

# Potentilla and Fragaria (Rosaceae) reunited

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## Abstract

Mabberley, D.J. (*Nationaal Herbarium Nederland, University of Leiden, The Netherlands, and Royal Botanic Gardens Sydney, Mrs Macquaries Road, Sydney, NSW 2000, Australia*) 2002. *Potentilla and Fragaria (Rosaceae) reunited*. *Telopea* 9(4): 793–801. Because morphological, genetic and DNA evidence shows that *Fragaria* is nested in *Potentilla*, the former is referred (following Scopoli 1760) to the latter. Remarks on the value of broad generic concepts permitting infrageneric units to be recognized on non-morphological characters are presented. A formal description of the 'intergeneric' hybrid to which the cultivars 'Serenata' and 'Frel' are referred, *P. x rosea* Mabb., is provided. New combinations and a *nomen novum* in *Potentilla* (*P. x ananassa* (Rozier) Mabb. [the commercial strawberry], *P. chiloensis* (L.) Mabb. [one of its parents; **new lectotype**], *P. daltoniana* (J. Gay) Mabb., *P. iinumae* (Mak.) Mabb., *P. nilgerrensis* (J. Gay) Mabb. [**new lectotype**] *P. nubicola* (Hook.f.) Mabb. [**new lectotype**], *P. pentaphylla* (Losinsk.) Mabb., *P. silvanus* Mabb. [*Fragaria tibetica*] and *P. yakusimensis* (Masam.) Mabb. [*F. nipponica*]) are made in a list of species and commercially significant hybrid strawberries generally referred to *Fragaria*. Some authorities and places of publication of names in current use are also amended.

## Introduction

POTENTILLA ... the genus, already extended by the admission of *Tormentilla* and *Comarum*, would, perhaps, be still better defined if the *Strawberry* and *Sibbaldia* were likewise included. It would then comprise all *Rosaceae* with a double calyx, distinct 1-seeded carpels ... and the styles not transformed into long, feathery beaks or awns.

George Bentham, *Handbook of the British Flora*, p. 192 (1858).

In preparation for corrected reprints of *The Plant-book* (Mabberley 1997a), it has been necessary to examine the nomenclature of a number of commercially important fruits, notably *Citrus* (Mabberley 1997b, 1998), *Annona* spp. (Mabberley 1999a), hybrid grapes (Mabberley 1999c), and apples (Mabberley et al. 2001).

In the last paper, it was shown that, if the genus *Malus* Mill. (Rosaceae) is maintained, the correct name for orchard apples is *M. pumila* Mill.: it was pointed out that if a broad view of *Pyrus* L. is taken, as it was in the early part of the last century, then the name would revert to Linnaeus's, *Pyrus malus*. It was also pointed out, following Walters (1962), that *Fragaria* (strawberries, Rosaceae) should be included in *Potentilla*. Similarly, *Amygdalus* L., *Armeniaca* Scop., *Cerasus* Mill., *Laurocerasus* Duham., *Padus* Mill. and *Persica* Mill. are back in *Prunus* L. (Rosaceae; Bortiri et al. 2001); *Lycopersicon* Mill. and *Cyphomandra* Sendtner are now in *Solanum* (Solanaceae; Spooner et al. 1993, Bohs 1995); *Lychnis* L. falls into *Silene* L. s.l. (Caryophyllaceae; Mabberley 1999b; unless that be shattered and unfamiliar segregates be recognized [Lidén et al. 2000]); *Acidanthera* Hochst., *Anomalesia* N.E. Br. and *Homoglossum* Salisb. (*Petamenes* Salisb. ex J.W. Loudon) are in *Gladiolus* L. (Iridaceae; Goldblatt & Manning 2000: 125); *Cheiranthus* L. is in *Erysimum* L. (Cruciferae) while *Diplycosia* Bl., besides *Pernettya* Gaud., is in *Gaultheria* Kalm ex L. (Powell & Kron 2001), *Ledum* L. and probably other genera are in *Rhododendron* L., and *Philippia* Klotzsch and many other splits (Goldblatt

