

SOUTHEASTERN AGARICALES, II¹

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STUDIES OF TRICHOLOMA TYPES

This paper is a report of studies of American types of the genus *Tricholoma*. The Southeastern species treated in this paper are organized into the following four groups: I. cuticle of the pileus cellular; II cuticle fibrillose, not cellular, hyphae gelatinous; III. cuticle fibrillose, not cellular, hyphae dry or only slightly viscid, hyphae parallel or subparallel; IV. cuticle hyphae interwoven.

Group I: *Cuticle of the pileus cellular*

I have found but two species which fall into this Group, and thus far these are unnamed.

Group II: *Cuticle fibrillose, viscid, or glutinous*

Tricholomaalachuanum Murr. Mychologia 30:371. 1938. *Spores* very few, 6-7 x 4.5-5 μ , ellipsoid to ovoid, smooth, yellowish in Melzer's reagent. *Basidia* 30-40 x 7-8 μ *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* divergent, of large subglobose to cylindrical cells, with a definite mediostrate 10-30 μ broad. *Epicutis* of undulating-parallel, gelatinous hyphae 2.5-5 μ broad. Murrill did not study the spores.

Tricholomahygrophorum Murr. Lloydia 7:327. 1944. *Spores* 8-11 x 4-5 μ ellipsoid, smooth, very pale yellow in Melzer's reagent. *Basidia* 35-46 x 8-11 μ . *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* of narrow, parallel to subparallel hyphae. *Epicutis* of parallel hyphae, 2-4 μ broad. This species resembles *Hygrophorus spadiceus* Fr. closely, and may be that species. Murrill describes the spores as 6-8 x 3.5 μ .

Tricholomaperalbum Murr. Lloydia 5:157. 1942. *Spores* (5)6-7 x 3-4.5 μ , ovoid, smooth, pale yellow in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* absent in some sections, present in others, cylindrical, 35-45 x 2.4 μ . *Gill-trama* undulating-parallel. *Epicutis* of parallel, narrow hyphae 2-4 μ broad.

Tricholomasilvaticoides Murr. Florida Acad. Sci. Jour. 8:198. 1945. *Spores* 9-11 x 5-6 μ , ellipsoid, inequilateral, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* of parallel hyphae. *Epicutis* of narrow, subparallel hyphae, 2.5 μ broad.

Tricholomasubcylindrisporum Murr. Florida Acad. of Sci. Jour. 8:198. 1945. *Spores* 6-9 x 2.5-3 μ , subcylindric, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* slender-clavate, few, conspicuous, 22-36 x 6-7 μ . *Gill-trama* subparallel. *Epicutis* of nearly parallel hyphae, 3-5 μ broad, some with rough, spirally-marked walls.

¹Contributions from the Botanical Laboratory, The University of Tennessee, N. Ser. No. 176.

Tricholoma subsejunctum Pk. N. Y. State Museum Bul. 157:53. 1912. Spores 4-5.5 x 3.5-4.5 μ , subglobose to ovoid, smooth yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* somewhat interwoven. *Epicutis* of subparallel hyphae, 3-6 μ broad.

Tricholoma subterreum Murr. Mycologia 6:269. 1914. The type from Alabama is not in condition for study. However, the following notes were recorded in another Alabama collection named by Murrill. Spores 4.5-5.5 x 3-4 μ , ovoid to ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel to interwoven. *Epicutis* with a colorless, gelatinous outer layer of narrow, interwoven hyphae, 1.5-2 μ broad, and an inner, brown layer of undulating parallel hyphae, 2-2.5 μ broad.

Tricholoma subtransmutans Murr. Mycologia 6:269. 1914. Spores 4.5-6 x 3.5-4 μ , ellipsoid, smooth, pale yellowish-brown to pale yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* composed of hyphae, 3-7 μ broad, the outer hyphae interwoven and gelatinous, the inner hyphae subparallel, not vinaceous in 2% KOH.

