

Revision of the genus *Myrsiphyllum* Willd.

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Keywords: Africa, Liliaceae, *Myrsiphyllum*, revision

ABSTRACT

The genus *Myrsiphyllum* Willd. (Liliaceae—Asparageae) is revised. Twelve species are recognized, one of which is new, namely, *M. alopecurum* Oberm. Eight new combinations are made. A key is provided for distinguishing *Myrsiphyllum* from *Protasparagus* Oberm.

MYRSIPHYLLUM

Myrsiphyllum Willd.** in Ges. naturf. Freunde Berl. Magazin 2: 25 (1808); Kunth, Enum. Pl. 5: 105 (1850). Type species: *M. asparagoides* (L.) Willd.

Hecatrix Salisb., Gen. Pl. 66 (1866). Type species: *H. asparagoides* (L.) Salisb.

Asparagus, section *Myrsiphyllum* (Willd.) Bak. in J. Linn. Soc. 14: 597 (1875); Fl. Cap. 6: 258 (1896); Jessop in Bothalia 9: 38 (1966); Dyer, Gen. 2: 943 (1976).†

Perennial, innocuous, glabrous climbers or erect, usually chamaephytes. *Rhizome* cylindrical, often not lignified; cataphylls small or vestigial. *Roots* placed radially on the often long, creeping rhizome, or irregularly dorsiventral on a compact rhizome; forming fusiform tubers crowded on rhizome or distant from it, filled with soft tissue saturated with aqueous fluid; in *M. ovatum* (Salter) Oberm. and *M. undulatum* (L.f.) Oberm. new plants may evolve on distal side of a tuber. *Stems* voluble or erect. *Phylloclades* solitary or 2-3-nate, placed in axils of scale-leaves, the latter not forming spines. (*M. fasciculatum* (Thunb.) Oberm. forms an exception in that the cladodes are many in each fascicle and small spines are developed.) *Flowers* 1-3-nate, bisexual, pendulous on short to long pedicels or stalks (viz. a combination of pedicel and pericladium, separated by a disk). *Tepals* white, usually with a green central band, connivent at base, forming a cup or tube, free lobes recurved above (except in *M. ramosissimum* and *M. scandens* where they remain erect). *Stamens* erect, usually connivent around gynoecium with filaments flattened, attenuate above, widened

below, where they may form two extended spurs; anthers introrse, yellow, orange or red. *Ovary* 3-locular; ovules 6-12 in each locule, biseriate; styles 1 or 3, stigmas 3, papillate. *Berry* globose or ovoid-apiculate, red, yellow or orange; seeds globose, black.

Species 12, recorded from the Winter Rainfall Region, with *M. asparagoides* and *M. ramosissimum* extending along the eastern Escarpment to the Transvaal; the former also spreading northwards to tropical Africa and southern Europe. Recently recorded as a troublesome adventive in Australia.

The genus *Myrsiphyllum*, separated from *Asparagus* by Willdenow in Ges. naturf. Freunde Berl. Mag. 2: 25 (1808), was upheld by Kunth in his Enum. Plant. 5 (1850). Baker in J. Linn. Soc., Bot. 14 (1875), however, placed it as a section of *Asparagus* and so did subsequent taxonomists. H. Huber in *The Monocotyledons*, a comparative study by Dahlgren & Clifford (1982), resuscitated the genus and I agree.

1. *M. multituberosum* (R. A. Dyer) Oberm., comb. nov.

Asparagus multituberosus R. A. Dyer in Bothalia 6: 442 (1954). Type: Ceres, Karooport, Marloth 9006 (PRE, holo!; STE!).

A. asparagoides sensu Jessop in Bothalia 9: 81 (1966).

Scandent with thin stems up to c. 0.4 m tall, or short, erect and compact (in dry areas in Namaqualand). *Rhizome* thin, horizontal, up to 0.5 m long, covered by a cylinder of overlapping small, fusiform, pointed tubers c. 10 × 3 mm, occasionally some continuing below as normal thin roots but scattered long filiform roots are also produced, sometimes one of these producing a tuber distant from rhizome. *Phylloclades* ovate to cordate, c. 15-25 mm long, apiculate, many-veined, margin papillate. *Flowers* 1-3 in axils of membranous scale-leaves; stalk c. 5 mm, curved, articulated below perianth. *Tepals* c. 7 mm, forming a wide tube below, spreading above. *Stamens* as long as tepals, filaments expanded at base, flat. *Ovary* ovoid, with 10-12 ovules in each locule. *Styles* 3, curved outwards; stigmas apical, papillate. *Berry* not seen. Figs. 1.1, 2.1 & 3.1.

Only known from the western Cape in montane vegetation. Flowering July-September. Fig. 4.

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** Origin of name: the phylloclades of *M. asparagoides* (L.) Willd. resemble the leaves of the myrtle.

† In Clifford & Dahlgren's study *The Monocotyledons* (1982) H. Huber divided the classical family Liliaceae of Kunth, Baker and others into two Orders, Asparagales and Liliales. The former contains 24 families, the latter eight. His family Asparagaceae is represented by six genera; two of these, *Protasparagus* and *Myrsiphyllum* are African.

For the present it was decided to leave these two African genera in the Liliaceae sensu lato to conform with the *Flora of Southern Africa* pattern.

KEY TO GENERA *PROTASPARAGUS* (*ASPARAGOPSIS* KUNTH) † AND *MYRSIPHYLLUM* WILLD.

- Perianth with 6 free spreading tepals; stamens free, spreading; flowers erect, fascicled or racemose, rarely solitary; spines present (absent in *P. virgatus* and *P. pendulus*); rhizome dorsiventral; cataphylls present..... 1113 *Protasparagus*
- Perianth with the tepals cohering in lower half, forming a tube, spreading to recurved in upper half; stamens cohering with filaments forming a tube around gynoecium (exceptions are *M. scandens* and *M. ramosissimum* where flowers resemble those of *Protasparagus*). Flowers pendulous, solitary or rarely 2–3 placed next to one another on a node; spines absent; roots emerging radially from the cylindrical rhizome, rarely dorsiventral..... 1113a *Myrsiphyllum*

KEY TO SPECIES OF *MYRSIPHYLLUM*

- Phylloclades solitary:
- Scandent plants (but cf. *M. multituberosum* which may be erect when stunted):
- Phylloclades ovate to cordate, 12–20 mm broad:
- Root-tubers attached close to rhizome:
- Styles 3: root-tubers cylindrical, c. 10–12 × 3 mm, overlapping on long rhizomes..... 1. *M. multituberosum*
- Style 1: root-tubers fusiform, c. 40–60 × 10–15 mm, radiating from rhizome..... 2. *M. asparagoides*
- Root-tubers distant from rhizome..... 3. *M. ovatum*
- Phylloclades narrowly ovate to broadly linear, c. 4–6 mm broad:
- Phylloclades narrow ovate, midrib distinct; root-tubers fusiform, firm..... 4. *M. kraussianum*
- Phylloclades narrowly elliptic without a distinct midrib, soft; root-tubers oblong-globose..... 5. *M. volubile*
- Erect plants:
- Plants branching freely; phylloclades narrowly ovate-acuminate, strongly ribbed..... 6. *M. undulatum*
- Plants 'fox-tail-shaped', viz the erect stems bearing numerous contracted branches forming a leafy cylinder around stem; phylloclades narrowly linear:
- Phylloclades 1–2 mm broad with smooth or minutely ciliate margins; roots with fusiform tubers some distance away from rhizome..... 7. *M. juniperoides*
- Phylloclades 0.5 mm broad; margin fimbriate; root-tubers densely packed on rhizome..... 8. *M. alopecurum*
- Phylloclades in fascicles of 3, or very numerous, linear to filiform; scandent, shade-loving:
- Phylloclades in fascicles of 3, linear to filiform:
- Branches declinate (viz forming recurved loops); branchlets short with overlapping phylloclades; berry ovoid, shortly pointed above and below, many-seeded..... 9. *M. declinatus*
- Branches and branchlets spreading at right angles to stem; berry globose, 1–few-seeded:
- Phylloclades spreading in one plane, shallowly S-shaped, c. 2 mm wide, one opposing two others and one shorter than other two..... 10. *M. scandens*
- Phylloclades laxly spreading, c. 1 mm wide, with a prominent midrib; stems, branches and branchlets angled..... 11. *M. ramosissimum*
- Phylloclades in dense fascicles (15–30-nate), linear, arcuate, c. 4–8 mm long..... 12. *M. fasciculatum*

Vouchers

Marloth 9006; Bayer 3454; Schlechter 8069; Marloth 12778; Rösch & Le Roux 01218 (01211).

