

Synopsis of the Genus *Haworthia* Duval, with some nomenclatoric changes.

Synopsis rodu *Haworthia* Duval s některými nomenklatorickými změnami

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Abstract. An infrageneric classification of the genus *Haworthia* Duval is presented. The genus is divided into two subgenera and 17 sections. New subgenus *Fusiformes* (Barker) J.J.Halda and many new combinations of all categories are made.

Keywords: *Haworthia*, system, taxonomy.

***Haworthia* Duval**, Plantae succulentae in Horto alenconio 7 (1809).

Haworth, Supplementum plantarum succulentarum 70 (1819); Revisione plantarum succulentarum 48 (1821); in Phil. Mag. 44:300 (1824); in Phil. Mag. 46:283 (1825); **Baker** in Journal of Linnean Society, Bot. 18:197 (1880); in Flora Capensis 6:332 (1896); **Bentham & Hooker f.**: Gen.Pl. 3:777 (1883); **Engler** in Pflanzenfamilien 2:5 (1888); **Berger** in Pflanzenreich 4(38):74 (1908); **Von Poellnitz** in Feddes Rep. 41:193 (1937); **Jacobsen**, Handb. Succ. Pfl. 2:56 (1960); **Merxm. et al.**, Fl. S.W. Afr. 147:50 (1970); **Jacobsen**, Lexicon Succ. Pl. 252 (1974); **M. B. Bayer**, *Haworthia Handbook* 15 (1976); **Court**, Succ. Fl. S. Afr. 158 (1981); **M. B. Bayer**, *New Haworthia Handbook* 20 (1982); **C. L. Scott**, *The Genus Haworthia* xviii (1985).

Aloe L., Sp. Pl. 1:430 (1753); Salm-Dyck, Monogr. Gen. Al. Sect. 3-43 (1836-1849); Roem. & Schult., Syst. Veg. 7:653 (1829); Kunth, Enum. Pl. 4:496 (1843).

Catevala (L.) Medic., Theod. 68 (1786).

Apicra (L.) Willd. in Hort. Berol. 5:271 (1811).

Plants small succulent perennials, often suckering and forming small or large clusters. Stems erect or creeping.

Leaves imbricate, spirally arranged or multifarious, or forming basal rosettes, succulent or leathery, variously shaped, deltoid-acuminate or linear, flat or canaliculate; apex acute or truncate; bases clasping; margin toothed, smooth, denticulate or ciliate; surface smooth, striate, tessellate or verrucose, very rarely pubescent. *Flowers* unscented, small, ascending, in apparently axillary, simple or paniced racemes, occasionally with accessory branchlets or buds

in the axils. *Peduncles* smooth, naked or with a few sterile bracts; floral bracts small; pedicels short ascending. *Perianth* bilabiate, tube straight or curved, oblong cylindrical; base obtuse, segments sub-equal, 6, fused below, contiguous above; limb short, rarely regular, with marked keels, deciduous; stamens 6, shorter than the perianth, hypogynous, included; filaments filiform; anthers small, versatile, introrse. *Ovary* sessile, oblong, triscutate, with numerous axile ovules; style subulate; stigma apical, small. *Capsule* oblong to obtuse in outline or ovoid to acuminate, woody or chartaceous, loculicidally 3 valved; *seeds* small, with the angles sharply winged.

Type: *H. arachnoidea* (L.) Duval.

subgenus *Fusiformes* (Barker) J. J. Halda subg. nov.

[bas: sect. *Fusiformes* W. F. Barker in J. S. Afr. Bot. 3:93(1937)].

Radix fusiformis; folia lineata.

Type species: *H. blackburniae* Barker.

Roots fusiform; leaves linear.

H. blackburniae W. F. Barker in J. S. Afr. Bot. 3:93(1937), non. V. Poelln.

subsp. *blackburniae*

subsp. *graminifolia* (G. G. Smith) J. J. Halda stat. nov.

[bas: *H. graminifolia* G. G. Smith in J. S. Afr. Bot. 8:247(1942)].

subgenus *Haworthia*

Roots not fusiform; leaves not linear.

sect. *Scabrae* Berger

Leaves spirally arranged, ovate-lanceolate or nearly triangular, long or short tapering, firm, unicolored, somewhat rough or minutely tuberculate, margins and keel without teeth or bristles.

Type species: *H. scabra* Haw.

H. scabra Haw., Suppl. Pl. Succ. 58(1819).

subsp. *scabra*

[*Aloe scabra* (Haw.) Roem. & Schult., Syst. Veg. 7:644 (1829); *H. morrisiae* V. Poelln. in Kakteenk. 9:132 (1937); *H. scabra* var. *morrisiae* (V. Poelln.) M. B. Bayer, Haworthia Handb. 137 (1976)].

subsp. *sordida* (Haw.) J. J. Halda stat. nov.

var. *sordida*

[bas: *H. sordida* Haw., Rev. Pl. Succ. 51 (1921); *Aloe sordida* (Haw.) Roem. & Schult., Syst. Veg. 7:644 (1829); *H. agavoides* Zant. & V. Poelln. in Feddes Rep. 43:232 (1938); *H. sordida* var. *agavoides* (Zant. & V. Poelln.) G. G. Smith in J. S. Afr. Bot. 16:2 (1950)].

var. ***tuberculata*** (V. Poelln.) J. J. Halda comb. nov.

[bas: *H. tuberculata* V. Poelln. in Feddes Rep. 29:219 (1931); *H. tuberculata* var. *acuminata* V. Poelln. in Feddes Rep. 44:219 (1938); *H. tuberculata* var. *sublaevis* V. Poelln. in Feddes Rep. 44:219 (1938); *H. tuberculata* var. *subexpansa* V. Poelln. in Cact. Succ. J. (GB) 7:56 (1938); *H. tuberculata* var. *angustata* V. Poelln. in Feddes Rep. 49:27 (1940);

var. ***lavrani*** (C. L. Scott) J. J. Halda comb. nov.

[bas: *H. sordida* var. *lavrani* C. L. Scott in Cact. Succ. J. (US) 53:124 (1981)].

subsp. ***granulata*** (Marloth) J. J. Halda comb. nov.

[bas: *H. granulata* Marloth in Trans. R. Soc. S. Afr. 2:39 (1910); *H. venosa* subsp. *granulata* (Marloth) M. B. Bayer, *Haworthia* Handb. 120 (1976)].

subsp. ***starkiana*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. starkiana* V. Poelln. in Feddes Rep. 33:73 (1933); *H. lateganae* V. Poelln. in Desert Pl. Life 9:103 (1937); *H. starkiana* var. *lateganae* (V. Poelln.) M. B. Bayer, *Haworthia* Handb. 128 (1976)].

sect. ***Marginatae*** Uitewaal

Rosette stemless, rarely suckering; leaves few, spirally arranged, more or less ascending, ovate-lanceolate, gradually tapering, rigid, mucronate, glabrous, dark green, coated with a whitish skin, margins and keel with a more or less distinct white edge, back surface sharply keeled.

Type species: *H. marginata* (Lam.) Stearn.

H. marginata (Lam.) Stearn in Cact. J. (GB) 12:39 (1938).

[*Aloe marginata* Lam., Encycl. 1:89 (1783); *A. albicans* Haw. in Trans. Linn. Soc. Lond. 7:8 (1804); *Apicra albicans* (Haw.) Willd. in Hort. Berol. 5:271 (1811); *H. albicans* (Haw.) Haw., Syn. Pl. Succ. 91 (1812); *H. laevis* Haw., Rev. Pl. Succ. 52 (1821); *H. marginata* var. *laevis* (Haw.) Jacobsen, Handb. Succ. Pl. 2:567 (1960); *H. virescens* Haw., Rev. Pl. Succ. 52 (1821); *Aloe virescens* (Haw.) Roem. & Schult., Syst. Veg. 7:637 (1829); *H. albicans* var. *virescens* (Haw.) Bak. in Fl. Cap. 6:343 (1896); *H. marginata* var. *virescens* (Haw.) Uitew. in Succulenta 21:40 (1939); *H. ramifera* Haw., Rev. Pl. Succ. 52 (1821); *A. ramifera* (Haw.) Roem. & Schult., Syst. Veg. 7:636 (1829); *H. marginata* var. *ramifera* (Haw.) Jacobsen, Handb. Succ. Pl. 2:567 (1960)].

sect. ***Margaritiferae*** Haw.

Rosettes stemless or shortly stemmed; leaves firm, nearly lanceolate or ovate triangular, tuberculate on both sides or only on the lower surface.

