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## A New Species of *Albatrellus* (Aphylllophorales: *Albatrellaceae*) from Arizona

**Zusammenfassung:** Als neue terrestrische Porlingsart wird *Albatrellus* (*Scutiger*) *arizonicus* sp. nov. aus Nordamerika (Arizona) beschrieben und abgebildet. In einem Bestimmungsschlüssel werden alle aus Nordamerika bekannten *Albatrellus*-Arten gegeneinander aufgeschlüsselt.

Red.

**SUMMARY:** *Albatrellus arizonicus* is described as new. It is characterized by a stout, centrally stipitate basidiocarp, a smooth, glabrous, buff colored upper surface, lack of clamps, and small, slightly thick-walled spores.

Members of the Southern Arizona Hiking Club recently collected an *Albatrellus* fruiting on the ground under a mixed conifer stand in the Santa Catalina Mountains of southern Arizona. The macro- and micromorphology of this fungus is distinctly different from that of described species of *Albatrellus* and it is here described as new.

### **ALBATRELLUS ARIZONICUS** GILBN., sp. nov.

Fructificatio terrestris, annua, stipitata; stipes centralis ad excentricus, robustus, tomentosus, usque ad 3.5 cm in diam; pileus ochraceo-bubalinus vel pallido rubro-brunneus, leviter tomentosus vel glabrosus; superficie pororum roseo-bubalina, pori angulati, 1.5–2.5 per mm; contextus pallido-bubalinus, usque ad 1.5 cm crassus; systema hypharum monomiticum; hyphae septatae, afibulatae, 4–10 (–20)  $\mu\text{m}$  in diam; basidia clavata, 4-sterigmatibus, 20–30  $\times$  6.5–7  $\mu\text{m}$ ; basidiosporae ovoidae vel oblongae, hyalineae, nonamyloideae, laeves, 4.5–6.5  $\times$  3–4  $\mu\text{m}$ . Holotypus: R. L. GILBERTSON No. 16382, Green Mountain Trail, Santa Catalina Mts., Coronado National Forest, Pima County, Arizona, Aug. 1988: in herb. National Fungus Collections, Beltsville, Maryland, (BPI); isotypus in herb. University of Arizona (ARIZ).

**Basidiocarps** terrestrial, centrally to eccentrically stipitate, in a confluent cluster of three from a common base, undergoing relatively little shrinkage or distortion on drying; pileus circular to irregular in outline, up to 16 cm wide, upper surface Ochraceous-Buff to Ochraceous-Tawny or Tawny on dried specimens, glabrous to minutely tomentose, azonate, cracking deeply in the center on drying; stipe central to eccentric, up to 6 cm long and 3.5 cm wide at the branching base, some areas Olive Buff to Tawny Olive, tomentose, with scattered patches of fertile areas with tubes, context of stipe solid, concolorous and continuous with that of the pileus; pore surface Pinkish-Buff to Cinnamon-Buff on dried specimens, the pores angular, averaging 1.5–2.5 per mm but some up to 1.5 mm in diam, dissepiments entire, fimbriate and appearing sugary under a 40x lens; tube layer concolorous with the pore surface, decurrent on stipe, firm and cheesy in consistency, up to 3 mm thick, with a slightly darker, firm zone separating tubes from context; context Light Buff, azonate, soft and cheesy, not fibrous, up to 1.5 cm thick.

**Hyphal system** monomitic; contextual hyphae hyaline, thin- to firmwalled, branched and interwoven, simple-septate, mostly 4–10  $\mu\text{m}$  in diam, but some inflated segments up to 20  $\mu\text{m}$  in diam, collapsed and fragmenting readily in mounts from dried specimens; gloeoplerous hyphae present in context, thin-walled, highly refractive in Melzer's reagent and staining brightly in phloxine, 4–12  $\mu\text{m}$  in diam; tramal hyphae hyaline, thin-walled, simple-septate, more uniformly 2.5–4  $\mu\text{m}$  in diam, with a parallel arrangement; numerous large, hyaline globules of oily material present in mounts of tramal tissue.

**Cystidia** or other sterile hymenial elements absent.

**Basidia** clavate to subcylindric, 4-sterigmate, 20–30  $\times$  6.5–7  $\mu\text{m}$ , simple-septate at the base.

**Basidiospores** mostly ovoid to pip-shaped but varying to subcylindric, hyaline, negative in Melzer's reagent, smooth, with slightly thickened walls, 4.5–6.5  $\times$  3–4  $\mu\text{m}$ .

**Habitat**—Terrestrial under mixed conifers including Douglas fir (*Pseudotsuga menziesii* (MIRB.) FRANCO), southwestern white pine (*Pinus strobiformis* ENGELM.), and ponderosa pine (*Pinus ponderosa* LAWS.).

