution for the three genera of the *Asteriscus* group. Redrawn from Anderberg (1991).

COMPOSITAE OF THE GUAYANA HIGHLAND-VIII

Dasyphyllum vepreculatum (D. Don) Cabr. (Barnadesioideae: Barnadesieae), New for Guayana

John F. Pruski
United States National Herbarium
Department of Botany, NHB-166
National Museum of Natural History
Smithsonian Institution, Washington, D.C. 20560, U.S.A.

and

Gerardo Aymard
Herbario Universitario
UNELLEZ-Guanare
Mesa de Cavacas 3323, Portuguesa, Venezuela

Abstract

Dasyphyllum vepreculatum is documented in Bolívar, Venezuela, marking the first report of the species, genus, tribe Barnadesieae, and subfamily Barnadesioideae in Guayana. Twelve tribes in the three subfamilies of Compositae are now known from Guayana.

Introduction

Dasyphyllum H.B.K. (Compositae: Barnadesioideae: Barnadesieae) is a striking, principally Andean and Planaltine genus of about 39 species of trees, shrubs, or vines. Species of the genus are often armed with nodal spines and are characterized by alternate trinerved chartaceous to subcoriaceous leaves, by generally epaleate capitula of bisexual florets with tubular actinomorphic or somewhat bilabiate (inconspicuously zygomorphic) corollas that are partly villose, by shortly caudate anthers that lack an apical appendage, by shortly bilobed smooth styles

with a continuous stigmatic surface, and by obconic, generally villous achenes with many persistent plumose pappus setae.

The present report documents a range extension of *D. vepreculatum* (D. Don) Cabr. into Edo. Bolívar, Venezuela, marking the first report of the genus and species in Guayana, and westward into Edos. Falcón and Lara. Neither the species nor the genus is known to occur in the Guayana region of Brazil, Colombia, or Guyana (Pruski 1991) or in the Guianas (Funk et al. 1992). The species is the only Venezuelan member of the genus (Aristeguieta 1964) and of tribe Barnadesieae. Previously, *D. vepreculatum* was known in Venezuela only from Anzoátegui (Steyermark 1957, p. 1145), Aragua, Distrito Federal, and Miranda (Aristeguieta 1964), where it was reported as a species of *Chuquiraga* Juss., and in Brazil from Bahia (Cabrera 1959).

Dasyphyllum has been placed in subtribe Barnadesiinae, tribe Mutisieae (Cabrera 1977) of the Cichorioideae and is the sole genus of the subtribe found in Guayana. Largely because of axillary spines and barnadesioid trichomes and because of cpDNA differences between Barnadesiinae and all the other Compositae for which cpDNA sequences are known, the subtribe has recently been elevated (Bremer and Jansen 1992) to the tribal level as the Barnadesieae. Moreover, the tribe has been placed by Bremer and Jansen (1992) into a newly described (third) subfamily (Barnadesioideae) of the Compositae. Consequent to this elevation in rank of subtribe Barnadesiinae, this report of *D. vepreculatum* in Guayana not only notes a species and genus new to Guayana, but therefore also a tribe and subfamily new for its flora. In the treatment of the Compositae by the first author in the forthcoming "Flora of the Venezuelan Guayana" by Julian Steyermark and collaborators, eleven additional tribes in the two larger subfamilies [Lactuceae, Mutisieae, and Vernonieae (Cichorioideae) and Astereae, Coreopsideae, Eupatorieae, Gnaphalieae, Heliantheae, Plucheae, Senecioneae, and Tageteae (Asteroideae)] are also listed as native to Guayana.

Taxonomic Treatment

Dasyphyllum vepreculatum (D. Don) Cabr., Rev. Mus. La Plata n.s. 9: 62. 1959. *Chuquiraga vepreculata* D. Don, Trans. Linn. Soc. 16: 290. 1830. *Flotovia vepreculata* (D. Don) DC., Prodr. 7: 11. 1838. -Type: VENEZUELA [Distrito Federal]: ad Caracas, ca. 1828, D. Fanning s.n. [holotype: Lambert Herbarium n.v., possibly in BM, CGE, G, LE, or OXF fide Miller 1970].

