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## Mosses from the Mascarenes - 6.

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**Abstract.** Sixty taxa of mosses, mainly pleurocarps, are reported from the Mascarenes. Two are new to Afr.3 sensu Index Muscorum, i.e., *Brachythecium plumosum* (Hedwig) Schimper in BSG and *Palamocladium sericeum* (Jaeger) C.Müller. Nine are new to the Mascarenes, i.e., *Brachythecium decurrens* Cardot, *Callicostella parvocellulata* Demaret & P.Varde, *Helicodontium lanceolatum* (Hampe & C.Müller) Jaeger, *Lepidopilum carrougeauanum* Thér. & P.Varde, *Mittenothamnium microthamnioides* (Geh.) Wijk & Marg., *Orthostichopsis longinervis* (Ren. & Cardot) Broth., *Plagiothecium nitens* Dixon, *Rhynchostegium comorae* (C.Müller) Jaeger and *Trachypus bicolor* var. *hispidulus* (C.Müller) Cardot. One is new to Mauritius and Réunion, but known from Rodrigues, i.e., *Meiothecium madagascariense* (Bridel) Broth. Five taxa are new to Mauritius, i.e., *Callicostella salaziae* (Besch.) Broth., *Lopidium struthiopteris* (Bridel) Fleischer, *Macrohymenium acidodon* (Mont.) Dozy & Molk., *Orthostichella pentasticha* (Bridel) Buck and *Vesicularia lepervanchei* (Besch.) Broth.

### Introduction

This is the sixth of a series of papers dealing with the mosses of the Mascarenes. I gave background information in the previous ones (Eén 1976, 1978, 1989 and 1993), which is not repeated here, except for the list of localities for my own collections from 1962.

This is the last publication based on my collections from 1962. I have, however, a number of

specimens that I have failed to identify with certainty. In some cases I have only been able to place them in a genus or a family. As my observations relating to these specimens may be of interest only to a limited number of bryologists, I am planning to make them available through Internet/BRYONET as publication number 9 in this series about Mosses from the Mascarenes.

### List of localities

## Mauritius

- Loc.3. Cave near Bassin Anglais, Curepipe, alt. 1800 feet.  
 Loc.4. Perrier Nature Reserve near Mare aux Vacoas.  
 Loc.6. Macabé, upland climax forest, alt. 1800 feet.  
 Loc.8. Le Pouce, forest near the top.  
 Loc.9. Le Pouce, forest halfway to the top.  
 Loc.10. Le Pouce, on rocks blasted for the old road from Port Louis to St. Pierre, alt. 1800 feet.  
 Loc.12. Mount Cocotte, the top, alt. 2463 feet.  
 Loc.13. Mount Cocotte, the northern slope.

## Réunion

- Loc. 1. Cilaos, 100 m. above the village, alt. 1100 m.  
 Loc. 2. Cilaos, Réserve Biologique, alt. 1200 m.  
 Loc.18. Forest above St. Denis, zone de tamarin, alt. 1400-1800 m.  
 Loc.19. Forest above St. Denis, zone de branle, alt. 1700-1900 m.  
 Loc.20. Forest above St. Denis, zone de tamarin, alt. 1400-1800 m.  
 Loc.23. Plaine des Cafres, alt. 1800 m.  
 Loc.24. La Grande Montée, upper part.  
 Loc.25. La Grande Montée, upper part, alt. 1450 m.  
 Loc.26. Bras des Calumets.  
 Loc.27. West of Plaine des Palmistes, wet forest with tree ferns.  
 Loc.30. Above St. Paul, alt. 2000 m., Forêt de Benard, alt. 1700-2100 m.

**List of species**

An asterisk (\*) before the scientific name indicates that the species is new to a defined geographical area.

I have used the following numbering of the specimens that I have studied:

- M000 = Specimens from Mauritius in my private herbarium.  
 R000 = Specimens from Réunion in my private herbarium.  
 RM000 = My private numbering of specimens in herb. S.

*Aerobryidium subpiligerum* (Hampe) Cardot

Réunion: Loc.1 (R017, R604A); loc.2 (R361C); Télévave (Bras-Sec), alt. 800 m, dans un sous bois clair en tapis sur le sol, leg. Cadet 1963-07-20, CT2 (Herb. Een: R504).

R361C has some leaves with a very short and indistinct double costa.

*Brachythecium* BSG

I have found four species of *Brachythecium* that have been recorded from the Mascarenes, i.e., *B. borgenii* (Hampe) Jaeger (Duby 1876: 7-8 sub *Hypnum atrotheca* sp. nov.), *B. chauvetii* Ren. & Cardot (Renauld & Cardot 1894: 130), *B. inconditum* Besch. (Bescherelle 1880: 155) and *B. valentinii* Besch. (Bescherelle 1880: 154).

Furthermore there is one species from Madagascar, i.e., *B. decurrens* Cardot (Renauld & Cardot 1915: 524-525).

In addition to these I have found two nomina nuda, *B. blackburnianum* Schimper in Jaeger & Sauerbeck (1879(9): 483) from the Mascarenes and *B. pseudo-depressum* C.Müller in Paris (1900: 48) from Madagascar.

In herbarium S I have found material of only two of the properly described species, i.e., *B. borgenii* and *B. chauvetii*. Thus I have had to rely mainly on the texts and on the illustrations of the other three species.

Two of the species, *B. inconditum* and *B. valentinii*, were published by Bescherelle on the basis of only one specimen each. It is remarkable that *B. inconditum* was described as lacking a costa: 'Folia ovato-lanceolata, ---, ecostata;' (Bescherelle 1880: 155).