Group III. *Cuticle* Fibrillose, *pileus* dry or only slightly viscid, *hyphae* parallel or subparallel

Tricholoma acre Pk. Torrey Bot. Club Bul. 24:139. 1897. Spores 5.5-7 x 4.5-5.5 μ subglobose to short ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* inconspicuous, cylindrical, 35-45 x 2-5 μ , absent in some sections. *Gill-trama* subparallel. *Epicutis* of subparallel hyphae, 4-7 μ broad. The *lamellae* are moderately broad to broad.

Tricholoma adustum Murr. Elisha Mitch. Sci. Soc. Jour. 55:372. 1939. Spores 4-5 x 3-3.5 μ , ellipsoid, smooth, pale yellow in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* somewhat interwoven. *Epicutis* of parallel hyphae, 5-7 μ broad.

Tricholoma australe Murr. Lloydia 7:306. 1944. Spores 4-5 x 2.8-3 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of parallel or nearly parallel hyphae, 1.5-4 μ broad. The type resembles that of *T. piperatiforme* Murr. to which it is closely related.

Tricholoma calceifolium Murr. Lloyd 8:275. 1945. Spores 3.5-5.5 x 2.3-2.8 μ , oblong-ellipsoid, smooth, pale yellow in Melzer's reagent. (Murrill reports the spores 3 x 2 μ .) *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* parallel or nearly so. *Epicutis* of parallel, narrow hyphae, 2.5-4 μ broad.

Tricholoma chrysenderoides (Pk.) Sacc. Syll. Fung. 5:115. 1887. Spores 8-10 x 4.5-6 μ , ellipsoid, subinequilateral, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* subparallel to slightly interwoven, the hyphae 3-6 μ broad.

Tricholoma cinnamomeum Murr. Mycologia 6:269. 1914. Spores 6-7.5 x 4.5-5.5 μ , broadly ellipsoid, few subglobose, smooth, yellowish in Melzer's reagent. *Basidia* 42-53 x 11-14 μ . *Pleurocystidia* none; *cheilocystidia* agglutinated, conspicuous, variable; ventricose, clavate, cylindrical, 25-50 x 5-16 μ . *Gill-trama* interwoven. *Epicutis* subparallel, hyphae 3-5 μ broad.

Tricholoma compressipes Murr. Mycologia 6:269. 1914. Spores 5-7 x 4.5-5.5 μ , ellipsoid to subglobose, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of subparallel hyphae, (a few hyphae interwoven) 2.5-4 μ broad.

Tricholoma Davisiae Pk. Torrey Bot. Club Bul. 27:611. 1900. Spores 5.5-7 x 4-5 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* clavate to pyriform, 37-60 x 12-18 μ , inconspicuous or apparently absent in some sections. *Gill-trama* somewhat undulating-parallel. *Epicutis* parallel, hyphae 5-8 μ broad.

Tricholoma Earleae Murr. Mycologia 6:269. 1914. Spores 7-9 x 5-6 (7) μ , ellipsoid, smooth, brownish in Melzer's reagent. *Pleurocystidia* of two types:

(a) cylindrical, long, conspicuous, colorless, projecting, 75-100 x 9-12 μ ; (b) fusoid and appendiculate or clavate, colorless; *cheilocystidia* conspicuous, clustered, with brown contents, variable; ventricose, cylindrical, clavate, 43-85 x 5-10 μ . *Gill-trama* wavy-parallel. *Epicutis* of narrow, parallel hyphae, 2.5-4 μ broad.

Tricholoma floridanum Murr. Lloydia 7:327. 1944. *Spores* 8-10 x 3.5-4.5 μ , ellipsoid, slightly elongate and subreniform, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* clustered, at times more or less agglutinated, cylindrical, at times subcapitate and slightly nodulose, some septate, 38-55 x 3-5 μ . *Gill-trama* slightly interwoven. *Epicutis* of undulating-subparallel hyphae, 5-8 μ broad; tufts of *tomentum* composed of hyphae 6-10 μ broad. Murrill reports the spores as 6-8 x 4 μ .

