[redacted]

7 February 1956

A/B, III, 9,5

MEMORANDUM FOR: THE RECORD

SUBJECT: Exploration of Potent Plant Resources in the Caribbean Region

The assignment had a four-fold purpose, namely:

1. To collect specific plant products and other promising drugs in sufficient bulk for study, appraisal and exploitation.

2. To gain, through personal contact with this region, the desired orientation concerning the natural drug resources, the institutions and personnel engaged in developing or testing them, and individuals especially familiar with native potent plants and medicines.

3. To explore every opportunity to enrich our knowledge of hidden treasures in potent plant resources, either native or introduced, to learn of their availability, their place of growth and the season of maturity, and to record their reported or proven value.

4. To collect published data, manuscripts, lists and notes dealing with potent plant resources found in the Caribbean and neighboring regions.

The following twelve countries or regions were visited and explored as thoroughly as time permitted: Puerto Rico, Trinidad, Tobago, Martinique, Dominica, Guadalupe, St. Thomas, and the Water Isle of the Virgin Islands, the Dominican Republic, Haiti, Jamaica, and Cuba. In addition, personal inquiries were made in Miami in contact with Government officials engaged in plant introduction, in the [redacted] with staff members active in the study of plants and plant products. A chart of the area explored is attached.

C

The results were most gratifying, inasmuch as provisions made for the trip, the season selected, and the weather were very favorable for observation and collection, and the fullest cooperation was obtained from all officials and other individuals contacted.

To assure the desired complete success of the exploration, the following recommendations are respectfully suggested.

[redacted]

1. Evaluation of the most promising potent agents collected, and exploitation where warranted.

2. The conclusion of cooperative agreements such as those with the [redacted] C

3. To establish or set aside token-cooperative funds to pay the expenses incurred for labor in growing, collection and transportation.

4. To maintain the contacts made and develop new ones for the continued exploration of additional natural potent resources, including especially the mushrooms and other fungi, having psychogenic properties. Particularly promising sources for further study are the native Carib ceremonial drugs of Dominica and the domestic cerebral drugs of the Virgin Islands and Haiti.

5. To arrange for adequate cover for field contacts, such as the functioning as a consultant for the [redacted] C or the [redacted] with the continued cooperation of [redacted]

[redacted] A

Attachments:
I Institutions and Personnel Contacted
II Caribbean Collections, 16 Dec 54 - 25 Jan 55
IIa Potential Sources of Potent Plant Products
IIb Potential Sources of Potent Fungal Products
IV Caribbean Collections, 16 Dec 54 - 25 Jan 55

