

Bryophytes from the Republic of Equatorial Guinea (West Central Africa). III. Contribution to the bryoflora of Rio Muni (Continental Region)

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Abstract: First results of the identification work of the collections made by Patxi Heras on Río Muni, the continental part of Equatorial Guinea, are offered. A list of 155 taxa (85 liverworts and 70 mosses) is included, 90 of them being new records for the country.

Resumen: Se ofrecen los primeros resultados del trabajo de identificación realizado en el material recolectado por Patxi Heras en Río Muni o Región Continental (Guinea Ecuatorial). Se incluye una lista de 155 táxones (85 hepáticas y 70 musgos), de los cuales 90 son novedad para el país.

Introduction

The first results of the identification work that is being carried out on Patxi Heras' collections in the Continental Region of Equatorial Guinea (Río Muni) are now presented. 155 taxa (85 liverworts and 70 mosses) are included, 90 of them being new records for the country.

The bryological work in Equatorial Guinea has been almost exclusively limited to the islands, Bioko (formerly Fernando Poó) and Annobón. In addition, the bryological exploration in this small African country was non-existent for almost forty years, until 1996, when three articles on Equatorial Guinea were published; one of them was a bibliographic compilation (Heras & Infante 1996), and the other two were based on

the collections made by Dr. Frank Müller in 1994 in the island of Bioko (Enroth 1996, Müller 1996). In 1997, again for Bioko, identification work based on old collections made by the Spanish botanist Emilio Guinea was published, with new records for this island (Infante, Heras & Buck 1997). In contrast, only one moss (*Fissidens danckelmannii*) until now had been recorded for the Continental Region, and in fact, it was collected by Danckelmann in the Elobey Islands, administratively included in Litoral province on the continent.

The results now presented come from the exploration of the more forgotten Continental Region. All collections were made by Patxi Heras, in August 1993, July-August 1994 and August-Sep-

tember 1996. The localities examined are mainly grouped in two areas:

Cogo district (Litoral province), including Elobey Islands and the far away island of Corisco. Among the explored habitats, there are degraded areas (croplands and trees inside villages, secondary forests by paths, roads and beaches) and primary lowland rainforests and mangroves. Most localities are near the numerous branchlets of the Muni river (Congüe, Mitong, Motorá, Lime, etc.), the only way of entering the forest. The highest point explored in this area is about 250 m.

Mount Alen National Park (Centro-Sur province) and its surroundings. In this area, in contrast to the first one, collections were mainly made in primary forests, lowland and submontane (the highest point is 1150 m), although secondary forests, croplands and villages were not forgotten.

Apart from these two areas, some collections were made in the surroundings of Bata, the continental capital town, and at Etembue (Mbini district, Litoral province), a particularly interesting place where there are natural grasslands on pure sand, with some populations of *Sphagnum*. In most cases, the nomenclature follows Wigginton & Grolle 1997 for liverworts and O'Shea 1995 for mosses. Identifications, if otherwise not indicated, were made by the authors. M. Bruggeman-Nannenga (Utrecht), W. R. Buck (New York), A. Harrington, L.T. Ellis and B. O'Shea (London), T. Pócs and S. Orbán (Eger), and J.-P. Frahm (Bonn) have contributed in the identification of certain groups of bryophytes.

Every record constitutes a novelty for Río Muni and new records for the country are indicated by an asterisk.

Remarkable species

The following observations are based on checklists by O'Shea 1997 and by Wigginton & Grolle 1996.

New records for West Africa:

Aphanolejeunea lisowskii Pócs

Aphanolejeunea moramangae (Tixier) Tixier ex Pócs

Riccardia saccatiflora (Steph.) Arnell

Campylopus arctocarpus (Hornsch.) Mitten ssp.

madegassus (Besch.) Frahm

Floribundaria patentissima var. *squarrosa* (Ren. & Card.) Ren. & Card.

Lepidopilum lastii Mitten

Syrrhopodon prolifer Schwaegr. var. *acanthoneuros*. (C. Müll.) C. Müll.

Syrrhopodon usambaricus Broth. ex Orbán

Rare West African species:

Acrolejeunea emergens var. *confertissima* (Steph.) Gradstein

Aphanolejeunea jovetastiana Pócs

Cololejeunea cornuta E.W. Jones

Frullania purpurea Steph.

Lejeunea brenanii E.W. Jones

Lejeunea papilionacea Steph.

Lepidolejeunea serrulata (Steph.) Grolle

Schiffneriolejeunea occulta (Steph.) Gradstein

Aerobryopsis longipendula (Dus.) Broth.

Fissidens pellucidus Hornsch. Known from Bioko (Müller 1996). This is the second record for Africa. Its distribution in Asia and America appears in Pursell et al. 1992 under its synonym *Fissidens laxis* Sull. & Lesq. (Bruggeman-Nannenga & Pursell 1995).

Isopterygium gabonense Broth. & P. Varde

Isopterygium nivescens (Broth.) Broth.

Leucobryum babettii Thér. & P. Varde

Leucobryum letestui P. Varde

Meiothecium chlorocladum (Broth.) Broth.

Pilotrichella subpanduraefolia Kindb.

Taxithelium planum (Brid.) Mitten

Rare African species:

Aneura pseudopinguis (Herzog) Pócs

Archilejeunea jonesii Vanden Berghen

Cololejeunea elegans Steph.

Cololejeunea latilobula (Herzog) Tixier

Plagiochila effusa Steph.

Pycnolejeunea contigua (Nees) Grolle

Riccardia longispica (Steph.) Pears.

Lepidopilidium devexum (Mitten) Broth.

Vesicularia latiramea Broth.

