

## PLEUROFLAMMULA

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(With 10 Text-Figures)

Ten species of *Pleuroflammula* Sing. (three of which are new: *P. praestans*, *P. overeemii*, *P. simulans*) are described and illustrated and their taxonomy and geographical distribution are discussed.

Contrary to Romagnesi's opinion (1977) on micro-genera the few known species of *Pleuroflammula* represent a well defined natural group of agarics which deserves the status of a good and distinct genus (Singer, 1946).

In the field the experienced collector only can distinguish *Crepidotus* from *Pleuroflammula*. Both genera form rather small conchate fruit-bodies which are attached either laterally-dorsally or by an eccentric or lateral and inconspicuous stipe to organic debris (mostly rotten wood and/or bark of dicotyledonous plants). Using a hand lens the attentive observer, studying a species of *Pleuroflammula*, in many cases will discover that most of these fungi bear persistent veil remnants along the margin of the pileus and/or on the stipe. The presence of the veil is an important morphological and therefore taxonomical character to separate *Pleuroflammula* from the gymnocarpous species of *Crepidotus*.

Furthermore most taxa of *Pleuroflammula* have deep yellow to golden brown or brown coloured carpophores and the context tastes bitter. The spore print is of a deep rust brown colour and thus reminds of spore prints typical for *Gymnopilus*, *Pyrrhoglossum*, *Conocybe* or *Pachylepyrium*.

The spores of *Pleuroflammula* are broadly ovate, smooth, thickwalled, rust brown to yellow-brown and with few exceptions lack the germ pore. In general the hyaline cheilocystidia are clavate, rarely cylindrical or tapering towards the apex and bear no crystals. The basidia are found to be 4-spored, rarely 2-spored (*P. ragazziana*). When pieces of fresh or dried carpophores are mounted in 3% KOH the yellow encrusting pigment immediately dissolves in the solution. The chemical structure of the pigment is unknown.

All characters mentioned before put *Pleuroflammula* distinctly apart from taxa such as *Crepidotus*, *Melanotus*, *Pyrrhoglossum* or laterally inserted species of *Naucoria* (*Simocybe*) or *Phaeomarasmius*. To our knowledge there is — except *Pachylepyrium* — also no other described genus of centrally stipitate agarics or boletes known yet which might be considered as closely related to *Pleuroflammula*.

Based on the hitherto reported records *Pleuroflammula* spreads from the tropical/subtropical belt to temperate zones in both Hemispheres. The area of distribution

of several taxa can go over large geographic distances (e.g. *P. flammea* of *P. ragazziana*). Other species appear to be restricted to rather small geographic regions like *P. puberula* (California), *P. overeemii* (Java) or *P. croceo-sanguinea* and *P. majuscula* (Chile) (Singer 1978: 63).

Despite the poor ecological data available at present it seems that the majority of species require for their development climatic conditions which are dominated by high rain fall, i.e. the water-soaked evergreen forests on the West-coast of New Zealand and Chile, the moss- and cloud-forests of Papua New Guinea or the monsoon forests of Ceylon and Java. However, much more detailed data are necessary to get more information not only about the ecology proper of the species but also about their horizontal and vertical distribution. Under these circumstances it appears to the critical reader unlikely that *P. overeemii* or *P. simulans* is just restricted to Java or Papua New Guinea respectively. Due to our lack of knowledge about the mycoflora in South-East-Asia the two taxa are recorded not more than once despite the fact that their habitat occurs over hundreds of miles in that part of the world.

Material and references have been received from several herbaria (BO, F, FH, K, NY, PC, S and SGO) and I must acknowledge the assistance of their curators who supported my work in various ways.

If not otherwise stated the magnification of the figures are: carpophores (natural size), spores ( $\times 2000$ ), basidia and cystidia ( $\times 1000$ ), cuticle (vertical section,  $\times 500$ ).

#### KEY TO SPECIES OF PLEUROFLAMMULA

- 1a. Pileus scaly, squamulose or squarrulose, margin often floccose-crenate to appendiculate from veil remnants (false veil); stipe squamulose below submembranaceous or peronate annulus (compare also *P. simulans*); spores deep rust brown (KOH), germ pore absent. 2
  - b. Pileus glabrous, minutely fibrillose or tomentose, conspicuous squamules and veil remnants absent; spores yellowish, brown or rust brown . . . . . 6
- 2a. Cheilocystidia  $25-55 \times 2-6,5 \mu\text{m}$ , effiliate, subventricose at base, tapering towards obtuse apex or cylindrical; pileus  $-20 \text{ mm}$ , yellow to golden yellow, margin distinctly appendiculate-crenate; lamellae pale yellow turning brown, deep brick red in dried specimens; stipe eccentric or lateral, concolorous with pileus; spores  $7,5-10 \times 4,5-6,5 \mu\text{m}$ ; on rotting branches and logs in broad-leaved forests; Chile (type), Argentina
  1. *P. croceo-sanguinea*, p. 441
  - b. Cheilocystidia clavate or subcylindrical-capitate. . . . . 3
- 3a. Pleurocystidia absent; pileus  $-30 \text{ mm}$ , yellow, with orange to ferruginous scales, margin dentate; stipe eccentric, lateral or absent,  $-6 \times -1,5 \text{ mm}$ , yellow; annulus membranaceous or fibrillose; spores  $6,5-8(-8,5) \times 5-6 \mu\text{m}$ ; cheilocystidia  $25-65 \times 4-6 \mu\text{m}$ ; on rotting decaying wood; Eastern USA (type), Mexico, Colombia, ? Brazil 2. *P. flammea*, p. 441
  - b. Pleurocystidia ( $20-40 \times 5-8 \mu\text{m}$ ) lageniform to fusoid-subcapitate (remining of chryso-cystidia) . . . . . 4
- 4a. Pileus  $-15 \text{ mm}$ , pale yellow covered with ferruginous scales, margin dentate from whitish veil remnants; stipe  $-4 \times -1 \text{ mm}$ , eccentric to lateral, white to ochraceous; distinct annulus absent in mature carpophores; spores  $8-10(-10,5) \times 5,5-7 \mu\text{m}$ ; basidia 2-spored; cheilocystidia  $6-7 \mu\text{m}$  at apex, clavate; on rotten wood (*Tilia*, *Eucalyptus*); East Africa (Somalia, type; Kenya), South Africa, Tristan da Cunha, Azores, Portugal, Ireland
  3. *P. ragazziana*, p. 443
- b. Pileus yellow, covered with concolorous squamules . . . . . 5