Distribution:
Orig [redacted] A C

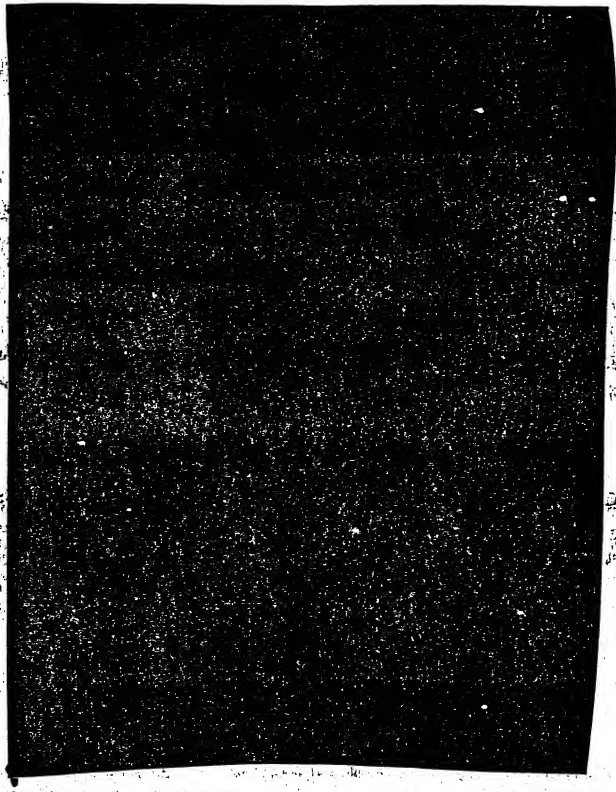
[redacted] A

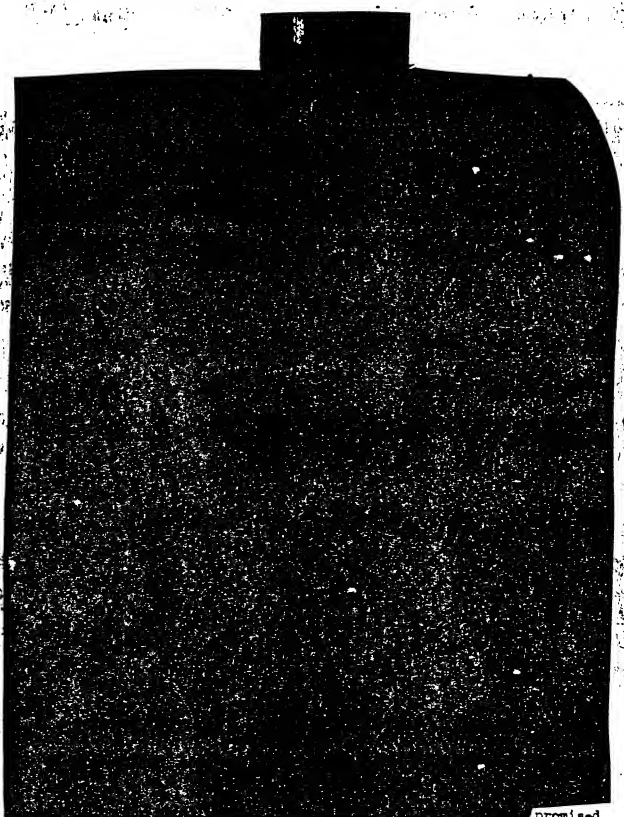
[redacted]

I Institutions and Personnel Contacted:

[redacted]

[redacted]





promised

to cooperate in any survey of poisonous or potent plants, as well as in efforts to grow them under control.

[redacted]

MEMO - See page 2 of I Institutions and Personnel

1 - 17 - 53

1. Set up a cooperative agreement and fund between your office in [redacted]. C

2. Ask us for the seed and plant samples you wish.

3. We will determine the cost of obtaining the samples and shipping them to you.

4. Your office deposit the necessary fund in the cooperative account.

5. We will have the material collected and send it to you.

6. We will pay the expense incurred from the cooperative fund.

[redacted] A

[redacted]

[redacted]

II CARIBBEAN COLLECTIONS, DECEMBER 16, 1954 - January 25, 1955:

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Criminal Action
1	Abrus Britonni ?	seed	Virgin Isles	Leguminosae	Abrin ?	
2	Abrus precatorius	seed	Martinique	Leguminosae	Phytotoxin	Used in malingering
	Abrus precatorius	seed	Virgin Isles	Leguminosae	Phytotoxin	Toxic
		root	India	Leguminosae		Abortive
3	Adenanthera pavonina	seed	Dominica	Leguminosae	Alkaloid ?	Intoxicant
4	Aleurites moluccana	fruit, seed	Puerto Rico	Euphorbiaceae	Phytotoxin	Toxic
5	Andira inermis	fruit, seed	Virgin Isles	Leguminosae	N-methyltyrosine	Narcotic
6	Annona muriatica	fruit, seed leaves	Dominica	Anonaceae	Muricine, Muricinine	Sedative
7	Barringtonia speciosa	fruit, seed	Haiti	Lecythidaceae	Saponin ?	Fish poison
8	Blighia sapida	fruit, seed	Dominica	Sapindaceae	Saponin ?	Very toxic, unripe
	Blighia sapida	aril, pulp	Jamaica	Sapindaceae		Very toxic, overripe
9	Caesalpinia coriaria	fruit, seed	Jamaica	Leguminosae		Disinfectant, Antiperiodic
10	Datura metel	fruit, seed	Puerto Rico	Solanaceae	Scopolamine, Hyoscyamine	Stupefacient
11	Datura stramonium	fruit, seed	Puerto Rico	Solanaceae	Hyoscyamine	Antispasmodic, Arrow Poison

[redacted]

