

3. *Leccinum manzanitae* Thiers, sp. nov.

Pileus 8–20 cm latus, viscidus, appresso-fibrillosus, obscure rufus. Caro alba, tactu fusca. Tubuli 1–2.5 cm longi, subolivacei, tactu fusci. Stipes 10–16 cm longus, 1.5–3.5 cm crassus, clavatus, fibrilloso-squamosus. Sporae 13–17 × 4–5.5 μ , fusoidae. Cystidia 23–32 × 4–6 μ , hyalina, fusoida vel clavata. Globuli pigmenti in hyphis cuticulae in “Melzer’s reagent.”

Typus legit Robert Keller (Thiers n. 24736), San Francisco Watershed, San Francisco Water Department, San Mateo County, Calif., Feb. 1, 1970, in herb. San Francisco State College conservatum.

Pileus (5–)8–20 cm broad, globose to convex when young, broadly convex to pulvinate when mature; surface often shallowly to deeply pitted or reticulate, viscid to subviscid especially with age, strongly appressed-fibrillose during all stages of development or occasionally tomentose, never glabrous, fibrils often more conspicuous toward the margin; color dark red (“bay” to “mahogany red” to “Mars brown” to “burnt umber”) during all stages of development; margin incurved, with conspicuous sterile projecting cuticular segments. Context 2–4 cm thick, white when first exposed, slowly and erratically changing to fuscous with no reddish intermediate stage; color changes often more pronounced in young basidiocarps. Taste and odor mild.

Tubes 1–2.5 cm in length, adnate to shallowly or deeply depressed, color pale olive (“pale olive-buff”) when young, darkening to olive drab (“olive-buff” to “deep olive-buff”) at maturity, staining dark brown (“buffy brown”) when bruised; pores up to 1 mm in diam, angular, concolorous.

Stipe 10–16 cm long, 1.5–3.5 cm broad at the apex, clavate to ventricose, solid; surface dry, conspicuously fibrillose-scaly, scales typically pallid when young darkening to near fuscous with age, ground color white to whitish. Context white, slowly staining fuscous in apical portion when exposed, sometimes bluing in the base.

Spores brown (“cinnamon-brown”) in deposit.

Spores 13–17 × 4–5.5 μ , ochraceous in KOH and Melzer’s reagent, fusoid to subellipsoid to subcylindric, inequilateral; walls smooth, moderately thick.

Basidia 27–32 × 6–9 μ , clavate to pyriform, hyaline in KOH, 4-spored. Hymenial cystidia 23–32 × 4–6 μ , often obscure, scattered, hyaline in KOH, fusoid to clavate with narrow, elongated apices. Caulocystidia 35–45 × 9–14 μ , clavate to mucronate to fusoid, staining dark brown in Melzer’s reagent and KOH, thin-walled, large cells occasionally interspersed, basidia sometimes present.

Pileus cutis differentiated as a trichodermium of free, tangled hyphal tips; no evidence of gelatinization of hyphal walls; terminal cells elongated and often noticeably tapered, some disarticulation of cells noted, walls smooth to sometimes obscurely roughened, contents ochraceous

in KOH, reddish in Melzer's reagent, pigment globules forming when mounted in Melzer's reagent, hyphae 8–12 μ in diam. Tube trama obscurely divergent from a distinct central strand, hyaline in KOH, hyphae 6–8 μ in diam. Pileus trama hyaline in KOH, interwoven, homogeneous, hyphae 6–9 μ in diam. Clamp connections absent.

Chemical reactions. FeSO₄—flesh pale gray. KOH—tubes pale red, then blackening. HNO₃—tubes orange yellow.

Habit, habitat and distribution. Solitary to scattered in soil under madrone (*Arbutus menziesii* Pursh.) and manzanita (*Arctostaphylos* spp.). Very common in the coastal areas in the northern part of the state.

Material studied. Marin County: Thiers 24654. Mendocino County: Thiers 8299, 9283, 10671, 18152, 21412, 21413, 23064, 24189, 24450, 24461, 24462, 24507, 24737. San Mateo County: Thiers 11200, 18059, 18336, 24735, 24736-type, 24755. Santa Cruz County: Thiers 12034, 14404.

Observations. This is by far the most common *Leccinum* in the coastal forests of California where it occurs under manzanita and madrone. Because the species is so frequently seen in association with manzanita it is often locally referred to as the "manzanita mushroom." It has not yet been found in the Sierra Nevada or Sierra foothills.

The large, dark red, viscid pileus is suggestive of *L. ponderosum*, however, the flesh of that species does not darken appreciably upon exposure and the pileus is glabrous at least when young. It is interesting to note that an additional, although apparently undescribed species has been found associated with *Arctostaphylos* in Alaska. That fungus, however, has only been found above timber line and associated with *Arctostaphylos uva-ursi* (L.) Spreng. which is a very small, almost prostrate shrub. There are numerous differences between the two species as evidenced by the fact that *L. manzanitae* is much darker colored, consistently larger in size, viscid, has different color changes in the exposed flesh and slightly smaller spores.

4. *Leccinum manzanitae* var. *angustisporae* Thiers, var. nov.

Haec varietas similis varietati *manzanitae* extra sporas quae tantum 3–4 μ latae et saepe 1–2 μ longiores sunt.

Typum legit J. Motta (Thiers n. 8774), Jackson State Forest, Mendocino County, Calif., in herb. San Francisco State College conservatum.

As in var. *manzanitae* except that the spores reach only 3–4 μ in width and often average 1–2 μ longer. In all other aspects this variant is similar to the typical variety.