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Bambusicolous Fungi from the Southwest of France I. Two New Species of Pyrenomycetes and a New Genus of the Phacidiaceae

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Summary. – The ascomycetous taxa *Amphisphaeria striatispora* sp. nov. (Sphaeriales, Amphisphaeriaceae), *Roussoella verruculosa* sp. nov. (Sphaeriales, Amphisphaeriaceae) and *Lasiostictella bambusae* gen. et sp. nov. (Helotiales, Phacidiaceae) are described on introduced Bambusoideae from southwestern France.

Introduction

In southwestern France, principally in the county of Pyrénées Atlantiques but also to a lesser extent in the Landes, Gironde, Gers and Hautes Pyrénées counties, bamboo was introduced some decades ago for the decoration of gardens and parks. The region has a mild and humid climate characterized by abundant rainfall almost evenly distributed throughout the year and mild winters with numerous foggy days with very high humidity. These factors have encouraged the establishment of bamboo at a number of sites. At present *Phyllostachys bambusoides* SIEB. & ZUCC., *P. mitis* RIVIERE, *P. nigra* MUNRO and *Pseudosasa japonica* MAKINO are found growing uncultivated in various localities. Debris from commercial cutting is commonly abandoned on the ground, where it is colonized by a great variety of saprophytic fungi.

Bamboos are members of the family Gramineae, subfamily Bambusoideae. Their distribution is centered in the tropics, although they can also be found in warm temperate regions. They are known to host a number of highly characteristic fungi (e. g. PENZING & SACCARDO, 1904; HINO, 1961). The species now growing in southwestern France are no exception.

The fungi occurring on bamboo in southwestern France represent a mixture of native and exotic taxa, the former mostly plurivor-

ous species which colonize other hosts, expecially coarse grasses, the latter characteristic bambusicolous species which presumably were introduced with their hosts.

During the last two years we have collected numerous fungi on bamboo, mainly ascomycetes but also a number of basidiomycetes and deuteromycetes. Among them, some species could be identified with the aid of previous works on bambusicolous fungi from Japan (HINO, 1961); others could not be found in the literature and are presumed new.

In the present and following communications we shall describe some new ascomycetes and basidiomycetes recorded from bamboo in France and at the same time publish a comparative list of the species collected in Japan and France.

Description of the Species

1. ***Amphisphaeria striatispora*** CANDOUSSAU & KATUMOTO, sp. nov. – Pl. 1, Figs. A–C

Ascomatibus sparsis, solitariis, interdum 2 conglutinatis, subperidermalibus, globosis vel depresso-globosis, 300–400 µm diam., ad apicem papillato-prominentibus et ostiolatis cum poris leviter angularibus; pariete ascomatis subcoriacea, atro-brunnea, pseudoparenchymatica, 10–13 µm crassa, ex cellulis polygonalibus 4–5 µm diam. composita; ascis cylindraceis, unitunicatis, ad apicem rotundatis, apice poro iodo caerulescente praeditis, breviter stipitatis, octosporis, 120–130 × 10–11 µm; paraphysibus filiformibus, 1.5–2.0 µm crassis; ascosporis monostichis, ellipsoideis, ad apicem utrinque rotundatis, in medio septatis et constrictis, leviter curvatis, pallide brunneis, guttatis, vagina mucosa hyalina circumcinctis, 20–23 × 7–8 µm, tunica longitudinaliter subtiliter pluristriata praeditis. Hab. In culmis emortuis *Pseudosasae japonicae*. France, Monument 40, Capbreton, F. CANDOUSSAU 5604, 11 Junii 1984 (YAM 24099, holotypus).

Perithecia culmicolous, scattered, solitary or occasionally 2 together, developing beneath the peridermis, spheric or depressed-spheric, 300–400 µm in diameter, with a short papilla at the apex and just perforating the peridermis with a distinct, somewhat angular pore. – Perithecial wall subcoriaceous, blackish-brown, pseudoparenchymatous, 10–13 µm thick, composed of polygonal cells measuring 4–5 µm in diameter.

