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THE GENUS MELANOTUS PAT.

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(With 80 Text-figures)

The genus *Melanotus* is revised. Its delimitation is discussed. A key is given to 21 accepted species. Of these synonyms, habitat, distribution, and illustrations are given. The new species *Melanotus citrisporus*, *M. protractus*, *M. distinctus*, *M. vorax*, and *M. communis* are described. *Melanotus hepatochrous* and *M. flavolivens* are described anew. A list of host plants is added.

Due to their small size and rare occurrence the Melanoti are agarics whose identification and taxonomy still raise considerable problems. No wonder no key or detailed modern descriptions of many of the taxa have ever been published.

The genus *Melanotus* (Singer, *1975*: 543) is characterized by small carpophores, eccentric or lateral short tipe (but occasionally the stipe is centric or even lacking), absence of veil remnants, brown spore print (often with purplish tint), ovate sublentiform or limoniform smooth spores with either thin- or thick-walled complex brown or opaque spore membrane, distinct apical germ pore, usually fusoid hyaline cheilocystidia, absent pleurocystidia, and a cutis of interwoven cylindrical hyphae with clamp connections and encrusting pigment.

All known species of *Melanotus* grow saprophytically on decomposing organic material (see list of host plants).

Concerning the area of distribution, the majority of species are restricted to regions close to the Equator but some taxa also occur in more temperate zones. The northernmost record of *M. phillipsii* is from Sweden. In the southern hemisphere *M. proteus* occurs in Kenya and also in the Cape Province. *Melanotus hepatochrous* seems to be a rather common fungus in the forests of Tasmania and finally *M. patagonicus* was collected in the Patagonian *Nothofagus* forests, which are covered by snow in winter at least temporarily. Many of the species described hitherto are known only from the type collection and therefore our knowledge about their ecology is at best poor. Due to their habit and habitat most of the classical species of *Melanotus* are published under *Crepidotus* or *Claudopus*. However, microscopical examination immediately reveals that *Melanotus* has no taxonomical relationship to these genera. Despite a number of macroscopical similarities the microscopical characters of *Pyrrhoglossum* and *Pleuroflammula* are so distinct that no species of these genera can be mistaken for *Melanotus*. The delimitation towards eccentric or estipitate species of *Phaeomarasmius* or *Tubaria*, however, can be difficult since their brown spores sometimes possess an oblique germ pore. In such cases generic identification is possible only in well documented collections.

The taxonomic limit raising the most problems is undoubtedly that of *Psilocybe* (*Deconica*). Where must the separating line be drawn between *Psilocybe* and *Melanotus*? Or is the eccentric, reduced or even absent stipe a criterion of sufficient importance to warrant splitting off *Melanotus* from *Psilocybe?* (Singer, *1976*: 543; Romagnesi, *1977*). From the microscopical point of view (spores, basidia, cystidia, cuticle) there are no differences at all between the two genera. Based on our personal field observations the insertion of the stipe can vary from eccentric to sublateral or lateral in a single population in the same locality and on the same host. The pileal position is often a direct response to the microtopography found at the point where the carpophores happen to be attached to the substrate. Under these circumstances it is possible that this 'generic character' is of much less value than is usually assumed. Experiments under pure culture conditions could help to resolve this question.

In this study the taxonomic concept of *Melanotus* follows Singer (*1975*). For the time being it does not matter that the 21 species accepted in several cases are not at all closely related. In my opinion the genus *Melanotus* in its present composition represents a heterogeneous conglomerate of fungi which share similar morphological characters as a result of ecological adaptation.

In preparing this monography on *Melanotus* the assistance and advice of several herbaria (BAFC, BO, E, F, FH, K, LPS, NY, PC, and S) is acknowledged. I am also grateful to Prof. E. J. H. Corner (Cambridge) who loaned part of his SE.-Asian collections of agarics.

If not otherwise stated the magnifications of the figures are: carpophores (nat. size), spores (× 2000), basidia and cystidia (× 1000), and cuticle (× 500).

MELANOTUS Patouillard

Melanotus Patouillard, Essai tax.: 175. 1900. — Type species: *Crepidotus ? bambusinus* Pat. *in* J. Bot. 5(18): 309. 1891 ≡ *Melanotus bambusinus* (Pat.) Pat., Essai tax.: 175. 1900.

KEY TO THE SPECIES OF MELANOTUS

EUROPE

Melanotus phillipsii (see key to African species)

AFRICA

1a. Spores (5–)6–7.5 × 4–5 µm, thick-walled; cheilocystidia 14–28 × 3.5–5.5 µm, lanceolate to fusiform with elongate neck; pileus –10 mm, pale brown; lamellae fuscous; stipe eccentric, lateral or absent. On wood (*Cupressus*).
South Africa (type), Kenya . . . . . 1. *M. proteus*, p. 308

b. Spores more slender, thin-walled (membranes rarely thick-walled) 2

2a. Spores 5.5–7(–8) × 3–4(–5) µm; cheilocystidia 20–35 × 3–7 µm, ventricose-fusoid, occasionally with subcapitate apex; pileus –15 mm, pale brown; lamellae cinnamon to fuscous; stipe eccentric to lateral, chestnut brown. On decomposing twigs. Kenya
2. *M. gelineus*, p. 308

b. Spores 5–6 × 2.5–3 μm; cheilocystidia 16–40 × 3–5 μm, fusoid with elongated neck; pileus –15 mm, pale brown or cinnamon; lamellae concolorous; stipe eccentric to lateral. On dead grasses (*Agrostis*, *Carex*) and herbaceous stems (*Scrophularia*). Morocco 3. *M. phillipsii*, p. 309

NORTH AMERICA / SOUTH AMERICA

1a. Spores thin-walled, 6–8(–9) × (4–)4.5–6 μm, broadly ovate; pileus –12 mm, brown to pale brown; lamellae pale ochraceous; stipe eccentric; cheilocystidia 20–45 × 4–6 μm, fusoid with elongate neck. On decomposing or dead leaves of *Chusquea*. Argentina, Chile . . . . . 4. *M. bruchii*, p. 310
b. Spores conspicuously thick-walled 2
2a. Spores larger than 7 × 5 μm 3
b. Spores smaller 4
3a. Spores 8–11 × 5.7–7.7 μm, ellipsoid to phaseoliform; pileus –10 mm, brown; stipe eccentric to lateral, white; cheilocystidia ampullaceous. On wood. Chile 5. *M. cassiaecolor* sensu Singer, p. 311
b. Spores 7–8 × 5.5 μm; pileus –10 mm, pale brown; lamellae pale yellow-brown; stipe absent; cheilocystidia ?. On husk of *Cocos*. Grenada . . . . 6. *M. subcuneiformis*, p. 311
4a. Stipe absent or rudimentary; spores 5.5–7.5 × 4–5 μm; cheilocystidia ?; pileus –15(–30) mm, ochraceous to pale red-brown; lamellae brown with purplish tint. On decomposing leaves and twigs, and rotten wood; known host plants: *Musa*, *Alpinia*, *Psychotria*. Brazil (type), Trinidad, Guadeloupe, Jamaica, Cuba . . . . . 7. *M. alpiniae*, p. 311
b. Stipe more or less well developed, often subcentric 5
5a. Pileus –5 mm, isabelline; lamellae yellowish; stipe whitish; spores 5–6 × 3.5–4 μm; cheilocystidia ?. On decomposing herbaceous stems. Jamaica . . 8. *M. eccentricus*, p. 313
b. Pileus brown to ochre-brown; lamellae and stipe more or less concolorous with pileus 6
6a. Spores 4.5–5.5 × 3–3.5 μm; pileus –10 mm; cheilocystidia 20–30 × 3–6 μm, fusoid with elongate tapering neck. On bark of *Polylepis*. Argentina . . . . 9. *M. polylepidis*, p. 313
b. Spores 6–7(–7.5) × 4–5 μm; pileus –18 mm; cheilocystidia –30 × –12 μm, polymorphous varying from clavate to vesiculose. On rotting wood. Argentina 10. *M. patagonicus*, p. 314

AUSTRALASIA

1a. Spores longer than 10 μm 2
b. Spores smaller than 10 μm 3
2a. Spores 10–13 × 9–12 μm, limoniform to lentiform; pileus –6 mm, cream to pale brown; lamellae grey-brown with lilac tinge; stipe rudimentary or absent; cheilocystidia 20–35 × 5–10 μm, fusoid. On decomposing leaves of *Astelia*. New Zealand 11. *M. citrisporus*, p. 315
b. Spores 10.5–12.5 × 6.5–7.5 μm, ellipsoid; pileus –16 mm, brown; lamellae pale brown to rust brown, without lilac tinge; stipe absent or rudimentary; cheilocystidia 20–35 × 8–18 μm, clavate-capitate. On decomposing leaves of *Musa*. Papua New Guinea 12. *M. protractus*, p. 315
3a. Stipe absent, pileus laterally or subdorsally attached to substratum (see also *M. flavolivens*, *M. hepatochrous*) 4
b. Stipe present, at least in young carpophores 7
4a. Pileus 5–10 mm, conchiform to reniform 5
b. Pileus 20–30 mm, linguiform to spathulate 6
5a. Pileus and lamellae 'atrosanguineus'; spores 5.5–7 × 3.5–4.5 μm, thick-walled; cheilocystidia ?. On rotting wood. Hongkong . . . . . 13. *M. haematites*, p. 317
b. Pileus white; lamellae brown; spores 5.5–6.5 × 3.5–4.5 μm, thick-walled; cheilocystidia?. On decomposing fern-rhachis. Malaya . . . . . 14. *M. ridleyi*, p. 317

