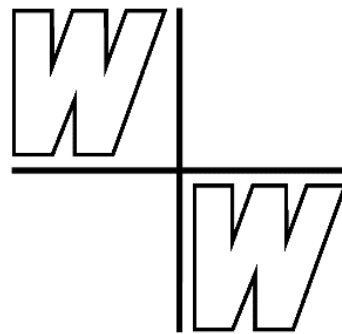


Data Collection on Intergeneric Hybrids and Basic Types:

ANGIOSPERMAE **families A–C**

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with the assistance of Benjamin Scholl
version 2 01.10.2026



ANGIOSPERMAE

65 orders, 642 families, 17.000 genera, ca. 300.000 species + extinct taxa
flowering plants = Bedecktsamer

Arranged alphabetically according to families.
Only a selection of families is listed in this paper!

families A–C for Asteraceae see separate file

Delimitation of families and genera after AP website 2025/2026 (= **Angiosperm Phylogeny Group**) as summarized by P. Stevens (2001 onwards)

<http://www.mobot.org/MOBOT/Research/APweb/welcome.html> accessed 2024/2025,

Subdivision of families after AP website 2025/2026 or en.wikipedia 2025/2026.

Summary for all families of Angiospermae:

1328 intergeneric hybrids (incl. IT + ISF), in 59 families.

78 preliminary basic types (average species number per basic type 52881 / 78 = 678 species).

Basic type level: 42 genera/subtribes/tribes, 13 subfamilies, 23 families.

Summary for families A–C:

443 intergeneric hybrids (incl. IT + ISF), found in 23 families.

26 preliminary basic types (average species-number pro basic type: 14649 / 26 = 563).

Basic type level: 2 subtribe, 7 tribes, 6 subfamilies, 11 families).

* = only family of the order

Acoraceae* (*Acorus*) 1: 2–4. – (0 IS)

Aizoaceae subfamily Mesembryanthemoideae (*Mesembryanthemum*) 1: 100. – (> 2 IS)

Aizoaceae Ruschioideae tribes Ruschieae + Delospermeae 98: 1550. **36 IG** (incl. **8 IT**)

Altingiaceae (*Liquidambar*) 1: 13. – (> 3 IS)

Amaryllidaceae Allioideae tribe Allieae (*Allium*) 1: 1020. – (>10 IS)

Amaryllidaceae Amaryllidoideae tribe Amaryllideae 11: 146. **10 IG** (incl. **6 IST**)

Amborellaceae* (*Amborella*) 1: 1. –

Apocynaceae Asclepiadoideae Ceropegieae subtribe Stapeliinae 22–37: 330. **36 IG** (or 2 IG)

Aquifoliaceae (*Ilex*) 1: 600. – (>50 IS)

Arecaceae* Arecoideae Cocoseae subtribe Attaleinae 10: 248. **5 IG**

Asparagaceae Agavoideae tribe Agaveae genus *Agave* 1: 270. – (15 IS)

Asphodelaceae Asphodeloideae tribe Aloeeae 13: 750. **23 IG**

Balsaminaceae 2: 1050. – (*Impatiens* 50 IS)
 Begoniaceae 2: 2000. – (*Begonia* 10 IS)
 Brassicaceae tribe Brassiceae 53: 243. **40 IG**
 Bromeliaceae 78: 3650. **86 IG** (incl. 8 IT + 8 ISF)
 Butomaceae (*Butomus*) 1: 1. –
 Cactaceae subfamily Cactoideae 112: 1500. **150 IG** (incl.+ 30 IT)
 Cactaceae subfamilies Leuenbergerioideae + Pereskioideae 2: 17. **2 ISF**
 Caprifoliaceae subfamily Diervilloideae 2: 16. **1 IG**
 Caricaceae 6: 28. **1 IG**
 Cercidiphyllaceae (*Cercidophyllum*) 1: 2. – (**0 IS**)
 Crassulaceae subfamily Crassuloideae (*Crassula*) 1: 200. – (**10 IS**)
 Crassulaceae subfamily Sempervivoideae 30: 1005. **6 IG** (incl. + 1 IT)
 Ceratophyllaceae* (*Ceratophyllum*) 1: 6. – (**0 IS**)
 Cyperaceae Cyperoideae tribe Cariceae (*Carex*) 1: 2300. – (**>200 IS**)

Abbreviations:

° = taxa actually not accepted in the rank of a genus, e.g. *Cerasus*° (= *Prunus* p. p.)

* = only family of an order

10: 50 etc. The numbers behind the names of families etc. refer to extant genera and species

IS = interspecific hybrid. **IG** = intergeneric hybrid. **IST** = intersubtribal hybrid.

IT = intertribal hybrid. **ISF** = intersubfamilial hybrid. **IF** = interfamilial hybrid.

EC = embryo culture or ovule culture

SO = somatic hybrid by cell fusion; normally these hybrids are asymmetric

AS = asymmetric hybrids, they do not equally express maternal and paternal features

HY = assumed intergeneric hybridogeneous origin of a taxon.

nat. hyb. = natural hybrid **art. hyb.** = artificial hybrid

Colors within the crosses:

Red letters: intergeneric hybrids (incl. former IG).

Violet = plurigeneric hybrids

Gray letters: hybridity unconfirmed or erroneous.

Green letters: notes on tribes, subfamilies etc. involved in the hybridization.

Yellow shaded: Notes concerning basic types.

General references on Angiospermae

Angiosperm Phylogeny group (Chase MW et al.) (2016) An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG IV. Bot. J. Linnean Soc. 181, 1–20. <https://doi.org/10.1111/boj.12385> → Stevens

- Belea A (1992) Interspecific and intergeneric crosses in cultivated plants. Budapest: Akademiai Kiado.
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- Feng Z-H et al. (2024). Nomenclatural novelties for intergeneric nothotaxa. Phytoneuron 2024-85: 1–. <https://www.phytoneuron.net/wp-content/uploads/2024/12/85PhytoN-IntergenericNothotaxa.pdf>
93 new names!
- Focke WO (1881) Die Pflanzenmischlinge. Berlin: Borntraeger.
- Folk RA et al. (2018) New prospects in the detection and comparative analysis of hybridization in the tree of life. American Journal of Botany 105, 364–375
- Haartman JJ (1751) Plantae hybridae. Dissertation Uppsala. Lidén no. 33. (also cited as „Linné C von & Haartman JJ (1751) Plantae hybridae. Upsaliae.“ and part of Linné C von (1756) Amoenitates academicae 3 (p. 28 ff.)
<http://ia600602.us.archive.org/25/items/mobot31753000806395/mobot31753000806395.pdf> only of historical interest, not hybrids as defined today!
- Index Kewensis **IK** [preceding IPNI](#)
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- Mitchell N et al. (2019) Correlates of hybridization in plants. Evolution Letters 3, 570–585. <https://doi.org/10.1002/evl3.146> [mainly interspecific hybrids, cf. Whitney et al. \(2010\)](#)
- Oehler E (1956) Art- und Gattungskreuzung. Handbuch der Pflanzenzüchtung I, 563–611.
- POWO Plants of the world online (= **POWO**). <https://powo.science.kew.org/> [This data base lists more hybrids than IPNI, but only hybrids to which a scientific name has been attributed!](#)
- Stace CA (1975) Hybridization and the flora of the British Isles. Academic Press.
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<https://www.mobot.org/MOBOT/research/APweb/> (= **AP website**).
- Tsitsin NV (ed.) (1960) Wide hybridization in plants. Akad. Nauk. SSSR. Translated from Russian. 1962 National Science Foundation, Washington.
https://keen101.wordpress.com/wp-content/uploads/2017/12/wide_hybridization_in_plants_tsitsin2.pdf [not all data are confirmed](#)
- WFO** Plant List <https://www.worldfloraonline.org/>
- Whitney KD et al. (2010) Patterns of hybridization in plants. Perspect. Plant Ecol. Evol. Syst. 12, 175–182. [mainly interspecific hybrids](#)
- Willis JC (1985) Dictionary of flowering plants and ferns, ed. 8 = Student edition. Cambridge University Press.

Zander R (2008) Handwörterbuch der Pflanzennamen. Dictionary of plant names.
Dictionnaire de plantes. 18. ed. Stuttgart: Ulmer.

Acanthaceae (Lamiales) 229: 5100

acanthus family = Akanthusgewächse

4 subfamilies (AP website 2024):

Acanthoideae 217: 4733, Avicennioideae 1: 8, Nelsonioideae 6: 175, Thunbergioideae 5: 260.

Acanthoideae 217: 4733. 2 IG + 1 IT

8 tribes: Acantheae 21: 550 (*Aphelandra* 170, ...), Andrographideae 4: 122, Barlerieae 13: 520, Justicieae 96: 2473 (*Justicia* 900 incl. × *Sericobonia*°, ...), Neuracanthae 1: 30, × Physacanthae 1: 3, Ruellieae 37: 1200, Whitfieldieae 8: 33.

Interestingly, one of the newly described tribes (× **Physacanthae**) is based on a (reconstructed) intertribal hybrid. It connects tribes Acantheae and Ruellieae. But please note that putative cases of (ancient) hybridization do not necessarily demonstrate that hybridization actually occurred.

Aphelandra aurantiaca („nitens“) × *Aphelandra maculata* („lindenii“) („*Stenandrium lindenii*“) **IS Acantheae** (→ *Aphelandra* × *dubia* L. Linden & Rodigas 1894 in Ill. Hort. 233 t. 15) IK (art. hyb.), Knobloch 1972

Jacobinia° (= *Justicia*) *ghiesbreghtiana* × *Libonia*° *floribunda* (= *Justicia rizzinii*) **IS Justicieae** (→ *Justicia* × *penrhosiensis*) Willis 1985, Zander 2008

Libonia° (= *Justicia* p. p.) × *Sericographis*° (= *Justicia* p. p.) **IS Justicieae** (→ × *Sericobonia*° 1875) POWO 2025 (*Justicia* IS)

× *Physacanthus* **IT** × **Physacanthae** = **Acantheae** × **Ruellieae** **HY** Tripp et al. 2011a, b (the authors discuss an ancient intertribal hybridization for this genus, which formerly was placed in Ruellieae, AP website 2024 (accepted))

Ruspolia („*Pseuderanthemum*“, „*Justicia*“) *hypocrateriformis* × *Ruttya ovata* **Justicieae** (→ × *Ruttyruspolia* A. Meeuse & de Wet 1961 in Bothalia 7, 440) IK 1970, Knobloch 1972, Lowrey & Crawford 1987, POWO 2025

References:

Long RW (1975) Artificial interspecific hybridization in temperate and tropical species of *Ruellia* (Acanthaceae). *Brittonia* 27, 289–296. <https://www.jstor.org/stable/2805899>

Lowrey TK & Crawford DJ (1987) Electrophoretic confirmation of the intergeneric hybrid × *Ruttyruspolia* (Acanthaceae). *Plant Syst. Evol.* 158, 29–36.

Tripp EA et al. (2011a) *Physacanthus* (Acanthaceae): a heteroplasmic, intergeneric, interlineage hybrid? Botany Conference. Bot. Soc. of America, July 2011.

<http://2011.botanyconference.org/engine/search/index.php?func=detail&aid=183>,

Tripp EA et al. (2011b) Origin of African *Physacanthus* (Acanthaceae) via wide hybridization. PLoS ONE 8 (1) e55677.

<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0055677>

Acoraceae (Acorales) 1: 2–4

calamus, sweet flags = Kalmusgewächse

Only family of the order Acorales. Formerly placed in Araceae.

Acorus.

Probably **basic type family Acoraceae** (*Acorus*) (1: 2–4), mainly due to its isolated taxonomic position. The order Acorales has only 1 genus, and from a molecular view is thought to be sister clade to all other monocotyledons.

Agavaceae → Asparagaceae

Aizoaceae (Caryophyllales) 124: 1722. (28 IG/IST + 7 IT)

fig marigold family = Mittagsblumengewächse

5 subfamilies (AP website 2026):

Acrosanthoideae 1: 7 (since 2017).

Aizooideae 5: 116.

Mesembryanthemoideae 1: 105.

Ruschioideae 106: 800–1600.

Sesuvioideae 4: 65.

For taxonomic studies, see Chesselet et al. 2002, 2004, Hartmann 1998, 2001, Klak et al. 2003, 2004, Landrum 2001, Schwantes 1971, Thiede et al. 2007, Hartmann 2017

See also the websites <http://www.mesembs.de/> and

<http://members.tripod.com/~mesembry/html/mesembs>.

For synonyms of the former genus *Mesembryanthemum* s. l. see Brown 1929 and

<http://www.ars-grin.gov/cgi-bin/npgs/html/splist.pl?7489>, e.g. *Carpobrotus*, *Glottiphyllum* and *Lampranthus* etc. (now Ruschieae), *Dorotheanthus* (now Dorotheanthaeae), *Mesembryanthemum* (Mesembryanthemoideae).

Acrosanthoideae 1: 7

Acrosanthes (formerly Aizooideae).

Aizooideae 5: 116

Aizoanthemopsis 1 hispanica, *Aizoanthemum*, *Aizoon* (incl. *Galenia*°, *Plinthus*°), *Gunniopsis*, *Tetragonia* (formerly part of subfamily Tetragonioideae).

Mesembryanthemoideae 1: 105

Monophyletic.

Mesembryanthemum 105 (incl. *Aptenia*°, *Aridaria*°, *Aspazoma*°, *Brownanthus*°, *Caulipsolon*°, *Dactyopsis*°, *Phyllobolus*°, *Platythyra*°, *Prenia*°, *Psilocaulon*°, *Sceletium*°, *Synaptophyllum*°).

Probably **basic type Aizoaceae subfamily Mesembryanthemoideae** (1: 100). The actual reduction of the subfamily to one genus points in the direction of a basic type.

IS: POWO (2026): *Mesembryanthemum* 2 IS.

Aptenia° (= *Mesembryanthemum*) *cordifolia* × *Platythyra*° (*Mesembryanthemum*, *Aptenia*°) *haeckeliana* IS Davis Arboretum Univ. California 1998

Ruschioideae 130: 1600

4 tribes:

Apatesiae 7: 11 *Apatesia*, *Carpanthea*, *Caryotophora*, *Conicosia*, *Hymenogyne*, *Saphesia*, *Skiatophytum*.

Dorotheanthae (annual taxa) 1: 13 *Cleretum* (incl. *Aethephyllum*°, *Dorotheanthus*°).

Delospermeae 27: 524 (= largest part of Ruschieae s. l. of Hartmann 2003)

Ruschieae s. str. 71: 1013.

Ruschieae s. l. (Delospermeae + Ruschieae s. str.) 98: 1550. **28 IG/IST + 7 IT**

living stones = Lebende Steine

Hartmann 1998 distinguishes 10 groups (see below), but no distinction is made later.

Recent taxonomy: Hartmann 2016. AP website 2024 separates the Delospermeae as a distinct tribe, but most authors do not differentiate within Ruschieae.

Subdivision according to Hartmann 1998:

AP website 2024 follows the separation of Delospermeae 27: 524 (*Bergeranthus*-Gr., *Delosperma*-Gr., and *Stomatium*-Gr.) from Ruschieae s. str. 71: 1013, as proposed by Chesselet 2002.

Bergeranthus Group: *Bergeranthus*, *Bijlia*, *Carruanthus*, *Cerochlamys*, *Hereroa*, *Machairophyllum*, *Rhombophyllum*.

Delosperma Group: *Corpuscularia*, *Delosperma* 170, *Drosanthemum*, *Gibbaeum*, *Imitaria*°, *Malephora*, *Mestoklema*, *Muiria*, *Oscularia*, *Trichodiadema*.

Dracophilus Group: *Conophytum* (incl. *Herreanthus*), *Dracophilus*, *Hartmanthus*, *Jensenobotrya*, *Juttadinteria*, *Namibia*, *Nelia*, *Psammophora*, *Ruschianthus*.

Eberlanzia Group: *Amphibolia*, *Eberlanzia*, *Ruschianthemum*, *Stoeberia*.

Lampranthus Group: *Antegibbaeaunsia*, *Carpobrotus*, *Circandra*, *Enarganthe*, *Erepsia*, *Esterhuysenia*, *Lampranthus*, *Namaquanthus*, *Scopelogenia*, *Smicrostigma*, *Vlokia*, *Wooleya*, *Zeuktophyllum*.

Leipoldtia Group: *Antimima*, *Argyroderma*, *Cephalophyllum*, *Cheiridopsis*, *Cylindrophyllum*, *Fenestraria*, *Hallianthus*, *Jordaaniella*, *Leipoldtia* s. l., *Octopoma* s. str., *Odontophorus*, *Ottosonderia*, *Pleiospilos*, *Schlechteranthus*, *Vanzijlia*.

Mitrophyllum Group: *Dicrocaulon*, *Diplosoma*, *Disphyma*, *Drosanthemopsis*, *Glottiphyllum*, *Jacobsenia*, *Meyerophytum*, *Mitrophyllum*, *Monilaria*, *Oophytum*.

Ruschia Group: *Acrodon*, *Arenifera*, *Astridia*, *Ebracteola*, *Khadia*, *Marlothistella*, *Polymita*, *Ruschia*, *Stayneria*.

Stomatium Group: *Chasmatophyllum*, *Faucaria*, *Frithia*, *Hammeria*, *Mossia*, *Neohenricia*, *Orthopterum*, *Rabiea*, *Rhinephyllum*, *Stomatium*.

Titanopsis Group: *Aloinopsis*, *Deilanthus*, *Didymaotus*, *Lithops*, *Nananthus*, *Prepodesma*.

The high number of known hybrids in Ruschieae is due to the popularity of this subfamily in horticulture. According to Ihlenfeldt 1994 and Klak et al. 2004 the radiation of this group is extraordinarily high in respect to the number of species and the very short time.

Basic type Aizoaceae Ruschioideae tribes Ruschieae incl. Delospermeae (98: 1550, 28 IG, 8 IT) (Kutzelnigg 2009, 2025): 9 of the 10 groups (subtribes) of Hartman 2003 are connected by hybridization. They are the result of an extensive recent radiation and are very closely related (Klak et al. 2003, 2004, 2014) with the high number of nearly 100 genera! The remaining *Eberlanzia*-Gr. does not differ substantially from the rest. Moreover, molecular data show that Ruschioideae as a whole are monophyletic, **so probably the basic type rather covers the whole subfamily**. – According to AP website 2024 tribe Delospermeae (Chesselet et al. 2002) is accepted as separate from Ruschieae s. l. with 3 of the 10 groups of Hartman 2003 (including all taxa with a lophomorphic meronectary). Tribe Delospermeae is linked with tribe Ruschieae anyway.

Acrodon × *Cerochlamys* IT *Ruschia*-Gr. × *Bergeranthus*-Gr. (→ × *Cerodon* S. A. Hammer 2013) POWO 2025

Aloinopsis × *Deilanthus* (= *Aloinopsis*) *Titanopsis*-Gr. (→ × *Aloilanthus* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) IK 1996, POWO 2025

Aloinopsis × *Nananthus* *Titanopsis*-Gr. (→ × *Nananopsis* S. A. Hammer 1996 in Cact. Succ. J. (U.S.A.) 67, 172) IK 1996, Hammer & Liede 1990 (art. hyb.)

Aloinopsis × *Nananthus* × *Titanopsis* *Titanopsis*-Gr. (→ × *Nanalotanopsis* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) IK 1996

Aloinopsis × *Prepodesma* (= *Aloinopsis* p. p.) *Titanopsis*-Gr. (→ × *Prepopsis* S. A. Hammer 2003 Mesemb Study Group Bull. 18, 78) IPNI 2007, POWO 2025

Aloinopsis × *Titanopsis* *Titanopsis*-Gr. (→ × *Alotanopsis* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) (art. hyb.) IK 1996, POWO 2025

Argyroderma × *Lapidaria* IST *Leipoldtia*-Gr. × *Titanopsis*-Gr. (→ × *Lapiderma* S. A. Hammer 1999 (publ. 2000) cf. Repert. Pl. Succ. (I.O.S.) 50, 7) IPNI 2007

Argyroderma × *Lithops* IST *Leipoldtia*-Gr. × *Titanopsis*-Gr. (→ × *Argyrops* Kimmach 1980 Cact. Succ. J. USA 52, 196) (art. hyb.) Eggli & Taylor 1994, POWO 2025

Carpobrotus × *Disphyma* IST *Lampranthus*-Gr. × *Mitrophyllum*-Gr. (→ × *Carpophyma* G. D. Rowley 1980 Name that Succulent, 199) (nat. hyb.) (The first hybrids were published by Chinnoek RJ 1973 in New Zealand J. Bot. 10, 615–625) IK 1987, Eggli 1994, Heenan & Sykes 2010 (*C. chilensis* × *D. australe*, *C. edulis* × *D. australe*; nat. hyb. New Zealand.), POWO 2025

Carruanthus × *Machairophyllum* *Bergeranthus*-Gr. (→ × *Carruanthophyllum* 1980 G. D. Rowley, Name that Succulent, 200) IK 1987 (AP website 2024 *Delospermeae*)

Cheiridopsis × *Ihlenfeldtia*° (= *Cheiridopsis*) IS *Leipoldtia*-Gr. (→ × *Ihlenopsis* S. A. Hammer 1995

in Cact. Succ. J. (U. S. A.) 67, 172) IK 1996

Cheiridopsis × *Odontophorus*^o (*Cheiridopsis*) **IS** *Leipoldtia*-Gr. (→ × *Cheirontophorus* S. A. Hammer 1995 in Cact. Succ. J. (U.S.A.) 67, 172) IK 1996

Conophytum × *Glottiphyllum* **IST** *Dracophilus*-Gr. × *Mitrophyllum*-Gr. Hammer & Liede 1990 (art. hyb.)

Conophytum × *Herreanthus*^o (= *Conophytum*) **IS** *Dracophilus*-Gr. Hammer & Liede 1990 (art. hyb.)

Conophytum × *Lithops* **IST** *Dracophilus*-Gr. × *Titanopsis*-Gr. (→ × *Conopops* S. A. Hammer 1995 in Cact. Succ. J. (U.S.A.) 67, 172) IK 1996

Conophytum × *Ophthalmophyllum*^o (= *Conophytum*) **IS** *Dracophilus*-Gr. (art. hyb.) Hammer & Liede 1990 (*Ophthalmophyllum* is now regarded as section of *Conophytum*.)

Delosperma pruinatum (= *echinatum*) × *Glottiphyllum linguiforme* **IT** *Delosperma*-Gr. × *Mitrophyllum*-Gr. (→ × *Delosphyllum* 1980 G. D. Rowley, Name that Succulent, 203 = *Mesembryanthemum* × *schickii* hort.) (art. hyb.) (Brown 1929, Knobloch 1972, IK 1987

Delosperma × *Lampranthus* **IT** *Delosperma*-Gr. × *Lampranthus*-Gr. Braun & Winkelmann 2016

Didymaotus × *Gibbaeum* **IT** *Titanopsis*-Gr. × *Delosperma*-Gr. (→ × *Gibbaotus* S. A. Hammer 2004 Mesemb Study Group Bull. 19, 74) IPNI 2007

Didymaotus × *Titanopsis* *Titanopsis*-Gr.- (→ × *Titymaotus* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 173) IK 1996, POWO 2025

Dinteranthus × *Lithops* *Titanopsis*-Gr. (→ × *Dinterops* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) (art. hyb.) IK 1996

Diplosoma × *Monilaria* *Mitrophyllum*-Gr. (→ × *Monilaroma* S. A. Hammer 2008 in Mesemb Study Group Bull. 23 (4): 80) IPNI 2011

Disphyma × *Glottiphyllum* *Mitrophyllum*-Gr. (→ × *Diphyllum* Kapitany 2013), POWO 2025

Dracophilus × *Juttadinteria* *Dracophilus*-Gr. (→ × *Dracadinteria* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) IK 1996

Enarganthe × *Wooleya* *Lampranthus*-Gr. (→ × *Woolarganthe* S. A. Hammer 2000 Mesemb Study Group Bull. 15, 66) IPNI 2007, POWO 2025

Faucaria × *Glottiphyllum* **IT** *Stomatium*-Gr. × *Mitrophyllum*-Gr. Hammer & Liede 1990

Faucaria × *Rhombophyllum* **IT** *Stomatium*-Gr. × *Bergeranthus*-Gr. (→ × *Rhombocaria* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 173; nat. hyb.) IK 1996, POWO 2025

Faucaria × *Stomatium* *Stomatium*-Gr. (→ × *Faumatium* S. A. Hammer 2000 Mesemb Study Group Bull. 15, 66), IPNI 2007

Gibbaeum × *Glottiphyllum* **IT** *Delosperma*-Gr. × *Mitrophyllum*-Gr. (→ × *Gibaeophyllum* 1980 G. D. Rowley, Name that Succulent, 206) (art. hyb.) IK 1987

Gibbaeum × *Muiria* (*Gibbaeum*) *hortenseae* **IS** *Delosperma*-Gr. (→ × *Muirio*–*Gibbaeum* 1933 Jacobsen, Sukkulent., 164; 1935 Jacobsen, Succ. Pl., 221; nat. hyb.) IK 1938, de Vos 1951, Knobloch 1972

Hartmanthus (= *Jensenobotrya* p. p.) × *Jensenobotrya lossowiana* *Dracophilus*-Gr. (→ × *Harbotrya* S. A. Hammer 1995 in Cact. Succ. J. (U.S.A.) 67, 172) IK 1996; *Hartmanthus* is accepted by the Mesemb Study Group 2008

Jacobsenia × *Mitrophyllum* *Mitrophyllum*-Gr. (→ × *Jacophyllum* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) IK 1996

Lapidaria × *Lithops* *Titanopsis*-Gr. (→ × *Lapthops* S. A. Hammer 1995 in Cact. Succ. J. (U.S.A.)

67, 172; (nat. hyb., both crossing directions successful) IK 1996

Meyerophytum × *Mitrophyllum* **Mitrophyllum-Gr.** (→ × *Metrophyllum* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) IK 1996, POWO 2025

Mossia × *Neohenricia* **Stomatium-Gr.** (→ × *Mohenricia* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 172) IK 1996

Neohenricia × *Stomatium* **Stomatium-Gr.** (→ × *Stomatricia* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 173) IK 1996, POWO 2025

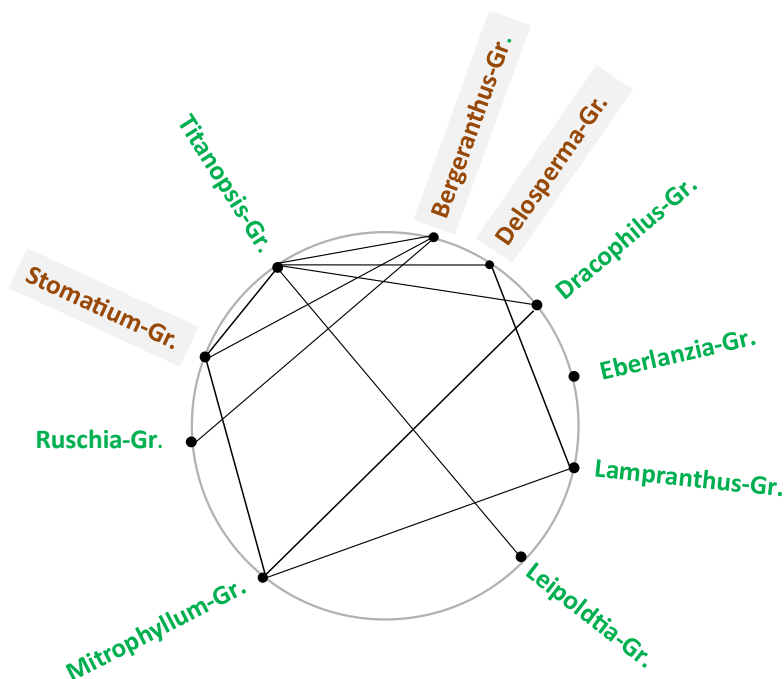
Neohenricia × *Titanopsis* **IT Stomatium-Gr. × Titanopsis-Gr.** (→ × *Neonopsis* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 173) IK 1996

Ophthalmophyllum^o (= *Conophytum* p. p.) × *Tanquana* **IST Dracophilus-Gr. × Titanopsis-Gr.** Hammer & Liede 1990 (hybrids are viable only under special conditions)

Pleiospilos × *Prepodesma* **IST Leipoldtia-Gr. × Titanopsis-Gr.** (→ × *Pleiodesma* S. A. Hammer 2004), POWO 2025

Pleiospilos × *Tanquana* **IST Leipoldtia-Gr.** (→ × *Tanquilos* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 173) (art. hyb.) IK 1996 (according to Hammer & Liede 1990 this type of hybrids has invaded the cultivated gene pool in collections of succulents), POWO 2025

Titanopsis × *Vanheerdea* **Titanopsis-Gr.** (→ × *Vananopsis* S. A. Hammer 1995 in Cact. Succ. J. (U. S. A.) 67, 173) IK 1996, POWO 2025



Aizoaceae Ruschioideae tribes Ruschieae + Delospermeae: hybrid connections between the subtribes (Gr = „groups“ according to Hartmann 1998) from Kutzelnigg 2009, updated 2026. **Green letters = tribe Ruschieae s. str., brown letters tribe Delospermeae.**

Sesuvioideae 5: 65

C4-plants

Cypselea, *Sesuvia*, *Trianthema*, *Tribulocarpus* (formerly part of Tetragonioideae), *Zaleya*.

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Schwantes G (1971) The classification of the Mesembryanthemaceae. In Herre H (ed.) The genera of the Mesembryanthemaceae. Cape Town, South Africa: Tafelberg.

Thiede J et al. (2007) Phylogenetic implication of the chloroplast *rpoC1* intron loss in the Aizoaceae (Caryophyllales). Biochem. Syst. Ecol. 35, 372–380.

Alismataceae (Alismatales) 15: 100 + fossil genera

water plantains = Froschlöffelgewächse

3 tribes (AP website 2025)

IS: POWO (2026): *Alisma* 3 IS, *Sagittaria* 1 IS.

Alisma plantago-aquatica × *Baldellia* („*Echinodorus*“) *ranunculoides* **Alismateae** (nat. hyb.) **unconfirmed**, especially questioned by Björkqvist 1968, see Les & Philbrick 1993 (→ × *Alismodorus* 1929 Wehrhahn, Gartenstauden 1, 9, in obs., nothospecies × *A. muretii* = *Echinodorus* × *praegeri* Glück 1936 in A. Pascher Süßwasserflora 15: 100) IK 1947, Knobloch 1972, POWO 2025 (no entry). – The genera *Alisma* and *Baldellia* are closely related.

