

***JOURNAL 1957***

*JAMES W. BEE*



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Museum Natural History, Univ. of Kansas, Lawrence, Kansas  
Feb. 28, 1957

Write A. W. F. Bonfield, Canadian Wildlife Service, Ottawa, Canada  
Ecology and morphology of the Altai Reindeer by F. D. Shaposhnikoff  
as translated by Dr. J. M. Mac Lennan of the Canadian Wildlife  
Service.

Snow cover in the life of USSR mammals and birds by A. N. Formozoff.  
Arctic Ungulates, animals of the Arctic by K. K. Fleroff.

[see April 5, 1955 for insert dated March 12, 1957, letter about Guatemala]

April 8, 1957

Turdus migratorius on campus with partially paralyzed limbs.  
Could walk feebly but would fall to side. wing kept along side  
of body but could not see them.

April 10, 1957

Two Turdus migratorius paralyzed on campus.

April 13, 1957

Two dead robins on campus.

April 14, 1957

Between Museum Nat. Hist and Patters Lake counted 4 dead rob-  
ins. One looked to have been dead for several days as eyes were  
completely sunken in head.

Museum Natural History, Univ. of Kansas, Lawrence, Kansas.  
April 14, 1957

Last week sent preliminary forms for the investigation of the  
vertebrate fauna of the Virgin Islands National Park. Checked  
Maupin Travel Agency in Lawrence for transportation etc.

Railway express - \$13.15 per hundred to Miami.

Airfreight - \$115.15 per 500 lbs per 2000 miles or \$38.00 per hundred.  
K.C. to N.Y. 13.11 per hundred; N.Y. - San Juan \$20.00 per hundred; San  
Juan - St. Thomas 5¢ per lb or \$5.00 per hundred.

Air express - \$30.88 per 40 lbs per 2349 miles.

Personnel - \$283.76 (round trip) first class from Kansas City to  
San Juan Puerto Rico. Allowed 66 lbs per person. Leave Kansas City  
6:30 A.M. - St. Louis - Atlanta - San Juan arriving 7:55 P.M. \$222.40  
(round trip) tourist. Allowed approx. 45 lbs per person.



Excess luggage - 41¢ per lb.; Miami to San Juan - 64¢ per pound.  
 Leave K.C. 8:30 P.M. - arrive San Juan 3:30 P.M. Jan 2. Leave San  
 Juan 3:30 P.M. - arrive St. Thomas 4:04 P.M. (CBA).

The following items ready for shipment to Virgin Islands.

3 field chests (1 full traps, 1 with 2 traps, 1 empty)	resouring pods	cotton, 8 batts
1 camp table	soap	skinning equip
1 camp stove	5 gal water can	scales
1 tent, poles, stakes	1 gas lamp	altimeter
294 mus. special traps	mantles	alarm clock
36 No. 0 steel traps	generator	2 head lamps
10 boxes 22 long	funnel	2 doz batteries
18 boxes 22 bird shot	siphon	knee boots
1000 rounds no 12 .410	rubber floor mat	med kit
125 " " 7 1/2 "	aerosol bomb	halozon tab
50 " " 5 "	head nets	iodine tab
.410 overunder .22	repellent	aerobic dip
cleaning equip	bed net	malaria
large fry pan	bat nets (12)	burn solve
coffee pot	thermometer	large small bandage
dish pan	maps	sleeping bags
rinse pan	literature	light blanket
spatula knife, spoon, fork	moth balls	pillow
chairs	shaving equip	matches
hatchet	herp jars & sol.	rope
Camel dirt equipment	alcohol	receipt book
strainer & white cloth	formalin	stamps - stationary
cloths	herp bags	shovel
note book	gauze	pins
eternal ink	insect net for bats	sticks for bird bodies
paper	vials for ectoparasite	mammal labels
pen, soft lead pencil		
skull labels.	Weight approx: 422 lbs for equipment.	

Museum Natural History, Univ of Kansas, Lawrence, Kansas  
 April 18, 1957

Chaetura pelagica arrived this date and were seen flying above  
 museum at 7:00 A.M. for the first time. They appear to be in  
 usual summer numbers.

April 30, 1957

One duck hawk flew by at approx 200 ft above campus and trended



n. It seemed to be hunting at times. Time, early twilight. A young robin was capable of flight on this date.

[see march 12, 1957 letter to Kenneth C Brown, inserted in march 2, 1955]

Lawrence, Douglas Co., Kansas

May 23, 1957

Prepared to leave for Provo, Utah and will leave tomorrow morning. Expect to arrive in Provo Sat. night and leave Provo Sunday afternoon for return to Lawrence.

