

Chapter One

PRESENT KNOWLEDGE OF HALLUCINOGENICALLY USED PLANTS: A TABULAR STUDY

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INTRODUCTION

Of the many plants known to have hallucinogenic activity, only a few have ever been purposefully employed in magico-medical, religious or other ceremonies. The reasons for this parsimonious use of psychoactive species is not wholly clear, but it is probable that man has learned by trial and error that some hallucinogenic species are otherwise too toxic for safety. Whatever the reason, it will be clear from the following pages that the chemistry even of those hallucinogenic plants valued highly in primitive societies is often unknown. Furthermore, it will be obvious that many of these hallucinogens have only very recently been botanically identified.

Inasmuch as I have published numerous detailed papers — both technical and popular — and have been a joint author of a book on hallucinogens, it has occurred to me that the most serviceable way of summarizing our present knowledge might be in tabular form. It is my hope that data thus set out may be more easily and more quickly consulted. The four

hallucinogenic species mentioned in connection with the frontispiece to this book are included in the illustrations (indicated in the Tables by an asterisk against the plate number). There is appended a relatively representative bibliography designed to help the specialist easily to find more information than that contained in the summarized tables.



PLATE 1. *Justicia pectoralis* Jacquin var. *stenophylla* Leonard.

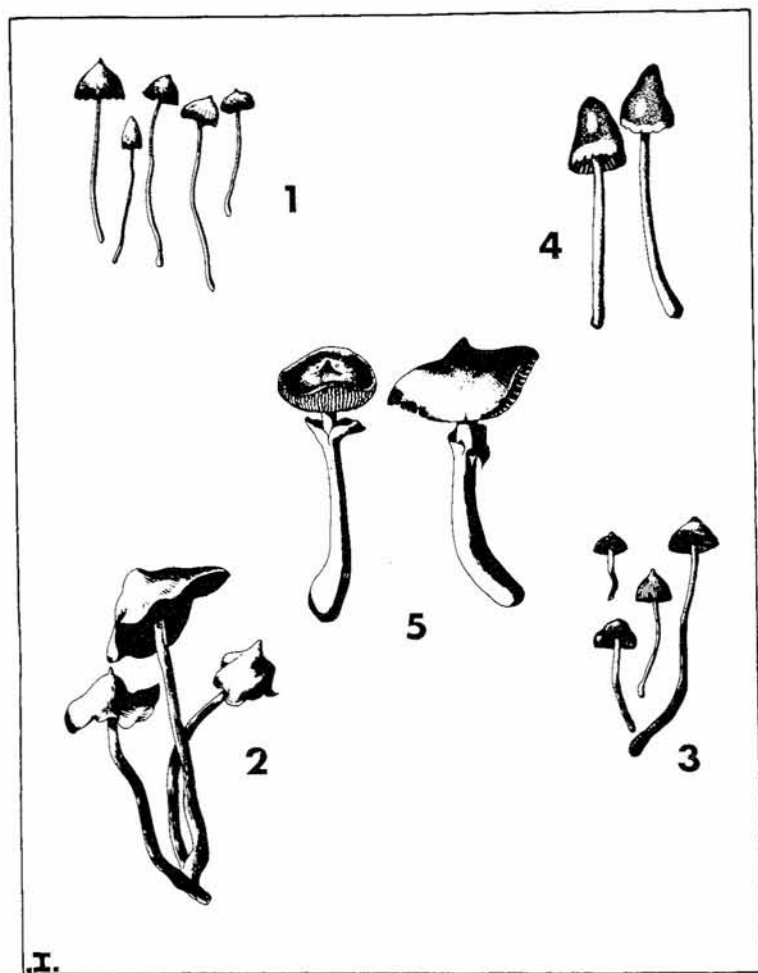


PLATE 2. Several mushrooms reported as hallucinogenic agents in Mexico.

1. *Psilocybe mexicana* Heim
2. *P. zapotecorum* Heim
3. *P. semperviva* Heim & Cailloux
4. *Panaeolus sphinotrinus* Fries
5. *Stropharia cubensis* Earle

(Drawn from Heim: Champignons toxiques et hallucinogènes)

