

3. Only the bitter taste of basic bodies, given in very small doses (*e. g.*, strychnine) or of slight bitterness (*e. g.*, quinine ethyl carbonate) can be satisfactorily disguised by eriodictyon.

4. The aromatic syrup of eriodictyon is an elegant preparation, for which we cannot suggest any improvement.

5. The aromatic elixir of eriodictyon, on the other hand, is a very unstable and unsatisfactory preparation; and, as it is hardly prescribed at all, we recommend its deletion from the National Formulary.

#### REFERENCES.

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### PEYOTE—THE DIVINE PLANT OF CERTAIN INDIAN TRIBES.\*

BY JOHN THOMAS LLOYD.

Peyote or Mescal Buttons, known also by a number of other names, in the words of Louis Lewin—"towers above the rest of known plants on account of its special effects on man. No other plant brings about such marvelous functional modifications of the brain."

Peyote is a species of cactus (*Anhalonium lewinii*). When fresh the top is fleshy, gray-green in color, and dome-shaped, usually about an inch and a half in diameter. The root is long and tapered, resembling the root of a parsnip. For use, the tops are removed and dried. In this condition they are brown and greatly shrunken.

The plant occurs locally over a considerable part of the Mexican Plateau, and extends north of the Rio Grande, into Texas.

Accounts of the influence of Peyote on the human mind have appeared in a few publications. These agree in their descriptions of the pleasing brilliancy of color and the fantastic forms of objects seen under the effect of the drug.

By the Indians, the plant has been known for untold generations, and worshipped as the "vegetable incarnation of the Divinity." It is known not alone to the Indians of the regions it inhabits, but also to tribes as far West as the Pacific, and northward to Wyoming and Nebraska, while Indians from Oklahoma make annual pilgrimages to Texas to gather their supply for worship. Naturally, the use of Peyote was condemned and forbidden by the early missionaries, while later it attracted the attention of officials concerned with Indian affairs, under whose influence a prohibitory law was enacted against the use of the drug. This law is apparently as effective as other laws designed to change religion, or modify established customs.

The present article is written to record visions and hallucinations experienced by the writer while in the region of Mexico in which Peyote grows, and among the Indians who use it. These hallucinations, following an Indian dance around a fire, as is customary in the Peyote ceremony, were so fantastic and vivid that he

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now feels little doubt that he was under the influence of the drug. They were so profound that twenty-eight years have failed to dim them in memory. Many times he has attempted to describe them, much as they are related in the following paragraphs, but always with the realization that his words could never describe the inspired creations of his brain.

The town of Los Peños, in all probability, is not shown on your map. Were it not that its few thatched shacks are the only habitations on a long stretch of the arid, rocky coast of Western Mexico, it would scarcely claim a name. Yet, for almost thirty years, the writer's memory has retained a clear picture of that little group of thatched houses on the slope of a mountain rising from the sea, while memories of important places and events of recent years, have blurred or faded.

It was at Los Peños, one late February morning in 1904, that an Indian and I grounded a dug-out canoe, and stretched our cramped limbs. For two days and nights, while the ever-thickening sky signaled the on-coming of the stormy season, we had sailed and paddled our hollow log, more than a hundred miles through open ocean, in conflict with the efforts of strong currents to sweep us around Cabo Corrientes (Cape Current), and past our destination.

At Los Peños, the services of Juan Estrello, a tall, athletic Indian, were engaged as muleteer, to take me and my few belongings to the railway, at Guadalajara. The luggage was packed on a mule, while I rode a pony, and Juan walked. At the start Juan wore muslin trousers, fitting tightly at the waist and flaring at the bottoms, while his muslin shirt tails hung loosely outside his belt. Away from the town, his shirt was discarded, and his baggy trousers rolled until he was covered by scarcely more than a breech-cloth. From the beginning, he was impatient to reach a certain place as soon as possible. I could make out only that there was to be dancing and gaiety, nor did I ever learn with absolute certainty the cause of the festivities.