May 24, 1957

Departed this A.M. at 4:30 for Provo, Utah. Mileage at Lawrence 66255, gas tank  $\frac{6}{10}$  full. Manhattan Kansas, 12.6 gals gas at \$3.81; Alma, Nebraska, 66550, 11:15 A.M., 13.0 gals, \$4.09; Elm Creek, Nebraska, 66596 mi, 12:20 P.M.; No. Platte, Neb, 2 1/2 hrs for repairs; Brule, Neb., 66754 mi, 11.6 gas, \$3.70; Photo (570524-1) of cloud and storm front at approx. 10 mi. W of No. Platte; Pine Bluff, Wyo, 66880 mi, 11:30 P.M. at Sunset Court. Travelled 627 miles today.

Pine Bluffs, Wyoming

May 25, 1957

Departed 4:50 A.M., mileage 66880. Rained most of last night and is raining now. Changed time at Cheyenne 1 hour back. Cheyenne, Wyo., 66923 mi, 11.2 gals, \$3.76. Departed Cheyenne at 5:15 A.M. Truck driver report rain and snow all across intermountain area to west. Rock River, Wyo. 2 hrs delay, tire \$6.00, tube \$2.75 - jack \$4.75 - tire wrench \$1.60; Medicine Bow, 67042, 11 1/10 gals, \$3.90; Rock Springs, 67215, 11 1/10 gals, \$4.00; Wanship, 67376, 10.5 gals, \$3.54. Arrived Provo 7:00 P.M., mileage 67444. gas tank  $\frac{3}{4}$  full, highway 30 all the way. Dad's wedding.

Provo, Utah

May 27, 1957

Departed Provo 7:45 A.M., mileage 67444, gas  $\frac{3}{4}$  tank. Duchesne Utah, mil. 67548, \$3.70 for 11 1/10 gals; Meeker, Colo, 8.1 gal, \$2.93, Fruco, Colo, 10.8 gal, \$3.75. Arrived Idaho Springs at 8:30 P.M. mileage 67935, gas  $\frac{6}{10}$  full.

Idaho Springs, Colorado

May 28, 1957

Departed 4:00 A.M., mileage 67935; Limon, 68064, 7:00 A.M., 11 8/10 gals.



#4.00. Left Limon at 7:45 A.M., route 24 east. Approx 1 mile west of Flagler to 20 miles east of Flagler there was an unusual number of Lark Buntings, a few in view at all times or approx. 1 per 1/10 mi. The majority were in song flight. One phoebe carried feathers to its nest under a bridge. Cottonwood trees farther west just in yellow leaf. In Nebraska and Wyoming these trees and willows were not yet in leaf; Hokie, Kansas, 68251, 10.8 gal \$3.63; Miltonvale, Kansas, 68433, 12.8 gals, \$3.45; arrived Lawrence at 68587, 8:10 P.M., tank 4/5 full. In summary: Gasoline used to Provo via route 30 was 79.6 gals at \$25.77 or 14.9 miles per gal. of gas, a distance of 1191 miles. Gasoline used from Provo to Lawrence via highway 24, mainly, was 70.1 gals at \$24.61 or 16.3 miles per gal; a distance of 1143 miles. On the basis of above, would recommend either route as equally desirable except return route more scenic.

Museum Natural History, Univ. Kansas, Lawrence, Kansas.

June 10, 1957

Mr. Lee of National Parks advises me to:

1. Send equipment to: James W. Bee, 40. Scept. Hal Hebler, National Parks Service, St. Thomas, Virgin Islands.
2. Mr. Alty Boyer, of the Lawrence S. Rockefeller Office in New York, looks after Caneel Bay interests.
3. Go to San Juan and first visit people at University to let them know our program. See Julio Marreio, of the Nat. Parks in San Juan.
4. Then go to St. Thomas and contact Mr. Hal Hebler, Phone 651 (private) Wintberg, who in turn will arrange with the Caneel Bay Plantation Resort (operated by the Jackson Hall Wildlife Preserve) for logistic support. Mr. Lee said that Rockefeller people have suggested providing local transportation, subsistence and possible lodging in lieu of money set up for these items in the contract.
5. Keep truck services rendered - meals, lodging, boat, etc.
6. Prof Thomas Donnelly and students are working on geology of Virgin Islands centering on St. John. Donnelly is from Princeton.