- 5a. Pileus -30 mm, deep yellow or yellow-brown, margin dentate; stipe -10×-2 mm, eccentric to lateral, concolorous with pileus, annulus membranaceous, spores 7-9,5×5-6 μm; basidia 4-spored; cheilocystidia 25-50×4-8 μm (at apex), often in fascicles; on rotten plant material (*Cordyline*, *Neopanax*, *Pseudopanax*); New Zealand  
4. *P. praestans*, p. 445
- b. Pileus -16 mm, pale yellow or ochraceous, with orange appressed squamules; stipe -2×-1 mm, eccentric, concolorous with pileus; annulus not distinct; base floccose; spores (7-)7,5-9×5-6 μm; cheilocystidia 15-30×5-10 μm, clavate; on rotten organic material; Ceylon, ? Colombia . . . . . 5. *P. flavo-marginata*, p. 445
- 6a. Spores yellowish to brown (KOH) . . . . . 7
- b. Spores deep rust brown . . . . . 9
- 7a. Spores lacking germ pore, 6-8,5×5-5,5 μm; cheilocystidia 25-40×5-6 μm; pileus -5 mm, brown; lamellae brown, edge albofimbriate; stipe -2×-1 mm, lateral, brown; on rotten wood; Java . . . . . 6. *P. overeemii*, p. 446
- b. Spores with germ pore (compare also *P. simulans*) . . . . . 8
- 8a. Pileus -6(-15) mm, yellow; stipe lateral or absent, concolorous with pileus; spores 6,5-8×4,5-5,5 μm, ovate to sublentiform; cheilocystidia polymorphous, subcylindrical to ventricose or appendiculate; on rotten wood; Guadeloupe (type), ? Eastern USA  
7. *P. dussii*, p. 447
- b. Pileus -10 mm, brown; stipe -4 mm long, eccentric to lateral, brown; spores 6-8,5×4,5-5,5 μm, often phaseoliform; cheilocystidia 30-55×2-5 μm, fusoid-capitate or cylindrical-capitate; on decaying wood; Western USA (S. California) . 8. *P. puberula*, p. 447
- 9a. Spores 6,5-8×4,5-5 μm, with germ pore, often phaseoliform; cheilocystidia 20-35×4-7 μm, fusoid-capitate; pileus -28 mm, yellow; stipe -16×-3,5 mm, eccentric, yellow; on rotten wood; Chile. . . . . 9. *P. majuscula*, p. 449
- b. Spores 7-8,5×5-5,5 μm, germ pore absent, ovate; cheilocystidia 40-90×3-4 μm, cylindrical or tapering towards obtuse apex, occasionally branched; pileus -25 mm, golden brown; stipe -5×-2 mm, eccentric to lateral, concolorous with pileus, cortina ring-like; on rotten branches of broad-leaved trees or stems of bamboo; Papua New Guinea . . . . . 10. *P. simulans*, p. 449

1. PLEUROFLAMMULA CROCEO-SANGUINEA (Mont.) Sing.—Fig. 1 A—G.

*Agaricus croceo-sanguineus* Mont. apud Gay in Hist. Fis. Pol. Chile 7: 339. 1849 (basionym).  
 — *Pleuroflammula croceo-sanguinea* (Mont.) Sing. in Beih. Nova Hedwigia 29: 283. 1969.  
 ILLUSTRATIONS.—Montagne apud Gay (1849: pl. 7 fig. 4).

HABITAT.—On rotten branches and logs of broad-leaved trees (*Nothofagus dombeyi* and *N. obliqua* are known host plants). Chile (type), Argentina, Ecuador (? , see Patouillard & Lagerheim 1895: 205).

