

Names of extant angiosperm species that are illegitimate homonyms of fossils

Ian M. Turner

Royal Botanic Gardens Kew, Richmond, Surrey TW9 3AB, UK (e-mail: turner187@btinternet.com)

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A search of various literature sources produced more than 100 newly recognised examples where the species name of a plant fossil-species was published earlier than the same name as applied to an extant angiosperm species. These later homonyms are listed and new names are proposed in 34 cases. Two examples will be the subject of conservation proposals. Changes in the accepted name or in full citation of the correct name are given in 14 cases. Two new combinations for infraspecific names are made. Some comments on avoiding making later homonyms when naming angiosperm species or making new combinations are made.

Introduction

One of the central tenets of plant nomenclature is that no two taxa of the same rank covered by the code should share the same name. The weeding out of homonyms at the rank of species has been greatly facilitated by various listings of published names. However an important omission is the names of plant fossil-species. Many fossil-species have been described in taxa also used for extant plants. There is, therefore, the possibility of the same name being applied to both a fossil and a non-fossil species. In cases where the fossil taxon was named first, the name of the non-fossil becomes an illegitimate later homonym.

I have searched various listings of fossil names for potential cases where a fossil-species was given a name before it was applied to a living angiosperm species. I cannot claim the search to be systematic or complete, but it did seem to

reach a point of a major diminution in returns (homonyms found) for time spent searching. I have seen all the original publications for the fossil names in order to confirm the validity of publication and accuracy of citation. Below I list the examples found. They are grouped in terms of the nomenclatural outcome of the investigation and, within groups, alphabetically by accepted name for the angiosperm taxon in question.

New names

First there are the species where the currently accepted name is found to be an illegitimate later homonym and there are no obvious synonyms. The immediate solution to this is to provide a new name (avowed substitute) for the species. In a couple of cases where the name is widely used, I do not provide a new name but will proceed with a proposal to conserve the affected name.

Acacia exigua I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Acacia exilis* Maslin, Nuytsia 4(1): 87–88, fig. 7. 1982, *nom. illeg.*, non *A. exilis* Saporta, Ann. Sci. Nat., Bot. sér. 7, 10: 125, t. 19 fig. 4. 1889.

NOTES: Maslin's name for an Australian species of *Acacia* is, like the next two examples, a later homonym of a fossil-species described by de Saporta from France.

Acacia minniritchi I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Acacia gracillima* Tindale, Telopea 1(1): 74–75. 1975, *nom. illeg.*, non *A. gracillima* Saporta, Ann. Sci. Nat., Bot. sér. 7, 10: 125–126, t. 18 figs. 28–29, t. 19 figs. 12–15. 1889.

NOTES: The new name for this Australian *Acacia* reflects the peculiar peeling bark of the species referred to by a term in one of Australia's indigenous languages.

Acacia neobrachycarpa I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Acacia brachycarpa* Pedley, Contrib. Queensl. Herb. 4: 5. 1969, *nom. illeg.*, non *A. brachycarpa* Saporta, Ann. Sci. Nat., Bot. sér. 7, 10: 124, t. 19 fig. 11. 1889.

NOTES: Another example of an Australian *Acacia* having the same name as a French fossil species.

Acacia neorigida I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Acacia rigida* Maslin, Nuytsia 12(3): 390–392. 1999, *nom. illeg.*, non *A. rigida* Heer, Fl. Tert. Helv. 3: 133. 1857 [t. 140 fig. 22. 1859].

NOTES: The name of this Australian *Acacia* was already used for a fossil-species from Switzerland. According to TL2 (Staffeu & Cowan 1979), Heer's description was published before the relevant plate.

Ampelopsis wangii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Ampelopsis acerifolia* W.T. Wang, Acta Phytotax. Sin. 17(3): 78. 1979, *nom. illeg.*, non *A. acerifolia* (Newb.) R.W. Br., Profess. Pap. U.S. Geol. Surv. 375: 78. 1962.

NOTES: This Vitaceae climber from Sichuan, China, was given a name already applied by Brown to a fossil-species from North America.

Aristolochia duchartrei I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Aristolochia pallida* Willd. var. *elongata* Duch. in A. DC., Prodr. 15(1): 487. 1864. — *Aristolochia elongata* (Duch.) E. Nardi, Webbia 38: 294. 1984, *nom. illeg.*, non *A. elongata* Knowlt., Profess. Pap. U.S. Geol.

Surv. 101: 307, t. 78 fig. 3. 1917.

NOTES: Nardi raised Duchartre's varietal name for this taxon from Greece to species rank, presumably unaware that the combination had already been applied by Knowlton to a fossil-species from North America.

Bromelia neotenuifolia I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Bromelia tenuifolia* Esteves et al., Bromeliel. 2013(3): 131. 2013, *nom. illeg.*, non *B. tenuifolia* Lesq., Fl. Dakota Gr. 41, t. 1 fig. 13. 1891, as '*Bromelia? tenuifolia*'.

NOTES: This recently described bromeliad from Brazil was given the same name as a fossil-species from North America described more than a century before.

Chrysobalanus prancei I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Chrysobalanus venezuelanus* Prance, Fl. Neotrop. Monogr. 9 (suppl.): 4–5, fig. 1. 1989, *nom. illeg.*, non *C. venezuelanus* E.W. Berry, Proc. U.S. Natl. Mus. 83: 347–348, fig. 28c. 1936.

NOTES: A case of lightning striking twice in Venezuela.

Diospyros kostermansii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Diospyros ebenoides* Kosterm., Ceylon J. Sci., Biol. Sci. 12(2): 93. 1977, *nom. illeg.*, non *D. ebenoides* Engelm., Abh. Geol. Landesanst. Darmstadt 7(4): 77, t. 24 fig. 1. 1922.

NOTES: Kostermans employed a name already used by Engelhardt for a German fossil when describing this species from Sri Lanka.

Diospyros ngii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Diospyros multinervis* Ng, Garden Bull. Singapore 53(1–2): 301, fig. 6. 2001, *nom. illeg.*, non *D. multinervis* Saporta, Ann. Sci. Nat., Bot. sér. 7, 10: 70–71, t. 10 figs. 4–5. 1889.

NOTES: This recently described ebony from Borneo shares a name with a fossil-species from France.

Diospyros srilankana I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Macreightia oblongifolia* Thwaites, Enum. Pl. Zeyl. 183. 1860. — *Diospyros oblongifolia* (Thwaites) Kosterm., Ceylon J. Sci., Biol. Sci. 12: 103. 1977, *nom. illeg.*, non *D. oblongifolia* Heer, Abh. Naturf. Ges. Halle 11: 17, t. 3 fig. 9. 1869.

NOTES: Another example of Kostermans creating the

later homonym of a fossil-species for a Sri Lankan ebony.

Grevillea mcgillivrayi* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Grevillea coriacea* McGill., *Telopea* 1(1): 19–20. 1975, *nom. illeg.*, *non G. coriacea* Saporta, *Ann. Sci. Nat., Bot. sér. 4*, 17: 251, t. 7 fig. 13. 1862.

NOTES: This Australian *Grevillea* species was given the same name as a French fossil published much earlier.

Grevillea neodissecta* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Grevillea pilosa* subsp. *dissecta* McGill., *New Names Grevillea* 12. 1986. — *Grevillea dissecta* (McGill.) Olde & Marriott, *Nuytsia* 9(2): 282. 1993, *nom. illeg.*, *non G. dissecta* L. Laurent, *Fl. Calc. Célas* 79, t. 4 fig. 18. 1899.

NOTES: Another example of an extant Australian species having the same name as a fossil-species from France.

Grevillea neorigida* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Grevillea rigida* Olde & Marriott, *Grevillea Book* 1: 186. 1995, *nom. illeg.*, *non G. rigida* Saporta, *Ann. Sci. Nat., Bot. sér. 5*, 3: 100, t. 5 fig. 2. 1862.

NOTES: A third example of France pre-empting Australia. As well as the new name, I provide a new combination for the heterotypic subspecies described by Olde and Marriott.

