

Table of contents

Abbreviations	11	Lophophora sp. var. Vieska	122
IMPORTANT Disclaimer & Cautionary Statement to Readers	13	Some forms not widely accepted as specific designations	123
Opening comments	19	Lophophora fricii Habermann	123
Endnotes for Opening comments	29	Lophophora jourdaniana Habermann	124
Chapter One	33	Lophophora williamsii var. caespitosa Hort.	125
Random thoughts from a variety of minds	56	Lophophora lutea	127
Notes for Chapter One	61	"Other" peyote species	127
A Few Similarities between the Drug Wars and the Witch Craze (after Szasz)	78	Lophophora williamsii (Lemaire ex Salm-Dyck) Coulter	129
Chapter Two	81	Common names used for or names applied to peyote	129
The Peyote 'crisis'	81	Other names encountered in connection with Peyote	132
Some statistics from the Texas DPS	82	Folk uses of Lophophora williamsii	133
Some suggestions	88	Occurrence and distribution	133
Chapter Three	93	Flora often associated with peyote	135
The Distribution & Occurrence of Mescaline	95	Description and characteristics	136
The reported distribution of mescaline containing species within the family Cactaceae	96	Moisture content of Peyote	139
Distribution of alkaloids within cacti	98	Reported analysis of L. williamsii:	140
Traces, Questions or Errors	100	Mescaline content of Peyote	140
Aztekium ritteri (Bödeker) Bödeker	101	Alkaloid content of Peyote	141
The <i>Gymnocalycium</i> species	102	An Abbreviated Chronology of the Identification of the Peyote alkaloids	144
Reports of the occurrences of mescaline within the <i>Gymnocalycium</i> species	108	Effects of peyote summarized	146
Islaya minor Backeberg	117	Pharmacological overview of the non-mescaline alkaloid content of peyote	146
Lophophora diffusa (Croizat) H. Bravo	118	Alkaloids identified in peyote	148

A couple points of potential interest	154	Descriptions of <i>Delospermas</i> mentioned in positive assays	209
References on peyote that may be of potential interest to readers	158	Cultivation of the <i>Delosperma</i> species	212
Peyote Music	161	<i>Delosperma</i> species in which we have detected the tentative presence of DMT and/or 5-MeO-DMT	214
A portion of the first Inquisition Law against Mescaline Containing Plants (Peyote)	162	Other members of the Aizoaceae	216
the genus <i>Opuntia</i>	163	Summary of other Aizoaceous TLC alkaloid screening	216
<i>Pelecyphora aselliformis</i> Ehrenberg	171	Some Other Succulents Held to be Sacred, Medicinal or Useful	217
<i>Pereskia</i> Mill.	172	Miscellaneous Notes on other members of the Aizoaceae	221
<i>Pereskiopsis</i> Britton & Rose	177	Miscellaneous Notes on some additional Aizoaceous Chemistry	222
<i>Polaskia chende</i> (Gosselin) Gibson & Horak	177	Endnotes for Some other Succulents	226
<i>Pterocereus</i> (?) <i>gaumeri</i> (Britton & Rose) MacDougall & Miranda	179	Chapter Five	231
<i>Stenocereus beneckeii</i> (Ehrenberg) Buxbaum	180	Mescaline; Physical Data & Toxicity	233
re: Djerassi reporting the detection of no alkaloid	182	Free base	233
<i>Stenocereus stellatus</i> (Pfeiffer) Riccobono	183	LD50	234
<i>Stenocereus treleasei</i> (Britton & Rose) Backeberg	184	Mescaline hydrochloride	235
<i>Stetsonia coryne</i> (Salm-Dyck) Britton & Rose	185	Mescaline sulfate	237
The <i>Turbinicarpus</i> species	187	Mescaline's action	238
Comments on the occurrence & distribution of mescaline	194	Dosage	239
Chapter Four	203	Isolation	239
Some Other Succulents	203	Synthesis	239
Some Other Succulents	204	Spectrofluorometry	241
Notes on the AIZOACEAE	205	Mass Spectra	242
		Biosynthesis of mescaline (discussions, studies and route proposals)	242

SC3: Table of Contents

Assays	242	Suggested readings on psychological and psychiatric investigations of peyote and its alkaloids	258
Some Rf values reported for Mescaline	242	Taraxein	258
Some Color Reagents and Reactions Reported For Mescaline	244	Tolerance to mescaline	259
Some color reactions of Mescaline	246	Cross-tolerance	260
Mescaline Endnotes	247	Interactions between hallucinogenic drugs	261
Chapter Six	249	Some odds and ends	261
Pharmacology & Metabolism of Mescaline	249	Miscellaneous drug interactions with mescaline	262
Physical & psychological effects in humans	251	Use of MAOIs with mescaline	263
A few observations published on the phenomenon of mescaline experiences	253	Assorted drug interactions reported in animals	267
Individual variability of drug response	256		



