

## A taxonomic revision of the genus *Chionoloma* Dixon (Musci, Pottiaceae) in Africa

Philip Sollman

Notarisappel 2, 9076 LB St. Anna Parochie, The Netherlands

**Abstract:** The African taxa of the genus *Chionoloma* Dixon are revised. Eleven taxa are proposed as new synonyms. Only one taxon is recognized: *Chionoloma bombayense* (Müll.Hal.) P.Sollm.

### Introduction

Some years ago, I published a partial revision of the genus *Pseudosymblepharis* Broth. in Asia (Sollman, 2000). This genus is now treated as a synonym of *Chionoloma* Dixon (Sollman, 2001).

During identification work on African material, I came across essentially the same variation patterns as described for the Asian material (Sollman, 2000), and so that discussion of variable characters, description, habitat and others is not repeated here. This paper should be read in connection with the *Pseudosymblepharis* revision (Sollman, 2000).

All author citations in botanical names follow Brummitt and Powell (1992).

### Material and Methods

In total, about 350 herbarium collections of *Chionoloma* from Africa were studied microscopically. All the material was filed and if necessary annotated. Many specimens were studied from the herbaria at BR, EGR and L.

Selected collections also were examined from several other herbaria: BM, DUIS, GRO, H, and PC. Material was also identified from the following private herbaria: G. Een, N.G. Hodgetts, G. and S. Miede, F. Müller, B.J. O'Shea, R.D. Porley, K. Wesche, M. Wigginton, B.O. van Zanten.

The African taxa described in the genera *Oxystegus* (Limpr.) Hilp., *Tortella* (Lindb.) Limpr., *Trichostomum* Bruch and also some of *Barbula* Hedw., were also checked as it was possible that at least some of them could belong to *Chionoloma*.

The same low percentage (ca 7%) of fruiting plants were seen in the African material (compare Sollman, 2000: 130).

### Taxonomy

The following names are proposed as new synonyms of *Chionoloma bombayense* (Müll.Hal.) P.Sollm. The taxa are placed in chronological order of the original publications.

*Chionoloma bombayense* (Müll.Hal.) P.Sollm., Trop. Bryol. 20: 139. 2001 (*Trichostomum bombayense* Müll.Hal., Syn. Musc. 2: 628. 1851.)

Type: (India) Bombay, herb. Kegelianum no. 10.025 (lectotype H-BR; isolectotype S)

*Symblepharis circinata* Besch., Ann. Sci. Nat., Bot. ser. 6, 9: 308, 1880, syn. nov.

*Trichostomum circinatum* (Besch.) Broth., Nat. Pflanzenfam. 1 (3): 394, 1902.

*Pseudosymblepharis bescherellei* Thér. nom. mut. (*Symblepharis circinata* Besch.), Recueil Publ. Soc. Havraise Etud. Div. 1925: 134, 1926.

*Oxystegus circinatus* (Besch.) Hilp., Beih. Bot. Centralbl. 50 (2): 670, 702, 1933.

Types: Ile de la Réunion, 1875, non fruiting, M.G. de l'Isle... Cafres, PC !; Réunion, s. d., non fruiting, Lépervanche; Grande Comore, non fruiting, May (?) 1870, avec *Anoectangium raphidostegium*, Boivin, PC !

*Symblepharis usambarica* Broth., Bot. Jahrb. 20: 179, 1894, syn. nov.

*Trichostomum usambaricum* (Broth.) Broth., Nat. Pflanzenfam. 1 (3): 294, 1902.

Type: (Tanzania), Usambare Mts, Waldungen, non fruiting, Nov. 1891, C. Holst no. 115 p.p., det. Brotherus, Hb. L, iso!

*Ptychomitrium soulae* Müll.Hal. in Renauld & Cardot, Bull. Soc. Roy. Bot. Belgique 33 (2): 118, 1895, syn. nov.

*Oxystegus soulae* (Müll.Hal.) Wijk & Margad., Taxon 9: 191, 1960.

*Trichostomum soulae* (Müll.Hal. in Renauld & Cardot) R.H.Zander, Genera of the Pottiaceae...: 92, 1993.

Type: Madagascar, Ambositra, Betsileo, non fruiting, 1890, Rev. Soula, Hb. J. Cardot, PC, iso!

*Barbula corticicola* Renauld & Cardot, Bull. Soc. Roy. Bot. Belgique 35 (1): 309, 1897, syn. nov.

*Tortella corticicola* (Renauld & Cardot) Broth. („corticola“), Nat. Pflanzenfam. 1 (3): 397, 1902.

