

# Draft Key to Some Bolete Genera

(R. E. Halling ©, August 2012)

Cautionary Note: This key is under constant revision.  
It *DOES NOT* contain all the genera included in the  
*Generic Synopsis* found on this website.

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 (rarely poroid and then somewhat boletinoid), decurrent, subdecurrent, rarely adnate - - - **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** (N.B. one species known with *Betula* in NE USA)

3. Darkly staining, clustered cystidia absent in hymenium; associated with diverse plant families - - - 4

4. Basidiocarp with a dry (rarely tacky), universal veil (be sure to check young specimens), collapsing to form a peronate annulus or annular zone AND basidiospores smooth - - - 5

5. Basidiocarp often with sulfur yellow pigmentation, staining blue; clamp connections absent - - - **Pulveroboletus**

5. 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 - - - 6

6. Stipe eccentric, lateral, or absent; tubes/pores radially elongated, decurrent - - -  
**Gyrodon** (incl. *Boletinellus*)

6. Stipe central; tubes/pores ±circular, adnexed, adnate, rarely decurrent - - - 7

7. Pores white to pallid when young, becoming yellow at maturity; stipe hollow; spores ellipsoid, yellow in deposit - - - **Gyroporus**

7. Basidiocarps without the above combination of characters - - - 8

8. 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**

8. Surface of stipe not as above - - - 9

9. Pores white, yellow, or red; spores brown, olive, olive brown, or bright yellow brown in deposit - - - 10

10. Spores elongate-fusoid, with longitudinal ribs or striations - - - **Boletellus**

10. Spores lacking longitudinal ribs/striations - - - 11

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

11. Hymenophore not uniformly pigmented with pink to red or brown; basal mycelium variously colored - - - 12

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

12. Spore deposit with olive brown pigments; pileipellis usually a trichodermium; reaction to alkali various - - - 13

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

13. Spores fusoid-elongate or short ellipsoid, smooth or ornamented; clamp connections absent; mycorrhizal with many plant families - - - 14

14. Basidiospores alveolate-reticulate, reticulate or with pit-like perforations - - - **Heimioporus**

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

9. 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 - - - 15

15. Spores with some kind of obvious ornamentation (light microscope) - - - 16

16. Basidiocarp usually with black to dark gray scales on pileus and stipe; hymenophore black with age, often staining red first then black *or* slowly

black directly - - - 17

17. Spores globose, reticulate or variously echinate to cristate - - -  
**Strobilomyces**

17. Spores subglobose to ellipsoid, longitudinally costate, ridged,  
or winged - - - **Afroboletus**

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

15. Spores smooth - - - 18

18. Hymenophore mineral greenish, yellowish green to olive brown to  
very dark brown, typically staining blue green, reddish, then black; spores  
dark brown in deposit - - - **Porphyrellus**

18. Hymenophore flesh pink to vinaceous pink to grayish pink, usually  
staining brown; spores flesh pink in deposit - - - 19

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

19. Pileipellis not gelatinous; basidiocarps usually robust;  
hymenial cystidia in the form of pseudocystidia - - - **Tylopilus**