Bull. Soc. Nat. luxemb., 93 (1992) p. 155-162

New or Interesting Lichenicolous Fungi. 2. *Taeniolella beschiana* sp. nov. and *Taeniolella serusiauxii* sp. nov. (Hyphomycetes)

by

Paul DIEDERICH [1])

Abstract: *Taeniolella beschiana* Diederich sp. nov. is described from Luxembourg where it was collected on *Cladonia*; it differs from the remaining species of the genus by the weakly verruculose, roughened, mostly solitary, 0-1-septate conidia. *Taeniolella serusiauxii* Diederich is described from France where it was collected on *Schismatomma decolorans*, and from Tanzania on an unidentified lichen; it is recognized by the conidia which have a verrucose splitting wall and a granular pigmentation.

This is the second part of a series of papers describing new or interesting lichenicolous fungi. The present contribution deals with two new species of *Taeniolella* s.l. The first species, *T. beschiana*, has been discovered on *Cladonia* in Luxembourg; it is named in honor of Mrs. Céline Besch (Luxembourg, 1922-1991) who passed away recently, in recognition of her merits in the study of the Luxembourg fungi (see Tholl, 1992). The second species, *T. serusiauxii*, has been collected on *Schismatomma decolorans* in France by Dr Emmanuël Sérusiaux (Liège) and on a sterile epiphytic lichen in Tanzania by Prof. Rolf Santesson (Uppsala); it is dedicated to Dr Emmanuël Sérusiaux as an acknowledgement for his precious help to my lichenological studies during the last years, and for allowing me to describe the new species.

[1]) Musée national d'histoire naturelle, Marché-aux-Poissons, L-2345 Luxembourg

Taeniolella beschiana Diederich **sp. nov.** (Figs. 1-2)

Fungus lichenicola. Mycelium immersum, ex hyphis hyalinis vel brunneis, levibus, 2-3.5 µm diam. Conidiophora semi-macronemata, mononemata, erecta, basi ramosa, septata, atrobrunnea, scabrida, 40-50 x 3-5.5 µm. Cellulae conidiogenae monoblasticae, integratae. Conidia solitaria vel catenata, ellipsoidea, 0-1-septata, septis non constricta, brunnea, truncata, levia vel scabrida, 6-10 x 2.5-4.5 µm.

Typus: Luxembourg, Mersch, Fischbach, road to Plankenhof, near the ponds, on a sandy slope at the roadside, on *Cladonia chlorophaea*, 15 xi 1980, Diederich 3480 (LG: holotypus; herb. Diederich: isotypus).

Colonies dispersed, effuse, dark brown to black; mycelium immersed, thin- and smooth-walled, hyaline to brown, 2-3.5 µm in diam. Conidiophores semi-macronematous, mononematous, erect, branched in the lower part, septate, dark brown, with a thick and roughened wall, 40-50 µm long and 3-5.5 µm thick, with one or several proliferations. Conidiogenous cells monoblastic, integrated, 3.5-4.5 µm thick. Conidia solitary or catenate by 2, ellipsoid, 0-1-septate, rarely constricted at the septa, brown, truncated at the base and at the apex, thick-walled, often with a roughened surface, 6-10 x 2.5-4.5 µm.