Asci cylindrical, unitunicate, rounded at the apex, with a short stipe, 120–130 × 10–11 µm, the apex of the ascus becoming thick and containing an apical ring which is stained blue in Melzer's reagent, 3–4 µm diam., 2–2.5 µm in height, slightly narrowed upward. – Paraphyses filiform, septate, hyaline, 1.5–2 µm broad. – Ascospores 8 in each ascus, uniseriate, ellipsoid, slightly curved, 2-celled, constricted at the median septum, rounded at both ends, light brownish, with oil drops, surrounded by a hyaline gelatinous sheath, finely striate (ca. 20 ridges) on the epispore, 20–23 × 7–8 µm.

Habitat. – On dead stems of *Pseudosasa japonica*, France.

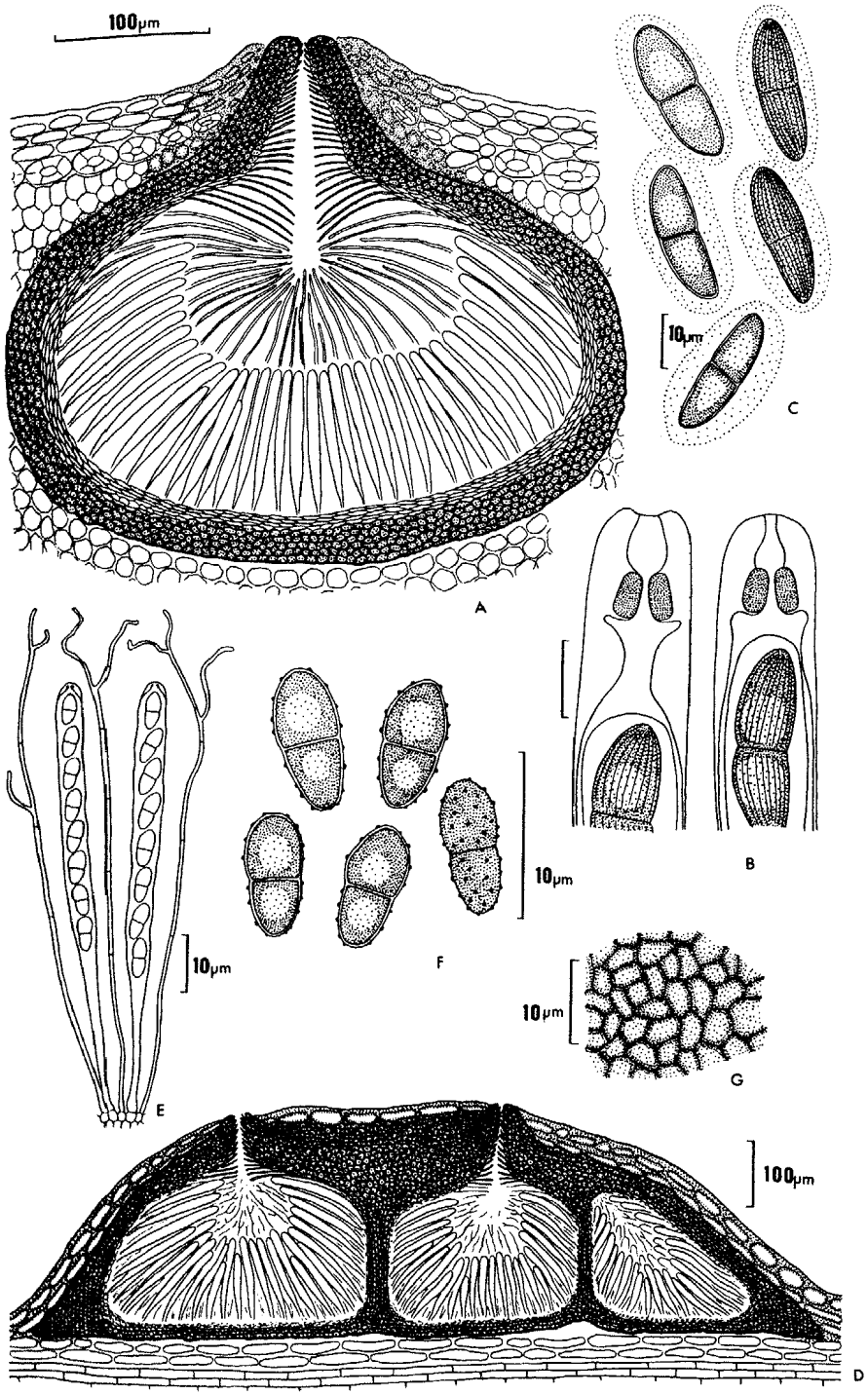

Plate 1. *Amphisphaeria striatispora* (holotype): A. Section of the ascoma immersed in the host. – B. Apical apparatus of the asci. – C. Ascospores *Roussoella verruculosa* (holotype). – D. Vertical section of a stroma containing three ascomata. – E. Asci with ramified paraphyses. – F. Ascospores. – G. Structure of the peridium.

Material. – Monument 40, Capbreton, CANDOUSSAU 5604, 11 June 1984 (YAM 24099, holotype). – Additional collection examined: On dead sheaths of *Pseudosasa japonica,* Monument 40, Capbreton, CANDOUSSAU 5604, 16 Decemer 1984.

The I + apical plug of the unitunicate asci and two-celled, brownish ascospores with a gelatinous sheath, as well as the structure of the perithecia (MÜLLER & von ARX, 1962; 1973) are diagnostic for *Amphisphaeria* CES. & de NOT. (Amphisphaeriaceae). Several species of *Amphisphaeria* have been described on bamboos, mainly from Asia. These species (*A. bambusina* SYD., *A. khandalensis* REHM, and *A. muroiana* HINO & KATUMOTO) differ from *A. striatispora* in having much larger asci and ascospores. *Amphisphaeria phyllostachydis* Hara has been excluded from *Amphisphaeria* by HINO & KATUMOTO (1965). *Amphisphaeria schizostachydis* REHM should be excluded from *Amphisphaeria* because of the J-apical structure of the asci. *Amphisphaeria bambusae* TRAV. has been recorded in northern Italy; its ascospores are smaller than those of *A. striatispora.*