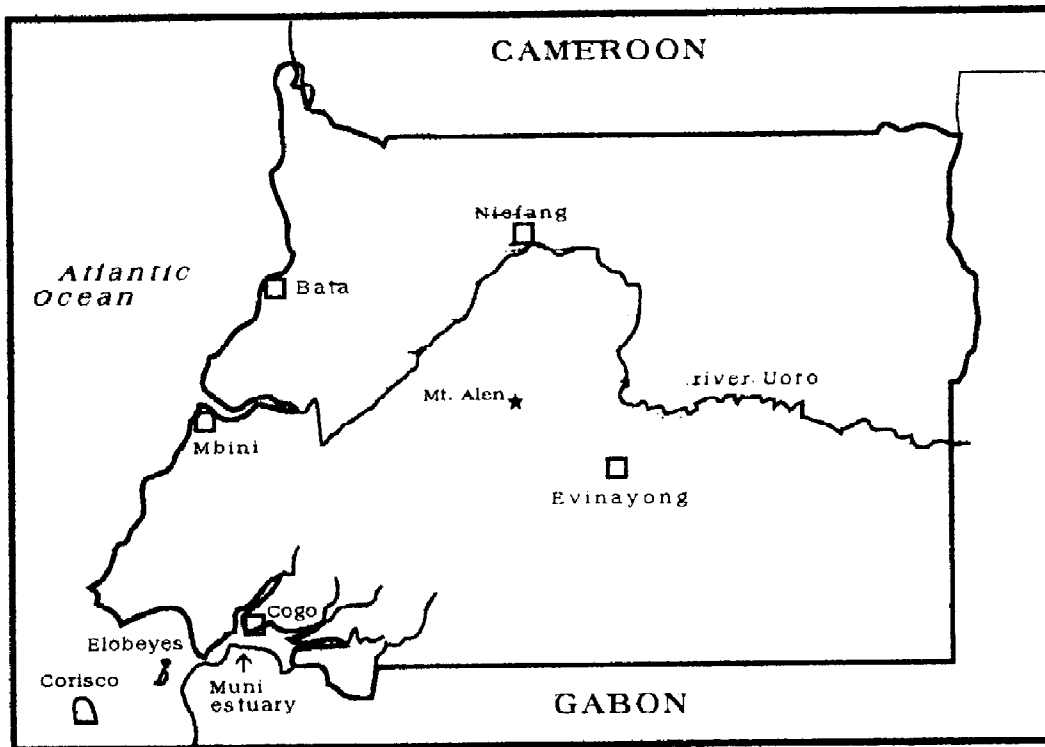
List and description of localities

Litoral province, Bata district: localities 1-3

Litoral province, Cogo district: localities 4-20

Litoral province, Mbini district: locality 25

Centro-Sur province, Evinayong district: localities 21-24



Map of the Continental Region (Río Muni) of the republic of Equatorial Guinea, with the main places mentioned in the paper.

Centro-Sur province, Niefang district: localities 26-33

1. Bata. Asonga. 3 m. Spanish Cooperation buildings. *Cocos nucifera* and *Elaeis guineensis* by the beach.
2. Bata. Mindjiminve. 75 m. Secondary forest with *Ceiba pentandra* as dominant species.
3. Cogo. Town of Cogo. 50 m. Isolated trees in town: *Roystonea regia* and *Mangifera indica*.
4. Cogo. Corisco. 0 m. Secondary littoral forest on the West coast, with *Cocos nucifera*, *Elaeis guineensis*, *Terminalia catappa*, *Ceiba pentandra* and *Vernonia conferta*.
5. Cogo. Elobey Chico. 0-5 m. Littoral forest with *Cocos nucifera*, secondary forest and graveyard and ruins of the old mission.
6. Cogo. Elobey Grande. 5-10 m. Secondary forest and cultivated trees in villages: *Mangifera indica* and *Irvingia gabonensis*.
7. Cogo. Fula. 50 m. Secondary forest between

Fula and Miwala

8. Cogo. Ngande island. 5m. Croplands and village in the island: *Citrus aurantium* and *Artocarpus communis*.
9. Cogo. Mbola. 5m. Croplands and village: *Mangifera indica* and *Artocarpus communis*.
10. Cogo. Miwala. 50 m. Secondary forest by the road.
11. Cogo. Ncolenvan. 30 m. Croplands and ruins of the old distillery.
12. Cogo. River Bisebisele. Ebongle. 150-250 m. Primary lowland rainforest. Lumbering place for *Aucoumea klaineana* and *Erythrophleum ivorense*.
13. Cogo. River Congüe. 5 m. Altered mangrove (*Rhizophora mangle*).
14. Cogo. River Lime. Ebongle. 10 m. Mature secondary forest.
15. Cogo. River Mbanga. 50-75 m. Primary lowland rainforest.

16. Cogo. River Mitong. 5-15 m. Primary lowland rainforest.
17. Cogo. River Mitong. Utoche. 5 m. Mangrove (*Rhizophora mangle*)
18. Cogo. River Motorá. 100 m. Primary lowland rainforest.
19. Cogo. Río Muni. 25-75 m. Secondary forest and *Mangifera indica* in the village
20. Cogo. Vabe. 10-75 m. Primary lowland rainforest by the river.
21. Evinayong. Mt. Alen. 650 m. Engong, River Lobo, stream by the road.
22. Evinayong. Mt. Alen National Park. 1000 - 1150 m. Submontane primary forest.
23. Evinayong. Mt. Alen National Park . 300 m. Río Laña. Primary forest.
24. Evinayong. Mt. Alen National Park . Moka. 680 - 950 m. Primary forest.
25. Mbini. Etembue. 10 m. Littoral grasslands on sandy soil.
26. Niefang. Between Ayene and Moka. 680 m. *Theobroma cacao* and *Coffea* sp. plantations.
27. Niefang. Beayup Yembam. 75 m. Riparian forest by river Mbaha.
28. Niefang. Lor. 250 m. River Uoro banks. Primary forest.
29. Niefang. Mosumu. 250 m. Secondary forest with *Musanga smithii*, *Elaeis guineensis* and *Vernonia conferta*; primary forest by a stream.
30. Niefang. Mt. Chocolate. 550 - 670 m. Primary forest.
31. Niefang. Mt. Televisión. 800 - 1050 m. Cleared primary forest, with some submontane trends. At the summit, there is a small granitic cliff, covered by forest.
32. Niefang. Odum. 75 m. River Mongó Pequeño. Secondary forest.
33. Niefang. Mt. Alen National Park. 250 m. Primary forest on granites on the left bank of river Uoro.

Hepaticae

Lepicoleaceae

- Mastigophora diclados* (Brid. ex Web.) Nees
Corticolous or saxicolous in primary forest, between 800 and 1000 m.
24 (VIT 354/94); 22 (VIT 412/94).

Lepidoziaceae

- Arachniopsis diacantha* (Mont.) Howe
Corticolous on olon trunk (*Fagara heitzii*) in primary forest at 800 m.
31 (VIT 456/94).
- Bazzania decrescens* (Lehm. & Lindenb.) Trev.
ssp. *molleri* (Steph.) E.W. Jones
Humicorticolous or saxicolous in primary forest.
Between 15 and 1000 m.
15 (VIT 547/96); 18 (VIT 357/96); 31 (VIT 477/94, VIT 480/94).
- Lepidozia succida* Mitten
Abundant as terricolous, humicorticolous, humisaxicolous and lignicolous mainly in primary forest. Between 10 and 1140 m.
3 (VIT 823/93); 16 (VIT 960/93, VIT 984/93, VIT 987/9, VIT 988/93); 18, (VIT 349/96); 19 (VIT 826/93); 20 (VIT 1016/93, 1017/93, VIT 1028/93, 1029/93); 22 (VIT 420/94); 24 (VIT 339/94, 341/94, VIT 374/94, 379/94, 380/94, VIT 391/94); 27 (VIT 874/93, 881/93, 882/93); 29 (VIT 270/94, 271/94, 273/94, 275/94); 30 (VIT 512/94).
- Telaranea nematodes* (Gottsche ex Aust.) Howe
Corticolous on bush branches in submontane forest, at 1100 m.
22 (VIT 419/94, 420/94).