Type species: *H. pumila* (L.) Duval.

***H. pumila* (L.) Duval, Pl. Succ. Hort. Alencon. 7 (1809).**

subsp. ***pumila***

var. ***pumila***

[*Aloe pumila* L., Sp. Pl. 322 (1753); *A. pumila* var. *margaritifera* L., Sp. Pl. 322 (1753); *A. margaritifera* (L.) Mill., Gard. Dict. ed.8:14 (1768); *A. margaritifera* var. *maxima* Haw. in Trans. Linn. Soc. Lond. 7:11 (1804); *H. maxima* (Haw.) Duval, Pl. Succ. Hort. Alencon. 7 (1809); *H. margaritifera* (L.) Haw., Suppl. Pl. Succ. 55 (1819); *A. margaritifera* var. *major* et var. *minor* Ait., Hort. Kew. 1:468 (1789); *H. major* et *H. minor* (Ait.) Duval, Pl. Succ. Hort. Alencon. 7 (1809); *Aloe semimargaritifera* Salm-Dyck, Cat. Rais. 6 (1817); *H. semimargaritifera* (Salm-Dyck) Haw., Suppl. Pl. Succ. 53 (1819); *H. margaritifera* var. *semimargaritifera* (Salm-Dyck) Bak. in J. Linn. Soc., Bot. 18:204 (1880); *Aloe papillosa* Salm-Dyck, Cat. Rais. 7 (1817); *H. papillosa* (Salm-Dyck) Haw., Suppl. Pl. Succ. 58 (1819); *H. semiglabrata* Haw., Suppl. Pl. Succ. 55 (1819); *H. papillosa* var. *semipapillosa* Haw., Rev. Pl. Succ. 55 (1821); *H. erecta* Haw., Suppl. Pl. Succ. 56 (1819); *H. margaritifera* var. *erecta* (Haw.) Bak. in J. Linn. Soc., Bot. 43:201 (1880); *Aloe erecta* (Haw.) Salm-Dyck, Monogr. Gen. Al. Sect. 6,t.7 (1842)].

var. ***kingiana* (V. Poelln.) J. J. Halda stat. nov.**

[bas: *H. kingiana* V. Poelln. in Cact. J. (GB) 5:31 (1936); *H. subfasciata* var. *kingiana* V. Poelln. in Feddes Rep. 44:218 (1938)].

var. ***smitii* (V. Poelln.) J. J. Halda stat. nov.**

[bas: *H. smitii* V. Poelln. in Desert. Pl. Life 10:186 (1938)].

subsp. ***attenuata* (Haw.) J. J. Halda stat. nov.**

[bas: *H. attenuata* (Haw.) Haw., Syn. Pl. Succ. 92 (1812); *Aloe attenuata* Haw. in Trans. Linn. Soc. Lond. 7:11 (1804); *Apicra attenuata* (Haw.) Willd. in Hort. Berol. 5:270 (1811); *Aloe radula* Ker-Gawl. in Curtis's Bot. Mag. t.2354 (1811), non Jacq.; *H. clariperla* Haw. in Phil. Mag. 3:186 (1828); *H. attenuata* var. *clariperla* (Haw.) Bak. in J. Linn. Soc., Bot. 18:203 (1880); *H. attenuata* forma *clariperla* (Haw.) M. B. Bayer, Haworthia Handb. 107 (1976); *H. britteniana* V. Poelln. in Feddes Rep. 41:196 (1937); *H. attenuata* var. *britteniana* (V. Poelln.) V. Poelln. in Kakteen 10:1 (1937); *H. attenuata* forma *britteniana* (V. Poelln.) M. B. Bayer, New Haworthia Handb. 63 (1982)].

subsp. ***minima* (Ait.) J. J. Halda stat. nov.**

[bas: *H. minima* (Ait.) Haw., Syn. Pl. Succ. 92 (1812); *Aloe margaritifera* Burm. f., Prodr. Fl. Cap. 10 (1768); *A. margaritifera* var. *minima* Ait., Hort. Kew. 1:468 (1789); *Apicra granata* Willd. in Hort. Berol. 5:269 (1811); *H. granata* (Willd.) Haw., Suppl. Pl. Succ. 57 (1819); *H. margaritifera* var. *granata* (Willd.) Bak. in J. Linn. Soc., Bot. 43:205 (1880); *H. brevis* Haw., Suppl. Pl. Succ. 57 (1819); *H. granata* var. *polyphylla* Haw., Rev. Pl. Succ. 203 (1821); *H. margaritifera* var.

minima s.v. *polyphylla* (Haw.) Uitew. in Succulenta 51 (1947); *H. mutabilis* V. Poelln. in Feddes Rep. 44:132 (1938); *H. poellnitziana* Uitew. in Cact. Vetpl. 5:137 (1939)].

subsp. ***radula*** (Jacq.) J. J. Halda stat. nov.

[bas: *H. radula* (Jacq.) Haw., Syn. Pl. Succ. 93 (1812); *Aloe radula* Jacq., Hort. Schoenbr. 4:29, t.422 (1804); *Aloe radula* var. *media* Salm-Dyck, Cat. 4 (1817); *Apicra radula* (Jacq.) Willd. in Hort. Berol. 5:270 (1811); *Aloe radula* var. *minor* Salm-Dyck, Pl. Succ. Hort. Dyck. 3 (1816); *Haworthia radula* var. *asperior* Haw., Rev. Pl. Succ. 54 (1821); *Aloe laetevirens* Salm-Dyck, Pl. Succ. Hort. Dyck. 12 (1829); *A. rugosa* Salm-Dyck, Hort. Dyck. 323 (1834); *H. rugosa* (Salm-Dyck) Bak. in J. Linn. Soc., Bot. 18:206 (1880); *Aloe rugosa* var. *perviridis* Salm-Dyck, Pl. Succ. Hort. Dyck. 12 (1829); *H. rugosa* var. *perviridis* (Salm-Dyck) Berger in Pflanzenr. 4(38):92 (1908)].

subsp. ***fasciata*** (Willd.) J. J. Halda stat. nov.

[bas: *H. fasciata* (Willd.) Haw., Rev. Pl. Succ. 54 (1821); *Apicra fasciata* Willd. in Hort. Berol. 5:270 (1811); *Aloe fasciata* (Willd.) Salm-Dyck, Cat. 5 (1817); *H. browniana* V. Poelln. in Desert Pl. Life 9:102 (1937); *H. fasciata* forma *browniana* (V. Poelln.) M. B. Bayer, Haworthia Handb. 105 (1976); *H. fasciata* var. *browniana* (V. Poelln.) C. L. Scott in The Genus Haworthia 21 (1985)].

subsp. ***longiana*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. longiana* V. Poelln. in Cact. Succ. J. (US) 5:31 (1936); *H. longiana* var. *albinota* G. G. Smith in J. S. Afr. Bot. 14:44 (1948)].

sect. ***Trifariae*** Haw.

Shoots elongated, forming stems; leaves in 3 somewhat twisted longitudinal series, thick, firm, fleshy, strongly folded and canaliculate on upper surface, keeled, dark green, rough, covered with tubercles.

Type species: *H. viscosa* (L.) Haw.

H. viscosa (L.) Haw. Syn. Pl. Succ. 90 (1812).

[*Aloe viscosa* L., Sp. Pl. ed. 1:322 (1753); *A. triangularis* Medic., Bot. Beob. 61 (1783); *Apicra viscosa* Willd. in Hort. Berol. 5:274 (1811); *Aloe pseudotortuosa* Salm-Dyck, Pl. Succ. Hort. Dyck. 2 (1816); *Haworthia pseudotortuosa* (Salm-Dyck) Haw., Suppl. Pl. Succ. 59 (1819); *H. viscosa* var. *pseudotortuosa* (Salm-Dyck) Bak. in J. Linn. Soc., Bot. 18:201 (1880); *H. concinna* Haw., Suppl. Pl. Succ. 59 (1819); *Aloe concinna* Roem. & Schult., Syst. Veg. 7:653 (1829); *H. viscosa* var. *concinna* (Haw.) Bak. in J. Linn. Soc., Bot. 18:200 (1880); *H. asperiuscula* Haw., Suppl. Pl. Succ. 60 (1819); *H. cordifolia* Haw., Suppl. Pl. Succ. 60 (1819); *H. indurata* Haw., Rev. Pl. Succ. 49 (1821); *Aloe indurata* Roem. & Schult., Syst. Veg. 7:654 (1829); *Aloe viscosa* var. *indurata* Salm-Dyck, Monogr. Gen. Al. Sect. 3, t. 3b (1836); *H. viscosa* var. *indurata* (Haw.) Bak. in J. Linn. Soc., Bot. 18:200 (1880); *H. viscosa* var. *major* et var. *minor* et var. *parvifolia*