2. ***Roussoella verruculosa*** CANDOUSSAU & KATUMOTO, sp. nov. – Pl. 1, Figs. D–G.

Stromatibus sparsis vel gregariis, subepidermalibus, subconoideis, coriaceis, atro brunneis, 350–500 µm diam; 300–350 µm alt.; ascomatibus solitariis vel gregariis globosis vel subconoideis, membranaceis, 200–280 µm, ostiolatis; peridio pseudoparenchymatico, cellulis polyhedricis opacis 4–5 µm composito; ascis unitunicatis, octosporis, 70–75 × 4.5–5 µm: paraphysibus numerosis, filiformibus, hyalinis, septatis, ramulosis, eminentibus inter ascis, 1–1.5 µm crassis; ascosporis monostichis, fusoideis, in medio septatis, ad septum leviter constrictis, apice rotundatis, brunneis, guttatis, verruculosis, 7–8 × 5 µm. Hab. In culmis emortuis *Phyllostachydis mitis.* France, Hotel Theas, 33 Bernos Beaulac, CANDOUSSAU 5396, 20 February 1984 (YAM 24097, holotypus).

Stromata scattered or gregarious, covered by the epidermis, subconical, dark brown, coriaceous, 350–500 µm across, 300–350 µm high. –

Perithecia one or more in a stroma, globose to subconical, membranaceous, ostiolate, 200–280 µm diam. – Peridium pseudoparenchymatous, composed of polyhedral opaque cells 4–5 µm diam.

Asci unitunicate, I+, cylindrical, with a rounded apex and short stipe, octosporous, 70–75 × 4.5–5 µm. – Paraphyses numerous, filiform, septate, branched, longer than the asci, hyaline, 1–1.5 µm diam. – Ascospores uniseriate, fusoid, septate in the middle, slightly constricted at the septum, rounded at the ends, brown, guttulate, verruculose, 7–8 × 5 µm.

Habitat. – On dead stems of *Phyllostachys mitis,* France.

