

THE CASE FOR VICTOR A. REKO—AN UNRECOGNIZED PIONEER WRITER ON NEW-WORLD HALLUCINOGENS

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ABSTRACT.—Victor A. Reko's book *Magische Gifte*, in which he recorded a number of original observations on New-World psychotropic drugs including the first modern recognition that teonanácatl was a mushroom and not a cactus, was well received when it first appeared in 1936. However, his contributions to the literature of this and other obscure plant hallucinogens such as ololiuqui and sinicuichi, have not received the recognition they deserve. His writings, evaluated objectively on the bases of modern scientific knowledge and historical evidence, establish Reko as an important pioneer in this field and show his accomplishments worthy of acclaim.

Two books written during the early decades of this century must be viewed, by any objective criteria, as pioneering efforts in providing the public with interesting information on naturally occurring hallucinogens and related drugs. One of them, *Phantastica*, authored by the German physician Lewis Lewin, has been recognized as a classic almost since its first publication in 1924. An English translation of the second German edition appeared in 1931 and was reprinted in 1964 (1). Interestingly, Lewin never held a full academic position at any university, but that has been attributed, not so much to his lack of ability as a toxicologist, but to the religious prejudice of certain persons in authority.

The other volume, written a dozen years after Lewin's book, was also authored by a man with somewhat tenuous academic credentials. Although it is known to specialists, it remains almost unknown to the lay public and, unlike Lewin, its author has received practically no acclaim for his role as a "popularizer" of valuable information on hallucinogens. In fact, Victor A. Reko, author of the book *Magische Gifte: Rausch- und Betäubungsmittel der Neuen Welt*, has been rather persistently denigrated and his contributions to the field disparaged in recent years. This may be attributed in part to the fact that although his book received excellent reviews at the time of its publication in 1936, and appeared in a second, revised edition shortly thereafter in 1938, as well as a subsequent third edition in 1949 (2), it was never translated into English. This no doubt prevented it from reaching the wide audience enjoyed by Lewin's work which, without detracting from it as a popularization, was far less original in content than Reko's.

Who was this Victor A. Reko who took such an early interest in hallucinogens of the Western Hemisphere but whose contributions to the field remain little known and even less appreciated? He was born in Vienna on August 5, 1880, the son of Ernst R. and Louise (Labeau) Reko. His father, whose own forebears had left France in 1798, where the family name was spelled Reccau, was an architect specializing in the design of school buildings, cold-storage warehouses, and the like. Victor graduated from the University of Vienna with a degree in philosophy in 1900. He then traveled extensively, was a correspondent for several newspapers, taught in an intermediate school, and worked on the railroad, all during a four-year period. From 1904 to 1907, he taught German and French in the Franz Joseph Secondary School in Vienna, a position apparently responsible for his subsequent use of the title "professor."

His interest in technical and scientific writing then reasserted itself. For a

period, he edited a journal devoted to the phonograph industry, lectured, and headed organizations devoted to that subject in Vienna and, later, Berlin. His service in World War I, from which he emerged as a wounded and decorated veteran, involved radio communications and deciphering. After the war, he undertook additional travels to further his scientific interests. In 1921, he took up residence in Mexico where he wrote books on various subjects, including the medical botany of that country. He also published numerous articles in various German and Spanish journals. Ultimately, he became a member of the Mexican Academy of Sciences (3).

In 1932, Reko began publication of a series of articles in the reputable *Pharmazeutische Monatshefte*, a publication of the Austrian Pharmaceutical Society (4). Some of these articles which provided details on the sources and uses of various Mexican plant drugs and poisons, including some hallucinogens, were combined with others to form the basis for the first edition of his book *Magische Gifte* which appeared in 1936 (5).

Subsequent articles in *Pharmazeutische Monatshefte* in 1938 were incorporated into the 1938 second edition of the volume (6). The overlap with Lewin's previously published *Phantastica* is minimal. Reko's first edition covers seven New-World plant drugs not even mentioned by Lewin, and his second edition includes two additional such drugs.

Magische Gifte was extremely well received by contemporary critics. A. Reid writing in the *Pharmazeutische Zeitung* (7) commented as follows (in translation):

"The author limits his presentation to drugs whose use for intoxicating purposes originates in Mexico or which is customary there. He provides an extremely knowledgeable discussion not only of the agents themselves but also of the people and the land, characterized by a colorfulness and objectivity which, without losing the scientific method, makes the book extraordinarily delightful reading.

"The book leads into a multicolored and interesting world both from the factual and the folkloristic viewpoints, and it will doubtless find many readers."

