



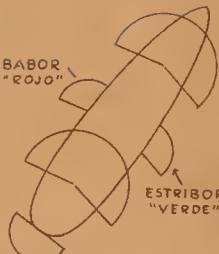
2

PROA

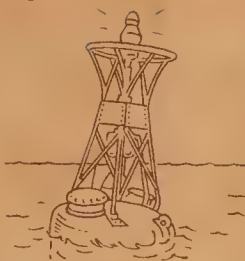
BABOR  
"ROJO"

ESTRIBOR  
"VERDE"

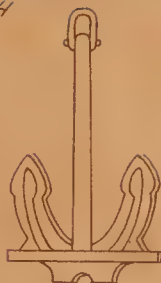
POPA



3

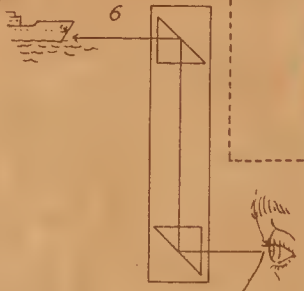


4



80 HOJAS

# NORMA

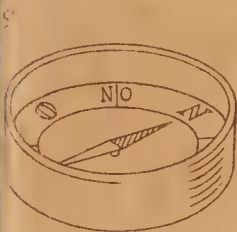
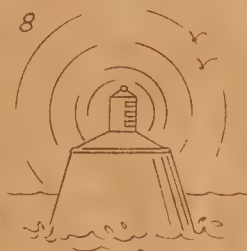


6

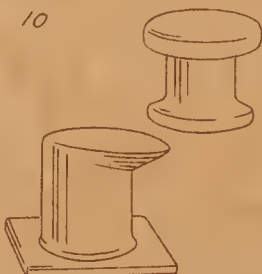
7



8



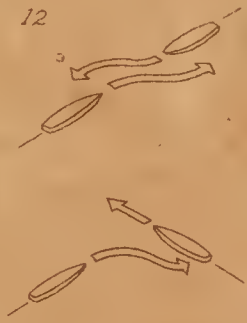
10



11



12

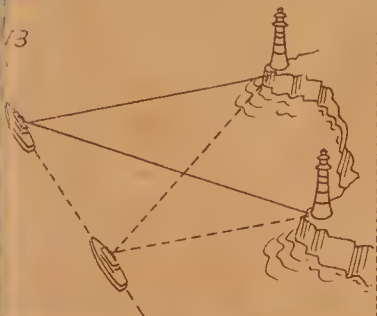


## COLEGIO

CUADERNO DE: \_\_\_\_\_

PERTENECE A: \_\_\_\_\_

13



14



15





Witot Sabon

Legenda

Missionaries at Tototobi

Mr. Keith Wardlaw Caixa Postal 165, B. Vista  
Mr. Verne Bartlett  
Francisco Becerra

Flyer - Mr. Eldon Larsen, Boa Vista  
Caixa Postal 165

Missionary at Boa Vista - Mr. Rod Lewis

Dr. Robert Smith

Casa da Missao Novos Tribus

Rua Urucará 247, Manaus

Publication of New Tribes Mission  
"From Gold"

Editor Knutson, J. B.

Woodworth, Wisconsin 53194

MANOEL DE OLIVEIRA FERREZ  
INSTITUTO DE PESQUISA DA MARINHA  
PRAIA DA BICA S/N  
ILHA DO GOVERNADOR - GUANABARA

Hyphomycetes - various species of *Hyphomycetes*  
Pezizomycetes  
Ascomycetes - *Ascomycetes*  
Zygomycetes - *Zygomycetes*

sta

Hyphomycetes - *Hyphomycetes*  
Pezizomycetes  
Ascomycetes - *Ascomycetes*  
Zygomycetes - *Zygomycetes*

Buy back number of Geographic Oct. 1965  
article by Paul A. Zahl "Bizarre  
world of the fungi"

Send to Bo -

- ✓ Ruiz & Pavon
- Jaramilla - C. C. C.
- ✓ Pappe & ...

Lectures -

Bo Holmstedt

Dr. Krayer (University of ...)

Bob Raffauf

H.W. Youngkin, Jr

Naomi Farnsworth

Mark ...  
D. ...