Tricholoma formosum Murr. Elisha Mitch. Sci. Soc. Jour. 55:372. 1939. *Spores* 6-7 x 4.5-5.5 μ , subglobose or short-ellipsoid, smooth, very pale yellow in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* 30-76 x 7-18 μ , irregularly clavate, some cylindrical or ventricose, often more or less agglutinated. *Gill-trama* subparallel. *Epicutis* undulating-parallel, pileus scales composed of columns of brown, slender hyphae.

Tricholoma fulvidiscum Murr. Lloydia 7:327. 1944. *Spores* 8-10 x 4.5-5.5 μ , ellipsoid, inequilateral, smooth, apiculate, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of parallel hyphae, 2.5-4 μ broad. Murrill says the spores are ovoid, 6-8 x 4-5 μ .

Tricholoma fumidellum (Pk.) Hesler *comb. nov.* *Agaricus* (*Tricholoma*) *fumidellus* Pk. Buffalo Soc. Nat. Hist. Bul. 1:44. 1873.) *Spores* 4-5 x 3-3.5 μ , ellipsoid, smooth, pale yellow to colorless in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* parallel or slightly subparallel. *Epicutis* subparallel, hyphae 1-3 μ broad.

Tricholoma hirtellum Pk. N. Y. State Museum Bul. 116:38. 1907. *Spores* 6-7.5 x 5.5-7 μ ovoid, or subglobose, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* clustered, clavate, often more or less clustered, clavate, frequently collapsed, 36-50 x 7-12 μ . *Gill-trama* subparallel. *Epicutis* of subparallel, brownish or fuscous, more or less spirally thickened hyphae, 6-10 μ broad; the pileus scales composed of spirally thickened, erect, parallel, brown hyphae, 6-12 μ broad.

Tricholoma imbricatum var. *felleum* Murr. Florida Acad. Sci. Jour. 8:198. 1945. *Spores* 4.5-6 x 2.8-3.5 μ , ellipsoid to ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of subparallel, narrow hyphae, 2-3 μ broad.

Tricholoma margaritum Murr. Torrey Bot. Club Bul. 67:281. 1940. *Spores* 4.5-5.5 x 2-3.5 μ , ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of parallel or nearly parallel hyphae, 1-2 μ broad, with a few hyphae 7-12 μ broad.

Tricholoma melaleuciforme Murr. Lloydia 8:290. 1945. *Spores* 5.5-7 x 3-3.5 μ , ellipsoid or slightly oblong, smooth, pale yellow in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* more or less parallel, 8-15 μ broad. *Epicutis* parallel to subparallel, 7-14 μ broad.

Tricholoma Memmingeri Murr. Mycologia 6:269. 1914 *Spores* 4.5-5.5 x 4-4.5 μ globose to ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* wavy subparallel. *Epicutis* of more or less parallel, closely packed, appressed, narrow hyphae, 1-2 μ broad.

Tricholoma microspermum Murr. Lloydia 8:290. 1945. *Spores* 3.5-4.5 x 2-2.8 μ , ellipsoid and more or less pip-shaped of subovoid, obliquely apiculate, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of narrow, parallel hyphae, 1-2 μ broad, with numerous more or less erect hyphae, some terminating as septate *pileocystidia* more or less constricted at septa.

Tricholoma mutifolium Murr. Mycologia 6:269. 1914. Spores 4.5-6 x 3.5-4.5 μ ellipsoid, rarely subglobose, smooth, yellowish in Melzer's reagent. Basidia 47-61 x 10-13 μ , 4-spored. Pleurocystidia and cheilocystidia none. Gill-trama subparallel. Epicutis subparallel, hyphae 3-5 μ broad. Murrill states that the spores are globose, 4-6 μ .