References:

Björkqvist I (1968) Studies in *Alisma* L., 2. Chromosome studies, crossing experiments, and taxonomy. Op. Bot. Soc. Lund 19, 1–138.

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Les DH & Philbrick CT (1993) Studies of hybridization and chromosome number variation in aquatic angiosperms: evolutionary implications. Aquatic Botany 44, 181–228.

Aloaceae → Asphodelaceae

Alstroemeriaceae (Liliales) 4: 200

Peruvian lilies = Inkaliliengewächse

2 tribes (AP website 2024):

Alstroemerieae 2: 185 *Alstroemeria* 80 (incl. *Schickendantzia*°, *Taltalia*°), *Bomarea* 105 (incl. *Leontochir*° *ovallei*).

Luzuriageae 2: 6 *Drymophila* 2, *Luzuriaga* 3.

IS: IPNI 2024: *Alstroemeria* 6 IS, *Bomarea* 1 IS.

Alstroemeria × *Bomarea* (= *Leontochir*°) *ovallei* **Alstroemerieae** ovule culture = EC Bridgen 2011 (no details!), Kashiwara et al. 2012 (“primary embryos aborted”)

References:

Bridgen M (2011) Flowering geophytes of Chile have ornamental potential.

http://www.lib.teiep.gr/images/stories/acta/Acta%20570/570_6.pdf

Kashihara Y et al. (2012) Towards intergeneric hybridization between *Alstroemeria* L. and *Bomarea* Mirb. Floriculture and Ornamental Biotechnology.

http://eprints.lib.hokudai.ac.jp/dspace/bitstream/2115/52570/1/FOB_6%28SI2%29146-149o.pdf

Altingiaceae (Saxifragales) 1: 13 + extinct taxa

sweet gum, star gum, styrax = Amberbäume

Separated from Hamamelidaceae as family Altingiaceae by Ickert-Bond et al. 2005.

Liquidambar 13 (incl. *Altingia*°, *Cathayambar*°, *Semiliquidambar*°, *Sedgwickia*°).

Probably **basic type family Altingiaceae** (1: 13). Isolated monogeneric family (*Liquidambar*). The species are closely related. Some authors accept only 2 species *orientalis* and *styraciflua*. These are connected by hybridization.

IS: *Liquidambar* (*formosana* × *styraciflua*) Lewis et al. (2024) doi:[10.1007/s11056-024-10057-7](https://doi.org/10.1007/s11056-024-10057-7), (*formosana* × *orientalis*; *formosana* × *styraciflua*; *orientalis* × *styraciflua*) Santamour 1972 <https://academic.oup.com/forestscience/article/18/1/23/4675355>, and see below.

Altingia° (*Liquidambar*) *haeckelianum* × *Liquidambar cordifolium* **IS HY** (→ *Semiliquidambar*° nat. hybridogeneous taxon) Wu et al. 2009, Ickert-Bond & Wen 2013

References:

Ickert-Bond SM, Pigg KB & Wen J (2005) Comparative infructescence morphology in *Liquidambar* (Altingiaceae) and its evolutionary significance. Amer. J. Bot. 92, 1234–1255.

<http://www.amjbot.org/cgi/content/full/92/8/1234>

Ickert-Bond SM & Wen J (2013) A taxonomic synopsis of Altingiaceae with nine new combinations. PhotoKeys 31, 21–61.

Wu W et al. (2009) Molecular evidence for natural intergeneric hybridization between *Liquidambar* and *Altingia*. J. Plant Res. 123, 231–239. doi: 10.1007/s10265-009-0275-z

Amaranthaceae (incl. Chenopodiaceae) (Caryophyllales) 180: 2000–2500. (1 IG)

amaranth family = Fuchsschwanzgewächse

13 subfamilies:

Achyranthoideae, Aervoideae, Amaranthoideae, Betoideae, Camphorosmoideae, Celosioideae, Chenopodioideae 10: 500, Corispermoideae, Gomphrenoideae, Polycnemoideae, Salicornioideae, Salsoloideae, Suaeoideae 2: 83.

Amaranthoideae 57: 330.

polyphyletic

IS: POWO (2026): *Amaranthus* 12 IS, *Atriplex* 7 IS, *Blitum* 1 IS.

Amaranthus tricolor × *Celosia cristata* ISF **Amaranthoideae** × **Celosioideae** Mastuti et al. 1997
(SO = somatic hybrid, but some symmetric hybrids by protoplast fusion of calli)

Chenopodioideae 20: 500. 1 IG

Some authors still retain this group as a separate family Chenopodiaceae.

4 tribes (AP website 2025):

Corispermaceae 3, Chenopodieae (= Atripliceae) 10: 460, Axyrideae 3, Dysphanieae 4.

IS: POWO (2026): *Atriplex* 7 IS, *Blitum* 1 IS, *Chenopodium* 23 IS, *Corispermum* 3 IS, *Dysphania* 2 IS, *Oxybasis* 1 IS, *Salicornia* 2 IS, *Salsola* 1 IS, *Sclerolaena* 1 IS, *Suaeda* 1 IS).

Chenopodiastrum (= *Chenopodium*) *hybridum* × *Lipandra polysperma* (= *Chenopodium polyspermum*)
Chenopodieae (→ × *Lipastrum* Mosyakin 2013 in *Phytoneuron* 56, 1–8) Mosyakin 2013 (nat. hyb.) IPNI 2018, POWO 2025

References:

- Mastuti R et al. (1997) Production of intergeneric hybrid calli from C-3 and C-4 species of Amaranthaceae through protoplast fusion. *Japanese J. Crop Science* 66, 456–465.
<http://retnomastutibiologi.lecture.ub.ac.id/2012/04/production-of-intergeneric-hybrid-calli-from-c-3-and-c-4-species-of-amaranthaceae-through-protoplast-fusion/>
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<http://www.phytoneuron.net/2013Phytoneuron/56PhytoN-ChenopodiumNames.pdf>

Amaryllidaceae (Asparagales) 73: 1605. (7 IG + 7 IT)

amaryllis family = Amaryllisgewächse, Narzissengewächse

3 subfamilies (AP website 2024):

Agapanthoideae 1: 8.

Allioideae 14: 795 (4 tribes).

Amaryllidoideae 75: 900 (14 tribes).

Allioideae 14: 795

4 tribes.

Allieae 1: 1020

Allium 1020.

Probably **basic type Amaryllidaceae Allioideae tribe Allieae** (1: 1020) as a well-characterized family with only one monophyletic genus (*Allium*).

IS: POWO 2025: 1 IS only! – en.wikipedia 2026: “Many *Allium* species and hybrids are cultivated as ornamentals.”

Amaryllidoideae 75: 900.

amaryllis, daffodils, snowdrops = Amaryllis-Verwandte

14 tribes (AP 2026):

Amaryllideae 11: 146.

Calostemmateae 2: 7.

Clinantheae 3: 40.

Cyrtantheae 1: 56 *Cyrtanthus* (incl. *Vallota*°).

Eucharideae (incl. *Stenomessae*) 10: 100.

Eustephieae 4: 15.

Galantheae 5-8: 31.

Griffinieae 2: 22 *Griffinia*, *Worsleya*.

Haemantheae 6: 80 *Clivia*, *Haemanthus*, ...

Hippeastreae 6: 300.

Hymenocallideae 3: 65 *Hymenocallis* 50, *Ismene* 11, ...

Lycorideae 3: 27 *Lycoris* 20, ...

Narcisseae 2: 58 *Narcissus* 50 (incl. *Corbularia*°), *Sternbergia* 8.

Pancratieae 1: 20.

Amaryllideae 11: 146. 4 IG + 6 IST

4 subtribes (en.wikipedia 2026):

Amaryllidinae 1 *Amaryllis* 2.

Boophoninae 1 *Boophone* 2.

Crininae 3 *Ammocharis* 6, *Crinum* 65, *Cyristetes* 1 (included in *Ammocharis* by some authors).

Strumariinae 6 *Brunsvigia* 23, *Crossyne* 2, *Hessea* 13, *Namaquanula* 2, *Nerine* 23, *Strumaria* 26.

Basic type Amaryllidaceae Amarylloideae tribe Amaryllideae (11: 146): all 4 subtribes are connected by hybridization.

Amaryllis × *Ammocharis longifolia* **Amaryllidinae** (→ × *Amaristes* Hannibal)

<http://de.wikipedia.org/wiki/Amaryllidoideae>

Amaryllis bella-donna × *Boophone disticha* **IST Amaryllideae × Boophoninae** (→ × *Boopharyllis*)

<http://www.flickr.com/photos/amarguy/2742635323/> (2011), not in IPNI 2024

Amaryllis bella-donna × *Brunsvigia josephinae* **IST Amaryllidinae × Strumariinae** (→ × *Amarygia* Ciferri & Giacom. 1950 Nomencl. Fl. Ital., Pt. 1, 121; „× *Brunsdonna*“ van Tubergen ex Worsley 1925 in Gard. Chron., Ser.3, 78, 391; the latter name adopted from the old synonym *Belladonna* of *Amaryllis belladonna*) IK 1974, Willis 1985, Zander 2008, POWO 2026

Amaryllis × *Brunsvigia* × *Nerine* **IST Amaryllidinae × Strumariinae** (→ × *Traubara* Lehmiller 2010 in Herbertia 63: 255–256) IPNI 2015. POWO 2026

Amaryllis bella-donna („*Belladonna*“) × *Crinum moorei* **IST Amaryllidinae × Crininae** (→ × *Amarcrinum* 1925 hort. ex Coutts in Gard Chron., Ser. 3, 78, 411; = × *Crindonna*° Ragioneri 1921 in Gard. Chron., Ser.3, 69, 32; = × *Crinodonna*° Stapf 1927/1929) IK 1929, Knobloch 1972, Zander 2008, POWO 2026

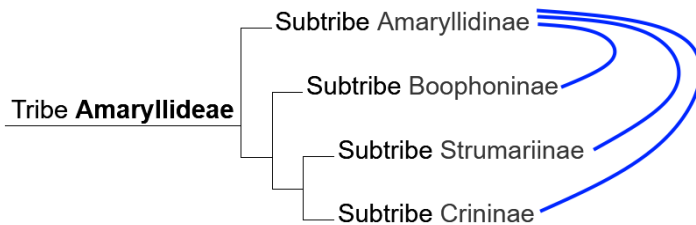
Amaryllis bella-donna × *Nerine bowdenii* et div. spec. **IST Amaryllidinae × Strumariinae** (→

× *Amarine* Sealy 1968 in J. Roy. Hort. Soc. London 92, 432) IK 1974, Willis 1985, BR 1992, Katsukawa et al. 1999, POWO 2026

Ammocharis × *Crinum* **IST** **Amaryllidinae** × **Crininae** (→ × *Crimocharis* Lehmiller 1999 (publ. 2000) *Herbertia* 54, 125) IPNI 2007 etc., AP website 2025

Brunsvigia × *Nerine* **Strumariinae** (→ × *Brunserine* Traub 1963 in *Plant Life* 19, 59) IK 1970, POWO 2026 (art. hyb.)

Crinum × *Cybistetes* ("*Ammocharis*") *longifolia* **Crininae** (→ × *Crinetes* Lehmiller 2013 in *Herbertia* 66: 335) IPNI 2015, POWO 2025



Amaryllideae: hybrid connections in the phylogeny from en.wikipedia (2026, CC BY SA 4.0).

Cyrtantheae 1: 56

Cyrtanthus (incl. *Vallota*°) 56.

Cyrtanthus × *Vallota*° (= *Cyrtanthus* p. p.) **IS** **Cyrtantheae** (→ × *Vallanthus* Ciferri & Giacom. 1950 *Nomencl. Fl. Ital.*, Pt. 1, 122; = *Cyrtanthus hybridus* N. E. Brown 1885) IK 1974

Eucharideae (incl. *Stenomessae*) 10: 100. **1 IG**

Phaedranassa, *Plagiolirion*, *Stenomesson* 35, *Urceolina* 26 (incl. *Caliphruria*°, *Eucharis*°), It has been proposed to unite all or most taxa in *Urceolina*.

Caliphruria° (= *Urceolina* p. p.) × *Eucharis*° (= *Urceolina* p. p.) **IS** **Eucharideae** (→ × *Calicharis* A. W. Meerow 1989 in *Ann. Missouri Bot. Gard.* 76, 208) (nat. hyb.) IK 1991, POWO 2025 (*Urceolina butcheri*)

Eucharis° (*Urceolina*) × *Urceolina* **IS** **Eucharideae** (→ × *Urceocharis* Mast. 1892 *Gard. Chron.* ser. 3, 12: 214) (nat. hyb.) Watson 1893, IK, Knobloch 1972, now often included in *Urceolina*, POWO 2025 (*Urceolina* IS)

Phaedranassa × *Stenomesson* **Eucharideae**

<http://forums.gardenweb.com/forums/load/amaryllishippeastrum/msg120402195545.html>

Hippeastreae 7: 300. **1 IG + 1 IT**

2 subtribes (en.wikipedia 2026: the subdivision is provisional and several species have been shifted to other genera, even of the other subtribe):

Hippeastrinae *Hippeastrum* 105, *Zephyranthes* 175 (incl. *Cooperia*°, *Habranthus*°, *Sprekelia*°, *Rhodophiala*° *bifida*)

Traubinae *Eremolirion/Paposo*a, *Phycella* 14 (incl. *Habranthus chilensis*, *Rhodophiala*° *chilensis*), *Pyrolirion* (or part of *Eustephieae*), *Rhodolinum*, *Traubia* 1.

IS: POWO 2026 *Hippeastrum* 9 IS.

- Cooperia*° (= *Zephyranthes* p. p.) × *Habranthus*° (= *Zephyranthes* p. p.) IS *Hippeastrinae* (→ × *Coobranthus* T. M. Howard 1990, publ. 1991 in *Herbertia* 46, 121) (nat. hyb.) Howard 1990, IK 1996, David 2011, POWO 2025 (*Zephyranthes* IS)
- Cooperia*° (= *Zephyranthes* p. p.) × *Zephyranthes* IS *Hippeastrinae* (→ × *Cooperanthes* Lancaster 1913 in *Journ. Roy. Hort. Soc., Lond.* 38, 531) (art. hyb.) IK 1966, Knobloch 1972, Willis 1985, David 2011, POWO 2026
- Habranthus*° (*Phycella*!) *chilensis* × *Hippeastrum miniatum* × *Rhodophiala*° (*Zephyranthes*) *bifida* IST *Hippeastrinae* × *Traubinae* (→ × *Rhodobranthus* Traub 1958 in *Plant Life* 14, 48, art. hyb.) Traub 1952, IK 1966, Knobloch 1972, Willis 1985, cf. *Phycella* × *Zephyranthes*
- Habranthus*° (= *Zephyranthes* p. p.) × *Sprekelia*° (= *Zephyranthes* p. p.) IS *Hippeastrinae* (→ × *Sprekanthus* Traub 1969 in *Plant Life* 25, 78) IK 1974, Willis 1985
- Habranthus*° (= *Zephyranthes* p. p.) × *Zephyranthes* IS *Hippeastrinae* (→ × *Zephybranthus* T. M. Howard 1990, publ. 1991, in *Herbertia* 46: 123; = „× *Sydneya*“ Traub 1954 in *Plant Life* 10, 47; et 1958 in *Plant Life* 14, 49; invalid name) (art. hyb.) (2 nothospecies) Traub 1952, IK 1966, Knobloch 1972, David 2011
- Hippeastrum* × *Sprekelia*° (= *Zephyranthes* p. p.) × *Zephyranthes* *Hippeastrinae* (→ × *Howardara* Lehmiller 2010 in *Herbertia* 64: 130) IPNI 2011, POWO 2026
- Hippeastrum miniatum* („*Amaryllis chilensis*“) × *Rhodophiala*° (= *Zephyranthes*) *bifida* *Hippeastrinae* Traub 1952
- Hippeastrum* × *Sprekelia*° (= *Zephyranthes* p. p.) IS *Hippeastrinae* (→ × *Hippeaskelia*° = × *Hippeastrelia*) see Katsukawa et al. 1999, not IPNI 2024
- Hippeastrum* × *Sprekelia*° (= *Zephyranthes* p. p.) × *Zephyranthes* IS *Hippeastrinae* (→ × *Howardara* Lehmiller 2010 in *Herbertia* 64: 130) IPNI 2011, POWO 2026
- Phycella chilensis* × *Zephyranthes bifida* IST *Hippeastrinae* Z. H. Feng 2024 (→ × *Zecella*) (art. hyb.) POWO 2026 (synonymous to × *Rhodobranthus* ?)
- Sprekelia*° (= *Zephyranthes* p. p.) × *Zephyranthes* IS *Hippeastreae* (→ × *Sprekelianthes* Lehmiller *Herbertia* 2003/2004 (publ. 2005) 58: 124) IPNI 2007, POWO 2026

Hymenocallideae 3: 65. 1 IG

Hymenocallis 50, *Ismene* 11, ...

Hymenocallis × *Ismene* (→ × *Ismenocallis*) https://www.plantdelights.com/products/ismene-sulphur-queen?srsItd=AfmBOorJ-Z7ALHhV1UYedWjMMcD6Zot_jK0n2eUI0wADyjBfKRpC7AVD 2026

Narcisseae 2: 58

Narcissus 50 (incl. *Corbularia*°), *Sternbergia* 8.

IS: POWO (2025): *Narcissus* (incl. *Corbularia*°) 133 IS.

Corbularia° (= *Narcissus*) *bulbocodium* × *Narcissus* IS *Narcisseae* (→ × *Narcibularia* Wehrhahn 1929, *Gartenstauden* I, 204) IK 1947, Knobloch 1972, Willis 1985, POWO 2026

Presumed intertribal hybrids of Amaryllidoideae

- Clivia* × *Eucharis*^o (= *Urceolina* p. p.) IT **Haemantheae** × **Eucharideae** (→ × *Cliveucharis* Rodigas 1891 ex Rev. Hortic. 93: 316 et ex Gard. Chron. (1891) I: 708; = × *Cliveocharis* hort.) IK, Knobloch 1972, Willis 1985, POWO 2026, IPNI 2026 (unplaced). unconfirmed!
- Clivia* × *Hippeastrum* IT **Haemantheae** × **Hippeastreae** (→ “× *Hippo-Clivia*” Bonavia) Knobloch 1972, Willis 1985, cf. <http://aristongardening.blogspot.com/2009/10/clivia-miniata.html>: (blog no longer available) „Gordon [Mc Neil] conducted countless hybridization experiments with his bulbs, incl. many intergeneric crosses; he was particularly proud of his putative hybrid between *Clivia miniata* and an unidentified *Hippeastrum* species, which he named 'Green Girl', of which the author was fortunate enough to receive a plant shortly before Gordon's passing.”; see also <http://forums.gardenweb.com/forums/load/clivia/msg0808042426170.html?2>, <https://www.pacificbulbsociety.org/pbslist/2015-March/ljsr5h5lnve5dhq9hqqbpdgfu5.html> (There is frequent mention of a *Clivia* × *Hippeastrum* hybrid created by the late Gordon McNeil in South Africa called 'Green Girl' but there is no evidence that I can find substantiating the claim that it is a true intergeneric cross. The picture of 'Green Girl' looks like just another nice *Clivia* selection, IPNI 2024 (no entry!) This hybrid is definitely unconfirmed!
- Clivia* × *Lycoris* IT **Haemantheae** × **Lycorideae** Lv et al. 2023 Sci. Hort. 319: it is a sexual „hybrid” with absolute dominance of the female parent!!
- Crinum* × *Leucojum* IT **Amaryllideae** × **Galantheae** (→ „× *Leucocrinum*”) <http://mwalnik.wodip.opole.pl/botanika/amaryllidaceae.html> erroneous: *Leucocrinum* is the accepted name of a monotypic species of Asparagaceae Agavoideae and no hybrid.
- Hemerocallis* × *Lycoris* IF **Asphodelaceae** **Hemerocallidoideae** × **Amaryllidaceae** **Lycorideae** Lv et al. 2022 (*L. aurea* × *H. 'My Complementary'*, EC, one embryo developed into a plantlet with both intermediate and novel characteristics of parents). This appears to be the first case of an interfamilial hybrid in Angiosperms. But it is obviously only a partial hybrid with absolute dominance of the female parent. Both families are part of the order Asparagales and the systematic position has changed variously.
- Hippeastrum* × *Sprekelia* (= *Zephyranthes* p. p.) × *Nerine* div. spec. IT **Hippeastreae** × **Amaryllideae** (trigeneric) Katsukawa et al. 1999 **unconfirmed**
- Lycoris* × *Nerine* div. spec. IT **Lycorideae** × **Amaryllideae** Katsukawa et al. 1999 **unconfirmed**
- Nerine* div. spec. × *Sprekelia*^o (= *Zephyranthes* p. p.) IT **Amaryllideae** × **Hippeastreae** Katsukawa et al. 1999. unconfirmed
- Nerine* div. spec. × *Vallota*^o (= *Cyrtanthus* p. p.) IT **Amaryllideae** × **Cyrtantheae** Katsukawa et al. 1999 unconfirmed

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Amborellaceae (Amborellales) 1: 1

Amborella trichopoda.

Basic type family Amborellaceae (1: 1): The dioecious shrub *Amborella trichopoda* endemic in New Caledonia is the only species of the whole order! It is very isolated and from a molecular view considered to be basal to all other Angiosperms.

Annonaceae (Magnoliales) 109: 2550

custard-apple family

23 subfamilies (AP website 2024)

IS: IPNI 2013: *Annona* 1 IS, *Asimina* 6 IS.

Asimina × *Deeringothamnus*^o (= *Asimina* p. p.) **IS** *Annonoideae* Norman 2003 (nat. hyb.) (*A. pygmaea* × *D. rugelii*, *A. reticulata* × *D. pulchellus*)

References:

Norman EM (2003) Reproductive biology of *Deeringothamnus rugelii* and *D. pulchellus* (Annonaceae). *Taxon* 52, 547–555.

Apiaceae = Umbelliferae (Apiales) 446: 3820

umbellifers = Doldenblütler

8 main groups (subfamilies) (AP website 2024)

The large and important **family Apiaceae** has long been known for its paucity of hybrids (e.g. Bell 1971, Webb & Druce 1984), and is therefore unsuitable for basic type studies.

Apioideae 380: 3200. 3 IG

IS: IPNI 2015: 18 IS in 8 genera.

Aciphylla div. spec. × *Anisotome* div. spec. **Aciphyllae** questionable, for a discussion see Webb & Druce 1984

Aciphylla squarrosa × *Gingidia montana* **Aciphyllae** Webb & Druce 1984 (nat. hyb. in New Zealand)

Apium graveolens × *Petroselinum crispum* (= *hortense*) **Apiace** Becker 1925/1926 (art. hyb., success only when *Apium* was the female parent) Lamprecht 1961, Honma & Lacy 1980

Anthriscus × „*Chaerophyllum*“ (→ × *Anthrachaerophyllum* P. Fournier 1937 Quatre Fl. France, 663) **Scandiceae** IK 1950, Knobloch 1972, Willis 1985. erroneous, according to Index synonymique France <http://www2.dijon.inra.fr/flore-france/an.htm>: „Erreur. Le type correspond à *Anthriscus sylvestris* subsp. *sylvestris*.“, Nevertheless, this nothogenus is accepted by many authors, even in IPNI 2017 and on the AP website 2024

Berula erecta × *Helosciadium* („*Apium*“) *nudiflorum* **Oenantheae** (→ × *Beruladium* A. C. Leslie 2015 in Taxon 64) Desjardins et al. 2015 (*Berula erecta* × *Helosciadium nodiflorum*, nat. hyb. Cambridgeshire, England). Formerly *Helosciadium* was grouped in *Apium* (tribe **Apiace**)

References:

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- Honma S & Lacy ML (1980) Hybridization between pascal celery and parsley. Euphytica 29, 801–805. <https://doi.org/10.1007/BF00023227> *Apium* × *Petroselinum*
- Lamprecht H (1961) Ein Bastard *Apium graveolens* L. × *Petroselinum hortense* Hoffm. Agri Hortique Genetica 19 (2), 223–224.
- Webb CJ & Druce AP (1984) A natural intergeneric hybrid, *Aciphylla squarrosa* × *Gingidia montana*, and the frequency of hybrids among other New Zealand apioid Umbelliferae. New Zealand J. Bot. 22, 403–411.

Apocynaceae (Gentianales) 400: 5000. (37 IG)

dogbane family = Hundsgiftgewächse

This family has been much enlarged since about 2010:
5 subfamilies, 25 tribes (AP website 2025):

Apocynoideae 77: 860.

Asclepiadoideae 214: 2365.

Periplocoideae 33: 180.

Rauvolfioideae 84: 980.

Secamonoideae 8: 160.

IS: IPNI 2013 (excl. Asclepiadoideae): 8 IS (*Apocynum* 1, *Malouetia* 1, *Mandevilla* incl. *Dipladenia*° 2, *Pachypodium* 2, *Parsonia* 1, *Rauvolfia* 1, *Tabernaemontana* 1).

Asclepiadoideae 214: 3000

milkweeds and carrion flowers = Seidenpflanzen- oder Schwalbenwurzgewächse

5 tribes:

Asclepiadeae 87: 1840.

Ceropegieae 11: 800.

Eustegieae 2: 4.

Fockeeae 2: 9.

Marsdenieae 26.

Asclepiadeae 87: 1840. **1 IG**

Asclepias woodii × *Pachycarpus concolor* **Asclepiadinae** Shuttleworth & Johnson 2010

Ceropegieae 12(–48): 800. **36 IG** (or 2 IG after the taxonomy of AP website 2025)(**Stapeliinae**)

carrion or starfish flowers = Aasblumen-Verwandte

No subtribes in AP website 2025 or in en.wikipedia 2025.

Endress et al. 2014 differentiate 4 subtribes:

Anisotominae 5: 37 *Anisotoma* 4, *Emplecanthus* 2, *Neoschumannia* 2, *Riocreuxia* 15, *Sisyranthus* 14.

Heterostemminae 1: 45 *Heterostemma* 45.

Leptadeniinae 4: 36 *Conomitra* 1, *Leptadenia* 24, *Orthanthera* 7, *Pentasacme* 4.

Stapeliinae 2: 330 (37 genera in Endress et al. 2014, cf. es.wikipedia 2025) *Ceropegia* (incl. *Baynesia*°, *Brachystelma*°, *Caralluma*°, *Decabelone*°, *Duvalia*°, *Duvaliandra*°, *Echidnopsis*°, *Edithcolea*°, *Frerea*°, *Gonostemum*°, *Hoodia*°, *Hoodiopsis*°, *Huernia*°, *Huerniopsis*°, *Lavrancia*°, *Notechidnopsis*°, *Ophionella*°, *Orbea*°, *Orbeanthus*°, *Orbeopsis*°, *Pectinaria*°, *Pseudolithos*°, *Quaqua*°, *Rhytidocaulon*°, *Stapelia*°, *Stapelianthus*°, *Stapeliopsis*°, *Tavaresia*°, *Trichocaulon*°, *Tridentea*°, *Tromotriche*°, *White-Sloanea*°), *Piранthus* 16 (incl. *Obesia*°).

Basic type Asclepiadaceae Asclepiadoideae Ceropegieae subtribe Stapeliinae (22–37: 330).

Kutzelnigg 2009, unpubl.: 18 of the former 37 genera according to Endress et al. (2014) are closely connected by 36 intergeneric hybrids. Possibly the basic type can be extended to the whole tribe Ceropegieae, but no hybrids are known within or with genera of the other 3 subtribes. Differences between the subtribes obviously are not big, because Stevens (AP website 2024) and en.wikipedia 2025 do not differentiate within tribe Ceropegieae, and according to Meve & Liede (2004) the tribe is monophyletic. This is also confirmed by the

phylogeny of Nazar et al. 2019.

According to AP website 2025 nearly all of the following hybrids have been degraded to interspecific hybrids with the exception of *Duvalia* × *Piранthus* and *Piранthus* × *White-Sloanea*.

Brachystelma × *Gonostemon* (= *Stapelia* p. p.) (→ × *Gonostelma* P. V. Heath 1995 in Calyx 5, 49; = × *Brachystemon* P. V. Heath 1992 in Calyx 1, 20) IK 1996

Brachystelma × *Stapelia* (→ × *Brachypelia* 1980 G. D. Rowley, Name that Succulent, 91) IK 1987

Caralluma × *Hoodia* (→ × *Hoodialluma* G. D. Rowley 1976, publ. 1979 in Repert. Pl. Succ. 27, 4) IK 1987, Albers & Meve 2002

Caralluma × *Pseudolithos* (→ × *Carallithos* 1980 G. D. Rowley, Name that Succulent, 91) IK 1987

Caralluma div. spec. × *Stapelia* (→ × *Carapelia* G. D. Rowley 1972 publ. 1974 in Repert. Pl. Succ. (I.O.S.) 23, 6) IK 1981

Duvalia × *Huernia* (→ × *Huernivalia* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 77; = × *Dernia* M. Kimnach, J. N. Trager & D. Tufenkian 1993 in Cact. Succ. J. (U.S.A.) 65, 75) IK 1987, IK 1996, Albers & Meve 2002

Duvalia × *Piранthus* (→ × *Duvaliaranthus* P. V. Bruyns 1976 in J. South Afr. Bot. 42, 365) IK 1987, Albers & Meve 2002, POWO 2025

Duvalia × *Stapelia* (→ × *Stapevalia* Cumming 2015), POWO 2025

Frerea × *Huernia* (→ × *Frernia* Barad ex M. Kimnach & J. N. Trager 1992 in Cact. Succ. J. (U.S.A.) 64, 88) IK 1996

Gonostemon × *Hoodia* (→ × *Hoodiostemon* P. V. Heath 1992 in Calyx 1, 20) IK 1996

Gonostemon × *Orbeopsis* (→ × *Orbeostemon* P. V. Heath 1992 in Calyx 1, 20) IK 1996

Gonostemon × *Stapelia* (→ × *Gonostapelia* P. V. Heath 1992 in Calyx 1, 21) IK 1996

Gonostemon × *Tavaresia* (→ × *Tavastemon* P. V. Heath 1992 in Calyx 1, 21) IK 1996

Gonostemon × *Tridentea* (→ × *Gonodentea* P. V. Heath 1993 in Calyx 3, 3) IK 1996

Gonostemon × *Tromotriche* (→ × *Gonotriche* P. V. Heath 1992 in Calyx 1, 21) IK 1996

Hoodia × *Orbea* (→ × *Hoodiorbea* G. D. Rowley 2003 Asklepios 89, 10) IPNI 2008 (*H. gordonii* × *Orbea* = *Orbeopsis lutea* → *Hoodiopsis trieneri* C. A. Lückh.; × *Hoodialluma triebneri* (Lückh.) G. D. Rowley.), POWO 2025

Hoodia × *Stapelia* (→ × *Hoodiapelia* G. D. Rowley 1976 publ. 1979 in Repert. Pl. Succ. (I.O.S.) 27, 4) IK 1987, POWO 2025

Hoodia × *Trichocaulon* (= *Hoodia* p. p.) (→ × *Hoodiocalon* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 77) IK 1987

Hoodia × *Tromotriche* (→ × *Hoodiotriche* G. D. Rowley 2003 Asklepios 89, 10 = *Echidnopsis atlantica*) IPNI 2008 (= „× *Lueckhoffia*“ White & Sloane 1935 in S. African Gard. 25: 36), POWO 2025

Huernia × *Orbea* (→ × *Huerniorbea* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 77) IK 1987

Huernia × *Stapelia* (→ × *Huernelia* G. S. Barad 1995 in Cact. Succ. J. (U.S.A.) 67, 255 = × *Stuernia* P.V. Heath 1995 in Calyx 5, 49) IK 1996, Albers & Meve 2002

Huernia × *Stapelianthus* (→ × *Huernianthus* G. S. Barad 1995 in Cact. Succ. J. (U.S.A.) 67, 255) IK 1996, Albers & Meve 2002

Huernia × *Tavaresia* Hübner & Tränkle 2011, 2025 (art. hyb.)

