

# AIZOACEAE

by

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Annual or perennial herbs, erect or prostrate, sometimes undershrubs. Leaves opposite or alternate or pseudo-verticillate, simple, fleshy or reduced to scales. Stipules present or wanting. Inflorescence consisting of axillary or terminal cymes or flowers solitary. Flowers actinomorphic, hermaphrodite. Tepals 4—5, free or connate, in the West Indian species free from the ovary. Stamens 4—5 and then alternating with the tepals or fewer or more, the outermost often sterile and petaloid; filaments free or basically united into a single mass or into separate fascicles; anthers opening with longitudinal dehiscence, 2-celled. Ovary superior (or inferior), 1- to many-locular; style one or wanting; stigmas as many as the locules, usually radiating. Ovules few to numerous, anatropous or campylotropous, on axile, parietal or basal placentas. Fruit a loculicidal or circumscissile capsule, sometimes leathery or tardily dehiscent or berry-like. Seeds usually with an aril. Embryo curved. Endosperm copious or scanty.

About 1100 species in 23 genera, mainly in South Africa; inhabitants of dry tropical and subtropical regions especially.

## Key to the genera:

1. Perennial herbs, succulent or fleshy, with prostrate or trailing branches; leaves opposite; flowers purplish to pink, tepals 0.5 cm or more long . . . . . 2  
Annual, small herbs, with decumbent stems; leaves alternate or pseudo-verticillate; flowers white or greenish-white, small . . . . . 3
2. Leaves linear or oblong, equal in each pair; capsule 3-locular; styles 3—5 . . . . . *Sesuvium*  
Leaves obovate to elliptical, those of a pair unequal; capsule 1-locular; styles 1(—2) . . . . . *Trianthema*
3. Leaves in pseudo-whorls, linear, up to 3 cm long . . . . . *Mollugo*  
Leaves alternate, oblong to elliptic, up to 10 mm long . . . . . *Cypselea*

**Mollugo** Linnaeus, Spec. Plant. 89. 1753

Annual herbs, erect or prostrate, branched, glabrous. Leaves pseudo-verticillate or rarely alternate, not succulent. Stipules scarious, deciduous. Inflorescence consisting of cymes or pseudo-verticillate, sessile umbels. Tepals 5. Stamens 3—5, persistent; filaments filiform or widened about the middle; anthers ellipsoid. Ovary superior, 3—5-locular; stigmas 3. Ovules numerous. Capsule subglobose or ellipsoid, 3-locular, loculicidally 3-valved, enclosed in the persistent perianth. Seeds few or numerous, small; testa smooth, granular or sculptured.

About 15 species in tropical and subtropical regions, mostly in the Old World; a few species in America.

**Mollugo verticillata** L.

LINNAEUS, Spec. Plant. 89. 1753; GRISEBACH, Fl. Br. W. Ind. Isl. 56. 1859; URBAN, Symb. Ant. 4: 230. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 64. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 209. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 186. 1913; Fl. D.W. Ind. Isl. 2: 28. 1914; FAWCETT & RENDLE, Fl. Jamaica 3(1): 164, fig. 60. 1914; URBAN, Symb. Ant. 8: 216. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 293. 1924; QUESTEL, Fl. Isl. St. Bartholomew 105. 1941; ARNOLDO, Zakflora 97. 1954; Zakflora 75. 1964; ADAMS, Flowering plants of Jamaica 269. 1972.

Prostrate herb, sometimes forming large patches; branches up to 40 cm long, often ascending. Leaves pseudo-verticillate, 4—10 at a node, those of the same whorl varying in size; blade spatulate, linear, lanceolate-linear or linear, obtuse or rounded at the apex, tapering at the base into the petiole, 6—30 × 1—10 mm; petiole small. Inflorescence contracted into sessile umbellules at the nodes; pedicels filiform, 5—8 mm long. Tepals herbaceous with scarious margin, oblong or elliptic, 2—2.5 × 0.6—1.2 mm, green or purplish. Stamens 3, rarely 4—5; filaments filiform, nearly 2 mm long; anthers small. Ovary 3-locular; stigmas 3. Capsule ellipsoid, 2—3 × 1.5—2 mm. Seeds uniform, 0.6 mm long brown, shining, smooth, ridges along the back.

Continental tropical America, Antilles south to St. Vincent, Aruba, Bonaire, Curaçao, and Marguerita.

Sandy and rocky soil, and waste and cultivated grounds at lower altitudes.

