

Subject – Taxonomy

Topic –Aizoaceae

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Aizoaceae

(Fig-marigold family)

Bentham & Hooker (1862-83)

Class : Dicotyledons

Subclass : Polypetalae

Series : Calyciflorae

Order : Ficoidales

Aizoaceae is one of the most important and widespread succulent plant families in both tropical/subtropical regions and arid zones.

- Aizoaceae includes ice plants, sea figs and living stones (lithops).
- Glistening epidermal bladder cells give the family its common name "ice plants". E. g . *Delosperma cooperi*
- They are called ice plant because they have bladder-like hairs on the leaf surface that reflect and refract light in a manner to make it appear that they sparkle like ice crystals.



**Bladderlike
hairs**

- It is a large family of dicotyledonous flowering plants containing 135 genera and about 1800 species.
- They are commonly known as ice plants or carpet weeds.
- They are often called vygies in South Africa and New Zealand.
- Highly succulent species that resemble stones are sometimes called mesembs.



MESEMBS

- The Aizoaceae consist of annual or perennial herbs, rarely shrubs or trees, rarely spiny.
- The leaves are often “centric,” without a bifacial structure. Some with apical “lens” through which light enters E.g. , *Fenestraria aurantiaca*.
- Opposite or whorled (rarely alternate), simple, undivided, usually exstipulate, succulent, often terete or angled.

Carpobrotus edulis



Aptenia cordifolia



Fenestraria aurantiaca



Carpobrotus edulis



- With generally opposite, succulent leaves.
- Often with C4 or CAM photosynthesis.
- Solitary or cymose flowers.
- Uniseriate perianth present.

- The inflorescence is terminal or axillary, of solitary flowers or cymes.
- The flowers are bisexual (rarely unisexual), actinomorphic, epi perigynous or perigynous.
- The perianth is uniseriate, a hypanthium present.
- The calyx is distinct with 5 [3–8] sepals .
- The corolla is absent, the petaloid structures of some taxa interpreted as petaloid staminodes.

