

Draft Key to Some Bolete Genera

(R. E. Halling ©, April 2005)

1. Hymenophore irregularly arranged, not vertically oriented; spore deposit not obtainable - - - **Gastroboletus** (in a very broad sense)
1. Hymenophore regular in arrangement, more or less vertically oriented; spore deposit typically readily obtained - - - 2
 2. Hymenophore lamellate to subporoid, decurrent - - - **Phylloporus**
 2. Hymenophore completely tubulose, usually not decurrent - - - 3
 3. Tubes and pores with clusters of cystidia in the hymenium that stain dark brown to blackish to occasionally vinaceous in a solution of KOH; associated only with Pinaceae - - - **Suillus**
 3. Darkly staining, clustered cystidia absent in hymenium; associated with diverse plant families - - - 4
4. Basidiocarp with a dry, universal veil (be sure to check young specimens), collapsing to form a peronate annulus or annular zone AND basidiospores smooth - - - 4a
 - 4a. Basidiocarp often with sulfur yellow pigmentation, staining blue; clamp connections absent - - - **Pulveroboletus**
 - 4a. Basidiocarp lacking sulfur yellow pigments, not staining blue; clamp connections present - - - **Paragyrodon**
4. Basidiocarp without a veil; if a veil is present, then spores ornamented - - - 5
 5. Stipe eccentric, lateral, or absent; tubes/pores radially elongated, decurrent - - - **Gyrodon** (incl. *Boletinellus*)
 5. Stipe central; tubes/pores ±circular, adnexed, adnate, rarely decurrent - - - 6
 6. Pores white to pallid when young, becoming yellow at maturity; stipe hollow; spores ellipsoid, yellow in deposit - - - **Gyroporus**
 6. Basidiocarps without the above combination of characters - - - 7
7. Surface of stipe with numerous relatively small squamules, which are usually pallid when young but become dark colored (dark brown to black) at maturity - - - **Leccinum**
7. Surface of stipe not as above - - - 8

8. Pores white, yellow, or red; spores brown, olive, olive brown, or bright yellow brown in deposit - - - 9

9. Spores elongate-fusoid, with longitudinal ribs or striations - - -

Boletellus

9. Spores lacking longitudinal ribs/striations - - - 10

10. Hymenophore entirely pigmented pinkish red, orange red, brownish red; basal mycelium typically sulfur yellow - - -

Chalciporus

10. Hymenophore not uniformly pigmented with pink to red or brown; basal mycelium variously colored - - - 11

11. Spore deposit bright yellow brown; pileipellis hymeniform; pigmented portions of pileus and stipe turning blue in alkali solution - - - **Xanthoconium**

11. Spore deposit with olive brown pigments; pileipellis usually a trichodermium; reaction to alkali various - - - 12

12. Spores ovoid to short ellipsoid; clamp connections present; not always mycorrhizal - - - **Phlebopus**

12. Spores fusoid-elongate; clamp connections absent; mycorrhizal with many plant families - - - 13

13. Basidiospores alveolate-reticulate, reticulate or with pit-like perforations - - - **Heimioporus** (= *Heimiella*)

13. Basidiospores with smooth walls - - - **Boletus** (incl. *Xerocomus*)

8. Pores pink, vinaceous, gray brown to very dark brown or black; spores pinkish flesh color to vinaceous brown to reddish brown or black in deposit - - - 14

14. Spores with some kind of obvious ornamentation (light microscope) - - - 15

15. Basidiocarp usually with black to dark gray scales on pileus and stipe; hymenophore black with age, staining red then black; spores globose, reticulate or variously echinate - - - **Strobilomyces**

15. Basidiocarp lacking dark colored scales, sometimes viscid, glutinous or tacky; hymenophore becoming flesh pink to grayish pink; spores elongate-fusoid, ornamented with pit-like perforations, fissures or large isolated warts - - - **Austroboletus**

14. Spores smooth - - - 16

16. Hymenophore very dark brown; spores dark brown in deposit; context bluing when exposed - - - **Porphyrellus**

16. Hymenophore flesh pink to grayish pink; spores flesh pink to grayish pink in deposit; context not bluing, but may oxidize to other colors - - - 17

17. Portion of the pileus surface becoming extremely gelatinized with age; basidiocarps often not large and fleshy; hymenial cystidia not pseudocystidia - - - **Fistulinella**

17. Pileipellis not gelatinous; basidiocarps usually robust; hymenial cystidia present as pseudocystidia - - - **Tylopilus**