Specimen examined: type specimen previously cited (RLG 16382), collected by members of Southern Arizona Hiking Club; communicated by Alice OLSON.

On the basis of microscopic characters, *A. arizonicus* keys out with *A. avellaneus* Pouz. and *A. ovinus* (SCHAEFF.: FR.) MURR. in North American Polypores (GILBERTSON and RYVARDEN, 1986). *Albatrellus avellaneus* was described from the redwood type in coastal California, and is known only from the type specimen. The type specimen of *A. avellaneus* apparently was soft and fleshy when fresh and has undergone pronounced shrinkage and distortion on drying. It has a slender stipe (6–8 cm long and 10–15 mm thick), orange coloration, and a squamulose upper surface. In the dried condition the tube layer and context are brown and brittle. Macroscopically, it is quite distinct from *A. arizonicus*. *Albatrellus ovinus* occurs only in spruce-fir habitats at high elevations in Arizona. Its basidiocarps have a pale yellow pore surface that dries dark olivaceous to cinereous.

Since some additional species of *Albatrellus* have been reported from North America since the treatment of the genus published by GILBERTSON and RYVARDEN (1986), a revised key to the species presently known is provided here.

### Key to North American species of *Albatrellus*

- |   |                       |
|---|-----------------------|
| 1. Clamp connections numerous .....   | 2                     |
| 1. Clamp connections absent or extremely rare .....   | 9                     |
| 2. Basidiospores up to 11 (–14) $\mu\text{m}$ long .....                                      | 3                     |
| 2. Basidiospores 4–7 $\mu\text{m}$ long .....   | 6                     |
| 3. Basidiospores tear-shaped .....  | 4                     |
| 3. Basidiospores broadly ellipsoid .....  | <i>A. skamianus</i>   |
| 4. Pileus surface and stipe yellowish green .....   | <i>A. ellisii</i>     |
| 4. Pileus surface and stipe tan to brown .....  | 5                     |
| 5. Pileus surface scaly to coarsely scurfy .....  | <i>A. pes-caprae</i>  |
| 5. Pileus surface glabrous .....  | <i>A. mexicanus</i>   |
| 6. Pileus and stipe yellowish; tissue not turning red after drying .....                      | 7                     |
| 6. Pileus and stipe apricot buff to bluish gray; tissue turning red after drying .....        | 8                     |
| 7. Pileus surface distinctly yellow; spores 3.5–4 $\times$ 2.5–3 $\times$ $\mu\text{m}$ ..... | <i>A. peckianus</i>   |
| 7. Pileus yellowish brown; spores 4.5–5 $\times$ 3–4 $\times$ $\mu\text{m}$ .....             | <i>A. syringae</i>    |
| 8. Pileus apricot buff colored when fresh .....   | <i>A. confluentis</i> |
| 8. Pileus bluish gray when fresh .....  | <i>A. flettii</i>     |



9.	Basidiocarp with many petaloid pilei from a much branched base, golden yellow when fresh .	<i>A. dispansus</i>	
9.	Basidiocarp with single or a few confluent pilei .....		10
10.	Tissue slowly becoming red after drying; pilei bluish, yellow, or greenish when fresh .....		11
10.	Tissue not becoming red after drying; pilei cream colored to pale buff or with yellowish tints .....		12
11.	Pilei grayish blue when fresh .....	<i>A. caeruleoporus</i>	
11.	Pilei yellowish green or olivaceous .....	<i>A. cristatus</i>	
12.	Basidiospores $4.5-6.5 \times 3-4.5 \times \mu\text{m}$ ; pileus pale orange to tan .....		13
12.	Basidiospores $3.5-4 \times 2.5-3.5 \times \mu\text{m}$ ; white to grayish buff or pale olivaceous .....		14
13.	Pileus surface orange, squamulose; stipe slender, 10-15 mm wide .....	<i>A. avellaneus</i>	
13.	Pileus surface ochraceous buff to tawny; stipe stout, up to 35 mm wide .....	<i>A. arizonicus</i>	
14.	Pileus becoming rimose, often with yellowish coloration in cracks; spores not amyloid .....	<i>A. ovinus</i>	
14.	Pileus rugose to rimose, not yellowish; spores amyloid .....	<i>A. subrubescens</i>	

Additional species of *Albatrellus* not presently known from North America are *A. cantharellus* (LLOYD) Pouz. and *A. yasudai* (LLOYD) Pouz., known only from Japan, and *A. tianschanicus* (BOND.) Pouz., from the Tian-Shan Mountains of Central Asia. All three, along with *A. arizonicus*, belong in the group of *Albatrellus* species with simple-septate hyphae and small spores. *A. yasudai* has a distinctive hymeniform cuticle on the pilear surface and has been placed in the subgenus *Hymenidermiger* Pouz. by POUZAR (1975). *A. cantharellus* and *A. tianschanicus* differ from *A. arizonicus* in having amyloid spores. A conspectus of *Albatrellus* species was published by POUZAR (1972), who has been the primary contributor to our knowledge of this genus of fungi.

