

Key to *Panaeolus*

Ola'h, G. M. (1969). *Le genre Panaeolus: Essai taxinomique et physiologique*. Paris: Herbiier Louis Marie. 116-119.

Translation by Michael Kuo

Note: Pileus covering and pleurocystidia "types" are illustrated on pages 225-227 (pleurocystidia) and on page 228 (pileus coverings) in Ola'h.

A. Species without a ring. Spores smooth:

Aa. Species without pleurocystidia:

a1. Spores: 7-9 X 4.0-6.0 μ

-- Growing in wet, swampy places populated with cedars and mosses in the genus *Mnium*.

-- Pileus covering type A.

..... *Panaeolus fontinalis* Smith

a2. Spores: 7.0-11.0 X 4.0-7.5 μ

-- *Acicole* [?], pushing up through needles and cone debris under mountain pines.

-- Pileus covering type of A-C.

..... *Panaeolus guttulatus* Bres.

a3. Spores: 9-11.0 X 6.5-7.5 μ

-- On stumps or logs of ash trees.

-- Pileus covering type A-H.

..... *Panaeolus fraxinophilus* Sm.

a4. Spores: 11.5-14.5 X 7.0-9.04 μ

- Cap margin not appendiculate, straight and unbent.
- Mycelium bluish in cultures.
- Pileus covering type D-A.

. *Panaeolus subbalteatus* Berk. & Br.

a5. Spores: 10.8-16.4 X 7.9-10.5 μ

- Cap margin appendiculate, whitish.
- Mycelium never bluish in cultures.
- Pileus covering of type A-C.

. *Panaeolus retirugis* Fr.

a6. Spores: 12.2-16 X 7.5-11.0 μ

- Cap margin not appendiculate, translucent-striate.
- Cap higher than it is wide.
- Pileus covering type A and D, or only A.

. *Panaeolus acuminatus* (Schaeff.) Fr.

a7. Spores: 14.5-18.5 X 10.5-12.6 μ

- Cap margin with whitish, overhanging teeth forming a tight marginal chokehold on young specimens [there's undoubtedly a better translation here, but you get the picture].
- Cap greenish gray, olive, campanulate, elevated, [and "dull" or "obtuse"; both are offered in my dictionary for *obtus*].
- Pileus covering type B and E.

. *Panaeolus sphinctrinus* Fr.

a8. Spores: 13.5-18.0 X 7.5-12 μ

-- Cap margin overhanging, straight to recurved, appendiculate with small whitish-gray teeth.

-- Cap campanulate; brownish gray, carnation red, brick rose

-- Pileus covering type A-C and D.

. *Panaeolus campanulatus* (Fr.) Quél.

Ab. Species with pleurocystidia:

b1. Spores: 7.5-8.5 X 5.0-5.5 μ

-- Pleurocystidia type B.

-- Cap conico-convex, plane, papillate, fawn-brown.

-- Pileus covering type F.

-- Mycelium in culture white, creamy-white, brownish.

. *Panaeolus microsporus* Ola'h & Cailleux.

b2. Spores: 10.0-12.5 X 6.0-8.0 μ

-- Pleurocystidia type A.

-- Cap subglobose, sepia brown, dark brown, blackish.

-- Pileus covering type I.

-- Mycelium in culture whitish gray, brownish.

. *Panaeolus ater* (Lange) Kühn. & Romagn.

b3. Spores: 10.5-12.0 X 6.5-9.0 μ

-- Pleurocystidia type E.

-- Cap subglobose, planoconvex, pulvinate; light brown, becoming olive green; bluing when bruised.

-- Pileus covering type A-C.

-- Mycelium in culture greenish blue.

. *Panaeolus cambodginiensis* Ola'h & Heim.

b4. Spores: 10.0-12.0 X 6.0-7.5 μ

- Pleurocystidia type A.
- Cap campanulate, [obtuse?], mammillate; silky white, ochraceous, clay colored, becoming fawn brown.
- Pileus covering type A-C, and D apically.

..... *Panaeolus leucophanes* Berk. & Br.

b5. Spores: 10.5-12.0 X 7.0-9.0 μ

- Pleurocystidia type E.
- Cap subglobose, convex; clay colored, brick red over the disc, grayish, greenish; translucent-striate on the margin; bluing when bruised.
- Pileus covering type G.
- Mycelium in culture bluish.

..... *Panaeolus tropicalis* Ota'h

b6. Spores: 10.8-14.2 X 6.9-9.5 μ

- Pleurocystidia type A.
- Cap conico-campanulate, elliptic; sepia brown, pale gray, brownish.
- Pileus covering type A-C and H.
- Mycelium in culture grayish white, brownish.

..... *Panaeolus fimicola* Fr.

b7. Spores: 11.4-14.5 X 7.9-11.0 μ

- Pleurocystidia type D.
- Cap subglobose, conico-convex, [obtuse?]; creamy white, grayish on the disc, becoming brick red.
- Pileus covering type G.
- Mycelium in culture grayish white, yellowish, grayish.

..... *Panaeolus africanus* Ota'h

b8. Spores: 12-14 X 8.5-11.0 μ

-- Pleurocystidia type E.

-- Cap subglobose to campanulate; light brown to dark reddish brown; bluing when bruised.

-- Pileus covering type A-C.

-- Mycelium in culture bluish.

..... *Panaeolus cyanescens* Berk. & Br.

b9. Spores: 17.9-21.8 X 11.0-12.5 μ

-- Pleurocystidia type D-C, C, and B.

-- Cap robust; subhemispheric, ovoid-campanulate; white, gray, ochraceous.

-- Pileus covering type A-C and D.

-- Mycelium in culture grayish white.

..... *Panaeolus phalaenarum* (Fr.) Quél.

B. Species without a ring. Spores rugose or verrucose:

Bc. Species with very finely verrucose, black spores.

c1 Spores 12-15 X 7.0-9.5 μ

-- Cap subhemispheric, convex, not plane; grayish green, blackish, yellowish when dry; rugose or ? [*ridulee*].

-- Spore print black.

-- Pileus covering type D, and A-C apically.

..... *Panaeolus castaneifolius* (Murr.) Ota'h

Bd. Species with substantially rugose, brown spores.

d1 Spores 11.9-16.5 X 7.4-9.0 μ

-- Cap subhemispheric, campanulate, convex; brownish red, cinnamon, light brown when dry; glabrous, smooth.

-- Spore print dark brown.

-- Pileus covering type A-C, rarely H.

..... *Panaeolus foenisecii* (Fr.) Kühn.

C. Species with a ring.

Spores 18.6-20.8 X 10.2-11.5 μ

-- Ring grayish white, membranous.

-- Pleurocystidia type B, C, and D

-- Cap robust; pale, clay colored, ochraceous.

-- On dung.

..... *Panaeolus semiovatus* (Fr.) Lund. & Nannf.