*Brachythecium borgenii* (Hampe) Jaeger

(*B. atrotheca* Duby, *B. melangium* C.Müller, *B. indistinctum* C.Müller and *B. pseudodepressum* C.Müller)

Mauritius: Leg. Robillard 1881, det Duby as *Ectropothecium galerulatum*, det. Een (Herb. S: RM443); Leg. Robillard 1876, det. C. Müller as *B. malacobolax*, ex herb. Kindberg, det. Een (Herb.

S: RM473); Det. C. Müller as *B. malacobolax*, det. Eén (Herb. S: RM472). - Réunion: Loc. 1 (R017, R600, R611); 2 (R345, R359, R360, R443, R612B, R615, R617); 24 (R626).

This species seems to be very variable. Cardot in Renault & Cardot (1915: 523) wrote that: 'Le *B. Borgenii* constitue ainsi un type très polymorph; plante plus ou moins robuste; gazon d'un jaune pâle ou d'un vert plus ou moins foncé; feuilles caulinaires terminées par un acumen plus ou moins long et fin, tantôt denticulées dès la base, tantôt serrulées dans le haut seulement, et parfois même subentières; nervure s'arrêtant vers le milieu de la feuille ou s'avancant jusqu'aux deux tiers;' Two of my specimens (R611, R615) have capsules that are black, and the perichaetial leaves have extremely long and fine acumina. This fits well with the original description of *B. atrotheca* by Duby (1878: 7-8 & tab. 3:2).

Buck (1993: 201) wrote under *B. implicatum* that 'I think that *B. atrotheca* (Duby) Besch. is a synonym. It differs by occurring in Madagascar and the Mascarenes rather than mainland Africa.' How this relates to *B. borgenii* I do not know.

*Brachythecium malacobolax* C. Müller nom. nud. is a name that was published by Kindberg (1891: 97) without further information. In the Appendix of Index Muscorum (Wijk, Margadant & Florschütz 1969: 350) the distribution is given as 'Ignot.' I found, however, in the bryophyte herbarium of S two specimens with this name from Mauritius, one of which clearly comes from the herbarium of N.C. Kindberg. Both have been identified by C. Müller. Thus it seems safe to replace the 'Ignot.' with 'Afr.3'. In my opinion both specimens are forms of the variable species *B. borgenii*.

#### *Brachythecium chauvetii* Ren. & Cardot

Réunion: Loc. 1 (R609); 18 (R619); Mafate, type locality, leg. Chauvet 1893, det. Renault (Herb. S: RM383).

\* *Brachythecium decurrens* Cardot

Réunion: Loc. 27 (R497, R632, R653); 30 (R637).

It is after some hesitation that I have referred my four specimens to this species. I have used the original description and comments by Cardot in

Renault & Cardot (1915: 524-525). The most convincing argument is the fact that the leafbase is long-and broad-decurrent.

*Brachythecium chauvetii* is a somewhat similar plant, but much larger and the leafbase is not decurrent to the same degree.

The species is new to the Mascarenes.

\* *Brachythecium plumosum* (Hedwig) Schimper in BSG

Réunion: Loc. 18 (R618). - Uganda: Ruwenzori, Bujuki Valley, on stones in Bujuki river below Nyambitaba camp, 2600 m.s.m., leg. Hedberg 1948-04-12 #783, det. Potier de la Varde (1955: 190).

Both specimens have been seen by Lars Hedenäs, who first suggested this name for my plant. We have also looked at a third plant, collected by Hedberg and determined by Potier de la Varde with the reference '(642 d, p.p.)' in his publication (1955: 190), but the specimen at S contains no *B. plumosum*. Perhaps the original sample has been divided in an unfortunate manner.

Ochyra & Sharp (1988: 365) wrote about the present species that: 'In Africa it is rare in Zaire, Kenya and Uganda.'

Buck (1993: 201) referred to *B. plumosum* as 'This widespread species', but I have found no previous reference to Afr.3.

#### *Callicostella* (C. Müller) Mitten

I have based my identifications mainly on the treatment by Demaret and Potier de la Varde (1952). For various reasons I found this monograph very difficult to use, because the information is sometimes contradictory. It is my opinion that it contains too many species and the authors themselves obviously doubted the validity of many of them.

*Callicostella brevipes* (Broth.) Broth.

Mauritius: Loc. 9 (M277)

This specimen was determined as *C. fissidentella* (Besch.) Broth. by Bizot (1968: 471). These two

species are closely related according to Demaret & Potier de la Varde (1952: 375), but *C. brevipes* has thickened cell corners in the lateral leaves. 'Elle pourrait être le plus facilement confondue avec *C. fissidentella*, mais chez cette dernière espèce, les cellules sont un peu plus longues, ne sont pas épaissies aux angles et la papillosité est très régulièrement central et simple.'

Compare with the comments under *C. parvocellulata*.

\* *Callicostella parvocellulata* Demaret & P. Varde

Mauritius: Loc. 6 (M512); Malherbe, pine woods near Curepipe, leg. Vaughan M/89 1935-08-08 (M240).

Dixon (1938: 126) identified sample M240 as *C. lacerans* var. *madagassa* Cardot, but using Demaret & Potier de la Varde (1952: 342-343) I find that it fits better with *C. parvocellulata* on account of its truncate lateral leaves with relatively short lower cells. My plant M512 has clearly mucronate lateral leaves which fits with the text, but not the illustration, in Demaret and Potier de la Varde (1952: 342 'summo obtusata, late rotundata, truncata vel mucronata').

