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Melastiza (Boud.) comb. et stat. nov.
– a subgenus of the genus *Aleuria* Fuck. emend. nov.
(Discomycetes, Pezizales)

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Moravec J. (1994): *Melastiza* – a subgenus of the genus *Aleuria* (Discomycetes, Pezizales). – Czech Mycol. 47: 237–259

Relations between the genera *Melastiza* Boud. and *Aleuria* Fuck. are discussed. Examination of a number of collections of most species of both genera including the relevant type material has confirmed the opinion that the coloured outgrowths on the receptacles of species of *Melastiza* are not reliable and sufficient for generic delimitation and, as a result, a new emendation of the genus *Aleuria* Fuck. is proposed. The genus is divided into two subgenera: subgen. *Aleuria* and subgen. *Melastiza* (Boud.) comb. et stat. nov. The discussed mutual relations and leading features, especially a variability of the colour and the wall thickness of the excipular hyphae and hyphoid hairs in *Melastiza*, similar shapes of the hyaline hyphae and hyphoid hairs in *Aleuria*, the same type of ascospores and excipular structure, the same carotenoid composition in paraphyses, and the same habitat, are considered an evidence for the generic identity. Reexaminations of the type material (NY,K) of *Peziza cornubiensis* Berkeley et Broome [= *Melastiza cornubiensis* (Berk. et Br.) J. Moravec (1992b)], and the type (K) of *Peziza chateri* W. G. Smith [= *Melastiza chateri* (W. G. Smith) Boud.], have confirmed the identity of both fungi. Consequently, new combinations – *Aleuria cornubiensis* (Berk. et Br.) comb. nov., *Aleuria carbonicola* (J. Mor.) comb. nov., *Aleuria flavida* (Thind et Kaushal) comb. nov., *Aleuria flavorubens* (Rehm) comb. nov., *Aleuria boudieri* (v. Höhnelt in Rehm) comb. nov. and *Aleuria scotica* (Graddon) comb. nov. are proposed. A Nepal collection of *Aleuria rubra* Batra [= *Melastiza rubra* (Batra) Maas Geesteranus] has also been examined. *Aleuria latispora* spec. nov. based on a collection from Central Asia is described as a new species of this subgenus too. Notes on the taxonomy, and descriptions and illustrations of all the taxa including SEM photomicrographs of ascospores accompany the paper.

Key words: *Aleuria*, subgen. *Melastiza*, Pezizales, taxonomy.

Moravec J. (1994): *Melastiza* – podrod rodu *Aleuria* (Discomycetes, Pezizales). – Czech Mycol. 47: 237–259

Jsou diskutovány vztahy mezi rody *Melastiza* Boud. a *Aleuria* Fuck. Na základě studia mnoha sběrů většiny druhů obou rodů byl potvrzen názor, že zbarvené odění zevní části excipula u *Melastiza* není spolehlivým znakem pro rodové rozlišení a závěrem je navrženo nové vymezení rodu *Aleuria*, který je rozdělen do dvou podrodů: subgen. *Aleuria* a subgen. *Melastiza* (Boud.) comb. et stat. nov. Diskutované vzájemné vztahy a rozhodující znaky, zejména variabilita zbarvení a síly stěn hyf a hyfových chlupů excipula u *Melastiza* a podobný tvar hyalinních hyf a hyfových chlupů u *Aleuria*, stejný typ askospor a struktury excipula, identická barviva v paraphyzách a stejná ekologie, jsou považovány za důkazy pro identitu obou rodů. Studium typového materiálu (NY,K) *Peziza cornubiensis* Berk. et Br. [= *Melastiza cornubiensis* (Berk. et Br.) J. Moravec (1992b)],

a typu (K) *Peziza chateri* W. G. Smith [= *Melastiza chateri* (W. G. Smith) Boud.] byla potvrzena identita obou hub. Následně jsou navrženy nové kombinace: *Aleuria cornubiensis* (Berk. et Br.) comb. nov., *Aleuria carbonicola* (J. Mor.) comb. nov., *Aleuria flavida* (Thind et Kaushal) comb. nov., *Aleuria flavorubens* (Rehm) comb. nov., *Aleuria boudieri* (v. Höhnelt in Rehm) comb. nov. a *Aleuria scotica* (Graddon) comb. nov. Byl rovněž studován nepálský nález *Aleuria rubra* Batra [= *Melastiza rubra* (Batra) Maas Geesteranus]. *Aleuria latispora* spec. nov. je popsána jako nový taxon uvedeného podrodu na základě sběru ze Střední Asie. Příspěvek doplňují poznámky k taxonomii, popisy, kresby a mikrofotografie (SEM) askospor.

The establishment of the genus *Melastiza* Boudier (1885) was based on *Humaria miniata* Fuckel [= *Melastiza miniata* (Fuck.) Boud.], a species selected later by Clements and Shear (1931) as the type, and *P. chateri* W.G.Smith [= *Melastiza chateri* (W.G.Smith) Boud.]. Le Gal (1958) confirmed the Seaver's opinion (Seaver 1928) on the identity of the two taxa and the younger *H. miniata* was definitively filed under synonyms of *M. chateri*.

After the examination of the type material (K, S), I can confirm the identity. Moreover, I have found that they are also conspecific with *Peziza cornubiensis* Berk. et Br. [= *Melastiza cornubiensis* (Berk. et Br.) J. Moravec (1992b)]. The genus now comprises several other species and has generally been considered to be closely related to the genus *Aleuria* Boud. The relations between *Melastiza* and *Aleuria* were discussed by Le Gal (1963), Eckblad (1968), Rifai (1968), Mäkinen et Pohjola (1969), J. Moravec (1972), Gamundí (1975), and Häffner (1986, 1993). The taxa of *Melastiza* were summarized by Lassueur (1980) and those of *Aleuria* monographed by Hohmeyer & Häffner in an unpublished manuscript which later appeared in a German version by Häffner (1993).

The carotenoids as a character from the taxonomic viewpoint were studied by Arpin (1968), Arpin et Bouchez (1968), Valadon (1976), Goodwin (1980), and Gill et Steglich (1987). As a result, the carotenoid composition (see below) represents another feature that supports the idea of an identity of these two genera and simultaneously is important for the generic delimitation between the genera *Aleuria* Fuck. and *Sowerbyella* Nannfeldt. The "aleurixanthin", a pigment unique to *Aleuria* and *Melastiza*, has not been found in species of *Sowerbyella*, not even in *Sowerbyella rhenana* (Fuck.) J. Mor. which was previously kept in *Aleuria* due to its orange-red hymenium. In my opinion, the genus *Sowerbyella* is confined to the subfam. Otideoideae Korf (1972) as discussed also in J. Moravec (1988).

Earlier, (J. Moravec 1972), discussing the mutual relation between *Aleuria aurantia* and *Melastiza chateri* and the various habitat of the former, I noted difficulties in the distinguishing these fungi from each other when the old apothecia of the both species are found admixed and growing mutually densely aggregated, as

the coloured hairs on the surface and margin of old apothecia of *Melastiza chateri* (= *M. cornubiensis*) may be very scarce, pale or hyaline, and therefore barely seen. The similarity of older apothecia of these two fungi is surprisingly great, as is the similarity of other features including the apothecial structure and the reticulate apiculate ascospores, which are, in my experience, only slightly smaller in *Aleuria aurantia*. The only difference between these two fungi, and simultaneously the leading character for which they have still been kept in two different genera (and even placed into different tribes), is the presence of coloured hairs in *Melastiza*, whilst those in *Aleuria* are hyaline. I suggested (J. Moravec 1972) that *Aleuria* and *Melastiza* should be merged into one genus. Furthermore, in one recent collection of *Melastiza cornubiensis* (Česká Třebová, Bohemia), I have found the coloured hairs very scarcely present in the marginal excipulum. Instead of them, or admixed, there were bunches of hyaline (whitish when seen with the naked eye) hyphae which were of the same shape as those in *A. aurantia*.

Furthermore, I have found hyaline but thick-walled septate hairs on the surface of the lower part of apothecia of *Aleuria cestricea* (Ell. et Ev.) Seaver, *Aleuria balfour-browniae* Waraitch and *Aleuria dalhousiensis* Thind et Waraitch (type). Such hairs are also described and illustrated by Häffner (1993) for *Aleuria luteonitens* (Berk. et Br.) Gill.

The habitat of species of these genera is extremely diverse. Apothecia of both are often collected among mosses. Häffner (1993) discussed a strong affinity of *A. bicucullata* and *A. cestricea* to mosses and considered them bryophilous species, and I can confirm this observation in species of *Melastiza* too. I have found a strong affinity to moss (*Brachythecium* sp.) in *A. latispora*, described below as a new species of the subgen. *Melastiza*. I found moss cells of thalli and rhizoids in the excipular cells near the base. The type species *Aleuria aurantia* was found by me on extremely diverse substrates, e.g. amongst dense moss (*Polytrichum*) in a spruce forest, but also on bare sand at edges of ponds in the company of *Melastiza cornubiensis*, and on soil mixed with cow dung associating with coprophilous discomycetes, and even on a heap of sawdust mixed with cow dung seemingly without any moss. Similarly, I have collected *Aleuria cestricea* on pig dung.

However, the bryophile habitat is evident and association with mosses (*Polytrichum* sp., *Bryum* sp., *Atrichum* sp., *Brachythecium* sp., *Dicranella* sp., *Fissidens* sp.) or their protonemata has been proved in all collections of *Aleuria* and *Melastiza* that I reexamined.

Examination of a number of collections of many species of both genera including the relevant type material has confirmed the opinion (J. Moravec 1972) that the coloured outgrowths on the receptacles of species of *Melastiza*, which has been the only feature distinguishing Boudier's genus from *Aleuria* are not reliable and

sufficient for generic delimitation, and that the genus *Melastiza* should be merged with *Aleuria* under the older generic name given by Fuckel.

Analogically, a similar situation exists in several other genera, such as *Neottiella* (Cooke) Sacc. versus *Octospora* Hedw., and *Coprobria* Boud. versus *Cheilymenia* Boud. The true hairy apothecia of *Neottiella helieri* Boud. bearing pointed setae, as well as the apothecia of *Neottiella rutilans* (Fr.) Dennis and several other species bearing hyphoid hairs or merely hyphae, is not considered a valuable feature for generic delimitation between the genera *Neottiella* and *Octospora* (see Dennis & Itzerot 1973 and Caillet et Moyne 1987a, 1987b). The species possessing hairy apothecia now form the section *Neottiellae* Caillet et Moyne of the genus *Octospora*, as all other features fit the genus well. Similarly, hairless apothecia of species of the genus *Coprobria* cannot be considered a reliable feature for generic separation. The species which bear hyaline hyphae or hyphoid hairs possess all other features that are characteristic of several other species of the genus *Cheilymenia* as emended by Moravec (1992a), and therefore merely form a section *Coprobriae* of the genus.

The above mentioned variability of the colour of the hairs in *Melastiza*, which are of a similar shape as the hyaline hyphae in *Aleuria*, the fact that such hyaline hyphae also occur on the excipular surface or even in the margin of apothecia of *Melastiza*, the same type of ascospores and excipular structure, the same habitat, and the same carotenoid composition of the main pigments (β -carotene, γ -carotene, and especially a mixture of aleuriaxanthene esters unique to *Aleuria* and *Melastiza*), represent an evidence for the generic identity.