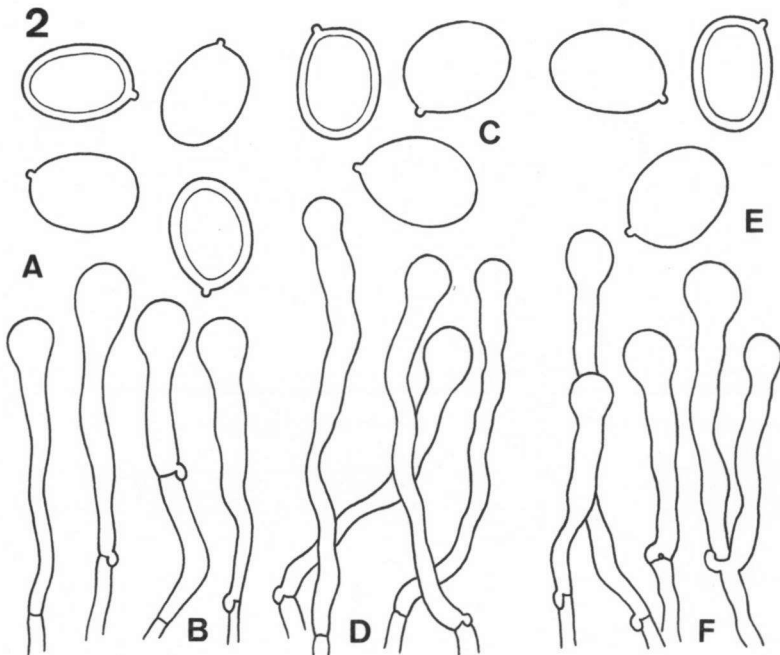
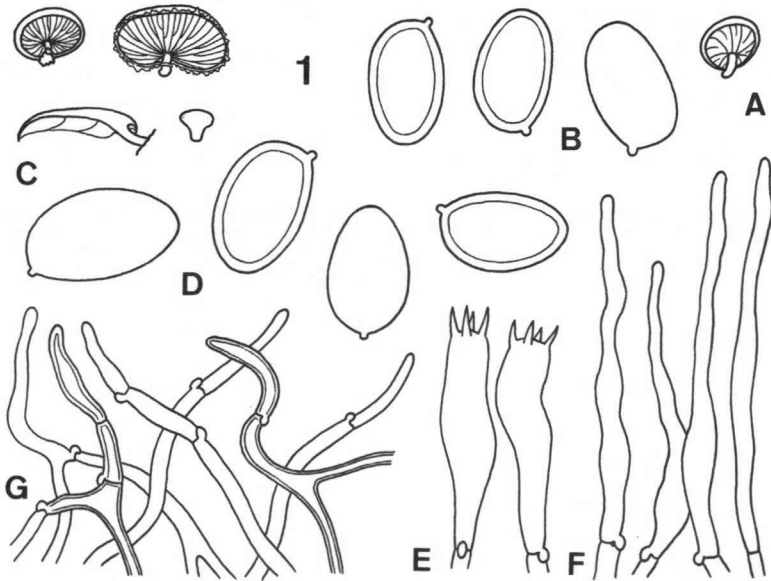
MATERIAL EXAMINED.—CHILE: Valdivia, bois de Roble, 1839, Gay (holotype, PC); Valdivia, Cuenta Sta. Elvira, 8 Apr. 1975, Horak 75/244 (ZT).

Our material corresponds well with the type collection (from the same locality) and with Singer's description. For more information consult Singer (1969).

According to Singer (1978: 63) *P. croceo-sanguinea* ss. Pat. & Lagerh. (1895: 205) is conspecific with *P. flavo-marginata* (B. & C.) originally described from Ceylon (see p. 445).

2. PLEUROFLAMMULA FLAMMEA (Murrill) Sing.—Fig. 2 A—F.

*Crepidotus flammeus* Murrill in North American Fl. 10: 153. 1914 (basionym). — *Pleuroflammula flammea* (Murrill) Sing. in Mycologia 38: 522. 1946.



*Pleuroflammula chocoruensis* Sing. in *Lilloa* 13: 59. 1947.

*Pleuroflammula squarrulosa* Sing. in *Beih. Nova Hedwigia* 7: 86. 1973.

**HABITAT.**—On rotten branches and dead logs of deciduous trees. East-Coast of USA (from New Hampshire to Florida), Colombia.

**MATERIAL EXAMINED.**—U. S. A.: Virginia, Crabbottom, 17–21 July, *Murrill* 221 (holotype, NY); Blackburg, 27 July–3 Aug. 1904, *Murrill* 325 (NY). — Connecticut: Redding, 17 July 1902, *Earle* 472 (NY). — Tennessee: Unaka Springs, 18–24 Aug. 1904, *Murrill* (NY). — Florida: Brodgon Hammock, Dade Co., 19 June 1915, *Small & Dossier* 6074 (NY). — New Hampshire: Chocorua, Sept. 1905, *Krieger* 194 (holotype of *P. chocoruensis* Sing., FH). — C O L O M B I A: Cali, Cerro Horqueta, 2 May 1968, *Singer* B 6915 (holotype of *P. squarrulosa* Sing., F).

Upon examining the collections mentioned above there can be no doubt that the area of distribution of *P. flammea* — a common fungus along the East-Coast of the USA — spreads also across the Carribean to Colombia. All characters found on the Colombian material are identical with the ones observed on typical *P. flammea*.

### 3. *Pleuroflammula ragazziana* (Bres.) Horak, *comb. nov.* —Fig. 3 A—G.

*Crepidotus ragazzianus* Bres. in *Ann. Ist. Bot. Roma* 5: 176. 1892 (basionym).