In Demaret and Potier de la Varde (1952: 374) there is a reference to Vaughan sample M 89, which was identified as belonging to *C. brevipes* (Broth.) Broth.

New to the Mascarenes.

\* *Callicostella salaziae* (Besch.) Broth.

Mauritius: Loc. 13 (M520).

I have not seen any herbarium material of this species, but my specimen fits the description and illustrations in Demaret & Potier de la Varde (1952: 376-378). These authors point out that *C. salaziae* is close to the more recently described *C. papillosula* Broth. & P. Varde (Pp. 370-371), which in 1952 had been reported only from Gabon. The same authors also stated that *C. salaziae* is close to *C. fissidentella* (Besch.) Broth. (Pp. 367-369), which was reported before from Réunion and Madagascar, and more recently by Bizot (1968:

471) from Mauritius. The separating character is that the upper cells in lateral leaves in *C. salaziae* have thickened corners. 'Cette espèce est extrêmement voisine de *C. papillosula* Broth. et P. de la V. qui a les feuilles latérales plus contractées au sommet, les cellules supérieures des feuilles latérales moins longues et les cellule-inférieures plus larges.' *Hookeria fissidentella* and *H. salaziae* were both described by Bescherele (1880: 143-144) in the same publication.

This species is new to Mauritius. The type specimen was collected on Réunion.

*Catagonium nitens* ssp. *nitens* (Bridel) Cardot

Réunion: Loc. 23 (R445, R623); Cilaos, leg. & det. De Sloover (Herb. S: RM502).

My specimens agree well with the description and illustrations in Lin (1984: 4-7+10).

*Cyclodictyon aubertii* (P. Beauv.) Broth.

Mauritius: Malherbe, pine woods near Curepipe, leg. Vaughan M/89 1935-08-08 (Herb. Eén: M240) - Réunion: Piste forestière de la Plaine d'Affouches, p.k. 8-9, alt. 1200 m, leg. Cadet 1964-01-29, CT77 (Herb. Eén: R645).

M240 is a very small sample, mixed with a plant that Dixon (1938: 126) called *Callicostella lacerans* var. *madagassa* Cardot.

*Cyrtohypnum versicolor* (C. Müller) Buck & Crum

Réunion: Loc. 1 (R331A, R333, R429).

*Ectropothecium* Mitten

I have found 15 properly described species of *Ectropothecium* from Afr. 3 sensu Index Muscorum. They are: *E. chenagonii* Ren. & Cardot, *E. doliare* Mitten, *E. intertextum* Ren. & Cardot, *E. mauritianum* Ren. & Cardot, *E. occultum* Ren. & Cardot, *E. paillotii* Ren. & Cardot, *E. perrieri*

Thér., *E. perrotii* Ren. & Cardot, *E. protractulum* (C.Müller) Broth., *E. regulare* (Bridel) Jaeger, *E. seychellarum* Besch., *E. subulosum* Mitten, *E. tamatavense* Broth., *E. valentinii* Besch. and *E. viridulum* (Bridel) Jaeger. Furthermore I have recorded *E. amabile* C.Müller in herb. and *E. brotheri* Paris nom. nud. I suspect that many of these taxa are synonyms.

I made an attempt to separate the species on the basis of numerical data from my own observations (33 specimens) plus data from the literature (19 descriptions). I investigated leaf length (0.480 - 2.248 mm), median cell length (30- 100 µm), median cell width (3.0- 8.0 µm), median cell length/width ratio (5.9- 25.0) and leaf length/median cell length ratio (8 - 37). All these data showed a continuous range of values and I was unable to draw any conclusions as to how to separate them into species. *Ectropothecium regulare* (*Hypnum cupressiforme* var. *regulare* Bridel 1812) is the oldest name.

*Ectropothecium protractulum* (C.Müller) Broth. was originally my best candidate for a species separated from *E. regulare*. A specimen from the Comores: Johanna, Leg. Hildebrandt 1879, det. C. Müller 1890 (Herb. S: RM436) has median cells 4 µm wide as compared with 7 µm in a typical *E. regulare*.

I found in S a specimen named *Ectropothecium amabile* C.Müller, Réunion: Plaine de Mafate, leg. Rodriguez 1896-08-16, det. ? (Herb. S: RM419). This name does not exist in the literature as far as I can find. *Ectropothecium amabile* Mitten is an American plant that should be called *Hypnum amabile* (Mitten) Hampe according to Index Muscorum. The specimen is close to *E. protractulum* (C.Müller) Broth. with which it shares very narrow median cells, < 4 µm, and stem surface cells with thick longitudinal walls, > 3 µm.

#### *Ectropothecium regulare* (Bridel) Jaeger

Mauritius: Loc.3 (M408, M508); 4 (M510A); 6 (M512, M513); 9 (M422, M516); 10 (M518, M519). - Réunion: Loc.1 (R331A, R333A, R600, R602, R606, R607, R611, R613); 2 (R164, R327, R419); 27 (R653); Télévave (Bras-Sec), alt. 800 m, dans un sous bois clair en tapis sur le sol, leg. Cadet 1963-07-20, CT2 (Herb. Een: R504); Grand Brulé, route

N1, lieu dit 'Vierge au Parasol', alt. 90 m, sur laves en décomposition dans un sous-bois clair, leg. Cadet 1964-01-05 CT40 (Herb. Een: R506); Cirque de Cilaos, alt. 1600 m, leg. De Sloover 1973-12-21, #17.570, det. De Sloover, Herbier bryologique #835 (Herb. S: RM370); Aviron 'Oratoire de Lourdes', alt. 400 m, pleine terre, à l'ombre d'un rocher, leg. Cadet 1963-08-03 CT24 (Herb. Een: R642); Grand-Brulé (voisinage de la Route N1), alt. 120 m, sur tronc pourri, dans une clairière de la forêt, leg. Cadet 1964-01-05 CT32 (Herb. Een: R505); Piste forestière de la Plaine d'Affouches, p.k. 8, alt. 1200 m, sur un fragment du bois mort, sur le sol, lieu humide, leg. Cadet 1964-01-29, CT119 (Herb. Een: R646).