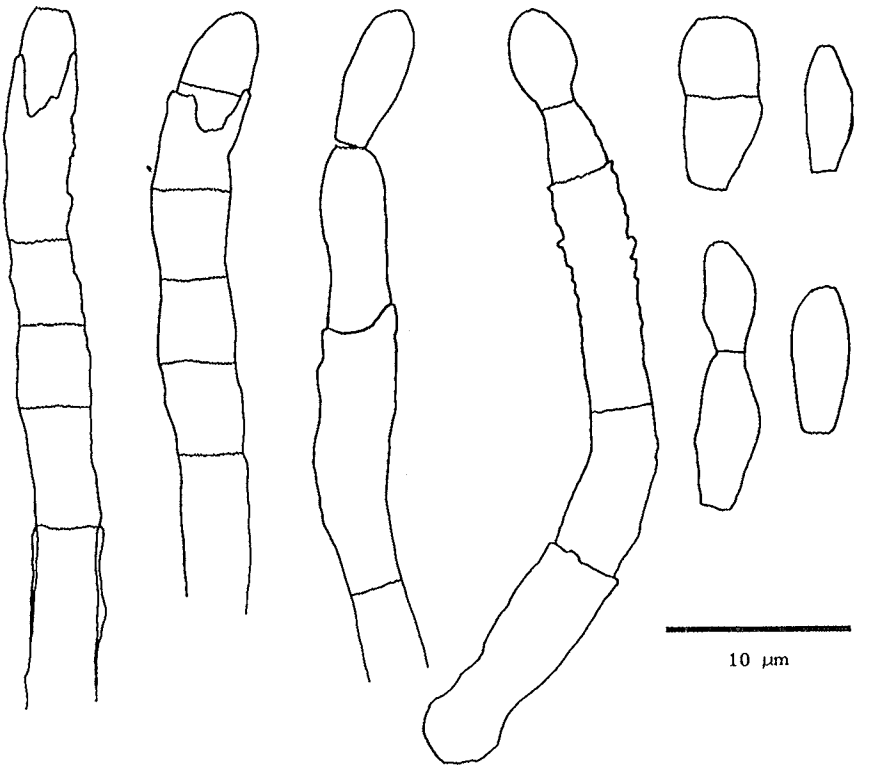

Fig. 1. - *Taeniolella beschiana* (LG - holotype); conidiophores and conidia.