It is the only *Myrsiphyllum* species in which the three styles have not fused into a single column.

2. *Myrsiphyllum asparagoides* (L.) Willd. in Ges. naturf. Freunde Berl., Mag. 2: 25 (1808); Kunth, Enum. Plant. 5: 105 (1850); Hook. f. in Curtis's bot. Mag., t. 5584 (1866).

Medeola asparagoides L., Sp. Pl. 339 (1753); Mant. alt. 370 (1771); Del. in Red., Liliac., t. 442 (1816). *Hecatis asparagoides* (L.) Salisb., Gen. Plant. 66 (1866). *Asparagus asparagoides* (L.) Wight in Century Dictionary II: 845 (1909); Jessop in Bothalia 9: 81 (1966), nom. illegit. *Asparagus asparagoides* (L.) Druce in Rep. botl. Exch. Club Brit. Isl. 1913, iii: 414 (1914). Type: Tilli, Cat. Plant. Horti Pisani, t. 12, f. 1 (1723) as 'Asparagus Africanus, scandens Myrti folio' (icono.).

Medeola angustifolia Mill., Dict. edn 6 (1768); Ait., Hort. Kew. edn 1: 490 (1789). *Myrsiphyllum angustifolium* (Mill.) Willd. l.c. 2: 25 (1808). *Asparagus medeoloides* (Thunb.) Bak., var. *angustifolius* (Mill.) Bak. in F.C. 6: 273 (1896). Type: Tilli, Cat. Plant. Horti Pisani, t. 12, f. 2 (1723), as 'Asparagus Africanus, scandens Myrti folio angustiore' (icono.).

Dracaena medeoloides L.f., Suppl. 203 (1781). *Asparagus medeoloides* (L.f.) Thunb., Prodr. 66 (1794), Fl. Cap. edn 2: 333 (1823); Bak. in J. Linn. Soc., Bot. 14: 627 (1875); F.C. 6: 272 (1896); Marloth, Fl. S. Afr. 4, t. 20 f (1915). Type: Cape of Good Hope, without precise locality, Thunberg (UPS, holo.; BOL!; PRE!, photo 8453).

Elide Medicus (1791) by lectotypification, cf. Farr, Leusink & Stafleu, Index Nom. Gen. 1139 (1979).

Myrsiphyllum falciforme Kunth, Enum. Pl. 5: 107 (1850); Saund., Ref. Bot., t. 47 (1869). Type: Cape, without precise locality, Drège 2704a in 'Herb. Luc.' (K, iso.). *Asparagus medeoloides* Thunb. var. *falciformis* (Kunth) Bak. in F. C. 6: 273 (1896).

Asparagus kuisibensis Dinter in Feddes Repert. 29: 270 (1931). Type: South West Africa/Namibia at the Kuiseb River, Tjuezu in Herb. Dinter 4698 (B, holo.; PRE, photo!).

Scandent, much branched perennials with shiny green ovate phylloclades, deciduous or semideciduous. Rhizome cylindrical, bearing numerous fusiform root-tubers c. 40–60 × 10–20 mm, radially arranged, variable in size, close to rhizome. Stems twisting, wiry, smooth or ridged, up to 2 m tall. Branches usually short, with beaded ridges. Phylloclades variable in size and shape, ovate-acuminate, c. 25–40 × 8–20 mm, flat or folded and curved, many-nerved but mostly with 3 more pronounced on each side; margin smooth or minutely denticulate. Flowers on pedicels c. 10 mm long, articulated below perianth. Tepals 6–10 mm long, forming a tube in lower half, reflexed above. Stamens erect, con-

† Kunth's name *Asparagopsis* (Enum. Pl. 5: 76, 1850), is a homonym as it was used by Montagne in 1841 for a genus in the Rhodophyceae.

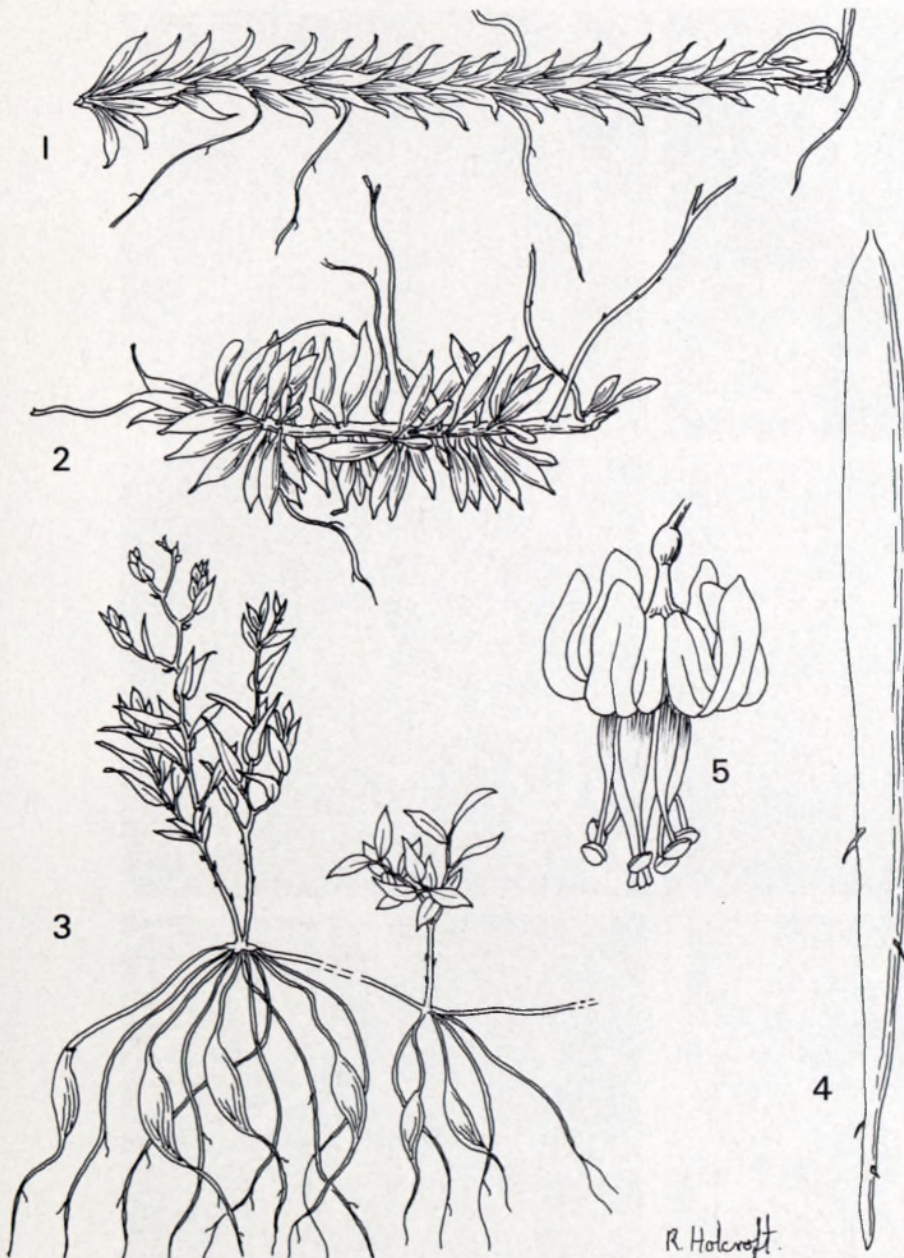


FIG. 1.—1, root system of *Myrsiphyllum multituberosum*, $\times 1$; 2, root system of *M. asparagoides*, $\times \frac{1}{2}$; 3, *M. ovatum* showing a young plant appearing from a root, reduced [after Fig. 1. on p. 167 in *Jl S. Afr. Bot.* 6: 166 (1940)]; 4, a root of *M. fasciculatum*, $\times \frac{1}{2}$; 5, flower of *M. ovatum* [t.1146 in *Flower. Pl. Afr.* 29 (1943) by C. Letty, $\times \frac{1}{6}$].

R. Holcroft.

nivent, expanded below into 2 small spreading teeth; anthers red. Ovary pear-shaped, stipitate, narrowed into a style as long as ovary; ovules c. 6 in each locule; stigmas short, spreading, ciliate. Berry globose, c. 10 mm in diam., usually many-seeded. Fig. 1.2, 2.2, 3.2, 5a & 5b.

Widespread and common in southern and eastern Cape forests and coastal valley bushveld; inland in wooded areas and along riverbanks in the eastern parts of Natal and Transvaal. Also recorded from South West Africa/Namibia and further north to tropical Africa. Naturalized locally in southern Europe. An invader in Australia where it has become troublesome. Flowering July–September. Fig. 6.

