

## THOMAS WALTER TYPIIFICATION PROJECT, II: THE KNOWN WALTER TYPES

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### ABSTRACT

Thomas Walter, a South Carolina plantation owner and skilled amateur botanist, in the 1780s wrote a flora that was the first treatment of American plants employing the binomial nomenclature and sexual classification system of Linnaeus. Walter's *Flora Caroliniana* contained many species new to science and whose names are of modern use. So that these names shall be used in a consistent way, provision has been made for each name to be represented by a single specimen, its type. But Walter designated no types; later authors, following internationally agreed-upon rules, have chosen specimens to serve as lectotypes or neotypes. A compilation is provided here of all known replacement types of Thomas Walter names.

### RESUMEN

Thomas Walter, un propietario de una plantación en Carolina del Sur y botánico amateur, en los años 1780s escribió una flora que constituyó el primer tratamiento de las plantas americanas usando la nomenclatura binomial y el sistema de clasificación sexual de Linnaeus. La *Flora Caroliniana* de Walter contenía muchas especies nuevas para la ciencia y cuyos nombres son de uso moderno. Para que estos nombres estén en uso de un modo consistente, se han hecho las provisiones necesarias para que cada nombre esté representado por un solo espécimen, su tipo. Pero Walter no designó tipos; autores posteriores, siguiendo normas internacionalmente aceptadas, han escogido especímenes para que sirvan como lectotipos o neotipos. Se aporta una compilación de todos los tipos reemplazados conocidos de los nombres de Thomas Walter.

The Thomas Walter Typification Project is an ongoing effort to determine appropriate type specimens for the many names of new plant species described by Thomas Walter in his *Flora Caroliniana* (1788). Walter himself left no herbarium, but he had access to the collections made by John Fraser in the Carolinas and Georgia. Fraser's specimens, now in the Natural History Museum, London, often bear Walter's identifications or comments, and are at times chosen as replacement types by later authors. Or, when no specimen is present in the Fraser collection, specimens gathered by other persons have been chosen by later authors to serve as replacement types for Walter's names.

The Fraser collection, because of its association with the author of the *Flora*, is commonly known as the "Walter Herbarium." It is in the form of a large folio containing 690 usually very small, often fragmentary specimens collected by John Fraser during an eighteen-month trip to the American southeast, from the fall of 1786 through the early spring of 1788. During that time Fraser met and was befriended by Walter who examined and partially annotated at least part of Fraser's collection. Fraser also carried Walter's manuscript to England and saw it to publication.

The Fraser collection of the Natural History Museum—perhaps better known as the "Fraser/Walter herbarium" to distinguish it from the presence in Paris of another part of the specimens collected by Fraser—has been described in detail as an initial step in the analysis of the Walter names (Ward, 2006). Somewhat more than half of the specimens have labels that carry Walter's handwriting, either an identification or partial identification, or a comment. Approximately half of the specimens bear similar identifications and/or comments by Fraser, while a significant number show the handwriting of both.

Though many authors have referred to the Fraser/Walter herbarium as having been collected by Walter, or as having been the basis for his new names, there is no credible contemporary evidence that Walter used the collection in this way. Even where his handwriting is present, it is far more probable that he formed most of his descriptions from plants available *in vivo* and that he saw the specimens only after his manuscript was complete or essentially so. This conclusion has been documented and justified elsewhere (Ward, 2007). Such specimens, though contemporary in time, are of course irrelevant to typification of Walter's names.

One small category of names given by Walter, however, cannot be separated from linkage with the Fraser collections. Though Walter (1788) stated his observations had come from a 50-mile radius of his plantation on the Santee River in what is now Berkeley County, South Carolina, it has long been recognized that at least some of his species are unknown on the Carolina coastal plain (Harper 1911; Ewan 1969). It appears certain, as Fraser has claimed (1789), that a number of species not known in Walter's area could have come to him only as a result of Fraser's far wider travels (Ward 1962a, 2007). When a specimen of such a species is found in the Fraser/Walter herbarium it is reasonable to conclude, though gathered by Fraser, either the individual specimen or other, supplementary material of the same collection was actually used by Walter in his writing. Supplemental materials may indeed have been available, for Walter's descriptions commonly contain details not shown in the Fraser specimens.

The International Code of Botanical Nomenclature (Greuter et al., 2000) dictates rules that govern determination of types. If, as here believed, no surviving specimens can be stated to be the only materials used by Walter, no holotype of a Walter name is possible. If a species described by Walter and known only outside his area is represented by a specimen collected by Fraser, the Fraser/Walter specimen may reasonably be designated as its lectotype. If, however, either no specimen has survived, or the species is known in Walter's area and may well have been described by him without use of the herbarium, a neotype may be selected.

At times authors have assigned type designation that are at variance with the origin of the materials as described here. In such cases the Code (Art. 9.8) permits the type designation to be corrected to the appropriate status. Such corrections have been made here where appropriate. The convention is faithfully followed, that lectotypes are "designated" and neotypes are "selected."

The Code (Art. 7.10) requires that a designation of lectotype or selection of neotype is without standing unless published. However the Code, especially in former years, has not provided guidance for a standard mode or place of publication. With this latitude, authors have used diverse outlets in publishing their type citations. Commonly, of course, typifications appear as a component of monographic treatments or revisions. But typifications have also been encountered in free-standing floristic notes, in proposals for conservation of a non-legitimate name, in captions of illustrations, and even in a pre-meeting abstract of a paper to be presented. All, if effectively published and if the type element is clearly indicated as such by the typifying author (Art. 7.11), are valid, and are accepted here.

Names are also found to be cited as having been typified when the circumstances of their publication do not justify type status. Notably, some members of a series of identifications by Hitchcock (1905), of grasses in the Fraser/Walter herbarium, are simply references to certain specimens and fall short of the author having treated them as types. Several type selections in theses and dissertations, though clearly stated, also fail because of the non-published format of their presentation. Such nonvalid typifications are excluded here.

The present tabulation of 67 published Walter types includes 13 that are lectotypes (8 of them corrected to that status) and 52 neotypes (34 of them corrected). Two names listed as neotypes are scheduled for publication elsewhere (Ward, in press). The designations are of specimens in the Fraser/Walter herbarium (43 names), as well as in other herbaria (22 names). The name used by Walter (*Flora Caroliniana* 1788) is given, with appropriate page number. The modern name for each is also listed, in most cases employing nomenclature used in the current flora of the Carolinas (Radford et al. 1968). Frequently used synonyms may also be given. [An index of all relevant Walter names and modern equivalents will be provided later in the present series.]

The names are presented in alphabetical order following Walter's usage. A discussion and/or justification accompanies each name. Typifying authors, with their determination of lectotypes or selection of neotypes, are cited. Further comments may include a simple statement of range and frequency in the Carolinas (indicative of the probability that Walter knew the plant *in vivo*); reference to any appropriate specimens in the Fraser/Walter herbarium (with designators as in Ward, 2006); and notation of whatever handwriting may be on the label.



## TYPIFICATIONS

WALTER'S NAME: *Aesculus parviflora* Walter (p. 128)

MODERN NAME: **Aesculus parviflora** Walt.

Rare in SC (one county). Spm. 62a-A was labeled "*Juglans Alba nova*" by Fraser. Rembert (1984) has designated this specimen, *Fraser/Walter 62a-A, [1787]* (BM), made by Fraser in South Carolina along the Savannah River across from Augusta, Georgia, as LECTOTYPE of *Aesculus parviflora* Walt.

WALTER'S NAME: *Andromeda ferruginea* Walter (p. 138)

MODERN NAME: **Lyonia ferruginea** (Walt.) Nutt.