Material. – Hotel Theas, 33 Bernos Beaulac, CANDOUSSAU 5396, 20 February 1984 (YAM 24097, holotype). – Additional collections: On dead stems of *Phyllostachys bambusoides,* 64 Sauveterre de Béarn, 31 December 1982, VIVANT & CANDOUSSAU.

Roussoella SACC. is characterized by two-celled ascospores, unitunicate asci with a small globose apical ring stained slightly blue with Melzer's reagent, and stromata with several perithecia (MÜLLER & von ARX, 1962; 1973). *Roussoella verruculosa* can be distinguished from the closely related *R. phyllostachydis* HINO & KATUMOTO by its smaller stromata and ascospores and by its branched paraphyses.

3. ***Lasiostictella*** SHERWOOD-PIKE, gen. nov.

Ascomatibus ascohymenialibus, immersis, orbicularibus vel irregularibus, fissuris stellatis dehiscentibus. Textura marginali hyphis intertextis in matrice brunnea immersis composita. Periphysoidibus eminentibus, hyphae specie, ad basim hymenii progressis. Paraphysibus numerosis, septatis, eramosis vel ramosis. Hymenio iodo non coerulescenti. Ascis cylindraceis vel clavatis, tenuitunicatis, poro iodo coerulescenti. Ascosporis transversaliter septatis, hyalinis, vagina mucosa non praeditis. Statu anamorphosis incognito.

Species typica: *Lasiostictella bambusae* SHERWOOD-PIKE.

Ascomata ascohymenial, immersed, orbicular or irregular in outline, without pre-formed lines of dehiscence, opening at maturity by means of stellate fissures to expose the sunken hymenium. Marginal tissues composed of slender interwoven hyphae cemented in brown pigmented gel. – Periphysoids prominent, hyphal, extending to the base of the hymenium – Paraphyses numerous, septate, simple to sparingly branched, hymenial gel J–. – Asci cylindric-clavate, thin walled, with a prominent J+ blue apical ring. – Ascospores transversely septate, colorless, without a gelatinous sheath. – Anamorph unknown.

The genus differs from *Karstenia* FR., a genus of uncertain affinity (SHERWOOD, 1977) in having J+ asci and a pigmented, entirely hyphal covering layer, and from *Lasiostictis* SACC. & BERLESE in having J+ asci and cylindrical, unsheathed ascospores. There is also a resemblance to *Odontotrema rhopalospermum* KIRSCHST., which occurs on culms of *Phragmites* in eastern Europe; however, this taxon (which is not an *Odontotrema* NYL.) has prominently sheathed spores (Di COSMO & al., 1984; SHERWOOD-PIKE, 198–). The combination of J+ annulate asci, immersed fruitbodies, a vertically oriented covering layer and unsheathed spores place *Lasiostictella* in the Phacidiaceae, where it appears to be distinct from the other genera accepted in the family.

Lasiostictella bambusae SHERWOOD-PIKE, sp. nov., Pl. 3

Ascomatibus immersis orbicularibus vel angularibus vel elongatis, atrofuscis, 3–4 fissuris stellatis dehiscentibus. Disco ochraceo, 0.3–0.7 mm diametro. Epithecio 65–70 µm crasso, hyphis septatis 1.5 µm crassis in matrice gelatinosa involutis composito. Hyphis periphysoidis numerosis, ramosis, 30–40 µm longis, ad apicem crassioribus, septatis, hyalinis. Ascis cylindraceo-clavatis, breviter pedicellatis, unitunicatis, tenuitunicatis, poro iodo coerulescenti praeditis, octosporis, 70–78 × 9–11 µm.

