

## Illustrated Handbook of Succulent Plants: Aizoaceae A-E

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## Aizoanthemum AIZOOIDEAE

H. E. K. HARTMANN

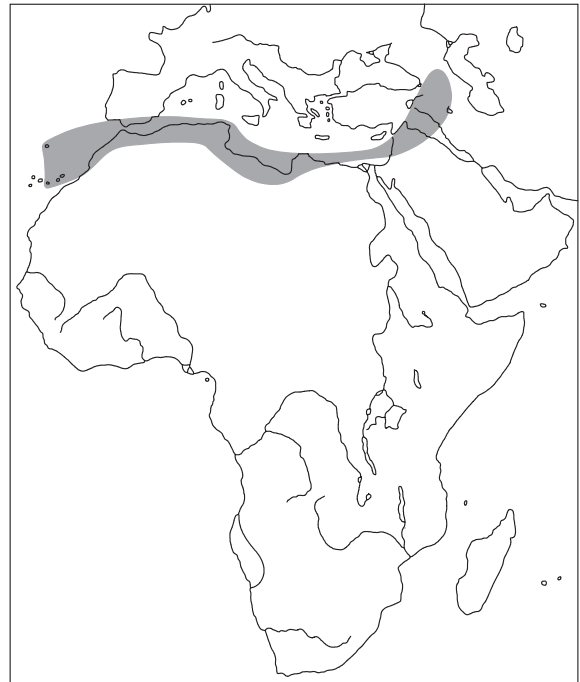
**Aizoanthemum** Dinter ex Friedrich 1957: 342  $\equiv$  *Aizoanthemum* Dinter Kakteenkunde 1935: 27 nomen invalid.  $\equiv$  *Aizoon* L. subg. *Aizoanthemum* (Friedrich) Adamson 1959: 44 **Typus** *A. membrumconnectens* Dinter ex Friedrich  $\equiv$  *Aizoon membrumconnectens* (Dinter ex Friedrich) Adamson = **A. rehmannii** (Schinz) H.E.K.Hartmann **Etym** *Aizoon*, a genus of Aizoaceae, Gk *anthos*, flower, the name stressing the similarity to the genus **Aizoon**.

Annual herbs, with erect to spreading, rarely decumbent branches, I young with longish papillae, old ones with distant, shorter papillae, appearing as flat scales when dry; L alternate, only in the distal part of the **Inf** opposite in some cases, elongate-oval, often narrowing towards the base and sometimes developing a petiole, papillae low and inconspicuous or more prominent; **Fl** in large **Inf** comprising  $\pm$  the entire plant, mostly purely dichasial in construction, perigynous, perigone papillate outside, greenish, white or yellow inside, all lobes of  $\pm$  equal length, stamens numerous, basally flat; **Fr**  $\pm$  globose or columnar, the valves opening completely by parallel, long expanding keels reaching from the centre of the fruit to the tip of the valve, 5–10 locules; **S** reniform to round, with concentric ridges, dark brown to black; **Ecol** in sandy soils, often near the coast; **Distr** S Angola, N Namibia, from the Canary Islands and S Spain along the S coasts of the Mediterranean Sea to Syria, Armenia, Iraq and Iran.

**Note:** The genus name was first presented by Dinter (1935: 27) without a Latin description, it was therefore invalidly published (ICBN 2000: Art. 36.1). Friedrich (1957: 342) established the genus based on an exten-

sive discussion of the discriminating features; his view is followed here; the placement of the taxon as a subgenus in **Aizoon** (Adamson 1959: 44) is not upheld.

As diagnostic character states are seen the basally flat filaments and the hygroscopic fruit opening completely by extensive expanding keels, both features absent in **Aizoon**. In this sense, the genus comprises 5 species.

