

# Chanterelle Identification Key for the Southern Appalachians

## by Michael Hopping

Many varieties of chanterelles, trumpets, and their lookalikes occur in the Southern Appalachians. Most fruit exclusively on soil. The fertile surface under a cap or on the outside of a flaring tube varies. It might be smooth, wrinkled, or form gill- or vein-like ridges that fork and fuse. Spores are light colored: white to yellowish, pale pinks or browns, but shades sometimes change when dry. In our part of the country those complications can be ignored. Spore *dimensions* do become important in uncertain cases. To make use of that information, you'll need access to a properly calibrated, compound microscope.

Several of the species below are prized edibles, but a few can be poisonous to some people. Do your homework, and eat at your own risk.

- 1a     Underside of the cap shows gills. These are more or less parallel-sided in cross-section, several to many times taller than they are thick.....Gilled Mushroom
  
- 1b     Underside of the cap or outer surface of the hollow, trumpet-like tube shows a fertile surface that may be smooth, wrinkled, or covered with false gill ridges or vein-like structures. These are typically low humps or triangular in cross-section, often not much taller than they are thick at the base.....2
  
- 2a     Mushroom mainly solid and/or relatively thick-fleshed, although healthy stalks become hollow in a few species. If the cap has a central perforation it is due to a visible crumbling of the surface layer.....15
  
- 2b     Mushroom a relatively thin, tubular structure flaring at the top, or many of these sharing a solid base. Although *C. carolinensis* is described as solid, all others tend to be hollow throughout their length at maturity. (Young specimens may have a centrally indented cap above a hollow stalk.) Fertile surfaces variable. Spores are smooth and elliptical to oval in shape.....*CRATERELLUS* SPP. couplets 3 → 14
  
- 3a     Cap surface a shade of yellow or orange.....13
  
- 3b     Cap surface predominantly blackish, blue-black, gray, some shade of brown, or a mixture of these colors.....4
  
- 4a     Fertile surface comprised of prominent veins or false gills that may branch and fuse together. Flesh paper thin or thicker.....9
  
- 4b     Fertile surface smooth to wrinkled. Flesh paper thin.....5
  
- 5a     Mushroom 3-14 cm tall with a cap diameter of 1-8 cm. Fertile surface variable in color, pale pinkish-brown to black. Pleasantly fragrant in quantity. Spores 11-14 x 7-9 μm.....**Black Trumpet** *Craterellus fallax*
  
- 5b     Mushroom 4 cm or less tall, caps less than 2 cm wide.....6
  
- 6a     Mushroom dark brown or brownish black throughout. Caps to 12 mm wide, scaly and fringed with hairs, centrally dimpled to funnel-shaped, but not perforated.

- Fertile surface smooth to wrinkled. Stalk to 25 mm tall and 3 mm wide. Spores 8-10.5 x 5-7  $\mu\text{m}$ .....*Craterellus carolinensis*
- 6b Mushroom differently colored.....7
- 7a Cap diameter to 7 mm, vase-like, wavy, dark brown centrally, honey yellow at the margin. Fertile surface brown. Stalk 1-3 mm in diameter lightening in color toward pinkish cinnamon at the base. Spores 6.5-9 x 5-7  $\mu\text{m}$ .... *Craterellus hesleri*
- 7b Cap diameter 6-13 mm, wavy, and minutely hairy at the margin. Blackish, brown, or gray. Fertile surface wrinkled and lighter in color. The stalk below the fertile surface darker again, up to 20 mm long but only 1 mm wide.....8
- 8a Spores 6.5-8 x 5-5.5  $\mu\text{m}$ .....*Craterellus subundulatus*
- 8b Spores 9.5-12 x 7-9  $\mu\text{m}$ .....*Craterellus calyculus*
- 9a Mushroom flesh thicker than paper, at least centrally. Strongly fragrant. Spores 7-10.5 x 4-5.5  $\mu\text{m}$ .....*Craterellus foetidus*
- 9b Flesh paper thin. Fragrance absent, slight, or vaguely unpleasant.....10
- 10a Mushrooms usually gregarious to densely clumped. Caps blackish brown to blue black with small, raised scales at the margin. Fertile surface vein-like, a whiter version of the upper surface.....11
- 10b Mushrooms not entirely as above.....12
- 11a Usually densely clumped. Odor not distinctive according to Michael Kuo (early descriptions don't comment on odor). Basidia 4 or 5-sterigmate (produce 4-5 spores). Spore size 9-10 x 5-6  $\mu\text{m}$ .....*Craterellus cinereus*
- 11b Similar to *Craterellus cinereus* but growth pattern listed as gregarious. Odor fruity like chanterelles, often strong. Basidia 6-sterigmate (produce 6 spores). Spore size 8-10 x 5-5.5  $\mu\text{m}$ .....*Craterellus venosus*
- 12a Caps yellow-brown to dark brown, may have fibrillose scales at the margin. Fertile surface resembles distant gills, usually pale violet-gray but can take on brown shades. Stalk golden to orange-yellow. Sometimes fruits on rotten wood in coniferous bog areas. Spores 9-12 x 6-8  $\mu\text{m}$ .....*Craterellus tubaeformis*
- 12b Caps a murky shade of dark at least centrally, perhaps with a greenish tint. Brown, tan, or golden near the periphery. No scales but may be finely fibrillose. Fertile surface pale pinkish- to yellowish brown, distinctly vein-like. Spores 7-8.5 x 5-6  $\mu\text{m}$ . Probably rare and tastes bad anyway..... *Craterellus caeruleofuscus*