*Crepidotus hibernianus* A. Pears. & Dennis *apud* A. Pears. in *Trans. Brit. Myc. Soc.* 32: 268. 1949. — *Pleuroflammula hiberniana* (A. Pears. & Dennis *apud* A. Pears. *Sing. in Sydowia* 15: 70. 1961.

*Pleuroflammula flammea* (Murrill) ss. Sing. in *Res. Norw. scient. Exp. Tristan da Cunha* 37–38: 17. 1955.

*Crepidotus austroafricanus* Pilát in *Trans. Brit. myc. Soc.* 33: 237. 1950. — *Pleuroflammula austroafricana* (Pilát) Reid in *Contr. Bolus Herb.* 7: 115. 1975.

*Pleuroflammula flavomarginata* (B. & Br.) Sing. ss. Pegl. in *Kew Bull. Add. Ser.* 6: 485. 1977.

**ILLUSTRATIONS.**—Bresadola (1933. *Iconogr. mycol.*: pl. 1248 fig. 2; Pearson (1949: 268); Reid (1975: pl. 17A); Pegler (1977: fig. 104, 3a–d).

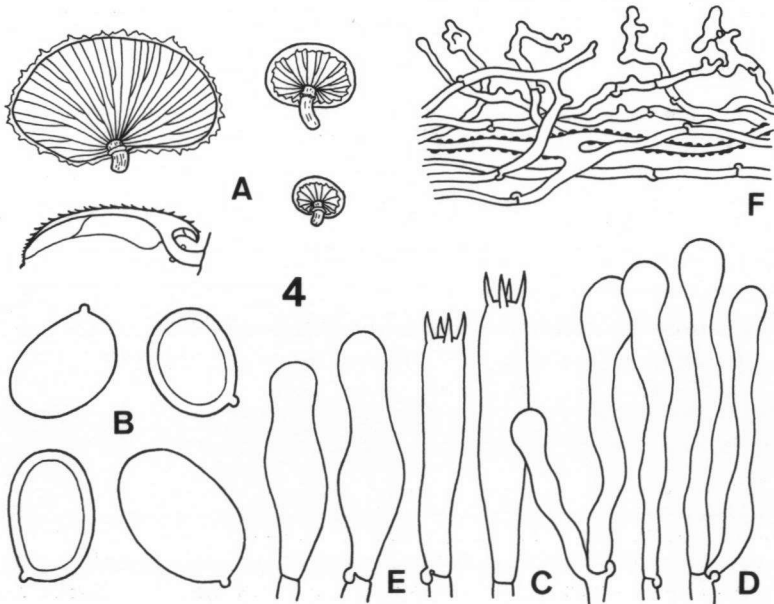
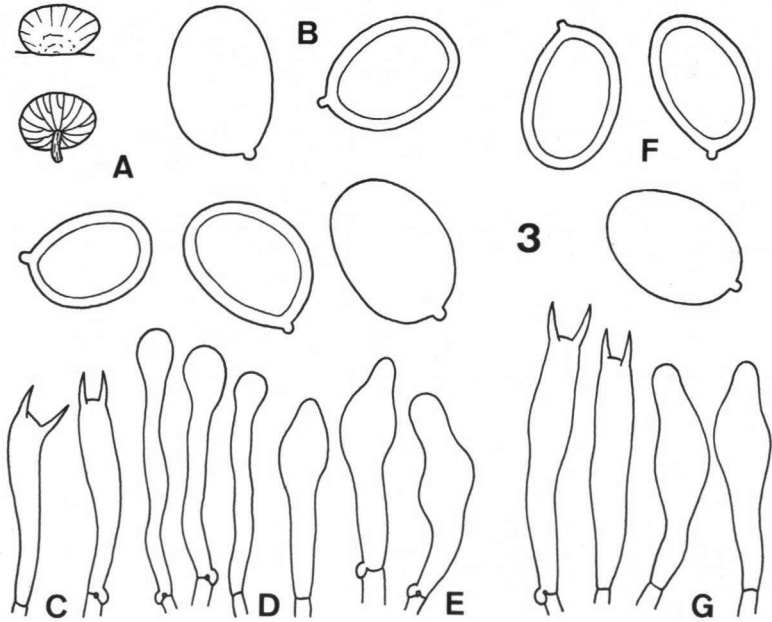
**HABITAT.**—On rotten wood and bark of broad-leaves trees (*Eucalyptus* in Portugal; *Tilia* in Ireland). East Africa (Somalia, type; Kenya), South Africa, Tristan da Cunha, Azores, Portugal, Ireland.

**MATERIAL EXAMINED.**—E A S T A F R I C A: Gambia, Ragazzi (holotype, S). — P O R T U G A L: March 1902, *Torrend* 764 (herb. Bresadola, S). — I R E L A N D: Killarney, Muckross Park, 29 Aug. 1946, *Pearson & Dennis* (holotype of *Crepidotus hibernianus*, K).

The most distinctive characters of this (in Europe probably introduced) fungus are: small ferruginous scales on the surface of the pileus, inconspicuous white veil remnants on the stipe, relatively large spores, 2-spored basidia and short clavate

Fig. 1. *Pleuroflammula croceo-sanguinea*. — A, B. From type of *P. croceo-sanguinea*. — A. Carpophore (sec. Mont. *apud* Gay). — B. Spores. — C–G. From *Horak* 75/244. — C. Carpophores. — D. Spores. — E. Basidia. — F. Cheilocystidia. — G. Cuticle.

