146. 2006). Trelease (l.c.) himself had made no comments on the type status of any collections associated with the name *V. serotinum*. Nuttall (in J. Acad. Nat. Sci. Philadelphia, ser. 2, 1: 149–189. 1848) proposed moving the New World "*Viscum*" mistletoes to *Phoradendron*, as well as applying the specific epithet "*flavescens*" (not "*flavens*") to the American mistletoe. The formal transfer was done later by Gray (in Mem. Amer. Acad. Arts, ser. 2, 4: 59. 1849), but inasmuch as Gray, who cited only "*V. flavescens*, Pursh", was not bound to adopt *V. flavens* Sw., a superfluous name for *V. racemosum* Aubl. (1775), his *P. flavescens* Nutt. ex A. Gray would be considered a new name. Prior to the monograph of *Phoradendron* by Trelease (l.c.), a number of other names currently identified with this species by Kuijt (in Syst. Bot. Monogr. 66: 411–425. 2003) were published including *V. tomentosum* DC. (1830), *V. oblongifolium* Raf. (1838, non DC. 1830), *V. ochroleucum* Raf. (1838), *V. rugosum* Raf. (1838), *V. villosum* Nutt. (1840), *P. orbiculatum* A. Gray (1849), *P. macrophyllum* (Engelm.) Cockerell (1900), *P. macrotomum* Trelease (1913), and *P. eatonii* Trelease (1913).

In 1957 Marshall Johnston first pointed out the fact that Pursh's designation ("*Viscum flavescens*"), being a misspelling of *V. flavens* Sw. (a West Indian species), cannot be interpreted as a new name. Moreover, Johnston indicated that *V. leucarpum* Raf. (1817) was not equivalent to *Phoradendron leucocarpum* Patschofsky (1911), a Peruvian species. Because the two specific epithets differed by only two letters, he argued that the epithets were orthographic variants and would cause confusion if placed in the same genus, attributing his decision to Art. 75 of the *Paris Code* (Lanjouw & al. in Regnum Veg. 8. 1956). Consequently, he dismissed *V. leucarpum* as an eligible basionym and proposed *P. serotinum* (Raf.) M.C. Johnst. as a new combination for the American mistletoe.

The *Sydney Code* (Voss & al. in Regnum Veg. 111. 1983) first provided the mechanism for formal decisions on cases of parahomonymy, and such a decision was requested on the *leucarpum*/*leucocarpum* case in 1986 (Reveal & Johnston, l.c.). Subsequently, the Committee for Spermatophyta (Brummitt in Taxon 37: 140. 1988) ruled that "*Phoradendron leucarpum*" and *P. leucocarpum* should not be treated as homonyms. Based on this, *P. leucarpum* (Raf.) Reveal & M.C. Johnst. (l.c.) was published as the correct name for this species. Nevertheless, in his 2003 monograph of *Phoradendron* Kuijt (l.c.: 414) erroneously stated "The earliest legitimate name for the taxon traditionally known as "*P. flavescens*" is *Viscum serotinum* Rafinesque, and the correct name in *Phoradendron* is *P. serotinum* (Rafinesque) M.C. Johnston subsp. *serotinum*."

Within a span of three years, Rafinesque proposed two names for the American mistletoe: *Viscum leucarpum* (1817) and *V. serotinum* (1820). Given the 1988 Committee for Spermatophyta decision on parahomonymy (Brummitt, l.c.), it is undeniable that the correct name for this species in *Phoradendron* is now *P. leucarpum*. However, the name *P. serotinum* has been and continues to be used in publications referring to this species (e.g., a string search on "Phoradendron serotinum" and "Phoradendron leucarpum" of several bibliographic databases performed on 7 June 2010 returned the following number of citations: Biosis Previews: 22 to 8, CAB Abstracts: 9 to 16, Scopus: 4 to 4, Agricola: 6 to 3, Google Scholar: 201 to 188; a similar search of Google yielded 32,100 to 12,300 results in favor of *P. serotinum*). This name is also present on innumerable herbarium sheets across the world. All of these sheets would require annotation if *P. leucarpum* is to be used, plus the three subspecies names published by Kuijt (l.c.) would require new combinations. As stated in Art. 14.2 of the ICBN, "Conservation aims at retention of those names which best serve stability of nomenclature." Moreover, the Preamble states that the goal is "the avoidance of the useless creation of names". We propose that greater stability would be achieved through the use of *P. serotinum* and that generating more names and combinations only complicates an already complex nomenclatural situation. Use of *P. leucarpum* does not contribute any new biological or taxonomic knowledge about this taxon and may indeed inhibit information exchange.

