

THOMAS WALTER TYPIFICATION PROJECT, III:  
LECTOTYPES AND NEOTYPES FOR 20 WALTER NAMES,  
AS RECOGNIZED IN THE FRASER/WALTER HERBARIUM

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ABSTRACT

Thomas Walter's *Flora Caroliniana* (1788) contained numerous species new to science and whose names are of modern use. Many of the species he described were independently collected by John Fraser, whose specimens were seen by Walter before being taken to England. To ensure that Walter's names shall be used in a consistent way, appropriate specimens from the Fraser collection are here chosen as types, to represent 20 of the names published by Walter.

RESUMEN

La *Flora Caroliniana* (1788), de Thomas Walter, contiene numerosas especies que son nuevas para la ciencia, con nombres de uso moderno. Muchas de las especies descritas por Walter fueron colectadas independientemente por John Fraser, cuyos especímenes fueron vistos por Walter antes de ser llevados a Inglaterra. Para asegurar que los nombres de Walter serán usados en una manera consistente, se escogen, como tipos, los especímenes apropiados de la colección de Fraser, para representar 20 de los nombres publicados por Walter.

The Thomas Walter Typification Project is intended to bring understanding and nomenclatural precision to the many plant names published by Thomas Walter in his *Flora Caroliniana* (1788). The present task is to choose from the Fraser/Walter herbarium those specimens that are believed to be part of the material used by Walter, or are of such quality and confident identification that though not likely used by Walter may be selected to represent his new species.

In the 1780s Thomas Walter, an English resident of South Carolina, operated a rice plantation on the cleared bottomlands of the Santee River, in what is now Berkeley County. A classical education and an inquisitive mind led Walter to observe the native plants around him, and then to attempt their identification through use of his few books by Carl Linnaeus. Though the descriptions were brief and in Latin, Walter was able to match many of the local plants with Linnaeus' names. Other plants, however, did not match, and Walter wrote his own descriptions, also in Latin, of the species he thought to be new. In 1786, John Fraser, a venturesome Scot in search of plants useful for English horticulture, met Walter and shared his interest in the native species. In 1788 Fraser returned to England, taking with him his numerous collections and the manuscript of Walter's new flora.

Once in London, Fraser promptly published Walter's *Flora Caroliniana*. This small volume contained 1056 species, many identified by Walter with names from Linnaeus, the rest given names of his own (unimaginatively, perhaps, assigning 58 of them "*caroliniana*"). Of the species treated in his book, 414 (or 39%) were given new names.

The importance and number of the species now carrying names given them by Thomas Walter is seldom appreciated. In the decades before Walter, Linnaeus had seen collections made by his student Pehr Kalm, by John Clayton, the city official of Gloucester, Virginia, and by Patrick Browne and others in the West Indies. From these sources he had learned of many plants of eastern North America and had published their descriptions and names. But from the Carolinas to southern Florida, very little botanical information had reached Europe. Walter was thus in position to find and name numerous species not previously known to science.

Walter kept no herbarium. Though later writers have stated that he had done so, and that it has since been lost or was perhaps given to Fraser, in none of Walter's surviving correspondence, nor in his book, nor in the writings of Fraser, is there evidence that Walter prepared or used a herbarium (Ward 2007a).

But Fraser certainly did! Though he was in the Southeast for only 18 months, with collection possible during only a single growing season, he gathered specimens widely and with enthusiasm. His field practices were recorded with disdain by Michaux (Sargent 1889; Ward 1977, in transl.), and the often-fragmentary specimens now surviving in his herbarium well illustrate his haste and inexperience. Walter had opportunity to review much of Fraser's collection—over half (368, or 53.5%) of the specimens kept by Fraser bear labels with Walter's handwriting (Ward 2007a)—and to name many as best he could. A portion of these specimens, selected by Fraser after his return to England, were retained by him. Others were sold to Charles Louis L'Heritier (Fraser 1789; Stafleu 1963) and are now in the DeCandolle Herbarium, Geneva; still others are in the Herbarium Lamarck, Paris.

The subset of 690 specimens retained by Fraser were mounted by him and/or his sons in a folio volume now held by the Natural History Museum, London. They form what is often called the "Walter Herbarium," or more appropriately, the Fraser/Walter herbarium, and are frequently consulted for suggestion as to what Walter may have meant by certain of his new names. A previous number of this series (Ward 2006) has addressed the characteristics and contents of this folio herbarium. Many of the species described and given new names by Walter are not represented in the Fraser folio. And even for those that are, there is no assurance that Walter used them in preparation of his *Flora* (Ward 2007a).

