

A TAXONOMIC MONOGRAPH

OF

LAMPRANTHUS AND ALLIED GENERA

(MESEMBRYANTHEMACEAE)

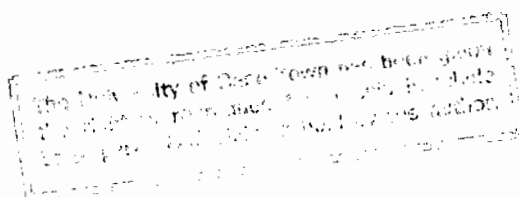
BY

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1 ABSTRACT

For the first time since the genera were described, a taxonomic monograph of Lampranthus and its immediate allies was undertaken. A numerical study of 97 characters (132 character strings) of each of some 270 items was undertaken, using Hall's BOLAIID package of numerical aids. The genus Lampranthus was reduced from about 240 species to 56. The genus Scopelogenia was shown to be monotypic and closely related to Lampranthus. Braunsia was reduced from 5 species to 3. It is shown that the genera Oscularia and Esterhuysenia are inseparable from Lampranthus. Because Oscularia was described before Lampranthus, and because the latter is by far the better-known, it is considered necessary to propose the conservation of Lampranthus over Oscularia. Such a proposal is included as an appendix. A new and more natural delimitation of the subtribe Lampranthinae, including Gibbaeinae and excluding the genera Cerochlamys, Disphyma and Ebracteola, is proposed. The following new combinations are made:-

Lampranthus deltoides (L.) Glen

Lampranthus glaucus (L.) N.E. Br. subsp. aureus

Lampranthus spectabilis subsp. fugitans (L. Bol.) Glen

Lampranthus alpinus (L. Bol.) Glen

2 HISTORY OF THE GENUS LAMPRANTHUS AND ITS ALLIES

2.1 LAMPRANTHUS

It appears that one of the first collectors to record a plant referable to the genus Lampranthus was Paul Hermann, who knew 12 species of the Linnaean genus Mesembryanthemum (Hermann, 1687). He visited the Cape in 1672 (Karsten 1967), in the course of a voyage to Ceylon, and collected many of the showier genera of the Cape flora. Hermann was instrumental in introducing a number of Cape plants into European horticulture through the botanical garden of Leyden University, where he was Professor of Botany from 1680 to his death in 1695.

Breynius (1678) records six species of Mesembryanthemaceae, one of which he notes "I grew it in my garden even in 1668", of another "C. Chivry of the Amsterdam gardens gave it to me, from seed, more than 17 years ago" (i.e. in or before (1661). The three species of which Breynius gives neither plates nor cultural details could be Lampranthus; from the description, one is almost certainly L. reptans. One may deduce from the very early dates quoted by Breynius, who lived in Danzig, that among the plants sent back to the Netherlands from the Cape under Van Riebeeck were most of the common species of the sandveld, including one or two species of Lampranthus. If it were not for the direct evidence for Breynius' visiting Amsterdam quoted above, one would have to assume that these garden rarities diffused eastwards in the Hanseatic ports.

The number of Lampranthus species known in Europe increased slowly, and all nine described by Linnaeus in the Species Plantarum (Linnaeus, 1753) were already in cultivation in England in the early 1730's (Dillenius, 1732) or in Clifford's garden in the Netherlands (Linnaeus, 1737). It is interesting to note that although there are specimens of most of the species of Mesembryanthemaceae described in the Hortus Elthamensis in the Dillenian Herbarium, only three of this family (including the type of Lampranthus tenuifolius (L.) N.E.) are to be found in the Hortus Siccus Cliffortianus.

In the nineteenth century the group was not extensively studied (only Haworth's later papers and Sonder's revision for the Flora Capensis (Sonder, 1863) originate in this period).

The second major phase of expansion in the number of species of the Mesembryanthemaceae in general and Lampranthus in particular occurred in the 1920's and 1930's, when the family was extensively studied by Brown, L. Bolus and Schwantes. It was at this stage that most of the present genera of the family were split off from the Linnaean genus Mesembryanthemum.

At that stage there was some disagreement as to what the type species of Mesembryanthemum L. was, and hence which genus in the family should bear that name. The first person to choose a lectotype for Mesembryanthemum L. was N.E. Brown (1925), who chose Mes. umbellatum L. (now Ruschia umbellata (L.) Schwantes), and called the genus now known as Mesembryanthemum L. emend. L. Bol., Cryophytum N.E. Br., ignoring the earlier, doubtfully legitimate name Gasoul Adans. (see also Ingram, 1970). Two years later, Schwantes (1927) independently typified Mesembryanthemum L. emend. Schwant. with the species Mes. tenuifolium L. (now Lampranthus tenuifolius (L.) N.E. Br.). Twelve years later, L. Bolus showed that neither of the concepts implied by these lectotypes fitted the Linnaean description, and proposed Mes. crystallinum L. (= Cryophytum crystallinum (L.) N.E. Br.) be regarded as the type of Mesembryanthemum L. emend. L. Bol. This last proposal was generally accepted, the only exceptions being a paper by Blake (1969) and a proposal by Ingram (op. cit.) to conserve Cryophytum N.E. Br. over Gasoul Adans. This proposal was later withdrawn (McVaugh, 1971).

Ihlenfeldt and Straka (1971) proposed the conservation of Mesembryanthemum L. emend. L. Bol. over Mesembryanthemum L. emend. N.E. Br. and Mesembryanthemum L. emend. Schwant., and hence the retention of Lampranthus N.E. Br. and Ruschia Schwant. as valid generic names. This proposal was necessary in terms of Article 8 of the International Rules of Botanical Nomenclature (Stafleu et al. 1972). The proposal was carried by a large majority (Nomenclature committee, 1974; 1975).

The various emendations of Mesembryanthemum L. are summarised in Table 1 below, the presently accepted one being in the last column.

TABLE 1

APPLICATIONS OF THE NAME MESEMBRYANTHEMUM L. TO SEGREGATE GENERA

Linnaeus (1753) N.E. Brown (1925) Schwantes (1927) L. Bolus (1939)

Mesembryan- themum	Cryophytum (= Gasoul)	Cryophytum (= Gasoul)	Mesembryanthemum
	Mesembryanthemum	Ruschia	Ruschia
	Lampranthus	Mesembryanthemum	Lampranthus

It was noticed in the course of this study that the three periods in which most specimens of Lampranthus were collected are 1895 - 1900, 1925 - 1935 and 1945 - 1953. The 1895 - 1900 peak is largely due to the efforts of Maj. A.H. Wolley Dod, who collected extensively on the Cape Peninsula in that period. The other two peaks would probably be continuous, but for fuel and travel restrictions imposed during the Second World War. With these exceptions, the rate of collection of specimens of Lampranthinae since 1750 are remarkably similar to the rate of foundation of new herbaria, over the same period, as determined by Shetler (1969).

The genus Lampranthus was described by Brown (1930a) in 1930 to contain those plants which Schwantes had included in Mesembryanthemum L. emend. Schwant. Brown transferred 123 names to his new genus, without citing more than a basionym for any of them (Brown, 1930b).

Nine years later, L. Bolus transferred 80 species to Lampranthus from Mesembryanthemum L. emend. Schwant. (L. Bolus, 1939). Since then, a further 60 species were described in Lampranthus, mostly by L. Bolus. No key to the species nor monograph of the group has been attempted before the present work.

2.2 SCOPELOGENA

Although a name that supposedly referred to this plant was published by Tournefort (1705), no name of any member of the Mesembryanthemaceae appears in either the first or the third edition of his Institutiones (Tournefort, 1700, 1719).

The first reasonably definite indication of the existence of this plant in cultivation in Europe is to be found in the second edition of Boerhaave's Index (Boerhaave, 1720), in which no hint of its provenance was given, other than a note that it was propagated by cuttings and was frost-tender. Cultivated specimens reached England in 1731 (Aiton, 1811) or 1732 (Haworth, 1725). From the absence of this plant from Boerhaave's first Index (Boerhaave, 1710) one may assume that seeds or cuttings were collected on Table Mountain or Lion's Head and sent to the Netherlands between 1710 and 1720.

Between 1753 and 1962, the one described species was ascribed to the genera Mesembryanthemum (Linnaeus, 1753), Lampranthus (Bulus, 1950), Ruschia (Rowley, 1957) and Scopelogenia (Bulus, 1962). In the last paper, Bulus described a second species, which cannot be shown to be different from S. veruculata (L.) L. Bol.

2.3 BRAUNSLIA

The first species of this plant was described by Haworth in his second book on Mesembryanthema (Haworth, 1803). According to Aiton (1811: 247) the species was sent from the Cape to Kew by Masson in 1792, during his second residence at the Cape.

A century after the first description of this species, it was re-described by Bulus (1909, 1915) and Brown (1920). In 1928 Schwantes described the genus Braunsia, the type species of which was a nomen nudum (Schwantes 1928), as a replacement-name for Echinus L. Bol. (Bulus 1927), a later homonym of Echinus Lour. (Loureiro, 1790)

A second genuine species was described in 1954 and a third, ten years later (Bulus 1954, 1964).

2.4 DISPHYMA, CEROCHLAMYS, EBRACTEOLA, GIBBAEUM, ANTEGIBBAEUM AND MUIRIA

The genera Cerochlamys, Disphyma and Ebracteola are considered to belong to Ruschiinae and so are not dealt with further here (see section 4.3.1). The genera Antegibbaeum, Gibbaeum and Muiria, which are considered to belong to Lampranthinae (see section 4.3.2) are not dealt with here as they have already been dealt with in a previous work (Glen 1974b).

3 METHODS AND MATERIALS

Over 3000 herbarium specimens from a number of herbaria were examined for some 70 gross-morphological characters in the usual way. Seed and pollen characters of certain selected taxa were obtained by means of standard techniques (Glen, 1974, 1975). The characters used are listed in table 2.

The data thus obtained were processed using Hall's (1973) BOLAIID system to yield a classification of some 270 initial OTU's.

It was found that data for only about a quarter of these OTU's could be processed at one time, and so the following strategy for obtaining an overall classification was adopted.

Instead of taking, as an initial hypothesis, the invalidity of any previous grouping (by trying to group all items at once), the hypothesis was adopted that some of the pre-existing subdivisions of Lampranthus may have been correct within limits. In other words, groups of about 60 OTU's were chosen, such that all members of a section of the genus (sensu Haworth, 1821, with species described since then assigned to groups as found in the arrangement of specimens in BOL.) were placed in the same group. All described taxa were represented in four groups. These were then classified using BOLAIID and data from OTU's that fitted the following criteria were merged.

1. Linkage between both or all members of the group to be merged to take place at a level higher than a constant 'cut-off' level. This was determined to be the middle of the largest gap in homogeneity values close to the value 0.80, which appears from a number of similar studies to represent the similarity between two species.
2. No member of the group may display certain obvious key characters in a state different to that shown by the majority of the group. (Two-member groups were either compatible or not compatible by this criterion, and coded accordingly). The characters screened included staminodes (present or absent), flower colour (predominantly pink or predominantly yellow but not both; white taken as being either), and overall appearance.

The arrays used in the original BOLAIID system were then expanded in a new copy of the system, to take the ca. 130 OTU's left by this method, and these were then grouped into the final classification using this method.

Descriptions of the accepted species were written using the data gathered as detailed above, and a standard vocabulary.

TABLE 2

CHARACTERS USED IN THE PRESENT STUDY

Character number	Number of strings	Description
1	3	length of seed
2	3	breadth of seed
3	3	length of funicle
5	1	pattern height, central
6	1	pattern height, funicular
7	1	pattern length, central
8	1	pattern length, funicular
9	1	pattern width, central
10	1	pattern width, funicular
11	1	pattern boundary, irregularity central
12	1	pattern boundary, irregularity funicular
13	1	pattern spacing, central
14	1	pattern spacing, funicular
15	1	microbacular height
16	1	microbacular length
17	1	microbacular width
18	1	microbacular spacing
19	1	seed colour maroon scale
20	1	seed colour yellow scale
21	1	seed colour grey scale
22	3	leaf length (of the larger leaf of a pair; where these are of different sizes)
23	3	leaf width (of the larger leaf of a pair; where these are of different sizes)
24	2	flower colour (pink scale)
25	2	flower colour (yellow scale)
26	1	plant diameter
27	1	plant height
28	2	no. of petaloid staminodes
29	2	no. of stamens
30	2	no. of nonpetaloid staminodes

Character number	Number of strings	Description
31	1	no. of sepals
32	1	no. of bracts
33	3	length of petaloid staminodes
34	3	length of stamens
35	3	length of nonpetaloid staminodes
36	1	length of larger sepals
37	1	length of bracts
38	1	max. width of petals
39	1	max. width of larger sepals
40	1	bract width
41	1	peduncle length
42	1	peduncle diameter
43	1	flower diameter
44	1	capsule diameter
45	1	capsule depth
46	1	lesser sepal length
47	1	lesser sepal width
48	1	no. of series of petals
49	3	length of stigmas
50	1	length of internodes
51	1	diameter of internodes
52	1	covering membranes % cover
53	1	valve wing length
54	1	free length of valve wing, %
55	1	covering membrane length
56	1	covering membrane width
57	1	length free between adjacent covering membranes
58	1	width of valve wings
59	1	placental tubercle diameter
60	1	leaf sheath length

Character number	Number of strings	Description
61	1	percentage flowering in January
62	1	percentage flowering in February
63	1	percentage flowering in March
64	1	percentage flowering in April
65	1	percentage flowering in May
66	1	percentage flowering in June
67	1	percentage flowering in July
68	1	percentage flowering in August
69	1	percentage flowering in September
70	1	percentage flowering in October
71	1	percentage flowering in November
72	1	percentage flowering in December
73	1	apiculus length
74	3	leaf depth (of the larger leaf of a pair, where these are of different sizes)
75	3	leaf length (of the smaller leaf of a pair, where these are of different sizes)
76	3	leaf width (of the smaller leaf of a pair, where these are of different sizes)
77	3	leaf depth (of the smaller leaf of a pair, where these are of different sizes)
78	1	leaf keel (distinctness)
79	1	leaf shape (triquetrous to terete)
80	1	leaf tip from side (incurved to recurved)
81	1	leaf tip from above (truncate to acuminate)
82	1	extent of different-coloured "eye" in centre of flower
83	2	eye colour, pink scale
84	2	eye colour, yellow scale
85	1	leaf wax (green to grey)
86	1	height of crest on capsule valve
87	1	flowers inflorescence
88	1	stem colour
89	1	teeth per leaf margin
90	1	locules per fruit
91	1	chromosome no.

4 RESULTS AND DISCUSSION

4.1 GENERAL MORPHOLOGY

4.1.1 HABIT

Lampranthinae sensu stricto show a range of habit typical of fruticose Mesembryanthemaceae, namely from relatively large, succulent-leaved shrubs, through smaller shrublets and mat-formers to a few species which form cushions, small mats or dwarf shrublets. If Gibbaeinae sensu stricto are included (see section 4.3.1) then dwarf succulent forms are also included.

In shrubs, shrublets and mat-formers, the opposite leaves are spaced regularly along the stem, and there are several functioning pairs of leaves on any one stem at any given time. In some of the more specialised small-mat and cushion-formers, on the other hand, only one or a few functioning leaf pairs may be present on each branch.

There is no simple way of determining the age of a Lampranthus plant, as there is in, for example, Gibbaeum. It does not seem likely that Lampranthus is as long-lived as the highly-succulent members of the family. It is standard practice amongst gardeners in both Europe and South Africa to replace plants of Lampranthus with cuttings every three years. (In Munich Botanical Garden, this is done annually (Friedrich, pers. comm.)). If this is not done, the plants become untidy. Virtually all species of Lampranthus except the wiry-stemmed members of section Scabridi will respond very readily to this treatment.

Habit, per se, is a character of variable taxonomic value in Lampranthus. In section Adunci, it is useful, and it will be seen (sections 5.4, 6.6) that the primary division of the key to the species of this section is on a habit character. On the other hand, almost all habit forms known within Lampranthus are found within the single species L. glaucus. Habit-related characters, such as stem colour and wiry or woody stems, are of somewhat more use in naming specimens of Lampranthus at species level.

4.1.2 LEAVES

The leaves of Lampranthinae s. str. vary within the range from terete to triquetrous, However, the boundaries of the shape-groups terete,

semiterete and triquetrous are often obscure. For example, it is fairly frequently found that an otherwise semiterete leaf has an obscurely triquetrous apex.

Two species, L. deltoides and L. copiosus, have leaves with toothed margins. In many cases the overall shape of the leaves of the former could best be described as semiclavate or semi- (three-dimensional by rotation) spatulate. This overall shape is very rare in Mesembryanthemaceae, the only other genus with approximately similarly shaped leaves which springs to mind being Jensenobotrya, which is otherwise unrelated to Lampranthus. Toothed leaves are also rare in Mesembryanthemaceae, occurring only in these two species, Carruanthus (Ruschiinae) and Faucariinae.

A third rare leaf-character in Mesembryanthemaceae is hairy leaves, which are known in Lampranthus maximiliani, Braunsia geminata and about half the species of Gibbaeum. (plate 1). In this case, there are enough significant characters in common apart from this one, to indicate that this similarity is due to more than just coincidence or parallel evolution. (see section 4.3.1). Warty (e.g. Faucaria) and papillate leaves (e.g. Drosanthemum) do not occur in this group.

The keys presented in section 5 rely heavily on macroscopic leaf characters, although there is more intraspecific variation than one could wish for in these characters. This is done because the leaves offer one of the very few suites of characters which is present regardless of state or time of collection of the specimen to be named.

4.1.3 THE INFLORESCENCE

Flowers in this group are always terminal, occurring as solitary flowers or in threes, or more rarely in many-flowered cymose inflorescences. Solitary flowers are the most common condition, followed by flowers in threes. Many-flowered inflorescences occur only in one section of Lampranthus (Lunati) and are not universal even in that group.

Almost all the species dealt with here have a pair of bracts per flower, usually located halfway up the pedicel. These may be similar in all respects to the foliage leaves, but more often they are slightly

smaller to about half the size of the foliage leaves. In a few species the bracts are at the base of the pedicels, and in even fewer they are entirely absent.

The nature and ontogeny of the "calyx" of Mesembryanthemaceae has been described and commented on before (Ihlenfeldt 1960; Ihlenfeldt & Jörgensen 1973; Glen 1974b), and those remarks will not be repeated here. In Lampranthinae sensu stricto the number of sepals is five, except for a few abnormal individual plants. These are rarely all in a single whorl, or more commonly in two whorls, two in the outer and three in the inner whorl. The two outer sepals are slightly to much larger than the inner ones, and may be deltoid to leaflike with an expanded base. In L. productus, one outer sepal is longer than the other, but in all other species they are both the same size. The inner sepals are smaller than the outer ones, and usually have membranous margins, changing the shape from deltoid to oblong-obtuse. The membranous margins may or may not be continuous; where they are, they usually pass below the apex of the sepal, causing this to be reflexed and giving the sepal a horned appearance. The existence of an odd number of inner sepals, arranged one between two outer sepals on one side and two between two outer sepals on the other, introduces an easily-overlooked asymmetry into an otherwise actinomorphic flower.

All three androecial types described by Ihlenfeldt (1960) in his study of the ontogeny and anatomy of the flowers of Mesembryanthemaceae are known in Lampranthus. Scopelogena has a class III androecium and the androecia of Braunsia belong to classes I and II.

In Lampranthus, intermediates between androecia belonging strictly to class I and those belonging to class II occur occasionally. Some species have some flowers with class II androecia and others with class III but this is relatively rare. No species exhibits the complete range from class I to class III.

The colour of the 'petals' (petaloid staminodes, but universally referred to as petals for convenience, cf. Glen 1974b : 33) may be any colour produced by any mixture of betaxanthins and betacyanins, that is, any colour except blue. Photographs of 'bluish'-flowered specimens of Lampranthus are possible, and are usually caused by

photographing pink-flowered specimens in open shade. The reason for the bluish tint in the picture accompanying the protologue of 'Mesembryanthemum brownii' (Hooker, 1888) (now accepted as an unusual form of L. scaber (L.) N.E. Br.) is not known. The occurrence of betaxanthins and betacyanins together in the same flower is rather rare but by no means unknown. In some species, e.g. L. glaucus or L. coccineus, the pigments occur together in the same part of the petal, giving scarlet, copper and golden colours. In others, such as L. bicolor or some forms of L. scaber, the pigments are separated, so that (usually) the abaxial and adaxial surfaces of the petals are of different colours.

White and 'mixed-pigment' flowers are rarest, followed by yellow, while pink to magenta petals are by far the commonest, being found in about three quarters of the species. About one species in five has petals in which the bases are of a different colour to the apices. In these, the base is paler or rarely deeper in colour than the apex, giving the appearance of a central white or paler 'eye' when the flower is seen as a whole. The presence of this colour character may be variable within a species. Although the colour of a petal may vary along its length, it does not do so across its width. The result of this is that petals with white or pale central stripes, which are common in Ruschiinae, are not known in Lampranthinae.

There is considerable intraspecific variability in numbers of all organs of the androecium (petals, staminodes and stamens) but this does not completely mask the interspecific variation in these characters. For this reason, these numbers are considered useful in group forming but not in key forming.

In Lampranthinae, the staminodes and stamens are approximately vertical, forming a truncated cone in the centre of the flower. In Erepsia, this is not necessarily so, and this gives rise to a key difference between Lampranthus and Erepsia. In the former, some stamens are always visible at the top of the staminal cone, while in the latter the stamens are hidden under the staminodes. In Lampranthus, the stigmas are sometimes visible in the middle of the stamens (particularly in old flowers), but in Erepsia they are always hidden under the stamens.

The pollen of this group was not investigated in detail, but it appears to be just as uniform as in Gibbaeinae s. str., with minor variations in surface sculpture (plate 2). It is highly unlikely that these would alter the grouping of taxa within Lampranthus if they were taken into account (cf. Glen 1974b : 36 - 38).

The ovary in Lampranthinae, as in all members of Ruschioideae, is inferior. The typical Lampranthoid ovary is five-locular, with five separate stigmas. Aberrant individuals with other numbers of locules are very rare indeed. The roof of the ovary is slightly convex in Lampranthinae (concave in Erepsia), and the receptacle does not extend upwards beyond the rim of the ovary as it does in Erepsia. The nectary is raised and annular (a lophomorphic holonecary). All species show parietal placentation at anthesis.

The ripe capsule in Lampranthinae is obconical to campanulate or turbinate, mostly but by no means exclusively wider than deep. Covering membranes are present throughout, mostly well-developed but rudimentary in Braunsia and small in a few species of Lampranthus. In most cases, the covering membranes cover more than two thirds of the surface of each locule. Placental tubercles are uniformly absent (a defining character of the subtribe, see section 4.3.1 below), but valve wings are present except in Scopelogenia (another defining character of the subtribe), although in certain species of Lampranthus they may be rudimentary.

Capsules of Lampranthinae seem to need more moisture to open them than do those of Gibbaeum. Those of all members of Lampranthinae except Scopelogenia open and close repeatedly with repeated wetting and drying; capsules of this last-named genus do not close completely after the first opening. Seeds are ejected as described by Garside & Lockyer (1930), Volk (1960) and Ihlenfeldt (1971).

4.1.4 SEEDS

It was found that seed characters are of the greatest value in defining sections in Lampranthus, as well as in defining the difference between this genus and Braunsia.

Except in Braunsia geminata, where the seeds are tetrahedral, the

overall shape of the seeds of Lampranthinae is triangular-ovoid with a distinct conical funicle. The testae of the seeds are baculate or echinate, and it is found that this level of pattern, combined with the colour of the testae of ripe seeds, is essentially constant for each section of Lampranthus. Intraspecific variation overlaps interspecific variation to some extent, and seed colour deepens with maturity. Although the ranges of individual characters within one species may overlap apparent sectional boundaries, if the whole suite of characters is taken into account, the sections are quite distinct.

It may be observed that seed characters provide an important piece of evidence for the placing of the boundary between Lampranthinae and Drosanthemum. D. otzenianum (Dtr.) Friedr. has been considered to be a species of Lampranthus (Friedrich, 1960), and so it was necessary to examine it in detail. On the basis of all characters except seeds, it was found to occupy such an isolated position in the group that its placing in the genus Lampranthus was doubtful. Of all the seeds examined, only those of this species and Ruschia uniflora were completely without surface pattern. It should be noted that seeds of a number of undoubted Ruschiinae were also examined, and had baculae exhibiting a range of patterns not found to any great extent in Lampranthinae, and none of them were without pattern. Close examination of the macroscopic characters of D. otzenianum and R. uniflora (mealy to sub-papillate leaves and mealy stems) indicated that they are both probably best considered as rather isolated, unspecialised species of Drosanthemum.

The seeds of Braunsia, particularly those of B. geminata, approach those of Antegibbaeum fissoides closely in that they are echinate. This character is visible to the naked eye if the viewer can resolve points 0,3 mm apart unaided. It is quite distinctive under a low-power hand-lens. The only other genus that appears to have echinate seeds is Astridia, a member of Ruschiinae.

Microbacular characters are common in Lampranthinae, but are constant in only a few species, for example Lampranthus maximiliani and species of Braunsia. In many species, it is found that not only are microbaculae present on some seeds and not on others from the same species, but microbaculae may be present on one part of the

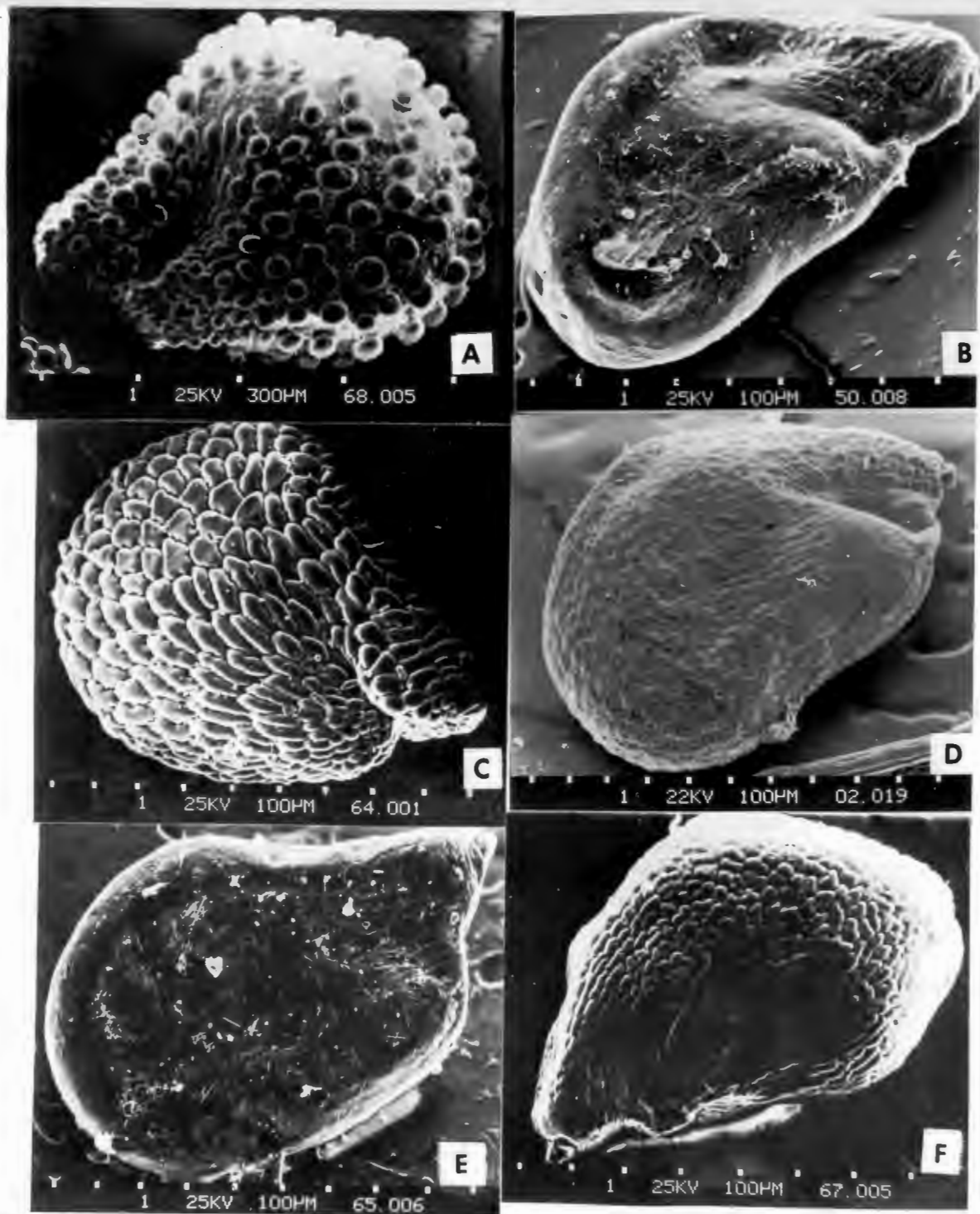


Plate 1. Seeds of various species of Mesembryanthemaceae. The pips below the photographs are 100 or 300 μ apart, as indicated.

A. *Acrodon bellidiflorus*

B. *Drosanthemum otzenianum*

C. *Ruschia cymbifolia*

D. *Disphyma dunsdonii*

E. *Ruschia uniflora*

F. *Hereroa bergerana*

seed and not on another, for example, many seeds were seen with microbaculae between baculae but not on them. Two main kinds of microbacular pattern were distinguished. In the first, the microbaculae were much longer than wide or deep, and may be upright or with the long axis on the testa. The other form, called micropunctilli in the descriptions (section 6), were much smaller and hemispherical. Both patterns are not uncommonly found on the same seed.

The seeds of Lampranthinae, Drosanthemum otzenianum (Dtr.) Friedr. and a few other taxa for comparison are shown in plates 1 - 6.

4.2 INTERPRETATION OF THE NUMERICAL DATA

The generalities of interpreting the results of numerical studies have already been dealt with elsewhere (Glen, 1974b) and will not be repeated here.

It was found in the present study that clearer groups were formed with 50% space conservation than with 100% conservation. This is equivalent to assuming that the sample of specimens examined is not vanishingly small compared to the total population available for examination. This assumption, although not strictly true in terms of individual plants, can be justified by noting that the items selected for study were chosen to include the widest possible range of variation.

When seed characters were included and shaped (Hall, 1969), there were 125 OTU's and 97 features expressed in 132 strings, that is, including 21 extra-value properties, seven of which were coded as maximum and minimum and 14 as minimum - mean - and - maximum. A large number of computer runs were performed on this complete matrix, with different weighting schemes (see appendix for details of those used in deciding on the final classification). The exact details of the weighting schemes were dictated by the following considerations:-

- 1 Obviously, homologous characters were de-weighted so as to appear to be one or a few whole characters, so as not to overstate a particular phenomenon. This yielded a basic scheme in which 26 characters were de-weighted.
- 2 Some characters which had been seen during encoding to be highly

variable within taxa, were de-weighted by varying amounts. Up to 26 further characters were de-weighted for this reason. These characters have been noted in detail in section 4.1 above, and include such characters as the microbacular ornamentation of the seed surfaces, the numbers of parts of the androecium and the overall size of the plants. It should be noted that all of these characters, although listed here and in section 4.1 as single features, were in fact scored as suites of two or more unit characters. Characters treated as one in section 4.1 were scored as a whole suite in the data matrix.

- 3 The taxonomy of two small groups, one of high mean peculiarity and the other of low mean peculiarity, was examined by traditional methods as a check on the numerical procedures.

Contrary to expectations, it was found that different results were obtained with different weighting schemes. In case of conflict, the grouping suggested by a majority of these runs was usually adopted. Any other deviations are discussed in section 4.3 below, or under the relevant taxa. A prime example of this will be found in the delimitation of species in Lampranthus section Scabridi. Each weighting scheme produced an unique indication of which items could be considered conspecific, and some weighting schemes even differed as to which items belonged to this section and which to section Tenuifolii. The final delimitation of species was made with the aid of five BOLAID runs and visual examination of type material. A further example is the placing of L. maximiliani, which is discussed in detail below.

4.3 CIRCUMSCRIPTION OF GROUPS

4.3.1 THE SUBTRIBE LAMPRANTHINAE

In a stepwise study of a large family such as Mesembryanthemaceae, it is hardly possible to achieve certainty in the classification between family and genus levels before the genera have all been circumscribed satisfactorily. On the other hand, it is necessary to make a provisional supra-generic classification at the start of such a revision in order to be able to plan one's research sensibly. In the Mesembryanthemaceae, one has the supra-generic classification of Ihlenfeldt, Schwantes & Straka (Schwantes, 1947; Ihlenfeldt, Schwantes & Straka 1962, 1971), which can be used as a starting

hypothesis, subject to later modification.

According to this scheme, the nearest large genera to Lampranthus are Ruschia, the capsules of which lack valve-wings and have placental tubercles, and Erepsia, which differs from Lampranthus in the disposition of the stamens relative to the rest of the flower. Neither of these genera have been the subject of critical taxonomic study since they were first described. Both genera were assumed to represent well-defined subtribes not necessarily closely related to Lampranthus, in order to aid the definition of the present project.

Some species of Ruschia have been attributed both to that genus and to Lampranthus, and thus provide an opportunity of testing the above hypothesis and the alternative, namely that the subtribes Lampranthinae and Ruschiinae are no more than taxa of convenience.

One may separate Lampranthus and Ruschia as genera of convenience on two capsular characters, namely that the capsules of Lampranthus have valve wings and lack placental tubercles, while those of Ruschia have placental tubercles and lack valve wings. Of these two characters, the placental tubercles are to be followed in case of conflict, as it can be shown that valve wings are the most susceptible organs in the capsule to weathering. Delimiting the genera in this way, one finds a number of other accessory characters help to separate them, as indicated in Table 3.

Of the two taxa that must be referred to Ruschia if this delimitation is followed, and which were studied intensively (75 and 89 in the dendrogram fig. 1), one (89) appears to fit fairly well into a section of Lampranthus, while the other is isolated and highly peculiar in Lampranthus, despite having several apparently close relatives in Ruschia. Minor genera which would be referred to Ruschiinae (items 82 - 86 in the dendrogram) are placed between Lampranthus and minor genera of the Lampranthinae (79 - 82, 88) when seed characters are taken into account, but when they are excluded, these minor genera become the most peculiar in the group. This would seem to indicate that although a thorough examination of both Ruschiinae and Lampranthinae was far beyond the scope of the present study, they should be kept apart as subtribes, certainly

of convenience, and possibly of phylogenetic significance as well.

If Ruschiinae and Lampranthinae are kept apart on the presence or absence of placental tubercles and valve-wings ('Lampranthoid' or 'Ruschioid' capsules) as the main character, then the genera Disphyma, Ebracteola and Cerochlamys must be transferred from Lampranthinae to Ruschiinae.

TABLE 3

MAIN DIFFERENCES BETWEEN LAMPRANTHUS AND RUSCHIA

LAMPRANTHUS	RUSCHIA
Placental tubercles absent Valve-wings present 'Petals' solid-coloured	Placental tubercles present Valve-wings absent 'Petals' usually with a white or paler-coloured central stripe
Flowers solitary or in threes (except in section <u>Lunati</u>)	Flowers usually in paniculoid cymose inflorescences, but there are many exceptions to this
Many leaf and habit forms of <u>Lampranthus</u> (e.g. sections <u>Lunati</u> and <u>Scabridi</u>) have no counterpart in <u>Ruschia</u> .	Many leaf and habit forms of <u>Ruschia</u> (e.g. sections <u>Tumidula</u> , <u>Uncinata</u> and <u>Vaginata</u>) have no counterpart in <u>Lampranthus</u> .

Cerochlamys is the most obviously out-of-place member of the group if seed characters are ignored. The fact that seed characters hinder rather than help classification at the subtribal level has been commented on before. (Glen, 1974b).

Ebracteola, seen from the dendrogram of fig. 1, items 85 and 86, to be a distinct genus, approaches certain dwarf-succulent species of Ruschia (section Ruschiellae sensu Jacobsen 1974) far more closely than any member of Lampranthinae, at least to visual and intuitive inspection. In fact, both species have been put into the genus Ruschia on occasions.

The genus Disphyma (items 83 and 84) is a more ambiguous case. Although the reasoning by which it was placed in Lampranthinae in the first place is obscure, it does not seem as badly out of place as the other two genera mentioned above. Disphyma approaches no genus of Ruschiinae very closely, except possibly some species of Ruschia itself; however it seems at least as remote from any typical member of Lampranthinae except possibly L. reptans or L. vanzijliae. On balance, it seems logical to opt for consistency and transfer it to Ruschiinae on the basis of the double placental tubercle. This could be justified on phylogenetic ground as follows.

The presence or absence of placental tubercles is observed to be a very stable character. Therefore a taxon with two tubercles per locule is more likely to be derived from one with one tubercle than from one with no tubercles. All one-tubercled taxa that could possibly give rise to Disphyma belong to Ruschiinae, therefore Disphyma must also belong to Ruschiinae.

Having divested Lampranthinae of genera which do not appear to belong here, one must ask whether there are any groups at present in other subtribes, which ought to be moved to Lampranthinae.

The outstanding group with "Lampranthoid" capsules is Gibbaeinae. The present author has made the suggestion (Glen 1974b) that this subtribe could be derived from a Braunsia-like ancestor. The difference in "base" number of locules per capsule, 5 in Lampran- thus and Braunsia, 6 to 8 in Gibbaeum and allied genera, is not seen as a major obstacle to this hypothesis, as this number is known to

vary in highly succulent Mesembryanthemaceae (Fearn, 1974; Cole, pers. comm.). If, indeed, Gibbaeum is a member of Lampranthinae with a modified number of locules per capsule, one might reasonably expect this number to be less stable in this genus and its derivatives than in Lampranthus. This is exactly what one finds; reports of aberrant capsules in Gibbaeum and Muiria are fairly frequent, but these are almost non-existent in Lampranthus.

In addition to an argument similar to that used to shift Disphyma to Ruschiinae, in order to attach Gibbaeinae to Lampranthinae, one could use the following argument.

Having started, at the less specialised end of the subtribes Lampranthinae and Ruschiinae, to separate them with an argument based on taxa of apparent convenience, it now appears as one moves from relatively unspecialised taxa to relatively specialised ones, that one is tracing out two parallel lines of development. In Ruschiinae, this line starts with unspecialised, shrubby members of the genus Ruschia and ends in small, highly succulent, highly specialised members of genera such as Acrodon, Bergeranthus, Bijlia, Carruanthus, Machairophyllum and Rhombophyllum. In Lampranthinae sensu stricto one can trace the less specialised end of a parallel line, but it stops short with Braunsia and similar species of Lampranthus, at about the level of Hereroa in Ruschiinae. The least specialised member of Gibbaeinae, Antegibbaeum, may also reasonably be compared with Hereroa. There appears to be good reason for the conclusion that Braunsia and Antegibbaeum are at least as closely related to each other as they are to anything else. Therefore, it is logical to place both Lampranthinae sensu stricto and Gibbaeinae sensu stricto in the same subtribe, for which the name Lampranthinae is adopted, because the subtribe is then named after its largest genus. As both names, Lampranthinae and Gibbaeinae, were proposed in the same paper, the choice of name is free. The resulting "fusion group" can then be regarded as a possible evolutionary line rather than a "horizontal" taxon.

For a discussion of the position of the genus Scopelogena, which lacks both valve wings and placental tubercles, and whose capsules are unique in the subtribe in that they do not close completely

once opened, see section 4.3.2 below. This genus was placed by Ihlenfeldt, Schwantes and Straka (Schwantes 1947); Ihlenfeldt, Schwantes and Straka 1971) among the genera incertae sedis but raised by Jacobsen (1974) to the rank of a subtribe. This new subtribe was, however, not validly published, as there is no Latin diagnosis of it.

The modified delimitation of Lampranthinae is as follows.

Lampranthinae Schw. emend. Glen (subtribus Mesembryanthemacearum)

Shrubs, mat-formers and dwarf succulents; fruits with 5 - 8 locular capsules except in isolated individuals, these having up to 10 locules, valve wings and covering membranes present (wings absent in Scopelogena), placental tubercles absent; in Braunsia and Muiria the covering membranes are much reduced or almost absent; leaves glabrous or hairy but not papillate or warty, margins not toothed except in two species of Lampranthus.

Type genus: Lampranthus N.E. Br.

Other genera: Antegibbaeum Schwantes

Braunsia Schwantes

Didymaotus N.E. Br.

Gibbaeum (Haw.) N.E. Br.

Muiria N.E. Br.

Scopelogena L. Bol.

4.3.2 THE GENERA LAMPRANTHUS, BRAUNSLIA AND SCOPELOGENA

If seed characters are not taken into account, the three species of Braunsia can be fitted into Lampranthus section Lunati without much difficulty. In this case, L. maximiliani appears deceptively like a subspecies of B. geminata (cf. note to the latter species, section 6.3). However, the genus Braunsia appears as a distinctive, well-defined group (fig. 1, items 79 - 81). Under these circumstances, L. maximiliani (item 37) links firmly to Lampranthus section Lunati. Dupont (1973) argued that L. maximiliani should become a species of Braunsia on account of the fact that the microbacular pattern of seeds of this species resembles that of seeds of B. geminata closely. There are, however, two possible arguments

against this point of view.

Firstly, in many species of Lampranthus, microbacular detail is very variable (cf. plate 5; and section 4.1.4). Usually this variability is of the form microbacular detail absent on the baculae but present between them, but whole seeds with or without microbacular pattern are often found in the same capsule. This seems to be a good a priori reason for discounting any argument based solely on this character, which Mme. Dupont's is not, and weakening any argument which includes micro-pattern, as a major constituent.

The second argument is that in over a dozen BOLAID runs using a wide variety of constraints on the data (see section 4.2), the link between L. maximiliani and the rest of section Lunati was one of the least changeable, comparable only to some of the closest intra-specific groupings in section Scabridi (though at a lower level of homogeneity, of course). At no point was there any tendency for L. maximiliani to join Braunsia at all. For these reasons, the delimitation of Lampranthus and Braunsia in section 6 was adopted.

The position of Scopelogenia (item 88) in the group studied was found to depend on (i) whether or not seed characters were taken into account and ii) the weighting scheme employed, when seed characters were used. When seed characters were ignored, and under certain circumstances when they were taken into account, Scopelogenia was seen to occupy a rather isolated position within Lampranthus section Scabridi. However, when the seed characters were included and the weighting scheme manipulated, the genus took up a more or less isolated position, indicating that it should be regarded as a separate genus. The genus was separated from Lampranthus (Bolus 1962) on the basis of the absence of valve wings and the fact that the capsules do not close completely after the first opening. For these reasons, Scopelogenia is retained as a separate genus.

When Oscularia is compared with members of Lampranthus section Lunati, it is found that a complete series of intermediates connects this taxon with L. copiosus and hence with the rest of the section. On the basis of overall similarity, Oscularia is seen to link to section Lunati regardless of whether seed characters are included or ignored,

except in a few cases where extreme weighting schemes were used. There can be no hesitation in including Oscularia in Lampranthus section Lunati.

The plant described as Esterhuysenia (Bolus 1967) was seen to link to Lampranthus section Scabridi, regardless of weighting scheme or characters included, although its position in that section was variable. Similarly, an almost complete series of intermediates between it, L. mariae and L. scaber can be demonstrated. The key difference between the two genera was that Esterhuysenia lacks valve wings, but it has been indicated above (section 4.1.3) that this character can be altered by the effect of the environment on capsules as they age. It can also be shown that wingless capsules can be found in the two species of Lampranthus named above, although it is not known whether the cause of this is environmental or genetic.

5 KEYS

5.1 KEY TO THE GENERA

1. Seeds echinate; leaves with horny margins and keels; flowers solitary, pink or white. Braunsia
- 1'. Seeds not echinate; leaves usually without horny margins and keels (except L. maximiliani); flowers white, pink or purple, yellow or any intermediate colour
2. Capsules closing completely after having been opened; leaves triquetrous to semiterete or if terete then only the apices recurved and the leaves typically less than 3 mm in diameter; flowers usually solitary or in threes, pink, white, yellow or any intermediate colour. Lampranthus
- 2'. Capsules not closing completely after having been opened; leaves terete, recurved almost from the base, typically more than 4 mm in diameter; flowers many in cymose inflorescences, yellow. Scopelogena

5.2 KEY TO THE SPECIES OF BRAUNSLIA

1. Mean length of leaves greater than 30 mm; plants from Bredasdorp division; flowers white. B. vanrensburgii
- 1'. Mean length of leaves 15 mm or less; plants from the Ceres Karoo and Little Karoo; flowers pink to magenta
2. Leaves of a pair equal in size, usually hairy; plant not mat-forming; flowers usually ca. 16 mm in diameter. B. geminata
- 2'. Leaves of a pair unequal in size, never hairy; plant mat-forming; flowers usually ca. 24 mm in diameter. B. stayneri

5.3 KEY TO THE SECTIONS OF LAMPRANTHUS

1. Leaf apices recurved, or if leaves straight to falcate, sometimes toothed, then not more than 4 times as long as deep
2. Leaf apices recurved; flowers 1 - 3 in an inflorescence; leaves terete to semiterete; small shrublets or mat-formers Adunci
- 2'. Leaves straight to falcate, triquetrous, flowers usually many to an inflorescence, if solitary then leaf margins toothed; large spreading shrubs Lunati
- 1'. Leaves straight, not less than 6 times as long as deep
3. Large shrubs (except some forms of L. aureus) leaves straight to falcate, mean length usually over 25 mm; 6 - 10 times as long as deep Lampranthus
- 3'. Smaller shrublets or mat-formers; leaves straight or rarely falcate, triquetrous to semiterete, if mean length over 20 mm then over 12 times as long as deep, otherwise 6 - 10 times as long as deep
4. Leaves over 12 times as long as deep, or if less then flowers yellow; flowers with many parts Tenuifolii
- 4'. Leaves 6 - 10 times as long as deep, mean length less than 15 mm; flowers white to pink, with few parts Scabridi

5.4 KEY TO THE SPECIES OF LAMPRANTHUS SECTION ADUNCI

1. Plants erect (succulent shrublets) L. spiniformis
- 1'. Plants prostrate, mat-forming
2. Stems not rooting at the nodes; leaf apices

strongly reflexed (through 180° or more);
flowers with a white central 'eye'

L. filicaulis

2'. Stems not rooting at the nodes; leaf apices
not strongly reflexed (through 90° or less);
flowers without a white central 'eye'

L. wordsworthiae

5.5 KEY TO THE SPECIES OF LAMPRANTHUS SECTION LAMPRANTHUS

1. Staminodes present

2. One outer sepal much larger than the other

L. productus

2'. Outer sepals equal in size

3. Bracts up to 15 mm long

4. Leaves triquetrous

L. stayneri

4'. Leaves semiterete

5. Small shrublets ca. 20 cm high;
leaves ca. 12 mm long; apices *acute*
plants from the Eastern Cape
Province

L. mutans

5'. Larger shrubs to ca. 70 cm. high;
leaves ca. 22 mm long; apices sub-
~~ob~~obtuse, plants from Namaqualand and
South-West Africa

L. hoerleinianus

3'. Bracts 22 mm or more long

6. Capsule valves with distinct, though
sometimes small, marginal ridges

7. Leaves triquetrous, plants from
the Cape West Coast and Ceres Karoo

L. godmaniae

7'. Leaves semiterete; plants from

Worcester to the Eastern Cape Province

- 8. Youngest stems square, covering membrane covering about a third of the area of each locule; leaves ca. 21 mm long L. dependens
- 8'. Youngest stems round, covering membrane covering about three quarters of the area of each locule; leaves ca. 26 mm long L. haworthii
- 6'. Capsule valves without ridges
- 9. Low, spreading shrublets; leaves ca. 34 mm long, sheathing the stem for ca. 2 mm; pedicels ca. 46 mm long L. spectabilis
subsp. spectabilis
- 9'. Erect shrubs; leaves ca. 20 mm long, sheathing the stems for ca. 1mm; pedicels ca. 35 mm long L. stipulaceus
- 1'. Stamnodes absent
- 10. Capsule valves with marginal ridges
- 11. Flowers yellow, leaves triquetrous, plants erect L. glaucus
subsp. glaucus
- 11'. Flowers pink, leaves semiterete to triquetrous, plants erect to spreading
- 12. Leaves semiterete, plants erect L. turbinatus
- 12'. Leaves triquetrous
- 13. Small spreading shrublets; pedicels ca. 39 mm long;

leaves green L. multiradiatus

13'. Large spreading shrubs;
pedicels ca. 22 mm long;
leaves grey L. falciformis

10'. Capsule valves without ridges

14. Pedicels 38 mm or longer

15. Bracts 27 mm long or longer

16. Leaves ca. 25 mm long; plants
from the Western Cape Province L. amoenus

16'. Leaves ca. 34 mm long; plants
from the Eastern Cape Province L. spectabilis
subsp. spectabilis

15'. Bracts up to 20 mm long

17. Plants mat-forming; flowers
white to yellow L. reptans

17'. Plants erect; flowers white to
pink L. conspicuus

14'. Pedicels up to 32 mm long

18. Flowers yellow to golden, plants from the
Western Cape Province

19. Sepals up to 10 mm long; plants
always prostrate and rooting at the
nodes; internodes ca. 33 mm long L. vanzijliae

19'. Sepals ca. 19 mm long; if prostrate
then not rooting at the nodes, plants
usually erect; internodes ca. 17 mm
long L. glaucus
Subsp. aureus

- 18'. Flowers purple, plants from Natal or
Transkei

L. spectabilis
subsp. fugitans

5.6 KEY TO THE SPECIES OF LAMPRANTHUS SUBSP. LUNATI

1. Stamminodes absent

2. Pedicels ca. 34 mm long; leaf-margins without
teeth

L. dregeanus

- 2'. Pedicels ca. 12 mm long; leaf-margins toothed,
rarely toothless

3. Valve wings attached to the valves for
most of their length; leaf-margins with
few or no teeth

L. copiosus

- 3'. Valve wings free from the valves for most
of their length, leaf-margins with many
teeth

L. deltoides

1'. Stamminodes present

4. Pedicels ca. 7 mm long

5. Leaves hairy with horny margins; flowers
always solitary

L. maximiliani

- 5'. Leaves hairless, without horny margins;
flowers solitary or in threes

L. prasinus

- 4'. Pedicels 14 mm or more long

6. Sepals about equal in length

L. primivernus

- 6'. Inner sepals not more than two thirds as
long as the outer sepals

7. Outer sepals ca. 4 mm long; leaf

apices acute; flowers in threes or solitary L. steenbergensis

7'. Outer sepals 6 - 10 or more mm long; leaf apices subobtuse to subtruncate, flowers many in a cymose inflorescence

8. Leaves ca. 13 mm long; pedicels ca. 14 mm long; bracts up to 10 mm long

L. lunatus

8'. Leaves ca. 25 mm long; pedicels ca. 23 mm long, bracts up to 16 mm long

L. comptonii

5.7 KEY TO THE SPECIES OF LAMPRANTHUS SECTION SCABRIDI

1. Stems woody

2. Pedicels less than 15 mm long

3. Plants mat-forming, rooting at the nodes

4. Bracts much smaller than the foliage leaves

L. arbuthnotiae

4'. Bracts similar in size to the foliage leaves

L. tegens

3'. Plants shrubby

L. scaber

2'. Pedicels over 20 mm long

5. Leaves semiterete

6. Leaves ca. 11 mm long, flowers with a white centre, capsules ca. 9 mm in diameter

L. algoensis

6'. Leaves ca. 5 mm long, flowers without a white centre, capsules ca. 5,5 mm in diameter

L. mariae

5'. Leaves triquetrous, ca. 5 mm long, flowers without a white centre, capsules ca. 4 mm in diameter

L. dilutus

7. Flowers white to purple, pedicels ca. 25 mm long, bracts similar to the foliage leaves, filaments and anthers pink or

white, capsules ca. 6,5 mm in diameter

L. scaber

- 7'. Flowers golden to copper-coloured, pedicels ca. 34 mm long, bracts significantly smaller than the foliage leaves, filaments and anthers orange to yellow, capsules ca. 9 mm in diameter

L. peersii

- 1'. Stems wiry

8. Petals much longer than the sepals (mean length of petals including the inner ones at least 1,5 times that of the inner sepals)

9. Inner sepals with membranous margins, significantly smaller than the outer ones

10. Stamínodes present

L. diffusus

- 10'. Stamínodes absent

11. Bracts similar to the foliage leaves, pedicels ca. 32 mm long, outer sepals up to 9 mm long

L. furvus

- 11'. Bracts much smaller than the foliage leaves, pedicels ca. 22 mm long, outer sepals up to 5 mm long

L. acutifolius

- 9'. Sepals all about the same size

12. Leaves more than 15 mm long, pedicels ca. 50 mm long

L. guthrieae

- 12'. Leaves less than 10 mm long, pedicels 35 mm long or shorter

13. Mean length of petals 3 times as great as that of the sepals,

- pedicels ca. 35 mm long L. persistens
- 13'. Petals twice as long as the
sepals, pedicels ca. 20 mm
long L. tulbaghensis
- 8'. Petals not much longer than the sepals
14. Leaves triquetrous
15. Pedicels 15 mm long or longer,
valve wings present or absent
16. Pedicels ca. 15 mm long, bracts
up to 12 mm long; flowering
season June to September; valve
wings usually absent L. calcaratus
- 16'. Pedicels ca. 25 mm long; bracts
up to 7 mm long; flowering
season August to December; valve
wings usually present L. scaber
- 15'. Pedicels 10 mm long or shorter;
capsules always without valve wings L. alpinus
- 14'. Leaves semiterete
18. Pedicels ca. 25 mm long, bracts
similar to the foliage leaves L. pocockiae
- 18'. Pedicels ca. 10 mm long; bracts
much smaller than the foliage
leaves
19. Staminodes present L. mariae
- 19'. Staminodes absent L. vallis-gratiae

5.9 KEY TO THE SPECIES OF LAMPRANTHUS SECTION TENUIFOLII

1. Leaves semiterete

2. Flowers with staminodes

3. Plants rooting at the nodes; Capsules ca. 6,5 mm in diameter; young stems dark brown; plants from the Western Cape Province L. sociorum

3'. Plants not rooting at the nodes; Capsules ca. 9 mm in diameter; young stems pale brown; plants from the Eastern Cape Province L. praecipitatus

2'. Flowers without staminodes

4. Plant erect; leaves ca. 15 mm long L. plenus

4'. Plant decumbent; leaves ca. 30 mm long

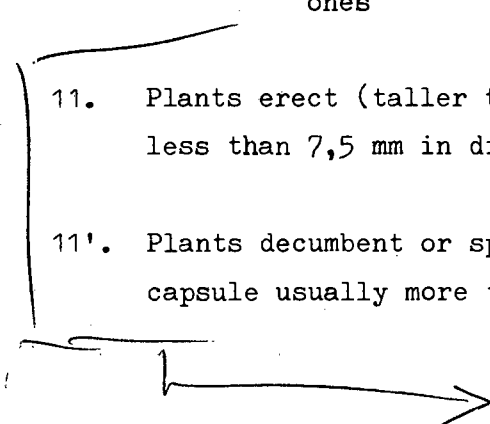
5. Pedicels ca. 23 mm long, bracts leaflike, outer sepals 15 - 19 mm long, inner sepals 10 - 12 mm long, filaments ca. 1,5 mm long, stigmas ca. 1,5 mm long, capsules ca. 8,5 mm in diameter L. dunensis

5'. Pedicels ca. 10 mm long, bracts much smaller than the leaves, sepals all alike, up to 10 mm long, filaments ca. 4 mm long, stigmas ca. 4,5 mm long, capsules ca. 11 mm in diameter L. antonii

1'. Leaves triquetrous

6. Pedicels 45 mm or more long

7. Plants rooting at the nodes, flowers with staminodes L. tenuifolius

- 7'. Plants erect; flowers without staminodes L. laxifolius
- 6'. Pedicels less than 35 mm long
8. Flowers yellow, or at least the inner surface of the petals yellow
9. Petals yellow inside, red outside; leaves ca. 25 mm long, green to grey-green L. bicolor
- 9'. Petals yellow on both surfaces; leaves ca. 13 mm long, blue-grey L. promontorii
- 8'. Flowers white to magenta, very rarely scarlet
10. Petals ca. 22 mm long; capsule valves without marginal ridges; inner sepals about half as long as the outer ones L. schlechteri
- 10'. Petals ca. 14 - 17 mm long; capsule valves with marginal ridges; inner sepals almost as long as the outer ones
11. Plants erect (taller than wide), capsules usually less than 7,5 mm in diameter L. coccineus
- 11'. Plants decumbent or spreading (wider than tall), capsule usually more than 8 mm in diameter L. macrocarpus
- 

6 TAXONOMIC TREATMENTS

In addition to the standard herbarium abbreviations used in Index Herbariorum (Holmgren & Keuken, 1974), the following abbreviations are used to indicate material housed in special collections or identified only by a garden number.

B-W : Botanisches Museum, Berlin : Willdenow Herbarium
BOL-F: Bolus Herbarium, Cape Town : Foureade Herbarium
KG : Karoo Garden, Worcester (accession number)
SUG : Stellenbosch University Garden (accession number)

6.1 L A M P R A N T H U S

Lampranthus N.E. Br., Gard. Chron. 87 : 71 (in clavi), 211 (1930)
nom. cons. prop;^{*} Von Pöllnitz, Feddes Rep. 32 : 47 (1933);
Pax, Nat. Pflanzenfam., 16c : 216 (1934); Jacobsen, Verzeich-
nis : 95 (1938); L. Bol., Fl. Cape Pen. : 379 (1950);
Phillips, Genera : 320 (1951); Jacobsen, Handb. Sukk. Pfl.
3 : 1422 (1955); Schwantes, Fl. Stones : 64, 338 (1957);
Jacobsen, Handb. Succ. Pl. 3 : 1190 (1960); Friedrich,
Prodr. Fl. S.W.A. 27 : 64 (1970); Jacobsen, Sukk. Lex.
437 (1970); Herre, Genera : 190 (1971); Jacobsen, Lex. Succ.
Pl. : 489 (1974); Dyer, Genera 2 : 117 (1975)

Oscularia Schwantes, Möllers Dtsche. Gärt.-Ztg. 42 : 187 (1927)
nom. rej. prop; Von Pöllnitz, Feddes Rep. 32 : 59 (1933);
Pax. Nat. Pflanzenfam. 16c : 217 (1934); Jacobsen, Succ.
Pl. : 230 (1935); Phillips, Genera : 321 (1951); Jacobsen,
Handb. Sukk. Pfl. 3 : 1585 (1955); Schwantes, Fl. Stones :
68, 338 (1957); Jacobsen Handb. Succ. Pl. 3 : 1337 (1960);
idem, Sukk. Lex. : 477 (1970); Pl. : 535 (1974); Dyer,
Genera 2 : 126 (1975)

Esterhuysenia L. Bol., Jl. S. Afr. Bot. 33 : 308 (1967); Jacobsen, Sukk.
Lex. : 422 (1970); Herre, Genera : 152 (1971); Jacobsen Lex.
Succ. Pl. : 475 (1974); Dyer, Genera 2 : 111 (1975)

* See appendix 2 for text of proposal to conserve this name.

Type Species: L. multiradiatus (Jacq.) N.E. Br.

Succulent shrubs, dwarf shrubs or mat-formers; internodes not hidden by the leaves, these opposite, sometimes sheathing the stems, rarely decurrent upon them, 3 - 90 mm long, 0,5 - 10 mm wide and deep, terete, semiterete or triquetrous, margins rarely toothed, falcate, straight or apices recurved, usually glaucous-green but may be grass green to pale or bluish grey, rarely hairy.

Flowers solitary, in threes or in cymes, 10 - 75 mm in diameter, usually pink to purple, more rarely yellow, golden, copper, white or bicoloured. Pedicels usually bibracteate, rarely ebracteate, 10 - 100 mm long, bracts usually leaflike, half as large to as large as the foliage leaves. Sepals 5 in two series, the inner 3 with membranous margins, or all alike, rarely one of the outer pair much longer than the other; Petaloid staminodes few to many, 5 - 35 mm long, in one to several series, colour of the basal end sometimes different to that of the apex, but never with a central stripe; nonpetaloid staminodes present or absent, if present either distinct from or grading into the "petals" and stamens, these few to many, white or yellow. Stigmas 5, subulate or broadly subulate, with or without a long cirrhous apex. Nectary annular, raised. Capsule woody, rarely papery, with broad covering membranes over the locules and broad to narrow valve wings; placental tubercles absent, but sometimes a proliferation of placental tissue performs the same function.

Seeds of medium size to very large, 0,7 - 1,7 mm long, ovoid-triangular, cream to black, testa sculpture and microbacular detail various.

56 Species and 2 subspecies.

The original description of Lampranthus (Brown, 1930a), is given as one of the final branches of a key. However, all the salient features of the genus and a type species are given. This description therefore constitutes a diagnosis as defined by the International Code of Botanical Nomenclature. That the diagnosis is not in Latin does not affect the validity of publication, as it was published before 1935, and the Code only required Latin descriptions after that date. Conservation of this name over Oscularia Schwant. (1927), is regarded as necessary because of the number of name changes that would be required and the confusion that would result if this were not done. (See Appendix 2.)

Herre's (1971) citation of L. tenuifolius (L.) N.E. Br. as the type species of this genus is erroneous, as Brown specifically cited L. multiradiatus (Jacq.) N.E. Br. as the type species.

The generic name is derived from two Greek words meaning "brilliant (or showy) flower".

Distribution: South-West Africa, Western, South-western, Southern and Eastern Cape Province coastal districts and adjacent interior, southern Natal.

6.1.1 SECTION LUNATI (Haw.) Glen, comb. nov.

Mesembryanthemum L. section Lunata Haw., Rev. Pl. Succ. : 135 (1821) pro parte, quoad M. lunatum Willd.

Small to large succulent shrubs, one species dwarf or mat-forming; internodes relatively short. Leaves about 2 - 4 times as long as deep, rarely to 6 times as long as deep, triquetrous, semiclavate or spatulate, glaucous to blue-grey, rarely with toothed margins. Flowers usually several to many in a cymose inflorescence, rarely solitary or in threes, (13) - 17 - 25 - (31) mm in diameter, pink, magenta or white. Capsules smaller than average for the genus, 4 - 7 mm in diameter. Seeds maroon to charcoal grey; baculae hemispherical to mammary with large microbaculae.

Type species: L. lunatus (Willd.) N.E. Br.

Nine species, no subspecies.

When Haworth (1821) proposed this section, he included in it three species, M. maximum Haw. (now Ruschia maxima (Haw.) L. Bol.), M. lunatum Willd. (now L. lunatus (Willd.) N.E. Br.) and M. falciforme Haw. (L. falciformis (Haw.) N.E. Br.). The first, being a species of Ruschia, is necessarily excluded from the present concept of the section. Although the last species is close to those included in this section, it is consistently excluded on the basis of overall similarity, being closer in other ways to section Lampranthus. The type species, therefore, must be the only one left of the three Haworth included in this section, and it is this which is chosen

as a lectotype. This seems to accord with Haworth's intention, as it is this species after which the section is named.

Neither the name nor the concept of this section was taken up by Salm Dyck (1836 - 63), Sonder (1862), Berger (1908) and Jacobsen (1955 and subsequent works), but both name and concept were implicitly taken up by Bolus, both in her arrangement of the material at the Bolus Herbarium and in her assigning of new species to section (e.g. Bolus 1939b). However, she did not formally transfer the section name from Mesembryanthemum to Lampranthus.

The group is a very natural and homogeneous one, with nine very similar species all from the Western and South-western Cape coastal region and adjacent mountains.

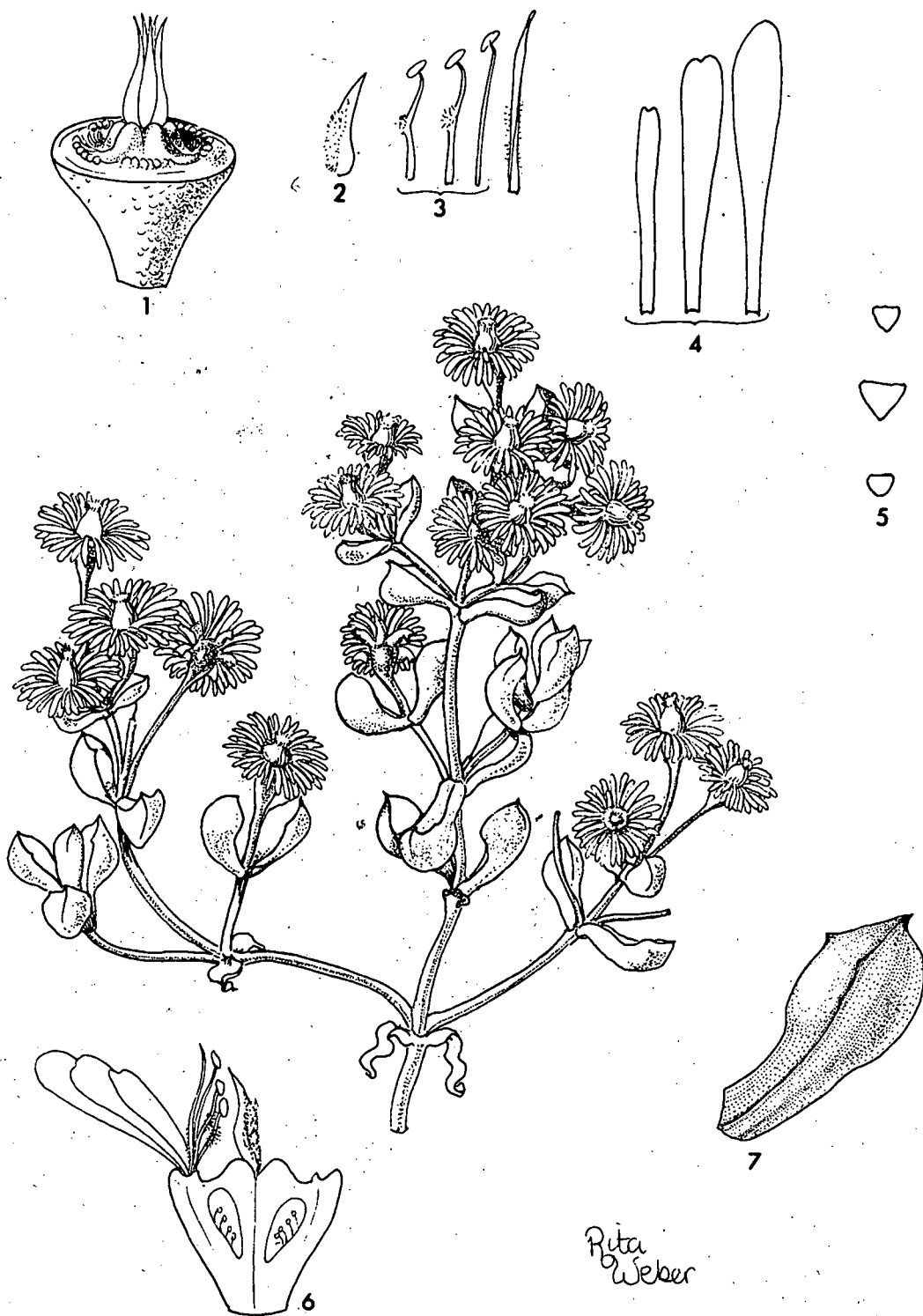


Fig. 2. Lampranthus copiosus.

- | | | |
|-----------------|-----------------|--------------------------|
| 1. gynoecium | 2. stigma | 3. stamens and staminode |
| 4. petals | 5. T.S. of leaf | 6. L.S. of flower |
| 7. toothed leaf | | |

- 1 Lampranthus lunatus (Willd.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1438 (1955); idem, Handb.
Succ. Pl. 3 : 1202 (1960); idem, Sukk. Lex. : 443 (1970);
idem, Lex. Succ. Pl. : 496 (1974)

Holotype: Hort. Berlin, no date, Willdenow s.n. (B-W!)

Mesembryanthemum lunatum Willd., Enum. Pl. Hort. Berol. : 538 (1809);
Hornem., Hort. Reg. Hafniae : 465 (1815); Haw., Rev. Pl. Succ.
136 (1821); DC., Prodr. 3 : 433 (1828); Salm Dyck, Monogr.
Gen. Aloes Mesemb. f. 1 t. 24 29 (1836); D. Dietr., Syn.
Pl. 3 : 141 (1843); Sond. Fl., Cap. 2 : 420 (1862); Berger,
Mesemb. u. Portulac. : 187 (1908)

Holotype: as above

M. guthrieae L. Bol., Ann. Bol. Herb. 4 : 101 (1927)

Holotype: Ceres Flower Show, 4 October 1926, L. Guthrie s.n.
in BOL 18531 (BOL!)

L. guthrieae (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1435 (1955); idem, Handb.
Succ. Pl. 3 : 1200 (1960); idem, Sukk. Lec. : 442 (1970);
idem, Lex. Succ. Pl. : 495 (1974)

Holotype: as above

M. paardebergense L. Bol., Notes Mesembryanthemum 2 : 200 (1930)

Holotype: Paardeberg, September 1928, L. Bolus s.n. in BOL
19216 (BOL!)

L. paardebergensis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 :
169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1441 (1955);
idem, Handb. Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex.
: 444 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

M. excedens L. Bol., Notes Mesembryanthemum 2 : 324 (1932)

Holotype: between Piquetberg & Clanwilliam, October 1929,
Mathews s.n. in NBG 2083/29 (BOL!)

L. excedens (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168
(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1432 (1955); Lex.

: 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Holotype: as above

M. superans L. Bol., Notes Mesembryanthemum 2 : 348 (1932)

Holotype: between Clanwilliam & Van Rhynsdorp, October 1929,
A. Godman s.n. in BOL 19917 (BOL!)

L. superans (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1449 (1955); idem, Handb.

Succ. Pl. 3 : 1211 (1960); idem, Sukk. Lex. : 446 (1970);

idem, Lex. Succ. Pl. : 500 (1974)

Holotype: as above

M. album L. Bol., Notes Mesembryanthemum 2 : 365 (1932)

Holotype: near Niewoudtville, October 1932, Compton s.n. in
NBG 1515/26 (BOL, holo!, K, iso!)

L. albus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1423 (1955); idem, Handb.

Succ. Pl. 3 : 1191 (1960); idem, Sukk. Lex. : 438 (1970);

idem, Lex. Succ. Pl. : 491 (1974)

Holotype: as above

M. thermarum L. Bol., Notes Mesembryanthemum 2 : 365 (1932)

Holotype: Clanwilliam Warmbaths, October 1932, L. Bolus s.n.
in BOL 20206 (BOL!)

L. thermarum (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1450 (1955); idem, Handb. Succ.

Pl. 3 : 1211 (1960); idem, Sukk. Lex., : 446 (1970); idem,

Lex. Succ. Pl. : 500 (1974)

Holotype: as above

M. cedarbergense L. Bol., Notes Mesembryanthemum 2 : 487 (1935)

Syntypes: Pakhuis Pass, October 1897, H. Bolus 9007 (BOL!)
Pakhuis Pass, September 1933, L. Bolus s.n. in
BOL 21021 (BOL!)

L. cedarbergensis (L. Bol.) Bol., Notes Mesembryanthemum 3 : 168

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1428 (1955); idem,

Handb. Succ. Pl. 3 : 1194 (1960); idem, Sukk. Lex. : 439
(1970); idem, Lex. Succ. Pl. : 492 (1974)

Syntypes: as above

Succulent shrublet, ca. 25 cm. high and 30 cm. in diameter. Internodes woody, smooth, pale ochre to maroon, ca. 20 mm long and 2 mm in diameter in the first two years of growth. Leaves sharply triquetrous, falcate, 4,5 - 13,2 - 22 mm long, 1 - 3 - 7 mm wide and 1 - 4 - 9 mm deep; sheathing the stem for ca. 1 mm, apices subobtusely. Inflorescence cymose, pedicels ca. 14 mm long and 1 mm in diameter; flowers white to deep pink, with a pink to deep magenta central 'eye' ca. 19 mm in diameter. Bracts up to 10 mm long and 4 mm wide, sepals 5, ca. 13 mm long and up to 6 mm wide, the inner 3 with membranous margins, ca. 7,5 mm long and 6,5 mm wide, petals (petaloid) staminodes) ca. 20 - 45 in 1 series, 5 - 7,5 - 19 mm long, up to 1,5 mm wide; non-petaloid staminodes up to 60, white, ca. 4 - 6 mm long, sharply differentiated from the petaloid staminodes. Stamens many, filaments ca. 1 - 5 mm long, anthers yellow; stigmas 5, 1 - 5 mm long, acuminate. Capsule 5 - locular, ca. 6 mm in diameter and 5,5 mm deep, woody, charcoal grey, valve-wings ca. 2,5 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds deep maroon to charcoal grey, ca. 0,88 - 0,97 - 1,27 mm long, 0,76 - 0,85 - 0,98 mm wide and 0,40 - 0,46 - 0,54 mm deep, funicles ca. 0,27 - 0,34 - 0,47 mm long; surface baculate, baculae ca. 31 μ long, 75 μ in diameter; microbaculae present, ca. 1,22 μ long and 0,42 μ in diameter. Chromosome number $2n = 36$ (Propach, 1934). Flowering season: 70% of specimens seen were in flower between September and November.

SPECIMENS SEEN:

- CAPE 3118 (-AB) Oorkraal hills, 28 August 1897, Schlechter 10998 (GRA!)
- (-DC) Giftberg Plateau, October 1953, E. Esterhuysen 22052 (BOL!) Giftberg Pass, September 1948, Acöcks 14881 (BOL!); Giftberg, 8 September 1959, Herre s.n. in SUG 14316 (BOL!); Gift Berg, September 1911, Phillips s.n. in Percy Sladen Memorial Expedition 7665 (K!)

- 3119 (-AC) Oorlogskloof, 6 miles from Nieuwoudtville; September 1930, L. Bolus s.n. in BOL 19305 (BOL!); Nieuwoudtville, October 1930, Compton s.n. in NBG 1575/26 (BOL, holo. of syn.!: iso. of syn.!)
 (-BD) Calvinia, October 1937, Schmolke s.n. in NBG 820/37 (BOL!)
- 3218 (---) Olifants River Valley, 28 March 1932, Leipoldt s.n. (BOL!)
- (-BA) Graafwater, 1923, Anon. s.n. in NBG 1044/23 (K!);
 (-BB) near Clanwilliam, October 1929, Godman s.n. in BOL 19917 (BOL!, K!)
 near Clanwilliam, November 1940, L. Bolus s.n. in BOL 23621 (BOL!)
- (-BD) between Piquetberg and Clanwilliam, October 1930, Mathews s.n. in NBG 2083/29 (BOL!)
 Uitkyk, Clanwilliam, 3 December 1934, Salter 5087 (BOL!)
- (-CB) Driehoek, November 1934, Salter 5085 (BOL!); Eikeboom, Cedarberg, October 1956, H. Meyer 13934 (BOL!)
- (-DB) Grey's Pass, 10 October 1958, Werdermann & Oberdieck 640 (B!, K!); upper slopes of Grey's Pass, 24 November 1910, Pearson s.n. in Percy Sladen Memorial Expedition 5131 (K!)
- 3219 (-A-) Witte Els Kloof, Clanwilliam, October 1929, Pillans s.n. (BOL!)
- (-AA) Pakhuis Pass, 7 October 1897, H. Bolus 9007 (BOL!)
 Kouberg Peak, October 1945
E. Esterhuysen 12033 (BOL!); Pakhuis, September 1933, L. Bolus s.n. in BOL 21021 (BOL!)
 Pakhuis, 4 November 1933, Bergh s.n. in Bol 21022 (BOL!); top of Pakhuis Pass, September 1947, L. Bolus s.n. (BOL!); Pakhuis Pass, September - October 1948, H. Hall s.n. (BOL!); Pakhuis Pass, October 1932, Salter s.n. in NBG 2998/32 (BOL!); Pakhuis Pass, 7 September 1953, E. Esterhuysen 21721 (BOL!); Pakhuis Pass, 7 October 1965, H. Hall 3040 (BOL!); Krakadouwpoort, 27 October 1945, E. Esterhuysen 12034 (BOL!); Packhuisberg, August 1897, Schlechter

- 10807 (GRA!); Lammkraal hills, August 1897,
Schlechter 10837 (GRA!)
- (-AC) Cedarberg Tafelberg, 26 June 1942, E. Esterhuysen
7917 (BOL!)
- (-AD) Brackfontein, September, Ecklon & Zeyner 2020 (S!);
Cedarberg Peak, 1 December 1941, E. Esterhuysen
7781 (BOL!)
- (-CA) Modderfontein, Clanwilliam, November 1934, Mathews
s.n. in NBG 2695/34 (BOL!); Warm Baths, Olifants
River Valley, 29 October 1932, L. Bolus s.n. in BOL
20206 (BOL!, K!)
- Elandskloof, between Ceres and Citrusdal, 25 September
1936, Lewis s.n. (BOL!)
- (-CC) Top of Olifants River Mountains, November 1938,
Pillans 8672 (BOL!)
- (-CD) Bokkeveld Tafelberg, 8 December 1940, E. Esterhuysen
3995 (BOL!)
- 3317 (-BB) Mooimaak, Saldanha Bay, 27 August 1951, H. Meyer s.n.
in SUG 12801 (BOL!)
- 3318 (-AA) 4 miles south of Langebaan, September 1932, Salter
3033 (BOL!)
- (-AB) near the road between Darling and Hopefield,
23 September 1933, Barker s.n. in BOL 21005 (BOL!, K!)
- (-DB) Paardeberg, 20 November 1928, L. Bolus s.n. in BOL
19216 (BOL!)
- 3319 (-AA) Twenty-four Rivers, September, Ecklon & Zeyner 2019
(S!)
- (-AB) Hottentots Kloof, 29 November 1909, Pearson s.n.
in Percy Sladen Memorial Expedition 3913 (BOL!)
- (-AD) West slopes of the Schurfteberg, 27 November 1941,
Pillans 9553 (BOL!)

Without exact locality:

Ceres Wild Flower Show, 4 October 1926,
Guthrie s.n. in BOL 18531 (BOL!); 3 other
specimens.

7 garden specimens.

The range of variation of this species is small, considering the number of names that have been applied to it. This range is expressed mainly in the flower colour and size of leaves. Flowers may vary from white to a fairly intense shade of magenta, while leaves show the normal variation to be expected from a variety of plants growing in different habitats.

The closest member of this section to the present species is the form of L. copiosus with toothless leaves. The two species may be distinguished by the fact that L. copiosus lacks staminodes and the present species lacks an apiculus at the apex of every leaf. The present species differs from L. comptonii (L. Bol.) N.E. Br. by having much shorter, thicker, more obviously triquetrous leaves.

- 2 Lampranthus comptonii (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1428 (1955); idem, Handb.
Succ. Pl. 3 : 1195 (1960); idem, Sukk. Lex. : 439 (1970);
idem, Lex. Succ. Pl. 492 (1974)
Holotype: Klaver June 1923, Compton s.n. in NBG 295/22 (BOL!,
holo!, K. iso!)

Mesembryanthemum comptonii L. Bol., Ann. Bol. Herb. 3 : 162 (1924)
Holotype: as above

M. comptonii var. angustifolium L. Bol., Notes Mesembryanthemum 2
: 409 (1933)
Holotype: near Springbok, June 1931, Herre s.n. in SUG 8997
(BOL!, holo!, K. iso!)

L. comptonii var. angustifolius (L. Bol.) L. Bol. ex Jacobsen, Feddes
Rep. Beih. 106 : 96 (1938); Jacobsen, Handb. Sukk. (1960);
idem, Sukk. Lex. : 440 (1970); idem, Lex. Succ. Pl. 493 (1974)
Holotype: as above

M. comptonii var. roseum L. Bol., Notes Mesembryanthemum 2 : 409 (1933)
Syntypes: near Clanwilliam, September 1932, Herre s.n. in SUG
8566 (BOL!, K!)
near Vanrhynsdorp, 21 June 1932, Herre s.n. in SUG
8568 (BOL!)