Huerniopsis × *White-Sloanea* (→ × *Whitesloaniopsis* G. S. Barad 1995 in Cact. Succ. J. (U.S.A.) 67, 255) IK 1996, Albers & Meve 2002

Orbea × *Stapelia* (→ × *Orbelia* 1980 G. D. Rowley, Name that Succulent, 95) IK 1987, Albers & Meve 2002, Hübner & Tränkle 2025, POWO 2025

Orbea × *Tavaresia* (= *Decabelone*) (→ × *Tavarorbea* C. C. Walker 2004 New Zealand Cact. Succ. J. 57, 103) IPNI 2008, <http://oro.open.ac.uk/29405/>, Hübner & Tränkle 2025

Orbea × *Tromotriche* (→ *Orbeotriche* G. D. Rowley 2011 Asklepios 109: 14) IPNI 2013

Orbea maculata × *Stapelia kwebensis* (→ × *Orbelia plowesii* (P. V. Heath) Z. H. Feng 2024 comb. nov.

Orbeopsis × *Stapelia* (→ × *Orbeopelia* 1980 G. D. Rowley, Name that Succulent, 95) IK 1987

Piaranthus × *White-Sloanea* (→ × *Piarioanea* G. D. Rowley 2003 Asklepios 89, 11) IPNI 2008

Stapelia × *Tavaresia*° (= *Decabelone*) (→ × *Staparesia* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 79) IK 1987, Albers & Meve 2002, Hübner & Tränkle 2025, POWO 2025

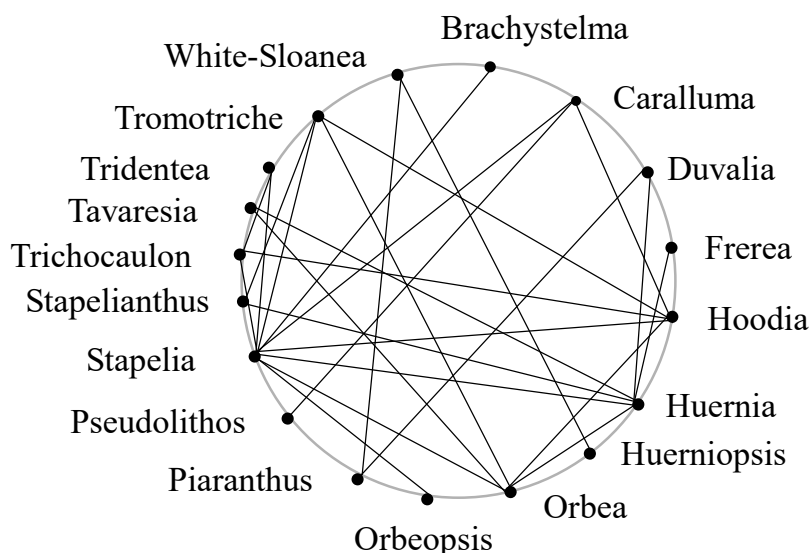
Stapelia × *Trichocaulon* (→ × *Trichopelia* 1980 G. D. Rowley, Name that Succulent, 98) IK 1987

Stapelia × *Tridentea* (→ × *Tridentapelia* 2003 G. D. Rowley Asklepios 89, 11) IPNI 2008, POWO 2025, see also: *Gonostemon*° (= *Stapelia* p. p.) × *Tridentea* (→ × *Gonodentea* P. V. Heath 1993 in Calyx 3, 3) IK 1996

Stapelia × *Tromotriche* (→ × *Tromostapelia* P. V. Heath 1992 in Calyx 1, 21) IK 1996, Albers & Meve 2002, Feng 2024

Stapelianthus decaryi × *Tromotriche aperta* (→ × *Stapelianthriche*, ined.) 2009
<http://www.asclepidarium.de/Photoausstellung%20Bilder%20Hybriden.htm>

Trichocaulon (= *Hoodia* p. p.) × *Tridentea* (→ × *Trichodentea* P. V. Heath 1992 in Calyx 1, 22) IK 1996



Apocynaceae Asclepiadoideae Ceropegieae subtribe Stapeliinae: hybrid connections between the main classical genera (from Kutzelnigg 2009). AP website 2025 accepts only 2 genera: *Ceropegia* and *Piaranthus*.

Marsdenieae 36: 790

Dischidia × *Hoya*, was published in 1994 in the internet as a possible intergeneric hybrid; the two genera are closely related. → *Hoya heuschkeliana* from the Philippines is supposed to be this hybrid, see e.g. <http://www.dasgrueneforum.com/hoyah/hoya-heuschkeliana->

[t220.html](#), etc. The leaves closely resemble those of *Dischidia*. Original description by Kloppenburg 1989 in *The Hoyan* 11 (1: 2).

Rauvolfioideae 84: 980

11 tribes (AP website 2025)

Catharanthus roseus × *Rauvolfia serpentina* **IT Vinceae × Rauvolfieae SO** Kostenyuk et al. 1991
(only in vitro growth up to 20 months, **probably asymmetric AS**)

Catharanthus roseus × *Vinca minor* **Vinceae probably asymmetric SO** Kostenyuk et al. 1991
(see above)

Rauvolfia serpentina × *Rhazya stricta* **Rauvolfieae probably asymmetric SO** Kostenyuk et al.
1991 (see above), Sheludko et al. 2000, Gerasimenko et al. 2001 **SO** (cell subcultures)

Rauvolfia serpentina × *Vinca minor* **IT Rauvolfieae × Vinceae probably asymmetric SO**
Kostenyuk et al. 1991 (see above)

References:

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Asclepiadoideae). Systematics and Biodiversity 15, 143–155.

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Sheludko Y et al. (2000) Divergence of the indole alkaloid pattern in two somatic hybrid plant cell subcultures of *Rauvolfia serpentina* × *Rhazya stricta*. Planta Medica 66, 656–659.

Shuttleworth A & Johnson SD (2010) Floral scents of chafer-pollinated asclepiads and a potential hybrid. South African J. Bot. 76, 770–778. <https://doi.org/10.1016/j.sajb.2010.07.023>

Aquifoliaceae (Aquifoliales) 1: 600

holly family = Stechpalmengewächse

Ilex 400 (incl. *Nemopanthes*° *mucronatus*)

Probably **basic type family Aquifoliaceae** (1: 600) consisting of only 1 genus (*Ilex*) with many known hybrids.

IS: POWO 2025: *Ilex* 6 IS.

Ilexgarden 2026 <https://ilexgarden.com/hybrids.html>: *Ilex* 8 IS.

en.wikipedia 2026: "Many hundreds of hybrids and cultivars have been developed for garden use, among them the very popular "Highclere holly", *Ilex* × *altaclerensis* (*I. aquifolium* × *I. perado*) and the "blue holly", *Ilex* × *meserveae* (*I. aquifolium* × *I. rugosa*).[41] The cultivars *I.* × *meserveae* Blue Prince = 'Conablu' and Blue Princess = 'Conapri'[42] have gained the Royal Horticultural Society's Award of Garden Merit. [...] Another hybrid is *Ilex* × *koehneana*, with the cultivar 'Chestnut Leaf'.

Araceae (incl. Lemnaceae) (Alismatales) 123: 3500–5500. 1 IG + 1 ISF

Arum family, aroids = Aronstabgewächse

8 subfamilies:

Aroideae 72: 2300, Gymnostachyoideae, Lasioideae, Lemnoideae, Orontioideae,

Monsteroideae 4 tribes, 12 genera. Pothoideae 2 tribes, 3 genera. Zamioculcoideae.

IS: IPNI 2015: 53 IS: *Alocasia* 11 IS, *Anthurium* 34 IS, *Arum* 1 IS, *Caladium* 1 IS, *Cryptocoryne* 2 IS, *Lysichiton* 1 IS, *Philodendron* 1 IS, *Spathiphyllum* 1 IS, *Xanthosoma* 1 IS.

Anthurium andraeanum × *Spathiphyllum wallisii* **ISF** Pothoideae Anthurieae × Monsteroideae Spathiphyllae Yunshang et al. 2002. These 2 subfamilies are sister clades.

Alocasia odora × *Colocasia esculenta* Aroideae Colocasieae Yoshino et al. 1998. The tribe has only these 2 genera.

References:

Yoshino H et al. (1998) An artificial intergeneric hybrid between *Colocasia esculenta* (L.) Schott and *Alocasia macrorrhiza* (L.) G. Don. Monocots II. Paper given at the Second Int. Conf. on the Comparative Biology of the Monocotyledons, Sydney, 27 September–2 October 1998.

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Araliaceae (Apiales) 43: 1450. 1 IG

ginseng or ivy family = Araliengewächse

3 subfamilies:

Aralioideae 55: 1275.

Harmsiopanax 1: 3.

Hydrocotyloideae 4: 180.

Aralioideae 41: 1275

3 tribes:

Aralieae 13, Mackinlayeae 3, Schefflerieae 25.

IS: IPNI 2013 (sub Araliaceae s. str.): *Aralia* 1, *Nothopanax* 1, *Raukana*^o = *Pseudopanax* 2.

Fatsia japonica × *Hedera helix* **Schefflerieae** (→ × *Fatshedera* Guillaumin 1923 in J. Soc. Nat. Hort. France, Ser. IV. 24, 524) (sterile) IK 1938, Bilquez 1957, Knobloch 1972, Willis 1985, Deghan 1987, BR 1992, Zander 2008 (× *Fatshedera lizei* originated in 1912 in the French nursery Lize Frères in Nantes by hybridization of *F. japonica* and *H. helix* or rather *H. hibernica*)

http://152.1.237.188/arbweb/digital_images/2002/05-may/300/DSC01636.JPG

Pseudopanax (= *Neopanax*^o) *arboreus* × *Pseudopanax crassifolius unifoliatus* **IS** **Aralieae** Knobloch 1972

References:

Bilquez A-F (1957) Etude des causes de la stérilité de × *Fatshedera lizei*. J. Agr. Trop. Bot. Appl. 1957, 545–547.

Deghan B (1987) Comparative morphology of *Fatsia japonica*, *Hedera helix* and their hybrid *Fatshedera lizei*. J. Amer. Soc. Horticult. Science 112, 1053–1060.

Areaceae = Palmae (Arecales) 188: 2500. (8 IG)

palms = Palmen

Only family of the order Arecales.

5 subfamilies (AP website 2025):

Arecoideae 14 tribes 107: 1390, Calamoideae 21: 655., Ceroxyloideae 8: 45, Coryphoideae 46: 480, Nypoideae 1: 1.

Arecoideae 107: 1390

14 tribes, e.g. Areceae, Cocoseae, ...

Areceae 61: 665. 1 IG

16 subtribes.

Veitchia macdanielsi, *montgomeryana* × *Wodyetia bifurcata* **Ptychospermatinae** 2004 (art. hyb.)
Stein 2010 (*V. arecina* × *W. bifurcata*)

Cocoseae 17: 412. 5 IG

cocoid palms = Kokospalmen-Verwandte

3 subtribes (de.wikipedia 2025/NCBI 2010):

Attaleinae 10: 248 *Allagoptera* 5, *Attalea* 70, *Beccariophoenix* 3, *Butia* 20, *Cocos* 1, *Jubaea* 1, *Jubaeopsis* 1, *Parajubaea* 3, *Syagrus* 56 (9 IS), *Voaniola* 1.

Bactridinae 5: 175 *Acroconia* 8, *Aiphanes* 29, *Astrocaryum* 36, *Bactris* 78, *Desmoncus* 24.

Elaeidinae 2: 3 *Barcella* 1, *Elaeis* 2.

Probably **basic type Arecaceae Arecoideae Cocoseae subtribe Attaleinae** (10: 248): The tribe is well-defined and monophyletic. The genera *Butia* + *Jubaea* + *Syagrus* are connected by hybridization. A view on the phylogeny of Gunn (2016) shows that another 3 genera of the same subtribe are included, see the figure below.

Arecastrum^o (= *Syagrus*) *romanzoffianum* × *Butia capitata* (→ × *Butiarecastrum*) → see: *Butia* × *Syagrus*

Attalea × *Orbignya*^o (= *Attalea* p. p.) **IS Attaleinae** (→ × *Attabignya* Balick, A. B. Anderson & J. T. Medeiros-Costa 1987 in *Brittonia* 39, 27 = *Attalea* × *minarum* 2002 Balick, A. B. Anderson & Med.-Costa) *Zona* IK 1991, Pintaud 2008

Butia capitata × *Jubaea chilensis* **Attaleinae** (→ × *Jubautia* Demoly 2002 (publ. 2003) *J. Bot. Soc. France* 18–19, 189) IPNI 2011, see also Wilcox & Raulerson 2004, POWO 2025 (nat. hyb., fertile)

Butia × *Jubaea* × *Syagrus* **Attaleinae** trigeneric (→ × *Jubutyagrus*)

<http://www.palmtalk.org/forum/index.php?showtopic=26741>, Stein 2010, POWO 2025 (no entry) this hybrid is offered for sale in the internet

Butia × *Parajubaea* Stein 2010

Butia capitata (“*Cocos australis*”) × *Syagrus* (*Arecastrum*^o) *romanzoffianum* **Attaleinae** (→ × *Butyagrus* P. Vorster 1990 in *Taxon* 39, 662; = × *Butiarecastrum* Proschowsky 1921 in *Rev. Hort* 93 (17), 290) (art. hyb.) IK 1991, Wilcox & Raulerson 2004, POWO 2025

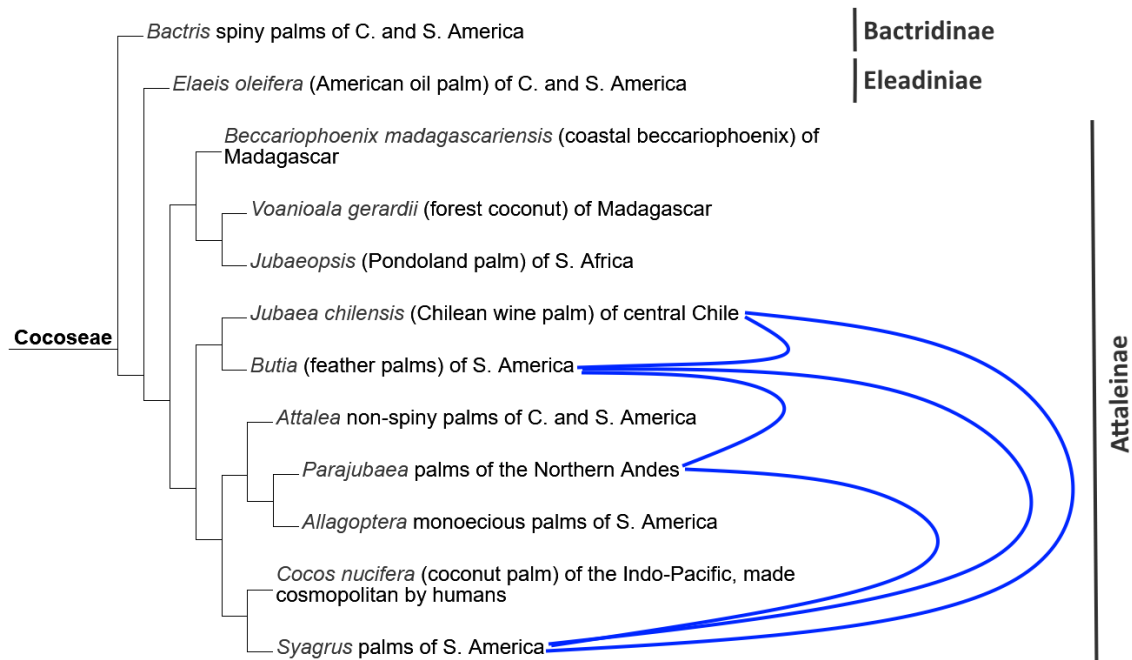
Corozo^o *oleifera* (= *Elaeis* p.p.) × *Elaeis guineensis* **IS Elaediniae** Kushairi 1985, BE 1992

Jubaea × *Syagrus* **Attaleinae** (→ “× *Jubagrus*”) Stein 2010, POWO (no entry)

Lytocaryum^o (= *Syagrus* p.p.) × *Syagrus* **IS Attaleinae** (→ × *Lytoagrus* Hodel 2005 *Palms* (1999+) 49, 123; = *Syagrus* × *nabonnandi* 1989 (Prosch.) Demoly) IPNI 2006, Stein 2010, POWO 2025 (*Syagrus* IS)

Maximiliana^o (= *Attalea* p.p.) × *Orbignya*^o (= *Attalea* p.p.) **IS Attaleinae** (→ × *Maximbignya* S. F. Glassman 1999 *Illinois Biol. Monogr.* 59, 199; = *Attalea dahlgreniana*, which is supposed to be of hybridogeneous origin HY) IPNI 2006, POWO 2025 (*Attalea* IS)

Parajubaea × *Syagrus* **Attaleinae** Stein 2010



Areaceae Arecoideae tribe Cocoseae: hybrid connections in the phylogeny of Gunn BF (2016). <https://openresearch-repository.anu.edu.au/bitstreams/98d7d3c7-600e-4ead-963e-337362a11b0e/download>), simplified by en.wikipedia (2026, CC BY SA 4.0).

Coryphoideae 45: 480. 2 IG

8 tribes, e.g.

Cryosophileae 10.

Phoeniceae.

Trachycarpeae, ...

Chamaerops humilis × *Phoenix dactylifera* (→ „× *Microphoenix decipiens*“ Naudin ex Carrière 1885 in Rev. Hort. [Paris] 57: 513) IT **Trachycarpeae** × **Phoeniceae** (art. hyb.) IK, Petrucci 1900 („unconfirmed“), Berger 1916 („unconfirmed“), Knobloch 1972, Willis 1985, POWO 2025, WFO 2025 („unchecked“), POWO 2025

Chamaerops humilis × *Phoenix dactylifera* × *Trachycarpus fortunei* IT **Trachycarpeae** × **Phoeniceae** (art. hyb.) (= „× *Microphoenix sahuti*“ Carrière 1885) IK (art. hyb.), Berger 1916 („unconfirmed“), POWO 2025 art. hyb., not validly published)

Coccothrinax argentata × *Thrinax morisii* **Cryosophileae** (Nauman 1988, 1990 (*C. argentata* × *T. morisii*, nat. hyb. Florida)

Coccothrinax × *Zombia* **Cryosophileae** Stein 2010

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Aristolochiaceae (Piperales) 8: 500

birthworts, pipevines = Osterluzeigewächse

2 subfamilies

IS: IPNI 2013: *Aristolochia* 2 IS, *Heterotropa* 1 IS.

Asclepiadaceae → Apocynaceae

Asparagaceae (Asparagales) 153: 2900. (2 IG)

asparagus family = Spargelgewächse

This family has been much enlarged since about 2000.

7 subfamilies (AP website 2025):

Agavoideae 23: 640.

Aphyllanthoideae 1: 1 (stems alone photosynthetic).

Asparagoideae 2: 165–295.

Brodiaeoideae 12: 62.

Convallarioideae = Nolinoideae 26: 530.

Lomandroideae 12: 186.

Scilloideae (= Hyacinthaceae) 41–70: 800–1025.

P. Steven on AP website 2025 writes: „This is a highly unsatisfactory family. Nothing characterises it, and while some of the subfamilies have several distinctive apomorphies and are also easy to recognise, others are difficult to recognise ...“

Agavoideae 23: 640

agave and allies = Agavengewächse

The subdivision is still matter of debate! Genera have been shifted from one family to another! The following subdivision is preliminary.

5 tribes (AP website 2025):

Agaveae (incl. Yuccaeae) 10: 425.

Anemarrheneae 1: 1.

Anthericeae 8: 285.

Behnieae 1: 1.

Herrerieae 2: 9.

Agaveae 14: 425

Agave 270 (incl. *Bravoa*°, *Manfreda*°, *Polianthes*°, *Prochnyanthes*°, *Pseudobravoa*°), *Beschorneria*, *Camassia*, *Chlorogalum* 3, *Echinoagave* 12, *Furcraea* 26, *Hastingsia*, *Hesperaloe* 1, *Hesperocallis*, *Hesperoyucca*, *Hosta* 30, *Paleoagave*, *Paraagave*, *Schoenolirion*, *Yucca* 55 (incl. *Clistoyucca*°, *Samuela*° 1).

The members of the large genus *Agave* s. l. (270) belong to the same basic type. At least 12 hybrids are known, including those connecting the 3 subgenera (*Agave*, *Litsea*, *Manfreda*).

POWO (2026): *Agave* 15 IS, *Camassia* 0 IS, *Hosta* 1 IS, *Yucca* 2 IS.

All known „intergeneric hybrids“ of **tribe Agaveae** as listed below are now downgraded as interspecific within *Agave*.

Agave × *Manfreda*° (= *Agave* p. p.) **IS Agaveae** (→ × *Mangave* hort. ex D. Klein 2010 Kakteen And. Sukk. 61 (8), 212) Howard 2001,

<http://www.plantdelights.com/xMangave/products/247/>, POWO 2025, now intersubgeneric hybrid *Litsea mitis* (celsii) × *Manfreda variegata*

Agave asperrima × *Agave nickelsiae* **IS Agaveae** (→ *Agave* × *pumila*) see POWO 2025, intersubgeneric hybrid *Agave* × *Litsea*

Agave × *Manfreda*° × *Polianthes*° **IS Agaveae** (→ × *Hansara*) van der Meer 2019, POWO 2025

Bravoa° (= *Agave* p. p.) × *Polianthes*° (= *Agave* p. p.) **IS Agaveae** (→ × *Bravantes* Cif. & Giacom. 1950 Nomencl. Fl. Ital., Pt. 1, 134 = *Polianthes* p. p.) IK 1974, Willis 1985 (it is unresolved which species were involved, but consider that *Bravoa polyphylla* and *B. densiflora* have later been included in *Polianthes*), now subgenus *Manfreda* section *Bravoa*

Manfreda° (= *Agave*) div. spec. × *Polianthes*° *tuberosa* (= *Agave* p. p.) **IS Agaveae** (→ × *Polifreda* W. Ritchie & J. T. Lindstrom (*Manfreda virginica*, *maculosa* × *Polianthes tuberosa*), POWO 2025 now subgenus *Manfreda* section *Bravoa*

Polianthes^o *geminiflora* (= *Bravoa geminiflora* = *Agave duplicata*) × *Prochnyanthes*^o *viridescens* = *Agave bulliana* **IS** **Agaveae** (→ *Bravoa* × *kewensis* = *Agave* × *neokewensis* Thiede 2012 Haseltonia 17, 95) Thiede 2012, now subgenus *Manfreda* section *Bravoa*

Anthericeae 8: 285. 1 **IG**

Anthericum 65, *Chlorophytum* 150, *Diamena*, *Echeandra* 60, *Leucocrinum*, *Paradisea*, ...

Anthericum × *Paradisea* (→ × *Antherisia* 1929 Wehrhahn, Gartenstauden I, 58, 64, in obs., *Anthericum* × *Paradisea liliastrum*) IK 1947, Knobloch 1972, Willis 1985, POWO 2025

Asparagoideae 2: 165–295

Asparagus 290, *Hemiphylacus* 5.

Convallarioideae = **Nolinoideae** 26: 605

The genera have much varied in their limits and assignments to families and subfamilies.

7 tribes (AP website 2025):

Convallarieae 6: 303, Dracaeneae 1: 170, Eriospermeae 1: 100, Nolineae 4: 52, Ophiopogoneae 3: 145, Polygonateae 3: 95, Rusceae 3: 8.

Beaucarnea (incl. *Calibanus*^o), *Convallaria*, *Dracaena* (incl. *Sansevieria*), *Nolina*, *Maianthemum*, *Polygonatum*, *Ruscus*, ...

IS: POWO 2025 *Dracaena* 2 **IS**, ...

Beaucarnea recurvata × *Calibanus*^o (= *Beaucarnea*) *hookeri* **IS** **Nolineae** presumed hybrid (→ × *Calicarnea* = *Calibanus* ‘Lotusland’)

Dracaena × *Sansevieria*^o (*Dracaena* p.p.) **IS** **Dracaeneae** (→ × *Draviera*) van der Meer 2020) POWO 2025 (synonym of *Dracaena*)

Scilloideae 37: 996

4 tribes AP website 2024):

Hyacintheae 32: 566, Oziroeeae 1: 5, Ornithogaleae 1(–4): 312, Urgineae 2–3: 112

IPNI 2011 (sub *Hyacinthaceae*): *Hyacinthoides* 1 **IS**, *Lachenalia* 5 **IS**, *Muscari* 1 **IS**, *Veltheimia* 1 **IS**.

Ornithogaleae 1: 312

Ornithogalum (incl. *Honorius*^o), ...

Honorius^o (= *Ornithogalum* p. p.) × *Ornithogalum* **IS** (→ × *Honogalum* J. Holub 1976 in *Folia Geobot. Phytotax.* 11, 81) (*Honorius boucheanus* = *Ornithogalum (nutans* subsp.) *boucheanum* × *Ornithogalum*) IK 1987, POWO 2025 (**IS**)

Hyacintheae = Scilleae 32: 566. 1 **IG**

Hyacintheae are characterized by Homoisoflavones!

3 subtribes:

Hyacinthinae 21: 295 *Bellevalia* 50, *Chionodoxa* 6, *Hyacinthella* 18, *Hyacinthus* 3, *Hyacinthoides* 30–50, *Puschkinia* 1, *Scilla* 30–50, ...

Massoniinae 10: 270.

Pseudoprosperinae 1: 1.

Chionodoxa (= *Scilla* p. p.) × *Scilla* **IS** Hyacinthinae (→ × *Chionoscilla* J. Allen ex G. Nicholson 1897 in Gard. Chron. Ser. 3, 21, 191) (*Chionodoxa luciliae* = *forbesii* × *Scilla bifolia* → × *Chionoscilla allenii* = *Chionodoxa allenii* = *Scilla allenii*) IK 1966, Knobloch 1972, Willis 1985, AP website 2025

Puschkinia × *Scilla* Hyacinthinae (→ × *Puschkiscilla* Cif. & Giacom.) (art. hyb.) Willis 1985, POWO 2025

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https://www.researchgate.net/publication/354462462_Draviera_Valid_Publication_of_a_Nothogeneric_Name_for_Hybrids_Between_Dracaena_and_Sansevieria_Asparagaceae

Asphodelaceae (= Xanthorrhoeaceae) (Asparagales) 41: 900–1060. (23 IG)

aloe, asphodil and daffodil family

3 subfamilies (AP website 2024):

Asphodeloideae (formerly Agavaceae) 2 tribes 22: 850 (now including the 5 genera of the former family Aloaceae and the 8–11 genera of the former Asphodelaceae s. str.)

Hemerocallidoideae 20: 89.

Xanthorrhoeoideae 1: 30.

An interfamilial hybrid (**IF**) *Hemerocallis* × *Lycoris* (Amaryllidaceae) has been reported in 2022, but it is only a partial hybrid, not expressing the genes of both parents, see Amaryllidaceae.

Asphodeloideae 22: 850

affodils = Affodillgewächse

2 tribes:

Aloae 12: 750.

Asphodeleae 10: 100.

Aloeae 13: 750. **23 IG**

aloe and relatives = Aloe-Verwandte

Aloe 500 (incl. *Leptaloe*°, *Lemeaea*°, *Lomatophyllum*°/ a valuable list is in af.wikipedia), *Aloestrela* 1 (formerly *Aloe suzannae*), *Aloiampelos* 7, *Alroidendron* 7 (formerly *Aloe barberae dichotoma*, *eminens*, *montana*, *pillansii*, *ramosissimum*, *sabaeum*), *Aristaloe* 1, *Astroloba* 12 (incl. *Poellnitzia*), *Chortolirion* 4, *Gasteria* 29, *Gonialoe* 3 (= *Aloe dinteri*, *sladeniana*, *variegata*), *Haworthia* 150, *Haworthiopsis* 28, *Kumara* 2, *Tulista* 4.

Probably **basic type Asphodelaceae Asphodeloideae tribe Aloeae** (13: 750): Kutzelnigg 2009, unpubl. The main taxa (11: 735) are connected by hybridization (23 IG). The tribe is monophyletic with a distinctive karyotype and a characteristic leaf morphology. It was for a long time known as family "Aloaceae" and Linné used a single genus *Aloe* for all species known to him. – An open question is, if the rest of the tribe can be added to this basic type.