Grevillea neorigida* subsp. *distans* (Olde & Marriott) I.M. Turner, *comb. nova

BASIONYM: *Grevillea rigida* subsp. *distans* Olde & Marriott, *Grevillea Book* 1: 187. 1995.

Hakea benthamii* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Hakea plurinervia* F. Muell. *ex Benth.*, *Fl. Austral.* 5: 523. 1870, *nom. illeg.*, *non H. plurinervia* Ettingsh., *Sitzungsber. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Cl. 7*: 723, t. 31 figs. 2 and 17. 1851.

NOTES: Despite being described nearly 150 years ago there do not seem to be any heterotypic synonyms available for this Australian species to provide an alternative to the later homonym, so a new name commemorating George Bentham is put forward here.

Hakea neospathulata* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Hakea auriculata* var. *spathulata* Benth., *Fl. Austral.* 5: 510. 1870. — *Hakea spathulata* (Benth.) R.M. Barker, *J. Adelaide Bot. Garden* 13: 107. 1990, *nom. illeg.*, *non H. spathulata* Schmalh., *Palaeont. Abh.* 1(4): 306, t. 35

figs. 2–6, 10. 1883.

NOTES: Schmalhausen used this name for a fossil-species from Russia over a century before Barker proposed the combination for an extant species from Australia.

Ilex hicksii* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Ilex obovata* D.M. Hicks, *Kew Bull.* 61(4): 545, fig. 4. 2007, *nom. illeg.*, *non I. obovata* Tanai, *J. Fac. Sci. Hokkaido Univ. Ser. IV, Geol. Mineral.* 14(4): 488, t. 13 fig. 6. 1970.

NOTES: Hicks proposed a name for this species from New Guinea that had been used already for an Oligocene fossil from Hokkaido, Japan.

Ilex neomamillata* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Ilex mamillata* C.Y. Wu *ex C.J. Tseng*, *Acta Phytotax. Sin.* 22(5): 414–415. 1984, *nom. illeg.*, *non I. mamillata* W.A. Bell, *Bull. Geol. Surv. Canada* 94: 56, t. 35 figs. 2–3, t. 36 fig. 3, t. 39 fig. 2. 1963.

NOTES: Technically this is an example of a parahomonym, as the epithets used by Tseng (for a Chinese holly) and Bell (for a Canadian holly fossil) are not exactly the same, but they are orthographic variants of the same word with the same meaning.

Ilex neoreticulata* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Ilex reticulata* C.J. Tseng, *Acta Phytotax. Sin.* 22(5): 414. 1984, *nom. illeg.*, *non I. reticulata* Heer, *Fl. Foss. Arct.* 1: 124, t. 48 fig. 7. 1868, as '*Ilex (?) reticulata*'.

NOTES: This Chinese holly species shares a name with a fossil first described from Greenland.

Ilex neogracilis* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Ilex gracilis* C.J. Tseng, *Bull. Bot. Res., Harbin* 1(1–2): 28–29, photo 6. 1981, *nom. illeg.*, *non Ilex gracilis* Kolak., *Trudy Sukhumsk. Bot. Sada* 10: 246, t. 2 figs. 5–6. 1957.

NOTES: Kolakovsky named a Pliocene fossil-species from Georgia *Ilex gracilis* before Tseng used the name for an extant species from China.

Ilex nothophoeboides* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Ilex grandifolia* Merr., *Pap. Michigan Acad. Sci.* 19: 1934, *nom. illeg.*, *non I. grandifolia* Lesq., *Cretac. Tert. Fl.* 187, t. 38 fig. 1. 1883.

NOTES: Merrill described this holly species from Sumatra but used a name already applied by Lesquereux to a North American fossil-species. The replacement name provided here has an epithet reflecting the initial misidentification of the type specimen as a species of *Nothophoebe* (Lauraceae).

Litsea miquelii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Lepidadenia magnifica* Miq., Fl. Ned. Ind. 1(1): 936. 1858. — *Litsea magnifica* (Miq.) Fern.-Vill., Nov. App. 181. 1880, *nom. illeg.*, non *L. magnifica* Saporta, Ann. Sci. Nat., Bot. sér. 5, 4: 136, t. 7 fig. 6. 1866, as '*Litsaea*'.

NOTES: Fernández-Villar seems to have been the first to transfer Miquel's Sumatran Lauraceae species from *Lepidadenia* to *Litsea*, unfortunately creating a later homonym of a French fossil-species.

Litsea muellerorum I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Litsea muelleri* Rehder, J. Arnold Arbor. 16: 449. 1935, *nom. illeg.*, non *L. muelleri* P. Friedrich, Abh. Geol. Spezialkarte Preussen Thüring. Staaten 4(3): 115–116, t. 16 figs. 6–9, 1883, as '*Litsaea*'.

NOTES: When Rehder described this Lauraceae species from Mexico he presumably commemorated Cornelius Hermann Müller (Muller, post 1937), but also created a later homonym of a German fossil-species. In providing a new name here, I include Müller's first wife, and co-collector of Rehder's type specimen, Mary Taylor Müller, in the eponym reflecting Müllers plural.

Magnolia neomagnifolia I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Dugandiodendron magnifolium* Lozano, Fl. Colombia 1: 37–39, fig. 9. 1983. — *Magnolia magnifolia* (Lozano) Govaerts in Frodin & Govaerts, World Checkl. Bibliogr. Magnoliaceae 35. 1996, *nom. illeg.*, non *M. magnifolia* Knowlt., Profess. Pap. U.S. Geol. Surv. 101: 311, t. 84. 1918.

NOTES: There has been a major reduction in the number of genera recognised in the Magnoliaceae in recent years. In transferring this species of *Dugandiodendron* (from Colombia) to *Magnolia*, Govaerts proposed a new combination that was a later homonym of a fossil-species from North America described by Knowlton.

Nymphaea dimorpha I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Nymphaea minuta* K.C. Landon *et al.*, Sida 22(2): 887–893, figs. 1–4. 2006, *nom. illeg.*, non *N. minuta* Saporta, Mém. Soc. Géol. France 9: 13–14, t. 2 fig. 6. 1891.

NOTES: Landon and colleagues recently described a diminutive waterlily from Madagascar but unfortunately chose a name already used for a fossil-species from France. I provide a new name that reflects the two forms the plant seems to take when grown in cultivation.

Ostrya chinensis I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Ostrya multinervis* Rehder, J. Arnold Arbor. 19: 71, t. 217. 1938, *nom. illeg.*, non *O. multinervis*

Ettingsh., Sitzungsber. Kaiserl. Akad. Wiss., Wien, Math.-Naturwiss. Cl., Abt. 1 57: 833. 1868.

NOTES: The Chinese hop-hornbeam has a species name that was first used by Ettingshausen for a fossil.

Persea kostermansii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Persea coriacea* Kosterm., Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 25: 12. 1936, *nom. illeg.*, non *P. coriacea* Engelm., Abh. Senck. Naturf. Ges. 19: 26–27, t. 6 figs. 3–4. 1895.

NOTES: The species described by Kostermans from Surinam is poorly known (Kopp 1966), but is also a later homonym of a European fossil.

Pyrus neoserrulata I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Pyrus serrulata* Rehder, Proc. Amer. Acad. Arts 50: 234–235. 1915, *nom. illeg.*, non *P. serrulata* Göpp. *ex* R. Ludw., Palaeontographica 8: 180, t. 43 fig. 6. 1861.

NOTES: This species of pear from China was provided with the same name as that used for a European fossil by Göppert and validated by Ludwig.

Quercus* × *ewanii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Quercus grandidentata* Ewan, Bull. Torrey Bot. Club 64: 512. 1937, *nom. illeg.*, non *Q. grandidentata* Unger, Gen. Sp. Pl. Foss. 401. 1850.

NOTES: Ewan employed a name for a California oak hybrid already applied to a fossil oak.