Nearly absent from SC (2 counties); frequent in adjacent northeastern GA, Judd (1981: 411) designated a specimen, *Fraser s.n., [1787]* (P), from South Carolina or Georgia, as LECTOTYPE of *Andromeda ferruginea* Walt., basionym of *Lyonia ferruginea* (Walt.) Nutt. This specimen was among the materials Fraser sold to Charles Louis L'Heritier in Paris (Fraser 1789). Although no indication is given that Walter saw or used that particular Fraser specimen, the absence of the species from the area in which Walter directly obtained his materials suggests that the specimen may have been part of a collection obtained by Fraser in his wider travels and utilized by Walter in forming his description. A fragment (spm. 6-C) in the Fraser/Walter herbarium was labeled as "*Andromeda ferruginea*" by Fraser, but has been identified as *Lyonia fruticosa* (Judd 1981: 419–420).

WALTER'S NAME: *Angelica lobata* Walter (p. 115)

MODERN NAME: **Ligusticum canadense** (L.) Britt.

Nearly absent from the SC coastal plain, but common inland; likely a Fraser discovery. Spm. 7-C, a crumpled vegetative scrap, was labeled "*Angelica*" by Fraser. It was identified as *Ligusticum canadense* by Fernald and Schubert (1948: 217), and called "the type." Though Walter's name will doubtless remain in synonymy of *Ligusticum canadense*, *Fraser/Walter 7-C [1787]* (BM) is corrected here to LECTOTYPE of *Angelica lobata* Walt. (= *Ligusticum canadense* (L.) Britt.).

WALTER'S NAME: *Anonymos bracteata*[a] Walter (p. 181); nom. illegit.

MODERN NAME: **Zornia bracteata** Walt. ex Gmel.

Frequent in eastern SC. No specimen has been identified. Walter's name is illegitimate, but his description still serves as the foundation for Gmelin's name (Ward 1962b). Mohlenbrock (1961: 30) selected *Duncan 11557, [29 July 1950]* (US), from McDuffie County, Georgia, as NEOTYPE for *Zornia bracteata* Walt. ex Gmel., with duplicate (GA) as ISONEOTYPE.

WALTER'S NAME: *Anonymos graminifolia*[ia] Walter (p. 197); nom. illegit.

MODERN NAME: **Vernonia angustifolia** Michx.

Frequent throughout. Walter's name was omitted by Gmelin (1792). The name is illegitimate (Ward 1962b), and the epithet cannot be transferred. The epithet was used by Willdenow (1803), but applied to a species of *Liatris*. Willdenow's name was formed independently and is not a transfer; though he referred to Walter, he gave a new diagnosis. A specimen (spm. 32-A) labeled "*Chrysocoma affinis* F 309" was identified as *Liatris graminifolia* Willd. by Gaiser (1950: 414), but rejected as type of *Anonymos graminifolia*. [Gaiser was correct in this rejection, though her reason was doubt as to its authenticity; Walter's *Anonymos graminifolia*, as determined by his identification of other Fraser specimens, was *Vernonia angustifolia*.] Gaiser, apparently in belief that the plant Walter had described was a *Liatris*, erroneously selected *White s.n., 25 Oct 1948* (GH), a plant of *Liatris graminifolia* Willd., from Wilmington, New Hanover County, North Carolina, as Walter's "type." Though Gaiser's incorrect typification of an illegitimate name is without application, in the interest of completeness it is here listed and corrected to NEOTYPE for *Anonymos graminifolia* Walt.

WALTER'S NAME: *Anonymos procumbens* Walter (p. 86); nom. illegit.

MODERN NAME: **Houstonia procumbens** (Walt. ex Gmel.) Standley [= *Hedyotis procumbens* (Walt. ex Gmel.) Fosberg; *Poiretia procumbens* Gmel.]

Frequent to common throughout. There is no specimen. Lewis (1966) has selected *Palmer s.n., 2-10 June*

1902 (US), from Charleston County, South Carolina, as NEOTYPE for *Poiretia procumbens* Gmelin, basionym of *Houstonia procumbens* (Walt. ex Gmel.) Standley.

WALTER'S NAME: *Anonymos rotundifolia* Walter (p. 181)

MODERN NAME: ***Crotalaria rotundifolia*** Walt. ex Gmel. [= *Crotalaria angulata* Mill.]

Common in eastern SC. Spm. 67-D has been termed "type" by authors (Fernald & Schubert 1948; Ward 1962b; Windler 1974). The label ("*Lupinus affinis*") is in Walter's hand. Since this species would surely have been familiar to Walter near his home, and the label indicates he did not recognize it to be his "*Anonymos rotundifolia*," there is no reason to believe this specimen was used by him. Its designation as type cannot be dismissed, but *Fraser/Walter 67-D, [1787]* (BM), the foundation for *Crotalaria rotundifolia* Gmelin, is corrected here to NEOTYPE. Fernald and Schubert's argument (1948: 202–203), equating Walter's plant with *Crotalaria maritima* Chapm., is incorrect; Chapman's type came from Cape Sable ("Palm Cape"), southernmost peninsular Florida, and differs in leaf form and pubescence.

WALTER'S NAME: *Anonymos sessifol[ia]* Walter (p. 108); nom. illegit.

MODERN NAME: ***Mitreola sessilifolia*** (Walt. ex Gmel.) D. Don [= *Cynoctonum sessilifolium* Walt. ex Gmel.]

Common in eastern SC. Spm. 117-B is a slender stem of poor diagnostic character, marked with Fraser's number 685. It was labeled "*Genus nov. Pentand digyn*" by Walter, not recognized by him as his *Anonymos "sessifolia."* Walter would have had living materials available; spm. 117-B could scarcely have been used by him in forming his description. Walter's name is illegitimate, but his description still serves as the foundation for Gmelin's name (Ward 1962b). Leeuwenberg (1974: 21) has designated no. 685 as "holotype" of *Mitreola sessilifolia*. In view of Walter's failure to recognize the plant as his own, *Fraser/Walter 117-B, [1787]* (BM) is here corrected to NEOTYPE for *Cynoctonum sessilifolium* Gmel., basionym of *Mitreola sessilifolia* (Walt. ex Gmel.) D. Don. Because the specimen scarcely shows useful diagnostic features, an epitype would be welcome.

WALTER'S NAME: *Anonymos setac[ea]* Walter (p. 170)

MODERN NAME: ***Agalinis setacea*** (Walt. ex Gmel.) Raf.

Frequent throughout. Pennell (1920: 282) stated the "type" had been identified in the British Museum by A. B. Rendle. This presumably is spm. 51-A. Walter's name is illegitimate, but his description still serves as the foundation for Gmelin's name (Ward 1962b). The specimen bears Walter's hand: "*Gerardia...terminalis.*" Though very unlikely to have been used by Walter in preparing his description, its somewhat indirect designation as type by Pennell restricts further choice; his designation of *Fraser/Walter 51-A, [1787]* (BM) is here corrected to NEOTYPE for *Gerardia setacea* Gmel., basionym of *Agalinis setacea* (Walt. ex Gmel.) Raf.

WALTER'S NAME: *Anthoxanthum giganteum* Walter (p. 65)

MODERN NAME: ***Erianthus giganteus*** (Walt.) Beauv.

Common throughout the SC coastal plain. Spm. 113-B bears the label "*Anthoxanthum*" in Fraser's distinctive hand. Hitchcock (1905: 33) stated the specimen, since it "agrees with the description and is the only species of the genus" that Walter described, "may be taken as the type." Gandhi and Dutton (1993), without reference to a specific specimen, noted BM to contain the Walter "type." The abundance of this species within Walter's territory and the probability that he knew it in the living state (he noted the height to be 8 feet) make it unlikely this Fraser specimen was given any weight by him. However, having been emphasized by Hitchcock and noted by Gandhi and Dutton, Walter's specimen can continue to serve by correction of Hitchcock's use of *Fraser/Walter 113-B, [1787]* (BM) to that of NEOTYPE for *Anthoxanthum giganteum* Walt., the basionym of *Erianthus giganteus* (Walt.) Beauv.