Consequently, I consider the species of *Melastiza* natural members of the genus *Aleuria*. However, I propose, partly for reasons of tradition, to accommodate species of the former in a separate subgenus of the latter, and thus establish two subgenera – subgen. *Aleuria* and subgen. *Melastiza* of the genus *Aleuria*:

Family **Pyronemataceae** Corda emend. Korf,
 subfamily **Scutellinioideae** Clements emend. Korf,
 tribe **Aleurieae** Seaver emend. Korf,
 genus ***Aleuria*** Fuckel emend. nov.

Basionym: *Aleuria* Fuckel, Jb. Nassau. Ver. Naturk. 23-24: 325, 1870. (= *Aleuria* (Fr.) Gill., Champ. Fr. Discom. 30, 1879 p.p.).

Apothecia e magnitudine mediocre sat magna, rarius minuta, (3-90 mm in diam.) sessilia, solitaria vel gregaria, patellaria usque explanata, orbicularia denique saepe undulata, extus albido-aurantiaca vel pallide rubra, indistincte et breviter albo-subtomentosa vel fusco-floccosa vel subglabra (oculo nudo observata), hyphis et pilis fasciculatis, hyphoideis (pseudopili) brevibus, clavatis, vel longis et sursum attenuatis vel apice obtusis, hyalinis vel luteo-fuscis vestita; hymenio luteo-aurantiaco, aurantiaco, aurantiaco-rubro, rubro-miniato, lateritio, roseo-rubro usque coccineo. Excipulum externum e textura globuloso-angulari usque angulari, excipulum inter-

num (medulla) e textura angulari-intricata, usque intricata, subhymenium e textura intricata cellulis angularibus vel irregulariter formatis mixta. Asci cylindracei, octospori, non amyloidei. Ascosporae ellipsoideae, guttulis binis (vel guttula unica) instructae, sculpturatae; sculptura sporarum e costis et spinis irregulariter formatis vel reticulum irregularem vel regularem formans, vel e pustulis rotundatis saepe connectis constat; spinae, costae et pustulae ad polis incrassatae et longiores, saepe apiculus formatibus. Paraphyses filiformes, septatae, rectae, apice incrassatae vel clavatae, granulis aurantiaci impletae (pigmento β -caroteno, γ -caroteno, et aleuriaxantheni aesthero).

Habitat: ad terram humidam arenosam, humosam, argillaceam, muscosam, inter muscos (*Polytrichum* sp., *Bryum* sp., *Dicranella* sp., *Brachythecium* sp., *Fissidens* sp., *Atrichum* sp.), vel solo oculo nudo nudam sed inter muscos minutos vel inter protonemata, vel ad sedimenta in arvis, rarius ad terram stercoratum et in stercore accumulato (sed etiam inter protonemata) ad ripas piscinarum, rivularum, in silvis, arvis, hortis, in vicinitate pagorum etc.

Species typica: *Peziza aurantia* Pers.: Fr.

Subgen. I. *Aleuria*

Apothecia extus et marginemque hyphis vel pilis hyphoideis (parietibus tenuibus vel incrassatis), hyalinis, vestita.

Species typica:

Peziza aurantia Pers., Obs. mycol. 2: 76, 1799 = *Peziza aurantia* Pers.: Fries, Syst. mycol. 2: 49, 1822).

= *Aleuria aurantia* (Pers.: Fr.) Fuckel, 1870. Species ceterae: *A. balfour-browneae* Waraith, *A. bicucullata* Boud., *A. cestricea* (Ell. et Ev.) Seav., *A. dalhousiensis* Thind et Waraith, *A. congrex* (Karst.) Svr., *A. exigua* Rifai, *A. luteonitens* (Berk. et Br.) Gill., *A. murreeana* Ahmad.

Subgen. II. *Melastiza* (Boud.) comb. et stat. nov.

Basionym: *Melastiza* Boudier, Bull. Soc. Mycol. France 1: 106, 1885.

Apothecia extus et marginemque hyphis et pilis hyphoideis (parietibus tenuibus vel saepe incrassatis), hyalinis vel saepe luteo-brunneis vestita.

Species typica: *Humaria miniata* Fuckel, Jb. nassau. Ver. 29-30: 32, 1875. [= *Peziza cornubiensis* Berkeley et Broome, = *Melastiza cornubiensis* (Berk. et Br.) J. Mor. = *Melastiza chateri* (W.G.Smith) Boudier, = *Peziza chateri* W.G.Smith, = *Aleuria cornubiensis* (Berk. et Br.) J. Mor.]

Species ceterae: *A. carbonicola* (J. Mor.) J. Mor.; *A. latispora* J. Mor.; *A. flavida* (Thind et Kaushal) J. Mor.; *A. rubra* Batra; *A. flavorubens* (Rehm) J. Mor.; *A. boudieri* (v. Höhnelt in Rehm) J. Mor.; *A. scotica* (Graddon) J. Mor.;

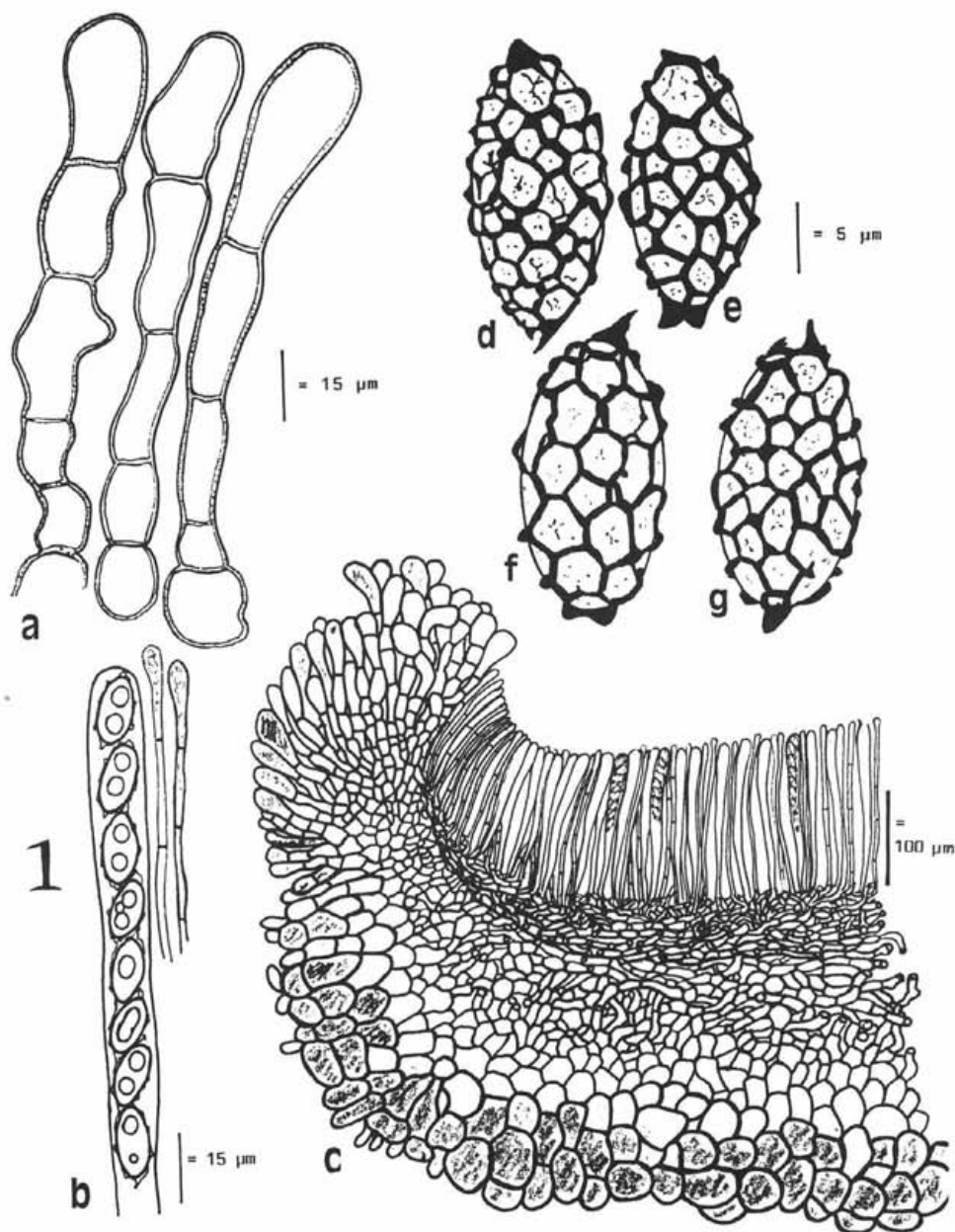


Fig. 1 *Aleuria* subgen. *Melastiza*: *Aleuria cornubiensis* (Berk. et Br.) J. Mor. - a. hairs, b. ascus and paraphyses (parts), c. median section of margin (holotype K); d - g. ascospores (oil immersion + CB): d. holotype (K), e. isotype (NY), f. type of *Peziza chateri* (K), g. type of *Humaria miniata* (S).

1. *Aleuria cornubiensis* (Berk. et Br.) comb. nov.

Basionym:

Peziza cornubiensis Berkeley et Broome, Ann. Mag. Nat. Hist. ser. 2, 13: 463, (n.767), 1854.

Synonyms:

- ≡ *Neottiella cornubiensis* (Berk. et Br.) Saccardo, Syll. Fung. 8: 190, 1889.
- ≡ *Lachnea cornubiensis* (Berk. et Br.) W. Phillips, Brit. Discom. 2, p. 229, 1893.
- ≡ *Cheilymenia cornubiensis* (Berk. et Br.) Le Gal, Rev. Mycol. 18: 82, 1953.
- ≡ *Melastiza cornubiensis* (Berk. et Br.) J. Moravec, Mycotaxon 44: 68, 1992
- = *Peziza chateri* W.G. Smith, Gard. Chron. 1872: 9, 1872
- ≡ *Humaria chateri* (W.G. Smith) Rehm, Ascomyceten exs. No 455, 1878.
- ≡ *Leucoloma chateri* (W.G. Smith) Saccardo, Michelia 1: 69, 1879.
- ≡ *Lachnea chateri* (W.G. Smith) Rehm, Discom. Ascom. Hyst. in Rabenh. Krypt. Fl. 1 (3): 1059, 1895.
- ≡ *Melastiza chateri* (W.G. Smith) Boudier, Hist. Class. Discom. Eur. p. 64, 1907.
- = *Humaria miniata* Fuckel, Jb. Nassau. Ver. 29/30: 32, 1875.
- ≡ *Lachnea miniata* (Fuck.) Gillet, Champ. Fr. Discom. p. 210, 1886.
- ≡ *Ciliaria miniata* (Fuck.) Patouliard, Tab. Anal. Fung. p. 276, 1884.
- ≡ *Scutellinia miniata* (Fuck.) Lambotte, Fl. Mycol. Belge, Suppl. 1: 300, 1887.
- ≡ *Melastiza miniata* (Fuck.) Boudier, Hist. Class. Discom. Eur. p. 32, 1907
- = *Ciliaria rubicunda* Quélet, Champ. Jur. Vosg. In C.R. Ass. franc. Av. Sc. 14 (2): 451, 1886, Grenoble.
- ≡ *Lachnea rubicunda* (Quélet.) Saccardo, Syll. Fung. vol. 8: 177, 1889.
- ≡ *Melastiza rubicunda* (Quélet.) Boudier, Hist. Class. Discom. Eur. p. 64, 1907.
- [Non *Peziza chateri* W.G. Smith sensu Phillips, *Elvellacei Britannici* 58, 1874; nec *Melastiza chateri* (W.G. Smith) Boud. sensu Grelet, Rev. Mycol. 7: 22, 1942 = *A. flavorubens* (Rehm) J. Mor.]

