

Per. *capsula* turbinata coronata calyce et stigmate, unilocularis, nervosa; receptaculo recto.

Sem. numerosissima, acerosa, dissepimento marcescente proximo vere evadunt.

*ficandens* 1. caule geniculato, altissime scandente, radicante; foliis simplicibus oppositis petiolatis acuminato-ovatis, apice dentatis supra laxeibus, pagina inferiori marginibus petiolisque subtomentosis. Floribus albis odoratis, bracteis subulatis, in corymbis trichotomis terminatis.


*lutea*? 1. foliis peltato-reniformibus integris, calyce triphylllo, corolla tripetala lutea;
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lutea; loculis pericarpii polyspermis.

sagittifolia foliis cordato-sagittatis undulatis, calyce triphyllum, corolla tripetala, loculis pericarpii polyspermis.

pentapetala foliis peltatis undique integris, calyce pentaphyllum, corolla magna pentapetala alba, loculis pericarpii monospermis.

Nelumbo foliis peltatis undique integris, calyce quadrifido, corolla multiplici alba, loculis monospermis.

alba 5. foliis cordatis integerrimis calyce quadrifido, corolla alba multiplici, loculis polyspermis.

reniformis foliis reniformibus, corollis polypeptalis, loculis monospermis.

TRIGYNIA.


Nectariunm 2-phyllum, cornutum.

Siliqua 3.

carolinianum 1. neectario diphylllo, quam flos longiori, labellis integris, floribus spicatis purpureis macula lutea, petalis duobus bifidis barbaris.
herbarium there (Reveal & al., 1987). No illustrations of the American lotus were cited by Linnaeus, yet he had an understanding of the taxon. We strongly suspect Linnaeus saw a Catesby specimen (Sherardian Herbarium No. 1090, OXF) of a single leaf collected in South Carolina in 1722 and annotated by William Sherard (1658-1728) with a Plukenet (1696) polynomial also appearing in Ray (1704). This annotation was amended by Jacob J. Dillenius (1684-1747) who hosted Linnaeus at Oxford. Sherard also annotated the sheet with Morison’s (1699) phrase name and Ray’s reference to it, Dillenius later noting that Bobart was the actual author of this description. As noted above, the citations appearing on Sherard’s label were the same ones provided by Linnaeus (1753).

Also of significance are two illustrations associated with the Mark Catesby specimen. One is a field sketch of a leaf with a note in Catesby’s hand: “This seems to be Clusius his Egyptian Bean[] The flower I could not preserve so have sent this sketch. The fruit here is call Water Chinkapin which I have not yet seen. It grows in water.” The second is an unpublished Catesby drawing of a leaf (obviously based on the field sketch), a flower bud, and an open flower; there is no indication when this drawing was made. Most assuredly Linnaeus could have examined the Catesby specimen and field sketch, but it is only conjecture that he saw the final inked drawing. In Species plantarum, Linnaeus (1753) remarked that except for the hard seeds of the American lotus there was scarcely any distinguishing character to differentiate it from its Old World counterpart. If Linnaeus saw the Catesby drawing, this is not a surprising conclusion. Had he proposed a name for the American plant, the Catesby material could be argued as being authentic.

However, since Willdenow had no authentic material at hand when he proposed Nelumbium luteum, a neotype is required. Accordingly, we propose the following, in view of Willdenow’s reference to Bartram:


(1003) Proposal to reject the name Nymphaea reniformis Walter (Nymphaeaceae)


Unlike Nymphaea pentapetala, Walter’s Nymphaea reniformis has not been accepted in recent times. Following publication by Walter (1788), it appeared in Gmelin (1791), Poiret (1798), was transferred to Nelumbo (as “Nelumbium”) by Willdenow (1799), and to Cyamus by Pursh (1814). Eaton (1817), under Nelumbium, and Elliott (1824), under Cyamus, also accepted this taxon “on the authority of Walter” although Eaton (1818) omitted it from later accounts. However, Candolle (1821) provided a rather lengthy description, citing a specimen gathered by John Fraser in the Carolinas. Indeed, a specimen in G-DC is labelled “Nymphaea reniformis? Walt. Carol. merid. Fraser” and seems to be the one described by Candolle (1821) and subsequently figured by Delessert (1824), for which Candolle provided the text. Both of these works were subsequently cited by Candolle (1824). It might be argued that Candolle executed an effective Art. 8.3 neotypification of Nymphaea reniformis, but as he only listed the Fraser specimen as an example and did not use the term “type” or an equivalent, this provision of the Code does not apply.
Later, Rafinesque (1830) questionably listed *Nelumbium reniforme*, stating that it was "probably a *Nuphar". Torrey & Gray (1838) cited *Nymphaea reniformis* under their var. *β* of *Nymphaea odorata*, for which Lehmann (1853) proposed the name *Nymphaea odorata var. reniformis* (Walter) Lehm., a treatment accepted by Watson (1878). Walter's name was not mentioned by Gray (1856). Planchon (1853), citing Delessert's (1824) plate, and Chapman (1860) listed it in synonymy under *Nymphaea odorata*. Caspary (1867), perhaps the foremost waterlily taxonomist of all times, excluded *Nymphaea reniformis* from *Nymphaea*, stating emphatically that it was a *Nelumbium* because of Walter's inclusion of the phrase "loculis monospermis", despite its treatment by Candolle (1821, 1824). Lawson (1888), following Watson (1878), referred it, in the sense of Candolle's interpretation, to *Nymphaea tuberosa* Paine. Apart from Nash's (1895) transfer to the genus *Castalia* which was followed by Small (1903), subsequent workers accepted Caspary's conclusion. These included Conard (1905), Henkel & al. (1907), and even Nash (1907) and Small (1933), although Conard listed *Nymphaea reniformis* as a dubious synonym of *Nymphaea odorata var. gigantea* Tricker, a taxon Small (1933) treated as *Castalia lekophylla* Small citing *Nymphaea reniformis* of previous editions.