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Criminal Action
12	Datura Tatula	fruit, seed	Puerto Rico	Solanaceae	Hyoscyamine ?	Antispasmodic, Arrow Poison
13	Dieffenbachia seguina	stem, leaves	Puerto Rico	Araceae	?	Painful swelling, temporary dumbness
		roots, juice			Oxalic acid	
		stem	S. America	Araceae	Oxalic acid	Addition to Arrow Poison
14	Diospyrus ebenaster	fruit, seed	Dominica	Ebenaceae	?	Fish Poison (umripe fruit)
15	Erythrina indica	fruit, seed	Cuba	Leguminosae	Alkaloids	Psychogenic agent
16	Erythrina senegalensis	seed	Jamaica	Leguminosae	Erythramine ?	Psychogenic agent
17	Ficus Benjamina	fruit, seed	Dominica	Moraceae	Ficin ?	Proteolytic enzyme in latex
18	Hura crepitans	fruit, seed	Puerto Rico	Euphorbiaceae	Phytotoxin	Fish poison, latex used in arrow poison
		latex	Dom. Repub.		Hurin	Arrow poison mixtures
19	Jatropha curcas	fruit, seed	Puerto Rico	Euphorbiaceae	Phytotoxin curcin	Toxic
20	Jatropha multifida	fruit, seed	Virgin Isles	Euphorbiaceae	Phytotoxin curcin ?	Toxic
21	Jatropha curcas	husks	Jamaica	Euphorbiaceae	Phytotoxin curcin	Toxic, resin, irritant
	Jatropha gossypifolia	leaves	W. Indies	Euphorbiaceae	?	Drastimus, abortive
22	Mucuna pruritum	Pods, seeds	Puerto Rico	Leguminosae	Mucunine, Mucunadine ?	Physostigmine-like [illegible]

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Criminal Action
23	Mucuna Sloani	pods, seeds	Puerto Rico	Leguminosae	Mucunine, mucunadine ?	
24	Ormosa Krugii	seeds	Puerto Rico	Leguminosae	Ormosin, Ormosinine ?	Psychogenic agent
25	Ormosa Monosperma	seeds	Dominica	Leguminosae	Ormosin, Ormosinine ?	Psychogenic agent
26	Ormosa dasycarpa	seeds	Dominica	Leguminosae	Ormosin, Ormosinine ?	Morphine like ?
27	Piptadenia peregrina	fruit, seeds	Puerto Rico	Leguminosae	Bufotenin, approx. 70%	
			Dominica	Leguminosae	Bufotenin	Psychogenic narcotic
			Haiti		Bufotenin	Stimulant
28	Rhynchosia phaseoloides	fruit, seeds	Puerto Rico	Leguminosae	?	Psychogenic
29	Rhynchosia minima	seeds	Cuba	Leguminosae	?	Toxic
30	Rivea corymbosa	fruit, seeds	Cuba	Convolvulaceae	?	Psychogenic
		buds, flowers	Tobago	Convolvulaceae	?	Intoxicant
		leaves	Cuba	Convolvulaceae	?	
		stems, roots	Cuba	Convolvulaceae	?	
		honey	Cuba	Convolvulaceae	?	Intoxicant
31	Sophora tomentosa	pods w/seeds	Cuba	Leguminosae	Cytisin ?	Psychogenic
	Sophora occidentalis		Trinidad			

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Original Action
32	Tabernaemontana citrifolia	roots	Guadalupe	Apocynaceae	Tabernaemontanine Coronarine ?	Latex Arrow poison ?
33	Tephrosia cinerea	pods, seeds	Dominica Guadalupe	Leguminosae	Tephrosin ?	Fish poison, toxic admixture to arrow poison

[redacted]