Apothecia (5-)8-20(-28) mm in diam., scattered, gregarious to densely crowded, sessile, at first subglobose, becoming cupulate, expanding to shallowly cupulate and becoming plane, regular in outline but becoming often irregularly undulate, lobed, split, or unequally sided due to mutual pressure. Hymenium orange-red or bright red to nearly scarlet or vermilion with a pink tinge, in some collections the colour is vermilion, without any orange tinge, or brick-red, rarely pale orange, especially in old apothecia. Receptacle paler than the disk but dotted towards the margin by minute bunches of brown obtuse hairs and hyphae. The bunches are denser at the margin and are common and usually dark coloured in young apothecia (though hyaline hyphae and hyphoid hairs are also present), becoming paler, scarce, and hardly visible, or even missing when the apothecia are old; the hyphae towards the base are pale and longer and attach the substrate. Excipulum indistinctly differentiated into three layers (well seen when stained with CB): the

ectal layer 150-180 μm thick, textura globulosa-angularis – composed of mostly rectangular, rarely subglobose, pale brownish coloured cyanophilic cells which measure 20-75(-90) μm in diam. but are smaller and more angular towards the margin of the apothecia where hyaline to pale brownish, septate, obtuse hyphae and hairs arise from these cells. The hairs are thick-walled (the walls being 0.5-3(-4.5) μm thick), septate (consisting of 3-5 articles), clavate and obtuse at their tips, 80-160(-200) x 10-18(-24) μm . The medullary layer indistinctly differentiated, 180-220 μm thick, textura angularis composed of hyaline angular cells which measure 9-40 μm in diam., towards the subhymenium gradually changing into a textura angularis-subintricata to intricata composed of smaller hyaline cells and hyphae 9-18 μm thick. Subhymenium 100-115 μm thick, textura intricata composed of hyaline cyanophilic interwoven hyphae which are 6.5-9 μm thick and intermixed with small cells of an indefinite shape. Asci operculate, 180-300 x 10.5-15 μm , cylindrical, gradually attenuated towards the base, non-amyloid, eight-spored. Ascospores ellipsoid, hyaline, (14-)15-21(-22) x (7.5-)8.5-10.8(-11.2) μm (ornamentation excluded), biguttulate, covered by a rather regular coarsely raised reticulum; the ribs are 0.3-1(-1.5) μm thick and protrude the ascospore outline with spiny to hood-like projections and form irregular, 1-2.7(-3.5) μm high apiculi on the ascospore poles. Paraphyses filiform, 2.7-3 μm , apex slightly or rarely distinctly enlarged at the top (4-8 μm), containing orange granules.

Material examined:

Holotype: K, labelled: "*Peziza cornubiensis* Berk. et Br., on manured ground (no date and locality), ex Herb. Myc. Berkeleyanum presented by the Rev. M. J. Berkeley 1879". The type material consists of one dried apothecium which measure 15 mm in diam. and is glued on the label; the colour of this dried apothecium is brown with a pink-orange tinge; The type locality is Cornwall (=Cornubia, the Latin name of Cornwall), Great Britain.

Isotype: NY, labelled: "*Neottiella cornubiensis* (Berk. et Br.) – portion of type, Herb. Bronx, The New York Botanical Garden from the Herbarium of G. Massee purchased 1905". The isotype material consists of fragments of one apothecium which measured about 10 mm in diam., and is accompanied by a coloured picture.

Other collections examined:

Great Britain: England, Cambridge, on road-earth, December 1871, leg. J. J. Chater (K – type of *Peziza chateri* W.G. Smith);

Austria: Ca. Hattenheim, ad terram humidam, rarissime, (sin. dat.), Fungi Rhen. No 2688 (S – isotype of *Humaria miniata* Fuck.).

Czech Republic: Bohemia b., Křineč-Nová ves prope Kněžmost, districtus Mladá Boleslav, ad terram humidam arenosam inter muscos (*Bryum* sp.) in societate *Aleuriae aurantiae* ad ripam piscinae, 2. X. 1966, leg. et det. J. Moravec (J. Mor.); Bohemia, Branžež-Kněžmost prope Mnichovo Hradiště, districtus Mladá Boleslav,

ad terram humidam nudam stercoratum in campo otioso sub: *Tussilago*, *Arctium*, *Rumex*, 29. 10. 1988, leg. et det. J. Moravec (J. Mor.); Bohemia, Loučeň, district. Nymburk, ad terram humidam in sedimento in arvo (ager raparum), 5.X. 1967, leg. Jan Sobotka, det.: J. Moravec (J. Mor.); Bohemia, Česká Třebová, ad terram humidam calcaream inter muscos in pago, 14. X. 1986, leg. Kamil Moravec, det. J. Moravec (J. Mor.); Moravia, Brno – horto publico "Lužánky", ad terram humidam argillaceam nudam sub gramina, 21. IX. 1989, leg. et det. J. Moravec (J. Mor., CUP); Moravia, Uničov prope Olomouc, ad terram humidam in sedimento et sordes in agro (ager raparum) inter protonemata muscorum, 9. XI. 1968, leg. Jaroslav Kupka, det. J. Moravec (J. Mor.); Moravia, Košovy-Rajnochovice, prope Bystřice pod Hostýnem, ad terram humidam viae silvaticae inter muscos, 23. IX. 1976, leg. Alois Vágner, det. J. Moravec (J. Mor.); Moravia, Soběšice prope Brno, ad terram humidam ad viam in silva, 10. VI. 1973, leg. Alois Vágner, det. J. Moravec (J. Mor.); Moravia, Arboretum Křtiny prope Brno, ad terram humidam in prato silvatico, 16. X. 1984, leg. et det. J. Moravec (J. Mor.);

M. cornubiensis is a common discomycete in Europe. It has been collected by me in Czech republic and in Slovakia many times. I can confirm the variability of the colour of the apothecia, which range from orange through vermilion (often with a ping tinge) to scarlet. The colour and density (or even occurrence) of the apothecial marginal hairs is also extremely diverse (see discussion above), as is the habitat of this fungus. It usually fructificates on sandy soil often amongst dense or small mosses (*Polytrichum* sp., *Bryum* sp.) frequently associated with *Aleuria aurantia* (Pers.:Fr.) Fuck., but also on seemingly bare loamy or clayey, soil but in fact always in the association with low, barely seen mosses or protonemata.

As was discussed previously (J. Moravec 1992b), *Cheilymenia cornubiensis* (Berk. et Br.) Le Gal was excluded from the genus *Cheilymenia* Boud., and a new combination, *Melastiza cornubiensis* (Berk. et Br.) J. Mor., was proposed. Both portions of the type material (K holotype, NY isotype) of *P. cornubiensis* Berk. et Br. represent the same fungus and possess features that are all identical to those of the type collection (K) of *Peziza chateri* W.G. Smith [= *Melastiza chateri* (W.G. Smith) Boud.] and of the type of *Humaria miniata* Fuck. (S) which have also been examined. The older name *P. cornubiensis* has priority, and, consequently after the new emendation of Fuckel's genus, the taxon is transferred here to the genus *Aleuria*. This is quite a surprising result, as the fungus has been commonly considered a member of *Cheilymenia* after the Le Gal's erroneous classification which resulted in the recombination of *P. cornubiensis* as *Cheilymenia cornubiensis* (Berk. et Br.) Le Gal (1953). As was discussed in J. Moravec (1992b), the features which are characteristic of a *Melastiza* sp. were recognizable even from the original diagnose and clear also from the redescription of *Peziza cornubiensis* in Cooke (1879), Phillips (1887) under the generic name *Lachnea*, and under *Neottiella* in Masee (1896).

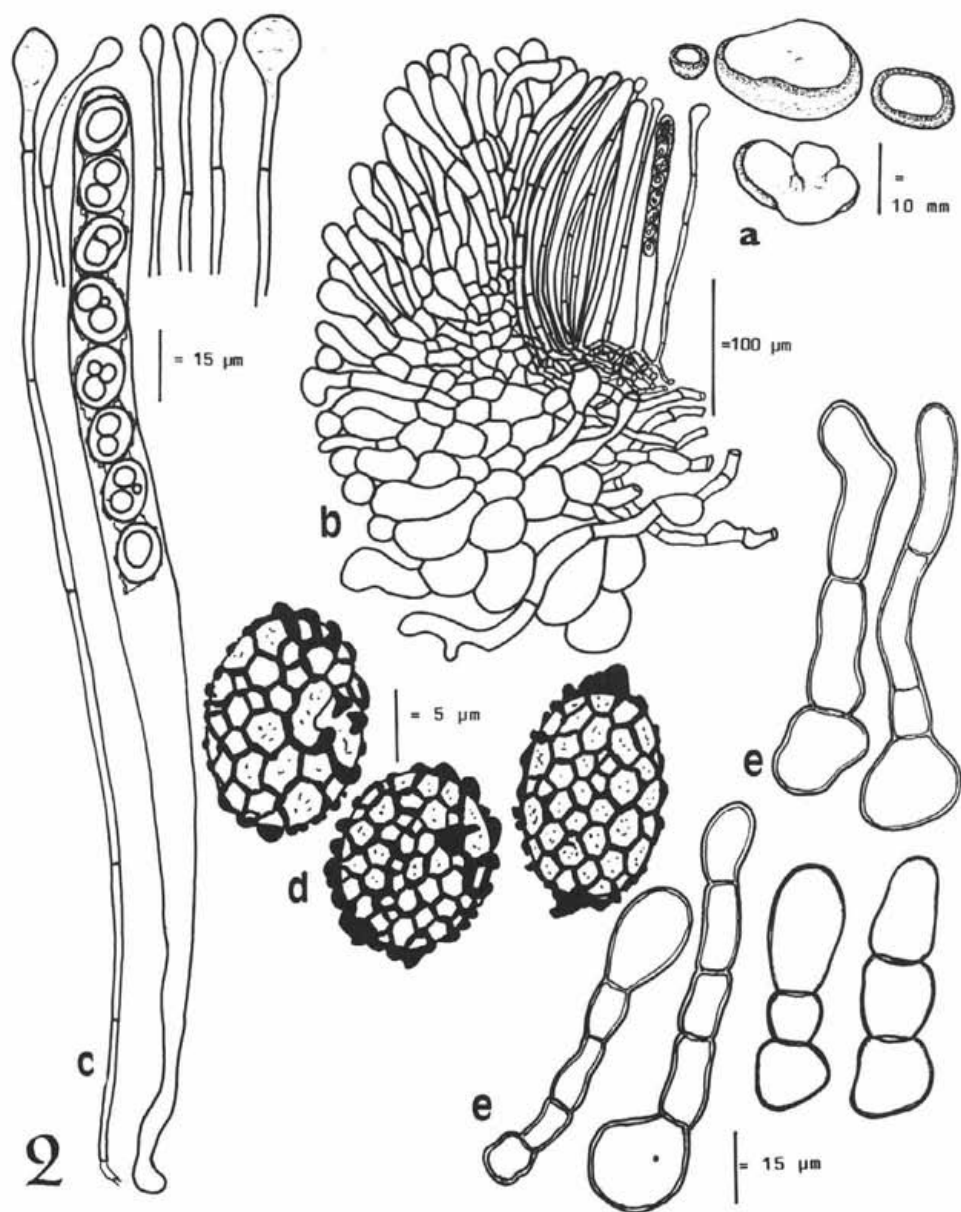


Fig. 2 *Aleuria* subgen. *Melastiza*: *Aleuria latispora* spec. nov. – a. apothecia, b. median section of marginal part, c. ascus and paraphyses, d. ascospores (oil immersion + CB), e. hairs (Holotype PRM).