Vouchers

Goldblatt 2638; Archibald 3610; Rösch & Le Roux 457; Ward 4998; Merxmüller & Giess 32272; Purcell 7.

Introduced in England in 1702 by the Duchess of Beaufort. It was in cultivation in the hortus in Pisa, Italy and illustrated in Tilli's *Catalogue of Plants* in 1723, on tab. 12, f. 1. The plant pictured on the

right-hand side has narrower, somewhat smaller phylloclades, which led Tilli, Miller and others to regard it as a separate species but the phylloclades vary in size and width. The origin of the plants, figured by Tilli, is unknown.

3. *Myrsiphyllum ovatum* (Salter) Oberm., comb. nov.

Asparagus ovatus Salter in *Jl S. Afr. Bot.* 6: 167 (1940); in *Fl. Cape Penins.* 174 (1951); Dyer in *Flower. Pl. Afr.* 29: t. 1146 (1943). Type: Cape, Rugby, Salter 8214 (BOL, holo.!; NBG!; PRE!). *Asparagus asparagoides* sensu Jessop in *Bothalia* 9: 81 (1966).

Scandent, with twining branches up to 1–1.5 m tall. Rhizome compact scaly, woody with long roots extending in all directions, bearing numerous hard, swollen, fusiform tubers c. 50–100 \times 20 mm, far removed from rhizome; much smaller in young plants; tubers may bring forth young plants at their proximal ends. Phylloclades deciduous, ovate, 30 \times 15 mm but variable in size, many-nerved, shiny. Flowers 1–3, beside the base of a phylloclade; pedicels c. 10 mm, articulated near base of flower.

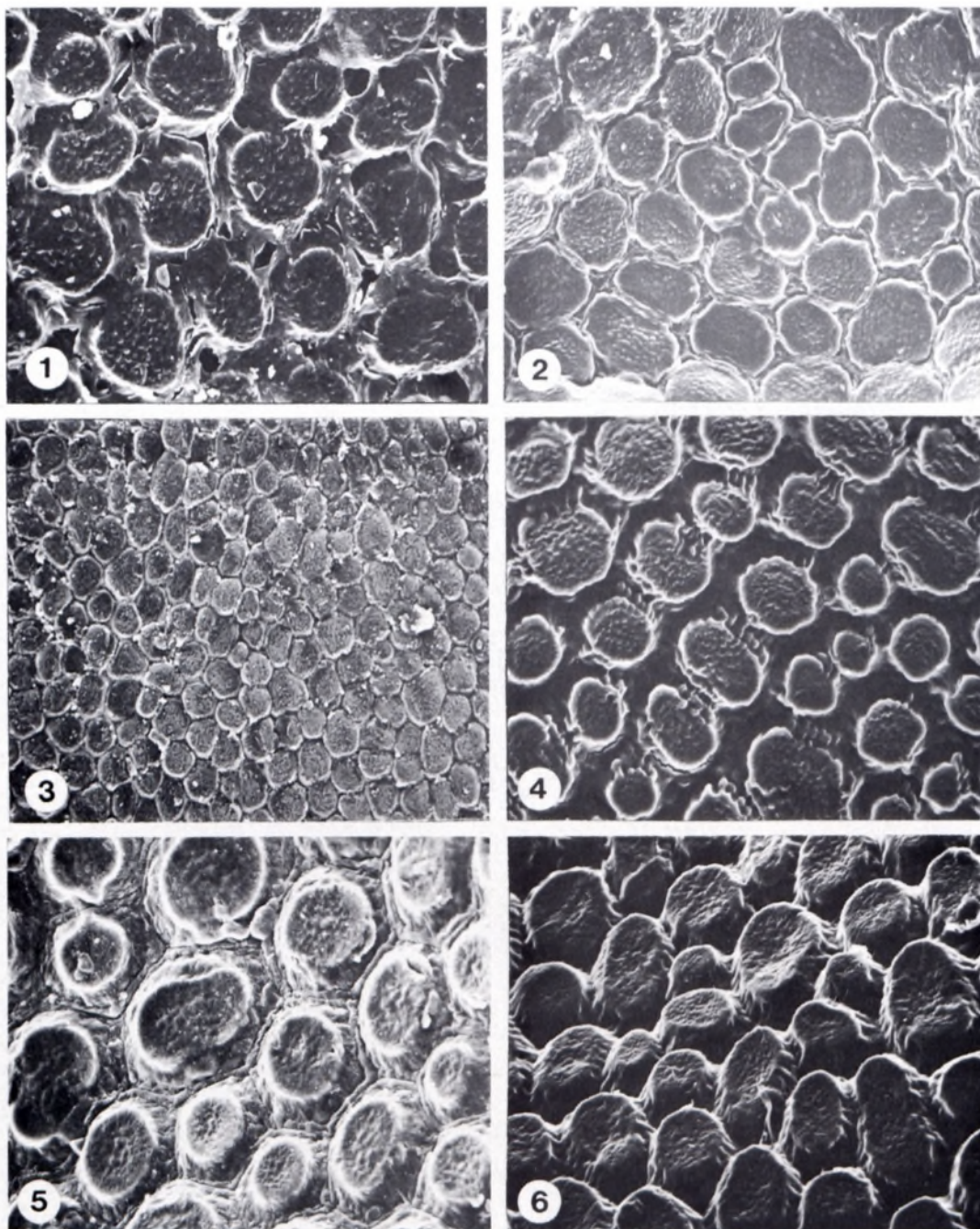


FIG. 2.—Seed coats of *Myrsiphyllum* species (SEM photographs). 1, *M. multituberosum*, $\times 600$; 2, *M. asparagoides*, $\times 600$; 3, *M. ovatum*, $\times 240$; 4, *M. kraussianum*, $\times 600$; 5, *M. volubile*, $\times 600$; 6, *M. undulatum*, $\times 600$.

Perianth c. 6 mm, tepals reflexed near centre. *Stamens* with filaments flattened, erect, bearing a small basal spur on each side. *Ovary* oblong, with c. 8–10 ovules in each locule; style and stigmas just exerted from staminal column. *Berry* globose, 10 mm in diam., red. Figs 1.3, 1.5, 2.3 & 3.3.

. Confined to the Cape Province, usually along the coastal belt from the south-western Cape to the eastern Cape, but also inland. Fig. 7.

Vouchers

Dyer 5338; Mauve & Hugo 243; Mauve 5347; Leach & Bayliss 12647.

4. *Myrsiphyllum kraussianum* Kunth, Enum. Pl. 5: 107 (1850); (as '*kraussianum*'). Type: Cape,

Wynberg, Constantia, Krauss 1333 (B, holo.; in errore Krause).

Asparagus kraussianus (Kunth) MacBride in Contr. Gray Herb. Harv. 56: 17 (1918); Salter in Fl. Cape Penins., 174 (1950). *A. kraussii* Bak. in F.C. 6: 272 (1896).

A. asparagoides sensu Jessop in Bothalia 9: 81 (1969).

?*Myrsiphyllum gramineum* Kunth, Enum. Plant. 5: 108 (1850). Type: Cape of Good Hope, collector unknown. (B).

Scandent, 1–2 m tall, resembling *M. asparagoides* but with straight, narrower phylloclades and shorter pedicels. *Rhizome* bearing a congested cluster of sessile fusiform tubers. *Stems* and branches laxly curved, angled, ridged. *Phylloclades* narrowly cordate-acuminate, c. 15–30 \times 5 mm, flat, striate,