Haw., Rev. Pl. Succ. 49 (1821); *H. torquata* Haw. in Phil. Mag. 1:123 (1827); *H. viscosa torquata* (Haw.) Bak. in J. Linn. Soc., Bot. 18:201 (1880); *H. viscosa* var. *subobtusa* et var. *caespitosa* V. Poelln. in Feddes Rep. 44:240 (1938); *H. beanii* G. G. Smith in J. S. Afr. Bot. 10:137 (1944); *H. beanii* var. *minor* G. G. Smith in J. S. Afr. Bot. 10:138 (1944); *H. asperiuscula* var. *patagiata* G. G. Smith in J. S. Afr. Bot. 12:11 (1946); *H. viscosa* var. *viridissima* G. G. Smith in J. S. Afr. Bot. 11:67 (1946); *H. viscosa* var. *quaggaensis* G. G. Smith in J. S. Afr. Bot. 14:46 (1948)].

sect. ***Limifoliae*** G. G. Smith

Plants stoloniferous, forming groups; leaves in a stemless rosette, spirally arranged, ovate-lanceolate, tapering, uniformly colored, set with transverse or longitudinal, confluent, similarly coloured tubercles.

Type species: *H. limifolia* Marloth.

H. limifolia Marloth in Trans. R. Soc. S. Afr. 1:409 (1908).

subsp. ***limifolia***

var. ***limifolia***

[*H. limifolia* forma *tetraploidea* Resende in Feddes Rep. 48:114 (1940); *H. limifolia* forma *marlothiana* (Resende) Resende in Bol. Soc. Brot. 14:200 (1940); *H. limifolia* var. *marlothiana* (Resende) Resende in Mem. Soc. Brot. 2:93 (1943); *H. limifolia* forma *diploidea* Resende in Feddes Rep. 48:200 (1940); *H. limifolia* forma *schuldtiana* (Resende) Resende in Bol. Soc. Brot. 14:200 (1940); *H. limifolia* var. *schuldtiana* (Resende) Resende in Mem. Soc. Brot. 2:93 (1943); *H. limifolia* var. *stolonifera* Resende in Mem. Soc. Brot. 2:94 (1943); *H. limifolia* var. *stolonifera* forma *pimentelli* Resende in Mem. Soc. Brot. 2:94 (1943); *H. limifolia* var. *stolonifera* forma *major* Resende in Mem. Soc. Brot. 2:94 (1943); *H. limifolia* var. *keithii* G. G. Smith in J. S. Afr. Bot. 16:4 (1950); *H. limifolia* var. *gigantea* M. B. Bayer in J. S. Afr. Bot. 28:215 (1962); *H. limifolia* var. *striata* Pilbeam, Haw., Astrol. 87 (1983)].

var. ***ubomboensis*** (Verdoorn) G. G. Smith in J. S. Afr. Bot. 16:3 (1950).

[*H. ubomboensis* Verdoorn in Fl. Pl. Afr. 21:818 (1941)].

subsp. ***koelmaniorum*** (Oberm. & Hardy) J. J. Halda stat. nov.

[bas: *H. koelmaniorum* Oberm. & Hardy in Fl. Pl. Afr. t. 1502 (1967); syn: *H. macmurtryi* C. L. Scott in Cact. Succ. J. US. 59:69 (1984)].

sect. ***Tessellatae*** (Salm-Dyck) Baker

Plants clumping; leaves spirally arranged in a stemless rosette, fleshy, firm, triangular or lanceolate-triangular, spreading, recurved, upper surface somewhat transparent and with longitudinal lines, margin irregularly dentate, lower surface tuberculate.

Type species: *H. venosa* (Lam.) Haw.

H. venosa* (Lam.) Haw., Rev. Pl. Succ. 51 (1821).**subsp. ***venosavar. ***venosa***

[*Aloe venosa* Lam., Encycl. 1:89 (1784); *A. tricolor* Haw. in Trans. Linn. Soc. Lond. 7:25 (1804); *Apicra tricolor* (Haw.) Willd. in Hort. Berol. 5:271 (1811); *H. distincta* N. E. Brown in Gardeners' Chron. 6:130 (1876)].

var. ***tessellata* (Haw.) J. J. Halda stat. nov.**

[bas: *H. tessellata* Haw. in Phil. Mag. 44:300 (1824); *Aloe tessellata* (Haw.) Roem. & Schult., Syst. Veg. 7:635 (1829); *H. venosa* subsp. *tessellata* (Haw.) M. B. Bayer, New Haworthia Handb. 76 (1982); *H. parva* Haw. in Phil. Mag. 44:301 (1824); *H. tessellata* var. *parva* (Haw.) Bak. in J. Linn. Soc., Bot. 18:211 (1880); *H. tessellata* var. *inflexa* Bak. in J. Linn. Soc., Bot. 18:211 (1880); *H. engleri* Dinter, Neue Pfl. D. S. W. Afr. 31 (1914); *H. tessellata* var. *engleri* (Dinter) V. Poelln. in Feddes Rep. 44:202 (1938); *H. pseudotessellata* V. Poelln. in Feddes Rep. 28:102 (1930); *H. tessellata* var. *tuberculata* V. Poelln. in Cact. J. (GB) 5:33 (1936); *H. minutissima* V. Poelln. in Desert Pl. Life 11:193 (1939); *H. tessellata* var. *elongata* v. Woerden in Succulenta 22(4):37 (1940); *H. tessellata* var. *simplex* Res. & V. Poelln. in Bol. Soc. Brot. 11:49 (1942); *H. tessellata* var. *stephaneana* Res. & V. Poelln. in Bol. Soc. Brot. 11:50 (1942); *H. tessellata* var. *luisieri* Res. & V. Poelln. in Bol. Soc. Brot. 11:51 (1942); *H. tessellata* var. *palhinhae* Res. & V. Poelln. in Bol. Soc. Brot. 11:51 (1942); *H. tessellata* var. *velutina* Res. & V. Poelln. in Bol. Soc. Brot. 11:52 (1942); *H. tessellata* var. *coriacea* Res. & V. Poelln. in Boll. Soc. Brot. 11:52 (1942); *H. tessellata* var. *coriacea* forma *longior* et var. *brevior* Res. & V. Poelln. in Bol. Soc. Brot. 11:52 (1942); *H. tessellata* var. *obesa* Res. & V. Poelln. in Boll Soc. Brot. 11:54 (1942)].

subsp. ***nigra* (Haw.) J. J. Halda stat. nov.**

[bas: *Apicra nigra* Haw. in Phil. Mag. 46:302 (1824); *H. nigra* Bak. in J. Linn. Soc., Bot. 18:203 (1880); *H. schmidtiana* V. Poelln. in Feddes Rep. 26:23 (1929); *H. nigra* var. *schmidtiana* (V. Poelln.) Uitew. in Succulenta 51 (1948); *H. schmidtiana* var. *angustata* V. Poelln. in Kakteen 10:169 (1937); *H. nigra* var. *angustata* (V. Poelln.) Uitew. in Succulenta 51 (1948); *H. schmidtiana* var. *suberecta* V. Poelln. in Kakteen 10:169 (1937); *H. nigra* var. *suberecta* (V. Poelln.) Uitew. in Succulenta 51 (1948); *H. diversifolia* V. Poelln. in Feddes Rep. 41:200 (1937); *H. schmidtiana* var. *diversifolia* V. Poelln. in Feddes Rep. 44:240 (1938); *H. nigra* var. *diversifolia* (V. Poelln.) Uitew. in Succulenta 51 (1948); *H. schmidtiana* var. *diversifolia* forma *nana* V. Poelln. in Feddes Rep. 44:240 (1938); *H. nigra* var. *diversifolia* forma *nana* (V. Poelln.) Uitew. in Succulenta 51 (1948); *H. schmidtiana* var. *pusilla* V. Poelln. in Feddes Rep. 44:240 (1938); *H. schmidtiana* var. *elongata* V. Poelln. in Feddes Rep. 44:240 (1938); *H. nigra* var. *elongata* (V. Poelln.) Uitew. in Succulenta 51 (1948); *H. ryneveldii* V. Poelln. in Desert Pl. Life 5:88 (1939)].

susbsp. ***woolleyi*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. woolleyi* V. Poelln. in Feddes Rep. 42:269 (1937)].

sect. ***Coarctatae*** Berger

Stems elongated, densely spirally leafy; leaves more or less erect, smooth or tuberculate on both sides, or only on the lower surface.