6a. Pileus –50 mm, whitish; lamellae brown-purple; spores 6–7 × 4–4.5 µm, thick-walled; cheilocystidia ?. On rotting wood. Ceylon . . . . . 15. *M. phaeophyllus*, p. 319
b. Pileus –20 mm, pale brown; lamellae brown, without lilac tinge; spores 6–7 × 4–5 µm, thin-walled; cheilocystidia 20–35 × 8–11 µm, fusoid with capitate apex; clamp connections absent. On rotting wood. Papua New Guinea . . . . . 16. *M. distinctus*, p. 319
7a. Spores 6.5–8.5(–9) × 4–5.5(–6) µm, thin-walled; cheilocystidia 15–30 × 5–10 µm, fusoid with elongate tapering neck. On decomposing leaves of *Phormium*, *Cortaderia*, and ferns. New Zealand . . . . . 17. *M. vorax*, p. 319,
b. Spores smaller 8
8a. Pileus –30 mm, dark brown, red-brown, or liver brown; lamellae yellowish brown, cinnamon, or deep brown; stipe often rudimentary in old specimens; spores 5.5–7.5 × 3.5–5 µm; cheilocystidia 20–30 × 3–6 µm, lanceolate to fusoid with elongate neck. On rotting wood. Tasmania (type), Victoria (Australia), New Zealand 18. *M. hepatochrous*, p. 321
b. Pileus whitish, pale brown or fawn-yellowish 9
9a. Lamellae grey, grey-beige or yellowish beige, without distinct purple tinge; pileus –12 mm; stipe eccentric, more or less concolorous with pileus; spores (5–)6–7 × 4–4.5 µm; cheilocystidia 15–25 × 3–5 µm, subfusoid to cylindrical. On decomposing organic detritus, also on decomposing leaves of *Cocos*. The Bonin Isl., New Caledonia, the Solomon Isl. . . . . 19. *M. flavo-livens*, p. 323
b. Lamellae brown with distinct purple or lilac tinge; spores usually thin-walled . . 10
10a. Pileus –30 mm; stipe eccentric to lateral; spores 5–7 × 3.5–4.5 µm; cheilocystidia 15–25 × 5–10 µm, clavate to fusoid-capitate, occasionally with mucronate apex. On rotting branches in rain forest. Papua New Guinea . . . . . 20. *M. communis*, p. 324
b. Pileus –15 mm, often laterally attached to substratum in old specimens; stipe eccentric when young; spores 6–7 × 4–5 µm; cheilocystidia ?. On *Bambusa*. Vietnam 21. *M. bambusinus*, p. 325

1. MELANOTUS PROTEUS (Kalchbr. apud Thüm.) Sing.—Fig. 1

Agaricus proteus Kalchbr. apud Thüm. *in* Flora **59**: 424. 1876 (basionym). — *Claudopus proteus* (Kalchbr.) Sacc., Syll. Fung. **5**: 734. 1877. — *Melanotus proteus* (Kalchbr. apud Thüm.) Sing. *in* Lloydia **9**: 130. 1946. — *Crepidotus proteus* (Kalchbr. apud Thüm.) Pilát *in* Trans. Brit. mycol. Soc. **33**: 231. 1950.

ILLUSTRATIONS.—Pilát (*1950*: 231); Pegler & Rayner (*1969*: 391); Reid (*1975*: 104).
HABITAT.—On humid lumber (type) and on wood of *Cupressus*. South Africa, Kenya (Pegler & Rayner, *1969*: 391), Ceylon? (Cesati, *1879*: 2).
MATERIAL EXAMINED.—SOUTH AFRICA: Somerset East, Jan. 1876, *McOwan & Tuck* (holotype, K).

2. MELANOTUS GELINEUS Pegler—Figs. 2–4

Melanotus gelineus Pegler *in* Kew Bull., Add. Ser. **6**: 477.1977.

ILLUSTRATIONS.—Pegler (*1977*: 477).
HABITAT.—On dead fallen twigs. Kenya.
MATERIAL EXAMINED.—KENYA: Nyanza, Kericho district, Kigumu River, 25 March 1968, *D. N. Pegler 237* (holotype, K).

The microscopical characters of this species suggest those found on *M. phillipsii*, which also occurs in the NW. corner of Africa (Morocco). Both taxa share the

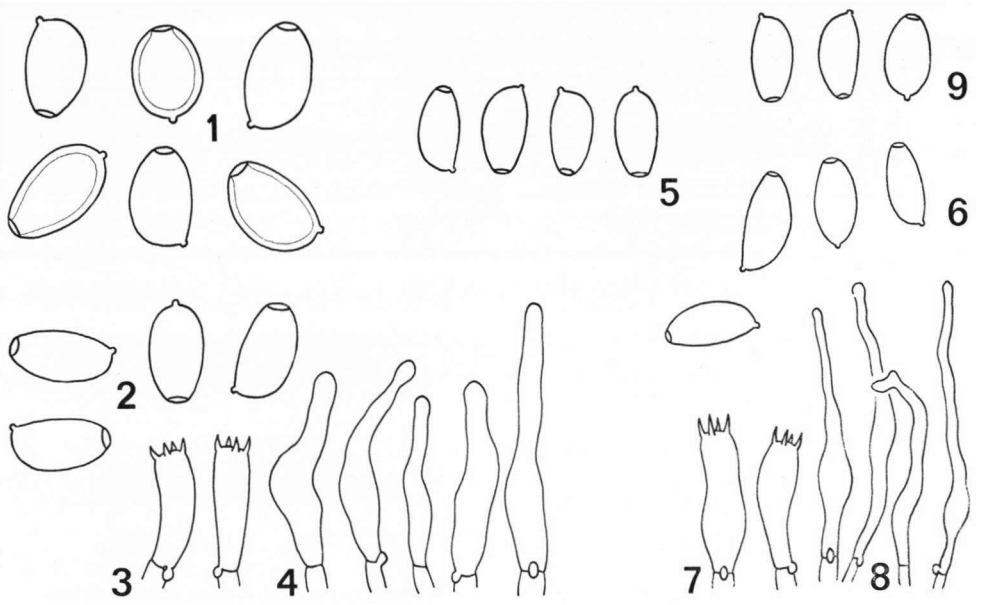


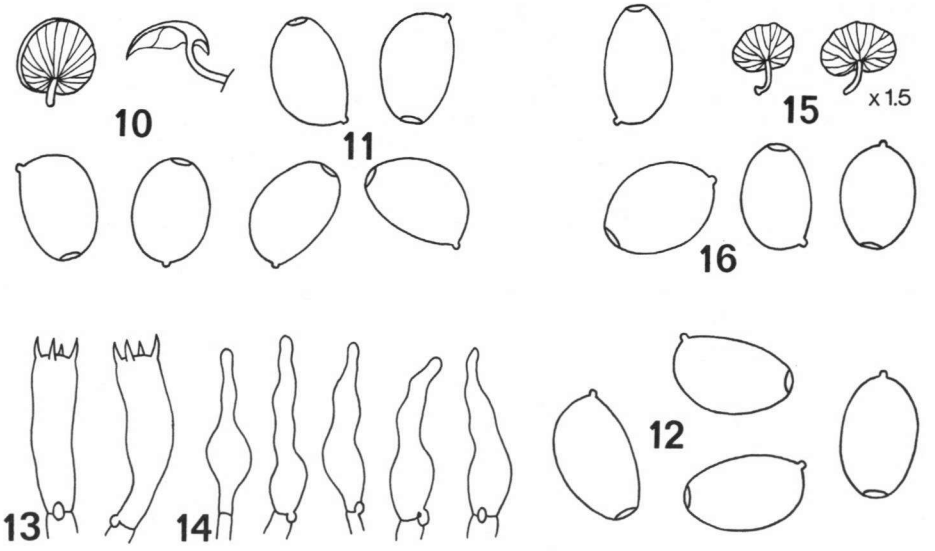
Fig. 1. *Melanotus proteus* (from type), spores.
Figs. 2–4. *Melanotus gelineus* (from type). — 2. Spores. — 3. Basidia. — 4. Cheilocystidia.
Figs. 5–9. *Melanotus phillipsii*. — 5. Spores (from type of *M. phillipsii*). — 6–8. From Fungi Exs. Suec. 2054. — 6. Spores. — 7. Basidia. — 8. Cheilocystidia. — 9. Spores (from type of *Navcoria scutellina*).
For magnifications see page 306.

slender ellipsoid spores that are rather uncommon in the genus *Melanotus*. Spore size and spore shape, however, distinctly separate the two species.

3. MELANOTUS PHILLIPSII (Berk. & Br.) Sing.—Figs. 5–9

Agaricus (*Crepidotus*) *phillipsii* Berk. & Br. *in* Ann. Mag. nat. Hist. **5**: 21. 1878 (basionym). — *Pleuroflammula phillipsii* (Berk. & Br.) Sing. *in* Sydowia **5**: 473. 1951. — *Geophila* (*Psilocybe*) *phillipsii* (Berk. & Br.) Kühn. & Romagn., Flore anal.: 339. 1953. — *Melanotus phillipsii* (Berk. & Br.) Sing. *in* Beih. Sydowia **7**: 84. 1973.
Naucoria scutellina Quél. *in* Bull. Soc. bot. Fr. **25**: 287. 1878.
Pleurotus roseolus Quél. sensu Lange *in* Dansk bot. Ark. **6** (5): 30. 1930.

ILLUSTRATIONS.—Quél. (*1878*: 287, pls. 3, 5); Cooke (1886, IV, pl. 515 C); Pilát, *1948*: 46; Malençon & Bertault (*1970*: 337).
HABITAT.—On decomposing leaves and culms of 'grasses' (*Agrostis*, *Carex*) and herbaceous stems (*Scrophularia*). England (type), Sweden, Denmark (Lange, *1930*: 30), France (Quél., l.c.; Romagnesi, *1937*: 137), Germany (Moser, pers. comm.), Switzerland, C. S. S. R. (Pilát, *1948*: 40), Morocco (Malençon & Bertault, l.c.).
MATERIAL EXAMINED.—ENGLAND: Shrewsbury, Oct. 1876 (holotype, K). SWEDEN: Bohuslän, Rödbo parish, Ellisbo, 17 July 1943, *Nathorst-Windahl* (Fungi exsicc. suec. 2054, '*Crepidotus*', S). FRANCE: Hérimoncourt, July–Aug. 1878, *Pillod* (holotype of *N. scutellina* Quél., herb. Bresadola, S).



