

lections were noted to be mild tasting, but the point needs rechecking since a delayed taste could have been missed.

L. subflammeus differs from *L. luculentus* var. *luculentus* in color of the pileus (if Burlingham's description is taken literally), and in having a white spore deposit, a feature Smith has checked many times. Herbarium specimens are best distinguished by the structure of the pileus cuticle.

In *L. subflammeus* there are numerous inflated cells at the base of the ixotrichoderm but these do not form an epithelial-like layer. The enlarged cells in the cuticle of *L. luculentus* occur more haphazardly.

Material cited.—ALASKA: Wells-Kempton 2913 (MICH); COLORADO: Smith 52608, 52962; OREGON: Burlingham 7, Woodcock's Hill, Corvallis, November 14, 1927 (type, NY); Smith 8931, 55802, 55872, 79943.

164a. *Lactarius luculentus* var. *laetus* var. nov.

Illus. Pl. 132.

Pileus 3-6 cm latus, late convenus demum late infundibuliformis, glaber, subviscidus dein siccus, laete aurantiacus, azonatus; contextu tenuis, firmus, luteolus; latex lacteus, copiosus, constans, mitis demum amarus; lamellae "light vinaceous-cinnamon" (pallide rubro-argillaceae), angustae (2.5-3 mm), confertae; stipes 4-5 cm longus, 5-7 mm crassus, aequalis, cavus, glaber, subaurantiacus; sporae 8-10 × 7-8.5 μ; macrocystidia 56-90 × 9-14 μ. Specimen typicum in Herbarium University of Michigan conservatum; Smith 17353, legit prope Port Angeles, Washington, 27 Sep 1941.

Pileus 3-6 cm broad, broadly convex to plane or the disc with a papilla, disc broadly depressed in age, surface glabrous, opaque when moist, slightly viscid when wet but soon dry, color evenly brilliant orange or margin a little paler, azonate, color duller in age, rarely with watery spots. Context thin but firm, pallid to pale yellow. Latex milk-white, copious, unchanging, staining gills brownish slowly (see Smith 17471), taste mild slowly becoming bitter.

Lamellae "light vinaceous-cinnamon" (pale reddish clay color), narrow (2.5-3 mm), crowded, ± 4 tiers of lamellulae, unchanging or in some collections slowly stained brownish.

Stipe 4-5 cm long, 5-7 mm thick near apex, equal or a bit enlarged below, hollow, remarkably firm at first but soon fragile, surface smooth, glabrous, colored as in the lamellae or pileus.

Spore deposit not obtained. Spores 8-10 × 7-8.5 μ, broadly ellipsoid; plage hyaline in Melzer's, the boundaries indefinite; ornamenta-

tion of a few prominent bands with Y-branching but no reticulum formed, isolated warts and short ridges present, prominences about 0.4-0.7 μ high.

Basidia 4-spored, 8-12 μ broad, many with refractive content as revived in KOH (more so than in the lactifers). Pleurocystidia: macrocystidia prominently projecting, 56-90 \times 9-14 μ , fusoid-ventricose and pointed to sharply fusoid, content not highly refractive in KOH; pseudocystidia not seen. Cheilocystidia basidiole-like to fusoid-ventricose with obtuse apex (none seen resembling macrocystidia). Gill trama lacking distinct rosettes but sphaerocysts present; lactifers inconspicuous in KOH. Pileus trama heteromerous, lactifers inconspicuous. Pileus cuticle a well-developed to a shortened, lax trichoderm showing slime in KOH and in Melzer's, the layer originating from a basal hyphal layer in which some of the cells are inflated but these not forming a distinct layer and not evident in many sections.

Habit, habitat, and distribution.—Gregarious under conifers and mountain alder, Mt. Angeles, Olympic Mts., Washington, September.

Observations.—This fungus has passed under the name *L. mitissimus* in the Pacific Northwest, but it differs microscopically from Neuhoff's concept in not having a thick layer of narrow (2.5-3.5 μ) hyphae (an ixocutis) over the pileus. Var. *laetus* apparently is more generally encountered than var. *luculentus*. Var. *laetus* differs from *L. subflammeus* in a mild to bitterish taste rather than an acrid one. Also, its spores appear to be slightly larger. It differs from var. *luculentus* in its brighter coloration and mild to slightly bitter context.

Material cited.—COLORADO: Smith 84923, 84971b; WASHINGTON: Smith 17202, 17353 (type, MICH), 17377, 17988.

165. *Lactarius minusculus* Burlingham

Bull. Torrey Bot. Club 34: 88. 1907

Illus. Burlingham, Mem. Torrey Bot. Club 14: 65, figs. 9-10. 1908.
(Note: the specimen illustrated apparently is not identical with the type.) Fig. 157.

Pileus 1-3 cm broad, broadly convex, with a small umbo, becoming plane, later somewhat depressed, fulvous in the center, shading to cinnamon-fulvous toward the cream-colored margin, azonate, viscid when wet, sometimes shining, glabrous; margin minutely crenate, sometimes substriate, often slightly wavy, pruinose at first. Context thin, fragile, isabelline white. Latex white, unchanging, acrid.

Lamellae adnate or decurrent by a tooth, whitish, seldom forking, close, broad (in relation to thickness of pileus).

PLATE 132



Lactarius luculentus var. *laetus* × 1

Smith 17988