

# DELETIONS AND RESTORATIONS IN THE FLORA OF SOUTHERN FLORIDA

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## ABSTRACT

The species listed in the *Annotated Checklist of the Vascular Plants of Collier, Dade, and Monroe counties, Florida* (1965) as occurring in the three southernmost counties of Florida have been compared with those species included in *A Flora of Tropical Florida* (1971, 1976) and with the known flora of the area. Corrections are made by deletion of 62 species and six families reported to occur in South Florida, restoration of 18 species and one family once reported but later omitted, and assignment of 23 names that should have been included in synonymy in the later publication.

The vascular flora of Florida is a fascinating one, varied and exotic beyond that of any other state in eastern North America. The abundance and novelty of this flora, and the economic and aesthetic interest in it by a rapidly expanding human population, has made welcome those too-few efforts to describe or merely to enumerate its plants.

It is inevitable, given the demand for studies of the state's flora, the paucity of experienced floristic botanists in the area, and the pressures upon them to make their information available, that preliminary listings and tentative identifications will be placed in print. Lack of time either in the field or in the herbarium, lack of access to literature or authoritatively named specimens, or lack of adequate understanding of the biological realities that keep plant distribution from being a random and wholly unpredictable event, all have doubtless contributed to the publication of errors. Such errors, once unequivocally placed in print, gain a life of their own, being copied and recopied with ever increasing verisimilitude, and are suppressed only with great difficulty.

No writer dealing with technical minutiae can be free of all error, and in most circumstances later commentators are perhaps best advised to make corrections gently by stating the facts accurately without specific mention of aberrant views. We do feel an obligation, however, where the general topic (plant identification and distribution in the state of Florida) is so intimately tied to our professional experience and knowledge, and particularly where one of us by implication is responsible for the statements made,

to document as clearly as we can, errors in this field with the hope that such documentation will inhibit their repetition in later publications.

In 1965 the Fairchild Tropical Garden and the University of Miami Press released an *Annotated Checklist of the Vascular Plants of Collier, Dade, and Monroe counties, Florida*. Its authorship was given as Dr. Olga Lakela, University of South Florida, Tampa, and Dr. Frank C. Craighead, of the Everglades National Park and Fairchild Tropical Garden. This listing was welcomed in southern Florida and served as a standardized tabulation of the flora of these three counties until superceded by Robert W. Long & Olga Lakela's *A Flora of Tropical Florida*, University of Miami Press, 1971. The *Annotated Checklist* contained 1,470 species of ferns, gymnosperms, monocotyledons, and dicotyledons, and for most gave the habitats, the counties, and in many cases the exact areas from which specimens had supposedly been collected or reported. Documentation was stated to be based on the herbaria of the Everglades National Park, the University of Miami, the University of South Florida, and on previously published records.

In what remains as an inexplicable misunderstanding, the present second author's name was listed, following that of Dr. Lakela, as co-author. He was not. This publication was not his doing, and he did not request nor anticipate that his name be so credited. He did give of his time and information to Dr. Lakela during her trips to southern Florida, and he did give her free access to the herbarium of the Everglades National Park, of which he was then curator and to which he had largely contributed. It must be attributed to the generosity of Dr. Lakela that she so acknowledged this help. But it has left him in the uncomfortable position of being considered responsible for errors that he had no part in making, and even further of being aware that his tentative identifications, never intended to be presented as definitive, are the source at least in part of statements in the *Annotated Checklist* that are patently false and denigrate the scholarship of its authors.<sup>1</sup>

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<sup>1</sup>My friend and co-author, Dr. Frank Cooper Craighead, died 15 May 1982. After his retirement as a U.S.D.A. entomologist, "Craig" became the unofficial but highly respected botanist of the Everglades National Park. His enthusiastic and perceptive field studies in this second career produced a number of botanical publications including *Orchids and Other Air Plants of the Everglades National Park* (1963) and *Trees of South Florida* (1971).

Craig was not a man of mild temper. It was at his urging that I began this compilation in the early 1970s. Encouragement was also received from George N. Avery, a meticulous collector and field observer of the flora of southern Florida. But with the loss through death of those persons immediately concerned (Robert William Long, 21 July 1976; Olga Korhonen Lakela, 17 May 1980; George Newton Avery, ca. 12 July 1983), other tasks took precedence.

Now, with a resurgence of interest in the plants of Florida, and with state-wide floristic projects actively underway in Tallahassee, Gainesville, Tampa, and Miami, it seems time to make these notes available. — D.B.W.

The inadequacies of this preliminary annotated listing were apparent, and the authors of *A Flora of Tropical Florida* clearly attempted exculpation by disregarding this earlier production. Nowhere in the 962 pages of their 1971 book, neither in the list of "selected" references nor at any other appropriate point, is there mention that six years earlier one of them had authored a treatment of the plant species of the identical geographic area.

But this earlier annotated listing cannot so simply be ignored. Copies of it abound, and are regularly cited by authors interested in the flora of southern Florida (Al-Shehbaz 1985; Austin 1980; Miasek 1978; Miller 1971a, 1971b; Poppleton et al. 1977; Rogers 1984, 1985; Sponberg 1978; Webster 1967; etc.). Further, a peculiar stylistic feature of the *Flora* has left the earlier *Annotated Checklist* still its essential companion. This is the practice of *A Flora of Tropical Florida*, apparently unique in recent North American local floras, of omitting almost all exact statements of distribution in the treated area for almost all species. The *Annotated Checklist*, although its distributional information may not be detailed to the degree desired, at least goes well beyond the larger book in specifying the counties from which collections have been seen or reports cited.

This disregard of the earlier *Annotated Checklist* by the authors of *A Flora of Tropical Florida* has left in a botanical limbo the names that appeared in the listing but not in the later book. A contemporary reviewer (Gillis 1973) noted that such names exist and suggested that it is an obligation of floristic writers to account for previous names recorded (and previously unchallenged) for the area they treat.

We support this policy most strongly. It seems particularly appropriate that an author who is aware of an error in his own work be the one to call attention to his earlier erroneous statement, thus most effectively removing doubt as to its invalidity. But when a previous author has not taken the opportunity to do so, the mantle of responsibility falls more broadly on the botanical community, and those with information that might prevent error by a still later generation of writers would themselves appear obligated to make correction. It is in this spirit that we have undertaken the present task.