The reviewer in the *Deutsche Apotheker-Zeitung* (8) was not only complimentary but concerned. He concluded his (translated) comments:

"The names, origin, and demoniacal effects of these [marihuana, peyote, zapote] and other narcotic agents have been extensively described by Prof. Rekow [sic] in twelve chapters of his book. It is to be hoped that especially psychiatrists and criminologists will take note of this publication, so that they can work strenuously to prevent the distribution of such dangerous drugs in this country."

F. Tobler, in his review for the *Pharmazeutische Zentralhalle für Deutschland* (9) noted Reko's qualifications (translated):

"This area [narcotic and poisonous drugs of Central America] has been for some years the unique field of activity of the learned pharmacist and botanist Viktor [sic] Reko in Mexico. He has, as a result of his extensive travels and precise scientific investigations, become a specialist in the field."

The review by H. Heger in *Pharmazeutische Monatshefte* (10) not only expressed national pride in his fellow Austrian's achievement but also recognized the dual nature of the plant materials Reko had investigated and described. His final paragraph read (in translation):

"In any case, Prof. Reko has by means of his studies and his publications performed a great service for mankind, and Austria can be proud of him. It is to be hoped that the book will receive the widest possible distribution, especially among pharmacologists and clinicians, thereby protecting humanity from the dangers of these narcotic poisons and, at the same time, encouraging their investigation as potential medicines for the cure of illness."

Knowing these favorable statements of his contemporaries, one finds it difficult to understand some of the subsequent evaluations of the same book and its author. B. Holmstedt (11) quotes a letter from the physician-turned-botanist Blas Pablo Reko to Henry Wassén of the Göteborg Museum under date of January 31, 1937. It reads in part as follows:

". . . Apparently you confound me with my cousin Victor A. Reko, the author of 'Magische Gifte,' a journalistic piece of work, by the way, which you need not take very seriously, since its author is neither a botanist nor has he any personal experience with the drugs described, most of which he has not even seen and would not recognize if he saw them. It is a cleverly made up *mixtum compositum* of compiled facts and wild inventions of his own fancy, intended for popular consumption.

V. P. and R. G. Wasson were equally uncomplimentary (12):

"In 1936 there appeared in Stuttgart a little book, *Magische Gifte*, by one who styled himself 'Prof. Victor A. Reko, Member of the Academy of Sciences, Mexico.' This Reko, a journalist and anything but a scientist, was first cousin to Blas Pablo. He asserted the existence of the divine mushrooms and was so bold as to give them, sight unseen, a hypothetical name, *Amanita muscaria*, var. *mexicana*."

Although Schultes (13) is somewhat ambivalent in his comments on Victor A. Reko, he at least recognizes the situation as it existed in 1936, which was that until such date most of the people interested in such matters agreed with the theory of W. E. Stafford, namely, that the teonanácatl of Shagún was not a mushroom but a cactus:

"The first published objection [to Stafford's theory], however, appeared in 1936, when Mr. Victor A. Reko, an Austrian journalist living in Mexico and a cousin of Blas Pablo Reko, published a rather superficial book on intoxicants: *Magische Gifte: Rausch- und Betäubungsmittel der Neuen Welt*. 'This [the Stafford identification] must be contradicted,' he wrote. 'The nanacates are poisonous mushrooms which have nothing to do with peyote.'"

Schultes continues on to explain that it is probable that V. A. Reko obtained the information he recorded in his book from his cousin B. P. Reko. That surmise, even if true, does not detract from the significance of the first publication of

such information by Victor A. Reko. Such loss of priority may have been the reason why Blas Pablo denounced his cousin Victor in the 1937 letter to Henry Wassén. The only other reason might be that *Magische Gifte* is in fact a superficial volume totally without merit. We already know that it had considerable merit in the proper identification of teonacácatl as mushrooms instead of cacti. Let us examine the remainder of the book to see how modern science has treated Victor Reko's "superficial" and "journalistic" book written more than forty years ago.

In his first edition, the author dealt with twelve drugs. The following listing gives the common name utilized by Reko accompanied by the botanical name presently recognized for the plant: ololiuqui, *Rivea corymbosa* (L.) Hall. f.; peyotl, *Lophophora williamsii* (Lem.) Coulter; marihuana, *Cannabis sativa* L.; toloachi, *Datura stramonium* var. *tatula* (L.) Torr.; ayahuasca, *Banisteriopsis caapi* (Griseb.) Morton; colorines, *Erythrina* and *Sophora* species; sinicuichi, *Heimia salicifolia* (H.B.K.) Link; coztic-zapote, *Pouteria campechiana* (H.B.K.) Baehni; nanácatl, mostly *Psilocybe* species; xomil-xihuite, *Gelsmium semperivirens* (L.) Ait.; camotillo, *Dioscorea composita* Hemsl.; and cohombriillo, *Ecballium elaterium* (L.) A. Rich. Three new drugs were added in the second edition in 1938: chicalote, supposedly obtained from a cross between *Argemone mexicana* L. and *Papaver somniferum* L.; minapatli, *Sebastiana pavoniana* Muell. Arg.; and herbas locas, *Dioon edule* Lindl., *Astragalus amphyoxys* Gray, and *Oxytropis lambertii* Pursh. It is probably unfair, however, to take these last three items into consideration in judging Victor A. Reko's book because the negative comments of Blas Pablo Reko and others were applied to the first edition.