[See June 28, 1957 for insert dated June 28, 1957, (news item, Peter)]

Lawrence, Douglas Co., Kansas

July 1, 1957

Depart for Virgin Islands this date. Bud Tordoff drove William Cutter and me to the Kansas City Municipal Airport. Departed K.C.



at 8:40 P.M. Arrived St. Louis 9:52 P.M. at St. Louis advanced clock 1 hr. Departed St. Louis 11:54 on non-stop flight to Miami (Flight 231), flew at 19,000 ft. Arrived Miami 3:25 P.M. Reservations from Miami to San Juan on waiting status so all day we remained on stand-by without success. At 6:30 P.M. departed (eastern, first class) on flight 101 for San Juan. Flew 21,000 ft. at 7:12 P.M. passed several of the Bahama Islands. I was impressed with the similarity of appearance to many sections of the Arctic of northern Alaska. The islands appear to me as if at grade with the ocean and are solid islands but many times bisected as is found associated with flood plains and meandering rivers. I can see why it is possible for small boats to navigate these waters. Arrived San Juan 11:00 P.M. (time on hr later than Miami) stayed Columbus Hotel. In morning July 3 visited Josefa Velazquez de Maceo who is the Director of the Museo de Biologia at the Government University in east San Juan. Dr. Carlos Garcia-Benitez is director of Biology Dept. at their museum they have all literature of the Puerto Rico Survey but do not have scientific study skins of any kind. Photo 570703-1 of Biology building here. At Dept of Interior, National Parks, got map from architect. Personnel are: Julio Marrero Núñez, Richards Reyes, Santiago Cruz, Luis Manuel Morreles, Jose Sasmigul, Carmen Hernandez all from San Juan. at St. Thomas are: Harold Hubler, Rene Purcell, Banga, Douglas (Bud) Anderson and Mrs. Hassel. Vincent Mrazek and Edward Shade are at St. John. Also visited the Departamento de Agricultura y Comercio, Blanch Kellogg Institute, Experimental station and Medical University. In the old section of San Juan made photo 570703-2 of ocean and yellow flowers in foreground, a large *Cnemidophorus*-like lizard (probably *Ameiva*) lived in the sandy areas. 1/100-22 F. Departed 5:38 P.M. for St. Thomas and arrived at approximately 6:12 P.M. Stayed at 1829 Hotel and tried several times until 9:00 P.M. to contact Hubler. Several small bats flew across porch at 1829 Hotel and small geckos climbed on walls in dining room. Several different kinds of birds called. Other geckos were on walls and stone fences after dark but utilizing light from street lamps. They are quick to retreat to holes when within 3 or 4 feet distance. People at St. Thomas report large iguanas on the island, some 3 feet or so in length. They also report snakes but these occur only rarely. *Mabuya* and *Ameiva* are common and several species of *Anolis*



are present. This island seems to be well populated with birds, reptiles, amphibians and mammals of the introduced kind. From talking to several people gained the following impressions:

Mr. Frank Schaelebrandt of St. Thomas and owns business and dependable informant: A creation of a National Park is not in the best interest of the United States Government as the Park will deprive the government of considerable revenue from taxes. The natives of St. John feel that with increase of tourist trade and supervision of the area by the U.S. officials, there will become a greater gap in the relationships between the whites and native negroes. Segregation under these conditions is feared by the natives - although they want to become American citizens. Natives who were on the island are allowed to remain on original homestead until death whereupon the land is converted to National Park property. Grazing is controlled and cutting of trees or vegetation is prohibited. There is no compensation for these limiting restrictions and to which the natives are objecting. There are no native villages on St. John, but the people are dispersed and living as family units. A certain vine, which was used to make fish nets and traps, is now prohibited to be cut and as a result the natives cannot effectively pursue their fishing profession. The support of certain governmental agencies, who are not productive, by money derived from taxes, is not accepted by the natives. The governor should be elected by the people and not appointed because too many of the appointees do not have an understanding of the problems of the Virgin Islands. The Rockefeller interests in the St. John Island have been only to their advantage - Rockefeller will someday become the Governor or lord of the Island. Relief should be stopped and people should work for living and develop pride in their respective professions. U.S. influence has helped considerably in health, sanitation and training of medical doctors.

Mr. Katzman, pharmacist and owner of drug store and formerly from Michigan, now in St. Thomas and has been for last 5 years. People in Puerto Rico do not want to become American citizens because of a fear of segregation of negroes and Americans (white) as exists in the United States. People of St. Thomas do desire to become American citizens. Rainy



season in September and not in July or August. All stores on main street are required by law to maintain Danish customs of architecture including massive iron doors.

St. Thomas Island, Virgin Islands.