The following listing is intended to be comprehensive *only* of the 103 names that appear in the 1965 *Annotated Checklist* that cannot be accounted for (in one way or another) in the 1971 *A Flora of Tropical Florida* or in its essentially identical 1976 "new edition." Additional names used in the *Annotated Checklist*, perhaps two to three times as many as in the following list, are not used for species in the later publication but are recorded as synonyms under a name accepted in the *Flora* or are otherwise unambiguously traceable.

The vanished names may be accounted for in one of three ways. First, and most numerous, are those species reported on the basis of misidentifications, where the error appears to have been detected and the species was correctly deleted from the later *Flora*. Sixty-two such species have been noted by us, and had the *Flora* contained the customary accounting of excluded species, these names would have been disposed of in that publication.<sup>2</sup>

These names constitute somewhat over 4.2% of the species enumerated by the *Annotated Checklist*. They include the sole representatives in South Florida (here defined, as in the two publications under discussion, as limited to Collier, Dade, and Monroe counties) of eighteen genera and six families (Araliaceae, Marsileaceae, Nyssaceae, Punicaceae, Sparganiaceae, Zosteraceae).

It must be made clear that additional species are included in the *Annotated Checklist* which we do not believe occur in South Florida. Our own understanding of their ranges casts immediate doubt on the inclusion of such species as *Cakile edentula*, *Carya floridana*, *Hypericum galioides*, *Juniperus silicicola*, *Oxalis stricta* (= *O. cymosa*), *Polygonum persicaria*, *Prunella vulgaris*, *Sabatia campanulata*, and *Vinca minor*, some of which we are not aware occur in Florida, much less in the southernmost counties covered by the *Flora*. But each of these names is included in the *Flora* (some with qualifications), and thus their tabulation falls outside the present scope of our study.<sup>3</sup>

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<sup>2</sup>It is worth comment that there is no standardized way of handling species that are reported for the area under study but are believed inappropriate for inclusion. Three exemplary floras demonstrate this diversity of treatment. Deam (*Flora of Indiana* 1940) gathered his 707 excluded species into a single appendix. Steyermark (*Flora of Missouri* 1963) listed his excluded species at the end of each genus. Voss (*Michigan Flora* 1972, 1985) inserted his excluded species in the text of the species with which they were most related.

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<sup>3</sup>As with the names recorded in the *Annotated Checklist*, the presence of a name in *A Flora of Tropical Florida* does not consistently reflect the presence of that species in the flora of southern Florida. Persons who give only cursory review of this strange publication cannot appreciate the large number of species listed therein that actually are unknown in South Florida, either as herbarium collections or as modern-day populations.

The following names, together with the names listed in the above text, are offered as a partial tabulation of species included in *A Flora of Tropical Florida* that appear not to be known in the flora of South Florida: *Acanthospermum australe*, *Amaranthus cannabinus*, *Amoracia aquatica*, *Asimina speciosa*, *Asplenium platyneuron*, *Bacopa cyclophylla*, *Bignonia capreolata*, *Brassica kaber*, *Cenchrus longispinus*, *Chloris neglecta*, *Chrysopsis* (*Heterotheca*) *floridana*, *Eleocharis vivipara*, *Eragrostis simplex* (= *E. cunningii*), *Flaveria floridana*, *Fuirena longa*, *Gelsemium sempervirens*, *Gentiana pennelliana*, *Juncus trigonocarpus*, *Lagerstroemia indica*, *Lemna perpusilla*, *Leptochloa filiformis*, *Linaria floridana*, *Liquidambar styraciflua*, *Lobelia floridana*, *Lycopodium carolinianum*, *Najas flexilis*, *Nyssa sylvatica* (s.l.), *Oncidium bahamense*, *Oxalis violacea*, *Petalostemon pinnatum*, *Pinus palustris*, *Polygonella fimbriata*, *Polygonum hirsutum*, *Rhexia nashii*, *Rhynchospora inundata*, *Rubus cuneifolius*, *Sagittaria kurziana*, *Salsola kali*, *Selaginella apoda*, *Setaria glauca*, *Silene antirrhina*, *Stipa avenacioides*, *Suaeda maritima*, *Tradescantia obiensis*, *Tragiola* (*Gratiola*) *pilosa*, *Typha angustifolia*, *Valeriana scandens*, *Zannichellia palustris*.

A second category of vanished names is composed of the species that were reported in the *Annotated Checklist* but were not retained by the *Flora* even though the species is known in South Florida or may reasonably be assumed to have existed there in the recent past. Considerable latitude is required in the assignment of a species to a flora, for at the poorly documented end of the scale one or more specimens may exist yet there be little doubt that the species is no longer present in a living state. Such quasi-components of a flora are perhaps best handled in the form of a note, with the species left unnumbered or in some way or other given a secondary or tentative status.

We have found eighteen species and one family (Zingiberaceae) which we believe to be proper inclusions in the flora of South Florida that should not have been dropped by the *Flora*. Six of these, for nomenclatural or other reasons, require names different from those used in the *Annotated Checklist*.

Finally, a third category of vanished names is simply a tabulation of synonyms that the *Flora* has failed to assign to an accepted species. These names are retained in the present listing since the inconsequentiality of this correction is of course not apparent to the person attempting to trace a name from the *Annotated Checklist* to the appropriate treatment in the *Flora*. We have considered twenty-three names worthy of comment.

We have listed these vanished names in alphabetic order, rather than in the sequence originally used, as an aid to rapid checking. Data as to habitat and range given in the *Annotated Checklist* are here repeated in quotes, except for those names that should have been treated as synonyms by the *Flora*. The use of "C," "D," or "M" in these quoted passages is the code used in the *Annotated Checklist* in reporting species as present in the counties of Collier, Dade, and Monroe. Habitat and range data as given for those species that we believe should be deleted from the flora of South Florida are of course considered erroneous.