WALTER'S NAME: *Arundo gigantea* Walter (p. 81)

MODERN NAME: ***Arundinaria gigantea*** (Walt.) Muhl.

Common throughout. Hitchcock (1905: 53) identified a specimen (spm. 113-A) as this species, but did not designate it as a type. McClure (1973: 26) took that step, but called the specimen the "Holotype." He noted the accompanying label to read "*Arundo gigantea*" but failed to recognize the hand as that of Fraser. Since



the species is common immediately adjacent to Walter's homesite, and there is no indication Walter saw or used Fraser's specimen, *Fraser/Walter 113-A*, [1787] (BM) is here corrected to NEOTYPE for *Arundo gigantea* Walt., basionym of *Arundinaria gigantea* (Walt.) Muhl. Since 113-A consists solely of a stem apex bearing two leaves and is marginally diagnostic, an epitype would be welcome.

WALTER'S NAME: *Arundo tecta* Walter (p. 81)

MODERN NAME: **Arundinaria gigantea** (Walt.) Muhl.

Only one *Arundinaria* is common in the Carolinas. Walter, under *A. tecta*, described the first-year stems as "culmis tectis" ("stems sheathed") by young leaf-bases, and named the second-year stems *A. gigantea* (branches fully developed, making the plant seem larger). There is no specimen labeled as *Arundo tecta*. Though (as interpreted here) *A. tecta* is a synonym of *A. gigantea*, McClure (1973: 28) has selected McClure 22000, [1952?] (US), from Anne Arundel County, Maryland, as NEOTYPE for *Arundo tecta* Walt., basionym of *Arundinaria tecta* (Walt.) Muhl.

WALTER'S NAME: *Athanasia graminifolia* Walter (p. 200)

MODERN NAME: **Marshallia graminifolia** (Walt.) Small

Infrequent in eastern SC. Spm. 16-F was identified as *Marshallia graminifolia* by Channell (1957: 112) and referred to as the "type" of *Athanasia graminifolia*. The label ("*Athanasia*") appears to be in Walter's hand. But since materials were available near Walter's home, it is unlikely he used this specimen in preparing his description. *Fraser/Walter 16-F*, [1787] (BM) is therefore here corrected to NEOTYPE for *Athanasia graminifolia* Walt., basionym of *Marshallia graminifolia* (Walt.) Small.

WALTER'S NAME: *Athanasia obovata* Walter (p. 201)

MODERN NAME: **Marshallia obovata** (Walt.) Beadle & Boynton

Two specimens (16-C, 16-D) were identified as *Marshallia obovata* var. *obovata* by Channell (1957: 83, 88–89) and referred to as the "type" of *Athanasia obovata*. He further concluded, with the aid of W. T. Stearn, that they represented the "leafy-stemmed" taxon, which thus becomes var. *obovata*. That variety occurs only on the piedmont, west of Walter's area; the specimen therefore was probably collected by Fraser. [Var. *scaposa* Channell occurs only on the coastal plain.] Walter's description may well have been based on plants of var. *scaposa* accessible to him in or near Berkeley County. But Channell's assignment of the typical name to a specimen of the western variant fixes the name in that usage. Channell did not select which of the two specimens was to be the type and which the isotype. Both are labeled "*Athanasia*" in Walter's hand. Since Walter probably based his description on var. *scaposa* and may not have seen these materials of var. *obovata* until after completion of his text, *Fraser/Walter 16-C*, [1787] (BM) (marked "*A. obovata*," probably by Gray) is here corrected to NEOTYPE for *Athanasia obovata* Walt., basionym of *Marshallia obovata* (Walt.) Beadle & Boynton. *Fraser/Walter 16-D* (BM) (unmarked) then becomes an ISONEOTYPE.

WALTER'S NAME: *Athanasia trinervia* Walter (p. 201)

MODERN NAME: **Marshallia trinervia** (Walt.) Trel. ex Branner & Coville

Unknown in modern SC, very rare in NC (one county) and GA (two counties). There is no specimen. Yet once found near Walter's home; a specimen from Berkeley County, South Carolina, *Cranmore Wallace s.n.*, 1841 (CHARL), has been selected by Channell (1957: 68, 72–73), as NEOTYPE for *Athanasia trinervia* Walt., basionym of *Marshallia trinervia* (Walt.) Trel. ex Branner & Coville.

WALTER'S NAME: *Carduus carolinianus* Walter (p. 195)

MODERN NAME: **Cirsium carolinianum** (Walt.) Fern. & Schub.

*Cirsium carolinianum* is so rare in the Southeast (4 counties in NC, 1 in SC, 3 in GA) that Walter's plant may not be the species that presently bears his name. But Fernald and Schubert (1948: 229, plate 1115) have identified spm. 25-C (a near-naked scape with single head, labeled "*Carduus*" by Walter) as *C. carolinianum*, and cited it as "Walter's TYPE." Thus, whatever the possibility Walter was writing of another species more common near his home, his name is now locked into its present usage. Since a discovery by Fraser in his

wider travels would appear the only way Walter may have seen this plant, *Fraser/Walter 25-C*, [1787] (BM) is here corrected to LECTOTYPE of *Carduus carolinianus* Walt., basionym of *Cirsium carolinianum* (Walt.) Fern. & Schub. Because of the poor quality of the specimen, an epitype would be welcome.

WALTER'S NAME: *Cenchrus carolinianus* Walter (p. 79)

MODERN NAME: **Cenchrus incertus** M.A. Curtis

Common in eastern SC. There is no specimen. Hitchcock (1905: 48), perhaps not realizing there is more than one species of *Cenchrus* in the Carolinas, suggested that Walter's description referred to *C. tribuloides* L.; Walter's "*spinosus laevibus*" forecloses that possibility. Reveal (1990) selected a NEOTYPE for *Cenchrus carolinianus* Walt. of material from Beaufort County, South Carolina, *Boufford, Bartholomew & Spongberg 23096*, 12 Sept 1982 (BM), currently known as *C. incertus* M.A. Curtis (1837), thereby temporarily displacing that name. But, following revision of the I.C.B.N. in 1994, Walter's name was formally rejected (Brummitt 1995), thus restoring *C. incertus*. Though Walter's diagnosis contains elements poorly compatible with *C. incertus* (Wilbur 1991), that common species would surely have been present in the fields of his Santee River plantation.

WALTER'S NAME: *Chrysocoma gigantea* Walter (p. 196)

MODERN NAME: **Vernonia gigantea** (Walt.) Trel. ex Branner & Coville

If this species, rare in SC (two counties). No specimen. Walter's plant is more likely to have been *Vernonia glauca* (L.) Willd. or *V. noveboracensis* (L.) Michx. But *Vernonia gigantea* is often quite tall, and corresponds to one feature of Walter's plant: "*caule 8 ad 10-pedali*." Urbatsch (1972: 236), lacking any Walter type, preserved conventional usage by selecting a collection (cited below) of *V. gigantea* (as customarily defined) as the neotype of that name. He, however, did not select a specimen (required by Art. 9.6) of the 7 cited duplicates; that omission is remedied by selection here of *Bozeman & Radford 11593*, 3 Nov 1967 (FLAS), from Jasper County, South Carolina, as NEOTYPE for *Chrysocoma gigantea* Walt., basionym of *Vernonia gigantea* (Walt.) Trel. & Branner. The duplicates (COLO, IND, NY, OKLA, TENN, WVA) become ISONEOTYPES.

WALTER'S NAME: *Collinsonia praecox* Walter (p. 65)

MODERN NAME: **Collinsonia canadensis** L.