Tricholoma niveipes var. *australis* Coker. Elisha Mitch. Sci. Soc. Jour. 45:169. 1929. Spores 7-9 (11) x 3-3.5 μ oblong-ellipsoid, often slightly curved, smooth, pale yellowish in Melzer's reagent. Pleurocystidia and cheilocystidia none. Gill-trama subparallel, hyphae 2-3 μ broad. Epicutis parallel, hyphae 2-3 μ broad.

Tricholoma piperatiforme Murr. Lloydia 9:330. 1946. Spores 4.5-5.5 x 3.5-4.5 μ , ovoid to subglobose, smooth, not angular, yellowish in Melzer's reagent. Pleurocystidia and cheilocystidia none. Gill-trama subparallel. Epicutis nearly parallel, hyphae colorless, 2-3 μ broad, with an occasional strand of radial, brown, broader hyphae, 5-6 μ wide. The type resembles that of *T. australe* Murr., and the two are closely related.

Tricholoma platyphylloides Murr. Lloydia 7:327. 1944. Spores 6-7 x 5-6 μ , globose to ovoid, smooth, colorless or pale yellow in Melzer's reagent. Pleurocystidia and cheilocystidia none. Gill-trama subparallel. Epicutis of parallel hyphae, 3-5 μ broad, with scattered, more or less erect, colorless, cylindrical to clavate hyphae which constitute the hispid surface.

Tricholoma praebulbosum Murr. Lloydia 5:157. 1942. Spores 7-8 x 4.5 μ , ellipsoid, smooth, yellowish in Melzer's reagent. Pleurocystidia and cheilocystidia none. Gill-trama subparallel. Epicutis of parallel, narrow hyphae, 2-3 μ broad.

Tricholoma quercicolum Murr. Lloydia 12:67. 1949. Spores 7-8 x 4.5-5.5 μ , ovoid to ellipsoid, smooth, yellowish in Melzer's reagent. Pleurocystidia and cheilocystidia none. Gill-trama with a few, slender subparallel hyphae, and mostly large, vesiculose cells. Epicutis of brownish, parallel hyphae, 2.5-5 μ broad; pilocystidia scattered or in rosettes, fuscous, 25-50 x 6-12 μ , variable: clavate, cylindrical, fusoid.

Tricholoma striatifolium (Pk.) Hesler comb. nov. (*Agaricus* (*Tricholoma*) *striatifolius* Pk. N. Y. State Museum Ann. Rept. 30:37. 1878.) Spores 5-7 x 3-4 μ , ellipsoid, smooth, colorless to very pale yellowish in Melzer's reagent. Pleurocystidia and cheilocystidia none. Gill-trama subparallel. Epicutis subparallel, hyphae 2-4 μ broad. The lamellae are medium broad. This species appears close to *T. subargillaceum* Murr. and *T. Tottenii* Murr.

Tricholoma subacre Murr. Lloydia 5:157. 1942. Spores 6-8 x 4-5.5 μ , ellipsoid, smooth, yellowish in Melzer's reagent. Pleurocystidia and cheilocystidia few, conspicuous, slender, cylindrical, 27-32 x 2-2.5 μ . Gill-trama subparallel. Epicutis of parallel hyphae, 2-5 μ broad. Although the spores are shorter in *T. acre*, the two species are very close.

Tricholoma subargillaceum Murr. Mycologia 6:269. 1914. Spores 4.5-6 x 3-3.5 μ , ellipsoid, smooth, pale yellowish in Melzer's reagent. Pleurocystidia and cheilocystidia none. Gill-trama subparallel to slightly interwoven. Epicutis composed of a colorless layer, beneath which is a brown zone; hyphae in both layers nearly parallel, narrow 1.5-2.5 μ broad. See *T. striatifolium* and *T. Tottenii*.