Cephaloziaceae

- Cephalozia fissa* Steph.
Corticolous on trunks inside primary forest. At 10 m.
16 (VIT 984/93, VIT 985/93).

Geocalycaceae

- **Heteroscyphus dubius* (Gottsche) Schiffner
Corticolous or terricolous in primary and secondary forest, between 0 and 75 m.
4 (VIT 418/96, 419/96); 16 (VIT 953/93, VIT 987/93); 27 (VIT 874/93).
- Lophocolea martiana* Nees
Lignicolous or terricolous in secondary forests, between 25 and 75 m.
19 (VIT 828/93); 20 (VIT 1028/93, 1030/93); 32 (VIT 896/93, 896a/93, 899/93).

Plagiochilaceae

- Plagiochila africana* Steph.
Ramicolous on bush branchlets in primary forest at 100 m.

18 (VIT 344/96).

Plagiochila effusa Steph.

Corticolous on branches in submontane forest at 1000 m.

22 (VIT 431/94).

Plagiochila integerrima Steph.

Saxicolous on wet rocks in primary or mature secondary forests. Between 15 and 700 m.

14 (VIT 376/96); 16 (VIT 1002/93); 24 (VIT 373/94); 30 (VIT 526/94, 527/94).

Plagiochila moenkemeyeri Steph.

Corticolous on exposed trees, between 10 and 700 m.

6 (VIT 849/93); 24 (VIT 361/94 det.: M. Infante & A. Harrington 1994).

Plagiochila neckeroidea Mitten

Usually corticolous, rarely saxicolous or occasionally epiphyllous. In primary or mature secondary forest between 10 and 950 m.

12 (VIT 455/96, VIT 459/96, VIT 464/96, 466/94); 14 (VIT 382/96, 383/96, 384/96, VIT 392/96); 15 (VIT 502/96, 506/96, 509/96); 16 (VIT 982/93 det.: M. Infante & A. Harrington 1994); 18 (VIT 303/96, 306/96, VIT 348/96); 24 (VIT 366/94, VIT 333/94, VIT 396/94); 30 (VIT 503/94); 31 (VIT 458/94 det.: M. Infante & A. Harrington 1994).

Plagiochila pectinata (Willdenow ex Web.) Lindenb.

Saxicolous on granite rocks at 1000 m.

31 (VIT 486/94).

**Plagiochila pinniflora* Steph.

Corticolous on *Cocos nucifera* trunk at 690 m.

24 (VIT 540/94, 541/94).

Plagiochila praemorsa Steph.

Corticolous, or more rarely lignicolous in primary forests, between 5 and 1050 m.

12 (VIT 487/96); 16 (VIT 952/93); 24 (VIT 328/94, VIT 360/94 det.: A. Harrington 1994, VIT 557/94); 29 (VIT 272/94); 30 (VIT 506/94, VIT 509/94, VIT 510/94); 31 (VIT 465/94); 33 (VIT 298/94 det.: A. Harrington 1994).

Plagiochila terebrans Nees & Mont. ex Lindenb.

Corticolous on branchlets in primary forest at 700 m.

24 (VIT 557/94, 558/94 det.: A. Harrington 1994)

Radulaceae

Radula appressa Mitten

Corticolous in altered mangrove (*Rhizophora*

mangle).

13 (VIT 577/94, VIT 584/94).

Radula boryana (Web.) Nees

Corticolous in primary submontane forest. At 1000 m.

22 (VIT 410/94).

**Radula flaccida* Lindenb. & Gottsche

Epiphyllous in primary forest between 5 and 1140 m.

16 (VIT 955/93, VIT 975/93); 22 (VIT 438794, VIT 409/94); 24 (VIT 324/94, VIT 385/94, VIT 560/94, 561/94); 29 (VIT 280/94); 30 (VIT 518/94, VIT 519/94, VIT 520/94); 30 (VIT 535/94).

**Radula stenocalyx* Mont.

Epiphyllous in primary forest between 5 and 1140 m.

16 (VIT 955/93); 22 (VIT 435/94, 439/94); 24 (VIT 322/94, VIT 396/94); 30 (VIT 518/94).

Frullaniaceae

**Frullania apiculata* (Reinw. et al.) Nees

Corticolous or more rarely saxicolous, in primary forest, on light exposed places such as tree crowns and rocks by rivers. Between 5 and 100 m.

15 (VIT 561/96); 16 (VIT 958/93, 968/93, 969/93); 18 (VIT 317/96, 318/96).

**Frullania apicalis* Mitten

Corticolous on *Aucoumea klaineana* and *Erythrophleum ivorense* on tree crowns. Between 50 and 250 m.

12 (VIT 484/96); 15 (VIT 544/96); 18 (VIT 318/96, 319/96).

**Frullania purpurea* Steph.

Corticolous on tree crown branches or on riparian trees. Between 5 and 100 m.

15 (VIT 534/96, 539/96, 562/96, 563/96, 568/96, 569/96, 571/96); 16 (VIT 968/93); 18 (VIT 318/96, 326/96, 330/96, 332/96).

**Frullania spongiosa* Steph.

Corticolous on cocoa tree trunk and branches, at 680 m.

26 (VIT 491/94, 492/94, 494/94, 496/94, 500/94. Det.: M. Infante & A. Harrington 1994)

Lejeuneaceae

**Acrolejeunea emergens* (Mitten.) Steph. var. *emergens*

Corticolous on *Cocos nucifera* trunks.

1 (VIT 860/93, VIT 863/93).