## LIST OF CORRECTIONS

**ADIANTUM CAPILLUS-VENERIS.** "Moist hammocks, solution holes, CDM." This fern is not known south of Hernando County (Correll 1938; Wherry 1964; FLAS; USF). DELETE SPECIES.

**ALOCASIA INDICA.** "Homestead, D." This (or *A. macrorrhiza* (L.) G. Don) is perhaps cultivated as a rare novelty, but is not known by us as an escape. DELETE SPECIES and the genus *Alocasia*.

**ALOE VERA.** This name does not appear as a synonym under *Aloe barbadensis* Mill., by which name the species is treated in the *Flora* (p. 281). Dates of publication of these two names, however, indicate the correct name is *Aloe vera* (L.) Burm. f.<sup>4</sup>

**ARALIA SPINOSA.** "Hammocks, D." The *Flora* (p. 659) qualified the earlier report with "apparently not well established in south Fla." No Dade County specimens have been located, and the species apparently does not extend south of Polk County (FLAS, USF). DELETE SPECIES, the genus *Aralia*, and the Araliaceae.

**BRACHIARIA PLANTAGINEA.** "Moist ground, D." This Brazilian grass has now escaped at several places in Florida, but no collections have been seen south of Palm Beach County (FLAS). *Brachiaria subquadriflora* (Trin.) Hitchc. is a frequent escape in South Florida and was treated in the *Flora* (p. 168); it was not recorded in the *Annotated Checklist*, and the presumption is that the earlier name was based on a misidentification. DELETE SPECIES.

**CAKILE LANCEOLATA.** "Coastal beaches, DM." Our understanding of *Cakile* is that it is represented in South Florida by two entities, both subspecies of *C. lanceolata*: ssp. *lanceolata*, and ssp. *fusiformis* (Greene) Rodman (Rodman 1974; FLAS; USF). The *Annotated Checklist* has these two (the second in the form of an unpublished combination attributed to J. P. Patman), but has also *C. edentula* (Bigel.) Hook., a northern species that we have not seen south of St. Johns and St. Lucie counties (Rodman 1974; FLAS). The *Flora* (p. 431) recorded *C. edentula* (with a note that it is only "presumably" in its area), and *C. fusiformis*; the *Flora* should have retained both *C. lanceolata* and *C. fusiformis*, either as two species or as lesser entities of *C. lanceolata*, the prior name. RESTORE *Cakile lanceolata* (Willd.) O. E. Schulz.

**CAPSICUM FRUTESCENS.** "Hammocks, CDM." Recent workers generally treat this species as distinct from *Capsicum annuum* L. (cf. Smith & Heiser 1951; Heiser & Pickersgill 1969; contra, Shinnars 1956). The common native species in South Florida is *C. frutescens*, and was correctly so recorded in the *Annotated Checklist*. Occasional plants of *C. annuum* L. var. *aviculare* (Dierb.) D'Arcy & Eshbaugh (1973) occur, perhaps as escapes, throughout Florida and could appropriately have been included in the checklist; the *Flora* (p. 759) reported only this species, as *C. annuum* var. *minimum* (Mill.) Heiser. RESTORE *Capsicum frutescens* L.

**CASSIA CORYMBOSA.** "Homestead, D." This shrub is restricted in cultivation to central and north Florida (Isely 1975). We do not believe it escapes even within this northern range. DELETE SPECIES.

<sup>4</sup>This plant was first described by Linnaeus in 1753, as *Aloe perfoliata* var. *vera*. Linnaeus' varietal epithet was transferred to specific level by Burman in 1768, while Miller, also in 1768, independently described the species as *A. barbadensis*. Following the analysis of Reynolds (1966) that the name *Aloe barbadensis* Mill. antedated *Aloe vera* (L.) Burm. f., Miller's name has obtained wide use. But more precise dating of the relevant publications (Stafleu 1967) indicates that the appropriate portion of Burman's *Flora Indica* appeared "Mar-Apr (ante 6)," while Miller's *The Gardeners Dictionary* was published 16 April. *Aloe vera* would thus appear to be the prior name by a minimum of ten days (Newton 1979).

**CAYAPONIA RACEMOSA.** "Hammocks, Everglade Keys, D." This habitat and location data would appear taken directly from Small (1933) which in turn is based upon early collections from Dade County (*Small & Carter* 792 in 1903, NY; *Small & Wilson* 1593 in 1904, NY; *Small & Carter* 2722 in 1906, NY). Although the *Flora* cautioned (p. 816), "No recent collections of this species from south Fla. have been seen, and it may no longer be in our area," it was found again in 1976 (Castellow Hammock Park, Dade County, *Avery* 486, FLAS, FTG). Small's identification, however, was in error, and has been corrected by R. P. Wunderlin. RESTORE (replace with) *Cayaponia americana* (Lam.) Cogn. in DC.

**CEANOOTHUS AMERICANUS.** "Drier sites - C." We have not seen this species south of Polk County, and Brizicky (1964b) was not willing to extend its range south of "northern Florida." The *Flora* (p. 582) recorded the species only as a note, remarking that it "...may occur locally in our area. However, we have seen no specimens from south Fla." DELETE SPECIES and the genus *Ceanothus*.

**CHAMAESYCE CHIOGENES.** Burch (1965) has considered this name as synonymous with *C. blodgettii* (Engelm. ex Hitchc.) Small.

**CHAMAESYCE CORDIFOLIA.** "Sand dunes, CDM." Correctly interpreted, this is a northern species. Burch (1965) did not record it south of Highlands and Lee counties. DELETE SPECIES.

**CHAMAESYCE GEMELLA.** Burch (1965) treated this as synonymous with *C. ophthalmica* (Pers.) Burch.

**CHAMAESYCE GLOMERIFERA.** Burch (1965) considered this as synonymous with *C. hypericifolia* (L.) Millsp.

**CHAMAESYCE MATHEWSII.** Burch (1965) included this with *C. maculata* (L.) Small.

**CHAMAESYCE MOSIERI.** Burch (1965) treated this within *C. garberi* (Engelm. ex Chapm.) Small.

**CHRYSOPSIS MICROCEPHALA.** "CDM." We fully agree with Small (1933), Dress (1975), and Semple et al. (1980) that *Chrysopsis*, *Pityopsis*, and *Heterotheca* merit separate generic recognition. Dress (1953) included this entity within the typical variety of *Pityopsis* (*Chrysopsis*) *graminifolia*, assigning it a range in Florida south only to Bradford and Flagler counties, while Semple & Bowers (1985) interpreted it as within var. *tenuifolia* which they extend to southern Florida. Although the *Flora* (p. 855) could perhaps have placed this in synonymy under its *Heterotheca graminifolia* var. *graminifolia*, one might best avoid use of the name. DELETE SPECIES.