Aloe × *Aloiampelos* (→ × *Aloiampaloe* G. D. Rowley 2014) POWO 2025

Aloe × *Aloinella*° (= *Aloe* p. p.) **IS** (→ × *Aloella* Rowley 1967 in Nat. Cact. & Succ. Journ. 22, 74) IK 1974 → see below (*Aloe* × *Lemeaea*°)

Aloe × *Astroloba* (→ × *Aloloba* Rowley 1967 in Nat. Cact. & Succ. Journ. 22, 74) IK 1974, Willis 1985, Eggli 2001

Aloe × *Astroloba* × *Gasteria* (→ × *Algastoloba* D. M. Cumming 1999 Haworthiad 13, 20) Eggli 2001

Aloe × *Chamaealoe*° (= *Aloe* p. p.) **IS** (→ × *Alamaealoe* P. V. Heath 1993 in Calyx 3, 153 = „× *Alchamalo*“ Rowley 1967 in Nat. Cact. & Succ. Journ. 22, 16) IK 1974, IK 1996, Willis 1985

Aloe × *Chortolirion* (→ × *Alolirion* Rowley 1973 in Nation. Cact. Succ. J. (U. K.) 28, 7) IK 1981, Eggli 2001

Aloe div. spec. × *Gasteria* div. spec. (→ × *Gasteraloe* Guillaumin 1931 Bull. Mus. Hist. Nat. Paris, Ser.II, 3, 339; confer „× *Gastrolea kewensis*“ (A. Berger) Uitew. 1949 Succulenta 1949, 12) IK 1938, IK 1950, Knobloch 1972, Willis 1985, Eggli 2001, AP website 2025

Aloe × *Gasteria* × *Haworthia* (→ × *Bayerara* D. M. Cumming 1999 Haworthiad 13, 20) (trigeneric) Eggli 2001

Aloe × *Guillauminia*° (= *Aloe* p. p.) **IS** (→ × *Allauminia* Rowley 1967 Nat. Cact. & Succ. Journ. 22, 74) **IS** IK 1974, Willis 1985

Aloe × *Guillauminia*° (= *Aloe* p. p.) × *Lemeaea*° (= *Aloe* p. p.) **IS** (→ × *Bleckara* P. V. Heath 1994 Calyx 4, 146) **IS** IK 1996

Aloe × *Guillauminia*° (= *Aloe* p. p.) × *Leptaloe*° (= *Aloe* p. p.) **IS** (→ × *Alleptauminia* D. M. Cumming 1974 in Bull. Afr. Succ. Pl. Soc. 9, 40) IK 1996

Aloe × *Haworthia* (→ × *Alworthia* G. D. Rowley 1973 in Nation. Cact. Succ. J. (U.K.) 28, 7) IK 1981, Willis 1985, Eggli 2001

Aloe × *Lemeaea*° (= *Aloe* p. p.) **IS** (→ × *Allemeaea* P. V. Heath 1993 Calyx 3, 153) IK 1996

Aloe × *Leptaloe*° (= *Aloe* p.p.) **IS** (→ × *Aloptaloe* P. V. Heath 1993 Calyx 3, 153 = „× *Aleptoe*“ Rowley 1967 in Nat. Cact. & Succ. Journ. 22, 7) IK 1974, IK 1996

Aloe × *Lomatophyllum*° (= *Aloe* p.p.) **IS** (→ × *Lomataloe* Guillaumin 1931 in Bull. Mus. Hist. Nat.

Paris, Ser. II, 3, 339) IK 1938, Willis 1985

Aloe × *Tulista* (→ × *Altulista* G. D. Rowley 2014)

Aloinella° (= *Aloe* p.p.) × *Leptaloe*° (= *Aloe* p.p.) IS (→ × *Leptaloinella* Rowley 1973 Nation. Cact. Succ. J. (U.K.) 28, 7) IK 1981

Apicra° (= *Haworthia* p.p. × *Haworthia* IS (→ × *Apworthia* 1943 Poelln. ex Journ. Roy. Hort. Soc. 68, 259, in obs.) IK 1950

Aristaloe × *Gasteria* (→ × *Aristeria* M. H. J. van der Meer 2019)

Astroloba × *Chamaealoe*° (= *Aloe* p. p.) (→ × *Chamaeloba* D. M. Cumming 1974 in Bull. Afr. Succ. Pl. Soc. 9, 36) IK 1996 → see *Aloe* × *Astroloba*

Astroloba × *Gasteria* (→ × *Gastroloba* D. M. Cumming 1974 Bull. Afr. Succ. Pl. Soc. 9, 36) IK 1996

Astroloba × *Gasteria* × *Haworthia* (→ × *Maysara* D. M. Cumming 1999 Haworthiad 13, 115) (trigeneric) Eggli 2001

Astroloba × *Gonialoe* (→ × *Goniloba* M. H. J. van der Meer 2019) POWO 2025

Astroloba × *Haworthia* (→ × *Astroworthia* Rowley 1973 Nation. Cact. Succ. J. (U.K.) 28, 7; nat. hyb. South Africa) IK 1981, Eggli 2001

Astroloba × *Haworthiopsis* (→ × *Astroworthiopsis* M. H. J. van der Meer 2019) POWO 2025

Astroloba × *Tulista* (→ × *Astrolista* Molteno & Figueiredo Bradleya 35, 196 (2017) Cape Prov., POWO 2024

Chamaealoe° (= *Aloe* p. p.) × *Gasteria* (→ × *Chamaeteria* D. M. Cumming 1974 Bull. Afr. Succ. Pl. Soc. 9, 36) IK 1996 → see *Aloe* × *Gasteria*

Chamaealoe° (= *Aloe* p. p.) × *Leptaloe*° (= *Aloe* p. p.) IS (→ × *Chamaeleptaloe* Rowley 1973 in Nation. Cact. Succ. J. (U.K.) 28, 7) IK 1981

Chortolirion × *Gasteria* (→ „× *Gastrolirion*“ Walth. 1933 Cact. & Succ. Journ. Amer. 67, 468) IK 1938, Knobloch 1972, Willis 1985 (= × *Gasterlirion* Mays & G. D. Rowley 2006 *Alsterworthia* Int. 6 (2), 10), AP website 2025

Gasteria × *Gonialoe* (→ × *Gastonialoe* Walker 2019) POWO 2025

Gasteria × *Guillauminia*° (= *Aloe* p. p.) (→ × *Gaslauminia*° P. V. Heath 1994 Calyx 4, 146) IK 1996 see *Aloe* × *Gasteria*

Gasteria × *Haworthia* (→ × *Gasterhaworthia* Guillaumin 1931 Bull. Mus. Hist. Nat. Paris, Ser. II, 3, 339) IK 1938, Willis 1985, Knobloch 1972, Eggli 2001, AP website 2025

Gasteria × *Haworthia* × *Poellnitzia*° (= *Astroloba* p. p.) (→ × *Cummingara* G. D. Rowley 1999 Haworthiad 13, 115) (trigeneric) Eggli 2001, IPNI 2008

Gasteria × *Haworthiopsis* (→ × *Gasworthiopsis* G. D. Rowley 2014) POWO 2025

Gasteria × *Lomatophyllum*° (= *Aloe* p. p.) (→ × *Lomateria* Guillaumin 1931 Bull. Mus. Hist. Nat. Paris, Ser. II, iii, 339) IK 1938, Knobloch 1972, Willis 1985 → see *Aloe* × *Gasteria*

Gasteria × *Poellnitzia*° (= *Astroloba* p. p.) (→ × *Poellneria* Rowley 1973 Nation. Cact. Succ. J. (U.K.) 28, 7) IK 1981 see *Astroloba* × *Gasteria*

Gasteria × *Tulista* (→ × *Gastulista* G. D. Rowley 2014) POWO 2025

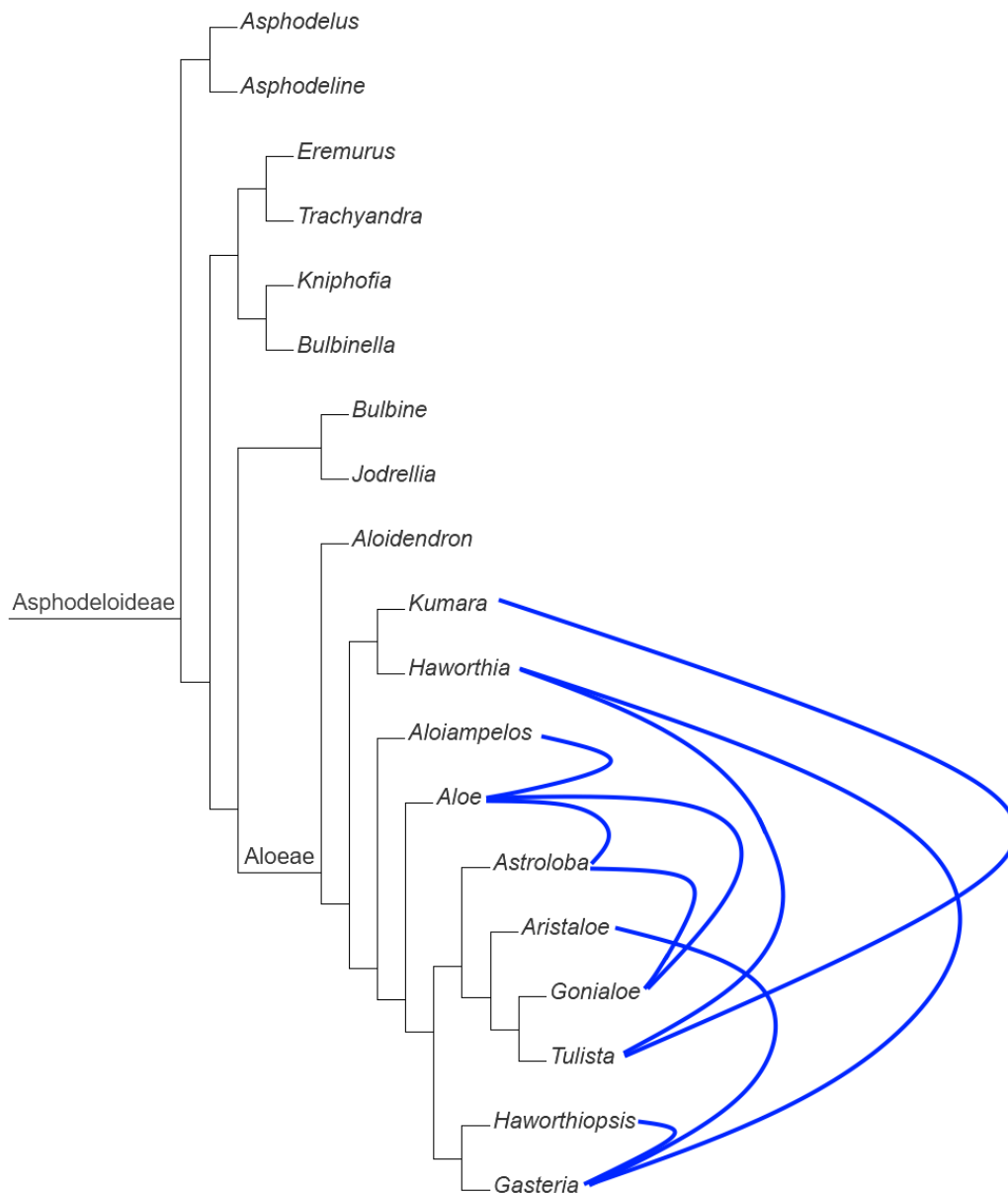
Gonialoe *variegata* × *Kumara* *plicatilis* (→ × *Gonimara* Gideon F. Sm. & Molteno) Smith 2018, AP website 2025, POWO 2025

Guillauminia° (= *Aloe* p. p.) × *Lemeea*° (= *Aloe* p. p.) IS (→ × *Leminia* P. V. Heath 1994 in Calyx 4, 146) IK 1996

Haworthia × *Haworthiopsis* (→ × *Hawiopsis* G. D. Rowley 2014) POWO 2025

Haworthia × *Tulista* (→ × *Tulworthia* G. D. Rowley 2014) POWO 2025

Haworthiopsis × *Tulista* (→ × *Tulworthiopsis* G. D. Rowley 2014, art. hyb.) POWO 2025
Kumara × *Tulista* (→ × *Kumalista* G. D. Rowley 2014) POWO 2025



Asphodelaceae Asphodeloideae: hybrid connections (in selection) of tribe Aloeeae in the phylogeny of Devey et al. 2006 Aliso 22 (Monocots: Comparative Biology and Evolution)345–351. ISSN 0065-6275, from en.wikipedia (2026, CC BY SA 4.0).

Asphodelaceae 10: 100

Asphodeline 17, *Asphodelus*, *Bulbine* 50, *Bulbinella*, *Eremurus*, *Hemiphyllacus*, *Jodrellia*, *Kniphofia*, *Simethis*, *Trachyandra*, ...

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Asteliaceae (Asparagales) 3: 31

silver spear family = **Asteliengewächse**

IPNI 2013: 0 IS

Astelia (incl. *Collospermum*°), *Milligania*, *Neoastelia*.

Astelia div. spec. × *Collospermum*° (= *Astelia* p. p.) div. spec. **IS** Moore 1980 (art. hyb., New Zealand), POWO 2025 (no entry)

References:

Moore LB (1980) Hybrid Asteliads (Liliaceae). *New Zealand J. Botany* 18, 37–42.

Asteraceae → see separate file

Austrobaileyaceae (Austrobaileyales) 1: 2

Austrobaileyales is a very small order with only 3 families (7: 168).

Balsaminaceae (Ericales) 2: 1050

balsam family = **Balsaminengewächse**

Hydrocera 1, *Impatiens* (incl. *Balsamina*°) 1050.

IS: POWO 2025: *Impatiens* 4 IS.

<https://www.jstor.org/stable/4119063>: 9 IS in Africa.

More than 50 hybrids have been produced in *Impatiens*, often by embryo rescue, connecting divergent species.

Probably **basic type family Balsaminaceae** (2: 1050).

Begoniaceae (Cucurbitales) 2: 2000

begonia family = Schiefblattgewächse

Begonia 2000 (incl. *Symbegonia*°), *Hillebrandia sandwicensis*.

IPNI 2013: *Begonia* 54 IS.

POWO 2025: 10 accepted IS.

Possibly **basic type family Begoniaceae** (2: 2000).

Berberidaceae (Ranunculales) 14: 700

barberry family = Berberitzengewächse

3 subfamilies (AP website 2025):

Berberidoideae 2: 629 *Berberis* 628 (incl. *Mahonia* 60) (6 IS), *Ranzania* 1.

Nandinoideae 4: 20 *Caulophyllum*, *Gymnospermium*, *Leontice*, *Nandina* 1.

Podophylloideae 8: 75 *Achlys* 2–3, *Bongardia* 1, *Diphylleia*, *Disosma*, *Epimedium* 50–60, *Jeffersonia*, *Podophyllum* 12, *Vancouveria*.

Aceranthus° (= *Epimedium* p. p.) × *Epimedium* IS **Podophylloideae** (→ × *Bonstedtia*° 1930

Wehrhahn, *Gartenstauden* 1, 455; *Epimedium* × *youngianum* ‘Lilacinum’ = *E. lilacinum*) IK 1947, Knobloch 1972, Willis 1985, POWO 2025 (IS)

Berberis div. spec. × *Mahonia*° *aquifolium* IS **Berberidoideae** (→ × *Mahoberberis* C. K. Schneider)

Knobloch 1972, Willis 1985, IPNI 2008 (3 nothospecies), Zander 2008, POWO 2025 (IS)

Betulaceae (Fagales) 6: 145

birch family = Birkengewächse

2 subfamilies (AP website 2025)

IPNI 2013: 0 IG, 32 IS: *Alnus* 10 IS, *Betula* 23 IS. – POWO 2025: *Alnus* 13 IS, *Betula* 31 IS, *Carpinus* 1 IS, *Corylus* 4 IS

Betuloideae 2: 95.

Alnus 25–40 (incl. *Alnaster*°, *Alnobetula*°), *Betula* 35–60.

Coryloideae 4: 50

Carpinus 25–50, *Corylus* 15–20, *Ostrya* 5–8, *Ostryopsis* 3

Corylus avellana × *Carpinus caucasica* ISF **Coryloideae** × **Betuloideae** Knobloch 1972
unconfirmed

Carpinus × *Ostrya* **HY Coryloideae** Wang et al. 2022 (*Carpinus* sect. *Distegocarpus* is supposed to be of ancient intergeneric hybrid origin)

References:

Wang Z et al. (2022) Genomic evidence for homoploid hybrid speciation between ancestors of two different genera. Nature Communications 13, Article number: 1987.

Bignoniaceae (Lamiales) 110: 800. 2 IG

bignonia or trumpet-creeper family = Trompetenbaumgewächse

8 tribes, e.g.:

Bignonieae 21: 400.

Catalpeae 2: 11 *Catalpa*, *Chilopsis*.

Tecomeae 12 (or 45): 55 *Campsis* 2, *Incarvillea* 66, *Tecoma*, *Tecomaria*, ...

IS: POWO 2025: *Campsis* 2 IS, *Tecoma* 1 IS.

Catalpa bignonioides × *Chilopsis linearis* **Catalpeae** (→ × *Chitalpa* T. S. Elias & W. Wisura 1991 in Bailey 23, 142) (art. hyb.: *Ca. bignonioides* × *Ch. linearis* → × *Catalpa tashkentensis*) Marguard & Tipton 1990, Elias & Wisura 1991, IK 1996, Li et al. 2006 (many photos in the web), POWO 2025

Tecoma × *Tecomaria* ("Tecoma") *capensis* **Tecomeae** Knobloch 1972

References:

Elias TS & Wisura W (1991) *Chitalpa tashkentensis* new genus new species (Bignoniaceae) an intergeneric hybrid of ornamental value. Bailey 23, 139–144.

Li JH et al. (2006) Molecular confirmation of intergeneric hybrid × *Chitalpa tashkentensis* (Bignoniaceae). HortScience 41, 1162–1164.

Marguard RD & Tipton JL (1990) Verification of an intergeneric hybrid between Desert willow and *Catalpa*. HortScience 25 (9), 1067. *Chilopsis* × *Catalpa*

Boraginaceae (Boraginales) 100: 1800

borage family or forget-me-not-family = Raublattgewächse

3 subfamilies, e.g. Boraginoideae.

Boraginoideae 42: 610

IS: IPNI 2013: 37 IS (*Alkanna* 1, *Cynoglossum* 1, *Echium* 4, *Heliotropium* 1, *Heterocaryum* 1, *Lithospermum* 2, *Moltkia* 2, *Myosotis* 9, *Nonea* 1, *Onosma* 2, *Pulmonaria* 6, *Symphytum* 14).

Procopiania^o (= *Symphytum*) *circinalis* × *Symphytum icaricum* **IS Boraginoideae** (→ × *Procopiphytum* Pawlowski 1971 in Fragm. Flor. Geobot. 17, 50) IK 1981 (nat. hyb. E. Aegean Is.: *P. circinalis* × *S. icaricum*), Willis 1985, Feng et al. 2024

Brassicaceae (= Cruciferae) (Brassicales) 350: 4150. (43 IG + 5 IT)

mustard or cabbage family, crucifers = Kreuzblütler

Attempts to subdivide the family are difficult and vary much as to the author. The actual solution is: either no subfamilies or a second monogeneric subfamily and 60 tribes!

Division according to AP Website 2025, Hendriks et al. 2023. German et al. 2023.

2 subfamilies: Aethionemoideae 1: 50, Brassicoideae 350: 4100, 60 tribes!

The **family Brassicaceae** (350: 4150) is a uniform group of plants with a unique flower and fruit structure etc. The uniformity is indirectly confirmed by the various and divergent attempts to divide the family, of which none is really satisfying. An extensive actual investigation by Hendriks et al. (2023) differentiates 60 tribes with one of them in the rank of a monogeneric subfamily Aethionemoideae. The authors compared the phylogenies based on nuclear or plastome genes, respectively, and found substantial differences between them. Hybridization has obviously been of high importance in the evolution of the family. The authors mention two tribes which obviously are the result of hybridization (Chorisporeae × Dentostomoneae → × Shebazieae, and Crucihimalayae × Smelowskieae).

From a basic type view, one might tend to consider the whole family as a basic type. But the data known so far are insufficient to confirm that.

Species of Brassicaceae often do not readily cross today and many hybrids could only be achieved by overcoming crossing barriers through ovule culture or cell fusion. That is especially true for intertribal hybrids of which several have been reported (see below). But many of these “hybrids” are only partial hybrids to various degrees including nearly symmetric hybrids by cell fusion.

Anyway, all members of the **tribe Brassiceae** belong to the same basic tribe, possibly as part of a putative more extensive basic type family Brassicaceae, see below.

Aethionemoideae 1: 50.

1 tribe

Aethionemoideae 1: 50 *Aethionema* 50.

Brassicoideae 350: 4100. 5 supertribes, 60 tribes

5 supertribes Arabodae, Brassicodae, Camelinodae, Heliophilodae, Hesperodae.

supertribe Arabodae (provisionally): Alysseae 24: 290, Arabideae 18: 560, Asperuginoideae 1: 1, Stevenieae 3: 11.

supertribe Brassicodae: Aphragmeae 1: 11, Brassiceae 53: 243, Calepineae 3: 3, Cochleariae 2: 30, Coluteocarpeae 1: 130, Conringieae 1: 3, Eutremeae 1: 25, Fourraeeae 2: 3, Isatideae 5:100, Kernereae 3:3, Plagiolobeae 1: 5, Schrenkielleae 1:1, Thelypodieae 34: 235, Sisymbrieae 1: 48, Thlaspidiae 13: 39.

supertribe Camelinodae: Alyssopsidae 4: 9, Arabidopsidae 1: 18, Boechereae 8: 110, Camelinae 4: 16, Cardamineae 12: 350, Crucihimalayae 3: 15, Descurainieae 6: 50, Erysimeae 1: 255, Halimolobeae 5: 40, Hemilopheae 2: 7, Lepidieae 1: 270, Malcomieae 1: 6, × Microlepidieae [= Crucihimalayae × Smelowskieae] 17: 56, Oreophytoneae 2: 8, Physarieae 7: 133, Smelowskieae 1: 25, Turritideae 1: 2, Yinshanieae 1: 13.

supertribe Heliophilodae: Anastaticae 13: 65, Asteae 2: 2, Biscutelleae 2: 54, Chamireae 1: 1, Cremolobeae 3: 30, Eudemeae 11: 43, Heliophileae 1: 90, Hilliellae 1: 11, Iberideae 2: 30, Megacarpaeae 1: 9, Notothlaspidiae 1: 3, Schizopetaleae 2: 16, Subularieae 2: 3.
 supertribe Hesperodae: Anchonieae 10: 100, Buniadeae 1: 2, Chorisporeae 5: 64, Dontostemoneae 2: 17, Euclidiae 29: 150, Hesperideae 1: 2, × Shehbaziae 1: 1.

IS: IPNI 2018: 90 IS.

For a comprehensive compilation of intergeneric and interspecific hybrids (mainly tribe Brassiceae), see Warwick et al. (2009. <http://www.brassica.info/info/publications/guide-wild-germplasm.php>).

Brassiceae 53: 243. **40 IG.** For intertribal hybrids see next section.

Genera mainly according to Warwick et al. 2009. Since then, many names and circumscriptions of genera have changed. But in this case, it is not relevant for considerations in the basic type concept.

Ammosperma 2, *Brassica* 39, *Cakile* 6, *Carrichtera* 1, *Ceratocnemum* 1, *Chalcanthus* 1, *Coincya* 6 (incl. *Brassicella*, *Thynchosinapis*), *Conringia* 6, *Cordylocarpus* 1, *Crambe* 34, *Crambella* 1, *Didesmus* 2, *Diplotaxis* 32, *Douepea* 2, *Enarthrocarpus* 5, *Eremophyton* 1, *Eruca* 4, *Erucaria* 10, *Erucastrum* 25, *Fezia* 1, *Foleyola* 1, *Fortuynia* 2, *Guiraoa* 1, *Hemicrambe* 3, *Henophyton* 2, *Hirschfeldia incana*, *Kremeriella* 1, *Moricandia* 8, *Morisia* 1, *Muricaria* 1, *Mutarda* (since 2025, *arvensis*, *carinata*, *nigra*, cf. *Sinapis*), *Orychophragmus* 2, *Otocarpus* 1, *Physorhynchus* 2, *Pseuderucaria* 2, *Pseudofortuynia* 1, *Psychine* 1, *Quezeliantha* 1, *Raffenaldia* 2, *Raphanus* 3, *Rapistrum* 2, *Rytidocarpus* 1, *Savignya* 1, *Schouwia* 1, *Sinapidendron* 4, *Sinapis* 5 (since 2025 only *alba*, *frutescens*, *pubescens*; former *Sinapis arvensis* and *Brassica nigra* are now part of *Mutarda*), *Succowia* 1, *Trachystoma* 3, *Vella* 7, *Zilla* 2.

All members of **tribe Brassiceae** (53: 243) belong to the **same basic type** (first studies by Sickinger 2003). They are connected by some 40 intergeneric hybrids. The high number of known hybrids is mainly the result of the economic importance of this group. Some intertribal connections exist, often as partial hybrids after cell fusion. So that the basic type could be much more extensive (see above), but it is difficult to evaluate the hybrids, and further studies are necessary to clarify the situation.

Brassica × *Coincya monensis* (= *Hutera* = *Rhynchosinapis*) Warwick et al. 2009

Brassica div. spec. × *Crambe abyssinica* (= *hispanica*) Luo et al. 1996, Youping & Peng 1998, Luo & Wang 1998

Brassica div. spec. × *Diplotaxis* div. spec. Zenkteler 1990, Vyas et al. 1995 EC, Kirti et al. 1995 (SO Warwick et al. 2009 (EC, sex. hyb.)

Brassica div. spec. × *Enarthrocarpus lyratus* EC Warwick et al. 2009

Brassica × *Eruca* Knobloch 1972, Willis 1985, Belea 1992, Warwick et al. 2009

Brassica div. spec. × *Erucastrum* div. spec. EC Rao et al. 1996, Sarmah 1998, Mohanty et al. 2009 Warwick et al. 2009 (EC + sex. hyb.)

Brassica div. spec. × *Hirschfeldia incana* (= *Sinapis* p. p.) Aparajita et al. 2007, Warwick et al. 2009 (sex. hyb.)

Brassica div. spec. × *Moricandia arvensis*, *nitens* (→ × *Brassicomorica*) Toriyama et al. 1987 SO, Zenkteler 1990, Warwick et al. 2009, Takahata et al. 1993, Rawsthorne et al. 1998

Brassica div. spec. × *Mutarda* (= *Brassica*) *arvensis*, *carinata*, *nigra* (→ × *Brassarda* Su Liu & Z. H. Feng) Feng et al. 2024, POWO 2025

Brassica div. spec. × *Orychophragmus violaceus* Li et al. 1995 EC, Li et al. 1998 EC, Cheng et al. (sex. hyb., no EC), Ding et al. 2013, Warwick et al. 2009 (sex. hyb.)

Brassica div. spec. × *Raphanus* div. spec. (→ × *Brassicoraphanus* Sageret 1929) Karpechenko 1928, Knobloch 1972, Lefol et al. 1997, Warwick et al. 2009, POWO 2025

Brassica fruticulosa × *Sinapidodendron frutescens* Harberd & McArthur 1980, Warwick et al. 2009 (EC)

Brassica div. spec. × *Sinapis* div. spec. Willis 1985, Warwick et al. 2009

Brassica juncea × *Trachystoma ballii* SO Baldev et al. 1998 (The recombination between chloroplast genomes of the two genera is reported), Warwick et al. 2009

Ceratocnemum × *Trachystoma* (→ × *Trachycnemum* Maire & G. Samuelsson 1937 in Bull. Soc. Hist. Nat. Afr. Nord 28, 11, in obs., 335) IK 1947, Knobloch 1972, POWO 2025 (*Ceratocnemum* IS)

Coincya monensis × *Mutarda nigra* Warwick et al. 2009

Cordylocarpus × *Rapistrum* (→ „× *Rapistrella*” Pomel) (nat. hyb. Algeria)
http://bibdigital.rjb.csic.es/Imagenes/O_ENG_13/O_ENG_13_0264.pdf, Knobloch 1972, Willis 1985

Diplotaxis tenuifolia × *Eruca sativa* Takahata & Hinata 1983 see Warwick et al. 2009

Diplotaxis × *Erucastrium gallicum* EC HY Warwick et al. 2009, suppose that the natural species *Erucastrium gallicum* is the result of the intergeneric hybridization *Diplotaxis eruroides* × *Erucastrium leucanthemum*

Diplotaxis × *Hirschfeldia incana* EC Warwick et al. 2009

Diplotaxis muralis × *Moricandia arvensis* Zenkteler 1990, Razmjoo et al. 1996

Diplotaxis tenuifolia × *Mutarda nigra* Warwick et al. 2009

Diplotaxis tenuifolia × *Raphanus sativus* Bang et al. 2003

Diplotaxis muralis × *Sinapidendron frutescens* EC Warwick et al. 2009

Diplotaxis × *Sinapis pubescens* EC Warwick et al. 2009

Enarthrocarpus lyratus × *Erucastrium abyssinicum* Warwick et al. 2009

Eruca sativa × *Raphanus sativus* Warwick et al. 2009

Erucastrium gallicum × *Hirschfeldia incana* Warwick et al. 2009

Erucastrium gallicum × *Mutarda nigra* Warwick et al. 2009

Erucastrium gallicum × *Raphanus sativus* Warwick et al. 2009

Erucastrium gallicum × *Sinapidendron frutescens* Warwick et al. 2009

Erucastrium gallicum × *Sinapis arvensis* Warwick et al. 2009

Hirschfeldia incana × *Mutarda nigra* Warwick et al. 2009

Hutera° (= *Coincya* p. p.) × *Rhynchosinapis*° (= *Coincya* p. p.) IS Sobrina Vesperinas 1988

Moricandia × *Mutarda nigra* EC Warwick et al. 2009

Moricandia × *Raphanus* EC Bang et al. 1996

Mutarda nigra (= *Brassica nigra*) × *Orychophragmus* Warwick et al. 2009

Mutarda nigra (= *Brassica nigra*) × *Raphanus sativus* EC Warwick et al. 2009

Mutarda nigra (= *Brassica nigra*) × *Sinapis alba* Warwick et al. 2009

Raphanus × *Sinapis* Willis 1985, Warwick et al. 2009

Sinapidodendron frutescens × *Sinapis pubescens* Warwick et al. 2009

Other tribes than Brassiceae and all intertribal hybrids 3 IG + 5 IT

In the case of somatic hybrids produced by cell fusion it is often difficult to decide if or to what extent the progeny expresses all features of both parents. Interestingly, a small part of somatic hybrids achieved by cell fusion was able to backcross, but in these cases the question is which parts of the genetic information has been transferred. – Due to the permanent changing of tribes possibly some tribe names given below are not actual.