Climbing vines to 8 m long; stems much-branched, subterete, densely pubescent when young, later glabrate, commonly armed with pairs of curved, downward pointing nodal spines, these 2—6 mm long; upper internodes to 4 cm long, shorter than the subtending leaves. Leaves simple, alternate, petiolate, evenly distributed along upper stem branches; blade chartaceous or subcoriaceous, elliptic-lanceolate

to broadly elliptic, 2.5—9 x 1—3.9 cm, acute to rounded at base, apically acute to acuminate and mucronulate, the margins entire, often revolute, the venation reticulately 3-veined from near base, upper blade surface subnitidous, glabrous or weakly villose with repent hairs, lower blade surface villose to weakly so or nearly glabrous; petiole non-clasping, 3—6 mm long, villosulous. Capitulescence terminal or also lateral from uppermost nodes, corymbiform, lateral corymbs of up to 12 capitula, terminal corymbs often with more than twice this number of capitula. Capitula homogamous and isomorphic, 14—24-flowered, short-pedunculate; involucre campanulate, 8—12 x 4—7 mm, 6—7-seriate; phyllaries many, imbricate, strongly graduated, erect or inner series spreading or reflexed, rigidly coriaceous, sericeous or at least so near margins, entire, the outer phyllaries triangular to ca. 2 mm long, the apex attenuate, terminating in a strong spinule to 1.5 mm long, grading to inner series of linear-lanceolate phyllaries to ca. 8 mm long, these with merely mucronate apices; receptacle flat, hirsute, naked or outer portions partly paleate. Florets bisexual; corollas inconspicuously zygomorphic, tubular, ca. 8 mm long, pilose, cream-colored, corolla limb 5 mm long, 5-lobed, with one lobe bordered by much more deeply cut sinuses than the others, apex of lobes pilose, the proximal portion of the lobes less pilose to nearly glabrous, the 4 shorter lobes ca. 2 mm long, longer lobe ca. 5 mm long, all lobes equal on top, erect or slightly reflexed at apex; corolla tube ca. 3 mm long, pilose; anthers slightly exserted from above the tips of the corolla lobes, ca. 4 mm long, cream-colored, caudate (with sterile tails), the tails ca. 0.5—0.7 mm long, glabrous, those of adjacent thecae connate; style glabrous, shortly bilobed, the branches slightly broader than the shaft, acute at apex. Achenes obconic, to 1.5 mm long, densely long-pilose, the hairs often more than twice the achene body length and obscuring achene surface; pappus of many persistent, obviously plumose cream-colored setae ca. 8 mm long, as long as the corolla.

Additional collections: **BRAZIL. Bahia**: Cruz das Almas, Feb 1957, Pinto 56—66 (IAL n.v., LP n.v., cited by Cabrera 1959). **VENEZUELA. Anzoátegui**: dryish forested slopes, Cerro La Danta, bordering tributary of Río León, northeast of Bergantín, 800—1100 m, 22 Feb 1945, Steyermark 61092 (F n.v., NY); forested rocky slopes along Río Querecual, southwest of Bergantín, 500 m, 14 Mar 1945, Steyermark 61489 (F n.v., NY, US). **Aragua**: prope coloniam Tovar, 20 Jun 1855, Fendler 639 (NY, P n.v., US). **Bolívar**: Mun. Piar, bosques medios semideciduos en lomerío, isla en el lago de Guri (Sector Danto Manchado), 20 km al S de la Presa R. Leoni, aprox. 735'N, 6258'W, 270 m, 6—9 Feb 1990, Aymard et al. 7778 (NY, PORT); Mun. Piar, isla en el lago de Guri (Sector Danto Manchado), bosques medios tropófitos en lomerío, 40 km al S de la Presa R. Leoni, aprox. 735'N, 6258'W, 270 m, 24 Feb 1992, Aymard et al. 10166 (NY, PORT); Mun. R. Leoni, Cerro Cachimbo, 36 km al E de La Paragua, 652'N, 6303'W, 320 m, Mar 1987, W. Fernández 4073 (PORT). **Falcón**: Dtto. Buchivacoa, Rio Agua