Of the twelve drugs in it, peyotl, marihuana, toloachi, ayahuasca, and xomil-xihuite were also covered by Lewin. They can, therefore, be disregarded since they were already well-known. Indeed, peyotl, marihuana, and toloachi had been covered in depth by Hartwich in his magnum opus on the subject which appeared in 1911 (14). Four of the seven remaining botanicals (namely, ololiuqui, colorines, sinicuichi, and nanácatl) have since been recognized as important hallucinogens or tranquilizers and are now accorded extensive coverage in such standard references as *The Botany and Chemistry of Hallucinogens* by R. E. Schultes and A. Hofmann (15).

Of the three drugs remaining, cohombriillo, a substance prepared from the juice of the squirting cucumber was not regarded by Reko as a hallucinogen (*Rauschdroge*) but as a drastic cathartic, which it most certainly is (16). He discussed its use to purge the system of the after-effects of indulgence in intoxicants, that is, to speed up detoxification. Any unabsorbed toxins in the gastrointestinal tract would indeed be removed rapidly by ingestion of the product.

Likewise, ingestion of camotillo was reported by the author to produce, not a psychotomimetic condition, but rather a kind of latent depression, best described as the result of chronic toxicity. Sapogenin-yielding species of *Dioscorea* are known to be bitter and toxic, and some are even quite poisonous in large doses (17).

Finally, Reko discusses coztic-zapote, the fruit of *Pouteria campechiana* which was claimed to produce intoxication following ingestion. A preliminary chemical study conducted in 1941 by Bachstsz and Aragon (18) failed to detect potentially active constituents such as alkaloids or glycosides. In addition, these authors' inquiries convinced them that this frequently eaten fruit had no harmful properties. They concluded that the popular Mexican name of the fruit, zapote borracho (drunk zapote), stems from its musty, alcoholic odor when overripe, rather than

from any intoxicating properties it might possess. It is likely that this nearly forty-year-old publication on coztéc-zapote will not be the final word on its chemical and physiological properties. But even it should prove to be, it gives Reko an excellent record of accuracy for the first edition of his popular book in which he described properly the effects induced by at least eleven out of the twelve drugs considered. When we remember that seven of the twelve were new to the popular literature, the feat becomes even more remarkable.

In the second edition published in 1938, Reko added three botanical products. The various loco weeds (herbas locas) had been covered by Lewin. Chicalote the dried latex of a supposed cross between the Mexican prickly poppy (*Argemone mexicana*) and the opium poppy (*Papaver somniferum*) proved to be something of a hoax, in that the plants do not cross fertilize (19). However, toxic effects produced by alkaloids other than morphine contained in the former species give chicalote a degree of physiological activity (20). That the stimulating effects which Reko ascribes to mincapatl or Mexican jumping beans apparently remain uninvestigated, speaks eloquently for the relative obscurity of his writings. However, we know enough about the Euphorbiaceae, the plant family in which *Sebastiania pavoniana* is classified, to recognize that many of its species do contain principles which are extremely active physiologically (21). The odds that Reko is right on this drug, too, are in his favor.

So, when all of the chapters have been examined, it seems reasonable to conclude that, on the whole, *Magische Gifte* is not only an interesting book, presenting in a popular manner for the first time information regarding many hallucinogenic or intoxicating plant drugs but, further, that this information is generally quite factual.

