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SOWERBYELLA ANGUSTISPORA SPEC.NOV. AND OTIDEOPSIS KAUSHALII COMB.NOV.

(DISCOMYCETES, PEZIZALES, PYRONEMATACEAE)

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SUMMARY: Sowerbyella angustispora Cao & J.Mor. sp. nov. is described according to a collection from China. The new species is distinguished from three closely related species, S. imperialis (Peck) Korf, S. fagicola J.Mor. and S. brevispora Harmaja by its different ascospore size, shape and ornamentation. Macro- and micro-features of S. angustispora are illustrated by line drawings and SEM micrographs. A new combination, Otideopsis kaushalii (J.Mor.) comb. nov. is made (basionym: Sowerbyella kaushalii J.Mor.). The author considers Otideopsis Liu & Cao a well defined genus, segregated from Sowerbyella Nannf. on the basis of the presence of brownish pustules on the receptacle surface. The examination of the type of Otideopsis yunnanensis Liu & Cao has confirmed that this type species of Otideopsis is congeneric with the earlier described Sowerbyella kaushalii. The ascospore ornamentation of the two taxa is identical, but O. yunnanensis has larger ascospores.

ZUSAMMENFASSUNG: Aufgrund einer Kollektion aus China wird Sowerbyella angustispora Cao & J.Mor. sp. nov. beschrieben. Von den nah verwandten Arten S. imperialis (Peck) Korf, S. fagicola J.Mor. und S. brevispora Harmaja unterscheidet sich die neue Art durch Grösse, Form und Ornamentation der Ascosporen. Zeichnungen und SEM Aufnahmen illustrieren Makro- und Mikroeinzelheiten. Der Autor anerkennt die Gattung Otideopsis Liu & Cao (abgespalten von Sowerbyella wegen des Vorkommens von bräunlichen Pusteln besonders auf der Aussenseite des Fruchtkörpers). Eine Untersuchung des Typus von Otideopsis yunnanensis Liu & Cao hat aufgezeigt, dass die früher beschriebene Art Sowerbyella kaushalii J.Mor. (Basionym) zur gleichen Gattung gehört, weshalb der Autor die Neukombination Otideopsis kaushalii (J.Mor.) comb. nov.

vorschlägt. Die Sporenornamentation der beiden Arten ist gleich; *O. yunnanensis* hat indessen grössere Sporen.

RÉSUMÉ: *Sowerbyella angustispora* Cao & J.Mor. sp. nov. est décrit à partir d'une collection provenant de Chine. La nouvelle espèce se différencie par la taille, la forme et l'ornementation des spores, des espèces voisines *S. imperialis* (Peck) Korf, *S. fagicola* J.Mor. et *S. brevispora* Harmaja. Des dessins au trait et des photos au M.E.B. illustrent des détails macro- et microscopiques. L'auteur reconnaît le genre *Otideopsis* Liu & Cao, extrait du genre *Sowerbyella* Nannf. à cause de la présence de pustules brunâtres, surtout sur la surface externe. Une étude du type d'*Otideopsis yunnanensis* Liu & Cao a révélé que *Sowerbyella kaushalii* J.Mor. (basionyme) doit se rattacher au même genre: c'est pourquoi l'auteur propose la nouvelle combinaison *Otideopsis kaushalii* (J.Mor.) comb. nov. L'ornementation sporique est la même chez les deux espèces; cependant, *O. yunnanensis* a des spores plus grandes.

SOWERBYELLA ANGUSTISPORA Cao & J.Moravec sp. nov.