- **Acrolejeunea emergens* var. *confertissima* (Steph.) Gradstein
Corticolous on *Cocos nucifera* trunks.
3 (VIT 1043/93).
- **Aphanolejeunea jovetastiana* Pócs
Epiphyllous or muscicolous in primary or mature secondary forests, also in submontane forest. Between 5 and 1140 m. Always in small quantities and occasionally with female bracts.
14 (VIT 400/96); 16 (VIT 955/93, VIT 966/93, 975/93), 18 (VIT 337/96, 345bis/96 and 346/96); 22 (VIT 409/94; VIT 411/94; VIT 435/94, 437/94); 24 (VIT 322/94, VIT 361/94. Det.: Infante & A. Harrington 1994; VIT 557/94; VIT 562/94); 29 (VIT 272/94, VIT 280/94); 30 (VIT 520/94, VIT 535/94); 31 (VIT 464/94); 33 (VIT 319/94).
- **Aphanolejeunea lissowskii* Pócs
Epiphyllous in primary forest at 670 m.
30 (VIT 520/94, VIT 521/94).
- **Aphanolejeunea moramangae* (Tixier) Tixier ex Pócs
Epiphyllous in primary forest at 700 m.
24 (VIT 562/94, Det.: T. Pócs 1997).
- **Archilejeunea abbreviata* (Mitten) Vanden Berghen
Saxicolous on stream rocks or corticolous, always in secondary forest or cocoa plantations. Between 10 and 680 m.
14 (VIT 378/96); 16 (VIT 408/96); 31 (VIT 493/94 det.: A. Harrington 1994).
- Archilejeunea africana* Steph.
Corticolous, epiphyllous and even saxicolous by a stream, in primary and secondary forest. Between 5 and 250 m.
12 (VIT 450/96); 16 (VIT 950/93); 18 (VIT 337/96); 29 (VIT 266/94 det.: A. Harrington 1994).
- **Archilejeunea autoica* Vanden Berghen
Saxicolous on shady rocks by a stream under primary forest or corticolous on *Rhizophora mangle* roots and trunks. Between 5 and 700 m.
9 (VIT 942/93); 13 (VIT 574/94); 16 (VIT 949/93); 24 (VIT 378/94)
- **Archilejeunea jonesii* Vanden Berghen
Corticolous on *Ceiba pentandra* buttresses.
2 (VIT 906/93 det.: M. Infante & A. Harrington 1994)
- **Archilejeunea linguifolia* Steph.
On rocky banks and on roots in river Uoro, at 250 m.
28 (VIT 281/94, 282/94 det.: A. Harrington 1994); 33 (VIT 289/94, 290/94, 299/94, 302/94, 304/94).
- **Caudalejeunea hanningtonii* (Mitten) Schiffner
Corticolous on branchlets in secondary forest, at 75 m.
2 (VIT 908/93 det.: A. Harrington 1994)
- Ceratolejeunea calabariensis* Steph.
Corticolous and humicorticolous in mangrove, primary and secondary forest, between 5 and 150 m.
11 (VIT 1010/93, 1012/93, 1013/93); 12 (VIT 488/96); 16 (VIT 367/96); 18 (VIT 308/96).
- Cheilolejeunea serpentina* (Mitten) Mizutani
Terricolous on the path to Cogo hospital.
3 (VIT 821/93).
- **Cololejeunea androphylla* E.W. Jones
Male spikelets like the ones described for *Cololejeunea wightii* and *C. cuspidata* have been searched for without success, and this is the reason why we leave these specimens under this taxon. On wet vegetal detritus, between 10 and 50 m.
3 (VIT 820/93, 824/93); 25 (VIT 442/96).
- **Cololejeunea cornuta* E.W. Jones
Epiphyllous in mature secondary forest, at 10 m.
14 (VIT 387/96, 390/96, 392/96, 393/96).
- **Cololejeunea cuneifolia* Steph.
Epiphyllous in primary, secondary and submontane forest. Between 10 and 1050 m.
14 (VIT 385/96, 390/96); 15 (VIT 498/96, 499/96); 18 (VIT 341/96); 19 (VIT 830/93, VIT 297/96); 24 (VIT 322/94, VIT 323/94, VIT 325/94); 22 (VIT 411/94); 31 (VIT 463/94, VIT 467/94, VIT 470/94); 33 (VIT 312/94, VIT 314/94).
- **Cololejeunea duvignaudii* E.W. Jones
Epiphyllous on bushes leaves in secondary forest at 25 m.
19 (VIT 829/93, VIT 831/93 det.: A. Harrington 1994).
- **Cololejeunea elegans* Steph.
Corticolous on trunks in submontane forest at 800 - 1000 m.
31 (VIT 458/94 det.: Infante & A. Harrington 1994; VIT 460/94; VIT 465/94).
- **Cololejeunea latilobula* (Herzog) Tixier
Epiphyllous on *Elaeis guineensis* leaves in riparian vegetation.
32 (VIT 890/93).
- **Cololejeunea leloutrei* (E.W. Jones) Schuster
Epiphyllous in primary forest, between 700 and 1050 m.
24 (VIT 325/94); 31 (VIT 467/94).

**Cololejeunea obliqua* (Nees & Mont.) Schiffner

Epiphyllous or muscicolous in primary or secondary forest. Between 5 and 670 m.

2 (VIT 907/93); 14 (VIT 400/96); 16 (VIT 955/93); 24 (VIT 562/94); 28 (VIT 284/94, 285/94); 29 (VIT 259/94, VIT 280/94); 30 (VIT 527/94, VIT 534/94).

**Cololejeunea obtusifolia* (E.W. Jones) Tixier

Epiphyllous or muscicolous in primary or secondary forest. Between 10 and 670 m.

2 (VIT 908/93); 6 (VIT 843/93, 844/93); 30 (VIT 527/94).

**Cololejeunea pusilla* Steph

Epiphyllous in primary and secondary forests, between 10 and 950 m.

16 (VIT 995/93); 19 (VIT 829/93); 24 (VIT 322/94, VIT 323/94, VIT 396/94, VIT 564/94).

**Cololejeunea tonkinensis* Steph.

Epiphyllous in secondary forests at low altitude (10- 15 m).

6 (VIT 845/93); 19 (VIT 297/96).

**Cololejeunea zenkeri* (Steph.) E.W. Jones

Muscicolous, on bryophytes hanging from branchlets in riparian trees.

16 (VIT 972/93).

Colura digitalis (Mitten) Steph.

Usually epiphyllous, more rarely corticolous on branchlets, both in primary and secondary forest. It lives up to 1150 m.

16 (VIT 955/93, VIT 974/93, 975/93); 22 (VIT 435/94, VIT 451/94); 32 (VIT 890/93).

**Colura tenuicornis* (Evans) Steph.

Muscicolous in submontane forest, at 1140 m.

22 (VIT 429/94).

**Diplasiolejeunea cavifolia* Steph.

Epiphyllous or corticolous in the most exposed places in the forest (river banks, tree crowns or rocky cliffs), between 75 and 1140 m.

18 (VIT 334/96); 22 (VIT 435/94); 28 (VIT 285/94); 32 (VIT 890/93).

Drepanolejeunea cultrella (Mitten) Steph.

Every examined specimen has big teeth, often in pairs one to each side of the leaf lobe, diminishing their size to the apex. Reduced lobules are frequently found. These characters point to *Drepanolejeunea ruandensis* Vanden Berghen, a species that was reduced to synonymy by its own descriptor, on the base that the most significant characters (shape of lobule tooth, number and

position of ocelli, underleaves and perianth shape) are exact to those of *Drepanolejeunea cultrella*.

Corticolous, muscicolous and epiphyllous in primary forests between 5 and 1140 m.