Fenestraria aurantiaca

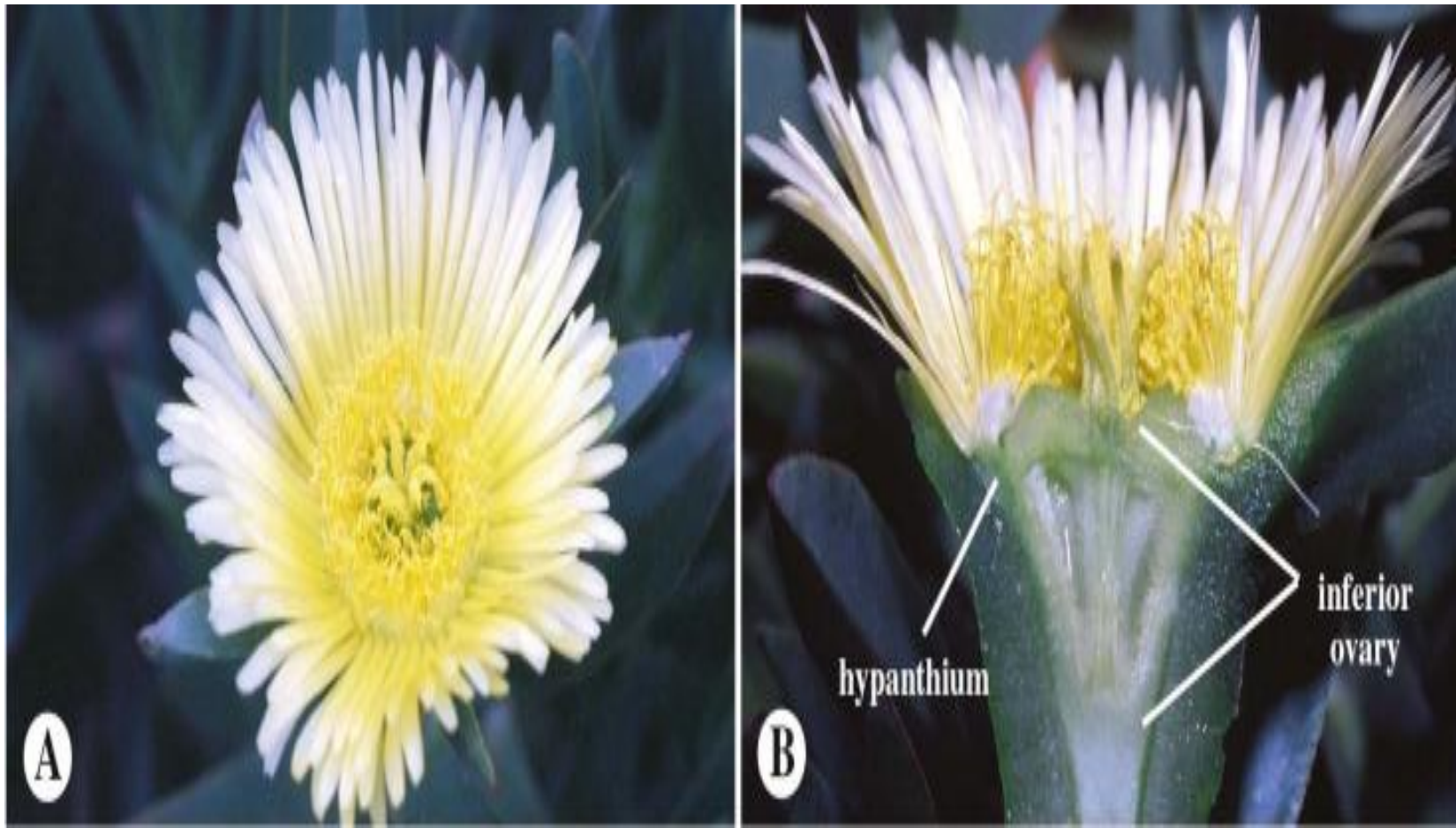


- The stamens are $5-\infty$, apostemonous or basally connate into bundles or monadelphous, with an outer whorl of petaloid staminodes in some taxa.
- The gynoecium is syncarpous, with a superior or inferior ovary, $2-\infty$ carpels, and $2-\infty$ locules.

Carpobrotus edulis



- The styles are generally as many as carpels.
- Placentation is axile, parietal with septa.
- Ovules are campylotropous to anatropous, bitegmic, [1–] ∞ .
- Nectaries are present, inner to the insertion of the androecium .
- The fruit is a loculicidal capsule or berry.
- Betalain pigments are present , anthocyanins absent.
- Photosynthesis is often C4 or CAM.



Carpobrotus edulis. **A.** Flower, top view, showing numerous, petaloid staminodes and numerous fertile stamens. **B.** Flower, longitudinal section. Note inferior ovary and hypanthium