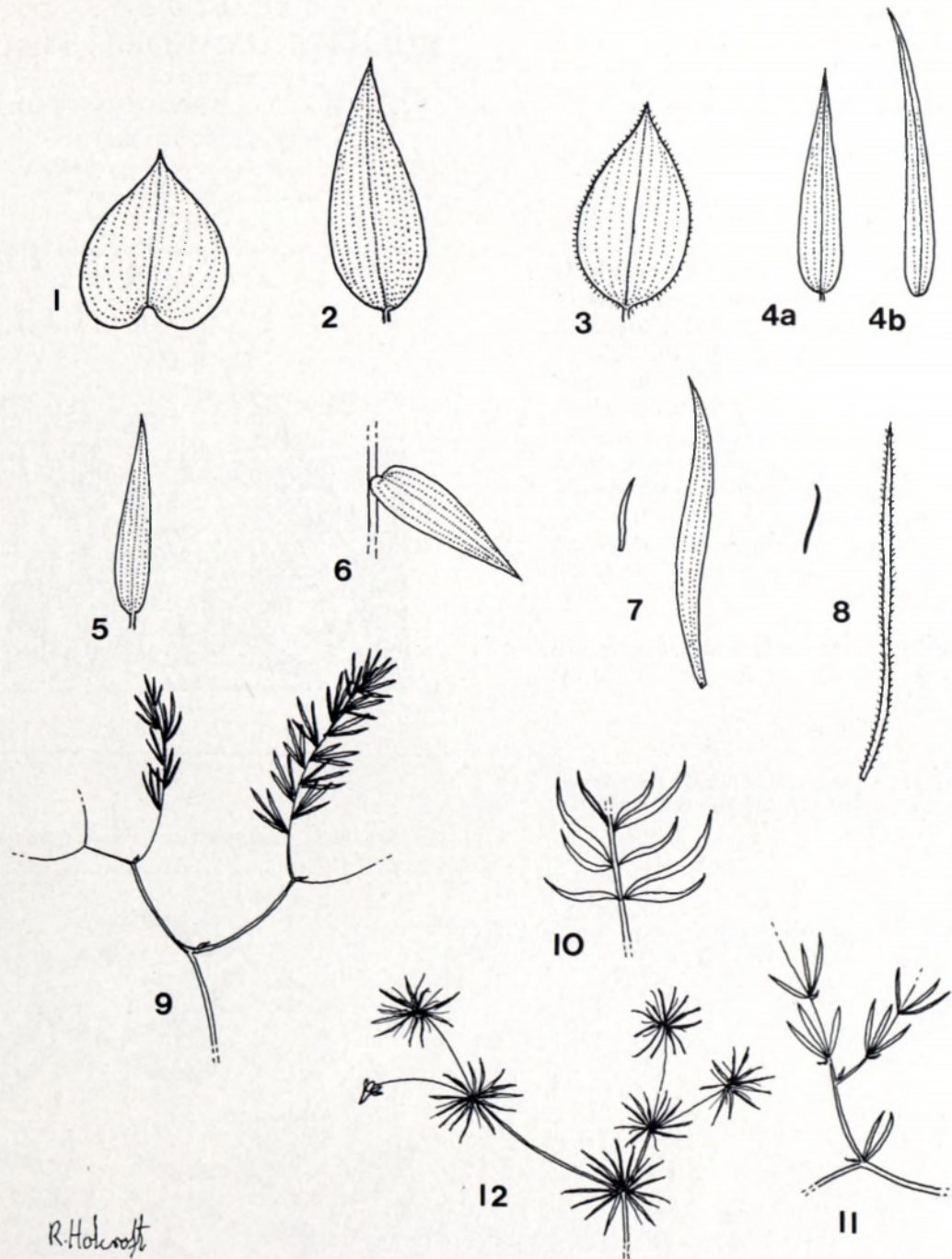


FIG. 3.—Phylloclades of *Myrsiphyllum* species. 1, *M. multituberosum*, $\times 1$; 2, *M. asparagoides*, $\times 1$; 3, *M. ovatum*, $\times 1$; 4, *M. kraussianum*: a, typical form; b, elongated form, $\times 1$; 5, *M. volubile*, $\times 1$; 6, *M. undulatum*, $\times 1$; 7, *M. juniperoides*: a, $\times 1$; b, $\times 4$; 8, *M. alopecurum*: a, $\times 1$; b, $\times 4$; 9, *M. declinatum* showing declinate branching, $\times 1$; 10, *M. scandens*, $\times 1$; 11, *M. ramosissimum* $\times 1$; 12, *M. fasciculatum*, $\times 1$.

with a distinct midrib, apiculate. Flowers pendulous, axillary; pedicels c. 3–5 mm long, articulated below perianth. Tepals c. 5 mm, white with a green midrib. Stamens with flattened filaments bearing two basal spurs; anthers orange. Ovary with 6 ovules in each locule. Berry 6–9 mm in diam., red. Figs 2.4, 3, 4a & 4b.

Southern Cape: recorded from the Cape Peninsula to the south-western and south-eastern Cape, in strandveld and fynbos. Fig. 8.

Vouchers

Purcell 68; Taylor 10235; Barker 10227; Strey 521; Van Breda & Joubert 1960; Acocks 17992.

A form of this species, bearing longer, narrower phylloclades c. 35–45 mm long, has been collected around the south-western Cape, viz Ceres, Worcester, Laingsburg and Swellendam.

Vouchers

Bayer 3153, 3344; Bond 247; Mauve & Hugo 240.

5. *Myrsiphyllum volubile* (Thunb.) Oberm.,
comb. nov.

Asparagus volubilis Thunb., Prodr. 66 (1794), Fl. Cap. edn 2: 332 (1821); Schult. f., Syst. 7: 347 (1829); Bak. in J. Linn. Soc., Bot. 14: 628 (1875), F. C. 6: 262 (1896). Type: Cape, without locality, Thunberg 8469 (UPS, holo; PRE, photo).

?*Ruscus volubilis* Thunb., Prodr. 13 (1794); Kunth, Enum. Pl. 5: 276 (1859). Type as above.*

Asparagus asparagoides sensu Jessop in Bothalia 9: 81 (1966); non Druce.

Scandent with wiry twisted stems and short leafy branches, c. 1 – 1,5 m tall, often with a garlic scent. Rhizome terete, bearing swollen bulbous tubers c. 300 – 500 mm long, closely attached to it. Stems bearing short branches 40 – 80 mm long. Phylloclades broadly linear, abruptly acute above and below, c. 15 – 20 × 3 mm, without a distinct midrib, flat, soft, pale green. Flowers on short pedicels 4 – 5 mm long, articulation below perianth; tepals fused below, spreading above, c. 5 mm long, cream. Stamens with orange anthers, typical. Ovary ovoid; ovules 6 in each locule; style short. Berry not seen. Figs 2.5 & 3.5.

Recorded from the south-eastern to north-eastern Cape, in fynbos, coastal scrub or in forest undergrowth. Fig. 9.

Vouchers

Mauve & Hugo 124, 174, 241, 138; Archibald 4557; Smook 3819; Ecklon & Zeyher 4; Jessop 623; Geldenhuys 639, 515; Sim 4082; Thode A2771.

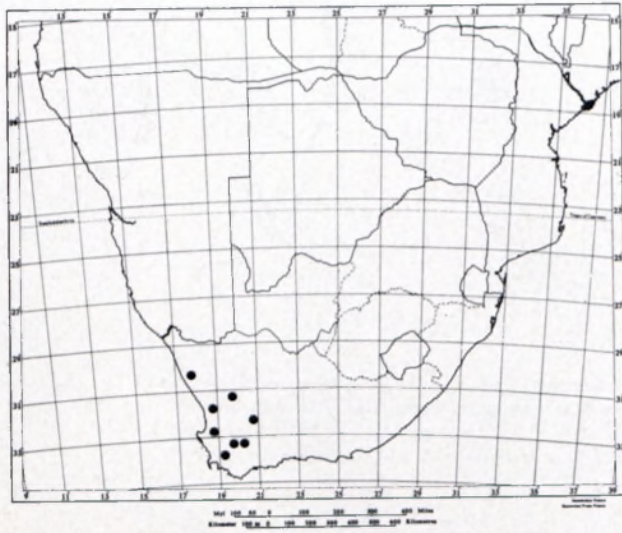


FIG. 4.—Distribution of *Myrsiphyllum multituberosum*.

* *Dracaena volubilis* L.f., Suppl. 204 (1781). The name is mentioned on the microfiche edition, Nr 435/4 but no specimen is shown. Baker in F.C. 6: 272 (1896) identified it as *Asparagus scandens* Thunb.

CATALOGUS
PLANTARUM HORTI PISANI
AUCTORE
MICHAELE ANGELO TILLI
E CASTRO FLORENTINO
IN PISANO Athenzo Simplicium LECTORE Ordinario
ET EJUSDEM HORTI CUSTODE
NEC NON
Regie Societ. LONDINENSIS, ac Acad. Botanicæ FLORENTINÆ SOCIO
SUB AUSPICIIS R. C.
COSMIII.
M. E. D.



FLORENTIÆ. MDCCXXIII.

Typis Regiæ Celsitudinis. Apud Tartinium & Franchium. Super. Permissu.

FIG. 5a.—Tilli's Catalogue Horti Pisani, frontispiece.



FIG. 5b.—Tilli's Catalogue Horti Pisani, Tab. 12, figs 1 & 2 of *Myrsiphyllum asparagoides*.