Type species: *H. reinwardtii* (Salm-Dyck) Haw.

H. reinwardtii (Salm-Dyck) Haw., Rev. Pl. Succ. 53 (1821).

subsp. ***reinwardtii***

var. ***reinwardtii***

[*H. reinwardtii* var. *major* Bak. in J. Linn. Soc., Bot. 18:202 (1880); *H. fallax* V. Poelln. in Feddes Rep. 31:83 (1933); *H. reinwardtii* var. *fallax* (V. Poelln.) V. Poelln. in Feddes Rep. 41:209 (1937); *H. reinwardtii* var. *archibaldiae* V. Poelln. in Feddes Rep. 41:210 (1937); *H. reinwardtii* var. *conspicua* V. Poelln. in Feddes Rep. 41:210 (1937); *H. reinwardtii* var. *pulchra* V. Poelln. in Feddes Rep. 41:209 (1937); *H. reinwardtii* var. *adelaidensis* V. Poelln. in Sukkulentenk. 2:43 (1940); *H. coarctata* subsp. *adelaidensis* (V. Poelln.) M. B. Bayer, Haworthia Handb. 94 (1976); *H. reinwardtii* var. *committeesensis* G. G. Smith in J. S. Afr. Bot. 9:93 (1943); *H. reinwardtii* var. *peddiensis* G. G. Smith in J. S. Afr. Bot. 9:94 (1943); *H. reinwardtii* var. *valida* G. G. Smith in J. S. Afr. Bot. 9:98 (1943); *H. reinwardtii* var. *triebneri* Resende in Mem. Soc. Brot. 2:80 (1943); *H. reinwardtii* var. *grandicula* G. G. Smith in J. S. Afr. Bot. 10:12 (1944); *H. reinwardtii* var. *huntsdriftensis* G. G. Smith in J. S. Afr. Bot. 10:14 (1944); *H. reinwardtii* var. *riebeekensis* G. G. Smith in J. S. Afr. Bot. 10:16 (1944); *H. reinwardtii* var. *olivacea* G. G. Smith in J. S. Afr. Bot. 10:16 (1944); *H. reinwardtii* forma *olivacea* (G. G. Smith) M. B. Bayer, Haworthia Handb. 142 (1976); *H. reinwardtii* var. *tenuis* G. G. Smith in J. S. Afr. Bot. 10:16 (1944); *H. coarctata* subsp. *coarctata* var. *tenuis* (G. G. Smith) M. B. Bayer, Haworthia Handb. 106 (1976); *H. reinwardtii* var. *kaffirdriftensis* G. G. Smith in J. S. Afr. Bot. 9:96 (1943); *H. reinwardtii* forma *kaffirdriftensis* (G. G. Smith) M. B. Bayer, Haworthia Handb. 126 (1976); *H. reinwardtii* var. *chalumnensis* G. G. Smith in J. S. Afr. Bot. 9:99 (1943); *H. reinwardtii* forma *chalumnensis* (G. G. Smith) M. B. Bayer, Haworthia Handb. 106 (1976); *H. reinwardtii* var. *brevicula* G. G. Smith in J. S. Afr. Bot. 10:11 (1944); *H. reinwardtii* var. *diminuta* G. G. Smith in J. S. Afr. Bot. 14:52 (1948); *H. reinwardtii* var. *zebrina* G. G. Smith in J. S. Afr. Bot. 10:18 (1944); *H. reinwardtii* forma *zebrina* (G. G. Smith) M. B. Bayer, Haworthia Handb. 69 (1976); *H. reinwardtii* var. *bellula* G. G. Smith in J. S. Afr. Bot. 11:70 (1945)].

subsp. ***coarctata*** (Haw.) J. J. Halda stat. nov.

var. ***coarctata***

[bas: *H. coarctata* Haw. in Phil. Mag. 44:301 (1824); *Aloe coarctata* (Haw.) Roem. & Schult., Syst. Veg. 7:647 (1829); *H. chalwinii* Marloth & Berger in Notitzbl. B.G. Mus. Berlin 4:247 (1906);

H. reinwardtii var. *chalwinii* (Marloth & Berger) Resende in Mem. Soc. Brot. 11:80 (1943); *H. fulva* G. G. Smith in J. S. Afr. Bot. 9:101 (1943); *H. musculina* G. G. Smith in J. S. Afr. Bot. 14:49 (1948)].

var. ***greenii*** (Bak.) J. J. Halda stat. nov.

[bas: *H. greenii* Bak. in J. Linn. Soc. Bot. 18:202 (1880); *H. greenii* var. *silvicola* G. G. Smith in J. S. Afr. Bot. 9:103 (1943); *H. coarctata* subsp. *coarctata* var. *greenii* (Bak.) M. B. Bayer in Nat. Cact. Succ. J. 28:80 (1973)].

subsp. ***glauca*** (Bak.) J. J. Halda stat. nov.

var. ***glauca***

[bas: *H. glauca* Bak. in J. Linn. Soc. Bot. 18:203 (1880); *H. carissoi* Resende in Bol. Soc. Brot. 15:161 (1941)].

var. ***herrei*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. herrei* V. Poelln. in Feddes Rep. 26:24 (1929); *H. herrei* var. *depauperata* V. Poelln. in Feddes Rep. 31:86 (1932); *H. eilyae* V. Poelln. in Kakteenk. 10:152 (1937); *H. armstrongii* V. Poelln. in Kakteenk. 10:152 (1937); *H. glauca* var. *herrei* forma *armstrongii* (V. Poelln.) M. B. Bayer, *Haworthia* Handb. 99 (1976); *H. jacobseniana* V. Poelln. in Desert Pl. Life 9:102 (1937); *H. jonesiae* V. Poelln. in Kakteenk. 10:153 (1937); *H. eilyae* var. *poellnitziana* Resende in Mem. Soc. Brot. 11:89 (1943); *H. eilyae* var. *zantneriana* Resende in Mem. Soc. Brot. 11:90 (1943); *H. herrei* var. *poellnitzii* Resende in Mem. Soc. Brot. 11:89 (1943); *H. glauca* var. *herrei* (V. Poelln.) M. B. Bayer, *Haworthia* Handb. 122 (1976)].

sect. ***Loratae*** (Salm-Dyck) Berger

Leaves spirally arranged in a stemless rosette, narrow, triangular-subulate or ovate-lanceolate, not truncate above, mucronate, rather firm, more or less erect, margins glabrous, often armed with minute teeth.

Type species: *H. chloracantha* Haw.

H. chloracantha Haw., Rev. Pl. Succ. 57 (1821).

subsp. ***chloracantha***

[*Aloe chloracantha* (Haw.) Roem. & Schult., Syst. Veg. 7:641 (1829); *H. angustifolia* var. *denticulifera* V. Poelln. in Cact. J. (GB) 5:35 (1936); *H. chloracantha* var. *denticulifera* (V. Poelln.) M. B. Bayer, *Haworthia* Handb. 112 (1976); *H. chloracantha* var. *subglauca* V. Poelln. in Kakteenkunde 9:137 (1937); *H. angustifolia* var. *liliputana* Uitew. in Succulenta 43 (1953)].

subsp. ***baylissii*** (C. L. Scott) J. J. Halda stat. nov.

[bas: *H. baylissii* C. L. Scott in J. S. Afr. Bot. 34:1 (1968); *H. angustifolia* f. *baylissii* (C. L. Scott) M. B. Bayer, New Haw. Handb. 26 (1982) p.p.].

subsp. *angustifolia* (Haw.) J. J. Halda stat. nov.

[bas: *H. angustifolia* Haw. in Phil. Mag. 46:283 (1825)].

var. *angustifolia*

[*Aloe stenophylla* Roem. & Schult., Syst. Veg. 7:641 (1829); *H. albanensis* Schonl. in Rec. Albany Mus. 2:256 (1912); *H. angustifolia* var. *albanensis* (Schonl.) V. Poelln. in Cact. J. (GB) 5:35 (1936); *H. angustifolia* var. *grandis* G. G. Smith in J. S. Afr. Bot. 9:105 (1943); *H. angustifolia* var. *paucifolia* G. G. Smith in J. S. Afr. Bot. 14:48 (1948)].

var. *floribunda* (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. floribunda* V. Poelln. in Feddes Rep. 40:149 (1936)].

var. *mclarenii* (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. mclarenii* V. Poelln. in Desert Pl. Life 11:107 (1939)].

var. *monticola* (Fourc.) J. J. Halda stat. nov.