Viva, 17 km de Dabajuro, 11 Nov 1978, L. Cárdenas et al. 2713 (MY, VEN). **Lara**: alrededores de Duaca, 26 Mar 1950, A. Fernández 104 (MY). **Miranda**: climber on bushes in scrub, between Sabana Grande and Baruta, 1000 m, 8 Dec 1938, Ll. Williams & Alston 243 (F n.v., NY, S n.v., US); trepadora sobre arbustos en matorrales, entre Sabana Grande y Baruta, 1000 m, s.d., Ll. Williams 10847 (US).

Distribution and Ecology

Plants of this species are low vines climbing over dry scrub or semideciduous forest in Bahia, Brazil and Anzoátegui, Aragua, Bolívar, Distrito Federal, Falcón, Lara, and Miranda, Venezuela (Fig. 1). This species is known to occur from 270 to 1100 meters in elevation and to flower in February, March, June, November, and December.

In Guayana this species is known only from low elevations (270—320 meters) near Lake Guri where it is found on steep hillsides of shallow recent azonal soils (entisols) and highly weathered ferruginous soils (ultisols) with gneiss rocks. The vertical structure of the forest in Guayana where *Dasyphyllum vepreculatum* occurs shows three well differentiated strata of trees and the floristic composition of the forest includes a number of Caribbean elements more commonly encountered in Venezuela in forests north of the Orinoco River. The upper stratum is composed of emergent species from 20—30 m in height and the more frequently encountered species are in the genera *Brosimum*, *Ceiba*, *Centrolobium*, *Eschweilera*, *Licania*, *Melicoccus*, *Myrospermum*, *Pradosia*, *Pseudanamomis*, and *Tabernaemontana*. The canopy and understory are composed of trees between 6—20 m in height and the more common elements include species of *Albizia*, *Allophylus*, *Alseis*, *Aspidosperma*, *Astrocaryum*, *Brosimum*, *Bunchosia*, *Casearia*, *Centrolobium*, *Clavija*, *Coccoloba*, *Cordia*, *Guarea*, *Guatteria*, *Guazuma*, *Guettarda*, *Gustavia*, *Hymenaea*, *Lecointea*, *Lepidocordia*, *Maclura*, *Margaritaria*, *Phyllanthus*, *Pterocarpus*, *Rollinia*, *Sapindus*, *Spondias*, *Vitex*, and *Zanthoxylum*. The forest floor is dense and composed of shrubs, subshrubs, and herbs of the genera *Abutilon*, *Adiantum*, *Bactris*, *Chamissoa*, *Coursetia*, *Ertela*, *Olyra*, *Pharus*, *Piper*, *Psychotria*, *Rinorea*, *Rivina*, and *Zapoteca*. A full account of the forests of these islands in Lake Guri has been prepared by the second author for publication in Biollania.

Acknowledgements

We thank Jose Cuatrecasas, Harold Robinson, and Michael Nee for help while this note was in preparation and for comments on the manuscript.

References

Aristeguieta, L. 1964. Compositae. Flora de Venezuela 10: 1—941.

Bremer, K. and R. K. Jansen 1992. A new subfamily of the Asteraceae. *Ann. Missouri Bot. Gard.* 79: 414—415. [Note: Subfamily Barnadesioideae was validated in this publication using the spelling "Barnadesioidae".]

Cabrera, A. L. 1959. Revisión del género *Dasyphyllum. Rev. Mus. La Plata, Bot. n.s.* 9: 21—100, plus 8 plates.

Cabrera, A. L. 1977. Mutisieae-systematic review. Pages 1039—1066. *In*: Heywood, V. H., Harborne, J. B. and B. L. Turner (eds.), The Biology and Chemistry of the Compositae. Academic Press, London, New York, San Francisco.

