

## Preface

On November 23, 1897, Dr. Arthur Heffter, an outstanding German scientist with training in chemistry, pharmacology, and medicine, performed a careful self experiment with one of the alkaloids that he had isolated from a small cactus. On the 100<sup>th</sup> anniversary of that date, it seems an auspicious time to be introducing what we hope will be the first of a series of Reviews, named in honor of Dr. Heffter.

The results he obtained on that day established for the first time that a specific chemical substance, which he named mescaline, was responsible for the dramatic and profound psychopharmacological effects that followed the ingestion of a small Southwestern American cactus that had been named peyotl by the Aztec Indians. This cactus, now known as peyote (*Lophophora williamsii*) was the subject of intense intellectual curiosity in the early part of the 20<sup>th</sup> century. It presently serves as the sacrament for the Native American Church but has been utilized for millenia as the focus of religious rituals by indigenous Indian peoples in the Americas.

In 1943, Dr. Albert Hofmann, a research chemist working at the Sandoz laboratories in Basle, Switzerland, accidentally discovered that a substance he had synthesized in 1938, named LSD-25, had similar profound effects on the psyche. Thus began a relatively short-lived saga that led Dr. Hofmann to isolate and identify a number of active principles from “magical” substances that had been used since antiquity by preindustrial cultures. While mescaline is a simple phenethylamine, perhaps more closely related in structure to the neurotransmitter known as dopamine, it proved to be the case that LSD, certain active principles in the seeds of morning glories and related plants, in various *psilocybe* mushrooms, and in numerous snuffs and plant decoctions used by South American Indians were all built around a chemical scaffold known as tryptamine, the same template upon which the ancient and natural brain neurotransmitter known as serotonin is constructed. The discovery of LSD, and the recognition of this chemical relationship, helped to catalyze the revolution in neuroscience that continues today, and led to early awareness of the importance of the role of serotonin in the brain.

While there was a period during the 1950s where artists and philosophers explored the magical properties of these newly rediscovered but ancient materials, ultimately their profound and ineffable effects on the human psyche have led to widespread use by generations of adolescents. Of course, no one reading this material will be unfamiliar with the fact that these substances, known variously as psychedelics or hallucinogens, are now classified in a restrictive drug category that seems to hold the attention of only a handful of research scientists throughout the world. It has been the aim of the Heffter Research Institute (<http://www.heffter.org>) to foster and maintain research interest in these substances, until the day that their value as research tools and potential therapeutic agents may again be recognized.

There has been no generally recognized forum for the discussion of psychedelic agents by scientists for many years. Many current sources are anonymously authored, and contain anecdotes, the equivalent of old wife’s tales, or urban myths, serving only to propagate and create misinformation, something the Heffter Institute adamantly opposes. It is the aim of the Institute, with this inaugural volume, to begin the periodic publication of a series of reviews that will place into perspective current research with psychedelic agents. It is hoped that in these pages, and in future volumes of the Review, a dialogue can be maintained that will convey to readers a real impression of the state of the art in this exciting research arena. Theoretical, practical, and clinical issues will be addressed and as time passes we hope that the number and scope of the contributions to the review will increase.

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