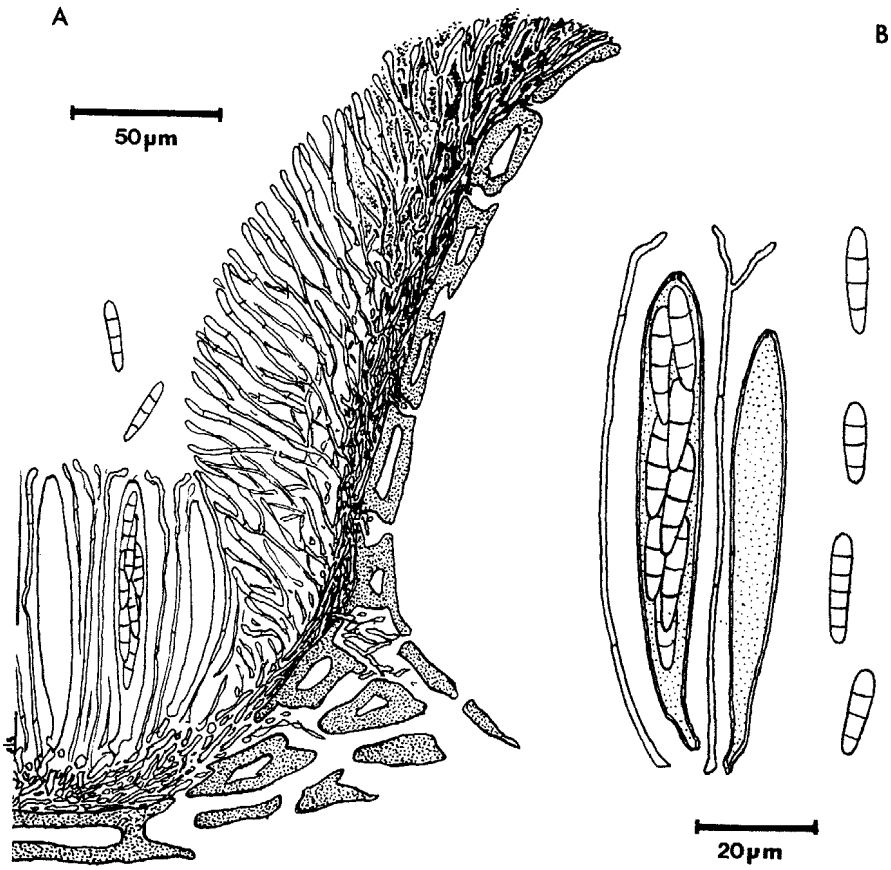

Plate 2. *Lasiostictella bambusae* (holotype): A. Cross section of apothecium. – B. Asci, paraphyses, and ascospores.

Ascosporis irregulariter biseriatis, cylindraceis versus cylindraceoclavatis, hyalinis, vagina mucosa non circumdatis, 12–17 × 3–4.3 µm, 3–5 septatis. Paraphysibus hyalinis, simplicibus vel ad apicem furcatis, 1.2 µm crassis. Holotypus: ad culmis emortuis *Pseudosasae japonicae,* Monumento 40, Capbreton, CANDOUSSAU 4667, 15 Majo 1984 (ZT).

Apothecia immersed, circular, angular, or somewhat elongate, dark brown, at first closed, opening by 3–4 irregular teeth to expose the sunken ochraceous hymenium, 0.3–0.7 mm diam., scattered or sometimes becoming confluent in lines parallel to the grain of the substrate. When the ascocarps are hydrated the inner face of the margin appears white-pruinose due to the presence of periphysiodal hairs. Covering layer in cross section 65–70 µm thick, firmly adhering to the overlying substrate, of slender septate hyphae 1.5 µm diam. immersed in a gel, darkening and becoming crumbly external-

ly. – Periphysoidal hyphae numerous, branched near the base, 30–40 µm long, a little enlarged near the apex, septate, colorless. – Subhymenium 10–15 µm thick, nearly colorless.

Asci cylindric-clavate, short-stalked, thin-walled, with a prominent I+ blue apical annulus, 70–78 × 9–11 µm, 8 spored. – Ascospores irregularly biseriate, cylindrical to cylindric-clavate, hyaline, not sheathed, 12–17 × 3–4.3 µm, 3–5 septate. – Paraphyses colorless, simple or forked near the apex, 1.2 µm broad. Hymenial gel I–.

Material. – On culms of *Pseudosasa japonica*, Monument 40, Capbreton, CANDOUSSAU 4667, 15 May 1984 (ZT, holotype). – Additional collections: On culms of *Pseudosasa japonica*, Monument 40, Capbreton, CANDOUSSAU, 11 June 1984.

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