L. comptonii var. roseus (L. Bol.) L. Bol. ex Jacobsen, Feddes Rep.
Beih. 106 : 96 (1938); Jacobsen, Handb. Sukk. Pfl. 3 : 1428
(1955)
Syntypes: as above

L. comptonii forma roseus (L. Bol.) Rowley, Nat. Cact. Succ. Jl.
13(4) : 77 (1958); Jacobsen, Handb. Succ. Pl. 3 : 1195 (1960);
idem, Sukk. Lex. : 440 (1970); idem, Lex. Succ. Pl. : 492 (1974)
Syntypes: as above

M. pageanum L. Bol., Notes Mesembryanthemum 2 : 97 (1929), non L. Bol.
(1927)
Holotype: ? in dit. Clanwilliam, May 1921, Ancn. s.n. (BOL!)

L. ornatus L. Bol., Notes Mesembryanthemum 3 : 109 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1441 (1955), idem, Handb. Succ. Pl. 3 : 1204 (1960); idem, Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 497 (1974).

Holotype: as above

Succulent shrubs, ca. 27 cm. high and 35 cm. in diameter. Internodes smooth, woody, pale green or ochre, ca. 25 mm long and 3 mm in diameter in the first two years of growth. Leaves triquetrous, falcate, subtruncate, grey, 8 - 24,5 - 40 mm long, 1,5 - 5,7 - 9 mm wide and 2 - 7,5 - 11,5 mm deep, sheathing the stem for ca. 1,5 mm. Inflouescence cymose, pedicels ca. 23,5 mm long and 1,3 mm in diameter; flowers white to pale pink, ca. 20 mm in diameter. Bracts up to 16 mm long and 5 mm wide, sepals 5, ca. 10 mm long and up to 5 mm wide, the inner 3 with membranous margins, ca. 6 mm long and 4 mm wide, petals (petaloid staminodes) ca. 25 - 60 in 1 series, 3,5 - 7 - 11 mm long, up to 2,5 mm wide; non-petaloid staminodes ca. 35 - 60, white, ca. 25 - 3 - 5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 40 - 60, filaments white, ca. 1 - 4 mm long, anthers yellow; stigmas 5,1 - 1,5 - 3,5 mm long, subulate. Capsule 5 - locular, ca. 6 mm in diameter and 6 mm deep, woody, charcoal grey, valve-wings ca. 2 mm long and up to 1 mm wide, separate from the valve for about half of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon to charcoal grey, ca. 0,87 - 0,96 - 1,05 mm long, 0,72 - 0,75 - 0,83 mm wide and 0,37 - 0,43 - 0,57 mm deep, funicles ca. 0,29 - 0,44 - 0,51 mm long, surface baculate, baculae ca. 49 μ long, 72 μ in diameter; microbaculae present, ca. 2,03 μ long and 1,14 μ in diameter. Chromosome number $2n = 18$ (de Vos) 1947. Flowering season: 92% of specimens seen were in flower between June and September.

SPECIMENS SEEN:

CAPE 2917 (-DB) Springbok, June 1931, Herre s.n. in SUG 8997 (BOL!, K!)

3118 (-DA) Van Rhynsdorp, no date, Anon. s.n. in SUG 8996 (BOL!)
Van Rhynsdorp, 21 June 1932, Anon. s.n. in SUG 8568 (BOL!)

(-DC) Klawer, June 1923, Compton s.n. in NBG 295/22 (BOL!,

K!); De Hangen, Nardouwsberg, 27 September 1969, E. Esterhuysen 32263 (BOL!); Klawer, August 1932, L. Bolus s.n. (BOL!); Klawer, October - November 1931, Peers s.n. in NBG 1082/30 (BOL!); Giftberg, September 1911, Phillips s.n. in Percy Sladen Memorial Expedition 7665 (BOL!)

- 3218 (---) Olifants River Valley, September 1932, L. Bolus s.n. (BOL!)
- (-BA) Graafwater, July - August 1925, Compton s.n. in NBG 1272/23 (BOL!); Graafwater, September 1930, Peers s.n. in NBG 1044/30 (BOL!)
- (-BB) near Clanwilliam, June 1940, L. Bolus s.n. in BOL 23619 (BOL!); Clanwilliam, July 1915, Pattison s.n. in NBG 509/14 (BOL!); 1 mile West of Clanwilliam, August 1959, H. Hall 1767 (BOL!); Clanwilliam, September 1932, Herre s.n. in SUG 8566 (BOL!, K!) ? in dit. Clanwilliam, May 1921, Anon. s.n. (BOL!); Uitkomst, between Graafwater and Clanwilliam, September 1934, Leighton s.n. in BOL 25249 (BOL!)
- (-DB) Piquenierskloof, September 1897, Macowan 3212 (SAM!)

2 garden specimens

Some forms of this species show a remarkable resemblance at first glance to Ruschianthemum gigas (Dtr.) Friedr. and species of Stoeberia. This resemblance is based on the obscurely triquetrous, almost semiclavate leaves, and a dense inflorescence of white flowers with red stamens. The plants are, in fact, quite different, as Ruschianthemum and Stoeberia are both members of Ruschiinae, whose capsules are characterised as having "large placental tubercles" (Friedrich, 1960). Both genera are found only in the Sperrgebiet south of Lüderitz and in the Richtersveld, while L. comptonii is most frequently encountered south of Van Rhynsdorp, as far as Grey's Pass, and with one outlying record from Springbok.

The characters which make this species appear similar to Ruschianthemum and Stoeberia are precisely those which serve to distinguish it from other members of this section. A further difference between this

species and most if not all others in the genus is that the nectaries are separate, not continuous. In many specimens, the flowers may be pale pink, not white; they differ from most other species of this section in the paleness of the flowers.

The name 'L. ornatus L. Bol.' was given to an extreme form with leaves which in some specimens are more definitely triquetrous than the type, and in others more nearly semiclavate. The flowers of this form are deeper in colour than the typical form, but still pale pink. All possible intermediates between this form and the type are known.

- 3 Lampranthus primivernus (L. Bol.) L. Bol., Notes on Mesemb. and allied
Gen. 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1443
(1955); idem, Handb. Succ. Pl. 3 : 1206 (1960); idem, Sukk.
Lex. : 444 (1970); idem, Lex. Succ. Pl. : 498 (1974)
Holotype: Grey's Pass, August 1931, Frames s.n. in NBG 145/28
(BOL! holo; K, iso!)

Mesembryanthemum primivernum L. Bol., Notes Mesemb. allied Gen. 2
: 199 (1930)
Holotype: as above

L. compressus L. Bol., Notes Mesembryanthemum 3 : 329 (1958);
Jacobsen, Handb. Succ. Pl. 3 : 1195 (1960); idem, Sukk. Lex.
: 439 (1970); idem, Lex. Succ. Pl. : 492 (1974)
Holotype: Leipoldtville, September 1952, Leistner s.n. in
SUG 12904 (BOL!)

Spreading succulent shrubs, ca. 22 cm. high and 45 cm. in diameter.
Internodes smooth, woody, russet-brown, ca. 25 mm long and 4 mm in
diameter in the first two years of growth. Leaves sharply triquetrous,
falcate, glaucous, 7 - 18,5 - 30 mm long, 2 - 4,3 - 9 mm wide and
3 - 6 - 12 mm deep, sheathing the stem for ca. 2 mm. Inflorescence
cymose, pedicels ca. 18 mm long and 1,5 mm in diameter; flowers
white to pink, ca. 23 mm in diameter. Bracts up to 13 mm long and
6 mm wide, sepals 5, ca. 8 mm long and up to 5 mm wide, all alike;
petals (petaloid staminodes) ca. 20 - 40 in 1 series, 4 - 8,5 - 12
mm long, up to 2 mm wide; non-petaloid staminodes ca. 20 - 50, white,
ca. 2 - 5 mm long, sharply differentiated from the petaloid staminodes
Stamens ca. 40 - 70, filaments white, ca. 2 - 4 mm long, anthers
pink; stigmas 5, 1 - 1,5 - 2,5 mm long, acuminate Capsule 5 -
locular, ca. 5 mm in diameter and 4,5 mm deep, woody, charcoal grey,
valve-wings ca. 2 mm long and up to 1 mm wide, separate from the valve
for most of their length; placental tubercle absent; covering membranes
present, covering most of the surface of each locule. Seeds maroon,
ca. 0,57 - 0,71 - 0,80 mm long, 0,42 - 0,48 - 0,60 mm wide and 0,42 -
0,54 - 0,63 mm deep, funicles ca. 0,21 - 0,27 - 0,39 mm long; surface
baculate, baculae ca. 22 μ long, 42 μ in diameter; microbaculae
present, ca. 1,61 μ long and 0,80 μ in diameter. Flowering season:
91% of specimens seen were in flower between July and October.

SPECIMENS SEEN:

- CAPE 3218 (-AB) Leipoldtville, August 1963, H. Hall 1297 (=NBG 93/58) (BOL!, NBG!); Leipoldtville, July 1953, Leistner s.n. in SUG 12904 (BOL!)
- (-C-) Skrik-van-rondom, September 1934, Barker s.n. (BOL!)
- (-DB) Grey's Pass, 26 August 1929, L. Bolus s.n. in BOL 21020 (BOL!); 4 miles south of Citrusdal at the foot of Grey's Pass, October 1965, H. Hall 3051 (=NBG 449/65) (BOL!, NBG!); Grey's Pass, August 1931, P. Ross Frames s.n. in NBG 145/28 (BOL!, K!)

This species appears to be intermediate between L. lunatus and L. comptonii, but differs from them in that the sepals are all the same, instead of the two whorls being markedly different. The leaves are often apiculate, unlike those of L. lunatus. In shape, the leaves of the present species are more like those of L. lunatus than those of L. comptonii. In size, this species is intermediate between the other two.

"L. compressus L. Bol." is a form from an extreme point in the range of this species. In the protologue it was compared to a species now included in the synonymy of L. comptonii, from which it is easily distinguishable. No reference to the present species was made, and so it is unknown on what grounds it was considered distinct.

- 4 Lampranthus maximiliani (Schltr. & Bgr.) L. Bol., Jl. S. Afr. Bot. 31 :
170 (1965); Jacobsen, Sukk. Lex. : 443 (1970); idem, Lex.
Succ. Pl. : 496 (1974)

Holotype: Packhuisberg, 12 August 1897, Schlechter 10817
(B holo!, K!, BOL!, GRA!, S!, PRE!, G!, BM!, E!, iso)

Mesembryanthemum maximiliani Schltr. & Bgr., Engl. Bot. Jahrb. 57
: 633 (1922)

Holotype: as above

Braunsia maximiliani (Schltr. & Bgr.) Schwant., Gartenwelt 32 : 644
(1928)

Holotype: as above

Echinus maximiliani (Schltr. & Bgr.) N.E. Br., Kew Bull. 1929 : 57
(1929); Jacobsen, Handb. Sukk. Pfl. 3 : 1254 (1955); idem,
Handb. Succ. Pl. 3 : 1135 (1960)

Holotype: as above

M. apiculatum Kentsit var. muticum L. Bol., Ann. S. Afr. Museum 9 : 149
(1913)

Holotype: Van Rhynsdorp, September 1911, Phillips Percy Sladen
Memorial Expedition 7664 (BOL, holo!, K!, SAM!, iso)

M. phillipsii L. Bol., Ann. Herb. 4 : 5 (1925)

Syntypes: Giftberg, September 1911, Phillips Percy Sladen
Memorial Expedition 7664 (BOL. holo!, h!, SAM! iso)
Packhuisberg, 12 August 1897, Schlechter 10817 (B holo!
K!, BOL!, GRA!, BM!, E!, G!, PRE!, S!, iso)
Van Rhynsdorp, July 1925, Mrs. Rood s.n. in NBG
1249/23 (BOL, holo!)

M. binum L. Bol., Fl. Pl. S. Afr. 7 : t. 263 (1927), non N.E. Br.

Syntypes: as for M. phillipsii; the plate being drawn from the
last of these

Dwarf succulent shrubs, ca. 9 cm. high and 25 cm. in diameter.
Internodes usually hidden between the leaves, ca. 12 mm long and 2 mm
in diameter in the first two years of growth, Leaves sharply triquetrous,
pilose, velvety-green with horny margins, 6 - 10,7 - 16 mm long, 2,8 -

6,2 - 9 mm wide and 3 - 6 - 9 mm deep; sheathing the stem for ca. 4,5 mm. Flowers solitary, pedicels ca. 6,5 mm long and 1,5 mm in diameter; flowers pink, ca. 18 mm in diameter. Bracts up to 8 mm long and 3 mm wide, sepals 5, ca. 7 mm long and up to 4 mm wide, the inner 3 with membranous margins, ca. 6,5 mm long and 3 mm wide; petals (Petaloid staminodes) ca. 45 in 1 series, 6,5 - 12,5 - 16 mm long, up to 3 mm wide; non-petaloid staminodes ca. 45 - 65, white, ca. 2 - 4,5 - 6,5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 25, filaments white, ca. subulate. Capsule 5 - locular, ca. 6,5 mm in diameter and 4,5 mm deep, woody, charcoal grey, valve-wings ca. 2 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering about half of the surface of each locule. Seeds pale maroon, ca. 0,60 - 0,66 - 0,72 mm long, 0,39 - 0,44 - 0,49 mm wide and 0,27 - 0,34 - 0,42 mm deep, funicles ca. 0,27 - 0,34 - 0,42 mm long; surface baculate, baculae ca. 28 μ long, 70 μ in diameter; microbaculae present, ca. 5,96 μ long and 0,95 μ in diameter. Chromosome number $2n = 18$ (Snoad, 1951). Flowering season: 84% of specimens seen were in flower between July and September.

SPECIMENS SEEN:

- CAPE 3118 (-DA) near Van Rhynsdorp, February 1922, Mrs. Rood s.n. (K!) Giftberg Plateau, September 1948, Acocks 14897 (BOL!); Van Rhynsdorp, 5 August 1958, H. Hall s.n. (BOL!); Van Rhynsdorp, August 1924, Rood s.n. in NBG 1249/23 (BOL!); Van Rhynsdorp, July 1925, Watermeyer s.n. in NBG 287/23 (BOL!); Giftberg, September 1911, Phillips s.n. in Percy Sladen Memorial Expedition 7664 (BOL!, K!)
- (-DC) Nardouw Pass, August 1949, Stokoe s.n. in SAM 67879 (SAM!); between Matzikamma and Giftberg, 6 September 1964, E. Esterhuysen 30750 (BOL!)
- (-DD) Nardouw, September 1937, L. Bolus s.n. (BOL!)
- 3119 (-AC) 3 miles west of Nieuwoudtville, 30 July 1948, Davis s.n. in SAM 67876 (BOL!); Nieuwoudtville, 18 November 1930, Galpin 10559 (BOL!, PRE!); Van Rhyn's Pass, 17 August 1967, Van der Schijff 7215 (PRE!); Top of

- Van Rhijn's Pass, 28 August 1941, E. Esterhuysen 7773 (BOL!); 3 - 4 miles from Niewoudtville towards Oorlogskloof, 23 September 1930, L. Bolus s.n. in BOL 19232 (BOL!); Van Rhyn's Pass, 1930, Ryder & Sons s.n. in NBG 2242/30 (K!)
- (-C-) between Niewoudtville and Pakhuis Pass, 27 December 1939, Leipoldt s.n. (BOL!)
- (-CA) Lokenburg, 10 August 1956, Acocks 18869 (PRE!)
- 3218 (-BB) Clanwilliam, no date, Leipoldt 666 (GRA!); Clanwilliam, no date, Leipoldt 670 (GRA!)
- 3219 (-AA) Packhuisberg, 12 August 1897, Schlechter 10817 (B, BM!, BOL!, E!, G!, GRA!, K!, PRE!, S!); Dorn River, 7 July 1896, Schlechter 8065 (GRA!); Klipfonteinrand, September 1969, E. Esterhuysen 32202 (BOL!)
- 3319 (-AB) Cold Bokkeveld, 15 August 1971, E. Esterhuysen 32617 (BOL!)
- (-AD) Ceres, July 1932, Anon. s.n. in SUG s.n. (BOL!)

2 garden specimens.

Two points should be made in connection with the nomenclature and typification of this species. The first is that in accordance with the Rules (Stafleu et al., 1972 Art. 60), no name of infrageneric rank is accorded priority at a rank other than at which it was published. This means, inter alia, that a varietal name has no standing when that taxon is raised to a species level. In the present case, the varietal name 'muticum' has no standing at specific rank, although it was published nine years before the first available name at the specific level. The correct name for this plant at the species level is therefore Lampranthus maximiliani (Schltr. & Bgr.) L. Bol.

The second is that the identity of all three epithets published by L. Bolus for this species, with L. maximiliani, is indicated by the fact that the type of the latter is specifically mentioned in the protologue of each epithet. Furthermore, all previous epithets,

including M. binum N.E. Br. (erroneously), are mentioned in the synonymy attached to M. binum L. Bol.

The taxonomy of this species, although straightforward, is not without its interesting points. On vegetative and flower characters alone, excluding seed characters (which define Braunsia), this species is very close to B. geminata (Haw.) Schwantes, and it will be seen that this species was first described as a variety of that one. However, when seed characters are taken into account, the effect of the echinate seeds of Braunsia as opposed to the baculate seeds of the present species on the numerical clustering is such as to force the present species into this position. The arguments of Dupont (1973) about microbacular structure have been discussed elsewhere (section 4.3.2)

This species is largely confined to the Cedarberg, with one record from as far south as Ceres, while B. geminata is found in the Ceres Karoo and near Touws River, with a few records from the Little Karoo and Skitterykloof, on the east slopes of the easternmost ridge of the Cedarberg complex.

L. maximiliani can be distinguished from B. geminata by the baculate, not echinate seeds and by the separate geographical ranges. In any population of this or any other species of Lampranthus, it is usually possible to find at least one plant with at least one fruit containing at least one seed, making this seed character usable in the field.

This species and B. geminata can be distinguished from all others of both genera by their hairy leaves, which usually have horny margins.

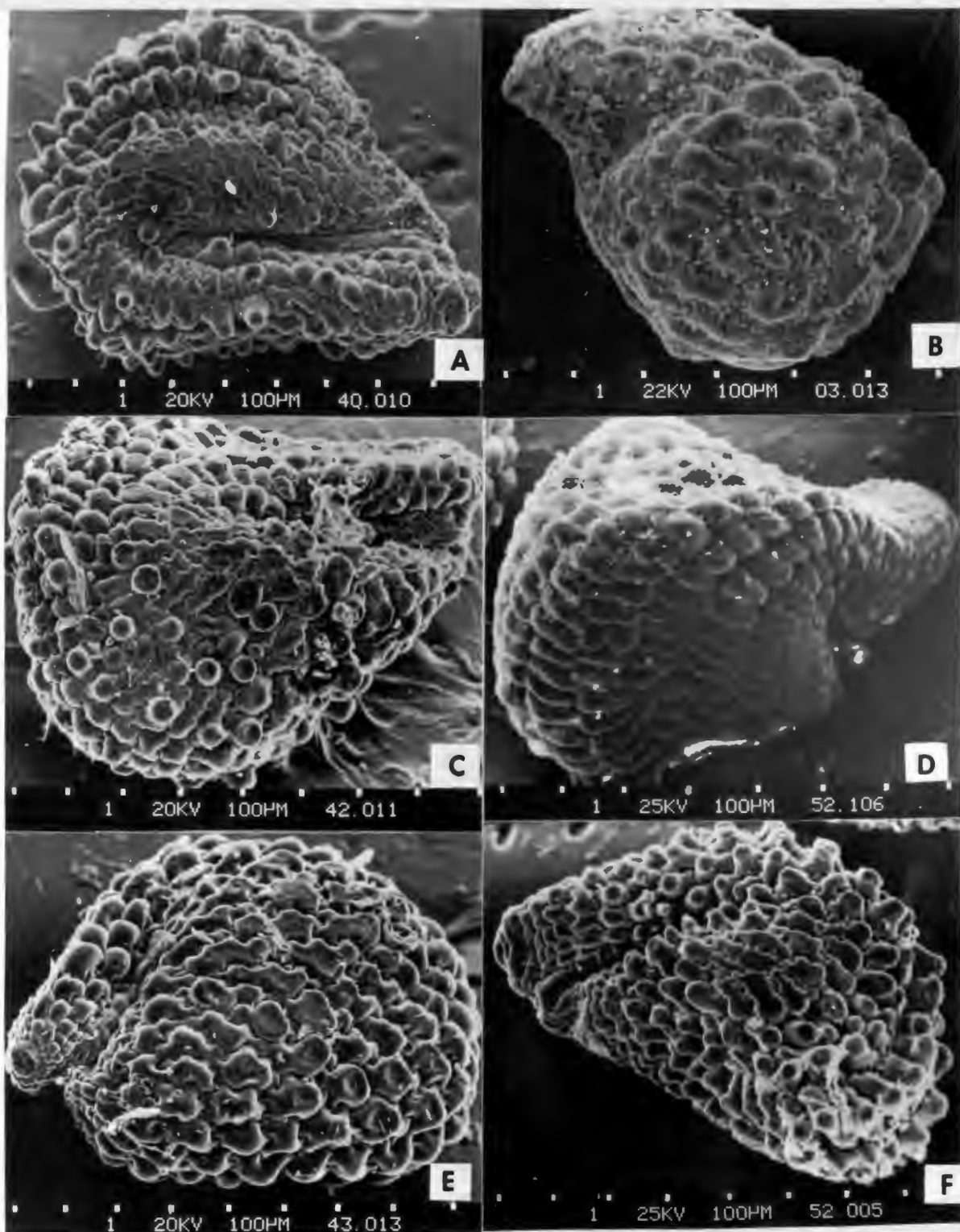


Plate 2. Seeds of *Lampranthus* section *Lunati*. The pips below each photograph are 100 μ apart.

A. *L. comptonii*

B. *L. maximiliani*

C. *L. copiosus*

D. *L. steenbergensis*

E. *L. dregeanus*

F. *L. prasinus*

- 5 Lampranthus copiosus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1429 (1955); idem Handb. Succ. Pl. 3 : 1195 (1960); idem, Sukk. Lex. : 440 (1970). idem, Lex. Succ. Pl. : 493 (1974)

Holotype: hort., Kirstenbosch, October - November 1930,
Anon. s.n. in BOL 19923 (BOL, holo!, K, iso!)

Mesembryanthemum copiosum L. Bol., Notes Mesembryanthemum 2 : 324 (1932)

Holotype: as above

M. piquetbergense L. Bol., Notes Mesembryanthemum 2 : 325 (1932)

Holotype: Piquetberg Mountain, November 1931, Compton s.n.
in NBG 1233/29 (BOL, holo!, K, iso!)

L. piquetbergensis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Handb. idem, Lex. Succ. Pl. : 498 (1974)

Holotype: as above

Spreading succulent shrubs, ca. 30 cm. high and 40 cm. in diameter. Internodes smooth, woody, buff to pale maroon, ca. 18 mm long and 2 mm in diameter in the first two years of growth. Leaves triquetrous, falcate, subtruncate, glaucous, 7,5 - 12 - 20 mm long, 1 - 3 - 5 mm wide and 2 - 4 - 7 mm deep, hardly sheathing the stem, margins sometimes dentate. Inflorescence cymose, pedicels ca. 16,5 mm long and 1 mm in diameter; flowers pale to deep pink, ca. 17 mm in diameter. Bracts up to 7 mm long and 3 mm wide, sepals 5, ca. 7 mm long and up to 4 mm wide, all alike; petals (petaloid staminodes) ca. 30 - 40 in 2 series, 5 - 7 - 13 mm long, up to 2 mm wide; non-petaloid staminodes absent. Stamens ca. 50 - 75, filaments white, ca. 2 - 3 - 5 mm long, anthers yellow; stigmas 5,1 - 3 - 5,5 mm long, acuminate. Capsule 5 - locular, ca. 5 mm in diameter and 4,5 mm deep, woody, grey, valve-wings ca. 2 mm long and up to 1 mm wide, separate covering membranes present, covering about half of the surface of each locule. Seeds charcoal grey, ca. 0,80 - 0,93 - 1,24 mm long, 0,62 - 0,68 - 0,84 mm wide and 0,33 - 0,40 - 0,47 mm deep, funicles ca. 0,25 - 0,32 - 0,42 mm long; surface baculate, baculae ca. 34 μ long, 67 μ in diameter; microbaculae present, ca. 2,43 μ long and 1,40 μ in diameter. Flowering season: 86% of specimens seen were

in flower between October and November.

SPECIMENS SEEN:

- CAPE 3218 (-DA) Piquetberg, 10 November 1930, Compton s.n. in NBG
1233/29 (BOL!, K!)
- Kapiteins Kloof, August - September 1955, du Plessis
142 (BOL!); Kapiteins Kloof, 6 November 1972, Wisura
1420 (BOL!)
- (-DB) Piekenierskloof, 5 November 1974, Wisura 2979
(NBG!)
- (-DC) Bushmans Hollow, Piquetberg, 12 October 1969, Wisura
753 (NBG!); Top of Versveld's Pass, October 1934,
Pillans s.n. (BOL!)

Garden material: Kirstenbosch, October - November 1930, Anon. s.n.
in BOL 19923

An almost complete series of intermediates can be demonstrated between L. copiosus s. str., through L. piquetbergensis s. str. to L. deltoides. The most consistent gap is not between toothed- and untoothed-leaf forms, but between forms with semiclavate to spatulate leaves with many teeth on the margins, and those with triquetrous leaves with few or no teeth.

Toothless-leaved forms approach L. lunatus most closely, but differ from that species in the stem colour, the fact that the leaves are almost always apiculate and in the absence of staminodes. L. dregeanus, although close to this species in the key, is readily distinguished from it by having much longer pedicels and smaller leaves.

- 6 Lampranthus steenbergensis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1448 (1955); idem, Handb. Succ. Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446 (1970); idem, Lex. Succ. Pl. 499 (1974)
Holotype: Steenberg plateau, June - July 1930, Compton s.n. in NBG 1625/29 (BOL!, holo, K!, iso)

Mesembryanthemum steenbergense L. Bol., Notes Mesembryanthemum 2 : 199 (1929)
Holotype: as above

- L. vredenburgensis L. Bol., Jl. S. Afr. Bot. 31 : 307 (1965); Jacobsen, Sukk. Lex. : 447 (1970); idem, Lex. Succ. Pl. : 501 (1974)
Holotype: Vredenburg, August 1965, H. Hall 2793 (NBG 345/64, BOL!)

Succulent shrubs, ca. 22 cm. high and 25 cm. in diameter. Internodes smooth, woody, buff, ca. 20 mm long and 3 mm in diameter in the first two years of growth. Leaves sharply triquetrous, falcate, glaucous, 13 - 19 - 29 mm long, 3 - 5 - 12 mm wide and 3,5 - 6 - 13 mm deep; sheathing the stem for ca. 1 mm. Flowers usually in threes, pedicels ca. 16 mm long and 1,5 mm in diameter; flowers pale pink to magenta, with a white central eye, ca. 18 mm in diameter. Bracts up to 13 mm long and 5,5 mm wide, sepals 5, ca. 6 mm long and up to 3 mm wide, the inner 3 with membranous margins, ca. 4 mm long and 3 mm wide; petals (petaloid staminodes) ca. 30 - 40 in 1 series, 5 - 7,5 - 9 mm long, up to 2 mm wide; non-petaloid staminodes ca. 20 - 40, white, 3 - 4 - 6 mm long, sharply differentiated from the petaloid staminodes. Stamens 40 - 50, filaments white, ca. 1 - 2 mm long, anthers pink; stigmas 5,1 - 2 mm long, subulate. Capsule 5 - locular, ca. 4,5 mm in diameter and 5 mm deep, woody, charcoal grey, valve-wings ca. 2 mm long and up to 0,5 mm wide, separate from the valve for little of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds reddish-maroon, ca. 0,81 - 0,85 - 0,92 mm long, 0,52 - 0,61 - 0,68 mm wide and 0,36 - 0,40 - 0,44 mm deep, funicles ca. 0,22 - 0,27 - 0,35 mm long; surface baculate, baculae ca 13 μ long, 64 μ in diameter; microbaculae present, ca. 3,83 μ long and 1,27 μ in diameter. Flowering season: 100% of specimens seen were in flower between June and August.

SPECIMENS SEEN:

CAPE 3217 (-DB) Stompneus Bay, Hopefield, July 1967, H. Hall 2805
(= NBG 357/64) (NBG!)

3317 (-BB) 8 miles from Saldanha towards Vredenburg, August
1965, H. Hall 2793 (= NBG 345/64) (BOL!)

3418 (-AB) Steenberg, June - July 1930, Compton s.n. in NBG
1625/29 (BOL!, K!)

The two species united here are very similar in all respects except possibly locality. Although the Steenberg Plateau is a well-known feature of the Cape Peninsula mountain chain, the existence of a Steenberg Cove in St. Helena Bay should not be overlooked. Presumably Steenberg Cove gained its name from a Steenberg (mountain) in the vicinity, but there is no trace of such a mountain in the most comprehensive Southern African gazetteer (Leistner & Morris 1976). There is no indication on the Compton specimen as to which Steenberg it came from. If it could be shown that this specimen was collected near Steenberg Cove, it would serve to place it exactly halfway between the other two known localities.

In this species the stigmas are much shorter than in others of this section. The stamens are more nearly horizontally disposed, almost recalling Erepsia in some cases. The solitary or ternate flowers are also diagnostic.

7 Lampranthus deltoides (L.) Glen, comb. nov.

Mesembryanthemum deltoides L., Sp. Pl. ed. 1, : 482 (1753); Gouan,
Hort. Monspel. : 244 (1765); Mill., Gard. Dict. ed. 8, n.
11 (1768); Soland. in Ait., Hort. Kew ed. 1, 2 : 183 (1789);
Gmel., Syst. Nat. ed. 14, 2 : 844 (1791); Haw., Obs. Gen.
Mesemb. 2 : 364 - 366 (1795); Willd., Sp. Pl. ed. 5, 2 : 1052
(1700); DC., Plant. Grass. t.53 (1800); Haw., Misc. Nat. :
74 (1803); Willd., Enum. Pl. Hort. Berol. : 539 (1809); Haw.,
Syn. Pl. Succ. : 296 (1812); Hornem., Hort. Reg. Hafniae :
465 (1815); Haw., Rev. Pl. Succ. : 133 (1821); DC., Prodr. 3 : 4
: 433 (1828); Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.3 t.24
§ 30 (1840); D. Dietr., Syn. Pl. 3 : 140 (1843); Sond., Fl. Cap.
2 : 421 (1862); Berger. Mesemb. u. Portulac. : 190 (1908);
N.E. Br., Jl. Linn. Soc. Bot. 45 : 118 (1920)
Iconotype: Dill., Hort. Eltham. t.195 f.246
Typotype: hort. Eltham. no date. Dillenius s.n. in herb. Dill.
(OXF!)

M. deltoideum L., Syst. Nat. ed. 10, : 1059 (1758)

Iconotype: as above

Oscularia deltoides (L.) Schwant., Möllers Dtsch. Gärt.-Ztg. 42 :
187 (1927); Jacobsen, Handb. Sukk. Pfl. 3 : 1586 (1955); idem,
Handb. Succ. Pl. 3 : 1338 (1960); idem, Sukk. Lex. : 487
(1970); idem, Lex. Succ. Pl. : 535 (1974)

Iconotype: as above

M. deltoides var. β simplex DC., Plant. Grass. t.53 (1800)

Type: not stated

O. deltata (Mill.) Schwant., Möllers Dtsche Gärt.-Ztg. 42 : 187
(1927)

Type: not stated; apparently based on Miller's description of
M. deltoides

M. caulescens Mill., Gard. Dict. ed. 8 n. 12 (1768); Haw., Obs. Gen.
Mesemb. 2 : 367 (1795); idem, Misc. Nat. : 74 Haw., Syn. Pl.
Succ. : 296 (1812); Hornem., Hort. Reg. Hafniae : 465 (1815)
Haw., Rev. Pl. Succ. : 133 (1821); DC., Prodr. 3 : 433 (1828);
Salm Dyck, Monogr. Gen. Aloes Mesemb. f.3 t.23 § 30 (1840);
D. Dietr. Syn. Pl. 3 : 140 (1843); Sond., Fl. Cap. 2 : 421

(1862); Berger, Mesemb. u. Portulac. : 188 (1908)

Icontype: Dill., Hort. Eltham, t.195 f. 243 - 244; t.196 f. 247

Typotype: Hort. Eltham. no date, Dillenius s.n. in herb. Dill.
(OXF!)

M. deltoides var γ. L., Sp. Pl. ed. 2, 690 (1762); Soland. in Ait.
Hort. Kew. ed. 1, 2 : 183 (1789)

Icontype: as above

O. caulescens (Mill.) Schwant., Möllers Dtsch. Gärt.-Ztg. 42 : 187
(1927); Jacobsen, Handb. Sukk. Pfl. 3 : 1586 (1955); idem,
Handb. Succ. Pl. 3 : 1338 (1960); idem, Sukk. Lex. : 477
(1970); idem, Lex. Succ. Pl. 535 (1974)

Icontype: as for M. caulescens

M. deltoides L. var. majus Weston, Universal Botanist 1 : 169 (1770);
Haw., Obs. Gen. Mesemb. : 2 : 366 (1795); N.E. Br., Jl. Linn.
Soc. Bot. 45 : 118 (1920)

Icontype: Dill., Hort. Eltham. t. 196 f. 247

Typotype: hort. Eltham, no date, Dillenius s.n. in herb. Dill.
(OXF!)

O. deltoides var. major (Weston) Schwant., ex. Jacobsen, Feddes Rep.
Beih. 106 : 158 (1938); Jacobsen, Handb. Succ. Pl. 3 : 1338
(1960); idem, Sukk. Lex. : 478 (1970); idem, Lex. Succ. Pl.
535 (1974)

Icontype: as above

O. deltata var. major (Weston) Schwant., Möllers Dtsch. Gärt.-Ztg.
42 : 187 (1927)

Icontype: as above

M. muricatum Haw., Misc. Nat. : 75 (1803); Haw., Obs. Gen. Mesemb.
2 : 364 (1795); idem, Syn. Pl. Succ. : 297 (1812); idem,
Rev. Pl. Succ. : 133 (1821); DC., Prodr. 3 : 433 (1828);
Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.3 t.25 S 30 (1840);
D. Dietr., Syn. Pl. 3 : 140 (1843); Sond., Fl. Cap. 2 : 421
(1862)

Icontype: Dill., Hort. Eltham. t.195 f.246

Typotype: hort. Eltham, no date, Dillenius s.n. in herb. Dill.
(OXF!)

M. deltoides L. var. muricatum (Haw.) Berger, Mesemb. u. Portulac.
: 190 (1908)

Icontype: as above

O. muricata (Haw.) Schwant., Jacobsen, Sukk. Lex. : 478 (1970), in
synonymy, comb. illegit.

Isotype: as above

M. deltoides L. var. pedunculatum N.E. Br., Jl. Linn. Soc. Bot. 45
: 118 (1920)

Syntypes: Nuwe Kloof, October 1896, Schlechter 9045 (K!)

Nuwe Kloof, 10 February 1890, Scott Elliot 228 (K!)

O. deltoides (L.) Schwant. var. pedunculata (N.E. Br.) Schwant. ex
Jacobsen, Feddes Rep. Beih. 106 : 158 (1938)

Syntypes: as above

O. pedunculata (N.E. Br.) Schwant., Nat. Cact. Succ. Jl. (G.B.) 4
: 58 (1949); Jacobsen, Handb. Sukk. Pfl. 3 : 1587 (1955);
idem, Handb. Succ. Pl. 3 : 1338 (1960); idem. Sukk. Lex.,
: 478 (1970); idem, Lex. Succ. Pl. : 535 (1974)

Syntypes: as above

PRE-LINNAEAN CITATIONS:-

Mesembryanthemum deltoides, et dorso et lateribus muricatis, minus Dill.,
Hort. Eltham. 255 t. 195 f. 246 (1732)

Mesembryanthemum Africanum frutescens procumbens, triangulari folio glauco
minimo, veluti tuberculis exasperato, flore suave purpurascense seu
carneo minore Breyn., Prodr. Pl. Rar. alt. : 80 (1689)

Ficoides Africana, folio crasso muricato Petiver, Musei 7 : n. 642 (1695)

Ficoides Africana erecta, folio triangulari brevi, fimbriato, glauco J.G.
Volck., Fl. Noriberg. : 165 (1700)

Ficoides Mesembryanthemum africanum, folio triangulato glauco brevi, serris
tuberculosis cum spinulis mitioribus ad angulos marginaliter asperato,
flore phoeniceo Plukenet, Amalth. Bot. : 89 (1705)

Ficoides Africana erecta ramosa, folio triangulari glauco et brevi, flore carneo, Tourn., Comm. Acad. Reg. Scient. Ann. 1705 : 240 n. 24 (1705)

Ficus aizoides Africana erecta, folio triangulari breviusculo fimbriato, floribus reseis odoratis J.C. Volck., Nürnberg. Hesp. : 223 t. 224 f. 5 (1708)

Ficoides seu Ficus aizoides Africana, folio triangulari crasso brevi glauco ad tres margines aculeato Boerh., Ind. Pl. Hort. Lugd. Bat. : 123 n. 10 (1710); idem., Ind. alter Pl. Hort. Lugd. Bat. : 290 n. 21 (1720)

Ficoides afra, folio triangulari glauco brevissimo, crassissimo, margine non spinoso Boerh., Ind. alter Pl. Hort. Lugd. Bat. : 290 n. 22 (1720)

Mesembryanthemum deltoides, dorso et lateribus muricatis, majus Dill., Hort. Eltham. : 254 t. 195 f. 245, 7.196 f. 247 (1732)

Mesembryanthemum deltoides, non dorso sed lateribus muricatis Dill., Hort. Eltham., 235 t. 195 f. 243 - 244 (1732)

Mesembryanthemum caulescens, foliis deltoidibus triquetris dentatis Linn., Hort. Cliff. : 218 n. 14 (1738); Royen., Hort. Lugd. Bat. : 284 n. 14 (1740)

Spreading succulent shrubs, ca. 35 cm. high and 1,25 m. in diameter. Internodes smooth, woody, russet-brown, ca. 16 mm long and 2,5 mm in diameter in the first two years of growth. Leaves sharply triquetrous to semiterete-spatulate, falcate, obtuse, grey, 6 - 11 - 20 mm long, 1,5 - 4 - 11 mm wide and 1,5 - 4 - 11 mm deep, hardly sheathing the stem, margins usually dentate, but forms with entire margins are known. Inflorescence cymose, pedicels ca. 18 mm long and 1 mm in diameter; flowers pale pink to pink, ca. 15 mm in diameter. Bracts up to 9 mm long and 3 mm wide, sepals 5, ca. 7 mm long and up to 4 mm wide, the inner 3 with membranous margins, 10,5 mm long and 3 mm wide; petals (petaloid staminodes) ca. 30 - 40 in 1 series, 4 - 6,5 - 11 mm long, up to 1 mm wide; non-petaloid staminodes absent. Stamens 10,50 - 85 filaments white, ca. 1 - 5 mm long, anthers white; stigmas 5, 1,5 - 3 - 5 mm long, subulate. Capsule 5 - locular, ca. 6 mm in diameter and 5 mm deep, woody, charcoal grey, valve-wings ca. 2,5 mm long and up to 1 mm wide, separate from the valve for most of their length;

placental tubercle absent; covering membranes present, covering half of the surface of each locule. Seeds black, ca. 0,84 - 0,92 - 1,08 mm long, 0,49 - 0,61 - 0,70 mm wide and 0,63 - 0,76 - 0,89 mm deep, funicles ca. 0,30 - 0,36 - 0,40 mm long; surface baculate, baculae ca. 39 μ long, 67 μ in diameter; microbaculae present, ca. 3,94 μ long and 4,19 μ in diameter. Chromosome number $2n = 18$ (Propach 1934; Suguira 1938, 1940b). Flowering season: 67% of specimens seen were in flower between October and December.

SPECIMENS SEEN:

CAPE 3218 (-DC) Hottentot Rock, Piquetberg, October 1897, H. Bolus s.n. (BOL!)

3318 (-DA) Klipheuwel, October 1940, L. Bolus s.n. in BOL 23622 (BOL!)

(-DB) Witte River at Wellington, November 1922, Thorne s.n. (SAM!); Great Britain Baths, Paarl, 11 August 1883, Wilms 3215 (B!)

(-DD) Van Brackelskloof, Stellenboschberg, 28 December 1919, Garside 1348 (K!)

3319 (-AA) Saron, October 1896, Schlechter s.n. (B!)

(-AC) Bushmans River Pass, Tulbagh, 23 July 1893, Guthrie 3043 (NBG!); Nieuwe Kloof Tulbagh, October 1897, Macowan 3125 (= HAA 1874) (BM!, BOL!, G!, K., SAM!); Witzenberg at Tulbagh November, Zeyher 694 (PRE!, G!, K!, BM!, CGE!, SAM!, E!, OXF!); Nieuwe Kloof, 9 October 1896, Schlechter 9045 (BM!, E!, G!, K!, GRA!, B!, PRE!, BOL!); Tulbagh Waterfall, November 1879, H. Bolus 5054 (BOL!, K!); Tulbagh Kloof, 16 November 1838, Drège s.n. (S!); mountainsides near Tulbagh, September - October, Ecklon & Zeyher 2022 (S!); Tulbagh Kloof, 10 February 1890, Scott Elliot 228 (K, sunt. of syn.!)
Ecklon / Tulbagh Kloof, 15 November 1838/34 (TCD!); Waterfall Forest Reserve, Ontongskop, 7 November 1969, Haynes 239 (JF!)

(-AD) Mostertshoek, Mitchells Pass, 1 October 1894, F. Guthrie s.n. in NBG 97000 (NBG!); Ceres, November

- 1933, Meekbold 11975 (M!)
- (-CA) Sneeuwkop, Wellington, December 1924, Barnard 680 (SAM!); Bainskloof, 1918, Moss 11987 (J!); Bainskloof, no date, Moll s.n. (BOL!)
- (-CB) Audensberg Peak, 9 April 1950, Wilman s.n. (BOL!); Audensberg Peak, 1 January, 1950, Esterhuysen 16665 (BOL!); Botha's Halt, Worcester, no date, Van Breda 28 (PRE!)
- (-CC) Stettynsberg, 16 December 1944, Esterhuysen 11041 (BOL!); near Villiersdorp, October 1934, L. Bolus s.n. in NBG 417/33 (BOL!); Villiersdorp, 20 November 1930, de Villiers s.n. in NBG 54/30 (BOL!); Wemmershoek, April 1924, Smuts 1118 (BOL!)
- (-DA) Bloukop near Keeromsberg, 16 December 1951, Esterhuysen 19667 (BOL!)
- 3321 (-CC) Garcia's Pass, November 1926, Muir 3984 (K!)
- 3418 (-BB) Steenbras, November 1931, Bartlett s.n. in NBG 1965/22 (BM!, BOL!, K!); Rooi Els, August 1947, Esterhuysen s.n. (BOL!); Sir Lowry's Pass, November 1921, L. Guthrie s.n. in BOL 17173 (BOL!); Sir Lowry's Pass, 29 October 1930, Wordsworth s.n. in NBG 1892/17 (BOL!); Sir Lowry's Pass, November 1919, Andreae M9272 (PRE!); near the top of Sir Lowry's Pass, October 1896, MacOwan HAA 1783 (G!, K!, UPS!)
- 3419 (-AA) North of Houw Hoek, 31 October 1913, Peters 50372 (B!); near Houw Hoek, October 1885, H. Bolus 9872 (BOL!); Ezeljacht, between Villiersdorp & Caledon, 27 July 1934, Salter s.n. in BOL 28038 (BOL!)
- (-AB) Caledon, October 1951, Esterhuysen 18959 (BOL!); Caledon Zwartberg, October 1899, H. Bolus s.n. in BOL 28036 (BOL!, GRA!); Caledon Zwartberg, 20 October 1897, Galpin 4062 (PRE!)
- (-BB) Riviersonderend, February 1932, Neethling s.n. in NBG 605/31 (BOL!)
- (-DB) Elim mountains, December 1896, H. Bolus s.n. in BOL 28-35 (BOL!)
- 3420 (---) 'Fairfield', Bredasdorp dist., 26 October 1961,

Oliver s.n. (BOL!)

- (-A-) Lemoenshoek, Langeberg, January 1951, Esterhuysen s.n. (BOL!)
- (-B-) Top of the Langeberg, December 1913, Anon. s.n. (BOL!)
- (-BC) Potteberg, 18 September 1954, Esterhuysen 23156 (BOL!) south slopes of the Potteberg, 12 October 1940, Pillans 9322 (BOL!)
- (-CA) Bredasdorp mountain, 1 December 1930, Galpin s.n. (BOL!)

3421 (-AB) near Riversdale, October 1904, H. Bolus s.n. in BOL 28037 (BOL!)

Without locality: C.B.S., no date, Willdenow 9785 A,B (B-W!); C.B.S., no date, Thunberg s.n. (S!); Africa Australis, 1839, Drège 7000 (G!, K!); C.B.S., no date, Blom 11 (SBT!) no locality, no date, Linnaeus 42.21.1,2,3 (S!) 7 other specimens.

Garden material: Berlin, no date, Willdenow 9786 (B-W!); Genève, July 1832, de Candolle 4049 (G!); van Royen, Leyden, no date, Daniel de la Roche s.n. (G!) Uppsala, no date, Alm in Linn. 42.21.4 (S!); Eltham, no date, Dillenius s.n. (OFX!); Eltham, no date, Dillenius s.n. (OXF!); Eltham, no date, Dillenius s.n. (OXF!); 19 other specimens.

As delineated here, this species includes the entire former genus Oscularia. Three species were recognised; intermediates between them are frequent and it is not possible to separate them at all. This species is placed here because of the line of intermediates connecting it with L. copiosus, which is normally quite easily distinguishable. The present species is characterised by many teeth on the leaves, which are among the smallest in the section, while L. copiosus has larger leaves with few to no teeth. Flowers in this species are usually solitary, sometimes ternate and only rarely more in an inflorescence.

This species is found in rocky places in the mountains of the

south-western Cape Province, a habitat not favoured by other members of this section.

- 8 Lampranthus dregeanus (Sond.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 (1955); idem, Handb. Succ. Pl.
3 : 1197 (1960); idem, Sukk. Lex. 440 (1970); idem, Lex. Succ.
Pl. : 493 (1974)

Syntypes: Tulbagh & Vogelvalley, no date, Ecklon & Zeyher in
TCD 107; Drège in Mb. Sonder (TCD!)

Mesembryanthemum dregeanum Sond. Fl. Cap. 2 : 414 (1862); Berger,
Mesemb. u. Portulac. : 196 (1908)

Syntypes: as above

Erepsia dregeana (Sond.) Schwant., Gartenflora 77 : 68 (1928)

Syntypes: as above

Succulent shrubs, ca. 60 cm. high and 40 cm. in diameter. Internodes
smooth, woody, russet-brown, ca. 30 mm long and 2 mm in diameter in
the first two years of growth. Leaves sharply triquetrous, falcate,
subacute, grass green, 6 - 9 - 14 mm long, 2 - 3 - 5,5 mm wide and
2 - 3 - 5,5 mm deep; not sheathing the stem. Inflorescence cymose,
pedicels ca. 33,5 mm long and 1,5 mm in diameter; flowers white, ca.
31 mm in diameter. Bracts up to 10 mm long and 3 mm wide, sepals
5, ca. 7 mm long and up to 3 mm wide, all alike; petals (petaloid
staminodes) ca. 80 in 3 series, 12 - 15 - 19 mm long, up to 1,5 mm
wide; non-petaloid staminodes absent. Stamens 10 - 40, filaments
white, ca. 1 - 3 mm long, anthers white; stigmas 5, 1 - 1,5 - 2,5
mm long, subulate. Capsule 5 - locular, ca. 7 mm in diameter and
7 mm deep, woody, grey, valve-wings ca. 3 mm long and up to 0,2 mm
wide, separate from the valve for most of their length; placental
tubercle absent; covering membranes present, covering little of the
surface of each locule. Seeds ashen grey, ca. 0,88 - 0,93 - 0,98 mm
long, 0,71 - 0,73 - -,7 mm wide and 0,40 - 0,47 - 0,53 mm deep,
funicles ca. 0,29 - 0,32 - 0,36 mm long; surface baculate, baculae
ca. 31 μ long, 106 μ in diameter; microbaculae present, ca. 1,20
 μ long and 0,55 μ in diameter. Flowering season: 100% of specimens
seen were in flower between September and December.

SPECIMENS SEEN:

CAPE 3319 (-AC) Tulbagh Kloof, September 1895, H. Bolus 13554 (BOL!)
Tulbagh Road Station, October 1890, F. Guthrie 2129

(BOL!); near Tulbagh Waterfall, November 1879,
H. Bolus 5052 (BOL!); Tulbagh Waterfall, December
Ecklon & Zeyher 2012 (= Ecklon 107) (TCD!, B!, S!)
Vogelvalley, September, Zeyher 1125 (B!, S!); Nuwe=
kloof, October, Drège 1133 (B!)

Without exact locality: C.B.S., no date, (Drège in) herb. Sonder
B!); 2 other specimens.

The disposition of the stamens of this species is typical of Lampranthus
and not at all similar to that of Erepsia. It is one of the few
species in the genus to have white flowers only; most species with
white flowers also have white and pink or white and yellow flowers.
It is easily recognisable by the short, sometimes almost boat-shaped
leaves, which are usually apiculate.

- 9 Lampranthus prasinus L. Bol., Notes Mesembryanthemum 3 : 157 (1939)
Jacobsen, Handb. Sukk. Pfl. 3 : 1443 (1955); idem, Handb.
Succ. Pl. 3 : 1206 (1960); idem, Sukk. Lex. : 444 (1970);
idem, Lex. Succ. Pl. : 498 (1974)

Holotype: Jonkers Klip, October 1938, Pillans 8853 (BOL!)

Dwarf spreading shrubs, ca. 12 cm. high and 50 cm. in diameter.
Internodes smooth, deep maroon to grey, ca. 9 mm long and 1,5 mm in diameter in the first two years of growth. Leaves triquetrous to obscurely triquetrous, falcate, glaucous to blue-grey, 4 - 6,5 - 9 mm long, 2 - 4 - 5 mm wide and 2 - 4 - 5 mm deep; hardly sheathing the stem, apices obtuse. Flowers solitary or in threes, pedicels ca. 7 mm long and 1 mm in diameter; flowers magenta, ca. 13 mm in diameter. Bracts up to 4 mm long and 2 mm wide, sepals 5, ca. 3 mm long and up to 2 mm wide, all alike; petals (Petaloid staminodes) ca. 30 in 2 series, 5 - 6 mm long, up to 1 mm wide; non-petaloid staminodes ca. 30 - 40, white, ca. 3,5 mm long, sharply differentiated from the petaloid staminodes. Stamens 40 - 50, filaments white, ca. 2 - 3 - 3,5 mm long, anthers yellow; stigmas 5, 1 - 2 mm long, subulate. Capsule 5 - locular, ca. 4,5 mm in diameter and 4 mm deep, woody, grey, valve-wings ca. 2 mm long and up to 1 mm wide, separate from the valve for very little of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds black, ca. 0,74 - 0,82 - 0,88 mm long, 0,55 - 0,61 - 0,67 mm wide and 0,32 - 0,37 - 0,41 mm deep, funicles ca. 0,23 - 0,26 - 0,39 mm long; surface baculate, baculae ca. 50 μ long, 69 μ in diameter; microbaculae present, ca. 1,54 μ long and 0,57 μ in diameter. Flowering season: 100% of specimens seen were in flower in October.

SPECIMENS SEEN:

- CAPE 3218 (-AB) Jonkersklip, 2 miles from Verloren Vlei, October 1938,
Pillans 8853 (BOL!, K!)
- (-AD) Upper north slopes of Rooikransberg, October 1935,
Pillans 7755 (BOL!)

This species has small leaves and dark-coloured internodes reminiscent of L. deltoides. It differs from that species in the absence of staminodes, the length of pedicels, the absence of teeth on the leaf-margins and the locality. L. maximiliani, next to which it keys out, has much deeper, hairy leaves which sheath the stem for a significant part of their depth.

6.1.2 Lampranthus section Lampranthus

Mesembryanthemum section Conferta Haw., Syn. Pl. Succ. : 240 (1812)

Salm Dyck, Obs. Bot. Hort. Dyck. 1 : 30 (1820) DC., Prodr. 3 :
436 (1828)

M. sect. Teretiuscula Haw., Syn. Pl. Succ. : 301 (1812)

M. sect. Rubicunda Salm Dyck, Obs. Bot. Hort. Dyck. 1 : 23 (1820)

M. sect. Aequilatera Salm Dyck, Obs. Bot. Hort. Dyck. 1 : 33 (1820)

M. sect. Blanda Haw., Rev. Pl. Succ. : 146 - 147 (1821); Sonder, Fl.
Cap. 2 : 418 (1862); Berger, Mes. u. Portulac. : 162 (1908)

L. sect. Blandi (Haw.) Schwant. ex Jac., Handb. Succ. Pl. 3 : 1191
(1960); Jacobsen, Sukk. Lex. : 437 (1970); idem, Lex. Succ. Pl.
: 490 (1974)

M. sect. Eximia Haw., Rev. Pl. Succ. : 145 (1821) partly.

M. sect. Aurea Haw., Rev. pl. Succ. : 148 (1821); DC, Prodr. 3 : 437
(1828); Sonder, Fl. Cap. 2 : 417 (1862); Berger, Mes. u. Portulac.
: 164 (1908)

L. sect. Aurei (Haw.) Schwant. ex Jac., Handb. Succ. Pl. 3 : 1191
(1960); Jacobsen, Sukk. Lex. : 437 (1970); idem, Lex. Succ. Pl.
: 490 (1974)

M. sect. Corallina Haw., Rev. Pl. Succ. : 154 (1821)

L. sect. Corallini (Haw.) Schwant. ex Jac., Handb. Succ. Pl. 3 : 1190
(1960), comb. illegit., Jacobsen, Sukk. Lex. : 437 (1970); idem,
Lex. Succ. Pl. : 490 (1974)

M. sect. Haworthiana DC., Prodr. 3 : 439 (1828); Sonder, Fl. Cap.
2 : 428 (1862); Berger, Mes. u. Portulac. : 154 (1908)

M. sect. Amoena Salm Dyck ex Berger, Mes. u. Portulac. : 159 (1908)

L. sect. Amoeni (Haw.) Schwant. ex. Jac., Handb. Succ. Pl.
3 : 1190 (1960); comb. illegit.; Jacobsen, Sukk. Lex. :
437 (1970); idem, Lex. Succ. Pl. : 490 (1974)

Large succulent shrubs, of mat-formers; leaves 5 - 10 times as long as wide and deep, triquetrous to semiterete, blue-grey to grass green. Flowers solitary or in threes, rarely more than three in a cymose inflorescence, 30 mm or more in diameter, pink to purple, yellow to copper-coloured or white. Capsules larger than average for the genus, 8 mm or more in diameter, woody to leathery, usually dark grey, often very tough. Seeds large, maroon to black with large, elliptical baculae with average to small microbaculae.

Type species: L. multiradiatus (Jacq.) N.E. Br.

Seventeen species and two subspecies.

As will be seen from the extensive synonymy, a number of sections have been combined to give the concept presented here. The name of the section as used here is obligatory in terms of the Code, as this section includes the type species of the genus. The combinations in Lampranthus ascribed to Schwantes ex Jacobsen are all illegitimate, as they were all published in 1960, at which time a direct citation of the date and place of publication of the basionym was required. This is missing from all these new combinations.

The section as circumscribed here includes the species with the north-westernmost and the north-easternmost ranges in the genus. The main centre of diversity is in the Eastern Cape Province, but the range of this section is continuous from South-West Africa to Natal.

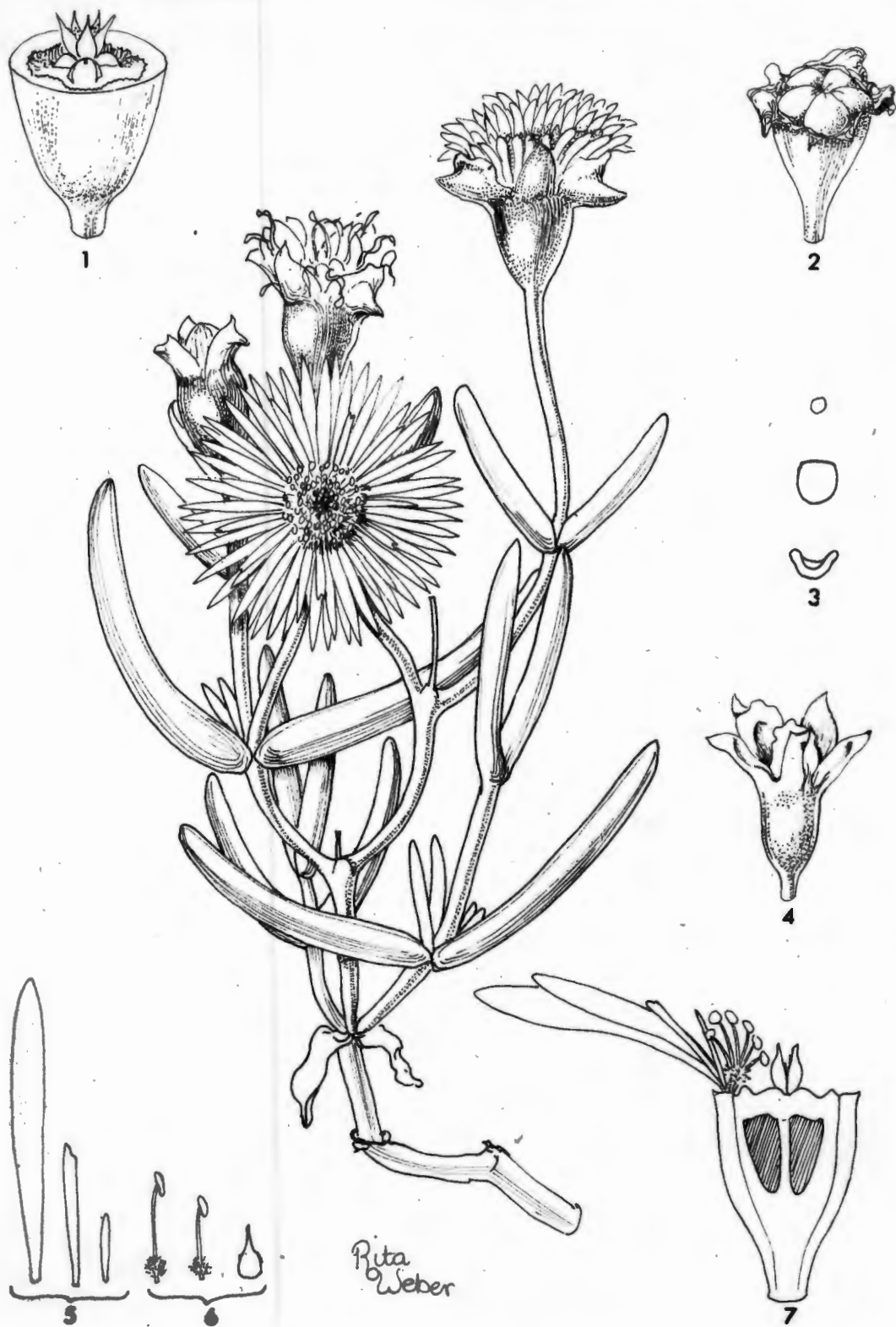


Fig. 3. *Lampranthus amoenus*.

- | | | |
|----------------------|-------------------|-----------------------|
| 1. gynoecium | 2. immature fruit | 3. sections of leaf |
| 4. sepals | 5. petals | 6. stamens and stigma |
| 7. section of flower | | |

- 10 Lampranthus falciformis (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1433 (1955); idem, Handb.
Succ. Pl. 3 : 1198 (1960); idem, Sukk. Lex. : 441 (1970);
idem, Lex. Succ. Pl. : 494 (1974)
Iconotype: unpublished plate at Kew

Mesembryanthemum falciforme Haw., Syn. Pl. Succ. : 299 (1812); idem,
Rev. Pl. Succ. : 137 (1821); DC., Prodr. 3 : 433 (1828); Salm
' Dyck, Monogr. Gen. Aloes. Mesemb. f.1 t.23 29 (1836); D.
Dietr., Syn. Plant. 3 : 141 (1843); Sond., Fl. Cap. 2 : 420
(1862); Berger, Mesemb. u. Portulac. : 187 (1908)
Iconotype: as above

M. maritimum L. Bol., Notes Mesembryanthemum 3 : 55 (1937)
Holotype: Rooi Els, January 1936, Pillans 8352 (BOL!)

L. falciformis var. maritimus (L. Bol.) L. Bol., Notes Mesembryan-
themum 3 : 170 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1433
(1955); idem, Handb. Succ. Pl. 3 : 1199 (1960); idem, Sukk.
Lex. : 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)
Holotype: as above

Spreading shrubs, ca. 40 cm. high and 1,2 m. in diameter. Internodes
smooth, maroon, chestnut or charcoal grey, ca. 22 mm long and 2,5 mm
in diameter in the first two years of growth. Leaves sharply trique-
trous, falcate, grey, 9 - 14,5 - 24,5 mm long, 2 - 4 - 4,4 mm wide
and 2 - 4 - 5,5 mm deep, sheathing the stem for ca. 1,5 mm. Flowers
in threes, pedicels ca. 22,5 mm long and 2 mm in diameter; flowers
pink, ca. 33 mm in diameter. Bracts up to 12,5 mm long and 4,5 mm
wide, sepals 5, ca. 9 mm long and up to 6 mm wide, the inner 3 with
membranous margins, ca. 7 mm long and 6 mm wide; petals (petaloid
staminodes) ca. 55 - 95 in 3 series, 10 - 13,5 - 16,5 mm long, up
to 3 mm wide; non-petaloid staminodes up to 25, white, ca. 3,5 - 6
- 10 mm long, sharply differentiated from the petaloid staminodes.
Stamens many, filaments white, ca. 2 - 3 - 4,5 mm long, anthers
white; stigmas 5, 1 - 2 mm long, subulate. Capsule 5 - locular,
ca. 8,5 mm in diameter and 7,5 mm deep, woody, pale grey, valves
with 1 - 1,5 mm high ridges, valve-wings ca. 3,5 mm long and up to
1 mm wide, separate from the valve for most of their length, placental
tubercle absent; covering membranes present, covering about half of

the surface of each locule. Seeds charcoal grey to black, ca. 0,94 - 1,22 - 1,26 mm long, 0,44 - 0,56 - 0,78 mm wide and 0,58 - 0,69 - 0,97 mm deep, funicles ca. 0,33 - 0,39 - 0,50 mm long; surface baculate, baculae ca. 59 μ long, 111 μ in diameter; micropunctilli present, ca. 0,31 μ long and 0,84 μ in diameter. Chromosome number $2n = 36$ (Propach 1934). Flowering season: 68% of specimens seen were in flower between October and February.

SPECIMENS SEEN:

- CAPE : 3218 (-BC) Between Paleisheuvel & Leipoldtville, 7 October 1958, Werdermann & Oberdieck 468 (B!, K!)
- 3318 (-CD) Lion's Head, February 1921, Pillans s.n. in BOL 18659 (BOL!); Top of Table Mountain, December 1879, H. Bolus 4669 (BOL!, K!); Castle Rock, 6 January 1946, Esterhuysen 12531 (BOL!); between Skeleton & Window gorges, 6 December 1945, Esterhuysen 12307 (BOL!); Ledges of Devil's Peak, 23 February 1944, Esterhuysen 10036 (BOL!); Table Mountain, January 1918, Moss 2922 (J!); Table Mountain, 6 December 1922, Moss 7722 (J!); Devil's Peak, January 1929, Moss 17470 (J!); slopes south of Nursery Ravine, December 1929, Wisura 938 (NBG!); Table Mountain, December 1933, Meebold 11955 (M!); Table Mountain, December 1902, Marloth 2796 (PRE!); Table Mountain, December 1920, Marloth 10081 (PRE!); Table Mountain, December, Ecklon en Zeyher 2052 (=Ecklon 519) (K!, S!); Camps Bay, Pillans B4 (K!);
- (-DC) Cape Flats, December 1922, Thomas s.n. in NBG 1/22 (BOL!)
- 3319 (-AC) Tulbagh Kloof, September 1895, H. Bolus 11794, 13554 (PRE!); Roodezand, October - November, Niven 101 (BM!)
- 3322 (-DC) Wilderness, November 1925, Mogg s.n. (PRE!)
- 3418 (-AB) Karbonkelberg, 28 February 1943, Leighton s.n. (BOL!) Muizenberg mountain, December 1942,

Goulimis s.n. (BOL!); Mossel Bay, Cape Peninsula, January 1897, H. Bolus 8649 (BOL!); Chapman's Peak, March 1927, Arbuthnot s.n. (BOL!); Grootkop, Table Mountain, 4 February 1945, Esterhuysen 11500 (BOL!); Little Lion's Head, January 1932, Sibbett s.n. (BOL!); Zwartkop Ridge near Cape Gap, 31 January 1939, Salter s.n. (BOL!); Orange Kloof, 6 December 1896, Wolley Dod 2293 (K!, BOL!); Disa Gorge, March 1916, L. Bolus s.n. (BOL!); Chapman's Peak Road, December 1927, Arbuthnot s.n. (BOL!) slopes of Constantiaberg, January 1945, Leighton 948 (BOL!); Table Mountain, December 1902, Marloth 2764 (BOL!, K!); western side of Table Mountain, January 1946, Esterhuysen 12535 (BOL!); Constantiaberg, May 1931, Barker s.n. (K!)

- (-AD) above Buffels Bay, 24 November 1935, Esterhuysen s.n. (BOL!); Cape Point Lighthouse, 3 December 1927, Arbuthnot s.n. (BOL!); Cape Point, January 1934, Leighton s.n. in BOL 21406 (BOL!); between Buffelsfontein & Cape Point, November 1915, L. Bolus s.n. (BOL!); Beyond Kalk Bay, 28 November 1896, Wolley Dod 2187 (BOL!, K!); Top of Matroos Klip Ridge, 4 November 1965, Taylor 6554 (BOL!, K!); Buffels Bay, 25 November 1932, Salter s.n. in NBG 3310/32 (BOL!); Cape Point, December 1933, Meebold 11956 (K!, M!); Cape Point, 30 July 1923, Rogers 27255 (G!)
- (-BB) Lebanon State Forest, 8 January 1971, Kruger 1112 (JF!)

3419 (-BD) Cape Hangklip, no date, Anon. s.n. (BOL!)

Without precise locality: C.B.S., no date, Drège s.n. (BM!, E!) Naturalised on Lundy Island, June 1908, Wakefield s.n. (K!); 6 other specimens.

Garden material: Melbourne, 26 October 1886, Anon. s.n. (K!); Cambridge, 1818, Anon. s.n. in herb. Lindley (CGE!); 17 other specimens.

This distinctive species forms a link between the present section and section Lunati. The short, deep, falcate leaves are reminiscent of the latter section, but these characters are less pronounced in this species than in most if not all members of Lunati. The large, spreading shrub habit also recalls the habit of at least some members of Lunati.

With few exceptions, this species is found on sandstone rocks on top of the Cape Peninsula mountain chain. At the southern end of this chain and a few other places, it is found near the sea. Specimens from this maritime habitat were described as a different species, but there are not characters to distinguish them from typical L. falciformis.

There can be no doubt about the identity of this plant in view of the plate and descriptions left by Haworth. It is, however, surprising that a plant as common on the Cape Peninsula as this species should only have been introduced to European cultivation as late as 1805.

- 11 Lampranthus reptans (Soland. in Alt.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1445 (1955); idem, Handb. Succ. Pl. 3 : 1207 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl. : 498 (1974)

Iconotype: unpublished plate at Kew

Mesembryanthemum reptans Soland. in Alt., Hort. Kew. ed. 1, 2 : 185 (1789); Gmel., Syst. Nat. ed. 14, 2 : 845 (1791); Haw., Obs. Gen. Mesemb. 2 : 349 (1795); idem, Misc. Bot. : 80 (1803); Willd., Enum. Pl. Hort. Berol. : 536 (1809); Haw., Syn. Pl. Succ. : 242 (1812); idem, Rec. Pl. Succ. : 121 (1821); DC., Prodr. 3 : 427 (1828); D. Dietr., Syn. Pl. 3 : 137 (1843); Salm Dyck, Monogr. Gen. Aloes Mesemb. f.6 t.7 (1854); Sond., Fl. Cap. 2 : 407 (1862); Berger, Mesemb. u. Portulac. : 134 (1908).

Iconotype: as above

Mesembryanthemum woodburniae L. Bol., Notes Mesembryanthemum 2 : 1 (1928)

Holotype: Orchard, Hex River Valley, July 1927 M. Woodburn
M. Woodburn s.n. in NBG 595/25 (BOL!)

L. woodburniae (L. BOL.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1452 (1955); idem, Handb. Succ. Pl. 3 : 1213 (1960); idem, Sukk. Lex. (1970); idem, Lex. Succ. Pl. : 501 (1974)

Holotype: as above

L. sternens L. Bol., Notes Mesembryanthemum 3 : 158 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1448 (1955); idem, Handb. Succ. Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446 (1970); idem, Lex. Succ. Pl. : 449 (1974)

Holotype: Cape Agulhas, January 1938, Matthews s.n. in BOL 21852

Mat-forming succulent, ca. 7 cm. high and 20 cm. in diameter.

Internodes smooth, chestnut, ca. 27 mm long and 1,5 mm in diameter in the first two years of growth. Leaves triquetrous, acute, very glaucous, 9 - 19 - 33 mm long, 1,5 - 3,5 - 6,5 mm wide and 1 - 2,5 - 7 mm deep, sheathing the stem for ca. 1,5 mm. Flowers solitary or in threes, pedicels ca. 42 mm long and 1,5 mm in diameter; flowers

white to yellow, ca. 44 mm in diameter. Bracts up to 20 mm long and 2,5 mm wide, sepals 5, ca. 10 mm long and up to 5,5 mm wide, all alike; petals (petaloid staminodes) ca. 30 - 40 in 1 series, 16 - 20,5 - 29 mm long, up to 5 mm wide; non-petaloid staminodes absent. Stamens 60 - 90, filaments yellow, ca. 2 - 4 - 5 mm long, anthers yellow; stigmas 5, 1,5 - 3,5 mm long, acuminate. Capsule 5 - locular, ca. 8 mm in diameter and 7,5 mm deep. woody, charcoal grey, valve-wings ca. 3,5 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering little of the surface of each locule. Seeds maroon, ca. 0,75 - 0,98 - 1,04 mm long, 0,38 - 0,50 - 0,61 mm wide and 0,54 - 0,64 - 0,75 mm deep, funicles ca. 0,30 - 0,42 - 0,50 mm long, surface baculate, baculae ca. 28 μ long, 102 μ in diameter; micropunctilli present, ca. 0,40 μ long and 0,75 μ in diameter. Chromosome number $2n = 36$ (de Vos 1947). Flowering season: 84% of specimens seen were in flower between July and October.

SPECIMENS SEEN:

- CAPE 3218 (-BA) Graafwater, August 1925, Peers s.n. in NBG 916/23 (BOL!, K!)
- (-CC) between Paternoster and Hopefield, June 1941, Leipoldt s.n. (BOL!)
- 3318 (-AB) near Hopefield, September 1905, H. Bolus s.n. (BOL!)
- (-CB) Mamre, 10 September 1955, H. Hall s.n. (BOL!)
- (-CD) near Rondebosch, July 1877, H. Bolus 3889 (BOL!, BM!, K!); Rondebosch, 26 August 1895, Wolley Dod 258 (BM!, BOL!); near Kenilworth, August 1887, H. Bolus 7043 (BOL!, K!); Green Point & Salt River, June - July, Ecklon & Zeyher s.n. (SAM!); Green Point, June - July, Ecklon & Zeyher 1988 (M!); Devil's Peak, August 1898, MacOwan 3282 (= Herbarium Austro-Africanum 1864) (B!, G!, BM!, K!, SAM!, UPS!); Camp Ground, August, Zeyher s.n. (SAM!); Cape Town, August 1872, G. de Vyllder s.n. (S!); Sea Point, no date, Pappe s.n. (K!) Salt River Flats, 19 July 1883, Wilms 3214 (E!, K!); Camp Ground, 20 August 1897, Wolley Dod

- 3049 (BM!); Green Point, July, Ecklon 3 (TCD!)
- (-DB) Wellington, August 1926, Grant 2397 (BOL!); foot of Paarl Mountain, August - September 1839; Drège 6955 (K!); Paarl Road, Wellington, 27 August 1918, Moss 6397 (J!, BM!)
- (-DC) Vyge Kraal, August, Zeyher s.n. (SAM!); Vygekraal, September, Zeyher 695 (CGE!, K!, OXF!, S!, TCD!); flats east of Mowbray, June 1877, H. Bolus 3726 (BM!); Kraaifontein, June 1908, Dümmer 1603 (E!); Vygekraal, September 1908, Dümmer 1784 (E!)
- (-DD) Groot Drakenstein, August 1913, Rogers 14501 (BOL!)
- 3319 (-BC) Orchard, Hex River Valley, July 1927, Woodburn s.n. in NBG 595/25 (BOL!)
- (-C-) Die Eike, Breede River, 4 October 1960, Van Breda 998 (PRE!, K!)
- 3322 (-CD) George, August 1912, Rogers 1360 (K!)
- 3418 (-AB) Retreat, August 1892, H. Bolus s.n. (BOL!); Fish Hoek, 30 August 1896, Wolley Dod 1631 (BOL!); mountain at Muizenberg, July 1958, R. du Plessis s.n. (BOL!); Kommetjie, June 1926, L. Bolus s.n. (BOL!); Simon's Bay, no date, Wright s.n. (K!); Clovelly Valley, 25 September 1928, Salter 269/1 (BM!)
- (-BA) Cape Flats, no date, Ecklon 144 (S!); Cape Flats, no date, Rehmann 2125 (BM!); Wynberg Flats, August 1908, Dümmer 647 (E!)
- (-BB) Macassar, August 1971, Wisura 2147 (NBG!)
- 3419 (-AA) near Houw Hoek, September 1902, H. Bolus 9941 (BOL!)
- (-AD) Bot River Mouth, July, Zeyher 2610 (S!)
- 3420 (-C-) Tantjies Bos near Bredasdorp, 14 September 1926, C.A. Smith 2965 (PRE!)
- (-CA) Arniston, 24 September 1958, Chamberlain s.n. (BM!)
- (-CC) Cape Agulhas, January 1938, Mathews s.n. in BOL 21852 (BOL!)
- 3421 (-AB) ? Riversdale, 4 May 1931, Muir 4687 (K!)

- 3049 (BM!); Green Point, July, Ecklon 3 (TCD!)
- (-DB) Wellington, August 1926, Grant 2397 (BOL!); foot of Paarl Mountain, August - September 1839; Drège 6955 (K!); Paarl Road, Wellington, 27 August 1918, Moss 6397 (J!, BM!)
- (-DC) Vyge Kraal, August, Zeyher s.n. (SAM!); Vygekraal, September, Zeyher 695 (CGE!, K!, OXF!, S!, TCD!); flats east of Mowbray, June 1877, H. Bolus 3726 (BM!); Kraaifontein, June 1908, Dümmer 1603 (E!); Vygekraal, September 1908, Dümmer 1784 (E!)
- (-DD) Groot Drakenstein, August 1913, Rogers 14501 (BOL!)
- 3319 (-BC) Orchard, Hex River Valley, July 1927, Woodburn s.n. in NBG 595/25 (BOL!)
- (-C-) Die Eike, Breede River, 4 October 1960, Van Breda 998 (PRE!, K!)
- 3322 (-CD) George, August 1912, Rogers 1360 (K!)
- 3418 (-AB) Retreat, August 1892, H. Bolus s.n. (BOL!); Fish Hoek, 30 August 1896, Wolley Dod 1631 (BOL!); mountain at Muizenberg, July 1958, R. du Plessis s.n. (BOL!); Kommetjie, June 1926, L. Bolus s.n. (BOL!); Simon's Bay, no date, Wright s.n. (K!); Clovelly Valley, 25 September 1928, Salter 269/1 (BM!)
- (-BA) Cape Flats, no date, Ecklon 144 (S!); Cape Flats, no date, Rehmann 2125 (BM!); Wynberg Flats, August 1908, Dümmer 647 (E!)
- (-BB) Macassar, August 1971, Wisura 2147 (NBG!)
- 3419 (-AA) near Houw Hoek, September 1902, H. Bolus 9941 (BOL!)
- (-AD) Bot River Mouth, July, Zeyher 2610 (S!)
- 3420 (-C-) Tantjies Bos near Bredasdorp, 14 September 1926, C.A. Smith 2965 (PRE!)
- (-CA) Arniston, 24 September 1958, Chamberlain s.n. (BM!)
- (-CC) Cape Agulhas, January 1938, Mathews s.n. in BOL 21852 (BOL!)
- 3421 (-AB) ? Riversdale, 4 May 1931, Muir 4687 (K!)

Without exact locality: C.B.S., 1774, Thunberg s.n. (S!);
illegible locality, 1 August 1824,
Ecklon s.n. (S!); Cape of Good Hope
1797, Roxburgh s.n. (S!); C.B.S., 1772,
Oldenburg 152, 361 (BM!); C.B.S., no
date, Lehmann s.n. (BM!)

1 garden specimen.

This species is readily distinguished from the mat-forming forms of L. glaucus subsp. aureus by the shorter, more nearly semiterete leaves, the clearer (less golden) yellow of yellow-flowered forms, and the much greater frequency of white flowers. Further distinguishing characters are the long pedicels, which have the bracts at the base, rather than in the middle of their length.

12 Lampranthus conspicuus (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930)

Jacobsen, Handb. Sukk. Pfl. 3 : 1428 (1955); idem, Handb. Succ. Pl. 3 : 1195 (1960); Haage, Cact. Succ. : 118 (1963); Jacobsen, Sukk. Lex. : 440 (1970); idem, Lex. Succ. Pl. : 493 (1974)

Iconotype: unpublished plate at Kew

Mesembryanthemum conspicuum Haw., Syn. Pl. Succ. : 240 (1812); idem,

Rev. Pl. Succ. : 146 (1821); DC., Prodr., 3 : 436 (1828); Salm

Dyck, Monogr. Gen. Aloes. Mesemb. f.2 t.11 27 (1837);

D. Dietr., Syn. Pl. 3 : 143 (1843); Sond., Fl. Cap. 2 : 419 (1862); Berger, Mesemb. u. Portulac. : 159 (1908)

Iconotype: as above

M. dyckii Berger, Engl. Bot. Janrb. 57 : 635 (1922)

Iconotype: Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.2 t.11

L. dyckii (Berger) N.E. Br., Gard. Chron. 87 : 212 (1934); Jacobsen,

Handb. Sukk. Pfl. 3 : 1431 (1955); idem, Handb. Succ. Pl. 3 : 1197 (1960)

Iconotype: as above

Ruschia dyckii (Berger) Jacobsen, Lex. Succ. Pl. : 628 (1974),

comb. illegit.

Iconotype: as above

M. latum L. Bol., Notes Mesembryanthemum 2 : 141 (1929), non Haw.

Holotype: between Khamieskroon and Springbok, August 1929, Pillans 6267 (BOL!)

L. plautus N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb.

Sukk. Pfl. 3 : 1443 (1955); idem, Handb. Succ. Pl. 3 : 1206 (1960); idem, Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 498 (1974)

Holotype: as ~~above~~ for M. latum L. Bol.