& Manning 2000: 423) are included in *Erica* L. (Ericaceae); *Heliocereus* (A. Berger) Britton and Rose and *Nopalxochia* Britton and Rose are in *Disocactus* Lindl., while *Lobivia* Britton and Rose is in *Echinopsis* Zucc. (Cactaceae); *Stephanotis* Thouars is in *Marsdenia* R. Br. (Apocynaceae s.l.) — see Mabberley (1997) for details; *Fortunella* Swingle and *Poncirus* Raf. are back in *Citrus* L. (Rutaceae; Mabberley 1998, Mabberley 2002); *Mahonia* Nutt. is back in *Berberis* L. (Berberidaceae; Whitemore 1997); *Sansevieria* Thunb. falls into *Dracaena* L. (Convallariaceae; Bos 1998), and *Chysalidocarpus* H. Wendl. into *Dypsis* Mart. (Palmae; Dransfield & Beentje 1995: 123). With such changes, it is now possible to recognize monophyletic rather than paraphyletic genera in all of these groups: such 'intergeneric' hybrids as  $\times$  *Citrofortunella* J. Ingram and H. Moore and  $\times$  *Citroncirus* J. Ingram and H. Moore (Rutaceae),  $\times$  *Gaulnettya* Marchant (Ericaceae),  $\times$  *Heliochia* G. Rowley (Cactaceae) and  $\times$  *Mahoberberis* C. Schneider (Berberidaceae) consequently disappear.

There can be no doubt that further molecular work in remodelling the relationships of plant taxa, will, in many cases, restore the broad view of genera: it may well be that horticulturists' reticence in retaining this broad view, in say, *Amaryllis* L. (including *Hippeastrum* Herb., Amaryllidaceae), *Hibiscus* L. (including *Abelmoschus* Medik., *Malvaosiscus* Fabr., Malvaceae) and *Veronica* L. (including *Hebe* Juss., Scrophulariaceae/Veronicaceae) will be vindicated.

### The *Fragaria* problem

For a historical account of the fate of genera ascribed to the *Potentilla* group, see Eriksson et al. (1998), who review the differing elaboration of the torus into a fleshy receptacle bearing achenes, typical of strawberries, but a condition probably arrived at more than once in the group. The important genera to be considered in this study include several that Linnaeus recognized as distinct, but are now generally incorporated in *Potentilla* L., a genus of some 500 species (Mabberley 1997a: 581). Within *Fragaria*, a genus of perhaps 12–15 species and the only one which is widely kept distinct now, Linnaeus described *F. sterilis* L., named for its not having a fleshy receptacle and thus being inedible. Even for him then, the fleshy nature of the 'strawberry fruit' was less important than other features. Smith (1800: 547) pointed out that *F. sterilis* is intermediate between the Linnaean genera *Fragaria* and *Comarum* and, shortly afterwards, Persoon (1806–7) transferred it to *Potentilla*, giving it the illegitimate name *P. fragariastrum* Ehrh. ex Pers., since corrected to *P. sterilis* (L.) Garcke<sup>1</sup>. It lacks the typical 'strawberry', although its overall facies is superficially very similar to *F. vesca* L., such that the 'generic' distinction has confused professional and amateur alike ever since.

Of the genera Linnaeus kept distinct from *Potentilla*, Scopoli (1760: 572) subsumed *Tormentilla* L., *Comarum* and *Fragaria* in *Potentilla*. The bulk of the remaining genus, *Sibbaldia* L., which is concentrated in the Himalaya, was later included in *Potentilla* by Joseph Hooker (thereby following Bentham's suggestion — see above) in his *Flora of British India* (2: 345, 1878). The collecting of certain wild plants believed to be hybrids between *Sibbaldia procumbens* L. (i.e. *P. sibbaldii* Hall.f.) and *Fragaria virginiana* Mill. (Staudt 1999: 100) supports the inclusion of *Sibbaldia* in *Potentilla*.

<sup>1</sup> These *Potentilla* names are incorrectly cited in *Index Kewensis*, IPNI etc. and were published as follows: ***Potentilla fragariastrum*** Ehrh. ex Pers., Syn. 2: 56 (1806), nom. illeg., nom. superfl. pro *F. sterilis* L., i.e. ***Potentilla sterilis*** (L.) Garcke, Fl. Halle 2: 200 (1856).

Most striking perhaps in the current context, though long since 'sunk', is *Comarum*, which has a somewhat swollen receptacle intermediate between that of a typical *Fragaria* and *Potentilla*: the type, now *P. palustris* (L.) Scop., is one of the parents of the recently selected cultivars 'Frel' (US Patent in 1989) and 'Serenata' (US Patent in 1991). Ellis (1962) was the first to report crosses made between the hexaploid *Potentilla palustris*, of Eurasia and North America, and the octoploid garden strawberry, *Fragaria* × *ananassa* Duch. ex Rozier (as *F. grandiflora*), a cross between two American species. He recorded that the hybrids were heptaploid and had pink petals intermediate between the purple ones of *P. palustris* and the white ones of the strawberry.