IIIa Potential Sources of Potent Plant Products*

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Criminal Action
1	Acnistus arborescens "Wild Tobacco"		Guadalupe Trinidad, Tobego	Solanaceae		Toxic, narcotic
2	Adansonia digitata "Guinea Tamarind"	fruit	St. Thomas	Bombaceae		
3	Amaranthus spinosus "Stupid Bush"		St. Thomas Puerto Rico	amaranthaceae		Psychogenic agent Pernicious weed
4	Annona reticulata	fruit, seed	St. Thomas, Dominica	Annonaceae		Narcotic, specific antidysent, vermifuge
5	Browaea latiflora grandiflora	bud	St. Thomas	Leguminosae		Menstruant
6	Cajanus cajanus indicus	leaves	St. Thomas Haiti, W. Indies	Leguminosae		Against toothache "Abscess in mouth" abortive
7	Cecropia peltatum	latex	Haiti, Trinidad	Moraceae	Alkaloid cecuelyine	Caustic
	Cecropia mexicana		Mexico		Alkaloid cecropine	
8	Cerbera odollam G.	seeds	Trinidad	Apocynaceae	Cerberin	Poisonous
9	Cestrum nocturnum	leaves	Haiti, Mexico Trinidad	Solanaceae	Cestrumid ?	Antispasmodic, anti-epileptic
10	Cissampelos pareira		Haiti, Puerto Rico Mexico	Menispermaceae	Alkaloids Bebeerine	Antidote

[redacted]

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Criminal Action
11	Clibadium surinamensis Clibadium sylvestre "Nivrage"	leaves	St. Thomas Guadalupe	Compositae		Fish poison
12	Cosmos caudatus H.B.K.	leaves	Trinidad, Puerto Rico Haiti	Compositae	Volatile oil	
13	Croton humilis L.	leaves	St. Thomas, Haiti, Mexico	Euphorbiaceae	crotonoside	Nerve stimulant
14	Euphorbia terenilla	latex	St. Thomas	Euphorbiaceae		Very potent
15	Furcraea tuberosa (Fourcroya tuberosa)	roots juice	St. Thomas Puerto Rico	Amarylidaceae	Saponin ?	Poisonous
16	Fumaria muralis S.		Haiti	Papaveraceae	Fumarine, protopine	Narcotic
17	Gliricidia sepium	leaves bark twigs	Haiti	Leguminosae		Cure of fright & terror, rodent poison
18	Hippomane mancinella	latex	West Indies	Euphorbiaceae		Arrow poison, very toxic, causing temporary blindness
19	Hibiscus pretens Roxb.	seeds	Mexico	Malvaceae	Gluco-alkaloid ?	Intoxicant, anti-snake bite.
20	Ipomoea simata	leaves	Trinidad, Tobago	Convolvulaceae		Poisonous to cattle

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Criminal Action
21	Lactuca sativa ?	latex ?	Guadalupe Haiti	Compositae	Lactucin, hyosoyam.	Narcotic
22	Leucaena glauca L.B.	leaves	St. Thomas, Haiti Trinidad	Leguminosae		Causing shedding of hair (Mane & tail of horses)
23	Lonchocarpus violaceous	wood	West Indies	Leguminosae	Rotenone ?	Fish poison
24	Momordica charanthia		West Indies	Cucurbitaceae	Alkaloids, incl. momordicine	Calmant
25	Morinda citrifolia Morinda Douleur citrifolia	leaves	St. Thomas Haiti	Rubiaceae	Morindin (root, bark)	Analgesic
26	Panax morototoni A.	roots ?	Guadalupe	Araliaceae		Excellent analgesic
27	Parthenium hysterophorus L.		West Indies	Compositae	Parthenin	Analgesic
28	Passiflora laurifolia		Trinidad Haiti	Passifloraceae	Passiflorin ?	Opium-like
29	Passiflora quadrangularis	root	Guadalupe Haiti	Passifloraceae		Toxic ?
30	Paullinia cururu L.	fruit	Guadalupe	Sapindaceae	Curarine ?	Fish poison
31	Paullinia pinnata	plant	W. Indies, Haiti			Fish poison
32	Physalis angulata	roots	Puerto Rico, Haiti	Solanaceae		Analgesic