Apothecia cupulata et stipitata, 0.5-1.3 cm diam., hymenio luteo-aurantiaco; pars externa luteo-aurantiaca usque lutea, sublaevis sed dense subtiliter appresse tomentosa; stipes 1-2 mm crassus et 2-8 mm altus, cylindricus, laete luteolus, saepe basi albidotomentosus. Excipulum externum textura globuloso-angularis e cellulis 7.5-45 µm diam., cum pilis externis hyalinis, hyphoideis, 15-160 µm longis et 3-7.5 µm crassis, tenuiter tunicatis, tunica 0.2-0.4-(0.7) µm crassa. Excipulum parte inferiore (medulla) textura intricata e hyphis 4.5-11 µm crassis, saepe inflatis (et usque 15 µm crassis), hyalinis, septatis. Paraphyses filiformes, 2-3 µm crassae, septatae, rectae vel paulum curvatae, apice sensim vel valde clavato-incrassatae (4-7.5 µm), subluteolae. Asci cylindricei, 195-205 x 7.5-9 µm, octospori. Ascosporae (12)-13.5-15.8-(16.5) x (4.6)-5.3-6.8-(7.2) µm, elongato-ellipsoideae vel saepe angustatae, biguttulatae, verruculosae; sculptura sporarum e verrucis cyanophilis, irregulariter convexis vel subglobosis usque angularibus, 0.3-0.5-(0.8) µm altis et 0.3-0.8 µm diam., insigniter isolatis vix confluentibus.

Ab aliis speciebus generis ascosporis elongato-ellipsoideis usque angustato-ellipsoideis, isolato-verruculosis differt. Affine sunt *S. imperialis* (Peck) Korf, *S. fagicola* J.Mor. et *S. brevispora* Harmaja. Ad ramulos putridos et ad folia dejecta et etiam solo humido sub *Quercus* sp., Jilin, China, 15.IX.1987 leg. Jin-zhong Cao. Holotypus in herbario MHSU N°724 et isotypus in herbario BRA asservantur.

Apothecia regularly to irregularly cupulate, with involute continuous margin, stipitate; hymenium yellow-orange; ectal surface concolorous or yellow, apparently smooth but with a very fine adpressed tomentum: stipe 1-2 mm thick and 2-8 mm high, cylindric, light-yellow, base often with a whitish tomentum. Ectal excipulum of textura globulosa-angularis, cells 7.5-45 μm diam., superficial hairs of the ectal surface hyphoid, hyaline, often branched, septate, 15-160 μm long and 3-7.5 μm thick, thin-walled, walls 0.2-0.4-(0.7) μm thick. Inner medullary layer of a textura intricata composed of septate, 4.5-11 μm thick hyphae, which are often inflated (up to 15 μm thick).

Subhymenium also of textura intricata, not clearly differentiated.

Paraphyses filiform, 2-3 μm thick, septate, straight or slightly curved at the tips, which are slightly to conspicuously enlarged and clavate (4-7.5 μm) and pale yellowish. Asci cylindrical, 195-205 x 7.5-9 μm , octosporous. Ascospores elongate ellipsoid, often very narrow, (12)-13.5-15.8-(16.5) x (4.6)-5.3-6.8-(7.2) μm , with two globules, verruculose; the verruculae of an irregular shape, mostly conical or rarely rounded and 0.3-0.7-(0.8) μm high, irregularly rounded or angular in their outlines and 0.3-0.8 μm in diam., irregularly distributed but conspicuously isolated, two warts or rarely three warts are only occasionally connected but they never form chains or rows. (Oil immersion 1600x + CB and SEM).

Habitat: On rotten twigs, leaves and on moist soil under wood of *Quercus* spec., Jiling, China, 15.IX.1987 leg. Jin-zhong Cao.

Holotype MHSU N°724, isotype BRA.

The excipular structure of *S. angustispora* is very similar to that of other species of *Sowerbyella*.