Xerox of ... - Bo

Reference to new Krayer draft: S.F. ...

Pr) ... - new ed. (Klein) ...  
(Scientific name of Phantasia)

See ... - for ...

Book in Hadley (latic) pubiflora (Chile) ...

Sci Am. (early 1967) report on ...

# The Physostigma Story

## Malaria + Quinine

Quinine was the model for Ehrlich in his search for a chemotherapeutic agent.

First chemotherapeutic agent, except emetine + morphine.

## Curare story

Opium Story - Cocaine Story. (Morris - Bo H.)

Digitalis - complex now being synthesized by German drug firm  
Sella  
Klein

Reserpine (Walter D. Hoar, Kilmac, already  
psychotropic and general anesthetic - 1950)  
Possible lecturer: Historical psychiatry.

Ipocuantho (Pain management)

## History of Signatures

History (3) Concomitant

Ethnopharmacology of China + India

Miscellaneous plants - Tobacco, etc.

Classifications

General

Specific

Pharmacology

Pharmacokinetics - Pharmacodynamics

McC

Stal - V

Mistakenly here polyptera (Anaclyptus)

pharocera

vesicaria

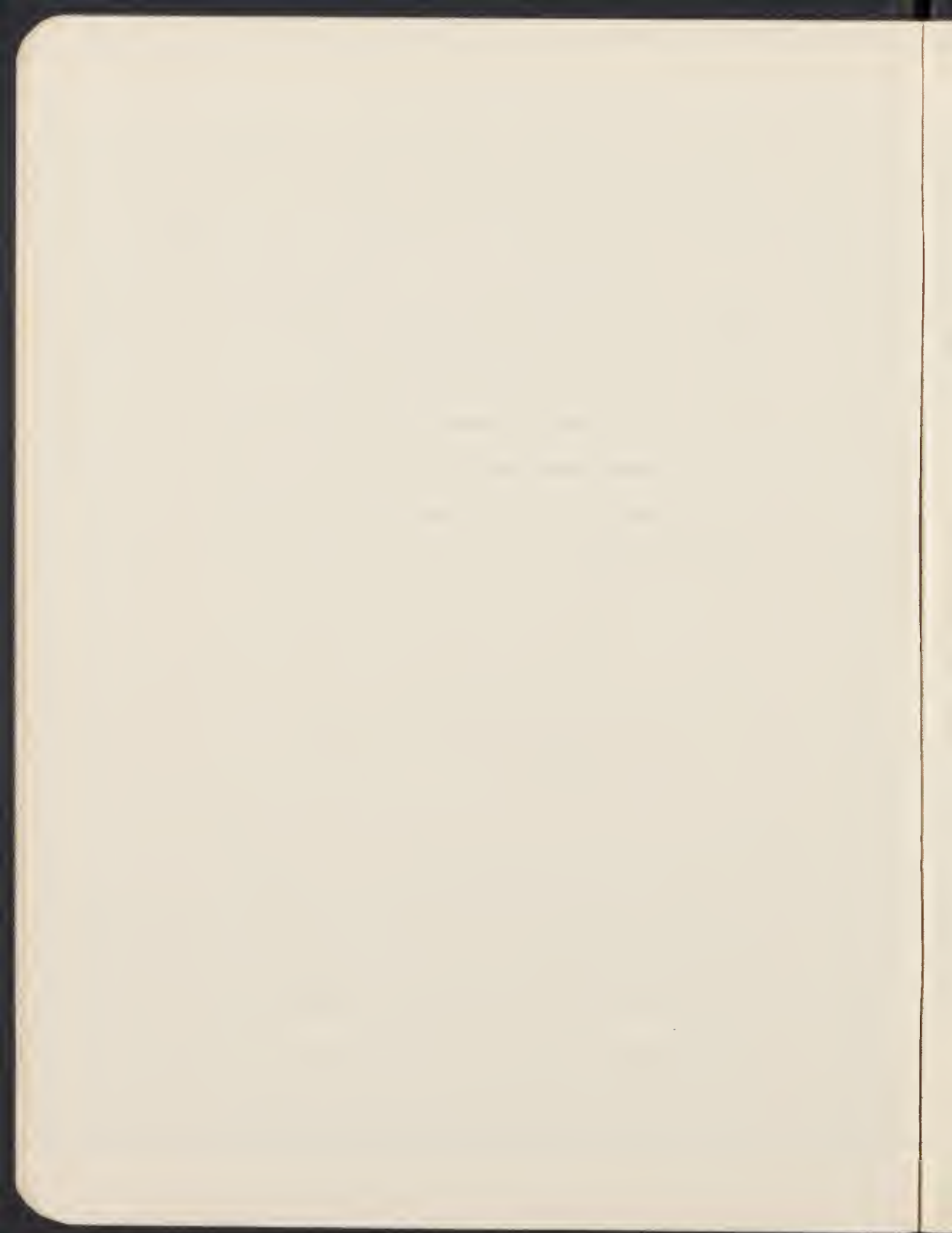


*Ephedra* - fruit KAL (see below)

*Vaccinium* *gibbum*

*Desmodium* (from plant, not in fruit). Put  
in *Desmodium* *gibbum* - minor of the  
*gibbum* <sup>per</sup> - Pauck; DeTong,  
(see note)

*Stydia* *Maximovii* - being, from plant  
Tr. *explor* *ba* *Pau*, *circum* *scripta*  
*glob* *et* *prop* *l* *max* *max* *max*  
*Stydia* *Maximovii*



~~P...~~

~~C...~~

Vinda

~~Ar...~~

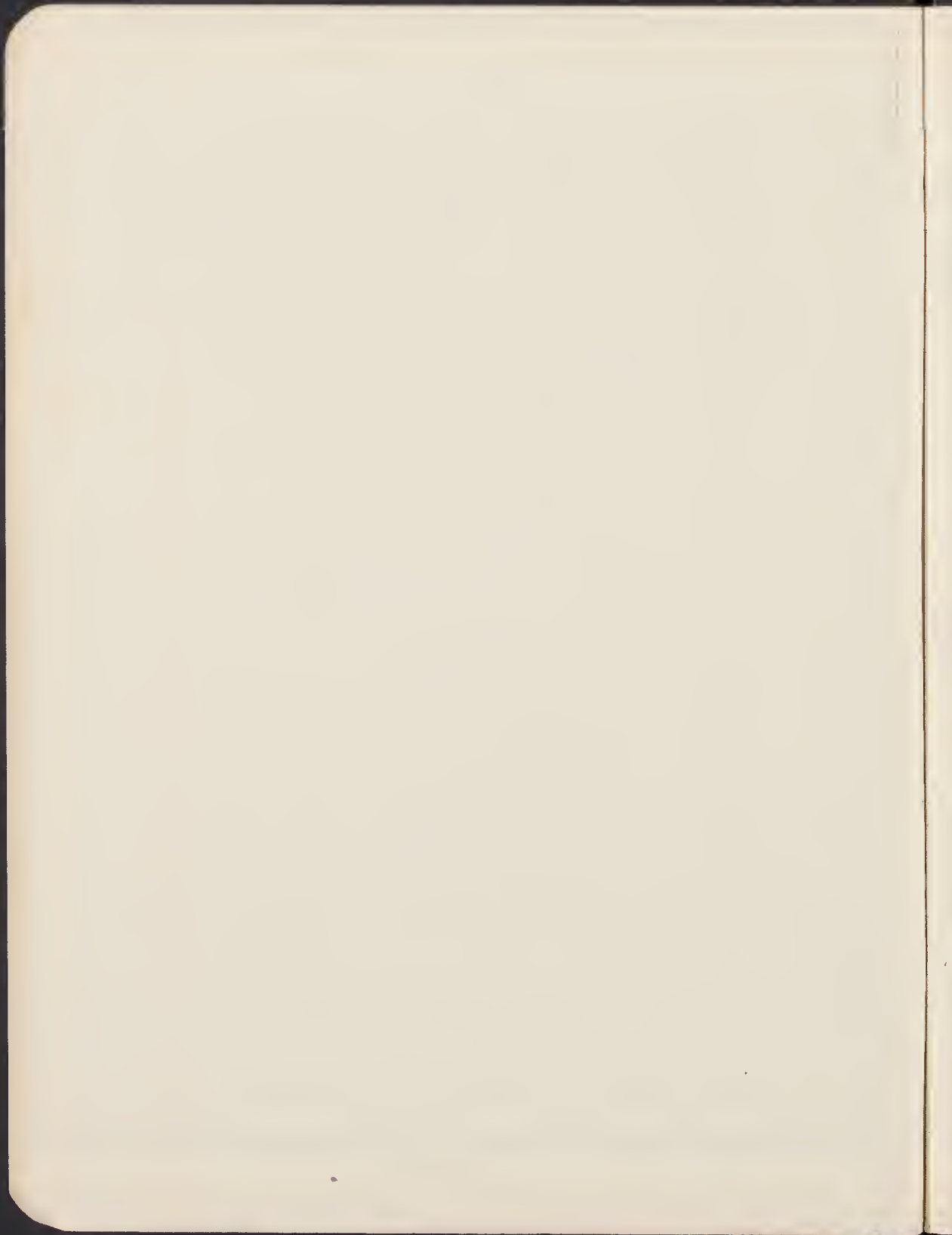
Tryp...