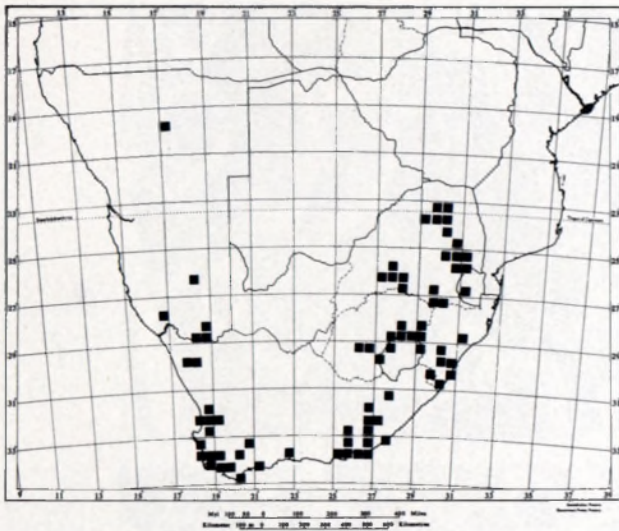


FIG. 6.—Distribution of *Myrsiphyllum asparagoides*.

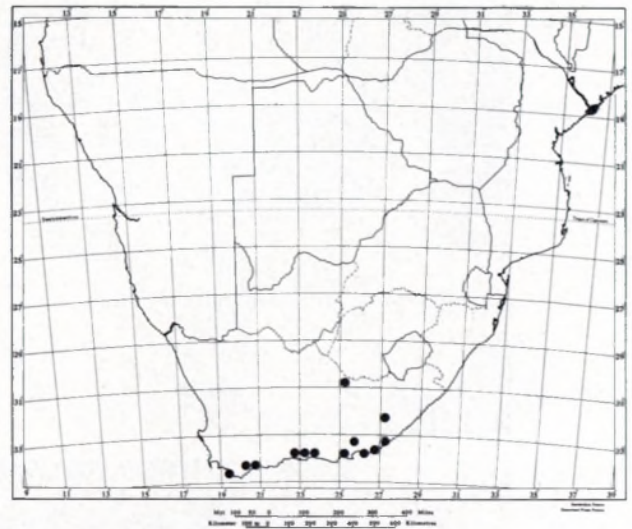


FIG. 9.—Distribution of *Myrsiphyllum volubile*.

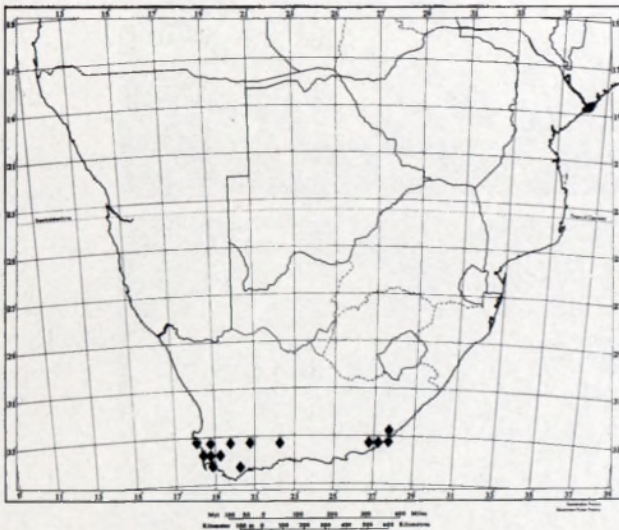


FIG. 7.—Distribution of *Myrsiphyllum ovatum*.

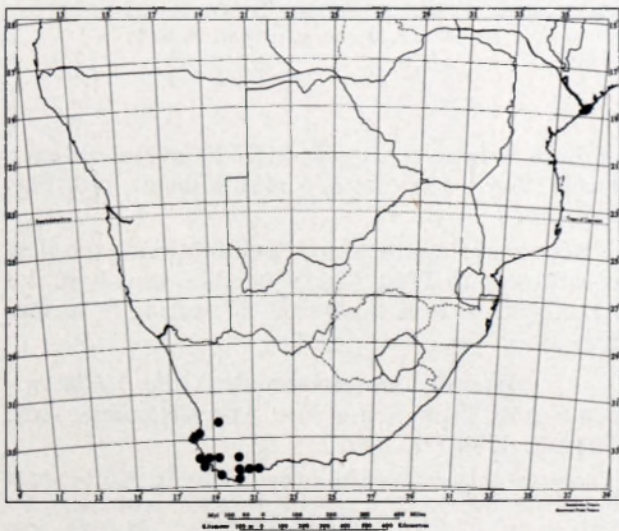


FIG. 8.—Distribution of *Myrsiphyllum kraussianum*.

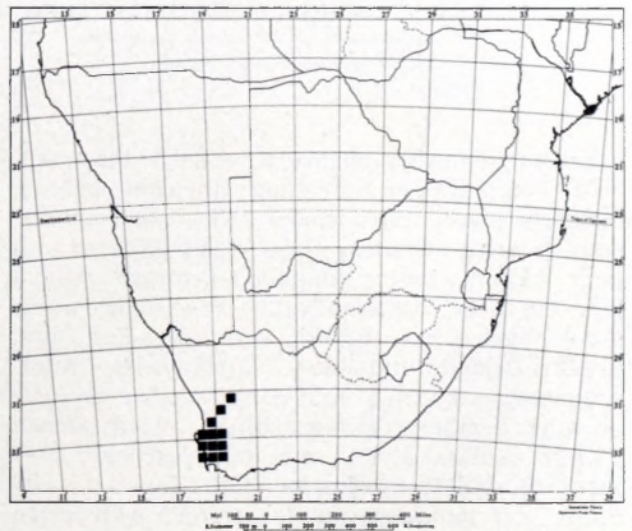


FIG. 10.—Distribution of *Myrsiphyllum undulatum*.

M. volubile can be distinguished from *M. kraussianum* by its softer phylloclades, which are rounded at the base and do not show a midrib.

'Giving off a garlic odour which scents the air around' (Tyson). Milk becomes tainted when cows feed on this plant.

6. *Myrsiphyllum undulatum* (L.f.) Kunth, Enum. Pl. 5: 109 (1850). Type: Cape of Good Hope, without precise locality, Thunberg (UPS, 8446; PRE, photo!).

Dracaena undulata L.f., Suppl. 203 (1781); Roem. & Schult., Syst. Veg. 7: 346 (1829). *Asparagus undulatus* (L.f.) Thunb., Prodr. 66 (1794); Bak. in J. Linn. Soc., Bot. 14: 628 (1875); Fl. Cap. 6: 273 (1896); Marloth, Fl. S. Afr. 4: t. 20 E; fig. 14a (1915); Salter in Fl. Cape Penins. 173 (1950); Sölch, Beitr. Fl. Südwest-Afr. 39 (1961); Jessop in Bothalia 9: 84 (1966).

Asparagus klinghardtianus Dinter in Feddes Rep. 29: 270 (1931). Type: South West Africa/Namibia: Klinghardtgebirge, Dinter 3998 (B, holo.! PRE!).