- Arabidopsis thaliana* × *Brassica* div. spec. **IT SO Arabidopsideae × Brassiceae** (→ × *Arabidobrassica* Gleba & F. W. Hoffm. 1979 Naturwiss. 66: 548) (*A. thaliana* × *B. campestris*; some of the plantlets are symmetric) Gleba & Hoffmann 1979, 1980, Nagl & Hoffmann 1981, Hoffmann & Adachi 1981 (*A. thaliana* × *B. napus*), Forsberg et al. 1994 **SO** symmetric? (*A. thaliana* × *B. oleracea*), **SO** Nitovskaya & Shakhovskii 1998a, **SO** Landgren & Glimelius 1994, Fahleson et al. 1994, POWO 2025
- Arabidopsis thaliana* × *Boechera furcata* **IT Arabidopsideae × Boechereae** Lohe & Perotti 2012 allopolyploid
- Arabidopsis thaliana* × *Pachycladon cheesemanii* **IT Arabidopsideae × Microlepideae** (→ × *Pachydopsis* Heenan 2008 Bot. J. Linn. Soc. 157, 543) (art. hyb.; sexually produced) Heenan et al. 2008, IPNI 2008, see Joly et al. 2008, POWO 2025
- Arabidopsis thaliana* × *Raphanus sativus* **IT SO Arabidopsideae × Brassiceae** Warwick et al. 2009
- Armoracia rusticana* × *Brassica oleracea* **IT SO Cardamineae × Brassiceae** Navratilova et al. 1997 → asymmetric
- Armoracia rusticana* × *Eutrema wasabi* (*Wasabia*°) **IT Cardamineae × Eutremeae** EC Ohi et al. 1994 → only a few plantlets, probably asymmetric
- Barbarea* × *Brassica napua* **IT Cardamineae × Brassiceae SO** Eriksson et al. symmetric?)
- Boechera lemmonii* × *Nevada* **Boechereae** Windham et al. 2014
- Boechera stricta* × *Borodinia laevigata* **Boechereae** Windham et al. 2014
- Brassica* × *Camelina* **IT Brassiceae × Camelinaeae** somatic hybrid = **SO** Narasimhulu et al. 1994 (asymmetric, no mature plants), Hansen 1998 (probably symmetric, not very vital), Sigareva & Earle 1999, Jiang et al. 2009
- Brassica napus, oleracea* × *Capsella bursa-pastoris* **IT SO Brassiceae × Camelinaeae** Sigareva & Earle (not totally symmetric), Nitovskaya et al. 1998b (asymmetric), Chen et al. 2007, 2009 (asymmetric), Warwick et al. 2009 (sex. + somatic hyb.)
- Brassica napus* × *Descurainia sophia* **IT SO Brassiceae × Descurainieae** somatic hybrid Warwick et al. 2009
- Brassica* × *Isatis* **IT Brassiceae × Isatideae** Du et al. 2009 (asymmetric and symmetric), Tu et al. 2008, 2009 (partial hybrids)
- Brassica napus* × *Lesquerella* (= *Physaria*) *fendleri* **IT Brassiceae × Physarieae** Skarzhinskaya et al. 1996 (**SO**, for some part probably symmetric), Huang et al. 1999 **EC**, Du et al. 2008 (sex. hyb., partial hybrids, asymmetric), see also this hybrid × *Brassica napus* sex. hyb. F1 and back cross: Schröder-Pontoppidan et al. 1999
- Brassica napus* × *Matthiola incana* **IT Brassiceae × Anchonieae** **EC** Luo et al. 2003 (probably **asymmetric**, F1 is partly intermediate and mixoploid, even few F2-plants could be obtained), Sheng et al. 2008

Brassica napus × *Orychophragmus* × *Rorippa indica* **IT** Brassiceae × Cardamineae EC Guan et al. 2007

Brassica napus × *Physaria fendleri* (= *Lesquerella* p. p.) see *Brassica* × *Lesquerella*

Brassica napus × *Rorippa indica* **IT** SO Brassiceae × Cardamineae Guan et al. 2007, Warwick et al. 2009

Brassica × *Thlaspi* **IT** SO Brassiceae × Thlaspidaceae Landgren & Glimelius 1994, Fahleson et al. 1994 (backcross successful!)

Camelina × *Capsella* Camelineae Zhang et al. 2020 (*C. sativa* × *C. bursa-pastoris*, art. hyb., sterile)

Camelina × *Mutarda* (= *Brassica*) *nigra* **SO** Warwick et al. 2009

Cardamine × *Iti*^o **IS** Cardamineae (art. hyb.) Heenan 2003

Cheiranthus^o (= *Erysimum*) *cheiri* × *Erysimum cheiranthoides* **IS** Erysimeae (→ × *Cheiranthesium* Bois 1913 in Rev. Hort., n. s. 13, 443; = × *Cheirysimum* Janchen 1933 in Oesterr. Bot. Zeitschr. 82, 153) IK 1926, IK 1938, Knobloch 1972, Willis 1985, POWO 2025 (IS)

Chorispora vel. aff. × *Dontostemon vel aff.* **IT** HY Chorisporaceae × Dentostomoneae (→ × *Shehbaziae*) (→ × *Shehbazia tibetica* D. A. German 2014) German & Friesen 2014 (the authors suppose that *Dontostemon* (= “*Nasturtium*”) *tibeticum* is of hybridogeneous origin of an ancient hybridization event, rename it and place it in an own monotypic tribe), POWO 2025

Diplotaxis × *Sisymbrium* **IT** Brassiceae × Sisymbrieae Zenkteler 1990 (EC: in vitro fertilization of ovules; only up to the globular state of embryo development)

Ischnocarpus^o (*Pachycladon*) *novae-zelandiae* × *Pachycladon* **IS** (Camelineae or) Microlepidieae (art. hyb.) Heenan 1999

Rapistrum × *Sisymbrium* **IT** Brassiceae × Sisymbrieae (→ × *Rapistrosymbrium* P. Fourn. ex Madiot 1932 in Le Monde des Plantes 33, 43) IK 1938, Knobloch 1972, Willis 1985, IPNI 2008 → very questionable, not mentioned in the Index of Synonyms of France, POWO 2025 (accepted)

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Bromeliaceae (Poales) 82: 3650. (in total: 70 IG + 8 IT + 8 ISF)

bromeliads, pineapple family = Ananasgewächse, Bromelien

AP website 2025: 8 subfamilies (see the figure below) (until 2004 Pitcairnioideae included Lindmanioideae, Brocchinioideae, Hechtioideae and Puyoideae):

Brocchinioideae 1: 20.

Bromelioideae 41: 995.

Hechtioideae 1: 78.

Lindmanioideae 1–2: 43.

Navioideae 5: 107.

Pitcairnioideae s. str. 5: 642.

Puyoideae 1: 225.

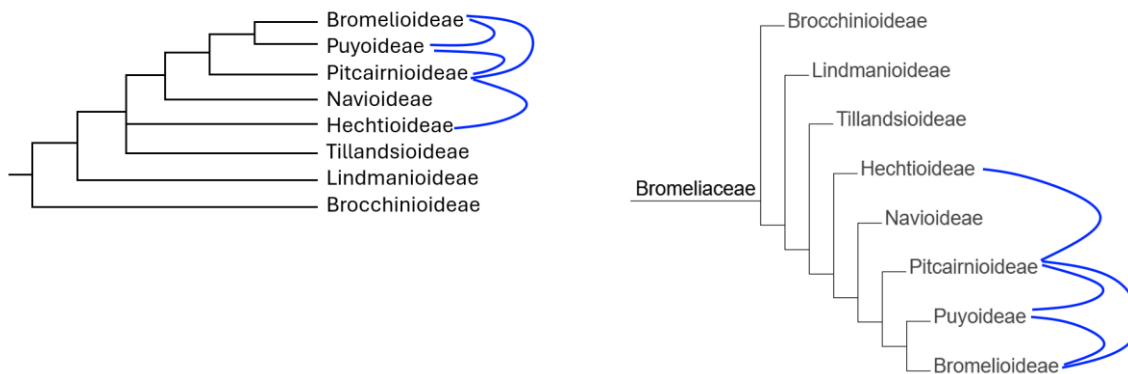
Tillandsioideae 21: 1450 (4 tribes).

For compilations of intergeneric hybrids, see the website of the Bromeliad Society

International **BSI** <https://bsi.org>, the official Bromeliad Registry

<https://registry.bsi.org/index.php> and the Florida Council of Bromeliad Societies:

<http://fcbs.org>. Pictures from nearly all bigeneric taxa and several articles on hybridization techniques are available from <http://fcbs.org/pictures.htm>.



Bromeliaceae: hybrid connections between the subfamilies in: 1. (left) the phylogeny of Givnish et al. (2011. <https://doi.org/10.3732/ajb.1000059>; own depiction) and 2. (right) the phylogeny of Givnish et al. (2004. <https://doi.org/10.1086%2F421067>), from en.wikipedia (2025, CC BY SA 4.0).

Possibly **basic type family Bromeliaceae** (78: 3650). The family is uniform and all subfamilies have much in common. Hybrids connect directly or indirectly 5 of the 8 subfamilies, see the figures above. No hybrids are known connecting subfamily Tillandsioideae (21: 145) with the former subfamilies; but if compared with the phylogeny of Givnish et al. (2011) this subfamily has the same common ancestor as the former subfamilies, so that it seems reasonable to assign them to the same basic type, see also the figure in AP website. But not all phylogenies place these subfamilies so closely together. There remain 2 very small basal subfamilies Brocchinioideae (1: 20) and Lindmanioideae (1-2) 43, where no hybrids are known as well. – First basic type studies have been presented by Neuhaus (1995) with the headline (translated): “The bromeliad family: one or several basic types?” Since then, the taxonomy has been much changed, and several new hybrids were found. But the question is still without a definite answer.

Brocchinioideae 1: 20

Brocchinia (incl. *Ayensua*°) 20.

Bromelioideae 41: 995. 5 IG (+ 2 ISF)

1 tribe, fleshy fruits.

Kessous et al. (2025) separate genus *Bromelia* from the rest of the subfamily (no intergeneric hybrids known).

Aechmea 244, *Billbergia* 63, *Bromelia* 70, *Cryptanthus* 66, *Hohenbergia* 49, *Neoregelia* 123, *Nidularium* 47, *Orthophytum* 67, ...

Aechmea × *Ananas* (→ × *Anamea* Anon. 1979, Int. Checklist Bromel. Hybrids) Neuhaus 1995, Grant & Zijlstra 1999

Aechmea × *Androlepis* (→ × *Androlaechmea* C. Chev. 1951, Bull. Bromeliad Soc. 1, 24) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011, AP website 2025

Aechmea × *Billbergia* (→ × *Billmea* K. Williams 1974, J. Bromeliad Soc. 24, 26) Neuhaus 1995, IPNI 2011, AP website 2025

Aechmea × *Canistropsis* (→ × *Aechopsis* D. Butcher 1999 J. Bromeliad Soc. 49, 14) IPNI 2011

Aechmea × *Canistrum* (→ × *Canmea* Racine C. Foster & M. B. Foster 1973, J. Bromeliad Soc. 23, 175) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Aechmea × *Cryptanthus* (→ × *Cryptmea* E. L. Smith 1983, J. Bromeliad Soc. 33, 72) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Aechmea × *Hohenbergia* (→ × *Hohenmea* B. R. Silva & L. F. Sousa 2003 J. Bromeliad Soc. 53, 73) IPNI 2008, AP website 2025

Aechmea × *Hohenbergia* × *Quesnelia* (→ *Hohenquesmea* M. H. J. van der Meer 2019), POWO 2025

Aechmea × *Hohenbergiopsis* (→ × *Aechbergiopsis* M. H. J. van der Meer 2019), POWO 2025

Aechmea × *Neoregelia* (→ × *Neomea* M. B. Foster 1958 in Bromeliad Soc. Bull. 8, 75) IK 1981, Neuhaus 1995, Grant & Zijlstra 1999, AP website 2025

Aechmea × *Canistrum* × *Quesnelia* (→ „× *Quesistrumea*”) (trigeneric) Chayangsu 2009 <http://forums.gardenweb.com/forums/load/bromeliad/msg121020076866.html?11>

Aechmea × *Canistrum* × *Neoregelia* × *Quesnelia* (→ „× *Chayangsuara*”) (tetrageneric) Chayangsu 2009 <http://forums.gardenweb.com/forums/load/bromeliad/msg121020076866.html?11>

Aechmea × *Nidularium* (→ × *Nidumea* L. B. Smith 1968 in Bromeliad Soc. Bull. 18, 63; cf. Gray Herb. Card Cat.) IK 1974, Willis 1985, Neuhaus 1995, Grant & Zijlstra 1999

Aechmea × *Orthophytum* (→ × *Orthomea* E. L. Smith 1983, J. Bromeliad Soc. 33, 75) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Aechmea × *Portea* (→ × *Portemea* Ariza-Julia 1978, J. Bromeliad Soc. 28, 21) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Aechmea × *Pseudananas* (→ × *Pseudanamea* H. U. Baensch & U. Baensch 1994 Blüh. Bromel.: 249; Bloom. Bromel.: 249) Neuhaus 1995, Grant & Zijlstra 1999, POWO 2025 (includes *Pseudananas* in *Ananas*), BSI 2025 (IS)

Aechmea × *Quesnelia* (→ × *Quesmea* E. Knobloch 1972, J. Bromeliad Soc. 22, 58) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Aechmea × *Sincoraea* (→ × *Sincoraechmea* M. H. J. van der Meer 2019), POWO 2025

Aechmea × *Streptocalyx* (→ × *Streptomea* E. L. Smith 1983, J. Bromeliad Soc. 33, 75) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Aechmea × *Ursulaea* (→ × *Ursumea* D. Butcher 2005, J. Bromeliad Soc. 55, 56)

Aechmea × *Wittrockia* (→ × *Wittmea*) BSI 2025

Ananas × *Cryptanthus* (→ × *Cryptananas* D. A. Beadle 1991, Prelim. Listing Cultivar Grex Names Bromel.: 36) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Ananas × *Neoregelia* (→ × *Anagelia* E. L. Smith 1983, J. Bromeliad Soc. 33, 72) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Ananas × *Pseudananas* (→ = × *Ananananas* D. A. Beadle 1991, Prelim. Listing Cultivar Grex Names Bromel.: 20. Jun 1991 = „× *Anapseudananas*”) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Androlepis × *Ursulaea* (→ × *Ursulepis*) 2025

Billbergia × *Cryptanthus* (→ × *Biltanthus* Roehrs 1947, Exotics 12; = × *Cryptbergia* M. H. J. van der Meer 2019) IK 1981, Neuhaus 1995, Grant & Zijlstra 1999, AP website 2025, POPWO 2025

Billbergia × *Neoregelia* (→ × *Neobergia* E. L. Smith 1983, J. Bromeliad Soc. 33, 73) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Billbergia × *Nidularium* (→ × *Nidbergia* D. Butcher 1982, Checklist Bromel. Hybrids Australia:

28) Neuhaus 1995, Grant & Zijlstra 1999

Billbergia × *Puya* (→ × *Puybergia* van der Meer 2022 = „× *Billya*” van der Meer 2019) ISF Bromelioideae × Puyoideae

Billbergia × *Quesnelia* (→ × *Billnelia* A. D. Hawkes 1959, Bromel. Pap. 1(6): 52 = × *Billque*^o incorrect name) Neuhaus 1995, Grant & Zijlstra 1999

Canistropsis^o (= *Aechmea* p. p.) × *Neoregelia* (→ × *Neostropsis* D. Butcher 1999 J. Bromeliad Soc. 49 (1): 14, contrary to Art. H. 6.2 ICBN (1994)) IPNI 2011

Canistrum × *Neoregelia* (→ × *Canegelia* D. Butcher 1991, Hybridist's Handb., Ed. 3: 2; = „× *Neoistrum*” M. H. J. van der Meer 2019) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011, POWO 2025

Canistrum × *Nidularium* (→ × *Nidulistrum* A. D. Hawkes 1963, Bromel. Pap. 3 (9): 85 = × *Canularium* M. H. J. van der Meer 2019) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011, POWO 2025

Canistrum × *Quesnelia* (→ × *Quesistrum* H. Graf ex D. A. Beadle 1998, Brom. Cult. Reg.: 350) Butcher 2008

Cryptanthus × *Forzzaea* (→ × *Forzzanthus* M. H. J. van der Meer 2019), POWO 2025

Cryptanthus × *Rokautskyia* (→ × *Rokautanthus* M. H. J. van der Meer 2019), POWO 2025

Cryptanthus × *Neoregelia* (→ × *Neotanthus* M. B. Foster 1978, Grande 1 (1), 21.) Neuhaus 1995, Grant & Zijlstra 1999

Cryptanthus × *Orthophytum* (→ × *Orthotanthus* Anon. (hort.) 1974 in J. Bromeliad Soc. 24, 26) IK 1981, Neuhaus 1995, Grant & Zijlstra 1999, AP website 2025, BSI 2025

Cryptanthus × *Sincoraea* (→ × *Sincortanthus*) 2025

Deuterocohnia × *Orthophytum* ISF Pitcairnioideae × Bromelioideae (→ × *Orthocohnia* M. H. J. van der Meer 2019) POWO 2025 (art. hyb.) <https://tropiflora.com/products/xorthocohnia-surprise> (interestingly, this cross was made by R. Lemieux in 1996 at a time when he did not know that the two parents belong to different tribes)

Forzzaea × *Rokautskyia* (→ × *Forzzautskyia* M. H. J. van der Meer 2019), POWO 2025

Hohenbergia × *Portea* (→ × *Hohentea* D. A. Beadle 1991, Prelim. Listing Cultivar Grex Names Bromel.: 89) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Hohenbergia × *Quesnelia* (→ × *Hohenelia* D. Butcher 2002 J. Bromeliad Soc. 52, 51) Butcher 2005

Hohenbergiopsis × *Neoregelia* (→ × *Neobergiopsis* D. Butcher 2001 J. Bromeliad Soc. 51, 7) Butcher 2005, IPNI 2011

Lapanthus × *Sincoraea* (→ × *Lapacoraea*) BSI 2022

Neoglaziovia × *Orthophytum* (→ × *Orthoglaziovia* Lawn 2012, J. Bromeliad Soc. 61 (5): 234 (figs. 1–2))

Neoglaziovia × *Syncoraea* (→ × *Sincorglaziovia*) BSI 2025

Neoregelia × *Nidularium* (→ × *Neolarium* M. H. J. van der Meer 2019, × *Niduregelia* A. D. Hawkes 1963 in Bromel. Pap. 3 (9), 85) Neuhaus 1995, Grant & Zijlstra 1999, AP website 2025, POWO 2025

Neoregelia × *Sincoraea* (→ × *Sincoregelia* M. H. J. van der Meer 2019), POWO 2025

Neoregelia × *Orthophytum* (→ × *Neophytum* M. B. Foster 1958 in Bromeliad Soc. Bull. 8, 73) IK 1981, Neuhaus 1995, Grant & Zijlstra 1999, AP website 2025

Neoregelia × *Quesnelia* (→ × *Quesregelia* J. F. Carrone 1983 in Bromeliad Soc. 33, 207) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

- Neoregelia* × *Wittrockia* (→ × *Neorockia* 1999 D. Butcher, J. Bromeliad Soc. 49: 14) Butcher 2005, IPNI 2011
- Nidularium* × *Orthophytum* (→ × *Ortholarium* Racine C. Foster & M. B. Foster 1973 in J. Bromeliad Soc. 23, 175) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011 (Attention: 11 species of *Orthophytum* have been transferred into the reactivated genus *Sincoraea*, the hybrid is named × *Nidosincoraea*)
- Nidularium antoineanum* × *Quesnelia lateralis* (→ × *Nidunelia rodriguana*) 2025
<https://ui.adsabs.harvard.edu/abs/2025Phytx.692....1L/abstract>,
<https://bromeliad.nl/encyclopedia/index.php?find=xNidunelia%252frodrigoana>
- Nidularium* × *Sincoraea* (→ × *Nidusincoraea* M. H. J. van der Meer 2019), POWO 2025
- Nidularium* × *Streptocalyx* (= *Aechmea* p. p.) (→ × *Streptolarium* D. A. Beadle 1991 in Prelim. Listing Cultivar Grex Names Bromel.: 201) Grant & Zijlstra 1999, IPNI 2011
- Orthophytum* × *Sincoraea* (→ × *Sincorphytum*) BSI 2025
- Rokautskya* × *Sincoraea* (→ × *Rokautsincoraea*) BSI 2025

Hechtioideae 1: 78. (2 ISF)

Hechtia 78.

- Deuterocohnia* × *Hechtia* ISF *Pitcairnioideae* s. str. × *Hechtioideae* (→ × *Hechcohnia* G. H. Anderson ex J. R. Grant 1998 Selbyana 19 (1): 117) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011
- Dyckia* × *Hechtia* ISF *Pitcairnioideae* s. str. × *Hechtioideae* (→ × *Dycktia* D. A. Beadle 1991 in Prelim. Listing Cultivar Grex Names Bromel.: 82) Neuhaus 1995, Grant & Zijlstra 1998, IPNI 2011

Lindmanioideae 1–2: 43

Connelia 5, *Lindmania* 39.

Navioideae 5: 107

Brewcaria, *Cottendorfia*, *Navia* 94, *Sequencia*, *Steyerbromelia*.

Pitcairnioideae s. str. 5: 642. 7 IG (+ 5 ISF)

Deuterocohnia 18, *Dyckia* 175, *Encholirium* 22, *Fosterella* 34, (= *Pitcairnia* p.p.), *Pitcairnia* 409 (incl. *Pepinia*°).

- Deuterocohnia* × *Dyckia* *Pitcairnioideae* s. str. (→ × *Dyckcohnia* G. H. Anderson ex J. R. Grant 1998 Selbyana 19 (1): 116) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011
- Deuterocohnia* × *Hechtia* ISF *Pitcairnioideae* s. str. × *Hechtioideae* (→ × *Hechcohnia* G. H. Anderson ex J. R. Grant 1998 Selbyana 19 (1): 117) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011
- Deuterocohnia* × *Orthophytum* ISF *Pitcairnioideae* s. str. × *Bromelioideae* (→ × *Orthocohnia* Lawn ex M. H. J. van der Meer 2019)
- Deuterocohnia brevifolia* × *Pitcairnia hartwigii* *Pitcairnioideae* s. str. (→ × *Deuterocairnia* D. Butcher 2002 J. Bromeliad Soc. 52, 51) Butcher 2008 (The hybrid is well documented, the

Pitcairnia species involved was collected in Mexico in the 1980's, but has not yet been officially described), not IPNI 2013

Deuterocohnia × *Puya* ISF Pitcairnioideae s. str. × Puyoideae (→ × *Pucohnia* G. H. Anderson ex D. A. Beadle 1991 in Prelim. Listing Cultivar Grex Names Bromel.: 200) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Dyckia × *Encholirium* Pitcairnioideae s. str. (→ × *Dicklirium*) BSI 2025

Dyckia × *Hechtia* ISF Pitcairnioideae s. str. × Hechtioideae (→ × *Dycktia* D. A. Beadle 1991 in Prelim. Listing Cultivar Grex Names Bromel.: 82) Neuhaus 1995, Grant & Zijlstra 1998, IPNI 2011

Dyckia × *Pitcairnia* Pitcairnioideae s. str. (→ × *Pitkia*) BSI 2025

Dyckia × *Puya* ISF Pitcairnioideae s. str. × Puyoideae (→ × *Puckia* 2002 D. Butcher 2002 J. Bromeliad Soc. 52, 52)

Encholirium × *Puya* Pitcairnioideae s. str. (→ × *Pulirium*) BSI 2025

Encholirium × *Hechtia* Pitcairnioideae s. str. (→ × *Enchotia*) BSI 2025

Fosterella × *Pitcairnia* Pitcairnioideae s. str. (→ × *Piterella*) BSI 2025

Pepinia^o (= *Pitcairnia*) × *Pitcairnia* IS Pitcairnioideae s. str. (→ × *Pitinia* J. Irvin ex Baskerville, 1998 in J. Bromeliad Soc. 48 (2), 64, for the cultivar 'Coral Horizon' formed by the cross *Pitcairnia rubronigrifolia* × *Pepinia corallina* by Jim Irvin, registered by the Bromeliad Society International 01–20–94) Grant & Zijlstra 1998, IPNI 2011

Puyoideae 1: 225. (3 ISF)

Puya 225.

Billbergia × *Puya* ISF Bromelioideae × Puyoideae (→ × *Puybergia* van der Meer 2022 = „× *Billya*“ van der Meer 2019)

Deuterocohnia × *Puya* ISF Pitcairnioideae s. str. × Puyoideae (→ × *Pucohnia* G. H. Anderson ex D. A. Beadle 1991 in Prelim. Listing Cultivar Grex Names Bromel.: 200) Neuhaus 1995, Grant & Zijlstra 1999, IPNI 2011

Dyckia × *Puya* ISF Pitcairnioideae s. str. × Puyoideae (→ × *Puckia* 2002 D. Butcher 2002 J. Bromeliad Soc. 52, 52)

Tillandsioideae 22: 1450. 6 IG + 8 IT

Seeds plumose.

3 tribes (AP website 2025):

Catopsidae 2 *Catopsis* 18, *Glomeropitcairnia* (or own tribe).

Tillandsiae 2 *Gregbrownia*, *Tillandsia* 800 (AP website includes now: *Barfussia*^o, *Guzmania*^o 215, *Lemeltonia*^o, *Pseudalcantarea*^o, *Racinaea*^o 61, *Wallisia*^o).

Vriesiae 13 *Alcantarea* 23, *Arachnandra*, *Cipuropsis*, *Goudaea*, *Jagrantia*, *Josemania*, *Lutheria*, *Mezobromelia* 9, *Stigmatodon*, *Vriesea*, *Waltillia*, *Werauhia* 87, *Zizkaea*.

Alcantarea × *Vriesea* Vriesiae (→ × *Vriecantarea* J. R. Grant 1996 in *Phytologia* 79, 256) Grant & Zijlstra 1999, IPNI 2011, de Souza et al. 2017, POWO 2025

Barfussia^o (= *Tillandsia*) × *Racinaea*^o (= *Tillandsia*) IS Tillandsiae BSI 2025

Barfussia^o × *Vriesea* IT Tillandsiae × Vriesiae (→ × *Barvriesea* Lawn ex M. H. J. van der Meer

2019), POWO 2025

Barfussia^o (= *Tillandsia*) × *Wallisia*^o (= *Tillandsia*) **IS** *Tillandsieae* (→ × *Wallfussia* Lawn ex M. H. J. van der Meer 2019), POWO 2025

Goudaea × *Tillandsia* **IT** *Vriesieae* × *Tillandsieae* (→ × *Tilgoudaea*) BSI 2025

Goudaea × *Vriesea* *Vriesieae* (→ × *Vriesgoudaea* Lawn ex M. H. J. van der Meer 2019), POWO 2025

Goudaea × *Zizkaea* *Vriesieae* (→ × *Zizkagoudaea* Lawn ex M. H. J. van der Meer 2019), POWO 2025

Guzmania^o (= *Tillandsia*) × *Tillandsia* **IS** *Tillandsieae* (→ × *Guzlandsia* Anon. 1979 in Int.

Checklist Bromel. Hybrids: 35) Neuhaus 1995, Grant & Zijlstra 1998, Vervaeke et al. 2004

Guzmania^o (= *Tillandsia*) × *Goudaea* **IT** *Tillandsieae* × *Vriesieae* (→ × *Guzgoudaea*) BSI 2025

Guzmania^o (= *Tillandsia*) × *Lutheria* **IT** *Tillandsieae* × *Vriesieae* (→ × *Guzlutheria*) BSI 2025

Guzmania^o (= *Tillandsia*) × *Vriesea* **IT** *Tillandsieae* × *Vriesieae* (→ × *Guzvriesea* A. D. Hawkes 1959 in Bromel. Pap. 1 (5), 45; Dutrie ex M. B. Foster 1963 in Bromeliad Soc. Bull. 13, 85) **IK** 1981, Neuhaus 1995, Grant & Zijlstra 1998, IPNI 2011

Lutheria × *Tillandsia* *Vriesieae* × *Tillandsieae* (→ × *Luthandsia*) BSI 2025

Lutheria × *Vriesea* *Vriesieae* (→ × *Vrieslutheria* Lawn ex M. H. J. van der Meer 2019), POWO 2025

Racinaea^o (= *Tillandsia*) × *Tillandsia* **IS** *Tillandsieae* (→ × *Racindsia* Takiz. 2009 J. Bromeliad Soc. 59 (3): 116) **IS** IPNI 2011

Stigmatodon × *Tillandsia* *Vriesieae* × *Tillandsieae* (→ × *Tillamatodon*) BSI 2025

Stigmatodon × *Vriesea* *Vriesieae* (→ × *Vriesmatodon*) BSI 2025

Tillandsia × *Vriesea* **IT** *Tillandsieae* × *Vriesieae* (→ × *Vrieslandsia* C. Chevalier 1931 in Bull. Soc. Natl. Hort. France V, 4, 213–215) Neuhaus 1995, Grant & Zijlstra 1998, Vervaeke et al. 2004

Vriesea × *Werauhia* *Vriesieae* (→ × *Vrierauhia* D. Shiigi ex D. A. Beadle 1998 Bromeliad Cult. Reg. 363) Butcher 2005

Wallisia^o (= *Tillandsia*) × *Tillandsia* **IS** *Tillandsieae* (→ × *Wallandsia* Lawn ex M. H. J. van der Meer 2019), POWO 2025

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Butomaceae (Alismatales) 1: 1

flowering rush family = Schwanenblumengewächse

The order Alismatales has 14 families.

Butomus umbellatus 1.

Probably **basic type family Butomaceae** (1: 1) as a well-defined monotypic family.

Cactaceae (Caryophyllales) 139: 1900. (156 IG (incl. 30 IT + 2 ISF)

cactus family = Kakteengewächse

AP website 2025: 5 subfamilies.

Subdivision of subfamily according to Vos et al. 2025, which differs much from AP website 11.1025.

de Vos et al. separate tribe Blossfeldieae as an own subfamily Blossfeldioideae, and propose to reunite subfamilies Leuchtenbergerioideae and Pereskioideae as one subfamily Pereskioideae.