(1987–1988) Proposals to conserve the name *Danaeopsis* Heer ex Schimp. (fossil *Pteridophyta*) against *Marantoidea* (fossil *Pteridophyta*) and *Danaeopsis* C. Presl (recent *Pteridophyta*) and the name *Taeniopteris marantacea* (fossil *Pteridophyta*) with a conserved type

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(1987) ***Danaeopsis*** Heer ex Schimp., Traité Paléontol. Vég. 1: 613. 1869, nom. cons. prop.
Typus: *D. marantacea* (C. Presl) Schimp. (*Taeniopteris marantacea* C. Presl), nom. cons. prop.

(=) *Marantoidea* Jaeger, Pflanzenverst. Bausandst. Stuttgart: 28. t. 5. f. 5. 1827, nom. rej. prop.
Typus: *M. arenacea* Jaeger.

(H) *Danaeopsis* C. Presl, Suppl. Tent. Pterid.: 39. 1845, nom. rej. prop.
Typus: *D. paleacea* (Raddi) C. Presl (*Danaea paleacea* Raddi).

(1988) ***Taeniopteris marantacea*** C. Presl in Sternb., Versuch Fl. Vorwelt: 2(7–8): 139. 1838, nom. cons. prop.
Typus: Switzerland, Triassic strata in Rütihard, Neue Welt, *NMB B726*, Heer collection, Natural History Museum, Basel, typ. cons. prop.

[If Prop. 1988 is not accepted, *Marantoidea*, proposed for rejection in Prop. 1987, will have an identity sign (≡) and the type paragraph for *Danaeopsis* Heer ex Schimp. in that proposal should read:

Typus: *D. marantacea* Schimp., nom. illeg. (*Marantoidea arenacea* Jaeger, *D. arenacea* (Jaeger) C. Csaki &. M. Urlichs)

In 1827, Jaeger described a sterile leaf fragment from a Triassic locality in Germany that he supposed could be related to *Maranta* (an extant monocot). He named it *Marantoidea*, with one species: *M. arenacea*. Soon afterwards, palaeobotanists recognized it as being a fern, and Jaeger's species name was treated as a taxonomic synonym of several other species names (cf. Jongmans & Dijkstra in Foss. Cat. Pars. Pl. 44: 1532. 1960; no species of *Marantoidea* were recorded by Jongmans & Dijkstra in Foss. Cat. Pars Pl. 68: 3920. 1968, nor by Dijkstra & Amerom in Foss. Cat. Pars Pl. 90: 333. 1983). Presl (l.c., 1838) considered it to be a good species, belonging to *Taeniopteris* Brongn. (a very heterogeneous morphogenus that includes species nowadays considered to be cycadophytes, pteridosperms and ferns) and renamed it *Taeniopteris marantacea*, consequently an illegitimate name. This species became the basis of a genus of fossil ferns: *Danaeopsis*.

In the literature, there is confusion on the place of valid publication of this *Danaeopsis*. Andrews's *Index* (in Bull. US Geol. Surv. 1013: 143. 1955) attributes the name to Heer in Schenk (in Palaeontographica 11: 303. Mai 1864); in that place, however, there is no generic description or diagnosis, there only is a seemingly new combination in *Danaeopsis* for *Taeniopteris marantacea* Presl. The same can be said of Schenk (in Abb. Foss. Pfl. Keuper Frankens Schoenlein: 16. 1865). In both places, Schenk mentions Heer as the author of the generic name. Heer did publish the name in 1864 (Urwelt Schweiz: 54. 1864 ('1865')), but only as a possible suggestion, for the case that one might wish to treat *Taeniopteris marantacea* and *Taeniopteris muensteri* in two different genera. Because their fertile parts are scarcely known, however, it is better to keep them still together, he said; in other words, under Art. 34.1(b) of the ICBN (McNeill & al. in Regnum Veg. 146. 2006) it still is a provisional name in 1864. Indeed Heer's 1864 plate (t. 2, f. 5) retains the name *Taeniopteris marantacea*. In 1877 Heer (Fl. Foss. Helv.: 71) did accept *Danaeopsis* but in the interval Schimper, with good fertile specimens, named Jaeger's species, now amended with fertile characters, *D. marantacea*. In other words, Schimper treated Presl's illegitimate name as though it were the basionym. Under this name, the species became widely known (cf. Jongmans & Dijkstra in Foss. Cat. Pars Pl. 39: 994. 1959), usually given as "*D. marantacea* (Presl) Heer", now and then, however, cited as "*D. marantacea* (Presl) Schenk."