*Trichostomum corticicola* (Renauld & Cardot) Cardot in Grandid., Hist. Madag. 39: 203, 1915.

*Oxystegus soulae* (Müll.Hal.) Wijk & Margad. var. *corticicola* (Renauld & Cardot) Wijk & Margad., Taxon 9: 191, 1960.

*Trichostomum soulae* (Müll.Hal. in Renauld & Cardot) R.H.Zander var. *corticicola* (Renauld & Cardot) R.H.Zander, Genera of the Pottiaceae ...: 92, 1993.

Type: Madagascar, Imerina, ad truncos putridos, non fruiting, 1890, Rev. Camboué, Hb. J. Cardot, PC!

*Leptodontium subintegrum* Broth., Bot. Jahrb. 24: 239, 1897, syn. nov.

*Trichostomum subintegrum* (Broth.) Broth., Nat. Pflanzenfam. 1 (3): 394, 1902.

Type: (Uganda), Africa or., Ru Nssoro, Rwenzori, stones in forest, 7000 - 8600 ft, non fruiting, s. date, Scott Elliott no. 185, det. Brotherus, Hb. H, holo!

*Barbula leptotortella* Müll.Hal., Hedwigia 38: 110, 1899, syn. nov.

*Trichostomum leptotortella* (Müll.Hal.) Broth., Nat. Pflanzenfam. 1 (3): 394, 1902.

*Oxystegus leptotortella* (Müll.Hal.) Hilp., Beih. Bot. Centralbl. 50 (2): 667, 1933.

Type: (Rep. of South Africa), Cape Somerset East, Boschberg, non fruiting, 1878, Mac Owan s.n., Hb. H-Br. no. 42.97.017, iso! Note.

Both Sim (1926) and Magill (1981) treat this taxon as *Oxystegus cylindricus* (Brid.) Hilp. (= *Trichostomum tenuirostre* (Hook. & Taylor) Lindb.). However, the isotype material of *Barbula leptotortella* (above), agrees much better with common states of *Chionoloma bombayense*.

However, the occurrence of true *Trichostomum tenuirostre* (Hook. & Taylor) Lindb. (= *Oxystegus cylindricus* (Brid.) Hilp.) is possible in southern Africa.

See also note 4, below.

- Trichostomum (Oxystegus) circinnatum* Broth. in Voeltzk., Reise Ostaf., Syst. Arbeit. 3: 54 + tafel 8, fig. 4, 1908, syn. nov.
- Pseudosymblepharis circinnatula* (Broth. in Voeltzk.) R.H.Zander, Genera of the Pottiaceae ...: 80, 1993.
- Type: Grande Comoren, Angasidja, Convalescence, 1900 m, non fruiting, 1903, A. Voeltzkow no. 84, Hb. Brotherus, H, holo!
- Trichostomum rhodesiae* Broth., Denkschr. Akad. Wiss. Math.-Nat. (Wien) 88: 735, 1913, syn. nov.
- Oxystegus rhodesiae* (Broth.) Hilp., Beih. Bot. Centralbl. 50(2): 667, 1933.
- Type: (Zimbabwe), Rhodesien, Victoria Falls, Regenwald auf Baumstämmen, non fruiting, 4 Oct. 1909, J. Brunthaler, Hb. Brotherus, H, no. 42.97.014, holo!
- Note.  
This collection was annotated by R.E. Magill in 1980 as „probably a *Tortella*“.
- Trichostomum fragilifolium* Dixon, J. Bot. 68: 117, 1930, syn. nov.
- Type: Kenya colony, Mt. Kenya, near Nanyuki, conifer forest, about 7000 ft, Aug. 1928 (1929), fruiting, A.B. Rendle no. 501, Hb. H.N. Dixon, BM, holo!
- Tortella syrrophodontoides* Dixon, J. Bot. 76: 228 + fig. 8, 1938, syn. nov.
- Pseudosymblepharis syrrophodontoides* (Dixon) R.H.Zander, Genera of the Pottiaceae ...: 80, 1993.
- Type: Kenya, Thika, Chania Falls, non fruiting, 26 Aug. 1929, Priestley & Scott 34-A, Hb. H.N. Dixon, BM, holo!
- Trichostomum perplexum* P.de la Varde, Rev. Bryol. Lichénol. 11: 172 + fig. 1, 1939, syn. nov.
- Type: (Central African Republic), Oubangui, Bocaranga, entre Kolo et Ngam, non fruiting, 16 June 1935, M.J. Eckendorff no. 6519, Hb. R. Potier de la Varde, PC, holo!
- Note 1.  
In the moss flora of Southern Africa (Magill, 1981: p. 256 (text) and p. 257 (plate 11-18)), the linear leaf facies of *Tortella xanthocarpa* is discussed and illustrated. The text and plate here are likely to refer to *Chionoloma bombayense*, judging from the plate only. (The short leaved specimens are the true *Tortella xanthocarpa*.)
- Note 2.  
*Gymnostomum fragilifolium* Dixon in Sim, Trans. R. Soc. S. Afr. 15: 246, 1926, *nom. nud.*  
I have not seen any material bearing this name. This taxon was treated by Wijk *et al.* (1959-1969, 2: 418; 5: 665) as *Trichostomum rhodesiae* Broth. The latter taxon is treated here as *Chionoloma bombayense*.
- Note 3.  
*Trichostomum corticicola* (Renauld & Cardot) Cardot in Grandid., Hist. Madag. 39: 203, 1915, *var. brevifolium* Cardot in Grandid.: 39: 293, 1915, *nom. illeg.*  
I have not seen any collection bearing this name. However, the type material of *Ptychomitrium soulae* in Hb. PC, Hb. J. Cardot (see above) contains a written note on the *var. brevifolium* Cardot, which is unfortunately illegible. The type material of *Ptychomitrium soulae* Müll.Hal., also has a glued sticker on the back side of the packet: „*Oxystegus soulae*“, and Index Muscorum (Wijk *et al.*, 1959-1969, 5: 137) treats *Trichostomum corticicola var. brevifolium* as *Oxystegus soulae* (Müll.Hal.) Wijk & Margad. It is thus here treated as a synonym of *Chionoloma bombayense* (Müll.Hal.) P.Sollm.
- Note 4.  
*Trichostomum tenuirostre* (Hook. & Taylor) Lindb.  
So far I have not seen convincing material of *Trichostomum tenuirostre* (in Magill, 1981 as *Oxystegus cylindricus* (Brid.) Hilp.) from (sub) tropical Africa, although its occurrence is possible. The same can be stated of *Trichostomum tenuirostre* in (sub) tropical countries in Asia.  
See also the note concerning *Barbula leptotortella* Müll.Hal.

