

A FRUITFUL FRIENDSHIP BETWEEN AN ETHNOBOTANIST AND A PHYTOCHEMIST

By Albert Hofmann

After several years of scientific correspondence I met Dr. Richard Evans Schultes personally at a meeting of the Gesellschaft für Arzneipflanzenforschung (Society for Medicinal Plant Research) in Berlin. An inscription in my copy of Dr. Schultes' monograph "A Contribution of our Knowledge of *Rivea corymbosa*: The Narcotic Ololiuqui of the Aztecs" (Botanical Museum of Harvard University, Cambridge, 1941) reminds me of that meeting. It reads as follows: "To Dr. Albert Hofmann, May 22, 1964, Berlin. With great pleasure in finally meeting you personally, Richard Evans Schultes".

We became close friends. Dick's Oldbostonian humor, his realism, his custom to work hard, his reliability made me think of similar Swiss characteristics and he liked to explain that his ancestors were descendents of the in Zürich long established Swiss family Schulthess. When ever in the States I visited the Schultes family in the beautiful home in Melrose and we spent vacation in common on Sutton Island in Maine. In turn the Schultes visited us in our house on the Jura mountain at Burg in Switzerland.

One of the many sympathetic characteristics of Dr. Schultes is his deep connection with Harvard University. His enthusiasm for his university and its tradition made him urge me to participate at the Commencement Day Ceremonies, —as a disguised Harvard professor—. Which was indeed an extraordinary experience for me.

I had also the opportunity to test personally Dr. Schultes' fame as an outstanding ethnobotanical explorer. On a trip to Oaxaca in Southern Mexico we were, in company of a young phytochemist, in search of a rare tree, *Quararibea funebris*, its fragrant flowers being used by the Indians as an admixture to chocolate. My nose will guide me, said Dick. We went to the big market hall, central meeting

place of the town of Oaxaca, passed through all the rich displays with fruits, vegetables, flowers, spices, etc., Dick always sniffing in the air. Suddenly he stopt at an old Indian woman, who had on her display dried flowers of *Quararibea funebris*. From her he got the information where such a tree would grow. We found it near a small settlement some miles outside of the town, a beautiful big tree belonging to a Zapotec family who lived on it, selling its white fragrant flowers to a chocolate producer. Our young colleague could collect here all the botanical documentation he needed for the book on chocolate he was writing.

Before we met personally I had been working on two research projects based on ethnobotanical findings of Dr. Schultes.

One was the chemical analysis of the "sacred mushrooms" of the Mexican Indians. It was Dr. Schultes who had initiated the botanical identification of these mushrooms by two articles in 1939 and 1940 (1). The investigations on "teonanacatl", the Aztec name of these mushrooms, was concluded in the latefiftieth by the isolation and chemical identification of the hallucinogenic principles, the alkaloids psilocybin and psilocin, by myself and my coworkers in the pharmaceutical research laboratories Sandoz, Basel, Switzerland (2).

The already mentioned publication of Dr. Schultes, "A Contribution of our Knowledge of *Rivea corymbosa*: The Narcotic Ololiuqui of the Aztecs", has served as ethnobotanical basis of our investigation on ololiuqui, an ancient magic drug of the Mexican Indians like the mushroom teonanacatl. The riddle of ololiuqui was solved when we found ergot alkaloids, i.e. lysergic acid amide and lysergic acid hydroxyethylamide, closely related to LSD (lysergic acid diethylamide) to be the hallucinogenic constituents of the convolvulaceous seeds (3).

My friendship with Dr. Schultes provided me with the privilege to coauthor two of this books, namely "The Botany and Chemistry of Hallucinogens" a text book, and "Plants of the Gods" a large size, richly with colored pictures illustrated volume for a general public. (4-5).

Dick convinced me of the need that he, an ethnobotanist and I, a phytochemist, should write this textbook, considering that all research in the field of psychoactive drugs of natural origin begins with botany and chemistry and that therefore we should provide investigators in this field with this basic knowledge.

The title "Plants of the Gods" refers to the important role which psychoactive, especially hallucinogenic plants play in the history of religion and

magic. These plants were used and are still used in our day in tribal cultures in religious ceremonies and in magical healing procedures. This is not mere superstition because phytochemists could isolate from many of these plants psychoactive substances which became useful tools in biological research and medicaments in psychiatry. This broad spectrum of cultural and scientific aspects presented by "Plants of the Gods" accounts for the widespread interest for this book which already appeared in a second edition and which has been translated in several languages.

When scientific collaboration is combined with friendship it becomes more fruitful and more pleasurable. My relation with Dr. Schultes is an example of such an experience.

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