ARUBA: slope of Miralamar (Boldingh 6459, fl. & fr. Jan.; Stoffers 1607, fl. & fr. Jan.); Tanki Leendert (Boldingh 6251, fl. & fr. Jan.); Companashi (Arnoldo 91, fl. & fr. Dec.); Seroe Largo (Stoffers 1877, fl. & fr. Jan.); hills N.E. of Andicouri (Stoffers 1829, fl. & fr. Jan.); Boca Mahos (Stoffers 1483, fl. & fr. Jan.); Matoguerai (Stoffers 1433, fl. & fr. Jan.); without loc. (Koolwijk s.n. sub Suringar s.n., fl. & fr. [L]).

BONAIRE: Jatoe Bacoe (Stoffers 626, fl. & fr. Nov.); Soebi Blanco (Stoffers 382, fl. & fr. Jan.); beach, Bolivia plantation (Suringar s.n., fl. & fr. Feb. [L]).

CURAÇAO: Museumtuin, Mundo Nobo (Arnoldo 2009, fl. & fr. Ap.); near Barber (Arnoldo 50, fl. & fr. March); Malpais (Arnoldo 1148, fl. & fr. Nov.); between Wacao and Playa Grande (Britton & Shafer 3036, fl. & fr. March); Hofje of Valentijn (Boldingh 5373, fl. & fr. Nov.); Santa Cruz (Stoffers 1180, fl. & fr. Dec.); near Soto (de Wilde 8, fl. & fr. Ap. [L]); Kopermijnen near Savonet (Suringar s.n., fl. & fr. Jan. [L]); Savonet (Suringar s.n., fl. & fr. Jan. [L]); near Hato (Suringar s.n., fl. & fr. Jan. [L]).

St. EUSTATIUS: along roads in Oranjestad (Boldingh 1098, fl. & fr. June); Fort Royale (Arnoldo 1366, fl. & fr. March); Bengalen (Suringar s.n., fl. & fr. May [L]).

**Cypselea** Turpin, Ann. Mus. Paris 7: 219. 1806

Annual prostrate herbs; stems slender, branched. Leaves opposite, those of a pair unequal. Stipules scarious, laciniate. Flowers small, nearly sessile, solitary or with a few together in the leaf-axils, greenish. Tepals 5, connate at the base, the lobes without appendages. Stamens 1—3, alternating with the tepals. Ovary superior, 1-locular; style bifid. Ovules numerous. Fruit a capsule, subglobose, circumscissile. Seeds many, minute; testa smooth. Embryo curved, endosperm fleshy.

Two species in the West Indies, South Florida, and Venezuela.

**Cypselea humifusa** Turp.

TURPIN, Ann. Mus. Paris 7: 219. 1806; GRISEBACH, Fl. Br. W. Ind. Isl. 56. 1859; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 209. 1909; URBAN, Symb. Ant. 8: 217. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 296. 1924; LEON & ALAIN, Fl. Cuba 2: 141. 1951; ARNOLDO, Zakflora 137. 1954; Zakflora 7. 1964.

Much branched, prostrate herb, forming mats of 3—20 cm (or more) in diameter. Leaves petiolate; blade oblong to elliptic, rounded at the apex, acute or rounded at the base, entire, 1.5—10 × 0.5—5 mm; petiole slender, equalling the blade in length. Flowers short-pedicellate. Tepals connate at the base; the lobes ovate to elliptic-ovate, 1—1.5 × 0.7—1 mm, obtuse or acutish, white or greenish. Stamens 1—3; filaments filiform, ± 1 mm long; anthers small, 0.3 mm long. Capsule 1—1.5 mm in diam. Seeds brown, 0.2—0.3 mm long.

California, Florida, Cuba, Water Island, St. Thomas, Anagada, Guadeloupe, Marguerita, and Bonaire.

Moist places.

BOINAIRE: Onima (Arnoldo 987, fl. & fr. July); behind a dam, west of Jatoe Bacoe (Stoffers 637, fl. & fr. Nov.).

**Sesuvium** Linnaeus, Syst. Nat. ed. 10, 2: 1058. 1759

Fleshy, annual or perennial herbs, sometimes shrubby. Leaves opposite, petioles often dilated and connate at the base. Stipules wanting. Inflorescence consisting

of axillary fascicles or flowers solitary in the leaf-axils. Tepals 5, united at the base, coloured at the inner side and provided with hornlike appendages on the back below the apex. Stamens 5, alternating with the tepals, or numerous and then the filaments often united; filaments filiform; anthers broad-ellipsoid. Ovary 3—5-locular; styles 3—5, papillose along the inner side. Ovules numerous. Capsule 3—5-locular, membranaceous, included by the persistent perianth, circumscissile. Seeds numerous roundish-reniform, smooth. Embryo annular.

Seven species, on seashores and saline soils in tropics and subtropics.