Lophophora williamsii

Inhibitors of various components of mescaline-induced effects (in animals)	Notes on Cultivating Some Other Cacti
269	315
Pharmacology in animals	Desert varnish
270	323
Mechanism of action (What we don't know)	Comments on "other cacti"
275	324
Some more recent thought	A comment on night blooming cacti
277	325
Suggested readings on the pharmacognosy and physiology of peyote and its alkaloids	Cactus Cultivation Endnotes
278	326
Distribution, metabolism & excretion reported in animals	Chapter Eight
279	329
Metabolism and excretion reported in humans	Utilization
283	329
Suggested readings on the metabolism of mescaline	Peyote & mescaline; the plant & its use
284	331
Biochemistry of mescaline (Miscellaneous observations)	Other ways of ingesting peyote and San Pedro
284	336
Animal toxicity summary	Utilization endnotes
286	340
Mescaline pharmacology endnotes	Making an orally active tincture
286	343
Chapter Seven	Chapter Nine
293	345
the Cultivation & Propagation of Cacti	Purifying and Producing Mescaline.
293	345
Growing cacti from seed	Extracting and processing mescaline
295	347
Cultivation of Peyote	A few words on emulsions
298	352
Grafting	Thoughts for the explorers among us
299	353
Cultivation of San Pedro	Suggestions for investigation or production using modern technology
302	354
Physically handling cacti	Related studies on enzymes and some useful purification procedures, in, mostly, unrelated species
305	355
Shipping & receiving a cactus	Purification & isolation endnotes
305	356
Propagation of San Pedro by cuttings	Chapter Ten
307	359
Problems & pests	Abstracts of Some Useful Manipulations
310	361
	Chapter Eleven
	367
	Chromophoretic Reagents & Assays
	369

Chapter Twelve 373	Suggested reading 397
Abstracts of useful assay approaches 375	Cactus Phenethylamines: A Tabular Key to their Structural Formulas 399
Spectrophotometry and other approaches 378	Cactus Isoquinolines: A Tabular Key to their Structural Formulas 403
Retention times reported in Gas Chroma- tography 379	Mescaline's Krebs acid conjugates & other compounds 408
Chapter Thirteen 381	Cactus Triterpenoids & similar molecules: A Tabular Key to their Structural Formulas (The following includes several related compounds that do not occur in cacti; these are included for comparative purposes) 409
Miscellany 381	Useful properties of some solvents com- monly used in chromatography 413
Some authors, namesakes & contributing researchers 383	
Some Knize Trichocereus offerings as they have appeared listed by KK# 387	
Suggested reading concerning phosphenes, drug or mind interactions with rhyth- mic stimuli (entrainment), and entoptic imagery in rock & other shamanic art 396	



Polaskia chende

References

417

ICactus alkaloid cross-list

469

Index

475

Some questions that still remain

497

Acknowledgements

511



***Trichocereus bridgesii* W.Baker 5452**
A bridgesii initially collected as a *pachanoi*.

A proven active form that is purported to have indigenous use but we have been unable to locate any details.



Petrified peyote

The first reference to ‘petrified peyote’ was a misnomer in reference to the Shumla Caves’ handmade 5 millenia old peyote effigies. (See Terry *et al.* 2006 for details.)

More recently ‘petrified peyote buttons’ have been offered for sale at the Tucson Gem & Mineral Show and elsewhere.



Abbreviations

μm = micrometer = micron	ml = milliliter
Å = angstrom	MLD = minimum lethal dose reported in literature
BCE = before current era	mM = milliMolar
BP = before present	mm = millimeter
bp= boiling point	mmp = mixed melting point
cm = centimeter	mp = melting point
dec. = with decomposition	ms = mass spectroscopy
dm = decimeter (10 cm.)	na = not available/applicable
<i>et al.</i> = <i>et alia</i> (“& others”)	nd = not detected
f = forma	nm = nanometer
ft = foot	nn = <i>nomen nudum</i> (named but lacking any description)
gc = gas chromatography	RT = room temperature
gm = gram	sc = subcutaneous
in = inch	sn = <i>sine numero</i> (lacking a collection number)
im = intramuscular	sp = species (singular)
ip = intraperitoneal	spp = species (plural)
ir = infrared	ssp = subspecies
iv = intravenous	subsp = subspecies
kg = kilogram	TD = toxic dose
kV = kilovolt	TLC = thin-layer chromatography
LD ₁₀₀ = lethal dose 100%	uv = ultraviolet
LD ₅₀ = lethal dose 50%	v = volt
mμ = millimicron (= nm)	var = variety
m = meter	X = indicates a hybrid
ma = milliamp	
MAO = monoamine oxidase	
MAOI = mao inhibitor	

***Trichocereus peruvianus* (Australia)**

These appear on first glance to vaguely resemble dried peyote buttons but are either an agate or another form of chalcedony with a fine drusy quartz coating on one side and lack critical features (such as ribbed divisions or the distinctive apex) that are typically found in peyote buttons.

They are amazing natural treasures but in our opinion are clearly not of botanical origin.



Compare the above to the dried peyote button on page 145.

Rock sold as a petrified peyote button (front & back view)