Since that time, back crosses with strawberries have been made and released into commerce under the names 'Frel' and 'Serenata' (which is a further back cross, between 'Frel' **Pink Panda**<sup>™</sup> and a strawberry). Because of the repeated backcrossing with strawberries in its ancestry, 'Frel' is regarded as a strawberry for patent purposes and is referred to as a *Fragaria* cultivar (Leslie 1995). From a botanical standpoint it is one of the *Potentilla-Fragaria* hybrid complex and it should be afforded an intergeneric name if the genera *Potentilla* and *Fragaria* are to be kept separate (Mabberley 1997: 287).

*Potentilla* has sometimes been shorn of some subgroupings, notably the shrubby *Dasiphora* Raf. ('*Pentaphylloides* Duham.', Duhamel's true *Pentaphylloides* being a synonym of *Potentilla* s.s. (Eriksson et al. 1998)), but molecular work has shown that *Potentilla* as presently understood is paraphyletic if *Dasiphora*, *Fragaria*, and those *Fragaria* species sometimes referred to *Duchesnea* Sm., are excluded from it. Now *Duchesnea*, species of which have a swollen torus but insipid 'fruits', has been formally moved to *Potentilla* (Kalkman 1968, following Wolf [1908]), and *Dasiphora* is almost never used. Hybrid seedlings have been raised between the type species of *Potentilla*, *P. reptans* L., and the commercial strawberry (Ellis 1962).

As conclusions based on morphological characters have been resoundingly confirmed by both molecular and breeding studies, either the rest of *Fragaria* is brought in or the genus *Potentilla* must be fragmented (Eriksson et al. 1998) into narrowly defined genera with unfamiliar names. At this stage monophyletic units in *Potentilla* s. l. are not clear and I therefore concur with Craven (2001), when dealing with large genera such as this. In discussing *Syzygium* L. (Myrtaceae), he writes, 'It is undesirable to optimistically propose new genera based on flimsy differences and hypocrisy to continue using definite invalid ones'.

Continuing to use *Potentilla* in the broad sense will provide continuity of names for almost all of the species so far described, though other genera may also be drawn in (Eriksson et al. 1998). Should infrageneric groupings be recognized later, they can be given infrageneric names (cf. Davis & Heywood 1963: 106, Mabberley 1997: xii). In so doing, such clades can, if necessary, be defined by molecular parameters, thereby obviating the need for botanists having to strive to find ever more obscure 'morphological features', which are ever more unusable for the layman trying to identify 'taxa' given names associated with ranks. There is, after all, no theoretical reason to suppose that all clades will be recognisable by eye, for evolution may act on chemical constitution, disease resistance etc., which can be more important as 'characters' to ecological forces or creatures such as fungi acting on plants.

## Nomenclature

Although the genera *Fragaria* and *Potentilla* have been combined since at least the time of Scopoli (1760), the fact that the receptacle of strawberries is edible, while that of *Potentilla* s.s. is not — a prime example of 'folk taxonomy' (Walters 1962), has encouraged their being kept separate right up until today. Despite the fact that,

following Bentham, both Ellis (1962) and Kalkman (1968) argued the case for amalgamation, they did not take the step they advocated (see also van der Meijden 1996: 235), the sole argument for not so doing being the nomenclatural one. However, long ago, Prantl (1884), and Krause (1904: 102) followed Scopoli (1771: 363, who was the first to make a new combination in *Potentilla* for a *Fragaria*), and transferred other *Fragaria* names to *Potentilla*, so that there are names in *Potentilla* available for use for some of the strawberries (see below), as well as most species of *Sibbaldia* and *Duchesnea*.

The reason for modern authors' reticence (see e.g. Eriksson et al. 1998) has in large part been because it was thought that *Potentilla* had been first included in *Fragaria* (Crantz 1763: 9; 1766: 176), so that it was believed necessary under the present Code to transfer several hundred other *Potentilla* names to *Fragaria*. This was clearly nonsensical and not in the interests of nomenclatural stability, but a successful proposal for the conservation of *Potentilla* over *Fragaria* would have removed this threat.