This species is said to be very variable - 'une plante assez polymorphe, plus ou moins robuste' (Cardot in Renaud & Cardot 1915: 449). One constant feature, however, is the very large hyaline alar cells. They are usually two, one short but bent, and one straight and decurrent. Together they give the impression of a boot. These cells have to be observed on the stem, as they without exception are separated from the leaf when that is torn off with a pair of tweezers.

#### *Entodon dregeanus* (Hornsch.) C.Müller

Mauritius: Garden at Phoenix, common on old stone walls & base of trees, alt 1250 ft., rainfall 80 ins., leg. R.E. Vaughan 1962-02-26, M/114 (Herb. Een: M527, M528). - Réunion: Loc.1 (R429 & NY, R612A). - Malawi: Southern Province, near Blantyre, leg. Crundwell 1969-07-15 #329, det. Bizot (Herb. S: RM413).

Specimen R429 has mature capsules. The identification was confirmed by Dr W.R. Buck.

#### *Floribundaria floribunda* (Dozy & Molk.) Fleischer

Mauritius: Loc. 9 (M516).

#### *Floribundaria patentissima* (C.Müller) Fleischer

Réunion: Loc. 2 (R359).

\* *Helicodontium lanceolatum* (Hampe & C.Müller) Jaeger

Mauritius: Garden at Phoenix, base of trees and on old walls, alt. 1250 ft., rainfall 80 ins., leg Vaughan 1953-03-23 M/120 (Herb. Een: M530). -RSA: Cape, in umbrosis prope Blanco, 1875-11, leg. Rehmann, Musci austro-africani #346, typus of *Schwetschkea rehmannii* C.Müller (Herb. S: RM514).

From current literature I have recorded only one species of the genus *Helicodontium* (Mitten) Jaeger from Afr.3, i.e., *H. fabroniopsis* C.Müller (*H. hildebrandtii* C.Müller nom. nud.). This species is not present in herbarium S. The text and pictures by Renauld in Renauld & Cardot (1915: 402-403, pl. 90:2) are not very informative.

On the other hand I have found a very good match in *H. lanceolatum* from South Africa, which is an older name, 1845 (*Leskea lanceolata* Hampe & C. Müller in *Linnaea* 18: 702) as compared with 1898 for *H. fabroniopsis* (C. Müller in Renauld 1898: 220). *Schwetschkea rehmannii* is a synonym of *H. lanceolatum* (See Dixon 1929).

The species is new to the Mascarenes.

*Homaliodendron exiguum* (Bosch & Lac.) Fleischer

Mauritius: Loc 6 (M513).

*Hypnum* Hedwig

Three species of *Hypnum* sensu str. have been recorded from Afr.3 sensu Index Muscorum. They are: *H. cupressiforme* Hedwig, *H. jutlandicum* Holmen & Warncke and *Hypnum macrogynum* Besch. There are also 4 old records, which probably do not belong in this genus, i.e.: *H. bicolor* Bel., *H. boryanum* Schwaegr., *H. gracilirameum* C.Müller nom. nud. and *H. nanocristatum* C.Müller nom. nud.

*Hypnum cupressiforme* var. *lacunosum* Bridel, as *H. cupressiforme* var. *tectorum* Bridel, has been recorded from Afr.3 according to Index Muscorum

3: 49. I am unable to trace the origin of that record. Ando (1993: 274) lists only Afr. 1, 2 and 4.

Ando (1987: 52-53) wrote about *H. jutlandicum* that 'Previous reports of this species from the Macaronesian Islands except the Azores, the African continent and Madagascar need reconfirmation', but it has recently been recorded from Madeira (Hedenäs 1992: 140-141).

*Hypnum cupressiforme* var. *aduncooides* Bridel

Réunion: Loc. 1 (R608); 2 (R361); 23 (R622); 30 (R638).

Ando (1989: 275) regarded this taxon as an 'Aduncooides' form of *H. cupressiforme* var. *cupressiforme* Hedwig. I have used the above name as it is the basionym and was first applied on a plant from Réunion (Bridel 1812: 219 & 1827: 612). All four specimens have the same habitus, but R622 is somewhat paler than the other three. R361 and R638 have slightly decurrent stem leaves, e.g. 53 µm with three cells, the largest of which has the size 20 x 36 µm, with walls 5 µm thick.

Compare with comments under *H. macrogynum* Besch.

*Hypnum macrogynum* Besch.

Réunion: Loc. 18 (R617); 19 (R621); Plaine de Mafate, leg. Rodriguez 1892-08, det. ? as *Hypnum kiaerii* C.Müller (Herb. S: RM421).

Ando (1995) has shown that this is the correct name for a species that was earlier called *H. aduncooides* (Bridel) C.Müller in African literature. Compare with *H. cupressiforme* var. *aduncooides* Bridel.