Figs. 10–16. *Melanotus bruchii*. — 10, 11. From type of *M. bruchii*. — 10. Carpophores. — 11. Spores. — 12–14. From *Horak 75/297*. — 12. Spores. — 13. Basidia. — 14. Cheilocystidia. — 15, 16. From type of *M. gayi*. — 15. Carpophores (× 1.5). — 16. Spores.

To our surprise type material or at least an authentic collection of *Naucoria scutellina* Quél. was found in the Bresadola Herbarium in Stockholm, Sweden. Since Bresadola added the remark 'Quélet misit', there can be no doubt about the authenticity of this fungus, which is conspecific with *M. phillipsii*, also published in 1878 (priority?).

4. **Melanotus bruchii** (Spegazzini) Horak, *comb. nov.*—Figs. 10–16

Crepidotus bruchii Speg. *in* Boln Acad. nac. Ci. Córdoba **29**: 128. 1926 (basionym.) — *Pleuroflammula bruchii* (Speg.) Sing. *in* Lilloa **22**: 251. '1949' [1951].

Crepidotus gayi Pilát in Trans. Br. mycol. Soc. **33**: 237. 1950. — *Melanotus gayi* (Pilát) Sing. *in* Beih. Nova Hedw. **29**: 258. 1969.

ILLUSTRATIONS.—Pilát (*1950*: 237, *gayi*).

HABITAT.—On rotting branches of broad-leaved trees (type) or decomposing leaves of *Chusquea* spec. Argentina (Tucuman, Cordoba (type), Neuquén), Chile.

MATERIAL EXAMINED.—ARGENTINA: Cordoba, Alta Cracia, 3 Feb. 1925, *Bruch 112* (holotype, LPS 13465). CHILE: Rancagua, April 1818, Bertero (=*M. psychotriae* sensu Sing., herb. Steudel, FH); Valdivia, 1839, *Gay* (holotype of *Crepidotus gayi* Pilát, PC); Valdivia, Fundo San Martin, 10 April 1975, *Horak 75/297* (ZT).

According to the microscopical data found on the type material of *Crepidotus bruchii* Speg. this fungus clearly belongs to *Melanotus* and not *Pleuroflammula* (Singer,

1949: 521). The characters observed on the four above mentioned collections agree in all details. *Melanotus bruchii* Speg. is distinguished by its large thin-walled spores and its lateral to eccentric short stipe.

5. MELANOTUS CASSIAECOLOR (Berk.) Singer sensu Singer

Melanotus cassiaecolor (Berk.) Sing. sensu Sing. *in* Beih. Nova Hedw. **29**: 257. 1969.

According to Singer's description (spores 8–11 × 5.7–7.7 μm) this Chilean collection does certainly not represent *Melanotus cassiaecolor* Berk. (= *M. hepatochrous* Berk.). The characters reported do not fit any of the taxa hitherto known to belong to *Melanotus*. Unfortunately no material was obtained on loan from SGO. Hence we can neither confirm nor refute the impression that this fungus is a representative of *Phaeomarasmius*.

6. MELANOTUS SUBCUNEIFORMIS (Murrill) Singer—Fig. 17

Crepidotus subcuneiformis Murrill *in* Mycologia **5**: 29. 1913 (basionym). — *Melanotus subcuneiformis* (Murrill) Sing. *in* Lilloa **13**: 87. 1947.

HABITAT.—On decaying coconut husk. Grenada (West Indies).
MATERIAL EXAMINED.—GRENADA: Grenada, Sept. 1905, *Broadway* (holotype, NY).

This small and pale brown *Melanotus* is characterized by rather large ovate to sublenticular and thick-walled spores. Macroscopically the species resembles the two other taxa so far reported from the islands in the Mexican Gulf. However, the size of the spores distinctly separate *M. subcuneiformis* from *M. alpiniae* and *M. eccentricus* (see also Hesler & Smith, *1965*: 146).

7. MELANOTUS ALPINIAE (Berk.) Pilát—Figs. 18–27

Agaricus (*Crepidotus*) *alpiniae* Berk. *in* Hooker, J. Bot. Lond., **8**: 133. 1856 (basionym). — *Melanotus alpiniae* (Berk.) Pilát *in* Trans. Br. mycol. Soc. **33**: 216.1950.
Agaricus (*Crepidotus*) *musaecola* Berk. & Curt. *in* J. Linn. Soc. (Bot.) **10**: 291. 1868. — *Crepidotus musaecola* (Berk. & Curt.) Sacc., Syll. Fung. **5**: 883. 1887 (as '*musicola*'). — *Melanotus musaecola* (Berk. & Curt.) Murrill *in* Mycologia **10**: 16. 1918 (as '*musicola*'). — *Melanotus musaecola* (Berk. & Curt.) Sing. *in* Lloydia **9**: 130. 1946.
Claudopus subvariabilis Speg. *in* Boln Acad. nac. Ci. Cordoba **11**: 411. 1889. — *Melanotus subvariabilis* (Speg.) Sing. *in* Lilloa **22**: 511. '1949' [1951].
Crepidotus psychotriae Pat. *in* Bull. Soc. mycol. Fr. **18**: 173. 1902. — *Melanotus psychotriae* (Pat.) Sing. *in* Lloydia **9**: 130. 1946.
Crepidotus fumosifolius Murrill *in* Mycologia **5**: 31. 1908. — *Melanotus fumosifolius* (Murrill) Sing. *in* Lilloa **13**: 87. 1947.

ILLUSTRATIONS.—Pilát (*1950*: 216, *alpiniae*; *1950*: 225, *musaecola*); Dennis (*1970*: 71).
HABITAT.—On decomposing leaves, twigs and wood. Known host plants: *Musa*, *Psychotria*, *Alpinia*. Brazil (type), Guadeloupe, Jamaica, Cuba, Trinidad (Dennis, *1970*: 71).

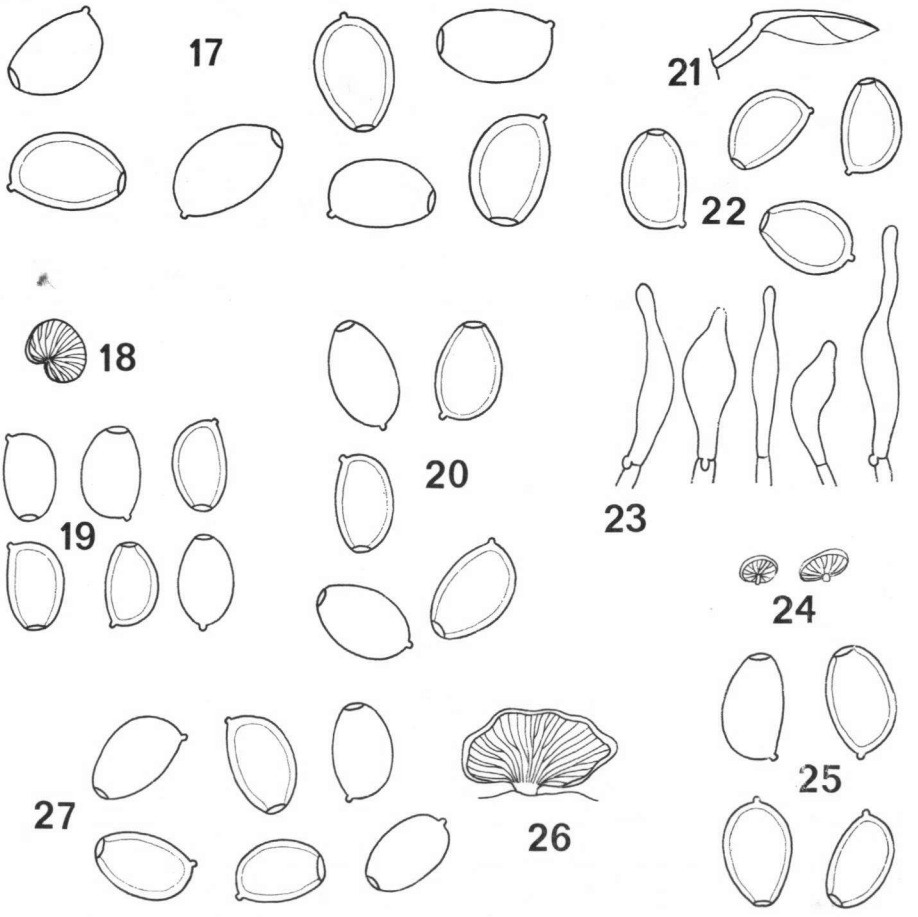


Fig. 17. *Melanotus subcuneiformis* (from type), spores.

Fig. 18–27. *Melanotus alpiniae.* — 18, 19. From type of *M. alpiniae.* — 18. Carpophores. — 19. Spores. — 20. Spores (from type of *Agaricus musaecola.* — 21–23. From type of *Claudopus subvariabilis.* — 21. Carpophore. — 22. Spores. — 23. Cheilocystidia. — 24, 25. From type of *Crepidotus psychotriae.* — 24. Carpophores. — 25. Spores. — 26, 27. From type of *Crepidotus fumosifolius.* — 26. Carpophores. — 27. Spores.

MATERIAL EXAMINED.—BRAZIL: *Spruce 114* (holotype, K); Apiahy, June 1880, *Puiggiari* (holotype of *Claudopus subvariabilis* Speg., LPS 17033). GUADELOUPE: Bois Bains-Jaunes, *Duss* (holotype of *Crepidotus psychotriae* Pat., FH). JAMAICA: Rose Hill, 30 Oct. 1902, *Earle 292* (holotype of *Crepidotus fumosifolius* Murrill, NY). CUBA: *Wright 86* (holotype of *Agaricus* (*Crepidotus*) *musaecola* Berk. & Curt., K).

