

Key to Amanita of the Central and Northern California Coast

Christian Schwarz, updated 30 July 2010, 20 January 2011, 24 Feb 2011, 3 Mar 2011

Taxa included:

A. baccata sensu Arora

A. muscaria

A. pantherina group

A. calyptroderma

A. calyptroderma spring (with *A.*

calyptroderma)

A. constricta group

A. franchetii sensu CA

A. gemmata group

A. magniverrucata

A. novinupta

A. ocreata

A. pachycolea

A. phalloides

A. porphyria sensu CA

A. protecta

A. silvicola

A. smithiana

A. vaginata group

A. velosa

1. Volva structures obscure, or present only as an indistinct ragged zone near the bottom of the stipe... 2
 - 1' Volva structures distinct and conspicuous, present either as layered rings of scales, as a tight, collarlike cup, or as a sheath or bag of tissue... 4
2. Deep or bright brown, red, or yellow colors present somewhere on fruitbody... 18
 - 2' Not as above... 3
3. Cap with large to very large, upright warts fused to the surface (not removable), fruitbody white with yellowish tones, base of stipe with large curved scales... *A. magniverrucata*
 - 3' Not as above... 24
4. Volva present as a simple or collared cup or as an ample bag of tissue, **NOT** composed of scaly rings... 5
 - 4' Volva appearing as multiple layers of scaly rings or rows, these often fragile and falling off when the mushroom is dug up... 8
5. Volva present as a tight cuff or collar or a simple, flat edge around the base of the stipe, not forming a spacious bag or sac... 6
 - 5' Volva membranous, enveloping the base of the stipe, with an obviously free rim, sometimes asymmetrical (with an extended 'limb' of tissue projecting from one side), or with a tightly constricted part below the flaring rim... 10
6. Edge of cap distinctly striate...23
 - 6' Margin of cap not striate or obscurely so, partial veil usually present as a ring on the stipe, or in one case partial veil appearing as a ragged zone of short fibers...7

7. Cap either mostly white or with pinkish tones, warts usually present but may be large or inconspicuous **OR** pale yellow, yellow, creamy, tan, or pale brown and with white warts... 22
7' Cap pale brown to medium or dark brown... 25

8. Margin of cap distinctly striate... 9

8' Margin not striate... 20

9. Stipe with partial veil...17

9' Stipe without partial veil, cap grayish, covered with a whitish patch or patches that stain rusty orange, volva often fragile and breaking off of stipe base when dug up... *A. protecta*

10. With a distinct skirt or ring on the stipe... 11

10' Without skirt or ring on the stipe, or only with a zone of ragged cottony fibers... 13

11. Cap usually smooth, but occasionally with a very thin, tightly appressed patch of tissue that cannot easily be rolled off with a thumb...12

11' Cap with a single thick, cottony, easily peeled patch on the cap, sometimes with additional smaller patches that are also easily peeled... 16

12. Cap usually greenish yellow, but ranging from brown to tan or more rarely white, smooth, often metallic-shiny, base of stipe swollen and rounded and surrounded by a baglike volva... *A. phalloides*

12' Entire fruitbody whitish, occasionally with pinkish tones at center of cap, volva tissue thin, volva somewhat tall and cylindrical, base of stipe enlarged, fruiting near oak, primarily in spring ... *A. ocreata*

13. Margin of cap striate... 14

13' Margin of cap not striate or very obscurely so, fruitbody whitish, base of stipe not particularly bulbous, volva tissue thin, often asymmetrical with a longer flap of tissue... *A. ocreata*

14. Cap coral pink to orangish pink or 'hen's-egg brown' to tan, rarely white, usually with one patch of thick universal veil tissue on cap, often with a few smaller patches, stipe decorated with 'chevrons' of whitish tissue, fruiting primarily with oaks in spring ... *A. velosa*

14' Cap gray to brown... 15

15. Length of cap striations less than or equal to half the distance from the edge of the cap to the center of the cap, often with a white patch of peelable veil tissue on cap or with fine grayish hairs decorating the stipe...19

15' Cap usually umbonate and deeply striate, gray to grayish brown, often with a "halo" (a ring of darker color around the center of the cap), fruitbody often large, volva tissue thick and staining reddish-orange... *A. pachycolea*