No.	Plant Material	Part Collected	Source	Family	Constituent	Physiological and Criminal Action
33	Phytolacca icosandra		Guadalupe Haiti	Phytolaccaceae		Narcotic
34	Piptadenia flava	fruit, seed leaves	Trinidad	Leguminosae	Bufotenin ?	Stimulant ?
35	Pithecolobium arboreum "Poison Lasinatte"		Mexico, Haiti, W. Indies	Leguminosae	Pithecolobine ?	Psychogenic agent ?
36	Roupala montana "Bois bande"	bark	W. Indies	Proteaceae		Nerve stimulant
37	Scoparius dulcis		Guadalupe, Haiti, Puerto Rico	Scrophulariaceae	Alkaloid	Opium substitute emetic
38	Solanum mammosum	fruit	Dominica Haiti Trinidad	Solanaceae	Alkaloids ?	Narcotic
39	Spigelia anthelmia	leaves	Trinidad Haiti Guadalupe Puerto Rico	Loganiaceae	Alkaloid spigeline ?	Poisonous vermifuge
40	Strychnos gravi G.	seed	Haiti	Loganiaceae	Strychnine, brucine ?	Convulsant ?
41	Verbesina alata "Information bush"	?	St. Thomas Haiti Puerto Rico	Compositae		Psychogenic agent ?
42	Vulcamira aculeata		St. Thomas	Verbenaceae		Antispasmodic

* Most promising sources are underlined.

[redacted]

IIIb Potential Sources of Potent Fungal Products

	Sources	Season
Mushrooms, believed to affect the Central Nervous System.		
Amanita muscaria Linn.	Fairly common	Fall
" pantherina D.C.		
" phalloides Fr.	Local	Summer
" verna Bull.		
" Mappa Linn. (Amanita virosa, Amanita citrina)		
" strobiliformis	Woods	Midsummer
Boletus calopus		
luridus Schaaff—red-pored Boletus		
pateras Lenz—white-topped Boletus		
Stropharia coronilla		
semiglobata—with hemispherical cap, on dung	Common	
stercoaria	Mexico	Summer
mazatecorum		
Inocybe asterospora	geophylla	
brunnea	hirsuta	
cincinnata	lamiginosa	Europe only ?
descissa	obscura	
enthales	praetervisa	
Clitocybe cerussata		
dealbata		
illudens Schw.—Giant Clitocybe	Canada, Florida	Summer
phyllophila		
pithyophila		
sudorifica (Sweat producing)		
virulosa		
Hebeloma festibile		
Conrinus atramentarius (with alcohol) "Inky Cap"	Kenneth Square Mushroom Beds	
parcoticus, with narcotic odor, with deliquescent gills		
Gyromitra esculenta - ?		
Lepiota Morgani—in fairy rings	Lawns, local	Summer
Lactaria torminosus Fr.—Large-sized with colored acrid latex		
Lactarius		

	Source	Season
Panaeolus campanulatus Linn. sphinctrinus ovatus papilionaceus retirugis—gills non-deliquescent Venenosus Murr. fimicola Fr.	Mexico N.S. Wales	Summer (Rainy season)
Russula emetica Fr. extremely acrid		Summer, Fall
Psilocybe cubensis	Cuba (on dung)	

NOTE: Those items underscored are the most important potential sources.

Selected References

Charles, V.K. "Some Common Mushrooms and How to Know Them", U.S. Department of Agriculture Circular 143, 1946.

Dujarric R. de la Riviere and Roger Heim. The Toxic Mushrooms. "L'Encyclopedie Medico-Chirugicale", Paris, 1938 (New edition in preparation) (Over 600 references).

Singer, R. "The Agaricales (Mushrooms) in Modern Taxonomy", Tucuman, Argentine Republic, 1949 (with over 350 references).

Kauffman, C.H. "The Agaricaceae of Michigan", Michigan Geological-Biological Survey, Vol. I and II, 1918.

Ricken, A. "The Agaricaceae of Germany and Border Countries", Leipzig, 1915.

Smith, A.H. "Studies on the Purple-Brown Spored Agrics", Mycologia, 31.544-667, 1939.

Hesler, L.R. "New and Unusual Agarics from the Great Smoky Mountains National Park", Journal Elisha Mitchel, Sc. Soc. 56, 302-24, 1940.

Hesler, L.R. and Smith, A.H. "Notes on Agarics from British Honduras", Contr. Mich. Herb. 1.21-28, 1939.

Smith, A.H. "Certain Species of Inocybe in the Herbarium", Pap. Mich. Academy Sc. Arts Letters, 24. 93-106, 1939.

Smith, A.H. "Studies on North American Agarics", Contr. Univ. Herb. 5.1-73, 1941.