- 13a Many tubes conjoined at a solid, substantial base up to 2 cm thick. Cap diameters to 5 cm. Fertile surfaces smooth to slightly wrinkled, a whitened shade of the upper surface color. Odor varies: pleasantly fragrant, gym socks, or not distinctive. Spores 8-12 x 4-6.5  $\mu\text{m}$ .....*Craterellus odoratus*
- 13b Growth habit single to gregarious, not massively conjoined.....14
- 14a Cap diameter to 8 cm, usually perforated at maturity. Fertile surface gill-like, initially colored similar to the upper surface but then pinkish to lavender, browning in age. Stalk to 6 cm long and 12 mm thick. No distinctive odor. Spores 7.5-12 x 4.5-6.5  $\mu\text{m}$ .....**Flame Chanterelle** *Craterellus ignicolor*
- 14b Cap diameter to 6 cm, usually perforated at maturity. Fertile surface smooth or wrinkled, pale yellow or pale orange, perhaps with a pink tinge. Found in coniferous boggy areas. Spores 9-11 x 6-7.5  $\mu\text{m}$ .....*Craterellus lutescens*
- 15a Mushroom a thick-fleshed mass of vase-like caps, each to 10 cm wide and fused at a common base. Fertile surface wrinkled to vein-like or almost poroid, running down the stalks.....16
- 15b Mushroom not as above.....17
- 16a Cap surface initially violet to purplish brown but fades to yellow brown, smooth or slightly scaly. Fertile surface vein-like, purplish gray, eventually fading to yellow brown. Under hemlocks or other conifers. Spores faintly warted, 10-13 x 4-6  $\mu\text{m}$ . Rare, harvest sparingly.....**Pig's Ears** *Gomphus clavatus*
- 16b Mushroom dark purple to blue black all over. Fertile surfaces wrinkled, veined, or almost poroid. Odor fragrant. Spores nodular, 6-8.5 x 5.5-7.5  $\mu\text{m}$ . Rare, harvest sparingly.....*Polyzellus multiplex*
- 17a Mushroom shaped like an old-fashioned funnel (think ice cream sugar cone), with a depressed, scaly cap surface and a fertile surface of vein-like ridges descending to the soil, or near it. May show purple stains but doesn't bruise purple.....18
- 17b Mushroom not as above.....19
- 18a Mushroom to 18 cm tall and 16 cm wide. Depressed upper surface covered with orange scales over a paler orange background. Fertile surface ridges pale yellow to near white. Spores warted, 11-15 x 7-8  $\mu\text{m}$ ..... *Turbinellus floccosus*
- 18b Mushroom to 18 cm tall and wide. Depressed upper surface covered with coarse brown scales. Fertile surface ridges cream-colored or slightly pinkish, perhaps with purple stains. Spores warted, 12.5-18.5 x 6-7.5  $\mu\text{m}$ .....*Turbinellus kauffmanii*