TABLE OF NEW WORLD HALLUCINOGENS

Family and Plant	Region Where Used	Common Names
ACANTHACEAE (Acanthus Family)		
<i>Justicia pectoralis</i> var. <i>stenophylla</i> [and possibly other species] PLATE 1	Upper Orinoco-Rio	mashihiri
AGARICACEAE (Agaric Family)		
<i>Conocybe siliginoides</i>	Central and Southern Mexico	teonanacatl; teyhuintli;
<i>Panaeolus sphinctrinus</i> PLATE 2		tehuintlinana- catl (anciently);
<i>Psilocybe aztecorum</i> ; <i>caerule- lescens</i> ; <i>Hoogshagenii</i> ; <i>mexicana</i> ; <i>mexaeensis</i> ; <i>Was- sonii</i> ; <i>zapotecorum</i> ; et al. spp. PLATE 2*		siwatsitsintli; cui-ya; nti-ni- se; nti-si-tho-ye- le-nta-ha; ya-nte; nti-ki-so; t-ha- na-sa; to-shka
<i>Stropharia cubensis</i> PLATE 2		
CACTACEAE (Cactus Family)		
<i>Lophophora Williamsii</i> (<i>Echinocactus Williamsii</i> ; <i>Anhalonium Williamsii</i>)	Central and Northern Mexico; the United States; and parts of Canada	peyote; peyotl (anciently); hikuli; hikouri; mescal button
<i>Lophophora diffusa</i>		
<i>Trichocereus Pachanoi</i>	Ecuador; Peru; Bolivia	San Pedro; agua- calla; cimora (preparation)
COMPOSITAE (Composite Family)		
<i>Calea Zacatechichi</i> PLATE 3*	Oaxaca, Mexico	zacatechichi; thlepelakano
CONVOLVULACEAE (Morning Glory Family)		
<i>Ipomoea violacea</i> (<i>Ipomoea tricolor</i>)	Southern Mexico	badoh negro; piule negro

When Identified	How Used	Active Constituents
1968; 1971	Alone as snuff (?)	?
1956-1969 1939 1956-1969	Ingested	Psilocybine; psilocine
1887-1888	Fresh or dried tops of plant ingested	Mescaline; pellotine; anhalonidine; anhalamine; hordenine; lophophorine; and 32 other phenylethylamine or isoquinoline alkaloids and related bases
1944; 1967 1959	Prepared in a drink with other Mescaline plants	Large amounts of pellotine; small amounts of anhalidine, anhalamine and lophophorine; traces of mescaline; anhalonidine; N-methylmescaline; O-methylpellotine
1968	Leaves made into tea and also smoked	?
1960	Seeds ingested	Ergine; isoergine; chanoclavine; elymoclavine; ergometrine; plus several minor alkaloids

TABLE OF NEW WORLD HALLUCINOGENS (Cont.)

Family and Plant	Region Where Used	Common Names
<i>Rivea corymbosa</i> (<i>Turbina corymbosa</i>) PLATE 4*	Southern Mexico	ololiuqui (an- ciently); piule; la señorita; bitoo; yuca-yaha; bador
LABIATAE (Mint Family)		
<i>Coleus Blumei</i>	Oaxaca, Mexico (native of Asia)	el nene; el ahijado
<i>Coleus pumilus</i>	Oaxaca, Mexico (native of Asia)	el macho
<i>Salvia divinorum</i> PLATE 5	Oaxaca, Mexico	pipiltzintzintli (anciently); hierba de la Virgen; hierba de la Pastora; shka-Pas- tora
LEGUMINOSAE (Pea Family)		
<i>Anadenanthera peregrina</i> (<i>Piptadenia peregrina</i>)	Orinoco basin, Colombia, Venezuela and adjacent Brazil; possibly dis- junctly in Brazilian Amazon; anciently, West Indies	cohoba; yopo; niopa; paricá



PLATE 3.

Calea zacatechichi Schlecht.

When Identified	How Used	Active Constituents
1903-1941	Seeds ingested	Ergine; isoergine; chanoclavine; elymoclavine; lysergol; plus several minor alkaloids
1962	Leaves crushed and ingested	?
1962	Leaves crushed and ingested	?
1962	Leaves crushed and ingested	?
1801	Leaves prepared in form of snuff	Same tryptamines and beta-carbolines as found in <i>Vinola</i> (q.v.) plus 5-hydroxy-N, N-dimethyltryptamine

PLATE 4.

Rivea corymbosa (L) Hall.

PLATE 5.

Salvia divinorum Epling
& Jativa.



TABLE OF NEW WORLD HALLUCINOGENS (Cont.)

Family and Plant	Region Where Used	Common Names
<i>Anadenanthera colubrina</i>	Southern Peru; Bolivia; Northern Argentina	huilca; vilca; cebil; sebil
<i>Mimosa hostilis</i> PLATE 6	Eastern Brazil	vinho de jurema
<i>Sophora secundiflora</i>	Northern Mexico; South- western United States	red bean; mescal bean; colorines; frijolillos
LYCOPERDACEAE (Puff Ball Family)		
<i>Lycoperdon marginatum</i> ; <i>misticorum</i> PLATE 7	Oaxaca, Mexico	gi-i-sa-wa; gi-i-wa
LYTHRACEAE (Loosestrife Family)		
<i>Heimia salicifolia</i> PLATE 8*	Central Mexico	sinicuichi



PLATE 6.

Mimosa hostilis (Mart.)
Benth.