[redacted]

IV Caribbean Collections—16 Dec 54 through 25 Jan 55:

Botanical books, guides, lists of toxic, insecticidal, medicinal, nursery plants and pamphlets:

Valcs, Israel and van Overbeek, J.
Plantes Indesirables Tropicales. Editorial Universitaria, Rio Piedras, Puerto Rico, 1950.

Williams, R. O. and Williams, R.O. Jnr.
Plants in Trinidad and Tobago. Port of Spain, Trinidad, British West Indies, 4th edition revised 1951.

Winters, H. F.
Large-Leaved O. Plants for the Tropics. Circular #35, Federal Experimental Station, Mayagues, Puerto Rico, 1952.

Hume, E. P.
O. Shrubs for the Tropics. Circular #34, Federal Experimental Station, Mayagues, Puerto Rico, 1951.

Hodge, W. A.
A Botanist's Dominica Diary. Scientific Monthly, March and April, 58, 185-, 281-, 1944.

Hodge, W. A. and Taylor, Douglas
List of Botanical and Medicinal Resources of Dominica, unpublished.

Augustine, M.
Trinidad Medicinal Plants submitted by M. P. S. Gilette, Malaria Division, Port of Spain, 1955.

Williams, et al
Descriptive stocklist of St. Augustine Nursery. St. Augustine, Trinidad.

Anonymous
Official Guide to the Botanical Gardens, Dominica, at Roseau, Dominica, British West Indies

Sichle, H.
Index Seminum. Institut National de la Recherche Agronomique, Guadalupe, 1950.

[redacted]

Stehle, H.
Detailed botanical report on special problems of the Central American region near Lamentin, unpublished.
Plants for Live Stock, including table of toxic plants, Caribbean Commission, Port of Spain, Trinidad.
"Ouvrages de la Flore de la Guadaloupe et de la Martinique".
Point-a-Pitre, Guadalupe (Only available on purchase).

Pennock
1955 Catalog of Pennock Gardens (North-South Nursery Company) Rio Piedras, San Juan, Puerto Rico.

Wright, J.
Catalogue of Plants, Hope Botanical Garden, Department of Agriculture, Kingston, Jamaica, British West Indies.

Clement, I. D.
Atkins Garden and Research Laboratory from Report of President of Harvard College. 1952-53.
Seed Exchange List from Atkins Garden and Research Laboratory, Soledad-Cienfuegos, Cuba.

West, E. and Ewmel, M. W.
Poisonous Plants in Florida. Bulletin 510, University of Florida and Agriculture Experimental Station, Gainesville, Florida.

Simpson, C. F. and West, E.
Coffee Weed (Glottidium ves.) Seed Poisoning of Cattle.
Circular S-58, Agriculture Experimental Station, Gainesville, Florida, 1953.

Lauter, W. M. and Fox, L. E., et al
Toxic Principles of Hippomane manc. J. American Pharmaceutical Association, 42, 199-201, 1952.

Fox, L. E. and Barnes, B. A.
Studies on the Toxicity of Diffenbachia. Presented before Third Pan-American Congress, Farmacoutico e Bioquimico, Sao Paulo, Brazil, December 1-8, in manuscript 1954.

Ewmel, M. W. and Sanders, D. A.
Crotolaria Spectabilis and C. Retusa Poisoning of Livestock.
Press Bulletin 574, University of Florida and Agriculture Experimental Station, Gainesville, Florida, 1942.

Simpson, C. F. and West E.
Ergot Poisoning in Cattle. Circular S-43, University of Florida, and Agriculture Experimental Station, Gainesville, Florida, 1952.

Feurt, S. D. and Fox, L. E.
Pharmacological Activity of Substances from Spanish Moss, Tillandsia U.L. J. American Pharmaceutical Association, 41, 453-4, 1952.

Feurt, S. D. and Fox, L. E.
Effects of Feeding Saw Palmetto Berries, Serenoa Reprans Small to Rats. J. American Pharmaceutical Association 43, 636-638, 1954.

Feurt, S. D. and Fox, L. E.
Report on Waxy Constituents of Spanish Moss. Science 117, 600-601, 1953.

Feurt, S. D. and Fox, L. E.
Effects of Oral Administration of Spanish Moss. Science 118, 626-627, 1953.