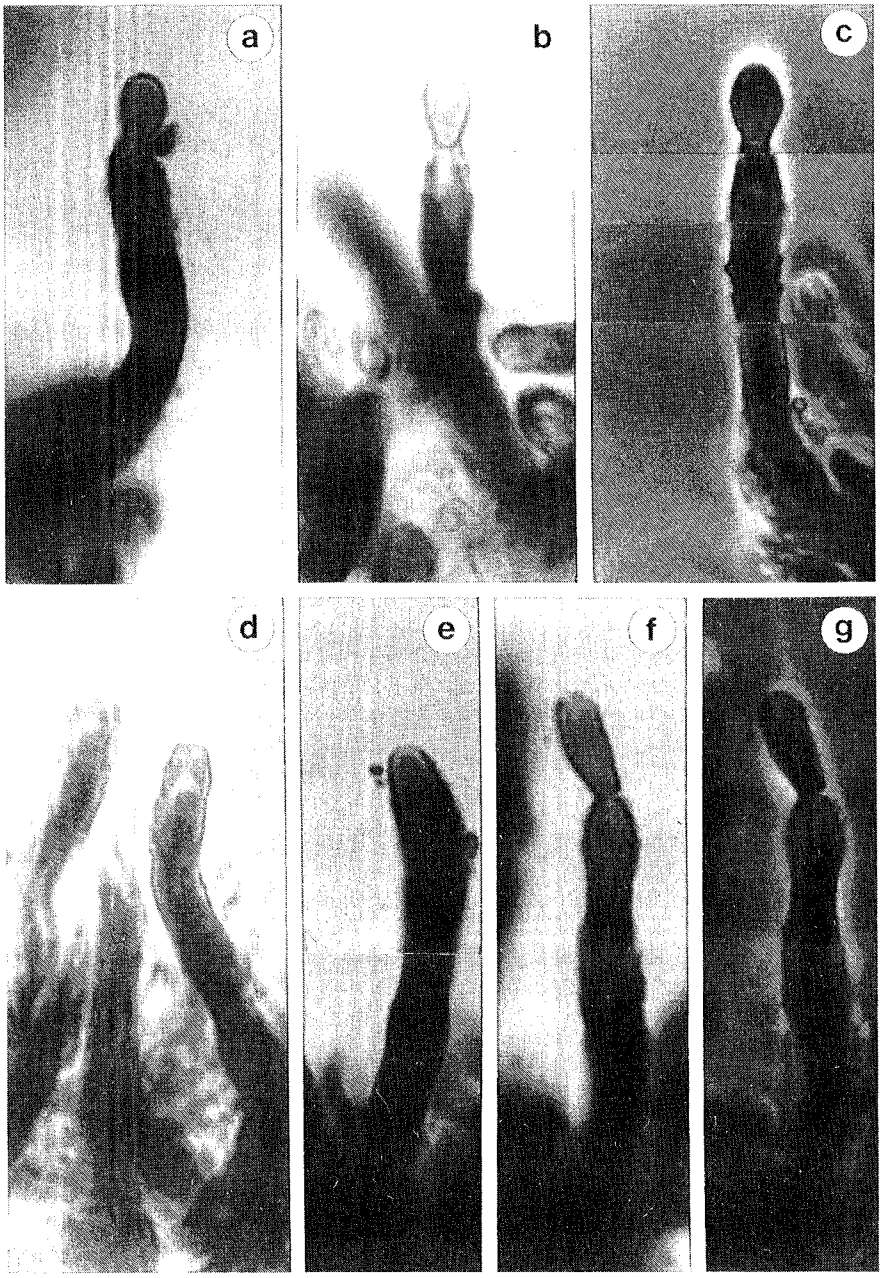

Fig. 2. - *Taeniolella beschiana* (LG - holotype) (x 2000); a-c: conidiophores showing wall remnants from proliferations and young non-septate conidia (c: phase contrast); d: conidiophores with developing conidia; e: conidiophore with developing 1-septate conidium; f-g: conidiophore with mature non-septate conidium, showing verruculose outer wall of conidium and conidiogenous cell (g: phase contrast).

Host: Parasymbiotic or weakly parasitic on the thallus of *Cladonia chlorophaea* s.l. The new fungus is found as well on the podetia as on the squamules (underside and upper side), mainly on the margins.

Distribution: Known only from the type locality in Luxembourg.

Observations: The new species has to be compared with *Taeniolella delicata* M.S. Christ. & D. Hawksw. That species has, however, smooth-walled conidiophores and catenate conidia that are more strongly constricted at the septa (Hawksworth, 1979).

Several lichenicolous *Taeniolella* species have been described with verrucose conidia (Alstrup & Hawksworth, 1990; Diederich, 1990; Hawksworth, 1979). In *T. christiansenii* Alstrup & D. Hawksw., *T. chrysothricis* Diederich and *T. verrucosa* M.S. Christ. & D. Hawksw. the outermost layer of the conidial wall tends to split up, the remaining parts of the wall having a smooth surface. In *T. pertusaricola* D. Hawksw. & H. Mayrh. and *T. trapeliopseos* Diederich the conidial wall disintegrates in much smaller verrucae of 0.5-1.5 µm in diam., giving the surface a coarse appearance. In the new species the conidial wall does not apparently split up, and the wall is only weakly verruculose.

The conidia of *T. beschiana* are solitary or catenate by 2, recalling those of *T. trapeliopseos*, a species with solitary conidia. Both species most probably do not belong to *Taeniolella* s.s. As the genus is still poorly known, and as most probably a large number of lichenicolous species await description in future, description of a new genus for these species, in my opinion, appears to be inappropriate at present.

Taeniolella serusiauxii Diederich **sp. nov.** (Figs. 3-5)

Fungus lichenicola. Mycelium ex hyphis hyalinis vel brunneis, levibus, 1.5-2.5 µm diam. Conidiophora semi-macronemata, mononemata, erecta, basi ramosa, septata, brunnea, verrucosa, 55-80 x 4-5.5 µm. Cellulae conidiogenae monoblasticae, integratae. Conidia catenata, ellipsoidea, (0-)1-septata, septis constricta, brunnea, infirme truncata, verrucosa, cum pariete exteriore findente, 10-16 x 4.5-5.5 µm.