Unknown on SC coastal plain, frequent westward; likely a Fraser discovery. No specimen has been identified. Spm. 96-H is this genus, but lacks flowers, and Peirson et al. (2006: 403, 406) stated it "cannot be determined with certainty." They then selected *Newberry 1912*, 6 Sept 1982 (NCU), from Chester County, South Carolina, as NEOTYPE for *Collinsonia praecox* Walt.

WALTER'S NAME: *Commelina caroliniana* Walter (p. 68)

MODERN NAME: **Commelina caroliniana** Walt. [= *Commelina hasskarlii* C.B. Clarke]

This name has generally been disregarded or has been thought unassignable. Faden (1989) has observed that collections from the southeastern coastal plain assumed to be of *Commelina diffusa* Burm. are actually of two entities: that species; and a second one Faden equated with *C. hasskarlii* C. B. Clarke, an Asiatic species previously unrecognized in the United States. Faden then identified (by photo) a specimen in the Fraser/Walter herbarium (35-C) as this second species and concluded its prior name was *C. caroliniana* Walt. He noted the label to read "*Commelina*," but did not recognize the hand to be that of John Fraser. Then, overlooking the tenuous connection of Walter to these specimens, Faden designated what is here termed *Fraser/Walter 35-C*, [1787] (BM) as the "lectotype" of *C. caroliniana*. Since there is no indication that Walter saw or used the specimen, it is here corrected to NEOTYPE for *Commelina caroliniana* Walt.

WALTER'S NAME: *Convallaria biflora* Walter (p. 122)

MODERN NAME: **Polygonatum biflorum** (Walt.) Ell.

Infrequent on the SC coastal plain (but incl. Berkeley Co.), common westward. Spm. 35-B was labeled "*Convallaria*" by Walter, and is of fair quality. It has been annotated as "TYPE," perhaps by J. E. Dandy at direction of Ownbey (1944: 394) who cited this specimen as "type." Since the plant may well have been known by Walter and there is no evidence the specimen was seen by him prior to preparing his diagnosis,



Fraser/Walter 35-B, [1787] (BM) is here corrected to NEOTYPE for *Convallaria biflora* Walt., basionym of *Polygonatum biflorum* (Walt.) Ell.

WALTER'S NAME: *Coreopsis gladiata* Walter (p. 215)

MODERN NAME: **Coreopsis gladiata** Walt.

Rare in SC, but known in Berkeley Co. No specimen has been identified. Smith (1976: 195–196) has selected Godfrey 8238, 15 Sept 1939 (F), from Georgetown County, South Carolina, as NEOTYPE for *Coreopsis gladiata* Walt., with duplicate (TENN) as ISONEOTYPE.

WALTER'S NAME: *Coreopsis major* Walter (p. 214)

MODERN NAME: **Coreopsis major** Walt.

Frequent in SC, though rare on the coastal plain. Spm. 37-B appears to be this; its label has no writing, which may explain why it was not noted by Smith (1976). There is no evidence Walter saw or used the specimen. Smith (1976: 170) has selected Tracy 4360, 10 June 1898 (NY), from Ocean Springs, Jackson County, Mississippi, as NEOTYPE for *Coreopsis major* Walt., with duplicate (F) as ISONEOTYPE.

WALTER'S NAME: *Corypha Palmetto* Walter (p. 119)

MODERN NAME: **Sabal palmetto** (Walt.) Lodd. ex Schult. & Schult.

Infrequent along SC coast. There is no specimen. Zona (1990: 646) selected (“designated”) Curtiss 2677, July [1894?] (NY), from Jacksonville, Duval County, Florida, as NEOTYPE for *Corypha palmetto* Walt., basionym of *Sabal palmetto* (Walt.) Lodd. ex Schult. & Schult., with duplicates (BH, F, GA, GH, MICH, MO, US) as ISONEOTYPES.

WALTER'S NAME: *Corypha pumila* Walter (p. 119)

MODERN NAME: **Sabal minor** (Jacq.) Pers.

Common in coastal SC. No specimen. Though a type is scarcely needed, Zona (1990: 643) selected Hexamer & Maier s.n., May 1855 (GH), from St. Andrews, Charleston County, South Carolina, as NEOTYPE for *Corypha pumila* Walt. (= *Sabal minor* (Jacq.) Pers.), with duplicate (CM) as ISONEOTYPE.

WALTER'S NAME: *Cucubalus polypetalus* Walter (p. 141)

MODERN NAME: **Silene polypetala** (Walt.) Fern. & Schub.

Walter's name was brought forward by Fernald and Schubert (1948: 198) as *Silene polypetala* (Walt.) Fern. & Schub., on the evidence of spm. 38-E (a single crumpled flower). The specimen was surely collected by Fraser along the Flint River, west-central Georgia, its closest location. It bears, in Walter's hand, the words “*Cucubalus polypetalus*,” and a 3-digit number assigned by Fraser. But Walter's description of *Cucubalus polypetalus* does not fit the plant. Walter's words, “*Cal. inflatus*” (“calyx inflated”), “*petala fauce nuda*” (“petals smooth at throat”), and “*floribus polypetalis*” (“flowers with many petals”), suggest one of the several *Silene* species with expanded (“inflated”) calyces and non-auricled (=crowned), deeply bi-lobed petals. Walter may have had an early contact with *Silene cucubalus* Wibel (1799), an introduced species now well established in the mountains of NC. *Lychnis alba* Mill., another introduced species with an inflated calyx, is less likely since its petals are auricled, unlike *Cucubalus*.

Fernald and Schubert noted the single flower (plate 1105) as “Walter's type” of *Cucubalus polypetalus*. That action, other than by conservation, is irrevocable; the error in understanding which of Walter's names applied to the fragmentary specimen does not invalidate their action. However, since Walter's description indicates he had access to more complete materials that were perhaps part of the same collection, Fraser/Walter 38-E, [1787] (BM) is here corrected to LECTOTYPE of *Cucubalus polypetalus* Walt., basionym of *Silene polypetala* (Walt.) Fern. & Schub.

WALTER'S NAME: *Echites difformis* Walter (p. 98)

MODERN NAME: **Trachelospermum difforme** (Walt.) Gray

Common throughout. Krings (2003) identified “Walter 215” (spm. 41-C) as this species, and cited it as “holotype” of *Echites difformis*. The label bears “*Echites*” by Walter and “*Difformis*” by Fraser. Since the plant

is common in his immediate area, Walter would have had no need for this specimen and there is no indication he used it in forming his diagnosis. Thus *Fraser/Walter 41-C*, [1787] (BM) is here corrected to NEOTYPE for *Echites difformis* Walt., basionym of *Trachelospermum difforme* (Walt.) Gray.

WALTER'S NAME: *Eupatorium pilosum* Walter (p. 199)

MODERN NAME: ***Eupatorium pilosum*** Walt.

Common in eastern SC. Spm. 45-A was labeled "*Eupatorium*" by Walter; the label also bears a 3-digit number assigned by Fraser. The specimen was identified as *Eupatorium pilosum* by Fernald and Schubert (1948: 225–226, plate 1114), then referred to as "Walter's TYPE." The probability is high that Walter had ready access to living materials growing near his home and did not see this specimen until shown it by Fraser. Fernald and Schubert's typification must be given recognition, but *Fraser/Walter 45-A*, [1787] (BM) is here corrected to NEOTYPE for *Eupatorium pilosum* Walt.

WALTER'S NAME: *Gentiana Catesbaei* Walter (p. 109)

MODERN NAME: ***Gentiana catesbaei*** Walt.