Funk, V. A., Robinson, H. and J. Pruski 1992. Asteraceae. Pages 81—88. *In*: Boggan, J., Funk, V., Kelloff, C., Hoff, M., Cremers, G. and C. Feuillet, Checklist of the plants of the Guianas (Guyana, Surinam, French Guiana). Biological Diversity of the Guianas Program, Washington.

Miller, H. S. 1970. The herbarium of Aylmer Bourke Lambert. Notes on its acquisition, dispersal, and present whereabouts. *Taxon* 19: 489—553.

Pruski, J. F. 1991 [1993]. Compositae of the Guayana Highland-V. The Mutisieae of the Lost World of Brazil, Colombia, and Guyana. *Bol. Mus. Paraense Emílio Goeldi, sér. Bot.* 7: 335—392.

Steyermark, J. A. 1957. Contributions to the Flora of Venezuela. Botanical collecting in Venezuela-IV. *Fieldiana, Bot.* 28: 679—1190.

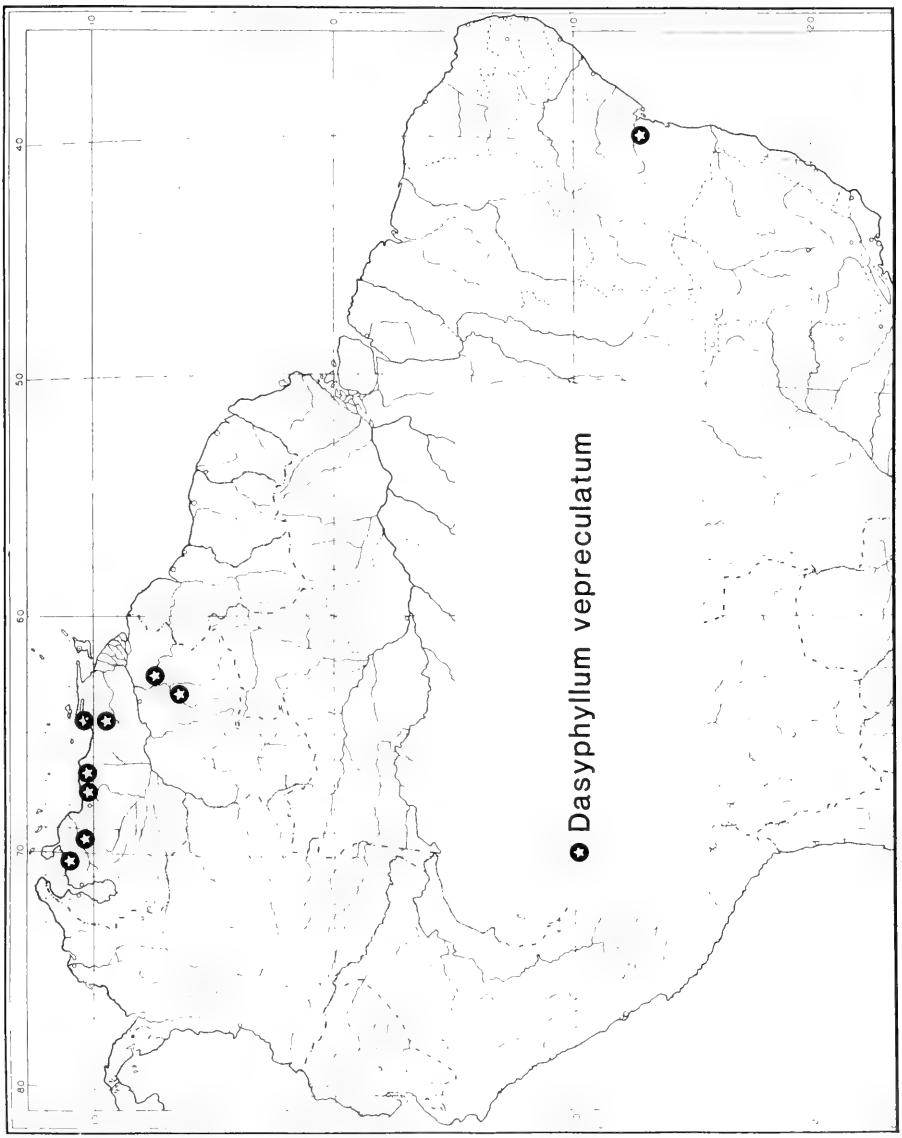

Fig. 1. Distribution of *Dasyphyllum vepreculatum.*

BOOK ANNOUNCEMENT

Asteraceae: Cladistics and Classification by Kåre Bremer

752 pp, 89 line drawings, 24 tables, 6 x 9", hardcover, ISBN 0-88192-275-7.