M. densipetalum L. Bol., Notes Mesembryanthemum 2 : 218 (1930);

Holotype: between Garies and Khamieskroon, August 1929, L. Bolus s.n. in BOL 19249 (BOL!)

L. densipetalus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1430 (1955); idem,
Handb. Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex. : 440
(1970); idem, Lex. Succ. Pl. : 493 (1974)

Holotype: as above

Succulent shrubs, ca. 35 cm. high and 35 cm. in diameter. Internodes smooth, pale reddish brown, ca. 20 mm long and 2,5 mm in diameter in the first two years of growth. Leaves sharply triquetrous, subfalcate, apices subacute, grey, 14 - 24,5 - 47 mm long, 1 - 2,5 - 5 mm wide and 1 - 2,5 - 5 mm deep; sheathing the stem for 1,5 mm. Flowers in threes, pedicels ca. 37 mm long and 1,5 mm in diameter; flowers white to deep magenta, ca. 41 mm in diameter. Bracts up to 13 mm long and 3 mm wide, sepals 5, ca. 10 mm long and up to 9 mm wide, the inner 3 with membranous margins, ca. 7,5 mm long and 6 mm wide; petals (petaloid staminodes) ca. 70 - 100 in 2 series, 12 - 17,5 - 22 mm long, up to 2,5 mm wide; non-petaloid staminodes absent. Stamens many, filaments white or pink, ca. 3 - 4,5 - 6,5 mm long, anthers yellow; stigmas 5, 1 - 3 mm long, broadly subulate. Capsule 5 - locular, ca. 9,5 mm in diameter and 8 mm deep, woody, charcoal grey, valve-wings ca. 2,5 mm long and up to 0,5 mm wide, separate from the valve for less than half of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon, ca. 1,42 - 1,65 - 1,76 mm long, 1,22 - 1,32 - 1,44 mm wide, 0,61 - 0,79 - 1,04 mm deep, funicles ca. 0,45 - 0,55 - 0,62 mm long; surface baculate, baculae ca. 56 μ long, 118 μ in diameter; microbaculae present, ca. 3,98 μ long and 0,94 μ in diameter. Chromosome number $2n = 18$ (Sugira 1938, 1940b). Flowering season: 70% of specimens seen were in flower between November and March.

SPECIMENS SEEN:

- CAPE 2917 (-DB) East of Springbok, no date, Godman s.n. in BOL
18987 (BOL!)
- (-DC) Komaggas, 28 February 1934, Anon. s.n. in SUG
9742 (BOL!).
- (-DD) between Khamieskroon and Springbok, August 1929,
Pillans 6267 (BOL!)
- 3017 (-BA) Soebatsfontein, March 1951, H. Hall s.n. in NBG
1059/50 (NBG!, BOL!)

3018 (-BA) between Garies and Khamieskroon, August 1930,
L. Bolus s.n. in BOL 19249 (BOL!)

6 garden specimens

2 specimens without locality

As far as the name Mes. dyckii Berger is concerned, the following points must be made. Firstly, Jacobsen (1970, 1974) is quite wrong in assuming it to be a nomen nudum. The basionym is cited clearly, directly and concisely, with a precision exceeding that of most nomina nova which Jacobsen accepts, and exceeding that required by the Code (Stafleu et al., 1972, art. 33) for names published at the time at which the name in question was first published. Secondly, it must be noted that Jacobsen's transfer of this name to Ruschia is done on his list of synonyms (of all species treated), and the name 'Ruschia dyckii' does not appear in his treatment of the genus Ruschia. In this way, Jacobsen contravenes both art. 33 and art. 34 of the Code, and this transfer cannot be considered valid.

Considering whether Salm Dyck's plant is the same as Haworth's plant described as M. conspicuum Haw., it is necessary to examine the differences alleged by Berger (1922), critically. The most obvious difference is that Haworth describes a plant with flowers in panicles, and Salm Dyck illustrated one with a solitary flower. In the first place, the panicle is an inflorescence type not known in Mesembryanthemaceae, as a determinate inflorescence type is a universal character of the family. If one examines the material at BOL, one will find that both solitary flowers and small cymes in groups which may give the appearance of a panicle, are found on the same plant. This character, therefore, cannot be used to distinguish between species. The other two characters involve relative sizes of the leaves, which can be very variable, and of the stigmas, which can also vary within one species. One must, therefore, come to the conclusion that Salm Dyck's plant was conspecific with Haworth's, but suffering from adverse conditions relative to the latter. There is no doubt that this species is the one described by Haworth; the specimens at BOL can be shown to match Salm Dyck's plate in all particulars except those affected by cultivation. A full range of cultivated material from badly-grown plants like Salm Dyck's to plants matching wild material has been seen.

It may initially appear surprising that Haworth could have seen a plant from

²
Namaqualand, but it should be remembered that explorers have visited the area since very early in this country's history (Waterhouse, 1932). Among others, Masson visited the area with Thunberg in the early 1770's (Masson 1776; Thunberg, ^{undated*} ~~1776~~) and sent many plants back to Kew. There is a plate commissioned by Haworth at Kew, which leaves no reasonable doubt as to the identity of this species.

* see 'literature cited', p. 304 l. 12

- 13 Lampranthus godmaniae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1434 (1955); idem, Handb. Succ. Pl. 3 : 1200 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex. Succ. Pl. : 495 (1974)

Syntypes: near Springbok, August - September 1929, L. Bolus s.n. in BOL 18992 (BOL!)
near Springbok, September - October 1929, Dame Alice Godman s.n. in NBG 1806/29 (BOL!)

Mesembryanthemum godmaniae L. Bol., Notes Mesembryanthemum 2 : 141 (1929)

Syntypes: as above

M. godmaniae var. grandiflorum L. Bol., Notes Mesembryanthemum 2 : 326 (1932)

Holotype: between Patats River & Karoopoort, September 1931, Compton 3719 (BOL!)

L. godmaniae var. grandiflorus (L. Bol.) L. Bol ex Jacobsen, Handb. Sukk. Pfl. 3 : 1435 (1955), comb. illegit.; Jacobsen, Handb. Succ. Pl. 3 : 1200 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex. Succ. Pl. : 495 (1974)

Holotype: as above

Succulent shrubs, ca. 45 cm. high and 30 cm. in diameter. Internodes smooth, buff, ca. 27 mm long and 2,5 mm in diameter in the first two years of growth. Leaves sharply to obscurely triquetrous, grey, 11 - 24,5 - 53 mm long, 2 - 3,5 - 6 mm wide and 2 - 3,5 - 6 mm deep; hardly sheathing the stem. Flowers in threes, pedicels ca. 40 mm long and 1 mm in diameter; flowers magenta to purple, ca. 49 mm in diameter. Bracts up to 22,5 mm long and 2,5 mm wide, sepals 5, ca. 11 mm long and up to 5 mm wide, the inner 3 somewhat smaller, with membranous margins; petals (petaloid staminodes) ca. 60 - 70 in 3 series, 8 - 18 - 29,5 mm long, up to 2 mm wide; non-petaloid staminodes ca. 40 - 65, white, ca. 4,5 - 7,5 mm long, grading into the petaloid staminodes. Stamens many, filaments pink, ca. 3 - 6 mm long, anthers yellow; stigmas 5, 1,5 - 2 - 3 mm long, subulate. Capsule 5 - locular ca. 9 mm in diameter and 8 mm deep, woody, pale grey to ochre, valves inconspicuously ridges, valve-wings ca. 4 mm long and up to 2 mm wide, separate from the valve for about half of their length; placental tubercle absent; covering membranes present, covering most of the

surface of each locule. Seeds cream to reddish ochre, ca. 1,23 - 1,39 - 1,68 mm long, 1,06 - 1,12 - 1,19 mm wide and 0,63 - 0,72 - 0,83 mm deep, funicles ca. 0,42 - 0,48 - 0,52 mm long; surface baculate, baculae ca. 24 μ long, 98 μ in diameter; micropunctilli present, ca. 0,31 μ long and 0,39 μ in diameter. Flowering season: 93% of specimens seen were in flower between August and October.

SPECIMENS SEEN:

- CAPE 2816 (-DC) 38 miles north of Port Nolloth, 19 May 1969, Werger 518 (K!)
- 2817 (-CC) Brakfontein, Richtersveld, August 1936, Herre s.n. in SUG 10212 (BOL!)
- 2917 (---) Namaqualand, August - September 1960, Littlewood s.n. in KG 653/60 (BOL!)
- (-BA) Anenous Pass, 3 September 1954, Carp s.n. in BOL 25653 (BOL!)
- (-BC) Steinkopf, October 1930, Anon. s.n. in NBG 2353/30 (BOL!)
- (-BD) 12 miles north-east of Springbok, October 1948, Acocks 15091 (BOL!)
- (-DA) 10 miles west of O'okiep, August 1960, Littlewood s.n. in KG 239/59 (BOL!)
- (-DB) near Springbok, August - September 1929, L. Bolus s.n. in BOL 18992 (BOL!) near Springbok, September - October 1929, Dame Alice Godman s.n. in NBG 1806/29 (BOL!)
- (-DD) between Springbok and Garies, September 1929, Dame Alice Godman 727 (BM!)
- 3017 (-BB) 3 miles west of Khamieskroon, 24 September 1948, Acocks 14997 (BOL!)
- (-BC) Wallekraal, August - September 1929, L. Bolus s.n. in BOL 19097 (BOL!)
- 3118 (---) between Van Rhynsdorp and Bitterfontein, September 1948, Acocks 14776 (BOL!)
- (-CB) 4 miles north of Koekenaap, 3 September 1955, Boucher

- s.n. (BOL!)
- (-CD) 7 miles from Doornbaai, 26 June 1968, Boucher 110 (STE!)
- (-DA) between Klawer and Van Rhynsdorp, October 1933, Lavis s.n. in BOL 21008 (BOL!)
- (-DD) between Pakhuis and Doornbos and at the turnoff to Nardouw, September 1937, L. Bolus s.n. (BOL!)
Knovlei, between Nardouw and Pakhuis, September 1947, L. Bolus s.n. in BOL 23678 (BOL!)
- 3119 (-AC) Nieuwoudtville, 3 September 1927, Compton s.n. in NBG 1523/26 (BOL!)
- (-B-) between Nieuwoudtville and Calvinia, 29 September 1933, I. de Jager s.n. in BOL 21010 (BOL!)
- (-BD) Calvinia, September 1953, Dyer in Bot. Survey 300 (BOL!)
- (-CB) 20 miles northeast of the top of Botterkloof Pass, 2 October 1948, Acocks 15060 (BOL!)
- (-CD) between Pakhuis and Botterkloof, 31 August 1937, L. Bolus s.n. (BOL!)
- 3319 (-BB) north of the Bonteberg between Karoopoort and Patats River, September 1931, Compton 3719 (BOL!)
- (-BC) Karoopoort, 19 September 1954, H. Hall s.n. in BOL 25655 (BOL!)
- 3320 (-AB) Patats River, Ceres Jaroo, 2 October 1954, E. Esterhuysen 23491, 23492 (BOL!)

This common Namaqualand species differs from L. hoerleinianus (Dtr.) Friedr. in having triquetrous leaves and leaflike bracts; in L. hoerleinianus the leaves are semiterete and the bracts are about half as long as the leaves. L. amoenus is very similar to this species but may be distinguished from it by the absence of staminodes and ridges on the margins of the capsule-valves. These three closely-related taxa are further kept apart by many small differences not obvious on visual examination.

14 Lampranthus hoerleinianus (Dinter) Friedrich, Mitt. Bot. Staatss.

München 3 : 566 (1960); Friedr., Mitt. Bot. Staatss.

München 7 : 218 (1968); Jacobsen, Sukk. Lex. : 442 (1970);

Friedr., Prodr. Fl. Südwestafrika 27 : 66 (1970); Jacobsen,

Lex. Succ. Pl. : 495 (1974)

Holotype: Buntfeldschuh plateau, 10 September 1922, Dinter
3788 (B!, holo., PRE!, HBG! iso.)

Mesembryanthemum hoerleinianum Dinter, Feddes Rep. 19 : 153 (1923)

Holotype: as above

M. brachyandrum L. Bol., Notes Mesembryanthemum 2 : 3 (1928)

Holotype: between Ooghrabies Poort & Port Nolloth, October
1926, Pillans 5803 (BOL!, holo., K, iso!)

L. brachyandrus (L. Bol) N.E. Br., Gard. Chron. 87 : 211 (1930);

Jacobsen, Handb. Sukk. Pfl. 5 : 1426 (1955); idem, Handb.

Succ. Pl. 3 : 1193 (1960); idem, Sukk. Lex. : 439 (1970)

Holotype: as above

L. brachyandrus forma L. Bol., Jl. S. Afr. Bot. 27 : 58 (1961)

Holotype: locus ignotus, July 1937, H.M. Holloway 66 (BOL!)

L. borealis L. Bol., Jl. S. Afr. Bot. 26 : 160 (1960); Friedr.,

Prodr. Fl. Südwestafrika 27 : 66 (1970); Jacobsen, Lex.

Succ. Pl. : 492 (1974)

Holotype: Witputs, May 1959, Herre s.n. in SUG 14513 (BOL!)

Succulent shrubs, ca. 70 cm. high and 70 cm. in diameter. Internodes smooth, buff, ca. 19 mm long and 2,5 mm in diameter in the first two years of growth. Leaves semiterete, obtuse, grey, 11,5 - 20 - 36 mm long, 2 - 4,7 - 8 mm wide and 2 - 4,5 - 8 mm deep, sheathing the stem for ca. 1 mm. Flowers usually in threes, pedicels ca. 25 mm long and 1 mm in diameter; flowers pale pink to pink, ca. 44 mm in diameter. Bracts up to 11 mm long and 6 mm wide, sepals 5, ca. 10 mm long and up to 4 mm wide, all alike, petals (petaloid staminodes) ca. 40 - 55 in 3 series, 7,5 - 18 - 24,5 mm long, up to 3 mm wide; non-petaloid staminodes up to 75, white, ca. 2 - 3 - 5 mm long, grading into the petaloid staminodes. Stamens ca. 60 - 100, filaments white, ca. 1,5 - 2,5 - 4 mm long, anthers yellow; stigmas 5, 1 - 2

- 3,5 mm long, subulate. Capsule 5 - locular, ca. 8 mm in diameter and 6,5 mm deep, woody, pale grey, valve-wings ca. 4 mm long and up to 2 mm wide, separate from the valve for most of their length, placental tubercle absent; covering membranes present, covering about half of the surface of each locule. Seeds cream-coloured, ca. 1,25 - 1,37 - 1,46 mm long, 1,00 - 1,07 - 1,12 mm wide and 0,64 - 0,72 - 0,80 mm deep, funicles ca. 0,40 - 0,47 - 0,54 mm long; surface baculate, baculae ca. 19 μ long, 92 μ in diameter; microbaculae present, ca. 1,22 μ long and 0,94 μ in diameter. Flowering season: 84% of specimens seen were in flower between June and October.

SPECIMENS SEEN:

- SOUTH WEST AFRICA 2715 (-AB) Pomona, 10 June 1929, Dinter 6422 (E!, STE!, BM!, SAM!, M!, S!, G!, HBG!, PRE!)
- (-BC) Buntfeldschuh, 10 September 1922, Dinter 3788 (B!, HBG!, PRE!, SAM!)
- (-BD) Klinghardtgebirge, 16 September 1922, Dinter 3792 (B!); Klinghardtgebirge, 1914, Schäfer 613 (B!); Klinghardtgebirge, 14 August 1913, Schäfer 584 (B!)
- 2716 (-BC) Witputs, September 1960, Herre s.n. in SUG 14513 (BOL!)
- 2816 (-AC) Uubvlei, 24 March 1958, Merxmüller & Giess 2333 (M!)
- (-BA) Obibfontein, 4 September 1958, De Winter & Giess 6185 (PRE!)
- CAPE 2816 (-BD) Numiesberg, 12 December 1934, Dinter 8218 (K!)
- (-DB) between Holgat River & Orange River, September - October 1926, Pillans 5816 (BOL!)
- (-DD) Holgat, August 1952, Hall s.n. (BOL!); south of Holgat, September - October 1926, Pillans 5029 (BOL!); Holgat, 28 October 1955, Hall s.n. in NBG 920/55 (BOL!); between Port Nolloth & Holgat, September 1929, M. Schlechter s.n. in STE 10853, 10829 (STE!)
- 2916 (-BD) between Aughrabies Poort & Port Nolloth, September

1926, Pillans 5803 (BOL!, K!) iso.

2917 (-CB) 12 miles west of Spektakelberg Pass, June 1954,
Hall s.n. in BOL 25650 (BOL!)

localities not traceable: Buchberge (S.W.A.), 1 July 1922,
Dinter 6470 (B!); Rheinpfalz, 21 May
1929 Range 2722 (= Dinter 6384) (HBG!)

This is the north-westernmost species in the genus, and there is little overlap in range between this and any other species. A few specimens of L. godmaniae have been found in the southernmost part of the range of this species. For distinguishing characters between these two species, see notes to L. godmaniae. The only other plants in the Richtersveld and the range of this species north of the Orange River, ^{to} ~~which~~ have similar capsules are two species of Drosanthemum. These may be confused with Lampranthus spp. because their stems have little of the roughness which characterises that genus. One is D. otzenianum, which is dealt with fully in sections 4.3 and 7. The other, D. curtophyllum, is very common particularly between Port Nolloth and Alexander Bay, and may be distinguished from any local species of Lampranthus by its very short leaves.

A complete range of forms, which appear to be environmental rather than genetic, between L. borealis, L. brachyandrus and L. hoerleinianus can be demonstrated easily.

* i.e. in the southern Namib

15 Lampranthus multiradiatus (Jacq.) N.E. Br., Gard. Chron. 87 : 212

(1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1440 (1955)

Iconotype: Jacquin, Fragmenta Botanica 7.53 f.1

Mesembryanthemum multiradiatum Jacq., Fragm. Bot. : 44 n. 152 t. 53

f. 1 (1809, but see below)

Iconotype: as above

M. incurvum Haw. var. multiradiatum (Jacq.) DC., Prodr. 3 : 434

Iconotype: as above

M. roseum Willd., Enim. Pl. Hort. Berol. : 535 (1809); Hornem.,

Hort. Reg. Hafniae : 463 (1815); Salm Dyck, Monogr. Gen.

Aloes Mesemb. f. 5 t. 18 29 (1849); Sond., Fl. Cap. 2 :

420 (1862); Berger, Mesemb. u. Portulac. : 185 (1908);

Marloth, Fl. S. Afr. 1 : t. 53A (1913)

Holotype: Hort. Berlin (B-W!)

M. incurvum Haw. var. roseum (Willd.) DC., Prodr. 3 : 433 (1828)

Holotype: as above

L. roseus (Willd.) Schwant. ex Jacobsen, Feddes Rep. 43 : 230 (1938);

Jacobsen, Handb. Sukk. Pfl. 3 : 1445 (1955); idem, Handb. Succ.

1. 3 : 1207 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex.

Succ. Pl. : 498 (1974)

Holotype: as above

M. suavissimum L. Bol., Notes Mesembryanthemum 2 : 220 (1930)

Holotype: near Hondekclip Bay, October 1924, Pillans s.n. in

BOL 17929 (BOL, holo!, K, iso!)

L. suavissimus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1449 (1955); idem,

Handb. Succ. Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446

(1970); idem, Lex. Succ. Pl. : 499 (1974)

Holotype: as above

M. suavissimum forma fera L. Bol., Notes Mesembryanthemum 2 : 221

(1930)

Holotype: Wallekraal, August 1929, L. Bolus s.n. in BOL 19250

(BOL!)

L. suavissimus forma fera (L. Bol.) L. Bol. ex Jacobsen, Handb.

Sukk. Pfl. 3 : 1449 (1955), comb. illegit.; Jacobsen, Handb.

Succ. Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446 (1970); idem,

Lex. Succ. Pl. 500 (1974)

Holotype: as above

M. suavissimum var. oculatum L. Bol., Notes Mesembryanthemum 2 : 221
(1930)

Holotype: near Hondeklip Bay, October 1924, Pillans 6060 (BOL!)

L. suavissimus var. oculatus (L. Bol.) L. Bol. ex Jacobsen, Handb.

Sukk. Pfl. 3 : 1449 (1955), comb. illegit.; Jacobsen, Handb.

Succ. Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446 (1970);

idem, Lex. Succ. Pl. : 500 (1974)

Holotype: as above

Lampranthus macrosepalus (L. Bol.) L. Bol., Notes Mesembryanthemum

3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1438 (1955);

idem, Handb. Succ. Pl. 3 : 1203 (1960); idem, Sukk. Lex. :

443 (1970); idem, Lex. Succ. Pl. : 496 (1974)

Holotype: Assegaibos, November 1927, Bishop Lavis s.n. in BOL
18761 (BOL!)

Mesembryanthemum macrosepalum L. Bol., Notes Mesembryanthemum 2 :
219 - 220 (1930)

Holotype: as above

Spreading succulent shrubs, ca. 25 cm. high and 45 cm. in diameter. Internodes smooth, greenish to pale brown, ca. 35 mm long and 25 mm in diameter in the first two years of growth. Leaves sharply triquetrous, subacute, very glaucous, 9,5 - 19 - 41 mm long, 1 - 2,5 - 4,5 mm wide and 1 - 2,5 - 4,5 mm deep; sheathing the stem for ca. 1 mm. Inflorescence cymose, pedicels ca. 38,5 mm long and 1 mm in diameter; flowers pale pink to magenta, ca. 46 mm in diameter. Bracts up to 7 mm long and 3 mm wide, sepals 5, ca. 13 mm long and up to 6 mm wide, all alike; petals (petaloid staminodes) many in 4 series, 15,5 - 21 - 31 mm long, up to 3 mm wide; non-petaloid staminodes absent. Stamens many, filaments white, ca. 2 - 3,5 - 6 mm long, anthers yellow; stigmas 5, 2 - 2,5 - 4 mm long, broadly subulate. Capsule 5 - locular, ca. 7,5 mm in diameter and 7 mm deep, woody, grey, valves

with ca. 1 mm high ridges, valve-wings ca. 3 mm long and up to 1,5 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon, ca. 0,83 - 1,10 - 1,20 mm long, 0,42 - 0,55 - 0,78 mm wide and 0,68 - 0,74 - 0,86 mm deep, funicles ca. 0,25 - 0,29 - 0,47 mm long, surface baculate, baculae ca. 23 μ long, 143 μ in diameter; micropunctilli present, ca. 0,30 μ long and 0,72 μ in diameter. Chromosome number $2n = 18$ (Snoad, 1951). Flowering season: 81% of specimens seen were in flower between August and November.

SPECIMENS SEEN:

- CAPE 3017 (-AD) Hondeklip Bay, October 1924, Pillans s.n. in BOL 17929 (BOL!, K!); 3 miles from Hondeklip Bay, 8 September 1932, Lewis s.n. in NBG 2144/32 (BOL!, K!); near Hondeklip Bay, October 1924, Pillans 6060 (BOL!)
- (-BC) Wallekraal, August 1929, L. Bolus s.n. in BOL 19250 (BOL!)
- 3118 (OAB) near Bitterfontein, September 1936, L. Bolus s.n. (BOL!)
- 3217)-DD) 1 mile south of Paternoster, 25 October 1971, Wisura 381 (NBG!)
- 3318 (-CB) ca. 2 miles northwest of Melkbosstrand, October 1972, Wisura 2591 (NBG!)
- (-CD) Camps Bay, October 1956, Cassidy 78, 79 (NBG!); between Clifton and Camps Bay, October 1922, Page s.n. in BOL 17295 (BOL!); between Cape Town and Camp's Bay, October 1928, Arbuthnot s.n. (BOL!); valleys of Table Mountain above Camp's Bay, October 1905, Glover s.n. (BOL!); West of Lion's Head, 26 September 1896, Wolley Dod 1623 (BOL!); Lion's Head above Clifton, 16 December 1927, Lavis s.n. (BOL!); Table Mountain, 2 November 1919, Rogers 17749 (J!); Lion's Head above Camp's Bay, October 1896, MacOwan in Herbarium Austro-Africanum 1747

(SAM!, UPS!); Table Mountain, 19 January 1900, Brown & Brown 221 (B!); North of Table Mountain, Ecklon and Zeyher 2053 (S!); Table Mountain, November 1825, Ecklon 514 (= Ecklon and Zeyher 2054) (S!); Table Mountain, October, Ecklon 518 (S!); Sea Point, no date, Pappe s.n. (K!); West of Lion's Head, 17 October 1897, Wolley Dod 3662 (K!); Lion Mountain, Dümmer 1270 (E!); Lion's Head above Camps Bay, October 1899, MacOwan 3374 (= Herbarium Austro-Africanum 2009) (K!)

(-DD) Stellenbosch Flats, October 1927, Smuts s.n. (STE!)

3319 (-BC) Matroosberg, October 1899, MacOwan 3375 (= Herbarium Austro-Africanum 2010) (K!)

3324 (-CD) Assegaibos, Humansdorp, November 1927, Lavis s.n. in BOL 18761 (BOL!, K!)

3418 (-AB) Chapman's Peak, November 1932, Barker 100, (BOL!); Chapman's Bay, November 1937, Salter s.n. (BOL!); Chapman's Peak Road, May 1926, Arbuthnot s.n. (BOL!); Chapman's Peak Drive, 7 August 1949, Wilman 638 (BOL!); Longkloof behind Orange Kloof, Table Mountain, 16 January 1972, Taylor 8042 (PRE!, STE!); Hout Bay Nek, 1915, Mathews s.n. in NBG 1615/15 (PRE!); Chapman's Peak, August 1931, Mathews s.n. in NBG 1827/30 (K!)

(-AD) near Matroosklip, 4 November 1965, Taylor 6554 (STE!)

3424 (-AA) Eerste River, Humansdorp, December 1923, Fourcade 2884 (BOL!, BOL-F!)

(-BA) Slang River sand dunes, November 1921, Fourcade 1815 (BOL-F!)

(-BB) Hills above Humansdorp, no date, Fourcade 1770 (BOL-F!); Hills above Humansdorp, September 1938, Fourcade 5374 (BOL-F!); Company's Drift, Humansdorp, September 1925, Fourcade 3013, (BOL-F!, K!) Zwart River, southwest of the causeway, November 1930, Fourcade 3899 (BOL-F!) Company's Drift, Humansdorp, September - October 1925, Fourcade 3013 (BOL!)

Without precise locality: C.B.S., no date, Wahlberg s.n. (S!);
C.B.S., June 1829, Anon. s.n. (S!); no
locality, no date, Herb. Link (B!);
C.B.S., 1831, Verreaux s.n. (G!);
C.B.S., no date, Commerson s.n. (G!);
C.B.S., no date, Burgmann s.n. (G!);
4 other specimens.

Garden material: Berlin, no date, Willdenow 9766 (B-W, holo.
of syn.!); Van Royen, Leyden, no date, Herb.
Daniel de la Roche 687 (G!); 19 other specimens

Although the date of publication of the epithet 'multiradiatus' is given above as 1809, the same year as the epithet 'roseus' was published it appears (Stafleu, 1967) that in fact Jacquin's Fragmenta were issued in fascicles over a period of years ending in 1809. The name in question is in the middle of the work, and so was almost certainly published some four years earlier than the latter epithet. The date given (1809), is that appearing on the title page of the bound volume of the Fragmenta. It will be seen that the epithet 'multiradiatus' must be considered to have priority over the epithet 'roseus', at least until a thorough historical study can be made to determine the exact dates of issue and pagination of the fascicles of the Fragmenta.

The infraspecific combinations Lampranthus suavissimus forma fera (L. Bol.) L. Bol. ex Jacobsen and L. suavissimus var. oculatus (L. Bol.) L. Bol. ex Jacobsen are noted as illegitimate for the following reason. When Bolus (1930c) transferred Mesembryanthemum suavissimum to Lampranthus, no mention was made of either the forma or the variety. The first direct reference to the transference of these infraspecific taxa is by Jacobsen (1955), who attributes the transfer to L. Bolus without a reference to the original publication of the basionym. This is in contravention of article 33 of the Code (Stafleu et al., 1972)

This species is very similar, at least at first glance, to some forms of L. spectabilis. However it differs from that species in that it lacks staminodes, the capsule valves have marginal ridges and the bracts are significantly smaller than the leaves.

Although Jacquin's plate is drawn from a garden plant, it is sufficiently similar to the material examined to leave no doubt as to the identity of this species.

16. Lampranthus amoenus (Salm Dyck ex DC.) N.E. Br., Gard. Chron. 87 : 211
(1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1423 (1955); idem,
Handb. Succ. Pl. 3 : 1192 (1960); idem, Sukk. Lex. : 438
(1970); idem, Lex. Succ. Pl. : 491 (1974)
Iconotype: Salm Dyck, Monogr. Gen. Aloes Mesemb. f.2 t.18 § 27 (1837)

Mesembryanthemum amoenum Salm Dyck ex DC., Prodr. 3 : 436 (1828); Salm
Dyck, Monogr. Gen. Aloes Mesemb. f.2 t.18 § 27 (1837); D. Dietr.,
Syn. Pl. 3 : 143 (1843); u. Berger, Mesemb. Portulac : 161 (1908)
Iconotype: as above

M. watermeyeri L. Bol., Ann. Bol. Herb. 3 : 72 (1921)
Holotype: Nieuwoudtville, November 1917, Watermeyer s.n. in NBG
2256/15 (BOL!)

L. watermeyeri (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1452 (1955); idem, Handb.
Succ. Pl. 3 : 1213 (1960); idem, Sukk. Lex. : 447 (1970);
idem, Lex. Succ. Pl. : 501 (1974)
Holotype: as above

M. cyathiforme L. Bol., Ann. Bol. Herb. 3 : 165 (1923)
Holotype: locality unknown, September 1922, Arbuthnot s.n. in
BOL 17255

Erepsia cyathiformis (L. Bol.) Schwant., Gartenflora 77 : 68 (1928)
Holotype: as above

L. cyathiformis (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : (1955); idem, Handb. Succ.
Pl. 3 : 1196 (1960); idem, Sukk. Lex. : 440 (1970); idem,
Lex. Succ. Pl. : 493 (1974)
Holotype: as above

M. vernale L. Bol., Ann. Bol. Herb. 4 : 93 (1927)
Holotype: hort., September 1925, Arbuthnot s.n. in BOL 17305

L. vernalis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1451 (1955); idem, Handb.

Succ. Pl. 3 : 1212 (1960); idem, Sukk. Lex. : 447 (1970); idem,
Lex. Succ. Pl. : 500 (1974)

Holotype: as above

M. pittanii Bol., Notes Mesembryanthemum 2 : 98 (1929)

Syntypes: Graafwater, May 1924, Compton s.n. in NBG 916/22 (BOL!)
Lambert's Bay, July 1928, Van Putten s.n. in NBG 1045/25
(BOL!)

L. pittanii (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Handb. Succ. Pl. 3 :
1206 (1960); L. Bol., Jl. S. Afr. Bot. 33 : 308 (1967) ('vanput=
tenii'); Jacobsen, Sukk. Lex. : 447 (1970) ('vanputtenii'); idem,
Lex. Succ. Pl. : 500 (1974) ('vanputtenii')

Syntypes: as above

Succulent shrubs, ca. 40 cm. high and 40 cm. in diameter. Internodes
pale russet-brown, smooth, later becoming fissured, ca. 22 cm. long
and 2,5 mm in diameter in the first two years of growth. Leaves semi=
terete to obscurely triquetrous, apices obtuse, 10 - 25 - 46 mm long,
1 - 3 - 8 mm wide and 1 - 3 - 8 mm deep; sheathing the stem for ca. 1
mm. Inflorescence cymose, pedicels ca. 38,5 mm long and 1,5 mm in
diameter; flowers white to purple, ca. 53 mm in diameter. Bracts up
to 27 mm long and 5 mm wide, sepals 5, ca. 21 mm long and up to 11,5
mm wide, the inner 3 with membranous margins, ca. 15 mm long and 6 mm
wide; petals (petaloid staminodes) many in 3 series, 8 - 23 - 38,5 mm
long, up to 4 mm wide; non-petaloid staminodes absent. Stamens many,
filaments pink to purple, ca. 2 - 4,5 - 7,5 mm long, anthers yellow;
stigmas 5, 1 - 2,5 - 4,5 mm long, elliptical-acuminate. Capsule 5 -
locular, ca. 8,5 mm in diameter and 9 mm deep, woody, grey; valve-wings
ca. 3,5 mm long and up to 1,5 mm wide, separate from the valve for most
of their length; placental tubercle absent; covering membranes present,
covering most of the surface of each locule. Seeds rich maroon, ca.
1,13 - 1,20 - 1,26 mm long, 0,72 - 0,94 - 1,00 mm wide and 0,47 - 0,56
- 0,66 mm deep, funicles ca. 0,37 - 0,44 - 0,50 mm long; surface baculate,
baculae ca. 25 u long, 100 u in diameter; microbaculae present, ca.
1,57 u long and 0,65 u in diameter. Chromosome number $2n = 18$ (de Vos,
1947). Flowering season: 75% of specimens seen were in flower between
July and October.

SPECIMENS SEEN:

- CAPE 2917 (---) Little Namaqualand, July 1933, Peters 7, 8 (BOL!)
(-CD) 11 miles east of Hondeklip Bay, 11 September 1970,
Van der Merwe 235 (PRE!)
- 3017 (-AD) Hondeklip Bay, September 1935, Archer 821 (BOL!)
(-BD) Brakdam, August 1941, E. Esterhuysen 7764 (BOL!)
- 3018 (-CC) 9 miles south of Garies, no date, Salter 4612
(BOL!) between Bitterfontein and Garies, September
1932, Lewis s.n. in NBG 2117/32 (BOL!)
- 3019 (-AD) 37 miles north of Loeriesfontein, 14 August 1969,
Stayner s.n. in KG 1206/62 (BOL!)
- 3318 (---) Knersvlakte, September 1952, H. Hall s.n. in NBG
573/52 (BOL!)
(-AD) South of Nieuwerust, September 1945, Leighton s.n.
(BOL!)
(-CC) Doornbaai, Van Rhynsdorp, 5 September 1964, H. Hall
2863 (NBG!)
(-DA) Van Rhynsdorp, July 1919, Pillans s.n. (BOL!)
(-DC) ca. 1 mile north of Heerenlogement, August 1970,
Wisura 1726 (NBG!) ca. 22 miles south of Klawer,
August 1079, Wisura 1719 (NBG!)
(-DD) between Clanwilliam and Van Rhynsdorp, March 1932,
Anon. s.n. in SUG 9491, 9492 (BOL!)
- 3319 (-AA) ca. 11 km. northeast of 'Grasberg' towards Theunis-
drift, August 1974, Wisura 2900 (= 288/74) (NBG!)
(-AC) Nieuwoudtville, November 1917, Watermeyer s.n. in
NBG 2256/16 (BOL!); Nieuwoudtville, June 1931,
Frames s.n. in NBG 1176/26 (BOL!, K!)
(-BD) Calvinia, August 1925, Lavis s.n. in BOL 18462 (BOL!)
near Calvinia, 27 July 1927, Archer s.n. (BOL!)
- 3218 (-AB) between Graafwater and Lamberts Bay, August 1945,
L. Bolus s.n. in BOL 23089 (BOL!); near Lamberts
Bay, May 1931, Leipoldt s.n. in BOL 19552 (BOL!, K!);

- Lamberts Bay, July 1928, Van Futton s.n. in NBG 1045/25 (BOL!, K!)
- (-AD) Elands Bay near the Point, 7 July 1970, Axelson 240 (BOL!)
- (-BA) 7 miles from Graafwater towards Lamberts Bay, 29 June 1932, Lavis s.n. in NBG 1274/32 (BOL!); Graafwater, May 1924, Compton s.n. in NBG 916/22 (BOL!); Graafwater, September 1925, Compton s.n. in NBG 1270/23 (BOL!)
- (-BB) Clanwilliam, 24 January 1932, Anon. s.n. in SUG 9495 (BOL!); near Clanwilliam, 10 September 1958, H. Hall s.n. (BOL!)
- (-DA) Kapiteinskloof, ca. 5 miles south of the bridge towards Redelinghuys, August 1970, Wisura 1717 (NBG!)
- (-DB) near Boontjiesrivier, July 1927, Leipoldt s.n. (BOL!)
- (-DC) near Sauer, Piquetberg division, 30 September 1943, Leighton s.n. (BOL!)
- 3219 (-DC) Skitterykloof, 29 August 1971, Wisura 2207 (NBG!)
- 3317 (-BB) Saldanha, September 1914, Marloth 5725 (PRE!); Saldanha Bay, 30 October 1931, Mathews s.n. in NBG 2388/29 (K!); Saldanha Bay, October 1923, Salter s.n. (BOL!); Koppies behind Saldanha Bay, 9 October 1927, Mathews s.n. (BOL!); Saldanha Bay, 10 November 1953, H. Hall s.n. (BOL!)
- 3318 (-AB) Darling, October 1928, Duckitt s.n. in NBG 1140/13 (BOL!)
- (-AC) Ysterfontein, 20 October 1951, H. Hall s.n. in NBG 1365/50 (BOL!); Ysterfontein, 1 November 1953, Levyms s.n. (BOL!)
- (-AD) Oudekraal, Darling, 2 October 1971, Axelson 527 (NBG!); near Darling, September 1905, H. Bolus 12680 (BOL!, BM!, K!, PRE!); Modder River, Mamre, October 1898, H. Bolus 4280 (BOL!)
- (-CB) Melkbosstrand, September 1926, Arbuthnot s.n. in BOL 18847 (BOL!)
- (-CD) Sea Point, no date, Zeyher s.n. (SAM!); Cape Town, September 1848, Prior s.n. (K!)

3319 (---) Ceres Karoo, 4 July 1948, H. Hall s.n. (BOL!);
Ceres Karoo, no date, Archer s.n. (BOL!)

3320 (-BA) Matjiesfontein, October 1921, Foley 32 (PRE!)

3418 (-AB) Muizenberg, April 1893, Kassner 296 (HBG!) Simons
Bay, no date, Wright s.n. (K!)

(-BA) Cape Flats, October - December, Zeyher s.n. (SAM!);
Cape Flats, December, Ecklon 24 (TCD!)

3421 (-AB) Riversdale, 1930, Herre s.n. in SUG 1470 (BOL!)

Without locality: C.B.S., no date, Pappe s.n. (K!); without
locality, September 1922, Arbuthnot s.n.
in BOL 17255 (BOL!)

Garden material: hort., September 1925, Arbuthnot s.n. in
BOL 17305 (BOL!); 9 other specimens.

The protologue of this species cites "Salm Dyck, in litt." as the source of the name. No type was mentioned at that stage. When Salm Dyck published his description of this species, annotated M. amoenum nobis, he included a plate of material which was presumably growing in his garden and was the plant that De Candolle's description was based on. It seems that one must therefore accept Salm Dyck's plate as the iconotype of this species, in the sense that it is as near as it is possible to come to Salm Dyck's intention in coining the name, as he made no herbarium. The differences between this species and L. godmaniae have already been dealt with under that species. It will further be seen that at least in the southern part of their ranges, this species prefers a more or less coastal habitat, while L. godmaniae is found in more inland karroid areas.

17A Lampranthus glaucus (L.) N.E. Br. subsp. glaucus

Mesembryanthemum glaucum L., Sp. Pl. ed. 1. : 486 (1753); Soland. in Ait., Hort. Kew. ed. a. 2 : 192 (1789); Gmel., Syst. Nat. ed. 14, 2 : 846 (1791); Haw., Obs. Gen. Mesemb. 2 : 329 - 330 (1795); idem, Misc. Nat. : 83 (1803); DC., Plant. Grass. 2 : t.146 (1804); Jacq., Hort. Schoenbr. 4 : t.439 (1805); Willd., Enum. Hort. Berol. : 536 (1809); Haw., Syn. Pl. Succ. : 264 (1812); Hornem., Hort. Reg. Hafniae : 464 (1815); Haw., Rev. Pl. Succ. : 148 (1821); DC., Prodr. 3 : 437 (1828); Salm Dyck, Monogr. Gen. Aloes Mesemb. f.3 t.16 25 (1840); D. Dietr., Syn. Pl. 3 : 117 (1843); Sond., Fl. Cap. 2 : 147 (1862); Berger, Mesemb. und Portulac. : 164 (1908)

Iconotype: Dill., Hort. Eltham. t.198 f.248

L. glaucus (L.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Succ. Pfl. 3 : 1434 (1955); idem, Handb. Succ. Pl. 3 : 1200 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Iconotype: as above

Mesembryanthus glaucus (L.) Rothm., Notizbl. Bot. Gart. Berlin 15 : 413 (1941)

Iconotype: as above

L. glaucus var. torulosus Schwant. ex. Jacobsen, nom. illegit. : Jacobsen, Handb. Sukk. Pfl. 3 : 1434 (1955); idem, Handb. Succ. Pl. 3 : 1200 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex. Succ. Pl. 494 (1974)

M. glaucum var. B. Haw., nom. illegit. : Haw., Misc. Nat. : 84 (1803); idem, Syn. Pl. Succ. : 264 (1812); Rev. Pl. Succ. : 148 (1821)

M. brachyphyllum Welw., Jl. Bot. 11 : 189 t.136 (1873); Berger, Mes. u. Portulac. : 292 (1908); Jacobsen, Handb. Succ. Pl. 3 : 1268 (1960)

Holotype: Algarve, 4 miles inland from Faro, Welwitsch Lusitanae 307 (BM!, K!, D)

M. longistaminum L. Bol., Notes Mesembryanthemum 1 : 148 (1928)

Holotype: Boontjies River, Leipoldt s.n. in BOL 18810 (BOL!)

L. longistaminus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1438 (1955); idem, Handb. Succ.
Pl. 3 : 1202 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex.
Succ. Pl. : 496 (1974)

Holotype: as above

M. hurlingii L. Bol., Notes Mesembryanthemum 2 : 427 (1934)

Holotype: between Robertson & McGregor, September 1935, Hurling
& Neil s.n. in BOL 21015 (BOL!)

L. hurlingii (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1436 (1955); idem, Handb. Succ.
Pl. 3 : 1201 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex.
Succ. Pl. : 495 (1974)

Holotype: as above

PRE-LINNAEAN CITATIONS:

Mesembryanthemum scabrum, flore sulphureo convexo Dill., Hort. Eltham.
: 256 t.196 f.248 (1732)

Chrysanthemum aizodes Africanum, triangulari folio, minus, flore flavo
Breyn. Exot. Pl. Cent. : 165 (1678)

Chrysanthemo similis aizodes Africana media, triangulari folio, flore
flavo Breyn., Prodr. 1 : 26 (1680)

Chrysanthemi aizoides Africani tertii, sive triangulari folio Breynii
species quarta, minor flore flavo Ray, Hist. Pl. 1 : 693 (1686)

Ficoides seu Ficus aizoides Africana minor erecta, folio triangulari
glauco, flore luteo Hermann. Hort. Lugd. Bat. : 247 (1687); Ray, Hist.
Nat. 2 App. : 1879 n. 2 (1688)

Mesembryanthemum Africanum frutescens medium erectum, triangulari folio
crasso glauco, fructu turbinato parvo, quinqu-angulari lignoso,
flore, luteo majore Breyn., Prodr. 2 : 68 (1689)

Ficoides Africanum Mesembryanthemum, seu Ficus aizoides frutescens media
erecta, triangulari folio crasso glauco, fructu turbinato parvo quin-
quangulari lignoso, flore luteo majore Pluk., Almagest. : 148 (1694)

Ficoides Africana frutescens, folio triangulari brevior glauco
Morison, Plant. Hist. Univ. Oxon. 3 : 507 2.12 t.5 f.3 (1699)

Ficoides Afra caule lignoso, folio triangulari ensiformi scabro,
flore luteo magno Boerh., Ind. Alt. : 289 n. 7 (1720)

Ficoides Afra, caule lignoso, erecta, folio triangulari ensiforme
scabro, flore luteo magno Bradley, Hist. Succ. Pl. 4 : 15
t.32 (1727)

Mesembryanthemum foliis subulatis triquetris strictis acutis;
punctis obsoletis sparsis Linn., Hort. Cliff. : 220 (1737);
Roen., Hort. Lugd. Bat. : 283 (1740)

Spreading succulent shrubs, ca. 19 cm. high and 35 cm. in diameter. Internodes smooth, maroon to brown, ca. 17 mm long and 2 mm in diameter in the first two years of growth. Leaves triquetrous to sharply triquetrous, glaucous to glaucous - green, 6 - 16 - 35 mm long, 0,8 - 2,5 - 6,5 mm wide and 1 - 2,5 - 6,5 mm deep; bases sheathing the stem for up to 1,5 mm, apices obtuse to acuminate. Flowers solitary or in threes, pedicels ca. 29 mm long and 1,5 mm in diameter; flowers lemon to canary yellow, ca. 31 mm in diameter. Bracts up to 19 mm long and 4 mm wide, sepals 5, ca. 10 mm long and up to 7 mm wide, all alike; petals (petaloid staminodes) ca. 45 - 90 in 2 - 3 series, 7,5 - 15 - 29 mm long, up to 2,5 mm wide, non petaloid staminodes absent. Stamens 5, 1 - 2 - 3,5 mm long, subulate - long - acuminate. Capsule 5 - locular, ca. 9,5 mm in diameter and 6 mm deep, woody, charcoal grey, valves with marginal ridges up to 1 mm high, valve-wings ca. 3,5 mm long and up to 2 mm wide, separate from the valve for about half of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds cream to maroon, ca. 0,98 - 1,15 - 1,24 mm long, 0,62 - 0,83 - 0,99 mm wide and 0,41 - 0,53 - 0,78 mm deep, funicles ca. 0,28 - 0,49 - 0,78 mm long; surface baculate, baculae ca. 36 μ long, 95 μ in diameter; microbaculae present or absent, ca. 0,27 μ long and 0,31 μ in diameter. Chromosome number $2n = 36$ (Snood, 1951). Flowering season: 75% of specimens seen were in flower between August and November.

SPECIMENS SEEN:

- CAPE 3118 (-DC) Giftberg, no date, Phillips s.n. in Percy Sladen Memorial Expedition 7666 (PRE!); Giftberg, September 1911, Phillips 7504 (PRE!, SAM!); Giftberg, September 1911, E.P. Phillips s.n. in Percy Sladen Memorial Expedition 7663 (K!); Giftberg Plateau, September 1948, Acocks 14896 (BOL!); Giftberg, 6 September 1964, E. Esterhuysen 30574 (BOL!)
- 3319 (-AC) Oorlogskloof, 8 miles south of Nieuwoudtville, October 1931, L. Bolus s.n. (BOL!, K!); Oorlogskloof, 6 - 7 miles south of Nieuwoudtville, September 1930, L. Bolus s.n. in BOL 19336 (BOL!)
- (-CA) farm 'Lokenburg', southwest of Calvinia, 29 August 1953, Acocks 17049 (BOL!)
- 3218 (-BB) Pakhuis Pass, May 1949, Barker s.n. in NBG 550/47 (NBG!); Olifants River, Clanwilliam, October, Ecklon & Zeyher 2013 (S!, SAM!); Pakhuis Pass, September 1942, Stokoe s.n. in SAM 67930 (SAM!)
- (-D-) Clanwilliam division. 2 October 1946, Leipoldt 4341 (BOL!)
- (-DB) Boontjies River, July 1927, Leipoldt s.n. in BOL 18810 (BOL!)
- 3219 (-AA) Pakhuis Pass, 10 June 1960, Littlewood s.n. in KG 638/60 (BOL!); Pakhuis Pass, August 1937, L. Bolus s.n. (BOL!)
- 3318 (-AB) near Hopefield, September 1885, Bachmann 1374 (B!);
- (-BD) Hermon, August 1925, Anon. s.n. in NBG 1012/23 (BOL!, K!)
- (-CD) Kenilworth, August 1894, H. Bolus 4938B (BOL!); Cape Town, 14 April 1960, Hummel s.n. (S!); Camp Ground, 23 January 1923, Pillans B9 (K!); Camp Ground Washhouse, 20 August 1897, Wolley Dod (BM!, K!); Camp Ground, 3 April 1896, Wolley Dod 1132 (BM!); Rondebosch, October 1908, Dümmer 32E (E!)
- (-DC) beyond Uitvlugt, 9 August 1896, Wolley Dod 1417

(BOL!, K!); Durbanville, 15 August 1963, Taylor
5605 (PRE!, STE!); Vyge Kraal, September, Zeyher
121 (S!); Wynberg Flats, September 1890, H. Bolus
4938 (BOL!, K!); North-West of Bokmakiri Vlei,
10 October 1920, Pillans s.n. (K!); Rosebank Flats,
September 1908, Dümmer 1788 (E!)

3319 (-AC) Tulbagh, November, Zeyher s.n. (SAM!)
(-AD) near Ceres Road, October 1894, MacOwan s.n. (GRA!)

CAPE 3319 (-DD) Bushmans River, Robertson, September 1935, Hurling
& Neil s.n. in BOL 21015 (BOL!)

3320 (-CC) between Ashton and Montagu, 30 October 1921, Anon.
s.n. in NBG 1480/21 (K!)

3418 (-BA) Cape Flats, September, Zeyher s.n. (SAM!); Cape
Flats, no date, Ecklon s.n. (S!)
(-BB) Faure, 1946, Strey 663 (PRE!)

Without precise locality: no locality, no date, Thunberg s.n.
(S!); C.B.S., no date, Willdenow
9765A, B, C (B-W!); C.B.S., no date,
Burmann 87 (G!); C.B.S., no date,
Thunberg s.n. (S!); 4 other specimens.

Garden material: Chelsea, no date, Herb. Grimm (M!); California,
1 April 1927, Bailey & Bailey 9828 (K!);
Montpellier, no date, Anon. s.n. (K!); Eltham,
no date, Dillenius s.n. (OXF!); Trescoe Abbey,
October 1962, Little TR34 (E!); no locality,
no date, herb. Morison (OXF!); Uppsala, no date,
Alm s.n. in Linn. 42.33 (S!); 15 other specimens.

The differences between this and the other subspecies of L. glaucus
are dealt with below, in the discussion of subspecies aureus. If
the flower colour is known, there is no species with which the present
taxon could readily be confused. If this is not known, however, it
may appear to be a somewhat depauperate form of L. falciformis. If
the flower colour is not known, then identification may be difficult,

9/ as no other flower characters will be present, and these are most of the diagnostic ones. The present taxon is commonest around Clanwilliam, a character which distinguishes it from the other subspecies as well as L. falciformis, and on the Cape Peninsula the present species is restricted to sandy flats while L. falciformis is found in rocky places on the mountain chain.

Material of M. brachyphyllum Welw. was examined at Kew and British Museum, and found to be identical to L. glaucus subsp. glaucus. It would appear that Welwitsch described a garden escape. This possibility was considered by him, but he rejected it as the plant was found far from human habitations. (Welwitsch 1873). The opinion expressed here about the identity of this plant is in accordance with those expressed by Brown and Leistner (Strey, 1969).

Of all the relatively few yellow-flowered taxa of Lampranthus, only the present subspecies matches both the Dillenian description and plate cited by Linnaeus under M. glaucum. As this plate is the only material cited by Linnaeus other than descriptions under this name, it is accepted as the iconotype. The specimen from which it was drawn is in the Dillenian collection at Oxford, and can only belong to this subspecies.

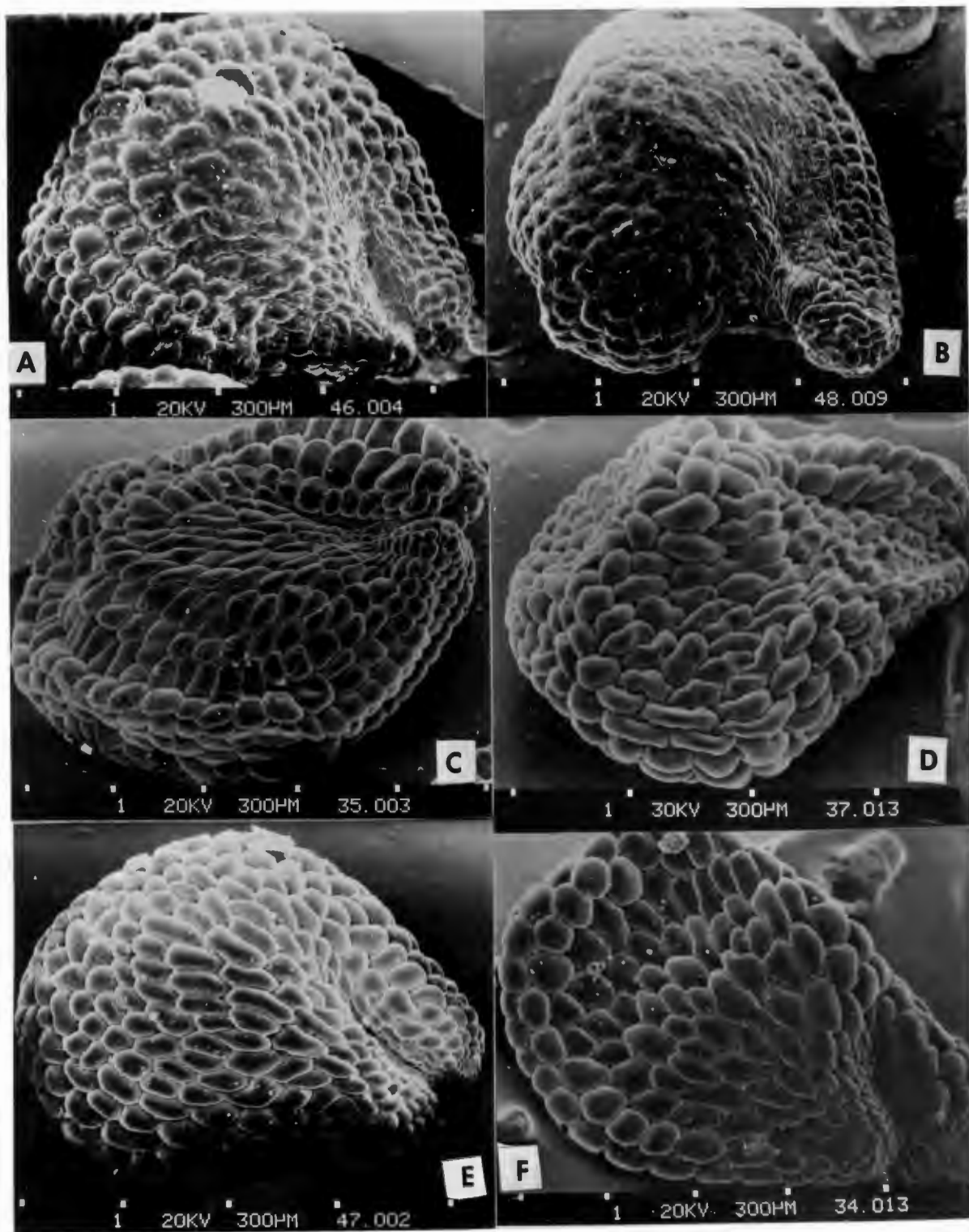


Plate 3. Seeds of Lampranthus section Lampranthus. The pips below each photograph are 300 μ apart.

A. *L. conspicuus*

B. *L. godmaniae*

C. *L. hoerleinianus*

D. *L. stipulaceus*

E. *L. spectabilis* subsp.
fugitans

F. *L. productus*

17B Lampranthus glaucus (L.) N.E. Br. subsp. aureus (L.) Glen, comb. nov.

L. aureus (L.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1425 (1955); idem, Handb. Succ. Pl. 3 : 1193 (1960); idem, Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl. : 492 (1974)

Lecto-iconotype: Curtis Bot. Mag. 4 : t.262

Mesembryanthemum aureum L., Syst. Nat. ed. 10, 1060 (1759); Aiton, Hort. Kew. ed. 1, 2 : 190 (1789); Curtis, Bot. Mag. 4 : t.262 (1794); Haw., Obs. Gen. Mesemb. 2 : 333 - 335 (1795); DC., Plant. Grass. t.11 (1799); Willd., Sp. Pl. ed. 5, 2 : 1049 (1799); Haw., Misc. Nat. : 84 (1803); Willd., Enum. Pl. Hort. Berol. : 537 (1809); Ait., Hort. Kew. Ed. 2, 2 : 190 (1811); Haw., Syn. Pl. Succ. : 263 (1812); Hornem. Hort. Reg. Hafniae : 464 (1815); Haw., Rev. Pl. Succ. : 148 (1821); DC., Prodr. 3 : 437 (1828); Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.1 t.22 27 (1836); Eckl. & Zeyh., Enumeratio : 312 n. 2015 (1837); D. Dietr., Syn. Pl. 3 : 143 (1843); Sond., Fl. Cap. 2 : 418 (1862); Berger, Mesemb. und Portulac. : 165 (1908)

Iconotype: as above

M. glaucoides Haw., Obs. Gen. Mesemb. 2 : 330 - 333 (1795)

Type: lost

L. glaucoides (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1434 (1955)

Type: as above

M. aurantium Haw., Misc. Nat. : 84 (1803); Willd., Enum. Pl. Hort. Berol. : 531 (1809); Soland. in Ait. Hort. Kew. ed. 2, 3 : 243 (1811); Haw. Syn. Pl. Succ. : 264 (1812); Hornem., Hort. Reg. Hafniae : 464 (1815); idem, Rev. Pl. Succ. : 148 (1821)

Type: lost

M. aurantiacum DC., Prodr. 3 : 437 (1828); Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.1 t.21 27 (1836); Eckl. & Zeyh., Enumeratio : 312 n. 2014 (1837); Sond., Fl. Cap. 2 : 417 (1862); Berger, Mesemb. und Portulac. : 166 (1908)

Type: as for M. aurantium

L. aurantiacum (DC.) Schwent. ex Jacobsen, Feddes Rep. 43 : 229
(1938); Jacobsen, Handb. Sukk. Pfl. 3 : 1424 (1955); idem,
Handb. Succ. Pl. 3 : 1192 (1960); Haage, Cact. & Succ. :
118 (1963); Jacobsen, Sukk. Lex. : 439 (1970); idem, Lex.
Succ. Pl. : 492 (1974)

Type: as above

M. flaccidum L. Bol., Ann. Bol. Herb. 3 : 164 (1924), non Jacq.
Holotype: between Montagu and Montagu Baths, September 1921,
Page s.n. in BOL 17258 (BOL!)

L. marcidulus N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1439 (1955); idem, Handb. Succ. Pl.
3 : 1203 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex.
Succ. Pl. : 496 (1974)

Holotype: as for M. flaccidum

M. serpens L. Bol., Notes Mesembryanthemum 2 : 221 (1930)
Holotype: near Kleinmond, August 1929, Gwen Edwards s.n. in
BOL 19247 (BOL!)

L. serpens (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1447 (1955); idem, Handb.
Succ. Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 445 (1970);
idem, Lex. Succ. Pl. : 499 (1974)

Holotype: as above

M. palustre L. Bol., Notes Mesembryanthemum 2 : 325 (1932)
Holotype: between Bottelary and Stellenbosch, 26 September 1931,
L. Bolus s.n. in BOL 19927 (BOL!)

L. palustris (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1441 (1955); idem, Handb.
Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex. : 444 (1970);
idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

M. citrinum L. Bol., Notes Mesembryanthemum 2 : 326 (1932)
Holotype: between Kalbaskraal & Malmesbury, March 1931,
Leipoldt s.n. in BOL 19925 (BOL!, holo!, K!, iso!)

L. citrinus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1428 (1955); idem, Handb.
Succ. Pl. 3 : 1194 (1960); idem, Sukk. Lex. : 439 (1970);
idem, Lex. Succ. Pl. : 492 (1974)

Holotype: as above

M. rubroluteum L. Bol., Notes Mesembryanthemum 3 : 11 (1936)

Holotype: North plateau of Kapiteins Kloof, 21 October 1935
Pillans 7749 (BOL!)

L. rubroluteus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169
(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1445 (1955); idem,
Handb. Succ. Pl. 3 : 1208 (1960); idem, Sukk. Lex. : 345
(1970); idem, Lex. Succ. Pl. : 498 (1974)

Holotype: as above

L. stanfordiae L. Bol., Notes Mesembryanthemum 3 : 158 (1939)

Holotype: Yzerfontein, Malmesbury Division, September 1938,
K.C. Stanford s.n. in BOL 21851 (BOL!)

Erect to decumbent, succulent shrubs, ca. 20 cm. high and 33 cm.
in diameter. Internodes smooth, maroon to brown, ca. 17 mm long
and 2 mm in diameter in the first two years of growth. Leaves
sharply triquetrous, sheathing the stem for ca. 1 mm, 5 - 20,5 - 50
mm long, 1 - 2,7 - 7,5 mm wide and 1 - 2,5 - 7,5 mm deep; apices
long - acute. Flowers solitary or in threes, pedicels ca. 31,5 mm
long and 1,5 mm in diameter; flowers white to golden-orange, ca.
41 mm in diameter. Bracts up to 28 mm long and 4 mm wide, sepals
5, ca. 19 mm long and up to 8 mm wide, the inner 3 with membranous
margins, ca. 15 mm long and 8 mm wide; petals (petaloid staminodes)
many in 4 series, 8 - 18 - 37 mm long, up to 4 mm wide; non-petaloid
staminodes absent. Stamens many, filaments yellow, ca. 1,5 mm long,
anthers yellow; stigmas 5, 1 - 2,5 - 4 mm long, subulate. Capsule
5 - locular, ca. 11 mm in diameter and 8,5 mm deep, woody, charcoal
grey, valve-wings ca. 3 mm long and up to 1 mm wide, separate from
the valve for most of their length, placental tubercle absent;
covering membranes present, covering most of the surface of each
locule. Seeds pale maroon, ca. 1,05 - 1,23 - 1,39 mm long, 0,69 -
0,91 - 1,02 mm wide and 0,89 - 0,98 - 1,05 mm deep, funicles ca.
0,28 - 0,51 - 0,67 mm long; surface baculate, baculae ca. 25 μ long,

105 μ in diameter; microbaculae present, ca. 0,60 μ long and 1,07 μ in diameter. Chromosome number $2n = 18$ (de Vos, 1947; Snoad, 1951).

Flowering season: 74% of specimens seen were in flower between August and October.

SPECIMENS SEEN:

CAPE 2917 (-DB) near Okiep, August 1897, Pillans s.n. in Herbarium Austro-Africanum 1865 (= SAM 46701) (K!, SAM!, UPS!)

3217 (-DB) Stompneus Bay, St. Helena Bay, 3 June 1970, Axelson 115 (NBG!)

(-DD) between Hopefield and Saldanha, September 1905, H. Bolus 12691 (BOL!, K!)

3218 (-BB) Langkloof, 3 August 1896, Schlechter 8401 (BM!, K!, PRE!)

(-CC) Steenberg Cove, St. Helena Bay, August 1970, Wisura (NBG!)

(-D-) Piquetberg division, October 1923, Anon. s.n. in BOL 15206 (BOL!)

(-DA) Kapiteinskloof, 24 October 1935, Pillans 7749 (BOL!, holo. of syn.); Kapiteinskloof. 5 September 1955, R. du Plessis 142 (BOL!)

3219 (-BC) Kerskopp, 1 September 1896, Schlechter 8800 (BOL!, GRA!, PRE!)

3317 (-BB) Hoedjies Bay, 1923, Mathews s.n. in NBG 1586/23 (K!) Saldanha Bay, August - September, Ecklon & Zeyher 2015 (= Ecklon 183) (S!); Saldanha Bay, September, Ecklon 121 (TCD!); Saldanha Bay, 27 August 1953, H. Hall s.n. (BOL!)

3318 (-AA) Lynch Point, Saldanha Bay, 5 October 1971, Axelson 483 (NBG!); Langebaan Veld, August 1931, Martley s.n. (BOL!); Langebaan, September 1932, Leighton s.n. in BOL 20175 (BOL!); 4 miles south of Langebaan, September 1932, Salter 3010 (BOL!)

(-AB) Hopefield, September 1921, Holland s.n. in NBG 734/14 (BOL!)

- (-AC) Yzerfontein, September 1938, Stanford s.n. in BOL 21851 (BOL!)
- (-AD) Darling, September, Duckitt s.n. (BOL!); 'Slang=kop' near Darling, 10 September 1955, H. Hall s.n. (BOL!) Darling, 1913, Duckitt s.n. in NBG 1140/13 (K!)
- (-BD) Hermon, 1931, Mathews s.n. in NBG 1012/23 (K!)
- (-CB) near Mamre, September 1955, H. Hall s.n. (BOL!); Mamre, 24 September 1955, R. du Plessis 157 (BOL!); between Mamre and Darling, 1 August 1932, Leipoldt s.n. (BOL!)
- (-CD) Wynberg, 29 February 1896, Schlechter 7544 (BM!, GRA!); Kenilworth, December 1895, H. Bolus 4744 (PRE!); Kenilworth, March 1805, Flanagan 2435 (PRE!)
- (-DA) Kalbaskraal, 1958, Werdermann & Oberdieck 312 (PRE!); Kalbaskraal, 29 September 1958, Werdermann & Oberdieck 640 (B!); between Kalbaskraal and Malmesbury, March 1932, Leipoldt s.n. in BOL 19925 (BOL!, K!)
- (-DB) Flats south of Paarl, 30 August 1946, Leighton 2849 (BOL!)
- (-DC) Joostenberg, 11 October 1949, E. Esterhuysen 15977 (BOL!); near Tygerberg, August, Ecklon & Zeyher 2014 (GRA!, S!); foot of the Tygerberg, October 1892, MacOwan s.n. in Herbarium Austro-Africanum 1465 (B!, GRA!, K!, STE!, UPS!); Patrysvlei, 16 August 1896, Wolley Dod 1471 (BM!); Patrysvlei, 19 September 1897, Wolley Dod 3295 (BM!); Hercules Pillar, September 1944, Leighton 947 (BOL!)
- (-DD) near Stellenbosch, 26 September 1931, L. Bolus s.n. in BOL 19927 (BOL!); Onderpapegaaiberg, 9 September 1966, Taylor 6896 (STE!)

- 3319 (-AA) Saron, October 1896, Schlechter 10639 (B!, BM!, E!, G!, GRA!, K!, PRE!, S!); Twenty-four Rivers, no date, R. du Plessis s.n. in NBG 68/13 (BOL!); Saron, 20 September 1936, G.J. Lewis s.n. (BOL!)
- (-AC) Tulbagh, no date, Anon. 2032 (BOL!); near Tulbagh Road, 25 September 1947, Anon. s.n. in SUG s.n. (BOL!); Tulbagh, September 1931, Brink s.n. in

STE 11507 (STE!); Tulbagh, September 1916,
Marloth 7356 (PRE!); Steendal, Tulbagh, October,
Ecklon, 35 (TCD!)

- (-AD) Foot of the Matroosberg at Michell's Pass,
October 1894, MacOwan s.n. in Herbarium Austro-
Africanum 1611 (B!, BM!, G!, GRA!, K!, SA!., UPS!)
- (-C-) 'Die Eike', Breërivier, July 1962, Van Breda
1704 (BOL!)
- (-CB) Worcester, 14 August 1969, Stayner s.n. in KG
344/68 (BOL!); Audensberg Valley, 3 September
1894, Penther 1657 (M!, S!); Worcester, October
1908, Marloth 8990 (PRE!)
- 3320 (-CC) Montagu Baths, September 1921, Arbuthnot s.n.
in BOL 17258 (BOL!); Ashton, October 1903,
Marloth 3260 (BOL!)
- 3418 (-AB) Simonstown, November 1933, Meebold 11962 (M!);
Buffels Bay, 27 May 1928, Salter 266/16 (BM!);
Muizenberg, February 1908, Dümmer 1318 (E!)
- (-AD) Gifkommetjie turnoff, 6 October 1971, Taylor
7954 (STE!); between Klein Rondevlei & Olifants=
bos, 16 March 1970, Taylor 7666 (STE!); Slope
above Batsata Cove, February 1972, Taylor 5090
(PRE!)
- (-BA) Cape Flats, September, Zeyher s.n. (SAM!); Wynberg
Flats, December 1866, Thode s.n. in STE 9385 (STE!)
- (-BD) Betty's Bay, 26 August 1954, H. Meyer s.n. in SUG
12973 (BOL!); Betty's Bay, October 1973, Ebersohn
373 (NBG!)
- 3419 (-AC) near Kleinmond, August 1929, Edwards s.n. in BOL
19247 (BOL!)
- (-AD) Above Vogelgat, 2 December 1896, Schlechter 9569
(BM!, GRA!, K!)
- 3420 (-AD) near De Hoop, October 1961, Van Breda 1485 (PRE!)
- (-CA) The Poort, Bredasdorp, September 1933, L. Bolus
s.n. in NBG 2015/33 (BOL!)

3421 (-AC) 17 miles south of Riversdale, 5 October 1968,
Acocks 24110 (K!, PRE!)

(-BD) Milkwoodfontein, Riversdale, October 1897,
Galpin 4061 (GRA!, PRE!)

Without precise locality: Doornhoek, no date, von Ludwig s.n.
(S!); C.B.S., no date, Krausse s.n.
in herb. Willdenow 9773 (B!); without
locality, no date, herb. Lindley (CGE!);
C.B.S., no date, Willdenow 9774 (B!);
4 other unlocalised specimens.

Garden material: Paris, 1828, herb. Delessert (G!); 14 other
garden specimens.

Linnaeus cited no type material in his description of this species,
and none is to be found in any contemporary herbarium that he could
have used. According to Aiton (1789), this species was in cultivation
at Kew from 1750 onwards, and it is presumably this material or
material propagated vegetatively from it which was used both by
Linnaeus for his description and by Curtis for his plate. The
Curtis plate is therefore taken as the iconotype of this species.
(I am grateful to Mr. W.T. Stearn, British Museum, for confirming
this opinion.)

The species as circumscribed here includes essentially all the
golden-flowered members of the former section Aurea sensu L. Bol.
of Lampranthus, regardless of habit. A network of intermediates
between all eight heterotypic taxa included in the present concept
can be shown, although the extremes of variation may at first sight
appear very different, in fact it is neither desirable nor possible
to separate them.

The only two close taxa which are kept separate from this are
L. glaucus subsp. glaucus and L. vanzijliae. The former includes
essentially all the pure-yellow flowered members of section Aurei
sensu L. Bol., and the range in habit is not as great as in subsp.
aureus. In addition to this flower-colour difference, the sepals
of subsp. glaucus are smaller than in subsp. aureus, the capsules
of plants of the former have ridged valves while the latter do not,

and the leaves of the former are generally somewhat shorter and deeper than those of the latter. Despite these differences, the similarities of those characters which are similar are so great that there does not seem to be any reason why these taxa should have the rank of full species. As there is hardly any overlap in the geographical ranges of these taxa, they are treated as subspecies rather than varieties.

L. vanzijliae differs from prostrate forms of L. glaucus subsp. aureus most notably in that it roots at the nodes, which the latter never does. The bracts of the former are near the base of the pedicels, and thus easily confused with foliage leaves, while the bracts of the latter are at the mid-point of the pedicels and are not as readily taken for leaves. The sizes of the sepals and internodes differ as indicated in the key. These two taxa are kept apart at species level because of these easily-observed differences and many minor, often overlapping differences which combine to give a very much lower homogeneity value between these two species than between the two subspecies of L. glaucus.

- 18 Lampranthus vanzijliae (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1451 (1955); idem, Handb.
Succ. Pl. 3 : 1212 (1960); idem, Sukk. Lex. : 447 (1970);
idem, Lex. Succ. Pl. : 500 (1974)

Holotype: Worcester, August 1921, Dorothy van Zijl s.n. in
BOL 17141 (BOL!)

Mesembryanthemum vanzijliae L. Bol., Ann. Bol. Herb. 3 : 126 (1922)

Holotype: as above

M. matutinum L. Bol., Notes Mesembryanthemum 1 : 135 (1928)

Holotype: in dit. Piquetberg, September 1926, Mrs. Immelman
s.n. in BOL 18713 (BOL!)

L. matutinus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Schwant., Nat. Cact. Succ. Jl. 4 : 58 (1949); Jacobsen,
Handb. Sukk. Pfl. 3 : 1439 (1955); idem, Handb. Succ. Pl.
3 : 1203 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex.
Succ. Pl. : 496 (1974)

Holotype: as above

M. acrosepalum L. Bol., Notes Mesembryanthemum 3 : 11 (1936)

Holotype: Kapiteins Kloof, Piquetberg, October 1935, Pillans
7752 (BOL!)

L. acrosepalus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1422 (1955); idem,
Handb. Succ. Pl. 3 : 1191 (1960); idem, Sukk. Lex. : 438
(1970); idem, Lex. Succ. Pl. : 491 (1975)

Holotype: as above

Mat-forming succulents, up to 14 cm. high and 47 cm. in diameter
Internodes smooth, ochre or russet, ca. 30 mm long and 2 mm in
diameter in the first two years of growth. Leaves triquetrous,
sheathing the stem for ca. 1 mm, 11,5 - 20,5 - 38 mm long, 0,8 -
2 - 4 mm wide and 1 - 2 - 4 mm deep; apices sharply acute. Flowers
solitary or in threes, pedicels ca. 28 mm long and 1,5 mm in diameter;
flowers yellow to golden, ca. 44 mm in diameter. Bracts up to 32 mm
long and 5 mm wide, sepals 5, ca. 12,5 mm long and up to 6 mm wide,
all alike; petals (petaloid staminodes) ca. 30 - 90 in 4 series,

capsules
9 - 17,5 - 30 mm long, up to 4 mm wide; non-petaloid staminodes absent. Stamens many, filaments yellow, ca. 1,5 - 4 - 6,5 mm long, anthers yellow; stigmas 5, 0,5 - 1 - 2,5 mm deep, woody, charcoal grey, valve-wings ca. 5 mm long and up to 2 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds cream-coloured, ca. 0,85 - 0,90 - 0,97 mm long, 0,59 - 0,71 - 0,82 mm wide and 0,34 - 0,40 - 0,58 mm deep, funicles ca. 0,27 - 0,30 - 0,36 mm long; surface baculate, baculae ca. 15 μ long, 85 μ in diameter; microbaculae absent. Flowering season: 73% of specimens seen were in flower between August and November.

SPECIMENS SEEN:

- CAPE 3218 (---) Olifants River Valley, 28 March 1932, Leipoldt s.n. (BOL!)
- (-D-) Piquetberg division, September 1926, Immelman s.n. in BOL 18713 (BOL!); hills near Moutonsvlei, November 1934, Pillans 7473 (BOL!)
- (-DA) Kapteins Kloof plateau, October 1935, Pillans 7752 (BOL!)
- (-DB) near Citrusdal, September 1932, Malan s.n. in NBG 2390/32 (BOL!)
- (-DC) Top of Piquetberg between Avontuur and Zebrakop, 9 November 1934, Pillans 7550 (BOL!)
- 3318 (-AD) between Darling and Ysterfontein, November 1955, Rycroft 1817 (NBG!); near Darling, September 1931, Leipoldt s.n. in BOL 19952 (BOL!)
- 3319 (-CB) near Worcester, August 1921, Van Zijl s.n. in BOL 17141 (BOL!)
- 3419 (-AC) Botrivier Vlei, 9 November 1972, Wisura 2148 (NBG) 707/71 (BOL!)
- (-BA) Genadendal, March 1933, L. Bolus s.n. in NBG 409/33 (BOL!)

The differences between this species and its nearest allies have already been discussed under L. glaucus (both subspecies) and will

not be repeated here.

No consistent characters could be found to distinguish between any of the heterotypic taxa here treated as synonyms.

- 19 Lampranthus stipulaceus (L.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 14 (1955); idem, Handb.
Succ. Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446 (1970);
idem, Lex. Succ. Pl. : 499 (1974)

Iconotype: Dillenius, hort. Eltham t.209 f.267, 268

Typotype: Hort. Eltham., before 1732, Dillenius s.n. in
Herb. Dill. (OXF!)

Mesembryanthemum stipulaceum L., Sp. Pl. : 484 (1753); Soland.
in Ait., Hort. Kew. ed. 1, 2 : 187 (1789); Gmel., Syst.
Nat. ed. 14, 2 : 845 (1791); Haw., Obs. Gen. Mesemb. 2 :
255 - 257 (1795); idem, Misc. Nat. 65 - 66 (1803); idem,
Syn. Pl. Succ. : 301 (1812); idem, Rev. Pl. Succ. : 154
(1821); DC., Prodr., 3 : 439 (1828); Salm Dyck, Monogr.
Gen. Aloes. Mesemb. f.1 t.29 & 40 (1836); D. Dietr. Syn.
Pl. 3 : 145 (1843); Sond. Fl. Cap. 2 : 429 (1862); Berger,
Mesemb. u. Portulac. : 157 (1908); Anon., Fl. Pl. S. Afr.
7 : t.253 (1927)

Iconotype: as above

Erepsia stipulacea (L.) Schwant., Gartenflora 77 : 68 (1928)

Iconotype: as above

M. disgregium N.E. Br., Kew Bull. 1929 : 59 (1929)

Iconotype: Fl. Pl. S. Afr. 7 : t.253 (1927)

Typotype: Div. Bot. 2394, no date, no locality (BOL!)

L. disgregus (N.E. Br.) N.E. Br., Gard. Chron. 87 : 212 (1930)

Iconotype: as above

PRE-LINNAEAN CITATIONS:

Mesembryanthemum frutescens, flore purpureo rariore Dill., Hort.
Eltham : 279 t.209 f.267 - 268 (1732)

Ficoides seu Ficus aizoides Africana erecta arborescens, geniculato
caule, folio viridi Boerh., Ind. Pl. Hort. Lugd. Bat. : 123 n.
15 (1710); idem, Ind. alter Pl. Hort. Lugd. Bat. : 291 n. 4 (1720)

Mesembryanthemum foliis subulatis subcylindratis, obsolete papillosis

distinctis, caule scabro Royen., Hort. Lugd. Bat. : 287 n.

30 (1740)

Erect succulent shrubs, ca. 50 cm. high and 30 cm. in diameter. Internodes smooth, russet, ca. 24 mm long and 1,5 mm in diameter in the first two years of growth. Leaves semiterete, glaucous, sheathing the stem for ca. 1 mm, 5 - 20,5 - 41 mm long, 1 - 1,7 - 3 mm wide and 1 - 1,5 - 3 mm deep; apices subacute. Flowers solitary or in threes, pedicels ca. 34,5 mm long and 1 mm in diameter; flowers white to magenta - purple, ca. 60 mm in diameter. Bracts up to 29 mm long and 3 mm wide, sepals 5, ca. 14 mm long and up to 7 mm wide, all alike; petals (petaloid staminodes) ca. 40 - 65 in 2 series, 5 - 18 - 29 mm long, up to 3 mm wide; non-petaloid staminodes ca. 20 - 40, white, ca. 1 - 5 - 6 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 40 - 70, filaments white, ca. 1 - 3 - 5,5 mm long, anthers yellow; stigmas 5, 2,5 - 3,5 mm long, elliptical to subulate. Capsule 5 - locular, ca. 12 mm in diameter and 15 mm deep, woody charcoal grey, valve-wings ca. 2,5 mm long and up to 1 mm wide, separate from the valve for almost all of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds charcoal grey, ca. 1,49 - 1,57 - 1,67 mm long, 1,04 - 1,20 - 1,40 mm wide and 0,55 - 0,69 - 0,85 mm deep, funicles ca. 0,44 - 0,54 - 0,72 mm long; surface baculate, baculae ca. 31 μ long, 135 μ in diameter; microbaculae present, ca. 0,80 μ long and 0,49 μ in diameter. Flowering season: 87% of specimens seen were in flower between August and November.

SPECIMENS SEEN:

CAPE 3318 (-CD) near Cape Town, July 1856, de Castelnau s.n. (PRE!);
Cape Peninsula, no date, Fr. Masson s.n. (BM!);
Table Mountain, no date, Frazer s.n. (E!)

3324 (-CB) Baviaanskloof, ca. 80 miles east of Willowmore,
February 1973, Wisura 1848 (= NBG 1692/70) (BOL!,
NBG!)