2. *Aleuria latispora* spec. nov.

Apothecia 3-20 mm diam., sessilia, gregaria, leniter patellaria, dein discoidea usque pulvinata, orbicularia denique saepe undulata, margine integro, hymenio pulchre miniato-rubro vel cinnabarino, extus pallide rubeola, margineque primum minute pallide fusco-floccosa, dein subglabra. Excipulum externum e textura globuloso-angulari usque angulari e cellulis subglobosis vel angularis, luteo-fuscis, margineque hyphis et pilis (pseudopili) brevibus, septatis, dense fasciculatis, hyalinis vel luteo-fuscis clavato-terminatis. Pseudopili 60-150 x 8-16(-25) μm , hyphoidei, septati, (2-4 cellulares), apice clavati, late rotundati, tenuiter tunicati (parietibus 0.5-1.5 μm crassis), hyalini vel luteo-fusci. Excipulum internum (medulla) e textura angulari-intricata, usque intricata. Subhymenium e textura intricata cum cellulis angularibus vel irregulariter formatis commixta. Asci 240-270 x 10.5-15.5 μm , cylindracei, deorsum sensim attenuati, octospori, non amyloidei. Ascosporae rotundato-ellipsoideae, 12-15 (-16) x 9-10.8 (-11.2) μm (saepe subglobosae, 12 x 10.5 μm , vel late ellipsoideae et 15 x 10.8 μm ornamento excluso), guttulis binis maioribus vel guttula unica magna instructae, irregulariter vel saepe regulariter reticulatae, ad polis breviter apiculatae. Paraphyses filiformes, 1.5-2.5 μm diam, septatae, rectae, apice clavatae vel saepe valde rotundato-incrassatae (6-12 μm), granulis aurantiacis impletas.

Habitat: Ad terram humidam stercoreatam viae silvaticae (*Picea schrenkiana*) et inter muscos (*Brachythecium* sp.), Asia centralis, Kazachstan, montes Zailijskij Ala-Tau, Kastroj prope Talgar (alt. 1500 m), districtus Alma-Ata, 7.VIII. 1979 leg. Jiří Moravec. Holotypus in PRM, Isotypus in CUP, BRNM et J. Mor. asservantur.

Apothecia 3-20 mm diam., sessile, gregarious, shallowly cupulate, than becoming discoid to pulvinate, rounded or often undulate with a continuous margin, hymenium bright-red with a pink tinge, vermilion to brick-red (without any orange tinge); outer surface paler, dotted towards the margin by minute bunches of dense pale to brownish hyphoid hairs which are visible especially in young apothecia giving the marginal part of the receptacle a brownish pruinose appearance and are barely visible on the surface of older apothecia. Ectal excipulum textura globulosa-angularis to angularis, composed of subglobose or angular, often yellow-brown cells which measure 15-65(-100) μm in diam., in the marginal part gradually changing into fascicles of hyaline hyphae or hyaline or yellow-brownish hyphoid hairs. Hairs (pseudopili) 60-150 x 8-16(-25) μm , hyphoid, densely arranged in short bunches, articulated or septate (consisting of 2-4 articles), clavate and obtuse above, thin-walled (the walls 0.5-1.5 μm thick), arising from the cells of the ectal excipulum, hyaline or yellow-brownish. Medullary layer indistinctly differentiated, as the angular cells are passing into interwoven hyphae forming a textura angularis-intricata to intricata, the cells being 10-15 μm in diam., the hyphae 6-15 μm thick. Hypothecium composed of densely interwoven hyphae which are intermixed with

small globose or indefinitely shaped cells. Asci 240-270 x 10.5-15.5 μm , cylindrical, gradually attenuated towards the base, eight-spored. Ascospores 12-15 (-16) x 9-10.8 (-11.2) μm , (ornamentation excluded), often subglobose and measuring 12 x 10.5 μm , but also wide ellipsoid, 15 x 10.8 μm , containing one large or more usually two oil globules possessing a perisporium which is covered by an almost regular and rather coarse reticulum (of the same type as that in *A. aurantia* and *A. cornubiensis*), the ribs of the reticulum being 0.3-1.2(-1.5) thick and protruding the ascospore outline, forming short, 1-2.5 μm high, irregular, usually blunt apiculi on the ascospore poles. Paraphyses filiform, 1.5-2.5 μm thick, septate, straight, usually enlarged to 6-10.5(-12) μm at their clavate or often conspicuously wide rounded tips, containing orange granules.

Holotype: Central Asia, Kazachstan, Zailijskij Ala-Tau mountains, Kastroj near Talgar (alt. 1500 m.), Alma Ata env., on soil manured with horse dung and amongst moss (*Brachythecium* sp.), on a path in spruce forest (*Picea schrenkiana*), 7. VIII. 1979 leg. J. Moravec. Holotype PRM, Isotypes in BRNM, CUP et J. Mor.

A. latispora is a typical member of the subgenus *Melastiza* and is closely related to the type species *A. cornubiensis*. However, the new species is distinguished by the different size and shape of its broad or subglobose ascospores which bear shorter and usually obtuse apiculi on the ascospore poles, and by the conspicuously enlarged paraphyses which often possess a large bulbous apex. Moreover, its apothecia bear shorter, thin-walled, and usually articulated hyphae or hairs (pseudopili). After the examination of a great number of collections of species of *Aleuria* subgen. *Melastiza*, especially those of *A. cornubiensis*, taking into account their variability, I consider *A. latispora* a good independent species. The classification of our fungus as a separate, well-founded species corresponds to the mutual differences which delimit all other taxa of the genus. The new species was collected during an excursion of naturalists to the mountains of Central Asia in 1979 and is known only from the type locality.

3. *Aleuria carbonicola* (J. Mor.) comb. nov.

Basionym: *Melastiza carbonicola* J. Moravec, Čes. Mykol. 26: 78, 1972.

For detailed descriptions see J. Moravec (1972) and Blank et Dougoud (1991).

The species was described 22 years ago from a burnt place in Bohemia. Recently, it was reported and illustrated by Blank et Dougoud (1991) from a burnt place and also from soil in Switzerland. Besides the Swiss collections, I have examined many other collections from the Czech Republic, mostly from mossy soil. *A. carbonicola* is not an entirely carbonicolous species and is not strictly confined to burnt substrates but actually to moss (*Dicranella* sp. and probably other mosses).

The species can be especially distinguished by the ascospore ornamentation which consists of a much coarser and mostly irregular reticulum which is formed by

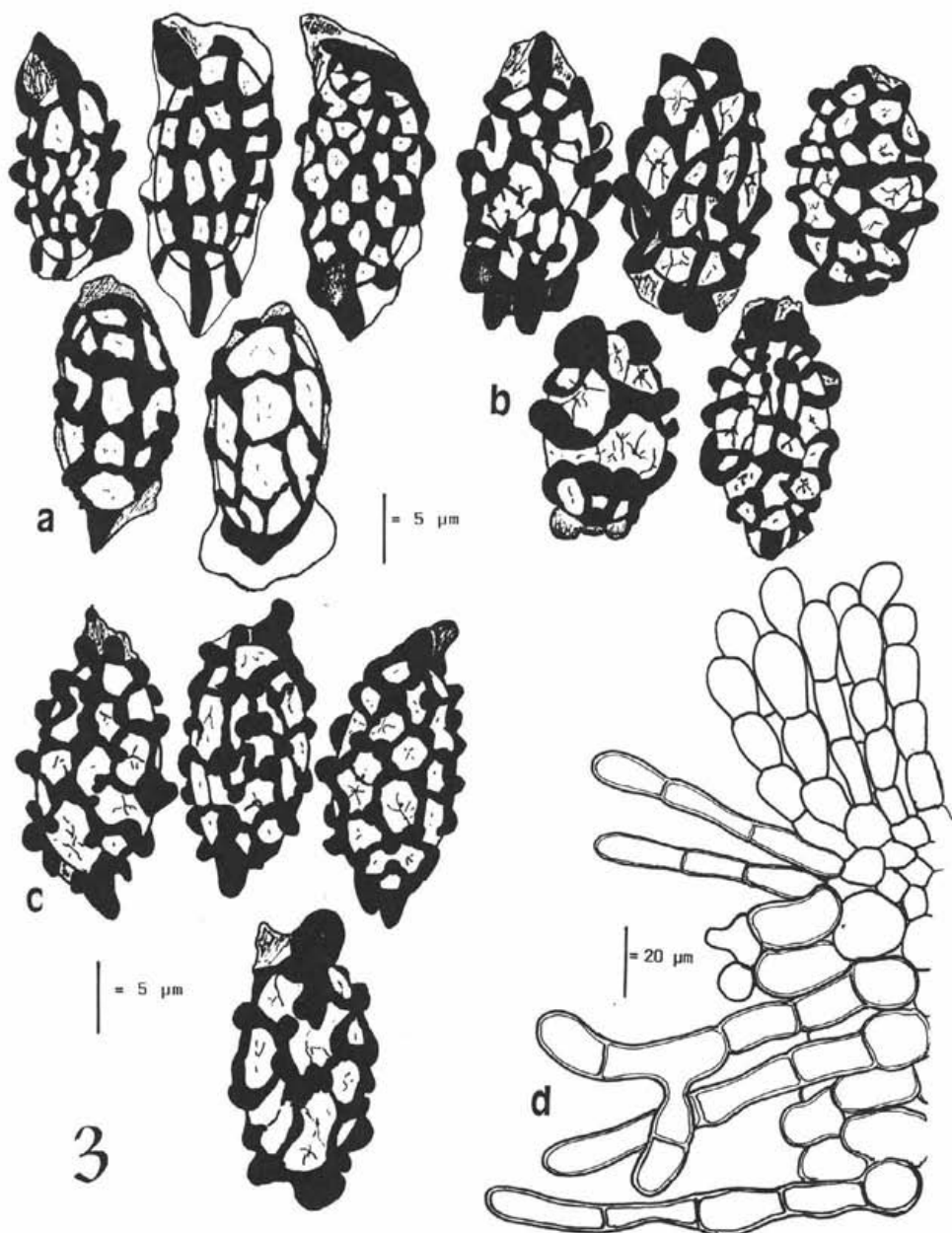


Fig. 3 *Aleuria* subgen. *Melastiza*: *Aleuria carbonicola* (J. Mor.) J. Mor. - a - c. ascospores (oil immersion + CB): a. holotype (PRM), b. Slovakia, Bystrička (J. Mor.), c. Switzerland (P. Blank, J. Mor); d. marginal cells and hairs (isotype J. Mor.).