Infrequent in eastern SC. Spm. 50-A was labeled as "*Gentiana*" and spm. 50-B as "*Gentiana saponaria*," both in Walter's hand. Fernald (1939: 555–556) referred to 50-A in discussion of *G. catesbaei*, but his text left open the possibility he considered it *G. saponaria*. Later, Fernald (1947, plate 1078) identified spms. 50-A and 50-B as the "type" of *Gentiana catesbaei*. [He (1947: 176) erroneously identified the label of 50-A as having been written by "James Britten (apparently)."] Rembert (1980) again identified spm. 50-A as *G. catesbaei*, though he did not designate it as type. Of the two, spm. 50-A is of better quality; it is reasonably complete, with leaves and flowers. Though Fernald included both specimens within his "type" of *Gentiana catesbaei* Walt., his designation of *Fraser/Walter 50-A*, [1787] (BM) is here corrected to LECTOTYPE. *Fraser/Walter 50-B* (BM) then becomes an ISOLECTOTYPE.

WALTER'S NAME: *Gratiola acuminata* Walter (p. 61)

MODERN NAME: ***Mecardonia acuminata*** (Walt.) Small [= *Bacopa acuminata* (Walt.) Robinson]

Frequent throughout. "[Walter's] description [is] evidently of plant here considered" (Pennell 1920: 236). Spm. 53-B was numbered "668" by Fraser and labeled "*Gratiola*" by Walter. It was cited (as "Walter 668") by Pennell (1935: 66) as "Type." Since Walter would surely have been familiar with the plant near his home, *Fraser/Walter 53-B*, [1787] (BM) is here corrected to NEOTYPE for *Gratiola acuminata* Walt., basionym of *Mecardonia acuminata* (Walt.) Small.

WALTER'S NAME: *Gratiola ramosa* Walter (p. 61)

MODERN NAME: ***Gratiola ramosa*** Walt.

Common on SC coastal plain. "Descriptive of this plant" (Pennell 1920: 240). Pennell (1935: 79) cited an unspecified specimen as "Type," noting "it shows well the characters of the species now considered, the calyx lacking subtending bractlets." He does not mention an accompanying number. Since spm. 53-D is the only specimen on the page without such a number, and since 53-D well matches modern specimens, it is accepted as Pennell's type. It was labeled "*Gratiola*" by Fraser. Since Walter would not have had use for the specimen in forming his description, *Fraser/Walter 53-D*, [1787] (BM) is here corrected to NEOTYPE for *Gratiola ramosa* Walt.

WALTER'S NAME: *Hedysarum grandiflorum* Walter (p. 185)

MODERN NAME: ***Desmodium cuspidatum*** (Muhl. ex Willd.) Loud.

Infrequent throughout SC. Not *Hedysarum grandiflorum* Pallas (1773). Fernald and Schubert (1948: 203) identified spm. 55-C as *Hedysarum grandiflorum* and referred to it as "Walter's TYPE." The specimen was labeled "*Hedysarum Flore magnus*" by Walter, who seemed not to recall the name he had already given it. Walter's name is a later homonym and thus illegitimate. But, having been typified by Fernald and Schubert, their designation of *Fraser/Walter 55-C* [1787] (BM) is here corrected to NEOTYPE of *Hedysarum grandiflorum* Walt.



WALTER'S NAME: *Helenium aestivale* Walter (p. 210)

MODERN NAME: **Gaillardia aestivalis** (Walt.) H. Rock

Absent from SC coastal plain, frequent on piedmont; possibly a Fraser discovery. Rock (1956) has designated spm. 56-C as lectotype of *Helenium aestivale* (= *Gaillardia aestivalis*). The specimen is labeled “*Helenium*” in Walter’s hand. Rock’s designation of *Fraser/Walter 56-C, [1787]* (BM) as LECTOTYPE is appropriate. A second specimen (spm. 56-B), labeled “*Helenium*” by Fraser, was designated by Rock as “syntype.” With the tenuous assumption that it is part of the same collection, *Fraser/Walter 56-B [1787]* (BM) is here corrected to ISOLECTOTYPE of *Helenium aestivale* Walt.

WALTER'S NAME: *Helenium serotinum* Walter (p. 210)

MODERN NAME: **Gaillardia pulchella** Foug. [= *Gaillardia serotina* (Walt.) H. Rock]

Infrequent on SC coastal plain. Rock (1956) identified a specimen (spm. 56-D) as a *Gaillardia*, and designated it as the lectotype of *Helenium serotinum* (and made the combination *Gaillardia serotina*). The typification was not critical since Fougereux’ name (1787) is prior to Walter’s. But Walter’s hand on the label (“*Helenium*”) makes plausible Rock’s designation of *Fraser/Walter 56-D, [1787]* (BM) as LECTOTYPE of *Helenium serotinum* Walt.

WALTER'S NAME: *Helenium vernale* Walter (p. 210)

MODERN NAME: **Helenium vernale** Walt.

Infrequent in eastern SC (incl. Berkeley Co.). Rock (1956) has designated spm. 56-A as lectotype of *Helenium vernale*. The specimen bears the hand of Fraser, who identified it only as “*Helenium*.” Since the species is known from Berkeley County, it is likely that Walter prepared his description independently of this specimen. However, the specimen having been given type status, Rock’s designation is retained, but *Fraser/Walter 56-A, [1787]* (BM) is here corrected to NEOTYPE for *Helenium vernale* Walt.

WALTER'S NAME: *Hydrangea radiata* Walter (p. 251)

MODERN NAME: **Hydrangea arborescens** L. ssp. **radiata** (Walt.) McClintock

Not known on the SC coastal plain, but frequent inland, thus probably a Fraser discovery. The word “*Hydrangea*” in Walter’s hand on spm. 59-B indicates he saw the specimen. Fraser added the epithet “*Radiata*,” written after he had access to Walter’s manuscript or book. The specimen is of good quality. It was annotated as the “Type of *Hydrangea radiata*” by E. McClintock in 1954; the designation was published as “Type collection: *Walter s.n.* (BM)” for *H. arborescens* ssp. *radiata* (McClintock 1957: 172). McClintock’s designation is retained, but *Fraser/Walter 59-B [1787]* (BM) is here corrected to LECTOTYPE of *Hydrangea radiata* Walt.

WALTER'S NAME: *Kalmia hirsuta* Walter (p. 138)

MODERN NAME: **Kalmia hirsuta** Walt.

Rare in SC (5 counties, all just south of Walter’s Berkeley Co.). Probably a discovery of Fraser’s; a “new villose *Kalmia*” was noted among other Fraser plants (letter from Walter to Forsyth–Rembert 1980: 17). Spm. 62b-C, a nearly bare twig, was labeled “*Kalmia Hirsuta Nova*” by Fraser. Southall and Hardin (1974) referred to a specimen on page 62 as the “type.” Since this fragment may have been part of better materials brought by Fraser to Walter and used by him in preparation of his diagnosis, *Fraser/Walter 62b-C, [1787]* (BM) is here corrected to LECTOTYPE of *Kalmia hirsuta* Walt. The specimen, however, is unidentifiable without the label and serves no useful purpose as a type. An epitype would be welcome.

WALTER'S NAME: *Lobelia glandulosa* Walter (p. 218)

MODERN NAME: **Lobelia glandulosa** Walt.

Frequent on SC coastal plain. There can be no confidence that Walter had *Lobelia glandulosa*, rather than *L. elongata* Small which is perhaps more common. But McVaugh (1936: 288) considered a “few fragments” (GH), taken in 1839 from the Walter herbarium, to be the “type” of *L. glandulosa*. [These materials have now been returned to the Walter herbarium (correspondence attached to folio: C. A. Weatherby, 28 Jan 1936; M.L. Fernald, 20 Jan 1936) and public apology made (Fernald 1937).] Since the specimen (65-G) bears only the hand of Fraser, and there is no indication that Walter made use of the collection, *Fraser/Walter 65-G, [1787]* (BM) is here corrected to NEOTYPE for *Lobelia glandulosa* Walt.

