

## REVIEWS

### RICHARD E. SCHULTES, ALBERT HOFMANN: PLANTS OF THE GODS.

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Since the origin of man plants have been essential for his survival: they have constituted his staple food, healing resource, and furthermore, means of communication with the gods. In all preindustrial societies psychotropic plants were considered sacred. In our modern society about 150 of them, mostly growing in South and Central America, are used in pharmacology.

At a time when tropical rain forests, the main source of rare and unexplored plants, are rapidly cut down to make place for pastures for cattle-ranching, two leading scientists present a remarkable book about magic plants. Schultes is a Harvard professor of Natural Science and chief of the Harvard Botanical Museum. Swiss senior research chemist A. Hofmann was awarded an honorary degree in Natural Science for his discovery of LSD-25, lysergic acid at the Sandoz laboratories in Basel.

They focus on psychotropic drugs called hallucinogens by establishment medicine doctors, although this description is highly inaccurate, because the visual effects they produce are not hallucinations: the non-standard states of consciousness cannot be adequately explained in terms of the Newtonian - Cartesian, mechanistic approach to the universe and have a multilevel and multidimensional quality (Grof, 1985, pp. 31-35). A far more precise term is "psychedelic drugs", best viewed as amplifiers or catalysts of mental processes, i.e. mind-expanding or mind manifesting. These terminological matters are briefly discussed in the Preface (p. 9).

The book consists of eight chapters.

(1) Plant Hallucinogens (pp. 10-19)

Narcotics and toxicity are explained from the medical and legal points of view. The Harrison Narcotics Act is seen as outdated: according to its wording marihuana does not rank among narcotics, although its use is criminalized in certain countries.

(2) *Fytochemical Research of Sacred Plants* (pp. 20-25)

surprisingly refers back to Paracelsus as its pioneer, well before pharmacist Sertümer who in 1806 isolated the alkaloid morphine from raw poppies. In 1866 the Berlin pharmacologist Ludwig Lewin published the first systematic study of the sacred cactus called peyotl by early Spanish settlers, venerated by Indians as a deity. Alienists Jaensch, Ellis and Mitchell dosed themselves with alkaloid mescaline in order to gain a better insight into the mental states of their schizophrenic patients.

(3) Use and Spread of magic plants is shown on a global map, on pp. 28-29.

(4) *Plant Atlas* (pp. 31-60)

enumerates psychotropic plants in alphabetical order according to Latin generic names starting with *Acorus* L. (sweet sedge) chewed by the Cree in Canada. Widespread is *Amanita muscaria* (toadstool), identified as source of the soma in the ancient Vedic ritual (p. 34). *Zornia* is smoked in Brasil as a cheap substitute of marihuana.

(5) *Hallucinogens and Their Users* (pp. 61-64)

Some species in Ancient India as well as sacred mushrooms *teonanacatl* of the Aztecs were identified with deity. This ingestion of "god's body" is being compared to the Christian Eucharist.

Ethnobotanists will appreciate (6), *An Overall Survey of Magic Plants* (pp. 65-80) with botanical names, their history and ethnography, preparation and chemical composition of psychoactive alkaloids.

(7) *Fourteen Hallucinogenic Plants* (pp. 80-171)

For a deeper and more detailed study both authors select 14 magic plants. Religionists are usually not acquainted with the controversy of peyotl's use for a ritual of the officially recognized denomination, the Native American Church, which is authorized in several US states and Canada but banned in Oregon.

Highly interesting is the history of *Datura stramonium* (thorn-apple), an important ingredient of medieval medicines in Europe, still in use in Islamic pharmacopeia in Afghanistan, Pakistan and India. The native American tribes of the Rio Grande river basin used mescal red beans *Sophora secundiflora* during visionary dances until 1820, when they replaced them by safer peyotl.

The root of *Mandragora officinarum* was known through the whole Asia as well as in Ancient Rome. No other magic plant is connected with such a wide range of fantastic myths.

*Cannabis sativa* and *C. indica* (marihuana) seem to be the source of mild non-aggressive intoxication or even ecstasy. Archaeology testifies to their connection with the beginnings of agriculture 10 000 years ago. Hemp rope and threads dated 3 000 B.C. were unearthed in Chinese Turkestan. Marihuana consumption and attraction has been on the rise over the last 40 years in the USA and Europe. Opinions on it widely vary. While its supporters including M.P.s in Britain consider it a recreational soft drug and urge its legalization, law and order opponents refuse to distinguish between hard and soft drugs and try to criminalize it as heroin or cocaine. While in the Americas cannabis is smoked mixed with tobacco, in Muslim North Africa and Western Asia it is also ingested in the form of hashish.

#### (8) Chemical Structure of Hallucinogens (pp. 172-83)

Comparison of the molecular models of LSD, psilocybin and mescaline show a striking similarity with CNS neurotransmitters noradrenalin and serotonin. Their application in psychiatry is two-fold. The psycholytic method discovered by R.A. Sandison consists of repeated mild doses within the psychoanalytical framework. The psychedelic therapy after H. Osmond prefers one massive dose of LSD or psilocybin to trigger a "peak experience" or manifestation of cosmic consciousness inducing a cure and radical change of lifestyle. Promising results were obtained in treating neurotics and alcoholics, but psychoanalysts and behaviourists did not want to go out of business, joined the law and order opponents and after a public outcry against psychedelic drugs abuse by the "Flower Power" generation all medical research has been phased out. Recent attempts to revive their use have been made in connection with the hospice movement.

The book's closing statement is a tribute to the famous Doctor Ludwig Lewin (1850-1926), the author of *Phantastica* (1924), the first interdisciplinary study of 28 psychotropic plants.

The book's lay-out is excellent: the text is accompanied by over 300 illustrations and colour photos, including some of ritual objects and scenes which have never been published. Some are samples of the best vision-inducing art produced by individuals who had shattering visionary experiences (pp. 63, 89, 168, 179, 180).

The editors of the Czech translation faced a dilemma: namely, how to publish and sell a high standard, objective and accurate ethnobotanic study and avoid prosecution for "drug abuse propaganda"? They faced

Article 188 of the Antidrugs Bill. Interpretations vary and even expert opinion is sharply divided. In a fit of self-censorship they regrettably left out a number of paragraphs which censors or politicians could have objected to. The high price of the book makes it prohibitive for many potential readers and even libraries.

From the Czech translation:

Richard Evans Schultes, Albert Hofmann: Rostliny bohů. Jejich posvátná léčebná a halucinogenní moc. Praha, Volvox Globator, Mat'á 1996.