cyanophilic, 1-2.3(-3) μm thick and 1.5-3.5 μm high ribs protruding the ascospore poles with much larger and higher (up to 6 μm) apiculi. The perisporium of a certain number of ascospores also bears an almost regular reticulum, but in such cases the ribs are thickened and conspicuously protrude the ascospore outline. Moreover, the ascospores of *M. carbonicola* are smaller, as they measure (without the sculpture) 14.5-17.7(-19) x 7-9.8 (usually 16.5 x 8.5) μm and thus only exceptionally exceed a length of 18 μm . The hairs are narrower, usually only 7-12 (exceptionally 18) μm thick, clavate and thick-walled, pale brownish, copious, and often much longer (up to 230 μm) than those in *M. cornubiensis*. I have not examined the two collections reported and illustrated by Häffner (1986) as "*Melastiza* sp.". In my opinion, they may be identical with *A. carbonicola* as their ascospore size and ornamentation agree with our species.

Material examined:

Holotype : Bohemia: Křineč non procul Branžež – Nová ves prope Mnichovo Hradiště, districtus Mladá Boleslav, in carbonario ad carbones et inter muscos (*Dicranella* sp.), ad ripam piscinae 6.VI.1970, leg. Jiří Moravec (holotype PRM, isotype BRA, CUP, J. Mor.)

Other material examined:

Czech Republic: Bohemia, Branžež prope Mnichovo Hradiště, districtus Mladá Boleslav, ad terram humidam stercoratum inter muscos viae in pascuo, 30. V. 1970, leg. et det. J. Moravec (J. Mor.); Moravia m., Melatín prope Brno, ad terram inter dense muscos (*Dicranella*) in silva mixta, 11. VI. 1984, leg. et det. J. Moravec (J. Mor.); Moravia, Bílovice nad Svitavou, districtus Brno, ad terram humidam viae silvaticae (*Picea excelsa*), 24. VI. 1972, leg. et det. J. Moravec (J. Mor.); Moravia, Bílovice nad Svitavou, districtus Brno, ad terram humidam viae silvaticae inter muscos (? *Dicranella* sp.), 10. VIII. 1973, leg. et det. J. Moravec (J. Mor.); Moravia, Bílovice nad Svitavou, districtus Brno, ad terram humidam viae silvaticae, 14. IX. 1974, leg. et det. J. Moravec (J. Mor.); Moravia, Vranov prope Brno, ad terram humidam argillaceam viae silvaticae inter muscos, 7. VII. 1984, leg. Alois Vágner, det. J. Moravec (J. Mor.); Moravia, Karlov, ad terram arenosam, 1. IX. 1986, leg. Alois Vágner, det. J. Moravec (J. Mor.); Moravia, Střítež, district. Žďár nad Sázavou, ad terram humidam argillaceam in silva (*Picea excelsa*), 13. VIII. 1989, leg. et det. J. Moravec (J. Mor.);

Slovakia: Bystrička prope Martin, ad terram humidam viae silvaticae, inter protonemata muscorum 16. VI. 1984 leg. L. Hagara et J. Moravec, det. J. Moravec (J. Mor.); Mt. Belanské Tatry, Ždiar, ad terram humidam ad ripam rivuli Belá, 12. VII. 1970, leg. et det. J. Moravec (J. Mor.); Mt. Západné Tatry, Oravica, ad terram margineque silvae (*Picea excelsa*) inter muscos minutos, 23. VII. 1987 leg. et det. J. Moravec (J. Mor.);

Switzerland: Delémant, a Lieu-Galet, sur sol nu d'un chemin forestier, 29. IX. 1989, leg. J. Rothenbühler, rev. J. Moravec (RD, PB, J. Mor.); Thayngen, sur une place à feu de 2 ans, 21. VIII. 1988, leg. Paul Blank, rev. J. Moravec (RD, PB, J. Mor.);

Bulgaria: Mt. Rila, Borovec, ad terram humidam viae silvaticae inter muscos, 6. VII. 1985, leg. et det. J. Moravec (J. Mor.);

Estonia: Ranametsa, on burnt soil and mostly on a sandy soil among small mosses or protonemata along a road in a spruce forest, 19. VIII. 1989, leg. et det. J. Moravec (J. Mor.).

4. *Aleuria rubra* Batra, Mycologia 52: 526, 1961.

≡ *Melastiza rubra* (Batra) Maas Geesteranus, Persoonia 4: 417, 1967.

For detailed descriptions and illustrations see also Batra (1961), Maas Geesteranus (1967) and Rifai (1968).

A. rubra is distinguished by the small ascospore size and prominent ascospore ornamentation. The other features including the hairs are very similar to those of the taxa treated above.

I have examined a collection from Nepal which in all features corresponds with the original diagnose and descriptions of the authors cited above.

The ascospores measure 10-13.5 x 6-8 μm and by the small size resemble ascospores of species of the subgenus *Aleuria*. However, the coloured hairs of a similar size and shape as those of *A. cornubiensis* clearly place this species into the subgenus *Melastiza*. The ascospore ornamentation is very conspicuous and consist of a very high usually almost regular reticulum. The reticulum is formed by ribs which protrude the ascospore outline as spines and spine-like projections 1.5-4.5 μm high forming irregular apiculi (up to 6 μm high) on the ascospore poles.

Material examined:

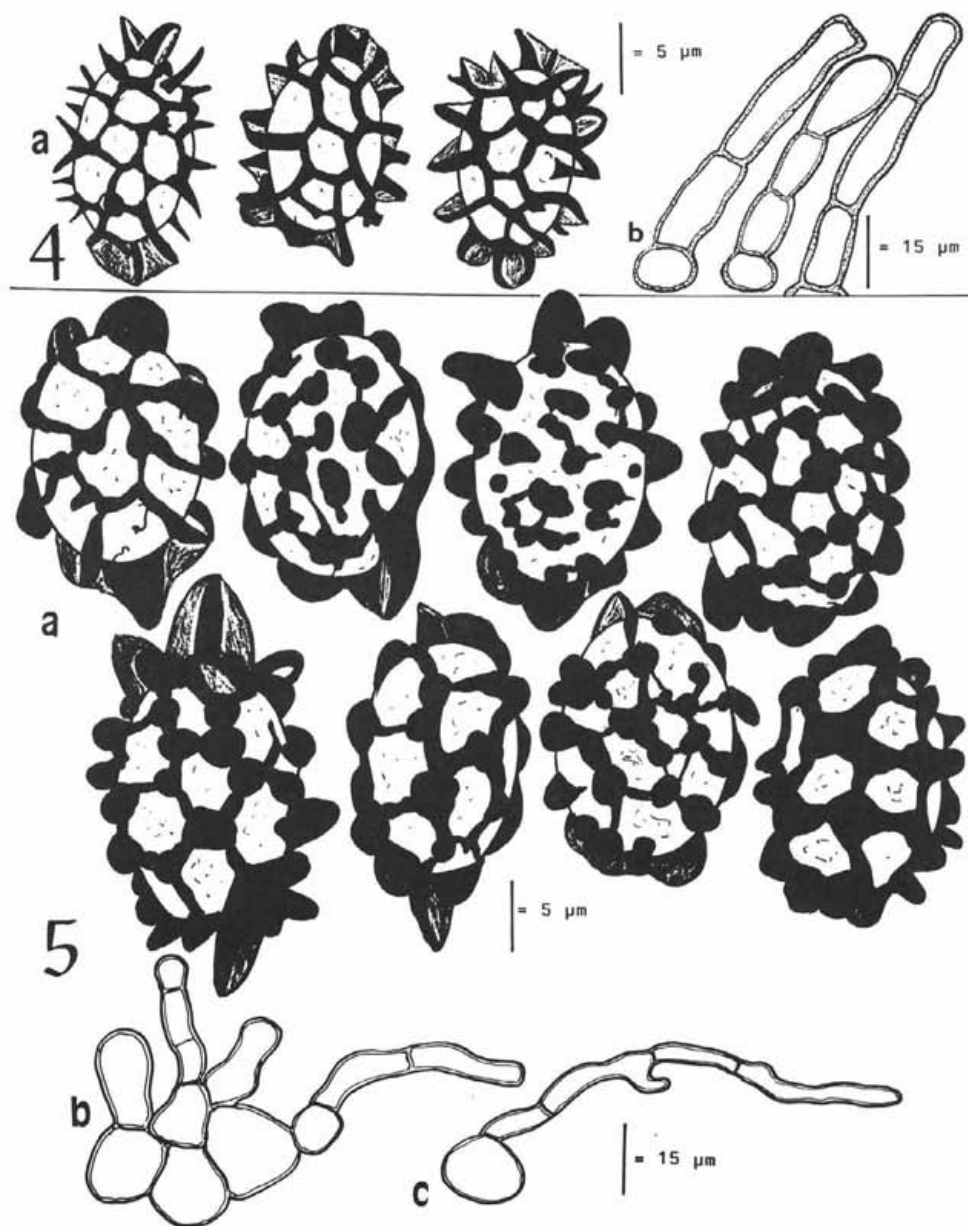
Nepal: Kathmandu-Chandragiri, on sandy soil on a bridle path, 17. VIII. 1969, leg. K. S. Waraitch, det. K. S. Thind et K. S. Waraith, rev. J. Mor. (PAN 2325, CUP, J. Mor.).

5. *Aleuria flavida* (Thind et Kaushal) comb. nov.

Basionym: *Melastiza flavida* Thind et Kaushal, Bot. Notiser 132: 459, 1979.

For a detailed description and illustration see Thind et Kaushal (1979).

A. flavida differs from other species of the subgen. *Melastiza* in having very small discoid apothecia which measure 2.5-3 mm in diam., a pale yellow hymenium, and very short, inconspicuous, usually hyaline or rarely pale brownish hyphae on the receptacle. This indicates the close affinity to species of the subgen. *Aleuria*, but such relations are in fact also evident between *A. cornubiensis* and *A. aurantia*, the



Figs. 4 - 5 *Aleuria* subgen. *Melastiza*: 4. *Aleuria rubra* Batra - a. ascospores (oil immersion + CB), b. hairs (Nepal, J. Mor ex PAN); 5. *Aleuria flavida* (Thind et Kaushal) J. Mor. - a. ascospores (oil immersion + CB), b. marginal cells and hairs, c. a hair arising from the outermost cell of a lower part of ectal excipulum (isotype J. Mor.).

type species of these subgenera, as discussed above. The ascospores of *A. flavida* measure (15.5-)16-19(-21) x 10.8-13(-13.6) μm (excluding the sculpture) and the ascospore perisporium is usually covered by a very thick and high irregular to almost regular reticulum, or rarely by warts which are irregularly connected by thinner buckles. The warts and ribs are 1.5-3(-4.5) μm thick, and form irregular apiculi which are up to 6 μm high on the ascospore poles. The ascospore ornamentation may resemble that of *A. carbonicola*, or rarely also *A. flavorubens*, both treated here, which are clearly distinguished by all other features, e.g. ascospore size, shape, size and colour of apothecia and apothecial hairs.