16. Cap brown to coppery brown, yellow towards edge of cap (in one form, cap is evenly pallid yellow, this form usually fruiting in spring), gills, and stipe creamy or yellow-tinged...
A. calyptroderma

16' Cap dull pale brownish or gray, with a peelable white patch of universal veil on the cap, skirt on stipe fragile and disappearing easily, fruitbodies small to medium-sized, stipe whitish or creamy and waxy-looking, fruiting with oak, uncommon our area... *A. calyptratoides*

17. Cap color bright red, brown, or yellow, covered in white, yellowish or bright yellow veil remnants... 18

17' Cap grayish, covered in whitish scales that stain rusty orange, volva forming bands of tightly appressed grayish tissue, base (and volva) often fragile and breaking off of stipe base when dug up... *A. protecta*

18. Cap bright red, sometimes fading to yellowish orange... *A. muscaria*

18' Cap brown, yellowish brown, or bright yellow, covered with yellow warts... *A. franchetii*

19. Volva spacious and flaring BUT choked or constricted around stem below flaring portion, interior of volva often with a grayish interior, outside often with ochre stains... *A. constricta* group

19' Volva unconstricted, spacious, with ochre stains, stipe whitish and often decorated with vertical lines of fine, grayish hairs... *A. vaginata* group

20. Cap dark brown to bright yellow, skirt on stipe bright yellow, also with patches or warts of yellow universal veil remnants on cap and at base of stipe... *A. franchetii*

20' Cap white or whitish... 21

21. Cap with very large, erect, often pyramidal warts tightly fused to cap tissue (not easily removed), base of stipe with rows of curved, spiny warts... *A. magniverrucata*

21' Cap warts not smaller, not particularly exaggerated... 26

22. Cap entirely white or off-white and powdery or dusty with inconspicuous warts, partial veil ragged and inconspicuous, growing in sandy areas... *A. baccata* sensu Arora

22' Cap white or pale yellow to creamy with distinct whitish warts, ring on stipe usually conspicuous... 27

23. Ring on stipe absent, cap grayish and covered in white or grayish scales that are often stained rusty orange, stipe with distinct grayish scales arranged in vertical lines, growing with oak and especially willow... *A. protecta*

23' Stipe with membranous ring, cap pale tan with a darker brown center to evenly medium or dark brown, patches on cap whitish ... *A. pantherina*

24. Skirt usually present on the stipe, fruitbody mostly white but developing pinkish to red-brown stains, base of stipe enlarged or bulbous, usually fruiting with oak in spring... *A.*

novinupta

24' Not as above... 28

25. Patches on cap grayish, ring on stipe gray, cap at first dark purplish brown, becoming metallic silvery-brown with faint tones, base of stipe abruptly bulbous and rimmed... *A.*

porphyria

25. Patches on cap whitish, stipe ring whitish, base of stipe more moderately enlarged and with a collarlike volva, cap color medium brown to dark brown *A. pantherina* group

26. Stipe tall, base tapered and deeply rooting in the soil BUT often breaking when collected, cap often with smooth, metallic areas in age... *A. smithiana*

26' Stipe usually squat and with a bulbous base, cap not smooth and shiny ... *A. silvicola*

27. Stipe with a single, well-developed ring, cap round when young... 30

27' Stipe often with two rings or ring-like zones on the stipe, one of these often near the base of the stipe, cap smooth, tan to pinkish-buff, often egg-shaped when young... *A.*

'*pseudobreckonii*'

28. Cap gray, covered in white or grayish patches or warts with rusty stains, stipe with fine, pointed, curved scales and vertical lines, growing with oak and especially willow... *A.*

protecta

28' Not as above, fruitbody without distinct gray tones... 29

29. Base of stipe swollen and tapered, stipe usually without a distinct skirt, but sometimes with a short, flaring, ragged ring of tissue, growing in sandy soil, without large warts or scales on the lower stipe, cap not smooth and shiny, gills becoming distinctly yellowish in age... *A. baccata* sensu Arora

29' Fruitbody with a more distinct skirt on the stipe or not growing in particularly sandy soil or with large, conspicuous warts and scales on the lower stipe

30. Cap pale yellowish to yellow or tan... *A. gemmata* group

30' Cap whitish, but staining pinkish-red, in age often becoming dull reddish-brown... *A. novinupta*