Price U.S.$79.95, or U.K.£60 (plus shipping and handling costs).

Publication date: May 1994.

Available from Timber Press, Inc. The book may be ordered from either of two locations:

U.S. offices: 9999 S.W. Wilshire, Suite 124, Portland, OR 97225, U.S.A. Telephone Nos. (800)327-5680, (503)292-0745, Fax (503)292-6607.

U.K. offices: 10 Market St., Swavesey, Cambridge, CB4 5QG, United Kingdom. Telephone (0954)232959.

Classification of the largest family of flowering plants, the Asteraceae (Compositae), has been difficult because of the large numbers of taxa involved: 23 000 species in 1535 genera, 3 subfamilies, and 17 tribes. Now, thanks to increasingly powerful computer technology — combined with a thorough and original reexamination of the distribution of characteristics of the plants — a taxonomic survey and cladistic analysis of the entire family has been carried out. This volume is the most complete treatment of the family in more than a century.

Using the relatively new and powerful technique of cladistics, which analyzes the distribution and evolution of individual taxonomic characteristics among the taxa, the author has reconstructed the phylogeny within the family Asteraceae. Cladistic analysis begins with "polarization" of character states from the putatively ancestral state to the advanced state. Then, using various algorithms, "trees" of different kinds are generated, with the taxa at the tips of the branches. In each case, the objective is to construct the most parsimonious tree, the one with the fewest parallelisms or reversals in the evolution of the characters. The resulting classification is the most comprehensive elucidation of the evolutionary relationships of the Asteraceae and of the groups within the family, and provides an exhaustive delimitation of natural groups.

Based on morphological data, this work on phylogeny and evolution from a cladistic point of view also serves as a reference to the generic classification of the

family. All available information on the phylogeny of the family has here been assembled in one volume; included are more than 50 cladograms and phylogenetic trees, many of them from new and hitherto unpublished cladistic analyses. In addition to introductory chapters on cladistics, classification, morphology, and evolution, the book also includes chapters on each of the subfamilies and tribes, as well as descriptions of genera. Material for several groups were contributed by Arne A. Anderberg, Per Ola Karis and Bertil Nordenstam from the Swedish Museum of Natural History, Stockholm, Sweden, and by Johannes Lundberg and Olof Ryding from the Department of Phanerogamic Botany at Uppsala University, Sweden. More than 1000 references to revisions and other important literature on the family have been included.

Specialists in Asteraceae will find the volume to be an indispensable reference for its synthesis and analysis of classification; other plant and animal systematists will appreciate the volume for its methodology.

Kåre Bremer, professor of systematic botany and dean of biology at Uppsala University, Sweden, has researched the family Asteraceae for more than 25 years. A leading synantherologist, he is one of the first and foremost proponents of cladistics in plant systematics. He has authored numerous articles in English and Swedish for international scientific journals, and is coauthor of two other books.

REQUEST FOR MATERIAL

Mr. Christoph Oberprieler is studying the biosystematics of the genus *Anthemis* in Northwest Africa for a Ph. D. thesis under the supervision of Prof. W. Greuter in Berlin. In connection with this work an anatomical and morphological study of cypselas in the whole genus is undertaken. Therefore viable or preserved cypsela material of any *Anthemis* species would be most welcome. Material from the East Mediterranean area and the Near East is of special interest.

Please send any cypsela material of *Anthemis* to

Christoph Oberprieler
Botanischer Garten und Botanisches Museum Berlin-Dahlem
Königin-Luise-Strasse 6-8
D-1000 BERLIN 33
GERMANY