12 (VIT 495/96); 16 (VIT 966/93, VIT 968/93, VIT 972/93); 18 (VIT 345bis/96); 22 (VIT 426/94, VIT 429/94, VIT 434/94, VIT 435/94, VIT 439/94); 24 (VIT 325/94).

Drepanolejeunea vesiculosa (Mitten) Steph.

This species is far less common than the former one. It has never been seen fertile. Corticolous in primary forests between 25 and 1050 m.

12 (VIT 472/96, 485/96, 493/96); 18 (VIT 315/96); 31 (VIT 460/94, VIT 465/94).

Lejeunea acuta Mitten

Corticolous on branches, in submontane forest in misty summits.

22 (VIT 431/94, VIT 435/94).

**Lejeunea brennanii* E.W. Jones

Corticolous on branches, in submontane forest in misty summits.

22 (VIT 428/94).

Lejeunea caespitosa Lindenb. in Gottsche et al.

Lignicolous in secondary forests at low altitude, between 25 and 75 m.

19 (VIT 825/93); 32 (VIT 896/93).

**Lejeunea confusa* E.W. Jones

Corticolous in secondary forests.

11 (VIT 1013/93 det.: A. Harrington 1994).

**Lejeunea ibadana* Harrington & E.W. Jones

Lignicolous in altered places, mainly by roads and paths.

3 (VIT 1039/93 det.: A. Harrington 1994); 5 (VIT 922/93 det.: A. Harrington 1994); 27 (VIT 885/93 det.: A. Harrington 1994).

**Lejeunea papilionacea* Steph.

Epiphyllous in secondary and primary forests between 75 and 1050 m.

2 (VIT 911/93 det.: A. Harrington 1994); 16 (VIT 995/93); 31 (VIT 469/94 det.: A. Harrington 1994).

**Lepidolejeunea serrulata* (Steph.) Grolle

Epiphyllous on bushes leaves in the riparian vegetation.

16 (VIT 975/93).

**Leptolejeunea astroidea* (Mitten) Steph.

Epiphyllous mainly in secondary forests near the coast, at low altitude (5- 250 m), although it has also been found more rarely to the interior, at

700 m in primary forest.

2 (VIT 907/93); 16 (VIT 955/93); 19 (VIT 829/93, VIT 830/93, VIT 832/93); 20 (VIT 1018/93); 24 (VIT 325/94); 28 (VIT 285/94); 29 (VIT 258/94, VIT 280/94).

**Leptolejeunea epiphylla* (Mitten) Steph.

Epiphyllous in secondary and primary forests between 5 and 670 m.

16 (VIT 955/93, VIT 973/93, 974/93, 975/93, 976/93); 19 (VIT 829/93, VIT 830/93); 20 (VIT 1018/93); 27 (VIT 880/93); 29 (VIT 256/94, 257/94, VIT 258/94); 30 (VIT 535/94); 32 (VIT 890/93).

**Leptolejeunea maculata* (Mitten) Schiffner

Epiphyllous in primary forest between 5 and 1050 m.

16 (VIT 973/93, 974/93); 22 (VIT 435/94); 24 (VIT 325/94); 27 (VIT 880/93); 28 (VIT 284/94, 285/94); 31 (VIT 467/94).

Lopholejeunea nigricans (Lindenb.) Schiffner

Saxicolous or corticolous in places near streams, between 5 and 75 m.

5 (VIT 856/93); 16 (VIT 951/93); 32 (VIT 889/93).

Lopholejeunea subfusca (Nees) Schiffner

Corticolous in villages and secondary forests, between 0 and 75 m.

4 (VIT 414/96, 420/96); 5 (VIT 915/93, VIT 932/93); 11 (VIT 1012/93, 1013/93); 19 (VIT 834/93).

Marchesinia excavata (Mitten) Schiffner

Corticolous on tree crowns, in primary forest between 50 and 250 m.

12 (VIT 469/96, 471/96, 473/96, 479/96, 481/96, 482/96); 15 (VIT 531/96, VIT 553/96, VIT 545/96, 546/96); 18 (VIT 315/96, 317/96, 321/96, 322/96, 323/96, 327/96).

Mastigolejeunea auriculata (Wils.) Schiffner

Corticolous on *Ceiba pentandra* buttresses in secondary forests or villages, between 5 and 15 m.

5 (VIT 917/93 det.: A. Harrington 1994); 20 (VIT 1025/93 det.: A. Harrington 1994).

**Mastigolejeunea florea* (Mitten) Paris

Corticolous on *Artocarpus communis* tree trunk base, in a village at 5 m.

9 (VIT 939/93 det.: A. Harrington 1994).

Microlejeunea africana Steph.

Corticolous and epiphyllous in different habitats (littoral forest, trees in villages, primary forest and submontane forest), between 0 and 1140 m.

1 (VIT 860/93, VIT 861/93, VIT 862/93); 5 (VIT 915/93, VIT 928/93); 18 (VIT 334/96); 19 (VIT 834/93); 22 (VIT 409/94, VIT 435/94); 24 (VIT 324/94, VIT 325/94); 25 (VIT 444/96); 27 (VIT 880/93); 31 (VIT 467/94).

Microlejeunea kamerunensis Steph.

Corticolous on branchlets in the misty summits of Mt. Alen, at 1150 m.

22 (VIT 451/94).

Odontolejeunea lunulata (Web.) Schiffner

Epiphyllous in submontane forest in misty summits, at 1140 m.

22 (VIT 433/94).

Prionolejeunea grata (Gottsche) Schiffner in Engler & Prantl

Muscicolous, epiphyllous and corticolous in primary forest between 5 and 1140 m.

12 (VIT 472/96); 16 (VIT 987/93, VIT 952/93, VIT 953/93); 22 (VIT 426/94); 24 (VIT 328/94, VIT 328/94, VIT 343/94, VIT 366/94); 31 (VIT 460/94).

**Pycnolejeunea contigua* (Nees) Grolle

Corticolous on *Erythrophleum ivorense* branch, on tree crown, in primary forest at 50 - 75 m.

15 (VIT 528/96, VIT 554/96).

**Schiffneriolejeunea occulta* (Steph.) Gradstein

Corticolous on orange tree trunks, in the village.

8 (VIT 1045/93).

**Stictolejeunea balfourii* (Mitten) E.W. Jones

Saxicolous in primary forest at 700 m.

24 (VIT 371/94).

**Taxilejeunea pulchriflora* Pears.

Corticolous in primary and secondary forest, between 550 and 1100 m.

22 (VIT 431/94); 30 (VIT 506/94); 31 (VIT 488/94).

**Thysananthus spathulistipus* (Reinw. et al.) Lindenb.

Corticolous on tree crowns in primary or riparian forests, between 5 and 250 m.