Rhamnus grubovii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Rhamnus minuta* Grubov, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 12: 131. 1950, as '*minutus*', *nom. illeg.*, non *R. minuta* Knowlt., Profess. Pap. U.S. Geol. Surv. 130: 155, t. 17 fig. 2. 1922, as '*minutus*'.

NOTES: This Central Asian buckthorn species was given a name used previously for a North American fossil-species.

Sapindus lippoldii I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Sapindus grandifolius* Lippold, Feddes Repert. 85: 628, fig. 13. 1974, as '*grandifolia*', *nom. illeg.*, non *S. grandifolius* Engelm., Foss. Pfl. Grasset 310, t. 21 fig. 1. 1881.

NOTES: This obscure species from Cuba shares a name with a European fossil-species.

Smilax neocyclophylla I.M. Turner, *nom. nov.*

REPLACED SYNONYM: *Smilax cyclophylla* Warb., Bot. Jahrb.

Syst. 29(2): 257. 1900, *nom. illeg.*, *non S. cyclophylla* Newb., Boston J. Nat. Hist. 7: 520–521. 1863.

NOTES: Newberry had already used this name for a North American fossil-species before Warburg applied it to an extant species from China.

***Ulmus laciniata* (Trautv.) Mayr**

Fremdländ. Wald-Parkbäume: 523. 1906, *nom. illeg.*, *non U. laciniata* Göpp., Fl. Tert. Schosnitzt: 30, t. 13 fig. 13. 1855. — BASIONYM: *Ulmus montana* var. *laciniata* Trautv. in Maxim., Prim. Fl. Amur. 246–247. 1859. — *Ulmus scabra* var. *laciniata* (Trautv.) Sarg., Silva N. Am. 7: 40. 1895.

NOTES: The Manchurian elm is a well-known species from the far east of Asia (Russian Far East, Japan, Korea, China). Unfortunately the name the species has been known by (and apparently the only name available for it at species rank in *Ulmus*) is the later homonym of a fossil-species first described by Göppert from the Tertiary of Silesia in south-western Poland. I will submit a proposal to conserve this well-known name as it is in widespread use.

***Viburnum betulifolium* Batalin**

Trudy Imp. S.-Peterburgsk. Bot. Sada 13: 371. 1894, *nom. illeg.*, *non V. betulifolium* Ward, Types Laramie Fl. 114–115, t. 57 fig. 4. 1887, as ‘*betulaefolium*’.

Viburnum willeanum Graebn., Bot. Jahrb. Syst. 29(5): 589. 1901.

Viburnum lobophyllum Graebn., Bot. Jahrb. Syst. 29(5): 589–590. 1901.

Viburnum dasyanthum Rehder, Trees & Shrubs [Sargent] 2: 103. 1908.

Viburnum ovatifolium Rehder, Trees & Shrubs [Sargent] 2: 115. 1908.

Viburnum formosanum Hayata, Mat. Fl. Formosa 132. 1911.

Viburnum adenophorum W.W. Sm., Notes Roy. Bot. Garden Edinburgh 9: 136. 1916.

NOTES: This species of viburnum is native to China. It is widely used in ornamental horticulture in temperate regions. It would therefore be unsettling to change its name. I will submit a proposal to conserve *Viburnum betulifolium* Batalin against its earlier homonym used for a North American fossil-species.

Viburnum hayatae* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Viburnum integrifolium* Hayata, Mat. Fl. Formosa 132. 1911, *nom. illeg.*, *non V. integrifolium* Newb., Fl. Amboy Clays 125, t. 41 fig. 1. 1894.

NOTES: This species native to the mountains of Taiwan has a name first used for a fossil from the USA.

Weinmannia bradfordii* I.M. Turner, *nom. nov.

REPLACED SYNONYM: *Weinmannia integrifolia* J. Bradford,

Adansonia sér. 3, 23(2): 225, fig. 2. 2001, *nom. illeg.*, *non W. integrifolia* Lesq., Rep. U.S. Geol. Surv. 8: 178, t. 42 figs. 8–13. 1883.

NOTES: Bradford proposed a name for this species of Cunoniaceae from Madagascar that had been given to an American fossil-species by Lesquereux more than a century before.

Name or authority changes

In a number of cases, the presence of an earlier homonym from a fossil-species, means that an earlier synonym becomes the correct name for the extant taxon. Alternatively, the correct full citation of a name needs to change because what was thought of as a new combination must be treated as a replacement name and the ‘basionym’ author is dropped from the citation.

***Betula kwangsiensis* Metcalf**

Lingnan Sci. J. 20: 216. 1942.

Betula insignis Franch., J. Bot. (Morot) 13: 206. 1899, *nom. illeg.*, *non B. insignis* C.T. Gaudin in Gaudin & Strozzi, Neue Denkschr. Allg. Schweiz. Ges. Gesamnten Naturwiss. 17(4): 39, t. 10 figs. 1–2. 1860.

NOTES: The illegitimate name for this birch species from China and Vietnam is replaced as correct by *Betula kwangsiensis*. A new combination under this species is provided for the recently described subspecies.

Betula kwangsiensis* subsp. *fansipanensis* (Ashburner & McAll.) I.M. Turner, *comb. nova

BASIONYM: *Betula insignis* subsp. *fansipanensis* Ashburner & McAll., Gen. Betula 185, t. 11, figs. 110–116. 2013

***Chamaecrista concinna* Pedley**

Fl. Australia 12: 196. 1998.

REPLACED SYNONYM: *Cassia concinna* Benth., Fl. Austral. 2: 291. 1864, *nom. illeg.*, *non C. concinna* Heer, Fl. Tert. Helv. 3: 122. 1857 [t. 138 fig. 41. 1859].

NOTES: Pedley transferred the Australian *Cassia concinna* to *Chamaecrista*, but as the basionym was illegitimate it effectively represents a new name for the taxon.

***Chamaecrista polita* H.S. Irwin & Barneby**

Mem. New York Bot. Garden 35: 654. 1982.

REPLACED SYNONYM: *Cassia polita* H.S. Irwin & Barneby, Mem. New York Bot. Garden 30: 118–120. 1978, *nom. illeg.*, *non C. polita* Lesq., Fl. Dakota Gr. 146. 1891.

NOTES: Irwin and Barneby originally employed a later homonym for this species from Brazil. Their transfer of the name to *Chamaecrista* therefore effectively provided a replacement name.

***Cinnamomum cubense* (Nees) Kosterm.**

Reinwardtia 6: 21. 1961.

Cinnamomum elongatum (Nees) Kosterm., Reinwardtia 6: 21. 1961, *nom. illeg.*, *non C. elongatum* Saporta, Ann. Sci. Nat., Bot. sér. 7, 10: 32, t. 6 figs. 3–4. 1889.

NOTES: The name of the Caribbean Lauraceae species *Cinnamomum elongatum* is an illegitimate later homonym. Here I treat it as a synonym of the Cuban *C. cubense*, but it may require a new name if one or more elements prove distinct.

***Ficus geniculata* var. *insignis* C.C. Berg**

Thai Forest Bull., Bot. 35: 17. 2007.

REPLACED SYNONYM: *Ficus insignis* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 42(2): 105. 1873, *nom. illeg.*, *non F. insignis* Ettingsh., Tert. Fl. Häring 42, t. 10 fig. 7. 1853.

NOTES: Berg reduced the Asian *Ficus insignis* Kurz to a variety of *F. geniculata* Kurz, but, as the former was illegitimate, Berg's variety is effectively a new name at a new rank for Kurz's taxon.

***Ficus kisantuensis* Warb.**

Ann. Mus. Congo Belge, Bot. sér. 6, 1: 22. 1904.

Ficus artocarpoides Warb., Ann. Mus. Congo Belge, Bot. sér. 6, 1: 23. 1904, *nom. illeg.*, *non F. artocarpoides* Lesq., Cretac. Tert. Fl. 227–228, t. 47 figs. 1–5. 1883.

Ficus demeusei Warb., Ann. Mus. Congo Belge, Bot. sér. 6, 1: 20. 1904.