3325 (-CD) Uitenhage, no date, Zeyher s.n. (TCD!); between
Port Elizabeth and Uitenhage, September 1939,

James s.n. (BOL!)

(-DC) Port Elizabeth, 1931, Long 8 (BOL!); probably Redhouse, August - September 1919, Agriculture Department 2394 (BOL!); Waterkloof near Greenbushes, Port Elizabeth, August 1931, Holland 3635 (BOL!); Redhouse, September 1908 Paterson 111 (BOL!)

3418 (-AB) Simonstown, 22 October 1860, Dubuc s.n. (E!); Simonstown, no date, Brown s.n. (E!)

3421 (-AC) 16 miles south of Riversdale, 5 October 1968, Acocks 24100 (K!, PRE!)

(-BD) Gouritz River, December, Ecklon & Zeyher 2031 (S!)

Without locality: C.B.S., no date, Zeyher 695 (E!); 1 other specimen.

Garden material: hort. Van Royen, Leyden, no date, herb. de la Roche (G!); hort. Cels, no date, herb. Delessert (G!); hort, no date, Giseke 1305 (E!); hort, Eltham, no date, Dillenius s.n. (OXF, typotype!); 2 other specimens.

This species may be confused with L. haworthii, L. spectabilis and possibly L. dependens. It differs from L. haworthii in not having ridged capsule-valves, in having leaves which are much slenderer than the latter, in that the bracts are near the base of the pedicels and more leaflike than in L. haworthii and in a tendency for the leaves to be in tufts on short shoots. It differs from L. spectabilis in being erect rather than spreading, in having shorter pedicels with bracts which although leaflike, are not as leaflike as in the other species, and in having shorter, slenderer leaves. It differs from L. dependens most obviously in habit, being erect rather than decumbent. Other differences are the much larger capsules which do not have ridged valves, and the covering membranes, which cover far more of the surface of each locule than in L. dependens.

The Dillenian plate shows all the characters of L. stipulacens and it is quite clear from the Linnaean protologue that this plate must be taken as the iconotype. (I am indebted to Dr. W.T. Stearn for confirmation of this opinion.)

- 20 Lampranthus dependens (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1430 (1955); idem, Handb. Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex. Succ. Pl. : 493 (1974)

Holotype: Cogmans Kloof, October 1921, Page s.n. in BOL 17156 (BOL!)

Mesembryanthemum dependens L. Bol., Ann. Bol. Herb. 3 : 134 (1922)

Holotype: as above

Decumbent succulent shrub, ca. 30 cm. high and 30 cm. in diameter. Internodes quadrangular, smooth, green, puff or russet, ca. 22 mm long and 2 mm in diameter in the first two years of growth. Leaves semiterete, grass green, hardly sheathing the stem, 13,5 - 20,5 - 55 mm long, 1 - 2 - 4 mm wide and 1 - 2 - 4 mm deep; apices obtuse. Flowers in threes, pedicels ca. 39,5 mm long and 1 mm in diameter; flowers pink to deep pink, ca. 65 mm in diameter. Bracts up to 25 mm long and 2 mm wide, sepals 5, ca. 23 mm long and up to 7 mm wide, all alike; petals (petaloid staminodes) ca. 65 - 90 in 3 series, 8 - 26,5 - 42 mm long, up to 2,5 mm wide; non-petaloid staminodes ca. 35 - 50, white, ca. 2 - 5 mm long, sharply differentiated from the petaloid staminodes. Stamens many, filaments white, ca. 1,5 - 4,5 mm long, anthers yellow; stigmas 5, 1 - 2,5 - 3,5 mm long. Capsule 5 - locular, ca. 8 mm in diameter and 7 mm deep, woody, charcoal grey, valves with ca. 1,5 mm - high ridges, valve-wings ca. 2,5 mm long and up to 1 mm wide, separate from the valve for about half of their length; placental tubercle absent; covering membranes present, covering little of the surface of each locule. Seeds deep maroon to charcoal grey, ca. 1,24 - 1,34 mm long, 0,86 - 0,92 - 1,02 mm wide and 0,47 - 0,54 - 0,59 mm deep, funicles ca. 0,31 - 0,42 - 0,48 mm long; surface baculate, baculae ca 30 μ long, 108 μ in diameter; microbaculae present, ca. 0,60 μ long and 0,53 μ in diameter. Flowering season: 87% of specimens seen were in flower between September and January.

SPECIMENS SEEN:

CAPE 3319 (-CB) Malkops Kloof, October 1940, Stokoe s.n. (BOL!)
Audensberg Ridge Peak, 1 January 1950,
E. Esterhuysen 16662 (BOL!)

- (-DC) Onklarberg, 20 miles south of Worcester,
December 1924, Stokoe 1100 (PRE!)
- 3320 (-CC) Montagu Baths, October 1921, Page s.n. in BOL
17156 (BOL!)
- 3322 (-DA) Kouga mountains, November 1959, E. Esterhuysen
s.n. in 644/58 (NBG!)
- 3323 (-CA) ca. 14 miles from Uniondale towards Willowmore,
October 1930, Fourcade 4388 (BOL!, BOL-F!)
- (-CC) Prince Alfred's Pass, January 1923, Fourcade 2473
(BOL!, BOL-F!)
- (-DC) Formosa, Plettenberg Bay, March 1910, Fourcade 610
(BOL-F!)
- 3324 (-BB) Hills near Humansdorp, September 1923, Fourcade
2720 (BOL-F!)
- 3326 (-BC) Donkerbosch near Grahamstown, August 1926, Britten
5409 (BOL!); Signal Hill, Grahamstown, 25 December
1926, Britten 5551 (BOL!); Dassie Krantz, April 1928,
Dyer 1256 (BOL!)
- 3419 (-BB) Palmiet Mountains, January 1925, Stokoe s.n. (BOL!)

2 garden specimens

This species differs from L. haworthii in having the youngest stems square not round, in being decumbent rather than erect or spreading, and from all similar species in having stigmas without ciliate margins and in that the covering membranes cover less than half of the surface of each locule.

21. Lampranthus haworthii (Donn ex Haw.) N.E. Br., Gard. Chron. 87 : 212;
 Jacobsen, Handb. Sukk. Pfl. 3 : (1955) ; idem, Handb. Succ.
 Pl. 3 : 1200 (1960); Haage, Cact. Succ. : 119 (1963); Jacobsen.
 Sukk. Lex. : 442 (1970); idem, Lex. Succ. Pl. 495 (1974)

Iconotype: unpublished plate at Kew

- Mesembryanthemum haworthii Donn, Cat. Hort. Cantab. ed. 2 : 66 (1800);
 Haw., Misc. Nat. : 65 (1803) ; idem, Syn. Pl. Succ. : 302
 (1812); Willd., Enum. Pl. Hort. Berol. Suppl. : 35 (1813);
 Hornem, Hort. Reg. Hafniae : 463 (1815); Haw., Rev. Pl. Succ.
 : 154 (1821); DC., Prodr. 3 : 439 (1828); Salm Dyck, Monogr.
 Gen. Aloes Mesemb. f.1 t.27 § 40 (1836); D. Dietr., Syn. Pl. 3
 : 145 (1843); Sond., Fl. Cap. 2 : 428 (1862); Berger, Mesemb.
 u. Portulac. : 155 (1908)

Iconotype: as above

- Erepsia haworthii (Donn ex Haw.) Schwant., Gartenflora 1928 : 68 (1928)

Iconotype: as above

- M. corallinum Haw., Rev. Pl. Succ. : 154 (1821), non Thunb.; DC.,
 Prodr. 3 : 440 (1828); D. Dietr., Syn. Pl. 3 : 145 (1843)

Iconotype: Salm Dyck, Monogr. Gen. Aloes Mesemb. f.1 t.28

- M. coralliflorum Salm Dyck, Monogr. Gen. Aloes Mesemb. f.1 t.28 § 40
 (1836); Sond., Fl. Cap. 2 : 429 (1862); Berger, Mesemb. u.
 Portulac. : 156 (1908)

Iconotype: as for M. corallinum Haw. non Thunb.

- E. coralliflora (Salm Dyck) Schwant., Gartenflora 1928 : 68 (1928)

Iconotype: as above

- L. corallifolrus (Salm Dyck) N.E. Br., Gard. Chron. 87 : 212 (1930);
 Jacobsen, Handb. Sukk. Pfl. 3 : (1955); idem, Handb. Succ. Pl.
 3 : 1196 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex.
 Succ. Pl. : 493 (1974)

Iconotype: as above

- M. egregium L. Bol., Notes Mesembryanthemum 3 : 12 (1936)

Holotype: 2 miles from Montagu on the old road to Ladismith,
 September 1935, E. Esterhuysen s.n. in BOL 21640 (BOL!)

L. egregius (L. Bol.) L. Bol, Notes Mesembryanthemum 3 : 170 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1431 (1955), idem, Handb. Succ.
Pl. 3 : 1197 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex.
Succ. Pl. : 493 (1974)

Holotype: as above

L. affinis L. Bol., Jl. S. Afr. Bot. 28 : 12 (1962); Jacobsen, Sukk.
Lex. : 438 (1970); idem, Lex. Succ. Pl. : 491 (1974)
Holotype: Meiringspoort, Oct. - Nov. 1961, Stayner s.n. in KG
794/60 (BOL!)

Erect succulent shrubs, ca. 42 cm. high and 35 cm. in diameter.
Internodes smooth or fissured, russet to charcoal, ca. 28 mm long and
2,5 mm in diameter in the first two years of growth. Leaves semiterete,
sheathing the stem for ca. 1,5 mm 11 - 26 - 54 mm long, 0,8 - 3 - 5,5 mm
wide and 1 - 3 - 5,5 mm deep; flowers solitary or in threes, pedicels
ca. 45,5 mm long and 1,5 mm in diameter; flowers magenta - purple,
often with a small central white 'eye', ca. 57 mm in diameter.
Bracts up to 23 mm long and 3,5 mm wide, sepals 5, ca. 1,8 mm long
and up to 6,5 mm wide, the inner three with membranous margins, ca.
13 mm long and 7 mm wide, petals (petaloid staminodes) ca. 35 - 37
in 3 series, 5 - 24,5 - 35 mm long, up to 4 mm wide; non-petaloid-
staminodes few to many, white, ca. 3 - 5 - 14 mm long, grading into
the petaloid staminodes. Stamens many, filaments white ca. 1 - 3,5 - 6
mm long, anthers white; stigmas 5, 1 - 2 - 4,5 mm long, ellipsoidal
to subulate. Capsule 5 - locular, ca. 10,5 mm in diameter and 10,5 mm
deep, woody, charcoal grey, valves with ca. 1,5 mm - high marginal
ridges, valve-wings ca. 3 mm long and up to 1 mm wide, separate from
the valve for almost all of their length; placental tubercle absent;
covering membranes present, covering most of the surface of each locule.
Seeds rich maroon, ca. 0,73 - 1,27 - 1,77 mm long, 0,37 - 0,73 - 1,07
mm wide and 0,53 - 0,95 - 1,22 mm deep, funicles ca. 0,26 - 0,60 -
0,72 mm long, surface baculate, baculae ca. 15 μ long, 85 μ in diameter;
microbaculae present, ca. 0,40 μ long and 0,58 μ in diameter.
Chromosome number $2n = 18$ (Pogosyan & Astvatsaryan, 1968; Snoad, 1951).
Flowering season: 70% of specimens seen were in flower between August
and October.

SPECIMENS SEEN:

- CAPE 3218 (-BB) Clanwilliam, 3 July 1896, Schlechter 8007 (B!, BM!, BOL!, E!, G!, PRE!, S!)
- 3219 (-BD) Tanqua Karoo, October 1920, Marloth 9612 (PRE!)
- (-DD) between Karooport and Koedoesberg, 18 September 1938, Wall s.n. (S!)
- 3220 (-CA) Houthoek, Sutherland, 23 September 1966, Hanekom 737 (PRE!)
- (-DA) Verlatenkloof, 20 miles south of Sutherland, October 1954, Leighton 3166 (BOL!)
- 3222 (-BC) Beaufort West, October 1917, Mathews s.n. (BOL!)
- 3224 (-BC) 2 miles south-west of Graaff-Reinet, October 1867, H. Bolus 618 (BOL!, GRA!, S!)
- (-DD) near Lootskloof, Somerset East, June, H. Bolus s.n. (GRA!); Lootskloof, Somerset East, June, MacOwan 1699 (BM!)
- 3319 (-BC) Karooport, 18 September 1938, Hafström & Acocks 428 (S!);
- (-BD) Hex River Pass, 1 October 1893, F. Guthrie 3083 (NBG!)
- (-CB) near Worcester, September 1952, H. Hall s.n. (BOL!); Worcester Veld Reserve, October 1934, Van Breda 156 (BOL!, PRE!); near Worcester, 26 September 1955, Anon. s.n. in SUG 13354 (BOL!); Worcester Veld Reserve, no date, Van Breda 153 (BOL!); between Worcester and Brandwag, 1 May 1975, Glen 945 (BOL!); Worcester Veld Reserve, 4 October 1962, Olivier 161 (PRE!, STE!) Karoo Garden Worcester, veld, September 1975, Bayer 65 (NBG!); Karoo Garden, hill above office, 5 September 1975, Dobay 40 (NBG!)
- (-DA) Hex River Valley, October 1893, H. Bolus 7998 (BOL!); Hex River Valley, 8 October 1943, James s.n. (BOL!) 8 miles from Worcester towards Touws River, October 1933, Lavis s.n. in BOL 21011 (BOL!); Rabiesberg slopes 26 September 1935, E. Esterhuysen s.n. in NBG 2694/35 (BOL!)

- (-DD) 2 miles south of Robertson towards MacGregor, September 1969, Wisura 456 (NBG!); near the road from Robertson to Worcester, September 1933, Hurling & Neil s.n. in BOL 21012 (BOL!); near Robertson, September 1933, Hurling & Neil s.n. in BOL 20998 (BOL!); between Robertson and Bonnievale, 5 October 1952, Pillans s.n. (BOL!); Bonnievale, March 1935, Van der Merwe 82 (BOL!)
- 3320 (-AB) Patats River, 2 October 1954, E. Esterhuysen 23493 (BOL!)
- (-BA) near Matjiesfontein, September 1908, H. Bolus 13455 (BOL!); Matjiesfontein, no date, Marloth 10204 (PRE!); 3 miles north of Matjiesfontein, September 1932, Acocks 17168 (BOL!); Whitehill, 28 September 1932, Barker s.n. (BOL!); Whitenhill, October 1925, Archer 104 (BOL!)
- (-BC) Dobbelaarskloof, September - October 1938, Levyns 6671 (BOL!)
- (-BD) Rooiberg, August 1954, Wurts 1321 (NBG!)
- (-CC) Montagu, September - October 1933, Leighton s.n. (BOL!); Bonnievale, September 1935, Van der Merwe 134 (BOL!); Kloof behind Montagu Baths, 27 October 1970, Wisura 1776 (NBG!); 2 miles from Montagu on the Never-Never road, September 1935, E. Esterhuysen 21640 (BOL!); 9 miles from Montagu on the Never-Never road, 26 January 1976, Wisura 3081 (= NBG 249/75) (BOL!)
- (-DA) 35 Miles north-east of Montagu, August 1973, Wisura 2738 (NBG!); 25 miles north-east of Barrydale, 29 June 1948, Acocks 14565 (BOL!)
- 3321 (-AD) Seven Weeks Poort, 27 October 1970, Wisura 1785 (= NBG 1632/70) (BOL!, NBG!); Towerkop Kloof, 28 October 1953, Wurts 1203 (NBG!); Waterkloof, Ladismith, 31 October 1928, Hutchinson 1108 (BM!, BOL!, PRE!)
- (-BC) South Slopes of Bosluiskloof, March 1969, Wisura s.n. in NBG 534/68 (NBG!)
- (-CB) Huis River Pass, 26 February 1975, Glen 933 (BOL!); Huis River Pass, 29 September 1932, Lewis s.n. in NBG 2740/32 (BOL!); Huis River Mountains, May 1933,

Davis s.n. in NBG 2824/32 (BOL!)

- 3322 (-AA) ca. 14 miles east of Prince Albert towards Klaar=
stroom, July 1971, Wisura 1814 (NBG!); Prince Albert,
August 1925, Krige s.n. in NBG 2093/23 (BOL!)
- (-BC) Meiringspoort, October 1961, Stayner s.n. in KG
794/60 (BOL!, holo. of syn!); Meiringspoort, October
- November 1961, Stayner s.n. in KG 842/60 (BOL!);
south of Meiringspoort, October 1955, E. Esterhuysen
24888 (BOL!)
- (-CA) Oudtshoorn, September 1932, Taylor s.n. (BOL!);
Oudtshoorn, 13 May 1952, Anon. s.n. in SUG 12789 (BOL!)
- (-CB) Hazenjacht, 29 July 1955, du Plessis 26 (BOL!)
- (-CD) Paardepoort, George, August 1931, Thorne s.n. in
SAM 51619 (SAM!)
- (-DB) 17 miles from Uniondale towards de Rust, 30 June
1975, Glen 985 (BOL!)
- 3323 (-AD) Willowmore, 4 November 1946, Anon. s.n. in SUG
11564 (BOL!)
- (-CA) near Uniondale, January 1931, Leipoldt s.n. in
BOL 19947 (BOL!, K!)
- (-DA) Saptokop, Kouga Mountains, 23 November 1958,
E. Esterhuysen 27954 (BOL!)
- 3324 (-CC) Moordenaarskloof, February 1973, Stayner s.n. in
NBG 1224/71 (NBG!)

3423 (-AB) Plettenberg Bay, September 1921, Swart 15525R (PRE!)

3 specimens without locality

Garden material: Berlin, no date, Willdenow 9759 (B-W!);
12 other specimens

The first use of the name Mesembryanthemum haworthii was by J. Donn
of Cambridge, in a garden catalogue. No description of his new
species was given by him. However, it was established that he kept
a herbarium, most of which is now in Liverpool, but no specimens of
Mesembryanthemaceae collected by him were found either at Liverpool

or at Cambridge. From this it may be deduced that he left no type material. No material attributable to Haworth, who supplied a description for this name, could be found. The first citation of type material for this species is by Sonder, who cites the Salm Dyck plate, which is accordingly taken as the lectotype.

This species is the centre of a group of closely related taxa, namely the two preceding species, L. spectabilis and itself. The differences between this species and the two preceding ones have been discussed above. L. haworthii may be distinguished from L. spectabilis by its ridged capsule-valves, a tendency to shorter internodes, petals with a small white patch at the base, giving the effect of a small white central 'eye', less leaflike bracts and leaves that show no sign of a keel, while those of L. spectabilis are usually distinctly keeled.

None of the heterotypic synonyms included here differ in any way from typical L. haworthii.

22A Lampranthus spectabilis (Haw.) N.E. Br. subsp. spectabilis

Lampranthus spectabilis (Haw.) N.E. Br., Gard. Chron. 87 : 212
(1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1447 (1955); idem,
Handb. Succ. Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 445
(1970); idem, Lex. Succ. Pl. : 499 (1974)
Iconotype: Curtis Bot. Mag. 11 : t.396

Mesembryanthemum spectabile Haw., Obs. Gen. Mesemb. 2 : 385 (1795);
Curtis, Bot. Mag. 11 : t.396 (1797); Willd., Sp. Pl. ed. 5
2 : 1048 - 1049 (1799); Haw., Misc. Nat. : 68 (1803); Jacq.
Hort. Schoenbr. 4 : t.441 (1804); DC., Plant. Grass. t.153
(1805); Willd., Enum. Pl. Hort. Berol. : 537 (1809); Haw.,
Syn. Pl. Succ. : 240 (1812); Hornem., Hort. Reg. Hafniae :
464 (1815); Haw., Rev. Pl. Succ. : 146 (1821); DC., Prodr.
3 : 436 (1828); Salm Dyck, Monogr. Gen. Aloes Mesemb. f.2
t.13 § 27 (1837); D. Dietr., Syn. Pl. 3 : 143 (1843);
Sond., Fl. Cap. 2 : 419 (1862); Berger, Mesemb. u. Portulac.
: 161 (1908)

Iconotype: as above

M. turbinatum Jacq., Hort. Schoenbr. 4 : t.476 (1804)1 DC., Prodr.
3 : 436 (1828); Dietr. Syn. Plant. 3 : 143 (1843); Sond.
Fl. Cap. 2 : 418 (1862); Berger, Mesemb. u. Portulac. :
164 (1908)

Iconotype: Jacq., Hort. Schoenbr., t.476

M. turbinatus (Jacq.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1450 (1955); idem, Handb.
Succ. Pl. 3 : 1211 (1960); idem, Sukk. Lex. : 447 (1970);
idem, Lex. Succ. Pl. : 500 (1974)

Iconotype: as above

M. blandum Haw., Suppl. Pl. Succ. : 95 (1819); idem, Rev. Pl. Succ.
: 147 (1821); Ker-Gawl., Bot. Reg. 7 : t.582 (1821); Lodd.,
Bot. Cab. 6 : t.599 (1821); DC., Prodr. 3 : 436 (1828); Salm
Dyck, Monogr. Gen. Aloes Mesemb. f.4 t.16 § 26 (1842); D.
Dietr., Syn. Pl. 3 : 143 (1843); Sond., Fl. Cap. 2 : 418
(1862); Berger, Mesemb. u. Portulac. : 162 (1908)

Iconotype: Lodd., Bot. Cab. 6 : t.599

L. blandus (Haw.) Schwant. ex Jacobsen, Feddes Rep. 43 : 229 (1938);
Jacobsen, Handb. Sukk. Pfl. 3 : 1426 (1955); idem, Handb.
Succ. Pl. 3 : 1193 (1960); idem, Sukk. Lex. : 439 (1970);
idem, Lex. Succ. Pl. : 492 (1974)

Iconotype: as above

M. curviflorum Haw., Rev. Pl. Succ. : 147 (1821); DC., Prodr. 3
: 436 (1828) ('curvifolium'); Salm Dyck, Monogr. Gen. Aloes
Mesemb. f.2 t.10 § 26 (1837); D. Dietr. Syn. Pl. 3 : 143
(1843) ('curvifolium'); Sond., Fl. Cap. 2 : 418 (1862)

Iconotype: Salm Dyck, Monogr. Gen. Aloes Mes. f.2 t.10

M. blandum Haw. var curviflorum (Haw.) Berger, Mesemb. u. Portulac.
: 163 (1908)

Iconotype: as above

L. curviflorus (Haw.) N.E. Br., Gard. Chron. 87 : 211 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1429 (1955); idem, Handb.
Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex. : 440 (1970);
idem, Lex. Succ. Pl. : 493 (1974)

Iconotype: as above

M. formosum Haw., Rev. Pl. Succ. : 145 (1821); DC., Prodr. 3 :
436 (1828); Salm Dyck, Monogr. Gen. Aloes Mesemb. f.3 t.21
§ 27 (1840); D. Dietr. Syn. Plant. 3 : 143 (1843); Sond.,
Fl. Cap. 2 : 419 (1862); Berger, Mesemb. u. Portulac. : 162
(1908)

Iconotype: Salm Dyck, Monogr. Gen. Aloes Mesemb. f.3 t.21

L. formosus (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1433 (1955); idem, Handb. Succ. Pl. 3
: 1199 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex.
Succ. Pl. : 494 (1974)

Iconotype: as above

M. zeyheri Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.5 t.25 40
(1849); Sond., Fl. Cap. 2 : 429 (1862); Berger, Mesemb. u.
Portulac. : 157 (1908)

Holotype: ad Zwartkopsrivier, October, Ecklon & Zeyher 2032 (S!)

M. haworthii E. & Z., Enumeratio : 314 - 315 (1835); non Donn

Holotype: as for M. zeyheri

L. zeyheri (Salm Dyck) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1452 (1955); idem, Handb.

Succ. Pl. 3 : 1213 (1960); idem, Sukk. Lex. : 447 (1970);

idem, Lex. Succ. Pl. : 501 (1974)

Holotype: as above

M. saturatum L. Bol., Ann. Bol. Herb. 3 : 169 (1924)

Holotype: ? Vanrhynsdorp div., July 1923, Mrs. van Zijl s n. (ROT.)

L. saturatus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen. Handb. Sukk. Pfl. 3 : 1446 (1955); idem, Handb.

Succ. Pl. 3 : 1208 (1960); idem, Sukk. Lex. : 445 (1970);

idem, Lex. Succ. Pl. : 499 (1974)

Holotype: as above

Spreading succulent shrublets, ca. 30 cm. high and 65 cm. in diameter. Internodes smooth or slightly fissured, russet to chocolate-brown, ca. 35 mm long and 3 mm in diameter in the first two years of growth. Leaves semiterete to sharply triquetrous, glaucous to grey, 11,5 - 34 - 92 mm long, 1 - 3 - 7 mm wide and 1 - 3 - 8 mm deep; sheathing the stem for up to 2 mm. Flowers usually in threes, pedicels ca. 46 mm long and 2 mm in diameter; flowers white to purple, ca. 50 mm in diameter. Bracts up to 32 mm long and 5 mm wide, these may appear so leaflike that the flowers appear to be ebracteate; sepals 5, ca. 21 mm long and up to 14 mm wide, the inner 3 with membranous margins, ca. 17 mm long and 12 mm wide; petals (petaloid staminodes) many in 3 - 4 series, 11 - 22 - 38,5 mm long, up to 4,5 mm wide; non-petaloid staminodes absent or to many, white, ca. 1 - 3 - 4,5 mm long, sharply differentiated from the petaloid staminodes. Stamens many, filaments white, ca. 1 - 4 - 8 mm long, anthers white; stigmas 5, 1 - 2,5 - 4,5 mm long, subulate - long - acuminate. Capsule 5 - locular, ca. 11 mm in diameter and 11 mm deep, woody, charcoal grey, valve-wings ca. 5 mm long and up to 1,5 mm wide, separate from the valve for over half of their length; placental tubercle absent; covering membranes present, covering over half of the surface of each locule. Seeds maroon, ca. 1,02 - 1,38 - 1,64 mm long, 0,42 - 0,86 - 1,10 mm wide and 0,66 - 0,92 - 1,31 mm deep, funicles

ca. 0,32 - 0,44 - 0,62 mm long; surface baculate, baculae ca. 35 μ long, 112 μ in diameter; microbaculae present, ca. 0,28 μ long and 0,55 μ in diameter. Chromosome number $2n = 18$ (Sugira, 1940).

Flowering season: 70% of specimens seen were in flower between July and December, but some specimens may be found flowering in any month of the year.

SPECIMENS SEEN:

CAPE 2917 (---) between O'okiep and the sea, April 1929, Good s.n. (BOL!)

3118 (-BD) 8 miles from Klawer to the Doorn River bridge, August 1938, L. Bolus s.n. (BOL!)

(-DD) Nardouw Pass, 6 August 1933, Salter 3526 (BOL!)

3119 (-CA) 'Lokenburg', south-west of Calvinia, 29 August 1953, Acocks 17067 (BOL!)

(-CD) Botterkloof, 2 August 1933, Salter 3505 (BOL!)

3218 (---) for 50 miles along the Olifants River Valley on both sides of Clanwilliam, August 1932, L. Bolus s.n. in NBG 1954/32 (BOL!)

(-BB) Clanwilliam, 2 May 1929, Lavis s.n. in NBG 927/25 (BOL!); Bulshoek, between Clanwilliam and Klawer 1 July 1963, Van Breda 1891/63 (BOL!)

(-DD) Piquetberg, June 1931, Immelman a.n. in NBG 2217/17 (K!)

3224 (-DA) Tadjiesberg, Graff-Reinet, no date, H. Bolus 803 (TCD!)

3225 (-BA) Cradock, December 1913, Becker s.n. (GRA!)

3227 (-CD) near King Williams Town, November 1893, Flanagan 2231 (BOL!, SAM!, K!, PRE!)

(-DA) Gonubie Springs, 23 December 1944, Acocks 10982 (PRE!)

(-DD) Cambridge, East London, February 1914, Lightfoot s.n. in NBG 3387/14 (BOL!); Gonubie River, December 1930, Carter s.n. (BOL!)

- 3228 (-CB) Black Rock Cove, Kentani, 5 December 1905, Peiger 1315 (BOL!, PRE!)
- (-CC) Gonubie Mouth, July 1956, E. Esterhuysen s.n. (BOL!)
- 3319 (---) Ceres Karoo, 4 July 1948, H. Hall s.n. (BOL!)
- (-DA) Hex River Valley, May 1908, Pillans s.n. (BOL!)
- 3320 (-BB) Laingsburg, September 1916, Marloth 7352 (PRE!)
- 3322 (-DA) 'Aangenaam', de Rust, 3 June 1972, Dahlstrand 2234 (J!, PRE!, STE!)
- 3323 (-AD) Willowmore, 22 September 1923, Andreae 1052 (PRE!)
- 3325 (-BC) Addo, December, Ecklon & Zeyher 2033 (S!)
- (-BD) Sandflats, near Port Elizabeth, October - November 1962, de Villiers s.n. in NBG 953/62 (BOL!)
- (-CD) Uitenhage, 22 December 1955, McEwen s.n. in SUG 13780 (BOL!); 1 mile north of Uitenhage, 6 November 1961, Stayner s.n. in KG 625/61 (BOL!); Bethelsdorp, October 1971, Tarr s.n. in NBG 1306/70 (NBG!); Zwartkops River, October, Ecklon & Zeyher 2032 (S!); probably Zwartkops River, October 1923, probably Paterson s.n. (B!); Uitenhage, 1861, Cooper 2397 (K!)
- (-DA) Groendal Water Works, October 1939, James s.n. in BOL 24954 (BOL!); 'Oudekraal', Somerset East division, 1961, Van Breda 1780/61 (BOL!)
- (-DC) Redhouse, September 1908, Paterson 170 (BOL!); Redhouse, October 1911, Paterson 110 (BOL!, GRA!); near Redhouse, November 1974, Glen 837 (BOL!)
- 3326 (-AD) hilltops near Grahamstown, September, MacOwan 1191 (S!)
- (-BC) near Grahamstown, no date, Bolton s.n. (S!); Dassie Krantz, Grahamstown, 1947, Story, 2563 (PRE!)
- (-B-) Albany division, November - January 1931, Britten s.n. (BOL!)
- (-BD) Trappes Valley, February 1932, Holland s.n. in NBG 1805/28 (BOL!)
- (-C-) Alexandria division, 1928, Profitt s.n. (BOL!); Alexandria division, January 1912, Burt Davy s.n. in PRE 12106 (PRE!)

- (-CB) 2 miles north of Alexandria, March 1953, Archibald 4121 (BOL!)
- (-DA) Kasouga Mouth, December 1928, L. Britten 5646 (BOL!, GRA!, K!, PRE!); Kenton-on-Sea, November 1971, Stayner s.n. in NBG 1241/71 (BOL!, NBG!)
- (-DB) Port Alfred, January 1907, Potts 239 (GRA!, BLFU!); near Barville Peak, Bathurst, Burchell S5A3 (K!)
- 3327 (-AA) Peddie, 1895, Sim 19538 (PRE!)
- (-BB) East London Coast, 1899, Sim 19520 (PRE!); East London, June 1894, Galpin 4050 (PRE!)
- 3423 (-AB) Robberg, Plettenberg Bay, July 1975, Glen 1018 (BOL!)
- 3424 (-AB) Clarkson, near Humansdorp, 6 February 1951, H. Hall s.n. in NBG 1512/50 (BOL!)
- (-BB) Humansdorp, November 1926, Holland s.n. in NBG 1398/25 (BOL!)

Without precise locality: C.B.S., no date, Thunberg s.n. (S!);
South Africa, 1859, Cooper 2358 (K!);
4 other specimens

Garden material: Cape Town, August 1920, Page s.n. in BOL 16630 (BOL!, holo of syn.); Hiroshima, Japan, 8 June 1954, Clairette 1733 (S!); Berlin, no date, Willdenow 9769 (B-W!); Geneva, 4 July 1835, De Candolle 2852 (G!); Madeira, 1860, Dubuc s.n. (E!); 55 other specimens

The differences between these subspecies spectabilis and other closely-related taxa in the same range have been discussed under the species concerned, above. L. spectabilis subsp. fugitans differs from the typical subspecies in habitat and in having somewhat shorter leaves and deeper-coloured flowers.

No consistent characters could be found to separate the seven heterotypic taxa regarded as synonyms here. It was therefore concluded for this reason and on the basis of overall similarity that they must be synonymous. This conclusion was strengthened by the obser=

vation that, when specimens of the resulting taxon were found in more than one herbarium, different duplicates had different names (always amongst those considered synonymous here) far more often than in the case of other common species.

22B L. spectabilis (Haw.) N.E. Br. subsp. fugitans (L. Bol.) Glen, comb.

Nov.

L. fugitans L. Bol., Notes Mesembryanthemum 3 : 330 (1958), basionym;

Jacobsen, Handb. Succ. Pl. 3 : 1199 (1960); idem, Sukk. Lex.

: 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Holotype: 3 miles inland from Port Edward, Dec. 1956, H. Hall
s.n. in NBG 496/56 (BOL!)

Spreading succulent shrubs, ca. 30 cm. high and 2 cm. in diameter. Internodes smooth to slightly fissured, russet to chocolate-brown, ca. 22 mm long and 2 mm in diameter in the first two years of growth. Leaves obscurely triquetrous, grey, sheathing the stem for ca. 1 mm, 12,5 - 21 - 29 mm long, 1,5 - 2 - 3 mm wide and 2 - 3 - 4 mm deep; Flowers in threes, pedicels ca. 24 mm long and 2 mm in diameter; flowers magenta to purple, ca. 38 mm in diameter. Bracts up to 19 mm long and 3 mm wide, sepals 5, ca. 20 mm long and up to 6 mm wide, the inner 3 with membranous margins, ca. 11 mm long and 19 mm wide; petals (petaloid staminodes) many in 6 series, 6 - 12 - 16,5 mm long, up to 2 mm wide; non-petaloid staminodes absent. Stamens many, filaments purple, ca. 2 - 4,5 - 6 mm long, anthers yellow; stigmas 5, 1 - 3 - 4 mm long, subulate. Capsule 5 - locular, ca. 10,5 mm in diameter and 9,5 mm deep, woody, charcoal-grey, valve-wings ca. 3 mm long and up to 2 mm wide, separate from the valve for about half of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon, ca. 1,12 - 1,28 - 1,38 mm long, 0,91 - 0,99 - 1,12 mm wide and 0,54 - 0,62 - 0,71 mm deep, funicles ca. 0,30 - 0,38 - 0,46 mm long; surface baculate, baculae ca. 33 μ long, 102 μ in diameter; microbaculae present, ca. 0,36 μ long and 0,55 μ in diameter. Flowering season: 100% of specimens seen were in flower between December and February.

SPECIMENS SEEN:

NATAL 3030 (-CB) Oribi Gorge, February 1971, Glen 354 (J!); Upper Izotsha, 30 December 1966, Strey 7183 (NH!, PRE!) Port Shepstone Forest Reserve, September 1966, Strey 6959 (BOL!); Plains, December 1949, Prosser 1397 (J!)

3130 (-AA) Port Edward, December 1956, H. Hall s.n. in
NBG 496/56 (BOL!); Port Edward, January 1931,
M. Moss s.n. in J 19142 (J!); Port Edward,
January 1951, Huntley s.n. in SUG 12591 (BOL!)

TRANSKEI 3029 (-DD) Bizana, 1968, Strey 8700 (BOL!)

This taxon is treated as a subspecies of L. spectabilis because of the many similarities between the two, despite the gap in distribution between them. No other species of Lampranthus are found in Natal or Transkei, making this subspecies difficult to confuse with anything else.

The flowers of L. spectabilis subsp. fugitansⁿ are among the deepest-coloured in the whole genus.

- 23 Lampranthus mutans (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1440 (1955); idem, Handb.
Succ. Pl. 3 : 1204 (1960); idem, Lex. Succ. Pl. : 497 (1974)
Holotype: in dit. Humansdorp, Zuurbron, October 1927,
Fourcade 3336 (BOL!)

Mesembryanthemum mutans L. Bol., Notes Mesembryanthemum 2 : 18 (1929)
Holotype: as above

Erect succulent shrubs, ca. 20 cm. high and 30 cm. in diameter.
Internodes smooth, russet, ca. 16 mm long and 1 mm in diameter
in the first two years of growth. Leaves semiterete, hardly
sheathing the stem, 6,5 - 12 - 19 mm long, 0,8 - 1,2 - 2,8 mm
wide and 1 - 1,2 - 3 mm deep. Flowers in threes, pedicels ca. 37
mm long and 1 mm in diameter; flowers pink or scarlet-pink, some-
times with a paler central 'eye', ca. 30 mm in diameter. Bracts
up to 13 mm long and 1 mm wide, sepals 5, ca. 11 mm long and up
to 4,5 mm wide, the inner 3 with membranous margins, ca. 6 mm long
and 3 mm wide; petals (petaloid staminodes) ca. 65 in 4 series,
10 - 12 - 14 mm long, up to 1,5 mm wide; non-petaloid staminodes
ca. 40, white, ca. 3 - 4 - 4,5 mm long, sharply differentiated
from the petaloid staminodes. Stamens ca. 40, filaments white,
ca. 2,5 - 3 - 4 mm long, anthers yellow; stigmas 5. Capsule
5 - locular, ca. 9 mm in diameter and 8 mm deep, woody, grey,
valve-wings ca. 4 mm long and up to 1,5 mm wide, separate from the
valve for about half of their length; placental tubercle absent;
covering membranes present, covering about half of the surface of
each locule. Seeds rich maroon, cal 0,95 - 0,99 - 1,02 mm long,
0,52 - 0,62 - 0,75 mm wide and 0,40 - 0,42 - 0,45 mm deep, funicles
ca. 0,30 mm long, surface baculate, baculae ca. 15 μ long, 83 μ in
diameter; microbaculae absent. Flowering season: 83% of specimens
seen were in flower between October and November.

SPECIMENS SEEN:

- CAPE 3322 (-DC) Berg Plaats, November 1927, Fourcade 3457 (BOL-F!)
- 3324 (-CD) Assegai Bush, March 1924, Fourcade 2192 (BOL-F!)
- (-DD) Zuurbron, Humansdorp, October 1927, Fourcade 3336
(BOL!, BOL-F!, K!)

3325 (-DC) Port Elizabeth, November 1908, I.L. Drège 281 (BOL!)

This is a much smaller, more delicate plant than any other member of this section and is unlikely to be confused with any other species of Lampranthus. Probably the commonest species in the area in which this species grows is L. coccineus, which has triquetrous leaves and lacks staminodes.

24 Lampranthus stayneri (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1448 (1955); idem, Handb.
Succ. Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 446 (1970);
idem, Lex. Succ. Pl. : 449 (1974)

Holotype: Bedford, March 1924, F.J. Stayner s.n. in NEG 81/21
(EOL, holo!, K!, PRE!, iso)

Mesembryanthemum stayneri L. Bol., Ann. Bot. Herb. 4 : 6 (1925)

Holotype: as above

Spreading succulent shrubs, ca. 30 cm. high and 90 cm. in diameter.
Internodes smooth, dark brown, ca. 19 mm long and 1,5 mm in diameter
in the first two years of growth. Leaves sharply triquetrous, hardly
sheathing the stem, 7 - 16 - 37 mm long, 1 - 1,8 - 3,5 mm wide and
1 - 2 - 3,5 mm deep. Flowers solitary or in threes, pedicels ca.
25 mm long and 1,5 mm in diameter; flowers magenta - pink to scarlet
- pink, ca. 35 mm in diameter. Bracts up to 14,5 mm long and 2 mm
wide, sepals 5, ca. 15 mm long and up to 5,5 mm wide, the inner 3
with membranous margins, 10 mm long and 5 mm wide; petals (petaloid
staminodes) many in 5 series, 11 - 17 - 24 mm long, up to 2 mm wide;
non-petaloid staminodes ca. 20 - 90, white, ca. 4 - 6 - 9 mm long,
sharply differentiated from the petaloid staminodes. Stamens many,
filaments pink, ca. 2 - 4,5 - 9 mm long, anthers yellow; stigmas
5, 1 - 3 mm long, acuminate. Capsule 5 - locular, ca. 9 mm in
diameter and 8 mm deep, woody, ochre, valve-wings ca. 3,5 mm long
and up to 1,5 mm wide, separate from the valve for most of their
length; placental tubercle absent; covering membranes present,
covering most of the surface of each locule. Seeds charcoal grey,
ca. 1,34 - 1,55 - 1,68 mm long, 0,96 - 1,19 - 1,32 mm wide and 0,62
- 0,77 - 0,95 mm deep, funicles ca. 0,33 - 0,49 - 0,62 mm long,
surface baculate, baculae ca. 35 μ long, 186 μ in diameter; micro-
baculae present, ca. 0,28 μ long and 0,47 μ in diameter. Flowering
season: 88% of specimens seen were in flower between September
and March.

SPECIMEN SEEN:

CAPE 3226 (-CA) Bedford, March 1924, Stayner s.n. in NEG 81/21
(BOL!, PRE!, K!)

- Kincardine, Rabula, near Keiskammahoek, 31 May 1933, Leighton s.n. in NBG 889/33 (BOL!, K!, PRE!); Rabula, near Keiskammahoek, May 1932, Leighton s.n. in NBG 811/32 (BOL!)
- 3227 (-CD) King William's Town, December 1927 - February 1931, Shortridge s.n. in NBG 170/26 (BOL!, K!); King William's Town, 1918, Hilmer 118 (PRE!)
- 3325 (-CC) near Loerie, November 1949, Rabinowitz s.n. (BOL!)
(-DC) Cradockplace, 3 November 1972, Stayner s.n. in NBG 1238/71 (BOL!, NBG!)
- 3326 (-CB) 2 miles north of Alexandria, 11 March 1952, Archibald 4121 (PRE!); 1 mile north of De Bega, March 1952, Archibald 4142 (BOL!)
- 3327 (-BA) Chalumna River Mouth, February 1934, Leighton s.n. in NBG 895/33 (BOL!)

This species may appear at first glance to be a small but nonetheless robust form of L. spectabilis subsp. spectabilis. The leaves, pedicels and flowers of the present species are all significantly smaller than that species, the stems are slightly deeper in colour and the stigmas are acuminate rather than subulate.

- 25 Lampranthus productus (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1444 (1975); idem, Handb.
Succ. Pl. 3 : 1206 (1960); idem, Sukk. Lex. : 445 (1970);
idem, Lex. Succ. Pl. : 498 (1974)

Iconotype: unpublished plate at Kew

Mesembryanthemum productum Haw., in Till. Phil. Mag. 64 : 425
(1824); DC., Prodr. 3 : 429 (1828); Salm Dyck, Monogr. Gen.
Aloes Mesemb. f.2 t.19 § 40 (1837); D. Dietr. Syn. Pl. 3 :
145 (1843); Sond. Fl. Cap. 2 : 439 (1862); Berger, Mesemb.
u. Portulac. : 158 (1908)

Iconotype: as above

M. lepidum Haw. in Till. Phil. Mag. 68 : 130 (1826); D. Dietr.,
Syn. Pl. 3 : 145 (1843)

Iconotype: unpublished plate at Kew

M. productum var. lepidum (Haw.) Salm Dyck, Monogr. Gen. Aloes
Mesemb. f.2 t.19 § 40 (1837); Sond. Fl. Cap. 2 : 439 (1862);
Berger, Mesemb. u. Portulac. : 158 (1908)

L. productus var. lepidus (Haw.) Schwant., ex Jacobsen, Feddes Rep.
Beihefte 106 : 100 (1938); Jacobsen, Handb. Sukk. Pfl. 3 :
1444 (1955); idem, Handb. Succ. Pl. 3 : 1206 (1960); idem,
Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl. : 498 (1974)

Iconotype: as above

M. productum var. purpureum L. Bol., Notes Mesembryanthemum 2 : 43
(1929)

Holotype: Peddie road, 25 miles from Grahamstown, April 1928,
R.A. Dyer 1323 (BOL!)

L. productus var. lepidus (L. Bol.) Jacobsen. Feddes Rep. Beih.
106 : 100 (1938); Handb. Sukk. Pfl. 3 : 1444 (1955); idem,
Handb. Succ. Pl. 3 : 1207 (1960); idem, Sukk. Lex. : 445
(1970); idem, Lex. Succ. Pl. : 498 (1974)

Holotype: as above

Erect succulent shrubs, ca. 30 cm. high and 25 cm. in diameter.
Internodes smooth, brown, ca. 25 mm long and 2 mm in diameter in

the first two years of growth. Leaves sharply triquetrous, glaucous, hardly sheathing the stems, 9 - 18,5 - 32 mm long, 1 - 2 - 4 mm wide and 1 - 2 - 4 mm deep. Inflorescence cymose, pedicels ca. 28,5 mm long and 1 mm in diameter; flowers white to deep pink, ebracteate, ca. 32 mm in diameter. Sepals 5, ca. 18,5 mm long and up to 6,5 mm wide, the inner 3 with membranous margins, ca. 13,5 mm long and 4 mm wide; petals (petaloid staminodes) ca. 65 - 90 in 3 series, 9 - 14 - 17 mm long, up to 1,5 mm wide; non-petaloid staminodes ca. 40 - 60, white, ca. 3,5 - 5,5 - 8 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 65 - 85, filaments white, ca. 1,5 - 3,5 - 6 mm long, anthers yellow; stigmas 5, 1,5 - 3,5 mm long, acuminate. Capsule 5 - locular, ca. 11 mm in diameter and 8,5 mm deep, woody, charcoal grey to dark brown, valve-wings ca. 3 mm long and up to 1 mm wide, separate from the valve for almost all of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds charcoal grey, ca. 1,34 - 1,54 - 1,72 mm long, 1,12 - 1,22 - 1,30 mm wide and 0,51 - 0,62 - 0,70 mm deep, funicles ca. 0,40 - 0,49 - 0,60 mm long; surface baculate, baculae ca. 32 μ long, 136 μ in diameter; microbaculae present, ca. 0,54 μ long and 0,40 μ in diameter. Chromosome number $2n = 18$ (Snoad, 1951). Flowering season: 56% of specimens seen were in flower between November and February, but some specimens may be found flowering in any month of the year.

SPECIMENS SEEN:

- CAPE 3226 (-DC) between Fort Beaufort and Grahamstown, December 1936, Kluth s.n. in SUG 10897 (BOL!)
- 3227 (-CC) between Breakfast Vlei and King William's Town, January 1929, Dyer 1849 (GRA!)
- 3324 (-DD) between Zuurbron and Hankey, May 1923, Fourcade 2554 (BOL!, BOL-F!); Hills near Hankey, October 1923, Fourcade 2773 (BOL-F!); Hills 3 miles from Hankey towards Loerie, March 1928, Fourcade 3636 (BOL-F!); Klein River near Hankey, no date, Anon. s.n. (BOL!)
- 3325 (-B-) Addo Bush, February 1934, Long 1176 (= RUH 3761)

- (BOL!, GRA!, K!, MPE!, PRE!, RUH!); Addo Bush,
19 June 1924, Dorrien Smith s.n. (K!)
- (-BC) Antelope Camp, Addo, 27 January 1966, Liebenberg
7693, (BOL!, PRE!)
- (-BD) Zuurkop, Addo, 27 January 1933, Liebenberg 7706
(BOL!, PRE!)
- (-CC) Otterford, March 1928, Fourcade 3672 (BOL!, BOL-F!)
- (-CD) Uitenhage, February 1956, McEwen s.n. in SUG 13787
(BOL!); Bethelsdorp, 1908, Paterson 364 (GRA!);
Despatch, January 1909, Holland s.n. (GRA!); between
Bethelsdorp and Uitenhage, January, Zeyher 2594
(B!, GRA!, K!, PRE!, S!); near Uitenhage, December
1828, Zeyher 2033 (S!, TCD!); Zwartkops River,
July 1829, Zeyher 2036 (S!); Zwartkops River,
December 1829, Zeyher 1086 (K!, OXF!); Uitenhage,
no date, Zeyher s.n. in Herb. Harvey s.n. (BM!, TCD!)
- (-DB) 20 miles east of Port Elizabeth, January 1964,
Thudichum s.n. (BOL!)
- (-DC) Redhouse, November 1911, Paterson 363 (BOL!, GRA!);
Redhouse, October 1911, Paterson s.n. (BOL!); North
End Cemetery lands, Port Elizabeth, February 1934,
Long 1173 (BOL!, GRA!, K!, MPE!, PRE!, RUH!);
Baakens River Valley Reserve, January 1934, Long
1149 (GRA!, K!, MPE!, PRE!); Baakens River Valley
2 April 1930, Galpin 10040 (BOL!); Frame's Drift,
Port Elizabeth, July 1931, Holland 3571 (BOL!);
6 miles north of Port Elizabeth, March 1954, Acocks
17615 (BOL!); New Brighton, Port Elizabeth, July
1931, L. Bolus s.n. in NBG 873/31 (BOL!); Walmer,
Port Elizabeth, 10 November 1962, Dahlstrand 194
(J!, PRE!); Port Elizabeth, October 1908, I.L. Drège
s.n. (GRA!); Redhouse, October 1908, Paterson 283
(GRA!); Cradockplace, Port Elizabeth, May 1902,
Galpin 6396 (GRS!); Sunridge Park, Port Elizabeth,
January 1967, Dahlstrand 521 (GRA!); Redhouse,
August 1908, Paterson 98, 102 (GRA!); 15 miles
east-northeast of Port Elizabeth towards Coega,
May 1968, Dahlstrand 685 (GRA!); Hills at Zwartkops

River, March, Ecklon & Zeyher 2035 (SAM!, S!, TCD!);
Port Elizabeth, August 1908, I.L. Drège 281 (K!);
Port Elizabeth, 4 August 1932, Holland s.n. in NBG
900/31 (K!); Zwartkops, 10 January 1927, Lynes s.n.
(BM!); near the beginning of the new Port Elizabeth
- Grahamstown main Road, ca. 10 miles from Port
Elizabeth, 1 February 1963, Dahlstrand 233 (J!, GRA!)
'The Valley' near Green bushes, February 1973,
Wisura 164 (NBG!)

- 3326 (-A-) Krantzkop, between Port Elizabeth and Grahamstown,
31 July 1931, Holland 36616 (= NBG 1014/31) (BOL!)
(-AC) Alicedale, 1914, Rogers s.n. in NBG 1415/14 (BOL!);
Alicedale, no date, Anon. s.n. in NBG 1414/14 (OL!);
near Alicedale, 31 December 1935, Dyer 3346 (GRA!,
K!, PRE!); Bushmans River Poort, 31 August 1954,
Archibald 5596 (PRE!); between Tootabi and Alicedale,
24 August 1953, Archibald 5980 (PRE!)
(-AD) Seven Fountains, January 1947, Leighton 2864 (BOL!)
(-B-) 'Delville' near Grahamstown, October 1968, Reed 20 (GRA!)
(-BA) Botha's Hill near Grahamstown, April 1909, Daly
s.n. (GRA!)
(-BB) between Committees and Hunt's Drifts, April 1927,
Dyer 894 (GRA!)
(-BC) Gowie's Kloof, 1 September 1946, Smyth s.n. in RUH
2058 (RUH!); Gowie's Kloof near Grahamstown, December
1931, Britten 15 (BOL!, K!); Manley's Flats, 5 Novem-
ber 1972, A. Jacot Guillarmod 7332 (PRE!)
(-BD) 25 miles from Grahamstown towards Peddie, April 1928,
Dyer 1323 (BOL!, GRA!)
- 3327 (-AD) Keiskamma River Mouth, June 1933, Leighton s.n. in
NBG 832/33 (BOL!)

1 specimen without precise locality

16 garden specimens

This species is quite easily distinguished from all others in the
genus by the one outer sepal being significantly longer than the

6.1.3 Lampranthus section Tenuifolii (Salm Dyck) Glen, comb. nov.

Mesembryanthemum section Tenuifolia Salm Dyck, Obs. Bot. Hort.

Dyck. 1 : 24 (1820); Haw., Rev. Pl. Succ. : 150 (1821);

Sonder, Fl. Cap. 2 : 436 (1862); DC., Prodr. 3 : 438 (1828);

Berger, Mes. u. Portulac. : 149 (1908)

L. sect. Lampranthi Schwant. ex. Jac., Handb. Succ. Pl. 3 :

1190 (1960). nom. illegit.; Jacobsen, Sukk. Lex. : 437 (1970);

idem, Lex. Succ. Pl. : 490 (1974)

Small to large succulent shrubs or mat-formers; leaves 5 or usually more times as long as wide or deep, triquetrous to semiterete, blue-grey to grass-green. Flowers solitary or in threes, rarely more than three in a cymose inflorescence, 27 - 32 (- 41) mm in diameter, pink to purple or white to yellow, or petals yellow inside and red outside in one species; flowers of many parts. Capsules of normal size for the genus, 6 - 8 mm in diameter, woody. Seeds of average size for the genus, baculae small to average in size, hemispherical or flatter, microbaculae small.

Type species: L. tenuifolius (L.) N.E. Br.

Eleven species, no subspecies.

It appears that Jacobsen (1960 and subsequent works) either ignored or was unaware of the fact that Brown (1930a) had named a type species for the genus Lampranthus N.E. Br.

Jacobson named a new and superfluous lectotype species, L. tenuifolius. Consistent with this decision, he then made this present section the type section of the genus, omitting to note that the Code requires that the section of a genus containing the type species must have exactly the same name as the genus. His name "Lampranthi" is therefore illegitimate for two reasons, first that it is a superfluous name and second that it is badly formed. His lectotype species can, however, be retained as the type of the section. The correct name of the section implies that Salm Dyck founded it on this species, which would therefore have more claim than any other to be considered the type.

The range of this section is from Springbok through the South-Western and Southern Cape Province to Grahamstown, with the greatest concentration of individuals and taxa in the South-Western Cape.

This section is fairly homogeneous, but can be difficult to distinguish from section Scabridi. Typical members of Tenuifolii have longer, narrower leaves and flowers with many more parts than typical Scabridi.



Fig. 4. Lampranthus bicolor.

1. sections of leaf

2. stigma

3. stamens

4. petals

5. section of flower

6. gynoecium

7. sepals

- 26 Lampranthus sociorum (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1447 (1955); idem, Handb.
Sukk. Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 445 (1970);
idem, Lex. Succ. Pl. : 499 (1974)

Syntypes: Darling, October 1918, Peacock & L. Bolus s.n. in
NBG 1666/17 (BOL!)
near Tulbagh, August 1918, Peacock & L. Bolus s.n.
in NBG 1922/17 (BOL!)

Mesembryanthemum sociorum L. Bol., Ann. Bol. Herb. 3 : 132 (1922)

Syntypes: as above

Mat-forming succulents, ca. 10 cm. high and 40 cm. in diameter.
Internodes smooth, russett, ca. 19 mm long and 1,5 mm in diameter
in the first two years of growth. Leaves semiterete, glaucous,
hardly sheathing the stem, 7 - 15 - 27 mm long, 0,5 - 1,5 - 3 mm
wide and 0,5 - 1,5 - 3 mm deep. Flowers solitary, pedicels ca. 25 mm
long and 1 mm in diameter; flowers white to magenta, with a very
small area of deeper colour at the base of each petal, ca. 32 mm in
diameter. Bracts up to 14 mm long and 2 mm wide, sepals 5, ca. 9
mm long and up to 4 mm wide, the inner 3 with membranous margins,
ca. 6 mm long and 4 mm wide; petals (petaloid staminodes) ca. 40 - 60
in 3 series, 11 - 15 - 20 mm long, up to 2,5 mm wide; non-petaloid
staminodes few, white, ca. 1,5 - 3,5 - 6 mm long, sharply differentiated
from the petaloid staminodes, Stamens ca. 30 - 90, filaments white ca.
1,5 - 4,5 mm long, anthers yellow; stigmas 5, 0,5 - 3,5 - 7 mm long,
long - acuminate. Capsule 5-locular, ca. 6,5 mm in diameter and 6,5 mm
deep, woody, grey, valve-wings ca. 2 mm long and up to 1 mm wide, separate
from the valve for most of their length; placental tubercle absent;
covering membranes present, covering most of the surface of each locule.
Seeds rich maroon, ca. 0,80 - 0,87 - 0,96 mm long, 0,58 - 0,64 - 0,70
mm wide and 0,33 - 0,46 - 0,60 mm deep, funicles ca. 0,24 - 0,30 - 0,34 mm
long; surface baculate, baculae ca. 52 μ long, 103 μ in diameter;
microbaculae present, ca. 0,58 μ long and 0,41 μ in diameter. Flowering
season: 92% of specimens seen were in flower between September and
November.

SPECIMENS SEEN:

CAPE 3217 (-DD) Vredenburg, 22 September 1925, Wallenkamp s.n. in
NBG 57/24 (BOL!)

Succ. Pl. : 498 (1974)

Holotype: between Modderfontein and Warmbaths, Olifants River Valley, October 1932, L. Bolus s.n. in BOL 20818 (BOL!)

Mesembryanthemum plenum L. Bol., Notes Mesembryanthemum 2 : 407 (1933)

Holotype: as above

M. leightonae L. Bol., Notes Mesembryanthemum 2 : 488 (1935)

Holotype: Kromme River, Cedarberg, September 1934, F.M. Leighton s.n. in BOL 21424 (BOL!)

L. leightonae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1437 (1955); idem, Handb. Succ.

Pl. 3 : 1202 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex.

Succ. Pl. : 495-6 (1974)

Holotype: as above

L. subtruncatus L. Bol., Notes Mesembryanthemum 3 : 159 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1449 (1955); idem, Handb.

idem, Lex. Succ. Pl. : 500 (1974)

Holotype: east base of the north side of Piquetberg Mountain, October 1938, Pillans 8854 (BOL!)

L. subtruncatus var. wupperthalensis L. Bol., Jl. S.Afr. Bot. 27 :

114 (1961); Jacobsen, Sukk. Lex. : 446 (1970); idem, Lex. Succ.

Pl. : 500 (1974)

Holotype: Wupperthal, September 1959, R. C. Littlewood s.n. in KG 380/59 (BOL!)

Erect succulent shrubs, ca. 30 cm. high and 20 cm in diameter. Internodes smooth to fissured, pale to dark brown or grey, ca. 17 mm long and 1,5 mm in diameter in the first two years of growth. Leaves semiterete, glaucous, hardly sheathing the stem, 7 - 14,3 - 34 mm long, 1 - 1,5 - 2,5 mm wide and 1 - 1,5 - 2,5 mm deep; apices subacute. Flowers solitary, pedicels ca. 28,5 mm long and 1,5 mm in diameter; flowers white to pink, ca. 30 mm in diameter. Bracts up to 17 mm long and 3 mm wide, sepals 5, ca. 8 mm long and up to 9 mm wide, all alike; petals (petaloid staminodes) many in 5 series, 5 - 12 - 17,5 mm long, up to 1,5 mm wide;

non-petaloid staminodes absent. Stamens many, filaments white, ca. 2 - 5 mm long, anthers yellow, stigmas 5, 0,5 - 2,5 mm long, elliptical-subulate. Capsule 5-locular, ca. 8 mm in diameter and 7 mm deep, woody, grey, valve-wings ca. 3 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds cream to pale maroon, ca. 1,11 - 1,16 - 1,23 mm long, 0,78 - 0,82 - 0,96 mm wide and 0,39 - 0,48 - 0,60 mm deep, funicles ca. 0,30 - 0,39 - 0,46 mm long; surface baculate, baculae ca. 27 μ long, 1,05 μ in diameter; microbaculae present, ca. 0,42 μ long and 0,50 μ in diameter. Flowering season: 100% of specimens seen were in flower between August and November.

SPECIMENS SEEN:

CAPE 3218 (-DA) near Piquetberg, October 1938, Pillans 8854 (BOL!, K!)

3219 (-AC) Wupperthal, September 1959, Littlewood s.n. in KG 380/59 (BOL!)

(-CB) Krom River, Clanwilliam, September 1934, Leighton s.n. in BOL 21424 (BOL!); Uitkomst, Clanwilliam, September 1934, Leighton s.n. in BOL 21432 (BOL!)

(-CC) foot of the Olifants River Mountains near Warmbaths, September 1911, Stephens s.n. in Percy Sladen Memorial Expedition 7167 (BOL!); between Modderfontein and Warmbaths, October 1932, L. Bolus s.n. in BOL 20818 (BOL!)

The four taxa represented by different types included in this concept are indistinguishable by means of any character or suite of characters.

L. plenus is close to L. coccineus but differs from it mainly in having semiterete instead of triquetrous leaves which hardly sheath the stem, and in having significantly smaller sepals, although the rest of the flower is slightly larger on average in L. plenus. The present species can be distinguished from L. laxifolius by the same characters, as well as having much smaller leaves and shorter pedicels.

- 28 Lampranthus coccineus (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1428 (1955); idem, Handb.
Succ. Pl. 3 : 1195 (1960); idem, Sukk. Lex. : 439 (1970);
idem, Lex. Succ. Pl. : 492 (1974)

Iconotype: unpublished plate at Kew

Mesembryanthemum coccineum Haw., Obs. Gen. Mesemb. 2 : 247 - 251
(1795); DC., Plant. Grass. t.83 (1801); Haw., Misc. Nat.
: 85 (1803); idem, Syn. Pl. Succ. : 265 (1812); idem, Rev.
Pl. Succ. : 150 (1821); Ker-Gawl., Lodd., Bot. Cab. 11 :
t.1033 (1825); DC., Prodr. 3 : 438 (1828); Salm Dyck,
Monogr. Gen. Aloes Mesemb. f.3 t.33 (1840); D. Dietz, Syn.
Pl. 3 : 144 (1843); Sond., Fl. Cap. 2 : 436 (1861); Berger,
Mesemb. u. Port. : 150 (1908)

Iconotype: as above

M. bicolor auct. non. L., Curtis, Bot. Mag. 2 : t.59 (1788); Gmel.,
Syst. Nat. ed. 14, 2 : 847 (1791)

Mesembryanthemum viatorum L. Bol., Ann. Bol. Herb. 3 : 136 (1922)

Holotype: between Bitterfontein & Stinkfontein, December 1910
Pearson s.n. in Percy Sladen Memorial Expedition
5575 (BOL!)

Lampranthus viatorum (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1451 (1955); idem, Handb.
Succ. Pl. 3 : 1213 (1960); idem, Sukk. Lex. : 447 (1970);
idem, Lex. Succ. Pl. : 500 (1974)

Holotype: as above

M. antemeridianum L. Bol., Notes Mesembryanthemum 1 : 135 (1928);

Holotype: near Albertinia, no date, Muir s.n. in NBG 1505/21
(BOL!)

L. antemeridianus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168
(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1423 (1955); idem,
Handb. Succ. Pl. 3 : 1192 (1960); idem, Sukk. Lex. : 438
(1970); idem, Lex. Succ. Pl. : 491 (1974)

Holotype: as above

M. antermeridianum forma flore-pleno L. Bol., Notes Mesembryanthemum

2 : 404 (1933)

Holotype: farm Welgevonden, Riversdale div., April 1933,
E. Ferguson s.n. in BOL 20221 (BOL!)

M. lavisii L. Bol., Notes Mesembryanthemum 2 : 156 (1929)

Holotype: Assegaibosch, Nov. 1927, Bishop Lavis s.n. in BOL
18762 (BOL!)

L. lavisii (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1437 (1955); idem, Handb.

Succ. Pl. 3 : 1201 (1960); L. Bol., Jl. S. Afr. Bot. 26 : 158
(1960); Jacobsen, Sukk. Lex. : 442 (1970); idem, Lex. Succ.

Pl. : 495 (1974)

Holotype: as above

L. lavisii var. concinus L. Bol., Jl. S. Afr. Bot. 26 : 158 (1960);

Jacobsen, Sukk. Lex. : 442 (1970); idem, Lex. Succ. Pl. :
495 (1974)

Holotype: Nabega Park near Fort Elizabeth, October - November
1959, D.H. MacKenzie s.n. in NEG 595/58 (BOL!)

M. hollandii L. Bol., Notes Mesembryanthemum 2 : 274 (1931)

Holotype: near Alexandria, April - July 1931, Galpin s.n. in
BOL 19640 (BOL!)

L. hollandii (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1436 (1955); idem, Handb.

Succ. Pl. 3 : 1201 (1960); idem, Sukk. Lex. : 442 (1970);

idem, Lex. Succ. Pl. : 495 (1974)

Holotype: as above

M. martleyi L. Bol., Notes Mesembryanthemum 2 : 366 (1932);

Holotype: between Piquetberg and Langebaan, November 1932
Martley s.n. in BOL 20205 (BOL!)

L. martleyi (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1439 (1955); idem, Handb.

Succ. Pl. 3 : 1203 (1960); idem, Sukk. Lex. : 443 (1970);

idem, Lex. Succ. Pl. : 496 (1974)

Holotype: as above

M. arenosum L. Bol., Notes Mesembryanthemum 2 : 367 (1932) non Schinz

Holotype: near Langebaan, October - November 1932, L. Bolus
s.n. in BOL 20202 (BOL!)

L. arenosus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1424 (1955); idem, Handb.

Succ. Pl. 3 : 1192 (1960); idem, Sukk. Lex. : 439 (1970);

idem, Lex. Succ. Pl. : 491 (1974)

Holotype: as above

M. fergusoniae L. Bol., Notes Mesembryanthemum 2 : 427 (1934)

Holotype: near Riversdale, November 1933, E. Ferguson s.n.
in BOL 21002 (BOL!)

L. fergusoniae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1433 (1955); idem,

Handb. Succ. Pl. 3 : 1199 (1960); idem, Sukk. Lex. : 441

(1970); idem, Lex. Succ. Pl. : 494 (1974)

Holotype: as above

L. fergusoniae var. crassistigma L. Bol., Jl. S. Afr. Bot. 26 :

159 (1960); Jacobsen, Sukk. Lex. : 441 (1970); idem, Lex.

Succ. Pl. : 494 (1974)

Holotype: Shelly Beach near Bredasdorp, December 1954, H. Hall
s.n. in BOL 25655 (BOL!)

M. salteri L. Bol., Notes Mesembryanthemum 2 : 428 (1934)

Holotype: Cape Agulhas, November - December 1933, Salter 4099 (BOL!)

L. salteri (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1446 (1955); idem, Handb.

Succ. Pl. 3 : 1208 (1960); idem, Sukk. Lex. : 445 (1970);

idem, Lex. Succ. Pl. : 499 (1974)

Holotype: as above

M. berghiae L. Bol., Notes Mesembryanthemum 3 : 127 (1938)

Holotype: between Pakhuis and Nardouw, August - September 1937,
J. Bergh s.n. in BOL 21842 (BOL!)

L. berghiae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1425 (1955); idem, Handb. Succ. Pl. 3 : 1193 (1960); idem, Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl. : 492 (1974)

Holotype: as above

L. virgatus L. Bol., Jl. S. Afr. Bot. 27 : 262 (1961); Jacobsen, Sukk. Lex. : 447 (1970); idem, Lex. Succ. Pl. : 501 (1974)

Holotype: Cedarberg, 1 mile from Alpha towards Algeria, September 1938, L. Bolus s.n. in BOL 27100!

L. baylissii L. Bol., Jl. S. Afr. Bot. 31 : 240 (1965); Jacobsen, Sukk. Lex. : 439 (1970). idem, Lex. Succ. Pl. : 492 (1974)

Holotype: Flat Rock, Knysna, November 1964, Bayliss 1083 (NBG 1103/62) (BOL!)

Succulent shrubs or shrublets, ca. 25 cm. high and 30 cm. in diameter. Internodes smooth, russet to chocolate-brown, ca. 20 mm long and 1,5 mm in diameter in the first two years of growth. Leaves triquetrous to sharply triquetrous, 5 - 16,5 - 31 mm long, 0,5 - 1,7 - 4 mm wide and 0,5 - 2 - 4 mm deep; sheathing the stem for ca. 1 mm. Flowers solitary or in threes, pedicels ca. 29 mm long and 1 mm in diameter; flowers white to magenta, rarely copper-coloured, ca. 27 mm in diameter. Bracts up to 15 mm long and 35 mm wide, sepals 5, ca. 12 mm long and up to 6 mm wide, the inner 3 with membranous margins, ca. 11 mm long and 5 mm wide; petals (petaloid staminodes) many in 3 series, 5 - 14,5 - 23 mm long, up to 3 mm wide; non-petaloid staminodes absent. Stamens many, filaments white, ca. 1 - 3,5 - 8 mm long, anthers white; stigmas 5, 1 - 2,5 - 6 mm long, subulate to subulate - acuminate. Capsule 5 - locular, ca. 7,5 mm in diameter and 7,5 mm deep, woody, charcoal grey, valves with 1 mm high marginal ridges, valve-wings ca. 3 mm long and up to 1,5 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon to charcoal grey, ca. 0,82 - 1,12 - 1,49 mm long, 0,60 - 0,86 - 1,17 mm wide and 0,34 - 0,53 - 0,87 mm deep, funicles ca. 0,23 - 0,32 - 0,46 mm long; surface baculate, baculae ca. 22 μ long, 105 μ in diameter; microbaculae present, ca. 0,48 μ long and 0,35 μ in diameter. Flowering season: 70% of specimens seen were in flower between September and December.

SPECIMENS SEEN:

- CAPE 2917 (-DB) Okiep, August 1897, Pillans s.n. in Herbarium Austro-Africanum 1869 (K!, UPS!)
- 3017 (---) between Bitterfontein and Stinkfontein, December 1910, Pearson s.n. in Percy Sladen Memorial Expedition 5575 (BOL!)
- 3118 (-AB) near Bitterfontein, October 1932, Mathews s.n. in NBG 1590/29 (BOL!)
- (-AC) Elandsfontein, Clanwilliam, 13 October 1943, Pillans 9832 (BOL!)
- 3119 (-AC) Oorlogskloof, 23 September 1930, L. Bolus s.n. in BOL 19304 (K!)
- (-CD) Botterkloof, September - October 1948, H. Hall s.n. (BOL!)
- 3218 (-BA) Graafwater, August 1925, Peers s.n. in NBG 1049/23 (BOL!)
- (-BB) Bulshoek, Clanwilliam, August 1952, H. Hall s.n. (BOL!); between Pakhuis and Nardouw, August - September 1937, Bergh s.n. in BOL 21842 (BOL!)
- (-CB) Krom River, southern Cedarberg, 4 October 1952, E. Esterhuysen 20457 (BOL!)
- (-DB) Grey's Pass, 13 October 1952, Herre s.n. in SUG 12933 (BOL!); Clanwilliam side of Grey's Pass, 3 August 1961, Stayner s.n. in KG 677/60 (BOL!)
- 3219 (-AC) 1 mile from Alpha towards Algeria, September 1938, L. Bolus s.n. in BOL 27100 (BOL!)
- (-CA) Clanwilliam Warmbaths, November 1919, F. Bolus s.n. in NBG 1800/15 (PRE!)
- 3317 (-BB) Saldanha Bay, October - November 1932, L. Bolus s.n. in BOL 20202 (BOL!, K!); Saldanha Bay, October, Ecklon & Zeyher s.n. (SAM!)
- 3318 (-AB) between Hopefield and Langebaan, October 1932,

- Lavis s.n. (BOL!); between Piquetberg and Langebaan, November 1932, Martley s.n. in BOL 20205 (BOL!)
- (-AD) 'Waylands', Darling, 13 September 1975, Wisura s.n. (BOL!)
- (-CB) Mamre, October 1878, H. Bolus 4281 (K!)
- (-CD) Wynberg Flats, November, Zeyher s.n. (GRA!, SAM!); near Cape Town, October 1830, Zeyher 696 (B!, CGE!, K!, OXF!, PRE!, S!, SAM!, TCD!); Kenilworth, November 1907, Dümmer 780 (E!); Cape Town, July 1856, de Castelnau 428 (PRE!)
- (-DA) Kalbaskraal, 25 September 1946, Herre s.n. in SUG 11740 (BOL!); 31 miles from Cape Town towards Malmesbury, September 1938, L. Bolus s.n. in BOL 22894 (BOL!)
- (-DC) near Vyge Kraal, August 1896, MacOwan s.n. in Herbarium Austro-Africanum 1867 (BM!, G!, K!, SAM!, UPS!); Cape Flats, no date, Ecklon & Zeyher s.n. (B!)
- 3319 (-AC) Elandskloof, Wolsely, July 1947, Herre s.n. in SUG 11671 (BOL!); Smith's Farm, Tulbagh, October 1892, F. Guthrie 2724 (NBG!); Tulbagh, September 1903, Thode s.n. in STE 5455 (STE!)
- (-CC) Wemmershoek, January 1953, Baker s.n. in BOL 25195 (BOL!)
- 3321 (-CC) Garcia's Pass, September 1908, Phillips 403 (SAM!, K!)
- (-CD) 'Welgevonden', Riversdale, April 1933, Ferguson s.n. in BOL 20821 (K!)
- 3322 (-DC) dunes east of Wilderness, 3 December 1955, E. Esterhuysen 19337 (BOL!)
- 3323 (-CA) Uniondale, November 1912, Paterson 3073 (GRA!)
- 3324 (-CD) Assegaibos, Humansdorp, October - November 1927, S.W. Lavis s.n. in BOL 18762 (BOL!)
- (-DC) 'Welbedacht', 18 miles northwest of Humansdorp, September 1909, Fourcade 425 (GRA!)
- 3325 (-CD) between Greenbushes and Kraggakamma, 18 January 1931, Holland 3563 (BOL!); Theescombe, Port Elizabeth, July

- 1932, L. Bolus s.n. (BOL!)
- (-DC) near Port Elizabeth, 25 August 1930, Fries, Nor=
lindh & Weimarck 144 (BOL!)
- Kabega Park, Port Elizabeth, 28 October 1959,
MacKenzie s.n. in NBG 595/58 (BOL!)
- 3326 (-BA) Alexandria, April - July 1931, Galpin s.n. in
BOL 19640 (BOL!); Alexandria commonage, 24 April
1931, Galpin s.n. in NBG 414/31 (BOL!)
- (-BC) Signal Hill, Grahamstown, 1926, Britten (GRA!)
- 3418 (-AB) Simonstown, April 1908, Dümmer 1451 (E!); behind
Muizenberg, November, Ecklon 11 (TCD!)
- (-BA) Cape Flats, no date, Pappe s.n. (K!)
- 3419 (-CB) Pearly Beach, Bredasdorp, December 1954, H. Hall
s.n. in BOL 25665 (BOL!); Awila, flats east of
Witbaken, 21 May 1971, M. Thompson 1197 (PRE!)
- (-DD) Brandfontein, Bredasdorp, October 1951, E. Esterhuysen
18966 (BOL!)
- 3420 (-CA) Bredasdorp, 7 November 1955, Anon. s.n. in SUG
13860 (BOL!)
- (-CB) Cape Agulhas, December 1933, Salter 4099 (BOL!, K!)
- 3421 (-AB) Limestone dunes near Riversdale, November 1933,
Ferguson s.n. in BOL 21002 (BOL!); near Riversdale,
1913, Anon. s.n. in NBG 963/13 (K!)
- (-BA) North of Albertinia, February 1973, Wisura 2194
(= NBG 849/71) (BOL!, NBG!); Ou Tuin, Albertinia,
9 May 1927, Muir 4042 (K!); near Albertinia, no
date, Muir s.n. in NBG 1505/21 (BOL!)
- 3423 (-AA) Flat Rock, Knysna, November 1964, Bayliss 1083
(BOL!); Sedgefield, Knysna, 4 November 1964, Middle=
most s.n. in NBG 569/64 (BOL!)
- 3424 (-BB) Humansdorp, October 1897, Galpin 4057 (GRA!);
Humansdorp, 1912, Rogers 3111 (GRA!)

Without locality: no date, herb. Lindley s.n. (CGE!)

Garden material: Leyden, no date, Burmeister s.n. in SBT
22 (SBT!); St. Michael's, Azores, 1865,
Godman s.n. (K!); hort., no date, Steudel
s.n. (OXF!); 17 other specimens

The fourteen heterotypically synonymous taxa of this species differ only in the place of origin of the type material. It will be seen from the specimen citation ~~and the data on the~~ that the geographical range of this species as defined here is continuous, as are the ranges of all other characters studied.

This species is a member of a natural cluster of species including L. tenuifolius, L. bicolor and L. macrocarpus. Some forms of this last can be distinguished from the present species by their very much larger capsules as well as other characters; others are distinguished mainly by their habit but also by many smaller differences of use in group-forming but not in specimen identification. The present species is readily distinguished from L. tenuifolius by habit, and the long pedicels and staminodes of the latter. L. bicolor is distinguished from the present species mainly by the bicoloured flowers of the former, but also by the bracts of the former being easily mistaken for foliage leaves, and the shorter pedicels and longer sepals of the former.

29 Lampranthus tenuifolius (L.) N.E. Br. Gard. Chron. 87 : 212 (1930);

Schwant. Feddes Rep. 43 : 230 (1938); Jacobsen, Handb. Sukk.

Pfl. 3 : 1450 (1955); idem, Handb. Succ. Pl. 3 : 1211 (1960);

idem, Sukk. Lex. : 446 (1970); idem, Lex. Succ. Pl. : 500 (1974)

Holotype: Hort. Clifford, near Leyden, no date, Linnaeus s.n.
in Hortus Siccus Cliffortianus (BM!)

Mesembryanthemum tenuifolium L., Sp. Pl. : 484 (1753); Soland. in Ait.,
Hort, Kew. ed 1, 2 : 186 (1789); Gmel., Syst. Nat. (1795); DC.,
Plant. Grass. t. 82 (1801); Haw., Misc. Nat. : 86 (1803); Willd.,
Enum. Pl. Hort. Berol. : 532 (1809); Haw., Syn. Pl. Succ. :
267 (1812); Hornem., Hort. Reg. Hafniae : 461 (1815); Haw., Rev.
Pl. Succ. : 151 (1821); DC., Prodr. 3 : 438 (1828); D. Dietr.,
Syn. Pl. 3 : 144 (1843); Sond., Fl. Cap. 2 : 437 (1862);
Berger, Mesemb. u. Portulac. : 153 (1908)

Holotype: as above

Mesembryanthus tenuifolius (L.) Rothm., Notizbl. Bot. Gart. Berlin
15 : 414 (1941)

Holotype: as above

M. stenum Haw., Till. Phil. Mag. 70 : 420 (1831); Salm Dyck, Monogr.
Gen. Aloes Mesemb. f.4 t.20 § 46 (1842); D. Dietr., Syn.
Plant. 3 : 142 (1843); Sond., Fl. Cap. 2 : 437 (1862); Berger,
Mesemb. u. Portulac. : 153 (1908)

Iconotype: Salm Dyck, Monogr. Aloes Mes. f.4 t.20

L. stenus (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1448 (1955); idem, Handb. Succ. Pl. 3
: 1210 (1960); idem, Sukk. Lex. : 446 (1970); idem, Lex. Succ.
Pl. : 499 (1974)

Iconotype: as above

M. monticolum L. Bol., Notes Mesembryanthemum 2 : 171 (1930) non Thunb.

Holotype: Castle Rock, Table Mountain, January - February 1930,
Cook s.n. in NBG 1378/28 (BOL!)

PRE-LINNANAN CITATIONS :-

Mesembryanthemum tenuifolium procumbens, flore coccineo Dill., Hort.

Eltham. : 264 t.201 f. 256 (1732)

Ficoides seu Ficus Aizoides Africana minor, folio tereti Hermann,

Hort, Acad. Lugd. Bat. : 252 (1687); Ray, Hist. Plant. 2 App.