Typus: France, dep. Landes, Thétieu (E of Dax), valley of the Adour, alt. 10-15 m, on *Schismatomma decolorans*, vii-viii 1985, Sérusiaux 7461 (LG: holotypus; herb. Diederich: isotypus). Ibid., Sérusiaux 7462, 7463 (LG: topotypi).

Colonies scattered or aggregated on the surface of the thallus, dark reddish brown; mycelium thin-walled, hyaline to brown, 1.5 - 2.5 µm. Conidiophores semi-macronematous, mononematous, erect, branched in the lower part, septate, brown, with a thick verrucose wall and a distinct granulose inner pigmentation, 55-80 µm long and 4-5.5 µm thick, proliferations not observed. Conidiogenous cells monoblastic, integrated, 4-5.5 µm thick. Conidia catenate, ellipsoid, (0-)1-septate,

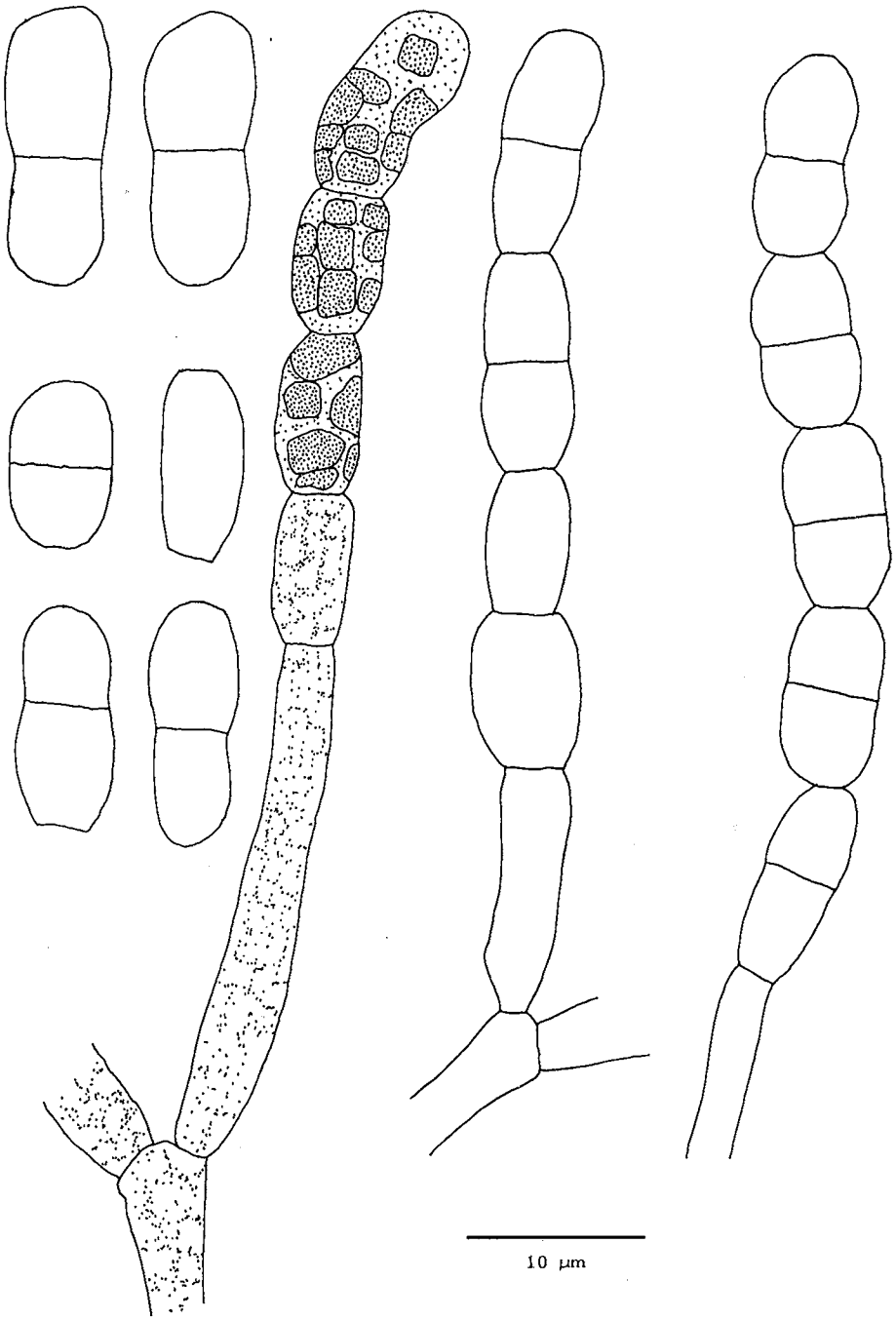

Fig. 3. - *Taeniolella serusiauxii* (LG - holotype); conidiophores and conidia; note the presence of conidiophores with only non-septate conidia and conidiophores with only 1-septate conidia.