Tricholoma subdecorosum Murr. Mycologia 35:433. 1943. Spores 4-5.5 x 3.5-4.5 μ ellipsoid or ovoid to sub-globose, yellowish in Melzer's reagent. Pleurocystidia none; cheilocystidia 40-76 x 6-18 μ , numerous, large, often collapsed in dried material, variable in shape: clavate, cylindrical, ventricose, subfusoid. Gill-trama subparallel. Epicutis of subparallel hyphae, 2-6 μ broad; scales composed of fascicles of brown, septate, broad hyphae, some spirally thickened, some ending in pilocystidia with rounded apex.

Tricholoma subfulvidiscum Murr. Lloydia 12:67. 1949. Spores 8.5-10 x 4.5-6 μ , ellipsoid, inequilateral, curved-apiculate, smooth, yellowish in

Melzer's reagent. *Pleurocystidia* none, at times the *cheilocystidia* extend up sides of the lamellae a short distance; *cheilocystidia* 35-52 x 3-3.7 μ , few, conspicuous, cylindric. Absent in some sections. *Gill-trama* subparallel. *Epicutis* of subparallel, narrow hyphae, 3-4 μ broad. Murrill gives the spores as 7-8 x 4-4.5 μ .

Tricholoma subluteum Pk. N. Y. State Museum Bul. 75:21. 1904. Spores 6-7 x 4-6 μ , subglobose to ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* subparallel, hyphae 2-3 μ broad.

Tricholoma subsilvaticum Murr. Lloydia 12:68. 1949. Spores 4-6 x 2-3 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* undulating-parallel. *Epicutis* of subparallel, narrow hyphae, 2-4 μ broad.

Tricholoma subterreforme Murr. Florida Acad. Sci. Proc. 7:127. 1945. Spores 5-6 x 2.5-3.5 (4) μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* usually few, absent in some sections, numerous in others, cylindric to slender-clavate, 36-50 x 4-5 μ . *Gill-trama* subparallel. *Epicutis* of subparallel narrow hyphae, 2-3 μ broad.

Tricholoma subvolkertii Murr. Florida Acad. Sci. Jour. 8:198. 1945. Spores 6-8 x 3.5-4.5 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel or slightly interwoven. *Epicutis* of narrow, subparallel hyphae, 2-5 μ broad.

Tricholoma Tottenii Murr. Mycologia 6:269. 1914. Spores 4-6 x 3-4 μ , ellipsoid, smooth, pale yellow in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel or nearly parallel. *Epicutis* subparallel. hyphae narrow, 2.5-5 μ broad. See *T. striatifolium*, above.

Tricholoma Westiana Murr. Torrey Bot. Club. Bul. 67:154. 1940. Spores 5-6 x 3-4 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of subparallel hyphae 2-3 μ broad.

Group IV: *Cuticle dry or slightly viscid, hyphae interwoven*

Tricholoma alabamense Murr. Mycologia 6:269. 1914. Spores 7-8.5 x 4-5 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* few, variable: ventricose, cylindric, clavate, 30-50 x 3-6 μ . *Gill-trama* subparallel. *Epicutis* composed of interwoven, narrow hyphae which stain pinkish-vinaceous in 2% KOH.

Tricholoma citrinifolium Murr. Mycologia 30:371. 1938. Spores 5-6 x 3.5-4.5 μ , ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of interwoven, narrow hyphae, 2.5-4 μ broad. In his original description, Murrill states that he did not examine the spores.

Tricholoma entoloma Murr. Lloydia 5:157. 1942. (*T. subrimosum* Murr. Mycologia 36:122. 1944.) Spores 8-9 x 4-4.5 μ , subfusoid to somewhat pip-shaped, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* nearly parallel or slightly interwoven. *Epicutis* of interwoven hyphae, 2-4 μ broad, with nearly parallel hyphae just below.

Tricholoma ferruginescens Murr. Lloydia 7:327. 1944. Spores 4-5 x 2.5-3 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* of subparallel narrow hyphae. *Epicutis* of interwoven, narrow hyphae, 1-1.5 μ broad. Murrill gives the spores as about 3 x 1.5 μ .