: 1880 (1688)

Mesembryanthemum Africanum procumbens tereti folio viridi, flore coccineo

Breyn., Prodr. Rar. Pl. Sec. : 69 (1689)

Ficoides Africana minor procumbens, folio tenuiore viridi, flore coccineo

Morison, Hist. Pl., 3 : 507 s.12 t.8 f.6 (1699)

Fisoides Africanum Mesembryanthemum, seu Ficus aizoides minor, folio

tereti, procumbens, flore coccineo (hort. Leyd.) Plukenet, Mantissa

: 77 (1700)

Ficoides Africana procumbens, triangulari lucido longiori ac angustiori

folio Volck., Fl. Noriberg. : 164 (1700); Ray, Hist. Plant. 3 :

365 n. 8 (1704)

Fisoides seu Ficus aizoides Africana, folio longo tenui, flore rubro

Boerh., Index Plant. Hort. Lugd. Bat. : 124 n. 23 (1710); idem, Ind.

alter Hort. Lugd. Bat. : 291 n. 7 (1720)

Ficus aizoides Kali folio, flore eleganti coccineo Tita, Cat. Pl. Hort.

Mauroceni : 74 (1713)

Ficoides capensis humilis teretifolia, flore coccineo Bradley, Hist. Pl.

Succ. 1 : 10 t. 9 (1734)

Mesembryanthemum foliis subulatis semiteretibus, glabris internodio

longioribus Linn., Hort. Cliff. : 220 (1738); Royen., Hort. Lugd.

Bat. : 286 n. 26 (1740); Linn., Hort. Ups. : 128 (1748)

Spreading or mat-forming succulent shrubs, ca. 20 cm. high and 60 cm.

in diameter. Internodes smooth, mahogany-brown, ca. 28 mm long and 1 mm

in diameter in the first two years of growth. Leaves sharply triquetrous,

sheathing the stem for ca. 1mm, 5 - 19 - 35 mm long, 0,8 - 1,2 - 3,3 mm

wide and 1 - 1,2 - 3 mm deep. Flowers solitary or in threes, pedicels ca. 46,5 mm long and 1 mm in diameter; flowers very pale to deep pink ca. 28 mm in diameter. Bracts up to 25 mm long and 1,5 mm wide, sepals 5, ca. 12,5 mm long and up to 7 mm wide, all alike; petals (petaloid staminodes) many in 3 series, 8 - 11,5 - 18 mm long, up to 1,5 mm wide; non-petaloid staminodes few to many, white, ca. 3 - 5 - 6,5 mm long, sharply differentiated from the petaloid staminodes. Stamens many, filaments yellow, ca. 2 - 3 - 5 mm long, anthers yellow; stigmas 5, 1 - 1,5 - 3 mm long, orate. Capsule 5-locular, ca. 7,5 mm in diameter and 6,5 mm deep, woody, charcoal grey, valve-wings ca. 3,5 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon, ca. 0,91 - 0,96 - 1,02 mm long, 0,74 - 0,78 - 0,86 mm wide and 0,39 - 0,43 - 0,47 mm deep, funicles ca. 0,25 - 0,33 - 0,41 mm long, surface baculate, baculae ca. 28 μ long, 116 μ in diameter; micropunctilli present, ca. 0,18 μ long and 0,20 μ in diameter. Chromosome number $2n = 18$ (Sugaira 1931, 1936 a, b). Flowering season: 85% of specimens seen were in flower between October and January.

SPECIMENS SEEN:

- CAPE 3218 (-DA) Het Kruis, Piquetberg, 17 September 1912, Stephens & Glover s.n. in Percy Sladen Memorial Expedition 8790 (BM!)
- 3318 (-BB) Saldanha Bay, October, Ecklon & Zeyher 2048 (S!)
- 3318 (-CD) Castle Rock, Table Mountain, February 1930, Cook s.n. in NBG 1378/28 (BOL!); Above upper North Battery, 15 November 1896, Wolley Dod 2142 (BOL!, K!); Camp Ground, 26 November 1896, Wolley Dod 2114 (BM!, BOL!, K!); Camp Ground, 25 December 1896, Wolley Dod 2393 (BM!, BOL!, K!); Table Mountain, 8 December 1837, Anon. s.n. (K!); Rondebosch Common, 16 August 1959, F. White 5286 (FHO!); Kenilworth Race Course, 18 February 1971, E. Esterhuysen 32571 (BOL!)
- (-DC) Raapenburg Flats, January 1893, H. Bolus 7910 (BOL!, K!); between Brackenfell and Kraaifontein on the old

road to Paarl, 11 November 1972, E. Esterhuysen
33051A (BOL!)

- 3418 (-AB) Commitjie, February 1924, Moss 13852 (BOL!, J!, K!); Chapman's Bay, 30 October 1897, Wolley Dod 3664 (BOL!, K!); near Kenilworth, October 1899, H. Bolus 8022 (BOL!, K!); Wynberg Flats, 4 November 1927, L. Bolus & Carter s.n. in BOL 18783 (BM!, BOL!, K!); Muizenberg Vley, 9 January 1897, Wolley Dod 2280 (BOL!, K!); Groot Rondevlei, 6 October 1967, Taylor 7159 (STE!); Fish Hoek, 21 December 1927, Young 298 (PRE!); Zandvlei 10 January 1926, Pillans 4924 (K!); Witsand, 28 January 1923, Pillans 4301 (K!); Clovelly, December 1924, Rogers 19859 (K!)
- (-AD) Cape Point Nature Reserve, 26 January 1969, 23 December 1969, Wisura 129 (NBG!); between Buffelsfontein and Cape Point, November 1915, L. Bolus s.n. (BOL!); Slangkop, 25 October 1933, Salter 3963 (BOL!); 1 mile north of Hoek van Bobbejaan, February 1942, Salter s.n. (BOL!); Cape Maclear, January 1927, Pillans s.n. (BOL!); Buffels Bay, November 1931, Barker s.n. (BOL!)
- (-BA) Cape Flats, November 1921, Page s.n. (BOL!); Cape Flats, 8 June 1927, L. Bolus s.n. (BOL!); Cape Flats, no date, Pappe s.n. (S!); Cape Flats, no date, Ecklon 141 (S!)
- (-BB) Betty's Bay, 5 December 1966, E. Esterhuysen s.n. (BOL!)
- 3419 (-AC) Hermanus, January 1927, L. Guthrie s.n. (BOL!); Poole's Bay, Hermanus, January 1920, Burt Davy 18740 (BOL!)
- (-AD) Mossel River Caledon, December 1912, G. Potts 1582 (SAM!)
- 3420 (-BB) between the Breede and Duivenhoks Rivers, September - October 1826, Zeyher s.n. (SAM!)
- (-CB) Franskraal Beach, December 1954, H. Hall s.n. in BOL 25652 (BOL!)

(-CC) Cape Agulhas, 27 October 1940, E. Esterhuysen
7756 (BOL!); near Cape Agulhas, October 1937,
Winton Nurseries s.n. (BOL!)

Without locality: C.B.S., no date, Thunberg s.n. (S!); 8
other specimens

Garden material: Berlin, no date, Willdenow 9743 (B-W!);
hort., 1798, herb. Roth s.n. (B!); Marugame,
Shikoku Island, Japan, 14 June 1916, Krug
748 (B!); hort. van Royen, Leyden, no date,
herb. de la Roche s.n. (G!); Leyden, no date,
Burmeister s.n. in SBT 23 (SBT!); Uppsala,
no date, Nietzel in Montin in Linn. 42.55
(S!); Berkeley, California, 19 March 1944,
Bracelin 2631 (K!); hort. Cliff., no date,
Linnaeus s.n. (BM!); Eltham, no date, Dillenius
s.n. (OXF!); no locality, no date, Morison
s.n. (OXF!); Oxford, March 1724, Dillenius
517 (OXF!); 20 other specimens

M. stenum was described as a species with paler flowers and more
erect habit than M. tenuifolium, but it was found that in fact the
range of variation of both these characters overlap in the two
species, and no other character can be found to separate them.

L. tenuifolius differs from L. bicolor in having flowers of a single
colour, in having staminodes, in having long pedicels and short
sepals and in habit. It differs from L. macrocarpus in that the
capsules are not ridged, in having staminodes, in having longer
pedicels and more leaflike bracts. The differences between this
species and L. coccineus have already been discussed under that
species.

- 30 Lampranthus bicolor (L.) H.E. Br., Gard. Chron. 87 : 211 (1930);
Jacobsen, Nat. Gact. Succ. Jl. (G.B.) 4 : 58 (1949); idem,
in Jacobsen, Volk & Herre, Mesembryanthemaceae : 100 (1950);
idem, Handb. Sukk. Pfl. 3 : 1426 (1955); idem, Handb. Succ.
Pl. 3 : 1193; idem, Sukk. Lex. : 439; (1970); idem, Lex.
Succ. Pl. : 492 (1974)
Iconotype: Dill., Hort. Eltham t.202 f.258
Typotype: hort., Eltham, no date, Dillenius s.n. in herb.
Dill. (OXF!)

Mesembryanthemum bicolor L., Sp. Pl. : 485 (1753); idem, Sp. Pl.
ed. 2 : 695 (1762) ✕; Mill., Gard. Dict. n. 28 (1768) ✕;
Soland. in Ait., Hort. Kew. ed. 1, 2 : 190 (1789) ✕; Curtis,
Bot. Mag. 1 : t.59 (1790) ✕; Gmel., Syst. Nat. ed. 14, 2
: 847 (1791) ✕; Haw., Obs. Gen. Mesemb. 2 : 241 - 246 (1795)
✕; Willd., Sp. Pl. ed. 5, 2 : 1039 (1799) ✕; Haw., Misc.
Nat. : 85 (1803) ✕; Willd., Enum. Pl. Hort. Berol. : 532
(1809) ✕; Haw., Syn. Pl. Succ. : 265 (1812) ✕; Hornem.,
Hort. Reg. Hafniae : 461 (1815) ✕; Haw., Rev. Pl. Succ. :
151 (1821) ✕; Thunb., Fl. Cap. : 427 (1823) ✕; DC., Prodr.
3 : 438 (1828) ✕; Eckl. & Zeyh., Enumeratio : 316 n. 2046
(1835) ✕; Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.4 2.18
§ 46 (1842) ✕; D. Dietr., Syn. Pl. 3 : 144 (1843) ✕; Sond.,
Fl. Cap. 2 : 437 (1862) ✕; Berger, Mesemb. u. Portulac. :
152 (1908) ✕

Iconotype: as above
✕ = (sphalm. 'bicolorum')

Mesembryanthus bicolor (L.) Rothm., Notizbl. Bot. Gart. Berlin 15
: 414 (1941)

Iconotype: as above

L. bicolorus (L.) N.E. Br. ex Jacobsen, Handb. Sukk. Pfl. 3 : 1426
(1955); Jacobsen, Handb. Succ. Pl. 3 : 1193 (1960); idem,
Sukk. Lex. : 439 (1970)

Iconotype: as above

PRE-LINNAEAN CITATIONS:-

Mesembryanthemum tenuifolium frutescens, flore croceo Dillenius,
Hort. Eltham. : 267 t.202 f.258 (1732)

Chrysanthemo similis aizoides Africana minor, triangulari folio,
flore luteo Breyn., Prodr. Rar. Pl. : 26 (1680)

Kali triangulare viridi folio, flore intus aureo, foris purpureo
P. Amman, Hort. Bos. : 18 (1686)

Ficoides seu Ficus aizoides Africana minor erecta, triangulari
folio viridi, flore intus aureo, foris purpureo Herm., Hort
Lugd. Bat. : 250 t.249 (1687); Ray, Hist. Pl. 2 App. : 1879
(1688); Bobart in Morison, Hist. Pl. Oxon. 3 : 407 s.12 t.6
n. 4 (1699)

Mesembryanthemum Africanum frutescens minus, flore luteo minore
Breyn., Prodr. Rar. Pl. sec. : 68 (1689)

Ficoides seu Ficus aizoides Africana arborescens, folio tenuissimo
triangulare aspero, flore luteo Boerh., Ind. Pl. Hort. Lugd.
Bat. : 123 n. 8 (1710)

Ficoides seu Ficus aizoides Africana, folio longo tenui, flore
auranti Boerh., Ind. Pl. Hort. Lugd. Bat. : 123 (1710);
idem, Ind. alter Pl. Hort. Lugd. Bat. : 291 (1720)

Ficoides capensis frutescens, folio tereti punctato, petalis luteis
Bradley, Hist. Succ. Pl. 1 : 8 t.7 (1716)

Erect succulent shrubs, ca. 50 cm. high and 25 cm. in diameter.
Internodes smooth, russet to mahogany, ca. 25 mm long and 2 mm
in diameter in the first two years of growth. Leaves sharply
triquetrous, sheathing the stem for ca. 1,5 mm, 14 - 25,3 - 47 mm
long, 1,3 - 2 - 4 mm wide and 1,5 - 2 - 4 mm deep; apices obtuse.
Flowers in threes, pedicels ca. 17,5 mm long and 2 mm in diameter;
flowers yellow inside the petals, scarlet to copper-coloured outside
and on the tips, ebracteate, ca. 30 mm in diameter. Sepals 5, ca.
16,5 mm long and up to 8 mm wide, the inner 3 with membranous margins,
ca. 14 mm long and 8 mm wide; petals (petaloid staminodes) many in
4 series, 12,5 - 16 - 19 mm long, up to 2 mm wide; non-petaloid
staminodes absent. Stamens many, filaments yellow, ca. 2 - 4 - 6,5
mm long, anthers yellow; stigmas 5, 1 - 3 mm long, elliptical -
acuminate. Capsule 5 - locular, ca. 8 mm in diameter and 6,5 mm

deep, woody, charcoal-grey, valve-wings ca. 3 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering about all of the surface of each locule. Seeds rich maroon, ca. 0,65 - 0,85 - 0,94 mm long, 0,39 - 0,57 - 0,70 mm wide and 0,61 - 0,62 - 0,67 mm deep, funicles ca. 0,19 - 0,34 - 0,46 mm long; surface baculate, baculae ca. 26 μ long, 101 μ in diameter; microbaculae present, ca. 0,51 μ long and 0,36 μ in diameter. Flowering season: 83% of specimens seen were in flower between October and December.

SPECIMENS SEEN:

CAPE 3317 (-BB) Saldanha Bay and Cape Flats, no date, Zeyher 2612 (S!)

3318 (-CB) behind Groenekloof, October, Ecklon & Zeyher 2047 (B!)

(-CD) Lion Mountain, no date, Zeyher s.n. (SAM!); near Rondebosch, June 1879, H. Bolus 4744 (BOL!, K!); Wynberg and East slopes of Table Mountain, March, Ecklon & Zeyher 2057 (S!); near Rondebosch, 1810 Burchell 214 (K!)

(-DC) Cape Flats near 'Doornhoogde', January - February, Ecklon & Zeyher 2046 (SAM!, S!)

3319 (-AC) Tulbagh, no date, Zeyher s.n. (S!)

(-CC) French Hoek, November 1913, Phillips 1129 (SAM!)

3418 (-AB) Cape Flats, Paulsberg, December 1922, Page s.n. (BOL!); Plumstead Flats, March 1925, Arbuthnot s.n. (BOL!, K!); Kenilworth Race Course, December 1895, H. Bolus s.n. (BOL!); Kommetjie Road, January 1928, Arbuthnot s.n. (BOL!); near Kenilworth Race Course, 1887, H. Bolus s.n. (BOL!); Kenilworth Racecourse, November 1970, Esterhuysen s.n. (BOL!); Prom. B. Spei, no date, herb. Alm s.n. (S!); Wynberg, 22 February 1896, Schlechter 7544 (B!); probably Clovelly, no date, Rogers 30109 (G!); Rondevlei, October 1827, Verreaux s.n. (G!); Diep River, October 1827, Verreaux s.n. (G!); Steenberg Plateau, 15 July 1897, Wolley Dod 3290

- (K!); Simon's Bay, 1854, Wright s.n. (K!);
Silvermine, August 1930, Schmidt 628 (M!)
- (-AD) Buffels Bay, December 1929, Girdwood s.n. in J
19142 (J!); Diaz Beacon, 26 January 1969, Wisura
128 (NBG!); Minichi, Cape Point, 1966, A.V. Hall
1166 (BOL!); 1 mile west of Minichi, 24 February
1966, Taylor 6749 (STE!); Smitswinkel, October
1931, Barker s.n. in BOL 20149 (BOL!)
- (-BA) Cape Flats, no date, Ecklon 203 (B!)
- 3419 (-AC) near Hermanus, September 1938, L. Bolus s.n. (BOL!)
- (-AD) Mossel River, December 1912, Potts s.n. in SAM
4989 (SAM!)
- 3420 (---) 'Dronkvlei', Bredasdorp, September 1962, Van Breda
s.n. (BOL!)
- (-CC) Cape Agulhas, October 1940, Esterhuysen 5657 (BOL!)

Without precise locality: C.B.S., no date, Thunberg s.n. (S!);
4 other specimens

Garden material: Berlin, no date, Willdenow 9379 (B-W!); hort.,
no date, Linnaeus 42.30 (S!); Eltham, no date,
Dillenius s.n. (OXF!); Oxford?, no date, herb.
Morison s.n. (OXF!); 9 other specimens.

This species is distinguished from all others in the genus and
most of the family by having petals which are red on the outside
and yellow on the inside. The differences between this and the
closest species, namely L. tenuifolius, L. macrocarpus and
L. coccineus, have been discussed under those species.

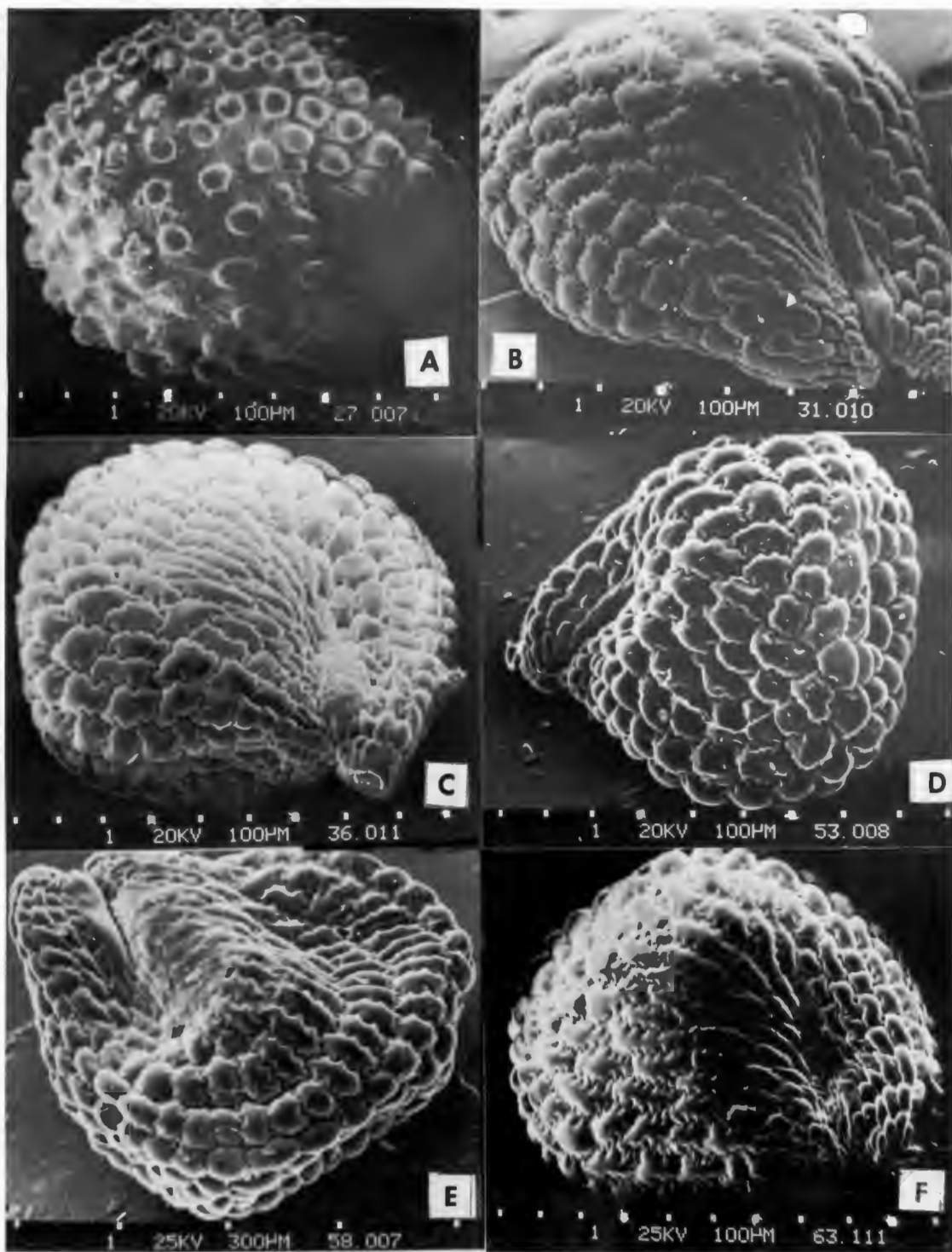


Plate 4. Seeds of *Lampranthus* section *Tenuifolii*. The pips below the photographs are 100 or 300 μ apart, as indicated.

A. *L. sociorum*

B. *L. coccineus*

C. *L. tenuifolius*

D. *L. promontorii*

E. *L. antonii*

F. *L. macrocarpus*

- 31 Lampranthus schlechteri (Zahlbr.) L. Bol., Notes Mesembryanthemum 3 : 227 (1950); Jacobsen, Handb. Sukk. Pfl. 3 : 1447 (1955); Jacobsen, Handb. Succ. Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl. : 499 (1974)

Holotype: Berg River near Franschoek, 17 November 1896,
Schlechter 9214 (B holo!, BOL!, K!, K!, BM!, PRE!,
G!, E!, S!, iso!)

Mesembryanthemum schlechteri Zahlbr., Ann. K. K. Nat. Hofmus.

15 : 35 (1900)

Holotype: as above

M. sabulosum Schlechter, Engl. Bot. Jahrb. 27 : 130 (1899); non Thunb.

Holotype: as above

M. perspicuum Berger, Engl. Bot. Jahrb. 57 : 634 (1922)

Holotype: Franschoek, 17 November 1896, Schlechter 9214 (B!, holo;
Bm!, BOL!, E!, G!, K!, PRE!, S! iso)

L. perspicuus (Berger) N.E. Br., Gard. Chron. 87 : 212 (1930)

Holotype: as above

M. magnificum L. Bol., Ann. Bol. Herb. 4 : 93 (1927)

Holotype: Malmesbury Flower Show, 16 October 1926, Anon. s.n.
in BOL 18532 (BOL!)

L. magnificus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1439 (1955); idem, Handb.

Succ. Pl. 3 : 1203 (1960); idem, Sukk. Lex. : 443 (1970);

idem, Lex. Succ. Pl. : 496 (1974)

Holotype: as above

Erect succulent shrublets, ca. 23 cm. high and 25 cm. in diameter.

Internodes smooth, russet, ca. 19 mm long and 2 mm in diameter in the first two years of growth. Leaves sharply triquetrous, hardly sheathing the stem, 9 - 20,5 - 48 mm long, 2 - 2,5 - 7 mm wide and

1 - 2,5 - 7 mm deep. Flowers solitary or in threes, pedicels ca. 22 mm long and 1,5 mm in diameter; flowers white to scarlet, ca.

41 mm in diameter. Bracts up to 18 mm long and 3 mm wide, sepals 5, ca. 17 mm long and up to 6 mm wide, the inner 3 with membranous

margins, ca. 9,5 mm long and 5 mm wide; petals (petaloid staminodes)

ca. 20 - 50 in 1 series, 10 - 22 - 30 mm long, up to 2,5 mm wide
non-petaloid staminodes absent. Stamens 25 - 90, filaments white,
ca. 2 - 3 - 6 mm long, anthers white; stigmas 5, 1 - 2,5 - 3,5
mm long, ovoid. Capsule 5 - locular, ca. 8,5 mm in diameter and
6,5 mm deep, woody, charcoal grey, valve-wings ca. 3 mm long and
up to 0,5 mm wide, separate from the valve for almost all of their
length; placental tubercle absent; covering membranes present,
covering most of the surface of each locule. Seeds maroon.

Flowering season: 96% of specimens seen were in flower between
September and November.

SPECIMENS SEEN:

CAPE 3318 (-DD) Groot Drakenstein, November 1919, Rogers 17991
(BOL!, K!); Kylemore, Banhoek, November - December
1933, Martley s.n. in BOL 21003 (BOL!)

3319 (-CC) French Hoek, 17 November 1896, Schlechter 9214
(B!, BM!, BOL!, E!, G!, K!, PRE!, S!); Drakenstein
mountains at Stellenbosch, 5 November 1961, H. Meyer
sub Ihlenfeldt 1496 (M!); Wemmershoek, 30 October
1934, Salter 4916 (BOL!); Wemmershoek, 14 November
1939, Stanford s.n. (BOL!); Wemmershoek, 10 November
1952, Baker s.n. (BOL!)

Without precise locality: Malmesbury flower show, 6 October
1926, Anon. s.n. in BOL 18532 (BOL!)

This distinctive species has leaves like those of L. tenuifolius
and long petals which have brown spots (presumably due to areas of
tanniniferous idioblasts) in herbarium specimens. This combination
of characters serves to distinguish it readily from any other
species in the genus. It can be further distinguished from most
species in this section by its capsules, which have valves with
marginal ridges.

The name L. magnificus was given to a plant similar in all respects
to L. schlechteri but with somewhat shorter petals. However, this
is a rather variable character and it is known that the length of
petals in Mesembryanthemaceae varies with the age of the flower.

Despite this, the petals of typical L. schlechteri are always about twice as long as those of any other member of this section, in flowers of about the same age.

- 32 Lampranthus promontorii (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1445 (1955); idem, Handb.
Succ. Pl. 3 : 1207 (1960); idem, Sukk. Lex. : 445 (1970);
idem, Lex. Succ. Pl. : 498 (1974)

Holotype: near Glencairn and Cape Point, January 1924, L. Bolus
s.n. in BOL 17486 (BOL!, holo\$, K!, PRE!, SAM!, iso\$)

Mesembryanthemum promontorii L. Bol., Ann. Bol. Herb. 4 : 10 (1925)

Holotype: as above

Succulent shrublets, ca. 20 cm. high and 30 cm. in diameter. Inter-
nodes smooth, pale brown, ca. 15 mm long and 1,5 mm in diameter in
the first two years of growth. Leaves sharply triquetrous, falcate,
blue-grey, hardly sheathing the stem, 6,5 - 12,5 - 18,5 mm long,
0,5 - 1,2 - 2 mm wide and 1 - 2,5 - 4 mm deep. Inflorescences cymose,
pedicels ca. 13 mm long and 1 mm in diameter; flowers canary yellow,
ebracteate, ca. 25 mm in diameter. Sepals 5, ca. 7 mm long and up
to 3 mm wide, the inner 3 with membranous margins, ca. 6 mm long
and 2 mm wide; petals (petaloid staminodes) ca. 35 - 45 in 2 series,
8 - 10,5 - 14 mm long, up to 2 mm wide; non-petaloid staminodes
absent. Stamens ca. 70, filaments yellow, ca. 1 - 3 mm long, anthers
yellow; stigmas 5, 0,5 - 1,5 mm long, subulate. Capsule 5 - locular,
ca. 7 mm in diameter and 7,5 mm deep, woody, charcoal grey, valve-
wings ca. 3 mm long and up to 1,5 mm wide, separate from the valve
for most of their length; placental tubercle absent; covering
membranes present, covering most of the surface of each locule.
Seeds deep ochre to charcoal grey, ca. 0,76 - 0,89 - 0,95 mm long,
0,62 - 0,76 - 0,81 mm wide and 0,38 - 0,50 - 0,59 mm deep, funicles
ca. 0,26 - 0,32 - 0,35 mm long; surface baculate, baculae ca. 28 μ
long, 97 μ in diameter; microbaculae present, ca. 0,67 μ long and
0,62 μ in diameter. Flowering season: 82% of specimens seen were in
flower between August and January.

SPECIMENS SEEN:

CAPE 3418 (-AB) Fish Hoek mountains, 31 October 1925, Peers s.n.
(BOL!); Muizenberg Plateau, September 1955, Du
Plessis 156 (BOL!); Vlaggeberg, 1 January 1896,
Wolley Dod 325 (BOL!, K!); Klipfontein, 30 March
1966, Taylor 6775 (STE!); south-west of Kommetjie,

19 May 1965, Taylor 6296 (STE!); Fish Hoek,
November 1925, Marloth 6681 (PRE!); Skoorsteenkop,
August 1936, Acocks 666 (PRE!); Muizenberg,
22 December 1922, Moss 7714 (BM!, J!)

- 3418 (-AD) Cape Point, January 1924, L. Bolus s.n. in BOL
17486 (= SAM 28484) (BOL!, K!, PRE!, SAM!); Buffels
Bay, August 1926, Starke s.n. (BOL!); Cape Point,
July 1923, Rogers 27255 (BOL!); Beyond Smitswinkel
Bay, August 1896, Wolley Dod 1472 (BOL!); Cape
Point area, January 1944, Leighton 514 (BOL!);
Smitswinkel Bay, 5 July 1896, Wolley Dod 1245
(BOL!, K!); Patrysvlei, 19 September 1897, Wolley
Dod 3295 (BOL!, K!); Smitswinkel Bay, October 1931,
Barker s.n. in BOL 20149 (BOL!); Cirkelsvlei,
28 September 1972, Taylor 8232 (STE!); Gifkommetjie
turn-off, 7 September 1972, Taylor 8188 (STE!);
slopes above Batsata Cove, 10 February 1972, Taylor
8070 (STE!); between Klein Rondevlei and Olifantsbos,
March 1970, Taylor (STE!); Vasco da Gama Peak,
30 June 1965, Taylor 6359 (STE!); near Smith's Farm,
9 August 1928, Salter 268/16 (BM!); between Cape
Point and Noordhoek, September 1929, Godman 391 (BM!);
Cape Point, November 1933, Meebold 11967 (M!);
Klaver Valley, January 1923, Moss 7447 (J!)
- (-BB) Steenbras River Mouth, December 1933, ? L. Bolus
s.n. (BOL!)

This species is distinctive in this section, and its ebracteate,
clear yellow to old gold flowers and short, somewhat falcate leaves
serve to distinguish it from all others in this section. It can
be separated from L. glaucus subsp. glaucus, the only species in
the genus with the same habit and flower colour, by its many flowers
in a cymose inflorescence, its lack of bracts, and the short pedicels.
It may also be noted that L. glaucus subsp. glaucus has not been
recorded from the South Cape Peninsula, to which L. promontorii is
restricted.

- 33 Lampranthus laxifolius (L. ^{Bol.}~~BOL.~~) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1437 (1955); idem, Handb.
Sukk. Pl. 3 : 1201 (1960); idem, Sukk. Lex. : 442 (1970);
idem, Lex. Succ. Pl. : 495 (1974)

Holotype: Riversdale division, February 1925, Muir s.n. in
NBG 2173/23 (BOL!)

Mesembryanthemum laxifolium L. Bol., Ann. Bol. Herb. 4 : 86 (1927)

Holotype: as above

L. hallii L. Bol., Notes Mesembryanthemum 3 : 272 (1954); Jacobsen,
Handb. Sukk. Pfl. 3 : 1435 (1955); idem, Handb. Succ. Pl. :
1200 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex. Succ.
Pl. : 495 (1974)

Holotype: Cloete's Pass near Herbertsdale, August 1952, H. Hall
s.n. in NBG 521/52 (BOL!)

Erect succulent shrubs, ca. 30 cm. high and 25 cm. in diameter.

Internodes smooth to striate, pale brown, ca. 34 mm long and 2,5 mm in diameter in the first two years of growth. Leaves sharply triquetrous, falcate, 8,5 - 31,5 - 82,5 mm long, 1,3 - 3 - 5,8 mm wide and 1,5 - 3 - 6 mm deep; sheathing the stem for ca. 1 mm.

Flowers in threes, pedicels ca. 46 mm long and 2 mm in diameter; flowers pink to magenta, ca. 32 mm in diameter. Bracts up to 20 mm long and 3 mm wide, sepals 5, ca. 13 mm long and up to 5,5 mm wide, the inner 3 with membranous margins, ca. 10 mm long and 5 mm wide; petals (petaloid staminodes) ca. 65 in 4 series, 4 - 11,5 - 20 mm long, up to 2 mm wide; non-petaloid staminodes absent. Stamens many, filaments white, ca. 1 - 4 - 5 mm long, anthers yellow;

stigmas 5, 1,5 - 2,5 - 4 mm long, lanceolate. Capsule 5 - locular, ca. 9 mm in diameter and 8 mm deep, woody, charcoal grey, valve-wings ca. 4 mm long and up to 2 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering about half of the surface of each locule. Seeds charcoal grey, ca. 0,99 - 1,11 - 1,20 mm long, 0,85 - 0,94 - 1,07 mm wide and 0,51 - 0,57 - 0,63 mm deep, funicles ca. 0,27 - 0,36 - 0,41 mm long. surface baculate, baculae ca. 35 μ long, 94 μ in diameter; microponctilli present, ca. 0,36 μ long and 0,27 μ in diameter. Flowering season: 80% of specimens seen were in flower between December and March.

SPECIMENS SEEN:

CAPE 3320 (-DD) Strawberry Hill Forest Station, Grootvadersbos,
December 1958, H. Hall 1507 (BOL!)

3321 (-DD) Cloete's Pass, Herbertsdale, August 1952, H. Hall
s.n. in NBG 521/52 (BOL!)

3421 (-A-) Riversdale division, February 1925, Muir s.n. in
NBG 2173/23 (BOL!, K!)

Without exact locality: Langeberg, March 1928, Muir 3857 (K!)

This is the most robust member of this section, and may almost be considered to be an intermediate between this section and sect. Lampranthus, although it shows no great resemblance to any one species in either section. One specimen (Hall 1507) has a central tuft of leaves with long stems with paired leaves, and this character recalls L. antonii and species of Cephalophyllum, but apart from this there are few if any significant similarities between this species and those taxa. Despite the fact that it keys out next to L. tenuifolius, it shares only the general group similarity, triquetrous leaves and long pedicels with that species.

- 34 Lampranthus antonii L. Bol., Jl. S. Af. Bot. 32 : 232 (1966); Jacobsen, Sukk. Lex. : 438 (1970); idem, Lex. Succ. Pl. : 491 (1974)
Holotype: North of Ceres at the Western foot of Agterwitszenberg Pass, September 1965, A.V. Hall 1053 (BOL!)

Small, clump or mat-forming succulents, ca. 6 cm. high and 25 cm. in diameter. Internodes smooth, dark brown, ca. 27 mm long and 2 mm in diameter in the first two years of growth. Leaves semi-terete, sheathing the stem for ca. 1,5 mm, 14 - 29,5 - 50 mm long, 2 - 4,7 - 7 mm wide and 2 - 4,5 - 7 mm deep; apices sharply acute. Flowers solitary, pedicels ca. 10,5 mm long and 2,5 mm in diameter; flowers pale pink with a white central 'eye', ca. 60 mm in diameter. Bracts up to 16 mm long and 4 mm wide, sepals 5, ca. 10 mm long and up to 6 mm wide, all alike; petals (petaloid staminodes) ca. 80 in 4 series. Stamens many, filaments white, ca. 2,5 - 4 - 5 mm long, anthers yellow; stigmas 5, 2,5 - 4,5 - 7 mm long, acuminate. Capsule 5 - locular, ca. 11 mm in diameter and 9,5 mm deep, woody, charcoal grey, valve-wings ca. 3 mm long and up to 2 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds charcoal grey, ca. 1,10 - 1,29 - 1,41 mm long, 0,95 - 1,06 - 1,21 mm wide and 0,51 - 0,60 - 0,70 mm deep, funicles ca. 0,43 - 0,45 - 0,50 mm long; surface baculate, baculae ca. 25 μ long, 113 μ in diameter; microbaculae present, ca. 0,39 μ long and 0,31 μ in diameter. Flowering season: 100% of specimens seen were in flower between August and September.

SPECIMEN SEEN:

CAPE 3319 (-A-) West foot of the Agterwitszenberg Pass north of Ceres, September 1965, A.V. Hall 1053 (BOL!)

This rare species differs from L. dunensis and L. laxifolius in both flowering season and geographical range. Of the three species, pedicels of L. antonii are by far the shortest. The bracts of this species are slightly shorter than those of L. laxifolius and much shorter than those of L. dunensis; only those of L. dunensis are leaflike. L. dunensis and L. laxifolius have two clearly distinct whorls of sepals; in L. antonii the sepals are all similar. The filaments of L. dunensis are far shorter than those of L. antonii

and L. laxifolius; the stigmas of L. antonii are much longer than those of L. dunensis, with those of L. laxifolius being of intermediate length. The capsules of L. antonii are significantly larger than those of the other two species. L. antonii shares with L. dunensis the character of semiterete leaves, those of L. laxifolius being triquetrous, and with this last (at least as regards the specimen Hall 1507) the habit character of a central, dense tuft of leaves and long stems with paired leaves.

35 Lampranthus praecipitatus (L. Bol.) L. Bol., Notes Mesembryanthemum

3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1443 (1955);
idem, Handb. Succ. Pl. 3 : 1206 (1960); idem, Sukk. Lex. :
444 (1970); idem, Lex. Succ. Pl. : 498 (1974)

Holotype: Dassiekrantz, December 1931, G.V. Britten 25 (Bol!)

Mesembryanthemum praecipitatum L. Bol., Notes Mesembryanthemum 2 :

330 (1932)

Holotype: as above

Prostrate woody succulents, ca. 10 cm. high and 45 cm. in diameter. Internodes smooth, striate or fissured, dark brown, ca. 14 mm long and 2 mm in diameter in the first two years of growth. Leaves semiterete, falcate, grey, hardly sheathing the stem, 9 - 13,5 - 40 mm long, 1,3 - 2 - 4 mm wide and 1,5 - 2 - 4 mm deep; apices sharply acute. Flowers solitary, pedicels ca. 20 mm long and 1 mm in diameter; flowers white, ca. 40 mm in diameter. Bracts up to 13 mm long and 3 mm wide, sepals 5, ca. 9 mm long and up to 5 mm wide, the inner 3 with membranous margins, ca. 8 mm long and 5 mm wide; petals (petaloid staminodes) ca. 50 in 5 series, 8 - 21 - 23 mm long, up to 2 mm wide; non-petaloid staminodes ca. 20, white, ca. 3 - 6 mm long, sharply differentiated from the petaloid staminodes. Stamens many, filaments white, ca. 2,5 - 3,5 - 4 mm long, anthers white; stigmas 5, 2 - 2,5 - 4 mm long, subulate. Capsule 5 - locular, ca. 9 mm in diameter and 7 mm deep, woody, charcoal grey, valve-wings ca. 3 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds deep maroon, ca. 1,15 - 1,26 - 1,37 mm long, 0,88 - 0,96 - 1,05 mm wide and 0,52 - 0,56 - 0,63 mm deep, funicles ca. 0,37 - 0,41 - 0,45 mm long; surface baculate, baculae ca. 35 μ long, 116 μ in diameter; microbaculae present, ca. 0,57 μ long and 0,58 μ in diameter. Flowering season: 100% of specimens seen were in flower between December and April.

SPECIMENS SEEN:

CAPE 3326 (-CA) Dassie Krantz, December 1931, Britten 25 (BOL, holo!, K!, iso!); Dassie Krantz, April 1928, Dyer 1256 (BOL!, K!); Dassie Krantz, December 1904, Daly 845 (K!, BOL!)

The only species with a similar habit to this is L. dependens, from which the present species differs in having shorter leaves and pedicels, acute leaf-apices, capsules without ridged valves, round young stems, smaller sepals and covering membranes which cover about three quarters of the surface of each locule. It may be distinguished from L. sociorum by the fact that it does not root at the nodes, and the dark colour of the young stems, in addition to the other characters given in the key.

- 36 Lampranthus dunensis (Sond.) L. Bol. in Jacobsen, Handb. Succ. Pl.
3 : 1197 (1960); Jacobsen, Sukk. Lex. : 440 (1970); idem,
Lex. Succ. Pl. : 493 (1974)

Syntypes: seashore near Cape Town, no date, Ecklon, Pappe,
in herb. Sonder (TCD, holo!, S, iso!)

Mesembryanthemum dunense Sond., Fl. Cap. 2 : 411 (1862); Berger,
Mesemb. und Portulac. : 208 (1908)

Syntypes: as above

L. foliosus L. Bol., Notes Mesembryanthemum 3 : 226 (1950); Jacobsen,
Handb. Sukk. Pfl. 3 : 1433 (1955); idem, Handb. Succ. Pl. 3
: 1199 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex. Succ.
Pl. : 494 (1974) "foliolosus"

Holotype: Baviaansfontein, Gansbaai, September 1940, T.P. Stokoe
s.n. in BOL 22742 (BOL!)

L. holensis L. Bol., Jl. S. Afr. Bot. 28 : 294 (1962); Jacobsen,
Sukk. Lex. : 442 (1970); idem, Lex. Succ. Pl. : 495 (1974)

Holotype: Hol River, Vanrhynsdorp, August 1962, H. Hall 2568
(NBG 745/62) (BOL!)

M. macrocalyx Kensit, Trans. Roy. Soc. S. Afr. 1 : 153 (1909)

Holotype: Skurfskop near Somerset West, November 1907,
N.S. Pillans 1423 (BOL!)

Spreading or mat-forming succulent shrubs, ca. 7 cm. high and
20 cm. in diameter. Internodes often hidden between the leaves,
usually striate or fissured, pale brown or grey, ca. 17 mm long
and 2,5 mm in diameter in the first two years of growth. Leaves
semiterete, glaucous, sheathing the stem for ca. 2 mm, 15 - 29,5
- 32,5 mm long, 2 - 4 - 7 mm wide and 2 - 4 - 7 mm deep; apices
sharply acute. Flowers solitary or in threes, pedicels ca. 23 mm
long and 3 mm in diameter; flowers white, ca. 36 mm in diameter.
Bracts up to 37 mm long and 7 mm wide, sepals 5, ca. 19 mm long
and up to 5 mm wide, the inner 3 with membranous margins, ca. 12
mm long and 6 mm wide; petals (petaloid staminodes) many in 4
series, 7 - 10,5 - 14 mm long, up to 1 mm wide; non-petaloid
staminodes absent. Stamens many, filaments white, ca. 1 - 1,5 -
2,5 mm long, anthers yellow; stigmas 5, 1 - 2 mm long, subulate.

Capsule 5-locular, ca. 8,5 mm in diameter and 8 mm deep, woody pale grey, valve-wings ca. 2 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds deep maroon, ca. 1,12 - 1,26 - 1,35 mm long, 0,95 - 1,02 - 1,10 mm wide and 0,44 - 0,57 - 0,71 mm deep, funicles ca. 0,44 - 0,57 - 0,71 mm long; surface baculate, baculae ca. 43 μ long, 110 μ in diameter; microbaculae absent. Flowering season: 80% of specimens seen were in flower between September and December.

SPECIMENS SEEN:

- CAPE 3118 (-CB) Hol River near Koekenaap, August 1962, H. Hall
2568 (= NBG 745/62) (BOL!); Hol River near
Koekenaap, August 1962, H. Hall 2506 (BOL!)
- 3318 (-CD) Dunes near Cape Town, September, Ecklon s.n.
(39 in TCD) (TCD!, S!)
- 3418 (-AB) Sandvlei, October 1923, L. Bolus s.n. in BOL 18590
(BOL!); Zeekoevlei, 6 November 1928, Starke s.n.
(BOL!); Klipfontein Road, 30 October 1941, Maytham
s.n. (BOL!)
- (-BB) Skurfskop near Somerset West, November 1907, Pillans
1423 (BOL!)
- 3419 (-AC) Klein River Vlei, Hermanus, December 1926, L. Guthrie
s.n. (BOL!)
- (-CB) Gansbaai, September 1940, Stokoe s.n. in BOL 22742
(BOL!)

Despite their locality, the two specimens named L. holensis provide the link uniting the other two taxa united here. The name L. foliosus has been applied to a more slender form of L. dunensis. The species as delimited here is difficult to confuse with any other, as the plants are dwarf succulent shrublets with a tendency to form small mats, the leaves are decurrent on the stems and very large in relation to the overall size of the plant, and only white flowers are known.

22. Lampranthus macrocarpus (Berger) N.E. Br., Gard. Chron. 87 : 212 (1930)

Jacobsen, Handb. Sukk. Pfl. 3 : 1438 (1955); idem, Handb. Succ.
Pl. 3 : 1203 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex.
Succ. Pl. : 426 (1974)

Syntypes: Cradock, October 1908, Murray s.n. (GRA!, K!)
Redhouse, no date, Paterson 267 (GRA!)

Mesembryanthemum macrocarpum Berger, Engl. Bot. Jahrb. 57 : 634 (1922)

Syntypes: as above

Lampranthus diutinus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1431 (1955); idem, Handb. Succ.
Pl. 3 : 1197 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex.
Succ. Pl. : 493 (1974)

Holotype: Riversdale division, 1914, Muir 2670 (= NBG 1587/14) (BOL!)

Mesembryanthemum diutinum L. Bol., Ann. Bol. Herb. 3 : 167 (1923)

Holotype: as above

Lampranthus explanatus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1432 (1955); idem, Handb. Succ.
Pl. 3 : 1198 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex.
Succ. Pl. 494 (1974)

Syntypes: Muizenberg above Lakeside, September 1920, Page s.n. in
BOL 15200 (BOL!)
Somerset Strand, October 1919, Page s.n. in BOL 15201 (BOL!)

Mesembryanthemum explanatum L. Bol., Ann. Bol. Herb. 3 : 166 (1924)

Syntypes: as above

Lampranthus densifolius (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 227

(1950); Jacobsen, Handb. Sukk. Pfl. 3 : 1430 (1955); idem, Handb.
Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex. : 440 (1970); idem,
Lex. Succ. Pl. : 493 (1974)

Holotype: Near Vredenburg, February 1928, Mathews s.n. in NBG
1705/24 (BOL!)

Mesembryanthemum densifolium L. Bol., Notes Mesembryanthemum 1 : 136 (1928)

Holotype: as above

M. multiseriatum L. Bol., Ann. Eol. Herb. 4 : 128 (1928)

Holotypes: Ou Tuin near Albertinia, October 1921, Muir 2416 (BOL!)

S.n. Syntypes: Ou Tuin near Albertinia, 1914, La Grange/NBG 4584/14 (BOL!)

L. multiseriatus (L. Bol.) N.E. Br., Gard. Chron, 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1440 (1955); idem, Handb. Succ.

Pl. 3 : 1204 (1960); idem, Sukk. Lex. 443 : (1970); idem, Lex.

Succ. Pl. 497 (1974)

Syntypes: as above

M. humile L. Bol., Notes Mesembryanthemum 2 : 73 (1929) non Haw.

Holotype: in dit. Swellendam, April 1929, Van der Merwe s.n. in
NBG 1195/28 (BOL!)

L. perreptans L. Bol., Notes Mesembryanthemum 3 : 169 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Lex. :

444 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

M. gracilipes L. Bol., Notes Mesembryanthemum 2 : 73 (1929)

Holotype: Cape Town Wild Flower Show, October 1924, Anon s.n. in
BOL 17883 (BOL!)

L. gracilipes (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930); L. Bol.,
Notes Mesembryanthemum 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl.
3 : 1435 (1955); idem, Handb. Succ. Pl. 3 : 1200 (1960); L. Bol.,
Jl. S. Afr. Bot. 32 : 233 (1966); idem, Jl. S. Afr. Bot. 33 :
308 (1967); Jacobsen, Sukk. Lex. : 442 (1970); idem, Lex. Succ.
Pl. : 495 (1974)

Holotype: as above

L. gracilipes forma luxurians L. Bol. Jl. S. Afr. Bot. 32 : 232 (1966);

Jacobsen, Sukk. Lex. : 442 (1970); idem, Lex. Succ. Pl. 495 (1974)

Holotype: Pakhuis Pass, October 1965, H. Hall 3039 (BOL!)

M. globosum L. Bol., Notes Mesembryanthemum 2 : 234 (1931) non N.E. Br.

Holotype: Van Rhyn's Pass, October 1930, Mathews s.n. in BOL 19384 (BOL!)

L. globosus (L. Bol.), Notes Mesembryanthemum 1 : 169 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1434 (1955); idem, Handb. Succ.
Pl. 3 : 1200 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex.
Succ. Pl. : 494 (1974)

Holotype: as above

M. dulce L. Bol., Notes Mesembryanthemum 2 : 328 (1932)

Holotype: near Clanwilliam Warmbaths, 5 October 1931, Leipoldt
s.n. in BOL 19332 (BOL!)

L. dulcis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1431 (1955); idem, Handb. Succ.
Pl. 3 : 1197 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex.
Succ. Pl. : 494 (1974)

Holotype: as above

M. salicolum L. Bol., Notes Mesembryanthemum 3 : 12 (1836)

Holotype: between Velddrift and St. Helenafontein, October 1935,
L. Bolus s.n. in BOL 21641 (BOL!)

L. salicolus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1446 (1955); idem, Handb. Succ.
Pl. 3 : 1208 (1960), idem, Sukk. Lex. : 445 (1970); idem, Lex.
Succ. Pl. : 499 (1974)

Holotype: as above

Lampranthus ceriseus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1428 (1955); idem, Handb.
Succ. Pl. 3 : 1194 (1960); idem, Sukk. Lex. : 439 (1970); idem,
Les. Succ. Pl. : 492 (1974)

Holotype: Melkhoutfontein near Still Bay, January 1931, L. Bolus
s.n. in BOL 19926 (BOL!)

Mesembryanthemum ceriseum L. Bol., Notes Mesembryanthemum 2 : 327 (1932)

Holotype: as above

M. galpiniae L. Bol., Notes Mesembryanthemum 2 : 328 (1932)

Holotype: Struisbaai, January 1931, Mrs. Galpin s.n. in NBG 2/31 (BOL!)

L. galpiniae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1434 (1955); idem, Handb. Succ.
Pl. 3 : 1199 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex.
Succ. Pl. : 494 (1974)

Holotype: as above

L. purpureus L. Bol., Notes Mesembryanthemum 3 : 157 (1939); Jacobsen,
Handb. Sukk. Pfl. 3 : 1444 (1955); idem, Handb. Succ. Pl. 3 :
1207 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl.
: 498 (1974)

Holotype: 1 mile SE of Keerom, Clanwilliam division, November 1938,
Pillans 8670 (BOL!)

L. occultans L. Bol., Notes Mesembryanthemum 3 : 225 (1950); Jacobsen,
Handb. Sukk. Pfl. 3 : 1441 (1955); idem, Handb. Succ. Pl. 3 : 1204
(1960); idem, Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. :
497 (1974)

Holotype: Hex River Valley, November 1949, E. Esterhuysen 10942 (BOL!)

Lampranthus eximius L. Bol., Notes Mesembryanthemum 3 : 273 (1954);
Jacobsen, Handb. Sukk. Pfl. 3 : 1432 (1955); idem, Handb. Succ.
Pl. 3 : 1198 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex.
Succ. Pl. : 494 (1974)

Holotype: Ysterfontein, October 1951, H. Hall s.n. in NBG 1354/50 (BOL!)

Lampranthus simulans L. Bol., Notes Mesembryanthemum 3 : 273 (1954);
Jacobsen, Handb. Sukk. Pfl. 3 : 1447 (1955); idem, Handb. Succ.
Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex.
Succ. Pl. : 499 (1974)

Holotype: Brandfontein, Bredasdorp, October 1951, E. Esterhuysen
18960 (BOL!)

L. amabilis L. Bol., Notes Mesembryanthemum 3 : 330 (1958); Jacobsen,
Handb. Succ. Pl. 3 : 1191 (1960); idem, Sukk. Lex. : 438 (1970);
idem, Lex. Succ. Pl. : (1974)

Holotype: foot of the Potteberg, September 1954, E. Esterhuysen
23153 (BOL!)

Spreading succulent shrublets or mat-forming, ca. 25 cm. high and 45 cm. in diameter. Internodes smooth, pale grey to mahogany, ca. 21 mm long and 1,5 mm in diameter in the first two years of growth. Leaves triquetrous to obscurely triquetrous, green to glaucous, 4 - 15 - 35 mm long, 0,5 - 2 - 4 mm wide and 0,5 - 2 - 4 mm deep;; sheathing the stem for up to 1 mm. Flowers usually in threes, pedicels ca. 34 mm long and 1 mm in diameter; flowers white to scarlet or purple, ca. 39 mm in diameter. Bracts up to 19 mm long and 3 mm wide, sepals 5, ca. 12 mm long and up to 8 mm wide, the inner 3 with membranous margins, ca. 11 mm long and 6 mm wide; petals (petaloid staminodes) few to many in 4 - 6 series, 3 - 16,5 - 29 mm long, up to 4 mm wide; non-petaloid staminodes absent. Stamens few to many, filaments golden, ca. 1 - 3 - 8 mm long, anthers yellow; stigmas 5, 1 - 2,5 - 6 mm long, broadly subulate to subulate - candate. Capsule 5-locular, ca. 8 mm in diameter and 6,5 mm deep, woody or rarely spongy to leathery, charcoal grey, valve-wings ca. 3,5 mm long and up to 1,5 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon, rarely reddish maroon, ca. 0,88 - 1,05 - 1,24 mm long, 0,71 - 0,85 - 1,00 mm wide and 0,35 - 0,48 - 0,59 mm deep, finicles ca. 0,25 - 0,36 - 0,45 mm long; surface baculate, baculae ca. 36 μ long, 102 μ in diameter; microbaculae present, ca. 0,62 μ long and 0,53 μ in diameter. Flowering season: 83% of specimens seen were in flower between September and December.

SPECIMENS SEEN:

- CAPE 3018 (-CA) Khamiesberg near Garies, October 1954, E. Esterhuysen 23732 (BOL!)
- 3118 (-BC) Giftberg Plateau, 14 October 1953, E. Esterhuysen 22054 (BOL!)
(-B) Uitkyk Pass, October 1937, Barker s.n. in NBG 2451/34 (BOL!)
- 3119 (-AC) Van Rhyn's Pass, October 1930, Mathews s.n. in BOL 19384 (BOL!); Van Rhyn's Pass, September 1959, Stayner s.n. in KG 216/59 (BOL!)
- 3217 (-DD) Vredenburg, February 1928, Mathews s.n. in NBG 1705/24 (BOL!)
Vredenburg, October 1946, Herre s.n. in SUG 11704 (BOL!)

- 3218 (-BB) Pakhuis, October 1933, Bergh s.n. in BOL 21016 (BOL!)
- (-CB) St. Helenafontein, October 1935, L. Bolus s.n. in BOL 21049 (BOL!)
- (-DA) Bokkloof, Kapiteinskloof mountain, October 1935, Pillans 7748 (BOL!)
- (-DA) Het Kruis, September 1912, Stephens and Glover s.n. in Percy Sladen Memorial Expedition 8790 (BOL!)
- (-DB) Grey's Pass, August 1930, L. Bolus s.n. in BOL 19293 (K!); Grey's Pass, November 1934, Mathews s.n. in NBG 2696/34 (BOL!)
- (-DC) Piquetberg, October 1892, L. Bolus 13552 (BOL!); hills North-West of Moutonsvlei, 7 November 1934, Pillans 7736 (BOL!)
- (-DC) Piquetberg, October 1952, Herre s.n. in SUG 12932 (BOL!)
- 3219 (-A-) Witte Els Kloof, October 1939, Pillans 9036 (BOL!)
- (-AA) Pakhuis Mountains, October 1953, E. Esterhuysen 21911 (BOL!); Krakadouwpoort, 27 October 1945, E. Esterhuysen 12035 (BOL!); Pakhuis Pass, 7 October 1965, H. Hall 3039 (BOL!); Top of Pakhuisberg, October 1930, Galpin s.n. (BOL!); Pakhuis Pass, 19 October 1965, Barker 10318 (BOL!); Upper Middelberg, Cedarberg, December 1941, E. Esterhuysen 7782 (BOL!)
- (-AC) Cedarberg Tafelberg, December 1950, E. Esterhuysen 18609 (BOL!)
- (-CA) Clanwilliam Warmbaths, 5 October 1931, Leipoldt s.n. in BOL 19932 (BOL!)
- (-CC) 1 mile south-east of Keerom, Olifants River Valley, November 1938, Pillans 8670 (BOL!)
- 3225 (-BA) Cradock, October 1908, Murray s.n. (GRA!, K!)
- 3318 (-AA) 5 ¹/₂ miles south-east of Langebaan, 1 November 1948, Acocks 15217 (BOL!); Langebaan, October 1927, Mathews s.n. in NBG 1727/24 (BOL!)
- (-AB) Hopefield, 1914, Holland s.n. in NBG 737/14 (BOL!); between Hopefield and Langebaan, October 1932, Lavis s.n. (BOL!); between Hopefield and Langebaan, October - November 1932, L. Bolus s.n. in BOL 25299 (BOL!); 2 miles from Hopefield towards Velddrift, November 1933, Lavis s.n. (BOL!); Waterboerskraal near Hopefield, August

- 1886, Bachmann 1379 (B!)
- (-AC) Ysterfontein October 1951, H. Hall s.n. in NBG 1354/50 (BOL, holo.); Churchhaven, November 1933, Lavis s.n. in NBG 2440/33 (BOL!)
- (-BC) between Malmesbury and Hopefield, November 1929, Pillans 6272 (BOL!)
- (-CB) Groenkloof, October, Ecklon and Zeyher 2047 (S!); Melkbosstrand, September 1933, Garside s.n. in BOL 21024 (BOL!); 10 miles south of Mamre, 20 August 1949, Wilman 643 (BOL!); Mamre, 10 September 1955, H. Hall s.n. (BOL!); Road between Cape Town and Mamre, at Melkbosstrand turnoff, August 1946, Leighton 2847 (BOL!)
- (-CD) Bloubergstrand, 28 August 1931, Barker s.n. (K!)
- (-DC) Rietvalley, July, Ecklon and Zeyher 2016 (S!); Kraaifontein, 9 August 1966, E. Esterhuysen 31566 (BOL!); Tygerberg, 17 August 1924, Pillans 4768 (BOL!)
- (-DD) between Klapmuts and Bellville, March 1931, L. Bolus s.n. in BOL 19859 (BOL!, K!)
- 3319 (-AB) between Osplaats and Tunnel, August 1915, Rogers 16768 (J!, K!)
- 3319 (-AC) Tulbagh Waterfall, November 1941, Leighton s.n. (BOL!)
Above Tulbagh Waterfall, November 1879, H. Bolus 5051 (BOL!)
- (-AD) Rosendalfontein, 28 November 1941, Pillans 9559 (BOL!)
- (-BC) Orchard, Karadouw mountains, November 1944, E. Esterhuysen 10939 (BOL!)
- (-CD) Kweekkraal, between Villiersdorp and Worcester, November 1962, Van Breda 1781/62 (BOL!)
- (-DA) Hex River Valley, November 1944, E. Esterhuysen 10942 (BOL, holo. of syn.); near De Wet, December 1951, E. Esterhuysen 19620 (BOL!); Buffelshoekkloof, Hex River Valley, December 1947, E. Esterhuysen 14169 (BOL!)
- 3325 (-BD) Zuurkop, Addo Elephant National Park, 28 January 1966, Liebenberg 7707 (BOL!)
- (-DC) Redhouse, no date, Paterson 267 (GRA!)

- 3418 (-AB) Kommetjie, January 1969, Wisura 131 (NBG!); Kommetjie, May 1930, L. Bolus s.n. (BOL!); Kommetjie, September 1945, L. Bolus s.n. (BOL!); Retreat Station, 6 November 1897, Wolley Dod 3665 (BOL!); Muizenberg mountain above Lakeside, September 1902, Page s.n. in BOL 15200 (BOL!) Claremont flats, October, Schlechter s.n. (BOL!)
- (-BA) Cape Flats, October, Zeyher s.n. (SAM!); Cape Flats, no date, Ecklon s.n. (S!)
- (-BB) Somerset Strand, October 1919, Page s.n. in BOL 15201 (BOL!)
- 3419 (-CB) Gansbaai, January 1946, Leighton 1623 (BOL!)
- (-DD) Brandfontein, Bredasdorp division, 14 October 1951, E. Esterhuysen 18964 (BOL!)
- 3420 (-AB) Swellendam, October 1928, Van der Merwe 53 (BOL!); Potteberg, November 1954, Barker s.n. in NBG 926/54 (BOL!, NBG!)
- (-BC) Potteberg, September 1954, E. Esterhuysen 23153 (BOL!, holo.); Elandspad, 15 October 1940, Pillans 9263 (BOL!)
- (-BD) Cape Infanta, 2 October 1959, E. Esterhuysen 28310 (BOL!)
- (-CA) Struisbaai, January 1931, Galpin s.n. in NBG 2/31 (BOL, holo. of syn.!); Bredasdorp, 16 December 1930, E. E. Galpin 19567 (BOL!)
- (-CC) 2 miles east of Cape Algulhas, no date, Salter 4828 (BOL!); Cape Algulhas, September 1936, Pillans s.n.
- 3421 (-AA) north-eastern foot of the Bosberg near Riversdale, 8 February 1973, Wisura 1366 (= NBG 702/70) (BOL!)
- 3421 (-AA) 7 miles south of Riversdale towards Blombos, 7 November 1972, Thomas s.n. in NBG 1182/71 (NBG!)
- (-AB) dunes near Riversdale, October 1932, Versveld s.n. in BOL 21009 (BOL!, K!); Riversdale, December 1927, Versveld s.n. in NBG 621/16 (BOL!)
- 3421 (-AB) Ou Tuin, Albertinia, October 1921, Muir 2416 (BOL!)
- Ou Tuin, Albertinia, La Grange s.n. in NBG 4584/14 (BOL, synt. of syn.!); Riversdale division, 1917, Muir s.n. in NBG 1587/14 (BOL!, K!)

- (-AC) 12 miles south of Riversdale towards Blombos, September 1959, Lewis 5625 (BOL!, NBG!)
- (-AD) Albertinia, 8 April 1930, Muir s.n. (K!); Albertinia, 26 October 1955, E. Esterhuysen 25014 (BOL!); Still Bay, September 1931, L. Bolus s.n. (BOL!); Still Bay, August 1951, Anon s.n. in NBG s.n. (BOL!)
- (-BA) Near Albertinia, December 1950, H. Hall s.n. (BOL!); Albertinia, July 1925, Muir s.n. in NBG 1126/22 (BOL!)
- (-BD) Melkhoutfontein near the Gouritz River, 13 September 1913, Muir 1010 (BOL!, K!); Melkhoutfontein aan de Gouritz Rivier, October 1927, Muir 4194 (BOL!, K!)
- (-BD) Melkhoutfontein near Still Bay, January 1931, L. Bolus s.n. in BOL 19926 (BOL!)
- 3422 (-AA) Mossel Bay, November 1950, H. Hall s.n. in NBG 1516/50 (BOL!)
- Without locality: Cape Town Wild Flower Show, October 1924, Anon. s.n. in BOL 17883 (BOL!)
- : 22 July 1930, Muir 3629 (K!)
- Kat Hoek, October 1940, Pillans 9266 (BOL!); Afr. Austr., no date, Ecklon s.n. (S!)
- Garden material: (from Swellendam), April 1929, Van der Merwe s.n. in NBG 1195/28 (BOL!)

1 other specimen

This is the fourth member of a comparatively close group of species which includes, in addition to the present one, L. coccineus, L. bicolor and L. tenuifolius. The differences between L. coccineus, L. tenuifolius and the present species have been discussed under the other two species. L. macrocarpus differs from L. bicolor most obviously in flower colour, but also in length of pedicel, in that the bracts of this species are not leaflike, and in that the sepals are smaller. The leaves of this species are also slightly shorter than those of L. bicolor.

The various taxa united here form a continuous pattern of variation.

Although the extremes may not appear to belong to the same species, they are nevertheless united by a continuous range of intermediates.

6.1.4 Lampranthus section Scabridi (Haw.) Schwant. ex Glen

L. sect. Scabridi (Haw.) Schwant. ex Jacobsen, Handb. Succ. Pl. 3 : 1190
(1960) Comb. illegit.; Jacobsen, Sukk. Lex. : 437 (1970); idem,
Lex. Succ. Pl. : 490 (1974)

Mesembryanthemum sect. Scabrida Haw., Misc. Nat. : 267 (1803); DC, Prodr.
3 : 434 (1828); Sonder, Fl. Cap. 2 : 439 (1862); Berger, Mes. u.
Portulac. : 145 (1908)

Mesembryanthemum sect. Scabra Salm Dyck, Obs. Bot. Hort. Dyck. 1 : 27 (1820)

Mesembryanthemum sect. Asperifolia Salm Dyck ex Haw., Rev. Pl. Succ.
: 138 (1821)

Small shrubs or mat-formers with wiry or woody stems; leaves typically hardly sheathing the stem, semiterete to triquestrous, grass-green to glaucous, often shorter and narrower than is usual in the genus, the smallest leaves in the genus being found here; leaf epidermis sometimes somewhat rough. Flowers solitary or in threes, pink, purple or white but never yellow, smaller than in the rest of the genus except section Lunati; petals and stamens usually few; staminodes often absent or if present then few, not grading into the stamens or petals. Capsules among the smallest in the genus, often 4,5 mm or less in diameter. Seeds small for the genus, ca. 0,7 mm long, cream to maroon; baculae small and low, Microbaculae in the form of micropunctilli or absent.

Type species: L. scaber (L.) N.E. Br.

18 species.

Jacobsen's (1960 seq.) transfer of this section from Mesembryanthemum to Lampranthus is invalid because no basionym was cited. His choice of L. scaber (L.) N.E. Br. as type species of this section is a good one for a number of reasons. The name of the section suggests that it was founded on this species. L. scaber is the by far commonest species of Lampranthus.

This section of the genus is found in the wettest parts of the generic range. It includes the commonest and most variable species, which have been described under many different names because of this variability. It is typically found in fynbos of the South-Western Cape, but may be found from Namaqualand to Uitenhage. Some species of this section may be difficult to separate from some species of the previous section (see the notes to that section for diagnostic characters). In addition to the character mentioned there, it should be noted that while a pink-flowered plant may belong to either section, a yellow-flowered plant that belongs to either of these two sections will most probably belong to sect. Tenuifolii.

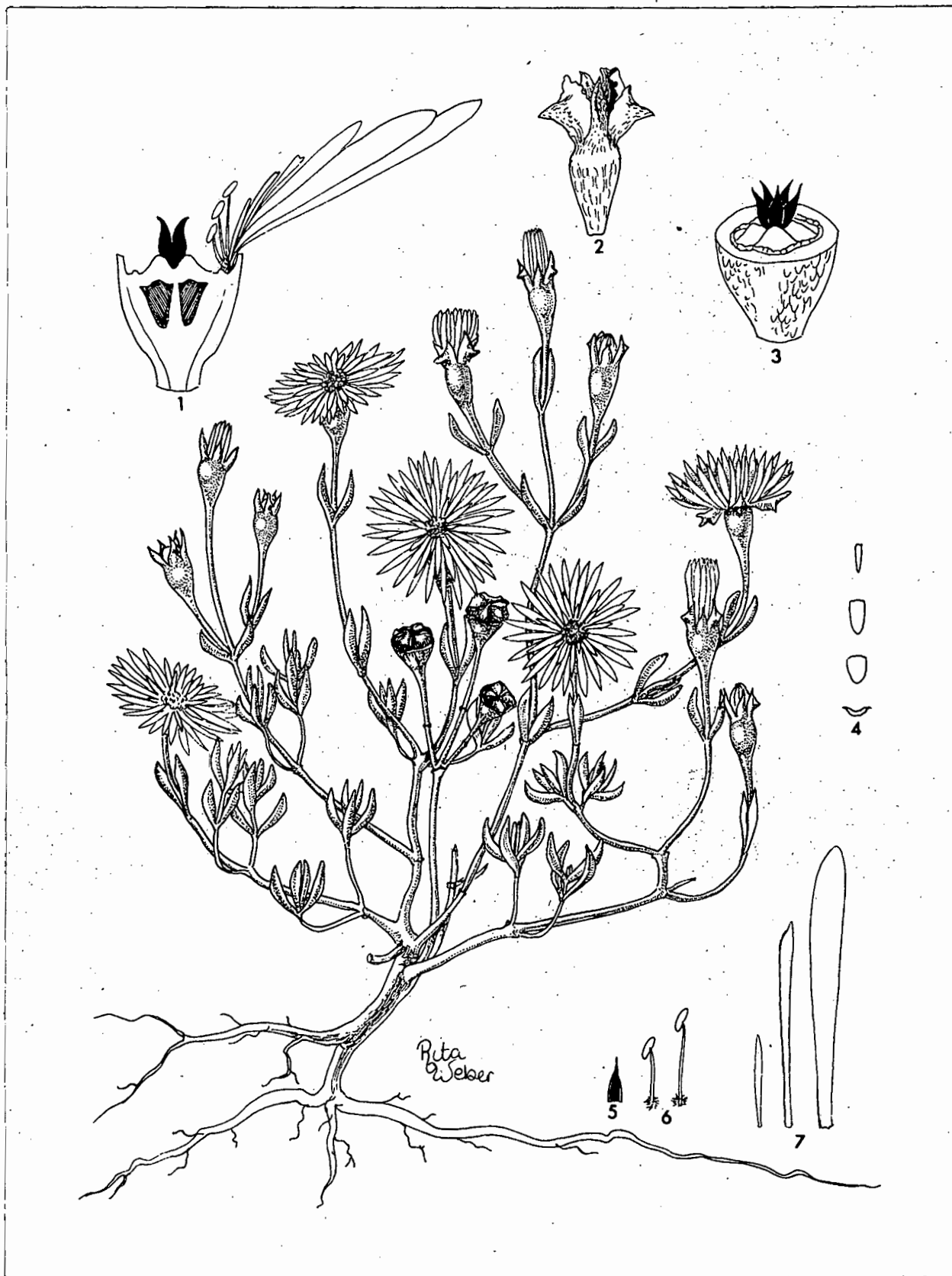


Fig. 5. *Lampranthus scaber*.

- | | |
|----------------------|---------------------|
| 1. section of flower | 2. sepals |
| 3. gynoecium | 4. sections of leaf |
| 5. stigma | 6. stamens |
| | 7. petals |

38 Lampranthus peersii (L. Bol.) N.E. Br., Gard. Chron., 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Handb.

Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex. : 444 (1970);

idem, Lex. Succ. Pl. : 497 (1974)

Holotype: Graafwater, July 1926, V. S. Peers s.n. in NBG 3002/15 (BOL!)

Mesembryanthemum peersii L. Bol., Ann. Bol. Herb. 3 : 131 (1922)

Holotype: as above

Erect succulent shrubs, ca. 35 cm. high and 25 cm. in diameter. Internodes smooth, russet, ca. 13 mm long and 2,5 mm in diameter in the first two years of growth. Leaves triquetrous, glaucous, hardly sheathing the stem, 6 - 11,5 - 20 mm long, 0,8 - 1,8 - 2,5 mm wide and 1 - 2,5 - 3,5 mm deep. Flowers in threes, pedicels ca. 33,5 mm long and 1,5 mm in diameter; flowers golden to copper-coloured, ca. 28 mm in diameter. Bracts up to 11 mm long and 2,5 mm wide, sepals 5, ca. 7 mm long and up to 5 mm wide, the inner 3 with membranous ⁴ margins, ca. 5 mm long and 4 mm wide, petals (petaloid staminodes) ca. 75 in 3 series, 9,5 - 11 - 13 mm long, up to 1 mm wide; non-petaloid staminodes ca. 75, white, ca. 4 - 5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 60, filaments pink or orange, ca. 2,5 - 3,5 - 5 mm long, anthers yellow; stigmas 5, 1 - 2 mm long, elliptical, acuminate. Capsule 5-^clocular, ca. 9 mm in diameter and 6 mm deep, woody, grey, valve-wings ca. 3,5 mm long and up to 1 mm wide, separate from the valve for almost all of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds rich maroon, ca. 0,86 - 1,00 - 1,07 mm long, 0,73 - 0,78 - 0,83 mm wide and 0,43 - 0,49 - 0,54 mm deep, funicles ca. 0,28 - 0,35 - 0,41 mm long;; surface baculate, baculae ca. 28 u long, 90 u in diameter; micropunctille presnet, ca. 0,23 μ long and 0,32 μ in diameter. Flowering season: 100% of specimens seen were in flower between July and October.

SPECIMENS SEEN:

CAPE 3218 (-BA) Graafwater, July 1926, Peers s.n. in NBG 3002/15 (BOL!);

Graafwater, 1923, Peers s.n. in NBG 1049/23 (K!)

3318 (-BA) Darling, September 1913, Mansergh s.n. in BOL 25298 (BOL!)

(-CB) near Groenkloof (Mamre), October 1878, H. Bolus
4281 (BOL!)

This is the most robust member of this section, and the only one with golden flowers (which turn redder as they fade). As with most, if not all, members of this section, it is most useful to describe its distinctive characters in terms of differences from L. scaber. The nectaries of this species are separate, which is unusual in the genus. The capsules of this species are larger and harder than those of L. scaber, and the bracts, being smaller relative to the leaves, are less leaflike.

- 39 Lampranthus scaber (L.) H.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1447 (1955); idem, Handb. Succ. Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl. : 499 (1974)

Iconotype: Dill., Hort. Eltham. t.197 f.259

Typotype: Hort. Eltham, no date, Dillenius s.n. in Herb. Dill. (OXF!)

Mesembryanthemum scabrum L., Sp. Pl. ed. 1 : 483 (1753); Soland. in Ait., Hort. Kew. ed. 1, 2 : 185 (1789); Gmel., Syst. Nat. ed. 14, 2 : 845 (1791); Haw., Obs. Gen. Mesemb. 2 : 345 - 347 (1795); Willd., Sp. Pl. ed. 5, 2 : 1049 (1799); Haw., Misc. Nat. : 71 (1803); idem, Syn. Pl. Succ. : Hornem., Hort. Reg. Hafniae : 464 (1815); Haw., Rev. Pl. Succ. : 138 (1821); DC., Prodr. 3 : 434 (1828); D. Dietr. Syn. Pl. : 3 : 141 (1843); Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.6 t.27 § 48 (1854); Sond., Fl. Cap. 2 : 440 (1862); Berger, Mesemb. u. Portulac. : 147 (1908)

Iconotype: as above

M. falcatum L., Sp. Pl. ed. 1 : 484 (1753); Soland. in Ait., Hort. Kew. ed. 1, 2 : 188 (1789); Haw., Obs. Gen. Mesemb. 2 : 360 (1795); Willd., Sp. Pl. ed. 5, 2 : 1046 (1799); Haw., Misc. Nat. : 72 (1803); Willd., Enum. Pl. Hort. Berol. : 535 (1809); Haw., Syn. Pl. Succ. : 298 (1812); Hornem., Hort. Reg. Hafniae : 463 (1815); Haw., Rev. Pl. Succ. : 136 (1821); DC., Prodr. 3 : 433 (1828); Salm Dyck, Monogr. Gen. Aloes Mesemb. f.1 t.23 § 29 (1836); D. Dietr., Syn. Plant. 3 : 141 (1843); Sond., Fl. Cap. 2 : 420 (1862); Berger, Mesemb. u. Portulac. : 188 (1908)

Iconotype: Dill., Hort. Eltham. t.213 f.275 - 276

Typotype: Hort. Eltham, no date, Dillenius s.n. in Herb. Dill. (OXF!)

L. falcatus (L.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1432 (1955); idem, Handb. Succ. Pl. 3 : 1198 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Iconotype: as above

M. glomeratum L., Syst. Nat. ed. 10 : 1060 (1758); idem, Sp. Pl. ed. 2 : 694 (1763); Mill., Gard. Dict. ed. 8 : n. 26 (1768)

Soland. in Ait., Hort. Kew. ed. 1, 2 : 185 (1789); Haw.,
Obs. Gen. Mesemb. 2 : 356 - 360 (1795); Gmel., Syst. Nat.
2 : 845 (1799); Haw., Misc. Nat. : 70 (1803); Willd., Enum.
Pl. Hort. Berol. : 535 (1809); Hornem., Hort. Reg. Hafniae
: 463 (1815); Haw., Rev. Pl. Succ. : 138 (1821); Kerr Gowl.,
Lodd. Bot. Cab. 11 : t.1043 (1825); Salm Dyck, Monogr. Gen.
Aloes Mesemb. f.6 t.23 ♂ 48 (1854); Sond., Fl. Cap. 2 : 439
(1862); Berger, Mesemb. und Portulac. : 145 (1908)

Iconotype: Dillenius, Hort. Elth. : 287 t.213 f.274

Typotype: hort. Eltham, no date, Dillenius s.n. (OXF, herb.
Dillenius!)

L. glomeratus (L.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1434 (1955); idem, Handb. Succ. Pl. 3
: 1200 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex.
Succ. Pl. : 494 - 5 (1974)

Iconotype and typotype: as above

M. falcatum sensu Lam., Encyclopédie 2 : 482 (1788), non L.

Typification not stated but presumably as above.

M. emarginatum L., Sp. Pl. ed. 2, 1 : 692 (1762), non E. & Z.; Soland.
in Ait., Hort. Kew. ed. 1, 2 : 185 (1789); Gmel., Syst. Nat.
2 : 845 (1791); Haw., Obs. Gen. Mesemb. 2 : 340 - 343 (1795);
Willd., Sp. Pl. ed. 5, 2 : 1049 (1799); Haw., Misc. Nat. :
70 (1803); Willd. Enum. Pl. Hort. Berol. : 537 (1809); Haw.,
Syn. Pl. Succ. : 268 (1812); idem, Rev. Pl. Succ. : 142 (1821);
DC., Prodr. 3 : 435 (1828); Dietr., Syn. Pl. 3 : 142 (1843);
Salm Dyck, Monogr. Gen. Aloes Mesemb. f.6 t.26 ♂ 48 (1854);
Sond., Fl. Cap. 2 : 440 (1862); Berger, Mesemb. und Portulac.
: 146 (1908)

Iconotype: Dill., Hort. Elth. 259 t.197 f.250

Typotype: Hort. Eltham, no date, Dillenius s.n. (OXF, Herb.
Dillenius!)

L. emarginatus (L.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1431 (1955); idem, Handb. Succ. Pl. 3
: 1198 (1960); idem, Sukk. Lex. : 440 - 441 (1970); idem,
Lex. Succ. Pl. : 494 (1974)

Iconotype: as above

M. deflexum Soland. in Ait., Hort. Kew. ed. 1, 2 : 187 (1789); Haw.,
Obs. Gen. Mesemb. 2 : 347 - 348 (1795); Gmel., Syst. Nat. 2
: 349 (1767); Haw., Rev. Pl. Succ. : 139 (184); Hornem.,
Hort. Reg. Hafniae : 463 (1815); Dietr., Syn. Pl. 3 : 142 (1843)

Type: lost

L. deflexus (Sol. in Ait.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1430 (1955); idem, Handb.
Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex. : 440 (1970);
idem, Lex. Succ. Pl. : 493 (1974)

Type: lost

M. emarginatoides Haw., Obs. Gen. Mesemb. 2 : 343 (1795)

Type: lost

L. emarginatoides (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1431 (1955)

Type: lost

M. violaceum DC., Plant. Grass. t.84 (1801) non E.fz; Haw., Rev.
Pl. Succ. : 141 (1821); DC., Prodr. 3 : 435 (1828); D. Dietr.,
Syn. Pl. 3 : 142 (1843); Salm Dyck, Monogr. Gen. Aloes.
Mesemb. f.6 t.3 § 48 (1854); Sond., Fl. Cap. 2 : 439 (1862)

Iconotype: DC., Plant. Grass. t.84

Lampranthus violaceus (DC.) Schwant. ex Jacobsen, Feddes Rep. 43 :
230 (1938); Jacobsen, Handb. Succ. Pl. 3 : 1452 (1955)

Iconotype: as above

Lampranthus incurvus (Haw.) Schwant. ex Jacobsen, Feddes Rep. 43 :
230 (1938); Jacobsen, Handb. Sukk. Pfl. 3 : 1436 (1955);
idem, Handb. Succ. Pl. 3 : 1201 (1960); idem, Sukk. Lex. :
442 (1970); idem, Lex. Succ. Pl. : 495 (1974)

Type: lost

Mesembryanthemum incurvum Haw., Misc. Nat. : 69 (1803); idem, Syn.
Pl. Succ. : 300 (1812); idem, Rev. Pl. Succ. : 136 (1821);
DC., Prodr. 3 : 433 (1828); D. Dietr., Syn. Pl. 3 : 141
(1843); non E. Mey. ex Harv. & Sond., nec Echl. & Zeyh.