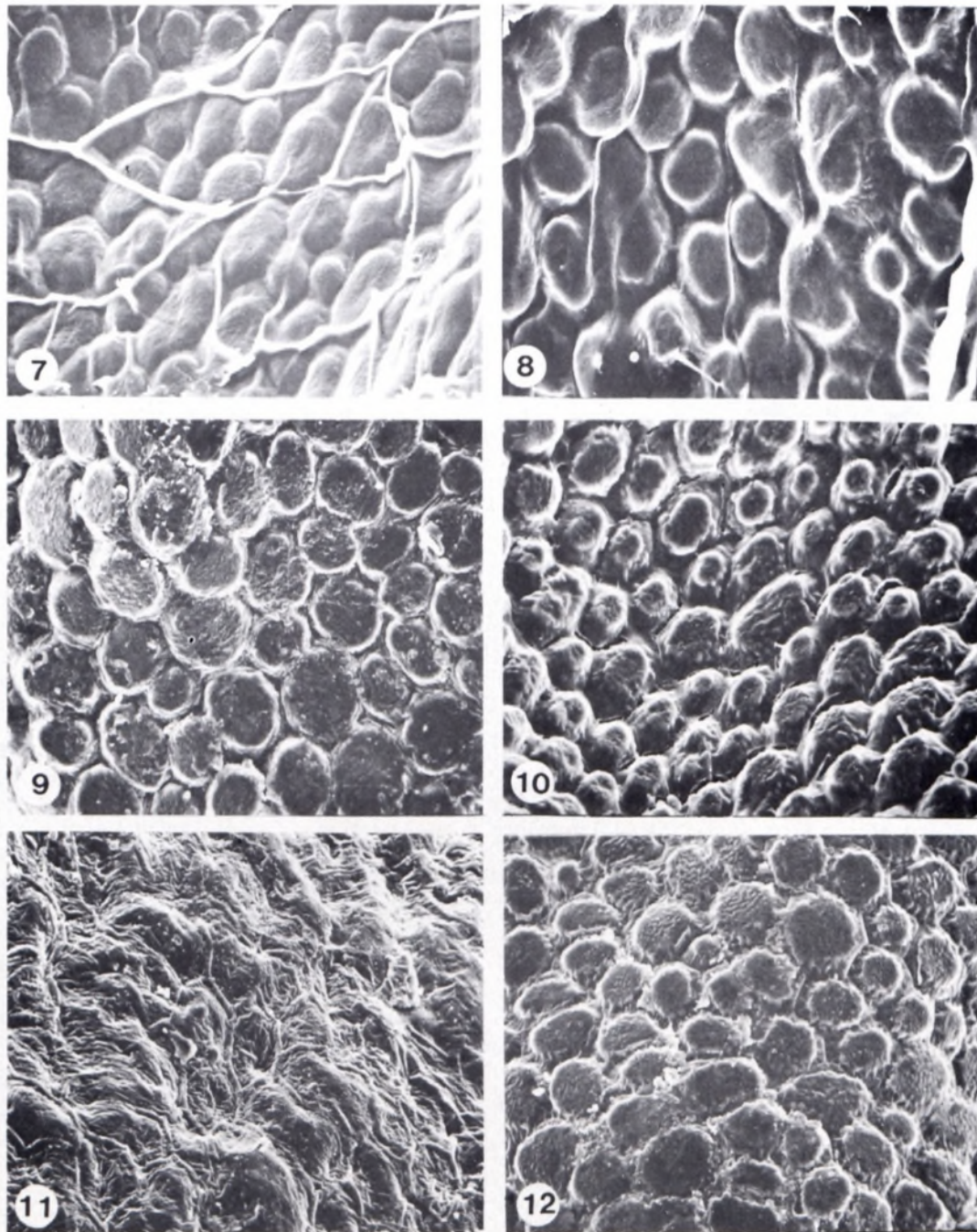


FIG. 11.—Seed coats of *Myrsiphyllum* species (SEM photographs). 7, *M. juniperoides*, $\times 600$; 8, *M. alopecurum*, $\times 600$; 9, *M. declinatum*, $\times 600$; 10, *M. scandens*, $\times 600$; 11, *M. ramosissimum*, $\times 1000$; 12, *M. fasciculatum*, $\times 600$.

Erect rigid bushes (chamaephytes) 0,3–0,5 m tall, with long, simple spreading branches bearing regularly placed phylloclades. *Rhizome* compact, scaly, bearing numerous roots, some of these with large fusiform tubers continued below as normal long thin roots; occasionally they may produce a new shoot. *Stem* erect, ridged, with spreading long, usually simple branches. *Phylloclades* ovate-acuminate, up to 25 mm long (smaller on new growth), leathery, striate, often folded above. *Flowers* pendulous, 1–3 at a node; pedicels c. 5–9 mm long, with disk below perianth. *Tepals* broadly linear, c. 6 mm long, purple or green with cream margins, reflexed in upper half. *Stamens* with flat attenuate filaments bearing 2 small basal spurs;

anthers orange. *Ovary* with 8–10 ovules in each locule. *Berry* globose, c. 5 mm in diam., red. Figs 2.6, 3.6.

Recorded from the Cape Peninsula along the west coast to South West Africa/Namibia, usually in the strandveld with its sandy soil. Flowering in spring. Fig. 10.

7. *Myrsiphyllum juniperoides* (Engl.) Oberm., comb. nov. Type: South West Africa/Namibia, Aus, Marloth 1538 (B, holo.).

Asparagus juniperoides Engl. in Bot. Jb. 10: 3 (1889); Schinz in Bull. Herb. Boissier. 1, 4, app. III: 44 (1896); Sölch, Beitr. Fl. Südwest-Afr. 37 (1961); Jessop in Bothalia 9: 63 (1966), pro parte. Type: South West Africa/Namibia, Aus, Marloth 1538 (B, holo.; PRE, photo!).



FIG. 12.—*Myrsiphyllum juniperoides*, showing a soft branch which developed after the plant was placed in a conservatory at the Botanical Research Institute. *J. J. Lavranos* 21242, Rosh Pinah, SWA/Namibia.

Erect chamaephytes with stems up to 0,5 m tall, covered by a 'cylinder' of short 'leafy' branches (viz. phylloclades) c. 40 mm in diam. ('fox tail' habit). *Rhizome* dorsiventral, creeping, bearing numerous long roots which form fusiform swellings c. 30 mm long towards root-tips, up to 120 mm away from rhizome, densely covered by a velamen of root hairs when young. *Branches* short, erect, c. 10–30 mm long, overlapping, placed in axil of a short membranous erect scale-leaf. *Phylloclades* solitary, linear, c. 10 × 2 mm, apiculate, margin smooth, bright shiny green. *Flowers* axillary, solitary, on peduncles c. 1 mm long. *Tepals* narrowly oblong, c. 6 mm long, forming a short tube below, curved outwards in upper half, outer ciliate. *Stamens* with outer shorter than inner, filaments fused to tepals in lower half, erect. *Ovary* obovoid with c. 10 ovules in each locule; style about as long as ovary; stigmas apical. *Berry* c. 5 mm in diam., several-seeded, red. Figs 3.7, 11.7, 12.

A psammophyte recorded from southern South West Africa/Namibia and northern Namaqualand, with a few records further inland. Fig. 13.

Vouchers

Dinter 3723; *Merxmüller & Giess* 3418; *Müller* 818; *Giess* 13004; *Verdoorn* 1835.

8. *Myrsiphyllum alopecurum* Oberm., sp. nov., *M. juniperoidi* (Engl.) Oberm. affinis sed rhizomatibus elongatis multituberosis foliis fimbriatis differt.

TYPE.—Western Cape 2917 (Springbok): 22 km W by S of Springbok (–DB). *Acocks* 19268 (PRE, holo!).

Chamaephytum. *Rhizoma* elongata, tuberis multis tecta. *Tubera* allantoidea, ad 40 mm longa. *Caules* erecti ad 0,5 m alti. *Rami* brevissimi aggregati. *Phyllocladia* numerosa anguste linearia, c. 10 mm longa dense ciliata adscendentia. *Flores* solitarii, breviter pedicellati; tepala anguste oblonga, ad basin tubum brevem formantes, lobi recurvati externi ciliolati. *Stamina* typica. *Ovarium* ovoideum 4-ovulatum. *Bacca* plurisperma.

Chamaephyte with erect annual stems c. 0,5 m tall, slender, attenuated above, covered by a feathery 'cylinder' of much abbreviated densely leafy branches, appearing 'fox-tail' shaped. *Rhizome* creeping, long, densely covered by numerous allantoid, shortly stalked root-tubers, placed in all directions, up to 40 × 10 mm, continued below as normal thin roots, densely covered by a velamen of root hairs. *Stems* ridged, scale-leaves persisting. *Branches* c. 30 mm long, ascending, overlapping. *Phylloclades* narrowly linear, c. 12 × 0,5 mm, glossy, yellow-green, margin densely ciliate, apex mucronate. *Flowers* solitary on the short branches; pedicels 1 mm long with the disk below perianth. *Tepals* free, connivent, forming a tube, curved outwards above, linear, obtuse, c. 7 mm long, white with a green midrib, margin of outer tepals densely, shortly ciliate, inner smooth. *Stamens* with filaments fused to tepals in lower half, outer somewhat shorter. *Ovary* oblong-ovoid with 4 ovules in each locule; style as long as ovary, stigmas small, curved outwards. *Berry* several-seeded, c. 7 mm in diam., red? Figs 3.8 & 11.8.

Apparently endemic to the north-western Cape from Namaqualand to Clanwilliam, in sandy places in Namaqualand Broken Veld. Flowering in winter. Fig. 13.

Vouchers

Van der Westhuizen 272; *Marloth* 6719, 7794; *Schlechter* 8028.

Marloth 6719 from Garies-Okiep and *Andreae* 409 from Klawer show a sudden lengthening of the upper side-branches giving the plants a plumose apex. This has also been observed in other species adopting the cylindrical habit.