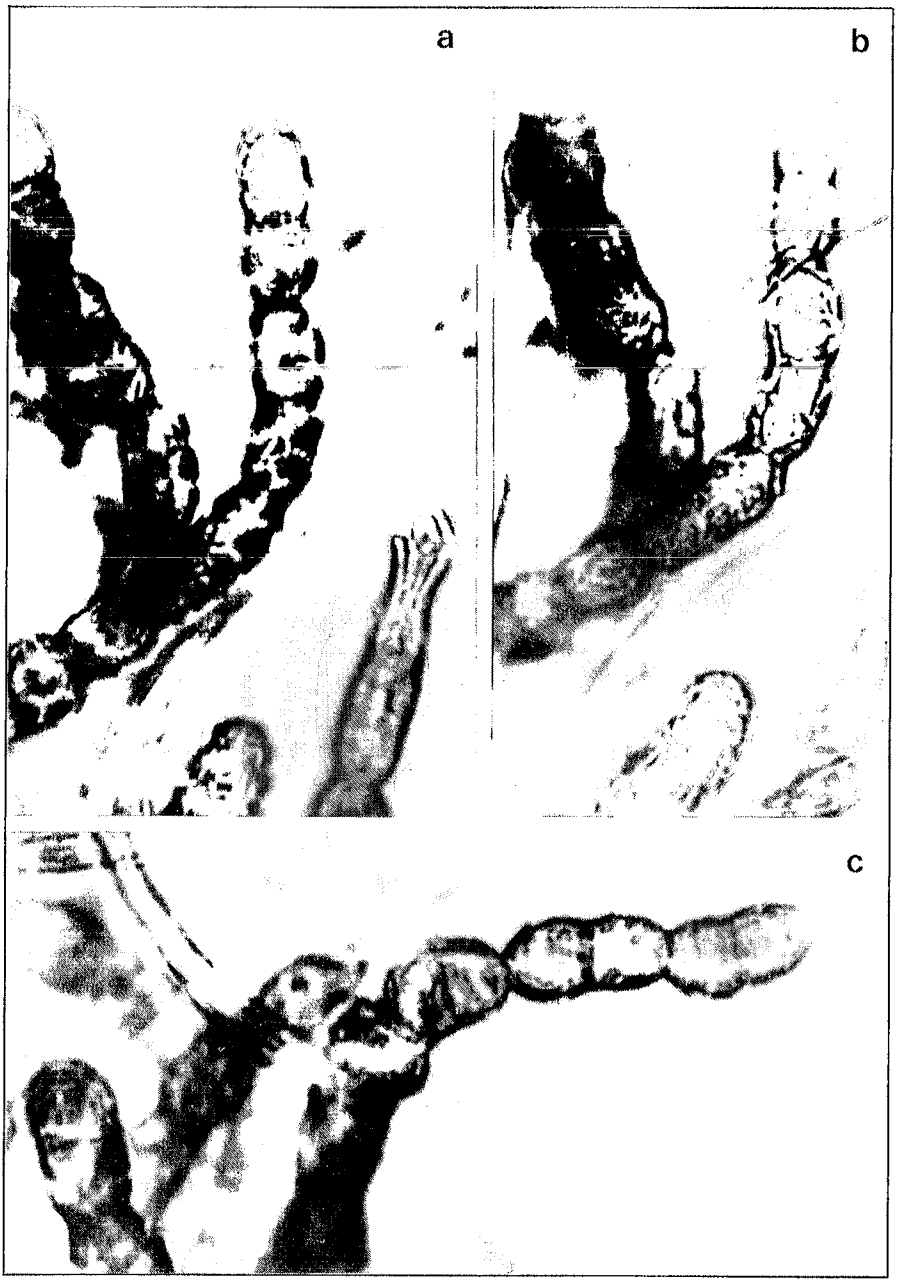

Fig. 4. - *Taeniolella serusiauxii* (LG - holotype) (x 2000); a: conidiophores and conidia, showing large verrucae due to the splitting of the conidial wall; b: same as a, optical section; c: catenate 1-septate conidia.