Distribution of *Aizoanthemum* Dinter ex FriedrichKey to the Species of *Aizoanthemum*

- |  |                        |
|--|------------------------|
| 1. Locules 5 .....   | 2                      |
| – Locules 7–10 .....   | 4                      |
| 2. Leaves with a petiole c. as long as the blade .....                         | <b>A. mossamedense</b> |
| – Leaves narrowing $\pm$ abruptly at the base, sessile and not petiolate ..... | 3                      |
| 3. Perigone 3–4 mm l, fruit 1.5 mm $\varnothing$ .....                         | <b>A. galenioides</b>  |
| – Perigone 7–15 mm l, fruit 5–6 mm $\varnothing$ .....                         | <b>A. hispanicum</b>   |
| 4. Perigone 5–7 mm l, fruits of a population mostly with 7–8 locules .....     | <b>A. dinteri</b>      |
| – Perigone 8–10 mm l, fruits of a population mostly with 10 locules .....      | <b>A. rehmannii</b>    |

*A. bossii* = **A. dinteri**

**A. dinteri** (Schinz) Friedrich 1957: 344  $\equiv$  *Aizoon dinteri* Schinz 1898: 523 T Dinter 55 (Z) = *A. bossii* Dinter ex Friedrich 1957: 344 nomen nudum = *A. sphingis* Dinter ex Friedrich 1957: 344 nomen nudum = *A. stellatum* Dinter ex Friedrich 1957: 344 nomen nudum.

Erect, highly branched, 20–40 cm *h*; L sessile to petiolate near the base of the plant, ovate to obovate, obtuse, finely papillate, 10–60 mm *l*, 7–35 mm *b*; **Fl**  $\pm$  sessile, perigone 5–6 mm *l*, lobes spreading with age, greenish inside, c. 50 stamens, filaments sharply denticulate at their edges, the outer ones sometimes sterile; **Fr** subglobose, 3–3.5 mm  $\varnothing$ , mostly 7–8 locules; **Ecol** in sandy or brackish soils; **Distr** from

Kaokoveld to Grootfontein and Swakopmund, Namibia.

*Note:* The species is similar to *A. rehmannii* in the high number of locules per fruit, it differs in the more erect growth and the smaller flowers and fruits.

**A. galenioides** (Fenzl ex Sonder) Friedrich 1957: 344  $\equiv$  *Aizoon galenioides* Fenzl ex Sonder in Harvey & Sonder 1862: 469 T Drege 7060 (W, lost), NT Dinter 7884 (M).

Erect, highly branched, to 15 cm *h*; L with a short petiole, oblanceolate to obovate, papillate, 7–20 mm *l*, 3–7 mm *b*; Fl sessile, perigone 3–4 mm *l*, lobes erect, cucullate, stamens 25–30, filaments with smooth edges; Fr globose, 1.5 mm  $\varnothing$ , 5 locules; S c. 0.5 mm *b*; Ecol in coastal sands; Distr Omaruru, Swakopmund, Namibia.

*Note:* The species can be recognized best by the tiny, globose, 5-locular fruits.

**A. hispanicum** (L.) H.E.K.Hartmann **comb. nov.** (see **photo**)  $\equiv$  *Aizoon hispanicum* L. Species plantarum 1753: 488 (as basionym)  $\equiv$  *Aizoon hispanicum* L. var. *genuinum* Maire 1962: 279 nomen illeg. **Lectotype** LINN 650.2 (LINN) = *Aizoon hispanicum* L. var. *minus* Maire 1962: 280 nomen invalid. T Joly s.n. (?) = *Aizoon sessiliflorum* Moench 1794: 698 T?

Erect, to 25 cm *h*, consisting of a highly branched terminal cyme and 2–3 basal additional ones, I with  $\pm$  dense, nearly globose papillae; L sessile, basally opposite, alternate in the middle and opposite again in upper parts of the cymes, covered by shining, low, roundish papillae, 5–40 mm *l*, 1–9 mm *b*; Fl in rich cymes,  $\pm$  sessile, perigone with vesicular papillae outside, white inside, the lobes prominently keeled from protruding bundles, 4–9 mm *l*, stamens numerous, in five groups; Fr a five-angled column with 5 prominent distal corners giving it a star-shaped appearance when seen from above, opening completely by long expanding keels,  $\varnothing$  5–6 mm, 5 locules; S black, 0.75–1 mm *l*; Chr  $2n = 32$ ; Ecol in sandy to slightly saline soils in predominantly Mediterranean climates; Distr Algeria; Armenia; Egypt; Iran; Iraq; Israel; Italy; Libya; Morocco; Portugal (Madeira: Porto Santo); Spain, including Gran Canaria and the mainland; Syria; Tunisia.

