

## Insights into the Cultivation of Polyporaceae Mushrooms: The Ancient Ones

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Long ago native peoples recognized the beneficial properties of polypore mushrooms. Some well known mushrooms, such as reishi (*Ganoderma lucidum* (Curt.: Fr.) P. Karst.), were so highly valued that collectors had to travel great distances to find them in the wild. Early woodcutters first gained insights into the cultivation of polypore mushrooms from the collection of firewood, which upon prolonged storage would often sprout the desired species. Woodspeople noted that the natural spore fall from wild-hewn logs would infect nonfruiting logs placed in close proximity. This model has been repeated throughout millennia and is the probable method for the first successful cultivation of shiitake, *Lentinus edodes* (Berk.) Sing., now placed in the Polyporaceae family.

Modern spawn generation technologies have allowed for a rapid increase in the number of polypore mushrooms that can be cultivated under controlled or quasi-natural conditions. The first species to be cultivated included *Ganoderma lucidum*, *Grifola frondosa* (Dicks.: Fr.) S. F. Gray, and *Trametes versicolor* (L.: Fr.) Lloyd. More recently the author has pioneered the cultivation of *Polyporus tuberaster* (Jacq.) Fr. In the study of the role of polypores in ancient growth forests of the Pacific Northwest, the diversity of polypores is fundamental to the health of the forest ecosystem. Mushrooms once thought to be the cause of dangerous blights in the old growth forests are increasingly being recognized for their beneficial

contributions in recycling nutrients and giving rise to complex ecological communities. One such mushroom, *Bridgeoporus nobilissimus* (W. B. Cooke) T. J. Volk, Burds. et Ammirati, is particularly fascinating for its mammoth size, longevity, and exclusivity to old growth forests. Attempts at its cultivation have failed to date. Another mushroom, now on the Red List of near-extinction in Europe, *Fomitopsis officinalis* (Vill.) Bond. et Sing., was first described by the Greek physician Dioscorides in 60 A.D. in the first *Materia Medica* as a treatment for consumption (tuberculosis). This mushroom survives in the old conifer growth forests of the Pacific Northwest, and the Haida Indians of the Queen Charlotte Islands revered it for shamanic purposes. Another related species, *Fomes fomentarius* (L.: Fr.) Fr., was found with the famous Ice Man who was discovered in the fall of 1994 on the border of Italy and Austria. *F. fomentarius* is presumably valued for its medicinal, antimicrobial, insecticidal, and fire-starting properties.

The diverse use of polypore mushrooms as medicines spans diverse cultures and underscores their importance both culturally and ecologically. Despite the long-time use of polypores, only recently have concerted medical studies authenticated what native peoples have long ago recognized—that the polypore mushrooms are powerful allies for sustaining the health of both people and environment.