12 (VIT 490/96); 15 (VIT 525/96, 537/96); 16 (VIT 969/93); 18 (VIT 328/96, 329/96, 330/96, 333/96, 335/96, VIT 356/96); 33 (VIT 309/94).

Aneuraceae

**Aneura pseudopinguis* (Herzog) Pócs.

Saxicolous or lignicolous both in primary and secondary forest. Between 550 and 950 m.

24 (VIT 395/94); 30 (VIT 516/94).

Riccardia amazonica (Spruce) Schiffner

Saxicolous or lignicolous both in primary and secondary forest. Between 5 and 100 m.

16 (VIT 946/93, VIT 992/93); 18 (VIT 351/96).

Riccardia limbata (Steph.) E.W. Jones

Usually lignicolous, but occasionally also saxicolous or terricolous. Mainly in secondary forest, sometimes also in primary forest. Between 10 and 250 m.

2 (VIT 914/93); 6 (VIT 853/93, 854/93); 19 (VIT 827/93); 24 (VIT 382/94); 29 (VIT 274/94); 32 (VIT 894/93, VIT 897/93).

**Riccardia longispica* (Steph.) Pears.

Saxicolous, more rarely lignicolous, both in primary and secondary forest. It is often associated to the presence of water. Between 5 and 950 m. 16 (VIT 950/93, VIT 989/93, VIT 993/93); 24 (VIT 377/94, VIT 392/94, VIT 398/94).

**Riccardia saccatiflora* (Steph.) S. Arnell

Saxicolous in primary and secondary forest. Between 10 and 75 m.

14 (VIT 372/96), 15 (VIT 549/96).

Metzgeriaceae

Metzgeria australis Steph.

Corticulous or saxicolous in primary and submontane forest, between 700 and 1140 m.

22 (VIT 434/94); 24 (VIT 401/94, VIT 559/94).

Musci

Sphagnaceae

**Sphagnum planifolium* C. Müll.

Littoral grassland on sandy soil, in wet hollows, at 10 m.

25 (VIT 439/96, 440/94).

Orthotrichaceae

**Macromitrium scleropodium* Besch.

Corticulous on coffee tree branches.

24 (VIT 549/94 det.: W. R. Buck 1996).

Bryaceae

**Bryum albo-pulvinatum* C. Müll

Granite rocks on the misty summit of Mt. Alen, at 1150 m.

22 (VIT 444/94, 445/94 det.: L.T. Ellis 1994).

Rhizogoniaceae

Pyrrhobryum spiniforme (Hedw.) Mitten

Saxicolous between 700 and 1000 m, in primary

forest.

24 (VIT 329/94 det.: B. O'Shea & P. Heras 1994);

31 (VIT 476/94).

Racopilaceae

**Racopilum capense* C. Müll. ex Broth.

Saxicolous on shady rocks by a stream under primary forest.

24 (VIT 375/94 det.: W. R. Buck 1996).

Calymperaceae

Calymperes afzelii Sw.

Corticulous, occasionally lignicolous in secondary forests and isolated trees in the villages, more rarely in primary forests; between 0 and 700 m.

2 (VIT 904/93, 906a/93 det.: L.T. Ellis 1994); 4 (VIT 421/96); 5 (VIT 919/93 det.: L.T. Ellis 1994); 6 (VIT 852/93 det.: L.T. Ellis 1994, VIT 836/93, 838a/93 det.: L.T. Ellis 1994); 8 (VIT 1049/93, 1050/93 det.: L.T. Ellis 1994); 9 (VIT 938/93 det.: L.T. Ellis 1994); 13 (VIT 565/94, 566/94, 583/94 det.: L.T. Ellis 1994); 24 (VIT 362/94 det.: L.T. Ellis 1994, VIT 384/94 det.: L.T. Ellis 1994); 26 (VIT 489/94 det.: L.T. Ellis 1994).

Calymperes erosum C. Müll.

Corticulous, lignicolous, terricolous on tree trunk bases or fissures on rocks, usually in altered places, more rarely in primary forest. Between 5 and 100 m.

4 (VIT 428/96); 5 (VIT 921/93, 934/93 det.: L.T. Ellis 1994); 8 (VIT 1044/93, 957/93 det.: L.T. Ellis 1994); 16 (VIT 962/93 det.: L.T. Ellis 1994); 18 (VIT 313/96); 20 (VIT 1022/93 det.: L.T. Ellis 1994).

Calymperes lonchophyllum Schwaegr. ssp. *microblastum* (C. Müll.) S. Edwards

Saxicolous by streams or corticulous, in primary or mature secondary forest. Between 10 and 250 m.

14 (VIT 370/96); 16 (VIT 986/93 det.: L.T. Ellis 1994, VIT 957/93 det.: L.T. Ellis 1994); 33 (VIT 315/94 det.: W.R. Buck 1996).

**Calymperes palisotii* Schwaegr.

Corticulous on isolated trees in littoral forests, villages or mangroves. Between 0 and 50 m.

1 (VIT 859/93, 864/93, 865/93 det.: L.T. Ellis 1994); 3 (VIT 1041/93, VIT 1042/93 det.: L.T. Ellis 1994, VIT 1037/93, 1038/93 det.: W.R. Buck 1996); 4 (VIT 416/96, 422/96); 13 (VIT 565/94,

579/94 det.: L.T. Ellis 1994); 19 (VIT 407/96); 25 (VIT 443/96).

Leucophanes mollerii C. Müll.

Corticulous, lignicolous, humicorticulous, muscicolous and even epiphyllous in primary or secondary forest, between 10 and 1140 m.

12 (VIT 452/96, VIT 462/96, 468/96); 14 (VIT 391/96, VIT 397/96); 15 (VIT 503/96); 16 (VIT 980/93, 981/93); 18 (VIT 307/96); 19 (VIT 292/96); 20 (VIT 1026/93); 22 (VIT 432/94); 33 (VIT 316/94 det.: L.T. Ellis 1994).

Octoblepharum albidum Hedw.

Corticulous on trees in villages at low altitude (0-15 m), or else saxicolous on granite rocky cliffs at 800 m.

1 (VIT 858/93); 6 (VIT 841/93), 20 (VIT 1021/93); 24 (VIT 336/94).

**Syrrhopodon africanus* var. *africanus* (Mitten) Par.

Corticulous in primary forest between 50 and 250 m.

15 (VIT 527/96, 540/96, VIT 557/96), 33 (VIT 311/94 det.: L.T. Ellis 1994).

Syrrhopodon armatus Mitten

Corticulous on *Aucoumea klaineana* and *Erythrophleum ivorense* trunks, near the tree crown, in primary forest between 50 and 250 m.

12 (VIT 480/96); 15 (VIT 513/96, 523/96).

**Syrrhopodon disciformis* Dusén

Corticulous on branches in *Erythrophleum ivorense* tree crown in primary forest at 75 m.