Halle (in Ark. Bot. 17(1): 3. 1921) already wondered if on strict grounds of priority *Danaeopsis* should not be replaced by *Marantoidea*. He decided not to do so, because Heer "instituted his genus for a plant with a peculiar type of fructification while *Marantoidea* was used for a sterile fragment of a pinna which has not been proved to have a similar fructification." So *Danaeopsis* (often ascribed to Heer 1864) with *D. marantacea* (usually attributed to (Presl) Heer) remained in use. It is found in many standard works, e.g., in Orlov (Osnovy Paleontol. [14]: 564. 1963) and in Boureau (Traité Paléobot. 4(1): 221. 1971). It remained the name for this genus until Webb (in Proc. Linn. Soc. New South Wales 123: 216–218. 2001) explained that Jaeger's *Marantoidea* may not be ignored – the facts that the latter name had fallen into disuse, originally was based upon sterile material and was derived from supposed resemblance with *Maranta* do not warrant its abandonment, under Art. 51 of the ICBN. Therefore he reinstituted *Marantoidea*. Despite this, Taylor & al. (Paleobot. Biol. Evol. Foss. Pl.: 434. 2009) continued to use *Danaeopsis*. Besides in scientific literature, *Danaeopsis* is also known and used in more popular works, e.g., in http://zipcodezoo.com/Key/Plantae/Danaeopsis_Genus.asp. This field guide to plants and animals of the world recognises three species: *D. angustifolia*, *D. fecunda* and *D. marantacea*.

Jongmans & Dijkstra (in Foss. Cat. Pars Pl. 39: 991–996. 1959) recorded 15 species of *Danaeopsis*; they added three more species in 1967 (l.c. 67: 3847) and in Dijkstra & Amerom (in Foss. Cat. Pars. Pl. 89: 147–148. 1982), there are two more species. Moreover Mogutcheva (Novye Vidy Drevn. Rast. Bespoz. Faneroz. Sibiri: 14. 1987) published *Danaeopsis tenuis*, and Huang & Zhou (Mesozoic Stratigr. Palaeontol. Basin Shaanxi Gansu Ningxia 1: 70. 1980) described "*D. magnifolia*" (although not validly published because no type was indicated). Webb (l.c.) described a new species, *M. acara*. This would give a total of 23 species, two of which do not yet have a valid combination in *Danaeopsis*. It appears, however, that several species that have been recognized within this genus belong elsewhere: Webb (l.c.) already referred four to the pteridosperms and he suggested that two may be cycadophytes. In addition *D. rumpfii* (Schenk) Schimp. 1869 was soon removed from *Danaeopsis* and treated in various ways. Its basionym, *Cycadites rumpfii*, was reported by Kustatscher & Van Konijnenburg-van Cittert (in Neues Jahrb. Geol. Paläontol., Abh., 258(2): 195–217) as belonging to *Scytophyllum*, a seed fern, and many specimens that have been labelled *Cycadites rumpfii* do belong there. Recent investigation of the holotype, however, revealed that it is not a sterile fragment with leathery lamina as suspected by Schenk (1864) but a fertile specimen assignable to *Symopteris*, a true fern, see Kustatscher & al. (submitted to *Review of Palaeobotany and Palynology*). Of the 16 species that remain, in our opinion at least 15 do belong to *Danaeopsis*/*Marantoidea* (although one proves not to be specifically distinct). Besides Jaeger's original *M. arenacea* (= *D. marantacea*) and Webb's new *M. acara*, Webb attempted to transfer five species to *Marantoidea*: *D. lunzensis* Stur 1885, *D. fecunda* Halle 1921, *D. hallei* P'an 1936, *D. emarginata* Brik 1952 and *D. petchorica* Khramova & Pavlov 1971. However the combinations in *Marantoidea* were not validly published because Webb did not give a full and direct reference to their basionyms in *Danaeopsis* (cf. Art. 33.4 ICBN). We conclude that besides these seven species, seven more species belong to *Danaeopsis*: *D. tenuis* and the species invalidly called "*D. magnifolia*" already mentioned above, and also *D. angustifolia* (Schenk) Compter 1874 (with *D. angustipinnata* Brik 1952 as a taxonomic synonym), *D. bipinnata* Brik 1952, *D. rarinervis* Turutanova-Ketova 1962, *D. taeniopteroides* Turutanova-Ketova 1962 (in our opinion, the holotype of fig. 6 only) and *D. bukobaica* Vladim. 1972.