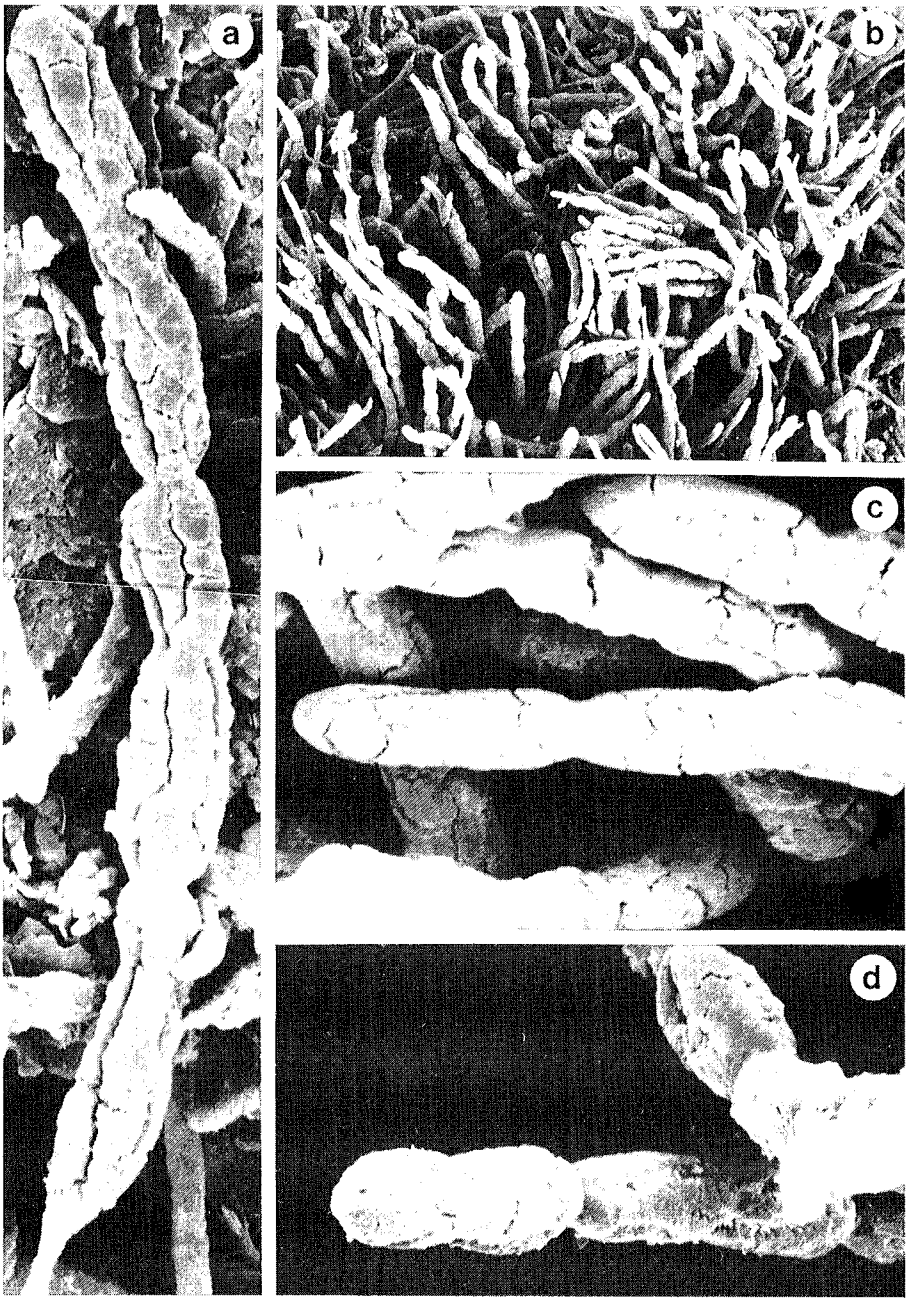

Fig. 5. - *Taeniolella serusiauxii* (LG - holotype); a: conidiophore and conidia (x 3500); b: colony (x 480); c: young conidia showing the splitting of the wall (x 3500); d: old conidia (x 3500). Scanning electron micrographs (air dried).

constricted at the septum, brown, weakly truncated, thick-walled, wall splitting up in large verrucae of 1.5-3 µm, 1-septate conidia 10-16 x 4.5-5.5 µm.

Hosts: The type specimen from France was collected on the thallus of *Schismatomma decolorans* (Turner & Borrer ex Sm.) Clauz. & Vezda. The host of the Tanzania specimen is a white epiphytic crust lichen with *Trentepohlia* as a phycobiont, reacting K-, C-, KC- and PD-.

Distribution: *T. serusiauxii* is known from SW France (type) and from Tanzania.

Observations: The new species strikingly differs from the remaining lichenicolous *Taeniolella* species by the large and thick verrucae resulting from the splitting of the conidial wall, as well as by the distinct granular pigmentation of the conidiophores and conidia. It should be noticed that, under the light microscope, the granular pigmentation can be mistaken for a verruculose ornamentation of the outer conidial wall. Under the scanning electron microscope, these granulose structures cannot be seen, indicating that they are located in the inner part of the conidial wall.

The new species strongly recalls *Cladosporium arthoniae* M.S. Christ. & D. Hawksw., also known from *Schismatomma decolorans* (Diederich, 1989). But in *C. arthoniae* the conidia are only finely verruculose and much smaller (6-10 x 4-5 µm), and the conidiophores are repeatedly branched towards the apex.

Although the Tanzania collection is richer, the French material is here designated as the type, this because the host of this specimen is specifically known.

Additional specimen: Tanzania, Arusha Prov., Mt Meru, E slope, road to the crater, Jekukumia River, alt. 2100-2200 m, 3°14' S, 36°48' E, on *Juniperus procera* by road in a montane forest, 17 i 1970, R. Santesson 21572 (UPS, herb. Diederich).

Acknowledgements

I am much indebted to Prof. Rolf Santesson (Uppsala) and Dr Emmanuël Sérusiaux (Liège) for allowing me to study the material of *Taeniolella serusiauxii* and to Prof. D.L. Hawksworth (Kew) for his comments on the taxonomic position of *Taeniolella beschiana*. Dr Christophe Scheidegger (Birmensdorf, Zurich) is acknowledged for the assistance with the scanning electron microscope. I thank Mr Claude Meisch (Luxembourg) for his comments on the manuscript.

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