Smaller states of *Chionoloma bombayense* are especially difficult to separate from *Trichostomum tenuirostre*. For the differences between the two taxa see especially: Sollman (2000: 142).

### Geographical distribution in Africa

The countries are listed in alphabetical order. The total number of studied collections is given in parentheses.

Cameroon (1); Central African Republic (2); Comoros (17); Ethiopia (10); Guinea (5); Ivory Coast (1); Lesotho (3); Kenya (13); Madagascar (21); Malawi (82); Republic of South Africa (24); Réunion (26); Rwanda (5); Sierra Leone (1); Tanzania (67); Uganda (48); D.R. Congo (Zaire) (28); Zimbabwe (5).

### Acknowledgements

I wish to thank the curators of the herbaria mentioned in the text for making available material. I am obliged to the staff in Hb. Egger (Hungary), and especially to G. Kis and T. Pócs for making available the material housed there. I thank also the private persons mentioned in the text, for sending material for identification. Mrs Y. Slingerland-Janssen is thanked for her secretarial assistance.

### References

- Brummitt, R.K. & Powell, C.E., 1992.** *Authors of Plant Names*. Kew: Royal Botanic Gardens.
- Magill, R.E. 1981.** Bryophyta, Part 1. Mosses, Fasc. 1. Sphagnaceae-Grimmiaceae, in: *Flora of Southern Africa*, ed. O.A. Leistner, Republic of South Africa.
- Sim, T.R. 1926.** The Bryophyta of South Africa. *Transactions of the Royal Society of South Africa* **15**: i-iv, 1-475. (Reprint Ed. 1973.)
- Sollman, P. 2000.** A taxonomic revision of *Pseudosymblepharis* Broth. (Musci, Pottiaceae) in Asia. *Tropical Bryology* **18**: 129-145.
- Sollman, P. 2001.** A new combination in *Chionoloma* Dixon (Musci, Pottiaceae). *Tropical Bryology* **20**: 139.
- Thériot, I. 1926.** Cinquième contribution à la Flore bryologique de Madagascar. *Recueil des Publications de la Société Havraise d'Etudes Diverses* **1925**: 122-151.
- Wijk, R. van der, W.D. Margadant & P.A. Florschütz, 1959-1969.** *Index Muscorum*. Utrecht: IAPT.
- Zander, R.H. 1993.** Genera of the Pottiaceae: Mosses of harsh environments. *Bulletin of the Buffalo Society of Natural Sciences* **32**: i-vi, 1-378.