## ACKNOWLEDGMENTS

The loan of the type of *A. avellaneus* from the University of Michigan Herbarium is greatly appreciated. I also thank Alice OLSON and the Southern Arizona Hiking Club, whose interest in the natural history of Arizona led to the discovery of this species.

## Literature

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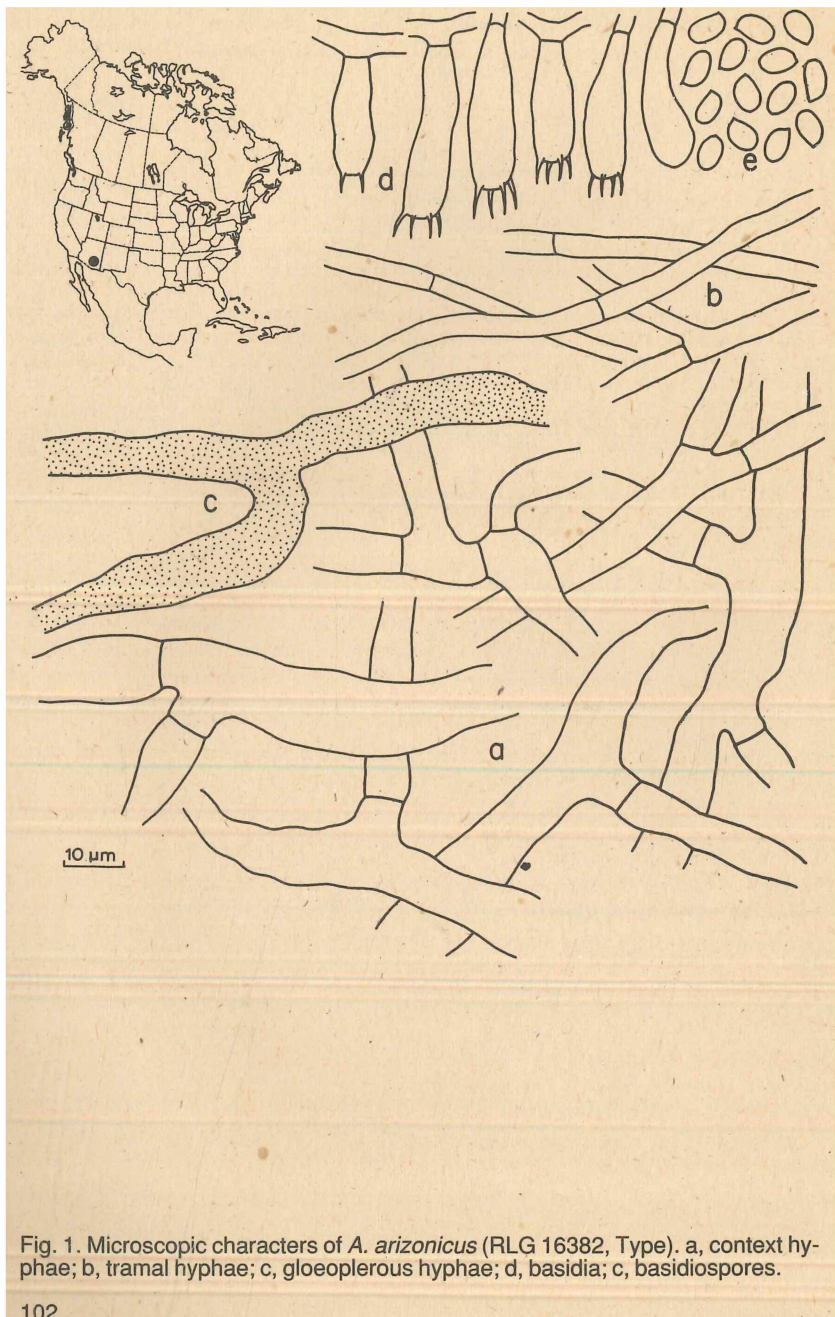


Fig. 1. Microscopic characters of *A. arizonicus* (RLG 16382, Type). a, context hyphae; b, tramal hyphae; c, gloeoplerous hyphae; d, basidia; e, basidiospores.

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Zeitschrift/Journal: [Boletus - Pilzkundliche Zeitschrift](#)

Jahr/Year: 1991

Band/Volume: [15](#)

Autor(en)/Author(s): Gilbertson Robert L.

Artikel/Article: [A New Species of Albatrellus \(Aphyllphorales: Albatrellaceae\) from Arizona 99-102](#)