*Jaegerina solitaria* (Bridel) Jaeger

Réunion: Loc. 1 (R602).

My sample is scanty, consisting of two secondary stems. In some leaves I observed an extremely vague costa, consisting of one layer of elongated cells in the middle of the lamina. This recalls the text

by Dixon (1938: 125), describing *J. excurrens* sp. nov. - now a synonym of *J. robillardii* C. Müller - from which I quote: 'The nerve is peculiar. Through the greater part of the leaf it is fairly narrow, well defined, and of equal width, but near the summit of the acumen it becomes somewhat expanded and very ill-defined, and as at the same time the lamina cells become narrower and very opaque, the nerve may become almost indistinguishable;'

*Lepidopilidium cespitosum* (Besch.) Broth.

Réunion: Loc. 27 (R633).

My sample has capsules and thus it is possible to use the keys provided by Demaret (1955: 376+383). The species is not represented in herb. S. The original description in Bescherelle (1880: 138-139) is very short and provides no measures, but there is, on the other hand, no conflict between the text and my observations.

Not recorded outside Réunion.

*Lepidopilidium flexuosum* (Besch.) Broth. ex Paris

Réunion: Loc. 2 (R616).

I have not found any herbarium material of this species in herb. S and thus I have been restricted to the original description by Bescherelle (1880: 139). The most striking feature of my plant is the long twin costa, both branches ending in the upper part of the leaf in a multicellular thorn - 'costis elongatis apice in spinam desinentibus'. Not recorded outside Réunion.

\* *Lepidopilium carrougeauanum* Thér. & P. Varde

Mauritius: Loc. 8 (M514)

This is a fairly good match but not perfect. I have not seen any herbarium specimens of this species but have studied the original description (Thériot 1924: 94-95). Matching elements are the long and narrow median cells and the rather short twin costa. The leaf margin of my plant is entire, while Thériot says 'denticulatis'. His picture of the leaf apex, however, shows a very faint denticulation. New to the Mascarenes. Previously known only

from Madagascar.

\* *Lopidium struthiopteris* (Bridel) Fleischer

Mauritius: Leg. ? Jussieu, herb. Kindberg in herb. S. - Réunion: Loc. 27 (R306D) -

The label of the Mauritius plant contains very little information. There are references to Ile de France but also, within brackets, to Réunion. If it really comes from Mauritius it is new to that island. Both specimens were overgrown by small hepatics.

\* *Macrohymenium acidodon* (Mont.) Dozy & Molke.

Mauritius: Loc. 10 (M517). - Madagascar: (Herb. S: RM466)

New to Mauritius but previously known from Réunion.

*Macrohymenium megasporum* (Duby) Kis

Mauritius: Loc. 6, det Bizot (1968: 471), (M254); 12 (M201); 13 (M521A, M521B); Leg. Vaughan 1933-01-04 M/34, Curepipe, det. Dixon (1937: 127), (M217); Leg. Vaughan 1962-03-18 M/123, Rivière du Poste near Grand Bassin (Herb. Een: M531); Leg. Robillard, det. Duby as *Rhaphidostegium megasporum* (Duby) Besch. (Herb. S: RM461).

In many of the samples I first thought I saw very thick alar cell walls, but this is an illusion caused by the cell wall not being perpendicular to the leaf surface.

\* *Meiothecium madagascariense* (Bridel) Broth.

Mauritius: Garden at Phoenix, base of trees and on old walls, alt. 1250 ft., rainfall 80 ins., leg. Vaughan 1953-03-23, M/120 (Herb. Een: M530A) and 1962-02-20, M/117 (Herb. Een: M529); Leg. Rodriguez, det. Thériot (Herb. S: RM451). - Réunion: Loc. 1 (R423); 2 (R431) - Madagascar: Ste-Marie, leg. Arbogast 1890, det. Renaud, syntype of

*Pterogoniella diversifolia* Ren. & Cardot (Herb. S:RM452).

*Meiothecium diversifolium* (Ren. & Cardot) Broth. was merged with this species by Townsend (1978: 212).

The stem leaves of my plants are concave but not plicate, which according to Cardot (Renauld & Cardot 1898-1915: 488) corresponds best with the original description of *Leucodon madagascariensis* Bridel (1827: 213-214)

The species is new to Mauritius and to Réunion, but was reported from Rodriguez by Townsend (1978:212-213)

*Mittenothamnium reptans* (Hedwig) Cardot

Mauritius: Curepipe, leg. Bijoux 1906-05-12, det. ? as *M. serratum* (Herb. S: RM428). - Réunion: Loc.1 (R605, R607); 2 (R327); Entre-Deux, leg Rodriguez, det. Renauld as *M. aureum* (Besch.) Cardot in Renauld (1892-1894), Musci Mascareno-Madagascarienses #? (Herb. S: RM430); Saint Philippe, leg. Rodriguez 1895-04-14, det. Een, intermixed with a specimen labelled *Isopterygium intortum* (Herb. S: RM423).

Buck (1993: 214) included *M. aureum* (Besch.) Cardot and *M. serratum* (P.Beauv.) Cardot in the present species.

*Mittenothamnium madagassum* (Besch.) Cardot

Mauritius: Loc.3 (M283 det. Bizot) - Réunion: Loc. 1 (R611); 2 (R361, R615); 23 (R338); 24 (R626); 27 (R634) - Madagascar: Leg. Sikora 1892, det. ? (Herb. S: RM435).