**CHRYSOPSIS NERVOSA.** "Pineland, CDM." Although viewed by Semple & Bowers (1985) as a variety of *Pityopsis graminifolia*, we support Dress (1975) in retaining *P. nervosa* at specific rank. This species is common in South Florida and is perhaps what the *Flora* (p. 855) intended by its *Heterotheca graminifolia* var. *tracyi*. RESTORE (replace with) *Pityopsis nervosa* (Willd.) Dress.

**CIENFUEGOSIA HETEROPHYLLA.** This species was excluded from Florida (Fryxell 1969), our plant now being known as *C. yucatanensis* Millsp. The *Flora* (p. 593) treated these species correctly but did not clearly indicate the previous assumption that they were identical.

**CLERODENDRON FRAGRANS.** The plant intended by the *Annotated Checklist* is widely cultivated in Florida and occasionally escapes. We are in agreement with Moldenke (1980) that this name should be placed in the synonymy of *Clerodendrum philippinum* Schauer, by the *Flora* (p. 737).

**CLUSIA FLAVA.** "Not seen recently, hammocks, Key West, M." Wood & Adams (1976) have pointed out the reports of this tropical species for Florida are unsubstantiated, the specimens so labeled being *C. rosea* Jacq. DELETE SPECIES.

**CYPERUS INFLEXUS.** Horvat (1941) and other workers have considered this a synonym of *Cyperus aristatus* Rottb.

**CYPERUS PSEUDOVEGETUS.** "Low ground, CD." This species is one of several closely related to *C. virens* Michx. They were well understood by McGivney (1938). We have not seen collections south of northern Florida. The present report should probably be referred to either *C. distinctus* Steud. or *C. surinamensis* Rottb., both common in South Florida and correctly cited by the *Flora*. DELETE SPECIES.

**DESMODIUM CILIARE.** "Cutler Ridge, D." This species is predominately northern and is rare south of Alachua County. It is, however, in Dade County, as documented by recent collections (*Atwater* in 1958, FLAS; *Avery* 486 in 1968, FLAS). It should not have been deleted by the *Flora*. RESTORE *Desmodium ciliare* (Muhl. ex Willd.) DC.

**DESMODIUM LINEATUM.** "Homestead, D." This species is largely northern, with only a few collections seen by us south of Alachua County. In Dade County we know of it only as a collection from a "scarified lot, Homestead" (*Hawkins* 41 in 1927, FLAS). We have no reason to believe that this specimen was the source for the above report, but it provides sufficient verification. RESTORE *Desmodium lineatum* DC.

**DIGITARIA DIVERSIFLORA.** "Old fields and roadsides, CDM." Swallen (1963) has distinguished this tropical species, found in Dade and Monroe counties, from *D. ciliaris* (Retz.) Koel. (= *D. ascendens* (HBK.) Henr.). Swallen's name, however, was not the earliest. RESTORE (replace with) *Digitaria bicornis* Roem. & Schult. ex Loud.

**DIGITARIA FILIFORMIS.** "D." This species is largely northern; we have seen no collections from peninsular Florida. South Florida collections are probably to be referred to *D. villosa* (Walt.) Pers. DELETE SPECIES.

**DOLICHOS HOSEI.** "Agr. Exp. Sta. Homestead, D." This species is perhaps better known as *Vigna hosei* (Craib) Back. It has been introduced into Florida on an experimental basis, as a possible ground cover. It is not known to escape. DELETE SPECIES.

**ELEOCHARIS ALBIDA.** "Wet soils, D." This distinct species is known in Dade County, with several recent collections (*Gillis* 10865 in 1971, FLAS; *Avery* 1196 in 1972, FLAS). It should not have been deleted by the *Flora*. RESTORE *Eleocharis albida* Torr.

**ELEOCHARIS EQUISETOIDES.** "Wet gladeland, solution holes." This species is not known south of Lake County (Ward & Leigh 1975). South Florida collections probably should be referred to *Eleocharis interstincta* (Vahl) R. & S.; this species was not reported in the *Annotated Checklist* but correctly does appear in the *Flora* (p. 219). DELETE SPECIES.

**ELEPHANTOPUS TOMENTOSUS.** "Pineland dryer sites, CDM." James (1959) and Ward (1975) have described this species as not extending closer to South Florida than Leon and Wakulla counties. The only South Florida representative of this genus is *E. elatus* Bertol. The earlier error was corrected, but not explained, in the *Flora* (p. 877). DELETE SPECIES.

**ERLANGEA INCANA.** "D." The report of this species is from Moldenke (1944). He flatly stated it to be in cultivation. We do not know otherwise. DELETE SPECIES and the genus *Erlangea*.

**FIMBRISTYLIS HARPERI.** Ward (1968) and Kral (1971) have treated this name as included with *Fimbristylis caroliniana* (Lam.) Fern. It should have been so indicated by the *Flora* (p. 216).

**FURCRAEA MACROPHYLLA.** "D." The *Flora* (p. 290) treated this species only as a note, remarking it "may persist" from cultivation. It is rarely if ever cultivated and there appear to be no reports, nor documenting specimens, of its persistence. We see no need to retain such an insubstantial supposition even as a note. DELETE SPECIES.

**GALACTIA BRACHYPODA.** "Miami, D." This name is based on A. W. Chapman collec-

tions from the vicinity of the Apalachicola River, northwestern Florida. Although Rogers (1949) maintained it as a species, it seems more probably an aberrant form of the northern *Galactia erecta* (Walt.) Vail. A Dade County collection cited by Rogers (dry rocky soil, Miami, Hood 71863 in 1912, FLAS) is apparently an atypical *G. volubilis* (L.) Britt. This last species may be what was intended by the above report. DELETE SPECIES.