A. flavida is known from the type locality only.

Material examined:

Holotype: India: Mussoorie, Dhanaulty, on soil, 7. IX. 1973, leg. Kaushal (Holotype PAN 2573, isotype J. Mor., BRNM, BRA, CUP).

6. *Aleuria flavorubens* (Rehm) comb. nov.

Basionym: *Humaria flavorubens* Rehm in Rabenh. Kryptog. Fl. Deutschl., Oesterr. Schw. II, 1 (3) [42]: 960, 1894.

≡ *Melastiza flavorubens* (Rehm) Pfister et Korf, Phytologia, 21: 204, 1971.

= *Melastiza greleti* Le Gal, Bull. Soc. Mycol. France 74: 151, 1958.

[= *Peziza chateri* W.G. Smith sensu W. Phillips, *Elvellacei Britannici* 58, 1874;

= *Melastiza chateri* (W.G. Smith) Boud. sensu Grelet, *Rev. Mycol.* 7: 22, 1942].

For a detailed description see Le Gal (1958), J. Moravec (1972), and Lassueur (1980),

A. flavorubens is well distinguished by its ascospore ornamentation which consists of mostly rounded pustules mutually connected by thin ribs and buckles, occasionally forming an incomplete reticulum; the pustules are 0.5-1.5 μm in diam., protruding the ascospore poles with irregularly shaped, usually blunt apiculi which are up to 2.5 μm high. The ascospores measure (13-)15-18 x 7-9 μm (excluding the ornamentation). The apothecia are small, usually 3-7 mm in diam. The hairs are short and clavate, similar to those of *A. cornubiensis*. *Melastiza kumouensis* Khare is probably a synonym. I have not examined the type material but according to the description and illustrations (Khare 1985) the features well agree with *A. flavorubens*.

Material examined:

Czech Republic, Bohemia: Branžež prope Mnichovo Hradiště, districtus Mladá Boleslav, ad terram humidam viae silvaticae, 25. VI. 1966, leg. et det. J. Moravec (J. Mor.); Moravia, Josefov non procul Adamov prope Brno, ad terram humidam viae silvaticae inter muscos (*Dicranella* sp.), VII. 1971, leg. et det. J. Moravec (J. Mor.); Moravia, Adamov prope Brno, ad terram humidam muscosam margineque silvae, in societate *Aleuriæ aurantiae*, 24. IX. 1972 leg. et det. J. Moravec (J. Mor.).

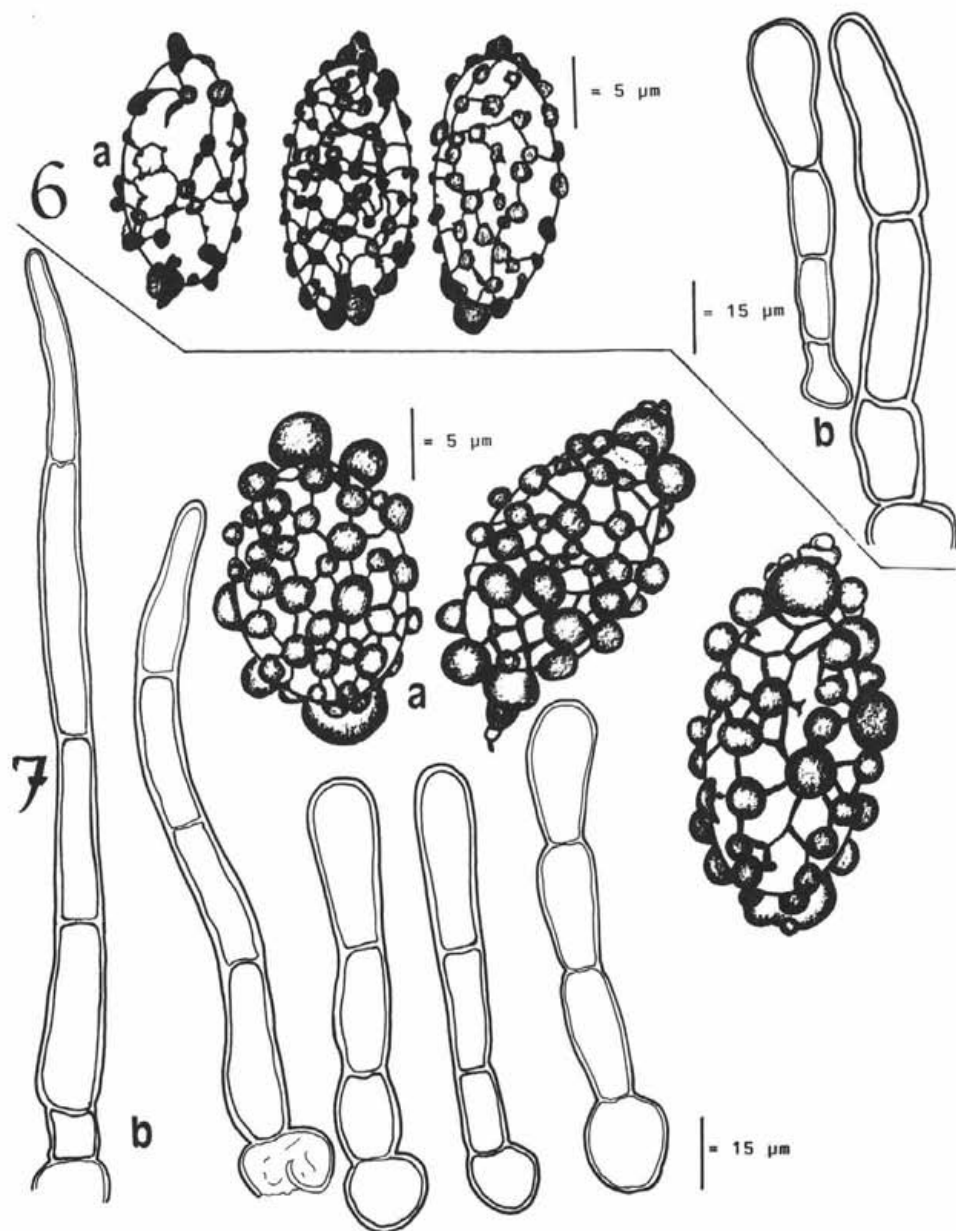


Fig. 6 - 7 *Aleuria* subgen. *Melastiza*: 6. *Aleuria flavorubens* (Rehm) J. Mor. - a. ascospores (oil immersion + CB), b. hairs (Bohemia, Branžež, J. Mor.); 7. *Aleuria boudieri* (v. Höhnelt in Rehm) J. Mor. - a. ascospores (oil immersion + CB), b. hairs (holotype S).

Bosna i Hercegovina: Ilidja prope Sarajevo, ad terram humidam in horto publico, 11. VII. 1969, leg. et det. J. Moravec (J. Mor.)

Switzerland: Les Diablerets, ad terram humidam inter muscos, 16. IX. 1992, leg. et det. J. Moravec (J. Mor.).

7. *Aleuria boudieri* (v. Höhnelt in Rehm) comb. nov.

Basionym: *Lachnea boudieri* v. Höhnelt in Rehm, Ann. Mycol. 7: 298, 1910.

[Non *Lachnea boudieri* (Torr.) Saccardo et Trotter, Syll. Fung. 22: 630, 1913].

≡ *Melastiza boudieri* (v. Höhnelt in Rehm) Le Gal, Bull. Soc. Mycol. Fr. 74: 152, 1958.

= *Lachnea austriaca* Saccardo et Trotter, Syll. Fung. 22: 634, 1913.

[Non *Lachnea austriaca* Beck in Saccardo, Syll. Fung. 8: 169, 1889].

For detailed descriptions and illustrations see Le Gal (1958), Lasueur (1980) and Blank et Dougoud (1991).

A. boudieri is very close to *A. flavorubens* having a very similar but coarser ascospore ornamentation and small, reddish apothecia. However, *A. boudieri* differs clearly by much longer apothecial hairs, which are often narrowed towards the obtuse tips, though clavate and short hairs and hyphae are also present. The hairs (pseudopili) are 9-16 μm thick and 70-250 μm long, pale brownish. *A. boudieri* is easily recognizable not only by the presence of longer hairs, but also by the ascospores which are broader. They measure (excluding the sculpture) (15-) 16.5-19.5(-21) x 9.2-12.5(-15) μm (usually 18.5 x 10.5 μm). Also, the ascospore perispodium bears much larger and densely arranged pustules. The pustules are conspicuously spherical, 1.5-3(-4.5) μm in diam., mutually attached to each other or connected by thin buckles. On the ascospore poles, the pustules are enlarged and form spherical apiculi, and usually possess additional, irregularly shaped appendages which form irregular apiculi (up to 5.5 μm high).

Material examined:

Holotype: Österreich: auf Lehmboden bei Kalsburg-Wien, Wiener Wald, X. 1909 leg. v. Höhnelt, Ascomyceten exsiccata Rehm No 1876 (S).

Other material examined:

Switzerland: Au lieudit Grätte, commune Merishausen (SH). sur terre argilo-calcaire (moussu *Fissidens taxifolium*) d'un petit chemin parmi les plantes herbacées, 9. VII. 1989, ibidem 1990, leg. Paul Blank, rev. J. Moravec (PB, RD, J. Mor.).

8. *Aleuria scotica* (Graddon) comb. nov.

Basionym: *Melastiza scotica* Graddon, Trans. Brit. Mycol. Soc. 44: 609, 1961.

For detailed descriptions and illustrations see Graddon (1961) and Breitenbach et Kränzlin (1981).