*Note:* The species is placed here based on literature evidence and some material only. The data collected from floras show a wide distribution range for the species, similar to that of *Aizoon canariense*, but extending further into Asia. Of the two varieties distinguished by Maire (1962: 279–280), one is illegitimate because it is based on the type of the species, the other is invalid because it lacks a Latin diagnosis or description. *Aizoon sessiliflorum* was explicitly named for *Aizoon hispanicum*, but the type is not known.

*A. membrumconnectens* = *A. rehmannii*

**A. mossamedense** (Welwitsch in Oliver) Friedrich 1960: 567  $\equiv$  *Aizoon mossamedense* Welwitsch in Oliver 1871: 584 T Welwitsch 1264 (BM).

Diffusely branched,  $\pm$  erect, with some alternate leaves below the terminal, rich cyme constituting most of the plant, branches to 25 cm *l*, papillate to hairy; L petioles c. as long as the blade, oval to broadly elliptical, obtuse, with lower papillae than I, 17–31 mm *l*, 3–13 mm *b*; Fl sessile, perigone with long papillae outside, bright yellow inside, lobes ovate to lanceolate, stamens numerous, in a ring, filaments laterally finely denticulate; Fr globose, 5 locules; S ridged; Ecol in sand near the coast; Distr Mossamedes, Angola.

*Note:* The species appears to occur in a restricted area only. It can best be distinguished from the other 5-locular species by the rather big, round fruit.

**A. rehmannii** (Schinz) H.E.K.Hartmann **comb. nov.** (see **photo**)  $\equiv$  *M. rehmannii* Schinz Bulletin de l'Herbier Boissier 5, Appendix 3, 1897: 80 (as basionym) **Holotype** Kolbe s.n. (Z, lost?) **Lectotype**, here designated: Rehmann s.n. (Z!) = *A. membrumconnectens* Dinter ex Friedrich 1957: 345  $\equiv$  *A. membrumconnectens* Dinter Kakteenkunde 1935: 27 nomen invalid. T Strey 2496 (M).

Prostrate, the entire plant formed by a rich cyme, I with densely placed, elongate, pointed papillae; L obovate to elliptical, often conduplicate, sessile or with a short petiole, papillate, 10–30 mm *l*, 5–13 mm *b*; Fl sessile, basal tube 6–7 mm *l*, numerous stamens in a ring, filaments laterally finely dentate; Fr subglobose, 10 locules,  $\varnothing$  5–6 mm; S c. 0.7 mm *l*; Ecol in gravelly flats; Distr Rehoboth, Swakopmund, Namibia.

*Note:* The low, prostrate growth characterizes the species best within the genus. In the description, “Miss Kolbe” is given as the collector of the material used as type. The sheet at Z, marked as “Typus” bears a heading “Dr. A. Rehmann – Exsiccata Africae austr. 1875–1880”. It can be speculated that Schinz, when describing the species and naming it after Rehmann, knew that this collection had been given to Rehmann by Kolbe. Since there is no evidence for this speculation, the sheet Rehmann s.n. marked “Typus” (Z) is chosen as the lectotype here, based on three arguments: 1. The material can be clearly identified as being the species described by Schinz under this name, 2. The sheet has been available to Schinz when he described the species first; 3. The epithet refers to Rehmann, from whose collections the “Typus” comes. Friedrich (1970: 13) listed *Aizoon rehmannii* as a possible synonym under *A. membrumconnectens* already, yet did not make the necessary transfer, which is undertaken here.

*A. sphingis* = *A. dinteri*

*A. stellatum* = *A. dinteri*