Although the whole alkaloids now known  
in tryptamine were recognized as such, in fact  
it is only — years ago, they have been  
responsible for magic and religious significance  
certain plants in South America for  
so many hundreds of years. Only now, as a result  
of the work of many investigators, we are beginning to  
understand some of the many ethnobotanical and  
sociological aspects involved in their use.

The recognition of alkaloids as being from the  
work of ... in ... and the first scientific study  
of this class of substances was Sertürner's isolation  
in 1805 of a substance from the opium poppy (*Papaver som-  
niferum*) which he called morphine from the Greek  
the Greek god of dreams, Morpheus. From this we,



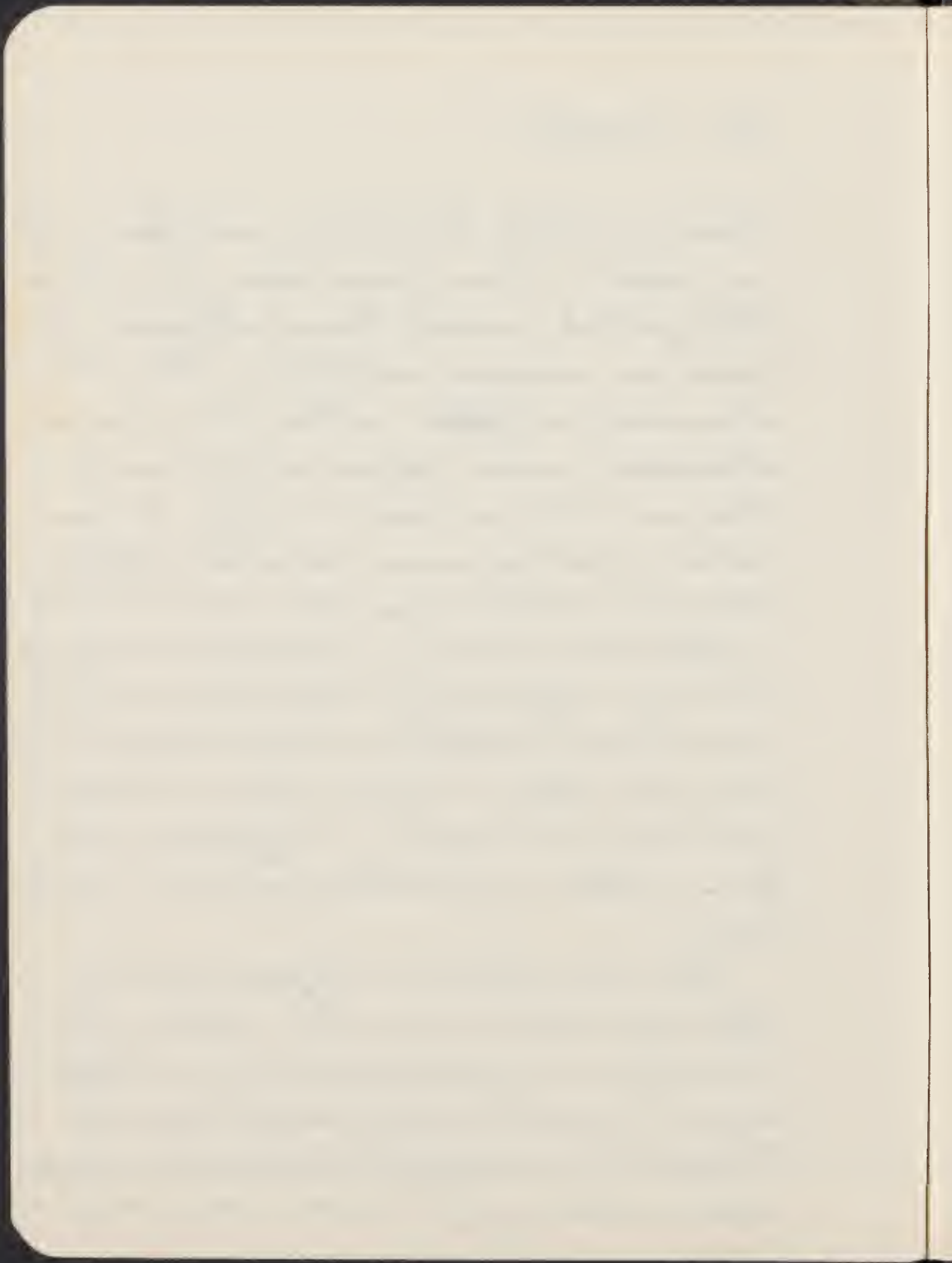
The growing sophistication of phytochemical studies  
indicated that there were many to be discovered,  
differing basically in their nuclear structure. It was  
in 1951 that W. C. Coker discovered the structure  
of chlorophyll a — a complex ring system with a central  
magnesium — from spinach.