WALTER'S NAME: *Ludwigia apetala* Walter (p. 89)

MODERN NAME: **Ludwigia palustris** (L.) Ell.

Common throughout. Spm. 66-A was labeled "*Ludwigia*?" by Walter. It was identified (from microfiche) by Peng et al. (2005: 336) as *Ludwigia palustris*, and was cited as the "holotype" of *L. apetala* Walt. Since the species would have been well-known to Walter and there is no indication that he made use of this specimen, Peng et al.'s citation of *Fraser/Walter 66-A, [1787]* (BM) is here corrected to NEOTYPE for *Ludwigia apetala* Walt. (= *Ludwigia palustris* (L.) Ell.).

WALTER'S NAME: *Ludwigia decurrens* Walter (p. 89)

MODERN NAME: **Ludwigia decurrens** Walt.

Common throughout. Spm. 66-C was labeled "*Ludwigia decurrens*" by Walter. An unspecified specimen ("Herb. Walter," identified from photo) was cited as "type" of *Ludwigia decurrens* Walt. by Ramamoorthy and Zardini (1987: 88). Since the species was available to Walter near his home and the specimen would not have been needed to form his description, *Fraser/Walter 66-C, [1787]* (BM) is here corrected to NEOTYPE for *Ludwigia decurrens* Walt.

WALTER'S NAME: *Ludwigia pilosa* Walter (p. 89)

MODERN NAME: **Ludwigia pilosa** Walt.

Common on SC coastal plain. Spm. 66-D was labeled "*Ludwigia pilosa*" by Walter, and appears to be that species; the specimen also bears "658" in Fraser's hand. A specimen bearing number 658 was cited by Peng (1989: 282) as "holotype" of *Ludwigia pilosa*. Since the species was available to Walter elsewhere and there is no evidence that spm. 66-D was used by him in preparation of his text, *Fraser/Walter 66-D, [1787]* (BM) is here corrected to NEOTYPE of *Ludwigia pilosa* Walt. Peng et al. (2005: 345) later cited the "lower left-hand specimen" on page 66 (again, 66-D) as the "holotype" of *Ludwigia arcuata* Walt., clearly in gross error!

WALTER'S NAME: *Ludwigia linearis* Walter (p. 89)

MODERN NAME: **Ludwigia linearis** Walt.

Common in eastern SC. Spm. 66-E is this; it was labeled "*Ludwigia*" by Walter. A specimen (not specifically designated; "Walter Herbarium, p. 66," identified from photo) was cited by Peng (1989: 244) as "holotype" of *L. linearis*. Since Walter would not have needed this specimen and there is no evidence he saw it prior to preparing his description, *Fraser/Walter 66-E, [1787]* (BM) is here corrected to NEOTYPE for *Ludwigia linearis* Walt.

WALTER'S NAME: *Nymphaea pentapetala* Walter (p. 155)

MODERN NAME: Perhaps **Nelumbo lutea** (Willd.) Pers.

If this species, rare in SC (4 counties). Spm. 75-F, a single petal, was labeled by Walter as "The Great Nymphaea." Ward (1977) noted that, though poorly described ("*corolla...pentapetala alba*"), Walter's plant was clearly a *Nelumbo*; he argued that it may have been either *Nelumbo lutea* or *N. nucifera* and must remain of uncertain application. Wiersema and Reveal (1991) "with great trepidation" interpreted *N. pentapetala* to be *Nelumbo lutea*, a later name (1788 vs. 1799); they then selected *Hunt & Martin 2056, 5 June 1943* (CLEM), from Charleston County, South Carolina, as Walter's NEOTYPE, and simultaneously proposed rejection of his name. With unanimous support from the Committee for Spermatophyta, *Nymphaea pentapetala* Walter was then nomenclaturally rejected (Brummitt 1995), preserving *Nelumbo lutea*.

WALTER'S NAME: *Nymphaea reniformis* Walter (p. 155)

MODERN NAME: Perhaps **Nymphaea odorata** Ait.

There is no specimen in the herbarium. Walter's name has been consistently disregarded. Ward (1977) believed Walter's description to have been based on mixed material with elements of both *Nymphaea* and *Nelumbo*. Wiersema and Reveal (1991) selected *Godfrey & Tryon 471, 12 Jul 1939* (DUKE), a specimen of *Nymphaea odorata* Ait. var. *gigantea* Tricker, from Berkeley County, South Carolina, as NEOTYPE, and simultaneously proposed rejection of Walter's name. Because of its unreconcilable ambiguity, *Nymphaea reniformis* Walter was then nomenclaturally rejected (Brummitt 1995). Familiar epithets of *Nymphaea* and *Nelumbo*



thus remain unchallenged. Being listed last in the genus suggests this to be a late addition from Fraser, a frequent practice of Walter's.

WALTER'S NAME: *Nymphaea sagittifolia* Walter (p. 155)

MODERN NAME: **Nuphar luteum** (L.) Sibth. & Sm. ssp. **sagittifolium** (Walt.) Beal

Occasional on the lower SC coastal plain. There is no specimen in the herbarium. Walter's description was identified by Ward (1977). Beal (1956: 335) selected *McCarthy s.n.*, July 1885 (NY), from eastern North Carolina, as NEOTYPE for *Nymphaea sagittifolia* Walt.

WALTER'S NAME: *Oenanthe filiformis* Walter (p. 113)

MODERN NAME: **Oxypolis filiformis** (Walt.) Britt.

Frequent on the SC coastal plain. No specimen has been identified. Tucker et al. (1983: 300) have selected *Porcher s.n.*, 17 Sept 1981 (BM), from Berkeley County, South Carolina, as NEOTYPE for *Oenanthe filiformis* Walt., basionym of *Oxypolis filiformis* (Walt.) Britt., with duplicates (CITA, DOV) as ISONEOTYPES.

WALTER'S NAME: *Ophrys barbata* Walter (p. 221)

MODERN NAME: Perhaps **Calopogon barbatus** (Walt.) Ames, more likely **Calopogon pulchellus** (Salisb.) R. Br.

*Calopogon pulchellus* is frequent in eastern SC. Walter—and Fraser—would surely have known it, also perhaps the much rarer *C. pallidus* Chapm. and *C. barbatus*. Walter's description does not permit judgment as to which of these species he meant by his *Ophrys barbata*—the lip is bearded in all. Spm. 77-E is clearly a *Calopogon*. Its original label bears only the single word “*Ophrys*” in Fraser's hand; it was later annotated as “*Ophrys barbata* / *Calopogon parviflorus*” by A. A. Eaton. Goldman (1998) stated the specimen to be “Walter's type” of *C. barbatus*, but he then identified it as *C. multiflorus* Lindl. [He was surely in error. *Calopogon multiflorus* is nearly absent from the Carolinas and Georgia (a single station in NC, with unverified reports from SC and GA), and morphology of the specimen is either of *C. barbatus* (viz. Eaton id.) or is inconclusive.] Goldman then selected *Orzell & Bridges 16163*, 21 Mar 1991 (TEX), from Baker County, Florida, as NEOTYPE for *Ophrys barbata* Walt. Goldman next proposed conservation of *Ophrys barbata* with this new type; his proposal was promptly accepted by the Committee for Spermatophyta.

Goldman may not have recognized the only writing on the original label was by Fraser, not Walter, nor that there is no indication the specimen was seen or used by Walter; these details were not brought before the Committee. Goldman's action, however, is of value in that by selecting a neotype that continues the historic interpretation, the name *Calopogon barbatus* retains its classic meaning.

WALTER'S NAME: *Origanum flexuosum* Walter (p. 165)

MODERN NAME: **Pycnanthemum flexuosum** (Walt.) BSP.