[bas: *H. monticola* Fourc. in Trans. Roy. Soc. S. Afr. 21:78 (1932); *H. angustifolia* Bak. in Fl. Cap. 6:347 (1896), non. Haw.; *H. divergens* M. B. Bayer, Haworthia Handb. 113 (1976)].

var. *pulchella* (M. B. Bayer) J. J. Halda stat. nov.

[bas: *H. pulchella* M. B. Bayer in J. S. Afr. Bot. 39:252 (1973)].

var. *serrata* (M. B. Bayer) J. J. Halda stat. nov.

[bas: *H. serrata* M. B. Bayer in J. S. Afr. Bot. 39:249 (1973)].

subsp. *variegata* (L. Bol.) J. J. Halda stat. nov.

[bas: *H. variegata* L. Bol. in J. Bot. Soc. S. Afr. 137 (1929)].

var. *variegata***var. *zantneriana* (V. Poelln.) J. J. Halda stat. nov.**

[bas: *H. zantneriana* V. Poelln. in Cact. J. (GB) 5:35 (1936)].

H. wittebergensis* W. F. Barker in J. S. Afr. Bot. 8:245 (1942).*sect. *Haworthia***

Rosette stemless; leaves uniformly coloured, gradually becoming nearly transparent towards the apex, narrow, often with a short terminal bristle, margins and keel with small bristles or teeth, not truncate towards the tip.

Type species: *H. arachnoidea* (L.) Duval.

H. arachnoidea* (L.) Duval, Pl. Succ. Hort. Alencon 7 (1809).**subsp. ***arachnoidea

[*Aloe pumila* var. *arachnoidea* L., Sp. Pl. 322 (1753); *A. arachnoidea* (L.) Burm. f., Prodr. Fl. Cap. 10 (1768); *Catevala arachnoidea* (L.) Medic., Theod. 67 (1786); *Apicra arachnoidea* (L.) Willd. in Hort. Berol. 5:168 (1811); *Aloe herbacea* Mill., Gard. Dict. ed. 8:18 (1768); *Haworthia herbacea* (Mill.) Stearn in Cact. J. (GB) 7:40 (1938); *Aloe atrovirens* DC., Hist. Pl. Gr. 51 (1799); *H. atrovirens* (DC.) Haw., Rev. Pl. Succ. 57 (1821); *Apicra atrovirens* (DC.) Willd. in Hort. Berol. 5:168 (1811); *Aloe bradlyana* Jacq., Hort. Schoenbr. 11 (1804); *H. pallida* Haw., Rev. Pl. Succ. 56 (1821); *Aloe pallida* (Haw.) Roem. & Schult., Syst. Veg. 7:641 (1829); *H. paynei* V. Poelln. in Feddes Rep. 41:206 (1937); *H. pallida* var. *paynei* (V. Poelln.) V. Poelln. in Cact. J. (GB) 6:19 (1937); *H. aegrota* V. Poelln. in Desert Pl. Life 11:194 (1939); *H. submaculata* V. Poelln. in Desert Pl. Life 11:194 (1939); *H. luteorosa* Uitew. in Cact. en Vetpl. 5:88 (1939)].

subsp. ***setata* (Haw.) J. J. Halda stat. nov.**

[bas: *H. setata* Haw., Suppl. Pl. Succ. 52 (1819); *Aloe setosa* Roem. & Schult., Syst. Veg. 7:641 (1829); *H. gigas* V. Poelln. in Feddes Rep. 31:84 (1932); *H. setata* var. *gigas* (V. Poelln.) V. Poelln. in Feddes Rep. 44:224 (1938); *H. minima* var. *major* V. Poelln. in Kakteenkunde 39 (1938); *H. tenera* var. *major* (V. Poelln.) Uitew. in Succulenta 52 (1948)].

var. ***bolusii* (Bak.) J. J. Halda stat. nov.**

[bas: *H. bolusii* Bak. in J. Linn. Soc. Bot. 18:215 (1880); *H. bolusii* var. *aranea* Berger in Pflanzenr. 4(38):114 (1908); *H. aranea* (Berger) M. B. Bayer, *Haworthia* Handb. 98 (1976)].

var. ***semiviva* (V. Poelln.) J. J. Halda stat. nov.**

[bas: *H. bolusii* var. *semiviva* V. Poelln. in Feddes Rep. 44:135 (1938)].

var. ***translucens* (Haw.) J. J. Halda stat. nov.**

[bas: *Aloe translucens* Haw. in Trans. Linn. Soc. Lond. 7:10 (1804); *Apicra translucens* (Haw.) Willd. in Hort. Berol. 5:168 (1811); *Aloe arachnoides* var. *translucens* (Haw.) Ker-Gawl. in Curtis Bot. Mag. t.1417 (1811); *H. pellucens* Haw., Syn. Pl. Succ. 96 (1812); *H. translucens* (Haw.) Haw., Suppl. Pl. Succ. 52 (1819)].

var. ***xiphiophylla* (Bak.) J. J. Halda stat. nov.**

[bas: *H. xiphiophylla* Bak. in Fl. Cap. 6:354 (1896); *H. longiaristata* V. Poelln. in Kakteenkunde 134 (1937); *H. setata* var. *xiphiophylla* (Bak.) V. Poelln. in Feddes Rep. 44:225 (1938)].

subsp. ***pearsonii* (C. H. Wright) J. J. Halda stat. nov.**

[bas: *H. pearsonii* C. H. Wright in Kew Bull. 1907:365 (1907)].

var. **pearsonii**[*H. decipiens* V. Poelln. in Feddes Rep. 28:103 (1930)].var. **gracilis** (V. Poelln.) J. J. Halda stat. nov.[bas: *H. gracilis* V. Poelln. in Feddes Rep. 27:133 (1929)].subsp. **tenera** (V. Poelln.) J. J. Halda stat. nov.[bas: *H. tenera* V. Poelln. in Feddes Rep. 31:86 (1933)].var. **tenera**[*H. minima* Bak. in J. Linn. Soc., Bot. 18:215 (1880); *H. translucens* subsp. *tenera* (V. Poelln.) M. B. Bayer, *Haworthia Handb.* 161 (1976); *H. isabella* V. Poelln. in Feddes Rep. 44:226 (1938)].var. **marumiana** (Uitew.) J. J. Halda stat. nov.[bas: *H. marumiana* Uitew. in *Cact. Vetpl.* 6:33 (1940); *H. archeri* Barker ex M. B. Bayer in *J. S. Afr. Bot.* 47:791 (1981); *H. archerivar. dimorpha* M. B. Bayer in *J. S. Afr. Bot.* 47:793 (1981)].var. **pehlemanniae** (C. L. Scott) J. J. Halda stat. nov.[bas: *H. pehlemanniae* C. L. Scott in *Cact. Succ. J. (US)* 54:70 (1982)].sect. **Denticulatae** Baker

Rosette stemless, spirally leafy; leaves oblanceolate or oblanceolately tapering, rather soft, margins smooth or dentate, gradually colourless-transparent towards the apex.

Type species: *H. mucronata* Haw.***H. mucronata*** Haw. *Suppl. Pl. Succ.* 50 (1819).subsp. **mucronata**var. **mucronata**[*Aloe mucronata* (Haw.) Roem. & Schult., *Syst. Veg.* 7:638 (1829); *H. altilinea* var. *mucronata* (Haw.) V. Poelln. in *Cact. J. (GB)* 6:18 (1937); *H. limpida* Haw., *Suppl. Pl. Succ.* 51 (1819); *Aloe limpida* (Haw.) Roem. & Schult., *Syst. Veg.* 7:638 (1829); *H. altilinea* var. *limpida* (Haw.) V. Poelln. f. *typica* V. Poelln. in *Cactus J. (GB)* 6:18 (1937); *H. mucronata* var. *limpida* (Haw.) V. Poelln. forma *typica* V. Poelln. in Feddes Rep. 49:20 (1940); *Aloe altilinea* Salm-Dyck, *Gen. Al. Sect.* 11:3 (1836); *H. altilinea* Bak. in *Fl. Cap.* 6:347 (1896) p.p.; *H. polyphylla* Bak. in *J. Linn. Soc., Bot.* 18:213 (1880); *H. altilinea* var. *polyphylla* (Bak.) V. Poelln. in Feddes Rep. 45:169 (1938); *H. mucronata* var. *polyphylla* (Bak.) V. Poelln. in Feddes Rep. 49:29 (1940); *H. altilinea* var. *brevisetata* V. Poelln. in Feddes Rep. 41:194 (1937); *H. mucronata* var. *brevisetata* (V. Poelln.) V. Poelln. in Feddes Rep. 49:29 (1940); *H. inermis* V. Poelln. in Feddes Rep. 31:85 (1932); *H. altilinea* var. *inermis* V. Poelln. in Feddes Rep. 41:194 (1937); *H. altilinea*