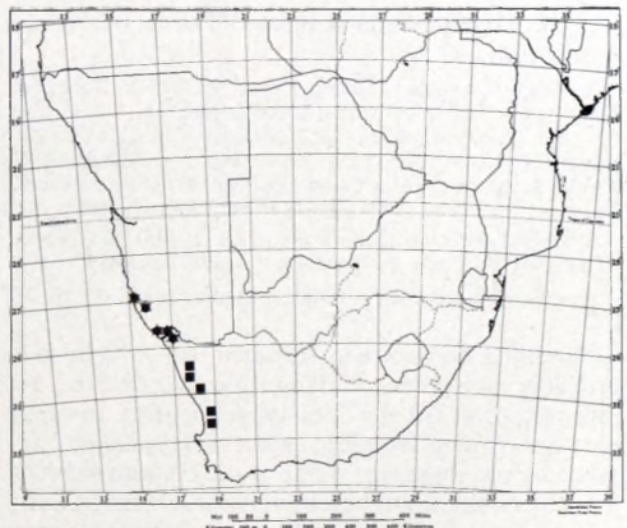


FIG. 13.—Distribution of ■, *Myrsiphyllum juniperoides*; ■, *M. alopecurum*

Schlechter on some of his collections gave it the name '*alopecurus*', (as '*alepocurus*'), meaning fox tail.

9. *Myrsiphyllum declinatum* (L.) Oberm., comb. nov.

Asparagus declinatus L., Sp. Pl. 313 (1753). Thunb., Prodr. Cap. 66 (1794), Fl. Cap. edn 2: 333 (1823). Type: Herbarium van Royen in Herb. Lugd. Bat. 913 62 567 (L, holo.; PRE, xerox copy!).

A. crispus Lam., Encyc. 1: 295 (1783); Roem. & Schult., Syst. Veg. 7: 326 (1829); Kunth, Enum. Pl. 5: 73 (1850); Bak. in J. Linn. Soc., Bot. 14: 607 (1875); Fl. Cap. 6: 259 (1896); Marloth, Fl. S. Afr., t. 20 (1915); Salter in Fl. Cape Penins. 174 (1950); Jessop in Bothalia 9: 80 (1966). Type: 'L'île de France' (Mauritius), collector unknown (P, holo.; PRE, photo!).

A. flexuosus Thunb., Prodr. 66 (1794); Kunth, Enum. Pl. 5: 74 (1850). Type: Cape of Good Hope, without precise locality, Thunberg (UPS, 8450, holo.; PRE, photo!).

A. decumbens Jacq., Hort. Schoenbr. 1: 51, t. 97 (1797). Type: Cape of Good Hope, without precise locality, collector unknown. *Asparagopsis decumbens* (Jacq.) Kunth, Enum. Pl. 5: 77 (1850).

Soft deciduous copiously branched scramblers up to c. 1 m high. *Rhizome* creeping, covered by numerous thick fusiform root-tubers up to 50 mm long. *Stems* annual, angled, thin, green, declinate; branches likewise; branchlets short, bearing overlapping ternate cladodes, or sometimes these more laxly arranged. *Cladodes* linear-acuminate, c. 5–15 mm long, somewhat arcuate. *Flowers* solitary on pedicels c. 5–11 mm long, articulated below truncate base of flower; tepals broadly linear, reflexed in upper half, c. 5 mm long, white to pale pink. *Stamens* with filaments bearing 2 basal spurs; anthers orange or red. *Ovary* oblong-ovoid, tapered into a persistent style, dark green; locules with 2–4 ovules. *Berry* oblong-ovoid, attenuated below, apiculate, c. 12 mm long, whitish, semi-transparent, 3–9-seeded. Figs 3.9, 11.9 & 14.

Recorded from southern South West Africa/Namibia to Namaqualand, the Cape Peninsula and east as far as Riversdale; in fynbos or coastal scrub, usually on rocky outcrops. Flowering May–September. Fig. 15.

Vouchers

Oliver 3430; Compton 14640; Hall 3640; Bos 168; Taylor 8621; Merxmüller & Giess 32218.

10. *Myrsiphyllum scandens* (Thunb.) Oberm., comb. nov.

Asparagus scandens Thunb., Prodr. 66 (1784); Roem. & Schult., Syst. Veg. 7: 325 (1829); Saund. in Ref. bot., t. 21 (1869); Bak. in J. Linn. Soc., Bot. 14: 622 (1875); Fl. Cap. 6: 268 (1896); Salter in Fl. Cape Penins. 174 (1950); Jessop in Bothalia 9: 78 (1966). Syntypes: Cape of Good Hope without precise locality, Thunberg s.n. (UPS, 8461, 8462; BOL! PRE! photos).

Asparagus pectinatus Delile in Red., Lil., t. 407 (1813). Type: 'l'Orangerie du jardin la Malmaison', t. 407 (iconotype).

Asparagopsis scandens (Thunb.) Kunth, Enum. Pl. 5: 78 (1850).

Perennial herbaceous, scandent, up to 2 m tall, probably evergreen. *Rhizome* small, covered by fusiform roots 20–40 mm long, tapering towards root-tips. *Stems* twining, wiry. *Phylloclades* arranged close together on one plane on both sides of branchlets, the whole resembling the frond of a fern, ternate on alternating sides, one cladode somewhat longer than other 2, shallowly S-shaped, apiculate, 1-nerved, c. 8–17 × 1 mm. *Scale-leaves* minute,



FIG. 14.—*Myrsiphyllum declinatum*. The holotype (L!).

forming fringed white membranous tufts at nodes. *Flowers* pendulous, 1–3 at a node, on pedicels up to c. 10 mm long, articulated below attenuated pericladium. *Tepals* spreading, c. 4 mm long, white. *Stamens* attenuated towards apex; anthers green or yellow. *Ovary* globose with 3–4 ovules in each locule; style erect short, with 3 spreading stigmas.

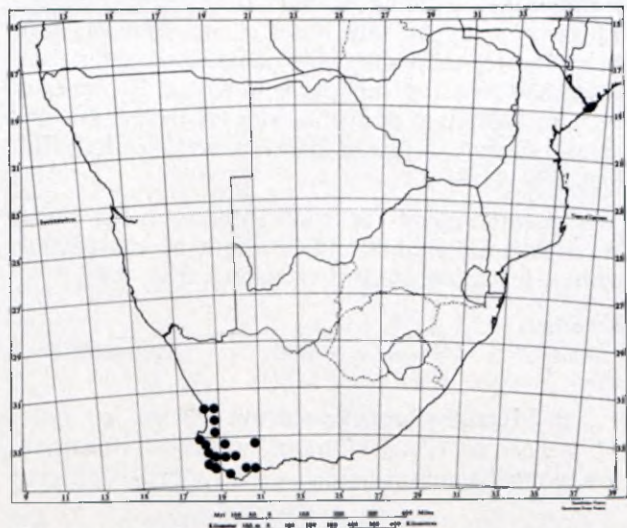
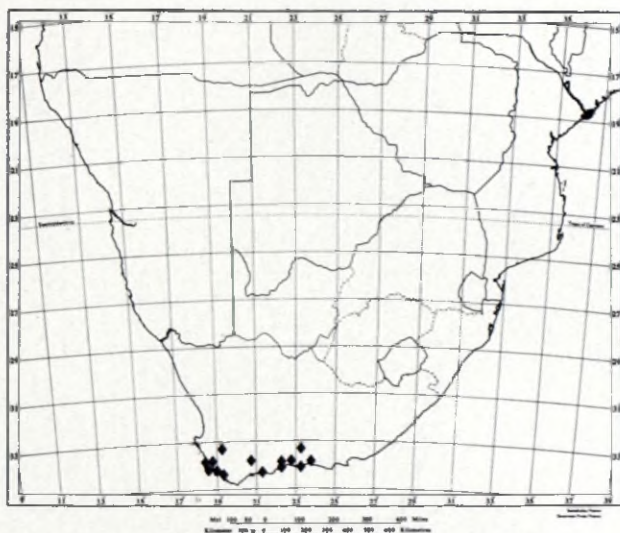


FIG. 15.—Distribution of *Myrsiphyllum declinatum*.

FIG. 16.—Distribution of *Myrsiphyllum scandens*.

Berry globose, c. 8 mm in diam., orange or red, 1–2 seeded. Figs 3.10 & 11.10.

A Cape endemic. Recorded from the west coast at St Helena Bay to the Cape Peninsula and eastwards as far as Tsitsikamma. Also inland as far as Worcester; a shade-loving plant, frequent in wooded areas, needing moisture all the year round, apparently evergreen. Flowers August–October. Fig. 16.

Vouchers

Fries, Norlindh & Weimarck 540; Mauve & Hugo 232; Marloth 4517; Ecklon & Zeyher s.n.; Werdermann & Oberdieck 355.