A great majority of the species described by Walter occur on the Carolina coastal plain and would very possibly have been known to him during the years he was preparing his *Flora*. For such species there is no reason to believe he had need of or made use of dried specimens, either from a herbarium of his own or that of Fraser. Walter, in his Latin introduction, reported that "for a long time he [Walter] has cultivated in his own garden the very many plants which he describes" (Walter 1788; Rembert 1980, in transl.). Thus, even though there may also be a specimen in the Fraser collection, for coastal plain species it is best to accept that Walter's descriptions were prepared largely or wholly from fresh materials. Such species, if not addressed previously by other authors, are now in need of a substitute type, a neotype.

The International Code of Botanical Nomenclature (McNeill et al. 2006) provides that when a name is unrepresented by a type specimen, or the original type specimen has been lost, a replacement specimen may be selected from another source. Such specimens are termed neotypes, and carry the same status as the missing type.

But it has long been recognized (Harper 1911; Ewan 1969) that a number of species treated by Walter do not grow within the limited area (perhaps 50 mile radius, centered on his Santee plantation) specified by Walter (1788). The means by which Walter encountered these plants is believed to have been Fraser, who is known to have traveled into the Appalachians of the western Carolinas and as far south as the Altamaha River, Georgia (Ward 2006). Fraser himself (1789) claimed to have provided Walter with some 200 new species, although survey of the *Flora* shows only 103 species (9.7%) known to grow only outside Walter's immediate area.

Though relatively few, these species now not known within Walter's area yet included within his *Flora* pose a special problem. Often Walter's description contains observations well beyond what is shown by the specimens alone—color and other details of the flowers (when the specimen itself is fruiting or sterile), height of the plant, etc. It is thus possible Walter based his descriptions on more generous materials—perhaps also provided by Fraser, perhaps from another source. Yet, with the generous assumption that the extra-territorial specimens in the Fraser collection are related to Walter's basis, they may be treated as part of the original material, or lectotypes.

The present number of this series includes only those lectotypes and neotypes that can adequately be based on specimens of the Fraser/Walter herbarium. Another number of this series (Ward 2007b) lists all known lectotypes and neotypes chosen by previous authors. A future number (or series of numbers) will encompass the many neotypes that must be selected from new materials.

It is understood that a risk accompanies selection of neotypes, in that there can never be certainty what was intended by the original author and that distortion of the original meaning will result if the new type differs significantly from the one once in the author's hand. Yet absence of a type carries its own potential



for misrepresentation through the lack of a fixed basis against which new collections may be tested. Though previous authors have at times selected dubious or seriously defective specimens from the Fraser/Walter herbarium as neotypes, their actions cannot now be abrogated. But it is believed the neotypes selected here would not have been rejected by Thomas Walter as representative of his new species.

The 20 Walter types published here include 7 specimens that are designated as lectotypes and 13 specimens that are selected as neotypes. All are based upon specimens in the Fraser/Walter herbarium, London. (Specimens are designated as described in Ward 2006.) The lectotypes are obligatory choices, once the thesis is accepted that materials of extra-territorial species must have been seen by Walter. The neotypes are chosen of specimens that display adequate diagnostic characteristics and are believed to represent their species as currently understood. These typifications are here presented in the format used previously (Ward 2007b), in alphabetical sequence, using the names given them by Thomas Walter.

#### TYPIFICATIONS

WALTER'S NAME: *Actaea dioica* Walter (p. 152)

MODERN NAME: **Aruncus dioicus** (Walt.) Fern.

Nearly absent from SC, common in western NC; probably a Fraser discovery. Spm. 1-G is this, but bears only "Actea" in Fraser's hand. The specimen is of decent quality and may be part of the materials used by Walter in forming his description. Thus *Fraser/Walter 1-G [1787]* (BM) is here designated LECTOTYPE of *Actaea dioica* Walt., basionym of *Aruncus dioicus* (Walt.) Fern.