The way from Los Peños to the upland was scarcely defined by travel. Certainly it could not be dignified as a trail, though the passing years have erased most of the details, a few spots can still be pictured, with remarkable clarity. In one place, the trail climbed a steep knife-edge ridge, such as may sometimes be seen on the sides of arid mountains. This ridge was so narrow that one could scarcely maintain footing. A slight misstep to either side would have sent the traveler spinning to dizzy depths below. In another place, remembered for its beauty, alone, the way skirted a swift, cool stream, overhung with verdure, and crossed and recrossed by great broad-winged bamboo butterflies of opalescent hues.

The night we finished the ascent to the Mexican Plateau (probably three or four days from the Coast), is distinctly remembered, on account of the unusual happenings. There were many Indians congregated at the place. With but little interest in their doings, and tired from the long trail, I stretched on a bench, and tried to defy their noise with sleep. Around a huge fire the Indians danced and sang and whooped. As the night wore on, their noise grew ever louder. At the time I regarded it all as a common "borracho" (drunk), which was disturbing to sleep, but of no other interest. But in the light of present knowledge, there seems little doubt that I slept through a Peyote Ceremony, and that the next day, just as innocently, I experienced the sensations produced by the drug.

When traveling in foreign lands, it has ever been my custom to live, as much as possible, as do the natives, and above all, to familiarize myself with what they eat. If those Indians offered something they themselves were eating, there is no doubt but that I would have eaten of it, and if, like Peyote, it had no characteristic flavor or noticeable quality, it is probable that by now it would be forgotten.

In the morning, after a cordial leave-taking from the Indians, we proceeded on our way. Soon a great change took place, a change that my words can most imperfectly express. The light became dazzlingly white, and shone with a superb brilliancy that is beyond description to those whose conception of light is derived from sunshine or firelight. There were no colors present, just a white radiance that did not resemble sunlight, nor even the burning of magnesium. Though my mind seemed clear, I did not realize that this light was not a reality. On the contrary, for many years I connected the Mexican Plateau with dazzling white light, and on a subsequent journey, I was bewildered to find the light normal. Soon I commenced to see animals, of species I had encountered during the months preceding, and also many others from distant regions. There were bears, jaguars, sea-lions, deer and many others. They were not ill-defined creations of the imagination, such as one may idly trace in stones or clouds, but were as true to life as if they lived and breathed. We passed among them. They were on both sides of the trail. Though my eyes saw them plainly, my mind was not deceived. At least I remember that I would ride up to a seal or deer, without surprise to have it dissolve into a stone or stump.

Many times during the years that followed, I have attempted to describe the great light, and the visionary animals of the Mexican Plateau, though until learning of the narcotic drug, Peyote, and its uses by the Indians among whom I was traveling, I attributed my hallucinations to a brain unbalanced by the effect of heat and light. But whatever the cause of the hallucination, the animals that stood in the bright light, remain as one of my plainest and most pleasing memories.

#### POISONS AND THEIR EFFECTS.

G. Roche Lynch, speaking on the above subject to the members of the British Pharmaceutical Society at a London evening meeting, gave the following definition of a poison:

"In popular language a poison is a substance which, when taken in small quantity, is capable of causing illness or death. But such a definition is far too restricted from a scientific point of view. For instance, it would obviously exclude certain of the less poisonous substances, such as copper, where very large doses are required to produce serious illness, and of course copper very rarely causes death. A more scientific definition is perhaps as follows: 'A poison is a substance which, when taken by the mouth or when absorbed into the blood, is capable of seriously affecting the health or of destroying life by its action on the tissues with which it immediately or after absorption comes into contact.'"

He referred to four landmarks in the history of toxicological investigation: 1836, Marsh; 1839, Orfila; 1844, Fresenius; 1850, van Stas.

Before closing, Mr. Lynch said that "the control of the distribution of poisons in Great Britain is largely in the hands of members of the British Pharmaceutical Society, and so long as it remains in such capable hands, I feel we shall have but little to fear. Of course, the restrictions are made, so it is not fair to the community virtually to prohibit the sale of poisons. But it is also clear that whatever changes are made will be in the regulation of the tightening, not loosening, of these regulations. Thus, I am a little apprehensive of some of the provisions of the proposed Poisons and Pharmacy Bill, in that it may place in the hands of those who have not had the training and experience of pharmaceutical chemists a number of powerful poisons which will in turn become easier of access to the public."