July 4, 1957

Contacted Mr. and Mrs. Douglas Anderson of the National Park Service. Mr. Anderson has been with the Park Service for a few months and was formerly with the Geological Survey. He is to appraise the land value and measure the areas of land now occupied by the natives of St. John Island. The Andersons are living on French Hill. In the afternoon the Andersons took us to the Hubler residence at Wintberg where the Natl Park Service had acquired a home and land for the officials. Mr & Mrs Hubler now reside there. Mr. Hubler informs me that he saw a Capromys on St. John Island. I will get the details at a later date as this is a new record for the island. The cays between St. Thomas and St. John are now populated with boobys, noddy tern, another species of tern and several other kinds of birds. Ground doves are also on these islands and may be using them as places of refuge from the mongooses of the main island. On islands used by mongooses the birds are adjusting by nesting in those places in trees where mongooses are not able to go. The mongooses are now becoming stabilized in ecological relationship with the other bird and animal forms. The larger doves are mountain doves. Mr. Hubler is anxious to acquire more land, especially those areas of beach and marine communities. Bufo marinus is present at Wintberg, an introduced form. Five species of lizards are present also and several snakes. A large tarantula digs holes about 1-inch in diameter into the ground and is numerous. Wintberg will be used as area for housing N.P. personnel. Returned to 1829 Hotel and after photographing flamboyant tree (570704-1) in front of hotel, went to see Thomas Cunnery at the government building to pick up permits for collecting in the Virgin Islands. A subsequent contact with Mr. Hubler revealed additional information about Capromys. It was seen 120 yards from Congo Rock N E of Charlotte Amalie in 1939 about Christmas time. July 4, 5, and 6 were spent at St. Thomas waiting for details to be worked out with Mr. Hubler and in getting final equipment and supplies ready.



GOVERNMENT HOUSE  
CHARLOTTE AMALIE  
ST. THOMAS  
VIRGIN ISLANDS OF THE UNITED STATES

July 5, 1957

TO WHOM IT MAY CONCERN

The bearer of this letter, Mr. James Bee, University of Kansas, is authorized to collect "Vertibrates" in the Virgin Islands of the United States. Such authorization has been granted by the United States Department of the Interior, Fish and Wildlife Service, and National Park Service.

Rules and regulations concerning collection and disposition of specimens as promulgated by the National Park Service will apply and collection will be permitted by the Government of the Virgin Islands so long as such rules and regulations are complied with.

*Walter A. Gordon*

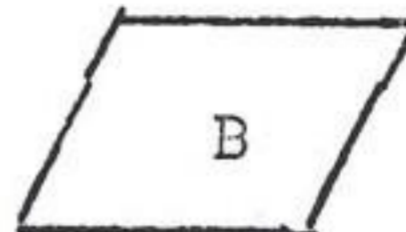
Walter A. Gordon  
Governor





10-741 (A)  
 UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 NATIONAL PARK SERVICE  
 (May 1953)

COLLECTING PERMIT - CLASS



Virgin Islands NP

NAME OF AREA

July 5, 1957

DATE ISSUED

IN ACCORDANCE WITH THE CONDITIONS AND RESTRICTIONS APPEARING ON THE BACK  
 PERMISSION IS GRANTED

James William Bee,

NAME OF COLLECTOR

1233 Ohio St., Lawrence, Kansas- University of Kansas

ADDRESS

NAME OF INSTITUTION

TO COLLECT THE FOLLOWING SPECIMENS: vertebrates exclusive of fish

Locality of collecting limited to Virgin Islands NP, St. John, V. I.

Special conditions or restrictions None

This permit expires September 15, 1957

Recommended \_\_\_\_\_

Recommended \_\_\_\_\_

Approved *Harold A. Hubler*  
 Harold A. Hubler- Superintendent

This collecting permit must be carried at all times while collecting.



*insert*

IN REPLY REFER TO:



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
WASHINGTON 25, D. C.

June 14, 1957

Mr. James William Bee  
1233 Ohio Street  
Lawrence, Kansas

Dear Mr. Bee:

We have received your application for a Federal Scientific Collecting permit to authorize you to collect migratory birds and the nests and eggs of migratory birds in the Virgin Islands for use in connection with a preliminary faunal survey of the Islands being conducted under the sponsorship of the National Park Service and the University of Kansas.