Fortunately, study of the work of Scopoli shows that it is unnecessary to do even that, because Scopoli (1760: 572) wrote under his entry for the genus *Potentilla*, 'Non opus est itaque ex *Potentilla*, *Tormentilla*, *Comaro* and *Fragaria*, totidem diversa genera constituere, contra Naturam'. Amongst his listing, which does not use Linnaeus's shorthand binomial system but quotes verbatim Linnaeus's phrase-names from *Species Plantarum*, he includes what is now called *Fragaria vesca* L., the type of *Fragaria*, and *Potentilla reptans* L., the type of *Potentilla*.

The consequence of this is that all that is now required is the transfer of the few remaining strawberry names, including the hybrid cultivars 'Frel' and 'Serenata', to *Potentilla*. Although the name-changes, like all name-changes, may be regretted, it is unlikely that the industry, which, unlike in its marketing of ornamentals, rarely uses the Latin names for strawberries in any case, will object strongly. Naturally those resisting the flow of rising scientific opinion (see Sanders & Judd 2000) by wishing to maintain *Fragaria* in its current circumscription as a separate genus, thereby recognising a paraphyletic *Potentilla*, can continue to use the names published in *Fragaria*. Even so, for them the names of the hybrids from which 'Frel' and 'Serenata' were bred are still a problem from a botanical standpoint without an 'intergeneric' name. Moreover, even if *Fragaria* is maintained, there are some clarifications of typifications needed.

The species and hybrid names needed for a new edition of *The Plant-book* (Mabberley 1997) and those other names widely used in modern Floras and the trade or plant-breeding (see Staudt 1962, 1989, 1999, Staudt & Dickoré 2001) for distribution etc. of species for which new names are not proposed here and/or are not grown in Australia) are therefore as follows (an asterisk indicates amendments or additions to *Index Kewensis*, IPNI etc.):

1. \**Fragaria* x *ananassa* [Duch. ex] Rozier, Cours Comp. Agric. 5: 52, t. 5, fig. 1 (1785), i.e. *P. virginiana* (Mill.) E.H.L. Krause x *P. chiloensis* (L.) Mabb., = ***Potentilla* x *ananassa* (Rozier) Mabb., comb. nov.**

Type: Cultivated in France, A.N. Duchesne '9' [Herb. Linn. 654.19], 'le fraisier-ananas. *Fragaria ananassa*' scrips. Duchesne (LINN, fiche), lecto selected by Staudt (1962: 884).

As pointed out by Navarro and Muñoz Garmendia (1998), Duchesne's binomial was first validated by Rozier. Rozier's herbarium was at the Lyon Palais des Arts, France, but, after investigation, Professor Ph. Morat (P) wrote (pers. comm.), 'Depuis [1900] les archives ont été distribuées en deux parties: l'une a été dirigée vers la Bibliothèque municipale, l'autre vers la Bibliothèque de l'Académie des Sciences, Belles Lettres et Arts de cette même ville. Dans les deux endroits les recherches ont été infructueuses.' Until the herbarium is found and examined, the published plate could perhaps serve

as lectotype, but, as Rozier (l.c.) wrote, 'Nous suivrons l'ordre qu'il [Duchesne] a établi', there is perhaps sufficient link to Duchesne's work and collection, thereby supporting Staudt's typification *pro tem*.

**Notes:** This is the octoploid garden strawberry (*P. chiloensis* x *P. virginiana*) as cultivated in Australia and all over the temperate world for the fruit trade. Some 2.5 million tonnes were traded in 1999 (Hancock 1999: 1). The most important cultivars grown in Australia are those bred in California, and, of those, 'Camarosa' is the world's most widely planted (Hancock 1999: 13). *Potentilla* x *ananassa* is one of the parents of *P. x rosea*, the other being *P. palustris*.

2. *Fragaria chiloensis* (L.) Mill., Gard. Dict. Edn 8, Fragaria no. 4 (1768) = ***Potentilla chiloensis* (L.) Mabb., comb. nov.**

Basionym: *Fragaria vesca* L. var. *chiloensis* L., Sp. Pl.: 495 (1753).

Type [icon, reproduced here]: Dillenius, Hort. Elth. t. 120, f. 146 (1732), **lecto, selected here.**



*Fragaria Chiloensis* fructu maximo, foliis carnosis hirsutis Frez.