## Rio Tototobí

Bark of Virola theiodora is stripped off in forest - first from base of tree, then tree felled & whole trunk stripped. If more is needed additional trees are similarly stripped. After lower bark is stripped & used & prior to felling the tree, an Indian climbs to top of trunk with a circle of vine and slide rapidly down the bark, doing this several times on the several sides of the trunk, scraping the bark vigorously with the vine loop each time with his whole weight. With this operation, they say they are causing the resin to "loosen". They often do the same with a machete back at base of tree.

Pieces of bark are stripped off about 2 ft long and 5 or 6 inches wide. A fire is made in the forest path, these strips are laid over the fire inside face up. The gentle heating of the bark causes a very copious bleeding of the red resin, so co-





process that large droplets flow together and soon the inner surface of the bark is full of resin. Then the Indian tips the bark vertically over a small clay pot, lets the resin run down into the pot, running his index finger down the bark to get every drop of the resin off + into the pot. The bark is again laid on the fire + reheated, more resin appearing. This is done several times before the Indians believe that the supply is exhausted. A large number of such strips are used, depending upon the amount of the resin required. The amount that we extracted measured about 2 tea cups and was the result of bleeding bark from 3 trees, one tree about 14 in. in diameter and 70 ft., two much smaller ones.

During the scraping off of the warm resin into the pot, another Indian is painting bamboo arrow heads with the resin and heating them slowly over the fire, warming them, to assure an even

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flow of the resin. He first takes a handful of the these bamboo tips to the stripped tree trunk which is covered with slime and resin. He smears each arrow tip carefully with the slime + resin that he removes from the trunk with his fingers. When he has dried this first application ~~with~~ in the smoke, he then begins to apply the pure resin to the tips - resin that he scrapes from the heating strips or takes from the accumulation in the pot. There are 20 or 30 applications to the arrow tips, a slow heating in the smoke after each one. Then, finally, an Indian wraps a knot of palm leaves around the top of a stick, then inserts the arrow tips in this knot, as in a pin-cushion, and plants the sticks in the ground in the sun to dry slowly.

All the meanwhile, the collecting of the resin from the heated strips into the pot continues. When, finally, enough is gathered in the pot, the Indian

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slowly heats the pot, the resin slowly boils and gets thicker until it is thick enough to carry back without its flowing out of the pot. By this time, it has mostly crystallized into a bright amber-red resin.

