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# ASTROBIOTA

AUTONOMOUS OBSERVATORY · TRACE-BASED LOGIC

## ASTROBIOTA FIELD RECORD

Template: AstroBiota Field Record v1.0

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**Record ID:** AB.1.001

**Timestamp:** 2026-03-15 21:13 UTC

**Classification:** PUBLIC

**Source:** observer

**Location:** oak woodland habitat (exact location not recorded)

**Reasoning system:** GPT-5.4 Thinking

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### SYSTEM CLASSIFICATION

**Category:** fungal field record; red-pigmented bolete-like ectomycorrhizal system

**Anabiont:** probable ectomycorrhizal fungal partner; believed to correspond to *Suillellus amygdalinus* (unconfirmed)

**Catabiont:** not resolved from available trace; root-soil interface and oak woodland substrate are the primary visible coupled environment

**System Type:** distributed fungal system represented here by fruiting body trace and agar-associated mycelial pigment expression

**Notes:** no genetic confirmation performed. Identification remains morphological and provisional.

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### IMAGE REFERENCES

AB.1.001.01 — mushroom split open

AB.1.001.02 — mushroom growing in situ near oak tree

AB.1.001.03 — agar plate showing red pigmented mycelium

Images are embedded in Appendix A and referenced throughout the report.

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### 0. PURPOSE AND SCOPE

This document records observations and provisional hypotheses concerning a red-pigmented bolete-like fungal system exhibiting persistent trace under constraint. Its purpose is not proof of taxonomic identity. Its purpose is to preserve an observational record while the system remains incompletely resolved. Procedural details, culture methods, and operational logs may exist separately and are not authoritative within this document.

- Maintain strict separation between observation and inference
  - Document pigment behavior across fruiting-body and agar contexts without narrative inflation
  - Preserve visible trace relevant to later taxonomic, ecological, or biochemical study
  - Support continued comparison as additional artifacts or genetic evidence accumulate
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## 1. NAVIGATION RULES

1. Observation and inference are explicitly distinguished.
2. Engagement takes precedence over explanation; uncertainty is handled by restraint.
3. Persistence is treated as a signal, not proof, of intelligence, role, or mechanism.
4. Anthropomorphic language is excluded.
5. This configuration is treated as a distinct system class defined by realized constraints.
6. System history is presumed relevant unless contradicted by later trace.
7. Classification precedes mechanism.
8. Novelty reduces claims rather than amplifying them.

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## 2. DOCUMENT STRUCTURE

**SYSTEM CONTEXT** — Define the system under observation and its visible constraints.

**OBSERVATION** — Record what is materially present, stripped of explanation.

**TRACE** — Document persistent structural artifacts produced by system activity.

**BEHAVIORAL PATTERNS** — Describe repeated or cross-context regularities supported by the artifact set.

**WORKING HYPOTHESIS** — Hold provisional explanations without collapsing them into observation.

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### 3. SYSTEM CONTEXT

The observed system consists of a bolete-like fungal fruiting body documented in oak woodland habitat and a separate agar-associated culture artifact showing red pigment diffusion (AB.1.001.02; AB.1.001.03). Visible constraints include soil contact, litter and moss proximity, probable tree-root association, ambient woodland moisture, and an ectomycorrhizal context inferred from habitat rather than direct root excavation. The observational interface is photographic. No genetic confirmation, spore print, or formal microscopy is included in this record.

### 4. OBSERVATION

In situ, the fruiting body presents a red cap and deep red pore surface beneath the pileus, with a stout stipe emerging directly from soil near woody substrate (AB.1.001.02). When the fruiting body is split, the internal tissue shows yellow to pale flesh with dark blue to blue-black bruising concentrated near cut and pore-adjacent regions (AB.1.001.01). The stipe exterior shows red concentration near the base and localized red striping or zonation toward the distal region. On agar, a dark red to rust-red pigmented colony or fragment is present, with visible pigment diffusing outward into the surrounding medium (AB.1.001.03). The agar plate also contains scattered fine particulate pigment or fragmented residues beyond the central mass.

### 5. TRACE

- Primary visible trace: persistent red pigmentation in the fruiting body, especially cap surface, pore-bearing region, and portions of the stipe (AB.1.001.02).
- Secondary visible trace: blue bruising expressed after tissue disruption in the split specimen, indicating state change tied to disturbance (AB.1.001.01).
- Tertiary visible trace: red pigment diffusion into agar surrounding the mycelial or tissue-associated mass, demonstrating that pigment is not confined to intact field morphology (AB.1.001.03).
- Additional trace: stripe-like red concentration near the stipe tip and stronger red accumulation near the stipe base.

### 6. BEHAVIORAL PATTERNS

Patterns in this record are limited to cross-artifact regularities rather than time-series repetition. The available images suggest a consistent association between this system and red pigment production across distinct contexts: intact field morphology, cut tissue, and agar-associated growth. The record also suggests that disturbance reveals additional state information, because internal tissue becomes visibly blue after splitting while external red pigmentation remains legible. Pigment appears spatially organized rather than uniformly distributed, with stronger concentration at specific interfaces or zones of the fruiting body.

### 7. WORKING HYPOTHESIS

H1: The observed system corresponds to a red-pigmented bolete consistent with the user-provided identification of liver bolete, here treated provisionally as *Suillellus amygdalinus* pending confirmation.

H2: Red pigment production is an intrinsic feature of the fungal system rather than an incidental environmental stain, because similar coloration appears in fruiting-body tissue and in agar-associated growth.

H3: Blue bruising in cut tissue indicates a disturbance-linked chemical transition that becomes visible only after structural disruption.

H4: The stripe-like red concentration near the stipe tip and stronger basal red coloration may reflect localized metabolic zoning, developmental stage, or interface-specific expression under field constraint.

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H5: Because the organism was observed in oak woodland habitat, the broader system is likely distributed through an ectomycorrhizal network rather than reducible to the visible fruiting body alone.

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## APPENDIX A — IMAGE RECORD

Images associated with this report are embedded below as JPG artifacts in accordance with the field record template. Full-resolution versions should be archived separately when long-term storage is established.



AB.1.001.01 — mushroom split open. Yellow internal tissue with blue bruising after disturbance; red external margins remain visible.



AB.1.001.02 — mushroom growing in situ near oak tree. Red cap, deep red pore surface, stout stipe, and direct soil interface visible.



AB.1.001.03 — agar plate showing red pigmented mycelium. Pigment appears concentrated centrally and diffuses into surrounding medium.

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END ASTROBIOTA FIELD RECORD

*Trace preserved. Interpretation provisional.*