S. angustispora is a species closely related to *S. imperialis* (Peck) Korf, *S. fagicola* J.Moravec (1973) and to *S. brevispora* Harmaja (1984). However, it is distinguished by its narrow ascospores with a conspicuously isolated verruculose sculpture. The ascospores of *S. imperialis* are similar in size (13.5-15-(16.5) x (5.5)-6.5-(7.5) μm) but those of *S. angustispora* are usually much narrower (most of them measure 15.5 x 6 μm). The ascospore ornamentation of *S. imperialis* is distinct, usually consisting of connected warts, which are often anastomosing and arranged in chains occasionally forming a very incomplete reticulum (J.Moravec 1985a, 1985b). In its ascospore shape, *S. angustispora* rather resembles *S. fagicola*, but the latter clearly differs by much larger ascospores ((15)-16-19.5-20.5-(21.5) x 7-8 μm) with a finer and denser ornamentation consisting of often connected verrucae arranged in chains (as in *S. imperialis*). The isolated ascospore sculpture of *S. angustispora* is similar to that of *S. brevispora*.

The verrucae in both species are conspicuously isolated, only occasionally connected and never arranged in chains or rows. However, the verrucae of the ascospores of *S. brevispora* are much rounder, densely arranged and much lower in optical section (J. Moravec 1985b). Moreover, the ascospores are of a different shape and size, ellipsoid, 9-12.2 x 5-6.6 μm . Also the hairs of the external surface of the apothecia of *S. brevispora* have a thicker wall (0.2-1.2 μm thick). Other species of the genus differ especially in ascospore ornamentation. The habitat is not a reliable feature.

OTIDEOPSIS KAUSHALII comb. nov.

Basionym: *Sowerbyella kaushalii* J. Moravec, Mycologia Helvetica 2 (1): 94, (1986).

The genus *Otideopsis* Liu & Cao with the type species *Otideopsis yunnanensis* Liu et Cao (1987) was erected for species related to *Otidea* Fuck. but distinguished by the ascospore sculpture and the presence of brownish pustules on the surface of the receptacle.

I consider *Otideopsis* a well founded genus, segregated from *Sowerbyella*. The type species, *O. yunnanensis* is clearly congeneric with *Sowerbyella kaushalii* and both taxa are closely related to each other. My re-examination of the type of *O. yunnanensis* has confirmed the relationship. The Chinese species, which was described later than *S. kaushalii* from India, nevertheless corresponds in many features, especially in ascospore ornamentation. The ascospores of the type of *O. yunnanensis* measure 15-21 x 9.7-10.5 μm (measured without the sculpture), and bear the same irregular spine-like sculpture as that of *O. kaushalii* (see the line drawings and SEM micrographs in J. Moravec, 1986), although the ascospores of *S. kaushalii* are conspicuously smaller, (12.7)-14-16.5-(17.5) x 6.5-9 μm . The question may arise as to whether *O. yunnanensis* is a separate species or merely an infraspecific taxon of *O. kaushalii*. In my opinion, however, the two taxa are sufficiently separated not only by ascospore size but also by some differences in the macro-features. The apothecia of the Chinese fungus are more "otideoid" as its apothecia are split down the stipe, whilst in the Indian species the apothecia are larger and incised only down the cup.

Zhuang & Korf (1987), in order to avoid an erection of a new genus, have transferred *Sowerbyella kaushalii* to the genus *Aleurina* Massee (= *Jafneadelphus* Rifai) on account of the similar brownish pustules on the receptacle surface. However, the genus *Aleurina* as defined by Zhuang & Korf (1986), differs in many features, especially in the shape of the apothecia which are much smaller, sessile and cupulate rather than "otideoid". Its paraphyses are straight and usually with

a cyanophilic cap, whilst the apothecia of *Otideopsis* are much larger, the cup either split down the long (up to 3.2 cm) stipe or of an "otideoid" auriculate shape. The paraphyses have a thin, hooked and sometimes diverticulate apex as in *Otidea* and *Sowerbyella*. The Chinese collection published by Zhuang & Korf (1987) is identical with *O. kaushalii*, with a similar ascospore size.