Carpobrotus edulis



Carpobrotus edulis

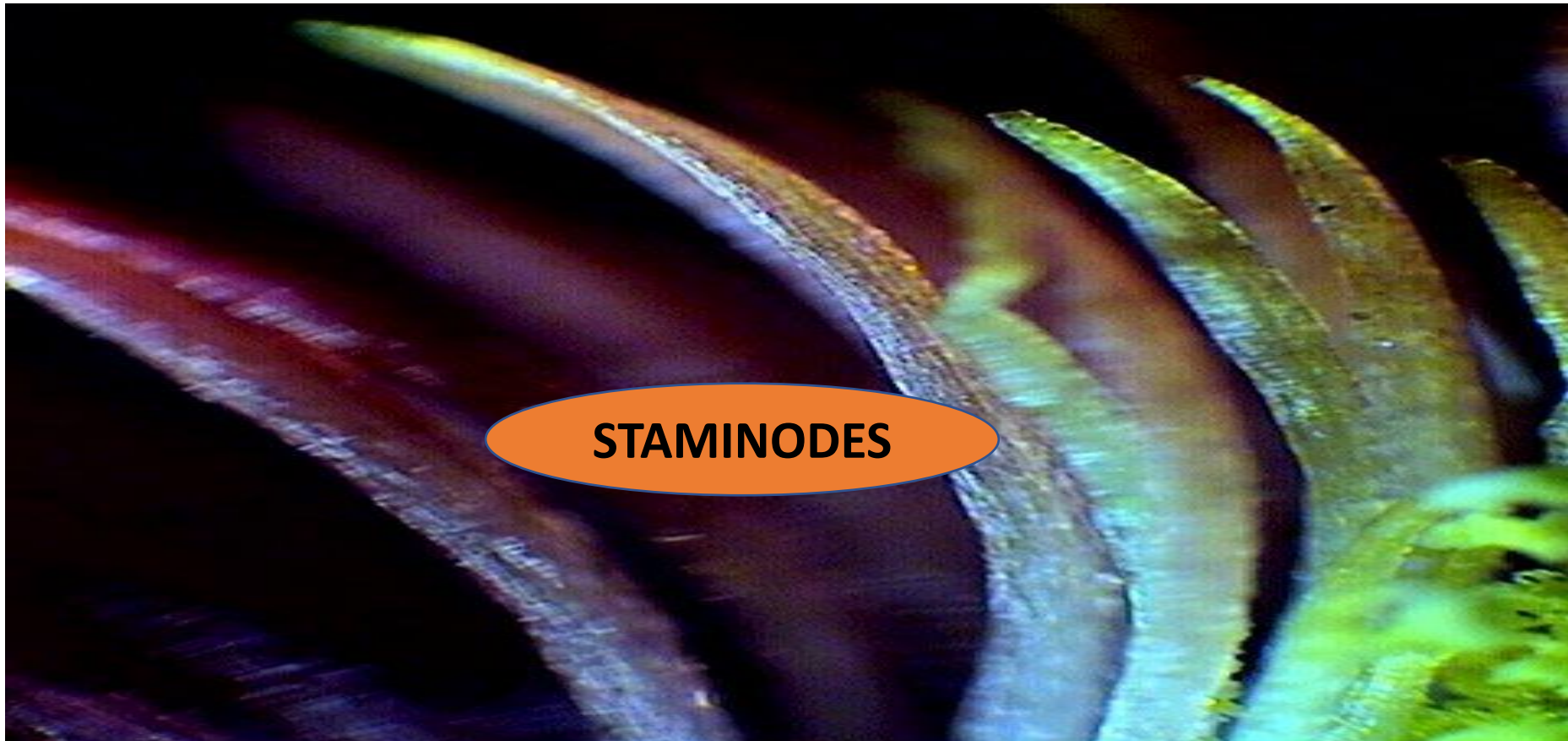


FRUIT L. S.

Aptenia cordifolia



Aptenia cordifolia



Aptenia cordifolia



Trianthema portulacastrum

(Desert Horse Purslane)



Trianthema portulacastrum

- The plant, dried out and reduced to powder, is reportedly used against throat troubles and anti-fungal agent.
- A decoction of the roots is reputedly used as an emmenagogue, and it larger doses it is abortive .
- Recent studies have investigated potential hepatoprotective properties.
- The leaves are diuretic and applied in the treatment of oedema, jaundice and dropsy.

- It is considered an antidote to alcoholic poisoning.
- The fleshy nature of leaves makes them suitable for use as a wound-dressing or poultice.
- In Gabon the powdered herb is taken for venereal discharge.
- The plant has a potential value as a source of organic matter because it contains considerable amounts of nitrogen, potassium and phosphorus.

Aptenia cordifolia

- Leaf pulp and -juice contains tannins.
- Antiseptic, Antibacterial, Anti-fungal.
- Vasoconstrictor effect -reduce fluid loss from wounds and burns.
- Enhance tissue regeneration.
- Apply pulp/juice: eczema, wounds, burns and to stop bleeding.
- Gargle - infections mouth/ throat.