Pierre-Louis, F.
Plantes Venenouses et Caustiques de la Flore d'Haiti.
Bulletin Agricole, Vol II, No. 4, Port-au-Prince, Haiti, 1952.

Plank, H. K.
Insecticidal Properties of some Plants Growing in Puerto Rico. Bulletin 49, Federal Experimental Station in Puerto Rico, Mayaguez, Puerto Rico 1950.

Williams, C. H. B.
Administration Report of the Director of Agriculture of Colony of Trinidad and Tobago for 1953.

Berkiots, G. A. C.
Report of the Principal of the Imperial College of Tropical Agriculture, St. Augustine, Trinidad, British West Indies for 1952-53.

Descriptive Silver-Jubilee Folder of the Imperial College of Tropical Agriculture, St. Augustine, 1951.

Descriptive Folder of Biology Program, College of Arts and Sciences, University of Florida, Gainesville, Florida.

Ciapotti, G. O.
Imperial College of Tropical Agriculture, St. Augustine, Trinidad, British West Indies, 1953.

Literature Consulted En Route:

Watkins, John V. - Gardens of the Antilles, Miami, 1952.

Carabia, J. P. - Brief Review of the Cuban Flora. Plants and Plant Science in Latin America, 16, 68-70, 1945.

Roig, J. T. and Acuna, J. - Plant Resources of Cuba, 70-73, Plants and Plant Science in Latin America, 1945.

Larter, L. N. H. - Plant Resources of Jamaica, 73-76, Plants and Plant Science in Latin America, 1945.

Moldridge, L. R. - Brief Sketch of the Flora of Hispaniola, Plants and Plant Science in Latin America, 1945.

Barker, H. D. - Plant Resources of Hispaniola, 78-81, 76-78, Plants and Plant Science in Latin America, 1945.

Moldridge, L. R. - Brief Sketch of the Puerto Rican Flora, 81-83, Plants and Plant Science in Latin America, 1945.

Horn, C. L. - Plant Resources of Puerto Rico, 83-85, Plants and Plant Science in Latin America, 1945.

Stahle, H. - Les Conditions Ecologiques, la Vegetation et les Resources Agricoles de l'Archipel des Petities Antilles. Plants and Plant Science in Latin America 16, 85-100, 1945.

Beard, J. S. F. - Brief Review of the Vegetation of Trinidad and Tobago, ibid, 100-1, 1945.

Grisebach, A. H. R. - Flora of the British West Indian Islands, 1864.

Cabre, H. - Flore de la Guadeloupe et Dependences, 1939-.

Approximately 1000 species, mostly herbs of warm regions (including ornamentals), with potent alkaloids, especially in bulbs: Lycorin and derivatives, Buphanine, minor alkaloids and saponins, yielding arrow poisons, emetics, affecting the central nervous system, etc.

Plant	Species	Author	Source	Pl. Part	Potent Agents	Nature	% Act	Effect	References
*Agave	Americana	L.	Mediterran.	Root		Saponin			Lehner 29
"	Asperrima	Lucc.	"	Leaves		"			" "
"	Lecamplla	Torr.	"	Rootstock		"		Toxic	" "
*Amaryllis	Belladonna	L.	S. Indies Africa	Bulb Dry Bulb	Lycorine	Alkaloid	0.9 0.3	Hydrastine-like Fatal paralysis of CNS.	Steyn 34
"	Radiata	Herit.	Japan, China	Root	Lycoramine	Minor Alkaloid			Merk's J. 1952
"	Pudica								
"	Carminensis	L.							" "
Buphane	Disticha (Toxicaria)	Herb	S. Africa	Bulb & Herb	Lycorine Buphanine	Alkaloid		Hyoscine-like	Steyn 34
"		"	"						

[redacted]