Fig. 2. *Pleuroflammula flammea*. — A, B. From type of *P. flammea*. — A. Spores. — B. Cheilocystidia. — C, D. From type of *P. squarrulosa*. — C. Spores. — D. Cheilocystidia. — E, F. From type of *P. chocoruensis*. — E. Spores. — F. Cheilocystidia.



cheilocystidia. Recently Pegler (1977: 485) and Dennis, Reid & Spooner (1977: 88) reported on the occurrence of this conspicuous fungus in Kenya and the Azores (as '*P. hibernica*'!) respectively.

#### 4. *Pleuroflammula praestans* Horak, *sp. nov.*—Fig. 4 A—F.

Pileo—30 mm lato, reniformi vel conchiformi, convexo, aureo vel aureobrunneo, squamuloso, marginem versus dentato-appendiculato, sicco. Lamellis ex adnato emarginatis, luteoauris dein luteoferrugineis, serratis, luteomarginatis. Stipite —10/—2 mm, excentrico vel laterali, cylindrico, pileo concolori, annulo membranaceo peronatoque instructo, basim versus floccoso. Odore nullo. Sapore amaro. Sporis 7–9,5 × 5–6 μm, ovatis, levibus, crasse-tunicatis, ferrugineis. Cheilocystidiis 25–50 × 4–8 μm, clavatis. Ad frustulos lignosos. Novazelandia. Holotypus: PDD 27133.

Pileus —30 mm diam., orbicular when young becoming reniform to conchiform, convex, with margin inrolled but dentate or appendiculate from veil remnants, yellow to deep yellow or yellow-brown, densely covered with minute fibrillose concolorous squamules, dry, estriate, not hygrophorous. Lamellae adnate to emarginate, ventricose, crowded, yellow-brown turning mustard brown or ferrugineous; edge serrate, concolorous or yellow. Stipe —10 × —2 mm, eccentric or lateral, always well developed, cylindrical, concolorous with pileus, with veil forming membranaceous persistent ring, towards apex glabrous to pruinose, towards base floccose-fibrillose, solid, dry, single in groups. Odour not distinctive. Taste bitter. Context yellow-brown, not gelatinized, Spore print yellow-brown to rust brown.

Spores 7–9,5 × 5–6 μm, ovate to ellipsoid, smooth, thick-walled, rust brown; germ pore absent. Basidia 25–36 × 6–7 μm, 4-spored. Cheilocystidia 25–50 × 4–8 μm, slender, clavate or cylindrical-subcapitate, thin-walled, with yellow-brown plasmatic pigment, often in fascicles, forming sterile edge on lamellae. Pleurocystidia 25–35 × 6–8 μm, fusoid-subcapitate, thin-walled, with yellow-brown plasmatic pigment, scattered. Cuticle a cutis of subregular interwoven cylindrical hyphae, terminal cells irregularly branched to coralloid (like *Marasmiellus*), membranes not gelatinized, encrusted with yellow-brown (KOH) pigment. Clamp connections present.

HABITAT.—On rotten leaves and branches of *Cordyline indivisa* (Agavaceae), *Neopanax arboreum* (Araliaceae) and *Pseudopanax crassifolium* (Araliaceae). New Zealand.

MATERIAL EXAMINED.—NEW ZEALAND: North Island, Mt. Egmont National Park, Stratford Lodge, 12 June 1968, Horak (holotype PDD 27133; isotype ZT 68/534); South Island, Westcoast, S. of Ahaura, 14 March 1968, Horak 68/172 (ZT).

#### 5. *PLEUROFLAMMULA FLAVO-MARGINATA* (B. & Br.) Sing.—Fig. 5 A—C.

*Crepidotus flavo-marginatus* B. & Br. in J. Linn. Soc. 11: 546. 1871 (basionym). — *Pleuroflammula flavo-marginata* B. & Br.) Sing. in Sydowia 6: 349. 1952.

? *Lentinus emerici* Berk. ined. (in sched., K). See Singer in Sydowia 15: 143. 1961.

Fig. 3. *Pleuroflammula ragazziana*. — A—E. From type of *P. ragazziana*. — A. Carpophores. — B. Spores. — C. Basidia. — D. Cheilocystidia. — E. Pleurocystidia. — F, G. From type of *P. hiberniana*. — F. Spores. — G. Basidia and cheilocystidia.

Fig. 4. *Pleuroflammula praestans*. — A—F. From type of *P. praestans*. — A. Carpophores. — B. Spores. — C. Basidia. — D. Cheilocystidia. — E. Pleurocystidia. — F. Cuticle.

*Agaricus croceo-sanguineus* Mont. ss. Pat. & Lagerh. in Bull. Soc. myc. France **11**: 205. 1895 (fide Singer, 1978: 63).

ILLUSTRATIONS.—Pilát (1950: 222).

HABITAT.—On rotten wood. Ceylon, ? India, ? Colombia (fide Singer, 1978: 63).

MATERIAL EXAMINED.—CEYLON: Ceylon, *Thwaites 392* (holotype; K).

Fresh collections of this conspicuous fungus are needed to get detailed information concerning both microscopical and macroscopical data. The type collection in K is in rather poor condition.