W.R. Buck saw my specimen R634 and confirmed that it is a *Mittenothamnium* and close to *M. reptans* (Hedwig) Cardot. I referred my specimens to *M. madagassum* on account of the shape and size of the stem leaves. The shape is somewhat cordate at base and the leaves end in a long and fine point. The leaf length varies between 1.2 and 1.9 mm, and the length over width ratio between 1.73 and 3.08

\* *Mittenothamnium microthamnioides* (Geh.) Wijk & Marg.

Réunion: Loc.1 (R600); 2 (R422); - Madagascar: Mont Tsaratassana, 1200 m alt., leg. Perrier de la Bathée, April 1924, det: Thériot (Herb. S: RM432).

My specimen R422 has young capsules and a few opercula with short beaks. The gametophyte is hardly different from *M. limosum* (Besch.) Cardot, a species which was described from Réunion. The latter species includes as a synonym, *Microthamnium longirostrum* Thér., which has long-rostrate opercula.

Not reported before from the Mascarenes, at least not under this name.

*Orthostichella* C.Müller

This genus was resurrected by Buck (1994). Four species were renamed, one of them being the following.

\* *Orthostichella pentasticha* (Bridel) Buck

Mauritius: Loc. 10 (M417); Leg. N.J. Andersson 1853, det. ? as *Pilotrichella imbricata* (Herb. S: RM500).

My plant is very close to the Andersson plant. The latter was probably collected in 1853, but it is not mentioned by Ångström (1873). The label says '*Pilotrichella imbricata* (P.B.) Mauritius N.J. An'. The two plants have the following in common: A creeping thin, dark primary stem that is producing frondose branches which are not more than 40 mm long and have few and short secondary branches. Thus the branching is very different from the normal long and pendulous appearance of this genus.

The primary branch leaves are arranged in five very distinct and almost straight rows. The leaves seem to be longer/narrower than they really are, due to the fact that they are shaped like half-cylinders with a rounded global prow and a very short bowsprit.



The alar cells are not clearly differentiated but are short-rectangular with cell walls 4 µm thick. Median cells are 6 µm wide with cell walls 2 µm thick. The species was originally described from Réunion but new to Mauritius.

\* *Orthostichopsis longinervis* (Ren. & Cardot) Broth.  
Mauritius: Loc. 6 (M513); Leg Rodriguez, det. Thériot (Herb.S:RM363) - Réunion: Loc. 1 (R325, R602)

New to the Mascarenes.

*Palamocladium* C.Müller

Robinson (1962) reduced this name to a subgenus of *Homalothecium*. Furthermore he could see 'no evident vegetative differences' between the American *P. leskeoides* (Hooker) Britton and the Asiatic *P. nilgheriense* (Mont.) C.Müller. The latter species has been reported several times before from Réunion (Crosby & al. 1983: 237). Buck (1993: 202-203) preferred to keep the genetic name *Palamocladium*. Also Hofmann (Lindbergia in press) maintained this name. Furthermore she reduces both *P. nilgheriense* and *P. sericeum* to synonyms of *P. leskeoides*. My personal view at this stage is that my specimen R325 is sufficiently different to justify a separation between the two species *P. sericeum* and *P. nilgheriense*.

*Palamocladium nilgheriense* (Mont.) C.Müller

Réunion: Loc. 1 (R333, R334, R366, R408, R416, R604); 2 (R337, R360, R361). - Papua New Guinea: Morobe Prov. 3 km S of Lake Wamba. In open tall rainforest on small peak, alt. 2600 m, 146.33E, 6.02S, leg. Norris 1981-07-26 #64813, det. Norris (Herb.S: RM364).

Cardot (Renauld & Cardot 1915: 521-522) recorded not less than five synonyms - 12 combinations - for this geographically very widespread species. My specimen R604 has a mature capsule, which is said to be rare. Bescherelle (1880: 153 as *Homalothecium*

*boivinianum*) says that the capsule is black (nigrescens), while it is pale in my specimen. In most of my samples this moss was found as isolated stems creeping among other dominating species.

\* *Palamocladium sericeum* (Jaeger) C.Müller

Réunion: Loc. 1 (R325). - Natal: Drakensberg 1600 m. alt., leg. Magill 1984-02-12 #6943, det. Magill 1985 (Herb.S:RM526).

Cardot (Renauld & Cardot 1915: 522) compared this species with the previous one and wrote: 'Le *Pleuropus sericeus* (Hornsch.) Broth. de l'Afrique australe, a les rameaux plus épais, les feuilles plus dressées, imbriquées, plus étroitement acuminées, et les cellule alaires plus grandes et plus translucides.'

My specimen R325 is a much larger and darker plant than *P. nilgheriense* (R604, measures within brackets) from the same locality. The stem leaves are 3.9 (1.4) mm long and 1.1 (0.4) mm wide. The costa is 2240 (613) µm long and 54 (40) µm or 5 (5) cells wide at base. The median cells are 45 (72) µm long and 6 (5) µm wide and the cell walls 2 (2) µm thick. Compare also with Buck (1993: 202).

The species is new to the Mascarenes and also new to Afr.3 sensu Index Muscorum.

*Papillaria africana* (C.Müller) Jaeger

Réunion: Loc. 2 (R180).

*Pilotrichella isleana* Besch.

Réunion: Loc. 2 (R180, R200A).

\* *Plagiothecium nitens* Dixon

Réunion: Loc. 20 (R620); 30 (R640). - Tanzania: Kilimanjaro 2700 m alt., leg. Hedberg 1948-06-14 #1163c, det. Potier de la Varde (Herb.S: RM504).