Among the above mentioned collections there is unfortunately none from which all the necessary microscopical and macroscopical data could be extracted. Without

exception all type material examined is in poor condition. Despite this careful comparison of the authentic collections resulted in the conclusion that these taxa are conspecific.

Upon revising the type collections Pilát (*1950*: 216) emphasized that *M. musaecola* (Berk. & Curt.) Murrill is a synonym of *M. alpiniae* (Berk.) Pilát. Further Hesler & Smith (*1965*: 147) were doubtful about the synonymy of *M. musaecola* originally found in Cuba and *M. fumosifolius* in Jamaica. The spore size of the two fungi ranges between 5.5–7.5 × 4–5 μm and if compared with *M. alpiniae* (Berk.) Pilát, *M. subvariabilis* (Speg.) Sing—both from Brazil—and *M. psychotriae* (Pat.) Sing. —from Guadeloupe—a complete identity of characters is observed. Therefore the five taxa are considered to represent only one and the same species.

Nevertheless fresh material is needed to resolve further questions as to the colour of the lamellae on fresh carpophores, insertion of the stipe and the size and shape of the cheilocystidia.

Hesler & Smith (*1965*: 147) also regard *M. flavo-livens* (Berk. & Curt.) Sing. as a synonym of *M. musaecola*. The fungus from the Bonin Isl., however, is characterized by yellowish to fawn colours on the pileus, grey or beige lamellae (without purplish tints) and smaller spores. In our own opinion *M. flavo-livens* represents a well defined separate species whose area of distribution spreads from the Bonin Isl. (Pacific Ocean) southwards to New Caledonia and the Solomon Isl. (see No. 19).

8. MELANOTUS ECCENTRICUS (Murrill) Sing.—Figs. 28, 29

Crepidotus eccentricus Murrill *in* N. Am. Fl. **10**: 155. 1917 (basionym). — *Melanotus eccentricus* (Murrill) Sing. *in* Lilloa **13**: 87. 1947.

HABITAT.—On dead herbaceous stems. Jamaica.

MATERIAL EXAMINED.—JAMAICA: E. of Hope Gardens, 12 Dec. 1908, *Murrill* (holotype, NY).:

Together with the type material in the Herbarium of the New York Botanical Garden (NY) a water colour painting was found; hence the morphology of this small species (—5 mm in diam.) is well known (see Fig. 28). The cylindrical stipe is centric or slightly eccentric and always well developed. This character together with the rather slender spores (3–4 μm, but 4–5 μm according to Hesler & Smith, *1965*: 141!) separate *M. eccentricus* from *M. alpiniae*, which also occurs in Jamaica.

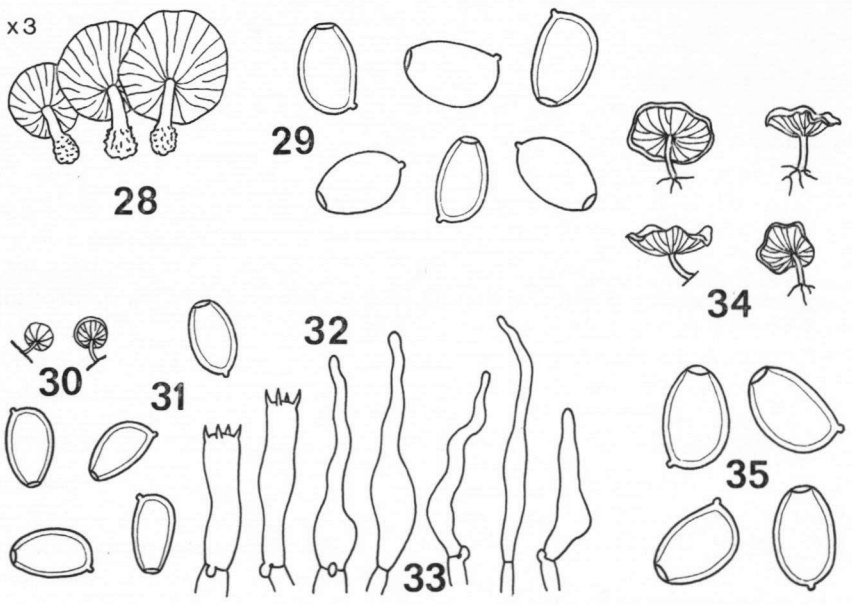
9. MELANOTUS POLYLEPIDIS Singer—Figs. 30–33

Melanotus polylepidis Sing. *in* Beih. Sydowia **7**: 84. 1973.

HABITAT.—On bark of *Polylepis* (Rosaceae). Argentina.

MATERIAL EXAMINED.—ARGENTINA: prov. Jujuy, Lagunas de Yala, 16 Feb. 1966, *R. Singer T 5215* (holotype, F).

HABITAT.—On rotting wood. Argentina.



Figs. 28, 29. *Melanotus eccentricus* (from type). — 28. Carpophores (×3). — 29. Spores.
Figs. 30–33. *Melanotus popylepidis* (from type). — 30. Carpophores. — 31. Spores. — 32. Basidia. — 33. Cheilocystidia.
Figs. 34, 35. *Melanotus patagonicus* (from type). — 34. Carpophores. — 35. Spores.

In this collection the spores, basidia and cheilocystidia are illustrated for the first time. On dried specimens the eccentric tipe is still clearly visible. The morphology of the carpophores and the small thick-walled spores distinguish this *Melanotus* from all others known so far from South America.

10. MELANOTUS PATAGONICUS Singer—Figs. 34–35

Melanotus patagonicus Sing. *in* Beih. Nova Hedw. **29**: 258. 1969.

MATERIAL EXAMINED.—ARGENTINA: prov. Neuquén, Puerto Manzano, 17 March 1963, *R. Singer M 3060* (holotype, BAFC 23963); prov. Neuquén, Puerto Manzano, 18 April 1965, *R. Singer M 5050* (BAFC 23964).

Despite careful preparation it was impossible to recover the cheilocystidia of the type material. Therefore the exact morphology of the cheilocystidia cannot be demonstrated. According to Singer's description there are two types of cystidia on the edge of the lamellae: (a) clavate cells (10–24×2.7–4.5 μm) and (b) vesiculose-ventricose cells (18–30×9–12 μm).

In the *Nothofagus*-belt of South America three species of *Melanotus* have so far

been observed (*bruchii*, *cassiaecolor* sensu Singer, *patagonicus*). As shown in Fig. 34 the carpophores of *M. patagonicus* are not very *Melanotus*-like since the stipe is predominantly centrically inserted. Among the dried carpophores of the two collections studied not a single one was seen where the stipe is in a lateral position. From the taxonomic point of view this species must be placed directly between *Melanotus* and *Psilocybe*.

11. **Melanotus citrisporus** Horak, *spec. nov.*—Figs. 36–39

Pileo –6 mm lato, semiorbiculari vel conchiformi, pallide brunneo, striato, sicco. Lamellis excentrice concurrentibus, griseobrunneis dein brunneoviolaceis. Stipite –2×–1 mm, cylindrico, laterali, pileo concolori. Sporis 10–13×9–12 μm, limoniformibus, brunneis, poro germinativo instructis, levibus. Cheilocystidiis praesentibus. Sub foliis siccis Asteliae nervosae. Novazelandia. Holotypus PDD 27134.

Pileus –6 mm in diam., dimidiate-hemispherical, conchiform or ear-shaped, cream, beige or pale brown, dry, membranaceous, conspicuously striate-sulcate, glabrous. Lamellae distant, ventricose, broadly attached to lateral stipe, grey-brown turning pale lilac-brown; edge albofimbriate. Stipe –2×–1 mm, cylindrical, rarely rudimentary or absent, lateral to eccentric, concolorous with pileus, dry, glabrous, without veil remnants, solid; rhizoids absent. Odour and taste not distinctive.

Spores 10–13×9–12 μm, limoniform, with distinct truncate germ pore, brown, thin-walled, smooth; apiculus conspicuous. Basidia 25–35×12–15 μm, 4-spored; sterigmata –8 μm long. Cheilocystidia 20–35×5–10 μm, lageniform to fusoid, with broadly rounded or subcapitate neck, hyaline, thin-walled, forming sterile gill edge. Cuticle a cutis of interwoven cylindrical hyphae (5–8 μm in diam.), membranes encrusted with brown (KOH) pigment, not gelatinized. Clamp connections numerous.

HABITAT.—On dry and half-decomposed leaves and culms of *Astelia nervosa* Hook. (Liliaceae). New Zealand.