Type: lost

M. versicolor Haw., Misc. Nat. : 70 (1803); idem, Syn. Pl. Succ.
: 268 (1812); idem, Rev. Pl. Succ. : 139 (1821); DC., Prodr.
3 : 434 (1828); Sond., Fl. Cap. 2 : 440 (1862)

Type: lost

M. retroflexum Haw., Misc. Nat. : 71 (1803); idem, Rev. Pl. Succ.

Type: lost

: 139 (1871); DC., Prodr. 3 : 434 (1828); Dietr., Syn. Plant.
3 : 141 (1843)

Iconotype: unpublished plate at Kew

M. elegans Jacq., Hort. Schoenbr. 4 : 18 t.436 (1804); Sond. Fl.

Cap. 2 : 440 (1862); Berger, Mesemb. und Portulac. : 148 (1908)

Iconotype: Jacq., Hort. Schoenbr. 4 : 18 t.436 (1804)

L. elegans (Jacq.) Schwant., Feddes Rep. 43 : 229 (1938); Jacobsen,

Handb. Sukk. Pfl. 3 : 1431 (1955); idem, Handb. Succ. Pl. 3

: 1197 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex. Succ.

Pl. : 493 (1974)

Iconotype: as above

M. puniceum Jacq., Hort. Schoenbr. 4 : t.442 (1804)

Iconotype: Jacq., Hort. Schoenbr. 4 : t.422

M. roseum Jacq. var. confertum Salm Dyck, Monogr. Gen. Aloes. Mesemb.

f.5 t.18 § 29 (1849); Sond., Fl. Cap. 2 : 420 (1862); Berger,

Mesemb. u. Portulac. : 186 (1908)

Iconotype: Salm Dyck, Monogr. Gen. Aloes Mesemb. f.5 t.18

M. emarginatum var. puniceum (Jacq.) Berger, Mesemb. und Portulac.

: 147 (1908)

Iconotype: as above

for M. puniceum Jacq.

L. emarginatus var. puniceus (Jacq.) Schwant. ex Jacobsen, Feddes

Rep. Beih. 106 : 97 (1938); Jacobsen, Handb. Sukk. Pfl. 3 :

1432 (1955); idem, Handb. Succ. Pl. 3 : 1198 (1960); idem,

Sukk. Lex. : 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Iconotype: as above

for M. puniceum Jacq.

M. polyanthon Haw., Syn. Pl. Succ. : 270 (1812); idem, Rev. Pl. Succ.

: 140 (1821); Ker-Gawl., Lodd. Bot. Cab. 13 : t.1281 (1827);

('polyanthum'); DC., Prodr. 3 : 435 (1828); Dietr., Syn. Pl.

3 : 142 (1843); sphalm. 'polyanthum'; Salm Dyck, Monogr. Gen.

Aloes Mesemb. f.6 t.24 § 48 (1854); Sond., Fl. Cap. 2 : 439 (1862)

Iconotype: unpublished plate at Kew

L. polyanthon (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,

Handb. Sukk. Pfl. 3 : 1443 (1955); idem, Handb. Succ. Pl.
3 : 1206 (1960); idem, Sukk. Lex. : 444 (1970); idem, Lex.
Succ. Pl. : 498 (1974)

Iconotype: as above

M. inflexum Haw., Suppl. Pl. Succ. : 98 (1819); idem, Rev. Pl.
Succ. : 138 (1821)

Type lost

M. imbricans Haw., Suppl. Pl. Succ. : 94 (1819); idem, Rev. Pl. Succ.
: 139 (1821); Dietr., Syn. Plant. 3 : 141 (1843)

Type: lost

L. imbricans (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1436 (1955)

Type: lost

M. flexile Haw., Rev. Pl. Succ. : 140 (1821)

Type: lost

L. flexilis (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1433 (1955)

Type: lost

M. leptaleon Haw., Rev. Pl. Succ. 140 (1821)

Type: lost

L. leptaleon (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1437 (1955); idem, Handb. Succ. Pl. 3 :
1202 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex. Succ.
Pl. : 496 (1974)

Type: lost

M. polyphyllum Haw., Rev. Pl. Succ. : 141 (1821); Dietr., Syn. Pl.
3 : 142 (1843)

Iconotype: unpublished plate at Kew

M. brownii Hook. f., Bot. Mag. 114 : t.6985 (1888); Berger, Mes.
und Portulac. : 148 (1908)

Holotype: Hort. Kew., 7 July 1887, Anon s.n. (K!)

L. brownii (Hook. f.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1426 (1955); idem, Handb.
Succ. Pl. 3 : 1194 (1960); idem, Sukk. Lex. 439 (1970);
idem, Lex. Succ. Pl. : 492 (1974)

Holotype: as above

L. peacockiae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Handb. Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lec. : 444 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Syntypes: near Darling, September 1918, W. Peacock s.n. in NBG 1689/17 (BOL!, synt!, K!, iso -synt!) near Kalbaskraal, L. Bolus s.n. in BOL 15192 (BOL!); Lion Mountain, Cape Town, August 1920; L. Guthrie s.n. (BOL!)

Mesembryanthemum peacockiae L. Bol., Ann. Bol. Herb. 3 : 71 (1921)

Syntypes: as above

M. lunulatum Berger, Engl. Bot. Jahrb. 57 : 638 (1922)

Holotype: Olifants River west of Clanwilliam, 3 September 1900, Diels 344 (B!)

L. lunulatus (Berger) L. Bol., Notes Mesembryanthemum 3 : 333 (1985);

Jacobsen, Handb. Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex. Succ. Pl. : 496 (1974)

Holotype: as above

M. rustii Berger, Engl. Bot. Jahrb. 57 : 646 (1922)

L. rustii (Berger) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen,

Handb. Sukk. Pfl. 3 : 1446 (1955); idem, Handb. Succ. Pl. 3 : 1208 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl. : 498 (1974)

Holotype: bei Riversdale, 1891 - 1893, Rust 312 (B!, holo, BOL!, iso)

M. edwardsiae L. Bol., Ann. Bol. Herb. 3 : 163 (1923)

Holotype: Olifants River Valley, G. Edwards s.n. in NBG 2600/14 (BOL!)

L. edwardsiae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1431 (1955); idem, Handb. Succ. Pl. 3 : 1197 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex. Succ. Pl. : 493 (1974)

Holotype: as above

M. henricii L. Bol., Ann. Bol. Herb. 3 : 168 (1924)

Syntypes: Koudeberg near Wuppertal, 5 October 1897; H. Bolus 9006

(BOL!); Witteberg near Matjiesfontein, August 1923,
Compton s.n. in NBG 762/23 (BOL!)

L. henricii (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1436 (1955); idem, Handb.
Succ. Pl. 3 : 1200 (1960); idem, Sukk. Lex. : 442 (1970);
idem, Lex. Succ. Pl. : 495 (1974)

Syntypes: as above

M. argenteum L. Bol., Ann. Bol. Herb. 4 : 8 (1925)

Holotype: Graafwater, June 1924, Compton s.n. in NBG 962/22 (BOL!)

L. argenteus (L. Bol.) L. Bol. Jl. S. Afr. Bot. 33 : 306 (1967);
Jacobsen, Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl.
: 491 (1974)

Holotype: as above

M. montaguense L. Bol., Ann. Bol. Herb. 4 : 9 (1925)

Holotype: Montagu Baths, August 1924, Page s.n. in BOL 17962 (BOL!)

L. montaguensis (L. Bol.) L. Bol., Jl. S. Afr. Bot. 33 : 306 (1967);
Jacobsen, Sukk. Lex. : 443 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

M. stenopetalum L. Bol., Ann. Bol. Herb. 4 : 10 (1927)

L. stenopetalum (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1448 (1955); idem, Handb.
Succ. Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446 (1970);
idem, Lex. Succ. Pl. : 499 (1974)

Holotype: Graafwater, October 1922, Peers s.n. in BOL 17830 (BOL!)

M. pauciflorum L. Bol., Ann. Bol. Herb. 4 : 90 (1927)

Holotype: Noetzie, Knysna, 24 September 1935, Phillips s.n.
in BOL 18552 (BOL, holo!, K, iso!)

L. pauciflorus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Handb.
Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex. : 446 (1970);
idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

M. rupestre L. Bol., S. Afr. Gard. Country Life 18 : 16 (1928);

idem, Notes Mesembryanthemum 1 : 134 (1928)

Holotype: Piardeberg, October 1928, Pillans s.n. in BOL 18780 (BOL!)

L. rupestris (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1446 (1955); idem, Handb.

Succ. Pl. 3 : 1208 (1960); idem, Sukk. Lex. : 445 (1970);

idem, Lex. Succ. Pl. : 498 (1974)

Holotype: as above

Mes. immelmaniae L. Bol., Notes Mesemb. 1 : 136 (1928)

Type: hort., Mrs. Immelman s.n. in BOL 18715 (BOL!)

L. immelmaniae (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1436 (1955); idem, Handb.

Succ. Pl. 3 : 1201 (1960); idem, Sukk. Lex. : 442 (1970);

idem, Lex. Succ. Pl. : 495 (1974)

Holotype: hort., Mrs. Immelman s.n. in BOL 18715 (BOL!)

M. paucifolium L. Bol., Notes Mesembryanthemum 1 : 138 (1928)

Holotype: Nieuwoudtville, 2 September 1927, Compton s.n. in
NBG 1500A/26 (BOL!)

L. paucifolius (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Handb.

Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex. : 444 (1970);

idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

Mesembryanthemum tenue L. Bol., Notes Mesembryanthemum 2 : 1 (1928);

non Haw., nec Eckl. & Zeyh.

Holotype: near Caledon, September 1926, Pillans s.n. in BOL
18844 (BOL!)

L. parvus N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb.

Sukk. Pfl. 3 : 1441 (1955); idem, Handb. Succ. Pl. 3 : 1205

(1960); idem, Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl.

: 497 (1974)

Holotype: as ~~above~~ *for M. tenue* L. Bol.

M. convexum L. Bol., Notes Mesemb. 2 : 18 (1928)

Holotype: between Tulbagh and the waterfall, September 1928,
Hutchinson 406 (BOL!)

L. convexus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1428 (1955); idem, Handb. Succ.
Pl. 3 : 1195 (1960); idem, Sukk. Lex. : 440 (1970); idem, Lex.
Succ. : Pl. : 493 (1974)

Holotype: as above

M. microstigma L. Bol., Notes Mesembryanthemum 2 : 142 (1929)

Holotype: Cape Town Wild Flower Show, 9 October 1929, Anon. s.n.
in BOL 18971 (BOL!)

L. microstigma (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1440 (1955); idem, Handb. Succ.
Pl. 3 : 1204 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex.
Succ. Pl. : 497 (1974)

Holotype: as above

M. leipoldtii L. Bol., Notes Mesemb. 2 : 156 (1930)

Holotype: road between Worcester and Villiersdorp, October -
November 1929, C.L. Leipoldt s.n. in BOL 18997 (BOL!)

L. leipoldtii (L. Bol.) L. Bol., Notes Mesemb. 3 : 169 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1437 (1955); idem, Handb. Succ.
Pl. 3 : 1202 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex.
Succ. Pl. : 496 (1974)

Holotype: as above

Mesembryanthemum aestivum L. Bol., Notes Mesembryanthemum 2 : 188 (1930)

Holotype: near Kleinmond, January 1929, Gwen Edwards s.n. in
BOL 19098 (BOL!)

Lampranthus aestivus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 168
(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1423 (1955); idem,
Handb. Succ. Pl. 3 : 1191 (1960); idem, Sukk. Lex. : 438 (1970);
idem, Lex. Succ. Pl. : 491 (1974)

Holotype: as above

M. obconicum L. Bol., Notes Mesemb. allied Gen. 2 : 220 (1930)

Type: As for L. obconicus (L. Bol.) L. Bol.

L. obconicus (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1441 (1955); idem, Handb. Succ. Pl. 3 : 1204 (1960); idem, Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Holotype: near Nieuwoudtville, September 1920, L. Bolus s.n. in BOL 19230 (BOL!)

M. hiemale L. Bol., Notes Mesembryanthemum 2 : 189 (1930)

Holotype: near the Clanwilliam - Vanrhynsdorp road, April 1929, Leipoldt s.n. in BOL 19117 (BOL!)

L. hiemalis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1436 (1955); idem, Handb. Succ. Pl. 3 : 1201 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex. Succ. Pl. : 495 (1974)

Holotype: as above

M. falcatum var. galpinii L. Bol., Notes Mesembryanthemum 2 : 234 (1931)

Holotype: near Bredasdorp, November - December 1930, Galpin s.n. in NBG 2669/30 (BOL!)

L. falcatus var. galpinii (L. Bol.) L. Bol. in Jacobsen, Feddes Rep. Beih. 106 : 87 (1938); Jacobsen, Handb. Sukk. Pfl. 3 : 1432 (1955); idem, Handb. Succ. Pl. 3 : 1198 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Holotype: as above

M. pakhuisense L. Bol., Notes Mesemb. allied Gen. 2 : 364 (1932)

Holotype: Pakhuis Pass, September - October 1932, Salter 2667 (B)L!)

L. pakhuisensis (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 169

(1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1441 (1955); idem, Handb. Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

M. tulbaghensis L. Bol., Notes Mesemb. 2 : 364 (1932), non Berger (1908)

Holotype: near the road between Tulbagh & Tulbagh Road, 17 September 1932, L. Bolus s.n. in BOL 18470

L. argillosus L. Bol., Notes Mesemb. 3 : 227 (1950); Jacobsen, Handb. Sukk. Pfl. 3 : 1424 (1955); idem, Handb. Succ. Pl. 3 : 1192 (1960); idem, Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl. : 492 (1974)

Holotype: as ~~above~~ for M. tulbaghense L. Bol.

M. recurvum L. Bol., Notes Mesembryanthemum 3 : 367 (1932), non Haw. nec Moench

Holotype: between Tulbagh and Tulbagh Road, L. Bolus s.n. in BOL 20166

L. recurvus Schwant., Nat. Cact. Succ. Jl. 4 : 58 (1949); Jacobsen, Handb. Sukk. Pfl. 3 : 1445 (1955); idem, Handb. Succ. Pl. 3 : 1207 (1960); idem, Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl. 498 (1974)

Holotype: as ~~above~~ for M. recurvum L. Bol.

L. bolusiae Schwant., Feddes Repertorium 43 : 228 (1938)

Holotype: as ~~above~~ for M. recurvum L. Bol.

M. laxum L. Bol., Notes Mesembryanthemum 2 : 406 (1933), non Willd.

Holotype: ? near Nieuwoudtville, September 1933, L. Bolus s.n. in BOL 20165 (BOL!, holo!, K, iso!)

L. sublaxus L. Bol., Notes Mesembryanthemum 3 : 169 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1449 (1955); idem, Handb. Succ. Pl. 3 : 1211 (1960); idem, Sukk. Lex. : 446 (1970); idem, Lex. Succ. Pl. : 500 (1974)

Holotype: as ~~above~~ for M. laxum L. Bol.

M. capornii forma fera L. Bol., Notes Mesembryanthemum 2 : 405 (1933)

Holotype: near the road between Pakhuis Pass & Oumuur, September 1933, L. Bolus s.n. in BOL 20746A

M. capornii L. Bol. var. longifolium L. Bol., Notes Mesembryanthemum 2 : 405 - 406 (1933)

Holotype: near Klaver, August 1932, L. Bolus s.n. in NBG 1947/32

M. nardouwense L. Bol., Notes Mesembryanthemum 2 : 407 (1933)

Holotype: Nardouw Pass, 5 miles from the Clanwilliam - Klaver Road, 5 August 1933, Salter 3531 (BOL!)

L. nardouwensis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1440 (1955); idem,
Handb. Succ. Pl. 3 : 1204 (1960); idem, Sukk. Lex. : 443 (1970);
idem, Lex. Succ. Pl. : 497 (1974)

Holotype: as above

M. prominulum L. Bol., Notes Mesemb. allied Gen. 2 : 408 (1933)

Holotype: ? near G orge, September 1933, Anon. s.n. in BOL 20825

L. prominulus (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 169

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1444 (1955); idem,
Handb. Succ. Pl. 3 : 1207 (1960); idem, Sukk. Lec. : 445 (1970);
Lex. Succ. Pl. : 498 (1974)

Holotype: as above

M. austricolum L. Bol., Notes Mesemb. allied Gen. 2 : 453 (1934)

Type: As for L. austricolum (L. Bol.) L. Bol.

L. austricolum (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 168

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1425 (1955); idem,
Handb. Succ. Pl. 3 : 1193 (1960); idem, Sukk. Lex. : 439
(1970); idem, Lex. Succ. Pl. : 492 (1974)

Holotype: between Smitswinkel and Olifantsbos, January 1934,
Salter 4264 (BOL!)

M. villiersii L. Bol., Notes Mesembryanthemum 2 : 489 (1935)

Holotype: Belgravia, in dit. Villiersdorp, 5 November 1934,
H.L. de Villiers s.n. in NBG 2547/32 (BOL!)

L. villiersii L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1451 (1955); idem, Handb.
Succ. Pl. 3 : 1213 (1960); idem, Sukk. Lex. : 447 (1970);
idem, Lex. Succ. Pl. : 501 (1974)

Holotype: as above

M. lewisiae L. Bol., Notes Mesembryanthemum 3 : 54 (1937)

Holotype: top of Gydo Pass, 27 September 1936, G.J. Lewis
s.n. in BOL 21820 (BOL!)

L. lewisiae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1438 (1955); idem, Handb. Succ.

Pl. 3 : 1202 (1960); idem, Sukk. Lex. : 442 (1970); idem, Lex.
Succ. Pl. : 496 (1974)

Holotype: as above

M. liberale L. Bol., Notes Mesembryanthemum 3 : 128 (1938)

Holotype: locus ignotus, no date, Anon. s.n. in BOL 21843 (BOL!)

L. liberalis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1438 (1955); idem, Handb. Succ.

Pl. 3 : 1202 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex.

Succ. Pl. : 496 (1974)

Holotype: as above

L. macrostigma L. Bol., Notes Mesembryanthemum 3 : 274 (1954);

Jacobsen, Handb. Sukk. Pfl. 3 : 1439 (1955); idem, Handb.

Succ. Pl. 3 : 1203 (1960); idem, Sukk. Lex. : 443 (1970);

idem, Lex. Succ. Pl. : 496 (1974)

Holotype: Driehoek Valley, Cedarberg, December 1950,

E. Esterhuysen 18608 (BOL!)

L. creber L. Bol., Notes Mesemb. allied Gen. 3 : 332 (1958); Jacob-

sen, Handb. Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex. :

440 (1970); idem, Lex. Succ. Pl. : 493 (1974)

Holotype: 20 miles from Albertina towards Mossel Bay, 28 July 1955;

R. du Plessis 15 (BOL!)

L. sparsiflorus L. Bol., Notes Mesemb. allied Gen. 3 : 332 (1958)

Holotype: Plettenberg Bay, 28 February 1955, E. Esterhuysen

24218 (BOL!)

L. intervallaris L. Bol., Jl. S. Afr. Bot. 26 : 160 (1960); Jacobsen,

Sukk. Lex. : 442 (1970); idem, Lex. Succ. Pl. : 495 (1974)

Holotype: 10 miles south of Clanwilliam, August 1959, H. Hall

1785 (BOL!)

L. microsepalus L. Bol., Jl. S. Afr. Bot. 27 : 261 (1961); Jacobsen,

Sukk. Lex. : 443 (1970); idem, Lex. Succ. Pl. : 496 - 7 (1974)

Holotype: Kleinberg near Tulbagh, July 1928, A.V. Duthie s.n.

in SUG 1410 (BOL!)

L. pleniflorus L. Bol., Jl. S. Afr. Bot. 28 : 293 (1962); Jacobsen,
Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 498 (1974)
Holotype: De Doorns, June - July 1962, Van Breda 1710/62 (BOL!)

L. neostayneri L. Bol., Jl. S. Afr. Bot. 27 : 58 (1961); Jacobsen,
Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 497 (1974)
Holotype: between Porterville and Twenty-four Rivers, 30 August
1945; L. Bolus s.n. in BOL 26980

L. littlewoodii L. Bol., Jl. S. Afr. Bot. 27 : 114 (1961); Jacobsen,
Sukk. Lex. : 443 (1970); idem, Lex. Succ. Pl. : 496 (1974)
Holotype: 2 miles north of Khamieskroon, November 1960, Littlewood
s.n. in KG 581/59

L. paarlensis L. Bol., Jl. S. Afr. Bot. 27 : 261 (1961); Jacobsen,
Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 497 (1974)
Holotype: Daljosafat, August 1937, A.J. Middlemost s.n. in
NBG 1360/37

L. proximus L. Bol., Jl. S. Afr. Bot. 32 : 127 (1966); Jacobsen,
Sukk. Lex. : 445 (1970); idem, Lex. Succ. Pl. : 498 (1974)
Holotype: Fisantekraal, near the Klapmuis turnoff to Agter-
Paarl, Sept. 1965, Nel s.n. in BOL 27738

L. tenuis L. Bol., Jl. S. Afr. Bot. 35 : 144 (1969); Jacobsen, Sukk.
Lex. : 446 (1970); idem, Lex. Succ. Pl. : 500 (1974)
Holotype: Kenilworth Race Course, September 1968, E. Esterhuysen
32044 (BOL!)

PRE-LINNAEAN CITATIONS:

Mesembryanthemum purpureum scabrum, staminibus expansis Dill., Hort.
Elth. 259 t.197 f.250 (1732)

Chrysanthemo similis aizoides Africana minor, triangulari folio, flore
purpureo Breyn., Prodr. 1 : 26 (1680)

Mesembryanthemum Africanum frutescens minus, partim procumbens, partim
erectum, triangulari folio glauco tenuiore, flore purpureo
amaranthino majore Breyn., Prodr. 2 : 68 (1689)

Ficoides Africana minor procumbens, folio triangulari glauco Volck.,
Fl. Noriberg. : 165 (1700)

Ficoides capensis, triangulari folio acuto, flore purpureo Pétiver,
Gazophylacium t.77 f.3 (1709)

Ficoides seu Ficus aizoides Africana arborescens, folio viridi longo,
triangulari aspero Boerh., Ind. Pl. Hort. Lugd. Bat. 123 n. 9
(1710)

Ficoides seu Ficus aizoides Africana frutescens, folio glauco parvo,
flore violaceo Boerh., Ind. Alt. : 290 n. 8 (1710)

Ficoides Afra, folio triangulari brevissimo, flore dilute purpura=
scente, filamentoso Boerh., Ind. alter Hort. Lugd. Bat. : 190
n. 19 (1720)

Ficoides Afra fruticans, folio triangulari scabro tenui, flore
violaceo, Boerh., Ind. Alt. 290 n. 23 (1720)

Ficoides Afra folio triangulari viridi longo aspero, flore violaceo
Boerh., Ind. alter Pl. Hort. Lugd. Bat. 290 n. 29 (1720)

Ficoides Afra, folio triangulari ensiforme brevissimo, flore dilute
purpurascente filamentoso Bradley, Hist. Plant. Succ. 5 : 9
t.42 (1727)

Mesembryanthemum purpureum scabrum, staminibus confertis Dill., Hort.
Eltham. : 259 t.197 f.250 (1732)

Mesembryanthemum falcatum minus, flore carneo minore Dill., Hort.
Elth. 287 t.213 f.274 (1732)

Mesembryanthemum flacatum minimum, flore purpurso parvo Dill., Hort.
Eltham., : 288 t.213 f.275, 276 (1732)

Mesembryanthemum foliis subulatis subtus undique scabris Linn., Hort.
Cliff. : 219 (1737); idem, Hort. Ups. : 129 (1745)

Mesembryanthemum foliis acinaciformibus distinctis laevibus, ramis

teretibus Linn., Hort. Cliff. : 219 (1738); Royen., Hort. Lugd.
Bat. : 285 (1740)

Succulent shrublets, ca. 25 cm. high and 30 cm. in diameter. Inter=
nodes smooth, russet, ca. 18 mm long and 1,5 mm in diameter in the
first two years of growth. Leaves semiterete to sharply triquetrous,
sometimes falcate, glaucous - green to grey, 3 - 11,5 - 28 mm long,
0,5 - 1,5 - 5 mm wide and 0,5 - 1,5 - 5 mm deep; hardly sheathing
the stem; apices sometimes recurved. Flowers usually in threes,
pedicels ca. 25 mm long and 1 mm in diameter; flowers usually white
to magenta, ca. 24 mm in diameter. Bracts up to 21,5 mm long and
3 mm wide, sepals 5, ca. 11 mm long and up to 6 mm wide, the inner
3 with membranous margins, up to 10 mm long and 4,5 mm wide; petals
(petaloid staminodes) ca. 20 - 100 in 1 - 4 series, 4 - 10,5 - 23
mm long, up to 2,5 mm wide; non-petaloid staminodes absent or few
to many, white, ca. 1 - 3 - 6 mm long, sharply differentiated from
the petaloid staminodes. Stamens few to many, filaments white, ca.
0,5 - 2,7 - 4,5 mm long, anthers yellow; stigmas 5, 0,5 - 2 - 4 mm
long, acuminate. Capsule 5 - locular, ca. 6,5 mm in diameter and
5,5 mm deep, woody, pale to charcoal grey, valves sometimes inconspi-
cuously ridged, valve-wings ca. 2,5 mm long and up to 1 mm wide,
separate from the valve for most of their length; placental tubercle
absent; covering membranes present, covering most of the surface of
each locule. Seeds maroon to charcoal grey, ca. 0,74 - 0,93 - 1,18
mm long, 0,59 - 0,72 - 0,91 mm wide and 0,40 - 0,53 - 0,66 mm deep,
funicles ca. 0,21 - 0,31 - 0,44 mm long, surface baculate, baculae
ca. 21 μ long, 85 μ in diameter; microbaculae usually present, ca.
0,5 μ long and 0,47 μ in diameter. Chromosome number $2n = 18$ (Sugaira
1931, 1936a, b). Flowering season: 79% of specimens seen were in
flower between August and December.

SPECIMENS SEEN:

CAPE 3017 (-BB) 2 miles north of Khamieskroon, November 1960,
Littlewood s.n. in KG 581/59 (BOL!)

(---) Road between Clanwilliam and Van Rhynsdorp, April 1929,
Leipoldt s.n. in BOL 19117 (BOL!)

3118 (-BC) Zandkraal, Van Rhynsdorp, September 1948, Acocks
14823 (BOL!)

- (-DC) de Hangen, 27 September 1969, E. Esterhuysen 32248 (BOL!); Giftberg Plateau, September 1948, Acocks 14900 (BOL!)
- Nardouw Pass, August 1949, Stokoe s.n. in SAM 67931 (SAM!)
- (-DD) Nardouw Pass, September 1937, Lewis s.n. (BOL!)
- (-DC) Olifants River at Klawer, August 1932, L. Bolus s.n. in NBG 1947/32 (BOL!)
- 3119 (-AC) Oorlogskloof, September 1930, L. Bolus s.n. in BOL 19337 (BOL!)
- near Nieuwoudtville, September 1933, L. Bolus s.n. in BOL 20165 (BOL!, K!,)
- near Nieuwoudtville, 2 September 1927, Compton s.n. in NBG 1509A/26 (BOL!); 3 miles west of Nieuwoudtville, 30 July 1943, Lewis 4292 (SAM!); between Oorlogskloof & Papkuilsfontein, September 1939, Leipoldt s.n. (BOL!); between Nieuwoudtville and Keyzersfontein, September 1930, L. Bolus s.n. in BOL 19230 (BOL!, ~~1016 of 1934~~); Nieuwoudtville, September 1930, L. Bolus s.n. (BOL!)
- 3217 (-DD) Slopes south of Vredenburg, 5 September 1928, Hutchinson 252 (BOL!, PRE!)
- near Vredenburg, 2 September 1944, Leighton 945 (BOL!)
- 3218 (---) Olifants River Valley, September 1908, Pillans 1493 (BOL!)
- (-AB) near Lambert's Bay, September 1934, Lavis s.n. in BOL 21539 (BOL!); 10 miles from Lambert's Bay towards Graafwater, 13 September 1934, Lavis s.n. (BOL!)
- (-AD) 2,5 miles south-east of Redelinghuys, September 1935, Pillans 7717 (BOL!)
- (-B-) Cedarberg, November 1913, Pattison s.n. in BOL 24583 (BOL!)
- Olifants River west of Clanwilliam, 3 September 1900, Diels 344 (B!); Clanwilliam division, 23 August 1945, L. Bolus s.n. (BOL!)
- (-BA) between Graafwater and Lamberts Bay, 26 August 1945,

- 26 August 1945, L. Bolus s.n. (BOL!); Graafwater, June 1924, Compton s.n. in NBG 962/22 (BOL!, holo. of syn.); Graafwater, June 1924, Peers s.n. in NBG 1062/23 (BOL!)
- Graafwater, October 1922, Peers s.n. in BOL 17830 (BOL!)
- (-BB) 5 miles from Clanwilliam towards Graafwater, 28 June 1932, Lavis s.n. in NBG 1231/32 (BOL!); between Pakhuis and Nardouw, 31 August 1937, L. Bolus s.n. (BOL!); ca. 5 miles from the Clanwilliam - Klawer road at Nardouw, 5 August 1933, Salter 3531 (BOL!)
- Clanwilliam Road, July - August 1930, le Roux s.n. in NBG 1090/25 (BOL!)
- Pakhuis Pass, 7 September 1933, Salter 3638 (BM!); Pakhuis Pass, September 1938, L. Bolus s.n. (K!)
- (-BC) Brakfontein, Clanwilliam, June, Ecklon & Zeyher 2021 (SAM!)
- (-BD) 10 miles south of Clanwilliam, August 1959, H. Hall 1785 (BOL!)
- between Citrusdal and Clanwilliam, 24 August 1932, L. Bolus s.n. in BOL 20299 (BOL!)
- Elandskloof, Clanwilliam Division, December 1940, E. Esterhuysen 3897 (BOL!)
- (-CB) Driehoek Valley, December 1950, E. Esterhuysen 18608 (BOL!)
- (-CC) Steenberg Cove, July 1925, Mathews s.n. in NBG 1676/23 (BOL!)
- Berg River near Piquetberg, September 1894, Schlechter s.n. (GRA!)
- (-CD) hills near Berg River, Piquetberg, 10 October 1894, Schlechter 5268 (BOL!, G!)
- (-DA) Hét Kruis, Piquetberg, September 1912, Stephens & Glover 8769 (BOL!); Kapteinskloof, 5 September 1955, R. du Plessis 141 (BOL!)
- (-DB) Boontjies Kloof north of Pakhuis Pass, September 1969, E. Esterhuysen 32241 (BOL!)
- Slopes of Piekeniers Pass, November 1910, Pearson s.n. in Percy Sladen Memorial Expedition 5181 (BOL!)
- Grey's Pass, August 1945, L. Bolus s.n. (BOL!)
- (-DC) Berg River, 10 September 1894, Schlechter 5268 (K!)
- Piquetberg mountain, October 1892, H. Bolus 13553 (BOL!)

near Piquetberg, September 1932, Leighton s.n. in
BOL 20182 (BOL!)

- 3219 (-AA) Pakhuis Pass, September 1951, Middlemost s.n. in
NBG s.n. (BOL!); Pakhuis Pass, September 1938, Salter
7501 (BOL!); top of Pakhuis Pass, September 1947,
L. Bolus s.n. in BOL 23683 (BOL!); Pakhuis Pass,
September - October 1932, Salter 1667 (BOL!);
near Clanwilliam, July 1898, Leipoldt 1872 (SAM!);
Krakadouwpoort, Cedarberg, 16 January 1977, Haynes
1257 (JF!)
- Pakhuis, 2 September 1933, L. Bolus s.n. in BOL 21007
(BOL!); near the road between Pakhuis and Oumuur.
September 1933, L. Bolus s.n. in BOL 20746A (BOL!);
Diamond Drift, between Pakhuis and Wupperthal
August 1939, Leipoldt s.n. (BOL!)
- (-AC) Wupperthal, August 1959, H. Hall 1802 (BOL!);
Top of Middelburg, Cedarberg, no date, E. Esterhuysen
s.n. in NBG 1295/37 (BOL!);
Koudeberg near Wupperthal, 5 October 1897, H. Bolus
9006 (BOL!)
- (-CA) Modderfontein, Clanwilliam, 26 October 1936, Mathews
s.n. in NBG 2702/34 (BOL!);
Modderfontein, 1 September 1930, L. Bolus s.n. in
BOL 19294 (BOL!); Modderfontein, June 1933, L. Bolus
s.n. in BOL 21043 (BOL!); Clanwilliam Warmbaths, no
date, Edwards s.n. in NBG 2600/14 (BOL!, K!);
Olifants River Valley opposite Warmbaths, 26 September
1911, Stephens s.n. in Percy Sladen Memorial Expedition
7324 (BOL!)
- (-DC) East of Swartruggens above Skitterykloof, 24 September
1975, Wisura 3522 (BOL!)
- 3225 (-BA) Cradock, 1861, Coper 2372 (K!, E!)
- 3118 (-AA) Olifants Kop between Langebaan and Malmesbury, June
1927, Mathews s.n. in NBG 1739/23 (BOL!)
- (-AB) between Hopefield & Langebaan, October 1932, Lavis
s.n. in NBG 3000/32 (BOL!);
between Hopefield & Langebaan, October 1932, Lavis

- s.n. in BOL 25277 (BOL!); between Porterville & Twenty-four Rivers, August 1960, Stayner s.n. in KG 568/60 (BOL!)
- (-AD) between Mamre & Darling, August 1932, L. Bolus s.n. (BOL!); June 1932, between Mamre & Darling, Barker s.n. in NBG 1020/32 (BOL!); South of the Contourberg September 1933, Pillans 6922 (BOL!); near Darling, September 1905, H. Bolus 12690 (BOL!); between Mamre & Darling, 4 August 1940, L. Bolus s.n. (BOL!) Oudekraal, Darling, 2 October 1971, Axelson 523 (NBG!) SW base of the Contreberg, September 1933, Pillans 6889 (BOL!); Darling, September 1918, Peacock s.n. in NBG 1689/17 (BOL!, K!)
- (-BA) between Porterville and Twenty-four Rivers, 30 August 1945, L. Bolus s.n. in BOL 26980 (BOL!) 20 miles from Piquetberg towards Moorreesburg, 25 August 1932, L. Bolus s.n. in BOL 19549 (BOL!)
- (-BB) At the Saron turnoff from the road between Porterville and Gouda, July - August 1937, E. Esterhuysen s.n. in NBG 1311/37 (BOL!)
- (-BC) near Malmesbury, October 1935, L. Bolus s.n. (BOL!) between Kalbaskraal and Malmesbury, 4 September 1928, Hutchinson 197 (K!) Dassenberg, 18 December 1946, Herre s.n. in SUG 11486 (BOL!) near road between Malmesbury and Moorreesburg, 24 August 1932, L. Bolus s.n. in BOL 23693 (BOL!)
- (-BD) between Riebeeck-Kasteel & Malmesbury, September 1939, L. Bolus s.n. (BOL!); at the junction of the Cape Town - Malmesbury and Hopefieldt roads, 27 August 1969, E. Esterhuysen 32168 (BOL!)
- (-CA) between Mamre and Darling, 4 August 1940, L. Bolus s.n. in (BOL!)
- (-CB) 4 miles from Malmesbury towards Darling, 6 October 1926, Arbuthnot s.n. (BOL!) Melkbosstrand, 1 September 1926, L. Bolus s.n. in BOL 18580 (BOL!); Melkbosstrand 16 October 1931, Barker 55 (K!) Melkbosstrand, 30 October 1950, H. Hall s.n. in

NBG 1368/50 (BOL!)

- (-CD) Lion's Rump, October 1903, H. Bolus 9324 (BOL!);
Lion's back, August 1938, Salter s.n. (BOL!); Sea
Point, 29 August 1897, Wolley Dod 2863 (BOL!);
About Observatory Ranger, 26 August 1896, Wolley Dod
1439 (BOL!, K!); Signal Hill, September 1915, Dawson
s.n. (BOL!); near Blockhouse (Devil's Peak), August
1897, Wolley Dod 2896 (BOL!, K!); behind Lion Battery,
October 1897, Wolley Dod 3420 (BOL!); Milnerton,
September 1927, L. Bolus s.n. in BOL 20161 (BOL!);
Table Mountain, November, Zeyher s.n. (SAM!); east
side of Table Mountain, August - September, Ecklon
& Zeyher 1055 (G!, GRA!, TCD!); side of Lion's
Mountain, no date, Ecklon 216 (B!); Kapstadt, 6 - 12
November 1898, Deutsche Tiefsee-Expedition Apstein
6 (HBG!); Tafelberg, February 1891, Kassner 103
(HBG!); Lions Mountain, October 1828, Ecklon 512
(S!); Table Mountain, no date, Pappe s.n. (S!);
Lions Head, 1923, anon. s.n. in NBG 2476/23 (K!);
south slopes of Signal Hill above fort, 3 October
1927, Lavis s.n. in BOL 20162 (BOL!);
Cape Flats, August 1876, H. Bolus 3924 (BOL!); Kloof,
West slopes near Lions Head, 13 November 1897, Wolley
Dod 3660 (BM!, BOL!, U!); Table Mountain, November,
Zeyher s.n. (SAM!); Table Mountain, October, Ecklon
& Zeyher 2053 Ecklon 518 (M!, SAM!); Sea Point,
October, Zeyher s.n. (SAM!); Sea Point Lion's Head,
November 1828, Ecklon s.n. (B!, S!); Kirstenbosch
roadside, 26 November 1937, Wall 3144 (S!); slopes
above Contour Path, January 1927, Young 26522 (PRE!);
Above Camps Bay, MacOwan s.n. in Herb. Austro-Africanum
1744 (BM!, G!, K!); Table Mountain, 28 August 1825,
Ecklon s.n. (S!); West slopes of Lion's Head, 26
September 1896, Wolley Dod 1623 (K!); Sea Point,
November, Ecklon 27 (TCD!); Table Mt. & Devil's Peak
(IIIDb6), October 1839, Drège 6998 (PRE!, K!, TCD!);
Kenilworth Race Course, September 1968, E. Esterhuysen
21044 (BOL!); Kenilworth Race Course, 29 August 1968,
E. Esterhuysen 31980 (BOL!); Lion's Head above Sea
Point, December 1927, Lavis s.n. in BOL 18772 (BOL!);

Camp's Bay, November 1922, Page s.n. in BOL 17302 (BOL!); Above Tamboerskloof, November - December 1938, Levys s.n. (BOL!); South slopes of Signal Hill, November 1927, Lavis s.n. (BOL!); lower slopes of Devil's Peak, December 1895, Guthrie sub H. Bolus 7977 (BOL!); Table Mountain, January 1918, Moss 2920 (J!); Kloof Nek, 3 December 1921, Moss 5779 (BM!, J!); Table Mountain, 1922, Moss 7715 (BM!, J!); Kloof Nek, 1921, Moss 5740 (J!); Lower Blinkwater Ravine, Camps Bay, December 1956, Cassidy 121 (NBG!); Leeuwenberg, October, Ecklon & Zeyher 2039 (= Ecklon 512) (GRA!, M!); Table & Lion Mountains, July, Ecklon s.n. (GRA!); Lion's Rump, October 1893, H. Bolus 9324 (GRA!); Cape Town, 1908, Rogers 3011 (GRA!); Wynberg Hill and Table Mountain, March, Ecklon & Zeyher 2057 (M!); Upper slopes of Lion's Head, 29 November 1919, Pillans 4150 (K!); East of Lion's Rump, 17 September 1920, Pillans 4146 (K!); Sea Point, 26 August 1897, Wolley Dod 2865 (K!); near the Blockhouse, 22 August 1897, Wolley Dod 2896 (BM!); Sides of Table Mountain, November, Ecklon 26 (TCD!); above Camps Bay, January 1946, E. Esterhuysen 12537 (BOL!); above Bakoven, December 1942, Goulimis s.n. (BOL!); south slopes of Signal Hill, 3 October 1927, M. Lavis s.n. (BOL!); Milnerton, August 1927, L. Bolus s.n. (BOL!); Raapenburg, September 1890, F. Guthrie sub H. Bolus 7091 (BOL!); Bloubergstrand, October 1950, L. Bolus s.n. (BOL!); lower east slopes of Table Mountain near Platteklip Gorge, 30 January 1949, E. Esterhuysen 15142 (BOL!); between Killarney Hotel & Bloubergstrand, 29 December 1926, Arbuthnot s.n. (BOL!); near Kenilworth, October 1899, H. Bolus 8022 (PRE!); Table Mountain, November 1890, Scott Elliot 159 (K!); Vaarsche vley, 2 October 1897, Wolley Dod 3124 (K!); Peaks near Cape, December, Zeyher s.n. (SAM!); North slopes of Table Mountain, November, Ecklon and Zeyher 2054 (= Ecklon 514) (M!); Devil's Peak, November, Ecklon 515 (M!); West slopes of Table Mountain, November, Ecklon 517 (M!); West slopes of Table Mountain, December, Ecklon and Zeyher 2052 (M!);

- Table Mountain, 15 December 1922, Moss 7712 (J!, BM!); Kloof, Cape Peninsula, November 1903, Marloth 3315 (PRE!); Table Mountain, 6 December 1922, Moss 7722 (BM!);
- (-CD) foot of Lion's Head, Sea Point, August 1920, L. Guthrie s.n. (BOL!); Cape Levels near Mowbray, July 1925, Moss 11571 (BOL!); Sea Point, 8 August 1896, Wolley Dod 1468 (BOL!)
- (-DA) Kalbaskraal, September 1905, H. Bolus 12688 (BOL!) near Kalbaskraal, L. Bolus s.n. in BOL 15192 (BOL!) Kalbaskraal, June 1925, Mathews s.n. in NBG 1620/24 (BOL!)
- (-DA) 12 miles from Malmesbury towards Cape Town, 27 August 1969, E. Esterhuysen 32623 (BOL!) near Kalbas Kraal, August 1942, L. Bolus s.n. in BOL 22749 (BOL!)
- 1 miles west of Kalbaskraal, December 1934, Carter s.n. in BOL 21536 (BOL!); between Abbotsdale & Kalbas= kraal, 6 October 1926, Arbuthnot s.n. in BOL 18583 (BOL!); between Kalbaskraal and Malmesbury, 4 September 1928, Hutchinson 197 (BOL!, PRE!)
- (-DB) Daljosaphat, Paarl, August 1937, Middlemost s.n. in NBG 1360/37 (BOL!); between Wellington & Hermon, September 1932, L. Bolus s.n. in BOL 20163 (BOL!); near Wellington, 5 August 1929, Grant 5060 (BOL!); Wellington, August 1926, Grant 2398 (BOL!); Wellington, September 1918, Moss 2932 (J!); Paardeberg, October 1928, Pillans s.n. in BOL 18780 (BOL!, PRE!); Paardeberg, November 1950, H. Hall s.n. (BOL!)
- Paardeberg, July 1926, Pillans s.n. (BOL!); Paarde= berg, August 1933, Leighton s.n. in BOL 20740 (BOL!)
- (-DC) Fisantekraal near Klapmuts, September 1965, Nel s.n. in BOL 27738 (BOL!); on the road to Tygerberg, November - December 1931, Barker s.n. in BOL 20148 (BOL!); Kraaifontein, December 1923, Young 200 (PRE!) at the Darling turnoff on the Cape Town - Malmesbury road, 4 August 1946, Leighton 1756 (BOL!); Rondevlei, 1828, Delessert s.n. (G!)
- Cape Flats, November 1901, Leipoldt s.n. (BOL!)

between Stellenbosch and Cape Town, 2 November 1927, L. Bolus s.n. (BOL!); C.B.S., dry plains, October - November, Niven 100 (BM!)

- (-DD) Stellenbosch, November, 1916, Duthie 181 (BOL!); foot of Stellenboschberg, 1963, Bos 134 (PRE!); near Stellenbosch, no date, L. Bolus s.n. in BOL 19950 (K!) Jonkershoek Forest Reserve, 2 November 1936, Wicht 432 (JF!); Langrivier, Jonkershoek, 15 July 1965, Kerfoot 5125, 5270 (JF!) on the road to Stellenbosch, September 1935, Lavis s.n. (BOL!); Simonsberg, Stellenbosch, 3 September 1946, anon. s.n. in SUG 11583 (BOL!) near Stellenbosch, September 1931, L. Bolus s.n. in BOL 19950 (BOL!) Jonkershoek, 6 May 1964, Taylor 5771 (PRE!)

3319 (---) Worcester division, 1859, Cooper 1674 (TCD!)

- (-AA) between Porterville and Twenty-Four Rivers, August 1945, E. Esterhuysen s.n. (K!) Twenty-four Rivers, 30 August 1945, L. Bolus s.n. (BOL!); near Saron, July 1938, Martin s.n. in NBG 1131/37 (BOL!)

- (-AB) Gydo Pass, 22 December 1937, Wall 18 (S!) Koude Bockeveld, 8 September 1896, Schlechter 8906 (K!, BOL!) Top of Gydo Pass, 27 September 1936, Lewis s.n. (BOL!, holo. of syn!)

- (-AC) near Tulbagh, September 1919, L. Bolus s.n. in NBG 1659/17 (BM!, BOL!); Kleinberg near Tulbagh, July 1928, Duthie s.n. in SUG 1410 (BOL!) Tulbagh, July 1916, Rogers s.n. (BOL!); Tulbagh, July 1923, Bolus Expedition s.n. in NBG 1934/17 (BOL!); Tulbagh Kloof, 17 September 1932, L. Bolus s.n. in BOL 20160 (BOL!) Tulbagh Road, August 1948, Herre s.n. in SUG 11655 (BOL!); 4 miles East of Tulbagh, 30 August 1958, H. Hall 1430 (NBG 400/58) (BOL!); 1,5 miles south-west of Tulbagh, September 1926, Pillans s.n. in BOL 18470A (BOL!); near the road between Tulbagh & Tulbagh Road, 17 September 1932, L. Bolus s.n. in

BOL 18470 (BOL!); Tulbagh Waterfall, 10 November 1896, Schlechter 9052 (B!, BM!, E!, G!, PRE!, GRA!, S!); Tulbagh Waterfall, December, Zeyher s.n. (SAM!); Tulbagh Waterfall, November - December, Ecklon & Zeyher 2056 (B!, G!, M!, OXF!, S!, TCD!); 1 miles southwest of Tulbagh, September 1926, Pillans s.n. in BOL 18470 (BOL!); between Tulbagh and Tulbagh Waterfall, September 1928, Hutchinson 406 (BOL!); lower slopes of the Vogel Vlei Mountain near Gouda, 9 September 1951, E. Esterhuysen 18783 (BOL!); near Tulbagh Waterfall, November - December, Zeyher s.n. (SAM!); Tulbagh, November, Ecklon 213 (B!); Tulbagh Waterfall, November 1879, H. Bolus 5051 (K!); Tulbagh, 15 August 1928, Hutchinson 377 (BOL!, PRE!)
Seven Fountains, Tulbagh, February 1896, MacOwan 3053 HAA 1871 (SAM!); Nuwekloof, Tulbagh, February 1896, MacOwan 3052 (SAM!, BM!); probably Tulbagh, January 1929, Pillans s.n. (BOL!)

- (-AD) Mitchells Pass, September 1896, Schlechter 8960 (BOL!); 6 miles west of N9 on the road to Ceres, 4 September 1960, Littlewood s.n. in KG 678/60 (BOL!); Ezelsfontein, foot of Milner Peak, 1 September 1952, E. Esterhuysen 20330 (K!)
- (-BC) near De Doorns, January 1908, H. Bolus 13114 (BOL!); Orchard, 2 September 1927, Haynes s.n. in NBG 591/26 (BOL!); Orchard, no date, Rogers 16421 (BOL!); Karoopoort, August 1932, Ross Frames s.n. in BOL 19550 (BOL!); Karoopoort, 30 July 1950, H. Hall s.n. (BOL!); Karoopoort, 31 May 1948, H. Hall s.n. (BOL!); Karoopoort, July 1959, Stayner s.n. (BOL!); De Doorns, 27 June 1962, Van Breda 1710 (BOL!)
- (-BD) Kaaimgat, 20 September 1960, Stayner and Littlewood s.n. in KG 242/60 (BOL!)
- (-CA) ca. 5 miles from the entrance to Bain's Kloof towards Worcester, October 1933, Lavis s.n. in BOL 21000 (BOL!)
- (-CB) between Bain's Kloof and Worcester, 30 August 1946, Leighton s.n. (BOL!); Goudini, 1859, Cooper 2392 (K!); Fonteintjiesberg, October 1925, Stokoe s.n. (BOL!); Worcester, 1859, Cooper 2365 (K!)
- (-CB) Breede River Bridge, September 1961, Van Breda

- 1761/62 (BOL!); Worcester, September 1928, L. Verwoerd s.n. in SUG 1478 (BOL!)
- (-CC) Franschhoek, December 1933, Meebold 11964 (M!);
South of Wemmershoek, January 1921, Andreae 725 (PRE!);
French Hoek, 31 October 1913, Phillips 1130 (SAM!);
Franschhoek, November 1896, Schlechter 9241 (GRA!);
- (-CD) Jonaskop, 9 October 1921, Rourke s.n. (BOL!); between
Worcester and Villiersdorp, October - November 1929,
Leipoldt s.n. in BOL 18997 (BOL!); between Villiers=
dorp and Worcester, October 1928, Leipoldt s.n. in
BOL 20191 (BOL!); Villiersdorp, September 1924,
Compton s.n. in NBG 1202/24 (BOL!); ca. 10 miles from
Worcester towards Villiersdorp, 11 August 1975, Wisura
2445 (= NBG 541/72) (BOL!)
- 3320 (-A-) between Matjiesfontein and Karoopoort, 2 September 1928,
Pillans s.n. (BOL!)
- (-AD) 14 miles east of Touws River, 30 August 1960, Stayner
s.n. in KG 617/60 (BOL!)
- (-B-) Witteberg, Laingsburg division, October 1928, Compton
s.n. (BOL!)
- (-BA) Witteberg, near Matjiesfontein, August 1923, Compton
s.n. in NBG 762/23 (BOL!); Witteberg near Matjiesfontein,
1924, Compton s.n. in NBG 966/24 (BOL!); Witteberg
at Whitehill, October 1942, Compton 13985 (NBG!)
- (-CC) Montagu Baths, August 1924, Page s.n. in BOL 17692
(BOL!)
- Montagu, November 1921, Rogers 24618 (PRE!)
- 3321 (-AD) 6 miles east of Ladismith, 3 July 3972, 3973, 3974
(K!); Springfontein, 13 October 1927, Muir 4186 (K!);
Springfontein, December 1927, Muir 4232 (K!)
- 3322 (-AC) Zwartberg near Prince Albert, December 1905, H. Bolus
s.n. (BOL!)
- (-C-) Drinkrivier, Oudtshoorn Division, 29 July 1955, R. du
Plessis 39 (BOL!)
- (-CD) ? near George, September 1933, anon. s.n. in BOL
20825 (BOL!); $7\frac{1}{2}$ miles west of George,
4 September 1951, Acocks 16054 (BOL!)

- 3323 (-AC) Zwartberg near Uniondale, November 1870, H. Bolus 2310 (BOL!)
- 3324 (-CD) Assegaibos, October 1919, L. Britten 1241 (GRA!)
- 3325 (-CD) Uitenhage, 1860, Cooper 2363 (K!)
- (-DC) Zwartkops River, July, Ecklon & Zeyher 2036 (GRA!)
- Port Elizabeth, 9 January 1027, Lynes s.n. (BM!)
- 3325 (-CC) Thornhill, Uitenhage, October 1952, Compton 23406 (BOL!)
- 3418 (-AB) Kommetjie, November 1928, Arbuthnot s.n. (BOL!)
- Plumstead flats, 4 November 1927, Carter s.n. in BOL 23217 (BOL!); Kalk Bay hills, 28 November 1896, Wolley Dod 2116 (BOL!, K!); Vlaggeberg, 26 January 1897, Wolley Dod 2283 (BOL!, K!); under the eastern buttress of Kalk Bay Mountain, December 1923, Levyns s.n. (BOL!); Redhill, Simonstown, October 1913, Pilans 2208 (BOL!); Farmer Tucker Valley, Muizenberg, January 1897, Wolley Dod 2281 (BOL!); above Miller's Point, 30 January 1897, Wolley Dod 2275 (BOL!); Kalk Bay, 1 January 1918, Moss 2919 (BOL!); Fish Hoek & Noordhoek, January 1924, Levyns s.n. in BOL 17496 (BOL!); Noordhoek Main Road, January 1928, M. Lavis s.n. (BOL!); between Redhill & Witsands, March 1936, L. Bolus s.n. (BOL!); Fish Hoek, January 1928, M. Lavis s.n. (BOL!); Karbonkelberg, 28 November 1943, Leighton s.n. (BOL!); near Noordhoek, March 1943, Goulimis s.n. (BOL!); Redhill road to Miller's Point, January 1929, Salter s.n. (BOL!); between Slangolie & Corridor, 4 February 1945, E. Esterhuysen 11499 (BOL!); Miller's Point, December 1924, Rogers 29233 (K!); Kommetjie Road, 3 December 1927, I. de Jager s.n. (BOL!); Glencairn, February 1925, Arbuthnot s.n. (BOL!); Redhill Road, November 1929, Salter s.n. (BOL!); behind Redhill, October 1931, Barker s.n. in BOL 20147 (BOL!, K!); Boyes Drive, November 1938, Salter s.n. (BOL!); between Smitswinkel and Kommetjie 24 November 1935, E. Esterhuysen s.n. (BOL!); near

Miller's Point, September 1938, Salter s.n. (BOL!); Klaver Vlei above Simonstown, 15 November 1896, Wolley Dod 2163 (BOL!, K!); Oatlands, Simonstown, 30 January 1897, Wolley Dod 2421 (BM!, BOL!, K!); Paradise Estate, Claremont, November 1923, L. Bolus s.n. in BOL 17465 (BOL!); near Retreat Station, November 1897, Wolley Dod 3661 (BOL!, GRA!); Chapman's Peak, 7 December 1943, Compton 15439 (NBG!); Redhill, 18 August 1962, Taylor 3723 (STE!); between Camps Bay and Hout Bay, December 1927, Young 247 (PRE!); near Princess Vlei, February 1896, MacOwan s.n. in Herbarium Austro-Africanum 1612 (BM!, G!); Simon's Bay, December 1852, MacGillivray 540 (K!); Cape Peninsula, 1967, Lady Barclay 7 (K!); Muizenberg, January 1927, Lynes s.n. (BM!); Vaarsche Vley, 2 October 1896, Wolley Dod 3124 (BM!); Hout Bay Nek, 12 December 1896, Wolley Dod 1522 (BM!, BOL!)

near Hout Bay Nek, August 1938, Salter s.n. (BOL!); Redhill, 3 December 1936, Wall 18 1105/6 (S!); Kalk Bay, 1 January 1918, Moss 2919 (BM!, J!); Chapman's Peak, November 1932, Barker 100 (K!); Oudekraal, 3 November 1918, Pillans 4154 (K!); Cape Peninsula, March 1929, Salter 268/11 (BM!); Muizenberg, October 1908, Dümmer 1965 (E!); Diep River, October 1827, Verreaux s.n. (G!); Kalk Bay, January 1917, Potts 2301 (BLFU!); Muisen=berg, December 1933, Meebold 11958B (M!); Kalk Bay, December 1924, Rogers 29824 (G!); Farmer Peck's Valley, 9 January 1897, Wolley Dod 2281 (K!); Simon's Bay, 1854, Wright s.n. (K!); Cape Peninsula, 1860, Cooper s.n. (K!); Orange Kloof, 6 December 1896, Wolley Dod 2293 (BM!)

(-AD) Above Miller's Point, 30 January 1897, Wolley Dod 2275 (K!)

Cape Point, November 1927, Arbuthnot s.n. in BOL 18769 (BOL!); Cape Point, February 1925, Arbuthnot s.n. (BOL!); Cape Point, December 1933, Meebold 11967 (M!, K!); Cape Point, 8 April 1943, Leighton s.n. (BOL!); between Smitswinkel & Olifantsbos, January 1934, Salter 4264 (BOL!); North of Boon Berg, February 1934, Salter 4282 (BOL!); Smitswinkel Ridge, Salter 4308, February

1934 (BOL!); Cape Point area, January 1944, Leighton 513 (BOL!); Cape Point, January 1924, L. Solus s.n. (BOL!); near lighthouse, Cape Point, January 1924, Arbuthnot s.n. (BOL!); Beacon 14, Olifantsbos, 13 February 1970, Taylor 7651 (PRE!, STE!); Schusters River, 18 May 1965, Taylor 6290 (PRE!), STE!); upper Diaz beacon ridge, 8 December 1965, Taylor 6628 (PRE!, STE!); Smitswinkel valley south, 31 March 1966, Taylor 6784 (STE!); above Matroosklip, October - November 1965, Taylor 6554 (PRE!); Klaasjagers River Mouth, January 1929, Andreae 1166 (PRE!); near Slangkop, 10 March 1918, Pillans 3231 (K!); Scarborough, February 1973, Bates 2 (BOL!)

(-BA) between Faure & Sheikh Joseph's Tomb, 29 September 1946, Pillans s.n. (BOL!)
Hottentots Holland, August - September, Zeyher 2055 (S!); Skurfkop near Somerset West, N.S. Pillans 1423 (BOL!)

(-BB) between Somerset West and Sir Lowry's Pass, November 1930, Lavis s.n. (BOL!); near Somerset Strand, 1 December 1924, Pillans s.n. in BOL 17885 (BOL!);
between Gordon's Bay and Steenbras, November - December 1934, Giffen s.n. in NBG 538/29 (BOL!)
Strand, 1 December 1921, Duthie 1240 (PRE!)
Foot of Sir Lowry's Pass, November 1958, Barker 8807 (BOL!, NBG!)

(-BD) Betty's Bay, March - April 1971, Boucher 1481 (PRE!);
east of the Blesberg, October 1970, Boucher 1085 (PRE!); Pringle Bay, 30 January 1970, Boucher 1103 (K!, PRE!); Hangklip, no date, Pillans s.n. (BOL!)
Kogel Bay, 24 November 1961, Ihlenfeldt 1734 (M!)

3419 (-AA) Houw Hoek Pass, November 1932, Lavis s.n. (BOL!);
Dwarsberg, Jonkershoek Forest Reserve, 9 January 1973, Kerfoot 6635 (JF!); Villiers Pass, December 1924, Pillans s.n. (BOL!)
Houw Hoek, February 1896, Schlechter 7433 (BOL!)

(-AB) Caledon, September 1926, Pillans s.n. in BOL 18844 (BOL!, holo!); Caledon commonage, September 1931, Barker 35 (BOL!); Caledon, no date, Pappe s.n. (S!);
Caledon, November, Ecklon s.n. (TCD!)

- Caledon, September 1924, L. Guthrie s.n. in BOL 17881 (BOL!); between Caledon & Hermanus, 6 October 1955, R. du Plessis 166 (BOL!); Caledon div., 10 November 1936, Hafström & Lindeberg s.n. (S!); Belgravia, Villiersdorp, 5 November 1934, de Villiers NBG 1647/30 (BOL!, holo. of syn.); Caledon Zwartberg, November, Ecklon s.n. (S!); Caledon Zwartberg, no date, Pappe s.n. (S!)
- (-AC) East of Bot River Vlei, San Marina township, 9 November 1972, Wisura 2149 (= NBG 708/71) (BOL!); Hermanus, July 1921, Rogers 28699 (GRA!); Kleinmond, December 1928, Edwards s.n. in BOL 19098 (BOL!, K!); Kleinmond, January 1929, Edwards s.n. in BOL 19121 (BOL!); Hermanus, 2 December 1949, de Villiers s.n. in NBG 171/31 (BOL!); Hermanus, December 1928, Muir 4318 (BOL!); near Hermanus, December 1910, H. Bolus s.n. (BOL!); on the road to Hermanus, at the Betty's Bay turnoff, 5 February 1956, R. du Plessis 247 (BOL!); Hermanus, August 1947, Anon. s.n. in SUG 11833 (BOL!)
- (-BD) Palmiet River Mouth, 23 January 1946, E. Esterhuysen 12619 (BOL!)
- (-DB) Mierkraal, April 1897, Schlechter 10520 (PRE!); Bredasdorp, November - December 1930, Galpin s.n. in NBG 2669/30 (BOL!, K!)
- 3420 (-CA) Racecourse, Bontebok Park (Bredasdorp), 1959, Barnard 616 (PRE!); The Poort, Bredasdorp, September 1933, Leighton s.n. in BOL 21404 (BOL!); Rietfonteinpoort south of Elim, H. Bolus s.n. (BOL!)
- 3421 (-A-) Riversdale division, 1891 - 1893, Rust 312 (B!, BOL!); Riversdale division, 1912, Pillans 1933 (BOL!)
- (-AB) Oakdale near Riversdale, September 1927, Muir 4120 (K!); Oakdale, 23 September 1913, Muir 1029 (K!); Oakdale, 25 October 1926, Muir 3950 (K!); Zandfontein near Riversdale, 29 September 1913, Muir 1040 (K!); Riversdale, 2 February 1922, Rogers s.n. (K!)
- (-AC) 16 miles south of Riversdale, 5 October 1968, Acocks 24101 (K!, PRE!)

- (-BA) Albertinia, September 1947, Rodin 1340 (BOL!, K!,
PRE!); 3 miles south of N2 on the road to Gouritz=
mond, 15 September 1973, Wisura 2764 (NBG!, PRE!,
STE!)
- (-BB) 20 miles from Albertinia towards Mossel Bay, 28 July
1955, R. du Plessis 15 (BOL!)
- 3423 (-AA) Noetzie, Knysna, 24 September 1925, J. Phillips s.n.
in BOL 18552 (BOL!, K!)
- (-AB) Robberg, Plettenberg Bay, February 1959, Leighton
s.n. (BOL!); Plettenberg Bay, 28 February 1955,
E. Esterhuysen 24218 (BOL!); Plettenberg Bay,
31 October 1946, E. Esterhuysen 13279 (BOL!); Rob=
berg, 8 August 1954, Taylor 1345 (PRE!)

Without precise locality: C.B.S., no date, herb. Burmann (G!);
locality illegible, 27 October 1824,
Ecklon s.n. (S!); no locality, no date,
Guthrie 1290 (BOL!); no locality,
February 1834, Verreaux s.n. (TCD!)
C.B.S., 1852, Milne H.M.S. Herald
s.n. (K!)
(W!); C.B.S., no date, herb. Burmann
(G!); C.B.S., no date, herb. Dunant
1868 (G!); Rietkuil, October, Zeyher
2612 (S!); C.B.S., no date, herb.
Sonder s.n. (B!); Cape Town Wild Flower
Show, 9 October 1929, Anon. s.n. in BOL
18791 (BOL!, holo. of syn.!); C.B.S.,
no date, Willdenow 9763A (B-W!); C.B.S.,
no date, Blom 12 (SBT!); C.B.S., no date,
Montin s.n. in Linn. 42.26 (S!)
C.B.S., no date, Ecklon 215 (B!, GRA!)
no locality, no date, Thunberg s.n. (S!)
Botha's Halt, no date, Van Breda 22 (PRE!)
C.B.S., no date, Willdenow 9768B (B-W!)
no locality, no date, herb. Lindley s.n.
(CGE!); 14 other specimens

Garden material: Kirstenbosch, January 1919, anon. in NBG 808/17

(BOL!); Hort. Bot. München, July 1963, anon s.n.
(M!); no locality, no date, herb. Laban (HBG!);
hort. Kew, June 1887, anon. s.n. (K!); hort.
Versailles, 23 July 1837, Gay s.n. (K!); ex
Wembley Exhibition, 15 August 1925, anon s.n.
(K!); hort. La Mortola, 8 July 1912, Lady Hanbury
s.n. (BM!); hort. Eltham, no date, Dillenius
s.n. (OXF, typotype!); hort., November, Ecklon
29 (TCS!)

hort. Immelman, September 1926, anon. s.n. (BOL!,
holo. of syn.!); hort. Schönbrunn, no date,
Sonder 216 (S!); Köpenhamns Botaniske Trädgården,
no date, J.E. Wm. 1847 (S!); hort. Bot. München,
5 June 1963, anon. s.n. (M!); herb. Zuccarini,
no date (M!); hort. Leipzig, no date, herb.
Schwägrichen (M!); hort. bot. Dahlem, 1 June 1923,
Schlechter s.n. (B!); hort. Genève, no date, herb.
De Candolle (G!); hort. Kew., 20 October 1907,
N.E. Brown s.n. (K!); hort. Kew., 26 May 1905,
N.E. Brown s.n. (K!); hort. bot. Cantab.,
9 May 1825, Henslow s.n. (CGE!)

Geneva, no date, de Candolle s.n. (G!); Eltham,
no date, Dillenius s.n. (OXF!); no locality, no
date; herb. Morison (OXF!)

Hamburg, 1788, herb. Roth (B!); Berlin, 1850,
Langguth s.n. (B!); hort., no date, Steudel s.n.
(OXF!); Eltham, no date, Dillenius s.n. (OXF,
typotype!); Tabriz, Iran, May - June 1929,
Gilliat-Smith 2574 (K!); Kirstenbosch, 2 October
1937, Anon. s.n. in BOL 21843 (BOL!, holo. of
syn.!); Kew., 7 July 1887, Anon s.n. (K!, holo.
of syn.!); hort. van Royen, Leyden, no date, herb.
Daniel de la Roche (G!); Eltham, no date, Dillenius
s.n. (OXF, typo. of syn.!); 75 other specimens

This is by far the commonest species in the genus, and because of this, it has been described as new repeatedly under many different names. Most of the 105 taxa here treated as synonyms show no difference at all from one another, and as no distinguishing characters or reasons for describing the new 'species' were given in the protologues, it is

difficult to account for why all these supposed new species were described. The difference between two of the earliest synonyms, M. elegans and M. emarginatum, was only whether or not the petals were emarginate or had obtuse apices. However, in at least one contemporary plate a flower is shown with some emarginate and some obtuse petals, a situation by no means unknown in modern specimens of this species.

The Haworthian synonyms arise from a number of forms showing minute differences from typical L. scaber. M. versicolor was said to show colour-changes with time of day (this has been copied often but never confirmed independently). M. retroflexum was described as having petals slightly more reflexed than usual. In his Synopsis, Haworth (1821) states, referring to M. imbricatum "... until recently, the author has not been able to find another of the same kind, or to distinguish it from its nearest affinities. At length, however, he has found in Chelsea Garden, what is, in all probability, the very same in a young state, and its nearest affinity in flower and habit appears to be M. retroflexum." This tells us that Haworth's plant is similar to L. scaber, and indeed so much so as to be practically indistinguishable except possibly for differences due to cultivation. It says nothing about the differences if any between the two. According to Haworth M. deflexum differs from the above in having more petals (this character can vary widely in one plant), and in a few minor measurements to a small degree. M. leptaleon bears the closest resemblance to L. scaber, differing only in being slightly wirier. Similar minute differences separate M. polyanthon, M. flexile, M. polyphyllum, M. violaceum and M. emarginatum. This cluster cannot be shown to differ significantly in any way from typical L. scaber.

The pollen of 'L. brownii' can be shown to be about 99% viable, despite a chromosome count of 27 recorded for it. On examination of this count, it appears that the material used was a garden plant which appears to have changed hands at least once since being named, and which had been in cultivation for somewhat longer than the apparent lifespan of plants of Lampranthus spp. It would appear that this plant is best regarded as a colour form of L. scaber.

L. rustii is another colour form based on a white-flowered plant from Riversdale.

In the protologue of M. scabrum, Linnaeus mentions two Dillenius plates, of plants which differ only in the disposition of their stamens.

This is a character which varies with the age of the flower, so both of these plates may be considered to represent material of L. scaber. Linnaeus gives a hint of which plate is to be considered the type by a starred reference to his entry in the Hortus Upsaliensis. (Linnaeus, 1748). This note refers to only one of the Dillenuis figures, and it is this which is regarded as the iconotype of this species. The specimen from which it is drawn is housed at Oxford, and differs from the present concept only in that the leaves are rougher than those of most specimens of this species. The possibility of this being an artifact has not been excluded.

A distinct cline can be shown, starting from the slender plants of the moister parts of the south-western Cape and ending with plants of much more succulent appearance, which have been named L. henricii and L. montaguensis. As the variation along this cline is continuous, it has not been considered worthwhile to recognise subspecific taxa. If this were done, the users of the resulting classification would inevitably find that the majority of specimens collected along the cline would be intermediate between two taxa and so unnameable, regardless of how the cline is divided. All plants along the cline have the distinctive appearance of L. scaber, with slightly falcate leaves tapering slightly from the base to the apex, often with a rather rough (hence the specific name) or punctate epidermis, small pink flowers and small charcoal-grey capsules.

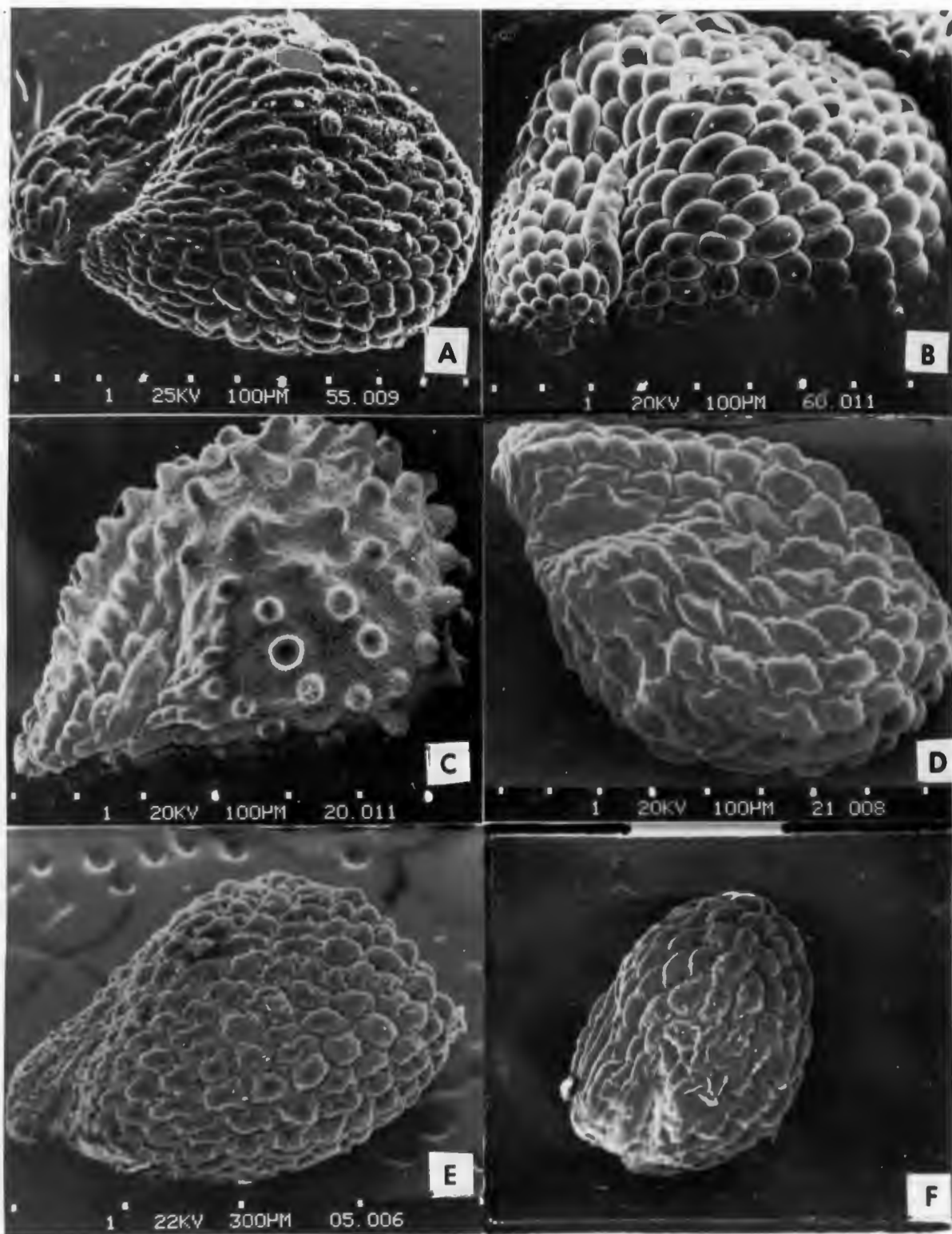


Plate 5. Seeds of Lampranthus section Scabridi. The pips below photographs A - E are 100 μ apart, and the marker above photograph F is 300 μ long. A - E were taken at the University of Cape Town, and F at the Botanical Research Institute, Pretoria.

A. *L. peersii*

B. *L. scaber*

C. *L. arbuthnotiae*

D. *L. tegens* (South African material)

E. *L. alpinus*

F. *L. tegens* (Australian material)

- 40 Lampranthus arbuthnotae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1423 (1955); idem, Handb. Succ. Pl. 3 : 1192 (1960); idem, Sukk. Lex. : 438 (1970); idem, Les. Succ. Pl. : 491 (1974)

Holotype: Wynberg Flats, August 1923, Miss I. Arbuthnot s.n. in BOL 17391 (BOL!, holo!, K!, iso!)

Mesembryanthemum arbuthnotiae L. Bol., Ann. Bol. Herb. 4 : 8 (1925)

Holotype: as above

Mat-forming succulents, ca. 3 cm. high and 50 cm. in diameter. Internodes smooth, russet, ca. 15 mm long and 1 mm in diameter in the first two years of growth. Leaves semiterete, hardly sheathing the stem, 4 - 6,5 - 11 mm long, 0,8 - 1,3 - 2,5 mm wide and 1 - 1,5 - 2,5 mm deep, flowers solitary, pedicles, ca. 8,5 mm long and 0,5 mm in diameter; flowers magenta with a central, white to very pale pink 'eye', ca. 17 mm in diameter. Bracts up to 5 mm long and 1,5 mm wide, sepals 5, ca. 5 mm long and up to 3 mm wide, the inner 3 with membranous margins, petals (petaloid staminodes) ca. 30 in 1 series, 5 - 7 - 8 mm long, up to 1 mm wide; non-petaloid staminodes, ca. 20 - 30, white, ca. 2 - 5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 25, filaments white, ca. 1,5 - 3 - 5 mm long, anthers yellow; stigmas 5, 3 - 4 - 6 mm long, 2 cuminate. Capsule 5-locular, ca. 4,5 mm in diameter and 3,5 mm deep, woody, pale grey, valve-wings ca. 1 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds rich maroon, ca. 0,59 - 0,68 - 0,74 mm long, 0,42 - 0,47 - 0,51 mm wide and 0,28 - 0,34 - 0,38 mm deep, funicles ca. 0,19 - 0,22 - 0,28 mm long, surface baculate, baculae ca. 43 μ long, 45 μ in diameter; microbaculae present, ca. 0,63 μ long and 0,72 μ in diameter. Flowering season: 100% of specimens seen were in flower between August and October.

SPECIMENS SEEN:

CAPE 3318 (-AD) near Darling, August - September 1923, Arbuthnot s.n. in BOL 17829 (BOL!)

(-CD) Lion's Head, August 1922, Marloth 11016B (PRE!)

- 3319 (-CB) Old Breede River Bridge, Worcester, August 1959,
Anon s.n. in KG 188/59 (BOL!)
- 3322 (-CD) Hettequas Kloof, September, Zeyher s.n. (SAM!)
- 3418 (-BA) Wynberg Flats, August 1923, Arbuthnot s.n. in
BOL 17397 (BOL!, K!)
- 3419 (-DB) Elim to Bredasdorp-Arniston road junction, 24 September
1976, Glen 1049 (BOL!); Vogelvlei, August-October 1933,
Lewis s.n. in BOL 21283 (BOL!, K!)
- 3420 (-CA) Bontebok Park, Bredasdorp, October 1950, Martin (NBG!)
(-CC) Cape Agulhas, no date, Salter s.n. (BOL!)

This plant is very similar to L. tegens, and may easily be confused with it. Seeds of the two species are, however, very different when examined by SEM. Those of the present species have small baculae which rise to a considerable distance from the surface of the seed, while those of L. tegens are larger in area but flatter. At a higher magnification it is seen that seeds of the present species always have microbaculae, but those of L. tegens either have small micropapillae or are completely without micro-pattern (see plate 4'). When specimens of the two species are seen together, it is noted that L. arbuthnotiae is smaller in all its parts than L. tegens, and the petals are narrower in relation to their length. These differences are constant, but may be hard to see without direct comparison of both species.

It is found on open sandy or clayey soil in the South-Western Cape Province at low altitudes, and always forms a very short turf.

- 41 Lampranthus tegens (F. von Müll.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1450 (1955); idem, Handb. Succ.
Pl. 3 : 1211 (1960); idem, Sukk. Lex. : 446 (1970); idem, Lex. Succ.
Pl. : 500 (1974)
Syntypes: Port Phillip, no date, F. von Müller s.n. in MEL
74972, 74973 (MEL!, K!, BOL (photo)!)
- Mesembryanthemum tegens F. von Müll., Fragm. Phytogr. Austral. 5 : 157
(1865 - 66); Ewart, Fl. Victoria : 480 (1930)
Syntypes: as above
- M. caespitosum L. Bol., Ann. Bol. Herb. 3 : 4 (1920)
Holotype: near Paarl, October to March 1914, Rohland s.n. in NBG
1712/14 (BOL!, holo!, K!, iso!)
- L. caespitosus (L. Bol.) N.E. Br., Gard. Chron. 87 : 211 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1426 (1955); idem, Handb., Succ. Pl. 3 :
1194 (1960); idem, Sukk. Lex. : 439 (1970); idem, Lex. Succ.
Pl. : 492 (1974)
Holotype: as above
- M. caespitosum L. Bol. forma luxurians L. Bol., Notes Mesembryanthemum
2 : 487 (1935)
Holotype: Worcester Veld Reserve, December 1934, Van Breda 197 (BOL!)
- L. caespitosus (L. Bol.) N.E. Br. forma luxurians (L. Bol.); Jacobsen,
Handb. Sukk. Pfl. 3 : 1421 (1955); idem, Handb. Succ. Pl. 3 :
1194 (1960); nom. illegit.
Holotype: as above
- L. caespitosus (L. Bol.) N.E. Br. var. luxurians (L. Bol.); Jacobsen,
in Jacobsen Volk & Herre, Mesembryanthemum : 100 (1950); idem,
Sukk. Lex. 439 (1970); idem, Lex. Succ. Pl. : 492 (1974)
Holotype: as above
- Mesembryanthemum ernestii L. Bol., Notes Mesemb. allied Gen. 2 : 327 (1932)
Holotype: near Bredasdorp, December 1930, E. E. Galpin s.n. NBG 2663/30

L. ernestii (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 168 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1432 (1955); idem, Handb. Succ.
Pl. 3 : 1198 (1960); idem, Sukk. Lex. : 441 (1970); idem, Lex.
Succ. Pl. L 494 (1974)

Holotype: as above

Mat-forming succulents, ca. 6 cm. high and 1 cm. in diameter. Internodes woody, smooth, russet, ca. 16 mm long and 1,2 mm in diameter in the first two years of growth. Leaves semiterete to triquetrous, glaucous, sheathing the stem for ca. 1 mm, 4,5 - 9,5 - 20 mm long, 1 - 1,7 - 4 mm wide and 1 - 1,7 - 4 mm deep; apices subobtuse. Flowers solitary, pedicels ca. 14 mm long and 1 mm in diameter; flowers pink to magenta, ca. 21 mm in diameter. Bracts up to 13,5 mm long and 2 mm wide, sepals 5, ca. 5,5 mm long and up to 3 mm wide, the inner three shorter, with membranous margins; petals (petaloid staminodes) ca. 15 - 5- in 2 series, 5,5 - 8 - 13 mm long, up to 2 mm wide; non-petaloid staminodes absent or up to 60, white, ca. 2,5 - 3,5 - 6 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 30 - 45, filaments white, ca. 1 - 5 mm long, anthers yellow; stigmas 5, 2 - 4 - 5,5 mm long, acuminate to filiform. Capsule 5-locular, ca. 5,5 mm in diameter and 4,5 mm deep, woody, pale grey, valve-wings ca. 2,5 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering about half of the surface of each locule. Seeds maroon to black, ca. 0,83 - 0,93 - 1,02 mm long, 0,53 - 0,67 - 0,87 mm wide and 0,32 - 0,39 - 0,59 mm deep, funicles ca. 0,22 - 0,31 - 0,39 mm long; surface baculate, baculae ca. 34 μ long, 87 μ in diameter; micropunctilli present or absent, ca. 0,81 μ long and 0,40 μ in diameter. Flowering season: 75% of specimens seen were in flower between September and November.

