

RCW71 (PHOTOS)

Arcangeliiella desjardinii Thiers, Sydowia (In Press)

Gastrocarps secotioid. Pileus 35-66mm across, convex depressed to uplifted or strongly undulate, the surface dry to moist (not viscid), azonate, minutely ~~villose~~^{VELUTINOUS} under a hand lens, colored "yellowish white" (1A2) with limited areas tinted "pale yellow" (3-4A3) to "pale orange" (5A3); the margin when thin weakly striate, incurved to downturned, concolorous with the surface. Gleba exposed from youth, irregularly lamellate to chambered; the lamella where exposed strongly anastomosed and contorted, ^{NOT MARGINATE,} within appearing completely chambered with irregularly shaped chambers +/- oriented vertically from the pileus surface, not giving a spore deposit, the tissue colored between "light yellow" (4A4) and "light orange" (5A4), ~~not~~ Stipe 17-42mm long by 9-22mm diam at apex, tapering slightly downwards, colored white over the upper half, below colored near "grayish red" (7B4), the context of the stipe white above and slightly paler than the surface below, solid to stuffed or with a central hollow, the apex minutely ~~villose~~^{VELUTINOUS} under a ~~10x~~ hand lens, appearing smooth and ~~polished~~ below, dry to moist (not viscid), ^{NOT WITHOUT SCROBICULAE:} Peridium in section up to 2.5mm thick near the disc, becoming very thin at the margin, colored grayish translucent, easily differentiated from the white columella extending thru the gleba and continuous with the stipe. The gleba attached to the columella, up to 11mm thick. Latex white, scant, ~~xxxxxxxxxxxx~~, not staining white field labels, staining the gleba in limited areas "salmon" (6A4) to "pale red" (7-8A3), taste mild. Odor none. Taste of pileus and glebal tissue mild to somewhat mealy or weakly bitter.

Macrochemical reactions: The peridium not reactive with application of KOH, HCl, FeSO₄, or Alpha-Naphthol within 15 minutes; with application of 2% Phenol becoming "grayish red" to "grayish ruby" (10-1204-6) to (12D4-6), the reaction slow and usually requiring 15-30 min. to develop, tissues of the pileus context and stipe context reactive in 10-15min. The pileus additionally reactive with Aniline oil & water 1:1 and exhibiting the same colors within 1-2 hours.

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Spores (20): 7.1-8.6 x 7.1-8.6µm, (excl. orn.), globose *to subglobose* hyaline in KOH; hilar appendix 1.3-2.1µm long by 1.3-2.5µm diam at base, conic, with a faint amyloid basal color commonly observed; ornamentation strongly amyloid, the higher elements 0.9-1.6µm high by up to 1µm across, formed as a partial to complete reticulum with outer edges rounded to conic and with frequent free ends, isolated elements not observed.

Peridial epicutis a trichodermium of more or less cylindrical cells with pale yellow contents in KOH and broadly undulating walls, forming a turf, not gelatinous. Context of heterogeneous tissue with conspicuous lactifers which are yellowish in KOH and refractive.

Stipe epicutis a trichodermium of more or less cylindrical cells typically hyaline in KOH and without contents, the walls undulating and appearing as weakly and irregularly inflated areas, the tips typically slightly inflated. Context of heterogeneous tissue with numerous lactifers near the surface and widely scattered inwards.

On drying the exposed edges of the lamellae becoming "light brown" (6D4). Pileus surface becoming "brownish orange" to "light brown" (6-7C-D5) particularly near or at the disc, outwards typically "yellowish white" to "orange white" or "pinkish white" (4-7A2) to pure white or "grayish orange" (6b2). Gleba color on undamaged surfaces "orange white" to "pale orange" (5A2-3). Stipe drying white above with bruised areas tinted "brown" to "dark brown" (7D-E7), on lower half strongly colored "dark brown" (7E-F4).

RGW71

Habit, Habitat and Distribution: Currently known only from Jackson St. Forest in the vicinity of Mendocino Co. roads #408 and 409, Mendocino Co., and Kruse Rhododendron St. Reserve, Sonoma Co., California. Uncommon. Nov. & Dec. In mixed coastal hardwood-coniferous forests.

Material Cited: Kruse Rhododendron St. Reserve, Sonoma Co., California, 17 November 1984, Collected by Mike Wood, Epigeous in a mixed forest of Pinus muricata, Lithocarpus densiflora, Arbutus menziesii, Pseudotsuga menziesii and Sequoia sempervirens, Det. H. Saylor, leg. Mike Wood #71 (SFSU, CSC).

Comments: Arcangeliella desjardinii Thiers, is an uncommon representative of the genus with unique characters which demonstrate an affinity to Lactarius subgenus Plinthogalonus as defined by Smith in Hesler & Smith. The presence of a trichodermium on both the peridial and stipe epicutis, and pinkish to salmon tints of the dried latex which is initially white are unique in the genus Arcangeliella as currently understood in North America. Sufficient data is at present not available from taxa of Lactarius subgenus Plinthogalonus to suggest more specific relationships to individual species occurring in California in the general region where A. desjardinii is known to fruit. Additional studies on Lactarius subgenus Plinthogalonus in the coastal region of Sonoma and Mendocino Counties is certainly in order to suggest such a relationship. Within the genus Lactarius subgenus Plinthogalonus, Lactarius pallidolivaceus Smith in Hesler & Smith (pg. 151) is somewhat close, but additional material will need to be studied to determine a relationship if one exists.

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Arcangeliiella desjardinii is differentiated from A. variegata Thiers by the presence of a non-gelatinous trichodermium, a white latex which stains the tissues pinkish, absence of hyphenal macrocystidia, and a mild to slightly bitter taste in the former while in the latter the presence of an interwoven epicutis, white unchanging and unstaining latex, rare macrocystidia in the hymenium and a distinctly acrid taste. Overall coloration of the gastrocarps of both species are very close in some collections and do not appear reliable in distinguishing these two species. The most reliable features from a field separation will probably be the taste and latex staining characters on the gleba.

Arcangeliiella lactarioides, A. crassa, A. parva, and A. saylorii are mountain species unknown from the coastal regions of California and additionally have either a gelatinous epicutis, latex which stains field labels yellowish to orange or a strongly acrid taste. An undescribed species of Arcangeliiella from Mt. Shasta is additionally distinguished by its orange latex on exposure which slowly becomes ruby and its strong relationship to Lactarius deliciosus.