6. *Pleuroflammula overeemii* Horak, *sp. nov.*—Fig. 6 A—D.

Pileo –5 mm lato, minuto, spatulato vel conchiformi, convexo, glabro, brunneo veo ochraceobrunneo, siccio. Lamellis ex adnato emarginatis, distantibus, brunneis, serratis. Stipite –2/–1 mm, laterali, cylindrico, brunneo, glabro. Sporis 6–8,5/5–5,5  $\mu$ m, ovato-ellipsoideis, levibus, crasse-tunicatis, luteis. Cheilocystidiis 25–40/5–6  $\mu$ m, clavatis. Ad lignum putridum. Java. Holotypus! BO 259.

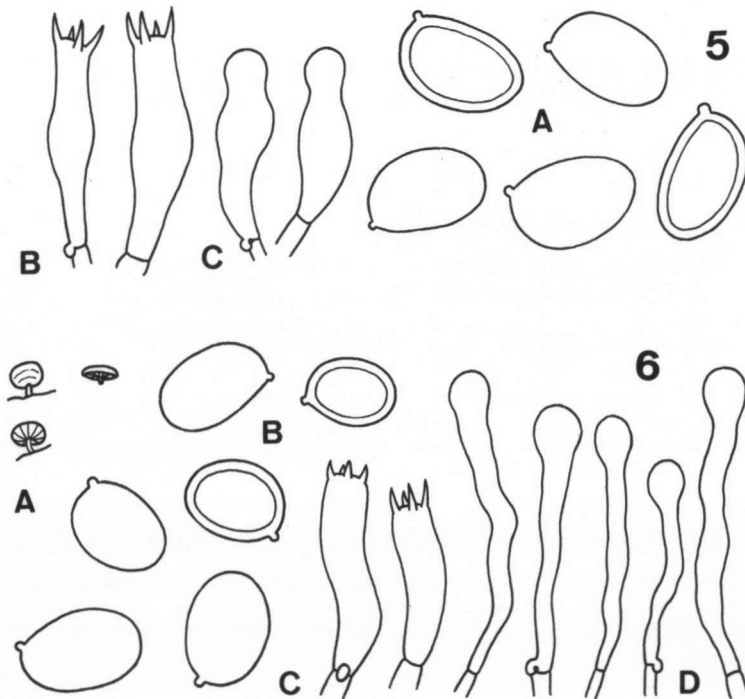


Fig. 5. *Pleuroflammula flavo-marginata*. — A–C. From type of *P. flavo-marginata*. — A. Spores. — B. Basidia. — C. Pleurocystidia.

Fig. 6. *Pleuroflammula overeemii*. — A–D. From type of *P. overeemii*. — A. Carpophores. — B. Spores. — C. Basidia. — D. Cheilocystidia.



Pileus—5 mm diam., at first spathulate becoming conchiform or reniform, margin inrolled, convex later plane; brown to ochraceous brown, dry, glabrous, estriate, not hygrophanous, veil remnants absent. Lamellae adnate to emarginate, distant, ventricose; brown to ochre brown, edge serrate, albofimbriate. Stipe—2 × 1 mm, lateral, cylindrical; concolorous with pileus, covered with white fibrils, veil forming neither ring nor cortina, dry, solid, single in groups. Odour and taste unknown. Context brown, not gelatinized. Spore print brown. Spores 6–8,5 × 5–5,5 μm, ovate (to ellipsoid), smooth, brown, thick-walled, germ pore absent. Basidia 18–22 × 5–6 μm, 4-spored. Cheilocystidia 25–40 × 5–6 μm, slender, clavate to subcapitate, with yellow plasmatic pigment. Cuticle a cutis of cylindrical hyphae, encrusted with brown pigment. Clamp connections present.

HABITAT.—On rotten wood. Indonesia (Java).

MATERIAL EXAMINED.—INDONESIA: Java, Bogor, Botanical Garden, May 1921, v. *Overeem* 259 (holotype; BO).

*Pleuroflammula overeemii* is well characterized by its small sized carpophores, lack of veil remnants and rather small spores.

#### 7. PLEUROFLAMMULA DUSSII (Pat.) Sing. apud Sing. & Smith—Fig. 7 A—B.

*Crepidotus dussii* Pat. in Bull. Soc. myc. France 18: 173. 1902 (basionym). — *Pleuroflammula dussii* (Pat.) Sing. apud Sing. & Smith in Mycologia 38: 521. 1946.

ILLUSTRATIONS.—Horak (1968: 479).

HABITAT.—On rotten wood and bark. Guadeloupe (type), U.S.A. (see Singer, 1946: l.c.).

MATERIAL EXAMINED.—GUADELOUPE: Bois de Bains-Jaunes, *Duss* (holotype; FH).

*Pleuroflammula dussii* represents the type species of the genus *Pleuroflammula*. Because of its morphological characters, however, this fungus takes a rather isolated position among the hitherto known species within that genus. To our opinion observations on fresh material might reveal that *P. dussii* is better accommodated in the genus *Melanotus* (Horak 1977).

A full description and additional data about *P. dussii* are found in Singer & Smith (1946), Hesler & Smith (1965) and Horak (1968).