**GREWIA POPULIFOLIA.** "Fantastic gardens, South Miami, D." This species is now becoming frequently cultivated in South and Central Florida but is not known to escape. DELETE SPECIES and the genus *Grewia*.

**HYMENOCALLIS CAYMANENSIS.** Recent authors (Adams 1972; Correll & Correll 1982) consistently place this name in synonymy under *Hymenocallis latifolia* (Mill.) Roem.

**JATROPHA MANIHOT.** "CDM." Rogers (1963) has treated this plant, the manioc or cassava, as *Manihot esculenta* Crantz. The *Flora* (p. 536) accepted this name but failed to give its synonym. This frost-sensitive species is very sparingly grown on the Florida keys and in Dade County, but we do not believe it persists outside of cultivation. The only basis for its inclusion by Small (1933) and the *Flora* appears to be a 1904 collection by J. K. Small reported by Webster (1967), from what was likely a cultivated source. DELETE SPECIES (and *Manihot esculenta*).

**KALANCHOE CRENATA.** "Waste places — CDM." The *Flora* was of two minds as to the inclusion of this species. It was treated as a note (p. 438), with the statement, "in disturbed sites and hammocks...no specimens, however, have been seen recently." This is not one of the more vigorous species, and we are unaware that it ever escapes. DELETE SPECIES.

**KALLSTROEMIA INTERMEDIA.** "Florida Keys, M." Porter (1969) assigned this name to the synonymy of *Kallstroemia parviflora* Norton, a species not known to occur in Florida. Our representative of this genus is *K. maxima* (L.) Hook. & Arn. DELETE SPECIES.

**LACHNANTHES TINCTORIA.** This name should have appeared in the *Flora* as a synonym of *Lachnanthes caroliniana* (Lam.) Dandy. It does appear in place of the correct name in the legend for the *Flora's* plate of the species (p. 292).

**LANGUAS SPECIOSA.** "Cult. — D." This species is better known as *Alpinia zerumbet*. It was collected in Addison Hammock, Dade County, as early as 1915 (FLAS) and has since been found repeatedly as an escape in the south and central parts of the state. RESTORE (replace with) *Alpinia zerumbet* (Pers.) Burtt & R. M. Sm., and Zingiberaceae.

**LEMNA MINIMA.** "Canals, D." Daubs (1965) recognized a species under this name, although he used it for plants occurring no closer to Florida than Texas. His specimens, however, conform to *Lemna minor* L., a species rare in Florida and unknown south of Glades County (Landolt 1986). We suspect the *Annotated Checklist* may have had the very similar *L. obscura* (Austin) Daubs, which is common. DELETE SPECIES.

**LEMNA VALDIVIANA.** "Stagnant pools, C." Peninsular Florida is appropriate for the reported range of this species. D. W. Hall has informed us he has seen collections of it from Collier and Dade counties, and E. Landolt has provided us an unpublished map showing its presence in Collier County. RESTORE *Lemna valdiviana* Phil.

**LIMNOBIUM SPONGIA.** "Shallow waters, C." This distinctive aquatic is rare south of Polk and St. Johns counties, but we have seen a specimen from Collier County (*Atwater M-137* in 1959, FLAS). RESTORE *Limnobium spongia* (Bosc) Steud.

**LOCHNERA MINOR.** "Wasteland — CDM." The *Flora* (p. 701) retreated to a note that this species (*Vinca minor* L.) "...is widely cultivated and has been collected as an escape in Palm Beach County. It may also occur locally in our area." Even this more modest distribution does not accord with our observation that this northern species cannot be cultivated successfully in peninsular Florida. DELETE SPECIES (and *Vinca minor*) and the genus *Lochnera*.

**LORINSERIA AREOLATA.** "Open hammocks, CDM." We have not seen specimens of this fern south of Glades County, although Correll (1938) reported a Lee County collection. DELETE SPECIES and the genus *Lorinseria*.

**LUDWIGIA INTERMEDIA.** This combination, as published in the *Annotated Checklist*, is illegitimate. Its basionym, *Isnardia intermedia* Small & Alexander, was treated by Munz (1965) with *Ludwigia repens* Forst.

**LUDWIGIA PALUSTRIS.** "Fresh water, CDM." We have seen this species south to Charlotte and Lee counties (FLAS), but not farther. It is easily confused with *Ludwigia repens* Forst., which is common in southern Florida. DELETE SPECIES.

**LUDWIGIA SPATHULIFOLIA.** "Low ground, D." This plant is related to *L. curtissii* Chapm. with which it has hesitantly been combined by a recent monographer (Peng 1989). Since its type locality is near Perrine, Dade County, the name should have been addressed by the *Flora*. Pending a further judgment as to its status, RESTORE *Ludwigia spathulifolia* Small.

**MACADAMIA TERNIFOLIA.** "Spice and Fruit Park, Homestead D." This tree is occasionally cultivated in Florida, but does not escape. DELETE SPECIES and the genus *Macadamia*.

**MAMMEA AMERICANA.** "Canal edge, Tamiami Trail, D." This tree is infrequently cultivated, and is tender. The *Flora* (p. 609) believed it "probably is not established." Its report as an escape was based upon Moldenke (1944). Without further indication of its persistence, we believe it best excluded from our flora. DELETE SPECIES and the genus *Mammea*.

**MARSILEA VESTITA.** "D." Old reports of this fern ally from "Orange Beach," Dade County, were based on a collection (*Underwood 66* in 1891, PH) from Orange Bend, Lake County (Ward & Hall 1976). In this century it has been known in Florida only in Franklin, Hillsborough, Sarasota, and Seminole counties. DELETE SPECIES, the genus *Marsilea*, and the Marsileaceae.