var. *limpida* forma *inermis* V. Poelln. in Feddes Rep. 45:168 (1938); *H. mucronata* var. *limpida* forma *inermis* V. Poelln. in Feddes Rep. 49:29 (1940); *H. altilinea* var. *bicarinata* Triebn. in Feddes Rep. 45:170 (1938); *H. mucronata* var. *bicarinata* (Triebn.) V. Poelln. in Feddes Rep. 49:30 (1940); *H. altilinea* var. *morrisiae* forma *subglauca* V. Poelln. in Feddes Rep. 45:168 (1938); *H. mucronata* var. *morrisiae* forma *subglauca* (V. Poelln.) V. Poelln. in Feddes Rep. 49:29 (1940); *H. altilinea* var. *polyphylla* forma *minor* Triebn. in Feddes Rep. 45:170 (1938); *H. mucronata* var. *polyphylla* forma *minor* (Triebn.) V. Poelln. in Feddes Rep. 49:30 (1940); *H. altilinea* var. *limpida* forma *acuminata* V. Poelln. in Feddes Rep. 45:168 (1938); *H. mucronata* var. *limpida* forma *acuminata* (V. Poelln.) V. Poelln. in Feddes Rep. 49:29 (1940); *H. altilinea* var. *limpida* forma *inconfluens* V. Poelln. in Feddes Rep. 45:168 (1938); *H. mucronata* var. *limpida* forma *inconfluens* (V. Poelln.) V. Poelln. in Feddes Rep. 49:29 (1940); *H. inconfluens* (V. Poelln.) M. B. Bayer, *Haworthia* Handb. 123 (1976); *H. habdomadis* var. *inconfluens* (V. Poelln.) M. B. Bayer in Nat. Cact. Succ. J. 32:18 (1977); *H. altilinea* var. *setulifera* Triebn. in Feddes Rep. 45:170 (1938); *H. mucronata* var. *setulifera* (Triebn.) V. Poelln. in Feddes Rep. 49:30 (1940); *H. mucronata* forma *acuminata* V. Poelln. in Feddes Rep. 49:29 (1940)].

var. ***morrisiae*** (V. Poelln.) V. Poelln. in Feddes Rep. 49:29 (1940)

[*H. altilinea* var. *morrisiae* V. Poelln. in Feddes Rep. 45:168 (1938); *H. inconfluens* var. *morrisiae* (V. Poelln.) M. B. Bayer, *Haworthia* Handb. 137 (1976); *H. habdomadis* var. *morrisiae* (V. Poelln.) M. B. Bayer in Nat. Cact. Succ. J. 32:18 (1977); *H. rycroftiana* M. B. Bayer in J. S. Afr. Bot. 47:795 (1981); *H. habdomadis* V. Poelln. in Desert Pl. Life 11:88 (1938)].

var. ***altilinea*** (Haw.) J. J. Halda stat. nov.

[bas: *H. altilinea* Haw. in Phil. Mag. 64:301 (1824); *Aloe altilinea* (Haw.) Roem. & Schult., Syst. Veg. 7:638 (1829); *H. cymbiformis* var. *obesa* V. Poelln. in Feddes Rep. 45:165 (1938)].

subsp. ***lockwoodii*** (Archibald) J. J. Halda stat. nov.

[bas: *H. lockwoodii* Archibald in Fl. Pl. Afr. 20:792 (1940)].

H. nortieri G. G. Smith in J. S. Afr. Bot. 12:13 (1946).

var. ***nortieri***

[*H. nortieri* var. *montana* G. G. Smith in J. S. Afr. Bot. 16:6 (1950); *H. nortieri* var. *giftbergensis* G. G. Smith in J. S. Afr. Bot. 16:7 (1950)].

var. ***globosiflora*** (G. G. Smith) M. B. Bayer, *Haw. Handb.* 119 (1976).

[*H. globosiflora* G. G. Smith in J. S. Afr. Bot. 16:11 (1950)].

sect. ***Obtusatae*** Berger

Rosette stemless; leaves broadly ovate, thickened above and somewhat truncate, upper surface convex, keeled towards the apex, often with connected longitudinal lines, margins and keel glabrous or with tiny teeth.

Type species: *H. cymbiformis* (Haw.) Duval.

H. cymbiformis (Haw.) Duval, Pl. Succ. Hort. Alencon. 7 (1809).var. ***cymbiformis***

[*Aloe cymbiformis* Haw. in Trans. Linn. Soc. Lond. 7:8 (1804); *Aloe cymbaefolia* Schrad., N. Journ. 2:17 (1809); *Apicra cymbaefolia* Willd. in Hort. Berol. 5:271 (1811); *H. concava* Haw., Rev. Pl. Succ. 58 (1821); *H. cuspidata* Haw., Suppl. Pl. Succ. 51 (1819); *H. planifolia* Haw. in Phil. Mag. 46:282 (1825); *A. planifolia* (Haw.) Rowm. & Schult., Syst. Veg. 7:638 (1829); *H. cymbiformis* var. *planifolia* (Haw.) Bak. in J. Linn. Soc., Bot. 18:209 (1880); *H. planifolia* var. *exulta* V. Poelln. in Feddes Rep. 43:93 (1938); *H. cymbiformis* var. *angustata* V. Poelln. in Feddes Rep. 44:230 (1938); *H. planifolia* var. *planifolia* forma *agavoides* Triebn. & V. Poelln. in Feddes Rep. 45:162 (1938); *H. planifolia* var. *planifolia* forma *alta* et forma *olivacea* et forma *robusta* Triebn. & V. Poelln. in Feddes Rep. 45:162 (1938); *H. planifolia* var. *incrassata* V. Poelln. in Feddes Rep. 45:163 (1938); *H. planifolia* var. *longifolia* forma *calochlora* Triebn. & V. Poelln. in Feddes Rep. 45:163 (1938); *H. planifolia* var. *transiens* V. Poelln. in Feddes Rep. 45:163 (1938); *H. cymbiformis* var. *transiens* (V. Poelln.) M. B. Bayer, Haworthia Handb. 162 (1976); *H. cymbiformis* var. *brevifolia* Triebn. & V. Poelln. in Feddes Rep. 45:165 (1938); *H. cymbiformis* var. *angustata* forma *subarmata* V. Poelln. in Feddes Rep. 45:166 (1938); *H. cymbiformis* var. *compacta* Triebn. in Feddes Rep. 45:166 (1938); *H. cymbiformis* var. *multifolia* Triebn. in Feddes Rep. 45:166 (1938); *H. planifolia* var. *setulifera* V. Poelln. in Kakteenkunde 5:54 (1938); *H. planifolia* var. *sublaevis* V. Poelln. in Kakteenkunde 6:67 (1938); *H. planifolia* var. *poellnitziana* Resende in Feddes Rep. 48:113 (1940); *H. lepida* G. G. Smith in J. S. Afr. Bot. 10:21 (1944); *H. ramosa* G. G. Smith in J. Afr. Bot. 10:22 (1944); *H. cymbiformis* forma *ramosa* (G. G. Smith) M.B. Bayer, Haworthia Handb. 149 (1976); *H. cymbiformis* var. *obtusa* (Haw.) Bak. in J. Linn. Soc., Bot. 18:209 (1880); *H. obtusa* Haw. in Phil. Mag. 46:282 (1825); *Aloe hebes* Roem. & Schult., Syst. Veg. 7:637 (1827); *H. umbraticola* V. Poelln. in Kakteenkunde 9:134 (1937); *H. cymbiformis* var. *umbraticola* (V. Poelln.) M. B. Bayer, Haworthia Handb. 164 (1976); *H. hilliana* V. Poelln. in Desert Pl. Life 9:103 (1937); *H. umbraticola* var. *hilliana* (V. Poelln.) V. Poelln. in Feddes Rep. 44:234 (1938); *H. cymbiformis* var. *translucens* Triebn. & V. Poelln. in Feddes Rep. 45:166 (1938);

var. ***incurvula*** (V. Poelln.) M. B. Bayer, Haw. Handb. 124 (1976).