There is no original herbarium material in the Linnaean herbaria, the specimen LINN 654.21 selected by Staudt (1962: 881; 1999: 100) being a post-1753 addition to Linnaeus's own herbarium (Charlie Jarvis, pers. comm.), so the only element Linnaeus cited, Dillenius's plate, is here chosen as lectotype. Typotype material (most probably examined by Linnaeus during his visit to Oxford in 1736 — see Clokie 1964: 201) is in Herb. Dillenius (OXF [photo seen]); a sheet (1053/2) in Herb. Sherard (OXF) is possibly a duplicate (Serena Marner, pers. comm.).

**Notes:** west coasts of North and South America; one of the octoploid parents of *P. x ananassa*. Cultivated in Australia.

3. *Fragaria daltoniana* J. Gay in Ann. Sci. Nat. IV, 8: 204 (1857) = **Potentilla daltoniana** (J. Gay) Mabb., **comb. nov.**

Type: Sikkim, '10–12000 ped.', J. D. Hooker s.n. in herb. J.D. Hooker and T. Thomson (K, holo; K, iso; OXF, iso [photocopy seen]; P, iso).

**Notes:** Himalaya, N Burma. Diploid.

4. *Fragaria* 'Frel' and 'Serenata' = cultivars of **Potentilla x rosea** Mabb., **hybr. nova** (*Potentilla palustris* (L.) Scop. x *P. x ananassa* (Rozier) Mabb.)

Hybrida hortensis, heptaploidea, e *P. palustre* (L.) Scop. et *P. x ananassa* (Rozier) Mabb. exorta, inter parentes media, insigniter corolla rosea.

Type [icon]: Proc. Linn. Soc. London 173, t. 2, excl. fig. 5 (1962).

**Notes:** Jack R. Ellis first synthesized such heptaploid hybrids at University College London and, using colchicine, produced 14-ploid plants ( $2n = 98$ ) with enhanced fertility (Ellis 1962). Since that time he has raised back-crosses with *P. x ananassa* to give the named cultivars (see above) with much lower chromosome numbers.

The named cultivars are therefore *P. x rosea* Mabb. 'Frel' and its offspring 'Serenata' ( $2n = 58$ ). No material of the original cross was preserved (Jack Ellis, pers. comm.), so the photographs of it are **here designated** the type.

'Frel' (as **Pink Panda**<sup>™</sup>) is grown in Australia.

5. *Fragaria indica* Jacks. (*Duchesnea indica* (Jacks.) Focke) = **Potentilla indica** (Jacks.) T. Wolf

6. *Fragaria iinumae* Mak. in Bot. Mag. Tokyo 21: 156 (1907) = **Potentilla iinumae** (Mak.) Mabb., **comb. nov.** (syn. *P. daisenensis* Honda)

Type: Makino cites only the illustration (t. 28) in Y. Inuma's *Sintei Sōmoku-Dzusesu* 9 (1874), but the description is clearly drawn up from other material not cited (?TI, n.v.). At UC is a sheet labelled 'Makino Herbarium 367 89', Japan, Yamagata Pref., Akumigun, Mt. Chokai, 1928, T. Makino s.n., for example.

**Notes:** Japan, Sakhalin. Diploid.

7. \**Fragaria moschata* Weston, Bot. Univ. 2: 327 (1771) = **Potentilla moschata** (Weston) Prantl

**Notes:** Europe. Hexaploid. Cultivated in Australia.

8. *Fragaria moupinensis* (Franchet) Cardot = **Potentilla moupinensis** Franchet

9. *Fragaria nilgerrensis* [Schldl. ex] J. Gay in Ann. Sci. Nat. IV, 8: 206 (1857) = **Potentilla nilgerrensis** (J. Gay) Mabb., **comb. nov.**

Type: India, Nilgiri Mts, J.D. Hooker and T. Thomson s.n. (K, lecto, **selected here**; OXF, isolecto [photocopy seen]; P, isolecto).

Staudt (Bot. Jahrb. 121: 299 [1999]) has selected a Metz sheet from Robert Wight's herbarium (now at K) as 'lectotype', with a P sheet as 'isolectotype' ('isolecto' — L). Although Gay took the name from Schlechtendal's unpublished one on a Metz sheet (*F. Metz s.n.* in Hohenacker, Pl. Ind. Or. Exsicc. n. 1578), his description is based on the Hooker and Thomson sheet.