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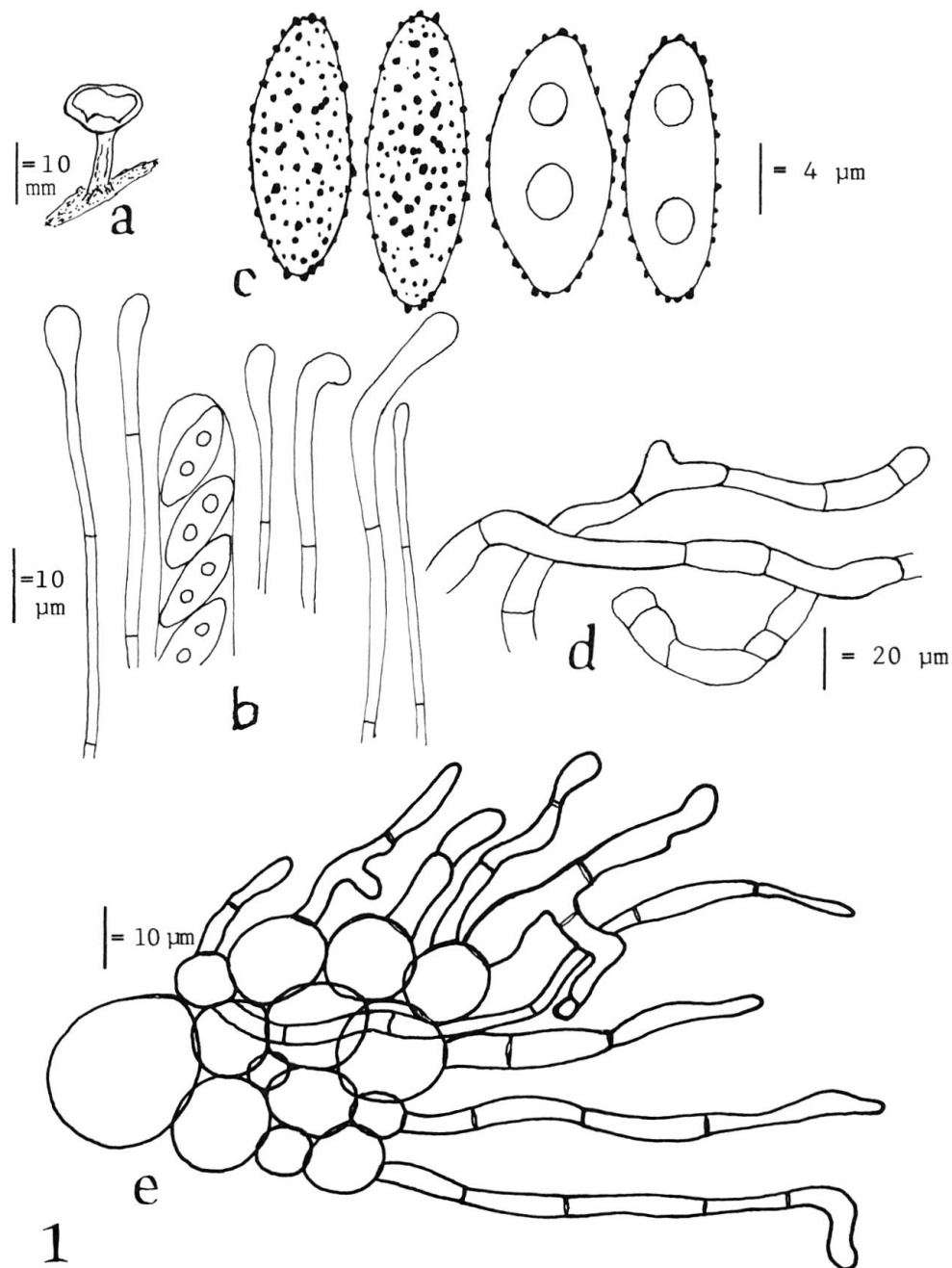


Fig. 1. *Sowerbyella angustispora* Cao & J. Moravec spec. nov.

a. Apothecium. b. Part of an ascus and paraphyses. c. Ascospores (two ascospores under oil immersion + CB, two ascospores in optical section). d. Hyphae of the medullary excipulum. e. Part of the ectal excipulum with hyphoid hairs. (Isotype BRA).