**NYSSA SYLVATICA VAR. BIFLORA.** "Swamps, C." We have not seen the swamp tupelo (for which we prefer *N. biflora* Walt.) south of Glades County. (The typical black tupelo does not extend south of Alachua County.) There appears to be no previous report from Collier County. Monachino & Leonard (1959) called attention to a specimen labeled as from Lignum Vitae Key, Monroe County (*Small & Britton* in 1919, NY), but H. K. Rickett (pers. comm., 1966) was unable to relocate the specimen. The *Flora* (p. 648) noted the Lignum Vitae Key collection, but remarked, "No recent collections have been seen, and its occurrence in our area is doubtful." DELETE SPECIES, the genus *Nyssa*, and the Nyssaceae.

A series of specimens attributed to Lignum Vitae Key and distributed to the University of South Florida and perhaps elsewhere is unquestionably in gross error as to its origin. In each case the label is a standard printed form, headed "New York Botanical Garden, with the cooperation of Mr. Charles Deering, Exploration of the Florida Keys, Tropical Florida." The labels further bear in print, "Hammock, Lignum Vitae Key, Monroe County. Collectors J. K. Small, N. L. Britton, December 13, 1919." Further data, in blue ink, is in the hand of J. K. Small. In each case the known range of the species mounted on the sheet and named on the label is completely at variance with the stated source on Lignum Vitae Key.

Two striking examples of this mis-labeled series of specimens are *Gentiana pennelliana* Fern. and *Juncus trigonocarpus* Steud. The gentian was reported in the *Flora* (p. 697) without details but with the suggestion that the species may no longer be present in the area. The basis for this report was an excellent sheet (USF 17005) of six flowering plants labeled in Small's hand, "Gentiana" and correctly annotated by R. W. Long as *Gentiana pennelliana* Fern. That species, however, is a tightly restricted pine flatwoods endemic known only from six counties in West Florida (Wakulla to Walton) and well documented by Clausen

(1941) and Pringle (1967). It is difficult to believe it could survive as a disjunct native or be adventive in the tropical hammock of Lignum Vitae Key.

Similarly, *Juncus trigonocarpus* was reported by the *Flora* (p. 280) as "Hammock, Lignum Vitae Key...rare," the report being based on a sheet (USF) bearing three plants, with the same printed heading and hand-labeled "Juncus." This species belongs to the same acid-soil coastal plain flora as the *Gentiana*; it is known in Florida only from west of Franklin County (FLAS, FSU, USF), although northward it extends into the Carolinas. Again, the habitat of this species is grossly different from that of Lignum Vitae Key.

The full history of what appears to be a set of spurious 1919 Lignum Vitae Key collections has not been traced. Since Small did not refer to these would-be striking range extensions in his later publications, it is clear that he did not accept them as the labels would now appear to read. The USF specimens were obtained by Mr. George Cooley from the New York Botanical Garden, in unmounted form, in the early 1960s. They would appear to have been part of a "rich collection," referred to by Monachino & Leonard (1959) that for many years had lain in storage at NY, but no information is at hand as to how many other erroneously labeled specimens were acquired by USE, if any, or how widely dispersed they may be in other herbaria. It is apparent that species with less sharply restricted North Florida ranges may more readily pass as acceptably small non-disjunct range extensions. At the least, a caveat is in order as to the acceptance of South Florida ranges based on 1919 Small & Britton collections from Lignum Vitae Key.

**OENOTHERA MOLLISSIMA.** "Drier soils, CDM." Small (1933) reported this South American species (as *Raimannia mollissima*) to occur from Florida to Texas, a claim that has been disregarded by North American workers (Munz 1965; Correll & Johnston 1970). The Florida plants, at least, are not of that species, but have been suggested by P. H. Raven (pers. comm., 1978) to represent *Oenothera humifusa* or *O. humifusa* — *O. laciniata* hybrids. **DELETE SPECIES.**

**ORYZA SATIVA.** "Anhinga Trail, Taylor Slough, D." A perennial, awned rice, "Red Rice," now commonly treated as distinct from *Oryza sativa* L., has been known for some years to be well established in the vicinity of Taylor Slough, Everglades National Park, and is represented by specimens (*Atwater GS-174* in 1959, FLAS; *Craighead* in 1961, FLAS). **RESTORE** (replace with) *Oryza rufipogon* Griff.

**PANICUM CONDENSUM.** This species was obscurely recorded by the *Flora* (p. 189) as a variety of *Panicum agrostoides* Spreng., a species better known (Voss 1966) as *P. rigidulum* Bosc ex Nees.

**PANICUM CONSANGUINEUM.** "Pinelands, CDM." Freckmann (1967) retained this entity at the level of species and reported it south to central Florida. Specimens we have seen support this range. It is very close to, and in fact appears to intergrade with, *P. angustifolium* Ell., a frequent South Florida species. **DELETE SPECIES.**

**PANICUM GEMINATUM.** This distinctive grass was retained in the *Flora* (p. 176) as *Paspalidium geminatum* (Forssk.) Stapf in Prain, but without indicative synonymy. Gould (1968) and other recent workers have supported this generic segregation.

**PANICUM LONGIFOLIUM.** "Low ground, wet pineland, DM." This name is now usually placed in synonymy under *Panicum rigidulum* Bosc ex Nees. Though this grass is somewhat aggressive and is widespread to the north, we have not seen it south of Okeechobee County. **DELETE SPECIES.**

**PASPALUM DIFFORME.** "Pinelands, D." We know this plant (as a synonym of *P. floridanum* Michx. var. *floridanum*) south only to Flagler and Marion counties. Specimens bearing this name from Dade County have been misidentified *Paspalum floridanum* var. *glabratum* Engelm. ex Vasey (= *P. giganteum* Baldw. ex Vasey). **DELETE SPECIES.**

**PHYSALIS TURBINATA.** "Pineland, D." Even after the work of Menzel (1951) and Waterfall (1958, 1968) we remain in doubt as to the correct names of the Florida species of *Physalis* section *Pubescentes*. More commentary is needed than is appropriate here. Our present interpretation is that the *Flora* (p. 754) was correct in describing this species as hairy and with a fruiting calyx up to 4 cm. long; many specimens bearing this name are the near-glabrous, smaller-fruited *P. cordata* Mill. (= *P. pubescens* L. var *glabra* (Michx.) Waterfall). We have, however, seen no specimens of true *P. turbinata* Medic. from Florida. DELETE SPECIES.