#### 8. PLEUROFLAMMULA PUBERULA (Peck) Sing.—Fig. 8 A—C.

*Crepidotus puberulus* Peck in Bull. Torrey bot. Club 25: 324. 1898 (basionym). — *Pleuroflammula puberula* (Peck) Sing. in Lilloa 13: 85. 1947.

Original diagnosis (Peck, 1898):

'Pileus 6–10 mm, thin, reniform or suborbicular, nearly plane, minutely pubescent, brown; lamellae rather broad ventricose, rustybrown when mature, whitish on edge; stem short, 2–4 mm long, equal, curved, lateral or eccentric, brown, with thin suborbicular patch of white mycelium at base; spores subelliptical, 9–10 × 5–6 μm.

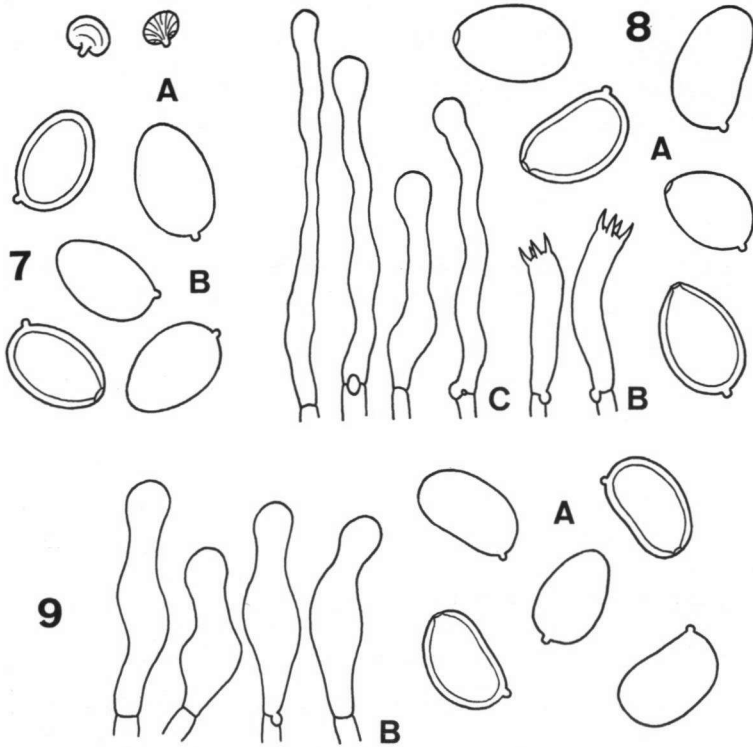


Fig. 7. *Pleuroflammula dussii*. — A, B. From type of *P. dussii*. — A. Carpophores. — B. Spores.  
 Fig. 8. *Pleuroflammula puberula*. — A–C. From type of *P. puberula*. — A. Spores. — B. Basidia.  
 — C. Cheilocystidia.  
 Fig. 9. *Pleuroflammula majuscula*. — A, B. From type of *P. majuscula*. — A. Spores. — B. Pleurocystidia.

#### Observations on the type-material:

Spores 6–8,5 × 4,5–5,5 μm, ovate to phaseoliform, smooth, thick-walled, pale yellow-brown, with distinct narrow germ pore. Basidia 15–20 × 4–5 μm, 4-spored. Cheilocystidia 30–55 × 2–5 μm, fusoid-capitate or cylindrical-capitate, with membrane occasionally thick-walled towards base, hyaline or with yellow-brown plas-matic pigment. Pleurocystidia absent. Cuticle? Clamp connections present.

HABITAT.—On decaying wood. U.S.A. (S. California).

MATERIAL EXAMINED.—U. S. A. : South California, Compton, 18 March 1897, McClatchie 1338 (holotype; NY).

The spores of *P. puberula* bear a narrow but distinct germ pore. In *Pleuroflammula* as far as known this distinctive character has been observed only in two taxa and both of them occur along the Pacific Coast in North America and South America.

9. *PLEUROFLAMMULA MAJUSCULA* Sing.—Fig. 9 A–B.

*Pleuroflammula majuscula* Singer in Beih. Nova Hedwigia 29: 282. 1969.

For macroscopical description see Singer (1969: l.c.).

Spores 6,5–8 × 4,5–5,5  $\mu\text{m}$ , ovate to ellipsoid, often phaseoliform, smooth, with thick-walled membrane, ochraceous to rust brown; germ pore narrow but distinct. Basidia 18–25 × 5–7  $\mu\text{m}$ , 4-spored. Cheilocystidia 20–35 × 4–7  $\mu\text{m}$ , polymorphous, cylindrical-capitate or fusoid-lageniform, with yellow plasmatic pigment. Pleurocystidia absent. Cuticle a cutis of cylindrical not gelatinized hyphae, encrusted with yellow-brown pigment. Clamp connections present.

HABITAT.—On rotten log. Chile.

MATERIAL EXAMINED.—CHILE: Valdivia, Hueycolla, 4 May 1967, Singer M 6729 (holotype; SGO).

*Pleuroflammula majuscula* appears to be a rather rare fungus in Chile and it is known only from the type locality. *P. puberula* — from South California — is its closest relative among the taxa studied in this contribution.

10. *Pleuroflammula simulans* Horak, *sp. nov.*—Fig. 10 A–E.