[*H. incurvula* V. Poelln. in Feddes Rep. 31:85 (1932)].

sect. ***Muticae*** Berger

Leaves in a stemless rosette, upper surface flat towards the base, somewhat inflated towards the apex and thus appearing recurved, uniformly colored and lighter towards the apex or half transparent, margins glabrous or with minute teeth, often with very short terminal bristle.

Type species: *H. reticulata* Haw.

H. reticulata (Haw.) Haw., Syn. Pl. Succ. 94 (1812).

subsp. ***reticulata***

var. ***reticulata***

[*Aloe reticulata* Haw. in Trans. Linn. Soc. Lond. 7:9 (1804); *Aloe pumilo* Jacq., Hort. Schoenbr. 4:11 (1804); *Aloe arachnoides* var. *reticulata* Ker-Gawl. in Curtis's Bot. Mag. t.1314 (1811); *Apicra pumilo* Willd. in Hort. Berol. 5:271 (1811); *H. subregularis* Bak. in Saund. Refug. bot. 4:232 (1870); *H. haageana* V. Poelln. in Feddes Rep. 28:104 (1930); *H. hurlingii* V. Poelln. in Cact. J. (GB) 5:34 (1936); *H. reticulata* var. *hurlingii* (V. Poelln.) M. B. Bayer, New Haworthia Handb. 52 (1982); *H. intermedia* V. Poelln. in Kakteenkunde 9:133 (1973); *H. haageana* var. *subreticulata* V. Poelln. in Cact. J. (GB) 5:37 (1937); *H. reticulata* var. *acuminata* V. Poelln. in Feddes Rep. 43:93 (1938); *H. hurlingii* var. *ambigua* Triebn. & V. Poelln. in Feddes Rep. 63:93 (1938); *H. guttata* Uitew. in Desert Pl. Life 19:101 (1947); *H. reticulata* var. *subregularis* (Bak.) Pilbeam, Haw., Astrol. 116 (1983)].

var. ***integra*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. integra* V. Poelln. in Feddes Rep. 34:239 (1933)].

subsp. ***batesiana*** (Uitew.) J. J. Halda stat. nov.

[bas: *H. batesiana* Uitew. in Nat. Cact. Succ. J. 3:101 (1948)].

sect. ***Limpidae*** Berger

Leaves in a stemless rosette, lower part green, upper part mostly sharply defined, wholly transparent, with a few green longitudinal stripes in the lighter part.

Type species: *H. cooperi* Baker.

H. cooperi Bak. in Saund. Refug. Bot. 4:233 (1870).

subsp. ***cooperi***

[*H. vittata* Bak. in Saund. Refug. Bot. 4:263 (1870); *H. blackbeardiana* V. Poelln. in Feddes Rep. 31:236 (1932); *H. bolusiivar. blackbeardiana* (V. Poelln.) M.B. Bayer, New Haworthia Handb. 31 (1982); *H. blackbeardiana* var. *major* V. Poelln. in Cact. J. (GB) 5:35 (1937); *H. pilifera* Bak. in Saund. Refug. Bot. 4:234 (1870); *H. columnaris* Bak. in J. Bot. Lond. 27:45 (1889); *H. pilifera* var. *columnaris* (Bak.) V. Poelln. in Feddes Rep. 44:236 (1938); *H. dielsiana* V. Poelln. in Feddes Rep. 28:103 (1930); *H. pilifera* var. *dielsiana* (V. Poelln.) V. Poelln. in Feddes Rep. 49:29 (1940);

H. gordoniana V. Poelln. in Feddes Rep. 42:269 (1937); *H. pilifera* var. *gordoniana* (V. Poelln.) V. Poelln. in Feddes Rep. 44:237 (1938); *H. obtusa* var. *gordoniana* (V. Poelln.) Uitew. in Succulenta, Amst. 29:50 (1948); *H. staynerii* V. Poelln. in Feddes Rep. 42:270 (1937); *H. pilifera* var. *staynerii* (V. Poelln.) V. Poelln. in Feddes Rep. 44:237 (1938); *H. obtusa* var. *staynerii* (V. Poelln.) Uitew. in Succulenta 29:50 (1948); *H. staynerii* var. *salina* V. Poelln. in Feddes Rep. 42:271 (1937); *H. pilifera* var. *salina* (V. Poelln.) V. Poelln. in Feddes Rep. 44:237 (1938); *H. obtusa* var. *salina* (V. Poelln.) Uitew. in Succulenta 29:50 (1948); *H. pilifera* var. *dielsiana* forma *acuminata* V. Poelln. in Feddes Rep. 49:27 (1940); *H. obtusa* var. *pilifera* et var. *columnaris* (Bak.) Uitew. in Succulenta 29:50 (1948); *H. leightoniae* G. G. Smith in J. S. Afr. Bot. 16:10 (1950); *H. cooperi* var. *leightoniae* (G. G. Smith) Bayer in Haw. Handb. 128 (1976)].

subsp. ***batteniae*** (C. L. Scott) J. J. Halda stat. nov.

[bas: *H. batteniae* C. L. Scott in Cact. Succ. J. (US) 51:268 (1979)].

sect. ***Planifoliae*** Berger

Leaves fairly soft, not recurved at the apex, unicolored or lighter towards the apex and with darker, connected longitudinal lines, mucronate, broadly ovate or more narrow, margins and keel glabrous or with minute teeth.

Type species: *H. aristata* Haw.

H. aristata Haw., Suppl. Pl. Succ. 51 (1819).

subsp. ***aristata***

[*Aloe aristata* (Haw.) Roem. & Schult., Syst. Veg. 7:638 (1829); *H. denticulata* Haw., Rev. Pl. Succ. 58 (1821); *H. setata* var. *subinermis* V. Poelln. in Feddes Rep. 40:150 (1936); *H. unicolor* V. Poelln. in Kakteenkunde 133:4 (1937); *H. venterii* V. Poelln. in Cact. J. (GB) 8:19 (1939); *H. unicolor* var. *venterii* (V. Poelln.) M. B. Bayer, Haworthia Handb. 166 (1976)].

subsp. ***helmyae*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. helmyae* V. Poelln. in Cact. J. (GB) 5:37 (1936); *H. unicolor* var. *helmyae* (V. Poelln.) M. B. Bayer, Haw. Handb. 121 (1976); *H. aristata* var. *helmyae* (V. Poelln.) Pilbeam, Haw., Astrol. 39 (1983)].

sect. ***Retusae*** Haw.

Leaves rather firm, more or less erect, mostly with minute teeth on the margins, more rarely smooth, truncate-recurved above, the terminal area somewhat transparent, with a few or several green stripes, tuberculate or less often with minute teeth.

Type species: *H. retusa* (L.) Duval.

H. retusa* (L.) Duval, Pl. Succ. Hort. Alencon. 7 (1809).**subsp. ***retusavar. ***retusa***

[*Aloe retusa* L. Sp. Pl. 322 (1753); *Catevala retusa* (L.) Medic. Theod. 68 (1786); *Apicra retusa* (L.) Willd. in Hort. Berol. 5:271 (1811); *H. turgida* Haw., Suppl. Pl. Succ. 52 (1819); *Aloe turgida* (Haw.) Roem. & Schult., Syst. Veg. 7:635 (1829); *H. turgida* (Haw.) Bak. in J. Linn. Soc. Bot. 18:200 (1880); *H. laetevirens* Haw., Suppl. Pl. Succ. 53 (1819); *Aloe laetevirens* (Haw.) Link., Enum. Hort. Berol. 335 (1821); *H. caespitosa* V. Poelln. in Cact. J. (GB) 5:33 (1936); *H. turgida* var. *subtuberculata* V. Poelln. in Feddes Rep. 44:134 (1938); *H. turgida* var. *suberecta* V. Poelln. in Feddes Rep. 44:134 (1938); *H. caespitosa* f. *subplana* et f. *subproliferans* V. Poelln. in Feddes Rep. 44:232 (1938); *H. turgida* var. *pallidiflora* G. G. Smith in J. S. Afr. Bot. 12:44 (1946); *H. fouchei* V. Poelln. in Succulenta 22:28 (1940); *H. dekenahii* G. G. Smith in J. S. Afr. Bot. 10:140 (1944); *H. dekenahii* var. *argenteo-maculosa* G. G. Smith in J. S. Afr. Bot. 11:74 (1945); *H. retusa* var. *dekenahii* (G. G. Smith) M. B. Bayer, New Haworthia Handb. 53 (1982); *H. longibracteata* G. G. Smith in J. S. Afr. Bot. 11:75 (1945); *H. geraldii* C. L. Scott in J. S. Afr. Bot. 31:123 (1965); *H. retusa* var. *multilineata* G. G. Smith in J. S. Afr. Bot. 12:3 (1946); *H. retusa* var. *solitaria* G. G. Smith in J. S. Afr. Bot. 12:5 (1946); *H. multilineata* (G. G. Smith) C. L. Scott in The Genus *Haworthia* 134 (1985); *H. solitaria* (G. G. Smith) C. L. Scott in *Aloe* 11(4):37 (1973); *H. retusa* var. *densiflora* G. G. Smith in J. S. Afr. Bot. 12:7 (1946); *H. retusa* f. *acuminata* M. B. Bayer, *Haworthia* Handb. 94 (1976); *H. retusa* var. *acuminata* (M. B. Bayer) M. B. Bayer, *New Haworthia* Handb. 53 (1982)].