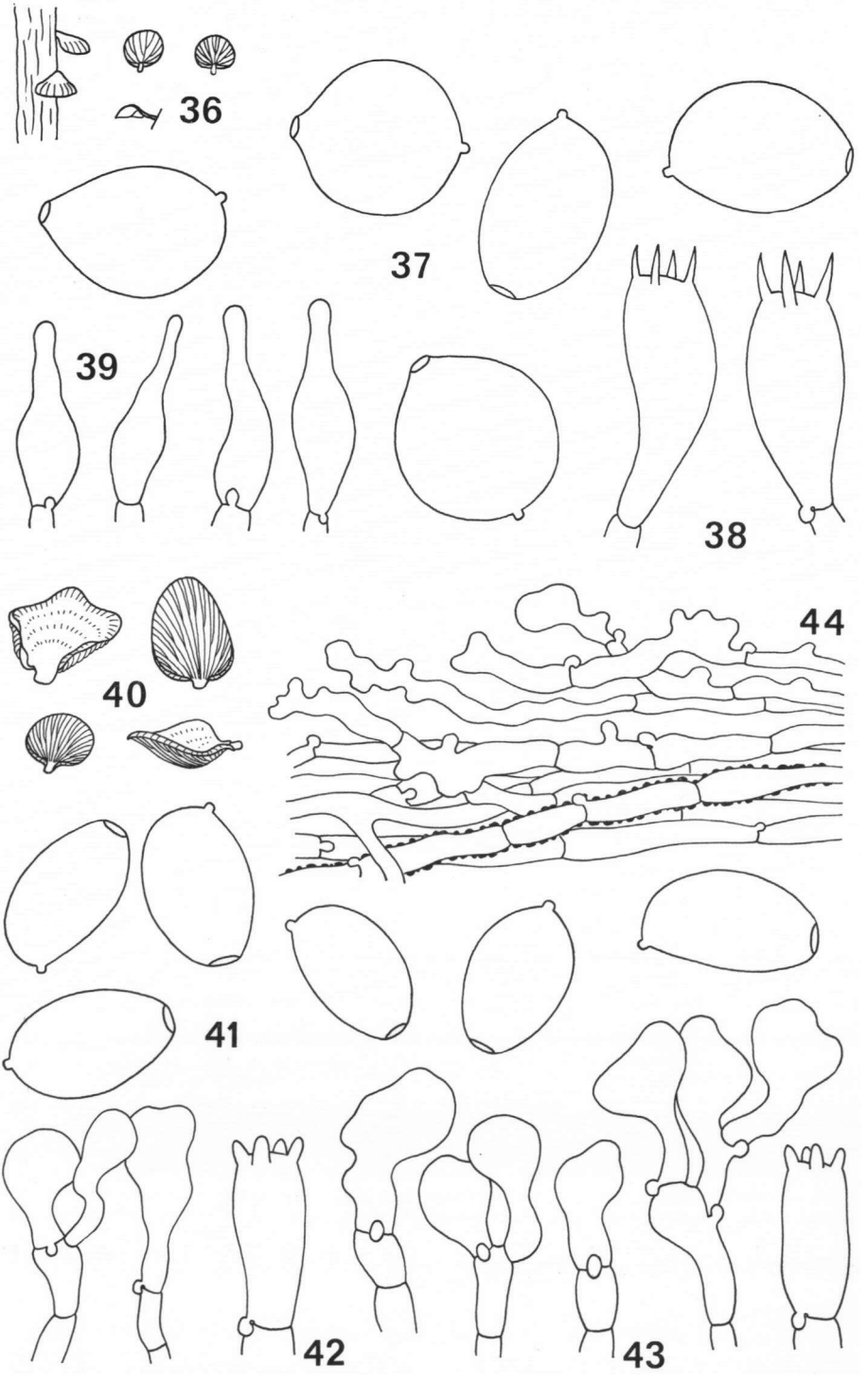
MATERIAL EXAMINED.—NEW ZEALAND: North Island, Mt. Egmont National Park, Stanford Lodge, 12 June 1968, *E. Horak 68/531* (holotype PDD 27134; isotype ZT).

This species represents the first *Melanotus* with limoniform spores which are, moreover, much larger than those of the other known taxa. The ecology of *M. citrisporus* is rather peculiar as well: the carpophores sit on the hanging tips of the long and bent leaves of *Astelia*.

12. **Melanotus protractus** Horak, *spec. nov.*—Fig. 40—44

Pileo –16 mm lato, semiorbiculari vel conchiformi, subsessili, convexo dein irregulariter concavo, ex argillaceo brunneo, sicco. Lamellis lateraliter concurrentibus, argillaceis vel ferrugineis, albofimbriatis. Stipite nullo, margine pilei protracto. Sporis 10.5–12.5×6.5–7.5 μm, ellipsoideis, brunneis, poro germinativo instructis. Cheilocystidiis conspicue capitato-clavatis. Ad folias deiectas Musae. Nova Guinea. Holotypus: ZT, 73/189.

Pileus –16 mm in diam., dimidiate, conchiform or fan-shaped, convex when young, later concave with upturned margin, pale brown to brown, dry, striate,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hygrophanous, thin, minutely fibrillose. Lamellae excentrically or laterally concurrent, densely crowded, ventricose, pale brown turning rust brown; edge albofimbriate. Stipe absent or rudimentary, margin of pileus often directly attached to substratum. Odour and taste not distinctive. Spore print dark brown, without lilac tinge.

Spores 10.5–12.5 × 6.5–7.5 μm, ellipsoid, brown, thin-walled, smooth; germ pore and apiculus conspicuous. Basidia 20–25 × 8–11 μm, 4-spored. Cheilocystidia 20–35 × 8–18 μm, clavate-capitate, occasionally constricted towards base, hyaline, thin-walled, forming sterile gill edge. Cuticle a cutis of subparallel hyphae (4–10 μm in diam.) bearing clavate or irregular-corallioid terminal cells, membranes encrusted with yellow-brown (KOH) pigment, not gelatinized. Clamp connections present.

HABITAT.—On rotting leaves of *Musa* spec. Papua New Guinea.

MATERIAL EXAMINED.—PAPUA NEW GUINEA: Morobe district, Bulolo, Susu, 26 April 1973, *E. Horak 73/189* (holotype, ZT).

This species is well characterized by its large spores and the clavate-capitate cheilocystidia. As far as we know at present *Musa* is inhabited by still another species of Melanotus but this fungus (*M. alpiniae* = '*musaecola*' = '*fumosifolius*') seems to be restricted to localities in Cuba and Jamaica.

13. MELANOTUS HAEMATITES (Berk. & Curt.) Sing.—Fig. 45

Agaricus (*Crepidotus*) *haematites* Berk. & Curt. *in Proc.* Am. Acad. Arts Sci. **4**: 117. 1860 (basionym). — *Melanotus haematites* (Berk. & Curt.) Sing. *in* Lloydia **9**: 130. 1946.

HABITAT.—On dead wood. Hongkong.

MATERIAL EXAMINED.—Hongkong: Hongkong, 1854, U.S. Pacific Exp., 119 (holotype, FH).

Our knowledge of this species is based on the following rather short diagnosis: 'Atro-sanguineus; pileo reniformi postice affixo glabro; lamellis ventricosis latiusculis On dead wood. Hongkong. — Has somewhat the habit of *Panus*.'

According to our observations the ovate-lentiform and thick-walled spores measure 5·5–7 × 3.5–4.5 μm. The germ pore is distinct. Cheilocystidia and basidia not recovered in the poorly preserved type material. Fresh material is needed to obtain more information about this outstanding black-red coloured species.

14. MELANOTUS RIDLEYI (Massee) Sing.—Fig. 46

Crepidotus ridleyi Massee *in* Kew Bull., Misc. Inf.: 169. 1899 (basionym). — *Melanotus ridleyi* (Massee) Sing. *in* Sydowia **9**: 404. 1955.

Figs. 36–39. *Melanotus citrisporus* (from type). — 36. Carpophores. — 37. Spores. — 38. Basidia. — 39. Cheilocystidia.

Figs. 40–44. *Melanotus protractus* (from type). — 40. Carpophores. — 41. Spores. — 42. Basidia. — 43. Cheilocystidia. — 44. Cuticle.

ILLUSTRATIONS.—Pilát (*1950*: 233).
HABITAT.—On dead fern rhachis. Malaya.
MATERIAL EXAMINED.—MALAYA: Selangor, *Ridley 110* (holotype, K).

According to Massee (*1899*: l.c.) this species is allied to '*Crepidotus turbidulus* Berk.' (= *M. hepatochrous*) from Tasmania. The two taxa, however, are clearly distinguished by the morphology of the carpophores, the size of the spores and their host plants. Up to date only two Melanoti are recorded that grow on ferns: *M. ridleyi* and *M. vorax* (New Zealand).

Comparing the macroscopical and microscopical data observed on the type material of *M. ridleyi* Massee we do not share Pilát's opinion (*1950*: 233) that this species is conspecific with '*M. musaecola* (Berk. & Curt.)' (=*M. alpiniae*). Among other differences the spores of the neotropical '*M. musaecola*' are larger than those of *M. ridleyi*.

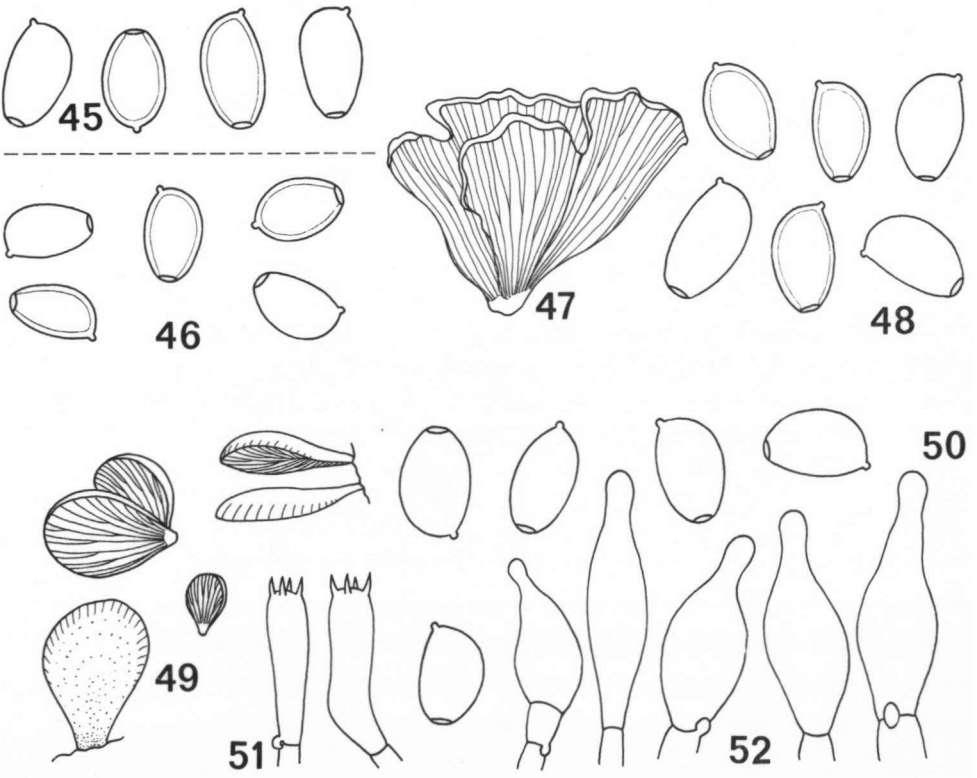


Fig. 45. *Melanotus haematites* (from type), spores.
Fig. 46. *Melanotus ridleyi* (from type), spores.
Fig. 47, 48. *Melanotus phaeophyllus* (from type). — 47. Carpophore. — 48. Spores.
Fig. 49–52. *Melanotus distinctus* (from type). — 49. Carpophores. — 50. Spores. — 51. Basidia — 52. Cheilocystidia.