### **Sesuvium portulacastrum (L.) L.**

LINNAEUS, Syst. Nat. ed. 10. 2: 1058. 1759; GRISEBACH, Fl. Br. W. Ind. Isl. 57. 1859; DUSS, Fl. phan. Ant. franç. 47. 1897; URBAN, Symb. Ant. 4: 230. 1905; BOLDINGH, Fl. D.W. Ind. Isl. 1: 64. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 209. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 186. 1913; Fl. D.W. Ind. Isl. 2: 28. 1914; FAWCETT & RENDLE, Fl. Jamaica 3(1): 166, fig. 61. 1914; URBAN, Symb. Ant. 8: 217. 1920; BRITTON & MILLSAUGH, Bahama Fl. 136. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 295. 1924; CHEESMAN in WILLIAMS, Fl. Trinidad & Tobago 1: 464. 1940; QUESTEL, Fl. Isl. St. Bartholomew 105. 1941; LEON & ALAIN, Fl. Cuba 2: 142, fig. 57. 1951; ARNOLDO, Zakflora 110, fig. 25. 1954; Zakflora 76, fig. 25. 1964; GOODING *et al.*, Fl. Barbados 149. 1965; ADAMS, Flowering plants of Jamaica 269. 1972; — *Portulaca portulacastrum* LINNAEUS, Spec. Plant. 446. 1753.

Glabrous, perennial, succulent herb; stems trailing and often rooting at the lower nodes, forming large patches; variable with regards to colour of the flowers and leaves, length of leaves and pedicels. Leaves oblanceolate to oblong, broadest above the middle, 1—5 cm long and 3—15 mm wide, acute or acutish at the apex, the base clasping, green, red or purplish. Flowers solitary in the leaf-axils; pedicels 1—15 mm long. Receptacle obconical, 2 mm long. Tepals lanceolate, obtuse at the apex, provided with hornlike appendages below the apex, green outside and purple to lilac within, 5—10 × 2—4.5 mm. Stamens numerous; filaments about 5 mm long; anthers oblong-elliptic, about 1 mm long. Ovary superior, ovoid to globose, 3—3.5 mm long and 3 mm in diam.; styles 3. Capsule conic, 9—11 × 5—6 mm. Seeds black, smooth, lustrous, 1—1.5 mm long.

Tropical and subtropical regions.

Saline soils, sea beaches and coastal rocks and cliffs.

Vernacular name: banana di rif (Leeward Group).

ARUBA: Hofje of Fontein (Boldingh 6472, fl. Jan.); calcareous seashore near Manchebo (Boldingh 6281, st. Dec.); San Nicolas (Arnoldo 293, fl., Dec.); Rif (Suringar s.n., st. Jan. [L]); Fuik (Suringar s.n., fl. Feb. [L]).

BONAIRE: calcareous seashore near Onima (Boldingh 7240, fr. Feb.); seashore

near Lagoen (Boldingh 465, fl. Feb.; 7464, st. Feb.); calcareous soil near Lagoen (Boldingh 7481, st. Feb.); Saliña Mathijs (Boldingh 7300, fl. Feb.); near Blauwe Pan (Stoffers 729, fl. & fr. Nov.); Oranje Pan (Burgers 524, fl. May).

CURAÇAO: border of mangrove, Willemstad (Britton & Shafer 2928, st. March); seashore near Hato (Boldingh 5137, fl. Nov.); seashore of St. Michiels Baai (Boldingh 4899, fl. Nov.); near St. Patrick (Boldingh 5477, fl. Nov.); Bullenbaai near St. Willibrordus (Stoffers 356, fl. & fr. Oct.); Julianadorp (Stoffers s.n., fl. & fr. Oct.); along shore between Willemstad and Piscadera Baai (de Wilde 89A, fl. Jan.); Klein Curaçao (Suringar s.n., fl. Feb. [L]); without loc. (Suringar s.n., fl. & fr. Jan. [L]).

SABA: near Sulphur mines (Boldingh 1703A, fl. & fr. July); seashore of Ladder Gut (Boldingh 2132, fl. & fr. July).

St. EUSTATIUS: near Mary Glory, 150 m (Boldingh 1162, fl. June); seashore near White Wall (Boldingh 851, fl. & fr. July; 855, fl. July); seashore near Bengalen (Boldingh 585, st. June); seashore (Suringar s.n., st. Ap. [L]).

St. MARTIN: road along western side of Great Salt Pond (Stoffers 2419, fl. March); near Philipsburg (Boldingh 2336A, fl. & fr.); Low Lands near Mullet Pond (Boldingh 2763A, fl. Sept.); Tintamarre (Boldingh 3389, fl. & fr. Sept.).