WALTER'S NAME: *Andromeda Catesbaei* Walter (p. 137)

MODERN NAME: **Leucothoe axillaris** (Lam.) D. Don

Common in eastern SC. Spm. 6-H was labeled "*Andromeda Catesbaei*" by Walter. It was annotated "Holotypus for the name *A. catesbaei* Walt." by N. C. Melvin in 1976, but the designation has not been published. Even though the name will remain in synonymy under *Leucothoe axillaris* (= *Andromeda axillaris* Lamarck, 1783), *Fraser/Walter 6-H [1787]* (BM) is of respectable quality and justifies selection here as NEOTYPE for *Andromeda catesbaei* Walt.

WALTER'S NAME: *Anonymos paniculat[a]* Walter (p. 198); nom. illegit.

MODERN NAME: **Carphephorus paniculatus** (Walt. ex Gmel.) Hebert [= *Trilisa paniculata* (Walt. ex Gmel.) Cass.]

Common in eastern SC. Although *Anonymos paniculata* is illegitimate, Gmelin (1792: 1204) based his name on Walter's description (Ward 1962). Spm. 32-D appears to be this. The handwriting is muddled, but includes "paniculata" in Walter's hand. Walter would not have needed this specimen. But its quality is fair (though its basal leaves are lacking), and *Fraser/Walter 32-D [1787]* (BM) is here selected as NEOTYPE for *Chrysocoma paniculata* Gmel., basionym for *Carphephorus paniculatus* (Walt. ex Gmel.) Hebert.

WALTER'S NAME: *Anonymos tinctori[a]* Walter (p. 68), nom. illegit.

MODERN NAME: **Lachnanthes caroliniana** (Lam.) Dandy [= *Lachnanthes tinctoria* (Walt. ex Gmel.) Ell.]

Common on the SC coastal plain. This plant was long known as *Lachnanthes tinctoria* (Walt.) Ell. After the decision by the 1950 International Botanical Congress that combinations made under "Anonymos" were illegitimate, Ward (1962) proposed Gmelin (1791: 113) as the first validating author. Wilbur (1962) found that Lamarck had done so five months earlier, but made the unneeded combination, *L. caroliniana* (Lam.) Wilbur. *Fraser/Walter 117-C [1787]* (BM), labeled "nova genera" in Fraser's hand and named to genus by A. Gray, is here selected as NEOTYPE for *Heritiera tinctorium* Gmel., basionym of *Lachnanthes tinctoria* (Walt. ex Gmel.) Ell.

WALTER'S NAME: *Arethusa racemosa* Walter (p. 222)

MODERN NAME: **Ponthieva racemosa** (Walt.) Mohr

Occasional in coastal SC. The label of spm. 8-D ("*Arethusa racemosa*") is in Walter's hand. But since the species would have been available to Walter near his home and the accompanying 3-digit number ("??9") indicates the specimen to be a Fraser collection, it may not have been seen by Walter until after completion of his manuscript. Blake (1915) correctly called it "an excellent specimen." *Fraser/Walter 8-D [1787]* (BM) is thus here selected as NEOTYPE for *Arethusa racemosa* Walt., basionym of *Ponthieva racemosa* (Walt.) Mohr.

WALTER'S NAME: *Asclepias polystachia* Walter (p. 107)

MODERN NAME: ***Asclepias exaltata*** L.

Westernmost NC and SC, unknown on the SC coastal plain. Spm. 10-H was labeled "*Asclepias Novum*" by Fraser. The specimen was identified (from photo) by Fernald & Schubert (1948: 218–220) as this species, but was not called its type. The specimen is mediocre, with three leaves and a largely destroyed inflorescence. But since Walter must have relied on Fraser for material of this common but exclusively montane species, *Fraser/Walter 10-H [1787]* (BM) is here designated LECTOTYPE of *Asclepias polystachia* Walt.

WALTER'S NAME: *Carpinus caroliniana* Walter (p. 236)

MODERN NAME: ***Carpinus caroliniana*** Walt.

Common throughout. Spm. 26-A bears "*Carpinus*" in Walter's hand. No type is known to have been designated elsewhere. Since this tree is found on what was Walter's Santee River property, there would have been no need for him to have relied on this specimen. Even so, the specimen is of adequate quality, and *Fraser/Walter 26-A [1787]* (BM) is here selected as NEOTYPE for *Carpinus caroliniana* Walt.