This crystallized resin is then scraped from the sides of the clay pot ~~and~~ with a sharp stone, then pulverized finely by grinding the accumulated powder in the ~~p~~ bottom of the pot. When it is sufficiently fine, it is removed and put onto a leaf. <sup>It is light coffee-colour</sup> Then the Indian begins a meticulous scraping of the carbonized resin material from the sides of <sup>the inside</sup> of the pot & the grinding of this dark ~~resin~~ <sup>very</sup> blackish brown powder until it, in turn, is fine enough.

When the whole operation of grinding had begun, certain lumps of very thick resin that had not been crystallized were removed from the pot and put onto a small stick. This was then put ~~into~~ over a fire and hardened, then pressed

*[The page contains extremely faint, illegible text, likely bleed-through from the reverse side of the page. The text is too light to transcribe accurately.]*

out on a heated surface over the fire and allowed to carbonize. The carbonized lump was then added to the similar blackish brown powder in the pot and completely reduced to a fine powder.

Then the first brown powder and the second blackish brown powder are united and fully mixed to prepare the final snuff. Either one of these 2 powders, however, have the potency and may be used alone as snuff. [We took the second, carbonized powder.] This snuff is known as nākwāna. It is administered by these Tototobi people by inserting snuff held between the finger tips & sniffing forcefully or, more usually in ceremony, by the ~~use~~ use of a long bamboo tube. Women do not use it, nor do all men in fiestas — only those who wish to do so. Snuff is not taken individually or periodically by those who do not want to converse with the spirits, & this is usually the witch-doctor called in to treat a disease. In this way, these Waikas differ

ho-ro-ma = snuff tube  
wa-na = keeping tube.

tube of snuffing tube made of boo-roo-sik,  
a type of bamboo.  
inaja mouthpiece is o-ko-la-shee-mu  
clay pot = ha-ba-ka

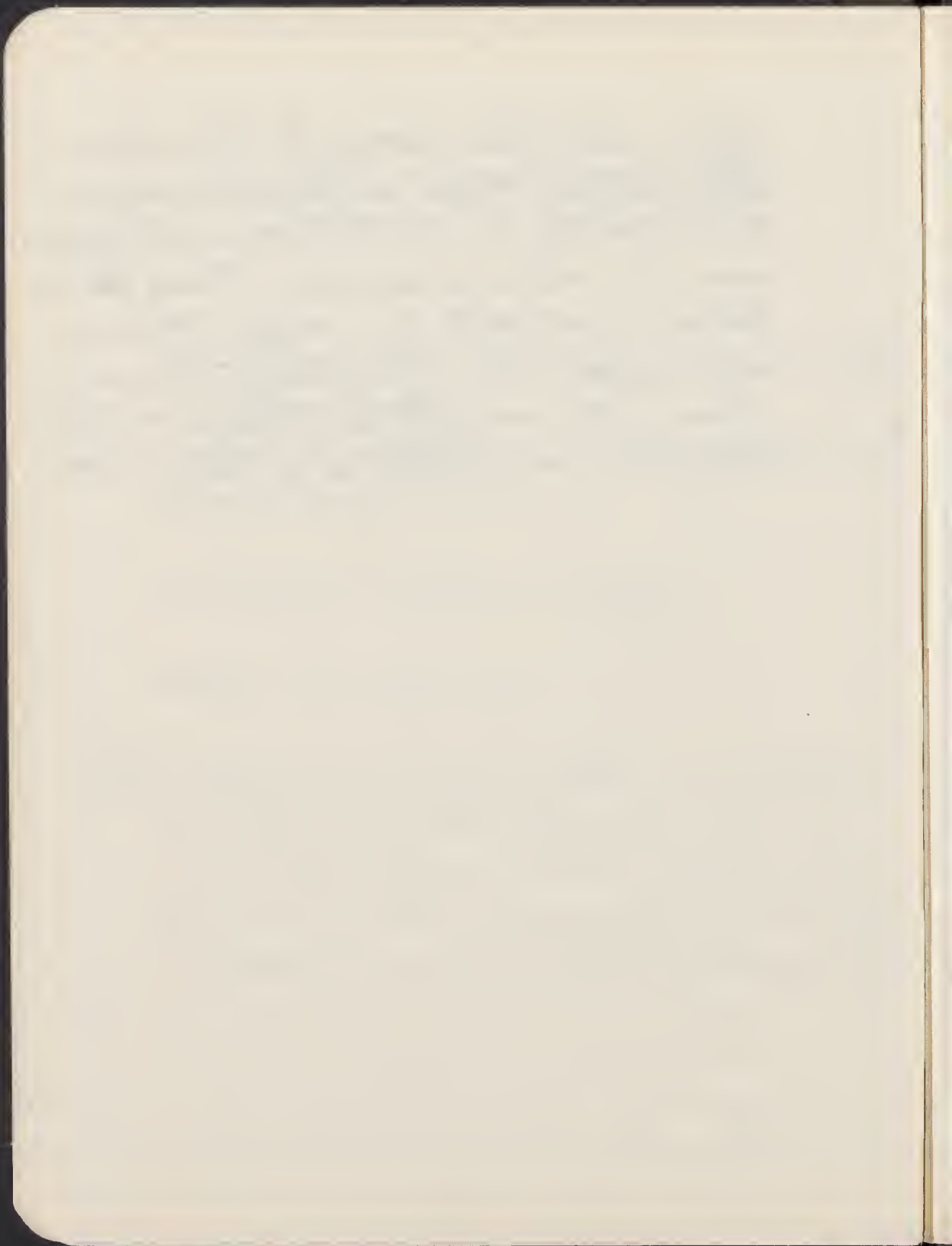
arrow poison = ñakwana {huisu  
  { latex