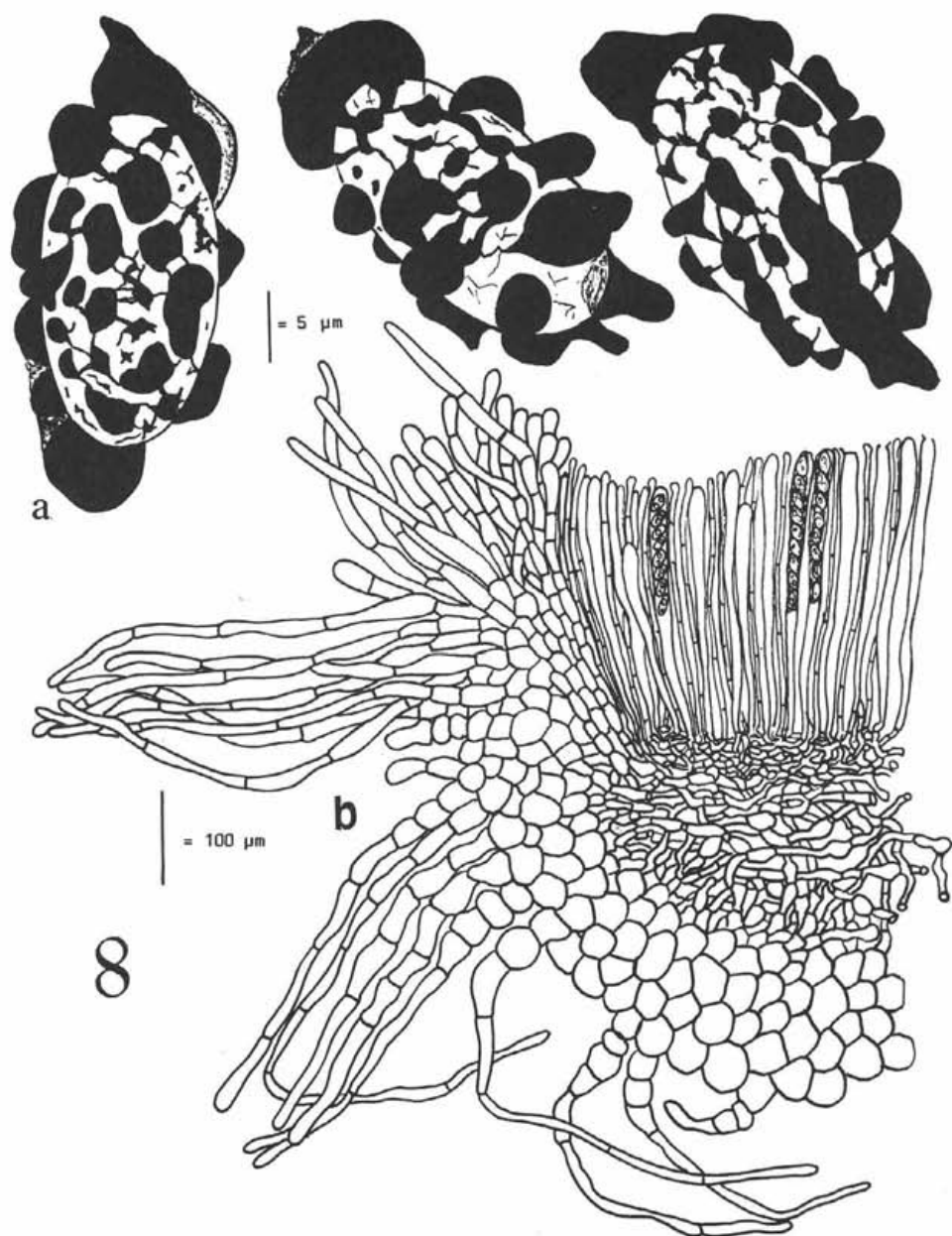
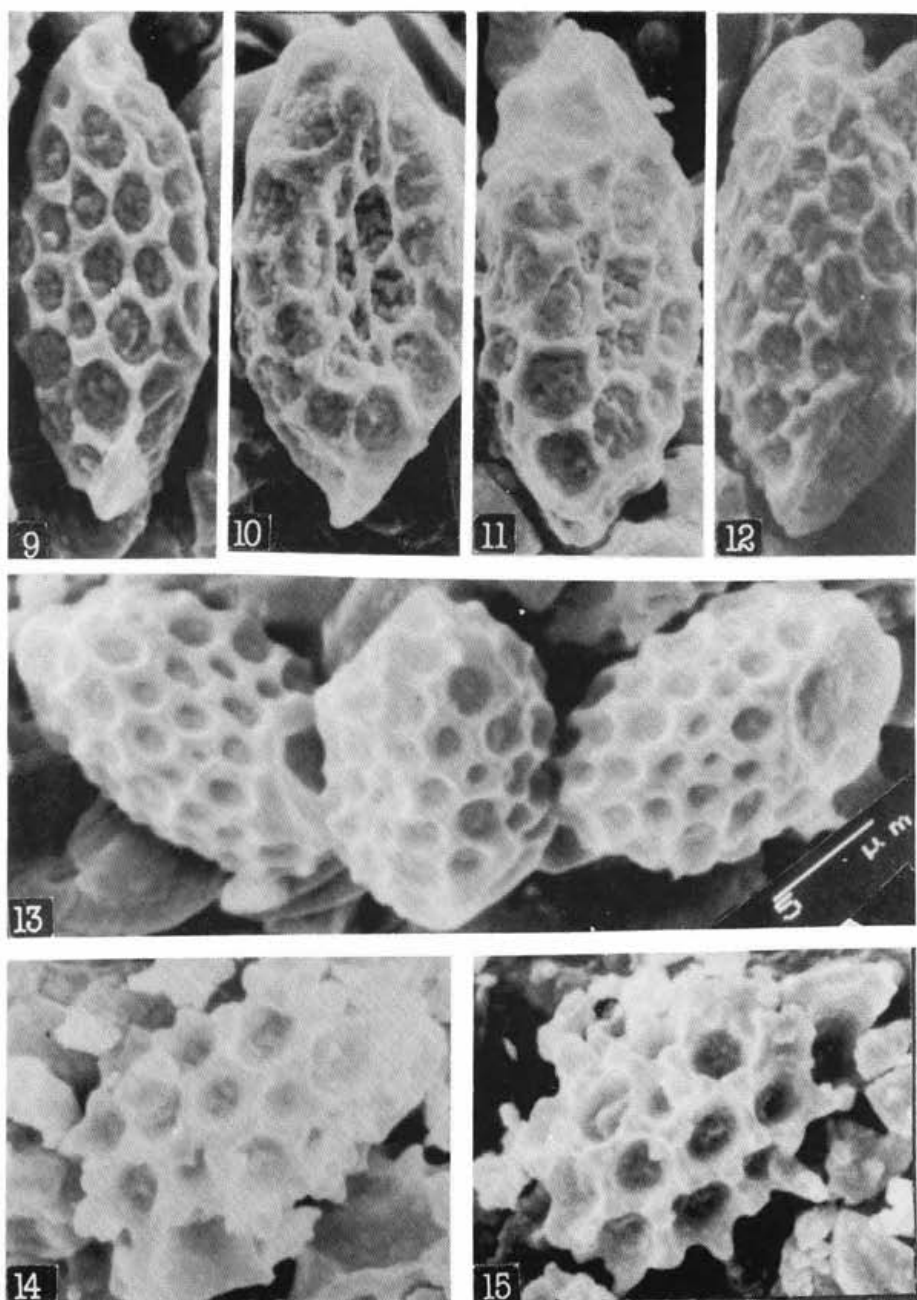
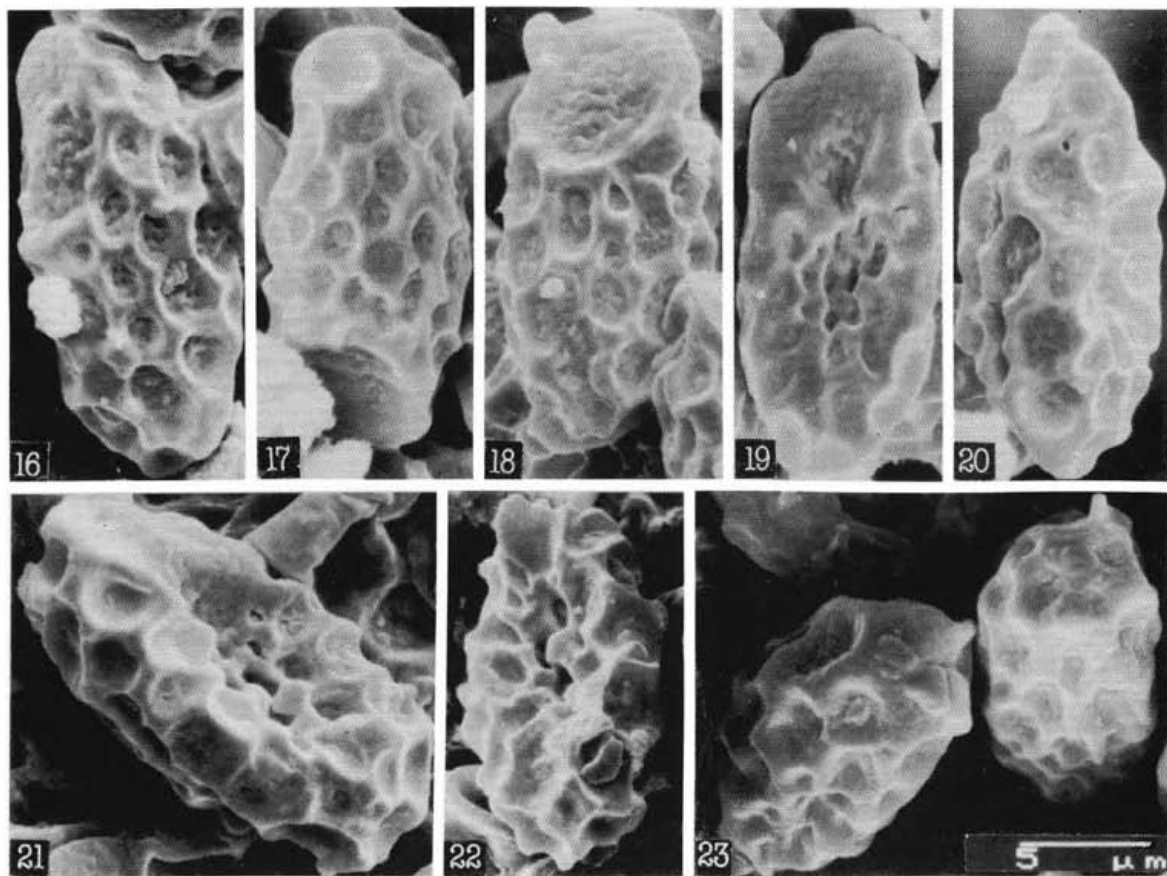