**Notes:** Nilgiris (SW India), Khasia Mts (NE India), Sikkim to China. Diploid.

**10.** *Fragaria nipponica* Mak. in Bot. Mag. Tokyo 25: '(229)' (1911, *japonice*) and 26: 282 (1912, *anglice*), non *Potentilla nipponica* T. Wolf [sic], = ***Potentilla yakusimensis* (Masam.) Mabb., comb. nov.**

Basionym: *Fragaria yakusimensis* Masam. in J. Soc. Trop. Agric. Taiwan 3: 115 (1931).

Type: Japan, Yaku Is., Ōsumi Province, June 1928, *G. Masamune s.n.* (TAI, not found, so perhaps transferred to a Japanese herbarium (Chen-Meng Kuo (TAI), pers. comm.), TI? — not found, T. Kajita (TI), pers. comm.).

**Notes:** Japan, Korea. Diploid.

**11.** *Fragaria nubicola* (Hook.f.) [Lindl. ex] Lacaita = ***Potentilla nubicola* (Hook.f.) Mabb., comb. nov.**

Basionym: *Fragaria vesca* L. var. *nubicola* Hook.f., Fl. Brit. India 2: 344 (1878).

Type: Tibet (Xixang), Gosainthan [28°22'N, 85°50'E], '*Potentilla* sp.', *Anon* [? *Bharat Singh*] in East India Company 1238/1 (K, **lecto selected here**; K-W, isolecto).

**Notes:** Bokhara to Sikkim. Diploid.

**12.** *Fragaria pentaphylla* Losinsk. in Izv. Glavn. Bot. Sada SSSR 25: 69 and t. 4 (1926), = ***Potentilla pentaphylla* (Losinsk.) Mabb., comb. nov.**

Type: China, Kansu, Li-dscha-pu, 20 June 1885, *G.N. Potanin s.n.* (LE, lecto [selected by Stepanova in Staudt & Dickoré 2001: 344], n.v.; US, isolecto, photocopy seen). Note that *Potentilla pentaphylla* Richter ex Pohl (1814, i.e. *P. recta* L.) was a name only ever published in synonymy.

**Notes:** southwest China. Diploid.

**13.** *Fragaria tibetica* Staudt and Dickoré in Bot. Jahrb. Syst. 123: 349 (2001), non *Potentilla tibetica* Cardot (1916), = ***Potentilla silvanus* Mabb., nom. nov.**

Type: [Cult.,] Germany, Merzhausen near Freiburg [ex Tibet (Xixang), Everest (Qomolangma) E, Kama Chu, W of Sakyetang, 10 Oct 1989, *W.B. Dickoré s.n.*], s.d., *W.B. Dickoré s.n.* (B, holo, digital image seen). The new specific name commemorates the Nestor of strawberry systematics, Prof. dr. Günther Staudt, monographer of *Fragaria*. According to Hanks and Hodges (1988: 510), the surname Staudt is a variant of Staude, a name for someone living by a patch of uncleared dense undergrowth, a name cognate with the Old High German word *stūda*, a thicket or wilderness. The Roman God associated with such uncultivated land is Silvanus (Rose 1970), hence the epithet, which is a substantive; coincidentally, and happily, the habitat for this strawberry is said to include upper montane scrub (Staudt & Dickoré 2001), beyond areas of cultivation.

**Notes:** southwest China. Tetraploid, allegedly derived from *P. pentaphylla* (Staudt & Dickoré 2001).

14. *Fragaria vesca* L. = *Potentilla vesca* (L.) Scop.

**Notes:** Cultivars of this are the 'alpine' strawberries of patisserie. Diploid. Cultivated in Australia (material apparently brought with the First Fleet, 1788), this North Temperate species is naturalized in New Zealand.

15. *Fragaria virginiana* Mill. = \**Potentilla virginiana* (Mill.) E.H.L. Krause, Sturm's Fl. Deutschland 8: 111 (1904) and Zweites Register [8]: 1 (1909?).

Note that although the meaning in the main text is clear, the basionym is cited only in the second index to the whole work.

**Notes:** This is an octoploid parent of *P. x ananassa*.

16. \**Fragaria viridis* Weston, Bot. Univ. 2: 327 (1771) = *Potentilla viridis* (Weston) Prantl (April 1884; nec \**Potentilla viridis* (Koch) Zimmeter in Jahres-Ber. Staats-Ober-Realschule Steyer 14: 6 [Aug.-Sept. 1884], i.e. *P. anserina* L., non \**Potentilla viridis* (Neilr.) Fritsch, Excursionsfl. Oesterreich: 295 [1897], i.e. *P. pusilla* Host)

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