**PIPER OTOPHYLLUM.** "Mangrove belt, Jamaica, CDM." Adams (1972) considered this name synonymous with *Piper fadyenii* C. DC. in DC., a montane endemic of Jamaica. It disappeared from the *Flora*, apparently recognized as a gross misidentification. DELETE SPECIES and the genus *Piper*.

**POINSETTIA DENTATA.** "Pinelands, D." Neither Burch (1966) nor we are able to cite collections of this species from Florida. DELETE SPECIES.

**POLYGONELLA MYRIOPHYLLA.** "Sand scrub, C." The *Flora* (p. 375) did not refer to the earlier Collier County report, but noted this species "has been found in Dade County." Horton (1963) knew it only as an endemic of central Florida (Highlands County and northward), and we have been unable to locate documenting specimens south of that area. DELETE SPECIES.

**POTAMOGETON FLUITANS.** "Long Pine Key, DC." This name is now usually considered a synonym of *Potamogeton nodosus* Poir. in Lam. which in our experience is not found south of western Florida. Confusion with the widespread *P. illinoensis* Morong is suggested. DELETE SPECIES.

**PUNICA GRANATUM.** "Waste places, old fields - D." Although this shrub, as Small (1933) stated, does persist around old homesites, it has only very sparingly been cultivated in southern Florida and apparently has never been documented there as an escape. DELETE SPECIES, the genus *Punica*, and the Punicaceae.

**RHACOMA CROSSOPETALUM.** This name should properly have been listed by the *Flora* (p. 568) as a synonym under *Crossopetalum rhacoma* Crantz (Brizicky 1964a).

**RHAPIDOPHYLLUM HYSTRIX.** "D." We believe this palm does not range south of Hardee and Highlands counties (FLAS, USF). DELETE SPECIES and the genus *Rhapidophyllum*.

**RHYNCHOSPORA EDISONIANA.** Gale (1944) treated this as synonymous with *Rhynchospora microcarpa* Baldw. ex Gray.

**RHYNCHOSPORA FERNALDII.** "Coastal beaches, C." Gale (1944) reported this species only south to Lee County, and the *Flora* (p. 231) deleted it without reference to the unequivocal statement in the *Annotated Checklist*. However, collections from Collier County do exist (Craighead in 1956, FLAS; Sandy excavation, Marco Island. Atwater in 1958, FLAS). RESTORE *Rhynchospora fernaldii* Gale.

**RHYNCHOSPORA HARVEYI.** "Glades, D." This coastal plain species is admitted to the flora of Florida only on the basis of a few northern collections (Leon Co., FSU; Duval Co., FLAS). It is unknown in the peninsula. DELETE SPECIES.

**RUELLIA NUDIFLORA.** "Pinelands, D." R. W. Long was a student of *Ruellia* but did not discuss the distribution of this species. It apparently is restricted to Texas and northern Mexico and had not previously been reported for Florida. It was omitted, without comment, by the *Flora* (p. 786.) DELETE SPECIES.

**SAGITTARIA FALCATA.** "C." The nearest location at which this species is known to occur is in Franklin County, western Florida (FLAS). DELETE SPECIES.

**SALVIA MUTABILIS.** We assume this combination is a *lapsus calami* for the common *Hyptis mutabilis* (A. Rich.) Briq.

**SCHOENOLIRION ALBIFLORUM.** Although this name may originally have been applied to the more northern *Schoenolirion croceum* (Michx.) Wood (Sherman 1969), it has long been used for *S. eliottii* Gray, under which the *Flora* (p. 283) might have placed it in synonymy.

**SCHRANKIA ANGUSTISILIQUA.** Probably only *Schrankia microphylla* (Dryand.) Macbr. occurs in the South Florida area (Isely 1973; FLAS; contra, Beard 1964, who cited Broward and Dade County specimens as *S. uncinata* Willd.). Isely (1973) considered *S. angustisiliqua* to be a "phase" of *S. microphylla*, within which the *Flora* (p. 454) should have placed this name in synonymy.

**SCLERIA SETACEA.** Core (1936) originally held this taxon distinct from *Scleria reticularis* Michx., but Fairey (1967), working under Core's direction, treated it as var. *pubescens* Britt. The above name should have been given by the *Flora* (p. 237) as a synonym.

**SISYRINCHIUM MIAMIENSE.** "D." The type of this taxon is a collection from Miami (Pollard & Collins 264 in 1898, NY), and thus the name should not have been disregarded by the *Flora* (p. 298). Although this plant can be interpreted to fall within a rather inclusive interpretation of the East Coast and Bahamian *Sisyrrinchium arenicola* Bicknell, the South Florida population appears to merit specific rank (Ward & Gillis 1975). RESTORE *Sisyrrinchium miamiense* Bicknell.

**SMILAX LANCEOLATA.** "Hammocks, CDM." This name is a synonym of *Smilax smallii* Morong. The species, however, is not known south of Highlands County (Duncan 1967; FLAS) DELETE SPECIES.

**SOLANUM NIGRUM.** "Good soil, CDM." Although this Eurasian species has been reported in Dade County (D'Arcy 1974), recent workers (Heiser et al. 1979; Ogg et al. 1981; Schilling 1981) place all related South Florida materials in *S. americanum* Mill. (including *S. nodiflorum* Jacq.) or *S. pseudogracile* Heiser. DELETE SPECIES.

**SPARGANIUM AMERICANUM.** "Swampy shores, CDM." This distinctive plant is not known in Florida south of Highlands County, either by Beal (1960) or by us (FLAS, FSU, FTG, USF). DELETE SPECIES, the genus *Sparganium*, and the Sparganiaceae.

**SPARTINA CYNOSUROIDES.** "Saltwater beaches, low tidal lands, CDM." We have seen no records of this grass south of Duval County. DELETE SPECIES.

**SPERMACOCE TENUIOR.** "Pinelands, CDM." Long (1970) chose to treat *Spermacoce floridana* as a variety of *S. tenuior* L. In the *Flora* (p. 806) the typical variety was excluded from South Florida. This conforms with our experience, although the differences between these two taxa seem of specific magnitude. ADD *S. floridana* Urban<sup>5</sup> to the South Florida flora, and DELETE SPECIES reported above.