15 (VIT 574/96).

Syrrhopodon lamprocarpus Mitten

Saxicolous in primary forest at 1000 m.

31 (VIT 487/94 det.: L.T. Ellis 1994).

**Syrrhopodon prolifer* var. *acanthoneuros* (C. Müll.) C. Müll.

Saxicolous on granite rocky cliff at 800 m.

24 (VIT 346/94, 347/94 det.: L.T. Ellis 1994 & S. Orbán 1997).

**Syrrhopodon usambaricus* Broth. ex Orbán

Saxicolous on shady rock under primary forest at 800 m.

31 (VIT 453/94 Det.: L.T. Ellis 1994 & S. Orbán 1997).

Dicranaceae

**Campylopus arctocarpus* (Hornsch.) Mitten ssp. *madegassus* (Besch.) Frahm

Saxicolous by a stream at 5 m, and corticolous in

submontane forest at 1000 m.

15 (VIT 961/93); 22 (VIT 415/94) det.: J.P. Frahm 1997.

Campylopus chevalieri Broth. & Thér.

Saxicolous on granites, between 800 and 1150 m, in primary forest.

22 (VIT 449/94); 24 (VIT 345/94, 348/94).

Campylopus hensii Ren. & Card.

Among grasses in rocky clear, in the misty summit of Mt. Alen, at 1150 m.

22 (VIT 443/94).

Leucobryaceae

**Leucobryum babettii* Thér. & P. Varde

Lignicolous in primary forest at 550 m.

30 (VIT 513/94).

**Leucobryum letestui* P. Varde

Lignicolous in submontane forest at 950 m.

24 (VIT 405/94).

Fissidentaceae

Every specimen in this family has been identified by M. Bruggeman-Nannenga.

Fissidens crispulus Brid.

Saxicolous on rocks by streams or cascades. Between 50 and 650 m.

7 (VIT 1033/93); 10 (VIT 1035/93, 1036/93); 16 (VIT 963/93, 999/93); 21 (VIT 554/94); 27 (VIT 871/93, 886/93); 33 (VIT 288/94, 291/94).

**Fissidens glaucissimus* Welw. & Duby

Saxicolous in primary forest, between 700 and 950 m.

24 (VIT 381/94, 388/94).

**Fissidens microcarpus* Mitten

On concrete walls, tombs, etc. more rarely on trunks.

4 (VIT 931/93, 933/93); 27 (VIT 883/93).

Fissidens pellucidus Hornsch.

Terricolous on termite nests and on soil in the paths in primary and secondary forest, between 10 and 700 m.

6 (VIT 850/93); 24 (VIT 836/94); 29 (VIT 269/94); 32 (VIT 895/93).

**Fissidens porrectus* Mitten

Terricolous or saxicolous by springs.

7 (VIT 1031/93); 24 (VIT 388/94, 390/94).

Fissidens sciophyllus Mitten

Saxicolous on granite rocks facing northeast under primary forest, at 1000 m.

31 (VIT 479/94, 484/94).

Fissidens weirii Mitten

Terricolous on termite nests, in villages or primary forest, between 75 and 700 m.

24 (VIT 387/94); 27 (VIT 887/93); 30 (VIT 508/94, 522/94, 523/94).

*Thuidiaceae**Thuidium gratum* (P. Beauv.) Jaeg.

Corticulous, saxicolous, lignicolous in different habitats: by streams, on buildings walls, in secondary and primary forest. Between 5 and 1000 m.

4 (VIT 431/96); 5 (VIT 855/93, VIT 857/96, VIT 928a/93, 932/93); 9 (VIT 941/93); 24 (VIT 371/94); 29 (VIT 279/94, VIT 265/94); 31 (VIT 488/94); 32 (VIT 892/93, VIT 900/93).

**Thuidium involvens* (Hedw.) Mitten ssp. *thomeanum* (Broth.) Touw

Saxicolous or terricolous on buildings. Between 15 and 30 m.

11 (VIT 1008/93); 20 (VIT 1019/93, 1020/93).

**Thuidium tenuissimum* Welw. & Duby

Saxicolous on stream banks under primary forest, between 5 and 700 m.

16 (VIT 945/93, VIT 1003/93); 24 (VIT 563/94); 30 (VIT 530/94).

Thuidium varians Welw. & Duby

Humicolous, lignicolous or corticolous in primary and secondary forest between 700 and 1000 m.

24 (VIT 356/94, VIT 367/94); 31 (VIT 488/94).

Entodontaceae

**Mesonodon flavescens* (Hook.) Buck

Corticulous on *Cocos nucifera* trunk at 690 m.

24 (VIT 539/94 det.: W. R. Buck 1996).

*Sematophyllaceae**Glossadelphus truncatulus* (C. Müll.) Fleisch.

24. Transecto de Lejoly. Primary forest. Saxicolous on shady rocks by a stream. Between 700 and 950 m. VIT 371/94, 393/94.

**Macrohymenium megasporum* (Duby) Kis

Corticulous on tree crowns or riparian trees, in primary forest between 5 and 250 m.

12 (VIT 467/96, 473/96, 474/96, 475/96, 486/96); 16 (VIT 969/93); 18 (VIT 314/96, VIT 320/96).

**Meiothecium chlorocladum* (Broth.) Broth.

Corticulous on trees in villages or saxicolous in cascades. Between 50 and 250 m.

3 (VIT 1037/93 det.: W.R. Buck 1996, VIT 1042/93 det.: L.T. Ellis 1994); 33 (VIT 286/94 det.: W.R. Buck 1996).

Radulina borbonica (Bél.) Buck

In primary and secondary forest, between 10 and 550 m.

16 (VIT 989/93); 30 (VIT 515/94 det.: W.R. Buck 1996); 32 (VIT 898/93 det.: W.R. Buck 1996).

**Sematophyllum fulvifolium* Mitten

Lignicolous in primary forest at 550 m .

30 (VIT 515/94 det.: L.T. Ellis 1994).

**Taxithelium perglabrum* Broth & Par.

On sand or saxicolous on rocky blocks by the river.

27 (VIT 877/93 det.: L.T. Ellis 1994); 32 (VIT 888/93 det.: W.R. Buck 1996).

**Taxithelium planum* (Brid.) Mitten

Corticulous or saxicolous by the river, under primary forest at 5 m.

16 (VIT 967/93 det.: W.R. Buck 1996, VIT 1004/93 det.: W.R. Buck 1996).

**Wijkia trichocolea* (C. Müll.) Crum

Saxicolous on granite rocky cliff at 800 m.

24 (VIT 340/94 det.: W.R. Buck 1996).

*Hypnaceae**Ectropothecium regulare* (Brid.) Jaeg.