SPECIMENS SEEN:

CAPE 3218 (-AB) northeast of Verloren Vlei, October 1935, Pillans 7756 (BOL!)

3219 (-AA) Pakhuis Pass, October 1926, Leipoldt s.n. in BOL
18570 (BOL!)

3318 (-AD) 5 miles west of Darling, September 1958, H. Hall s.n.
(BOL!)

- (-CD) Green Point Common, October 1938, Salter s.n. (BOL!);
Green Point, October, Zeyher s.n. (SAM!); Paarden
Eiland, September 1927, L. Bolus s.n. (BOL!); Paarden
Eiland, October 1897, Wolley Dod 3595 (BOL!); Paarden
Eiland, 2 October 1897, Wolley Dod 3143 (BOL!); Rugby,
October 1940, Salter s.n. (BOL!); near Killarney Hotel,
October 1926, L. Bolus s.n. in BOL 18569 (BOL!);
Kenilworth, October 1908, Dümmer 1998 (E!); Camps Bay,
November, Ecklon 40, 59 (TCD!); between Mowbray and
Wynberg, 8 July 1883, Wilms 3223B (G!)
- (-DB) near Paarl, October - March 1914, Rohland s.n. in
NBG 1712/14 (BOL!, K!)
- (-DC) Brackenfell, 19 August 1963, Bos 428 (PRE!); Joostenberg=
kloof near Fisantekraal, 10 June 1975, Glen 947 (BOL!)
- 3319 (-AC) Witsenberg near Tulbagh, September 1958, H. Hall s.n.
in NBG 730/56 (BOL!)
- (-CB) Worcester Veld Reserve, November 1934, Van Breda 197 (BOL!);
Worcester airport, September 1962, Van Breda 1747/62 (BOL!)
- 3418 (-AB) pr. Kenilworth, October 1892, H. Bolus 7292 (BOL!)
- (-BB) Somerset Strand, October 1922, L. Guthrie s.n. (BOL!)
- 3419 (-AC) between Hawston and the turnoff to Kleinmond on the road
to Bot River, 7 October 1955, du Plessis 159 (BOL!)
- (-DB) Vogelvlei, Bredasdorp division, 24 September 1976,
Glen 1043 (BOL!)
- 3420 (-CA) Bredasdorp, December 1930, Galpin s.n. in NBG 2663/30
(BOL!); slopes above Bredasdorp, October 1951, E. Ester=
huysen 18967 (BOL!)

AUSTRALIA

NEW SOUTH WALES 33151 (-CC) Homebush Bay, Sydney, 2 November 1953,
McKee 784 (MEL!)

VICTORIA 37144 (-DD) Melbourne, 24 October 1927, Valentine s.n. (S!);
Port Melbourne, 11 November 1892, Morrison s.n. (BM!);

Port Melbourne, 8 January 1886, Morrison s.n.
(E!); Port Melbourne, 17 October 1895, Morrison
s.n. (E!); Port Melbourne, July 1900, Walter s.n.
in MEL 74978 (MEL!); Port Melbourne, 1 October 1942,
Willis s.n. in MEL 74977 (MEL!); Goode Island,
23 March 1912, Tovey s.n. in MEL 74976 (MEL!);
West Melbourne, 1908, Tovey s.n. in MEL 74975 (MEL!)

37145 (-CC) Port Phillip, September 1844, F. von Müller s.n.
(MEL!, K!, BOL (photo!))

Without precise locality: Australia felix, no date, Th. Müller s.n.
(B!, S!, UPS!); no locality, no date,
Th. Müller 112 (B!); without locality, no
date, Swartz s.n. (S!)

5. garden specimens

In addition to the differences between this species and L. arbuthnotiae under the latter, it will be noticed on comparing material of both species that the internodes of the main horizontal stems and hence the vertical branches remain close together to the ends of the stems in this species, while in L. arbuthnotiae the terminal internodes may be much longer than the first-formed ones, giving the plant a much laxer appearance around the edges. The turf formed by the present species is not as dense as that formed by L. arbuthnotiae because there are fewer horizontal stems per plant.

It is immediately evident from examination of the Australian material of L. tegens that it must be conspecific with either L. arbuthnotiae or L. caespitosus, both described from the south-western Cape. Examination of seeds from one of the syntype specimens of L. tegens by SEM showed that they were identical to seeds of L. caespitosus which had been examined previously, except that the Australian seeds had micropunctilli, which the Cape seeds lacked. Re-examination of all other character both visually and by computer confirmed that L. tegens and L. caespitosus are conspecific, and that L. tegens, being the earlier name, is the correct one for this species.

This species was once found on Paarden Eiland, and presumably a fruit or fruits of this population found their way into ballast carried by ships

sailing to Australia. On arrival, the ballast was jettisoned at Melbourne, where the seeds germinated and the plants became naturalised. From the absence of recent collections and the difficulty encountered in obtaining seed for SEM studies, it appears that the Australian population of this species is dying out.

- 42 Lampranthus pocockiae (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1206 (1955); idem, Handb. Succ.
Pl. 3 : 1206 (1960); idem, Sukk. Lex. : 444 (1970); idem,
Lex. Succ. Pl. : 498 (1974)

Holotype: Swartberg, October 1926, M. A. Pocock S158 (BOL!)

Mesembryanthemum pocockiae L. Bol., Ann. Bol. Herb. 4 : 80 (1921)

Holotype: as above

Mesembryanthemum subglobosum L. Bol., Notes Mesembryanthemum 3 : 56 (1937)

Holotype: locus ignotus, November 1936, Anon s.n. in SUG 1477A (BOL!)

L. subrotundus L. Bol., Notes Mesembryanthemum 3 : 170 (1939);

Jacobsen, Handb. Sukk. Pfl. 3 : 1449 (1955); idem, Handb. Succ.

Pl. 3 : 1211 (1960); L. Bolus, Jl. S. Afr. Bot. 29 : 19 (1963);

Jacobsen, Sukk. Lex. : 446 (1970); idem, Lex. Succ. Pl. : 500 (1974)

Holotype: as above

Mesembryanthemum staminodosum L. Bol., Notes Mesembryanthemum 3 : 76 (1937)

Holotype: Elands Kloof, Cedarberg, 24 November 1936, G. F. Lewis
s.n. in BOL 21839 (BOL!)

L. staminodosus (L. Bol.) Schwant., Nat. Cact. Succ. Jl. 4 : 58 (1949);

Jacobsen, Handb. Sukk. Pfl. 3 : 1448 (1955); idem, Handb. Succ.

Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 446 (1970); idem, Lex.

Succ. Pl. : 499 (1974)

Holotype: as above

L. walgateae L. Bol., Notes Mesembryanthemum 3 : 159 (1939); Jacobsen,

Handb. Sukk. Pfl. 3 : 1452 (1955); idem, Handb. Succ. Pl. 3 : 1213

(1960); idem, Sukk. Lex. : 447 (1970); idem, Lex. Succ. Pl. : 501

(1974)

Holotype: Swellendam div., Tradouw Pass. October 1938, M. Walgate
s.n. in BOL 21853 (BOL!)

L. esterhuyseniae L. Bol., Notes Mesembryanthemum 3 : 331 (1958);

Jacobsen, Handb. Succ. Pl. 3 : 1198 (1960); idem, Sukk. Lex. :

441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Holotype: Khamieskroon, October 1954, E. Esterhuysen 23638 (BOL!)

L. vanheerdei L. Bol., Jl. S. Afr. Bot. 30 :39 (1964); Jacobsen,
Sukk. Lex. : 447 (1970); idem, Lex. Succ. Pl. : 500 (1974)

Holotype: road between Springbok and Spektakel, about 12 miles
west of Springbok, November 1963, P. van Heerde s.n.
in BOL 27493 (BOL!)

Succulent shrubs, ca. 17 cm. high and 21 cm. in diameter. Internodes
wiry, pale grey, ca. 11 mm long and 1,5 mm in diameter in the first
two years of growth. Leaves semiterete, glaucous to glaucous green,
4 - 9 - 21 mm long, 0,8 - 1,3 - 3 mm wide and 1 - 1,5 - 3 mm deep;
hardly sheathing the stem. Flowers solitary or in threes, pedicels ca.
23 mm long and 1 mm in diameter; lowers pink to magenta or scarlet, ca.
21 mm in diameter. Bracts up to 12 mm long and 1,5 mm wide, sepals
5, ca. 7 mm long and up to 3 mm wide, the inner 3 slightly smaller,
with membranous margins; petals (petaloid staminodes) ca. 30 - 70 in
3 series, 4 - 9 - 15 mm long, up to 1 mm wide; non-petaloid staminodes
absent or 40 - 80, white, ca. 3 mm long, sharply differentiated from the
petaloid staminodes. Stamens ca. 30 - 95, filaments white, ca. 1 - 2 - 5
mm long, anthers yellow; stigmas 5, 1 - 3 mm long, shortly subulate.
Capsule 5-locular, ca. 6 mm in diameter and 4 mm deep, woody, charcoal
grey, valve-wings ca. 1,5 mm long and up to 0,5 mm wide, separate from
the valve for most of their length; placental tubercle absent; covering
membranes present, covering most of the surface of each locule. Seeds
maroon to dark brown, ca. 0,88 - 1,10 - 1,22 mm long, 0,68 - 0,87 - 1,03
mm wide and 0,45 - 0,52 - 0,60 mm deep, funicles ca. 0,26 - 0,40 - 0,53
mm long; surface baculate, baculae ca. 54 μ long, 108 μ in diameter;
microbaculae present, ca. 0,67 μ long and 0,48 μ in diameter. Flowering
season: 88% of specimens seen were in flower between August and
January.

SPECIMENS SEEN:

CAPE 2917 (-DA) 12 miles from Springbok towards Spektakelberg, November
1963, P. van Heerde s.n. in BOL 27493 (BOL!)

3017 (-BB) Khamieskroon, October 1954, E. Esterhuysen 23638 (BOL!)

3018 (-AC) Khamiesberg, 5 November 1963, P. van Heerde s.n. (BOL!)

(-CA) 8 miles east of Garies, September - October 1969, Plowes
3240 (PRE!)

- 3219 (-AC) Elandskloof, 24 November 1936, G. J. Lewis s.n. in BOL 21839 (BOL!)
- 3318 (-DC) Fisantekraal, November 1948, H. Hall s.n. (BOL!)
- 3319 (-BC) Therons Pass, Baviaansberg, 4 November 1962, E. Esterhuysen 29791 (BOL!)
- (-DC) Breede River between Robertson and Worcester, 5 September 1926, Leipoldt s.n. in BOL 18600 (BOL!)
- 3320 (-DC) Tradouw Pass, February 1939, M. Walgate s.n. in BOL 21853 (BOL!, K!)
- 3321 (-AD) Towerkop, Ladismith, 5 September 1947, E. Esterhuysen 13927 (BOL!); Towerkop, April 1951, E. Esterhuysen 18501 (BOL!); Towerkop, December 1956, E. Esterhuysen 26690 (BOL!); Seweweekspoort, 27 December 1928, Andreae 1235, 1344 (PRE!); Seweweekspoort, December 1928, Primos 71, 72, 73 (PRE!); Seweweekspoort, 27 December 1928, Stokoe 1797, 1873, 1928 (PRE!)
- 3322 (-AC) Swartberg, Prince Albert Division, October 1926, Pocock S158 (BOL!)

Without precise locality: Swartberg, May 1926, Pocock P69 (PRE!)

garden material: without locality, November 1936, Anon. s.n. in
SUG 1477A (BOL!)

The various names here regarded as synonyms of the same species all refer to different forms of L. pocockiae. L. walgatae is a name given to an unusually lax form, and L. esterhuyseniae and L. vanheerdei are slightly less lax. L. subrotundus is a tufted, more compact form than the type.

This species is similar to L. tulbaghensis but the plants are smaller, with larger leaves. The internodes are characteristically shorter, and the sepals longer. The capsules are somewhat smaller and the seeds somewhat larger.

43 Lampranthus tulbaghensis (Berger) N.E. Br., Gard. Chron. 87 : 212 (1930);

Jacobsen, Handb. Sukk. Pfl. 3 : 1450 (1955); L. Bol., Notes

Mesemb. allied Gen. 3 : 227 (1950); idem, Handb. Succ. Pl. 3 :

1211 (1960); idem, Sukk. Lex. : 447 (1970); idem, Lex. Succ.

Pl. : 500 (1974)

Syntypes: Tulbagh Waterfall, 15 January 1896, Schlechter 7477 (B!, K!,
E!, S!, G!, PRE!); Nuwe Kloof, February 1896, MacOwan 3052 (B!)

Mesembryanthemum tulbaghense Berger, Engl. Bot. Jahrb. 57 : 637 (1922)

non L. Bol.

Syntypes: as above

M. capillaceum L. Bol., Notes Mesembr. allied Gen. 1 : 137 (1928)

Holotype: near Tulbagh, January 1928, T. P. Stokoe s.n. in BOL 18781 (BOL!)

L. capillaceus (L. Bol.) N.E. Br., Gard. Chron. 87 : 211 (1930); Jacobsen,

Handb. Sukk. Pfl. 3 : 1427 (1955); idem, Handb. Succ. Pl. 3 :

1194 (1960); idem, Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl. :

492 (1974)

Holotype: as above

M. brevistaminum L. Bol., Notes Mesemb. allied Gen. 2 : 155 (1929)

Holotype: Matroosberg, November 1932, T. P. Stokoe s.n. in NBG 855/25
(BOL!, holo!, K!, iso!)

L. brevistaminus (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 168

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1426 (1955); idem, Handb.

Succ. Pl. 3 : 1194 (1960); idem, Sukk. Lex. : 439 (1970); idem,

Lex. Succ. Pl. : 492 (1974)

Holotype: as above

L. candidus L. Bol., Notes Mesemb. 3 : 156 (1939); Jacobsen, Handb. Sukk.

Pfl. 3 : 1427 (1955); idem, Handb. Succ. Pl. 3 : 1194 (1960);

idem, Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl. : 492 (1974)

Holotype: Jonker's Klip 2 miles north of Verloren Vlei, and east
slope of Muis Hond Berg, south side of Verloren Vlei,
October 1938, Pillans 8852 (BOL!, holo!, K!, iso!)

Succulent shrubs, ca. 37 cm. high and 37 cm. in diameter. Internodes
smooth, wiry, russet, ca. 16 mm long and 1 mm in diameter in the first

two years of growth. Leaves semiterete to triquetrous, 2,5 - 7 - 15 mm long, 0,7 - 1,5 - 3 mm wide and 0,5 - 1,5 - 3,5 mm deep; hardly sheathing the stem. Flowers solitary or in threes, pedicels ca. 20 mm long and 1 mm in diameter; flowers white to magenta, ca. 22 mm in diameter. Bracts up to 9 mm long and 2 mm wide, sepals 5, ca. 6 mm long and up to 3 mm wide, the inner 3 slightly smaller, with membranous margins; petals (petaloid staminodes) ca. 20 - 50 in 2 series, 3 - 11 - 19 mm long, up to 2 mm wide; non-petaloid staminodes absent or few, white, ca. 3 - 5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 20 - 65, filaments white, ca. 1 - 1,7 - 3 mm long, anthers white; stigmas 5, 0,5 - 1,2 - 2,5 mm long, subulate, Capsule 5-locular, ca. 5 mm in diameter and 4,5 mm deep, woody, charcoal grey, valve-wings ca. 2 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering about half of the surface of each locule. Seeds brown, ca. 0,76 - 0,96 - 1,16 mm long, 0,62 - 0,78 - 0,94 mm wide and 0,38 - 0,56 - 0,72 mm deep, funicles ca. 0,20 - 0,31 - 0,37 mm long; surface baculate, baculae ca. 11 μ long, 90 μ in diameter; microbaculae present, ca. 0,87 μ long and 0,38 μ in diameter. Flowering season: 89% of specimens seen were in flower between October and February.

SPECIMENS SEEN:

CAPE 3118 (-DC) Giftberg plateau, October 1953, E. Esterhuysen 22053 (BOL!)

- 3218 (-AB) Leipoldtville, October 1953, Leistner s.n. in SUG 12901 (BOL!); Jonkersklip, 2 miles north of Verlorenvlei, October 1938, Pillans 8852 (BOL!, K!); between Verlorenvlei & Rooikransberg, October 1935, Pillans 7753 (BOL!)
- (-AD) East slope of the Muishondberg, south of Verlorenvlei, October 1938, Pillans 8852 (BOL!)
- (-BD) Witels Kloof, November 1947, E. Esterhuysen 14150 (BOL!)

- 3219 (-AA) Krakadouw peak summit, 20 October 1945, E. Esterhuysen 12025 (NBG!); Heuning Vlei, Cedarberg, December 1941, Stokoe s.n. in SAM (SAM!); Top of Pakhuis Pass, November 1960, Littlewood s.n. KG 576/59 (BOL!)
- (-AC) Groot Koupoort, Cedarberg, 19 January 1977, Haynes 1278,

- 1291 (JF!); Cedarberg Peak, December 1941, Esterhuysen
 7780 (BOL!); Cedarberg, November 193, Pattison sub Pillans
 2304 (BOL!); peak of Koupoort, 24 October 1945, E. Ester=
huysen 1202 (NBG!); Cedarberg Sneekop, January 1942,
Stokoe s.n. (SAM!)
- (-AD) foot of Wolfberg, Cedarberg, 26 December 1953, E. Ester=
huysen 22449a (BOL!)
- 3318 (-BB) Plateau above Porterville, December 1949, E. Esterhuysen
 16607 (BOL!)
- (-DB) Seven Sisters, Paarl, January 1951, E. Esterhuysen 18304 (BOL!)
- 3319 (-AA) Visgat, Ceres Division, 27 December 1946, E. Esterhuysen
 13367 (BOL!); Groot Winterhoek State Forest, 19 January
 1974 Haynes 911 (JF!), north of Sneegat Peak, Great
 Winterhoek, 1 January 1952, E. Esterhuysen 19473 (BOL!)
- (-AB) Ertjiesland Kloof, November 1947, Leighton 2173 (BOL!);
 Gydoberg, November 1946, Leighton 2172 (BOL!)
- (-AC) Nuwekloof, Tulbagh, February 1896, MacOwan 3052 (= Her=
 barium Austro-Africanum 1871) (B!); Tulbagh Waterfall,
 15 February 1896, Schlechter 7477 (B!, E!, S!, G!, PRE!)
- (-AD) near Ceres, January 1888, H. Bolus 8377 (BOL!); Waaihoek
 Peak, January 1949, E. Esterhuysen 15061 (BOL!); Lower
 west slopes of Mitchell Peak, December 1948, E. Esterhuysen
 14813 (BOL!); Elands Kloof, September 1936, G. J. Lewis
 s.n. (BOL!); Tulbagh, January 1928, Stokoe s.n. in BOL
 18781 (BOL!); Waaihoek Peak, December 1942, E. Esterhuysen
 8375 (BOL!); Waaihoek Peak, September 1943, E. Esterhuysen
 9008 (BOL!); Waaihoek Peak, October 1949, E. Esterhuysen
 15055 (BOL!); Mostertshoek Twins, January 1944, E. Ester=
huysen 9934 (BOL!); Rosendalfontein, western foot of the
 Schurfteberg, 27 November 1941, Pillans 9555 (BOL!)
- (-BA) top of Bain's Kloof near the Hotel, Wellington side, April
 1934 Lavis s.n. in NBG 693/34 (BOL!)
- (-BC) Foot of the Matroosberg, 1 November 1932, Stokoe s.n.
 in NBG 855/25 (BOL!); Matroosberg near
 Lakenvlei, November 1917, Phillips s.n. (SAM!); Bain's
 Kloof, 3 February 1927, Moss 15970 (BOL!); Witte River,
 Bain's Kloof, January 1928, Lamb s.n. in NBG 727/26 (BOL!);

- Bain's Kloof, 26 February 1946, Leighton 1624 (BOL!);
Top of Bain's Kloof, January 1970, Schelte s.n. (BOL!);
Bain's Kloof, 24 February 1946, Leighton 1783 (BOL!);
Baviaanskloof, Bain's Kloof, 4 February 1975, Glen 864 (BOL!)
(-BD) Hex River Valley, Buffelshoek River bed, 28 April 1942,
E. Esterhuysen 7790 (BOL!)
(-CA) Du Toit's Peak, 26 January 1943, E. Esterhuysen 8609 (BOL!);
Du Toit's Kloof, January 1952, E. Esterhuysen s.n.
(BOL!); Bain's Kloof, January - February 1971, Wisura
1414 (NBG!)
(-CB) near Worcester, 4 October 1960, Stayner s.n. in KG 575/59
(BOL!); Brandwacht Peak, 26 November 1944, E. Esterhuysen
11029 (BOL!); Audensberg Ridge Peak, 1 January 1950,
E. Esterhuysen 16663 (BOL!, S!)
(-DD) Klaas Voogds, south of the Langeberg, 31 January 1954,
E. Esterhuysen 22682 (BOL!)

3321 (-CA) Witteberg, February 1943, E. Esterhuysen 8685 (BOL!)
(-CB) Bailey's Peak, March 1940, E. Esterhuysen 5656 (BOL!)

3322 (-AC) top of Zwartberg Pass, December 1951, Stokoe s.n. (SAM!)

3419 (-AA) Grabouw, 8 January 1973, Marais s.n. in NBG 23/71 (NBG!, BOL!)

Without precise locality: Cape of Good Hope, no date, Wallich s.n. (CGE!)

This species differs from L. scaber in its wiry stems, short, falcate, leaves and the shape of the stigmas. It tends to flower later than that species, although there is a considerable overlap in flowering time. No putative hybrids were observed.

Cape In the flowering season it is a conspicuous element of the fynbos of the Western Cape mountains, excluding the ~~W~~^P Peninsula. The small flowers cover the plants, which in mature examples may be considerably larger than the mean given here, almost completely. These plants are often found under the overhang of boulders on the mountainsides.

L. candidus was the name given to a white-flowered form of this species. L. brevistamineus was the name given to a form with slightly shorter stamens and slightly thicker stems. It appears from the fact

that she called a different species L. tulbaghensis, that Bolus was unaware of Berger's having described the plant already when she published the name L. capillaceus. The two are not separable by any character or suite of characters.

The Berlin specimens of the syntypes of L. tulbaghensis were both annotated by Berger.

44 Lampranthus mariae (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169

(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1439 (1955); idem,

Handb. Succ. Pl. 3 : 1203 (1960); idem, Sukk. Lex. : 443

(1970); idem, Lex. Succ. Pl. 496 (1974)

Holotype: in dit. Ceres, October 1931, M. Lavis s.n. in NBG 1764/31
(BOL!, K!)

Mesembryanthemum mariae L. Bol., Notes Mesembryanthemum 2 : 329 (1932)

Holotype: as above

Succulent shrubs, ca. 20 cm. high and 15 cm. in diameter. Internodes rough, buff, ca. 10 mm long and 1 mm in diameter in the first two years of growth. Leaves semiterete, glaucous, hardly sheathing the stem, 3 - 5,3 - 9 mm long, 1 - 1,2 - 2 mm wide and 1 - 1,2 - 2 mm deep. Flowers solitary or in threes, pedicels ca. 10 mm long and 0,5 mm in diameter; flowers magenta to purple, ca. 15 mm in diameter. Bracts up to 5 mm long and 1 mm wide, sepals 5, ca. 5 mm long and up to 3 mm wide, the inner three smaller, with membranous margins; petals (petaloid staminodes) ca. 30 in 3 series, 4 - 6,5 - 8 mm long, up to 2 mm wide; non-petaloid staminodes few, white, ca. 1 - 3 - 4 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 40 - 50, filaments pink, ca. 1 - 3 - 3,5 mm long, anthers white; stigmas 5, 1 - 4 mm long, long-acuminate. Capsule 5-locular, ca. 5,5 mm in diameter and 5 mm deep, woody, charcoal grey, valve-wings ca. 1,5 mm long and up to 1 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds maroon, ca. 0,81 - 0,90 - 0,95 mm long, 0,59 - 0,73 - 0,80 mm wide and 0,39 - 0,45 - 0,53 mm deep, funicles ca. 0,21 - 0,30, 0,36 mm long; surface baculate, baculae ca. 130 μ long, 65 μ in diameter; micropunctilli presnet, ca. 0,30 μ long and 0,50 μ in diameter. Flowering season: 86% of specimens seen were in flower between September and October.

SPECIMENS SEEN:

CAPE 3219 (-CB) Kromme River, Cedarberg, 27 September 1934, Leighton s.n. (BOL!); Hondverbrand ridge, southern Cedarberg, April 1946, E. Esterhuysen 12653 (BOL!); Krom River,

- southern Cedarberg, October 1952, E. Esterhuysen 20450 (BOL!)
- (-AD) Theronsberg, left of the road to Sutherland, 6 August 1975, Cillié s.n. (BOL!)
- 3319 (-BB) between Karoopoort and Koedoesberg, 18 September 1938, Wall s.n. (S!)
- (-BC) Theronsberg, 18 September 1938, Wall s.n. (S!); Karoopoort, 18 September 1938, Wall s.n. (S!); Eastern foot of Karoopoort, September 1933, Anon. s.n. (S!)
- (-BD) between Touws River and Karoopoort, October 1933, Leighton s.n. in BOL 20825 (BOL!)

without precise locality: Ceres show, October 1931, M. Lavis s.n. in NBG 1764/31 (BOL!)

This species has longer stigmas (proportionate to their diameter) than L. scaber. The petals are broader and the leaves shorter and broader, and the stems become rough and fissured at a younger age than in most species in the genus. It may appear from the key that this species could be confused with L. dilutus and L. alpinus. It differs from the former in having semiterete leaves, smaller sepals, covering membranes which cover a significantly greater part of each locule, flowering later and in being found in mountains at high altitude rather than on the flats at low altitude. L. alpinus is a montane species which is unusual in lacking valve wings. The leaves of L. mariae are semiterete, whereas those of L. alpinus are triquetrous, and other differences are found in the seeds of the two species. L. vallis-gratiae flowers later than L. mariae, lacks staminodes, has somewhat larger seeds and sepals, and somewhat shorter stamens and stigmas.

This species is restricted to the mountains between Ceres and the Ceres Karoo.

- 45 Lampranthus persistens (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1442 (1955); idem, Handb. Succ. Pl. 3 : 1205 (1960); idem, Sukk. Lex. : 444 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Holotype: Grasberg near Nieuwoudtville, October 1930, Mathews s.n. in BOL 19383 (BOL!)

Mesembryanthemum persistens L. Bol., Notes Mesembryanthemum 2 : 235 (1931)

Holotype: as above

Erect succulent shrubs, ca. 25 cm. high and 15 cm. in diameter. Internodes smooth, wiry, pale buff, ca. 28 mm long and 1 mm in diameter in the first two years of growth. Leaves semiterete, glaucous, hardly sheathing the stem, 6 - 9 - 12,5 mm long, 1 - 1,2 - 1,5 mm wide and 1 - 1,2 - 1,5 mm deep; apices recurved. Inflorescence cymose, pedicels ca. 36 mm long and 1 mm in diameter; flowers white to deep pink, ca. 25 mm in diameter. Bracts up to 5 mm long and 1,5 mm wide, sepals 5, ca. 4 mm long and up to 2,5 mm wide, all alike; petals (petaloid staminodes) ca. 30 - 50 in 1 series, 10 - 13 - 15 mm long, up to 1,5 mm wide; non-petaloid staminodes absent. Stamens 40 - 65; stigmas 5. Capsule 5-locular, ca. 5,5 mm in diameter and 5 mm deep, woody, charcoal grey, valve-wings ca. 2 mm long and up to 0,5 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes, covering most of the surface of each locule. Seeds maroon, ca. 0,96 - 1,10 - 1,16 mm long, 0,76 - 0,87 - 0,96 mm wide and 0,50 - 0,57 - 0,69 mm deep, funicles ca. 0,28 - 0,33 - 0,39 mm long; surface baculate, baculae ca. 12 μ long, 81 μ in diameter; microbaculae absent. Flowering season: 100% of specimens seen were in flower in October.

SPECIMEN SEEN:

CAPE 3119 (-AC) Grasberg, near Nieuwoudtville, October 1930, Mathews s.n. in BOL 19383 (BOL!)

This species differs from other members of this section in its long, wiry internodes and long pedicels. The overall habit is reminiscent of L. tulbaghensis, from which it differs not only by the characters mentioned above, but also in locality and in that the leaves of this species are considerably longer and straight rather than falcate, and are often borne in 'tufts' on short shoots rather than in simple pairs along the stem.

- 46 Lampranthus diffusus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1430 (1955); idem, Handb.
Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex. : 440 (1970);
idem, Lex. Succ. Pl. : 493 (1974)
Holotype: near Ceres, November 1927, W. R. Way s.n. in BOL 18759 (BOL!)

Mesembryanthemum diffusum L. Bol., Notes Mesemb. allied Gen. 1 : 137 (1928)
Holotype: as above

M. rabiesbergense L. Bol., Notes Mesemb. allied Gen. 3 : 13 (1936)
Holotype: Rabiesberg, between Robertson & Worcester, 26 September 1935,
E. Esterhuysen s.n. in BOL 21642 (BOL!)

L. rabiesbergensis (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 169
(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1444 (1955); idem, Handb.
Succ. Pl. 3 : 1207 (1960); idem, Sukk. Lex. : 445 (1970); idem,
Lex. Succ. Pl. : 498 (1974)
Holotype: as above

M. subaequale L. ^Bol., Notes Mesembryanthemum 3 : 56 (1937)
Holotype: in dit. Uniondale, October - November 1936, Fourcade
5094 (=NBG 1883/34) (BOL!)

L. subaequalis (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 170 (1939);
Jacobsen, Handb. Sukk. Pfl. 3 : 1449 (1955); idem, Handb. Succ.
Pl. 3 : 1210 (1960); idem, Sukk. Lex. : 446 (1970); idem, Lex.
Succ. Pl. : 500 (1974)
Holotype: as above

L. caudatus L. Bol., Notes Mesembryanthemum 3 : 226 (1950); Jacobsen,
Handb. Sukk. Pfl. 3 : 1427 (1955); idem, Handb. Succ. Pl. 3 : 1194
(1960); idem, Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl. : 492 (1974).
Holotype: Strandkloof, Bredasdorp div., April 1946, F. M. Leighton
1631 (BOL!)

Succulent shrubs, ca. 30 cm. high and 28 cm. in diameter. Internodes
smooth, maroon, ca. 21 mm long and 1 mm in diameter in the first two
years of growth. Leaves semiterete to triquetrous, keels always visible
glaucous-green, 7 - 13,5 - 28 mm long, 0,5 - 1 - 4 mm wide and 0,5 - 1 - 4 mm

deep; hardly sheathing the stem, apices acute to acuminate, straight to recurved. Flowers solitary or in threes, pedicels ca. 31 mm long and 1 mm in diameter; flowers white to magenta, ca. 26 mm in diameter. Bracts up to 10,5 mm long and 1,5 mm wide, sepals 5, ca. 7 mm long and up to 3,5 mm wide, the inner 3 slightly smaller with membranous margins; petals (petaloid staminodes) ca. 40 - 90 in 2 - 4 series, 7 - 11 - 22 mm long, up to 2 mm wide; non-petaloid staminodes 20 - 40, white, ca. 2 - 3 - 5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 40 - 85, filaments white, ca. 1 - 2,5 - 4 mm long, anthers yellow; stigmas 5, 1 - 2 - 5 mm long, shortly ovoid with long-acuminate apices. Capsule 5-locular, ca. 7 mm in diameter and 6 mm deep, woody, dark grey, valves inconspicuously ridged, valve-wings ca. 2,8 mm long and up to 1 mm wide, separate from the valve for little of their length; placental tubercle absent; covering membranes present, covering about half of the surface of each locule. Seeds maroon to charcoal-grey, ca. 0,92 - 1,12 - 1,44 mm long, 0,71 - 0,92 - 1,25 mm wide and 0,40 - 0,55 - 0,76 mm deep, funicles ca. 0,32 - 0,42 - 0,51 mm long; surfaces baculate, baculae ca. 32 μ long, 102 μ in diameter; microbaculae present, ca. 0,61 μ long and 0,33 μ in diameter. Flowering season: 83% of specimens seen were in flower between September and November.

SPECIMENS SEEN:

- CAPE 3319 (-AD) Ceres, November 1927, Way s.n. in BOL 18759 (BOL!)
- (-BA) slopes of the Rabiesberg, between Robertson & Worcester, 26 September 1935, E. Esterhuysen s.n. in BOL 21642 (BOL!)
- (-CA) Du Toit's Kloof, October 1952, E. Esterhuysen 19880 (BOL!)
- 3323 (-CA) Uniondale, October 1936, Fourcade 5094 (=NBG 1883/34) (BOL!)
- (-CC) Longkloof, Upper Keurbooms River, 4 November 1944, E. Esterhuysen 10847 (BOL!)
- (-CD) between De Vlugt and the Longkloof, Keurbooms River, November 1927, Fourcade 3371 (BOL!, BOL-F!)
- (-DD) Joubertina, November 1944, E. Esterhuysen 10872 (BOL!)
- 3324 (-CB) Kouga Hills, Humansdorp, November 1941, E. Esterhuysen 6745 (BOL!)
- 3419 (-CB) Strandkloof, Bredasdorp, 22 April 1946, Leighton 1631 (BOL!) Franskraal, 21 April 1946, Leighton 1632 (BOL!)

It should be noted that in the protologue of 'M. rabiesbergense L. Bol.', the collector of the holotype is cited incorrectly as G. J. Lewis.

This is corrected in L. Bolus' handwriting in the copy attached to the sheet in question, and the herbarium label on that sheet cites the collector as E. Esterhuysen in Miss Esterhuysen's handwriting.

This species looks very similar to L. scaber at first sight. It differs from that species in having shortly ovoid stigmas, in having bracts much smaller than the foliage leaves, in having considerably smaller sepals and in a number of minor characters. Plants of this species tend to be taller and more robust than those of L. scaber.

The holotype of L. rabiesbergensis appears to have been grazed and then allowed to grow to the flowering stage. Two parts of the plant show dense clusters of short shoots, and the rest of the fragments on the two sheets of the specimen are somewhat diffuse, with leaves typical of L. diffusus.

L. subaequalis was so called because the sepals were said to be all approximately alike. However, the outer sepals of the type specimen are markedly different from the inner ones. The only other character in which L. subaequalis differs from typical L. diffusus is the stems, which are slightly darker-coloured in the former than in the latter.

L. caudatus was given this name on account of the stigmas, which in the type specimen were conspicuously caudate. This character is not uncommon in typical specimens of L. diffusus, and the only other distinguishing character is the stems, which in L. caudatus are paler in colour than in typical L. diffusus.

- 47 Lampranthus algoensis L. Bol., Jl. S. Afr. Bot. 26 : 159 (1960); Jacobsen, Sukk. Lex. : 438 (1970); idem, Lex. Succ. Pl. : 491 (1974)

Holotype: Algoa Park near Port Elizabeth, October 1959,

G. Feinauer s.n. in NBG 691/59 (BOL!)

Erect succulent shrubs, ca. 35 cm. high and 25 cm. in diameter. Inter-nodes smooth, deep maroon, ca. 16 mm long and 1,5 mm in diameter in the first two years of growth. Leaves semiterete, sheathing the stem for ca. 1 mm, 8 - 11,3 - 15 mm long, 1 - 1,5 - 2 mm wide and 1 - 1,5 - 2 mm deep. Flowers solitary, pedicels ca. 13,5 mm long and 1 mm in diameter; flowers scarlet with a central white 'eye', ca. 30 mm in diameter. Bracts up to 8 mm long and 3 mm wide, sepals 5, ca. 11 mm long and up to 6 mm wide, the inner 3 with membranous margins, ca. 8 mm long and 3 mm wide; petals (petaloid staminodes) ca. 75 in 3 series, 5 - 12 - 16 mm long, up to 1,5 mm wide; non-petaloid staminodes ca. 40 - 50, white, ca. 4 - 5,5 - 9 mm long, grading into the petaloid staminodes. Stamens many, filaments white, ca. 2 - 3,5 - 5,5 mm long, anthers yellow; stigmas 5, 1,5 - 3,5 mm long, subulate. Capsule 5 - locular, ca. 9 mm in diameter and 7 mm deep, woody, charcoal grey, valve-wings ca. 3 mm long and up to 1 mm wide, separate from the valve for almost all of their length; placental tubercle absent; covering membranes present, covering over half of the surface of each locule. Seeds deep maroon, ca. 1,24 mm long, 0,98 mm wide and 0,46 mm deep, funicles ca. 0,40 mm long; surface baculate, baculae ca. 39 μ long, 95 μ in diameter; micropunctilli present, ca. 0,25 μ long and 0,46 μ in diameter. Flowering season: 100% of specimens seen were in flower in October.

SPECIMEN SEEN:

CAPE 3325 (-DC) Algoa Park, Port Elizabeth, October 1959, Feinauer s.n. in NBG 691/59 (BOL!, holo.!)

This distinctive species is known from only one gathering, from Port Elizabeth. Locality may be used in addition to the characters given in the key, to separate it from L. mariae and L. dilutus, both of which are Western Cape species. Of all species in the group, L. peersii, also a Western Cape plant, is probably most similar to the present species, but differs from it in having triquetrous leaves, golden (not red) flowers, smaller sepals and elliptical, acuminate stigmas.

- 48 Lampranthus dilutus N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1430 (1955); idem, Handb. Succ. Pl. 3 : 1197 (1960); idem, Sukk. Lec. : 440 (1970); idem, Lex. Succ. Pl. : 493 (1974)

Holotype: near Porterville, August 1923, Matthews s.n. in NBG 1196/23 (BOL!)

Mesembryanthemum pallidum L. Bol., Notes Mesemb. allied Gen. 2 : 119 (1929); non N.E. Br.

Holotype: as above

M. praecox L. Bol., Notes Mesemb. allied Gen. 2 : 3 (1928); non F. Muell.

Holotype: near Klapmuis, September 1928, L. Bolus s.n. in NBG 1045/24 (BOL!)

L. maturus N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1439 (1955); idem, Handb. Succ. Pl. 3 : 1203 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex. Succ. Pl. : 496 (1974)

Holotype: as above

Spreading succulent shrubs, ca. 20 cm. high and 25 cm. in diameter. Internodes smooth, deep maroon, ca. 12 mm long and 1,5 mm in diameter in the first two years of growth. Leaves triquetrous, obtuse, glaucous, hardly sheathing the stem, 3 - 5,5 - 8,5 mm long, 0,8 - 1,2 - 2,5 mm wide and 1 - 1,5 - 3 mm deep. Flowers solitary or in threes, pedicels ca. 13,5 mm long and 1 mm in diameter; flowers white to pink, ca. 20 mm in diameter. Bracts up to 9 mm long and 2 mm wide, sepals 5, ca. 7 mm long and up to 2 mm wide, the inner 3 with membranous margins; petals (petaloid staminodes) ca. 30 in 1 series, 6 - 8 - 10,5 mm long, up to 2 mm wide; non-petaloid staminodes few, white, ca. 3 - 5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 25, filaments white, ca. 2,5 - 3,5 - 5 mm long, anthers white; stigmas 5, 2 - 4,5 - 5,5 mm long, long acuminate. Capsule 5 - locular, ca. 4 mm in diameter and 4 mm deep, woody, charcoal grey, valve-wings ca. 1,5 mm long and up to 0,5 mm wide, separate from the valve for less than half of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds maroon, ca. 0,66 - 0,73 - 0,79 mm long, 0,48 - 0,52 - 0,62 mm wide and 0,28 - 0,33 - 0,36 mm deep, funicles ca. 0,15 - 0,25 - 0,32 mm long;

surface baculate, baculae ca. 28 μ long, 75 μ in diameter; micro-punctate present, ca. 0,28 μ long and 0,29 μ in diameter. Flowering season: 76% of specimens seen were in flower between May and September.

SPECIMENS SEEN:

- CAPE 3318 (-BB) Porterville, May 1923, Bolus Tour s.n. in NBG 1193/23 (BOL!, K!); Near Porterville, August 1923, Mathews s.n. in NBG 1196/23 (BOL!, holo!)
- (-CB) Koeberg Road, ca. 12 miles from Cape Town near the Melkbosstrand turnoff, September 1929, Pillans s.n. (BOL!)
- (-DD) Klapmuts, August 1926, L. Bolus s.n. in NBG 1045/24 (BOL!, holo. of syn.); near Klapmuts, November 1924, L. Bolus s.n. in BOL 17835 (BOL!); Social Farm near Klapmuts, 24 September 1952, E. Esterhuysen 20438 (BOL!)
- 3418 (-AB) Steenberg Cove, June 1925, Mathews s.n. in NBG 1626/23 (BOL!)
- Due to a misprint, the number of the type specimen is given incorrectly in the protologue as NBG 1196/26 (instead of .../23)

The only difference between the two concepts united here is that the type of L. dilutus has white flowers, while those of the type of L. matusus are pink. As it appears that this is a single-gene difference, the two species cannot be upheld.

This species is most similar to L. mariae, from which it differs in flowering season, in that the pedicels, sepals and stigmas are longer, in that the valve-wings are more closely adnate to the valves, in that the seeds are smaller and in a number of minor characters.

- 49 Lampranthus vallis-gratiae (Schltr. & Bgr.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1451 (1955); idem, Handb. Succ. Pl. 3 : 1212 (1960); idem, Sukk. Lex. : 447 (1970); idem, Lex. Succ. Pl. : 500 (1974)

Type: Genadendal. 1 April 1897, Schlechter 10303 (B, holo!, BOL, iso!, B!)

Mesembryanthemum vallis-gratiae Schltr. & Bgr., Engl. Bot. Jahrb. 57 : 634 (1922)

Type: as above

L. altistylus N.E. Br., Gard. Chron. 87 : 211 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1423 (1955); idem, Handb. Succ. Pl. 3 : 1191 (1960); idem, Sukk. Lex. : 438 (1970); idem, Lex. Succ. Pl. : 491 (1974)

Type: as for M. longistylum L. Bol. non D.C.

M. longistylum L. Bol., Notes Mesemb. allied Gen. 2 : 2 (1928) non DC.

Holotype: Near the road between Cape Town & Kalbaskraal, August 1929, L. Bolus s.n. in BOL 18823 (BOL!)

L. verecundus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1451 (1955); idem, Handb. Succ. Pl. 3 : 1212 (1960); idem, Sukk. Lex. : 447 (1970); idem, Lex. Succ. Pl. : 500 (1974)

Holotype: Riversdale division, December 1927, Muir 3865 (BOL!)

M. verecundum L. Bol., Notes Mesembryanthemum 1 : 134 (1928)

Holotype: as above

L. middlemostii (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169 (1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1440 (1955); idem, Handb. Succ. Pl. 3 : 1204 (1960); idem, Sukk. Lex. : 443 (1970); idem, Lex. Succ. Pl. : 497 (1974)

Holotype: near Houw Hoek, December - January 1930, Middlemost s.n. in NBG 2071/28 (BOL!, holo!, K!, iso!)

M. middlemostii L. Bol., Notes Mesembryanthemum 2 : 329 (1932)

Holotype: as above

L. arenicolus L. Bol., Jl. S. Afr. Bot. 30 : 38 (1964); Jacobsen,

Sukk. Lex. : 439 (1970); idem, Lex. Succ. Pl. : 491 (1974)

Holotype: South of the Witteberg, Nov. 1963, E. Esterhuysen
30524 (BOL!, K!)

Succulent shrubs, ca. 30 cm. high and 35 cm. in diameter. Internodes wiry, buff, smooth, ca. 10 mm long and 1 mm in diameter in the first two years of growth. Leaves semiterete, green to glaucous, hardly sheathing the stem, 2 - 6,7 - 14 mm long, 0,5 - 1,5 - 2,5 mm wide and 0,5 - 1,6 - 2,5 mm deep; apices truncate to subacute, rarely falcate. Flowers solitary or in threes, pedicels ca. 10 mm long and 1 mm in diameter; flowers white to magenta, ca. 18 mm in diameter. Bracts up to 8 mm long and 2 mm wide, sepals 5, ca. 6 mm long and up to 3 mm wide, the inner 3 with membranous margins, slightly smaller; petals (petaloid staminodes) ca. 35 - 40 in 1 series, 4 - 6,5 - 9,5 mm long, up to 1 mm wide; non-petaloid staminodes usually absent, rarely few. Stamens ca. 35 - 70, filaments white, ca. 0,8 - 2,2 - 4 mm long, anthers white; stigmas 5, 1 - 2 - 3,5 mm long, subulate. Capsule 5 - locular, ca. 6 mm in diameter and 4,5 mm deep. woody, charcoal grey, valve-wings ca. 2,5 mm long and up to 1 mm wide, separate from the valve for almost all of their length; placental tubercle absent; covering membranes present, covering almost all of the surface of each locule. Seeds pale reddish-brown, maroon or grey, ca. 0,81 - 0,97 - 1,15 mm long, 0,59 - 0,75 - 0,85 mm wide and 0,33 - 0,48 - 0,56 mm deep, funicles ca. 0,27 - 0,30 - 0,42 mm long; surface baculate, baculae ca. 165 μ long, 85 μ in diameter; microbaculae present or absent, ca. 0,49 μ long and 0,45 μ in diameter when present. Flowering season: 88% of specimens seen were in flower between November and April.

SPECIMENS SEEN:

CAPE 3318 (-BA) between Piquetberg & Malmesbury, 24 August 1932,
L. Bolus s.n. in BOL 19548

(-DA) between Cape Town & Kalbaskraal, August 1929,
L. Bolus s.n. in BOL 18823 (BOL!); 25 miles from
Cape Town towards Malmesbury, September 1955, R. du
Plessis 149

3321 (-CA) South of the Witteberg, November 1963, E. Esterhuysen
30524 (BOL!, K!)

(-CC) Phisantefontein, Riversdale Division, December 1927,
L. Muir 3865 (BOL!, K!)

3419 (-AA) near Houw Hoek, December - January 1930, Middlemost
s.n. in NBG 2071/28 (BOL!, K!)

(-BA) Genadendal, 1 April 1897, Schlechter 10303 (B!, BM!,
K!, PRE!); Genadendal, February 1934, L. Bolus s.n.
in NBG 412/33 (BOL!)

3421 (-AA) Langeberg above Novo, Riversdale division, 25 March
1923, Muir 2509 (K!)

This species is most similar to L. mariae, from which it differs in both geographical range and flowering season. Other characters in which the two species differ are the size of the leaves, bracts and sepals, in which L. vallis-gratiae is the larger, the size of the stamens and the stigmas, in which L. mariae is the larger, and the shape of the stigmas. Plants of L. vallis-gratiae tend to be much larger than those of L. mariae. L. vallis-gratiae differs from L. alpinus in leaf-shape, in having the leaves less crowded together on the stems, in having larger bracts and sepals, and smaller seeds, and in lacking staminodes.

The name M. verecundum was given to a somewhat larger, laxer form of this species growing in a moister area than the type of L. vallis-gratiae. L. altistylus and L. middlemostii are names given to prostrate forms in different parts of the range of this species. L. arenicolus is a name given to a more robust form than the type.

50 Lampranthus alpinus (L. Bol.) Glen, comb. nov.

Esterhuysenia alpina L. Bol., Jl. S. Afr. Bot. 33 : 309 (1967);
Jacobsen, Sukk. Lex. : 422 (1970); idem, Lex. Succ. Pl. :
475 (1974)

Holotype: Milner Peak, Hex River Mountains, December 1948,
E. Esterhuysen 14817 (BOL!)

Succulent shrubs, ca. 40 cm. high and 33 cm. in diameter. Internodes rough, charcoal-grey, ca. 6 mm long and 1 mm in diameter in the first two years of growth. Leaves sharply triquetrous, glaucous, falcate, hardly sheathing the stem, 5 - 8 - 12,5 mm long, 1 - 1,7 - 3 mm wide and 1 - 1,5 - 3 mm deep; apices subacute. Flowers solitary, pedicels ca. 8,5 mm long and 1 mm in diameter; flowers pale pink to magenta, ca. 17 mm in diameter. Bracts up to 6 mm long and 2 mm wide, sepals 5, ca. 4,5 mm long and up to 3 mm wide, all alike; petals (petaloid staminodes) ca. 20 - 40 in 2 series, 5 - 7 - 8 mm long, up to 1 mm wide; non-petaloid staminodes few, white, ca. 2 - 2,5 - 3,5 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 30 - 60, filaments pink, ca. 2 - 2,5 - 3,5 mm long, anthers yellow; stigmas 5, 1 - 2 - 2,5 mm long, acuminate. Capsule 5 - locular, ca. 5,5 mm in diameter and 3,5 mm deep, woody, ochre, valve-wings absent; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds charcoal grey, ca. 1,01 - 1,17 - 1,25 mm long, 0,64 - 0,77 - 0,98 mm wide and 0,53 - 0,66 - 0,79 mm deep, funicles ca. 0,24 - 0,33 - 0,43 mm long; surface baculate, baculae ca. 16 μ long, 112 μ in diameter; microbaculae present, ca. 0,40 μ long and 1,14 μ in diameter. Flowering season: 69% of specimens seen were in flower between October and December.

SPECIMENS SEEN:

CAPE 3319 (-AD) Milner Peak, Hex River Mountains, December 1948,
Esterhuysen 14817 (BOL!, holo.); Waaihoek Peak,
1 November 1953, Esterhuysen 22200 (BOL!); Mosterts=
hoek Twins, January 1944, Esterhuysen s.n. (BOL!);
Buffelshoek peak, 2 January 1955, Esterhuysen
24090 (BOL!)

(-BC) Matroosberg, December 1892, Cook s.n. (BOL!); south
side of the Matroosberg, December 1947, Esterhuysen

- 25680 (BOL!); Roodeberg, Hex River Mountains,
27 December 1952, Esterhuysen 20883 (BOL!)
(-CB) between Chavonnesberg & Brandwacht Peak, 29 September
1968, Esterhuysen 32032 (BOL!)
(-CD) Fonteintjiesberg, 13 November 1966, Esterhuysen
31649, 31650 (BOL!); Fonteintjiesberg, 18 August
1968, Esterhuysen 31978A (BOL!); Fonteintjiesberg,
1 June 1969, Esterhuysen 32164 (BOL!); Fontientjies=
berg, 24 January 1971, Esterhuysen 32564 (BOL!)

This species differs from most if not all others in the genus by being found only above 1500 metres altitude, and in that the capsules lack both valve-wings and placental tubercles. The reasons for its being included in Lampranthus are given in full in section 4.3. Differences between this species, L. mariae and L. vallis-gratiae are discussed under the two last-named. L. alpinus differs from L. scaber in the two general characters given above, and in being more compact, with smaller, solitary flowers, smaller capsules with ridged valves and larger seeds.

- 51 Lampranthus furvus (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1434 (1955); idem, Handb.
Succ. Pl. 3 : 1199 (1960); idem, Sukk. Lex. : 441 (1970);
idem, Lex. Succ. Pl. : 494 (1974)

Holotype: near Gordon's Bay, November 1927, L. Lavis s.n. in
BOL 18760 (BOL!)

Mesembryanthemum furvum L. Bol., S. Afr. Gard. Country Life 18 : 16
(1928); idem, Notes Mesemb. 1 : 134 (1928)

Holotype: as above

M. leptosepalum L. Bol., Notes Mesembryanthemum 2 : 489 (1935)

Holotype: Cedarberg, Uitkyk Pass, 3 December 1934, R.H. Compton
s.n. in BOL 21430 (BOL!)

L. leptosepalus (L. Bol.) L. Bol., Notes Mesembryanthemum 3 : 169
(1939); Jacobsen, Handb. Sukk. Pfl. 3 : 1437 (1955); idem,
Handb. Succ. Pl. 3 : 1202 (1960); idem, Sukk. Lex. : 442
(1970); idem, Lex. Succ. Pl. : 496 (1974)

Holotype: as above

Succulent shrubs, ca. 20 cm. high and 20 cm. in diameter. Internodes
smooth, maroon to purple - brown, ca. 19 mm long and 1 mm in diameter
in the first two years of growth. Leaves semiterete to triquetrous,
glaucous, hardly sheathing the stem, 5 - 11 - 20 mm long, 1 - 1,5 -
3 mm wide and 1 - 1,5 - 3 mm deep. Flowers solitary or in threes,
pedicels ca. 32 mm long and 1 mm in diameter; flowers magenta to purple,
ca. 28 mm in diameter. Bracts up to 17 mm long and 4 mm wide, sepals
5, ca. 9 mm long and up to 2 mm wide, the inner 3 with membranous margins,
ca. 6,5 mm long and 2 mm wide; petals (petaloid staminodes) ca. 40 - 65
in 5 series. 7 - 11,5 - 17,5 mm long, up to 2,5 mm wide; non-petaloid
staminodes absent. Stamens ca. 40 - 60, filaments white or pink, ca.
0,5 - 2 - 3 mm long, anthers yellow; stigmas 5, 0,5 - 1,5 mm long,
elliptical - subulate. Capsule 5 - locular, ca. 5,5 mm in diameter and
5 mm deep, woody, charcoal-grey, valve-wings ca. 2 mm long and up to
0,5 mm wide, separate from the valve for most of their length; placental
tubercle absent; covering membranes present, covering about half of the
surface of each locule. Seeds rich maroon, ca. 0,72 - 0,85 - 0,90 mm
long, 0,46 - 0,59 - 0,68 mm wide and 0,55 - 0,65 - 0,79 mm deep,
funicles ca. 0,18 - 0,36 - 0,50 mm long; surface baculate, baculae ca.

18 μ long, 117 μ in diameter; micropunctilli present, ca. 0,25 μ long and 0,52 μ in diameter. Flowering season: 90% of specimens seen were in flower between November and January.

SPECIMENS SEEN:

- CAPE 3219 (-AA) Pakhuis Pass, 1 December 1935, Salter 5085 (BOL!)
- (-AC) Uitkyk Pass near Algeria, 3 December 1934, Compton s.n. in BOL 21430 (BOL!); Uitkyk Pass, far side of Algeria, December 1934, Leighton s.n. in BOL 21532 (BOL!); Matjes River, Cedarberg, December 1934, Leipoldt s.n. in BOL 21541 (BOL!)
- (-CA) Duiwelskop, Cedarberg, January 1945, Stokoe s.n. in SAM 67933 (SAM!)
- 3318 (-BB) Twenty-four Rivers mountain above Porterville, December 1949, E. Esterhuysen 16608 (BOL!, S!)
- (-DB) Upper Berg River, Paarl Division, December 1945, E. Esterhuysen 12388 (BOL!)
- (-DD) Jonkershoek Twins, February 1945, E. Esterhuysen 11502 (BOL!); Victoria Peak, 2 January 1944, E. Esterhuysen 9791 (BOL!); Nerine Kloof, Jonkershoek, 6 January 1947, Anon. s.n. in SUG 11839 (BOL!); Jonkershoek, 2nd Waterfall, 25 November 1946, Anon. s.n. in SUG 11575 (BOL!)
- 3319 (-AA) Visgat between Schurftteberg and Great Winterhoek, October 1953, Stokoe s.n. in SAM 63821 (SAM!)
- (-AD) West slopes of Mitchell Peak, December 1948, E. Esterhuysen 14814 (BOL!)
- (-BC) Matroosberg near Laakenvlei, November 1917, Phillips 2093, 2095 (SAM!)
- (-CA) Bain's Kloof, December 1931 - January 1932, Feenstra s.n. in NBG 2504/31 (BOL!); North slopes of Du Toit's Kloof, December 1945, E. Esterhuysen 12310 (BOL!); Du Toit's Kloof, H. Hall s.n. in NBG s.n. (BOL!); Haalhoek Spitskop, 2 January 1947, E. Esterhuysen 13506 (BOL!)
- (-CB) Fairy Glen, Worcester, 2 January 1950, E. Esterhuysen 1667 (BOL!)
- (-CC) Frenchhoek, November 1913, Phillips 1127 (SAM!)

- 52 Lampranthus calcaratus (Wolley Dod) N.E. Br., Gard. Chron. 87 : 211 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1427 (1955); idem, Handb. Succ.
Pl. 3 : 1194 (1960); idem, Sukk. Lex. : 439 (1970); idem, Lex.
Succ. Pl. : 492 (1974)

Syntypes: Claremont Flats, 5 September 1897, Wolley Dod 2857 (BOL!)
Kenilworth Racecourse, 5 September 1897, Wolley Dod
2860 (BOL!)

M. calcaratum Wolley Dod, Jl. Bot. 38 : 170 (1900); Berger, Mesemb.
und Portulac. : 144 (1908)

Syntypes: as above

L. stoloniferus L. Bol., Jl. S. Afr. Bot. 31 : 307 (1965); Jacobsen,
Sukk. Lex. : 446 (1970); idem, Lex. Succ. Pl. : 499 (1974)

Holotype: 55 miles east of Karooport, June 1965, Stayner s.n.
in KG 214/65 (BOL!)

Succulent shrubs, ca. 40 cm. high and 25 cm. in diameter. Internodes
smooth, russet, ca. 15 mm long and 1 mm in diameter in the first two
years of growth. Leaves triquetrous, glaucous, sheathing the stem for
ca. 1,5 mm, 4 - 12 - 21 mm long, 1 - 2 - 4 mm wide and 1 - 2 - 4 mm
deep. Flowers solitary or in threes, pedicels ca. 15 mm long and 1 mm
in diameter; flowers pink to magenta, ca. 20 mm in diameter. Bracts
up to 12,5 mm long and 3 mm wide, sepals 5, ca. 7 mm long and up to 3
mm wide, the inner 3 with membranous margins, shorter; petals (petaloid
staminodes) ca. 30 in 1 series, 6 - 8 - 10 mm long, up to 1,5 mm wide;
non-petaloid staminodes few, white, ca. 3 - 6 mm long, sharply differen-
tiated from the petaloid staminodes. Stamens 20 - 75, filaments white,
ca. 1,5 - 3,5 - 5 mm long, anthers yellow; stigmas 5, 1,5 - 3,5 - 5,5
mm long, long-acuminate. Capsule 5 - locular, ca. 6 mm in diameter
and 7 mm deep, woody, charcoal-grey, valve-wings absent; placental
tubercle absent; covering membranes present, covering about half of the
surface of each locule. Seeds maroon-brown, ca. 1,08 - 1,30 - 1,48 mm
long, 0,86 - 0,91 - 0,99 mm wide and 0,49 - 0,57 - 0,68 mm deep,
funicles ca. 0,34 - 0,49 - 0,56 mm long; surface baculate, baculae ca.
20 μ long, 100 μ in diameter; microbaculae present, ca. 0,42 μ long
and 0,97 μ in diameter. Flowering season: 100% of specimens seen
were in flower between June and September.

SPECIMENS SEEN:

- CAPE 3220 (-CB) 55 miles east of Karooport, 29 June 1965, Stayner s.n. in KG 214/65 (BOL!)
- 3318 (-BB) hillside at Strand Kloof, August 1946, Leighton 1850 (BOL!)
- (-CD) Kenilworth Race Course, 5 September 1897, Wolley Dod 2857 (BOL!, K!); Claremont Flats, 5 September 1897, Wolley Dod 2860 (BOL!, K!); near Kenilworth Racecourse, July 1896, Wolley Dod 1296 (BOL!); Milnerton, June 1939, Salter s.n. (BOL!)
- 3418 (-AB) Fish Hoek, July 1926, L. Bolus s.n. (BOL!); Zeekoevlei, 1 August 1919, Pillans 3657 (K!); Raapkraal, 11 August 1928, Salter 268/1 (K!); Pollsmoor, 9 September 1942, Marinus s.n. (BOL!)
- (-BA) Cape Flats, n.d., Ecklon s.n. (S!)
- 3419 (-AC) East side of Bot River Vlei, September 1949, Wilman 754 (BOL!); Mossel River, December 1912, G. Potts s.n. in SAM 4989 (SAM!)

This species differs from L. alpinus, the only other species to lack valve-wings regularly, in geographical range, flowering season, in having longer leaves, pedicels and bracts, in the plants being larger and laxer, and in that the depth of the capsules is greater than their diameter. It differs from L. scaber in usually lacking valve-wings, in flowering earlier, in having shorter pedicels and sepals and larger seeds than that species, and in that the depth of the capsules of L. calcaratus is greater than their diameter.

L. stoloniferus is the name given to a depauperate plant of this species from the Ceres Karoo.

- 53 Lampranthus acutifolius (L. Bol.) N.E. Br., Gard. Chron. 87 : 211 (1930); Jacobsen, Handb. Sukk. Pfl. 3 : 1422 (1955); idem, Handb. Succ. Pl. 3 : 1191 (1960); idem, Sukk. Lex. : 438 (1970); idem, Lex. Succ. Pl. : 491 (1974)

Mesembryanthemum acutifolium L. Bol., Notes Mesemb. allied Gen. 2 : 59 (1929)

Holotype: Riebeecks Kasteel, January 1925, Pillans s.n. in BOL 18871

Dwarf succulent shrubs, ca. 20 cm. high and 12 cm. in diameter. Internodes smooth, deep maroon, ca. 20 mm long and 1 mm in diameter in the first two years of growth. Leaves sharply triquetrous, 4 - 7,5 - 13 mm long, 0,5 - 1 - 2 mm wide and 0,5 - 1 - 2 mm deep. Flowers in threes, pedicels ca. 22 mm long and 0,5 mm in diameter; flowers pink, ca. 25 mm in diameter. Bracts up to 6 mm long and 1 mm wide, sepals 5, ca. 5 mm long and up to 2 mm wide, the inner 3 slightly shorter, with membranous margins; petals (petaloid staminodes) ca. 30 in 1 series, 11,5 - 13 - 14 mm long, up to 1,5 mm wide; non-petaloid staminodes absent. Stamens ca. 25, filaments white, ca. 0,5 - 1 - 2 mm long, anthers white; stigmas 5, ca. 1 mm long, elliptical. Capsule 5 - locular, ca. 4,5 mm in diameter and 4 mm deep, woody, grey, valve-wings ca. 1 mm long and up to 0,5 mm wide, not separate from the valve; placental tubercle absent; covering membranes present, covering less than half of the surface of each locule. Flowering season: 100% of specimens seen were in flower in January.

SPECIMEN SEEN:

CAPE 3318 (-BD) Riebeeck Kasteel, January 1928, Pillans s.n. in BOL 18871 (BOL!, holotype)

This species differs from L. furvus in geographical range and in that it flowers somewhat later than that species. In L. acutifolius the bracts are much smaller than the foliage leaves. The pedicels, sepals and petals of this species are shorter than those of L. furvus, and the petals are fewer. L. acutifolius differs from L. scaber in that the leaves, sepals, stamens, stigmas and capsules are all smaller than those of L. scaber, the valve-wings are attached to the valves for their whole length instead of being free for most of it, and the covering membranes in L. acutifolius are much less extensive than those of L. scaber.

6.1.4 Lampranthus section Adunci ^{Salm Dyck} (~~ad~~) Glen, comb. nov.

Lampranthus } Adunci ^{Salm Dyck} (~~ad~~) Schwant. ex Jacobsen, comb. illegit.
Jacobsen, Handb. Succ. Pl. 3, 1190 (1960);
Jacobs, Sukk. Lex. : 437 (1970); Jacobsen, Lex. Succ.
Pl. : 490 (1974)

Mesembryanthemum L. } Adunci Salm Dyck, obs. Bot. Hort. Dyck.
1 : 25 (1820); Haw., Rev. Pl. Succ. : 152 (1821);
DC., Prodr. 3 : 439 (1828); Sond., Fl. Cap. 2 :
437 (1862); Berger, Mes. u. Port. : 140 (1908)

Prostrate or shrubby plants with opposite leaves with strongly to slightly recurved apices, these usually dark grey or reddish, contrasting with the green of the rest of the leaf, leaves semiterete to terete, obscurely keeled in L. wordsworthiae. Internodes black to charcoal-grey. Flowers solitary, pink, with or without a white central 'eye', stigmas very short and broad, 5, capsules 5 - locular, these and the seeds typical of the genus.

Species 3, S.W. Cape.

Type species: L. spiniformis (Haw.) N.E. Br.

Jacobsen's transfer of the sectional name to Lampranthus is illegitimate for the same reason as all his other transfers of sectional names. The section is composed of three rather similar species, and the name is based on L. aduncus, which is included in L. spiniformis in this treatment. For this reason, the latter is named as the type species of the section.

This section is confined to the south-western Cape Province, very few specimens being found further than 150 km. from Cape Town.

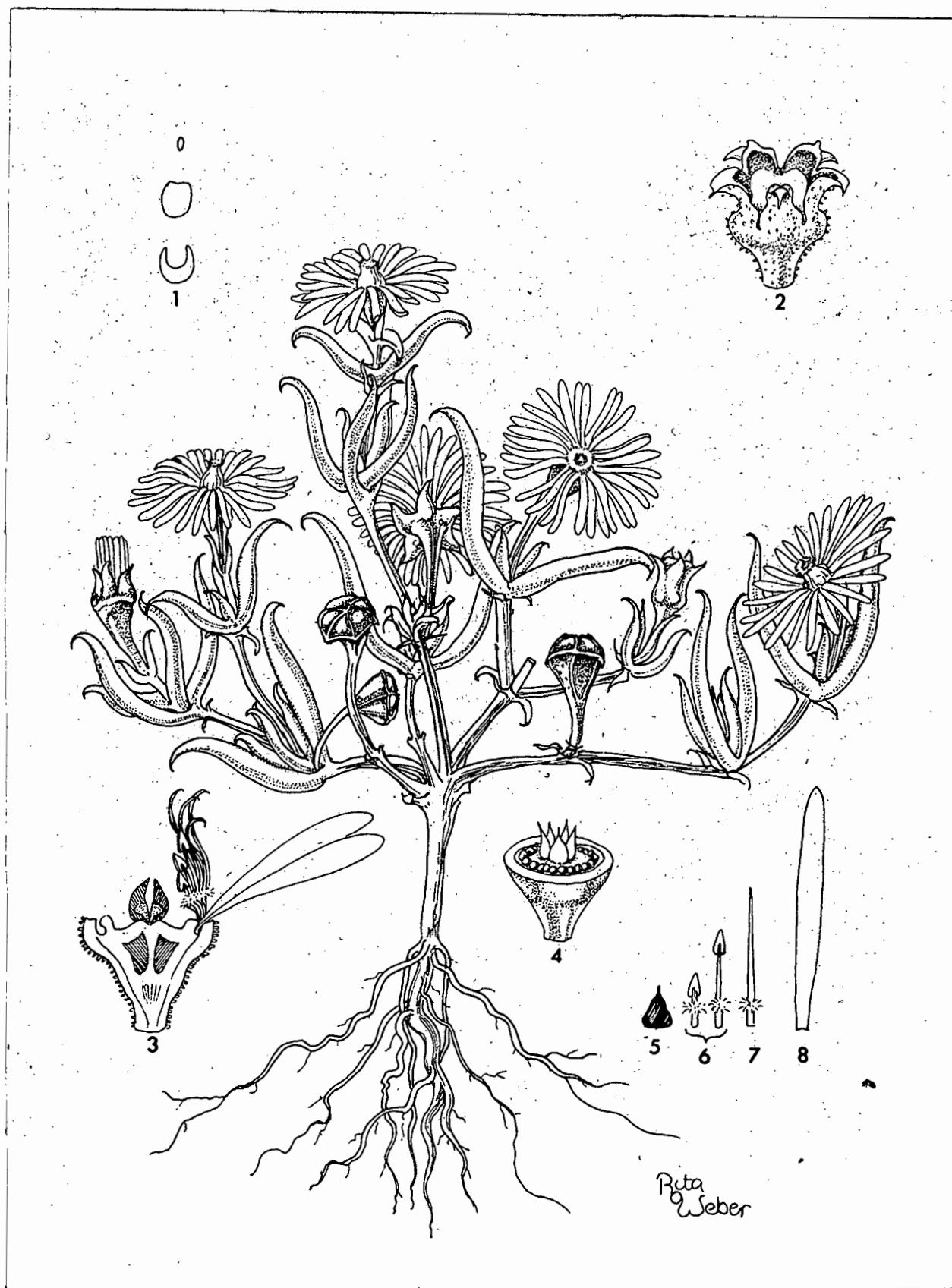


Fig. 6. *Lampranthus spiniformis*.

- | | |
|----------------------|--------------|
| 1. sections of leaf | 2. sepals |
| 3. section of flower | 4. gynoecium |
| 5. stigma | 6. stamens |
| 8. petal | 7. staminode |

- 54 Lampranthus spiniformis (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1447 (1955); idem, Handb.
Succ. Pl. 3 : 1209 (1960); idem, Sukk. Lex. : 446 (1970);
idem, Lex. Succ. Pl. : 449 (1974)

Neotype: Saron, 22 June 1896, Schlechter 7868 (BOL, holo!, BM!,
E!, G!, K!, PRE!, S!, iso)

Mesembryanthemum spiniforme Haw., Obs. Gen. Mesemb. 2 : 240 (1795); idem,
Misc. Nat. : 87 (1803); idem, Syn. Pl. Succ. : 291 (1812); idem,
Rev. Pl. Succ. : 152 (1821); DC., Prodr. 3 : 439 (1828); Salm
Dyck, Monogr. Gen. Aloes Mesemb. f.1 t.30 § 47 (1836); D. Dietr.,
Syn. Pl. 3 : 144 (1843); Sond., Fl. Cap. 2 : 438 (1862); Berger,
Mesemb. u. Portulac. : 140 (1908)

M. aduncum Haw., Misc. Nat. : 87 (1803); Jacq., Fragm. Bot. t.51 (1809);
Haw., Syn. Pl. Succ. : 291 (1812); Haw., Rev. Pl. Succ. : 153
(1819); DC., Prodr. 3 : 439 (1828); Salm Dyck, Monogr. Gen.
Aloes. Mesemb. f.1 t.32 § 47 (1836); D. Dietr., Syn. Plant. 3
: 144 (1843); Sonder. Fl. Cap. 2 : 438 (1862); Berger, Mes. u.
Portulac. : 143 (1908)

Iconotype: unpublished plate at K.!

L. aduncus (Haw.) N.E. Br., Gdnrs Chron. 87 : 211 (1930); Jacobsen,
Handb. Sukk. Pfl. 3 : 1423 (1955); Jacobsen, Handb. Succ. Pl.
3 : 1191 (1960); Jacobsen, Sukk. Lex. : 438 (1970); Jacobsen,
Lex. Succ. Pl. : 4491 (1974)

Iconotype: as above

M. curvifolium Haw., Misc. Nat. : 88 (1803); idem, Syn. Pl. Succ. :
290 (1803); idem, Rev. Pl. Succ. : 152 (1821); DC., Prodr. 3 :
439 (1828); Salm Dyck, Monogr. Gen. Aloes. Mesemb. f.1 § 47 t.2
(1836); D. Dietr., Syn. Pl. 3 : 144 (1843); Sond., Fl. Cap. 2
: 438 (1862); Berger, Mesemb. u. Portulac. : 141 (1908)

L. curvifolius (Haw.) Schwant., Nat. Cact. Succ. Jl. (C.B.) 4 : 58
(1949); Jacobsen, Handb. Sukk. Pfl. 3 : 1429 (1955); idem,
Handb. Succ. Pl. 3 : 1196 (1960); idem, Sukk. Lex., : 440
(1970); idem, Lex. Succ. Pl. : 493 (1974)

M. ceratophyllum Schlechtendahl in Willd., Enum. Pl. Hort. Berol.
Suppl. : 36 (1813)

Mes. flexifolium Haw., Suppl. Pl. Succ. : 96 (1819); Rev. Pl. Succ.
: 153 (1821); Dietr., Syn. Plant. 3 : 144 (1843)

Iconotype: Unpublished plate at K

Lampranthus flexifolius (Haw.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1433 (1955)

Iconotype: as above

Mes. curfolium Haw. var. minus S.D., Monogr. Gen. Aloes Mesembr. 47
t.2 (1836); Berger, Mes. u. Portulac. : 142 (1908)

Iconotype: Salm Dyck, Monogr. Gen. Aloes Mesembr. 47 t.2

L. curvifolius (Haw.) N.E. Br. var. minus (S.D.) Rowley, Jacobsen,
Handb. Succ. Pl. 3 : 1196 (1960); Jacobsen, Sukk. Lex. : 440
(1970); Jacobsen, Lex. Succ. Pl. : (1974)

Iconotype: as above

Ruschia willdenowii Schwantes, Feddes Rep. 43 : 230 (1938)

No type cited

L. nelii L. Bol., Jl. S. Afr. Bot. 31 : 308 (1965); Jacobsen, Sukk. Lex.
: 444 (1970); idem, Lex. Succ. Pl. : (1974)

Holotype: Fisantekraal, July 1965, Nel s.n. in BOL 27732 (BOL!)

Succulent shrubs, ca. 25 cm. high and 40 cm. in diameter. Internodes
pale grey, smooth, ca. 16 mm long and 1,5 mm in diameter in the first
two years of growth. Leaves semiterete to terete, dark green, sheathing
the stem for ca. 1 mm, 8 - 20 - 50 mm long, 0,5 - 1,7 - 5 mm wide and
0,5 - 1,7 - 5 mm deep; apices sharply recurved. Flowers solitary, rarely
in threes, pedicels ca. 15,5 mm long and 1 mm in diameter; flowers pink
to scarlet or magenta, often with a white or rarely more deeply-coloured
ventral 'eye', ca. 24 mm in diameter. Bracts up to 12 mm long and 3 mm
wide, sepals 5, ca. 8 mm long and up to 5 mm wide, the inner 3 with
membranous margins, ca. 6 mm long and 4 mm wide; petals (petaloid
staminodes) ca. 25 - 40 in 1 series, 5 - 8 - 14 mm long, up to 1 mm
wide; non-petaloid staminodes few to many, white, ca. 1 - 5 mm long,
sharply differentiated from the petaloid staminodes. Stamens ca. 30
- 90, filaments white, ca. 1 - 3 - 4 mm long, anthers yellow; stigmas
5, 1 - 3 - 6 mm long, subulate, long-acuminate. Capsule 5 - locular,
ca. 7,5 mm in diameter and 7 mm deep, woody, charcoal grey, valves with
conspicuous, ca. 1 mm high marginal ridges, valve-wings ca. 3 mm long

and up to 0,7 mm wide, separate from the valve for most of their length; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds greyish-maroon, ca. 0,93 - 1,13 - 1,35 mm long, 0,47 - 0,77 - 1,00 mm wide and 0,45 - 0,67 - 0,92 mm deep, funicles ca. 0,24 - 0,43 - 0,56 mm long; surface baculate, baculae ca. 46 μ long, 92 μ in diameter; microbaculae present, ca. 0,50 μ long and 0,78 μ in diameter. Flowering season: 87% of specimens seen were in flower between May and August.

SPECIMENS SEEN:

- CAPE 3118 (-DC) Giftberg, October 1953, Esterhuysen 22055 (BOL!)
- 3218 (-DA) lower north slopes of the Piquetberg, May 1948, Esterhuysen 14484 (BOL!)
- (-DB) Grey's Pass, May 1908, Pillans 1265 (BOL!)
- 3318 (-AD) Darling Flora Reserve, 28 June 1956, Winkler 101 (NBG!)
- (-BC) Springfield, milestone 26 near Mamre, 4 June 1971, Axelson 432 (NBG!); 8,2 miles from Malmesbury towards Hopefield, 13 June 1967, Marsh 175 (PRE!)
- (-CD) Observatory Ranger, 25 July 1896, Wolley Dod 1383 (BM!, BOL!, GRA!, K!); Table Mountain, 1 July 1917, Moss 2929 (J!); Foot of Devil's Peak, July 1896. MacOwan 3122 (= Herbarium Austro-Africanum 1613) (G!, GRA!, K!, SAM!); Above Camps Bay, July, Ecklon s.n. (GRA!); Cape Town, August 1872, G. de Vyllder s.n. (S!); Cape Town, April 1853, Andersson s.n. (S!); West of Lion's Head, 1900, Diels 118 (B!); Lion Mountain, July 1828, Ecklon s.n. (= Ecklon & Zeyher) 2038 (S!, TCD!)
- Oude Molen, 28 August 1897, Wolley Dod 2763 (K!); Observatory Ranger, 22 August 1897, Wolley Dod 2897 (BM!); Signal Hill. June 1908, Dümmer 1606 (E!); between Mowbray and Wynberg, 8 July 1883, Wilms 3220 (E!); Table Mountain, July 1908, Dümmer 1659 (E!)
- (-C-) Sea Point Slopes, 3 June 1943, Goulimis s.n. (BOL!); Sea Point Slopes, May 1923, Page s.n. in BOL 17363 (BOL!); Lion's Head, 20 June 1896, Wolley Dod 1228 (BM!); Lion's Mountain, May 1838, Anon. s.n. (TCD!)
- Lion's Head, 5 August 1896, Wolley Dod 1469 (K!); West of Lions's Head, August 1971, Wisura 2139 (NBG!)

- (-DA) Kalbaskraal, May 1923, L. Bolus s.n. in NBG 880/15 (BOL!)
- (-LB) Paardeberg, May 1927, Pillans s.n. (BOL!); Kalbaskraal, 12 August 1969, Marsh 1218 (STE!)
- (-DC) Maitland Flats, July 1891, Guthrie 926 (BOL!); South of Kanonberg, Bottelary Rd., 17 June 1933, Acocks 2773 (S!); Kraaifontein, June 1908, Dümmer 1602 (E!)
- (-C-) Foot of Tygerberg near Parow, July 1925, Moss 11572 (J!, BM!); Durbanville, 15 August 1963, Taylor 5605A (STE!); 1,8 miles from Fisantekraal Airport towards Agter Paarl, September 1965, Nel s.n. in BOL 27732 (BOL!); Fisantekraal, July 1965, Nel s.n. in BOL 27732 (BOL, holo. of syn!); Joostenberg, Fisantekraal, June 1975, Glen 946 (BOL!); Joostenbergkloof, April 1975, Milewski s.n. (BOL!)
- (-DD) Joostenbergkloof, 15 April 1975, Milewski s.n. (BOL!) between Klapmuts and Stellenbosch, 28 April 1946, L. Bolus s.n. in BOL 23333 (BOL!); Bottelary Road west of Kanonberg, 1 July 1933, Acocks 2768 (S!)
- 3319 (-AA) Saron, 22 June 1896, Schlechter 7868 (BM!, BOL!, E!, G!, K!, PRE!, S!); Saron, no date, Herre s.n. in SUG 11652 (BOL!)
- (-AC) Romans River, 1925, Compton s.n. in NBG 841/22 (K!) 1½ miles southwest of Tulbagh, September 1926, Pillans s.n. (BOL!)
- (-CD) Moordkuil, 24 June 1975, Glen 958 (BOL!)
- 3322 (-CD) George, August 1925, Struben s.n. in NBG 681/20 (BOL!, K!)
- 3418 (-AB) Brakkloofnek, 7 August 1949, Wilman 637 (BOL!); Llandudno, July 1933, Salter 3337 (BOL!); Llandudno, May 1943, Goulimis s.n. (BOL!); near Hout Bay, 4 July 1897, Wolley Dod 2732 (BOL!); Hout Bay, June 1915, Mathews 258 (BOL!); Kommetje Road, 3 December 1927, Arbuthnot s.n. (BOL!); Kommetjie, 6 August 1975, Milewski 6 (BOL!); below Brakkloof Reservoir, west of Fish Hoek, 28 July 1971, Wisura 2120 (NBG!); Cook's Bay, Cape Peninsula, 1933, Humbert 9560 (PRE!); Above Kalk Bay, 11 July 1926, Pillans s.n. (K!); Hout Bay,

- 24 April 1937, Mathews NBG 1650/15 (BOL!, K!)
- De Klip, Wynberg, May 1940, Salter s.n. (BOL!);
between Muizenberg & Kalk Bay, 15 August 1883, Willms
3220 (G!); Hout Bay, 4 July 1897, Wolley Dod 2732 (BM!)
- (-AD) between Witsands and Smitswinkel, October 1946, Herre
s.n. in SUG 11751 (BOL!); Catlands Simonstown, 5 July
1896, Wolley Dod 1260 (BOL!, K!)
- (-BA) near Athlone Blind School, Faure, 13 August 1933,
Arbuthnot s.n. in BOL 20723 (K!)
- (-BB) South-west of Somerset West, 9 September 1974,
Boucher & Mauve (PRE!)