**STENOCARPUS SINUATUS.** "Coral Gables - D." This tree is cultivated occasionally in central and southern Florida, but there is no evidence that it escapes. DELETE SPECIES and the genus *Stenocarpus*.

**STYLISMA AQUATICA.** "In clearing floor of hammock, D." This species was attributed to South Florida by Moldenke (1944). Myint (1966) noted the reported range to southern Florida had been based upon misidentified specimens, mostly of *Stylisma villosa* (Nash) House, and that *S. aquatica* was not found south of the Apalachicola River in West Florida. DELETE SPECIES.

**THELYPTERIS DENTATA.** "Moist hammocks, CD." We have seen specimens of this species from Collier County (Scull in 1937, FLAS; Avery 2071 in 1969, FLAS), as well as a

<sup>5</sup>*Spermacoce floridana* Urban dates from 15 Aug 1913 (*Symbolae Antillanae* 7:550, published on this date according to Carroll & Sutton 1965), while *S. keyensis* Small appears to be later. The preface of Small, *Flora of the Florida Keys*, 1913, was dated 11 Aug 1913, but the publication was recorded in the 28 Nov 1914 *Index to American Botanical Literature* (Bull. Torrey Bot. Club 41:575). Since the *Index* was monthly, *Flora of the Florida Keys* would seem not to have been available until after Oct 1914.

"volunteer in slat house," Dade Co. (FLAS). It had been deleted by the *Flora*. RESTORE *Thelypteris dentata* (Forssk.) E. St. John.

**THELYPTERIS PATENS.** "Moist hammocks, CDM." Neither Wherry (1964), Smith (1971b), nor recent field botanists in South Florida have been able to expand state records of this species beyond the single 1905 Dade County collection discussed by R. St. John (in Small 1938). We concur with the *Flora* (p. 101) that this species is highly unlikely to remain a member of our flora. DELETE SPECIES.

**THELYPTERIS SERRA.** "D." St. John (in Small 1938), in his report of this species for the state, recognized that the original specimens from Dade County were not wholly typical of the species as known in the West Indies. Wherry (1964) and Smith (1971a) have pointed out that, indeed, the Florida collections so named fall within the morphological limits of *Thelypteris angescens* (Link) Munz & Johnst. DELETE SPECIES.

**THELYPTERIS TETRAGONA.** "Moist hammocks, CD." This species is not known south of Marion and Hernando counties (FLAS, USF). DELETE SPECIES.

**THELYPTERIS ULIGINOSA.** The *Flora* (p. 100) omitted this name as a synonym of *Thelypteris torresiana* (Gaud.) Alston.

**THERMOPSIS MOLLIS.** "Pineland, hammocks, CDM." Wilbur (1963) reported this piedmont legume south only to northern Georgia. No conflicting specimens have been seen. DELETE SPECIES and the genus *Thermopsis*.

**VERNONIA SCABERRIMA.** "Sandy pineland, CDM." Jones (1964) failed to find this taxon, which he treated as *Vernonia angustifolia* Michx. var. *scaberrima* (Nutt.) Gray, outside of South Carolina and eastern Georgia. DELETE SPECIES.

**VICIA FLORIDANA.** "Margins, hammocks, CD." This legume, although common in northern and central Florida, apparently does not occur south of Desoto County (FLAS, USF). DELETE SPECIES.

**VIGNA UNGUICULATA.** "Waste places, CD." This plant is frequently cultivated, but we know it as an escape only on Sanibel Island, Lee County (FLAS). DELETE SPECIES.

**WALTHERIA AMERICANA.** The *Flora* (p. 604) failed to give this name as a synonym under *Waltheria indica* L.

**WAREA CUNEIFOLIA.** "D." Channell & James (1964) have reemphasized the earlier interpretation of this species as known only from Liberty and Gadsden counties, West Florida. Dade County material would be the related but distinct *Warea carteri* Small. DELETE SPECIES.

**WASHINGTONIA FILIFERA.** "CDM." The vast majority of Florida individuals of this genus are the gracefully slender *Washingtonia robusta* Wendl. *Washingtonia filifera* is cultivated only with rarity in Florida, and we are unable to find evidence that it escapes. DELETE SPECIES.

**WEBSTERIA SUBMERSA.** "Submersed aquatic, C." This plant is better known as *Websteria confervoides* (Poir.) Hooper (= *Scirpus confervoides* Poir. in Lam.). It is rare in Florida, and we have seen no specimens from south of Lake and Highlands counties. Inclusion of this species in South Florida is based upon specimens from Collier County so annotated by H. K. Svenson (FLAS, FSU, USF); the plants, however, are submersed forms of the common *Eleocharis baldwinii* (Torr.) Chapman. DELETE SPECIES and the genus *Websteria*.

**WOLFFIA COLUMBIANA.** "Canals, D." The *Flora* (p. 254) omitted this genus. Yet this species is frequent in Florida and D. W. Hall, recently a student of the Lemnaceae, reports to us that he has seen a Dade County collection (*Stimpson 738*, FSU). RESTORE *Wolffia columbiana* Karst.

**XYRIS BALDWINIANA.** "C." Kral (1966) did not find this species south of Marion County. We are unable to contradict him. DELETE SPECIES.

**ZAMIA INTEGRIFOLIA.** "Pinelands, CDM." The *Flora* (p. 108) reported the common

Florida species of this genus to be *Zamia pumila* L., a name initially applied to plants from Hispaniola but extended by Eckenwalder (1980) to all members of the genus in the West Indies and Florida. The Florida representatives, though undoubtedly "founder effect" selections from this Caribbean complex, seem sufficiently uniform to merit taxonomic recognition (Hardin 1971; Ward 1979). Aiton's *Zamia integrifolia*, though earlier, is nomenclaturally superfluous and thus illegitimate. RESTORE (replace with) *Z. floridana* A. DC.

ZOSTERA MARINA. "CDM." This marine species ranges from Beaufort, North Carolina (Den Hartog 1970), north into the arctic seas. It is completely unknown in Florida. DELETE SPECIES, the genus *Zostera*, and Zosteraceae.

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