One major criticism remains to be considered, namely, the Wassons' intimation that Reko's assignment of a hypothetical name, *Amanita muscaria* var. *mexicana*, to the Mexican magic mushroom was sufficient grounds to discredit both the man and his book. Or as the Wassons put it (12), "This [Victor A.] Reko, a journalist and anything but a scientist. . . ." In the first place, Reko did misidentify specimens of the mushrooms shown him during a visit in Chihuahua as belonging to the genus *Amanita*; however, he initially assigned the species epithet *mexicana*. Later, in the second edition of his book, this was changed to *Amanita muscaria* var. *mex.* (?). But in both editions he does describe the drug nanácatl as a mushroom, a fact not previously recognized in published form in this century. As a matter of fact, it was in direct conflict with the beliefs then generally held that the drug was not a mushroom but a cactus. Further, the author goes on, in the 1938 edition, to list from ancient sources the description of some nine types of hallucinogenic and/or toxic fungi, one of which might very well have been an *Amanita* species. Whether that is true or not makes little difference. The fact that Victor A. Reko was the first modern author to recognize in print that nanácatl was a mushroom instead of a cactus is worthy of far more praise than his relatively minor error in attributing to the wrong genus one of the specimens shown to him is worthy of blame. As far as that is concerned, authorities today still do not agree (22) on whether one of the mushrooms involved should be assigned to the genus *Psilocybe* [*P. cubensis* (Earle) Sing.] or *Stropharia* (*S. cubensis* Earle).

Some of Reko's other positive contributions are worthy of acclaim. He was the first author of "popular" writings in modern times to identify correctly ololiuqui as the seeds of *Rivea corymbosa*. While it is true, as Schultes has pointed out (23), that Reko initially seemed to favor Safford's identify of the plant as *Datura*

meteloides Dun. (a conclusion with which Lewin also agreed), a close reading of his chapter on the drug reveals that Reko adopted this conclusion reluctantly. He placed great confidence in Hernández's and Urbina's identification of ololiuqui as a member of the Convolvulaceae, but experiments on both men and animals carried out prior to 1936 had, for some reason, not revealed any physiological activity in the seeds of *R. corymbosa*. On this basis, coupled with the known physiological activity of datura seed, Reko believed that the Indians might have intentionally deluded the early ethnobotanical investigators. At the time, it was not an unreasonable conclusion.

In 1937, C. G. Santesson was able to demonstrate experimentally in animals the central-nervous-system effects of an isolated principle (erroneously thought to be a gluco-alkaloid) from *R. corymbosa* seed (24). Reko was quick to take notice of this finding, and on the basis of it, he revised the identity of ololiuqui in the 1938 edition of *Magische Gifte*. This was a full year before Schultes and B. P. Reko finally collected identifiable botanical material employed in divination by a Zapotec witch doctor, thus confirming the identity of ololiuqui as *R. corymbosa* (15).

In the foreword to the 1938 edition, Victor also acknowledges the assistance of Dr. B. P. Reko in revising the botanical nomenclature. The primary botanical origin of ololiuqui is given as *Turbina corymbosa* (L.) Raf. with synonyms of *Rivea corymbosa* (L.) Hall. and *Ipomoea sidaefolia* Choisy. Consequently, the second edition of *Magische Gifte* becomes the first publication written for popular consumption to present the correct solution to the mystery of the identity of ololiuqui.

One of Victor A. Reko's most astonishing successes in describing in detail the folk use of a New-World hallucinogen, which had remained practically unknown to European and North American scientists, involves sinicuichi. He tells how prolonged use of a beverage prepared from the leaves of *Heimia salicifolia* produces forgetfulness in the user. Drinkers of it lose their orientation in time and space, recalling with great exactness events of long ago, and in some cases, supposed happenings remembered from a life before birth.

Stimulated by his fascinating writings on this drug, scientists conducted a series of chemical and physiological studies which led to the detection of a number of different alkaloids, one of which, cryogenine, is believed to be the major active principle. It was found not only to possess a unique "tranquilizing" property but also to reduce experimentally induced anxiety in small animals. Side effects, such as hypotension and skeletal muscle relaxation, commonly observed with effective doses of other tranquilizing drugs, appear to be minimal for cryogenine (19).

Further studies will be required to establish the therapeutic usefulness, if any, and safety of cryogenine. Even if these should prove disappointing, at least we have some indication of the reason why sinicuichi is employed as a Lethean draught by the natives of Mexico. We also recognize another interesting and potentially important revelation made in the writings of Victor A. Reko.

At this point the defense rests. Although the case for the author of *Magische Gifte* is not necessarily complete as written here, I believe enough evidence has been presented to assure for him a place of prominence among those persons who sought through their writings to disseminate to a wide audience information on hallucinogenic plants of the Western Hemisphere. If some of his contributions lacked perfection, one can only conclude that pioneers in any field seldom attain that state. His own willingness to recognize imperfection and to improve his writings by the incorporation of available new evidence has already been demonstrated.

Ethnobotanists, psychopharmacologists, pharmacognosists, in fact, all persons interested in plant drugs with central-nervous-system activity owe a debt to Victor A. Reko for developing a smooth path over rocky terrain where only faint indications of a trail had existed previously. Now that his path has become a well-traveled four-lane highway, it is time to render him the credit he deserves for his pioneering efforts.

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