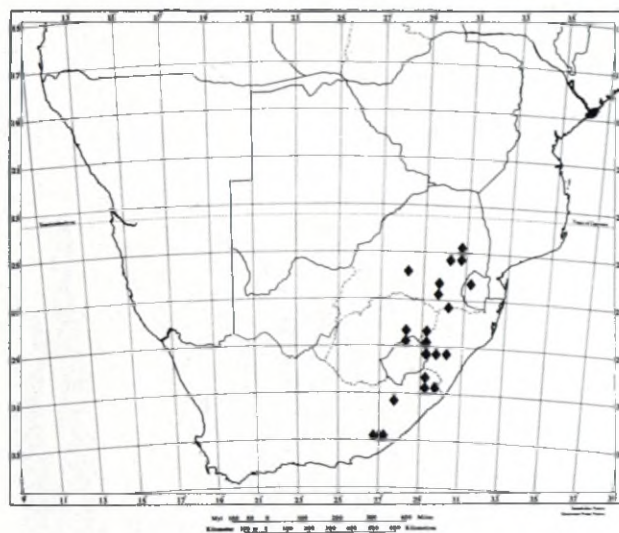
M. scandens (Thunb.) Oberm. and the next species, *M. ramosissimum* (Bak.) Oberm. have perianths similar to those of *Protasparagus* but agree in all other respects with *Myrsiphyllum*. They are considered more primitive.

11. *Myrsiphyllum ramosissimum* (Bak.) Oberm., comb. nov.

Asparagus ramosissimum Bak. in Gdnrs' Chron. n.s. 2: 6 (1874); J. Linn. Soc., Bot. 14: 622 (1875); Fl. Cap. 6: 268 (1896). Type: Eastern Cape, Pirie Forest near King Williamstown, Flanagan 2235 (PRE, neo!).

A. scandens Thunb. var. *deflexus* Bak. in J. Linn. Soc., Bot. 14: 622 (1875); Fl. Cap. 6: 268 (1896). Type: Somerset East, Boschberg, MacOwan 1771 (BOL; SAM).

Scandent, 1–2 m tall, evergreen perennial. Rhizome creeping, woody, scaly, c. 20 mm in diam., producing fusiform root-tubers terminating in long thin roots. Stems green, angled, ridges minutely papillate. Branches and branchlets spreading. Phylloclades usually 3-nate, linear, flat above, keeled below, 8–12 × 0.7 mm, apiculate, margin minutely papillate. Flowers solitary, similar to *Protasparagus* type; stalk filiform, c. 10 mm, articulated in lower half, pendulous. Tepals spreading, oblong-attenuate, c. 3–4 mm, outer with a small callosity at base, white. Stamens with linear-acuminate filaments, anthers yellow or red, apiculate. Ovary ovoid, attenuated into a short style, stigmas with short spreading ciliate lobes; ovules c. 6 in each locule. Berry red or orange, 1–3 seeded. Figs 3.11 & 11.11.

FIG. 17.—Distribution of *Myrsiphyllum ramosissimum*.

Recorded from montane areas in the eastern Transvaal, Natal and eastern Cape to the southern Cape; in forests, kloofs and riverbank vegetation, in moist shady places. Flowering in summer. Fig. 17.

Baker described this species from a living plant, collected by Cooper in the eastern Cape and cultivated by Wilson Saunders in his garden at Reigate. It was evidently not preserved. [cf Jessop in *Bothalia* 9: 80 (1966)].

Vouchers

Kerfoot, Gooyer & Eastman 286; Galpin 14531; Devenish 206; Strey 6292; Compton 28084; Killick 1105; Galpin 10173; Dieterlen 707; Dahlstrand 1851; Compton 30552.

12. *Myrsiphyllum fasciculatum* (Thunb.) Oberm., comb. nov.

Asparagus fasciculatus Thunb., Fl. Cap. edn 2: 329 (1823); Jessop in *Bothalia* 9: 54 (1966). Type: Cape, without precise locality, Masson s.n. (UPS, sub *Thunberg* 8447, holo.; BOL; PRE!, photos).

Asparagopsis consanguinea Kunth, Enum. Pl. 5: 76 (1850). *Asparagus consanguineus* (Kunth) Bak. in J. Linn. Soc., Bot. 14: 615 (1875); Fl. Cap. 6: 260 (1896). Type: Cape, without precise locality, Drège s.n. (Kiel, holo., PRE, photo!; K, PRE, photo!).

Note: On the Kew sheet N. E. Brown gave Drège's locality as 'between Krom River and Pietersfontein on the Piquetberg, under 1 000 ft, July'. *Asparagopsis schlechtendalii* Kunth, Enum. Plant 5: 90 (1850). Type: Cape; at the Olifants River, Krebs s.n. (March), B, holo?

Scandent or prostrate, non-spinous (rarely with some small spines on stem below), much branched with deciduous cladodes in feathery fascicles, bearing solitary flowers. Rhizome woody with numerous swollen roots, c. 300–600 mm long and c. 20 mm in diam., smaller in younger plants. Stems spineless, or with some brittle spines below, glabrous, reddish brown. Branches widely spaced, laxly zigzagging, in turn producing numerous short branchlets bearing the cladode-fascicles. Cladodes unequally long, 15–30-nate, c. 5–10 mm long, smooth, apiculate, somewhat curved, greyish green, deciduous. Flowers apical, solitary or rarely 2–3-nate, beside a cladode-fascicle; pedicel c. 5 mm long with disk below perianth. Tepals c. 5 mm, broadly linear, white with a brown central stripe,



FIG. 18.—*Myrsiphyllum fasciculatum*. Marloth 9049.



FIG. 19.—*Myrsiphyllum fasciculatum* showing large rootsystem. Bayer 3287. Photo M. B. Bayer.

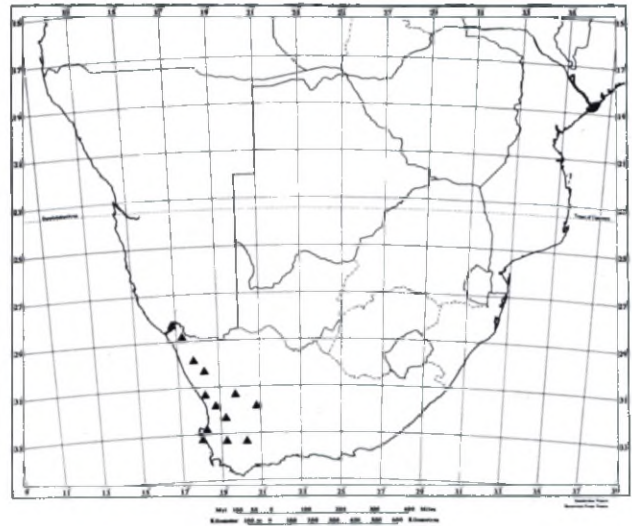


FIG. 20.—Distribution of *Myrsiphyllum fasciculatum*.

forming a tube, recurved above. *Stamens* erect, filaments flat, attenuated above, abruptly narrowed below, forming basal spurs; anthers orange or yellow. *Ovary* oblong-ovoid, shortly stipitate, with 6–8 ovules in each locule, style long, stigmas short, spreading. *Berry* several-seeded, c. 10 mm in diam., pinkish red. Figs 1.4, 3.12, 11.12 & 18.

Common in the western Strandveld up to Namaqualand and the southern Karoo as far as Laingsburg. Not recorded from the Peninsula. The young cladodes appear in March–April; flowers in May–June; fruits ripen in September. Fig. 20.

Vouchers

Marloth 9049; Ecklon & Zeyher 1675; Esterhuysen 1805; Thompson & Le Roux 112; Schlechter 7890; Bolus 13882; Werger 414; Leistner 3390.

The fascicles containing numerous cladodes are unusual for this genus, but the pendulous flower, including the true pedicel, are typical of *Myrsiphyllum*. In old plants the root-system develops into a huge mass of long cylindrical roots, each 0.3–0.6 m long and c. 30 mm thick. Marloth (his No. 9049) counted up to 120 'finger thick' roots. Bayer 3287 shows a similar mass (photo). Fig. 19.

ACKNOWLEDGEMENTS

We thank the director and staff of the Rijksherbarium, Leiden for the xerox copy of the type of *Asparagus declinatus* L.; Dr H. P. Linder at Kew for assisting with types; Mrs S. Perold for the SEM photographs of the seedcoats and Mr M. B. Bayer of the Karoo Botanic Garden, Worcester, for most generous co-operation.

UITTREKSEL

Die genus *Myrsiphyllum* Willd. (Liliaceae—Asparageae) word hersien. Twaalf spesies word erken, waarvan een 'n nuwe spesie is, naamlik, *M. alopecurum* Oberm. Agt nuwe kombinasies word gemaak. Daar is ook 'n sleutel om *Myrsiphyllum* Willd. van *Protasparagus* Oberm. te onderskei.