15. MELANOTUS PHAEOPHYLLUS (Berk. & Br.) Pilát—Figs. 47, 48

Agaricus (Crepidotus) phaeophyllus Berk. & Br. *in* Hook., J. Bot. **6**: 486. 1847 (basionym).—*Melanotus phaeophyllus* (Berk. & Br.) Pilát *in* Trans. Br. mycol. Soc. **33**: 240. 1950.

ILLUSTRATIONS.—Pilát (*1950*: 230).
HABITAT.—On old wood. Ceylon.
MATERIAL EXAMINED.—CEYLON: Hautane Range, June 1844, *No. 36* (holotype, K); Peradeniya, July–Dec., *No. 87* (K).

Among all known species of *Melanotus* this fungus is remarkable due to its large size (—50 mm in diam.) and shape, which suggest *Paxillus panuoides*. The carpophores are broadly attached to the wood as substratum and there is no sign of a stipe even in young specimens.

16. **Melanotus distinctus** Horak, *spec. nov.*—Figs. 49–52

Pileo –20 mm lato, semiorbiculari vel linguiformi, lateraliter substrato affixo, pallide brunneo, sicco. Lamellis lateraliter concurrentibus, brunneis, albofimbriatis. Stipite nullo. Sporis 6–7.5 × 4–5 μm, ovatis, brunneolis, poro germinativo inconspicuo, levibus. Cheilocystidiis praesentibus.
Ad lignum putridum. Nova Guinea. Holotypus: ZT, 72/655.

Pileus 6–20 mm in diam., linguiform or conchiform, with margin broadly attached to substrate, pale brown, drying to whitish or pallid, hygrophanous, dry, slightly striate towards margin, glabrous. Lamellae laterally concurrent, ventricose, crowded, brown, without lilac tinge; edge albofimbriate. Stipe absent. Odour and taste not distinctive. Spore print brown, without lilac shade.

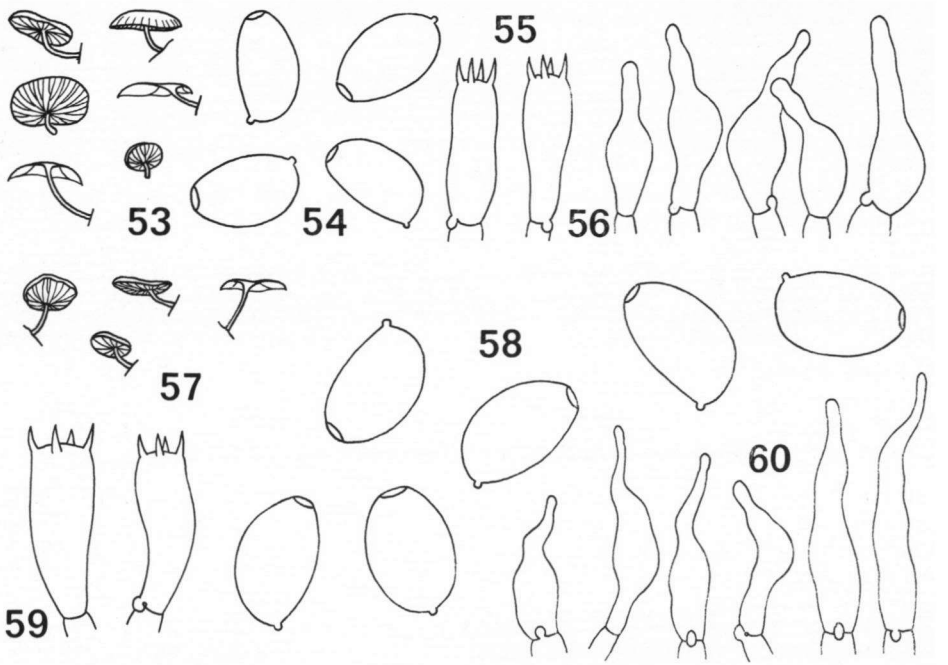
Spores 6–7.5 × 4–5 μm, ovate, pale brown, thin-walled, smooth; germ pore often indistinct. Basidia 18–22 × 5–6 μm, 4-spored. Cheilocystidia 20–35 × 8–11 μm, ventricose-fusoid with subcapitate neck, hyaline, thin-walled, forming sterile gill edge. Cuticle a cutis of parallel cylindrical hyphae (3–7 μm in diam.), terminal cells not differentiated, membranes encrusted with brownish (KOH) pigment, not gelatinized. Clamp connections absent from all septa.

HABITAT.—On rotting wood in rain forest. Papua New Guinea.
MATERIAL EXAMINED.—Papua New Guinea: Morobe district, Bulolo, Watut, 21 Nov. 1972, *E. Horak* (holotype, ZT, 72/655).

The most distinguishing characters of this species are the spathulate estipitate carpophores, the thin-walled spores (like *M. bruchii*) and the fusoid-capitate cheilocystidia.

17. **Melanotus vorax** Horak, *spec. nov.*—Figs. 53–60

Pileo –12 mm lato, e convexo applanato, argillaceo vel pallide brunneo, subviscido, striato. Lamellis adnatis ex argillaceo brunneis, albofimbriatis. Stipite –10 × –1 mm, cylindrico, excentrico vel sublaterali, pileo concolori. Sporis 6.5–8.5 × 4–5.5 μm, ovatis, luteibrunneis, levibus, poro germinativo instructis. Cheilocystidiis fusoideis. Ad frustulos plantarum. Novazelandia. Holotypes: PDD 27135.



Figs. 53–60. *Melanotus vorax*. — 53–56. From type of *M. vorax*. — 53. Carpophores. — 54. Spores. — 55. Basidia. — 56. Cheilocystidia. — 57–60. From *Horak 67/126*. — 57. Carpophores. — 58. Spores. — 59. Basidia. — 60. Cheilocystidia.

Pileus –12 mm in diam., hemispherical or convex when young, becoming expanded, centre depressed in old carpophores, cream, argillaceous or pale brown, chocolate brown when moist, dry to subviscid, striate towards margin, membranaceous, glabrous, slightly hygrophanous. Lamellae adnate, occasionally subdecurrent, crowded, whitish or argillaceous turning to pale brown or deep brown, often with pale red-brown tinge, edge albofimbriate. Stipe –10 × –1 mm, cylindrical, eccentric or sublaterally inserted, curved, concolorous with pileus or dark brown, apex pruinose, glabrous towards base, solid, dry, often attached to substratum with white mycelium, single in groups. Odour and taste not distinctive. Spore print brown.

Spores 6.5–8.5(–9) × 4–5.5(–6) µm, ovate, yellow-brown, smooth, thin-walled, germ pore and apiculus distinct. Basidia 18–22 × 6–8 µm, 4-spored. Cheilocystidia 15–30 × 5–10 µm, fusoid with tapering neck, apex rounded, hyaline, thin-walled, forming sterile edge. Cuticle a cutis of interwoven cylindrical hyphae (3–8 µm in diam.), membranes slightly gelatinized, encrusted with brown (KOH) pigment. Clamp connections present.

HABITAT.—On decomposing leaves of *Cortaderia*, *Phormium*, and ferns (*Dicksonia*, *Cyathea*). New Zealand.

MATERIAL EXAMINED.—NEW ZEALAND: South Island, Canterbury, Mt Grey, Kowai River, 30 Dec. 1968, *E. Horak 68/688* (holotype, PDD 27135; isotype, ZT); Mt Grey, Kowai Bush, 22 Sept. 1967, *E. Horak 67/126* (ZT); Mt Grey, Kowai

Bush, 30 Dec. 1968, *E. Horak 68/689* (ZT). — Nelson: Puponga, 18 May 1968, *E. Horak 68/477* (ZT). — North Island: Gisborne, Urewera National Park, Lake Waikareiti, 30 June 1968, *E. Horak 68/623* (ZT); Taranaki, Mt Egmont National Park, Rahiri Lodge, 17 June 1968, *E. Horak 68/563* (ZT).

The description of *M. vorax* is based on 8 collections made at different sites in New Zealand. According to our field observations this fungus is widely distributed on decomposing leaves and stems of grasses, New Zealand flax and ferns. We must emphasize that the spores of carpophores growing on *Phormium tenax* are often larger than those observed on carpophores from other host plants.

18. MELANOTUS HEPATOCHROUS (Berk.) Sing.—Figs. 61–76

Agaricus (*Crepidotus*) *hepatochrous* Berk. *in* Hook., J. Bot. **7**: 574. 1848 (basionym). — *Melanotus hepatochrous* (Berk.) Sing. *in* Sydowia **5**: 472. 1951 (as '*M. haematochrous*' Sing. *in* Sydowia **6**: 348. 1952).

Agaricus (*Crepidotus*) *insidiosus* Berk. *in* Hook., J. Bot. **7**: 574. 1848. — *Melanotus insidiosus* (Berk.) Pegler *in* Austr. J. Bot. **13**: 336. 1964.

