

*Habitat*.—Scattered under *Pinus contorta* Dougl. in coastal Oregon.

*Collections examined*.—USA. OREGON: Tillamook Co., off of Three Capes Scenic Road, between Sandlake and Cape Lookout, 22 Nov. 1984, *Ovrebø 1759*.

*Discussion*.—*Tricholoma nigrum* is known only from Oregon. The presence of a pseudoparenchymatous hypodermium indicates this species belongs in stirps *Luteomaculosum*. *Tricholoma nigrum* is distinguished from other species in the stirps by the very dark gray pileus, and very thin gelatinous layer of the pileipellis. *Tricholoma mutabile*, a related species that occurs in the Pacific Northwest, also possesses a pseudoparenchymatous hypodermium, but has a pale gray pileus when young, and discolors pink at the base of the stipe.

**Tricholoma myomyces** (Fr.) Lange var. **cystidiotum**  
Shanks, var. nov. FIGS. 10–12

Differt a *T. myomyces* var. *myomyces* a cheilocystidia clavata.

*Etymology*. *Cystidiotum*, possessing cystidia.

HOLOTYPE. USA. CALIFORNIA: San Mateo Co., Jasper Ridge Biological Reserve, 26 Dec. 1992, *K. M. Shanks 343* (SFSU).

*Pileus* 17–60 mm broad, obtusely conic when young, expanding to plane with a low broad umbo, the margins inrolled at first, becoming uplifted and splitting in age (FIG. 10); surface dry, matted fibrillose to recurved fibrillose overall when young, becoming more appressed radiating fibrillose in age, but often retaining recurved fibrils and small squamules over the disc, nearly purple black, dark gray or brownish gray (7-11F3, 7E3-8E2) overall when young, becoming paler in age as the pale gray context is exposed between the surface fibrils; context thin, 1–2 mm, white, pale gray near pileus surface; taste and odor not distinguishable.

*Lamellae* sinuate, 4–10 mm broad, close to subdistant, thin, pale gray becoming whitish in age, occasionally margins discoloring dark gray.

*Stipe* 25–60 × 4–12 mm; equal, occasionally with a slightly bulbous base; surface dry, silky fibrillose, whitish, pale gray or silvery gray, discoloring yellow brown in age or where handled; context white or pale gray, solid or hollow; partial veil a fugacious cortina present on young buttons, leaving blackish fibrils at stipe apex.

*Basidiospores* 5.8–8.6 × 3.4–5.3 μm ( $\bar{x}$  = 7.2 ± 0.52 × 4.4 ± 0.40 μm; E = 1.3–2.1; Q = 1.6 ± 0.16; n = 197/12 collections); elliptic to narrowly elliptic, hya-

line, smooth, inamyloid (FIG. 11). *Basidia* 26–33 × 6.2–7.2 μm; clavate, 4-spored, hyaline. *Cheilocystidia* 19–38 × 8.2–12.0 μm; broadly clavate to sphaeropedunculate, often septate, scattered to abundant, hyaline, smooth, slightly thick-walled (FIG. 12). *Pileipellis* a cutis; hyphae 4.8–16 μm diam, cylindrical to somewhat inflated, parallel, forming recurved fascicles, dark brown, rarely hyaline, smooth or with broken plaques of dark brown incrustations, thick-walled; *pseudoparenchymatous hypodermium* hyphae 14–48 μm diam, highly inflated to nearly isodiametric, hyaline or with plaques of dark brown incrustation between the cells, thin- or thick-walled. *Pileus trama* hyphae 3.8–16 μm diam, cylindrical near pileipellis, cylindrical to inflated elsewhere, mostly parallel, hyaline, smooth, thin-walled. *Lamellar trama* hyphae 2.4–19 μm diam, cylindrical to inflated, parallel, hyaline, smooth, thin-walled. *Stipe* hyphae 2.4–14 μm diam, cylindrical to somewhat inflated, parallel, hyaline, smooth; hyphae of partial veil 7.2–14 μm, slightly inflated, appressed or interwoven, dark brown, smooth. *Caulocystidia* absent. Clamp connections absent.

*Habitat*. Solitary to gregarious with *Pseudotsuga menziesii* Carr. (Douglas Fir) or in mixed woods, November through March, coastal forests from Santa Cruz County northwards, and montane forests.