### **Trianthema** Linnaeus, Spec. Plant. 223. 1753

Succulent, diffuse or prostrate herbs; stems branched. Leaves opposite, entire, those of a pair unequal; petiole long with sheathing base. Stipules wanting. Flowers sessile or pedicellate, solitary in the leaf-axils. Tepals 5, often with an appendage on the back below the apex. Stamens 5 to numerous, inserted near the top of the receptacle. Ovary free, 1- or 2-locular; styles 1 or 2. Ovules few. Capsule membranaceous or coriaceous, at length circumscissile, bearing a short, fleshy, shallow lobed appendage, on one side of the top. Seeds one or few, reniform; testa rough. Embryo annular. Endosperm farinaceous.

Over 15 species, in tropical and subtropical regions, especially in Australia.

### **Trianthema portulacastrum** L.

LINNAEUS, Spec. Plant. 223. 1753; BOLDINGH, Fl. D.W. Ind. Isl. 1: 65. 1909; JOHNSTON, Proc. Bost. Soc. Nat. Hist. 34(7): 210. 1909; BOLDINGH, Fl. Ned. W. Ind. Eil. 187. 1913; Fl. D.W. Ind. Isl. 2: 29. 1914; FAWCETT & RENDLE, Fl. Jamaica 3(1): 167, fig. 62. 1914; URBAN, Symb. Ant. 8: 217. 1920; BRITTON & WILSON, Sci. Surv. Porto Rico & Virgin Isl. 5: 295. 1924; CHEESMAN in WILLIAMS, Fl. Trinidad & Tobago 1: 464. 1940; QUESTEL, Fl. Isl. St. Bartholomew 106. 1941; LEON & ALAIN, Fl. Cuba 2: 141. 1951; ARNOLDO, Zakflora 110. 1954; Zakflora 76. 1964; GOODING *et al.*, Fl. Barbados 149. 1965; ADAMS, Flowering plants of Jamaica 269. 1972; — *Trianthema monogyne* LINNAEUS, Mant. 1: 69. 1767; GRISEBACH, Fl. Br. W. Ind. Isl. 58. 1859; DUSS, Fl. phan. Ant. franç. 48. 1897; URBAN, Symb. Ant. 4: 231. 1905.

More or less succulent, prostrate, perennial herb; stems much branched and the branches sometimes 1 m long. Stems and leaves sparsely pubescent or

glabrous. Leaves petiolate; blade obovate, suborbicular or elliptic, rounded, emarginate or apiculate at the apex, acute or rounded at the base, variable in size, 0.5—5 × 0.5—3.5 cm; petiole up to 2 cm long. Flowers sessile, axillary, partly concealed by the petiolar sheath. Tepals ovate-lanceolate, 4—5 mm long, pinkish or purplish within, green outside. Stamens numerous; filaments filiform, about 4 mm long; anthers oblong, 0.5—1 mm long. Ovary free; style 1. Capsule 4—5 mm long, crested. Seeds 1 or 2, reniform, black, about 2 mm in diam., rough.

Tropical and subtropical regions.

Saline soils and waste grounds at lower altitude.

Vernacular name: bembe di porco (Leeward Group).

ARUBA: Sivi-Sivi (Boldingh 6314, fl. & fr.; 6320, fr.); Oranjestad (Arnoldo 198, fl. Dec.; Suringar s.n., fl. Feb. [L]); plantation near Washington (Stoffers 1517, fl. & fr. Jan.); seashore near Fontein (Stoffers 1363, fl. Jan.); without loc. (Koolwijk s.n. sub Suringar s.n., fl. [L]).

BONAIRE: behind a dam, west of Jatoe Bacoe (Stoffers 642, fl. & fr. Nov.); Saliña Mathijs (Boldingh 7298, fr. Feb.).

CURAÇAO: St. Patrick (Britton & Shafer 3063, fr. March); Rif (Arnoldo 2002, fl. & fr. Ap.); Santa Catharina (Stoffers 176, fr. Oct.); Groot Piscadera (Burgers 103, fr. Jan.); Habaai (Stoffers 312, fl. & fr. Oct.); Cas Cora (Burgers 75, fr. Jan.); Noordkant Plantation (Stoffers 133, fl. & fr. Oct.); Willemstad (Suringar s.n., st. Feb. [L]); Savonet (Suringar s.n., fl. Jan. [L]); Brakkeput (Suringar s.n., fl. & fr. Jan. [L]); Hato (Suringar s.n., st. Jan. [L]); Gasparito (Suringar s.n., fl. Jan. [L]).

ST. EUSTATIUS: in garden in Oranjestad (Boldingh 1058A, fr.; Suringar s.n., fl. Ap. [L]); without loc. (v. Groll-Meyer n. 90, fl. & fr.).

ST. MARTIN: road near Simson Bay (Boldingh 3247A, fl. & fr. Aug.); Naked Boy Hill (Boldingh 2707A, fl. Aug.).