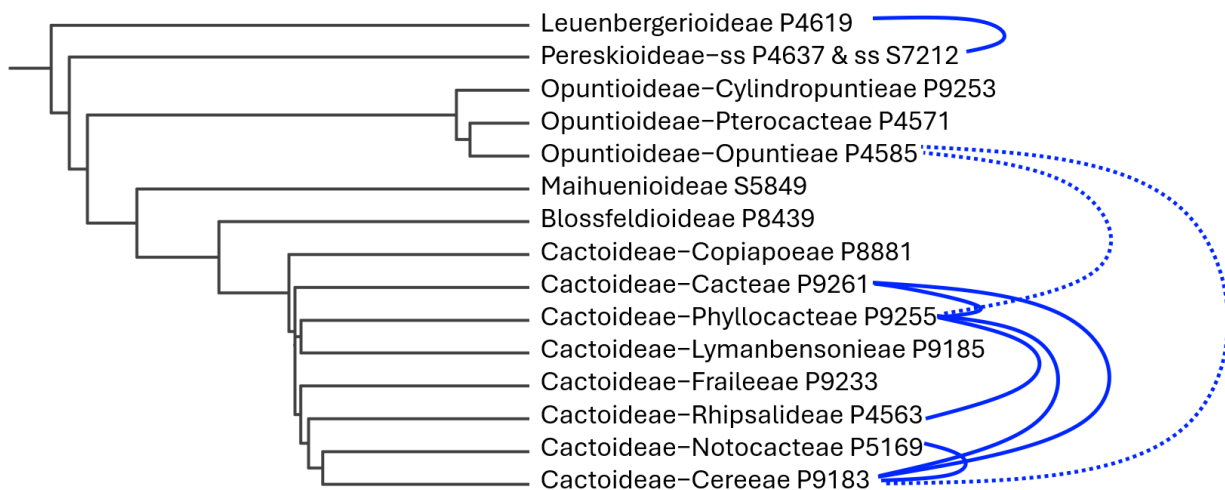
Cactoideae 112: 1500 (incl. Blossfeldioideae).

Leuenbergerioideae *Leuenbergeria* 1: 8 (no stem stomata).

Maihuenioideae *Maihuenia* 1: 2.

Opuntioideae 15: 220–349 (stems articulated).

Pereskioideae 1: 9 *Pereskia*.



Cactaceae: hybrid connections between subfamilies and tribes in the (simplified) phylogeny of de Vos et al. 2025 (BUCKY analyses. <https://doi.org/10.1007/s00606-025-01948-z>; cf. de Vos et al.)

Cactoideae 112: 1500. **120 IG** (incl. 26 plurigeneric hybrids) + **30 IT**

9 tribes:

Blossfeldieae 1: 1.

Cacteae 30 *Astrophytum*, *Echinocactus*, *Ferocactus*, *Leuchtenbergia*, *Lophophora*, *Mammillaria*, *Stenocactus*, ...

Cereeae 35: 445 *Borzacactus*, *Cereus*, *Cleistocactus*, *Denmoza*, *Echinopsis*, *Espostoa*, *Gymnocalycium*, *Rebutia*, ...

Copiapoeae 1 *Capiapoa*.

Fraileae 1: 18 *Frailea*.

Lymanbensonieae 2 *Calymmanthium*, *Lymanbensonia*.

Notocacteae 4 *Eriosyce* 73, *Neowerdermannia*, *Parodia* 62, *Yavia*.

Phyllocacteae 36 *Acanthocereus*, *Aporocactus*, *Disocactus*, *Cephalocereus*, *Epiphyllum*, *Hylocereus*, *Leptocereus*, *Nyctocereus*, *Pachycereus*, *Selenicereus*, ...

Rhipsalideae 4: 55 *Hatiora*, *Lepismium*, *Rhipsalis* 37, *Schlumbergera*.

Basic type Cactaceae subfamily Cactoideae (112: 1500): Kutzelnigg 2009 unpubl. About 150 bigeneric and plurigeneric hybrids are known, most of them artificial, 30 of them connecting all important tribes (5 of 9), see the figure on top (see: Cactaceae). An exception is the

monotypic tribe Blossfeldieae which is separated as an own tribe by de Vos et al. 2025. – The circumscription of genera and tribes has been changed fundamentally in the last decades, but this is not relevant for the basic type question. – Two connections have been reported to subfamily Opuntioideae, but further confirmation is necessary. Possibly, Cactaceae as a whole represents a basic type. But this is speculative currently.

Addition in 2026: the following new nothogenera names of Phyllocactaceae have been published by van der Meer 2018: *×Aporgera*, *×Dialis*, *×Differa*, *×Dilectus*, *×Dinocereus*, *×Diphlocereus*, *×Diselvia*, *×Disivia*, *×Disoquipa*, *×Disuntia*, *×Epivia*, *×Heliara*, *×Opuntara*, *×Selenara*, *×Selenbergera*, *×Selivia*. – Probably not all of them have been taken into account in the following list.

- Acanthocalycium × Cyndrolobivia*[°] (= *Echinopsis* p. p.) *Cereeae* (→ *×Cyndrocalycium* Y. Ito 1981, The Cactaceae, 644) IK 1987
- Acanthocalycium × Echinopsis* *Cereeae* (→ *×Acanthinopsis* P. V. Heath 1992 in Calyx 1, 94) IK 1996
- Akersia*[°] (= *Cleistocactus*) *× Borzicactus* *Cereeae* (→ *×Borkersia* Halda, Malina & Panar. 2003 in Acta Mus. Richnov., Sect. Nat. 10 (2): 150) IPNI 2008
- Aporocactus × Cryptocereus*[°] (= *Selenicereus* p. p.) *Phyllocactaceae* (→ *×Aporocryptocereus* Xhonneux 2000 in Cact. Aventures 45: 24) IPNI 2008
- Aporocactus × Heliocereus*[°] (= *Disocactus* p. p.) *Phyllocactaceae* (→ *×Aporoheliocereus* hort. ex Airy Shaw 1966 in Willis, Dict. Flow. Pl. Ferns, ed. 7: 80) IPNI 2008
- Aporocactus × Cryptocereus*[°] (= *Selenicereus* p. p.) *× Epiphyllum × Heliocereus*[°] (= *Disocactus* p. p.) *× Selenicereus* *Phyllocactaceae* (→ *×Kleinerara* P. V. Heath 1992 in Calyx 1, 86) (pentageneric) IK 1996
- Aporocactus × Cryptocereus*[°] (= *Selenicereus* p. p.) *× Heliocereus*[°] (= *Disocactus* p. p.) *Phyllocactaceae* (→ *×Meierara* P. V. Heath 1983 in Epiphytes 7, 91) (tetrageneric) IK 1987
- Aporocactus × Disocactus* *Phyllocactaceae* Backeberg 1958–1962, Knobloch 1972
- Aporocactus × Echinopsis* **IT** *Phyllocactaceae × Cereeae* (→ *×Aporechinopsis* G. D. Rowley 1980 Name that Succulent, 114 = „*×Echinaporus*“ Y. Ito 1981 The Cactaceae, 649, invalid according to Art. H.6.2.) IK 1987
- Aporocactus × Epiphyllum* *Phyllocactaceae* (→ *×Aporoepiphyllum* G. D. Rowley 1980 Name that Succulent, 114; = „*×Aporophyllum*“ hort. ex D. R. Hunt 1966 in Willis Dict. Fl. Pl. ed. 7, 80, not correct according to Art. H. 6 of the code) Knobloch 1972, IK 1987
- Aporocactus × Epiphyllum × Heliocereus*[°] (= *Disocactus* p. p.) *× Nopalxochia*[°] (= *Disocactus* p. p.) *Phyllocactaceae* (→ *×Joyceara* P. V. Heath 1992 in Calyx 1, 84) (tetrageneric) IK 1996
- Aporocactus × Epiphyllum × Heliocereus*[°] (= *Disocactus* p. p.) *× Nopalxochia*[°] (= *Disocactus* p. p.) *× Selenicereus* *Phyllocactaceae* (→ *×Cockeara* P. V. Heath 1992 in Calyx 1, 84) (tetrageneric) IK 1996
- Aporocactus × Epiphyllum × Heliocereus*[°] (= *Disocactus* p. p.) *× Selenicereus* *Phyllocactaceae* (→ *×Rettigara* P. V. Heath 1992 in Calyx 1, 96) (tetrageneric) IK 1996
- Aporocactus × Heliocereus*[°] (= *Disocactus* p. p.) *Phyllocactaceae* (→ „*×Heliaporus*“ Rowley 1951 in Cact. & Succ. Journ. Brit. 13, 54, in adnot.; et 1962 in Backeberg Cactac.: Handb. Kakteenk. 6, 3553; confer *×Aporoheliocereus mallisonii* (Otto et Dietrich) P. V. Heath 1989 in Taxon 38,

- 281: *Cereus smithii*; × *Aporoheliocereus smithianus* (Sweet) P. V. Heath 1983 in Epiphytes 7, 92: *Cereus smithianus*) Backeberg 1958–1962, IK 1970, Knobloch 1972, IK 1991
- Aporocactus* × *Heliocereus*^o (= *Disocactus* p. p.) × *Nopalxochia*^o (= *Disocactus* p. p.) **Phyllocactaeae** (→ × *Aporoheliuchia* P. V. Heath 1984 in Epiphytes, 8, 40) IK 1991
- Aporocactus* × *Nopalxochia*^o (= *Disocactus* p. p.) **Phyllocactaeae** (→ × *Aporochia* G. D. Rowley 1972 in Epiphytes 4, 12 cf. G. D. Rowley 1980 publ. 1982 in Repert. Pl. Succ. (I.O.S.) 31, 3) Backeberg 1958–1962, IK 1987
- Aporocactus* × *Schlumbergera* **IT Phyllocactaeae** × **Rhipsalideae** (→ × *Aporgera* van der Meer 2018) POWO 2025
- Aporocactus* × *Selenicereus* **Phyllocactaeae** (→ × *Aporicereus* 2016 Mottram) cf. G. D. Rowley 1980 publ. 1982 in Repert. Pl. Succ. (I.O.S.) 31, 11) Backeberg 1958–1962, IK 1987, POWO 2025
- Aporocactus* × *Trichocereus*^o (= *Echinopsis* p. p.) **IT Phyllocactaeae** × **Cereeae** (= *Echinopsis* p. p.) Backeberg 1958–1962, Knobloch 1972
- Aporocactus* × *Weberocereus* **Phyllocactaeae** (→ × *Aporoberocereus* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 46) IK 1987
- Arequipa*^o (= *Oreocereus* p. p.) × *Heliocereus* × *Nopalxochia*^o (= *Disocactus* p. p.) (→ × *Callisonara* P. V. Heath 1992 in Calyx 1: 98) (trigeneric) IK 1996
- Ariocarpus* × *Lophophora* **Cacteae** (nat. hyb. Mexico)
<http://www.panarottocactus.net/phpBB2/viewtopic.php?t=69> 2007 (with photo)
- Arthrocareus* × *Cleistocactus* **Cereeae** (→ × *Arthrocleistocactus* Mordhorst 2020) POWO 2025
- Astrophytum* × *Ferocactus* **Cacteae** (→ × *Astroferocactus* Liczn. 2009 Kaktusy Inne 6 (3): 1001; cf. Repert. Pl. Succ. 60: 6 (2010)) IPNI 2013
- Astrophytum* × *Leuchtenbergia* **Cacteae** (→ × *Astrobergia* Pinal 2010 Revista Circulo Colecc. Cact. Crasas Republ. Argent. 9 (1): 25; cf. Repert. Pl. Succ. 61: 9 (2011)) IPNI 2013
- Backebergia* (= *Pachycereus* p. p.) × *Pachycereus* **IS Phyllocactaeae** (→ × *Pachebergia* S. Arias & Terrazas 2008 in Revista Mex. Biodivers. 79 (1): 26) (nat. hyb. Mexico) Arias & Tarrazas 2008, IPNI 2009
- Bergerocactus* × *Myrtillocactus* **Phyllocactaeae** (→ × *Myrtgerocactus* Moran 1962 in Cact. & Succ. Journ. Amer. 34, 186) Backeberg 1958–1962, IK 1970, Knobloch 1972, POWO 2024 (nat. hyb. Mexico)
- Bergerocactus* × *Pachycereus* **Phyllocactaeae** (→ × *Pacherocactus* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 78; = „× *Pachgerocereus*“ Moran 1962 in Cact. & Succ. Journ. Amer. 34, 93) Backeberg 1958–1962, IK 1970, Knobloch 1972, IK 1987, POWO 2024 (nat. hyb. Mexico)
- Bisnaga*^o (= *Ferocactus* p. p.) × *Stenocactus* **IT Phyllocactaeae** × **Cacteae** (→ × *Stenobisnaga* Doweld 2005 in Sukkulenty (Moscow) 8 (1–2): 16) IPNI 2008
- Borzicactus* × *Chamaecereus*^o (= *Echinopsis* p. p.) **Cereeae** (→ × *Chamaezicactus* Halda, Malina & Panar. 2003 in Acta Mus. Richnov., Sect. Nat. 10 (2): 151) IPNI 2008
- Borzicactus* × *Cleistocactus* **Cereeae** (→ × *Cleistoborzicactus* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 48) IK 1987
- Borzicactus* × *Denmoza* **Cereeae** (→ × *Borzimoza* G. D. Rowley 1980, Name that Succulent, 116) IK 1987
- Borzicactus* × *Echinopsis* **Cereeae** (→ × *Borzinopsis* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 47) IK 1987

Borzicactus × *Espostoa* **Cereeae** (→ × *Borzipostoa* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 47; = × *Espostocactus* Mott 1990) IK 1987

Borzicactus × *Matucana* **Cereeae** POWO 2024 (nat. hyb. Peru)

Borzicactus × *Oroya* **Cereeae** (→ × *Borziroya* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 47) IK 1987

Browningia × *Espostoa* **Cereeae** (→ × *Espostingia* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 48) IK 1987

Cephalocereus × *Epiphyllum* **Phyllocacteae** (→ × *Cephalepiphyllum* R. Mottram 1990, Contrib. New Class. Cact. Fam., 26) IK 1991

Cephalocereus × *Heliocereus*^o (= *Disocactus* p. p.) **Phyllocacteae** (→ × *Cephaliocereus* G. D. Rowley 1980 Name that Succulent, 118) IK 1987

Cephalocereus × *Neobuxbaumia*^o (= *Cephalocereus*) **IS Phyllocacteae** Vite et al. 1996 (nat. hyb.)

Cephalocereus × *Nyctocereus*^o (= *Peniocereus*) **IS Phyllocacteae** (→ × *Nyctocephalocereus* R. Mottram 1990, Contrib. New Class. Cact. Fam., 62) IK 1991

Cereus × *Epiphyllum* **IT Cereeae × Phyllocacteae** (→ × *Cerephyllum* R. Mottram 1990, Contr. New Class. Cact. Fam., 26) IK 1991

Cereus × *Echinopsis* **Cereeae** (→ × *Cereopsis* Mottram) Mottram 2016

Cereus × *Harrisia* **Cereeae** (→ × *Harricereus* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 76) IK 1987

Cereus × *Monvillea*^o (= *Acanthocereus*) **IT Cereeae × Phyllocacteae** (→ × *Cerevillea* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 48) IK 1987

Chamaecereus^o (= *Echinopsis* p. p.) × *Cleistocactus* **Cereeae** (→ × *Cleistochamaecereus* P. V. Heath 1992 in Calyx 1, 103) IK 1996

Chamaecereus^o (= *Echinopsis* p. p.) × *Echinopsis* **IS Cereeae** (→ × *Chamaelopsis* J. H. Johnson ex Y. Ito 1967 Hana Shaboten Zufu 59) IPNI 2013

Chamaecereus^o (= *Echinopsis* p. p.) × *Lobivia*^o (= *Echinopsis* p. p.) **IS Cereeae** (→ × *Chamaebivia* Halda, Malina & Panar. 2003 in Acta Mus. Richnov., Sect. Nat. 10 (2): 151) IPNI 2008

Chamaecereus^o (= *Echinopsis* p. p.) × *Echinocereus* × *Trichocereus*^o (= *Echinopsis* p. p.) **Cereeae** (→ × *Fricara* P. V. Heath 1992 in Calyx 1, 103) (trigeneric) IK 1996

Chamaecereus^o (= *Echinopsis* p. p.) × *Echinopsis* **IS Cereeae** (→ × *Chamaecereopsis* P. V. Heath 1992 in Calyx 1, 103) Backeberg 1958–1962, IK 1996

Chamaecereus^o (= *Echinopsis* p. p.) × *Echinopsis* × *Lobivia*^o × *Trichocereus*^o (= *Echinopsis* p. p.) **Cereeae** (→ × *Mottramara* P. V. Heath 1992 in Calyx 1, 103) (tetrageneric) IK 1996

Chamaecereus^o (= *Echinopsis* p. p.) × *Echinopsis* × *Rebutia* (→ × *Timmermansara* P. V. Heath 1992 in Calyx 1, 104) (trigeneric) IK 1996

Chamaecereus^o (= *Echinopsis* p. p.) × *Leptocladodia* (= *Mamillaria* p. p.) **IT Cereeae × Cacteae** (→ × *Chamaecladodia* P. V. Heath 1992 in Calyx 1, 104) IK 1996

Chamaecereus^o (= *Echinopsis* p. p.) × *Lobivia*^o (= *Echinopsis* p. p.) **IS Cereeae** Backeberg 1958–1962

Chamaecereus^o (= *Echinopsis* p. p.) × *Notocactus*^o (= *Parodia* p. p.) **IT Cereeae × Notocacteae** (→ × *Chamaeactus* P. V. Heath 1992 in Calyx 1, 104) IK 1996

Chamaecereus^o × *Pygmaeocereus* **Cereeae** (→ × *Chamygmaeocereus* Mordhorst 2008 Hybriden-J. 2007 (3): 11; cf. Repert. Pl. Succ. 58: 9) IPNI 2009

- Cleistocactus* × *Denmoza* **Cereeae** (→ × *Cleistoza* G. D. Rowley 2004 in Brit. Cact. Succ. J. 22 (2): 64) IPNI 2008
- Cleistocactus* × *Echinocereus* **IT Cereeae** × *Phyllocacteae* (→ × *Cleistonocereus* G. D. Rowley 2004 in Brit. Cact. Succ. J. 22 (2): 65) IPNI 2008
- Cleistocactus* × *Echinopsis* **Cereeae** (→ × *Cleistopsis* F. Strigl 1979 in Kakt. andere Sukk. 30, 226) IK 1991
- Cleistocactus* × *Echinopsis* × *Haageocereus* **Cereeae** (→ × Graeserara Mordhorst 2011 Kakteen And. Sukk. 62 (9): 228) (trigeneric) IPNI 2013
- Cleistocactus* × *Echinopsis* × *Matucana* **Cereeae** (→ × *Cleistoechinocana* Liczn. 2009 Kaktusy Inne 6 (3): 101; cf. Repert. Pl. Succ. 60: 6); = ×° *Schickara* Mordhorst 2011 Kakteen And. Sukk. 62 (9): 228 (trigeneric) IPNI 2013
- Cleistocactus* × *Espostoa* **Cereeae** (→ × *Espostocactus* R. Mottram 1990, Contrib. New Class. Cact. Fam., 38) IK 1991
- Cleistocactus* × *Haageocereus* **Cereeae** (→ × *Cleistaageocereus* Mordhorst 2011 Kakteen And. Sukk. 62 (9): 228) IPNI 2011, see also *Cleistocactus* × *Yungasocereus*° (= *Haageocereus* p. p.)
- Cleistocactus* × *Matucana* **Cereeae** (→ × *Cleistocana* G. D. Rowley 1994 in Bradleya 12, 5) IK 1996
- Cleistocactus* × *Parodia* **IT Cereeae** × *Notocacteae* (→ × *Cleistoparodia* A. Wessner 1994 in Hybriden-J. 1, 18, publ. 1995 Repert. Pl. Succ. (I. O. S.) 45, 8) IK 1996
- Cleistocactus* × *Samaipaticereus* **Cereeae** (→ × *Cleipaticereus* G. D. Rowley 1994 in Bradleya 12, 5) IK 1996
- Cleistocactus* × *Yungasocereus*° (= *Haageocereus* p. p.) **Cereeae** (→ × *Yungastocactus* G. D. Rowley 2004 in Brit. Cact. Succ. J. 22 (2): 64) IPNI 2008
- Coleocephalocereus* × *Pilosocereus* **Cereeae** (→ × *Colosocereus* G. D. Rowley 1994 in Bradleya 12, 6) IK 1996
- Coleocephalocereus* × *Pseudopilosocereus*° (= *Pilosocereus*) **Cereeae** (→ × *Pseudocereus* P. V. Heath 1992 in Calyx 1, 106) IK 1996
- Coleocephalocereus* × *Stephanocereus* **Cereeae** (→ × *Coleocereus* P. V. Heath 1992 in Calyx 1, 106) IK 1996
- Cosmantha*° (= *Echinopsis* p. p.) × *Cylindrolobivia* (= *Echinopsis* p. p.) **IS Cereeae** (→ × *Cylindrantha* Y. Ito 1981, The Cactaceae, 643) IK 1987
- Cosmantha*° (= *Echinopsis* p. p.) × *Echinopsis* **IS Cereeae** (→ × *Cosmopsis* Y. Ito 1981, The Cactaceae, 641) IK 1987
- Cosmantha*° (= *Echinopsis* p. p.) × *Soehrensia*° (= *Echinopsis* p. p.) **IS Cereeae** (→ × *Soehrenantha* Y. Ito 1981, The Cactaceae, 646) IK 1987
- Cryptocereus*° (= *Selenicereus* p. p.) × *Heliocereus*° (= *Disocactus* p. p.) **Phyllocacteae** (→ × *Heptocereus* P. V. Heath 1983 in Epiphytes 7, 91) IK 1987
- Cryptocereus*° (= *Selenicereus* p. p.) × *Heliocereus*° (= *Disocactus* p. p.) × *Nopalxochia*° (= *Disocactus* p. p.) **Phyllocacteae** (→ × *Petersenara* P. V. Heath 1992 in Calyx 1, 86) (trigeneric) IK 1996
- Cylindrolobivia*° (= *Echinopsis* p. p.) × *Echinopsis* **IS Cereeae** (→ × *Cylindropsis* Y. Ito 1981, The Cactaceae, 639; = „× *Echinocylindra*“ Y. Ito 1981, The Cactaceae, 644, invalid according to Art. H.6.2.) IK 1987
- Cylindrolobivia*° (= *Echinopsis* p. p.) × *Soehrensia*° (= *Echinopsis* p. p.) **IS Cereeae** (→ × *Cylindrosia* 1976 Y. Ito in Shaboten 91, 25; cf. G. D. Rowley 1976 publ. 1979 in Repert. Pl. Succ. (I.O.S.) 27, 4; 1981 Y. Ito, The Cactaceae, 643) IK 1987

- Denmoza* × *Echinopsis* **Cereeae** (→ × *Echinomoza* G. D. Rowley 2004 in Brit. Cact. Succ. J. 22 (2): 64) IPNI 2008
- Denmoza* × *Leucostele* **Cereeae** (→ × *Leucomozia* M. H. J. van der Meer 2021) POWO 2024 (nat. hyb. Argentina)
- Denmoza* × *Seticereus*[°] (= *Cleistocactus* p. p.) **Cereeae** (→ × *Setidenmoza* 1959 C. Backeberg, Die Cactaceae 2: 991) Knobloch 1972, IK 1991
- Denmoza* × *Trichocereus*[°] (= *Echinopsis* p. p.) **Cereeae** (→ × *Trichomoza* Font & Picca 2001 in Bradleya 19: 59) IPNI 2008
- Disisorhopsalis*[°] (= *Disocactus* p. p.) × *Disocactus* **IS Cereeae** (→ × *Disisocactus* Doweld 2001 in Sukkulenty (Moscow) 4 (1–2): 40 (publ. 2002)) IPNI 2008
- Disisorhopsalis*[°] (= *Disocactus* p. p.) × *Heliocereus*[°] (= *Disocactus* p. p.) **IS Cereeae** (→ × *Heliorhopsalis* Doweld 2001 (publ. 2002) in Sukkulenty (Moscow) 4 (1–2): 40) IPNI 2002
- Disocactus* × *Echinopsis* **Cereeae** (→ × *Disonopsis* G. D. Rowley 2004 in Syst. Init. 18: 13.) IPNI 2008, POWO 2025 (unplaced)
- Disocactus* × *Epiphyllum* **IT Cereeae** × **Phyllocactaeae** (→ × *Disophyllum* C. F. Innes 1968 in Epiphytes 1, 43) IK 1991
- Disocactus* × *Heliocereus*[°] (= *Disocactus* p. p.) **IS Cereeae** Hunt 1992
- Disocactus* × *Heliocereus*[°] (= *Disocactus* p. p.) × *Nopalxochia*[°] (= *Disocactus* p. p.) **Cereeae** (→ × *Macdougallara* P. V. Heath 1992 in Calyx 1, 43) (trigeneric) IK 1996
- Disocactus* × *Hylocereus* **IT Cereeae** × **Phyllocactaeae** (→ × *Disolocereus* E. Meier 2009 EPIG 64: 26; cf. Repert. Pl. Succ. 60: 6) IPNI 2013
- Disocactus* × *Nopalxochia*[°] (= *Disocactus* p. p.) **IS Cereeae** (→ × *Disochia* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 48) IK 1987
- Disocactus* × *Opuntia* **ISF Cactoideae Cereeae** × **Opuntioideae Opuntiaeae** → see **Opuntioideae**
- Disocactus* × *Opuntia* × *Selenicereus* **ISF Cactoideae Phyllocactaeae** × **Opuntioideae Opuntiaeae** → see **Opuntioideae**
- Disocactus* × *Schlumbergera* **IT Cereeae** × **Rhipsalideae** (→ × *Schlumisocactus* Süpplie ex Doweld 2001 in Sukkulenty (Moscow) 4(1–2): 37 (publ. 2002).) IPNI 2008
- Disocactus* × *Selenicereus* **IT Cereeae** × **Phyllocactaeae** (→ × *Disoselenicereus* E. Meier 1990 in Kakt. and. Sukk. 41, 80) Backeberg 1958–1962, Knobloch 1972, IK 1991
- Disocactus* × *Weberocereus* **IT Cereeae** × **Phyllocactaeae** (→ × *Disberocereus* E. Meier 1990 in Kakt. and. Sukk. 41, 80) IK 1991
- Echinocactus* × *Ferocactus* **Cacteae** (→ × *Echinoferocactus* P. V. Heath 1992 in Calyx 1, 109) IK 1996
- Echinocereus* × *Sclerocactus* **IT Phyllocactaeae** × **Cacteae** (→ × *Sclerinocereus* G. D. Rowley 2006 in Teratopia 280.) IPNI 2008
- Echinocereus* × *Echinopsis* **IT Phyllocactaeae** × **Cereeae** (→ × *Echinocereopsis* P. V. Heath 1992 in Calyx 1, 109) IK 1996
- Echinocereus* × *Heliocereus*[°] (= *Disocactus* p. p.) × *Nopalxochia*[°] (= *Disocactus* p. p.) **Phyllocactaeae** (→ × *Buchheimara* P. V. Heath 1992 in Calyx 1, 109) (trigeneric) IK 1996
- Echinocereus* × *Wilcoxia*[°] (= *Echinocereus* p. p.) **Phyllocactaeae** (→ × *Echinocoxia* P. V. Heath 1992 in Calyx 1, 110) IK 1996
- Echinofossulocactus*[°] (= *Stenocactus* p. p.) × *Ferocactus* **Cacteae** (→ × *Ferofossulocactus* 1980 G. D. Rowley, Name that Succulent, 124) IK 1987

Echinofossulocactus° (= *Stenocactus*) × *Leuchtenbergia* **Cactaceae** (→ × *Echinobergia* 1990 R. Mottram, Contr. New Class. Cact. Fam., 35) IK 1991

Echinopsis × *Epiphyllum* × *Heliocereus*° (= *Disocactus* p. p.) × *Nopalxochia*° (= *Disocactus* p. p.) × *Selenicereus* **IT Cereeae × Phyllocactaeae** (→ × *Innesara* P. V. Heath 1992 in Calyx 1,609) (pentageneric) IK 1996

Echinopsis × *Epiphyllum* × *Selenicereus* **IT Cereeae × Phyllocactaeae** (→ × *Knebelara* P. V. Heath 1992 in Calyx 1, 52) (trigeneric) IK 1996

Echinopsis × *Eriocereus*° (= *Harrisia* p. p.) **Cereeae** (→ × *Eriocereopsis* Doweld 2001 (publ. 2002) in Sukkulenty (Moscow) 4 (1–2): 34) IK

Echinopsis × *Gymnocalycium* **Cereeae** (→ × *Gymnochinopsis* P. V. Heath 1992 in Calyx 1, 111) IK 1996

Echinopsis × *Haageocereus* **Cereeae** (→ × *Echinaageocereus* Mordhorst 2011 Kakteen And. Sukk. 62 (9): 228) IPNI 2012

Echinopsis × *Harrisia* **Cereeae** (→ × *Harrisinopsis* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 77) IK 1987

Echinopsis × *Harrisia* × *Trichocereus*° (= *Echinopsis* p. p.) **Cereeae** (→ × *Guillauminara* P. V. Heath 1992 in Calyx 1, 111) (trigeneric) IK 1996

Echinopsis × *Heliocereus*° (= *Disocactus* p. p.) **IT Cereeae × Phyllocactaeae** (→ × *Heliocereopsis* P. V. Heath 1992 in Calyx 1, 111) IK 1996

Echinopsis × *Heliocereus*° (= *Disocactus* p. p.) × *Nopalxochia*° (= *Disocactus* p. p.) **IT Cereeae × Phyllocactaeae** (→ × *Lutterlohara* P. V. Heath 1992 in Calyx 1, 111) (trigeneric) IK 1996

Echinopsis × *Lobivia*° (= *Echinopsis* p. p.) **IS Cereeae** (→ × *Echinobivia* Rowley 1966 in Nat. Cact. & Succ. Journ. 21, 82) Backeberg 1958–1962, Knobloch 1972, IK 1974

Echinopsis × *Lobivia*° (= *Echinopsis* p. p.) × *Trichocereus*° (= *Echinopsis* p. p.) **Cereeae** (→ × *Tricholobiviopsis* P. V. Heath 1992 in Calyx 1, 111) (trigeneric) IK 1996

Echinopsis × *Nopalxochia*° (= *Disocactus* p. p.) **Cereeae** (→ × *Echinopalxochia* P. V. Heath 1992 in Calyx 1, 112) IK 1996

Echinopsis × *Notocactus*° (= *Parodia* p. p.) **IT Cereeae × Notocactaeae** (→ × *Echinonotocactus* P. V. Heath 1992 in Calyx 1, 112) IK 1996

Echinopsis × *Oreocereus* **Cereeae** (→ × *Oreonopsis* G. D. Rowley 1994 in Bradleya 12, 6) IK 1996, POWO 2024 (nat. hyb. Argentina)

Echinopsis × *Parodia* **IT Cereeae × Notocactaeae** (→ × *Echinoparodia* 1990 R. Mottram, Contrib. New Class. Cact. Fam., 36) IK 1991

Echinopsis × *Rebutia* **Cereeae** (→ × *Echinobutia* P. V. Heath 1992 in Calyx 1, 112) IK 1996

