

Gastroboletus turbinatus (Snell) A.H. Smith & Singer

ROD name *Gastroboletus turbinatus*

Family Boletaceae

Morphological Habit truffle

Description: **SPOROCARP** 20-55 (-80) x 20-50 (-7) mm, cap margins strongly upturned at maturity, yellow to various shades of brown, often with red areas or red blushed overall. **CONTEXT** pale yellow, staining blue where exposed, later becoming red to brown. **TUBES** adnate-seceding, at maturity angled from below horizontal to nearly vertically upward, often contorted, 10-40 mm long, in youth yellow, later olive, staining blue, initially yellow but soon becoming olive and often slightly to strongly red at maturity. **STEM** centrally or sometimes laterally attached, nearly always percurrent, 10-20 (-70) x 8-20 mm, equal to downward tapered, often not projecting much below the tubes, solid, yellow at apex, often more orange-yellow to red or red-brown below, quickly bluing where bruised. **CONTEXT** yellow, often developing pink areas near the apex to becoming deep red throughout, bluing slightly to strongly when exposed. **ODOR AND TASTE** not distinct. **PILEIPELLIS** of hyaline to yellow, thin-walled hyphae 3-5.5 (-9) μm in diam., the cells mostly slightly inflated, releasing a golden yellow pigment in KOH mounts, in youth forming a palisade of cystidiumlike hyphal ends that these soon collapsing. **STIPITOPPELLIS** with a basal, subhymeniumlike layer giving rise to a patchy palisade of fertile basidia and brachybasidioles 15-27 x 9-14 μm and ventricose to mucronate, yellow caulocystidia 30-42 x 8-11 μm . **BASIDIA** clavate, hyaline to yellow, 30-40 x 9-14 μm ; 4-spored. **CYSTIDIA** 35-60 x 9.5-17 μm , ventricose-mucronate to pedicellate-ampullaceous, often with a long, thin neck, the apex mostly obtuse. **CLAMP CONNECTIONS** absent. **SPORES** fusoid, (9.5-) 13-18 (-20) x (5.5-) 6.5-9.5 μm , symmetrical, smooth, the walls 0.5 μm thick, the apex obtuse to acute, golden yellow singly and bright brown-yellow in mass, inamyloid.



Distinguishing Features: *Gastroboletus turbinatus* is closely related to *G. ruber*, but the latter has a dendroid columella and lacks a well-defined stem or cap. *Gastroboletus vividus* may occur in the same habitats as *G. turbinatus*, but the former has much brighter colors than the latter and does not turn blue where bruised.

Distribution: Washington, Oregon, northern California, Idaho, Missouri, and Mexico. **CALIFORNIA**, Shasta Co., Lassen National Park (LNP), Summit Lake; LNP, Shadow Lake trail; Shasta-Trinity National Forest (STNF), Bear Springs; STNF, Mount Shasta; **Siskiyou** Co., head of the south fork of Salmon River; **OREGON**, Benton Co., Bureau of Land Management, Mary's Peak Resource Area, Grass Mountain; Siuslaw National Forest, Mary's Peak summit; **Clatsop** Co., Fort Clatsop National Monument; **Coos** Co., near South Slough Estuaries Sanctuary headquarters south of Coos Bay; **Douglas** Co., Tahkenitch Lake campground; **Hood River** Co., Mount Hood National Forest (MHNF), Tilly Jane campground; **Jackson** Co., 1.6 km east of Dutchman Peak; Dutchman Peak; west slope of McDonald Peak; Rogue River National Forest, MacDonald Basin; **Jefferson** Co., Willamette National Forest (WNF), Canyon Creek basin; **Klamath** Co., Crater Lake National Park (CLNP), Cleatwood Picnic area; CLNP, Mazama Creek; CLNP, Annie Springs; **Lane** Co., WNF, West Lava campground; **Lincoln** Co., SNF, Cape Perpetua, Gwynn Creek; Depoe Bay; Rocky Creek State Park; Whale Cove State Park; **Linn** Co., WNF, Iron Mountain; WNF, Lost Prairie; WNF, Mount Jefferson Wilderness Area, Pamela Creek; **Multnomah** Co., MHNF, Larch Mountain; **Tillamook** Co., Cape Lookout; Oswald West State Park; **Wasco** Co., Devil's Half Acre; **WASHINGTON**, **Chelan** Co., Lyman Lake; north fork of Entiat River; Phelps Creek at wilderness boundary; Wenatchee National Forest (WENF), Nason Ridge; WENF, southwest of Rock Mountain; WENF, White River Rd.; WENF, Valhalla Mountain; **Clallam** Co., Clallam Bay Demonstration Forest; **Grays Harbor** Co., 1.6 km north of Copalis beach on Hwy. 109; Copalis; Olympic National Forest (ONF), 1.6 km south of Lake Quinault; ONF, north of Falls Creek on trail; **Jefferson** Co., Olympic National Park, Hoh park entrance; **King** Co., Denny Creek trail to Malakwa Lake above the second bridge; **Pierce** Co., Mount Rainier National Park, (MRNP) Lower Tahoma; MRNP, Ohanepecos; **Snohomish** Co., Mount Baker-Snoqualmie National Forest, Barlow Pass; **Whatcom** Co., U.S. Cabin, Chilliwack River.

Substrate and Habitat: Hypogeous to emergent, scattered to grouped in lowland forests of *Picea sitchensis*-*Tsuga heterophylla* and *Pseudotsuga menziesii* to montane and subalpine *Abies*, *Picea*, and *Pinus* spp.

Season: July through November.

References: Smith, A.H.; Singer, R. 1959.

Studies on secotiaceae fungi – IV.

Gastroboletus, *Truncocolumella* and *Chamonixia*.

Brittonia. 11: 205-223. Thiers, H.D.; J.M. Trappe. 1969.

Studies in the genus *Gastroboletus*. Brittonia. 21: 244-254.

Photo courtesy of Michael Castellano