Ficus inkasuensis Warb., Ann. Mus. Congo Belge, Bot. sér. 6, 1: 22. 1904

NOTES: The Central African fig species is known by the illegitimate *Ficus artocarpoides* Warb. From a number of synonyms of apparently equal priority, I propose *F. kisantuensis* as the correct name. Someone may care to take up the case for conserving *F. artocarpoides* which is a name that appears quite often in the ecological literature.

***Frangula revoluta* Grubov**

Trudy Bot. Inst. Akad. Nauk S.S.S.R., ser. 1, Fl. Sist. Vyssh. Rast. 8: 268. 1949.

REPLACED SYNONYM: *Rhamnus revoluta* Rose, Contr. U.S. Natl. Herb. 8(1): 51. 1903, *nom. illeg.*, *non R. revoluta* Lesq., Fl. Dakota Gr. 171, t. 65 fig. 5. 1892.

NOTES: In transferring the Mexican *Rhamnus revoluta* to *Frangula*, Grubov effectively proposed a nomen novum for the illegitimate name. It seems that a new name is required if the species is recognised in a broadly conceived *Rhamnus*.

***Fraxinus petenensis* Lundell**

Wrightia 4(2): 95. 1968.

Fagara dubia Willd. *ex* Schult. & Schult.f., Mant. 3: 228. 1827. — *Fraxinus dubia* (Willd. *ex* Schult. & Schult.f.) P.S. Green & M. Nee in Green, Kew Bull. 46(2): 274. 1991, *nom. illeg.*, *non F. dubia* Budantzev, Probl. Bot. 4: 247–248, t. 19 figs. 3–5. 1959, as 'dubius'.

Fraxinus schiedeana Schtdl. & Cham., Linnaea 6(3): 391. 1831, *nom. illeg.*, *superfl.*

NOTES: This Central American ash species was first erroneously referred to the Rutaceae by Willdenow as *Fagara dubia*. Green and Nee transferred the epithet to *Fraxinus*, but this combination was pre-empted by the name of a fossil-species from Central Asia. The heterotypic synonym, *Fraxinus petenensis*, must therefore become the correct name for the species.

***Grewia persicifolia* A. Gray**

U.S. Expl. Exped., Phan. 15: 198. 1854, as 'persicaefolia'.

Mallocoeca crenata J.R. Forst. & G. Forst., Char. Gen. Pl., ed. 2. 78, t. 39. 1776. — *Grewia crenata* (J.R. Forst. & G. Forst.) Schinz & Guillaumin in Sarasin & Roux, Nova Caled. 1: 179. 1921, *nom. illeg.*, *non G. crenata* (Unger) Heer, Fl. Tert. Helv. 3: 42. 1857.

Grewia prunifolia A. Gray, U.S. Expl. Exped., Phan. 15: 199. 1854.

NOTES: This South Pacific species of Tiliaceae was first named *Mallocoeca crenata*. However this cannot provide the correct epithet in *Grewia* as it is pre-empted by the name of a fossil-species. Of the two synonyms of equal priority, I propose *G. persicifolia* as the correct name for the species.

***Ilex rugosa* var. *stenophylla* Sugim.**

Key Trees Shrubs Jap. 213. 1936.

REPLACED SYNONYM: *Ilex stenophylla* Koidz., Bot. Mag. (Tokyo) 37: 44. 1923, *nom. illeg.*, *non I. stenophylla* Unger, Chlor. Protogaea 149, t. 50 figs. 10–13. 1847.

NOTES: This Japanese holly was first known at species rank by a later homonym. A legitimate name was provided by Sugimoto at the rank of variety.

***Quercus hypargyrea* (Seemen *ex* Diels) C.C. Huang & Y.T. Chang**

Guihaia 12(4): 302. 1992. — BASIONYM: *Quercus glauca* Thunb. var. *hypargyrea* Seemen *ex* Diels, Bot. Jahrb. Syst. 29(2): 293. 1900.

Cyclobalanopsis multinervis W.C. Cheng & T. Hong, Sci. Silvae Sin. 8(1): 10. 1963. — *Quercus multinervis* (W.C. Cheng & T. Hong) Govaerts, Chekl. Fagales 276. 1998, *nom. illeg.*, *non Q. multinervis* Lesq., Amer. J. Sci. Arts 27: 360. 1859.

NOTES: While the earliest name at species rank for this taxon is *Cyclobalanopsis multinervis*, this cannot provide a

legitimate epithet in *Quercus*, being pre-empted by the name of a fossil-species. The correct name in *Quercus* is therefore *Q. hypargyrea*.

***Searsia engleri* Moffett**

Bothalia 37(2): 168. 2007.

REPLACED SYNONYM: *Rhus engleri* Britten, J. Bot. 38: 316. 1900, *nom. illeg.*, *non R. engleri* Nath., Contr. Fl. Foss. Japan 59, t. 10 fig. 1. 1883.

NOTES: In transferring a large number of Anacardiaceae species from *Rhus* to *Searsia*, Moffett effectively, but unwittingly, dealt with two cases of later homonyms in African *Rhus*, by providing nomina nova in *Searsia*.

***Searsia nitida* Moffett**

Bothalia 37(2): 171. 2007.

REPLACED SYNONYM: *Rhus nitida* Engl., Monogr. Phan. [A. DC. & C. DC.] 4: 434. 1883, *nom. illeg.*, *non R. nitida* Unger, Gen. Sp. Pl. Foss.: 474. 1850.

***Vaccinium puberulum* var. *spathulatum* Maguire et al.**

Mem. New York Bot. Garden 29: 192. 1978.

REPLACED SYNONYM: *Vaccinium spathulatum* Camp & A.C. Sm., Brittonia 3: 187. 1939, *nom. illeg.*, *non V. spatulatum* E.W. Berry, J. Geol. 15: 346. 1907, as '*spatulata*'.

NOTES: This South American bilberry has an illegitimate name at species rank, but is legitimate as a variety.

Synonyms

A number of names newly recognised as later homonyms because of prior occupation by fossil-taxa are regarded as synonyms and hence have no impact on the names currently considered correct. These are listed below with no further comment in most cases.

***Acacia merrallii* F. Muell.**

Proc. Linn. Soc. New South Wales, ser. 2, 5: 18. 1890.

Acacia dubia W. Fitzg., J. Western Australia Nat. Hist. Soc. 1: 9. 1904, *nom. illeg.*, *non A. dubia* Engelh., Abh. Deutsch. Naturwiss.-Med. Vereins Böhmen "Lotos" 1(3): 115, t. 11 fig. 24. 1898

***Acer campbellii* Hook. f. & Thomson subsp. *wilsonii* (Rehder) P.C. de Jong**

in van Gelderen et al., Maples World 129. 1994.

Acer angustilobum Hu, J. Arnold Arbor. 12: 154. 1932, *nom. illeg.*, *non A. angustilobum* Heer, Fl. Tert. Helv. 3: 57, t. 117 figs. 3–5. 1857.

***Alnus incana* subsp. *tenuifolia* (Nutt.) Breitung**

Amer. Midl. Naturalist 58: 25. 1957.

Alnus occidentalis Dippel, Handb. Laubholz. 2: 158–159, fig. 78. 1892, *nom. illeg.*, *non A. occidentalis* Rérolle, Rev. Sci. Nat. (Montpellier) sér. 3, 4: 252, t. 4 figs. 4–8. 1885.

***Annona cascarilloides* C. Wright ex Griseb.**

Cat. Pl. Cuba 2. 1866.

Annona elliptica R.E. Fr., Ark. Bot. 21A(9): 13. 1927, *nom. illeg.*, *non A. elliptica* Unger, Gen. Sp. Pl. Foss. 442. 1850, as '*Anona*'.

***Ardisia lurida* Blume**

Bijdr. 13: 687. 1826.

Ardisia crassifolia Mez, Pflanzenr. (Engler) Myrsin. 130. 1902, *nom. illeg.*, *non A. crassifolia* Engelh., Abh. Senckenberg. Naturf. Ges. 16(4): 660, t. 6 fig. 1. 1891.

