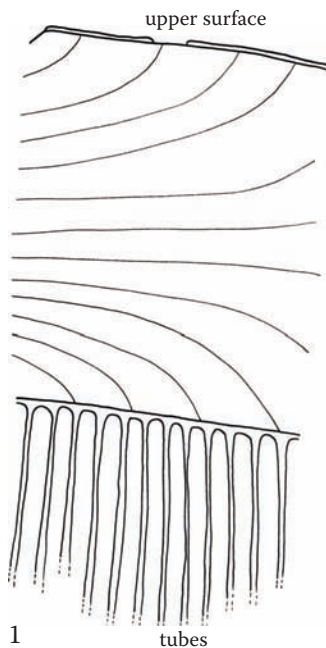


***Ganoderma lucidum***  
**(Curtis: Fr.) P. Karst.**  
**Reishi Mushroom (Sporocarp)**  
**Pinyin: Ling zhi**  
***Ganodermataceae***

*Ganoderma lucidum*, more commonly known by its Japanese name of reishi, is one of the most highly regarded botanicals of traditional Chinese herbalism. It possesses a broad range of beneficial actions on the cardiovascular, hepatic, and immune systems. Reishi mushroom is commonly found in immune supportive formulas for general health purposes and for those undergoing conventional therapies for cancer. The many different varieties and forms of *Ganoderma* may not be well differentiated on the market. Mycelium biomass is also used. This microscopic characterization was developed on the mature fruiting body of red *Ganoderma lucidum*.

**Surface view (paradermal section) of upper cap:** The ends of the yellow-orange hyphae appear as irregular circles or as papillae along the edge of the section.

**Longitudinal section:** Surface layers of cap consist of very dense, enlarged, yellow-orange, thick-walled hyphae oriented at a right angle to the cap surface; underlying tissue



consists of a dense network of three types (trimitic) of light brown hyphae: (1) thick-walled fiber hyphae (up to  $\sim 7 \mu\text{m}$  across) are long, straight, and run parallel to cap surface and are without septae; (2) binding hyphae are thinner, branched, curved, and also without septae; (3) there are few generative hyphae, partly collapsed, with clamps; some septae may be present. Due to their density and tendency to intergrade, these three hyphal types are difficult to distinguish using light microscopy, except in powder; spore-producing tubes (hymenophore) perpendicular to cap surface ( $170\text{--}250 \mu\text{m}$  diameter) are composed of densely packed brown hyphae; basidia are rarely detectable; numerous dark brown, ovate or elliptical basidiospores ( $4\text{--}5 \mu\text{m} \times 8\text{--}10 \mu\text{m}$ ) have two walls: the outer one is lighter and has indentations that appear like dots on the surface.

**Surface view (paradermal section) of lower cap:** Tubes are  $170\text{--}250 \mu\text{m}$  in diameter.

**Powder:** Generative, binding, and fiber hyphae; infrequent basidia and spores. When milled, the fruiting body typically grinds into a fibrous mass or fractures into tiny strips rather than a fine powder.