The leaves are about 2 mm long, the alar group is long-decurrent in the form of a single row of hyaline cells, and the median lamina cell walls are

about 2.5 µm thick. *Plagiothecium membranosulum* C.Müller is rather similar but has thinner cell walls. *Plagiothecium nitidifolium* (Mitten) Jaeger, with its synonym *P. mildbraedii* Broth. fide Buck (1993: 204), has much narrower median cells (7 µm as compared with 14). In both the latter species the row of decurrent cells is shorter than in *P. nitens*, about two cells long, and the end of the row is rounded and not tapering.

This species was first described by Dixon (1916: 78-79) from Kenya and has since been reported also from Tanzania, Rwanda and Zaïre (O'Shea 1995: 155). The species, as well as the genus, is new to the Mascarenes.

*Porotrichum madagassum* Kiaer ex Besch.

Réunion: Loc. 2 (R422)

In previous papers (Een 1976: 216, Een 1978: 221) I recorded a number of *Porothamnium* species, i.e., *P. comorense* (C.Müller) Sim, *P. hildebrandtii* (C.Müller) Fleischer and *P. pennaeifrondeum* (C.Müller) Cardot. Since then De Sloover (1983) has revised the African *Porotrichum*/*Porothamnium* complex. I have used his paper as a basis for the present identification.

*Prionodon ciliatus* Besch.

Réunion: Loc. 2 (R200A).

*Pseudoscleropodium purum* (Hedwig) Fleischer

Réunion: Loc. 23 (R651); 26 (R631).

\* *Pterogonium gracile* var. *capense* C.Müller ex Dixon

Réunion: Loc. 2 (R337)

This small sample is close to *P. gracile*, but the stem leaf margin is entire also in apex and apiculate. Of the two varieties from Africa that I have seen, it fits var. *capense* C.Müller ex Dixon better than var. *madagassum* C.Müller ex Geheeb.

I have earlier (Een 1976: 216) reported this species from the same locality. The variety is new to Afr.3.

*Racopilum africanum* Mitten

Mauritius: Loc. 9 (M277); Garden at Phoenix, base of trees and on old walls, alt. 1250 ft., rainfall 80 ins., leg. Vaughan 1962-02-20, M/117 (Herb. Een: M529). - Réunion: Loc. 1 (R284).

*Racopilum mauritianum* Besch.

Mauritius: Loc. 3 (M508). - Réunion: Loc. 1 (R429).

*Rhaphidorrhynchium rubricaula* (Besch.) Broth.

Réunion: Loc. 20 (R652).

There is a good match with the description by Bescherele (1880: 161-162) and with the comments by Cardot (Renauld & Cardot 1915: 513-514, pl. 101:1). This species was reported before from Réunion by Bizot (1968: 480), based on my specimens R170 from loc. 20 and R207 from loc. 24. All three plants grew on bark.

*Rhizofabronia persoonii* (Schwaegr.) Fleischer

Réunion: Loc. 1 (R284).

*Rhynchostegiella tenelliformis* (Ren. & Cardot) Broth.

Réunion: Loc. 1 (R284)

I have not found any herbarium specimens in S with which to compare my material. The original description is very short, but contains: '*R. tenello* BS. europaeo simillimum, -, habitu paulo robustiore et laxiore, etc.' The stem leaves of my plant have the shape of *R. tenella* but are larger, a typical leaf having the dimensions 2.45 x 0.55 mm.

A specimen of *R. holstii* (Broth.) Broth. from Usambara has the same shape of stem leaves and median cells as *R. tenelliformis*, but is only half the size.

\* *Rhynchostegium comorae* (C.Müller) Jaeger

Réunion: Piste forestière de la Plaine d’Affouches, p.k. 8-9, alt. 1200 m, sur sol humide, tuf volcanique, sous les Hedychium, forme des tapis denses, loc. 7, Cadet CT77 1964-01-29 (Herb. Eén: R645). - Comores: Mayotte, leg. E. Marie 1881, det. ?, M. des Col. franc. n. 9/37 (Herb. S: RM395).

Previously known from the Comores and Madagascar, but also reported from the East African mountains - Kilimanjaro and Arusha - by Ochyra & Sharp (1988: 364). New to the Mascarenes.

*Sematophyllum subpinnatum* (Bridel) E. Britton

Mauritius: Loc. 9 (M515A); Leg. Robillard, det. Renauld as *Rhaphidostegium dusaoboanae* Besch., Musci Masc.-Mada. #136 (Herb. S: RM483); Leg. Andersson, det. Ångström as *Plagiothecium corticola* sp. nov. (Herb. S: RM494)

Buck (1983: 309-310) showed that *Sematophyllum subpinnatum* is the valid name of this species and not *S. caespitosum* (Hedwig) Mitten.

Ångström (1873: 143) described *Plagiothecium corticola* [corticolum] from material collected on Mauritius by N.J. Andersson in 1853. Herb. S has three specimens under that name, all of them probably parts of the same collection. None of them is marked as being a type of any kind.

Bescherelle (1880: 160) wrote under *Rhaphidostegium* that ‘Le *Rh. Dusaoboanae*, de même que le *Rh. caespitosum* des Antilles, varie beaucoup comme port, comme couleur et comme disposition de feuilles;’ and also further down the same page: ‘Forma *virescens*, ramis compressis, foliis virescentibus laxè imbricatis. Maurice: DUISABO (herb. MONTAGNE); M.J. ANDERSSON (ANGSTRÖM, comm.);’ etc. It is probable that the specimen collected by Andersson and seen by Bescherelle, is part of the same collection from 1853.