Common in eastern SC. Spm. 79-C was labeled “*Origanum*” by Walter. It was identified (from photo) by Fernald and Schubert (1948: 220–222, plate 1112) as *Pycnanthemum flexuosum* and designated as “Walter's TYPE.” Since the plant is common near his home it is unlikely that Walter used this specimen in preparing his description. Even so, having been cited as “type” by Fernald and Schubert, *Fraser/Walter 79-C*, [1787] (BM) has attained formal status. It is here corrected to NEOTYPE for *Origanum flexuosum* Walt., basionym of *Pycnanthemum flexuosum* (Walt.) BSP.

WALTER'S NAME: *Panicum hirtellum* Walter (p. 72)

MODERN NAME: **Echinochloa walteri** (Pursh) Heller

Not *Panicum hirtellum* L. [= *Oplismenus hirtellus* (L.) Beauv.], a tropical species. Hitchcock (1905: 35) found three specimens in the Walter herbarium that had been labeled “*Panicum hirtellum*.” The first of these (115-A) Hitchcock called “the long-awned form of *P. crus-galli* L.” [= *Echinochloa crusgalli* (L.) Beauv.], and the second (115-B) “a densely flowered long-awned form [that is the] *P. hispidulum* of Muhlenberg, who cites *P. hirtellum* Walt.” Spms. 115-A and 115-B are both labeled in Walter's hand. [The third, 115-C, is *Panicum virgatum* L.] Hitchcock favored placing Walter's name in synonymy under *P. crus-galli* (now *Echinochloa crusgalli*). Pursh (1814), however, had correctly interpreted Walter's plant as new, and named it *Panicum walteri* [= *Echinochloa walteri* (Pursh) Heller.] *Panicum hirtellum* Walter thus remains the basis for the modern *E. walteri*.

*Echinochloa crusgalli* is abundant throughout the Carolinas, but is “believed to be adventive from Europe or Asia” (Gould et al. 1972), while the similar *E. walteri* is common in coastal areas of the Carolinas where it is native. Hitchcock (1920: 138) referred to a specimen (115-B) as what “may be taken as the type.” Though Walter saw this specimen (as demonstrated by his hand on the label), there is no certain evidence he used it in preparation of his text. Hitchcock’s action must be acknowledged, but the status of *Fraser/Walter 115-B, [1787]* (BM) is here corrected to NEOTYPE for *Panicum hirtellum* Walt. (= *Panicum walteri* Pursh; *Echinochloa walteri* (Pursh) Heller).

WALTER’S NAME: *Phalaris caroliniana* Walter (p. 74)

MODERN NAME: **Phalaris caroliniana** Walt.

Frequent on SC coastal plain. No specimen was found in the herbarium by Hitchcock (1905: 40), nor Anderson (1961). Anderson found the description perplexing but concluded there was “no other species of the Carolina grass flora that would fit the description” better than *P. caroliniana*. He then selected *Duncan 9468, [4 May 1949]* (US), from McCormick County, South Carolina, as NEOTYPE for *Phalaris caroliniana* Walt., with duplicate (GA) as ISONEOTYPE.

WALTER’S NAME: *Phyllanthus caroliniensis* Walter (p. 228)

MODERN NAME: **Phyllanthus caroliniensis** Walt.

Frequent throughout. Spm. 83-E was labeled “*Phyllanthus affinis*” by Walter. Webster (1970: 60) cited a specimen on page “83” as “holotype” of *P. caroliniensis* ssp. *caroliniensis*. Since Walter neither recognized this specimen as his new species, nor would have been in need of it for his diagnosis, *Fraser/Walter 83-E, [1787]* (BM) is here corrected to NEOTYPE for *Phyllanthus caroliniensis* Walt.

WALTER’S NAME: *Pinguicula caerulea* Walter (p. 63)

MODERN NAME: **Pinguicula caerulea** Walt.

Frequent on SC coastal plain. Spm. 104-D was identified as *Pinguicula caerulea* by Fernald and Schubert (1948: 224), then referred to as its “TYPE.” The label is misplaced; it reads “*Utricularia gibba*” in Walter’s hand. [Fernald and Schubert erroneously described it (plate 1113) as “mis-labeled by Fraser.”] The label that should have been with spm. 104-D is to be found with spm. 83-F (a plant of *Oxalis violacea*). Since the label of “*Pinguicula caerulea*” that should have accompanied spm. 104-D truly was in Fraser’s hand, there is no indication that Walter saw or used the specimen. Thus *Fraser/Walter 104-D, [1787]* (BM) is here corrected to NEOTYPE for *Pinguicula caerulea* Walt.

WALTER’S NAME: *Pinguicula lutea* Walter (p. 63)

MODERN NAME: **Pinguicula lutea** Walt.

Infrequent on SC coastal plain, but known in Berkeley County. Spm. 83-G was identified as *Pinguicula lutea* by Fernald and Schubert (1948: 224), then referred to as its “TYPE” (plate 1113). Since the label (“*Pinguicula lutea*”) is in Fraser’s hand and there is no indication that Walter saw or used the material, *Fraser/Walter 83-G, [1787]* (BM) is here corrected to NEOTYPE for *Pinguicula lutea* Walt.

WALTER’S NAME: *Potamogeton pinnatum* Walter (p. 90)

MODERN NAME: **Myriophyllum pinnatum** (Walt.) BSP.

Infrequent on SC coastal plain. Aiken (1981) reported John Lewis “examined the Walter specimen [86-B] for me.” This specimen was labeled “*Potamogeton monoicum*” in Walter’s cramped hand. Aiken did not convey the specimen was already annotated “*Potamogeton pinnatum* Walt., Fl. Carol. p. 90, M.L. F[ernald].” Though Aiken called this specimen the “holotype,” it is much more likely that Walter prepared his description from fresh material found near his home. Appropriately, *Fraser/Walter 86-B, [1787]* (BM) is here corrected to NEOTYPE for *Potamogeton pinnatum* Walt., basionym of *Myriophyllum pinnatum* (Walt.) BSP.

WALTER’S NAME: *Prasium purpureum* Walter (p. 166)

MODERN NAME: **Physostegia purpurea** (Walt.) Blake

Common on SC coastal plain. Spm. 87-A was labeled “*Prasium*” by Fraser. It was identified as (a synonym of)



*Physostegia purpurea* by Blake (1915: 134), and designated as lectotype by Cantino (1981, 1982). In absence of evidence the specimen was seen or used by Walter, *Fraser/Walter 87-A, [1787]* (BM) is here corrected to NEOTYPE for *Prasium purpureum* Walt., basionym of *Physostegia purpurea* (Walt.) Blake.

WALTER'S NAME: *Quercus sinuata* Walter (p. 235)

MODERN NAME: **Quercus sinuata** Walt.

Rare, perhaps found only along the Santee River. Believed to be a hybrid of *Quercus falcata* and *Q. phellos*. There is no specimen in the herbarium. A NEOTYPE has been selected for *Quercus sinuata* Walt. (Ward, in press).

WALTER'S NAME: *Rhexia Alifanus* Walter (p. 130)

MODERN NAME: **Rhexia alifanus** Walt.

Common in eastern SC. No specimen. James (1956: 218) selected *James 675, 17 June 1955* (GH), from Pineville, Berkeley County, South Carolina, as NEOTYPE for *Rhexia alifanus* Walt. Noted by Kral and Bostick (1969).

WALTER'S NAME: *Rhexia lutea* Walter (p. 130)

MODERN NAME: **Rhexia lutea** Walt.

Frequent in eastern SC. No specimen. James (1956: 216) selected *James 678, 17 June 1955* (GH), from St. Stephen, Berkeley County, South Carolina, as NEOTYPE for *Rhexis lutea* Walt. Noted by Kral and Bostick (1969).