Since Webb (l.c), *Marantoidea* has been used a few times (Van Konijnenburg-van Cittert & al. in Palaeontology 49: 956. 2006 and Roghi & al. in Boll. Soc. Paleontol. Ital. 45: 134. 2006); in both cases with the later name, *Danaeopsis*, mentioned. However, in addition to Taylor & al. (l.c.), Zhang & al. (Biostratigr. China: 383, 384, 390. 2003), Passoni & Van Konijnenburg-van Cittert (in Rev. Palaeobot. Palynol. 123: 330. 2003), Deng (at an International Congress in Poland in 2006: http://voluminajurassica.org/pdf/volumen_IV_session_IX.pdf), Artabe & al. (in Asoc. Paleontol. Argentina Publ. Espec. 11: 77. 2007), Volonets & Shorokhova (in Tikhookeanskaya Geol. 1(5): 88–200. 2007 & in Russ. J. Pacific Geol. 1: 482–494. 2007) and Rozynek (in Palaeodiversity 1: 4. 2008) have all continued to use *Danaeopsis*, and valid combinations in *Marantoidea* for those five species that Webb tried to transfer have not yet been published, as far as we know.

There is another barrier to the use of *Danaeopsis* Heer ex Schimp. first validly published in 1869. Presl (l.c. 1845) published this name for a genus of extant ferns, thus the fossil *Danaeopsis* is

a later homonym. In the past, there have been palaeobotanists who knew about Presl's genus but continued to use Heer's name. Halle (in Ark. Bot. 17(1): 2–3. 1921), referring to Krasser (in Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Cl., Abt. 1. 118: 23. 1909) stated it was published as the epithet of the name of a section of *Danaea*. There is not, however, any doubt as to the valid publication of Presl's name: it clearly is accepted in generic rank and there is an extensive description, followed by one species (n. comb. & basionym) with its occurrence.

Danaeopsis Presl has been long out of use. Its type appears to be a taxonomic synonym of *Bolbitis serratifolia* Schott 1834, and as far as we could establish, no other species has been described in this genus (cf. IPNI: http://www.ipni.org; Moore, Index Fil. 1857–1862, Christensen, Index Fil. 1906 and later supplements). In 1857 it was already recombined as *Danaea* sect. *Danaeopsis* (C. Presl) T. Moore (Index Fil.: cxxiii. 1857). Indeed, *Danaeopsis* Presl does not occur in the List of Names in Current Use (NCU-3: http://www.bgbm.org/iapt/ncu/genera/default.htm). To conclude, this name does not present any problem to conservation of *Danaeopsis* Heer ex Schimp.

In connection with the proposal to conserve *Danaeopsis* (see above), we also propose to conserve the species name that has been treated as though it were a good basionym for more than 160 years. *Taeniopteris marantacea* C. Presl is a nom. illeg. for *Marantoidea arenacea* Jaeger 1827. Only Csaki & Urlichs (in Stuttgarter Beitr. Naturk., B 114: 9. 1985) reinstituted the epithet *arenacea*, without going back to the legitimate generic name. They only were followed by Kelber (and co-authors) in several publications (e.g. Versunkene Pflanzenwelt: 39. 1990, Kelber & Hansch (Keuperpflanzen: 58. 1995), who still cited *D. marantacea* as a synonym and Rozynek (l.c.). Other authors, e.g., Dobruskina (Triassic Fl. Eurasia 1994, in many pages) and Li (Foss. Fl. China Geol. Ages: 320. 1995) continued to use *D. marantacea*. Only when Webb (in Proc. Linn. Soc. New South Wales 123: 216–218. 2001) reintroduced *Marantoidea* Jaeger, the legitimate name of this species again came into the picture. Nevertheless, Passoni & van Konijnenburg-van Cittert (l.c. 2003) still used *D. marantacea*.

According to Csaki & Urlichs, Jaeger's original specimen was destroyed in 1944. They consider Jaeger's illustration of the sterile specimen sufficiently clear for the identity of the species. Presl did not see a fertile specimen, and since we wish to go in the footsteps of Heer, Schimper and Halle, we now choose the fertile specimen that was figured by Heer (l.c. 1877: t. 24, f. 1).

To conclude, acceptance of the proposals will enable continuation of current use of one generic name and of more than a dozen species names, whereas under rejection of the proposals, an unused generic name would have to be used, along with recombination of almost all species names.