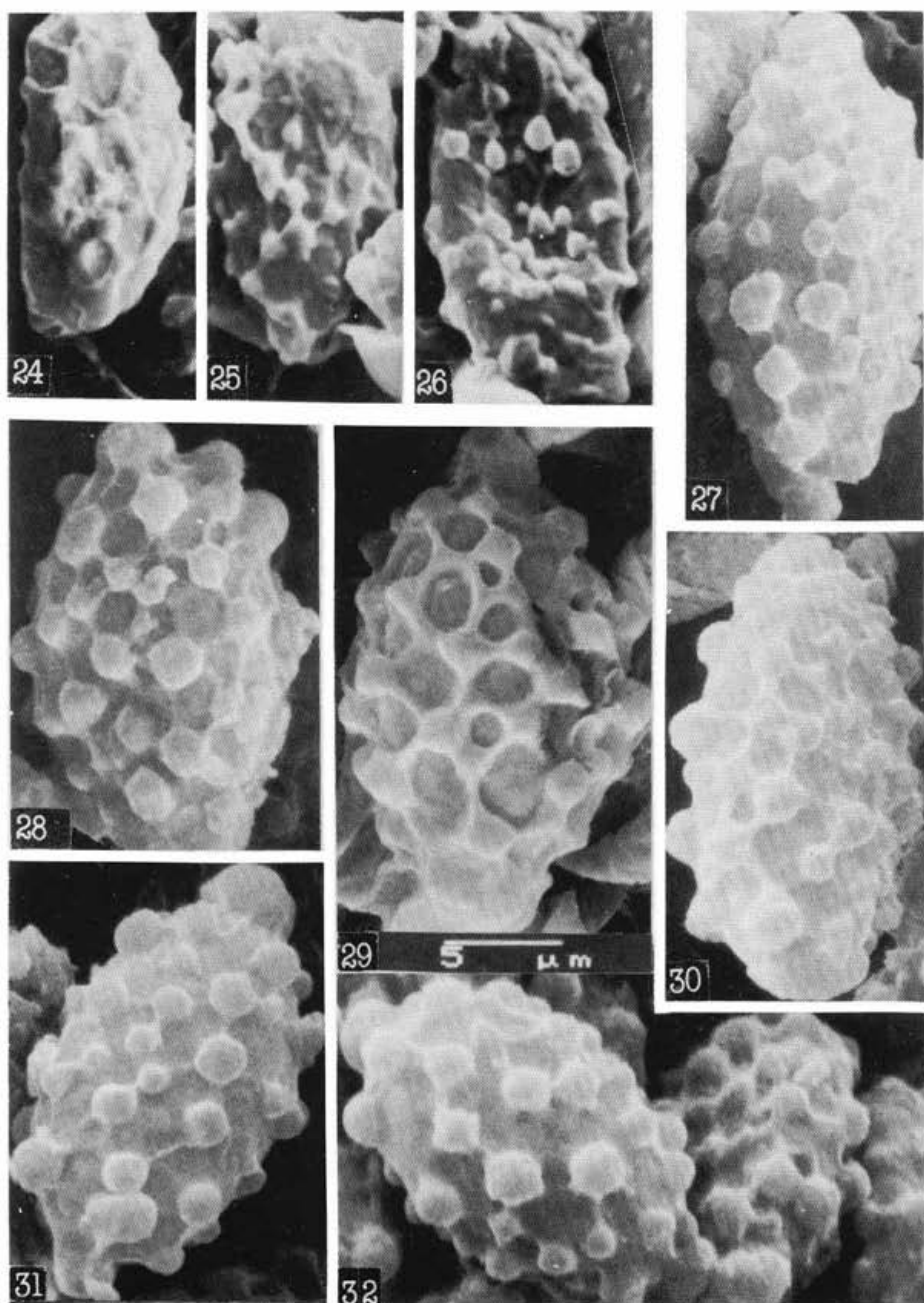
Fig. 8 *Aleuria* subgen. *Melastiza*: *Aleuria scotica* (Graddon) J. Mor.- a. ascospores (oil immersion + CB), b. median section of margin (holotype K).



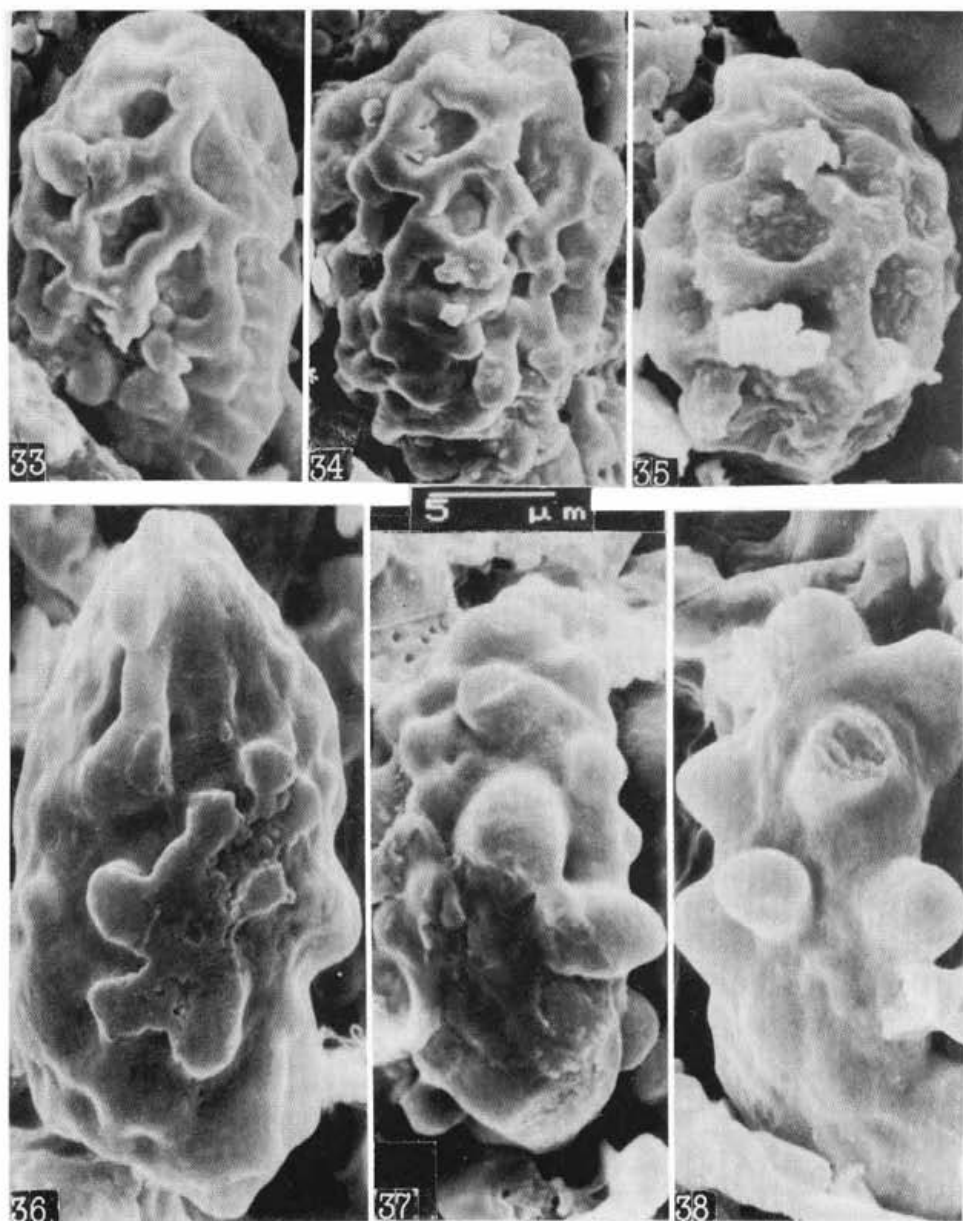
Figs. 9 - 15 SEM of ascospores of species of *Aleuria* subgen. *Melastiza*: 9 - 12. *A. cornubiensis* (Berk. et Br.) J. Mor. (Bohemia, Branžež, 29. X. 1988, J. Mor.); 13. *A. latispora* spec. nov. (isotype BRNM); 14 - 15. *A. rubra* Batra (Nepal, J. Mor. ex PAN).



Figs. 16 - 23 SEM of ascospores of of *Aleuria* subgen. *Melastiza*: *A. carbonicola* (J. Mor.) J. Mor. (16 - 20. from Switzerland, Thayngen, 21. VIII. 1988 P. Blank; 21-23. Slovakia, Bystrička, J. Mor.).



Figs. 24 - 32 SEM of ascospores of species of *Aleuria* subgen. *Melastiza*: 24 - 26. *A. flavorubens* (Rehm) J. Mor. (Moravia, Josefov VII. 1971, J. Mor.); 27 - 32. *A. boudieri* (v. Höhnelt in Rehm) J. Mor. (holotype S).



Figs. 33 - 38 SEM of ascospores of species of *Aleuria* subgen. *Melastiza*: 33 - 35. *A. flavida* (Thind et Kaushal) J. Mor. (isotype J. Mor.); 36 - 38. *A. scotica* (Graddon) J. Mor. (holotype K).

A. scotica, in my opinion, has an outstanding position in the genus *Aleuria* although it possesses almost all features of the subgen. *Melastiza*.

The hairs are much longer, 70-360(-480) x 9-18(-20) μm , but they are of the same shape (including the clavate obtuse tips) and hyaline to pale brownish coloured as in other species treated above. The hymenium is orange-yellow and apothecia are deeply cupulate and irregularly undulate and thus resembling more those of the subgen. *Aleuria*. Contrary to the nice smell of *Viola odorata*, which is characteristic of all other species of *Aleuria* (including *Melastiza*), dried apothecia of *A. scotica* have a similar smell mixed with the smell of *Lactarius helvus*. In my opinion, the carotenoids of this species deserve further examination. The ascospores fit well in the genus. They measure (excluding the sculpture) 22-24.5 x 11.4-13.6 μm and the warts are only rarely rounded, usually the ornamentation is formed by cyanophilic warts or ribs of an irregular shape and they are 1.5-5 μm thick and 1.5-4.5 μm high, protruding the ascospore poles as irregular, up to 10 μm wide and 7.5 μm high apiculi.

The habitat of *A. scotica* seems to be different from other species of the subgenus as it is usually found in the montane to alpine zone on needle litter and twigs of coniferous trees (Breitenbach et Kränzlin (1981). However it always fructifies amongst moss (*Atrichum* sp.) and as all other species it is probably confined to it rather than being lignicolous.

Material examined:

Holotype: N.Scotland, moss (*Atrichum* sp.) / pines, VIII. 1957, leg. Roy Watling (K).

Other material examined:

Switzerland: Near Sörenberg, on Schwarzenegg, elev. 1450 m, in spruce forest on needle litter, 18. VIII. 1977, leg. Fred Kränzlin, FK 1808-77 K - colour photograph No 92 in Breitenbach et Kränzlin (1981), (LU, J. Mor.); Préalpes fribourgeoises, on needle litter, 10. VI. 1986, leg. René Dougoud (RD, J. Mor.).

ADDITIONAL NOTE TO SUBGEN. ALEURIA

Häffner (1993) has written that *Aleuria cestricea* (Ell. et Ev.) Seaver in the sense of J. Moravec (1980) has been misdetermined by me and represents in fact *Aleuria luteonitens* (Berk. et Br.) Gill. However, reexamination of my two collections from Bulgaria and of the type of *A. luteonitens* (K) has confirmed that the Bulgarian collections cannot be conspecific with *A. luteonitens* and thus I consider Häffner's opinion quite erroneous.

A. luteonitens clearly differs from *A. cestricea* by much larger ascospores which measure 10-13 x 6-7.5(-8.2) μm (without the ornamentation). This difference is also clear from Häffner's paper and therefore it is difficult to understand the reasons for

his conclusion. The ascospore ornamentation of both taxa varies from an incomplete to almost complete reticulum but the ascospore size differs conspicuously.

The Bulgarian collections possess ascospores of the typical size of *A. cestricea* as they measure 9-9.7(-10.8) x 4.7-5.8(-6.2) μm and the ascospore ornamentation is formed by an almost regular to incomplete reticulum. A revision of species of the subgen. *Aleuria* is now being prepared.

A c k n o w l e d g e m e n t s

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