*Collections examined*. USA. CALIFORNIA: Del Norte Co., Hwy 199 near Oregon border, 23 Oct. 1972, *HDT 30349*; Humboldt Co., Patrick's Point State Park, 25 Oct. 1992, *KMS 251*; Marin Co., Alpine Lake, 16 Nov. 1975, *HDT 35442*; Audubon Canyon Ranch, above Pitcher Canyon, 23 Jan. 1981, *Calhoun 81-1796*, 29 Nov. 1984, *Calhoun 84-3901*; Audubon Canyon Ranch, Bolinas Ridge Rd., 27 Mar. 1981, *Calhoun 81-2280*; Mt. Tamalpais State Park, Bootjack Trail, 30 Dec. 1991, *KMS 208*; Marin Municipal Watershed District (MMWD), Rock Creek Simmonds Trail, 16 Nov. 1992, *KMS 281*; 9 Dec. 1992, *KMS 323*; MMWD, Bon Tempe Lake, 20 Dec. 1992, *KMS 326*, *KMS 329*, *KMS 340*; MMWD, Bolinas Ridge Road, 31 Dec. 1992, *KMS 346*; Mendocino Co., Jackson State Forest, 8 Jan. 1967, *HDT 18407*; 5 Nov. 1967, *HDT 21439*; 21 Nov. 1992, *KMS 283*; 20 Nov. 1993, *M.G. Wood 363*; Nevada Co., Hwy 20, Skillman Campground, 5 Nov. 1983, *HDT 46873*; San Mateo Co., San Francisco Watershed, 21 Dec. 1964, *HDT 12033*; 6 Jan. 1967, *HDT 18342*; Santa Cruz Co., Boulder Creek, 30 Dec. 1964, *HDT 12049*; 9 Dec. 1966, *HDT 18045*; Siskiyou Co., McCloud, 17 Nov. 1967, *HDT 21646*; Shasta Co., Sweetbriar Creek, 24 Dec. 1966, *HDT 18212*; Sonoma Co., Cleary Reserve, 19 Dec. 1967, *HDT 21806*; Trinity Co., Hwy 299 nr Weaverville, Trinity National Forest, 9 Nov. 1962, *HDT 9396*; Hwy 299 nr Big Bar, Trinity National Forest, 17 Nov. 1965, *HDT 14273*.

*Discussion*.—*Tricholoma myomyces* var. *myomyces* is recognized by its small stature, fibrillose to squamulose

gray pileus, cortinate veil, pseudoparenchymatous hypodermium, lack of cystidia, and lack of a distinguishable taste or odor. See Ovrebo (1989) and Bon (1984) for a description of *T. myomyces* var. *myomyces* and related species. *Tricholoma myomyces* var. *cystidiotum* differs from var. *myomyces* in the presence of broadly clavate to sphaeropedunculate cheilocystidia, but is otherwise indistinguishable.

*Tricholoma myomyces* var. *cystidiotum* is the most common small, gray *Tricholoma* in mixed evergreen forests in the fall in California, particularly in association with *Pseudotsuga menziesii* (Douglas Fir). *Tricholoma terreum* (Schaeff.:Fr.) Kummer is the name most commonly applied to collections of *T. myomyces* in California, but to my knowledge *T. terreum* does not occur in California. *Tricholoma moseri* Singer is common in montane regions in the spring, but occurs rarely in coastal forests. *Tricholoma moseri* is distinguished from *T. myomyces* by the lack of a partial veil and lack of a pseudoparenchymatous hypodermium.

*Tricholoma moseri* Singer, Beih. Sydowia 7: 17. 1973.

FIGS. 13–15

*Pileus* 20–45 mm broad, campanulate when young, becoming broadly convex to plane, rarely umbonate (FIG. 15); surface dry, woolly tomentose overall when young, remaining so over the disc, appressed radiating fibrillose to minutely squamulose overall, the surface often splitting radially to reveal the whitish context, margin inrolled and heavily bearded when young, a cobweb of white fibrils remaining on the margin in age; grayish brown (8F3-4, 8-7D3), to blackish, the margin often paler; context white to gray, taste and odor not noticeable to farinaceous.

*Lamellae* sinuate, 2–5 mm broad, close to subdistant, thin or thick, pale gray to gray, spotting dark gray or blackish.

*Stipe* 20–60 × 5–11(–18) mm, equal, occasionally with a slightly bulbous base, surface dry, silky fibrillose, pruinose at apex, white to very pale gray, cortina absent; context whitish to pale gray, solid.