As Ward (1977) has noted, Walter's description is clearly based on mixed material, and without authentic material it is difficult to know exactly what elements Walter had before him when he composed the description. Walter's phrase name was "foliis reniformibus, corollis polypetalis, loculis monospermis". The leaf and corolla features could apply to a species of *Nymphaea*, while the corolla and locular characters could apply to a species of *Nelumbo*. As there is no original material, it is necessary to select a neotype. We accept the arguments of Ward that *Nymphaea mexicana* Zucc., rare in coastal South Carolina, was unknown to Walter. We reject *Nymphaea tuberosa* from consideration, as it does not grow in the region. We also reject *Nymphoides* Hill despite the similar leaves and habit because the five stamens and petals of *Nymphoides* are obviously anomalous. It was, in fact, appropriately treated elsewhere by Walter (1788: 108) as an unnamed genus under Pentandria Digynia. It seems reasonable to assume that Walter misapplied *Nymphaea alba* L. to the common waterlily of his region, i.e., *Nymphaea odorata*, a conclusion also reached by Ward (1977). Recognizing the obvious differences between the typical form of this waterlily and typical *Nymphaea odorata* var. *gigantea*, also occurring in his region, he distinguished the latter under the name *Nymphaea reniformis*. Clearly Walter erred in his interpretation of the locules as monospermous. It must be acknowledged that flowering and especially fruiting material of waterlilies is often quite difficult to collect, so one can not be certain that Walter had authentic material on which to base this interpretation.

Accordingly, we have designated the above neotype so that we might simultaneously propose rejection of *Nymphaea reniformis*. The neotype specimen was collected in Walter's home county, only a few miles from his home and doubtless within the region covered by his Flora (Rembert, 1980). It is identifiable with *Nymphaea odorata* var. *gigantea*. The Fraser collection in Candolle's herbarium (G-DC) appears to be this variety also. Since it is clear from Fraser's tentative identification that Walter did not view that specimen, since its exact locality is unknown, and since our inspection is limited to the microfiche and Delessert's plate, we preferred a modern specimen to it. Although the relationship of infraspecific entities within *N. odorata* remains to be clarified, this is the same variant with which Conard (1905) tentatively associated *N. reniformis*. 
Of two specimens currently labelled as “type specimen” of *Nymphaea odorata* Aiton at BM, the one lacking collection information seems to be that referred to, and chosen as lectotype (Art. 8.3), by Conard (1905), who writes: “original specimen in hb. British Museum, from Kew Garden”. The specimen may be traceable to the original 1786 introduction of the species to Kew Gardens by William Hamilton, mentioned by Aiton (1789), although this can no longer be determined with certainty. The other specimen is a John Clayton collection (949) from Virginia and is the basis of the phrase name of Gronovius (1739) cited by Aiton. As both specimens are of typical *Nymphaea odorata*, we accept Conard’s typification:

*Nymphaea odorata* Aiton, Hort. Kew. 2: 227. 1789. – LT. (selected by Conard, 1905):

Unattributed and undated garden specimen from the Royal Botanic Gardens, Kew (BM).

The nomenclatural standing of *Nymphaea reniformis* is in many ways similar to that of *N. pentapetala*. Prior to our act of typification, *Nymphaea reniformis* has been largely ignored in recent times. Thus, one may not be able to bring the name forward for rejection under Art. 69. Nonetheless, the name *N. odorata*, which *N. reniformis* would replace, has long been widely and persistently applied to this taxon, in all taxonomic and horticultural literature dealing with this species, since it was proposed by Aiton (1789), less than a year after Walter’s flora was published. If *N. reniformis* was not now typified, it would have remained essentially a rejected name allowing *N. odorata* to remain in use as a de facto conserved specific name, thanks to nomenclatural inaction.

Art. 14.3 of the *Code* states that the “application of both conserved and rejected names is determined by nomenclatural types”. How, then, can one bring forward an obscure name for conservation or rejection without typifying it? Such a name, unless typified, would fall into the category of “implicitly” rejected names as noted by McNeill (1986). It is with this in mind that we have typified both *Nymphaea reniformis* and *N. pentapetala* so that they may be considered for rejection under Art. 69.

Recently, Wilbur (1991) has criticized the approach taken by Reveal (1990) in neotypifying *Cenchrus carolinianus* Walter while simultaneously proposing it for rejection. Although both authors seek the same end, the burial of *C. carolinianus*, they differ regarding how that end should be attained. Wilbur prefers to continue to treat such names as *incertae sedis*, a status not directly addressed by the *Code*, and Reveal chooses to propose them for formal rejection under Art. 69. For Wilbur’s approach to be successful *Nymphaea pentapetala* and *N. reniformis* must continue to be untypified, because any selection of a type disturbs current usage, both names having priority over any possible competing name. We could have taken that approach, but it would not ensure that future botanists would follow the same course. The history of *N. pentapetala*, which has already been revived twice this century, would suggest otherwise. As a matter of fact, the problem was brought to our attention by someone contemplating yet another resurrection of this name.

Once a neotype is designated, Art. 8.1 dictates that this choice must be followed, but can be superseded if (a) any original material is rediscovered, or (b) it can be shown to be in serious conflict with the protologue and another element is available which is not in conflict, or (c) it was based on a largely mechanical method of selection, or (d) it is contrary to Art. 9.2. In the case of *Cenchrus carolinianus*, it would not seem possible to ignore Reveal’s neotypification, as advocated by Wilbur (1991), without designating