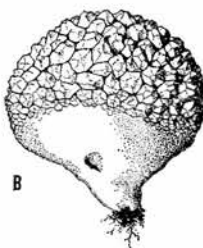
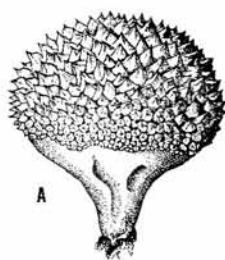
When Identified	How Used	Active Constituents
1916	Seeds prepared in form of snuff	N,N-dimethyltryptamine; 5-hydroxy-N,N-dimethyltryptamine; 5-hydroxy-N,N-dimethyltryptamine-N-oxide
1881; 1946	Root prepared in drink	N,N-dimethyltryptamine
1965	Seeds ingested	Cytisine
1958	Ingestion of plant	?
1936	Leaves slightly wilted are crushed in water and liquor and set out to ferment	Lythrine; cryogenine; heimine; sinine; vertine; lythridine; nesodine; lyofoline

TABLE OF NEW WORLD HALLUCINOGENS (Cont.)

Family and Plant	Region Where Used	Common Names
MALPIGHIACEAE (Malpighia Family)		
<i>Banisteriopsis Caapi</i> ; <i>inebrians</i>	Western Amazon (Bolivia, Brazil, Colombia, Ecuador, Peru); uppermost Orinoco (Colombia, Venezuela); Pacific Coast (Colombia, Ecuador)	ayahuasca; caapi; yajé; pinde; natema; kahi
<i>Tetrapteris methystica</i>	Brazil-Colombian boundary	caapi
MYRISTICACEAE (Nutmeg Family)		
<i>Virola calophylla</i> ; <i>calophylloidea</i> ; <i>theiodora</i> PLATE 9	Northwest Amazon (Brazil, Colombia) and headwaters of Orinoco (Venezuela)	ebena; nyakwana; yato; yakee; paricá

PLATE 7.

- A. *Lycoperdon marginatum*
 B. *Lycoperdon mistecorum*



When Identified	How Used	Active Constituents
1851	Bark prepared in a cold-water drink or boiled decoction. Said occasionally to be chewed or prepared for snuffing	Harmine; harmaline; tetrahydroharmine; harmol
1954	Bark prepared in cold water drink	?
[1938]; 1954; 1968	Resin in bark prepared in snuff. Occasionally licked raw or ingested in form of dried pellets. Some evidence <i>Virola</i> may be smoked	Tryptamines and β -carboline; N,N-dimethyltryptamine; N-methyltryptamine; 5-methoxy-N,N-dimethyltryptamine; 5-methoxy-N-methyltryptamine; 2-methyl-6-methoxy-1,2,3,4-tetrahydro- β -carboline; 1,2-dimethyl-6-methoxy-1,2,3,4-tetrahydro- β -carboline



PLATE 8.

Heimia salicifolia Link &
Otto



PLATE 9.

Viola theiodora (spr.
ex Bth.) Warburg

TABLE OF NEW WORLD HALLUCINOGENS (Cont.)

Family and Plant	Region Where Used	Common Names
SOLANACEAE (Nightshade Family)		
<i>Brunfelsia grandiflora</i>	Locally and disjunctly in Western Amazonia (Bolivia; Colombia; Ecuador; Peru)	chiric-caspi; chiric-sanango; borrachero
<i>Cestrum laevigatum</i>	Brazil	dama da noite
<i>Datura innoxia</i> (<i>D. meteloides</i>); <i>Stramonium</i> ; <i>discolor</i> ; <i>Wrightii</i> ; <i>ceratocaula</i>	United States, Mexico	jimson weed; thorn apple; tolo-atzin (anciently); a-neg-la-kya; torna-loco
<i>Datura</i> (<i>Brugmansia</i>) <i>aurea</i> ; <i>arborea</i> ; <i>candida</i> ; <i>dolicho-carpa</i> ; <i>sanguinea</i> ; <i>suaveolens</i> ; <i>vulcanicola</i>	Andean highlands (Colombia; Ecuador; Peru; Chile) and (<i>D. suaveolens</i>) Westernmost Amazon (Colombia; Ecuador; Peru) and Pacific Coast of Colombia	borrachero; huanca-cachu; huanto; chamico; sampanilla; floripondio; maicoa; toa; tonga
<i>Tochroma fuchsiioides</i>	Colombian Andes	borrachero

PLATE 10.

Latua pubiflora (Gris.) Phil.