Echinopsis × *Salpingolobivia*° (= *Echinopsis* p. p.) **Cereeae** (→ × *Salpingolobiopsis* Y. Ito 1967 Hana Shaboten Zufu 48) IPNI 2013

Echinopsis × *Selenicereus* **IT Cereeae × Phyllocactaeae** (→ × *Seleniopsis* G. D. Rowley 2004 in Cactaceae Syst. Init. 18: 13) IPNI 2008

Echinopsis × *Trichocereus*° (= *Echinopsis* p. p.) **IS Cereeae** (→ × *Trichoechinopsis* hort. 1959 ex Backeberg Cactac.: Handb. Kakteenk. 2, 1283; × *Trichopsis* 1981 Y. Ito, The Cactaceae, 638) IK 1970, IK 1987

Echinopsis × *Weingartia*° (= *Rebutia* p. p.) **Cereeae** (→ × *Weinganopsis* G. D. Rowley 1994 in Bradleya 12, 6) IK 1996

- Epiphyllanthus*[°] (= *Schlumbergera* p. p.) × *Schlumbergera* **IS** *Rhipsalideae* (→ × *Schlumbergeranthus* Doweld 2001 (publ. 2002) in *Sukkulenty* (Moscow) 4 (1–2): 37) IPNI 2008
- Epiphyllopsis*[°] (= *Hatiora* p. p.) × *Rhipsalidopsis*[°] (= *Hatiora* p. p.) **IS** *Rhipsalideae* (→ × *Rhipsaphyllopsis* Werderm. 1939 in *Kakteenkunde* 11, in obs.) IK 1947, Knobloch 1972
- Epiphyllum* × *Heliocereus*[°] (= *Disocactus* p. p.) *Phyllocactaeae* (→ × *Heliphyllum* Rowley 1962 in *Backeberg Cactac.: Handb. Kakteenk.* 6, 3555) IK 1970, Knobloch 1972
- Epiphyllum* × *Heliocereus*[°] (= *Disocactus* p. p.) × *Nopalxochia*[°] (= *Disocactus* p. p.) *Phyllocactaeae* (→ × *Feastara* P. V. Heath 1992 in *Calyx* 1, 38) (trigeneric) IK 1996
- Epiphyllum* × *Heliocereus*[°] (= *Disocactus* p. p.) × *Nopalxochia*[°] (= *Disocactus* p. p.) × *Selenicereus* *Phyllocactaeae* (→ × *Rowleyara* P. V. Heath 1992 in *Calyx* 1, 36) (tetrageneric) IK 1996
- Epiphyllum* × *Heliocereus*[°] (= *Disocactus* p. p.) × *Selenicereus* *Phyllocactaeae* (→ × *Courantara* P. V. Heath 1992 in *Calyx* 1, 116; = × *Helioseleniphyllum* Doweld 2001 (publ. 2002) *Sukkulenty* 4 (1–2): 41) (trigeneric) IK 1996
- Epiphyllum* × *Hylocereus* *Phyllocactaeae* (→ × *Hylophyllum* P. V. Heath 1992 in *Calyx* 1, 38) IK 1996
- Epiphyllum* × *Nopalxochia*[°] (= *Disocactus* p. p.) *Phyllocactaeae* (→ × *Epixochia* Rowley 1962 in *Backeb. Cactac.: Handb. Kakteenk.* 6, 3556) Backeberg 1958–1962, IK 1970, Knobloch 1972
- Epiphyllum* × *Nopalxochia*[°] (= *Disocactus* p. p.) × *Selenicereus* *Phyllocactaeae* (→ × *Seleniphylchia* F. Süpplie 1988 in *Succulenta* 67, 258) (trigeneric) IK 1991
- Epiphyllum* × *Schlumbergera* **IT** *Phyllocactaeae* × *Rhipsalideae* (→ × *Schlumbephyllum* Süpplie ex Doweld 2001 (publ. 2002) in *Sukkulenty* (Moscow) 4 (1–2): 37) IPNI 2008
- Epiphyllum* × *Selenicereus* *Phyllocactaeae* (→ × *Seleniphyllum* Rowley 1962 in *Backeberg Cactac.: Handb. Kakteenk.* 6, 3557) (*E. crenatum* × *S. grandiflorum*) Backeberg 1958–1962, IK 1970, Knobloch 1972, Heath 1989, Tel-Zur et al. 2012
- Epiphyllum* × *Selenicereus* × *Opuntia* **ISF** *Cactoideae* *Phyllocactaeae* × *Opuntioideae* *Opuntieae* → see *Opuntioideae*
- (*Epiphyllum* × *Selenicereus*) × *Opuntia* **ISF** *Cactoideae* *Phyllocactaeae* × *Opuntioideae* *Opuntieae* → see *Opuntioideae*
- Escontria* × *Polaskia* *Phyllocactaeae* (→ × *Polascontria* Y. Cruz & S. Vasquez 2017) Cruz-Zamora et al. 2017 (*E. chiotilla* × *P. chichipe*) POWO 2024 (nat. hyb. Mexico)
- Espostoa* × *Haageocereus* *Cereeae* (→ × *Haagespostoa* G. D. Rowley 1982 in *Nation. Cact. Succ. J.* (U. K.) 37, 76) Ritter 1958 (see Rowley 1982), Rowley 1982, IK 1987, POWO 2024 (nat. hyb. Peru)
- Espostoa* × *Matucana* *Cereeae* (→ × *Espocana* P. V. Heath 1992 in *Calyx* 1, 117) IK 1996
- Espostoa* × *Weberbauerocereus* *Cereeae* (→ × *Weberbostoa* G. D. Rowley 1994 in *Bradleya* 12, 6) IK 1996
- Ferocactus* × *Leuchtenbergia* *Cacteae* (→ × *Ferobergia* Ono & Ito 1981 in *The Cactaceae*, 472; Glass 1966 in *Cact. & Succ. Journ. Amer.* 38, 177) Backeberg 1958–1962, IK 1974, IK 1987
- Ferocactus* × *Stenocactus* *Cacteae* (→ × *Ferenocactus* Doweld 2005 in *Sukkulenty* (Moscow) 8 (1–2): 16.) IPNI 2008, see also *Echinofossulocactus*[°] (= *Stenocactus* p. p.) × *Ferocactus*
- Griseocereus*[°] (= *Stenocereus* p. p.) × *Isulatocereus*[°] (= *Stenocereus* p. p.) **IS** *Phyllocactaeae* (→ × *Grisulatocereus* P. V. Heath 1998 in *Calyx* 6 (1): 1) IPNI 2008
- Gymnocalycium* × *Hylocereus* **IT** *Cereeae* × *Phyllocactaeae* (→ × *Hylocalycium*) Hunt 1992

- Gymnocalycium* × *Lophophora* **IT** *Cereeae* × *Cacteae* (→ × *Gymnophora* P. V. Heath 1992 in *Calyx* 1, 118) IK 1996
- Gymnocalycium* × *Rebutia* *Cereeae* (→ × *Gymnobotia* P. V. Heath 1992 in *Calyx* 1, 118) IK 1996
- Gymnocalycium* × *Sulcorebutia*^o (= *Rebutia* p. p.) *Cereeae* (→ × *Sulcocalycium* P. V. Heath 1992 in *Calyx* 1, 118) IK 1996
- Gymnocalycium* × *Weingartia*^o (= *Rebutia* p. p.) *Cereeae* (→ × *Weinocalycium* P. V. Heath 1992 in *Calyx* 1, 119) IK 1996
- Harrisia* × *Selenicereus* **IT** *Cereeae* × *Phyllocacteae* (→ × *Selenirisia* G. D. Rowley 1982 in *Nation. Cact. Succ. J. (U. K.)* 37, 79) IK 1987
- Hattoria* × *Schlumbergera* *Rhipsalideae* (→ × *Hatbergera* Süpplie 2004 in *Schlumbergera Direct. Spec. Hybr.* [4].) Boyle & Idnurm 2003, IPNI 2008
- Heliocereus*^o (= *Disocactus* p. p.) × *Mediocactus* (= *Selenicereus* p.p) *Phyllocacteae* (→ × *Medeliocereus* P. V. Heath 1992 in *Calyx* 1, 120) IK 1996
- Heliocereus*^o (= *Disocactus* p. p.) × *Nopalxochia*^o (= *Disocactus* p. p.) **IS** *Phyllocacteae* (→ × *Heliochia* Rowley 1962 in *Backeberg Cactac.: Handb. Kakteenk.* vi, 3551; the first hybrid of this nothogenus was published as '*Cactus hybridus*' by Geel in *Sertum Botanicum* 1, t. 115) Backeberg 1958–1962, IK 1970, Knobloch 1972, IK 1991, IK 1996
- Heliocereus*^o (= *Disocactus* p. p.) × *Nopalxochia*^o (= *Disocactus* p. p.) × *Pfeiffera* *Phyllocacteae* (→ × *Eversonara* P. V. Heath 1992 in *Calyx* 1, 120) (trigeneric) IK 1996
- Heliocereus*^o (= *Disocactus* p. p.) × *Nopalxochia*^o (= *Disocactus* p. p.) × *Selenicereus* *Phyllocacteae* (→ × *Worsleyara* P. V. Heath 1992 in *Calyx* 1, 120) IK 1996
- Heliocereus*^o (= *Disocactus* p. p.) × *Phyllocactus*^o (= *Epiphyllum* p. p.) *Phyllocacteae* (→ × *Phyllocereus* Knebel 1938 in *Cactuss. en Vetpl.* iv, 26, hybr. artef.; = × *Heliocactus* Janse 1938 in *Cactuss. en Vetpl.* iv, 28) IK 1950
- Heliocereus*^o (= *Disocactus* p. p.) × *Pilosocereus* **IT** *Phyllocacteae* × *Cereeae* (→ × *Heliosocereus* Glass & Foster 1971 in *Cact. Succ. J. (U.S.A.)* 43, 22, nom. provis.) Backeberg 1958–1962, IK 1981
- Heliocereus*^o (= *Disocactus* p. p.) × *Selenicereus* *Phyllocacteae* (→ × *Seleliocereus* 1937 A. Guillaumin, *Guides Coll. Pl. Viv. Mus. Nation. Hist. Nat. Paris* 4, 51; = „× *Helioselenius*“ Rowley 1951 in *Cact. & Succ. Journ. Brit.* xiii, 54, in adnot.; et 1962 in *Backeb. Cactac.: Handb. Kakteenk.* vi, 3554), IK 1970, IK 1974, IK 1996
- Hylocereus* × *Selenicereus* *Phyllocacteae* Tel Zur et al. 2005, 2012
- Leptocladodia*^o (= *Mamillaria* p. p.) × *Pseudomamillaria*^o (= *Mamillaria* p. p.) **IS** *Cacteae* (→ × *Pseudocladodia* P. V. Heath 1992 in *Calyx* 1, 121) IK 1996
- Leuchtenbergia* × *Parrycactus*^o (= *Ferocactus* p. p.) *Cacteae* (→ × *Parrybergia* Doweld 2005 in *Sukkulenty (Moscow)* 8 (1–2): 17) IPNI 2008
- Leuchtenbergia* × *Thelocactus* *Cacteae* (→ × *Thelobergia* Hirao 1979, *Colour Encycl. Cacti*, 30; cf. G. D. Rowley 1979 publ. 1981 in *Repert. Pl. Succ. (I. O. S.)* 30, 10) IK 1987
- Leucostele* × *Soehrensia*^o (= *Echinopsis* p. p.) *Cereeae* (→ × *Leia* M. H. J. van der Meer 2022) POWO 2024
- Lobivia*^o (= *Echinopsis* p. p.) × *Notocactus*^o (= *Parodia* p. p.) **IT** *Cereeae* × *Notocacteae* (→ × *Notolobivia* P. V. Heath 1992 in *Calyx* 1, 122) IK 1996
- Lobivia*^o (= *Echinopsis* p. p.) × *Oreocereus* *Cereeae* (→ × *Oreobivia* M. Lowry 2000 in *Brit. Cact. Succ. J.* 18 (4): 216) IPNI 2008

- Lophophora* × *Turbinicarpus* **Cactaeae** (→ × *Turbiniphora* Halda & Malina 2005 in Acta Mus. Richnov., Sect. Nat. 12 (1): 7 (–8)) IPNI 2008
- Matucana*° (= *Oreocereus* p. p.) × *Oreocereus* **Cereaeae** (→ × *Oreocana* P. V. Heath 1992 in Calyx 1, 123) IK 1996
- Matucana*° (= *Oreocereus* p. p.) × *Oroya* (= *Oreocereus* p. p.) **Cereaeae** (→ × *Maturoya* P. V. Heath 1992 in Calyx 1, 123) IK 1996
- Micranthocereus* × *Pilosocereus* **Cereaeae** (→ × *Microsocereus* G. D. Rowley 1994 in Bradleya 12, 6) IK 1996
- Micranthocereus* × *Pseudopilocereus*° (= *Pilosocereus* p. p.) **Cereaeae** (→ × *Micropilocereus* P. V. Heath 1992 in Calyx 1, 123) IK 1996
- Mitrocereus*° (= *Pachycereus*) × *Pachycereus* **IS Phyllocactaeae** (→ × *Patrocereus* M. H. J. van der Meer 2021) POWO 2024 (nat. hyb. Mexico)
- Myrtillocactus* × *Nyctocereus* (= *Peniocereus*) **Phyllocactaeae** (→ × *Myrtocereus* 1990 R. Mottram, Contrib. New Class. Cact. Fam., 59) IK 1991~
- Myrtillocactus* × *Rathbunia*° (= *Stenocereus* p. p.) **Phyllocactaeae** (→ × *Rathbunillocactus* R. Mottram 1990, Contrib. New Class. Cact. Fam., 73; P. V. Heath 1992 in Calyx 2, 106) IK 1991, IK 1996
- Myrtillocactus* × *Stenocereus* **Phyllocactaeae** (→ × *Myrtillenocereus* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 78; = × *Stenillocactus* P. V. Heath 1996 in Calyx 5(3): 102) IK 1987, IPNI 2008
- Nigellocereus*° (= *Stenocereus* p. p.) × *Ritterocereus*° (= *Stenocereus* p. p.) **IS Phyllocactaeae** (→ × *Rittellicereus* P. V. Heath 1998 in Calyx 6 (1): 1) IPNI 2008
- Nopalxochia*° (= *Disocactus* p. p.) × *Rhipsalis* **IT Phyllocactaeae** × *Rhipsalideae* (→ × *Nopalxalis* F. Süpplie 1988 in Succulenta 67, 141) IK 1991
- Nopalxochia*° (= *Disocactus* p. p.) × *Selenicereus* **Phyllocactaeae** (→ × *Selenochia* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U.K.) 37, 79, as „× *Selenocha*“) IK 1987
- Oreocereus* × *Trichocereus*° (= *Echinopsis* p. p.) **Cereaeae** (→ × *Oreotrichocereus* P. V. Heath 1992 in Calyx 1, 125) IK 1996
- Salpingolobivia*° (= *Echinopsis* p. p.) × *Soehrensia*° (= *Echinopsis* p. p.) **IS Cereaeae** (→ × *Soehrenlobivia* 1981 Y. Ito, The Cactaceae, 650) IK 1987

Leuenbergerioideae 1: 8

Leuenbergeria 8.

de Vos et al. 2025 propose to include this subfamily in Pereskioideae.

For basic types and hybrids see Pereskioideae.

Maihuanioideae 1: 2

Maihuenia 2.

Opuntioideae 15: 220–350. 2 IG

AP website 2025 3 tribes:

Cylindropuntieae 7: 79 *Cylindropuntia* 40, *Grusonia*, *Micropuntia*, ...

Opuntieae 7: >200 *Brasiliopuntia*, *Consolea* 10, *Opuntia* 200 (incl. *Corynopuntia*°) (12 IS), *Tacinga* 15, ...

Pterocactae = Tephrocactae 5: 33 *Austrocylindropuntia*, *Cumulopuntia*, *Maihueniopsis* 15, *Pterocactus*, *Tephrocactus*.

Consolea × *Opuntia* Opuntieae (→ × *Opulea* M. H. J. van der Meer 2019) POWO 2024 (nat. hyb. Caribbean)

Cylindropuntia × *Grusonia* Cylindropuntieae (→ × *Cylindronia robertsii*) Baker 2023, POWO 2024 (nat. hyb. Mexico, *C. alcahes* × *G. invicta*)

Disocactus × *Opuntia* ISF Cactoideae Cereeae × Opuntioideae Opuntieae (→ × *Disuntia* M. H. J. van der Meer 2018 Cact. Phantast.) POWO 2025

Disocactus × *Opuntia* × *Selenicereus* ISF Cactoideae Cereeae × Opuntioideae Opuntieae (→ × *Opuntara* van der Meer 2018 Cact. Phantast. 1 (1): 6) POWO 2025

Epiphyllum × *Opuntia* ISF Cactoideae Phyllocactae × Opuntioideae Opuntieae (→ × *Epipuntia* Mottram 2016 Cactician 4, 112) → **questionable**: see next entry

Epiphyllum × *Selenicereus* × *Opuntia* ISF Cactoideae Phyllocactae × Opuntioideae Opuntieae (→ × *Beahmara* P. V. Heath 1992 in Calyx 1, 68) Heath 1992, IK 1996, POWO 2025 (accepted). **questionable**. This hybrid is based on 'Pygmalion' in the ESA (Epiphyllum Society of America) Directory 1983, p. 118 and is according to Heath 1992 supposed to be the cross (*Epiphyllum* × *Selenicereus*) (= × *Epinicereus*) 'Cooperi' × *Opuntia* spec. × *Epipuntia* and × *Beahmara* are treated as synonyms by some authors, but the first is bigeneric, the second trigenic.

Pereskioideae 1: 9. 2 IT/ISF

Pereskia 9 (incl. *Rhodocactus*°).

de Vos et al. 2025 propose to include *Leuenbergerioideae* in *Pereskioideae*.

Subfamilies **Pereskioideae** (1: 9) and **Leuenbergerioideae** (1: 8) belong to the same basic type. But possibly they even belong to a more extensive basic type of the whole family (see *Cactoideae*)?

Leuenbergeria bleo × *Pereskia* (= *Rhodocactus*°) ISF Leuenbergerioideae × Pereskioideae (*L. bleo* × *P. grandifolia* Leuenberger 1986 Mem. New York Bot. Gard. 41, 50 (→ × *Rhodenbergeria* M. H. J. van der Meer 2022)

Leuenbergeria × *Pereskia* ISF Leuenbergerioideae × Pereskioideae (→ × *Perenbergeria* M. H. J. van der Meer 2022) (*L. bleo* × *P. diaz-romeroana* and *L. bleo* × *P. grandifolia* Leuenberger 1986, Mem. New York Bot. Gard. 41: 50)

Pereskia (= *Rhodocactus*°) × *Pereskia* IS Pereskioideae (→ × *Rhodeskia* M. H. J. van der Meer 2022) (*R. nemorosus* = *P. nemorosa* × *P. diaz-romeroana* Leuenberger 1986 Mem. New York Bot. Gard. 41, 50)

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Calycanthaceae (Laurales) 5: 12. 1 IG

sweetshrubs or spicebushes = Gewürzstrauchgewächse

2 subfamilies:

Calycanthoideae 3: 10.

Idiospermoideae 1: 1 *Idiospermum australiense* (Australia).

Calycanthoideae 3: 10

Calycanthus 3 (North America), *Chimonanthus* 6 (China), *Sinocalycanthus* (China, by some authors included in *Calycanthus*).

IS: POWO (2026): *Calycanthus* IS)

Calycanthus floridus × *Sinocalycanthus* (= *Calycanthus*) *chinensis* (→ × *Sinocalycalycanthus* F. T. Lass. & Fantz 2001 HortScience 36 (4), 767) (*C. floridus* × *S. chinensis*) Lasseigne et al. 2001 (art. hyb.), IPNI 2008, POWO 2025

References:

Lasseigne FT et al. (2001) × *Sinocalycalycanthus raulstonii* (Calycanthaceae): A new intergeneric hybrid between *Sinocalycanthus chinensis* and *Calycanthus floridus*. HortScience 36, 765–767.

Campanulaceae (Asterales) 84: 2400. 2 IG

bellflower family = Glockenblumengewächse

5 subfamilies (AP website 2025):

Nemacladoideae 2: 25.

Campanuloideae 50: 1050.

Cyphioideae 1: 65.

Cyphocarpoideae 1: 3.

Lobelioideae 29: 1200.

Campanuloideae 50: 1050

AP website: 3 tribes.

IS: IPNI 2013: 24 IS (*Campanula* 11, *Dialypetalum* 1, *Edraianthus* 3, *Phyteuma* 4, *Wahlenbergia* 1).

~~*Campanula* × *Phyteuma*~~ (→ „× *Fockeanthus*“ 1931 Wehrhahn, Gartenstauden 2, 985, in obs.)

Kovanda 1981 (Unconfirmed. “probably belongs to the realm of fantasy ... monstrosity of *P. hemisphaericum*.” ... In 1931 Wehrhahn published the name ×*Fockeanthus hausmanii* (Rchb. f.) Wehrh. for the same plant to mark it as an intergeneric hybrid), IK 1947, Knobloch 1972, Willis 1985, Feng et al. 2024 (×*Phyteupanula* nothogen. nov. Feng et al. Phytoneuron 2024), POWO 2025 (accepted as ×*Phyteupanula*).

Lobelioideae 29: 1200

Centropogon, *Lobelia*, *Siphocampylus*, ...

IS: IPNI 2013: *Lobelia* 4 IS.

Centropogon × *Siphocampylus* HY (*C. cornutus* × *S. betulifolius* → *C. × lucyanus* W. Bull 1871, art. hyb.) Zander 2008 POWO 2025 (*Centropogon* IS).

Clermontia × *Cyanea* Givnish et al. 2013 HY (supposed hybridogeneous origin of *Clermontia*)

References:

Givnish TJ et al. (2013) Phylogeny, floral evolution, and inter-island dispersal in Hawaiian *Clermontia* (Campanulaceae) based on ISSR variation and plastid spacer sequences. PLOS ONE 8 (5) Article Number: e62566. doi: 10.1371/journal.pone.0062566

Kovanda M (1981) Studies in *Phyteuma*. Preslia 53, 211–238.

http://www.preslia.cz/archive/Preslia_53_1981_211-238.pdf

Reichenbach HG (1877) Über einen merkwürdigen *Campanula*-Bastard aus Tirol. Flora 60, 30–31. <http://www.botanicus.org/item/31753002307269>. only one plant, which died. With diagnosis.

Cannabaceae (Rosales) 10: 117

hemp family = Hanfgewächse

Aphananthe, *Cannabis* 3, *Celtis* 74, *Humulus*, *Lozanella*, ...

IS: PNI 2013: *Cannabis* 1 IS. POWO 2026: 0 IS. Many hybrids exist within *Cannabis*, but it is problematic to attribute them to species.

Caprifoliaceae (Dipsacales) 31: 890

honeysuckle family = Geißblattgewächse

AP website 2025: 7 subfamilies:

Caprifolioideae 5: 220.

Diervilloideae 2: 16.

Dipsacoideae 11: 290.

Linnaeoideae 6: 20.

Morinoideae 2–3: 13.

Valerianoideae 5: 375.

Zabelioideae 1: 4–6.

IS: IPNI 2013 (classical circumscription of Caprifoliaceae): *Abelia* 2 IS, *Diervilla* 1 IS, *Linnaea* 1 IS, *Lonicera* 19 IS, *Sambucus* 1 IS, *Triosteum* 1 IS, *Viburnum* 7 IS, *Weigela* 3 IS.

Diervilloideae 2: 16. 1 IG

bush honeysuckle family = Weigeliën-Verwandte

Diervilla 3, *Weigela* 13 (incl. *Weigelastrum*° *maximowiczii*, *Macrodiervilla*° *middendorffiana*).

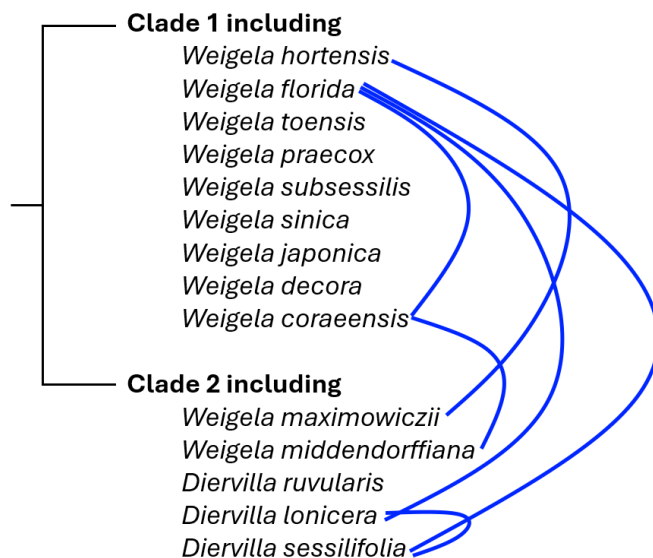
The taxonomy is still matter of discussion, some authors accept only one genus *Weigela*, other authors up to 6 genera.

Basic type **Caprifoliaceae subfamily Diervilloideae** (2: 16): The 2 genera and the most distant species of the larger genus *Weigela* are connected by hybridization.

IS: POWO (2026) *Weigela* 3 IS (*coraensis* × *florida*; *coraensis* × *middendorffiana*; *decora* × *floribunda*), *Diervilla* 1 IS (*lonicera* × *sessilifolia*).

Yokoyama et al (2002) add *Weigela hortensis* × *W. maximowiczii*, nat. hyb.

Diervilla lonicera, *sessiliflora* × *Weigela florida* **Diervilloideae** Touchell et al. 2006 (art. hyb, EC, only a small part was successful).



Caprifoliaceae subfamily Diervilloideae: hybrid connections in the simplified phylogeny after Kim & Kim (1999, fig. 2. <https://dx.doi.org/10.1007%2FPL00013887>).

Dipsacoideae 11: 290

honeysuckle family = Kardengewächse

AP website 2026 two tribes:

Dipsaceae 10: 290 *Bassecuja* 3, *Callistemma*, *Cephalaria* 102, *Dipsacus* 21, *Knautia* 60, *Lomelosia* 63, *Pterocephalus* 34, *Pynocomon* 2, *Scabiosa* 68, *Succisa*, *Succisella*.

Triplostegieae: *Triplostegia* 1: 1.

en.wikipedia separates the following genera in an own subfamily Scabiosoideae (partly following Mayer & Ehrendorfer 2013. <https://doi.org/10.1002/tax.621010>): *Lomelosia*, *Pterocephalus*, *Pynocomon*, *Scabiosa*.

IS: IPNI 28 IS (*Dipsacus* 1, *Knautia* incl. *Trichera*° 17, *Scabiosa* incl. *Lomelosia*° 7)

Knautia × *Succisa* **Dipsaceae** or **Succiseae** × **Knautieae** (→ × *Succisoknautia* Baksay 1952 in Ann. Mus. Nat. Hungar., n. s. 2, 255) (*K. drymeia* × *S. pratensis*) IK 1959, POWO 2025.

Linnaeoideae 6: 20. 1 IG

Abelia, *Dipelta*, *Kolkwitzia*, *Linnaea*, ...

Abelia × *Kolkwitzia* EC (→ × *Kobelia amabilis* Naranjo & Robacker 2022 (*A. chinensis* × *K. amabilis*, EC, sterile), POWO 2025

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Caricaceae (Brassicales) 6: 28. 1 IG

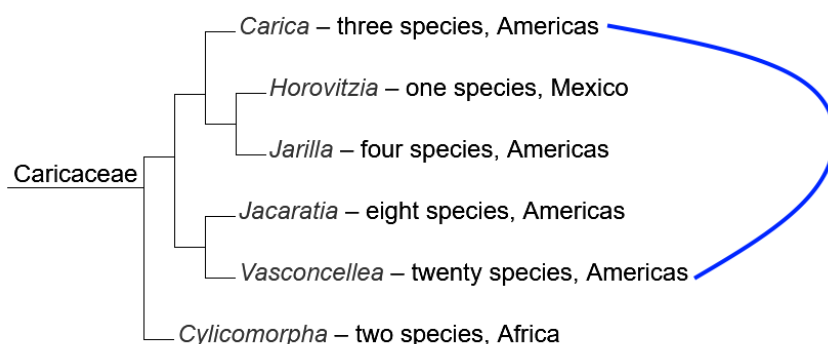
papaya family = Melonenbaumgewächse

Carica (incl. *Papaya*) 3, *Cylicomorpha* 2 (Africa), *Vasconcellea* 20, ...

Probably **basic type Caricaceae** (6: 28): The two distant genera *Carica* and *Vasconcellea*, formerly thought to be closely related, are linked by hybridization.

IS: POWO 2026: *Vasconcellea* 1 IS (*pubescens* × *stipulata*, nat. hyb. → *V.* × *pentagona* = *heilbornii*).

Carica × *Vasconcellea* Horovitz & Jimenez 1967, Vegas et al. 2003, Sajise et al. 2004, Dinesh et al. 2007



Caricaceae: hybrid connections in the phylogeny of Carvalho & Renner 2013
<https://doi.org/10.3897%2Fphytokeys.29.6103>, from en.wikipedia (2026, CC BY SA 4.0).

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[http://www.cropscience.org.au/icsc2004/poster/3/4/3/1220_godwin.htm?print=1](http://www.cropsscience.org.au/icsc2004/poster/3/4/3/1220_godwin.htm?print=1)

Vegas A et al. (2003) Obtention, regeneration and evaluation of intergeneric hybrids between *Carica papaya* and *Vasconcellea cauliflora*. [Spanish] *Interciencia* 28 (12), 710–714.

http://www.interciencia.org/v28_12/indexe.html

Caryophyllaceae (Caryophyllales) 66: 2200

carnation family or pink family = Nelkengewächse

The division of the family is problematic.

AP website 2025: 11 tribes:

Alsineae, Arenarieae, Caryophylleae, Corrigioleae (= Molluginaceae p. p.) 2: 16,

Eremogoneae 2: 68, Paronychieae (= Illecebraceae p. p.) 15: 900, Polycarpaeae, Sagineae,

Scleranthaeae, Sileneae 6: 738, Sperguleae.

Alsineae 16: 545

Alsinidendron° (= *Schiedea* p. p.) × *Schiedea* IS Weller & Sakai 1991, Weller et al. 2001

Caryophylleae 14: 730. 1 IG

Dianthus barbatus, *caryophyllus* × *Gypsophila paniculata* SO somatic hybrid, probably asymmetric Nakano & Mii 1993, Nakano et al. 1996 (symmetric?)