WALTER'S NAME: *Cinna glomerata* Walter (p. 59)

MODERN NAME: ***Andropogon glomeratus*** (Walt.) BSP.

Common throughout the SC coastal plain. Hitchcock (1905: 32) identified a specimen (spm. 113-E) as *Andropogon macrourus* Michx., presently treated as a synonym of *Andropogon glomeratus*. He associated the specimen with Walter's name on the basis of its label, "*Cinna glomerata*," but did not refer to it as a type. Though he did not comment on the handwriting, it is that of Walter. Since *Andropogon glomeratus* is common, this specimen may have been obtained by Fraser anywhere in his travels and need not have been used by Walter in preparing his description. It is however of reasonably good quality. Having been addressed by Hitchcock, *Fraser/Walter 113-E [1787]* (BM) is here selected as NEOTYPE for *Cinna glomerata* Walt., basionym of *Andropogon glomeratus* (Walt.) BSP.

WALTER'S NAME: *Cinna lateralis* Walter (p. 59)

MODERN NAME: ***Andropogon virginicus*** L.

Common throughout. Hitchcock (1905: 33) interpreted a specimen (spm. 113-C), bearing the label "*Cinna*" in Fraser's hand, as "probably the basis" of *Cinna lateralis* Walt., and identified it as "one of the forms of *Andropogon virginicus* L." Though the name will surely remain in synonymy, *Fraser/Walter 113-C [1787]* (BM) is here selected as NEOTYPE for *Cinna lateralis* Walt.

WALTER'S NAME: *Cypripedium reginae* Walter (p. 222)

MODERN NAME: ***Cypripedium reginae*** Walt.

Very rare: in the Carolinas, known only in NC (2 counties). Spm. 39-B is labeled "*Cypripedium Reginae*" in Fraser's hand. It has been marked as "type" (by O. Ames?), but the designation has not been published. Since Walter could have seen this species only through the agency of Fraser, this specimen (or another of the same gathering) was probably used by him. Thus *Fraser/Walter 39-B [1787]* (BM) is here designated LECTOTYPE of *Cypripedium reginae* Walt.

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

MODERN NAME: ***Eupatorium compositifolium*** Walt.

Common in eastern SC. Spm. 46-B, an excellent specimen, was identified (from photo) as *Eupatorium compositifolium* ["*compositum*," writ in haste] by Fernald & Schubert (1948: 227). Its label, "*Eupatorium*," is in Walter's hand, but there is no evidence it was used by him in preparation of his text. Its quality justifies selection here of *Fraser/Walter 46-B [1787]* (BM) as NEOTYPE for *Eupatorium compositifolium* Walt.

WALTER'S NAME: *Iva imbricata* Walter (p. 232)

MODERN NAME: ***Iva imbricata*** Walt.

Frequent along SC coast. Spm. 61b-B appears to be this. It was labeled "*Iva ? nova*" by Walter. It has been annotated as "Lectotype" (presumably of *Iva imbricata*) by Lillian T. Gillis (date unknown); this designation is believed not to have been published. The specimen is of good quality, and merits recognition as a type.



But, in light of Walter's failure to recognize his own species, it can scarcely be ranked as lectotype. Thus *Fraser/Walter 61b-B [1787]* (BM) is here selected as NEOTYPE for *Iva imbricata* Walt.

WALTER'S NAME: *Limodorum praecox* Walter (p. 221)

MODERN NAME: ***Spiranthes praecox*** (Walt.) Watson

Infrequent on SC coastal plain. Spm. 65-D appears to be this. It was labeled "*Limodorum*" by Fraser, and has been annotated as "*praecox*" (by O. Ames?). There is no indication it was seen or used by Walter. But *Fraser/Walter 65-D [1787]* (BM) is of good quality and is here selected as NEOTYPE for *Limodorum praecox* Walt., basionym of *Spiranthes praecox* (Walt.) Watson.

WALTER'S NAME: *Lysimachia lanceolata* Walter (p. 92)

MODERN NAME: ***Lysimachia lanceolata*** Walt. [= *Steironema lanceolatum* (Walt.) Raf.]

Not known in eastern SC, frequent westward, notably along Savannah River where Fraser traveled; surely his discovery. Spm. 68-E is this; it was labeled "*Lysimachia nov*" by Walter. It is a decent specimen of an entire plant. The probability is high that Walter relied on Fraser's material. Thus *Walter 68-E [1787]* (BM) is here designated LECTOTYPE of *Lysimachia lanceolata* Walt.

