

GIGASPERMACEAE

(R.E. Magill)

Plants small, scattered and gregarious, glaucous green to light or dark green. **Stems** arising from a long aphyllous rhizome; in section with central strand weak or absent. **Leaves** appressed or erect spreading, concave, broader above, orbicular to broadly elliptical or obovate; apex rounded and abruptly apiculate or awned; margins plane and entire. **Costa** absent or if present, short or long excurrent. **Leaf cells** small, smooth, angular or quadrate to hexagonal; thin walled. **Gemmae** uncommon at leaf apex, lenticular. Autoicous or dioicous with dwarf males. **Perichaetia** terminal, leaves somewhat distinct, larger. **Seta** very short or elongate. **Capsule** immersed or exserted, cleistocarpic and subspherical or stegocarpic, gymnostomous, cupulate to short cylindrical; exothelial cells lax; stomata present at base of urn. **Operculum** plano-convex, apiculate. **Calyptra** very small. **Spores** large, granulate, reddish brown.

DISCUSSION. The Gigaspermaceae contain 4 genera, only the American genus *Lorentziella* not known from Africa. The other three genera are restricted to the dry shrublands of southern Africa; *Oedipodiella* has been reported from Europe and *Gigaspermum* from Australia and New Zealand. *Gigaspermum* and *Chamaebryum* both exhibit short, bulb-shaped gametophytes scattered on relatively open soil. The exposed plants arise from a long creeping rhizome that lies just below the surface or is closely appressed to rock in more exposed area. The plants are most often collected along small, dry water courses or on soil crusts under short shrubs. *Oedipodiella* is found on soil in wooded canyons in savanna habitats.

LITERATURE. Magill, R. E. 1987. Flora of Southern Africa. Part 1. Mosses. Fascicle 2: 299--303.

- 1. Leaves ecostate *Gigaspermum*
- 1. Leaves costate 2
- 2. Costae long excurrent as smooth, hyaline awn; capsules exserted *Chamaebryum*
- 2. Costae cuspidate or short excurrent, green; capsules immersed *Oedipodiella*

Gigaspermum (Fig.)

One species found in southern Africa, *G. repens* (Hook.) Lindb.

Plants small, light green or glaucous, scattered or loosely caespitose. **Stems** erect, 2--5 mm high, from a creeping, aphyllous rhizome; central strand weak. **Leaves** distant, erect-spreading, orbicular, apiculate, 0.5--0.8 mm long; ecostate. **Leaf cells** quadrate to subhexagonal, smooth. Autoicous. **Perichaetia** terminal; leaves differentiated, elliptical and long acuminate, 2.0--2.5 mm long. **Seta** very short, 0.3--0.5 mm long. **Capsule** immersed, gymnostomous, cupulate, 0.8--1.0 mm long; mouth very broad; exothelial cells lax, quadrate to hexagonal. **Calyptra** small, campanulate. **Spores** round to angular, 80--100 μm .

HABITAT. On poor, rocky soils in open shrublands of the desert southwest, but should be expected in grasslands and shrublands of northern Africa.

DISCUSSION. Scattered, sterile plants are difficult to detect, but the larger perichaetial leaves and wide-mouthed capsules with red-brown spores make the plants more obvious. The short and broad, ecostate leaves will also help to identify this taxon.

LITERATURE. Magill, R. E., 1987. - see family ref.

Chamaebryum (Fig.)

One species endemic to southern Africa, *C. pottiioides* Thér. & Dixon

Plants small, light green, caespitose. **Stems** erect, 2--6 mm high from a highly branched, creeping rhizome; central strand absent. **Leaves** crowded above, obovate to orbicular, 0.8--1.2 mm long; apex obtuse, cuspidate to piliferous. **Costa** percurrent in lower leaves, short or long excurrent in upper leaves forming smooth, hyaline awn, to 0.5 mm long. **Leaf cells** angular to quadrate, basal cells short rectangular. **Gemmae** rare, at apex of sterile plants, bulging

lenticular, to 0.2 mm long, with pronounced, hyaline, distal apiculus, cells hexagonal.

Monoicous. **Perichaetia** terminal, leaves somewhat larger. **Seta** erect, 0.6--1.8 mm long.

Capsule exserted, gymnostomous, short cylindrical, 1.0--1.3 mm long, mouth narrow; exothecial cells lax, subhexagonal. Opercula remaining attached to columella when capsule first opens. Spores round, 50--55 μ m.

HABITAT. The genus is endemic to dry, rocky areas of southern Africa.

DISCUSSION. The creeping rhizome, concave and piliferous leaves, and exserted, small mouthed capsule will serve to identify this taxon. The plants frequently have a greyish colouration when dry much like some *Grimmias*, but *Chamaebryum* occupies a different habitat and the size and habit are quite distinct.

LITERATURE. **Magill, R. E. 1987**. - see family ref.

Oedipodiella (Fig. XX)

One species in Africa, *O. australis* (Wager & Dixon) Dixon

Plants small to medium sized, scattered or in loose cushions, dark green. **Stems** erect, 2--5 mm long from branching, aphyllous rhizome; central strand absent or not well defined.

Leaves crowded above, wide spreading, obovate to spatulate or broadly elliptical, 2--4 mm long; apex rounded and abruptly apiculate. **Costae** short excurrent. **Leaf cells** subquadrate to hexagonal, basal cells longer, short rectangular. **Gemmae** at stem apex, lenticular, 0.3--0.6 mm across. cells quadrate to short rectangular. **Dioicous**. **Perichaetia** terminal; leaves spatulate to lingulate, 3.0--3.5 mm long; apex rounded, apiculate; costae ending below apex. **Seta** very short. **Capsules** immersed, cleistocarpic, subglobose, beaked, 1.0--1.5 mm long; exothecial cells lax, quadrate to subhexagonal. **Spores** round, 45--50 μ m.

HABITAT. On soil in wooded areas of otherwise open grasslands.

DISCUSSION. The plants have an appearance of some broad-leaved Pottiaceae, but the frequently produced, lens-shaped gemmae will help to place *Oedipodiella*. The small, immersed, subglobose, cleistocarpic capsules and branching rhizome will also be useful in identifying this genus.

LITERATURE. **Magill, R. E. 1987**. - see family ref.