***Aristolochia tagala* Cham.**

Linnaea 7: 207. 1832.

Aristolochia nervosa Duch. in A. DC., Prodr. 15(1): 480. 1864, *nom. illeg.*, *non A. nervosa* Heer, Fl. Tert. Helv. 3: 189–190. 1857 [t. 153 fig. 36. 1859].

***Berberis eurybracteata* (Fedde) Laferr.**

Bot. Zhurn. (Moscow & Leningrad) 82(9): 97. 1997.

Berberis berberidifolia (P.K. Hsiao & Y.S. Wang) Laferr., Bot. Zhurn. (Moscow & Leningrad) 82(9): 96. 1997, *nom. illeg.*, *non B. berberidifolia* (Heer) Palam. & Petkova in Tzankov, Fossiles Bulgarie 8(1): 47. 1987.

***Betula nana* L.**

Sp. Pl. 2: 983. 1753.

Betula crenata Rydb. ex E.J. Butler, Bull. Torrey Bot. Club 36: 429. 1909, *nom. illeg.*, *non B. crenata* Göpp., Fl. Schosnitz: 11, t. 3 figs. 7–8. 1852.

***Betula pendula* subsp. *mandshurica* (Regel) Ashburner & McAll.**

Gen. Betula 291. 2013.

Betula grandifolia Litv., Trav. Mus. Bot. Acad. Imp. Sci.

St. Pétersbourg 2: 98. 1905, *nom. illeg.*, non *B. grandifolia* Ettingsh., Denkschr. K. Akad. Wiss. Wien Math. Naturw. Cl. 26: 123, t. 14 figs. 23–24. 1866.

***Betula tianshanica* Rupr.**

Mém. Acad. Sci. St. Pétersbourg, sér. 7, 4: 72. 1867.

Betula stenolepis V.N. Vassil., Bot. Zhurn. (Moscow & Leningrad) 48(6): 903. 1963, *nom. illeg.*, non *B. stenolepis* Saporta, Ann. Sci. Nat., Bot. sér. 7, 10: 10, t. 2 figs. 6–8. 1889.

***Carex vesiculosa* Boott**

Ill. Carex 3: 107. 1862.

Carex diffusa Boott ex C.B. Clarke in Hooker, Fl. Brit. India 6: 717. 1894, *nom. illeg.*, non *C. diffusa* Saporta, Ann. Sci. Nat., Bot. sér. 7, 7: 77, t. 5 figs. 15–16, 21. 1888.

***Castanopsis eyrei* (Champ. ex Benth.) Tutcher**

J. Linn. Soc., Bot. 37: 68. 1905.

Quercus castanopsis H. Lév., Repert. Spec. Nov. Regni Veg. 12: 363. 1913, *nom. illeg.*, non *Q. castanopsis* Newb., Proc. U.S. Natl. Mus. 5: 505. 1882.

***Cola reticulata* A. Chev.**

Bull. Soc. Bot. France 61 Mém. 8e: 254. 1917.

Sterculia reticulata (A. Chev.) Roberty, Bull. Inst. Franc. Afr. Noire 15: 1402. 1953, *nom. illeg.*, non *S. reticulata* Lesq., Fl. Dakota Gr. 185, t. 34 fig. 10. 1891.

***Cotoneaster nummularius* Fisch. & C.A. Mey.**

Index Seminum [St. Petersburg (Petropolitanus)] 2: 34. 1835.

Cotoneaster minutus G. Klotz, Wiss. Z. Martin-Luther-Univ. Halle-Wittenberg, Math.-Naturwiss. Reihe 12(10): 763. 1963, *nom. illeg.*, non *C. minutus* Saporta, Ann. Sci. Nat., Bot. sér. 5, 18: 118, t. 16 fig. 36. 1873, as '*minuta*'.

***Crataegus dissona* Sarg.**

Rhodora 5: 60. 1903.

Crataegus incisa Sarg., Rhodora 7: 196. 1905, *nom. illeg.*, non *C. incisa* C.O. Weber, Palaeontographica 2: 217, t. 24 fig. 7. 1852.

***Crataegus macrosperma* Ashe**

J. Elisha Mitchell Sci. Soc. 16(2): 73–74. 1900.

Crataegus longipetiolata Sarg., Proc. Acad. Nat. Sci. Philadelphia 57: 621. 1905, *nom. illeg.*, non *C. longepeti-*

olata Heer, Fl. Tert. Helv. 3: 97. 1857 [t. 155 fig. 16. 1859], as '*longe-petiolata*'.

***Dalbergia microphylla* Chiov.**

Ann. Bot. (Rome) 13: 385. 1915.

Dalbergia microcarpa Taub. ex Baker f., Legum. Trop. Africa 2: 520. 1929, *nom. illeg.*, non *D. microcarpa* Saporta, Ann. Sci. Nat., Bot. sér. 7, 10: 117, t. 18 fig. 19. 1889.

***Diospyros kurzii* Hiern**

Trans. Cambridge Philos. Soc. 12: 162. 1873.

Diospyros nitida Merr., Publ. Bur. Sci. Gov. Lab. 35: 57. 1906, *nom. illeg.*, non *D. nitida* Dawson, Trans. Roy. Soc. Canada 1: 22, fig. 10. 1883.

***Erythroxylum macrophyllum* Cav.**

Diss.: 401, t. 227. 1789.

Erythroxylum laurinum Planch. & Triana, Ann. Sci. Nat., Bot. sér. 4, 18: 341. 1862, *nom. illeg.*, non *E. laurinum* A. Massal., Syn. Fl. Foss. Senogall. 101, t. 30 fig. 6, t. 44 fig. 9. 1858, as '*Erythroxylon*'.

***Eucalyptus coccifera* Hook. f.**

London J. Bot. 6: 477. 1847.

Eucalyptus daphnoides Miq., Ned. Kruidk. Arch. 4: 133. 1856, *nom. illeg.*, non *E. daphnoides* C.O. Weber in Wessel & Weber, Palaeontographica 4: 157, t. 28 fig. 8. 1855.

***Eugenia acapulcensis* Steud.**

Nomencl. Bot. (ed. 2): 1: 601. 1840.

Eugenia ovatifolia Lundell, Bull. Torrey Bot. Club 69: 396. 1942, *nom. illeg.*, non *E. ovatifolia* E.W. Berry, Johns Hopkins Univ. Stud. Geol. 13: 126, t. 17 figs. 7–8. 1939.

***Euonymus europaeus* L.**

Sp. Pl. 1: 197. 1753.

Euonymus europaeus var. *tenuifolius* L., Sp. Pl. 1: 197. 1753. — *Euonymus tenuifolius* (L.) Dalla Torre & Sarnth., Fl. Tirol 6(2): 788. 1909, *nom. illeg.*, non *E. tenuifolius* Engelm., Abh. Deutsch. Naturwiss.-Med. Vereins Böhmen "Lotos" 1(3): 107, t. 10 fig. 34. 1898, as '*Evonymus*'.

***Euonymus yunnanensis* Franch.**

Bull. Soc. Bot. France 33: 454. 1886.

Euonymus stenophyllus J.W. Ren, Acta Bot. Boreal.-Occid. Sin. 23(9): 1635. 2003, *nom. illeg.*, non *E. stenophyllus* (Ettingsh.) Pax in Pax & Lingelsheim, Bot. Jahrb. Syst. 40 Beihefte 93: 61. 1908, as '*Evonymus*'.

Fagus orientalis Lipsky

Trudy Imp. S.-Peterburgsk. Bot. Sada 14: 300. 1898.

Fagus macrophylla (Hohen. ex A. DC.) Koidz., Bot. Mag. (Tokyo) 30: 95. 1916, *nom. illeg.*, *non F. macrophylla* Unger, Denkschr. K. Akad. Wiss. Wien Math. Naturw. Cl. 7: 175, t. 2 fig. 10. 1854.

Ficus heteromorpha Hemsl.

Hooker's Icon. Pl. 26: t. 2533. 1897.