- 19a Mushroom vase-shaped, to 12 cm wide, upper surface flat to depressed, dull orange-yellow to pinkish-orange and coated with tiny, flattened fibers. Fertile surface consists of paler ridges running far down the stalk. Surfaces bruise purple. Usually under hemlock. Spores brown, finely warted, 7-13.5 x 3.5- 5.5  $\mu\text{m}$ . Rare, harvest sparingly.....*Gloeocantharellus purpurascens*
- 19b Mushroom predominantly yellow, orange, pinkish, or red-orange (cap surface mainly brown in one species). Cap typically not perforated. Margin often inrolled at first, but uplifting. Mature caps frequently depressed or vase-shaped. Fertile surface clearly distinct from the stalk but runs down it to some extent. Stalks solid or hollow. Spores smooth..... *CANTHARELLUS* SPP. couplets 20 → end
- 20a Chunky species, medium to large, with cap diameters to 8 cm. Colors range from yellows to yellow-orange or peach pink. Upper surface densely fuzzy (use lens if necessary). Fuzz whitens when dry and breaks up into concentric rippling waves. Fertile surface varies from nearly smooth to prominent false gills. Stalk to 8 cm long and 1 cm or more wide. Odor like apricots. Spores 7.5-8.5 x 4.5  $\mu\text{m}$ .....  
.....*Cantharellus velutinus* (smooth, cibarioid, and **Peach Chanterelle** forms)
- 20b Similar to the above, or smaller. Mushroom may have a fuzzy cap, but the fuzz doesn't break up into wave-like ripples.....21
- 21a Mushroom medium to large, often nearly as wide or wider than it is tall. Mature cap typically depressed, yellow to yellow-orange and smooth, fuzzy, or minutely scaly at 10x. Fertile surface covered with prominent false gills or veins. Stalk relatively short and stout. Smell of apricots. Spores 7-8.5 x 4-4.5  $\mu\text{m}$ .....  
.....**Golden Chanterelle spp.** 22
- 21b Mushroom not entirely as above, may be slender, smaller, differently colored, or have a relatively smooth fertile surface.....23
- 22a Fertile surface initially whitened compared to the cap but pinkens at maturity. Two species distinguishable only by genetic testing.....*Cantharellus phasmatis* & *C. deceptivus*
- 22b Fertile surface colored like the cap and remains so into maturity. Two species distinguishable only by genetic testing.....*Cantharellus tenuithrix* & *C. flavus*
- 23a Fertile surface with pronounced false gills but either smaller, more slender, or differently colored than Golden Chanterelles.....25
- 23b Mushroom resembles a Golden Chanterelle in size, shape, and color. Cap may be fuzzy but doesn't show wave-like ripples. Mature caps often wavy or lobed, depressed to vase-like. Fertile surface nearly smooth, wrinkled, or with blunted false gill ridges.....other **Smooth Chanterelle spp.** 24

- 24a Mushroom tends to be short, squat, and medium-sized, yellow to yellow-orange. Cap margin stays inrolled a long time but eventually uplifts. Fertile surface initially similar to cap color or paler, but tinged with pink at maturity. Stalk typically short and thick. Spores 7-8.5 x 4-5  $\mu\text{m}$ .....*Cantharellus flavolateritius*
- 24b Mushroom medium to large, usually taller and more lightly built than the species above. Cap to 12 cm in diameter, yellow to apricot yellow, initially convex but soon depressed, funnel-shaped, or expansively vase-like. Fertile surface colored the same or paler than the cap. Stalk to 8 cm long and 2.5 cm thick. Odor fruity or not distinctive. Spores 7.5-12 x 4.5-6.5  $\mu\text{m}$ .....*Cantharellus lateritius*
- 25a Mushroom surfaces bright pinkish- to red orange. Cap to 4.5 cm in diameter. Fertile surface ridged and branched (but no short gills as in similarly colored wax caps). Stalk to 5 cm long and 1 cm thick but usually thinner. No distinct odor. Spores 6-11 x 4-6  $\mu\text{m}$ .....**Cinnabar Chanterelle** *Cantharellus cinnabarinus*
- 25b Mushroom cap may be brown or predominantly yellow to yellow-orange. Small to medium in size. Fertile surface with distinct false gills, a shade of yellow, pink, or lavender orange.....26
- 26a Mushroom smallish to medium sized, typically taller than wide. Cap diameter to 5.5 cm, usually deeply vase-shaped, often lobed, some shade of yellow. Fertile surface vein-like or with false gills, colored like the cap or paler. Stalk to 5 cm long and 4-7 mm thick, paler than the cap and almost white at the base. Odor of apricots. Spores 8.5-12 x 4.5-5.5  $\mu\text{m}$ .....*Cantharellus altipes (septentrionalis)*
- 26b Mushroom not as above.....27
- 27a Mushroom smallish to medium size, often taller than wide. Cap diameter to 5 cm. initially convex with a depressed center, eventually with an uplifted and wavy margin. Young cap brown at least centrally, yellowing toward the margin. At maturity the brown fades to dingy oranges and yellows. Fertile surface pale yellow to orange-yellow with gill-like ridges. Stalk to 6 cm long and 1.3 cm thick, hollowing, pale yellow brown. Odor not distinctive. Spores 6-10 x 4-6  $\mu\text{m}$ .....  
.....*Cantharellus appalachiensis*
- 27b Mushroom small. Cap a shade of yellow or yellow-orange. Fertile surface yellow or pale pink to lavender-orange.....28
- 28a Cap rarely wider than 4 cm, convex to flat, pale yellow to yellow-orange, fading as it dries. May have a sprinkling of fine white powder. Fertile surface forking and fusing false gills, pale pink to lavender-orange in age. Stalk to 45 mm long by 4 mm wide, often hollowing, colored like the cap. No distinctive odor. Spores 9.5-11 x 6-7  $\mu\text{m}$ .....*Cantharellus persicinus*

- 28b Cap tiny, to 2.5 cm wide, initially convex but then with an uplifted margin, yellow-orange. Fertile surface comprised of false gills that occasionally fork or fuse, colored like the cap. Stalk also colored like the cap, to 4 cm long and 3 mm wide, hollowing at maturity. No distinctive odor. Spores 6-11.5 x 4-6.5  $\mu\text{m}$ .....  
 .....*Cantharellus minor*

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