Agaricus (*Crepidotus*) *cassiaecolor* Berk. *in* Hook., Fl. Tasm. **2**: 246. 1860. — *Melanotus cassiaecolor* (Berk.) Sing. *in* Sydowia **15**: 70. 1950.

Agaricus (*Crepidotus*) *turbidulus* Berk. apud Saccardo, Syll. Fung. **5**: 889. 1887; **9**: 1891.

Crepidotus subhaustellaris Cleland, Toadstools Mushrooms ... South Australia: 131. 1934.

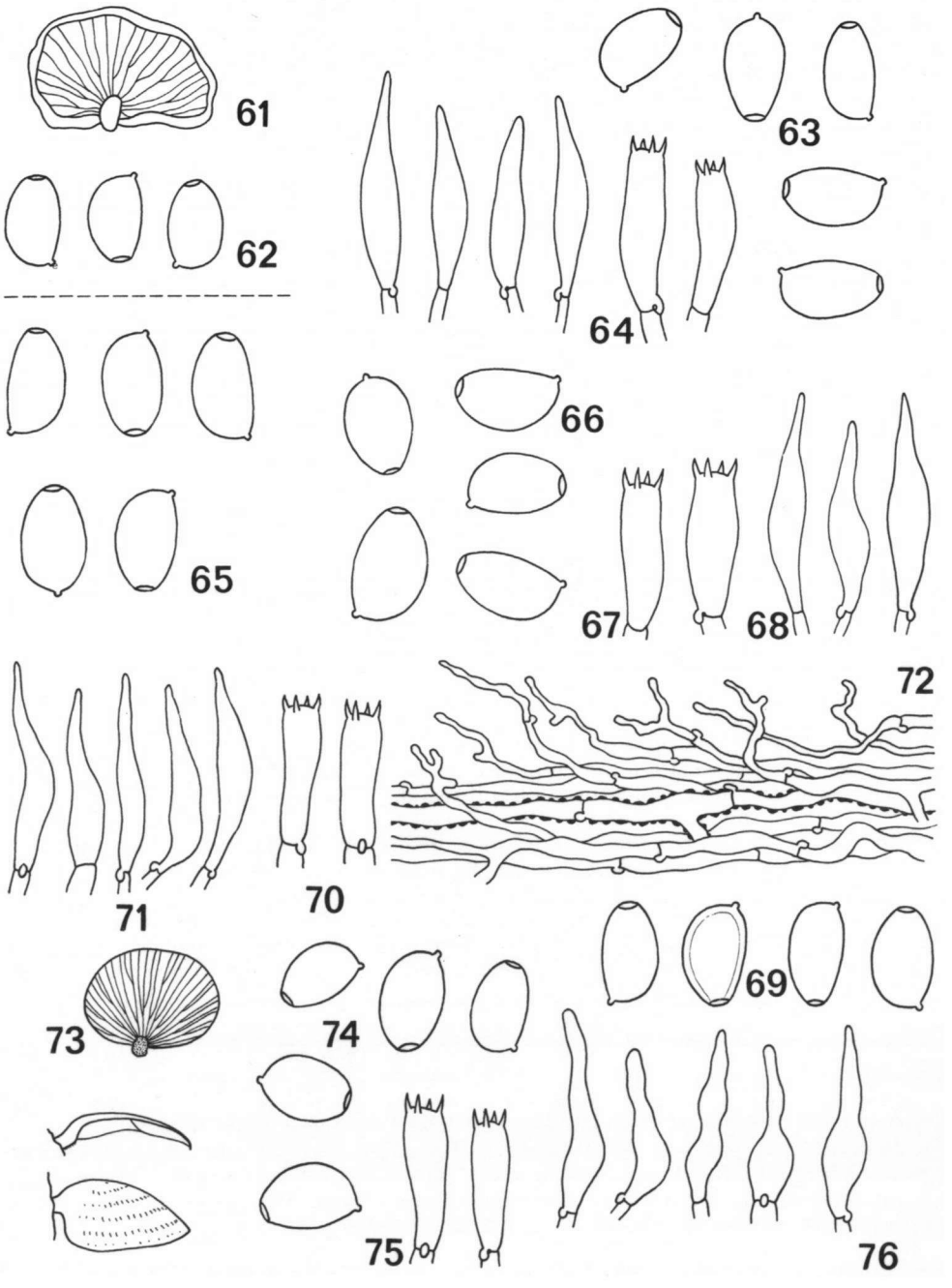
Pileus –30 mm in diam., orbicular, semiorbicular or reniform, also flabelliform, convex to plane, dark brown, reddish brown or brown when moist, fading to pale brown or cinnamon brown, dry, estriate, glabrous or minutely felty. Lamellae concurrent at stipe, broadly adnate, crowded, argillaceous becoming cinnamon brown or dark brown, often with ferrugineous tint; edge albofimbriate. Stipe –4 × –2.5 mm, eccentric to lateral, sometimes directly attached to substratum, cylindrical, curved, whitish or concolorous with pileus, dry, glabrous, solid; veil remnants absent. Odour and taste acidulous. Spore print brown to lilac-brown.

Spores 5.5–7.5 × 3.5–5 µm, ovate to sublentiform, yellowish to pale brown, smooth, thin-walled; germ pore distinct. Basidia 15–22 × 5–6 µm, 4-spored. Cheilocystidia 20–30 × 3–6 µm, lanceolate to fusoid with elongate neck, thin-walled, hyaline, forming sterile edge. Pleurocystidia absent. Cuticle a cutis of interwoven cylindrical hyphae (2–8 µm in diam.), terminal cells often branched or forked (like *Marasmiellus*), membranes not gelatinized, encrusted with brownish (KOH) pigment. Clamp connections present.

ILLUSTRATIONS.—Pilát (*1950*: 223, *hepatochrous*; *1950*: 225, *insidiosus*; *1950*: 218, *cassiaecolor*; *1950*: 236, *turbidulus*).

HABITAT.—On rotting bark, wood or leaves (known host plants: *Eucalyptus*, *Xanthorrhoea*, *Podocarpus*). Tasmania (type), South Australia, New Zealand.

MATERIAL EXAMINED.—TASMANIA: Tasmania, *Gunn 756* (holotype of *Agaricus hepatochrous* Berk., K); Penguite, May 1845 (holotype of *Agaricus insidiosus* Berk., K); Tasmania, *Archer* (holotype of *Agaricus cassiaecolor* Berk., K); holotype of *Agaricus turbidulus* Berk. (K). SOUTH AUSTRALIA: Mt Lofty, 20 May 1920, *Cleland* (holotype of *Crepidotus subhaustellaris* Clel., WAITE 12622). NEW ZEALAND: South Island, Westcoast, Ahaura, 14 March 1968, *E. Horak 68/159* (ZT).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The preceding redescription of *M. hepatochrous* is based on its type specimen, on the type specimens and descriptions of the above mentioned synonyms, and on fresh material collected in New Zealand.

Comparison of the original descriptions, the hitherto unpublished drawings and the microscopical data extracted from the type specimens of *M. hepatochrous*, *M. insidiosus*, *M. cassiaecolor*, and *M. turbidulus* (all described from Tasmania) leaves little doubt but that these taxa are conspecific. In addition the microscopical characters of *Crepidotus subhaustellaris* Clel. agree in many respects with those of *M. hepatochrous* so that this fungus is also relegated to the synonyms of the Tasmanian *Melanotus*. The most distinctive characters of *M. hepatochrous* are the thin-walled spores, the lanceolate or fusoid-conical cheilocystidia, the branched tips of the cuticular hyphae, the dark brown or reddish brown pileus and the cinnamon brown lamellae, which do not show an obvious purple tint.

19. MELANOTUS FLAVO-LIVENS (Berk. & Curt.) Sing.—Fig. 77

Agaricus flavo-livens Berk. & Curt. *in* Proc. Am. Acad. Arts Sci. **4**: 117. 1860 (basionym). — *Crepidotus flavo-livens* (Berk. & Curt.) Sacc., Syll. Fung. **5**: 887. 1887. — *Melanotus flavo-livens* Curt.) Sing. *in* Lloydia **9**: 130. 1946.

Pileus –12 mm in diam., orbicular to reniform, convex or plane, pale ochraceous, fawn or pale argillaceous, estriate, cottony or minutely felty, dry. Lamellae concurrent at stipe, broadly adnate, crowded, ventricose, greyish to pale argillaceous or pale ochraceous without distinct purplish tint (fresh carpophores), edge albofimbriate. Stipe 2–5(–10) × 1–1.5 mm, eccentric, sublateral or rudimentary, cylindrical, curved, white or concolorous with pileus, dry, glabrous, without veil remnants, solid, single in groups. Odour and taste not distinctive.

Spores (5–)6–7 × 4–4.5 μm, ovate to sublentiform, smooth, thick-walled, germ pore present. Basidia 15–20 × 5–7 μm, 4-spored. Cheilocystidia 15–25 × 3–5 μm, subfusoid to cylindrical, hyaline, thin-walled, not pigmented, forming sterile gill edge. Pleurocystidia none. Cuticle a cutis of interwoven to subregular cylindrical repent hyphae (4–10 μm in diam.), membranes not gelatinized, encrusted with brown (KOH) pigment. Clamp connections present.

ILLUSTRATIONS.—Pilát (*1950*: 221).

HABITAT.—On dead wood (type) or decomposing plant detritus (*Heliconia*, *Cocos*). Bonin Islands, New Caledonia, Solomon Islands.

MATERIAL EXAMINED.—BONIN ISLANDS: Bonin Islands (holotype, K). NEW CALEDONIA: Yaté, 25 Feb. 1977, *E. Horak 77/168* (ZT); Yaté, 25 Feb. 1977, *E. Horak 77/168* (ZT). SOLOMON ISLANDS: Kolombangara, 27 Aug. 1965, *E. J. H. Corner* (RRS 1113, ZT).