snuff = ña-kwa-na

These people do not have any other arrow poison,  
but they know of other Indians who make  
arrow poison from a vine, indicating with  
the hand a stout branch of 8 or 9" diameter  
& round leaves (probably Chondrodendron)



apparently from those of the Cauabari  
River where there is snuff hanging in  
a tube all the time in the house ready for  
use and where, ever now + then, ~~the~~ an  
Indian will take the snuff + dance +  
sing + experience the intoxication all  
alone, the rest of the group going about its  
daily chores + not paying him any heed.



Hans Becker

Niedersächsisches Landesmuseum

Abt. für Völkerkunde

3 Hannover

Staubfotografie

Am Maschpark 5

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"SEGURIDAD EN EL MAR"		TABLA DE MULTIPLICAR			
		2 X 1 - 2	3 X 1 - 3	4 X 1 - 4	5 X 1 - 5
1	Faro portuario	2 X 2 - 4	3 X 2 - 6	4 X 2 - 8	5 X 2 - 10
2	Las luces en el barco	2 X 3 - 6	3 X 3 - 9	4 X 3 - 12	5 X 3 - 15
3	Boya luminosa	2 X 4 - 8	3 X 4 - 12	4 X 4 - 16	5 X 4 - 20
4	Ancla tipo Hall	2 X 5 - 10	3 X 5 - 15	4 X 5 - 20	5 X 5 - 25
5	Sondeo acústico	2 X 6 - 12	3 X 6 - 18	4 X 6 - 24	5 X 6 - 30
6	Periscopio Submarino	2 X 7 - 14	3 X 7 - 21	4 X 7 - 28	5 X 7 - 35
7	Ancla Hartshorne	2 X 8 - 16	3 X 8 - 24	4 X 8 - 32	5 X 8 - 40
8	Boya de sirena	2 X 9 - 18	3 X 9 - 27	4 X 9 - 36	5 X 9 - 45
9	Brújula magnética	6 X 1 - 6	7 X 1 - 7	8 X 1 - 8	9 X 1 - 9
10	Bitas para atraque	6 X 2 - 12	7 X 2 - 14	8 X 2 - 16	9 X 2 - 18
11	Faro sobre escollo	6 X 3 - 18	7 X 3 - 21	8 X 3 - 24	9 X 3 - 27
12	Tráfico en el mar	6 X 4 - 24	7 X 4 - 28	8 X 4 - 32	9 X 4 - 36
13	Estableciendo la posición con dos 12) referencias	6 X 5 - 30	7 X 5 - 35	8 X 5 - 40	9 X 5 - 45
14	Proyector rotatorio del faro	6 X 6 - 36	7 X 6 - 42	8 X 6 - 48	9 X 6 - 54
15	Faro Costero	6 X 7 - 42	7 X 7 - 49	8 X 7 - 56	9 X 7 - 63
		6 X 8 - 48	7 X 8 - 56	8 X 8 - 64	9 X 8 - 72
		6 X 9 - 54	7 X 9 - 63	8 X 9 - 72	9 X 9 - 81