WALTER'S NAME: *Salix alpina* Walter (p. 243)

MODERN NAME: **Salix humilis** Marsh.

Nearly absent from SC, frequent in mountains and piedmont of NC. Spm. 93-C was labeled by Fraser as "*Salix Minor* of Fraser" and was identified by Blake (1915: 136) as *Salix alpina* Walter; Blake noted it "may be considered the type." *Salix alpina* is a later synonym (Marshall 1785 vs. Walter 1788), and designation of its type is not needed for stability of the current name. But Blake's reference to the specimen requires acknowledgment of his choice. Though the specimen bears only Fraser's hand, absence of the species from Walter's immediate area indicates it may have been part of materials brought to him by Fraser, which justifies correction of *Fraser/Walter 93-C, [1787]* (BM) to LECTOTYPE of *Salix alpina* Walt.

WALTER'S NAME: *Sarracenia rubra* Walter (p. 152)

MODERN NAME: **Sarracenia rubra** Walt.

Infrequent throughout SC. A photo of spm. 95-B is given by Rembert (1980: 24). The specimen was designated as "type" by McDaniel (1971). However, since it was collected and labeled (as "*Sarracenia Rubra*") by Fraser, and there is no evidence it was seen or used by Walter, *Fraser/Walter 95-B, [1787]* (BM) is here corrected to NEOTYPE for *Sarracenia rubra* Walt.

WALTER'S NAME: *Sarracenia minor* Walter (p. 153)

MODERN NAME: **Sarracenia minor** Walt.

Common in eastern SC. A photo of spm. 95-C is given by Rembert (1980: 24). The specimen was designated as "type" by McDaniel (1971). However Walter labeled the specimen "*Sarracenia lutea*," either a *lapsus calami* for *S. flava*, or he failed to recognize it as the plant he had described as *S. minor*. Thus *Fraser/Walter 95-C, [1787]* (BM) is here corrected to NEOTYPE for *Sarracenia minor* Walt.

WALTER'S NAME: *Silene Catesbaei* Walter (p. 141)

MODERN NAME: **Silene catesbaei** Walt. [= *Silene polypetala* (Walt.) Fern. & Schub.]

Very rare (2 counties in FL, 4 counties in GA, unknown in SC and NC). No specimen in the herbarium bears this name. Walter's description of *Silene catesbaei* is a near-exact match for the plant colloquially known as Fringed Catchfly. A NEOTYPE has been selected for *Silene catesbaei* Walt. (Ward, in press).

WALTER'S NAME: *Sophora villosa* Walter (p. 134)

MODERN NAME: **Baptisia cinerea** (Raf.) Fern. & Schub.

Infrequent in eastern SC. Spm. 100-E, labeled by Walter as "*Sophora*" and by Fraser as "*Villosa*" and bearing

Fraser's number "360", was identified by Fernald and Schubert (1948: 200–201) as "the Walter type" of *Sophora villosa* (= *Thermopsis villosa* (Walt.) Fern. & Schub.). They also depicted the specimen (plate 1106) with the label, "TYPE of *Sophora villosa* Walt." The specimen is indeed of a *Thermopsis*, but Walter's description is of a *Baptisia*, surely *B. cinerea*. *Thermopsis villosa* is known only in the Carolina mountains, where available only to Fraser (undoubtedly the source of spm. 100-E). Walter described five legumes as *Sophora*, believed by him to be congeneric. Four of his *Sophora* are clearly identifiable species of *Baptisia* that are frequent-to-common in eastern SC. "*Sophora villosa*", third in his tabulation, corresponds to *Baptisia cinerea* (Raf.) Fern & Schub. It is most unlikely that Walter would have inserted the morphologically different, unfamiliar *Thermopsis* between the four similar *Baptisia* species, and then omitted treatment of a fifth species also found in eastern SC.

But typification cannot be reversed (short of conservation), and the plant fragment, an inflorescence branch bearing two flowers, is by the action of Fernald and Schubert (1948) the type of *Sophora villosa* Walt., the basionym of *Thermopsis villosa* (Walt.) Fern. & Schub. Since there is little probability that Walter saw or used the specimen, Fernald and Schubert's unfortunate citation of *Fraser/Walter 100-E, [1787]* (BM) can only here be corrected to NEOTYPE for *Sophora villosa* Walt.

WALTER'S NAME: *Stellaria uniflora* Walter (p. 141)

MODERN NAME: ***Arenaria uniflora*** (Walt.) Muhl.

Rare, on granite outcrops of the lower piedmont. Surely a discovery of Fraser. Spm. 100-K was labeled "No Name" by Fraser. The specimen was identified (from photo) by Fernald and Schubert (1948: 195–197) as *Arenaria uniflora*, then equated with Walter's *Stellaria uniflora*, and designated its "TYPE" (plate 1103). Since it is most likely Walter based his description on materials brought to him by Fraser, *Fraser/Walter 100-K, [1787]* (BM) is here corrected to LECTOTYPE of *Stellaria uniflora* Walt., basionym of *Arenaria uniflora* (Walt.) Muhl.

WALTER'S NAME: *Utricularia inflata* Walter (p. 64)

MODERN NAME: ***Utricularia inflata*** Walt.

Frequent in eastern SC. Spm. 104-E was labeled "*Utricularia minor*" by Walter (but is not *U. minor* L., of Europe). Though (from photo) its identity is unclear, the specimen was designated by Taylor (1989: 662) as the "lectotype" of *Utricularia inflata* Walt. But since it would surely have been familiar to Walter and described by him from fresh material, *Fraser/Walter 104-E, [1787]* (BM) is here corrected to NEOTYPE for *Utricularia inflata* Walt.

WALTER'S NAME: *Viscum album* ? (p. 241)

MODERN NAME: ***Phoradendron serotinum*** (Raf.) M.C. Johnst. [= *Phoradendron "leucarpum"* (Raf.) Reveal & M.C. Johnst.]

Frequent throughout. Not *Viscum album* L., a European species. *Fraser/Walter 110-F, [1787]* (BM) is a scarcely identifiable scrap, labeled simply "Viscum" in Walter's hand. The specimen was designated ("selected") by Reveal and Johnston (1989) as LECTOTYPE for "V. ? *album*" of Walter. Then, having attached a specimen to Walter's description (and name?), they used the specimen as the basis for *Viscum leucarpum* Rafinesque (a misspelling of "*leucocarpum*"!), itself the basis for *Phoradendron leucarpum* (Raf.) Reveal & Johnston. Their lectotypification cannot be discarded. But since Walter had merely made a tentative error of identification and was not publishing a new name, a simpler action would have been to recognize the irrelevance of Walter's name, and select a better-quality neotype for *Viscum leu[co]carpum* Raf.

WALTER'S NAME: *Xyris caroliniana* Walter (p. 69)

MODERN NAME: ***Xyris caroliniana*** Walt. [= *Xyris flexuosa* Muhl. ex Ell.]

No specimen. In search for the type of Walter's *Xyris caroliniana*, Kral (1966: 236) located a John Fraser specimen (at P) that corresponded to *X. flexuosa*. That inconspicuous dry-soil species surely is not what Walter knew in the rice fields of his Santee River plantation, nor could it later (DBW obs., July 1990) be found anywhere in the vicinity of Walter's homesite. Its linear, twisted leaves conform poorly with Walter's "*fol. gladiatis*." But, however inappropriate, the Fraser specimen having been designated by Kral as the type of *X.*



*caroliniana*, Walter's name is best left assigned to the species otherwise known as *X. flexuosa*. Since Fraser's collections were made quite independently of Walter, *Fraser s.n.*, [1787] (P), from another location and by a different collector, is here appropriately corrected to NEOTYPE for *Xyris caroliniana* Walt.

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