Pileo 25 mm lato, conchiformi vel reniformi, convexo, ad marginem dentato-appendiculato, aureobrunneo, velutino. Lamellis ex adnato emarginatis, luteis dein sinapicoloribus, alboseratis. Stipite 5 × 2 mm, laterali, cylindrico, pileo concolori, anulo imperfecto instructo, fibrilloso. Sporis 7–8,5 × 5–5,5  $\mu\text{m}$ , ovatis, levibus, crasse-tunicatis, ferrugineis, aporis. Cheilocystidiis 40–90 × 3–4  $\mu\text{m}$ , cylindratis. Ad ramos putridos. Nova Guinea. Holotypus: ZT 72/6.

Pileus 25 mm diam., conchiform to reniform, with margin incurved and dentate-appendiculate, convex; golden yellow to yellow-brown; velutinous to felty, estriate, dry, conspicuous veil remnants absent. Lamellae adnate to emarginate, at first deep yellow (like *Gymnopilus*) changing to yellow-brown, mustard brown or ochraceous-brown; edge whitish, serrate. Stipe 5 × 2 mm, lateral, cylindrical, concolorous with pileus, longitudinally fibrillose, dry, solid, with incomplete, fibrillose to submembranaceous, subpersistent annulus; single in groups. Odour and taste not distinctive. Context yellow-brown. Spore print brown with ferruginous tint.

Spores 7–8,5 × 5–5,5  $\mu\text{m}$ , ovate, smooth, thick-walled, rust brown; germ pore absent. Basidia 20–27 × 5–7  $\mu\text{m}$ , 4-spored. Cheilocystidia 40–90 × 3–4  $\mu\text{m}$ , cylindrical or tapering towards obtuse apex, hyaline or with yellow-brown plasmatic pigment, forming sterile edge. Pleurocystidia absent. Cuticle a cutis of subregular cylindrical hyphae (4–10  $\mu\text{m}$  diam.), membranes not gelatinized, yellow-brown plasmatic and encrusting pigment. Clamp connections numerous.

HABITAT.—On rotten branches of broad-leaved trees and stems of *Nastus* sp. (Bambusaceae). Papua New Guinea.

MATERIAL EXAMINED.—PAPUA NEW GUINEA: Eastern Highlands, Goroka, Daulo Pass, 5 Jan. 1972, Horak 72/6 (holotype; ZT).

The cheilocystidia (shape, size) and the spores of *P. simulans* are reminiscent of those observed in *P. croceo-sanguinea*. However, the Chilean fungus is well separated by its conspicuous veil remnants and the deep brick red coloured lamellae.

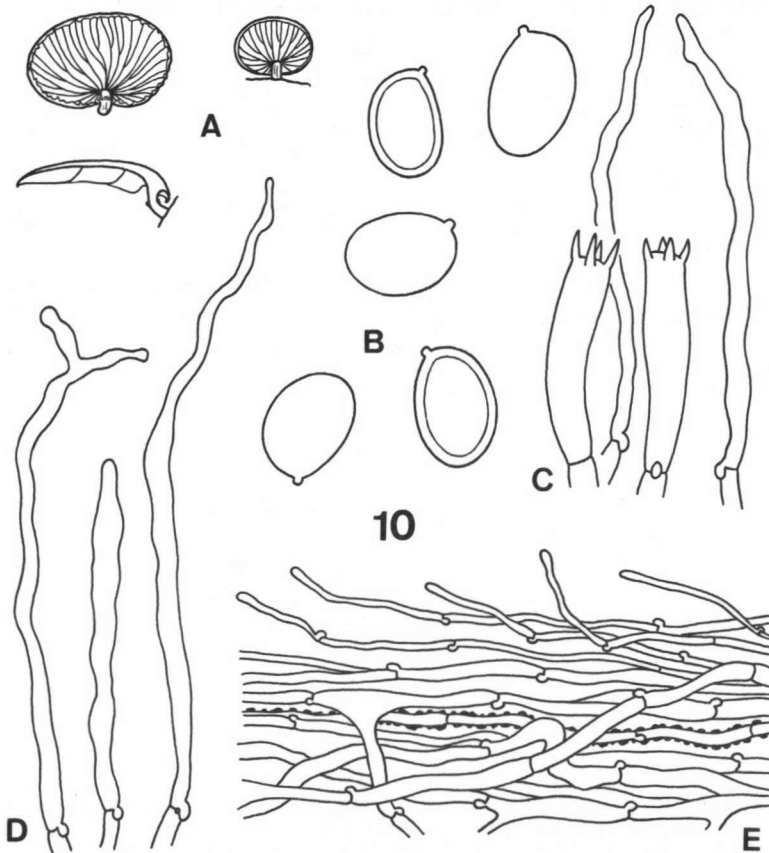


Fig. 10. *Pleuroflammula simulans*. — A-E. From type of *P. simulans*. — A. Carpophores. — B. Spores. — C. Basidia. — D. Cheilocystidia. — E. Cuticle.

#### DOUBTFUL SPECIES

*Pleuroflammula fluminensis* Singer in Beih. Sydowia 7: 86. 1973.

Despite efforts no type material was located in NY, FH and F.

#### Zusammenfassung

Zehn Arten von *Pleuroflammula* Singer (1946) [davon 3 neue: *P. praestans*, *P. overeemii*, *P. simulans*] werden beschrieben, abgebildet und bezüglich Taxonomie und geographischer Verbreitung diskutiert.

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