Ficus ovatifolia S.S. Chang, Acta Phytotax. Sin. 22(1): 68. 1984, *nom. illeg.*, *non F. ovatifolia* E.W. Berry, Bull. Torrey Bot. Club 36: 253. 1909.

Frangula crenata (Siebold & Zucc.) Miq.

Ann. Mus. Bot. Lugd.-Bat. 3: 32. 1867.

Rhamnus acuminatifolia Hayata, Icon. Pl. Formosan. 3: 62. 1913, *nom. illeg.*, *non R. acuminatifolia* C.O. Weber, Palaeontographica 2: 206. 1853, as '*acuminatifolius*'.

Fraxinus chinensis Roxb.

Fl. Ind. 1: 150. 1820.

Fraxinus chinensis var. *acuminata* Lingelsh., Pflanzenr. (Engler) Oleac.-Fraxin.-Syring. 70, fig. 8D. 1920, *non F. acuminata* Lam., Encycl. [J. Lamarck et al.] 2(2): 547. 1788.

Fraxinus caudata J.L. Wu, J. Wuhan Bot. Res. 5(4): 350. 1987, *nom. illeg.*, *non F. caudata* Dorf in Dorf & Webber, Publ. Carnegie Inst. Washington 412: 106, t. 13 figs. 6–8. 1933.

Grewia arborea (Forssk.) Lam.

Encycl. 3(1): 45. 1789.

Grewia dubia Defflers, Bull. Soc. Bot. France 42: 300. 1895, *nom. illeg.*, *non G. dubia* Watelet, Descr. Pl. Foss. Bass. Paris 222, t. 56 fig. 7. 1866.

Grewia biloba G. Don

Gen. Hist. 1: 549. 1831.

Grewia tenuifolia Kaneh. & Sasaki, Trans. Nat. Hist. Soc. Formosa 18: 337. 1928, *nom. illeg.*, *non G. tenuifolia* Engelm., Abh. Hess. Geol. Landesanst. Darmstadt 7(4): 89, t. 29 fig. 3, t. 30 fig. 5. 1922.

Grewia sulcata Mast.

Fl. Trop. Afr. 1: 252. 1868.

Grewia obovata K. Schum. ex Engl., Abh. Königl. Akad. Wiss. Berlin 1894: 18, *nom. illeg.*, *non G. obovata* Heer, Kongl. Svenska Vetensk. Acad. Handl. 14(5): 86, t. 19 fig. 15. 1876.

Hernandia cordigera Vieill.

Ann. Sci. Nat., Bot. sér. 4, 16: 62. 1862.

Aralia triloba W. Bull. ex W. Richards, Garden Chron. III, 20: 309. 1896, *nom. illeg.*, *non A. triloba* Newb., Ann. Lyceum Nat Hist. New York 9: 58. 1868.

Ilex decidua Walter

Fl. Carol. 241. 1788.

Ilex berberidifolia Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 4(8): 221. 1929, *nom. illeg.*, *non I. berberidifolia* Heer, Fl. Tert. Helv. 3: 72–73. 1857. [t. 122 figs. 12–18. 1859].

Ilex odorata Buch.-Ham. ex D. Don

Prodr. Fl. Nepal. 189. 1825.

Ilex theifolia Hook. f., Fl. Brit. India 1: 601. 1875, as '*theaeifolia*', *nom. illeg.*, *non I. theifolia* C.T. Gaudin in Gaudin & Strozzi, Neue Denkschr. Allg. Schweiz. Ges. Gesamten Naturwiss. 17(4): 53, t. 7 figs. 11 and 13. 1860.

Inga vera Willd.

Sp. Pl. 4: 1010. 1806.

Inga pseudospuria Britton & Killip, Ann. New York Acad. Sci. 35: 122. 1936, *nom. illeg.*, *non I. pseudospuria* Hollick, Sci. Surv. Porto Rico & Virgin Islands 7: 202, t. 69 fig. 3. 1928.

Kalopanax septemlobus (Thunb.) Koidz.

Bot. Mag. (Tokyo) 39: 306. 1925.

Acanthopanax acerifolius Schelle, Mitt. Deutsch. Dendrol. Ges. 1908: 217–218. 1908, *nom. illeg.*, *non A. acerifolius* Nath., Kongl. Svenska Vetensk. Acad. Handl. 20(2): 54, t. 8 fig. 5, t. 9 figs. 1–2. 1883, as '*acerifolium*'.

Laurus nobilis L.

Sp. Pl. 1: 369. 1753.

Laurus iteophylla Borzi, Boll. Ort. Bot. Palermo 1: 43. 1897, *nom. illeg.*, *non L. iteophylla* A. Massal., Syn. Fl. Foss. Senogall. 57, t. 45 fig. 18. 1858.

Lithocarpus naiadarum (Hance) Chun

J. Arnold Arbor. 9(4): 152. 1928.

Quercus neriifolium Seemen, Bot. Jahrb. Syst. 23 (Beibl. 57): 51. 1897, *nom. illeg.*, *non Q. neriifolia* A. Braun ex A.E. Bruckmann, Jahresh. Vereins Vaterl. Naturk. Württemberg 6: 229. 1850.

Machilus edulis King ex Hook. f.

Fl. Brit. India 5: 138. 1886.

Persea fructifera Kosterm., Reinwardtia 6: 192. 1962, *nom. illeg.*, non *P. fructifera* E.W. Berry, Profess. Pap. U.S. Geol. Surv. 156: 115, t. 33 fig. 17. 1930.

***Magnolia grandiflora* L.**

Syst. Nat., ed. 10. 2: 1082. 1759.

Magnolia angustifolia Millais, Magnolias 55, 83. 1927, *nom. illeg.*, non *M. angustifolia* Newb., Proc. U.S. Natl. Mus. 5: 513. 1883.

Magnolia rotundifolia Millais, Magnolias 70. 1927, *nom. illeg.*, non *M. rotundifolia* Newb., Proc. U.S. Natl. Mus. 5: 513. 1883.

***Meliosma dentata* (Liebm.) Urb.**

Ber. Deutsch. Bot. Ges. 13: 212. 1895.

Quercus dawsonii Trel. ex Yunck., Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 357. 1938, *nom. illeg.*, non *Q. dawsonii* Knowlt., Cat. Cret. Tert. Pl. N. Amer. 191. 1898, as '*dawsoni*'.

***Morella esculenta* (Buch.-Ham. ex D. Don)**

I.M. Turner

Garden Bull. Singapore 53(1–2): 324. 2001.

Myrica longifolia Teijsm. & Binn. ex Miq., Fl. Ned. Ind., Eerste Bijv. 1(1): 872. 1858, *nom. illeg.*, non *M. longifolia* Unger, Gen. Sp. Pl. Foss. 396. 1850.

***Nymphaea petersiana* Klotzsch in Peters**

Naturw. Reise Mossambique 6(Bot., 1): 152. 1861.

Nymphaea calophylla Gilg, Bot. Jahrb. Syst. 41(5): 365. 1908, *nom. illeg.*, non *N. calophylla* Saporta in Heer & Gaudin, Rech. Climat Vég. Tert. 162. 1861.

***Pseudopanax crassifolius* (Sol. ex A.**

Cunn.) K. Koch

Wochenschr. Gärtnerei Pflanzenk. 2: 366. 1859.

Panax longissimus Hook. f., Handb. N. Zeal. Fl. 102. 1864, *nom. illeg.*, non *P. longissimus* Unger, Denkschr. K. Akad. Wiss. Wien Math. Naturw. Cl. 2: 174, t. 45 figs. 21–23. 1850, as '*longissimum*'.

Populus deltoides* subsp. *monilifera

(Aiton) Eckenw.

J. Arnold Arbor. 58(3): 204. 1977.

Populus deltoides var. *occidentalis* Rydb., Mem. New York Bot. Garden 1: 115. 1900. — *Populus occidentalis* (Rydb.) Britton ex Rydb., Fl. Colorado 91. 1906, *nom. illeg.*, non *P. occidentalis* Knowlt., Rep. (Annual) U.S. Geol. Geogr. Surv. Territ. 18(3): 727, t. 99 fig. 14. 1898.