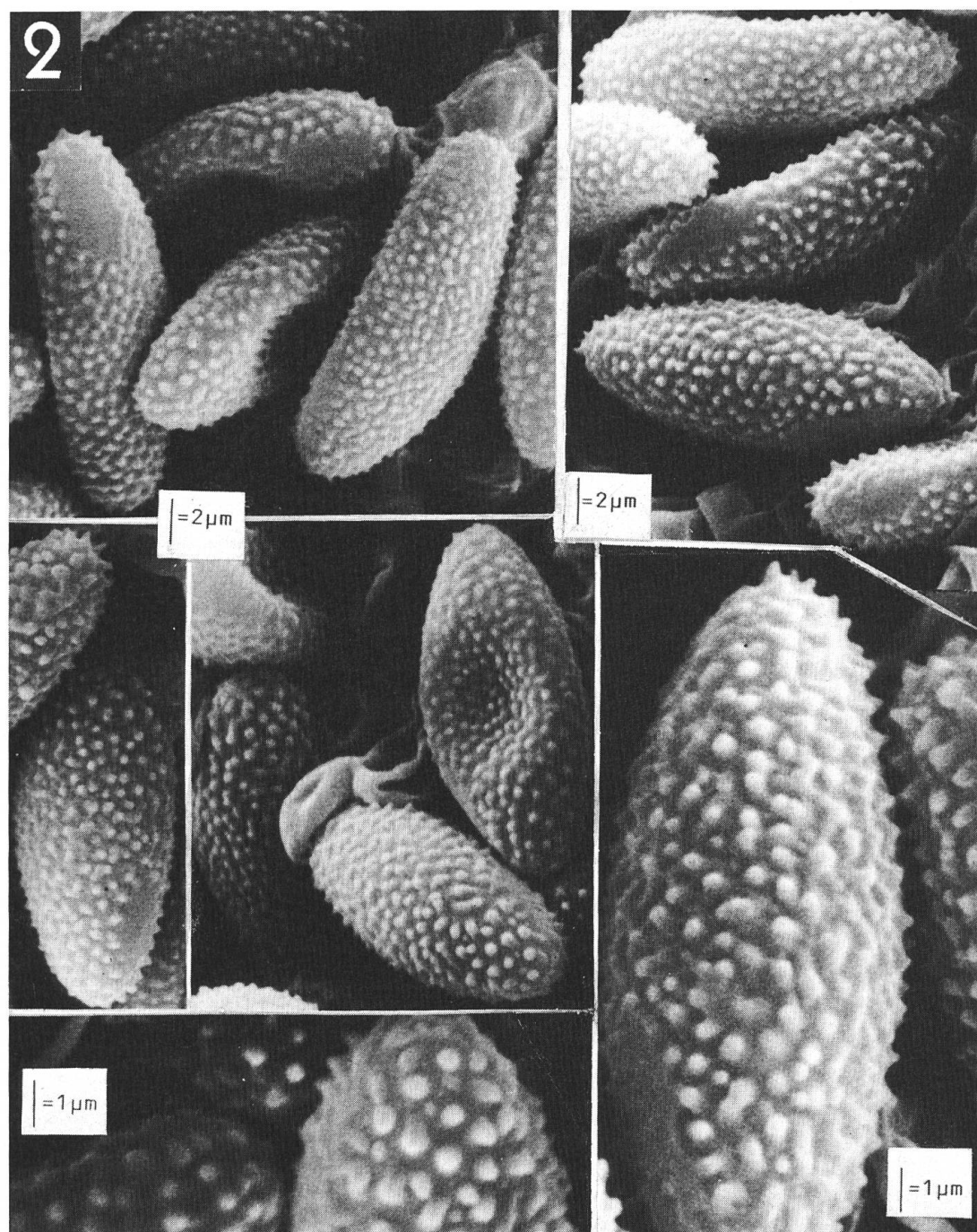


Fig. 2. SEM photomicrographs of ascospores of *Sowerbyella angustispora* sp. nov. (Isotype BRA).