WALTER'S NAME: *Magnolia Fraseri* Walter (p. 159)

MODERN NAME: ***Magnolia fraseri*** Walt.

Found only in mountains of western NC and SC; a John Fraser discovery. Spm. 70-A was labeled by Fraser as "*Magnolia Fraseri*." The specimen has been annotated as "type specimen" (presumably by J.E. Dandy 1929), though this choice appears not to have been published. The fold-out plate in *Flora Caroliniana* cannot be the type, in that it was prepared in England and not seen by Walter until after publication. Since Walter only had access to material of this species through the efforts of Fraser, it is appropriate that *Fraser/Walter 70-A [1787]* (BM) is here designated LECTOTYPE of *Magnolia fraseri* Walt.

WALTER'S NAME: *Prenanthes autumnalis* Walter (p. 193)

MODERN NAME: ***Prenanthes autumnalis*** Walt.

Frequent in eastern SC. Spm. 87-C (no label) was annotated as *Prenanthes autumnalis* by S.F. Blake. The epithet when published in the *Flora* was not italicized, as is usual for Walter's names. Although there is no indication this specimen was seen or used by Walter, it is of good quality, and *Fraser/Walter 87-C [1787]* (BM) is here selected as NEOTYPE for *Prenanthes autumnalis* Walt.

WALTER'S NAME: *Rhamnus carolinianus* Walter (p. 101)

MODERN NAME: ***Rhamnus caroliniana*** Walt.

Absent from SC coastal plain, frequent inland; probably a Fraser discovery. Spm. 91-F was labeled "*Rhamnus novus*" by Walter, with "*Carolinianus*" added by Fraser. The specimen is of poor quality, but is readily identifiable. Since Walter could scarcely have seen this species without the agency of Fraser, *Fraser/Walter 91-F [1787]* (BM) is here designated LECTOTYPE of *Rhamnus caroliniana* Walt.

WALTER'S NAME: *Sium suave* Walter (p. 115)

MODERN NAME: ***Sium suave*** Walt.

Occasional along SC coast. Spm. 42-F has been identified as *Sium suave* by Blake (1915: 131) from direct exam, and by Fernald & Schubert (1948: 217) from photo. Neither, however, called it the type. The label ("*Eryngium*") is by Fraser and there is no evidence the specimen was seen or used by Walter. Still, it is of fair quality and, having been confirmed by the above authors, *Fraser/Walter 42-F [1787]* (BM) is here selected as NEOTYPE for *Sium suave* Walt.

WALTER'S NAME: *Statice caroliniana* Walter (p. 118)

MODERN NAME: ***Limonium carolinianum*** (Walt.) Britt.

Occasional along the SC coast. Spm. 101-D, a quite good specimen, is this species. Although the generic name ("*Statice*") is in Walter's hand, the specific name ("*Caroliniana*") was assigned by Fraser. It is unlikely that this specimen was used by Walter in writing his *Flora*. Even so, *Fraser/Walter 101-D [1787]* (BM) is

judged adequate to be selected here as NEOTYPE for *Statice caroliniana* Walt., basionym of *Limonium carolinianum* (Walt.) Britt.

WALTER'S NAME: *Vincetoxicum acanthocarpus* Walter (p. 104)

MODERN NAME: **Matelea carolinensis** (Jacq.) Woodson

Rare on SC coastal plain, common inland; perhaps a Fraser discovery. The epithet was not italicized in the *Flora*, though the name is by Walter. Walter noted two varieties: one, "*corollis purpureis*", is surely *M. carolinensis*; the other, "*corollis nigricantibus*" ("blackish"), is unassignable. Spm. 109-B was labeled "*Vincetoxicum*" by Walter, and has been annotated (by S.F. Blake?) as "*V. acanthocarpus* Walt." It was suggested by Drapalik (1970: 59) from photo, to be a "probable lectotype" of Walter's species. Jacquin's epithet is earlier (1787), and typification of Walter's name is not imperative. However, in support of Drapalik's tentative suggestion, *Fraser/Walter 109-B [1787]* (BM) is here designated LECTOTYPE of *Vincetoxicum acanthocarpus* Walt. (= *Matelea carolinensis* (Jacq.) Woodson).

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