Brotherus (1908: 1113) wrote ‘; *Rhaphidostegium Dusaoboanum* (Mont.) Jaeg. (formenreich) auf Madagascar und Bourbon (*Plagiothecium corticola* Aongstr.);’ Brotherus (1908: 1087) also remarked in passing on another page that he

regarded this plant as a species of *Rhaphidostegium*.

One of the three envelopes mentioned above contains a small slip of paper with Brotherus’ handwriting, saying that: ‘*Plagioth. corticolum* Aongstr. = *Rhaphidostegium Dusaoboanum* (Mont.)’.

Renauld & Cardot (1915: 496) lists the following synonym under *Rhaphidostegium Dusaoboanum* (Mont.) Besch.: ‘*Plagiothecium corticolum* Ångstr. in Oefv. Kongl. Vet-Akad. Förhand., 1873, n° 5, p. 143 (fide Brotherus, Musci, p. 1113).’

Thus it seems that Bescherelle in 1880, and not Brotherus in 1908, was first to recognize that *Plagiothecium corticola* = *Rhaphidostegium dusaoboanum* = *Sematophyllum subpinnatum*.

*Trachypodopsis serrulata* var. *serrulata* (P.Beauv.) Fleischer  
Réunion: Loc. 24 (R626).

Compares well with the description in van Zanten (1959: 515-521).

\* *Trachypus bicolor* var. *hispidulus* (C.Müller) Cardot

Réunion: Loc. 1 (R603); 25 (R630). - Guinea, Fouta Djallon 1100 m, det. Paris as *T. molliculus* sp. nov. (Herb. S: RM456)

I have used Zanten (1959) for determination of my specimens. The keys on pages 490 and 491, respectively, clearly indicate this variety. Furthermore my specimens are very similar to the sample from Guinea.

This taxon is new to the Mascarenes, but var. *viridulus* (Mitten) Zanten was previously reported from Réunion.

*Radulina borbonica* (Bél.) Buck

Mauritius: Loc. 6 (M511A); 9 (M277, M515C); 13 (M520) - Réunion: Leg. Cordemoy 1890, det. Cardot (Herb. S: RM474).

*Trichosteleum pervilleanum* (C.Müller ex Geh.)  
Buck

Réunion: Loc. 24 (R627, R628).

My plants are closely matching the descriptions in Renault & Cardot (1915: 504-505, tab. 101:2 + 102:2) and Buck (1993: 211). There are three rather large hyaline alar cells and the leaf cell papillae are very difficult to see. R628 has an immature capsule with a rostrate operculum that is as long as the rest of the capsule.

*Vesicularia bescherellei* (Ren.) Broth.

Mauritius: Leg. Robillard, det. by Renault as spec. nov. (Herb. S: RM447); Leg. Robillard 1876, det. by ? as *V. gastrophylla* C.Müller (Herb. S: RM450). I cannot find any literature reference to *Vesicularia gastrophylla* C.Müller! The nearest I have come is *Rhaphidostegium gastrophyllum* C.Müller in Kindb. nom. nud., distribution 'ignot.'

The two samples have in common that the stem leaves have one marginal row of narrow clear cells [(5-8) × (55-90) µm] near the base, and that the median cell walls are thin at the leaf surface but thicker (4 µm) inside the leaf lamina.

*Vesicularia galerulata* (Duby) Broth.

Mauritius: Loc. 3 (M507); Leg. Robillard, det. Renault as *V. virenti-pinnata* (C.Müller) Broth., Renault 1892-1894#49 (Herb. S: RM444).

I have been able to list 3 synonyms for this species, i.e., *V. boivini* (Besch.) Broth., *V. sphaerocarpa* (C.Müller) Broth. and *V. virenti-pinnata* (C.Müller) Broth. It has been recorded from Mauritius, Réunion, Madagascar, the Comores and East Africa and is thus rather widely distributed.

Cardot (Renault et Cardot 1915: 481) had the following comment under the name *V. sphaerocarpa*: 'Plante variable, plus ou moins robuste, verte ou jaunâtre. Le *V. galerulata* (Duby) Broth. n'est qu'une forme à feuilles un peu plus étroites, d'un tissu un peu moins lâche, et le *V. virentipinnata* (C.Müll.) Broth. est la même forme; le *V. Boivini* (Besch.) Broth. diffère de type par son port

un peu plus grêle, et ses feuilles légèrement plus petites. Ces diverses formes s'enchaînent par des transitions insensibles et n'ont guère de valeur.' I find that my plant (M507) fits into this wider concept, but so do the following two specimens, which I have examined more closely:

*V. alboviridis* (Ren.) Broth., Mauritius, leg. Robillard 1875, det. Renault, syntype of *Ectropothecium alboviride* Ren. (Herb. S: RM449).

*V. ayresii* (Besch.) Broth., Mauritius, leg. Robillard, det. Renault as *Ectropothecium ayresii* Schimper ex Besch. (Herb. S: RM448, Renault 1892-1894#142).

\* *Vesicularia lepervanchei* (Besch.) Broth.

Mauritius: Loc. 9 (M515B). - Comores: Anjouan, forêt de Kangani, leg. Decary 1928-08, det. Thériot (Herb. S: RM442).

New to Mauritius.

*Wijkia protensa* (Ren. & Cardot) Crum

Réunion: Loc. 25 (R629).

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