Plant	Species	Author	Source	Pl. Part	Potent Agents	Nature	% Amt	Effect	References
*Clivia	Miniata	Benth	Java, S.Afr.	Root	Lycorine	Alkaloid	0.3		Henry 49
*Cooperia	Drummondii	Herb	Java, Tex, Mex						
"	Pedunculata		Tex, Mex	Fresh Bulb	"	"	0.04-0.05		Manske 52
*Crinum	Asiaticum	L.	Java	Root	"	"	1.0-1.8		Manske & Holmes 52
"	Japonicum		Japan				0.018		" "
"	Giganteum	Andr.	Java	Seed	"	"	1.0-1.5		
	Pratense	Herb	Java	Root	"	"	0.9		
"	Scabrum	Herb	Trop. Afr.						
Curculigo	Exsifolia	R. Br.	China	Root					Read 36
("	Malabarica)	Wight	"	"					" "
"	Orchioides	Gaertn	"	"					" "
"	Stans	Labill	"	"					" "
(Hypoxis	Minor)	Seem.	"						
Cyrtanthus	Pallidus	Sims	Java	Bulb Root Nodules	Lycorine	Alkaloid trace			Manske 52
*Eucharis	Grandiflora	Planch	Java, Brazil	Root	Lycorine	Alkaloid	0.45-0.75		Manske 52
*Eurycles	Silvestris	Salisb	Java, Malaya	Root	"	" trace			" "
("	Amboinensis)								

Plant	Species	Author	Source	Pl. Part	Potent Agents	Nature	% Ast	Effect	References
Fourcroya	Cubensis		Cuba	Sap		Saponin			Wehmer 29
"	Gigantea	Vent	Trop. Amer.	"		"			
("	Foetida R.)	L.							
*Galanthus	Nivalis	L.	Europe W. Asia Lower Don	Bulb	Tazettine, Leucoine, Buccocitine	Alkaloids			Sokolov 52
"	Woronowii	Losinsk	Russia	Bulbs	?		1.03		Manske & Holmes 52
				Leaves	?		0,60		
Haemanthus	Toxicarius	Ait	S. Afr.		Haemanthine	Alkaloid Mixture	?	Atropine-like Narcosis, Trembling, Spasms, Mydriasis, arrow poison	Manske & Holmes 1952
*Hippeastrum	Reginae	Herb	Brasil	Bulb				Toxic	L.Lewin 23
"	Reticulat.	Herb	Mex, W.Ind.	"				"	
"	Rutilum	Hook	"	"				"	
Hymenocal-lis	littoralis	Salisb	Java	Root	Lycorine	Alkaloid	0,015		Wehmer 29
*Leucojum	Aestivum	L.	Crimea	Bulb	Leucojin, Buccocitine	Alkaloid		Emetic	Wehmer 29
"	Vernum	L.	Su,W.Ukraine	"	"	"		"	Sokolov 52
*Lycoris	Radiata	Herb	Japan, China	Root	Lycorine Sekisanine	"		"	

[redacted]

Plant	Species	Author	Source	Pl. Part	Potent Agents	Nature	% Amt	Effect	References
Nerine	Japonica	Miq	Japan						Read 36
Narcissus	Orientalis				Lycorenine, Sekisanoline				
** princeps	Poeticus Cult	L.	Ukraine Eu.	Bulb	Lycorine, Narcipostine	Minor Alkaloid	Trace		Sokolov 52
**	Pseudo-narcis.	L.	S.Europe	Fresh bulb	Lycorine	Alkaloid	0.2	Emetic	Wehmer 29
**	Tazetta	L.	"		Suesenine ?	Alkaloid			Wehmer 35
Pancratium	Zeylanicum	L.	E.Indies	Bulb	Lycorin	Alkaloid		Emetic, Paral. CNS	Burkill 35
Polyanthes	Tuberosa*	L.	C.Am, E.Ind	Tuber	"	"		"	"
*Sprekelia (Amaryllis	Formosissima *)	Herb	Mex, W.Ind.	Bulb "	Lycorin	Alkaloid	0.9		Manske & Holmes 52
Ungernia	Sewerrovii	Rgl.		Bulb	Tazettine	Alkaloid	0.067-0.11	Emetic	Manske & Holmes 52
"	Tadshirorum	Vved			Ungerine, Lycorine	"	0.31		"
Zephyranthes	Carinata	Herb	N.Zealand		Buphanine ?	Alkaloid		Causing Staggers in horses	Manske & Holmes 52
"	Grandiflora	Lindl							
"	Rosea	Lindl	Java	Root	Lycorine	"	Trace		Wehmer 29
	Texana	Herb		Bulb			0.02		

Footnotes: * In cultivation - as ornamentals, etc.
_ Items underlined are the most promising agents.

[redacted]