*Basidiospores* 7.2–10.6 × 3.8–5.8 μm ( $\bar{x}$  = 8.3 ± 0.75 × 4.6 ± 0.40 μm; E = 1.5–2.4; Q = 1.8 ± 0.18; n = 366/16 collections), elliptic to narrowly elliptic, hyaline, smooth, inamyloid (FIG. 13). *Basidia* 31–43 × 6.7–8.6 μm, clavate, 4-spored, hyaline. *Cheilocystidia* 21–57 × 5.8–19 μm, not present in all collections, clavate to broadly clavate, often with a strangulated apex, hyaline or fuscous, somewhat thick-walled (FIG. 14). *Pileipellis* a cutis; hyphae 2.4–24 μm diam, cylindrical to inflated, parallel, forming recurved fascicles; pale brown to dark brown, rarely hyaline, smooth and somewhat thick-walled, or with rough dark

brown or hyaline incrustations; pseudoparenchymatous hypodermium absent. *Pileus trama* hyphae 2.4–19 μm diam, cylindrical to inflated, mostly parallel, hyaline or pale brown, smooth. *Lamellar trama* hyphae 2.4–19(24) μm diam, cylindrical to inflated, parallel, hyaline, smooth. *Stipe* hyphae 2.4–19 μm diam, cylindrical near surface to inflated, parallel, hyaline, smooth. *Caulocystidia* 24–62 × 3.3–7.2 μm; cylindrical to broadly clavate, often with strangulated apices, solitary or in pyramidal clusters at stipe apex, hyaline or dark brown, occasionally with hyaline granular contents, smooth. Clamp connections absent.

*Habitat.* Solitary to caespitose under conifers, particularly *Abies magnifica* A. Murr. (Red Fir) in the Sierra Nevada mountains, or *Pinus hartwegii* Lindl. in Mexico, often in disturbed soil or near melting snow, May to August in montane regions, rarely from October to January in montane and coastal regions.

*Collections examined.* MEXICO. DISTRICT FEDERALES: Paso de Cortés, 23 July 1969, *Singer M8521* (HOLOTYPE, F). USA. CALIFORNIA: Alpine Co., Alpine lake Campground, 24 May 1966, *HDT 16571*; Blue Lakes, 10 June 1966, *HDT 16931*; Breckon 438; Hwy 108 nr Clark Fork, 27 June 1967, *HDT 19880*; Alpine Lake, 29 Aug. 1982, *HDT 44797*; 20 Aug. 1983, *HDT 46043*; 26 Aug. 1983, *HDT 46146*; Amador Co., Silver Lake, 9 June 1966, *HDT 16905*; Hwy 88 E of Silver Lake, 12 July 1967, *HDT 20127*; Hwy 88, Carson Spur, 20 June 1986, *HDT 49951*; Hwy 88 rest area, 10 mi W of Silver Lake, 14 May 1988, *HDT 51657*; Calaveras Co., Hwy 4 nr Devils Kitchen, Vista Point, 28 May 1966, *HDT 16745*; El Dorado Co., Crystal Basin Recreation Area, 27 May 1978, *HDT 38*; Fresno Co., Huntington Lake, 25 Aug. 1983, *HDT 46079*; Humboldt Co., Six Rivers National Forest, Big Hill Rd, Mill Creek Lakes Trail, 18 May 1973, *DLL 5903* (HSC); 26 May 1973, *DLL 5919* (HSC); 1 June 1973, *T. J. Baroni 1306* (HSC); Lassen Co., Lassen Volcanic National Park, 23 June 1965, *HDT 12717*; 1 July 1965, *HDT 12897*; Madera Co., Yosemite National Park, 21 June 1967, *HDT 19775*; Marin Co., Pt. Reyes National Seashore, Limantour Ridge, 4 Dec. 1993, *KMS 414*; Mariposa Co., Yosemite National Park, Glacier Point Rd, 20 June 1967, *HDT 19714*; Sierra Co., Yuba Pass, 13 June 1967, *HDT 19532*; 19 June 1982, *HDT 44477*; Weber Lake Rd, 4 mi S of Yuba Pass, 26 June 1986, *HDT 50020*; 3 June 1989, *HDT 52095*; SFSU Field Campus, 6 June 1993, *KMS 376*; *KMS 377*; 7 June 1993, *KMS 380*; *KMS 381*; *KMS 382*; Haskell Peak Rd, 9 June 1993, *KMS 383*; Siskiyou Co., Mt. Shasta, 1 June 1969, *HDT 23481*; 3 June 1970, *HDT 25389*; 29 May 1972, *HDT 28879*; 17 June 1980, *HDT 41095*; 5 June 1988, *HDT 51696*; Tehama Co., hwy 89, 20 mi S of Lassen Volcanic National Park, 2 July 1982, *HDT 44611*; Tuolumne Co., Yosemite National Park, Tuolumne Grove, 22 June 1967, *HDT 19810*; Pinecrest Lake, 25 Oct. 1975, *R. E. Halling 996*; Pinecrest, 17 May 1980, *HDT 40810*; Hwy 108, 2 mi E of Long Barn, 16 Oct. 1982, *HDT 45137*. UTAH. Grand Co., La Sul Mtn., Gold Basin nr Moab, 13