***Potamogeton pusillus* L.**

Sp. Pl. 127. 1753.

Potamogeton trinervius G. Fisch., Ber. Bayer. Bot. Ges. 11: 29. 1907, *nom. illeg.*, non *P. trinervius* Saporta, Ann. Sci. Nat., Bot. sér. 7, 7: 102, t. 9 fig. 4. 1888.

***Prunus clarofolia* C.K. Schneid.**

Repert. Spec. Nov. Regni Veg. 1: 67. 1905.

Prunus variabilis Koehne, Pl. Sargent 1(2): 201. 1912, *nom. illeg.*, non *P. variabilis* Newb., Proc. U.S. Natl. Mus. 5: 509. 1882.

***Quercus heterophylla* F. Michx.**

Hist. Arbr. Forest. 2: 87, t. 16. 1812.

Quercus hollickii C.K. Schneid., Ill. Handb. Laubholz. 1: 165. 1904, *nom. illeg.*, non *Q. hollickii* E.W. Berry, Bull. New York Bot. Garden 3: 71, t. 51 figs. 1–2. 1903.

***Quercus ilex* L.**

Sp. Pl. 2: 995. 1753.

Quercus cyclophylla Welw. ex Nyman, Consp. Fl. Eur. 662. 1881, *nom. illeg.*, non *Q. cyclophylla* Unger, Gen. Sp. Pl. Foss. 400. 1850.

***Quercus robur* L.**

Sp. Pl. 2: 996. 1753.

Quercus castanoides Vuk., Verh. Zool.-Bot. Ges. Wien 39: 198. 1889, *nom. illeg.*, non *Q. castanoides* Newb., Proc. U.S. Natl. Mus. 5: 506. 1883.

***Quercus sessilifolia* Blume**

Mus. Bot. 1(20): 305. 1851.

Quercus paucidentata Franch. ex Nakai, Bot. Mag. 40: 583. 1926, *nom. illeg.*, non *Q. paucidentata* Newb., Proc. U.S. Natl. Mus. 5: 505. 1883.

***Salix interior* Rowlee**

Bull. Torrey Bot. Club 27(5): 253. 1900.

Salix linearifolia Rydb. in Britton, Man. Fl. N. States: 316. 1901, *nom. illeg.*, non *S. linearifolia* Göpp., Fl. Tert. Schosnitz 27, t. 18 fig. 18. 1855.

***Salix myrsinifolia* Salisb.**

Prodr. Stirp. Chap. Allerton 394. 1796.

Salix varians Andersson, Kongl. Svenska Vetensk.-Akad. Handl. 6: 127. 1867, *nom. illeg.*, non *S. varians* Göpp., Tert. Fl. Schosnitz 26, t. 19 figs. 17–18, t. 20 figs. 1–2. 1855.

***Salix myrtilifolia* Andersson**

Öfvers. Kongl. Vetensk.-Akad. Förh. 15: 132. 1858.

Salix lingulata Andersson in A. DC., Prodr. 16(2.2): 281. 1868, *nom. illeg., non S. lingulata* Göpp, Fl. Tert. Schosnitz 27, t. 18 figs. 15–17. 1855.

***Searsia magalismontana* (Sond.) Moffett**

Bothalia 37(2): 170. 2007.

Rhus coriacea Engl., Monogr. Phan. [A. DC. & C. DC.] 4: 418. 1883, *nom. illeg., non R. coriacea* Engelm., Sitzungs-Ber. Naturwiss. Ges. Isis Dresden 3–4: 145, t. 8 fig. 18. 1880.

Rhus milleri R. Fern. & A. Fern., Bol. Soc. Brot. sér. 2, 38: 188. 1965, *nom. illeg., non R. milleri* Hollick, Miocene 485. 1904.

***Senna insularis* (Britton & Rose) H.S. Irwin & Barneby**

Mem. New York Bot. Garden 35: 162. 1982.

Cassia insularis (Britton & Rose) R.A. Howard, J. Arnold Arbor. 28: 126. 1947, *nom. illeg., non Cassia insularis* Hollick, Bull. New York Bot. Garden 8: 164, t. 167 fig. 3. 1912.

***Sideroxylon americanum* (Mill.) T.D. Penn.**

Fl. Neotrop. Monogr. 52: 118. 1990.

Bumelia americana (Mill.) Stearn, J. Arnold Arbor. 49: 282. 1968, *nom. illeg., non B. americana* (Lesq.) E.W. Berry, Profess. Pap. U.S. Geol. Surv. 91: 337. 1916.

***Toxicodendron radicans* subsp. *hispidum* (Engl.) Gillis**

Rhodora 73: 213. 1971.

Rhus intermedia Hayata, Fl. Mont. Formos. 73. 1908, *nom. illeg., non R. intermedia* Ettingsh., Denkschr. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 54: 355, t. 1 fig. 12, t. 9 figs. 12–13. 1888.

***Toxicodendron radicans* subsp. *orientale* (Greene) Gillis**

Rhodora 73: 206. 1971.

Rhus ambigua Lavallée ex Dippel, Handb. Laubholz. 2: 378. 1892, *nom. illeg., non R. ambigua* Unger, Bot. Zeitung (Berlin) 7: 352–353, t. 5 fig. 9. 1849.

***Viburnum blandum* C.V. Morton**

Contr. U.S. Natl. Herb. 26: 352. 1933.

Viburnum montanum Lundell, Lloydia 2: 106. 1939, *nom. illeg., non V. montanum* Knowlt., Bull. U.S. Geol. Surv.

163: 73, t. 19 figs. 1–2. 1900.

***Weinmannia boliviensis* R.E. Fr.**

Ark. Bot. 8(8): 16–17, t. 1 figs. 9–10. 1909.

Weinmannia obtusifolia Rusby, Bull. New York Bot. Garden 6: 508. 1910, *nom. illeg., non W. obtusifolia* Lesq., Cretac. Tert. Fl. 178, t. 41 figs. 4–10. 1883.

***Zanthoxylum avicennae* (Lam.) DC.**

Prodr. 1: 726. 1824.

Zanthoxylum diversifolium Warb., Bot. Jahrb. Syst. 13(3–4): 339–340. 1891, as ‘*Xanthoxylon*’, *nom. illeg., non Z. diversifolium* Lesq., Mem. Mus. Comp. Zool. 6: 33, t. 8 figs. 14–15. 1878.

***Zanthoxylum bungeanum* Maxim.**

Bull. Acad. Imp. Sci. St. Pétersbourg 16(3): 212–213. 1871.

Zanthoxylum fraxinoides Hemsl., Ann. Bot. (Oxford) 9: 148. 1895, *nom. illeg., non Z. fraxinoides* Unger, Gen. Sp. Pl. Foss. 476. 1850.

Incertae sedis

A few names that are found to be later homonyms are unplaced.

Alnus lobata Nyman, Consp. Fl. Eur. 3: 671. 1881, *nom. illeg., non A. lobata* (Unger) Unger ex W. Schimp., Traité Paléont. Vég. 2(2): 584. 1872.

Crataegus tenuifolia Britton, Bull. New York Bot. Garden 1: 448–449. 1900, *nom. illeg., non C. tenuifolia* Saporta in Heer & Gaudin, Rech. Climat Vég. Tert. 168. 1861.

Rhamnus alaternoides P. Candargy, Bull. Soc. Bot. France 44: 156. 1897, *nom. illeg., non R. alaternoides* Heer, Fl. Tert. Helv. 3: 78. 1857 [t. 123 figs. 21–23. 1859].

Pisonia acuminata Mart. ex J.A. Schmidt, Fl. Bras. (Martius) 14(2): 357. 1872, *nom. illeg., non P. acuminata* R. Ludw., Palaeontographica 8: 107, t. 40 figs. 4–5. 1860.