3419 (-AA) Houw Hoek, 20 July 1897, F. Guthrie 4689 (BOL!)

Without locality: C.B.S., 1831, Verreaux s.n. (G!); 2 other
specimens

3 garden specimens

This very distinctive species differs from most if not all others in the genus by flowering in winter and having terete, reflexed leaves. Its shrubby habit, short pedicels, larger sepals, smaller bracts and seeds, and more extensive covering membranes distinguish it from L. filicaulis.

All the names here reduced to synonymy were given to plants with different-sized leaves or which formed shrublets of different sizes. Although the leaves of this species can be grouped into two distinct size classes, it is usual to find both on the same plant. As the proportion of large and small leaves on a plant varies within a single population, this character cannot be used to separate them at specific level.

No painting or material of this species seen by Haworth has survived, so it is necessary to propose a neotype. Schlechter 7868, a typical specimen of which there are a number of duplicates⁵, is proposed as the neotype of this species, because it matches Haworth's description.

The name Ruschia willdenowii Schwant. is included here because it is

based on Berger's (1908) interpretation of Mes. aduncum Willd. as a synonym of M. curviflorum var. minus, which can be shown to be a synonym of this species. The names for which no type is given, are included here as synonyms because no point in the descriptions given can be used to distinguish between them and L. spiniformis.

- 55 Lampranthus filicaulis (Haw.) N.E. Br., Gard. Chron. 76 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1433 (1955); idem, Handb.
Succ. Pl. 3 : 1199 (1960); idem, Sukk. Lex. : 441 (1970);
idem, Lex. Succ. Pl. : 494 (1974)

Holotype: unpublished plate at Kew

Mesembryanthemum filicaule Haw., Misc. Nat. : 87 (1803); idem, Syn.
Pl. Succ. : 291 (1812); idem, Rev. Pl. Succ., : 153 (1821);
DC., Prodr. 3 : 439 (1828); Salm Dyck, Monogr. Gen. Aloes
Mesemb. f. 1 t. 33 47 (1836); D. Dietr., Syn. Pl. 3 : 144
(1843); Sond., Fl. Cap. 2 : 438 (1862); Berger, Mesemb. u.
Portulac. : 143 (1908)

Holotype: as above

Mat-forming succulents, ca. 10 cm. high and 1 m. in diameter. Inter-
nodes smooth, maroon, often rooting at the nodes, ca. 20 mm long and
1 mm in diameter in the first two years of growth. Leaves terete, grass
green, sheathing the stem for ca. 1,5 mm, 4 - 15 - 50 mm long, 1 - 2 -
4 mm wide and 1 - 2 - 4 mm deep; apices distinctly recurved. Flowers
solitary, pedicels ca. 47,5 mm long and 1 mm in diameter; flowers
magenta, sometimes with a white central 'eye', ca. 18 mm in diameter.
Bracts up to 16 mm long and 3 mm wide, sepals 5, ca. 5 mm long and up
to 4 mm wide, the inner 3 with membranous margins, narrower; petals
(petaloid staminodes) ca. 30 in 1 series, 6 - 9 - 11 mm long, up to
1 mm wide; non-petaloid staminodes ca. 20, white, ca. 2 - 3 - 4,5 mm
long, sharply differentiated from the petaloid staminodes. Stamens
ca. 20, filaments pink at the apices, white below, ca. 2 - 2,5 - 3,5
mm long, anthers yellow; stigmas 5, 1 - 3 mm long, acuminate. Capsule
5 - locular, ca. 8 mm in diameter and 6,5 mm deep, woody, dark brown,
valves with conspicuous marginal ridges, valve-wings ca. 3,5 mm long
and up to 1 mm wide, separate from the valve for most of their length;
placental tubercle absent; covering membranes present, covering about
a third of the surface of each locule. Seeds reddish maroon, ca. 1,14
- 1,26 - 1,39 mm long, 0,91 - 0,97 - 1,06 mm wide and 0,49 - 0,59 -
0,68 mm deep, funicles ca. 0,39 - 0,43 - 0,59 mm long; surface baculate,
baculae ca. 37 μ long, 133 μ in diameter; microbaculae absent.
Flowering season: 71% of specimens seen were in flower between June
and August.

SPECIMENS SEEN:

- CAPE 3318 (-CD) Rondebosch Common, July 1938, Barker 659 (NBG!);
Foot of Table Mountain, June, Zeyher s.n. (SAM!);
Foot of Devil's Peak, July 1896, MacOwan 3123
(= Herbarium Austro-Africanum 1731, = SAM 36712)
(SAM!, G!, K!, GRA!, UPS!); Witkamp, August, Zeyher
s.n. in SAM 36713 (SAM!); Camp Ground, June 1923,
Page s.n. in BOL 17375 (BOL!); Bloemendal, June 1877,
H. Bolus 3726 (BOL!); near Claremont, 2 July 1892,
Schlechter 1057 (B!, BM!, PRE!); Green Point, 7 June
1824 and Salt River, 12 July 1824, Ecklon & Zeyher
1988 (B!, S!, TCD!); Sea Point, 5 August 1896, Wolley
Dod 1468 (BM!, K!); Campground, 29 August 1955, Salter
9617 (BM!); Camp Ground, June 1908, Dummer 1604 (E!);
Rondebosch Common, 16 August 1959, F. White 5257
(OXF!); Lion Mountain, June, Zeyher 2591 (S!)
- (-DA) 15 miles from Malmesbury at the Durbanville turnoff,
September 1931, Arbuthnot s.n. (BOL!)
- (-DC) Cape Levels near Mowbray, July 1925, Moss 11571 (J!);
Fisantekraal Airport, September 1965, Nel 5 (BOL!);
'Peaslake', Durbanville, 1963, Taylor 4954 (STE!, PRE!)
- (-DD) Joostenberg, between Paarl & Durbanville, October 1949,
Esterhuysen 15976 (BOL!); Stellenbosch Flats, no date,
E. Burger 2 (STE!); Stellenbosch, 10 August 1963, Bos
327 (M!)
- 3319 (-AA) Saron, August 1926, Leipoldt s.n. (BOL!)
- (-CA) Hawequas mountains, nek west of the Microwave tower,
1972, Oliver 3732 (PRE!, K!)
- (-CB) Worcester airport, 1962, van Breda 1746/62 (BOL!);
between Bain's Kloof & Worcester, 30 August 1946,
Leighton 2848 (BOL!, PRE!)
- 3418 (-AB) Bergvliet, 21 July 1916, Purcell 326 (SAM!, STE!);
Oatlands, Simonstown, 5 July 1896, Wolley Dod 1259
(BOL!); Froggy Farm, November 1964, Taylor 6040 (PRE!);
Diep River, October 1827, Verreaux s.n. (G!, TCD!);
From. B. Sp., 1777, Oldenburg s.n. (BM!)
- (-AD) Miller's Point, July 1908, Dummer 1630 (E!)

- (-BA) Flats at Kenilworth, 3 November 1913, Peters 50470
(B!); Cape Flats, 1841, Ecklon 143 (S!)
(-BB) Faure, 1946, Strey 644 (PRE!)

Without precise locality: C.B.S., no date, Blom 6 (SBT!); no
locality, no date, herb. Swartz
s.n. (S!)

1 garden specimen

This species differs from L. wordsworthiae in geographical range and in that it flowers earlier than that species. Other differences are that in L. filicaulis the flowers are smaller, the capsule valves have minute ridges, the pedicels and bracts are much longer, the covering membranes are less extensive and valve-wings and staminodes are present.

This species differs from L. reptans in having terete, recurved leaves rather than triquetrous, falcate ones; in having pink, not white or yellow flowers, in having slightly shorter leaves, in having ridged capsule valves, in having staminodes, in having slightly larger seeds and in having much smaller sepals.

- 56 Lampranthus wordsworthiae (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930);
Jacobsen, Handb. Sukk. Pfl. 3 : 1452 (1955); idem, Handb. Succ.
Pl. 3 : 1213 (1960); idem, Sukk. Lex. : 447 (1970); idem, Lex.
Succ. Pl. : 501 (1974)

Holotype: Mountains near Sir Lowry's Pass, August 1919,
R. Wordsworth s.n. in NBG 1899/17 (BOL!)

Mesembryanthemum wordsworthiae L. Bol., Ann. Bol. Herb. 3 : 126 (1922)

Holotype: as above

Mat-forming succulent, ca. 8 cm. high and 50 cm. in diameter. Internodes square, smooth, russet to greenish, not rooting at the nodes, ca. 25 mm long and 2 mm in diameter in the first two years of growth. Leaves semiterete, acuminate, grass green, 12 - 17,8 - 28 mm long, 1,5 - 2,5 - 5 mm wide and 1,5 - 2,5 - 5 mm deep; sheathing the stem for ca. 1 mm. Flowers solitary, pedicels ca. 12,5 mm long and 1,5 mm in diameter; flowers pink, ca. 27 mm in diameter. Bracts up to 9 mm long and 2,5 mm wide, sepals 5, ca. 5 mm long and up to 5 mm wide, all alike; petals (petaloid staminodes) ca. 32 in 1 series, ca. 11 mm long, up to 2 mm wide; non-petaloid staminodes absent. Stamens ca. 60 - 70, filaments pink, ca. 1 - 2 mm long, anthers yellow; stigmas 5, ca. 2 - 3 mm long, ovoid-acuminate. Capsule 5 - locular, ca. 8 mm in diameter and 7 mm deep, woody, charcoal-grey, valve-wings absent; placental tubercle absent; covering membranes present, covering most of the surface of each locule. Seeds reddish maroon, ca. 1,32 - 1,48 - 1,61 mm long, 1,07 - 1,15 - 1,22 mm wide and 0,69 - 0,78 - 0,88 mm deep, funicles ca. 0,53 - 0,67 - 0,78 mm long; surface baculate, baculae ca. 48 μ long, 116 μ in diameter; micropunctilli present, ca. 0,15 μ long and 0,26 μ in diameter. Flowering season: 76% of specimens seen were in flower between February and April.

SPECIMENS SEEN:

CAPE 3418 (-BB) Sir Lowry's Pass, October 1917, Wordsworth s.n. in NBG 1899/17 (BOL!); Sir Lowry's Pass, 27 March 1923, Wordsworth s.n. in NBG 436/18 (K!)

This species differs from L. filicaulis in both flowering season and geographical range. The leaves of this species are slightly longer than those of L. filicaulis, semiterete and not as sharply reflexed as those of that species. The capsules of L. wordsworthiae do not have

ridged valves, unlike those of L. filicaulis, which do. Flowers of L. wordsworthiae lack staminodes, unlike those of L. filicaulis. The bracts of L. wordsworthiae are smaller and the seeds larger than those of L. filicaulis.

L. wordsworthiae differs from L. reptans in having semiterete, reflexed leaves and pink flowers, rather than triquetrous, falcate leaves and white to yellow flowers. There is no overlap in flowering season between these two species. The pedicels of L. wordsworthiae are very much shorter than those of both L. filicaulis and L. reptans. The sepals of L. reptans are about twice the size of those of L. wordsworthiae, but the seeds are considerably smaller.

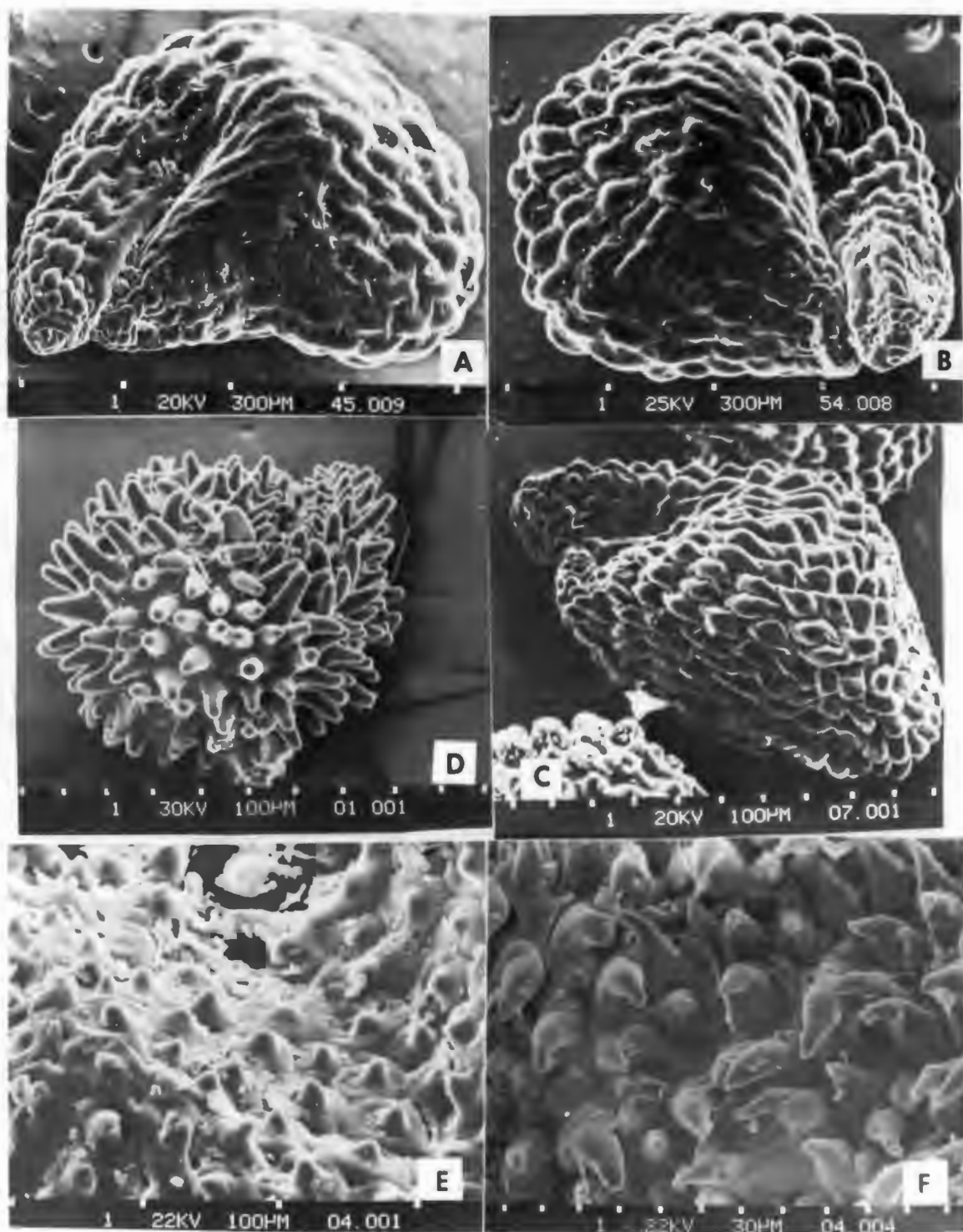


Plate 6. Seeds and leaves of Lampranthinae. The distances between the pips below each photograph are as marked.

- | | |
|---|------------------------------------|
| A. Seed of <u>L. filicaulis</u> | B. Seed of <u>L. wordsworthiae</u> |
| C. Seed of <u>Scopelogenia veruculata</u> | |
| D. Seed of <u>Braunsia vanrensburchii</u> | |
| E. Leaf of <u>B. geminata</u> | F. Leaf of <u>L. maximiliani</u> |

6.2 SCOPELOGENA

Scopelogenia L. Bol., Jl. S. Afr. Bot. 28 : 9 (1962); Jacobsen, Sukk.
Lex. : 508 (1970); Herre, Genera : 282 (1971); Jacobsen, Lex.
Succ. Pl. : 569 (1974); Dyer, Genera 2 : 133 (1975)

This genus is monotypic.

Type species: S. veruculata (L.) L. Bol

Description and notes as for the species

Scopelogenia veruculata (L.) L. Bol., Jl. S. Afr. Bot. 28 : 10 (1962);
Jacobsen, Sukk. Lex. : 509 (1970); idem, Lex. Succ. Pl. :
569 (1974)

Iconotype: Dill., Hort. Eltham. t.203 f.259

Typotype: Hort. Eltham, no date, Dillenius s.n. in Herb. Dill
(OXF!)

Mesembryanthemum veruculatum L., Sp. Pl. ed. 1, : 486 (1753); Mill.,
Gard. Dict. ed. 8, : 33 (1768); Soland. in Ait., Hort. Kew.
ed. 1, 2 : 192 (1789); Gmel., Syst. Nat. ed. 14, 2 : 192
(1791); Haw., Obs. Gen. Mesemb. 2 : 260 (1795); Willd., Sp.
Pl. ed. 5, 2 : 1041 (1799); DC., Plant. Grass. t.26 (1801);
Haw., Misc. Nat. : 81 (1803); Willd., Enum. Pl. Hort. Berol.
: 532 (1809); Ait. f., Hort. Kew. ed. 2, 3 : 211 (1811); Haw.,
Syn. Pl. Succ. : 258 (1812); Hornem., Hort. Reg. Hafniae :
462 (1815); Haw., Rev. Pl. Succ. : 155 (1821); Spreng., Syst.
Veg. 2 : 250 (1825); DC., Prodr. 3 : 438 (1828); D. Dietr.,
Syn. Pl. 3 : 144 (1843); Salm Dyck, Monogr. Gen. Aloes. Mesemb.
39 t.1 (1854); Sond., Fl. Cap. 2 : 428 (1862); Berger, Mesemb.
u. Portulac. : 126 (1908)

Iconotype: as above

Lampranthus veruculatus (L.) L. Bol., in Adamson & Salter, Fl. Cape
Peninsula : 385 (1950); Jacobsen, Handb. Sukk. Pfl. 3 : 1548
(1955); idem, Handb. Succ. Pl. 3 : 1212 (1960)

Iconotype: as above

Ruschia veruculata (L.) Rowl., Cact. Succ. Jl. G.B. 19 : 7 (1957)

Iconotype: as above

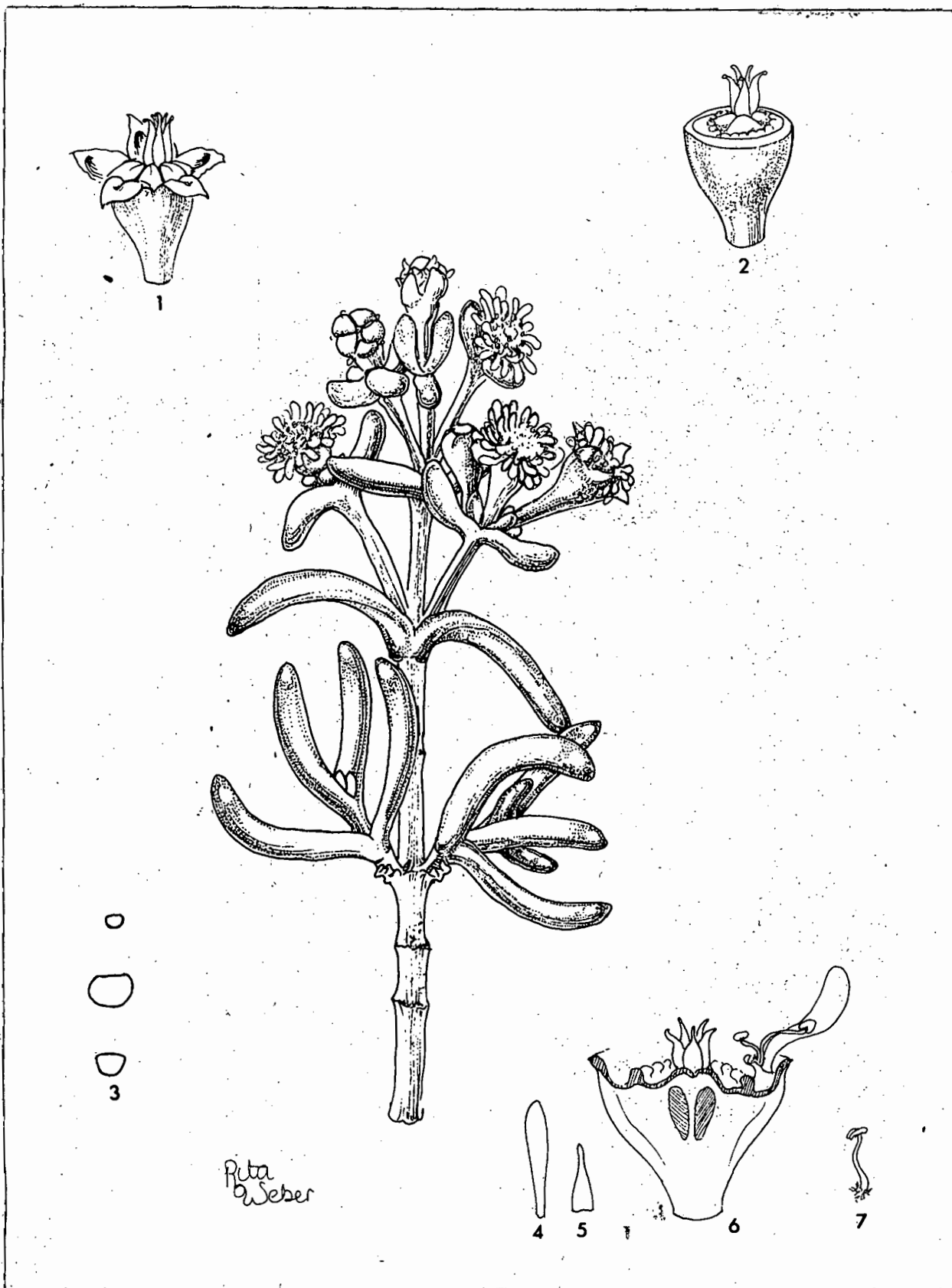


Fig. 7. *Scopelogenia veruculata*.

1. sepals and gynoecium

2. gynoecium

3. sections of leaf

4. petal

5. stigma

6. section of flower

7. stamen

S. gracilis L. Bol., Jl. S. Afr. Bot. 28 : 10 - 11 (1962); Jacobsen,
Sukk. Lex. : 509 (1970); idem, Lex. Succ. Pl. : 569 (1974)
Holotype: Swellendam div., Grootvadersbos, December 1958,
H. Hall 1506 (BOL!)

PRE-LINNAEAN CITATIONS:

Mesembryanthemum foliis veruculiformibus, floribus mellinis umbellatis
Dill., Hort. Eltham. : 268 t.203 f.259 (1732)

Ficoides Africana, folio triangulari, apice rubro, caule purpurascente
Tournefort, Comm. Act. Reg. Scient. 1705 : 240 n. 22 (1705)

Ficoides afra arborescens, folio tereti glauco, apice purpureo crasso
Boerh., Ind. Alt. Hort. Lugd. Bat. : 293 n. 3 (1720)

Mesembryanthemum foliis subcylindricis acutis connatis arcuatis laevibus
Linn., Hort. Cliff. : 220 n. 24 (1738); idem, Hort. Ups. : 128
n. 6 (1748)

Mesembryanthemum foliis subcylindraceutis acutis connatis arcuatis laevibus
Roen., Hort. Lugd. Bat. : 285 n. 24 (1740)

Lex succulent subshrubs, ca. 25 cm. high and 75 cm. in diameter. Inter-
nodes soft, smooth, pale buff, ca. 28 mm long and 3 mm in diameter in the
first two years of growth. Leaves terete to semiterete, grass green,
recurved, sheathing the stem for ca. 1,5 mm, 16 - 31,5 - 50 mm long, 2
- 3,5 - 8 mm wide and 2 - 3,5 - 8 mm deep; apices subtruncate.
Inflorescence cymose, pedicels ca. 16,5 mm long and 1 mm in diameter;
flowers deep yellow, ca. 16 mm in diameter. Bracts up to 15 mm long
and 2,5 mm wide, sepals 5, ca. 6,5 mm long and up to 4,5 mm wide, all
alike; petals (petaloid staminodes) ca. 30 - 50 in 1 series, 3,5 - 5,5
- 7,5 mm long, up to 1 mm wide; non-petaloid staminodes absent. Stamens
ca. 50 - 80, filaments yellow, ca. 1,5 - 3 - 4 mm long, anthers yellow;
stigmas 5, 2 - 6 mm long, acuminate. Capsule 5 - locular, ca. 8 mm in
diameter and 6,5 mm deep, woody, ochre, valve-wings absent; placental
tubercle absent; covering membranes present, covering less than half of
the surface of each locule. Seeds charcoal-grey, ca. 1,13 - 1,17 - 1,22
mm long, 0,61 - 0,75 - 0,85 mm wide and 0,39 - 0,53 - 0,73 mm deep,
funicles ca. 0,21 - 0,37 - 0,53 mm long; surface baculate, baculae ca.

37 μ long, 89 μ in diameter; microbaculae present, ca. 0,99 μ long and 0,69 μ in diameter. Flowering season: 80% of specimens seen were in flower between October and December.

SPECIMENS SEEN:

CAPE 3219 (-AD) Brackfontein, October - November, Ecklon & Zeyher 2030 (S!)

3318 (-CD) Table Mountain, October 1902, Marloth 2851 (BOL!);
Table Mountain, October 1915, Marloth s.n. (BOL!);
Lion's Head, 10 January 1897, Wolley Dod 2420 (BOL!);
Rocks west of Lion's Head, 17 November 1961, H. Hall s.n. (BOL!)

3320 (-DD) Strawberry Hill. Grootvadersbosch, December 1958,
H. Hall 1506 (BOL!, NBG!)

3421 (-A-) Glen Leith, Riversdale div., no date, Muir 4320 (BOL!)

Without precise locality: Africa, no date, Sello sub Willdenow
9746 (B-W!)

Garden material: Eltham, no date, Dillenius s.n. (⁰XF!)
3 other specimens

This species is difficult to confuse with any other member of the family. Few species of Mesembryanthemaceae have relatively large, reflexed, terete (as opposed to semiterete or triquetrous) leaves, and equally few have yellow flowers in many-flowered cymes. The capsules of this genus are unique in the family in that once opened, they do not close completely. Further details on the delimitation of this genus and reasons for maintaining it as such and for placing it in Lampranthinae, may be found in section 4.3.

The name 'Scopelogenia' comes from two Greek words meaning 'rock-child'. This genus is found amongst rocks in the moister parts of the southwestern Cape, on mountain-sides. It may well be commoner than the small number of cited specimens indicates, but it is inconspicuous even when in flower.

6.3 BRAUNSLIA

Braunsia Schwant., Gartenwelt 32 : 644 (1928); von Pöllnitz, Feddes

Rep. 32 : 28 (1933); Jacobsen, Feddes Rep. Beih. 106 : 24 (1938);

Phillips, Genera : 319 (1951); Jacobsen, Handb. Succ. Pfl. 3 : 1191

(1955); Jacobsen, Handb. Succ. Pl. 3 : 1000 (1960); L. Bolus, Jl.

S. Afr. Bot. 31 : 172 (1965); Jacobsen, Succ. Lex. : 367 (197);

Herre, Genera : 96 (1971); Jacobsen, Lex. Succ. Pl. : 415 (1974);

Dyer, Genera 2 : 101 (1975)

Echinus L. Bol., Fl. Pl. S. Afr. 7 : t. 266 (1927), non Lour. (1790); N.E.

Br., Kew Bull. 1929 : 56 (1929); von Pöllnitz, Feddes Rep. 32 : 41

(1933); Jacobsen, Succ. Pl. : 173 (1935); Pax, Nat. Pflanzenfam.

16c : 214 (1934); Jacobsen, Feddes Rep. Beih. 106 : 77 (1938);

Phillips, Genera : 320 (1951); Jacobsen, Handb. Succ. Pfl. 3 : 1354

(1955); Schwantes, Fl. Stones : 96, 338 (1957); Jacobsen, Handb.

Succ. Pl. 3 : 1135 (1960)

Dwarf succulent shrubs, internodes not completely hidden by the leaves, these opposite, sheathing the stems for up to two thirds of each internode; 9 - 43 mm long, 3,5 - 12 mm wide and 4 - 12 mm deep, triquetrous, usually with horny margins, sometimes hairy, grass green to pale grey.

Flowers solitary, 16 - 40 mm in diameter, white to magenta. Pedicels bibracteate, 5 - 30 mm long, bracts like the leaves but smaller, sepals 5 in two series, the outer ones 7,5 - 18 mm long and up to 7,5 mm wide, the inner ones similar or much smaller; petals few, wider than in most species of Lampranthus, 10 - 25 mm long, usually in 1 series; staminodes few to many; stamens few to many, white; stigmas 4 - 5, broadly subulate; nactaries separate to joined, raised. Capsule woody, with narrow to very narrow covering membranes over the locules, valve-wings present, placental tubercles absent. Seeds large to very large, 0,8 - 1,5 mm long, ovoid-triangular or tetrahedral, deep maroon to black, echinate with large microbaculae.

Type species: B. geminata (Haw.) L. Bol.

Schwantes (1928) named B. nelii Schwant. as type species of this genus, but unfortunately omitted a description, ~~which~~ ^{so this name} is therefore a nomen nudum.



Fig. 8. *Braunsia geminata*.

1. section of flower

3. gynoecium

6. stamens

9. half capsule, opened

4. petal

7. stigma

2. sepals

5. staminode

8. sections of leaf

It appears from Schwantes' generic description that "B. nelii" was probably referable to B. geminata. A further indication of this is that when Schwantes' description of the genus is combined with the means of character values of other species known to him, in order to make a 'pseudo-nelii' description, and the result used in numerical group-forming 'pseudo-nelii' and B. geminata cluster very closely indeed. For this reason Herre's (1971) choice of B. geminata as lectotype is well founded. The name Echinus L. Bol. is rejected because it is a later homonym of Echinus Lour. (Loureiro, 1790) (Acanthaceae).

The character which separates Braunsia from Lamprathus in all cases is the echinate seeds of the former. The habit and short, deep leaves with horny margins are highly distinctive and serve to separate Braunsia from all Lampranthinae except L. maximiliani. Braunsia is found from the Ceres Karoo to Bredasdorp, and is a conspicuous feature of the landscape around Touws River in the flowering season.

1 Braunsia geminata (Haw.) L. Bol., Jl. S. Afr. Bot. 33 : 306 (1967); Jacobsen, Sukk. Lex. : 367 (1970); idem, Lex. Succ. Pl. : 415 (1974)

Neotype: see discussion below

Mesembryanthemum geminatum Haw., Misc. Nat. : 92 (1803); idem, Syn. Pl.

Succ. : 280 (1812); idem, Rev. Pl. Succ. : 123 (1821); DC, Prodr.

3 : 430 (1828); D. Dietr., Syn. Pl. Mesemb. u. Portulac. : 117 (1908)

Neotype: as for Braunsia geminata

Echinus geminatus (Haw.) L. Bol., Notes Mesembryanthemum 2 : 79 (1929);

Jacobsen, Handb. Sukk. Pfl. 3 : 1354 (1955); idem, Handb. Succ.

Pl. 3 : 1135 (1960)

Neotype: as for Braunsia geminata

M. apiculatum Kensit, Trans. Roy. Soc. S. Afr. 1 : 154 (1909)

Holotype: North-east of Matjiesfontein, May 1908, Pillans 894 (BOL!)

E. apiculatus (Kensit) L. Bol., Fl. Pl. S. Afr. 7 : t.266 (1927)

Jacobsen, Handb. Sukk. Pfl. 3 : 1354 (1955); idem, Handb. Succ.

Pl. 3 : 1135 (1960)

Holotype: as above

B. apiculata (Kensit) L. Bol., Jl. S. Afr. Bot. 33 : 306 (1967); Jacobsen,

Sukk. Lex. : 367 (1970); idem, Lex. Succ. Pl. : 415 (1974)

Holotype: as above

M. mathewsii L. Bol., Ann. Bol. Herb. 1 : 189 (1915)

Syntypes: between Muiskraal and Ladismith, August 1913, Pillans 895 (BOL!) near Prince Albert, no date, Mathews s.n. in NBG 4055/14 (BOL!)

E. mathewsii (L. Bol.) N.E. Br., Kew Bull., 1929 : 57 (1929)

Syntypes: as above

M. binum N.E. Br., Jl. Linn. Soc. Bot. 45 : 119 (1920)

Holotype: near Matjiesfontein, Pillans s.n. (BOL!)

B. bina (N.E. Br.) Schwant., Gartenwelt 32 : 644 (1928)

Holotype: as above

Dwarf succulent shrubs, ca. 11 cm. high and 20 cm. in diameter. Internodes hidden between the leaves, ca. 12 mm long and 2,5 mm in diameter in the first two years of growth. Leaves sharply triquetrous, sometimes pilose, velvety-green to grey-green, sheathing the leaves for ca. 10 mm, 9 - 14,5 - 23 mm long, 3,5 - 5,5 - 9,5 mm wide and 4 - 6,5 - 11 mm deep; margins white, horny; apices sometimes apiculate. Flowers solitary, pedicels ca. 5,5 mm long and 1,5 mm in diameter; flowers pale to deep pink, ca. 16 mm in diameter. Bracts up to 10 mm long and 4,5 mm wide, sepals 5, ca. 10 mm long and up to 6 mm wide, all alike; petals (petaloid staminodes) ca. 30 - 60 in 1 series, 9 - 13,5 - 18 mm long, up to 3 mm wide; non-petaloid staminodes ca. 20 - 55, white, ca. 3,5 - 5 - 8 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 30 - 65, filaments white, ca. 1 - 3,5 - 5,5 mm long, anthers pink; stigmas 5, 1 - 3,5 - 5,5 mm long, subulate. Capsule 5-locular, ca. 8,5 mm in diameter and 6,5 mm deep, woody, charcoal grey, valve-wings ca. 4,5 mm long and up to 1 mm wide, separate from the valve for about half of their length; placental tubercle absent; covering membranes present, covering very little of the surface of each locule. Seeds pale reddish-ochre, ca. 1,07 - 1,30 - 1,52 mm long, 0,65 - 0,94 - 1,22 mm wide and 0,93 - 1,04 - 1,13 mm deep; surface echinate, spines ca. 322 μ long, 60 μ in diameter; microbaculae present, ca. 3,30 μ long and 4,64 μ in diameter. Flowering season: 66% of specimens seen were in flower between May and August.

SPECIMENS SEEN:

- CAPE 3219 (-CD) Suurvlaakte, Cold Bokkeveld, 14 September 1975, Esterhuysen 33957 (BOL!)
- (-DC) Skitterykloof, 29 August 1971, Wisura 2210 (NBG!)
- Skitterykloof, 1 June 1973, Glen 694 (BOL!)
- 3319 (-BB) Inverdoorn, 30 April 1948, Acocks 14485 (BOL!)
- (-BC) Karoopoort, 31 May 1948, H. Hall s.n. (BOL!); Karoopoort, no date, Herre s.n. in SUG 8582 (BOL!); Karoopoort, July 1940, Esterhuysen 5640 (BOL!)
- 3320 (-AC) Touws River, October 1934, Lavis s.n. (BOL!); Touws River, April 1927, Cook s.n. in NBG 1456/24 (BOL!); 12 miles east of Touws River, 13 June 1965, Acocks 23639 (PRE!)
- (-AD) Pieter Meintjies, 28 April 1934, Archer 776 (BOL!)
- (-BA) Whitehill, August 1925, Archer 44 (BOL!)
- (-BC) Ridge at Dobbelaarskloof, 29 July 1954, Levyms s.n. in BOL 25663 (BOL!)
- (-CB) 23 miles north-east of Montagu, August 1973, Wisura 2730 (NBG!)
- 3321 (-C-) between Muiskraal & Ladismith, August 1913, Pillans 895 (BOL!, PRE!, K!, B!)
- (-CA) on the Barrydale to Ladismith road at the Laingsburg turnoff, 1 August 1955, du Plessis 95 (BOL!)
- (-CC) Phisantefontein, March 1926, Muir 3848 (L!)
- 3322 (-AA) Prince Albert, April 1955, Du Plessis s.n. in BOL 25900 (BOL!); near Prince Albert, 1 January 1929, Van der Bijl 35 (K!)
- 3323 (-CA) Uniondale, 30 June 1948, Herre s.n. in SUG 12168 (BOL!)

Without precise locality: near Abrahamskraal, September 1926, Van der Bijl 24 (K!); 3 other specimens.

1 garden specimen

No material or plates which could have been seen by Haworth has survived to the present, so it is necessary to propose a neotype. Esterhuysen 5640

is proposed because it is a good specimen with dissections, from the middle of the range of this species, and matches Haworth's description.

In the protologue of Mes. apiculatum Kensit (Kensit, 1909), three specimens are mentioned, but none specifically cited as the holotype. These specimens are Leipoldt 666, Schlechter 8065 and Pillans 894.

Leipoldt 666 is a mixed gathering from Clanwilliam (out of the range of Braunsia). The portions marked A on the sheet are referable to Lampranthus maximiliani (Schltr. & Bgr.) L. Bol., while the portions marked B are in such poor condition as to be unidentifiable. Schlechter 8065 has smooth seeds, this being the chief character distinguishing L. maximiliani (Schltr. & Bgr.) L. Bol. from Braunsia spp., and so must be referred to the former. It, too, is from near Clanwilliam. The third specimen, Pillans 894, is from Matjesfontein and accords with the description of the present species. It is therefore proposed as the lectotype of Braunsia apiculata (Kensit) Schwantes.

This species, B. stayneri and L. maximiliani all have mutually exclusive geographical ranges, but their flowering-seasons overlap. The leaves and stamens of L. maximiliani are slightly shorter than those of both species of Braunsia and the seeds are much smaller and baculate, not echinate. The pedicels of L. maximiliani and B. geminata are much shorter than those of B. stayneri, which is a much laxer plant than either of the other species. L. maximiliani and B. geminata both have hairy leaves, while those of B. stayneri are glabrous. The sepals of B. geminata are significantly larger than those of the other two species, and all alike. The seeds of B. geminata are slightly larger than those of B. stayneri and much larger than those of L. maximiliani. For reasons why L. maximiliani is excluded from Braunsia, see section 4.3.2 .

Braunsia stayneri (L. Bol.) L. Bol., Jl. S. Afr. Bot. 31 : 170 (1965);

Jacobsen; Sukk. Lex. : 367 (1970); idem, Lex. Succ. Pl. : 415 (1974)

Holotype: Soutpan, Ceres Karoo, May 1964, F. J. Stayner s.n. in
KG 490/61 (BOL!)

Echinus stayneri L. Bol., Jl. S. Afr. Bot. 30 : 237 (1964)

Holotype: as above

Dwarf, mat-forming succulents, ca. 9 cm. high and 60 cm. in diameter. Internodes smooth, russet, ca. 20 mm long and 2 mm in diameter in the first two years of growth. Leaves sheathing, the stem for ca. 6,5 mm, slightly esymmetric, the larger 10 - 14,2 - 18 mm long, 4 - 5 - 6 mm wide and 4 - 5 - 6 mm deep; the lesser 11 - 14 - 18 mm long and 4 - 6 mm wide and deep. Flowers solitary, pedicels ca. 9 mm long and 2 mm in diameter; flowers deep pink to magenta, ca. 24 mm in diameter. Bracts up to 9 mm long and 4,5 mm wide, sepals 4, ca. 7,5 mm long and up to ca. 25 in 1 series, 13 - 14,7 - 16 mm long, up to 3 mm wide; non-petaloid staminodes ca. 40 - 50, white, ca. 6 - 8 mm long, sharply differentiated from the petaloid staminodes. Stamens ca. 50 - 60, filaments pink, ca. 1 - 4 - 5,5 mm long, anthers yellow; stigmas 4, 2 - 3,5 - 4,5 mm long, subulate. Capsule 4-locular. Flowering season: 100% of specimens seen were in flower in May.

SPECIMEN SEEN:

CAPE 3219 (-D-) Soutpan, Ceres Karoo, May 1964, Stayner s.n. in KG
490/61 (BOL!)

This species and B. vanrensburgii share with Gibbaeum the character of the leaves of a pair being of different sizes. The character is not at all well marked here as it is in some species of Gibbaeum, but it is measurable. This character is not found in any species of Lampranthus.

This species is much closer to B. geminata than to B. vanrensburgii, both taxonomically and geographically. It differs from the former in that the leaves are not hairy, in having 4 sepals, stigmas and locules per flower instead of 5, in the sepals being considerably smaller, and in various seed characters. It differs from the latter species in having much smaller vegetative parts, the leaves not being nearly as waxy (even on herbarium specimens), in having pink flowers and in various seed characters.

Braunsia vanrensburgii (L. Bol.) L. Bol., Jl. S. Afr. Bot. 33 : 306 (1967);

Jacobsen, Sukk. Lex. : 367 (1970); idem, Lex. Succ. Pl. : 415 (1974)

Holotype: near Bredasdorp, November 1953, A. D. van Rensburg s.n.
in SUG 12947 (BOL!)

Echinus vanrensburgii L. Bol., Notes Mesembryanthemum 3 : 284, 288 (1954);

Jacobsen, Handb. Sukk. Pfl. 3 : 1355 (1955); idem, Handb. Succ.

Pl. 3 : 1135 (1960)

Holotype: as above

Dwarf, spreading succulents, ca. 8 cm. high and 20 cm. in diameter.

Internodes hidden between the leaves, ca. 25 mm long and 6 mm in diameter in the first two years of growth. Leaves slightly asymmetric, triquetrous, subfalcate, grey, ca. 26 - 33 - 43 mm long, 8 - 10,3 - 12 mm wide and 8 - 10,5 - 12 mm deep; apices sharply acute. Flowers solitary, pedicels ca. 29,5 mm long and 4,5 mm in diameter; flowers white, ca. 40 mm in diameter. Bracts up to 22 mm long and 8 mm wide, sepals 4, ca. 18 mm long and up to 7,5 mm wide, the inner pair with membranous margins, ca. 9 mm long and 6 mm wide; petals (petaloid staminodes) many in 3 series, 20 - 23 mm long, up to 1 mm wide; non-petaloid staminodes many, white, ca. 5 - 6 mm long, grading into the petaloid staminodes. Stamens many, filaments white, ca. 2 - 6 mm long, anthers yellow; stigmas 5, 3,5 - 5,5 mm long, acuminate, Capsule 5-locular, ca. 14,5 mm in diameter and 9,5 mm deep, woody, pale grey, valve-wings; placental tubercle absent; covering membranes present, covering very little of the surface of each locule. Seeds black, ca. 0,82 - 0,90 - 1,11 mm long, 0,66 - 0,73 - 0,82 mm wide and 0,42 - 0,53 - 0,67 mm deep, funicles ca. 0,14 - 0,23 - 0,33 mm long; surface echinate, spines ca. 129 μ long, 53 μ in diameter; microbaculae present, ca. 1,01 μ long and 0,96 μ in diameter. Flowering season: 100% of specimens seen were in flower between January and April.

SPECIMENS SEEN:

CAPE 3420 (-AD) De Hoop, Bredasdorp, April 1957, Barker s.n. in NBG 159/57 (BOL!, NBG!); De Hoop, Bredasdorp, 15 February 1971, Rourke & Hattingh s.n. in NBG 834/69 (NBG!)

(-CA) near Bredasdorp, November 1953, Van Rensburg s.n. in SUG 12947 (BOL!)

This distinctive plant appears to be confined to a small area near Bredasdorp. It differs from the other two members of this genus in that the vegetative parts of this species are far larger than those of either of the other two, the flowers are always white, the seeds are less obviously echinate and more like those of most Mesembryanthemaceae, and although there are only 4 sepals in each flower (as in B. stayneri) there are 5 stigmas and 5 locules in the ovary (as in B. geminata).

6.4 SPECIES NON SATIS COGNITA et REJICIENDAE

Lampranthus capornii (L. Bol.) L. Bol., Notes Mesemb. allied Gen.
3 : 170 (1939)

Mesembryanthemum capornii L. Bol., Ann. Bol. Herb. 2 : 30 (1916)

The correct name of this species is Ruschia capornii (L. Bol.) L. Bol.,
Notes Mesemb. allied Gen. 3 : 333 (1958)

L. drepanophyllus (Schltr. & Bgr.) N.E. Br., Gard. Chron. 87 : 212 (1930)

M. drepanophyllum Schltr. & Bgr., Engl. Bot. Jahrb. 57 : 637 (1922)

M. mallesoniae L. Bol., Ann. Bol. Herb. 3 : 129 (1922)

R. mallesoniae (L. Bol.) L. Bol., Jl.S. Afr. Bot. 29 : 16 (1963)

The correct name of this plant is Ruschia drepanophylla (Schltr. & Bgr.)
L. Bol., Notes Mesemb. allied Gen. 3 : 221 (1950)

Lampranthus ebracteatus L. Bol., Jl. S. Afr. Bot. 28 : 294 (1962);
Jacobsen, Sukk. Lex. : 440 (1970); idem, Lex. Succ. Pl. : 493 (1974)
Holotype: Papendorp, Vanrhynsdorp division, November 1961, H. Hall
s.n. in NBG 613/57 (BOL!)

This plant appears to be a species of Ruschia, but it has not been possible
to determine whether it can be referred to any described species of this
genus.

L. erratus N.E. Br., Gard. Chron. 87 : 212 (1930); Jacobsen, Handb. Sukk.
Pfl. 3 : 1432 (1955); idem, Handb. Succ. Pl. 3 : 1198 (1960);
idem, Sukk. Lex. : 441 (1970)

Iconotype: Salm Dyck, Monogr. Gen. Aloes. Mesemb. § 24 t.1

M. virens Salm Dyck, Monogr. Gen. Aloes Mesemb. f.3 § 24 t.1 (1840);
non Haw.

Iconotype: as above

All specimens seen of this species, which agree with the iconotype, also agree in all respects with Ruschia cymbifolia (Haw.) L. Bol. This name must therefore go into synonymy under that species.

Lampranthus francisci L. Bol., Jl. S. Afr. Bot. 27 : 113 (1961);

Jacobsen, Sukk. Lex. : 441 (1970); idem, Lex. Succ. Pl. : 494 (1974)

Holotype: Karoopoort, November 1960, F. J. Stayner s.n. in KG 240/60 (BOL!)

The type of specimen of this species has capsules with placental tubercles, indicating that it is not a Lampranthus but a Ruschia. On examination, it is referable to R. ceresiana Schwant.

L. herrei (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 169 (1939)

M. herrei L. Bol., Notes Mesemb. allied Gen. 2 : 276 (1931)

The correct name of this species is Ruschia sandbergensis L. Bol., Notes Mesemb. allied Gen. 3 : 334 (1958). The new name is necessary to avoid a later homonym of R. herrei Schwant., Zeitschr. für Sukk. 3 : 301 (1928).

Lampranthus inconspicuus (Haw.) Schwant., Feddes. Rep. 43 : 229 (1938)

M. inconspicuum Haw., Till. Phil. Mag. 64 : 62 (1824); Salm Dyck, Monogr. gen. Aloes Mesemb. § 47 t.5 (1854); Sonder, Fl. Cap. 2 : 438 (1862); Berger, Mesemb. u. Portulac. : 144 (1908)

There is no surviving type specimen or iconotype of this species. The picture presented by Salm Dyck is not referable to any known species of Lampranthus, and the papillate receptacle, of which much is made in all the descriptions, seems to indicate that this is a species of Drosanthemum or a hybrid with one parent being a member of that genus. Plants with reflexed leaves like the one in Salm Dyck's illustration are known from the genera Ruschia and Erepsia as well as Lampranthus and Drosanthemum. The name is therefore rejected as a nomen confusum.

L. lerouxiae (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930)

M. lerouxiae L. Bol., Ann. Bol. Herb. 3 : 170 (1924)

The correct name of this species is Ruschia lerouxiae (L. Bol.)

L. Bol., Notes Mesemb. allied Gen. 3 : 219 (1950)

L. mucronatus L. Bol., Jl. S. Afr. Bot. 32 : 201 (1966); Jacobsen,

Sukk. Lex. : 443 (1970); idem, Lex. Succ. Pl. : (1974)

Holotype: 15 miles west of Skitterykloof, Ceres Karoo, September 1965, Stayner s.n. in KG 998/61

The placental tubercles in the capsules of the type specimen of this species indicate that it belongs to the genus Ruschia. The closest species in that genus appears to be R. incumbens L. Bol. but it is not known at this stage whether the two species are in fact the same.

L. otzenianum (Dtr.) Friedr., Mitt. Bot. München 3 : 565 (1960)

M. otzenianum Dtr., Feddes Rep. 19 : 152 (1923)

The case of this species has been discussed fully in sections 4.3 and 7. The correct name is Drosanthemum otzenianum (Dtr.) Friedr., Mitt. Bot. München 7 : 217 (1968)

L. punctulatus (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 169 (1939)

M. punctulatum L. Bol., Notes Mesemb. allied Gen. 2 : 17 (1928)

The correct name of this species is Ruschia unca (L. Bol.) L. Bol. var. punctulata (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 220 (1950)

L. ruber (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 169 (1939)

M. rubrum L. Bol., Notes Mesemb. allied Gen. 2 : 273 (1931)

R. rubra (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 220 (1950)

The correct name of this species is Astridia rubra (L. Bol.) L. Bol., Jl. S. Afr. Bot. 27 : 170 (1961)

L. stephanii (Schwant.) Schwant., Feddes Rep. 43 : 230 (1938)

M. stephanii Schwant., Möllers Dtsche Gärtn.-Ztg. : 159 (1927)

Only a fragment of the type remains, the holotype having been destroyed. Pollen was removed from the fragment and examined both by light microscopy and SEM, in order to determine viability. By both methods it was shown that there was less than 1% viable pollen in flowers of the type. It was deduced from this that this taxon is a sterile hybrid. As one flower on the type had the typical extended sepal of L. productus, it may be assumed that the latter was one parent, but the other remains unknown. It seems that this will remain the case, as there is no living material of this taxon in existence.

L. swartkopensis Strohschn., Oesterr. Bot. Zeitschr. 84 : 292 (1935)

The type specimen of this species is no longer extant, and it is unrecognisable from the protologue. No specimens have ever been given this name other than the type. It seems that it is most likely a synonym of L. spectabilis, but in the absence of any definite evidence it is best treated as a nomen dubium and rejected.

L. uncus (L. Bol.) Schwant., Nat. Cact. Succ. Jl. 4 : 58 (1949)

M. uncum L. Bol., Notes Mesemb. allied Gen. 1 : 136 (1928)

The correct name for this species is Ruschia unca (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 220 (1950)

L. uniflorus (L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 170 (1939)

M. uniflora L. Bol., Ann. Bot. Herb. 3 : 135 (19

Drosanthemum uniflorum (L. Bol.) Friedr. ex Jacobsen, Sukk. Lex. : 418 (1970), comb. illegit.

The last named synonym is illegitimate because no direct reference to the basionym is given. However, it appears that this species does belong to the genus Drosanthemum for the same reasons, given in sections 4.3 and 7, as D. otzenianum (Dtr.) Friedr.

L. utilis (L. Bol.) Schwant., Nat. Cact. Succ. Jl. 4 : 58 (1949)

M. utile L. Bol., Notes Mesemb. allied Gen. 2 : 99 (1929)

The correct name of this species is Ruschia utilis (L. Bol.) L. Bol.,
Notes Mesemb. allied Gen. 3 : 219 (1950)

L. zygophylloides (L. Bol.) N.E. Br., Gard. Chron. 87 : 212 (1930)

M. zygophylloides L. Bol., Ann. Bol. Herb. 4 : 89 (1927)

The correct name of this species is Drosanthemum zygophylloides
(L. Bol.) L. Bol., Notes Mesemb. allied Gen. 3 : 236 (1954)

7 Possible Phylogeny in Lampranthus and allied genera

In the following discussion, use is made of Ihlenfeldt's (1960, 1971) hypotheses on evolutionary trends in Mesembryanthemaceae. It is intended to show that using these hypotheses one can construct possible phylogenetic lines for the Lampranthiae.. In the absence of a fossil record of Mesembryanthemaceae, it is not logically possible to attempt to do more than this.

One hypothesis is that dorsiventral leaves are more primitive than terete or semiterete leaves, which are more primitive than triquetrous leaves, which are more primitive than highly reduced leaves of any shape. Another important hypothesis is that a large, lax shrub is more primitive than a dwarf shrub which is more primitive than a highly reduced succulent. Any variation in the number of locules per capsule away from 5, the commonest number in Mesembryanthemaceae, is considered to be an advanced feature.

The genus with the highest concentration of the most primitive character-states, as defined above, appears to be Delosperma. One species, D. abyssinicum (Regel) Schwant., has a character not mentioned above, which must be regarded as one of the most unspecialised in the family. Most Mesembryanthemaceae have either axile or parietal placentation; the division of the family into subfamilies is based on this. In D. abyssinicum, the placentation is both axile and parietal. That other species of Delosperma may be found which mimic the habit of many genera both in subfamily Mesembranthemoideae and in subfamily Ruschioideae, seems another good reason for regarding the genus as particularly unspecialised. One can derive the genus Drosanthemum from Delosperma by a few short steps, namely, the acquisition of a papillate leaf epidermis (as in some species of Delosperma) and the acquisition of covering membranes and valve wings in the fruit. Indeed, not a few intermediate forms are known (O'Connor-Fenton, pers. comm.). If one constructs an imaginary Drosanthemum without the characteristic leaf epidermis and with a farinose, as opposed to rough or hispid, stem, the result will be indistinguishable from D. otzenianum (Dtr.) Friedr. and not very different from L. hoerleinianus (Dtr.) Friedr. Therefore, one may postulate that Lampranthinae are possibly derived from a Delosperma-like ancestor, probably intermediate between Delosperma and Drosanthemum.

In more detail, it appears that section Lampranthus may be taken as the most primitive group in Lampranthus and L. hoerleinianus as the most primitive species. An essentially continuous line can be traced from typical Lampranthus, through L. falciformis to section Lunati. Here two branches may be observed. One leads through L. copiosus to L. deltoides, and the other to L. maximiliani and a further bifurcation, at an hypothetical "proto-Braunsia". One branch of this pathway would lead to Braunsia itself, and the other to Antegibbaeum, Didymaotus, Gibbaeum and Muiria.

In order to postulate the possible origins of sections Adunci, Scabridi and Tenuifolii, one may profitably examine the behaviour of mesembryanthema under cultivation. It is found that, typically, the leaves and internodes elongate rapidly relative to their diameter when water is over-abundant. Let us imagine a primitive member of section Lampranthus, with semiterete to triquetrous leaves, the capacity to produce both betaxanthins and betacyanins, and variable habit, invading an area of increasing water-availability or adapting to the onset of a pluvial period. It seems likely that the plants would respond either by an elongation of their leaves, or by a reduction in their diameter, or both. In other words, one may propose a pathway from section Lampranthus to section Tenuifolii, with L. tenuifolius as the logical conclusion of this pathway.

It will be observed that this pathway involves a certain overall reduction in size. It was also noted in passing while examining seeds under the SEM, that seeds from imperfectly ripe capsules of sections Lampranthus and Tenuifolii were paler than normal and had a rather simple form of surface ornamentation, both characters reminiscent of fully-ripe seeds of plants of section Scabridi. It seems logical, then, to derive section Scabridi from section Tenuifolii (or proto-Tenuifolii) by a form of neoteny. That the evolutionary pathways that were followed by section Lampranthus were followed later or simultaneously by section Scabridi is indicated by one of the extreme forms of L. scaber (L.) N.E. Br. This form, originally described as L. falcatus, resembles a miniature form of L. falciformis quite strongly.

Section Adunci is defined on the basis of its unusual recurved leaves, which are usually terete. The species which has these characters to the

least degree is L. wordsworthiae, a mat-former with semiterete or obscurely triquetrous leaves with recurved apices. However, from the preponderance of plants with shrubby habit among the species considered primitive, it seems that one must regard the habit of L. wordsworthiae as a derived character. A shrubby analogue of L. wordsworthiae would be difficult to place, having characters both of section Lampranthus and of section Tenuifolii. It seems that one should, therefore, derive section Adunci from an intermediate between the two sections. The plotting of potential pathways within section Adunci is trivial.

Scopelogena veruculata (L.) L. Bol. presents an interesting problem of possible phylogeny, as its possible closest relatives are obscure. The inflorescence of this species is only found in Lampranthus section Lunati among Lampranthinae; the terete, reflexed leaves are nearest, though still not close, to those of section Adunci in this character and to section Lampranthus in overall size and size relationships (Length : breadth : depth). Yellow flowers are known mainly in sections Lampranthus and Tenuifolii, and flowers with few parts in section Scabridi. The capsules, which do not close completely after the first opening, are unique in the subtribe, and not very close to any other member of Mesembryanthemaceae. It seems, on the basis of this evidence, that "proto-Scopelogena" must have diverged from "proto-Lampranthus" before divergence of the latter into what are now recognised as sections had proceeded very far.

It is necessary to examine the position of the genus Erepsia, which is not considered to be a member of Lampranthinae, in order to clarify further why this is so. The range of forms found in Erepsia is almost as great as in Lampranthus, although the geographical range and possibly the number of species is smaller in the former genus. The exact number of species in Erepsia is difficult to establish, as the genus has not been monographed since it was first described. However, only 38 species are recognised by Herre (1971), who recognises 178 species of Lampranthus (no at present recognised here is 56.) Erepsia is restricted to the Western and Southern Cape coastal region, while Lampranthus is found from South-West Africa to Natal.

The key character separating Erepsia from Lampranthus is the disposition

of the stamens. This character, however, is dependent on the structure of all the perigynous parts of the flower, so that this is an indicator of a whole suite of characters. The rim of the ovary of Erepsia is raised above the top of the ovary, which distorts the area of the bases of the stamens so that they and the staminodes are horizontally disposed. In Lampranthus, however, the rim of the ovary is not raised and therefore the stamens and staminodes must necessarily be approximately vertically disposed. For the same reason, the top of the ovary of Lampranthus is domed (convex) while that of Erepsia is concave. Other differences between the two genera are that the nectaries of Erepsia are separate, but those of Lampranthus are joined, and that flowers of Erepsia usually have many bracts immediately below the flower, while in Lampranthus usually a single pair of bracts is found halfway up the pedicel.

In view of the evidence of the previous two paragraphs, it seems likely that Erepsia diverged from a Delosperma-like ancestor possibly about the same time as Lampranthus, and forms a parallel line of development to Lampranthinae.

The above discussion is summarised in the diagram shown in fig. 7.

The concept of Lampranthinae presented here is similar to that of Haas (1976) in that Ebracteola and Cerochlamys are removed to Ruschiinae and Gibbaeinae are included in Lampranthinae. It differs in that Malephora, Erepsia and Trichodiadema are excluded here but included in Haas's "Lampranthus-group". The reason for this difference is that Haas worked on characters of the flower, fruit and seed only, while the present study was based on characters of the whole plant.

Malephora has multilocular capsules (ca. 8 - 12 locules per capsule) and is considered to be closer to a "multilocular group" composed of Leipoldtiinae, Argyroderma, Glottiphyllum and possibly other genera as well. Many of the multilocular genera, including Malephora, are primarily betaxanthin producers, while Lampranthinae are primarily betacyanin producers.

Trichodiadema differs from Drosanthemum, which was not studied by Haas, in having a tuft of hairs on the tip of each leaf. In both genera, the leaves are papillate and the stems are roughened (Drosanthemum section Aspericaulia only). It is therefore considered that Trichodiadema represents

a specialisation of Drosanthemid stock in a direction quite remote from
Lampranthinae.

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Braunsia

stayneri

B. vanrensburgii

L. filicaulis

L. wordsworth:

(sect. Adunci

↖

Lampranthus

↑

Lampranthus

section *Tenuifolia*

↑

Ruschia and

of Ruschiinae

Dorotheanthinae

Drosanthemum

→ **Drosanthemum**

(plants) with warty leaves

→ Psammophorinae

(Lithopinae

(Conophytinae

Ruschioideae

Mesembryanthemoideae

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APPENDICES

11.1 Weighting schemes used in the establishment of the present classification.

HOLLAID SYSTEM FOR NUMERICAL AIDS FOR CLASSIFICATION.

OPERATING ON DATA FOR ... LAMPRANTHINAE, FINAL RUN
OBTAINED BY H.F. GLEN, 16 MAY 1977

1 GROUP FORMING
50 PERCENT SPACE CONSERVATION
125 ITEMS
97 MODAL PROPERTIES
0 BINARY PROPERTIES
0 MULTISTATE PROPERTIES
21 EXTRA-VALUE PROPERTIES

PROPERTY	1	....	3
PROPERTY	2	....	3
PROPERTY	3	....	3
PROPERTY	4	....	3
PROPERTY	22	....	3
PROPERTY	23	....	3
PROPERTY	24	....	2
PROPERTY	25	....	2
PROPERTY	28	....	2
PROPERTY	29	....	2
PROPERTY	30	....	2
PROPERTY	33	....	3
PROPERTY	34	....	3
PROPERTY	35	....	3
PROPERTY	49	....	3
PROPERTY	74	....	3
PROPERTY	75	....	3
PROPERTY	76	....	3
PROPERTY	77	....	3
PROPERTY	83	....	2
PROPERTY	84	....	2

32 DEWEIGHTED PROPERTIES

PROPERTY	1	....	75
PROPERTY	2	....	75
PROPERTY	3	....	75
PROPERTY	4	....	75
PROPERTY	26	....	50
PROPERTY	27	....	50
PROPERTY	28	....	34
PROPERTY	29	....	33
PROPERTY	30	....	33
PROPERTY	41	....	50
PROPERTY	42	....	50
PROPERTY	48	....	50
PROPERTY	50	....	25
PROPERTY	51	....	25
PROPERTY	61	....	25
PROPERTY	62	....	25
PROPERTY	63	....	25
PROPERTY	64	....	25
PROPERTY	65	....	25
PROPERTY	66	....	25
PROPERTY	67	....	25
PROPERTY	68	....	25

	PROPERTY	69	.....	25
	PROPERTY	70	.....	25
	PROPERTY	71	.....	25
	PROPERTY	72	.....	25
	PROPERTY	92	.....	17
	PROPERTY	93	.....	17
	PROPERTY	94	.....	17
	PROPERTY	95	.....	17
	PROPERTY	96	.....	16
	PROPERTY	97	.....	5
0	NO FREQUENCY MODULATION			
12	INDIVIDUALLY MODULATED PROPERTIES			
	PROPERTY	61	.....	100
	PROPERTY	62	.....	100
	PROPERTY	63	.....	100
	PROPERTY	64	.....	100
	PROPERTY	65	.....	100
	PROPERTY	66	.....	100
	PROPERTY	67	.....	100
	PROPERTY	68	.....	100
	PROPERTY	69	.....	100
	PROPERTY	70	.....	100
	PROPERTY	71	.....	100
	PROPERTY	72	.....	100
1	DATA FROM DISC FILE NEXDAT			
5	CARD COLUMNS PER DATUM			

.....
 BOLAIID SYSTEM FOR NUMERICAL AIDS FOR CLASSIFICATION.

OPERATING ON DATA FOR ... LAMPRANTHINAE, FINAL RUN
 OBTAINED BY H.F. GLEN, 16 MAY 1977

1	GROUP FORMING
50	PERCENT SPACE CONSERVATION
125	ITEMS
97	MODAL PROPERTIES
0	BINARY PROPERTIES
0	MULTISTATE PROPERTIES
21	EXTRA-VALUE PROPERTIES

PROPERTY	1	.....	3
PROPERTY	2	.....	3
PROPERTY	3	.....	3
PROPERTY	4	.....	3
PROPERTY	22	.....	3
PROPERTY	23	.....	3
PROPERTY	24	.....	2
PROPERTY	25	.....	2
PROPERTY	28	.....	2
PROPERTY	29	.....	2
PROPERTY	30	.....	2
PROPERTY	33	.....	3
PROPERTY	34	.....	3
PROPERTY	35	.....	3
PROPERTY	49	.....	3
PROPERTY	74	.....	3
PROPERTY	75	.....	3
PROPERTY	76	.....	3
PROPERTY	77	.....	3
PROPERTY	83	.....	2
PROPERTY	84	.....	2

36 DEWEIGHTED PROPERTIES

PROPERTY	1	....	75
PROPERTY	2	....	75
PROPERTY	3	....	75
PROPERTY	4	....	75
PROPERTY	22	....	75
PROPERTY	23	....	75
PROPERTY	28	....	34
PROPERTY	29	....	33
PROPERTY	30	....	33
PROPERTY	41	....	50
PROPERTY	42	....	50
PROPERTY	48	....	50
PROPERTY	50	....	25
PROPERTY	51	....	25
PROPERTY	61	....	25
PROPERTY	62	....	25
PROPERTY	63	....	25
PROPERTY	64	....	25
PROPERTY	65	....	25
PROPERTY	66	....	25
PROPERTY	67	....	25
PROPERTY	68	....	25
PROPERTY	69	....	25
PROPERTY	70	....	25
PROPERTY	71	....	25
PROPERTY	72	....	25
PROPERTY	74	....	75
PROPERTY	75	....	75
PROPERTY	76	....	75
PROPERTY	77	....	75
PROPERTY	92	....	17
PROPERTY	93	....	17
PROPERTY	94	....	17
PROPERTY	95	....	17
PROPERTY	96	....	16
PROPERTY	97	....	5

0 NO FREQUENCY MODULATION

12 INDIVIDUALLY MODULATED PROPERTIES

PROPERTY	61	....	100
PROPERTY	62	....	100
PROPERTY	63	....	100
PROPERTY	64	....	100
PROPERTY	65	....	100
PROPERTY	66	....	100
PROPERTY	67	....	100
PROPERTY	68	....	100
PROPERTY	69	....	100
PROPERTY	70	....	100
PROPERTY	71	....	100
PROPERTY	72	....	100

1 DATA FROM DISC FILE NEXDAT

5 CARD COLUMNS PER DATUM

BOLAIID SYSTEM FOR NUMERICAL AIDS FOR CLASSIFICATION.

OPERATING ON DATA FOR ... LAMPRANTHINAE, FINAL RUN
OBTAINED BY H.F. GLEN, 16 MAY 1977

1 GROUP FORMING
50 PERCENT SPACE CONSERVATION
125 ITEMS
97 MODAL PROPERTIES
0 BINARY PROPERTIES
0 MULTISTATE PROPERTIES
21 EXTRA-VALUE PROPERTIES

PROPERTY	1	.....	3
PROPERTY	2	.....	3
PROPERTY	3	.....	3
PROPERTY	4	.....	3
PROPERTY	22	.....	3
PROPERTY	23	.....	3
PROPERTY	24	.....	2
PROPERTY	25	.....	2
PROPERTY	28	.....	2
PROPERTY	29	.....	2
PROPERTY	30	.....	2
PROPERTY	33	.....	3
PROPERTY	34	.....	3
PROPERTY	35	.....	3
PROPERTY	49	.....	3
PROPERTY	74	.....	3
PROPERTY	75	.....	3
PROPERTY	76	.....	3
PROPERTY	77	.....	3
PROPERTY	83	.....	2
PROPERTY	84	.....	2

38 DEWEIGHTED PROPERTIES

PROPERTY	1	.....	75
PROPERTY	2	.....	75
PROPERTY	3	.....	75
PROPERTY	4	.....	75
PROPERTY	22	.....	75
PROPERTY	23	.....	75
PROPERTY	26	.....	50
PROPERTY	27	.....	50
PROPERTY	28	.....	34
PROPERTY	29	.....	33
PROPERTY	30	.....	33
PROPERTY	41	.....	50
PROPERTY	42	.....	50
PROPERTY	48	.....	50
PROPERTY	50	.....	25
PROPERTY	51	.....	25
PROPERTY	61	.....	25
PROPERTY	62	.....	25
PROPERTY	63	.....	25
PROPERTY	64	.....	25
PROPERTY	65	.....	25
PROPERTY	66	.....	25
PROPERTY	67	.....	25
PROPERTY	68	.....	25
PROPERTY	69	.....	25
PROPERTY	70	.....	25
PROPERTY	71	.....	25
PROPERTY	72	.....	25
PROPERTY	74	.....	75
PROPERTY	75	.....	75

PROPERTY 76 75
 PROPERTY 77 75
 PROPERTY 92 17
 PROPERTY 93 17
 PROPERTY 94 17
 PROPERTY 95 17
 PROPERTY 96 16
 PROPERTY 97 5

0 NO FREQUENCY MODULATION
 12 INDIVIDUALLY MODULATED PROPERTIES

PROPERTY 61100
 PROPERTY 62100
 PROPERTY 63100
 PROPERTY 64100
 PROPERTY 65100
 PROPERTY 66100
 PROPERTY 67100
 PROPERTY 68100
 PROPERTY 69100
 PROPERTY 70100
 PROPERTY 71100
 PROPERTY 72100

1 DATA FROM DISC FILE NEXDAT
 5 CARD COLUMNS PER DATUM

BOLAID SYSTEM FOR NUMERICAL AIDS FOR CLASSIFICATION.

OPERATING ON DATA FOR ... LAMPRANTHINAE, FINAL RUN
 OBTAINED BY H.F. GLEN, 16 MAY 1977

1 GROUP FORMING
 50 PERCENT SPACE CONSERVATION
 125 ITEMS
 97 MODAL PROPERTIES
 0 BINARY PROPERTIES
 0 MULTISTATE PROPERTIES
 21 EXTRA-VALUE PROPERTIES

PROPERTY 1 3
 PROPERTY 2 3
 PROPERTY 3 3
 PROPERTY 4 3
 PROPERTY 22 3
 PROPERTY 23 3
 PROPERTY 24 2
 PROPERTY 25 2
 PROPERTY 28 2
 PROPERTY 29 2
 PROPERTY 30 2
 PROPERTY 33 3
 PROPERTY 34 3
 PROPERTY 35 3
 PROPERTY 49 3
 PROPERTY 74 3
 PROPERTY 75 3
 PROPERTY 76 3
 PROPERTY 77 3
 PROPERTY 83 2
 PROPERTY 84 2

42 DEWEIGHTED PROPERTIES

PROPERTY	1	....	75
PROPERTY	2	....	75
PROPERTY	3	....	75
PROPERTY	4	....	75
PROPERTY	15	....	75
PROPERTY	16	....	75
PROPERTY	17	....	75
PROPERTY	18	....	75
PROPERTY	22	....	80
PROPERTY	26	....	85
PROPERTY	27	....	85
PROPERTY	23	....	80
PROPERTY	28	....	34
PROPERTY	29	....	33
PROPERTY	30	....	33
PROPERTY	41	....	50
PROPERTY	42	....	50
PROPERTY	48	....	50
PROPERTY	50	....	25
PROPERTY	51	....	25
PROPERTY	61	....	25
PROPERTY	62	....	25
PROPERTY	63	....	25
PROPERTY	64	....	25
PROPERTY	65	....	25
PROPERTY	66	....	25
PROPERTY	67	....	25
PROPERTY	68	....	25
PROPERTY	69	....	25
PROPERTY	70	....	25
PROPERTY	71	....	25
PROPERTY	72	....	25
PROPERTY	74	....	75
PROPERTY	75	....	75
PROPERTY	76	....	75
PROPERTY	77	....	75
PROPERTY	92	....	17
PROPERTY	93	....	17
PROPERTY	94	....	17
PROPERTY	95	....	17
PROPERTY	96	....	16
PROPERTY	97	....	5

0 NO FREQUENCY MODULATION

12 INDIVIDUALLY MODULATED PROPERTIES

PROPERTY	61	....	100
PROPERTY	62	....	100
PROPERTY	63	....	100
PROPERTY	64	....	100
PROPERTY	65	....	100
PROPERTY	66	....	100
PROPERTY	67	....	100
PROPERTY	68	....	100
PROPERTY	69	....	100
PROPERTY	70	....	100
PROPERTY	71	....	100
PROPERTY	72	....	100

1 DATA FROM DISC FILE NEXDAT

5 CARD COLUMNS PER DATUM

BOLAIID SYSTEM FOR NUMERICAL AIDS FOR CLASSIFICATION.

OPERATING ON DATA FOR ... LAMPRANTHINAE, FINAL RUN
OBTAINED BY H.F. GLEN, 16 MAY 1977

1 GROUP FORMING
50 PERCENT SPACE CONSERVATION
125 ITEMS
97 MODAL PROPERTIES
0 BINARY PROPERTIES
0 MULTISTATE PROPERTIES
21 EXTRA-VALUE PROPERTIES

PROPERTY	1	....	3
PROPERTY	2	....	3
PROPERTY	3	....	3
PROPERTY	4	....	3
PROPERTY	22	....	3
PROPERTY	23	....	3
PROPERTY	24	....	2
PROPERTY	25	....	2
PROPERTY	28	....	2
PROPERTY	29	....	2
PROPERTY	30	....	2
PROPERTY	33	....	3
PROPERTY	34	....	3
PROPERTY	35	....	3
PROPERTY	49	....	3
PROPERTY	74	....	3
PROPERTY	75	....	3
PROPERTY	76	....	3
PROPERTY	77	....	3
PROPERTY	83	....	2
PROPERTY	84	....	2

50 DEWEIGHTED PROPERTIES

PROPERTY	1	....	75
PROPERTY	2	....	75
PROPERTY	3	....	75
PROPERTY	4	....	75
PROPERTY	6	....	80
PROPERTY	8	....	80
PROPERTY	10	....	80
PROPERTY	12	....	80
PROPERTY	14	....	80
PROPERTY	15	....	75
PROPERTY	16	....	75
PROPERTY	17	....	75
PROPERTY	18	....	75
PROPERTY	22	....	80
PROPERTY	23	....	80
PROPERTY	26	....	90
PROPERTY	27	....	90
PROPERTY	28	....	34
PROPERTY	29	....	33
PROPERTY	30	....	33
PROPERTY	32	....	95
PROPERTY	37	....	95
PROPERTY	40	....	95
PROPERTY	41	....	50
PROPERTY	42	....	50
PROPERTY	48	....	50
PROPERTY	50	....	25
PROPERTY	51	....	25
PROPERTY	61	....	25
PROPERTY	62	....	25

PROPERTY	63	....	25
PROPERTY	64	....	25
PROPERTY	65	....	25
PROPERTY	66	....	25
PROPERTY	67	....	25
PROPERTY	68	....	25
PROPERTY	69	....	25
PROPERTY	70	....	25
PROPERTY	71	....	25
PROPERTY	72	....	25
PROPERTY	74	....	75
PROPERTY	75	....	75
PROPERTY	76	....	75
PROPERTY	77	....	75
PROPERTY	92	....	17
PROPERTY	93	....	17
PROPERTY	94	....	17
PROPERTY	95	....	17
PROPERTY	96	....	16
PROPERTY	97	....	5

0

NO FREQUENCY MODULATION

12 INDIVIDUALLY MODULATED PROPERTIES

PROPERTY	61	....	100
PROPERTY	62	....	100
PROPERTY	63	....	100
PROPERTY	64	....	100
PROPERTY	65	....	100
PROPERTY	66	....	100
PROPERTY	67	....	100
PROPERTY	68	....	100
PROPERTY	69	....	100
PROPERTY	70	....	100
PROPERTY	71	....	100
PROPERTY	72	....	100

1

DATA FROM DISC FILE NEXDAT

5

CARD COLUMNS PER DATUM

Appendix 2.

Proposal for the conservation of the generic name 7405 Lampranthus N.E. Br. (1930) (Mesembryanthemaceae) against Oscularia Schwantes (1927)

Lampranthus N.E. Br., Gard. Chron. 87 : 71 (1930) nom. cons. prop.

Type species: L. multiradiatus (Jacq.) N.E. Br.

Oscularia Schwant., Möllers Dtsche Gärtn.-Ztg, 42 : 187 (1927) nom. rej. prop.

Type species: O. deltoides (L.) Schwant.

This proposal aims to conserve the name Lampranthus against Oscularia when the two genera are combined. A brief note on the desirability of merging the two genera is given in the evidence.

Herre (1971) indicates that there are 178 species of Lampranthus, a genus of showy-flowered succulent plants common in the South-Western Cape and found as far afield as Namibia and Natal. In a new revision of the genus (Glen, 1978) it is proposed to recognise 56 species. The first description was in one of Brown's keys to genera separated by himself and others from Mesembryanthemum L. This description consists of a complete and unambiguous diagnosis as required by the Code, and an explicit citation of the type species.

According to Herre (op. cit.) and Jacobsen (1974), Oscularia is a genus of three species, found only in the mountains of the South-Western Cape. Glen (op. cit.) considers these three species to be one. The propologue of this genus is also validly published.

A complete range of intermediates between typical Oscularia deltoides and typical Lampranthus copiosus, can be demonstrated. The former is distinguished from other related taxa by having leaves with many marginal teeth, and the latter by having leaves with few or rarely no marginal teeth. L. copiosus is found in the Piquetberg, an inselberg about 100 km north of Cape Town. Species of Oscularia are found from the Witzenberg (the next range of the East) to the Caledon Swartberg. These two taxa are very close in all characters except the ones mentioned. In view of this, and of the results obtained in a numerical

taxonomic study of Lampranthus s. str. and allied genera, in which species of Oscularia consistently clustered with L. copiosus and its allies much more closely than with anything else, it does not appear that Oscularia and Lampranthus can be kept separate.

Conservation of Lampranthus is proposed primarily to avoid 55 new combinations which would have to be made if the name Lampranthus is not conserved. In addition to changing all these specific names, it would be necessary to change the name of the subtribe Lampranthinae, quite a large and conspicuous group in the Mesembryanthemaceae, to Osculariinae, a name that would mean little if anything to workers in the group.

Lampranthus s. str. is a large genus which is very popular in horticulture, whereas Oscularia is hardly known in cultivation.

If the name Oscularia (meaning "a collection of little mouths", and referring to the teeth on the leaves of two taxa of some sixty-odd is retained, then yet another name in contravention of the recommendation that names should be descriptive of the taxa to which they apply, would be perpetrated. The name Lampranthus is derived from two Greek words meaning "showy flower", a character true for most of the genus.

References

- Glen, H. F. (1978) A taxonomic Monograph of Lampranthus and Allied Genera. Ph. D. thesis, University of Cape Town.
- Herre, A. G. J. H. (1971) The Genera of the Mesembryanthemaceae. Cape Town, Tafelberg.
- Jacobsen, H. (1974) Lexicon of Succulent Plants. London, Blandford.
- H. F. Glen, Botanical Research Institute, Private Bag X101, Pretoria 0001, South Africa.

Fig. 1. Dendrogram showing relationships between 125 items belonging to Lampranthinae. This is one of five such dendrograms used to establish the classification adopted here. For further discussion, see text.

0.85
0.80
0.75
0.70
0.65
0.60
0.55

Homogeneity