Tricholoma intermedium Pk. N. Y. State Museum Ann. Rept. 41:60. 1888. Spores 4.5-6 (7) x 3.5-4.5 μ , ellipsoid, smooth, pale yellow in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* subparallel. *Epicutis* of interwoven, brown, slightly gelatinous hyphae which stain vinaceous in 2% KOH, 2.5-4 μ broad. *Lamellae* rather narrow.

Tricholoma luteomaculans Atk. Ann. Mycol. 7:376. 1909. *Spores* 4-5.5 x 3-4.5 μ , subglobose to ovoid, smooth, yellowish-brown in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* undulating-subparallel. *Epicutis* of interwoven hyphae, 3-6 μ broad.

Tricholoma maculatum Murr. Torrey Bot. Club Bul. 67:145. 1940. *Spores* 5-5.5 x 3-3.5 μ , ellipsoid to sub-ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* few, cylindric, 25-30 x 2-3 μ . *Gill-trama* of undulating-subparallel hyphae. *Epicutis* of interwoven hyphae, 2-4 μ broad.

Tricholoma odorum Pk. Torrey Bot. Club Bul. 25:321. 1898. *Spores* 7.5-10 x 5-6 μ , ellipsoid to sub-ovoid, often slightly inequilateral, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* more or less parallel. *Epicutis* interwoven, hyphae 2-3 μ broad, vinaceous in 2% KOH.

Tricholoma subacidum Murr. Mycologia 6:269. 1914. *Spores* 5-6 x 4-5 μ , short-ellipsoid to ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* somewhat interwoven. *Epicutis* composed of a colorless, outer layer of interwoven, narrow hyphae, 1-2 μ broad, beneath which is a zone of brown, undulating-parallel hyphae.

Tricholoma totilividum Murr. Mycologia 35:433. 1943. *Spores* 5.5-7 x 3.5-4.5 μ , ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* numerous, conspicuous, 48-66 x 12-18 μ , fusoid to ventricose; *cheilocystidia* few, similar, at times shorter, again broader, 30-56 x 8-20 μ . *Gill-trama* undulating-subparallel. *Epicutis* interwoven to subparallel, with numerous, brown *pileocystidia*, the terminal cell with a rounded apex.

Tricholoma unakense Murr. Mycologia 6:269. 1914. *Spores* 4-6 x 3.5-4.5 μ , subglobose to ovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* parallel or nearly so. *Epicutis* of interwoven hyphae, 2-4 μ broad. *Lamellae* narrow.

Tricholoma ustaliforme Murr. Lloydia 7:327. 1944. *Spores* 5-7 x 4-4.5 μ , ellipsoid to subovoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* none; *cheilocystidia* few, hair-shaped, 22-35 x 1-2 μ , not present in all sections. *Gill-trama* undulating-parallel to slightly interwoven. *Epicutis* of parallel rusty-brown hyphae, 2-3 μ broad, overlaid with colorless, narrow, interwoven hyphae.

Tricholoma virgineum Murr. Lloydia 5:157. 1942. *Spores* 8-12 x 4:5-6 μ , ellipsoid to sub-fusoid, sub-inequilateral, smooth, pale yellow in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* slightly interwoven. *Epicutis* slightly interwoven, some hyphae immediately below surface hyphae subparallel, 2-3 μ broad. Murrill reports the spores to be 6-7 x 4-5 μ , ovoid.

Tricholoma viriditinctum (Pk.) Sacc. Syll. Fung. 5:128. 1887. *Spores* 5-6 x 3-3.5 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* more or less interwoven. *Epicutis* interwoven, 2-3 μ broad.

Tricholoma Watsonii Murr. Florida Acad. Sci. Proc. 7:127. 1945. *Spores* 4-5 x 2.3-2.5 μ , ellipsoid, smooth, yellowish in Melzer's reagent. *Pleurocystidia* and *cheilocystidia* none. *Gill-trama* more or less interwoven. *Epicutis* interwoven, 2-3 μ broad.