## EQUIVALENCIA DE PESOS Y MEDIDAS

### LONGITUD

Cm.	-	0,3937	Pulgadas
Metro	- 100 Cms.	39,37	Pulgadas
Metro	-	3,28	Pies
Metro	-	1,0936	Yardas
Metro	-	1,25	Varas
Km.	- 1.000 Ms.	0,62137	Millas
Pulgada	-	2,54	Cms
Pie	- 12 Pulgds.	30,48	Cms.
Yarda	- 3 Pies	91,44	Cms.
Milla	- 1760 Yds.	1.609,35	Metros
Milla Náutica	-	1.852	Metros
Vara	-	80	Cms.
Cuadra	- 100 Varas	80	Metros

### SUPERFICIE

Cm <sup>2</sup>	-	0,155	Pulg. Cuad.
M <sup>2</sup>	-	10,764	Pies Cuads.
M <sup>2</sup>	-	1,196	Yds. Cuads.
M <sup>2</sup>	-	1,5625	Varas Cuads.
Hectárea - 10.000 Ms <sup>2</sup>	-	2,4710	Acres
Hectárea	-	1,5625	Plazas*
Km <sup>2</sup>	-	0,386	Milla Cuad.
Pulg. Cuad.	-	6,452	Cms <sup>2</sup>
Pie Cuad.	-	0,0929	M <sup>2</sup>
Yarda Cuad.	-	0,8361	M <sup>2</sup>
Acre	-	0,4047	Hectárea
Milla Cuad.	-	2,59	Kms <sup>2</sup>
Vara Cuad.	-	0,64	M <sup>2</sup>
Plaza*	-	6.400	Ms <sup>2</sup>

\* También Cuadras

### VOLUMEN

Cm <sup>3</sup>	-	0,06102	Pulg. Cúbica
M <sup>3</sup> 1.000.000 Cms. <sup>3</sup>	-	35,3145	Pies Cúbicos
M <sup>3</sup>	-	1,308	Yds. Cúbicas
Pulgada Cúbica	-	16,387	Cms <sup>3</sup>
Pie Cúbico	-	0,0283	M <sup>3</sup>
Yarda Cúbica	-	0,765	M <sup>3</sup>

### PESO

Gramo	-	15,432	Granos
Gramo	-	0,03527	Onza
Kilogramo	-	2,2046	Lbs.
Tonelada Métrica 1000 Kgs.	-	2.204,6	Lbs.
Grano	-	0,0648	Gramo
Onza Avoirdupois	-	28,35	Gramos
Libra 16 Onzas	-	453,6	Gramos
Tonelada Amer. - 2.000 lbs.	-	907,18	Kgs.
Tonelada Ingl. - 2.240 Lbs.	-	1 016,05	Kgs.
Onza Avoirdupois	-	437,5	Granos
Onza Troy	-	480	Granos
Arroba - 25 Lbs.	-	11,34	Kgs.
Quintal - 100 Lbs.	-	45,359	Kgs.

### CAPACIDAD

Litro - 1.000 Cms. <sup>3</sup>	-	0,264	Gal. Americano
Litro	-	0,220	Gal. Inglés
Litro	-	1,389	Botellas.
Onza Flúida	-	29,57	Cms <sup>3</sup>
Galón Inglés 227,420 Pulgs. Cúb.	-	4,546	Lts.
Galón Americano 231 Pulgs. Cúb.	-	3 785,3	Lts.
Botella - 720 Cms <sup>3</sup>	-	0,72	Litro
Botella	-	25,36	Onzas Flúidas

### TEMPERATURA

Grados Centígrados	(F° - 32) 5/9
Grados Fahrenheit	9/5 C° + 32
Grados Centígrados	5/4 Grados Reaumur
Grados Reaumur	4/5 C°