Saponaria × *Vaccaria*° (= *Gypsophila* p. p.) Khoshoo & Bhatia 1961, Maheshwari 1962, Knobloch 1972

Sileneae 6: 800

The circumscription of *Silene* varies much according to the author.

Silene 486, ...

Coronaria° (*Lychnis*°, *Silene*) × *Melandrium*° (*Silene*) IS (→ „× *Coromelandrium*“ Graebn. 1920 in Aschers. & Graebn. Syn. Mitteleur. Fl. 5, 11, 54, art. hyb.; = × *Coromelandrium roseum*)

Lychnis° (*Silene*°) div. spec. × *Silene* (incl. *Melandrium*°) div. spec. IS (→ × *Lychnisilene* Ciferri & Giacom. 1954 Nomencl. Fl. Ital., Pt. 2, 291) IK 1947, Crang & Dean 1971, Knobloch 1972 (10 nothospecies), IK 1974, Willis 1985, Zenkteler et al. 2005 (EC), Jiang et al. 2014, POWO 2025 (*Silene* IS)

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Cercidiphyllaceae (Saxifragales) 1: 2 + fossil taxa

katsura = Katsura- oder Judasblattbäume

Living fossil.

Cercidiphyllum 2.

Probably **basic type family Cercidiphyllaceae** (1: 2): monogeneric family with a unique set of characteristics.

Chenopodiaceae → Amaranthaceae

Cistaceae (Malvales) 8: 207. 1 IG

rock-rose family = Zistrosengewächse

Monophyletic. But the subdivision varies much according to the author,
3 tribes:

Cisteae 6: 181, Fumaneae 1: 9, Lecheae 1: 17.

Cisteae 6: 181

Cistus 18, *Halimium* 30 (incl. *Crocanthemum*°), *Helianthemum* 136, *Hudsonia* 3, *Tuberaria* 12, *Pakaraimaea* (position unresolved).

IS: POWO (2026): *Cistus* 105 IS, *Halimium* 3 IS, *Helianthemum* 43 IS, *Hudsonia* 1S, *Tuberaria* 1 IS.

Some authors include *Halimium* in *Cistus*.

In **Cistaceae** tribe **Cisteae** the high number of 105 interspecific hybrids in genus *Cistus* with only 18 species is remarkable, supplemented by 11 nothospecies connecting the genera *Cistus* and *Halimium* which by some authors are classified as congeneric. Thus, probably all species of *Cistus* s. l. (48) belong to the same basic type.

Cistus salvifolius × *Halimium* div. spec. **Cisteae** (→ × *Halimiocistus* Janchen 1925 in Engler & Prantl, Nat. Pflanzenfam. ed. 2, 21: 304) IK 1929, Knobloch 1972 (11 nothospecies!), Willis 1985, Zander 2008, POWO 2026 (10 nothospecies), AP website 2026

Colchicaceae (Liliales) 15: 255

meadow saffron or autumn-crocus family =Herbstzeitlosengewächse

AP website 2025: 3 subfamilies.

IS: POWO 2026: *Colchicum* 3 S, *Disorum* 1 IS.

Colchicoideae 9: 210

3 tribes.

Colchiceae 5: 170. **1 IG**

Colchicum, *Hexacyrtis*, *Gloriosa* (incl. *Littonia*°), *Ornithoglossum*, *Sandersonia*.

Gloriosa × *Littonia*° (= *Gloriosa* p. p.) **IS** Amano et al. 2007, 2008

Gloriosa × *Sandersonia* **EC** Nakamura et al. 2005, Amano et al. 2007, Nakamura et al. 2007

Littonia° (= *Gloriosa* p. p.) × *Sandersonia* **EC** art. hyb. (→ × *Santonica* Eason, E. R. Morgan Mullan & G. K. Burge 2001 Postharv. Biol. Technol. 22: 93) Morgan et al. 2001, 2003, Amano et al. 2007, IPNI 2011, POWO 2025

References:

Amano J et al. (2007) Early identification of intra- and intergeneric hybrids among Colchicaceous ornamentals, *Gloriosa* spp., *Littonia modesta* Hook. and *Sandersonia aurantiaca* Hook., by flow cytometry and random amplified polymorphic DNA analyses. J. Japan. Soc. Hort. Sci. 76, 73–78.

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Hort. 118 (2) 87–99.

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Morgan ER et al. (2003) 'Santonia Golden Lights': A novel intergeneric hybrid of *Sandersonia* and *Littonia* (Colchicaceae). HortScience 38, 466–467.

Nakamura T et al. (2005) Production of intergeneric hybrid plants between *Sandersonia aurantiaca* and *Gloriosa rothschildiana* via ovule culture (Colchicaceae). Euphytica 142, 283–289.

<http://www.springerlink.com/content/kx23jk15k76k/?p=cdff430ce6b042e28b0ae585519ba64a&pi=33>

Convolvulaceae (incl. Cuscutaceae) (Solanales) 60: 1600

IPNI 2011: 9 IS (*Calystegia* 3, *Convolvulus* 2, *Ipomoea* (incl. *Quamoclit*°) 4.)

Cornaceae (Cornales) 2: 115

According to en.wikipedia 2024 the systematics of Cornaceae has been remarkably unsettled and controversial, and many genera have been added to it and removed from it over time.

Some authors split *Cornus* into several separate genera.

AP website 2025: *Alangium* 50, *Cornus* 65 (incl. *Swida*°).

POWO 2025: *Cornus* 5 IS

Crassulaceae (Saxifragales) 34: 1480

crassulas, stonecrops = Dickblattgewächse

The subdivision of the family is still matter of discussion.

3 subfamilies (AP website 2025):

Crassuloideae 1: 200.

Cotyledonoideae = Kalanchoideae 4: 240.

Sempervivoideae 30: 1005.

Crassuloideae 1: 200

Crassula 200 (incl. *Tillaea*°).

IS: IPNI 2013: *Crassula* 10 IS.

Probably **basic type Crassulaceae subfamily Crassuloideae** (*Crassula*) (1: 200). The subfamily is monophyletic and separated from Sempervivoideae by several molecular and morphological characters (t'Hart 1995, p. 163), e.g. leaves opposite, generally with hydathodes at the leaf margin and one whorl of stamens only.

Crassula × *Rochea*° (= *Crassula* p. p.) **IS** (→ × *Rocheassula* Rowley 1973 in Nation. Cact. Succ. J. (U. K.) 28, 7) IK 1981

Globulea° (= *Crassula* p. p.) × *Purgosea*° (= *Crassula* p. p.) **IS** (→ × *Purgobulea* P. V. Heath 1995 in

Calyx 5, 48 – as „× *Pyrgobulea*“ = *Crassula serpentaria*) IK 1996

Kalosanthes° (= *Crassula* p. p.) × *Rochea*° (= *Crassula* p. p.) IS (→ × *Kalorochea* Veitch 1898 in J. Roy. Hort. Soc. 22, p.146) IK 1981

Cotyledonoideae = Kalanchoideae 4: 200

Adromischus, *Cotyledon*, *Kalanchoe* 145 (incl. *Bryophyllum*°, *Kitchingia*°, *Tylecodon* 46.

IS: IPNI 2013: *Adromischus* 1, *Kalanchoe* 50.

Bryophyllum° (= *Kalanchoe* p. p.) × *Kalanchoe* IS (→ × *Bryokalanchoe* Resende 1956 in Bol. Soc. Portug. Cienc. Nat. 21, 241) IK 1974, POWO 2025

Sempervivoideae (= Sedoideae) 30: 1005. in total: 5 IG + 1IT

The subdivision is matter of debate. AP website 2025: no subdivision! Monophyletic.

5 tribes according to Messerschmid et al. 2020:

Aeonieae 3: 70.

Sedeae 12: 520.

Semperviveae 2: 75.

Telephieae 6: 50.

Umbiliceae 5: 100.

Probably **basic type Crassulaceae subfamily Sempervivoideae** (30: 1005). The subfamily is monophyletic (Messerschmid et al. 2020). The genera are closely related, and it is not easy to define their exact delimitations or to construct a precise subdivision of the subfamily. For hybrids between tribes see the figure below. The connection between *Aeonium* and *Sempervivum* is intertribal (Aeonieae –Semperviveae); it was confirmed in 2020, see the figure below. – It is necessary to wait for a revised taxonomy of the subfamily.

Sedum s. l. is highly polyphyletic, and its species currently belong to different tribes!!

Aeonieae *Sedum caeruleum*, *jaccardianum*, *modestum*, *pubescens*, *surculosum*.

Sedeae Acre-clade: 350, Leucosedum-Clade 120.

Semperviveae (*Petrosedum* 17 = *Sedum* ser. *Rupestria*) *forsterianum*, *ochroleucum*, *rupestre*, *sediforme*, ...

Telephieae (*Hylotelephium* 29 = *Sedum* subgen. *Telephium*) *Sedum telephium*, *spectabile*, ...

Umbiliceae (*Phedimus* 18) *Sedum aizoon*, *hybridus*, *kamtschaticus*, *spurius*, ...

Therefore, in hybrids comprising „*Sedum*“ as one parent, it is important to know the species. On the other hand, this situation shows the very close relation of the members of Sempervivoideae. – For proposals to resolve the *Sedum*-problem and the taxonomy of the subfamily, see Messerschmid et al. 2020. In their summary they write: “we believe that combination of all 14 genera currently recognized in tribe Sedeae (= clades Leucosedum plus Acre) into *Sedum* might be the most stable solution of the “*Sedum* problem”. This new *Sedum* s. l. would then comprise approximately 755 species.”

Aeonieae 5: 70. 4 IG + 1 IT

Aeonium (incl. *Greenovia*°), *Aichryson*, *Hypagophytum* 1, *Monanthes*, *Sedum* p. p. (*caeruleum*, *jaccardianum*, *modestum*, *pubescens*, *surculosum*)

IS: IPNI 2013: *Aeonium* 65, *Aichryson* 6, *Greenovia* 1, *Monanthes* 13,

Aeonium × *Aichryson* **Aeonieae** (→ × *Aeonichryson* P. V. Heath 1992 in *Calyx* 2, 59; = *Sempervivum aizoides*) IK 1996, Scarlet 2025

Aeonium × *Aichryson* × *Monanthes* **Aeonieae** Scarlet 2025

Aeonium × *Monanthes* **Aeonieae** Scarlet 2025

Aeonium div. spec. × *Greenovia*^o (= *Aeonium*) div. spec. **IS Aeonieae** (→ × *Greenonium* G. D. Rowley 1958 *Nat. Cact. Succ. J.* 13, 758 = „× *Aeonioogreenovia*“ Voggenreiter 1974 in *Diss. Bot.* 26, not in accordance with the code art. 11.2, H 4.1, 317–324; cf. Voggenreiter 1974 in *Cuad. Bot. Canar.* 25, 15) (nat. hyb.), Praeger 1932, Rowley 1982, IK 1996, Eggli 2003 (sub *Aeonium* s. l.)

Aeonium × *Sempervivum* **IT Aeonieae** × **Semperviveae** (→ × *Semponium* D. Michael 2020 CactusWorld) Smith 1979, Lea & Michael 2020 (art. hyb. A. ‘Ice Warrior’ × S. ‘Green Ice’), POWO 2025 (accepted, with picture, several cultivars)

Aichryson × *Monanthes* Scarlet 2025

Sedeae 12: 520

AP-website 2025 includes the following genera in *Sedum*, so that all hybrids listed are now **IS**: *Afroviella*, *Cremnophila*, *Dudleya*, *Echeveria*, *Graptopetalum* (incl. *Byrnesia*^o), *Lenophyllum*, *Pachyphytum*, *Pistorinia*, *Prometheum*, *Rosularia*, *Sedella*, *Sedum* 470, *Thompsonella*, *Villadia*.

IS: IPNI 2013: *Dudleya* 1, *Echeveria* 31.

Byrnesia^o (= *Graptopetalum* p. p.) × *Echeveria* **Sedeae** (→ × *Echenesia* P. V. Heath 1994 in *Calyx* 4, 132) IK 1996

Courantia^o (= *Echeveria* p. p.) × *Pachyphytum*^o (= *Sedum* p. p.) **Sedeae** (→ × *Pachyrantia* Walth. 1931 in *Cact. & Succ. Journ. Amer.* 3, 11, in obs.) IK 1938

Cremnophila linguifolium (= *Sedum* p. p.) × *Echeveria elegans* **Sedeae** (→ × *Cremneria* Moran 1975 in *Bailey* 19, 145) Knobloch 1972, IK 1981, Eggli 2003

Cremnophila × *Echeveria* × *Graptopetalum* **Sedeae** (→ × *Cremnovelum* Bischofb. 2025) POWO 2025

Cremnophila linguifolium × *Graptopetalum fruticosum* **Sedeae** (→ × *Cremnopetalum* Kimnach & Moran 1986 *Cact. Succ. J. (US)* 58, 55) Knobloch 1972, Eggli 2003

Cremnophila nutans × *Sedum humifusum* **Sedeae** (→ × *Cremnosedum* M. Kimnach & G. L. Lyon 1981 in *Cact. Succ. J. (U. S. A.)* 53, 69) IK 1991, Eggli 2003

Cremnophila (= *Sedum* p. p.) × *Thompsonella* **Sedeae** (→ × *Cremsonella* C. H. Uhl 1994 in *Cact. Succ. J. (U.S.A.)* 66, 177: *C. nutans* × *T. minutiflora*) IK 1996, Eggli 2003

Cremnophila (= *Sedum* p. p.) × *Villadia* **Sedeae** (→ × *Cremnadia* C. H. Uhl 1994 in *Cact. Succ. J. (U.S.A.)* 66, 215) (*C. nutans* × *V. nelsonii*) IK 1996, Eggli 2003

Dudleya × *Echeveria* (this cross is doubted by Uhl 1994a) (→ × *Dudleveria* Rowley 1958 in *Nat. Cact. & Succ. Journ.* 13, 75) IK 1966, Knobloch 1972, Willis 1985

Dudleya × *Hasseanthus*^o (= *Dudleya* p. p.) **IS** (→ × *Hasseleya* J. M. H. Shaw 2018) (this cross is doubted by Uhl 1994a) Knobloch 1972, POWO 2025 (unplaced)

Dudleya × *Tylecodon* **ISF Sempervivoideae** × **Cotyledonoideae** (→ × *Dudledon* S. A. Hammer

2004 Mesemb Study Group Bull. 19, 6) POWO 2025 (unplaced)

Echeveria × *Graptopetalum* **Sedeae** (→ × *Graptoveria* Gossot in Marnier-Lapostolle 1949; Rowley 1958 in Nat. Cact. & Succ. Journ. 13, 75; = “× *Echepetalum*”) IK 1966, Knobloch 1972, Rowley 1982, Willis 1985, Eggli 2003

Echeveria × *Graptopetalum* × *Pachyphytum* **Sedeae** (→ × *Graptophytia* Bischofb.) POWO 2025

Echeveria × *Graptopetalum* × *Sedum* **Sedeae** (→ × *Graptovedum* Bischofb.) POWO 2025

Echeveria div. spec. × *Lenophyllum* **Sedeae** (→ × *Lenoveria* C. H. Uhl 1993 in Cact. Succ. J. (U. S. A.) 65, 272) IK 1996, Eggli 2003

Echeveria div. spec. × *Pachyphytum* div. spec. **Sedeae** (→ × *Pachyveria* hort. ex Haage & Schmidt 1926 apud A. Berger 1930 in Engler & Prantl, Nat. Pflanzenfam. 18a, 481; = × *Echephytum* Gossot 1938 in Notre Vallée, Nos. 24, 25, 35, 38) IK 1938, Knobloch 1972, Willis 1985, Zander 2008, Eggli 1994, Eggli 2003

Echeveria × *Pachyphytum* × *Sedum* **Sedeae** (→ × *Pachevedum* Bischofb. 2009 Int. Cact. Advent. 81: 27; cf. Repert. Pl. Succ. 60:10 (2010)) (trigeneric) IPNI 2013, *P. oviferum* × *E. derenbergii* × *S. morganianum*

Echeveria derenbergii × *Sedum* **Sedeae** (→ × *Sedeveria* E. Walther 1953 in Cact. & Succ. Journ. Amer. 25, 20) (art. hyb. *E. derenbergii* × *S. pachyphyllum* → × *Sedeveria hummellii*) IK 1959, Knobloch 1972, Eggli 1994, Eggli 2003, Gallo et al. 2020 (nat. hyb. *E. agavoides* × *S. pachyphyllum* → × *Sedeveria mauroi* introduced species in Italy), POWO 2025

Echeveria div. spec. × *Thompsonella* **Sedeae** (→ × *Thompsoveria* C. H. Uhl 1995 in Cact. Succ. J. (U. S. A.) 66, 177) IK 1996, Uhl 1994 b, Eggli 20 03

Echeveria chapalensis × *Villadia grandisepala* **Sedeae** (→ × *Villeveria* C. H. Uhl 1995 in Cact. Succ. J. (U. S. A.) 66, 215) IK 1996, Uhl 1994 c, Eggli 2003

Graptopetalum div. spec. × *Lenophyllum* div. spec. **Sedeae** (→ × *Lenaptopetalum* G. D. Rowley 1982 in Nation. Cact. Succ. J. (U. K.) 37, 77 = „× *Lengraptophyllum*“ 1980 G. D. Rowley, Name that Succulent, 154, not according to Art. H 7) Knobloch 1972, IK 1987, Uhl 1993, Eggli 2003

Graptopetalum filiferum × *Pachyphytum oviferum* **Sedeae** (→ × *Graptophytum* Gossot in Marnier Lapostolle 1949) Knobloch 1972, Rowley 1982, Eggli 2003

Graptopetalum × *Pachyphytum* × *Sedum* **Sedeae** (→ × *Setophytum* Bischofb. 2022) POWO 2025)

Graptopetalum × *Sedum* **Sedeae** (→ × *Graptosedum* 1980 G. D. Rowley, Name that Succulent, 153) (*G. fruticosum* × *S. div. spec.*) Knobloch 1972, IK 1987, Eggli 1994, Eggli 2003

Graptopetalum × *Tacitus*^o (= *Graptopetalum* p. p.) **IS Sedeae** (→ × *Tacipetalum* C. H. Uhl 1995 in Cact. Succ. J. (U. S. A.) 67, 144) IK 1996

Graptopetalum × *Thompsonella* **Sedeae** (→ × *Grapsonella* 1980 G. D. Rowley, Name that Succulent, 152) Uhl 1970, Knobloch 1972, IK 1987, Uhl 1994b, Eggli 2003

Graptopetalum fruticosum × *Villadia* **Sedeae** (→ × *Graptoladia* C. H. Uhl 1994 in Cact. Succ. J. (U. S. A.) 66, 216) IK 1996, Uhl 1994c, Eggli 2003

Lenophyllum reflexum × *Pachyphytum hookeri* **Sedeae** (→ × *Lenophytum* C. H. Uhl 1993 in Cact. Succ. J. (U. S. A.) 65, 273) Uhl 1993, IK 1996, Eggli 2003

Pachyphytum × *Sedum* **Sedeae** (→ × *Pachysedum* Jacobsen 1970 Sukkulent. Lex., 274) IK 1974, Rowley 1982, Eggli 1994, Eggli 2003

Pachyphytum × *Tacitus*^o (= *Graptopetalum* p. p.) **Sedeae** (→ × *Taciphytum* C. H. Uhl 1995 in Cact. Succ. J. (U. S. A.) 67, 145) IK 1996

Pachyphytum hookeri × *Thompsonella* **div. spec. Sedeae** (→ × *Thompsophytum* C. H. Uhl 1994 in Cact. Succ. J. (U. S. A.) 66, 179) IK 1996, Eggli 2003

Pachyphytum × *Urbinia*[°] (= *Echeveria* **p. p.**) **Sedeae** (→ × *Urbiphytum* Gossot 1938 in Notre Vallee, Nos. 24, 25, 34) IK 1959

Pachyphytum hookeri etc. × *Villadia nelsonii* etc. **Sedeae** (→ × *Pachyladia* C. H. Uhl 1994 in Cact. Succ. J. (U. S. A.) 66, 216) Uhl 1994c, IK 1996, Eggli 2003

Sedum × *Tacitus*[°] (= *Graptopetalum* **p. p.**) **Sedeae** (→ × *Tacisedum* Bischofb. 2009 Int. Cact. Advent. 81: 25; cf. Repert. Pl. Succ. 60: 10 (2010)) IPNI 2013

Sedum **div. spec.** × *Thompsonella* **div. spec. Sedeae** (→ × *Thompsosedum* C. H. Uhl 1995 in Cact. Succ. J. (U. S. A.) 66, 179) Uhl 1995, IK 1996, Eggli 2003

Sedum × *Urbinia*[°] (= *Echeveria* **p. p.**) **Sedeae** (→ *Sedurbinia* Nigel Taylor 1972 in Cact. Succ. J. Gt. Brit. 34, 91 = × *Sedeveria*) IK 1981

Sedum **div. spec.** × *Villadia* **Sedeae** (→ × *Sedadia* Moran 1975 in Bailey 19, 147) Knobloch 1972, IK 1981

Semperviveae 2–3: 75. **1 IT**

Petrosedum 17 (= *Sedum* ser. *Rupestria*) *forsterianum*, *ochroleucum*, *rupestre*, *sediforme*, ...
Sempervivum (incl. *Jovibarba*[°] *globifera*, *heuffelii*)).

IS: Gallo (2012), en.wikipedia (2025) *Petrosedum* (= *Sedum* ser. *Rupestria*) **11 IS**.
POWO (2026) *Sempervivum* **19 IS**.

Aeonium × *Sempervivum* **IT Aeonieae × Semperviveae** (→ × *Semponium* D. Michael 2020 CactusWorld) Smith 1979, Lea & Michael 2020 (art. hyb. A. 'Ice Warrior' × S. 'Green Ice'), POWO 2025 (accepted, with picture, several cultivars)

Jovibarba **div. spec. × Sempervivum div. spec. IS Semperviveae** → × *Jovivum* G. D. Rowley 1980 Name that Succulent, 154) Stojanov & Stefanov 1948 (*J. heuffelii* × *S. marmoreum*, Bulgaria, without description), Favarger et al. 1968 (*J. globifera* ssp. *hirta* = *Diopogon* h. × *S. montanum*, art. hyb), Rowley 1982, IK 1987, Eggli 2003 (sub *Sempervivum*), POWO 2025

Telephieae 6: 50. **1 IG**

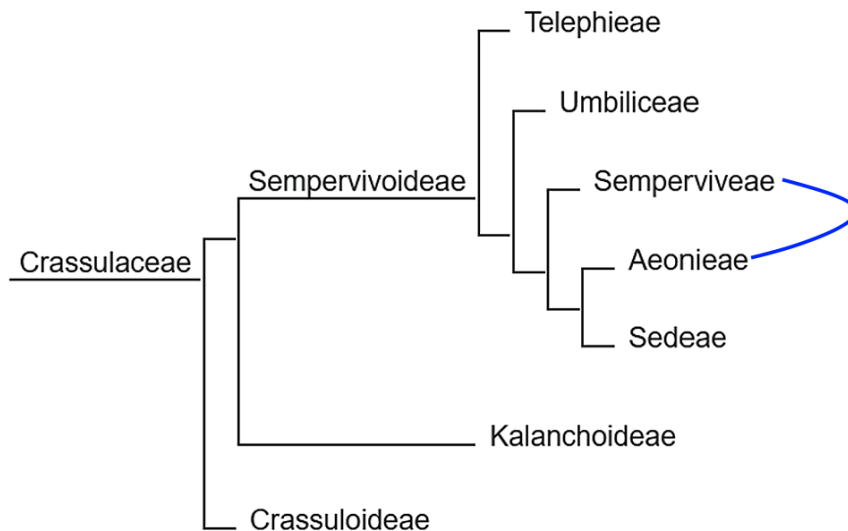
Hylotelephium 29 (formerly *Sedum* subgen. *Telephium*) (**1 IS**), *Kungia* 2, *Meterostachys* 1, *Orostachys* 13, *Perrierosedum*, *Sinocrassula* 5.

IS: IPNI 2013: *Hylotelephium* **2 IS**.

Hylotelephium (= „*Sedum*“) × *Orostachys* **Telephieae** (→ × *Hylostachys* J. M. H. Shaw 2017 art. hyb. Sedum Society Newsletter 121: 62, April 2017, mainly called by the incorrect name „× *Sedoro*“ 'Blue Elf' Garden Crossings LLC (US)

Umbiliceae 5: 100

Aizopsis, *Phedimus* 18 (= *Sedum aizoon*, *hybridus*, ...), *Pseudosedum*, *Rhodiola*, *Umbilicus*.



Crassulaceae: hybrid connections in the phylogeny of Thiede & Eggli (2007. <https://doi.org/10.1007/978-3-540-32219-1%2012>), from de.wikipedia (2026, CC BY SA 4.0).

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Ceratophyllaceae (Ceratophyllales) 1: 6 + 2 extinct genera

hornwort family = Hornblattgewächse

AP website 2024: 1 genus, 3 sections.

The order includes only Ceratophyllaceae + extinct † Montsechiaceae.

Possibly **basic type family Ceratophyllaceae** (*Ceratophyllum*) (1: 6). The monogeneric family and the corresponding order Ceratophyllales differ from all other extant orders in several respects (e.g. no roots) and belong neither to Monocotyledoneae nor to Dicotyledoneae! Interspecific hybrids are unknown.

Cucurbitaceae (Cucurbitales) 98: 1000. 3 IG

gourd family= Kürbisgewächse

Attempts to subdivide the family differ very much!

AP website 2025: 15 tribes:

e. g. Benincaseae 24: 210.

In **Cucurbitaceae** (98: 1000) only 3 intergeneric hybrids and no confirmed intertribal hybrids have been reported. The family is rather uniform and the genetic distances between the tribes are small, so that it is a possible candidate for a basic type. But from a hybrid view it is too soon to give a definite evaluation. – Brophy et al. (2003) suggest a monobaraminic status for the family.

IS: POWO 2026: *Cucurbita* 1 IS. *Momordica* 1 IS.

For *Coccinia* IS see Holstein S (2015) <https://doi.org/10.3897/phytokeys.54.3285>.

See also the (unconfirmed) hybridogram and the references cited by Brophy et al. (2023).

Benincasa ("Praecitrullus fistulosus") × *Citrullus* **Benincaseae** Gol'Dgauzen 1961

Coccinia grandis („indica") × *Diplocyclos palmatus* ("Bryonopsis laciniosa") **Benincaseae** Roy & Roy 1971 (art. hyb.). closely related

Cucumis melo, *sativus* × *Thladiantha* spec. **IT Benincaseae × Thladiantheae** (art. hyb.) Brezhnev 1962 (Michurin). unconfirmed

Cucurbita pepo × *Luffa cylindrica* **IT Cucurbiteae × Sicyoeae** Yang & Cao 1981 (viable seeds), hybridity not confirmed.

Echinocystis × *Sicyos* **Sicyoeae** (→ × *Echinocystis* Kamner & Topa 1952 in Stud. Cerc. Stint. Cluj. Acad. Republ. Popul. Romane 3, 163) **IK** 1970, Willis 1985, POWO 2026

Gynostemma × *Luffa* **IT Gomphogyneae × Sicyoeae** Ito et al. 1991. **SO**. No plants, but only cell lines. Probably asymmetric

Momordica charantia × *Trichosanthes anguina* **IT Momordiceae × Trichosantheae** Patrude & Krishnamurthy 1934, Knobloch 1972. Unconfirmed. The cross is adopted, but not confirmed by Roy & Roy 1971.

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https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1208&context=bio_chem_fa_c_pubs The arguments seem not enough for a definite evaluation as a basic type

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Cyperaceae (Poales) 95: 5700

[sedge family = Sauergräser](#)

Monophyletic.

2 subfamilies (AP website 2025):

Mapanioideae 11: 185. 2 tribes.

Cyeroideae (incl. Rhynchosporoideae) 84: 5500. 22 tribes.

Cyeroideae 84: 5500. 1 IT

22 tribes, e.g.:

Bolboschoeneae 1: 15 (*Bolboschoenus*)

Cariceae 1: 2300 (*Carex*, incl. *Kobresia*[°], *Vignea*[°]). 6 subgenera.

Cypereae 8: 1132 (*Cyperus* 961, ...).

Dulichieae 3: 5 (*Blysmus* 3, *Dulichium*, ...).

Rhynchosporae 1: 400 (*Rhynchospora*).

Schoenoplecteae 2: 18 (*Schoenoplectus* 17, ...).

Scirpeae 6: 73 (*Eriophorum* 18, *Scirpus* 47, ...).

Probably **basic type Cyperaceae Cyeroideae tribe Cariceae** (*Carex*) (1: 2300). The monogeneric tribe was formerly split into a host of genera, which now are all included in the sole genus *Carex*, one of the largest plant genera at all. *Carex* species readily cross and are connected by some 200 or more known interspecific hybrids.

IS: IPNI 2013: *Carex* 198 IS!, *Cyperus* 13 IS, *Eleocharis* 2 IS, *Eriophorum* 11 IS, *Fimbristylis* 1 IS, *Kobresia*[°] 1, *Rhynchospora* 1 IS, *Schoenoplectiella*[°] (= *Schoenoplectus* p. p.) 9 IS, *Schoenoplectus* 9, *Schoenus* 2 IS, *Scirpus* s. l. 11 IS, *Trichophorum* 1 IS, *Uncinia* 1 IS, *Vignea*[°] 3 IS (= *Carex* p. p.)

Bolboschoenus × Schoenoplectus **IT** *Bolboschoeneae × Schoenoplecteae* (→ × *Bolboschoenoplectus* Tatanov 2007 Novosti Sist. Vyssh. Rast. 39: 154) IPNI 2011, de.wikipedia 2026 (× *B. mariqueter* nat hyb. China), POWO 2026

~~„*Cyperus dentatus*“ × *Rhynchospora capitellata*~~ **IT** *Cypereae × Rhynchosporae* (→ *Cyperus × weatherbianus* Fernald 1918 Rhodora 20 (239): 190–191) Fernald 1918, according to Raymond 1962 *Cyperus dentatus* must be replaced by *Dulichium arundinaceum*.

Dulichium arundinaceum × Rhynchospora capitellata **IT** *Dulichieae × Rhynchosporae* (nat. hyb.) (→ „× *Raymondiella*“ Boivin 1973 in Taxon 22, 278 „verosimiliter hybridus inter *Dulichium* et *Rhynchospora* secundum M. Raymond 1962 in Rhodora 64, 349–350“, name not in accordance with Art. H7 of the code) IK 1981. POWO 2026 (no entry, cf.

<https://gobotany.nativeplanttrust.org/species/dulichium/arundinaceum/>. Questionable.

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