var. ***mutica* (Haw.) J. J. Halda stat. nov.**

[bas: *H. mutica* Haw., Rev. Pl. Succ. 55 (1821); *Aloe mutica* (Haw.) Roem. & Schult., Syst. Veg. 7:635 (1829); *H. retusa* var. *mutica* (Haw.) Bak. in Fl. Cap. 6:346 (1896); *H. otzenii* G. G. Smith in J. S. Afr. Bot. 11:72 (1945)].

var. ***heidelbergensis* (G. G. Smith) J. J. Halda stat. nov.**

[bas: *H. heidelbergensis* G. G. Smith in J. S. Afr. Bot. 14:42 (1948)].

subsp. ***emelyae* (V. Poelln.) J. J. Halda stat. nov.**

[bas: *H. emelyae* V. Poelln. in Feddes Rep. 42:271 (1937)].

var. ***emelyae***

[*H. correcta* V. Poelln. in Feddes Rep. 43:103 (1938); *H. picta* V. Poelln. in Feddes Rep. 44:133 (1938); *H. blackburniae* V. Poelln. in Kakteenkunde 9:132 (1937), non Barker].

var. ***bruynsii* (M. B. Bayer) J. J. Halda stat. nov.**

[bas: *H. bruynsii* M. B. Bayer in J. S. Afr. Bot. 47:789 (1981)].

var. ***comptoniana*** (G. G. Smith) J. J. Halda stat. nov.[bas: *H. comptoniana* G. G. Smith in J. S. Afr. Bot. 11:76 (1945)].var. ***springbokvlakensis*** (C. L. Scott) J. J. Halda stat. nov.[bas: *H. springbokvlakensis* C. L. Scott in J. S. Afr. Bot. 36:287 (1970)].subsp. ***asperula*** (Haw.) J. J. Halda stat. nov.var. ***asperula***

[bas: *H. asperula* Haw. in Phil. Mag. 300 (1824); *Aloe asperula* (Haw.) Roem. & Schult., Syst. Veg. 7:635 (1829); *H. pygmaea* V. Poelln. in Feddes Rep. 27:132 (1930); *H. paradoxa* V. Poelln. in Feddes Rep. 33:240 (1933); *H. maraisii* var. *paradoxa* (V. Poelln.) M. B. Bayer, Haworthia Handb. 143 (1976); *H. magnificavar. paradoxa* (V. Poelln.) M. B. Bayer in Nat. Cact. J. (GB) 32:18 (1977); *H. maraisii* V. Poelln. in Feddes Rep. 38:194 (1935); *H. magnificavar. maraisii* (V. Poelln.) M. B. Bayer, New Haworthia Handb. 44 (1982); *H. sublimpidula* V. Poelln. in Cact. Succ. J. (US) 5:33 (1936); *H. schuldtiana* V. Poelln. in Feddes Rep. 41:211 (1937); *H. whitesloaneana* V. Poelln. in Desert Pl. Life 9:102 (1937); *H. schuldtiana* var. *white-sloaneana* (V. Poelln.) V. Poelln. in Feddes Rep. 49:26 (1940); *H. schuldtiana* var. *erecta* Triebn. & V. Poelln. in Feddes Rep. 49:25 (1940); *H. magnifica* var. *notabilis* M. B. Bayer, New Haworthia Handb. 45 (1982), p. p.; *H. schuldtiana* var. *minor* Triebn. & V. Poelln. in Feddes Rep. 49:25 (1940); *H. schuldtiana* var. *maculata* V. Poelln. in Feddes Rep. 49:25 (1940); *H. maculata* (V. Poelln.) M. B. Bayer, Haworthia Handb. 130 (1976); *H. schuldtiana* var. *robertsonensis* V. Poelln. in Feddes Rep. 49:25 (1940); *H. schuldtiana* var. *simplicior* et var. *sublaevis* et var. *subtuberculata* et var. *unilineata* V. Poelln. in Feddes Rep. 49:26 (1940); *H. schuldtiana* var. *major* G. G. Smith in J. S. Afr. Bot. 12:1 (1946); *H. maraisii* var. *major* (G. G. Smith) M. B. Bayer, Haworthia Handb. 132 (1976); *H. magnificavar. major* (G. G. Smith) M. B. Bayer in Nat. Cact. Succ. J. 32:18 (1977); *H. pubescens* M. B. Bayer in J. S. Afr. Bot. 38:129 (1972); *H. maraisii* var. *meiringii* M. B. Bayer, Haworthia Handb. 134 (1976); *H. magnifica* var. *notabilis* M. B. Bayer, New Haworthia Handb. 45 (1982)

var. ***magnifica*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. magnifica* V. Poelln. in Feddes Rep. 33:239 (1933); *H. atrofusca* G. G. Smith in J. S. Afr. Bot. 14:41 (1948); *H. magnifica* var. *atrofusca* (G. G. Smith) M. B. Bayer in Nat. Cact. Succ. J. 32:18 (1977)].

var. ***mirabilis*** (Haw.) J. J. Halda stat. nov.

[bas: *Aloe mirabilis* Haw. in Trans. Linn. Soc. Lond. 7:9 (1804); *Apicra mirabilis* (Haw.) Willd. in Hort. Berol. 5:269 (1811); *H. mirabilis* (Haw.) Haw., Syn. Pl. Succ. 95 (1812); *H. multifaria* Haw. in Phil. Mag. 44:300 (1824); *Aloe multifaria* Roem. & Schult., Syst. Veg. 635 (1829); *H. willowmorensis* V. Poelln. in Cact. J. (GB) 5:33 (1936); *H. triebneriana* V. Poelln. in Cact. J. (GB) 6:36 (1937); *H. triebneriana* var. *depauperata* V. Poelln. in Feddes Rep. 43:94 (1938);

H. triebneriana var. *sublineata* V. Poelln. in Feddes Rep. 44:135 (1938); *H. rossouwii* V. Poelln. in Kakteenkunde 7:75 (1938); *H. badia* V. Poelln. in Kakteenkunde 7:76 (1938); *H. triebneriana* var. *diversicolor* Trieb. & V. Poelln. in Feddes Rep. 47:9 (1939); *H. triebneriana* var. *multituberculata* et var. *rubrodentata* et var. *napiensis* et vV. Poelln. in Feddes Rep. 47:10 (1939); *H. triebneriana* var. *subtuberculata* V. Poelln. in Feddes Rep. 47:10 (1939); *H. triebneriana* var. *turgida* Triebn. in Feddes Rep. 47:11 (1939); *H. triebneriana* var. *pulchra* V. Poelln. in Feddes Rep. 49:29 (1940); *H. emelyae* var. *beukmanii* V. Poelln. in Feddes Rep. 49:29 (1940); *H. mundula* G. G. Smith in J. S. Afr. Bot. 12:8 (1946); *H. mirabilis* subsp. *mundula* (G. G. Smith) M.B. Bayer, *Haworthia* Handb. 139 (1976); *H. emelyae* var. *multifolia* M. B. Bayer, New *Haworthia* Handb. 39 (1982)].

H. parksiana V. Poelln. in Cact. J. (GB) 5:34 (1936).

sect. ***Fenestratae*** V. Poelln.

Leaves distichous or spirally arranged, more or less erect, ovate-triangular or ovate-elongate, horizontally truncate above, the truncate portion transparent, covered with numerous, tiny, transparent tubercles.

Type species: *H. truncata* Schonl.

H. truncata Schonl. in Trans. R. Soc. S. Afr. 1:391 (1910).

var. ***truncata***

[incl. forms *tenuis*, *crassa* and *normalis* V. Poelln. in Feddes Rep. 44:239 (1938)].

var. ***maughanii*** (V. Poelln.) J. J. Halda stat. nov.

[bas: *H. maughanii* V. Poelln. in Feddes Rep. 31:85 (1932)].