A final clarification

There is a case where there has been some confusion over whether homonymy occurs or not. It concerns a species of ebony from the Guianas and Brazil. It was first named *Diospyros longifolia* by Spruce (1860: 7), but he did not provide a description. The name was validated as *Heisteria longifolia* by Engler in the *Flora Brasiliensis*.

Sleumer (1984) transferred this name to *Diospyros*, noting that *D. longifolia* Spruce was invalid, as was the name of the fossil-species *D. longifolia*. Some later authors and databases appear to consider the fossil-species name as valid, making Sleumer and White's combination illegitimate, and *Diospyros tenuiflora* A.C. Sm. the correct name for the extant ebony. The history of the use of *D. longifolia* for fossil taxa is also complex. The name was possibly first used, though not published, by Alexander Braun, but may actually have been *D. lancifolia*, but neither Bruckmann (1850, as *D. lancifolia*) nor Stizenberger (1851, as *D. langifolia*) validated the name with a description. Von Heer (1857: 12) referred to *D. longifolia* but clearly in relation to a variety of *D. brachysepala*, not as a species that he accepted. I have not found any other publication that validated *D. longifolia* as a name for a fossil-species. Therefore Sleumer (1984) was correct and *D. longifolia* is the correct name for the South American ebony species.

***Diospyros longifolia* (Spruce ex Engl.)
Sleumer & F. White**

in Sleumer, Fl. Neotrop. Monogr. 38: 82. 1984. — BASIONYM: *Heisteria longifolia* Spruce ex Engl. in Martius, Fl. Bras. 12(2): 14–15. 1872.

Diospyros tenuiflora A.C. Sm., J. Arnold Arbor. 20: 301–302. 1939.

**Afterword — avoiding fossil
homonyms**

In the absence of a complete listing of the names of plant fossil-taxa, those naming plants or making new combinations run the risk of re-using names already given to fossils. Having conducted this exercise, I feel a few relevant points can be made. Firstly, the risk for angiosperms is relatively tiny. Secondly, it seems a

relatively greater threat for woody plants and very low probability for monocots. Large genera, particularly those which include temperate trees, are common examples. Specific epithets that relate to basic leaf size or shape seem prone to risk. To help reduce the likelihood of creating new homonyms, particularly when naming species in those susceptible groups, it may be worth checking for potential competing fossil names. The search function in Biodiversity Heritage Library is a useful tool as many old journals and other works that include palaeotaxa are included. Other internet tools that search published works, such as Google Books, Gallica, HathiTrust Digital Library, can also help.

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Appendix 1. Examples of later homonyms of fossil names that have been noted in the literature.

Acer craibianum Delendick

Brittonia 30: 474. 1978.

REPLACED SYNONYM: *Acer isolobum* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 41(4): 304. 1872, *nom. illeg.*, *non A. isolobum* A. Massal. in Massalongo & Scarabelli Gomme Flamini, Stud. Fl. Foss. Senigall. 330. 1859.

Acer mapienense W.P. Fang

Acta Phytotax. Sin. 17(1): 73. 1979.

Acer gracile W.P. Fang & M.Y. Fang, Acta Phytotax. Sin. 11: 155. 1966, *nom. illeg.*, *non A. gracile* Saporta, Ann. Sci. Nat., Bot. sér. 5, 8: 104–105, t. 13 fig. 5. 1867.

Acer nipponicum H. Hara

J. Jap. Bot. 14: 50. 1938.

Acer crassipes Pax, Pflanzenr. (Engler) 4, Fam. 163: 69. 1902, *nom. illeg.*, *non A. crassipes* Heer, Fl. Tert. Helv. 3: 55, t. 117 fig. 1–2. 1857.

Acer pictum f. *ambiguum* (Pax) H. Ohashi

J. Jap. Bot. 68(6): 319. 1993. — BASIONYM: *Acer pictum* var. *ambiguum* Pax, Bot. Jahrb. Syst. 16: 401. 1892.

REPLACED SYNONYM: *Acer ambiguum* Dippel, Handb. Laubholz. 2: 457–458, fig. 218. 1892, *nom. illeg.*, *non A. ambiguum* Heer, Fl. Foss. Arct. 5: 50, t. 13 fig. 5–7. 1878.

Betula neoalaskana Sarg.

J. Arnold Arbor. 3: 206. 1922.

REPLACED SYNONYM: *Betula alaskana* Sarg., Bot. Gaz. 31: 236. 1901, *nom. illeg.*, *non B. alaskana* Lesq., Proc. U.S. Natl. Mus. 5: 446, t. 6 fig. 14. 1882.

Cornus quinquenervis Franch.

J. Bot. (Morot) 10(18): 307–308. 1896.

Cornus paucinervis Hance, J. Bot. 19: 216. 1881, *nom. illeg.*, *non C. paucinervis* Heer, Fl. Tert. Helv. 3: 289. 1859.

Eucalyptus rigidula Cambage & Blakely

in Maiden, Crit. Rev. *Eucalyptus* 7: 403. 1928.

REPLACED SYNONYM: *Eucalyptus angusta* Maiden, Crit. Rev. *Eucalyptus* 6: 265. 1922, *nom. illeg.*, *non E. angusta* Velen., Fl. Böhm. Kreideform. 4: 3, t. 3 fig. 2–12. 1885.

Ilex kingiana Cockerell

Torreya 11: 264. 1911.

REPLACED SYNONYM: *Ilex insignis* Hook. f., Fl. Brit. India 1: 599. 1875, *nom. illeg.*, *non I. insignis* Heer, Kongl. Svenska Vetensk. Acad. Handl. 8(4): 37–38, t. 10 fig. 1. 1869.

Liquidambar formosana Hance

Ann. Sci. Nat., Bot. sér. 5, 5: 215–216. 1866.

Liquidambar acerifolia Maxim., Bull. Acad. Imp. Sci. Saint-Petersbourg 10: 486. 1866, *nom. illeg.*, *non L. acerifolia* Unger, Gen. Sp. Pl. Foss. 415. 1850, as ‘*acerifolium*’.

Liquidambar maximowiczii Miq., Ann. Mus. Bot. Lugduno-Batavi 3: 200. 1867.

Quercus × *burnetensis* Little

J. Wash. Acad. Sci. 33: 9. 1943.

REPLACED SYNONYM: *Quercus coloradensis* Ashe, Bull. Torrey Bot. Club 49: 268. 1922, *nom. illeg.*, *non Q. coloradensis* Lesq., Bull. Mus. Comp. Zool. 16: 46. 1888.

Salix arctophila Cockerell ex Heller

Cat. N. Amer. Pl. ed. 3: 89. 1910.

REPLACED SYNONYM: *Salix groenlandica* (Andersson) Lundstr., Nova Acta Regiae Soc. Sci. Upsal. 14: 36. 1877, *nom. illeg.*, *non S. groenlandica* Heer, Fl. Foss. Arct. 1: 101, t. 4 fig. 8–10. 1868.

Salix cascadenis Cockerell

Muhlenbergia 3: 9. 1907.

REPLACED SYNONYM: *Salix tenera* Andersson in de Candolle, Prodr. 16(2.2): 288. 1868, *nom. illeg.*, *non Salix tenera* A. Braun ex Unger, Gen. Sp. Pl. Foss. 418. 1850.

Sorbus scopulina Greene

Pittonia 4: 130. 1900.

Sorbus alaskana G.N. Jones, J. Arnold Arbor. 20: 24, t. 226. 1939, *nom. illeg.*, *non S. alaskana* Hollick, Profess. Paper U.S. Geol. Surv. 159: 97, t. 74 fig. 1. 1930.

Tilia × *cinerascens* (Rehder & E.H. Wilson) Pigott

Lime-trees Basswoods 226. 2012.

BASIONYM: *Tilia oliveri* var. *cinerascens* Rehder & E.H. Wilson, Pl. Wilson. 2(2): 367. 1916.

Tilia populifolia Hung T. Chang, Acta Phytotax. Sin. 20(2): 174. 1982, *nom. illeg.*, *non T. populifolia* Lesq., Cretac. Tert. Fl. 179, t. 34 fig. 8–9. 1883.