When Identified	How Used	Active Constituents
1967	Drink prepared from leaves and bark	?
1973	Leaves smoked	?Possibly saponines; gitogenin; digitogenin
During 1800's	Seeds or leaves usually prepared in drink	A variety of tropane alkaloids, mainly scopolamine, hyoscyamine, atropine
During past century	Seeds or leaves usually prepared in drink	A variety of tropane alkaloids, mainly scopolamine, hyoscyamine, atropine
1970	Leaves prepared in form of tea	?Possibly alkaloids

TABLE OF NEW WORLD HALLUCINOGENS (Cont.)

Family and Plant	Region Where Used	Common Names
<i>Latua pubiflora</i> PLATE 10	Chile	árbol de los brujos; latué
<i>Methysticodendron</i> <i>Americum</i>	Southern Andes of Colombia	culebra borrachero; mitsway borrachero

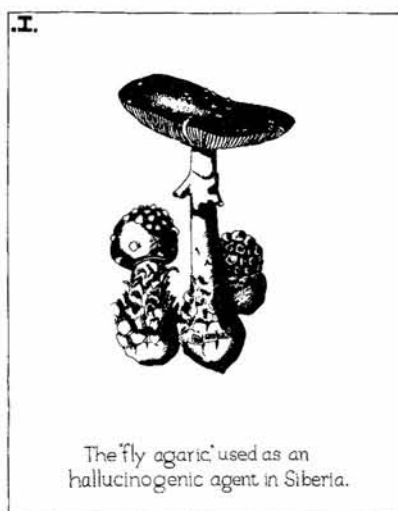
TABLE OF OLD WORLD HALLUCINOGENS

Family and Plant	Region Where Used	Common Names
AGARICACEAE (Agaric Family)		
<i>Amanita muscaria</i> PLATE 11	India (anciently); north- eastern and western Siberia	soma (anciently); fly agaric
APOCYNACEAE (Dogbane Family)		
<i>Tabernanthe Iboga</i> PLATE 12	Gabon, Congo	iboga

PLATE 11.

Amanita muscaria Fries
ex Linnaeus

(Drawn from Heim:
Champignons toxiques
et hallucinogènes)



When Identified	How Used	Active Constituents
1858	Leaves prepared in drink. Fresh fruits reputedly also toxic	Hyoscyamine; scopolamine
1955	Tea of leaves drunk	Mainly scopolamine; atropine; two unidentified alkaloids

When Identified	How Used	Active Constituents
1967 (India); 1730 (Siberia)	Dried mushroom ingested or drunk in fruit juices or reindeer milk	Muscimole; other minor ibotenic acid derivatives
[1864]; 1889	Root ingested	Ibogaine and eleven other indole alkaloids



PLATE 12.

Tabernanthe Iboga

TABLE OF OLD WORLD HALLUCINOGENS (Cont.)

Family and Plant	Region Where Used	Common Names
CANNABACEAE (Hemp Family)		
<i>Cannabis sativa, indica, ruderalis</i>	Genus originally Asiatic, hemo; now used virtually on all continents	marihuana; maconha
MYRISTICACEAE (Nutmeg Family)		
<i>Myristica fragrans</i>	Southeast Asia	mace; nutmeg; madashaunda
SOLANACEAE (Nightshade Family)		
<i>Atropa Belladonna</i>	Europe (in Middle Ages)	belladonna
<i>Hyoscyaminus niger</i>	Europe (in Middle Ages)	henbane
<i>Mandragora officinarum</i>	Europe (in Middle Ages)	mandrake
ZINGIBERACEAE (Ginger Family)		
<i>Kaempferia Galanga</i>	New Guinea	galanga, maraba
ZYGOPHYLLACEAE (Caltrop Family)		
<i>Peganum Harmala</i>	Asia	Syrian rue, harmala

When Identified	How Used	Active Constituents
Anciently	Resin eaten or smoked; crushed leaves and inflorescences smoked; dried plant powdered and drunk in water or milk (India: <i>bharg</i>); dried plant powdered and made into candies with sugar, spices (India: <i>majun</i>); dried pistillate inflorescences smoked with tobacco or eaten or drunk (India: <i>ganja</i>); pure resin eaten with spices (India: <i>charas</i>); often taken mixed with other narcotics, e.g. seeds of <i>Datura</i>	Mainly tetrahydrocannabinol. Less active or questionably active are the more than 20 known cannabidiolic acids, cannabidiol or related compounds
Anciently	Nutmeg ingested in powdered form or sniffed.	Probably myristicine and other aromatic fractions of oil of nutmeg
Anciently	An ingredient of witches' brews	Hyoscyamine (principally); scopolamine; atropine
Anciently	An ingredient of witches' brews	Hyoscyamine (principally); scopolamine; minor alkaloids; tropine, scopine, apoa-tropine, cuscohygrine
Anciently	An ingredient of witches' brews	Hyoscyamine (principally); scopolamine; nor-hyoscyamine; cuscohygrine (mandragorine)
1962	?	?Possibly a constituent of the essential oils
Anciently	?	Harmine, harmaline

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