Figs. 61–76. *Melanotus hepatochrous*. — 61, 62. From type of *M. hepatochrous*. — 61. Carpophore. — 62. Spores. — 63, 64. From type of *Agaricus insidiosus*. — 63. Spores. — 64. Basidia and cheilocystidia. — 65. Spores (from type of *Agaricus cassiaecolor*). — 66–68. From type of *Agaricus turbidulus*. — 66. Spores. — 67. Basidia. — 68. Cheilocystidia. — 69–72. From type of *Crepidotus subhaustellaris*. — 69. Spores. — 70. Basidia. — 71. Cheilocystidia. — 72. Cuticle. — 73–76. From *Horak 68/159*. — 73. Carpophores. — 74. Spores. — 75. Basidia. — 76. Cheilocystidia.

The original description of *Agaricus flavo-livens* reads as follows: 'Pileo flabelliformi flavido pulverulento; stipite nullo; lamellis angustis purpureoalbis. On dead wood. Bonin Islands.'

In the preceding description this poor diagnosis is complemented with observations on fresh collections made in New Caledonia and the Solomon Islands.

Examining the type material of *Agaricus flavo-livens* Berk. & Curt. we cannot agree with the opinion of Hesler & Smith (*1965*: 147) that this fungus should be considered a later synonym of *M. musaecola* (= *M. alpiniae*). *Melanotus flavo-livens* is a sound and independent species from the islands in the West Pacific.

20. **Melanotus communis** Horak, *spec. nov.*—Figs. 78–81

Pileo –30 mm lato, rotundato-reniformi vel conchiformi, centro convexo, albidulo vel pallide brunneo, sicco. Lamellis adnexis, ex argillaceo brunneis, lilacino tinctis, albofimbriatis. Stipite –5 × –1.5 mm, cylindrico, excentrico sublateralive, pileo concolori. Sporis 5–7 × 3.5–4.5 µm, ovatis, brunneis, levibus, poro germinativo instructis. Cheilocystidiis clavatis vel fusoideo-mucronatis. Ad ramos putridos in silvis. Nova Guinea. Holotypus: ZT, 71/465.

Pileus –30 mm in diam., reniform or conchiform, with centre convex or umbonate and margin not upturned, varying from whitish to brownish, dry, estriate, not hygrophanous, smooth when young, often radially cracked in old carpophores.

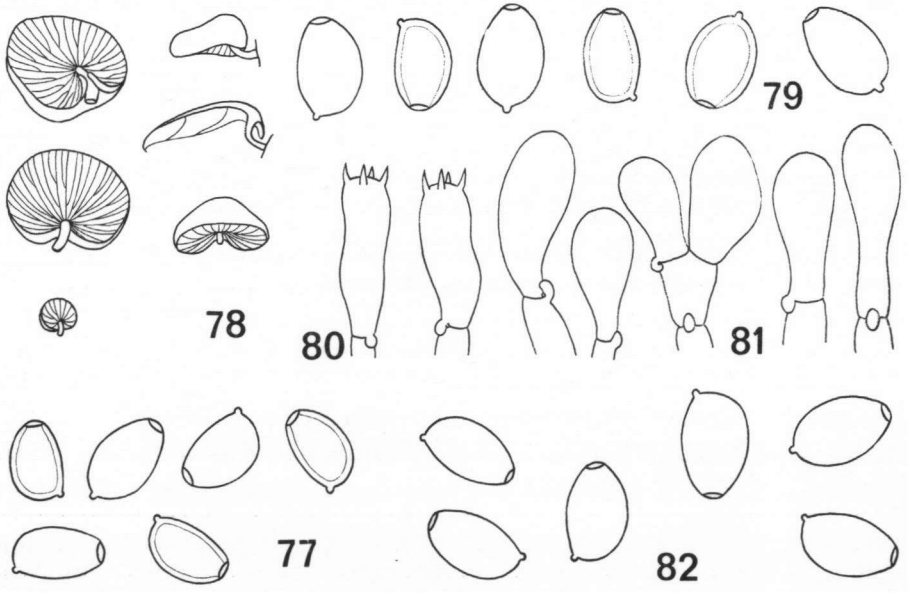

Fig. 77. *Melanotus flavo-livens* (from type), spores.

Figs. 78–81. *Melanotus communis* (from type). — 78. Carpophores. — 79. Spores. — 80. Basidia. — 81. Cheilocystidia.

Fig. 82. *Melanotus bambusinus* (from type), spores.

Lamellae adnexed, densely crowded, ventricose, eccentrically concurrent, argillaceous turning grey-brown or deep brown, often with distinct lilac tints; edge albofimbriate. Stipe –5 × –1.5 mm, cylindrical, curved, eccentric to sublaterally inserted, concolorous with pileus or pallid, pruinose at apex, dry, solid, single in groups. Odour and taste not distinctive. Spore print dark brown, with lilac hue.

Spores 5–7 × 3.5–4.5 μm, ovate, brown, smooth, thin or thick-walled; germ pore and apiculus distinct. Basidia 15–22 × 5–7 μm, 4-spored. Cheilocystidia 15–25 × 5–10 μm, clavate, fusoid-subcapitate or clavate-mucronate, hyaline, thin-walled, forming sterile gill edge. Cuticle a cutis of interwoven cylindrical hyphae (2—8 μm in diam.), membranes not gelatinized, encrusted with brown (KOH) pigment. Clamp connections present.

HABITAT.—On rotting branches in forests. Papua New Guinea.

MATERIAL EXAMINED.—PAPUA NEW GUINEA: Eastern Highlands, Mt Michael, Frigano, Hut Track, 31 Dec. 1971, *E. Horak 71/465* (holotype, ZT); Mt Michael, Frigano, Hut Track, 8 Dec. 1971, *E. Horak 71/397* (ZT); Northern district, Popondetta, Mt Lamington, Kandata, 13 April 1972, *E. Horak 72/380* (ZT); Goroka, Daulo Pass, 12 Jan. 1972. E. *Horak 72/69* (ZT).

This species is very common in the rain forests of Papua New Guinea. It is characterized by thin-walled spores, clavate or fusoid-subcapitate (and often also mucronate) cheilocystidia and rather large whitish to pale brownish carpophores. In fresh material the lamellae show a distinct purple tinge.

21. MELANOTUS BAMBUSINUS (Pat.) Pat.—Fig. 82

Crepidotus ? bambusinus Pat. *in* J. Bot., Paris 5(18): 309. 1891 (basionym). — *Melanotus bambusinus* (Pat.) Pat., Essai Tax.: 175. 1900.

ILLUSTRATIONS.—Pilát (*1950*: 218).

HABITAT.—On rotting twigs of *Bambusa*. Vietnam.

MATERIAL EXAMINED.—VIETNAM: Tonking, Ke So, 28 July 1890, *Bon 4462* (holotype, PC); Ke So, 24 March 1914 (PC).

Melanotus bambusinus is the type species of *Melanotus*. Unfortunately the type collection and the second collection mentioned above are in fragmentary condition. Only the morphology of the spores is sufficiently well known.

SPECIES INCERTAE SEDIS

CREPIDOTUS TJIBODENSIS. P. Henn *in* Monsunia 1: 17. 1900

Original diagnosis: 'Pileo submembranaceo-carnosulo, conchiformi vel flabellato, sessili, basi protracto, albo, levi, glabro, 5–15 mm lato longoque, margine tenui; lamellis ad basim radiantibus, inaequilongis, subconfertis, latis ad marginem crispulis, albo-violaceis dein brunnescentibus; sporis olivaceo-brunneis, late ellipsoideis, laevibus, 6–8 × 4–5 μm. Java, Tjibodas: an Zweigen, Juli 1890 (M. Fleischer).'

No type material was traced in the Hennings herbarium in Berlin (B) but according to the good description it is very likely that this species belongs to *Melanotus*.

List of host plants of Melanotus species

Pteridophyta, Filicales:
- Cyatheaceae: *Dicksonia, Cyathea.—M. ridleyi, M. vorax*

Spermatophyta, Gymnospermae:
- Podocarpaceae: *Podocarpus.—M. hepatochrous*
- Cupressaceae: *Cupressus.—M. proteus*

Spermatophyta, Angiospermae:
Monocotyledoneae:
- Gramineae: *Cortaderia.—M. vorax*; *Bambusa.—M. bambusinus*; *Chusquea.—M. bruchii*; *Agrostis.—M. phillipsii*
- Cyperaceae: *Carex.—M. phillipsii*
- Agavaceae: *Phormium.—M. vorax*
- Palmae: *Cocos.—M. subcuneiformis, M. flavo-livens*
- Musaceae: *Musa.—M. protractus, M. alpinia* (*M. musaecola, M. fumosifolius*); *Heliconia.—M. flavo-livens*
- Zingiberaceae: *Alpinia.—M. alpiniae*
- Liliaceae: *Astelia.—M. citrisporus*; *Xanthorrhoea.—M. hepatochrous* (*M. subhaustellaris*)
- Other 'grasses'.—Further host plants: *M. phillipsii, M. eccentricus, M. vorax, M. flavo-livens*; *Zea, Juncus* (see Singer, *1975*: 544)

Dicotyledoneae:
- Myrtaceae: *Eucalyptus.—M. hepatochrous* (*M. subhaustellaris*)
- Rosaceae: *Polylepis.—M. polylepidis*
- Rubiaceae: *Psychotria.—M. alpiniae* (*M. psychotriae*)
- Scrophpulariaceae: *Scrophularia.—M. phillipsii*

On logs, branches, twigs, bark, or leaves of deciduous trees.—*M. alpinia* (*M. fumosifolius, M. subvariabilis*), *M. bruchii, M. communis, M. distinctus, M. flavo-livens, M. gelineus, M. haematites, M. hepatochrous* (*M. cassiaecolor, M. insidiosus, M. turbidulus*), *M. patagonicus, M. phaeophyllus, M. proteus.*

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