Corticulous, lignicolous or humicolous, in primary forests between 10 and 1150 m.

14 (VIT 399/96, 400/96); 16 (VIT.991/93 det.: W.R. Buck 1996); 18 (VIT 351/96, 352/96); 22 (VIT 446/94 det.: W.R. Buck 1996).

**Isopterygium argyroleucum* Besch.

Saxicolous in primary submontane forest at 950 m.

24 (VIT 397/94 det.: W.R. Buck 1996).

**Isopterygium gabonense* Broth. & P. Varde

On sands by a path in a village.

6 (VIT 835/93 det.: W.R. Buck 1996).

**Isopterygium nivescens* (Broth.) Broth.

Saxicolous on granite rocky cliffs at 800 m.

24 (VIT 346/94 det.: W.R. Buck 1996).

**Rhacopilopsis trinitensis* (C. Müll.) Britt. ex Dix.

Saxicolous on rocks under submontane forest at 1000 m and corticolous in primary forest at 550 m.

31 (VIT 482/94 det.: W.R. Buck 1996); 30 (VIT 504/94 det.: W.R. Buck 1996).

**Vesicularia latiramea* Broth.

Lignicolous in primary forest at 700 m.
24 (VIT 383/94 det.: W.R. Buck 1996).

Neckeraceae

Neckeropsis disticha (Hedw.) Kindb.

Corticulous in secondary forest between 75 and 680 m.

26 (VIT 490/94); 29 (VIT 264/94, 265/94); 32 (VIT 901/93).

**Neckeropsis foveolata* (Mitten) Broth. ex Par.
Corticulous in primary forest between 700 and 1000 m.

22 (VIT 406/94); 24 (VIT 330/94).

Pinnatella minuta (Mitten) Broth.

Corticulous in primary forest and cocoa plantation between 550 and 680 m.

26 (VIT 498/94); 30 (VIT 505/94).

Porothamnium stipitatum (Mitten) Touw ex De Sloover

Saxicolous on stream under primary forest at 670 m.

30 (VIT 524/94).

Porotrichum elongatum (Welw. & Duby) Gepp
Saxicolous on stream bank or corticolous in primary forest. Between 5 and 700 m.

16 (VIT 1005/93 det.: W.R. Buck 1996); 24 (VIT 375/94 det.: W.R. Buck 1996); 30 (VIT 502/94, VIT 524/94).

**Porotrichum usagarum* Mitten

Corticulous or saxicolous by streams in primary forest, between 5 and 1050 m.

14 (VIT 377/96); 16 (VIT 954/93, VIT 966/93); 18 (VIT 299/96, VIT 347/96); 30 (VIT 524/94); 31 (VIT 466/94); 33 (VIT 315/94 det.: W.R. Buck 1996).

Cryphaeaceae

**Schoenobryum concavifolium* (Griff.) Gangulee

Corticulous on coffee tree trunks at 680 m.

24 (VIT 547/94, 548/94 det.: W.R. Buck 1996).

Pterobryaceae

Orthostichidium involutifolium (Mitten) Broth.

Corticulous in primary forest between 150 and 1140 m.

12 (VIT 488/96); 22 (VIT 408/94, VIT 441/94); 30 (VIT 507/94).

Meteoriaceae

**Aerobryopsis longipendula* (Dus.) Broth.

Corticulous and hanging on branchlets in riparian forests between 5 and 250 m.

16 (VIT 972/93); 33 (VIT 305/94).

**Floribundaria floribunda* (Dozy & Molk.) Fleisch. (= *F. cameruniae* [Dus.] C. Müll.)

Corticulous, hanging or humicolous in primary forests, between 75 and 1150 m.

22 (VIT 421/94, VIT 448/94); 24 (VIT 357/94); 27 (VIT 884/93 det.: W.R. Buck 1996); 30 (VIT 502/94).

**Floribundaria patentissima* var. *squarrosa* (Ren. & Card.) Ren. & Card.

Corticulous on coffee tree trunks.

24 (VIT 552/94 det.: W.R. Buck 1996).

Pilotrichella communis C. Müll. ex Dus.

Corticulous, saxicolous and even occasionally epiphyllous, in primary forests between 680 and 1100 m.

22 (VIT 406/94, 407/94, 408/94, 413/94, VIT 429/94); 24 (VIT 337/94); 26 (VIT 501/94).

**Pilotrichella sordido-viridis* C. Müll. ex Dus.

Corticulous and hanging from branchlets in riparian trees, between 10 and 700 m.

14 (VIT 398/96, 400/96); 16 (VIT 970/93); 24 (VIT 330/94); 28 (VIT 283/94); 33 (VIT 306/94, 307/94).

**Pilotrichella subpanduraefolia* Kindb.

Corticulous, hanging from branchlets in riparian trees.

16 (VIT 971/94).

Hookeriaceae

**Callicostella perpapillata* Broth. & P. Varde

Saxicolous or corticolous, more rarely lignicolous, in primary or secondary forest, between 15 and 950 m.

7 (VIT 1032/93); 12 (VIT 452/96); 15 (VIT 551/96); 18 (VIT 350/96, 353/96); 19 (VIT 294/96); 24 (VIT 383/94 det.: W.R. Buck 1996, VIT 555/94, VIT 393/94, 400/94); 27 (VIT 874/93); 29 (VIT 278/94, VIT 267/94); 31 (VIT 452/94).

**Callicostella submarginatula* Broth. & P. Varde

Saxicolous on rocks by streams and rivers, sometimes even submerged. Between 5 and 300 m.

14 (VIT 379/96, 380/96); 16 (VIT 947/93, 949/93, VIT 1004/93, VIT 977/93); 18 (VIT 355/96); 23 (VIT 321/94); 27 (VIT 873/93); 33 (VIT 320/

94).

**Chaetomitrium dusenii* C. Müll. ex Broth.
Corticulous on cocoa tree trunk at 680 m.
26 (VIT 499/94 det.: W.R. Buck 1996. VIT 498/94).

Cyclodictyon vallis-gratiae (C. Müll.) O. Kuntze

Saxicolous or on sands by streams, at 5 m .
16 (VIT 947/93, VIT 979/93).

Lepidopilidium devexum (Mitten) Broth.
Epiphyllous in submontane forest at 1050 m.
31 (VIT 471/94).

**Lepidopilum lastii* Mitten
Corticulous in primary forest between 250 and 1000 m.
22 (VIT 424/94); 33 (VIT 315/94 det.: W.R. Buck 1996).

Leucomium strumosum (Hornsch.) Mitten
Saxicolous on rocks in a clear in the submontane forest at 950 m.
24 (VIT 397/94 det.: W.R. Buck 1996).

Daltoniaceae

Distichophyllum procumbens Mitten
Saxicolous in primary forest at 1100 m.
22 (VIT 442/94).

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