

GROWING GOURMET and MEDICINAL MUSHROOMS

食用及び薬用きのこの栽培

a companion guide to
The Mushroom Cultivator

by

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Foreword

Mushrooms—fleshy fungi—are the premier recyclers on the planet. Fungi are essential to recycling organic wastes and the efficient return of nutrients back into the ecosystem. Not only are they recognized for their importance within the environment, but also for their effect on human evolution and health. Yet, to date, the inherent biological power embodied within the mycelial network of mushrooms largely remains a vast, untapped resource. As we enter the 21st century, ecologists, foresters, bioremediators, pharmacologists, and mushroom growers are uniting at a new frontier of knowledge, where enormous biodynamic forces are at play.

Only in the last half of this century have we learned enough about the cultivation of mushrooms to tap into their inherent biological power. Working with mushroom mycelium *en masse* will empower every country, farm, recycling center and individual with direct economic, ecological and medical benefits. As we approach a new century, this myco-technology is a perfect example of the equation of good environmentalism, good health and good business.

This book strives to create new models for the future use of higher fungi in the environment. As woodland habitats, especially old growth forests, are lost to development, mushroom diversity also declines. Wilderness habitats still offer vast genetic resources for new strains. The temperate forests of North America, particularly the mycologically rich Pacific Northwest, may well be viewed in the 21st century as the Amazon Basin was viewed by pharmaceutical companies earlier in the 20th century. Hence, mushroom cultivators should preserve this gene pool now for its incalculable future value. The importance of many mushroom species may not be recognized for decades to come.

In many ways, this book is an off-spring of the marriage of many cultures—arising from the worldwide use of mushrooms as food, as religious sacraments in Mesoamerica, and as medicine in Asia. We now benefit from the collective experience of lifetimes of mushroom cultivation. As cultivators we must continue to share, explore and expand the horizons of the human/fungal relationship. Humans and mushrooms must bond in an evolutionary partnership. By empowering legions of individuals with the skills of mushroom tissue culture, future generations will be able to better manage our resources and improve life on this planet.

Now that the medical community widely recognizes the health-stimulating properties of mushrooms, a combined market for gourmet and medicinal foods is rapidly emerging. People with compromised immune systems would be wise to create their own medicinal mushroom gardens. A community-based, resource-driven industry, utilizing recyclable materials in a fashion that strengthens ecological equilibrium and human health will evolve. As recycling centers flourish, their by-products include streams of organic waste which cultivators can divert into mushroom production.

I foresee a network of environmentally sensitive and imaginative individuals presiding over this new industry, which has previously been controlled by a few mega-businesses. The decentralization began with *The Mushroom Cultivator* in 1983. It now continues with *Growing Gourmet & Medicinal Mushrooms*. Join me in the next phase of this continuing revolution.

Mushrooms, Civilization & History

Humanity's use of mushrooms extends back to Paleolithic times. Few people—even anthropologists—comprehend how influential mushrooms have been in affecting the course of human evolution. Mushrooms have played pivotal roles in ancient Greece, India and Mesoamerica. True to their beguiling nature, fungi have always elicited deep emotional responses: from adulation by those who understand them to outright fear by those who do not.

The historical record reveals that mushrooms have been used for less than benign purposes. Claudius II and Pope Clement VII were both killed by enemies who poisoned them with deadly *Amanitas*. Buddha died, according to legend, from a mushroom that grew underground. Buddha was given the mushroom by a peasant who believed it to be a delicacy. In ancient verse, that mushroom was linked to the phrase "pig's foot" but has never been identified. (Although truffles grow underground and pigs are used to find them, no deadly poisonous species are known.)



Figure 2. Cruz Stamets holding a Mesoamerican Mushroom Stone, circa 500 B.C.

The oldest archaeological record of mushroom use is probably a Tassili image from a cave dating back 5000 years B. C. (Figure 1). The artist's intent is clear. Mushrooms with electrified auras are depicted outlining a dancing shaman. The spiritual interpretation of this image transcends time and is obvious. No wonder that the word "bemushroomed" has evolved to reflect the devout mushroom lover's state of mind.

In the spring of 1991, hikers in the Italian Alps came across the well-preserved remains of a man who died over 5300 years ago, approximately 1700 years later than the Tassili cave artist. Dubbed the "Iceman" by the news media, he was well-equipped with a knapsack, flint axe, a string of dried Birch Polypores (*Piptoporus betulinus*) and another as yet unidentified mushroom. The polypores can be used as tinder for starting fires and as medi-

cine for treating wounds. Further, a rich tea with immuno-enhancing properties can be prepared by boiling these mushrooms. Equipped for traversing the wilderness, this intrepid adventurer had discovered the value of the noble polypores. Even today, this knowledge can be life-saving for anyone astray in the wilderness.

Fear of mushroom poisoning pervades every culture, sometimes reaching phobic extremes. The term *mycophobic* describes those individuals and cultures where fungi are looked upon with fear and loathing. Mycophobic cultures are epitomized by the English and Irish. In contrast, *mycophilic* societies can be found throughout Asia and eastern Europe, especially amongst Polish, Russian and Italian peoples. These societies have enjoyed a long history of mushroom use, with as many as a hundred common names to describe the mushroom varieties they loved.

The use of mushrooms by diverse cultures was intensively studied by an investment banker named R. Gordon Wasson. His studies concentrated on the use of mushrooms by Mesoamerican, Russian, English and Indian cultures. With the French mycologist, Dr. Roger Heim, Wasson published research on *Psilocybe* mushrooms in Mesoamerica, and on *Amanita* mushrooms in Euro-Asia/Siberia. Wasson's studies spanned a lifetime marked by a passionate love for fungi. His publications include: *Mushrooms, Russia, & History*; *The Wondrous Mushroom: Mycolatry in Mesoamerica*; *Maria Sabina and her Mazatec Mushroom Velada*; and *Persephone's Quest: Entheogens and the Origins of Religion*. More than any individual of the 20th century, Wasson kindled interest in ethnomycology to its present state of intense study. Wasson died on Christmas Day in 1986.

One of Wasson's most provocative findings can be found in *Soma: Divine Mushroom of*