So far as we have been able to ascertain, it has never been determined by administrative or judicial decision that the Migratory Bird Treaty Act of July 3, 1918, as amended (16 U.S.C. 703-711), is applicable to the Virgin Islands. Although these Islands do not have the status of a "Territory" comparable to the territorial status of Alaska and Hawaii, it is, nevertheless, possible that the Migratory Bird Treaty Act is sufficiently broad in its coverage to afford protection to all species of migratory birds found in or on the Virgin Islands. Accordingly, to such extent as may be required by existing law, the enclosed scientific collecting permit, being No. 11888, will authorize you to collect migratory bird specimens on the Virgin Islands subject to the terms and conditions stated in the permit. You will note that the permit is conditioned upon compliance with State, territorial and such other Federal laws and regulations as may be applicable and that the permit does not authorize the collecting of specimens of wildlife, other than migratory birds. A copy of Form 3-430a, containing a list of the migratory birds which are afforded protection under the Migratory Bird Treaty Act, is enclosed.

The National Park Service administers laws and regulations governing the collection of wildlife specimens on national parks and other areas under its administrative jurisdiction. Accordingly, a copy of your application for a permit from this Service and copies of the letters, both dated June 6, written in your behalf by Dr. E. Raymond Hall and Mr. Sydney Anderson, Director and Assistant Curator of Mammals, respectively, of the Museum of Natural History, University of Kansas, are being referred to the National Park Service for further



attention. That Service will inform you directly concerning the requirements to be observed in collecting wildlife specimens within the boundaries of the Virgin Islands National Park.

Information concerning the need for an additional permit or other requirements imposed by the laws of the Government of the Virgin Islands which you may have to observe in collecting wildlife specimens in the Islands should be sought by writing to the Governor of the Virgin Islands, Christiansted, St. Croix, Virgin Islands.

Sincerely yours,

  
Charles H. Lawrence, Acting Chief  
Branch of Game Management

Enclosures



St. Thomas Island, Virgin Islands

July 6, 1957

Mr. Douglas Anderson drove us to Red-hook Point and thence by boat to Lameshur on St. John Island. One photo (570706-1) at boat dock across bay from where the N.P. will eventually place their docks. At Lameshur on the south side of St. John Island, set 3 bat nets and organized equipment for field work. Will set up composite records for catches in bat nets and for censusing mongooses. I will keep these records from day to day until bat nets are changed, and will make observations from day to day on the distribution and activities of the mongoose. Mr. James Mathias, a native of Bordeaux and a fisherman by profession, reported the following:

a. Agoutis are in the upper forests of the mountain and are not uncommon there. These animals cause considerable damage to the gardens by digging roots of vegetables and banana trees. They can be captured by hunting them with dogs and at great effort. He will try to secure one for us.

b. There are many bats at Reef Bay Estate House.

c. An animal about 18 inches long was at his fish traps last week. It had a humanlike head with large eyes, heavy eyebrows and rounded cranium. The body was dark and fleshy and tapered to a finlike tail which was used for propulsion. He had never seen this animal before but thought it could be a mermaid.

d. Large sharks, 5-10 long bring small sharks 1 to 2 ft. long to the shallow waters in the morning and after the young have fed all day along the edge of the ocean, the mother will return in the evening and after swallowing the young will swim out into the deep water where they will remain until daybreak.

e. Both the green sea turtle and the hawks-billed turtle come into the shallow bays to feed on the green grasslike vegetation; this feeding only at night. A net is placed in front of the grass area and the turtles swim into it and become entangled. Frequently two turtles are caught in the same net in one night. The hawks-billed turtle is more common than the green turtle.

f. James' mother told him that she could remember the time when the now inland lake, Mill Lake, SW of Lameshur was connected with the ocean and boats entered



the lagoon or bay.

g. Box or bunnk fish are in Lameshur bay and are good to eat because they have no bones and the flesh is delicate. They can be roasted over an open fire or baked.

h. He has seen *Copromys* (he calls them gumae pigs) at St. Thomas but they are not on St. John Island.

i. *Crotophaga ani* is known as the black witch because it comes to houses of those who are dying or have died.

f. He has names for all the different kinds of lizards and birds and trees.

A Rev. George Starling informed me that about three years ago his congregation was building a foundation for a church at Coral Bay and they found an Amphisbaena or legless lizard. It was about 10 inches long and was taken from damp soil under a large rock. A hole led down from the surface of the ground under the rock. He estimated the depth at about 14 inches. Bats are at the Post office at Coneel Bay between the door and the rock wall.

Mr. Elwood Shade, who is stationed at Lameshur as naturalist, informs me that Amphisbaena was unearthed when the road was built on the east side of the ridge east of the main Lameshur Bay (about 1 block east of Lameshur.)

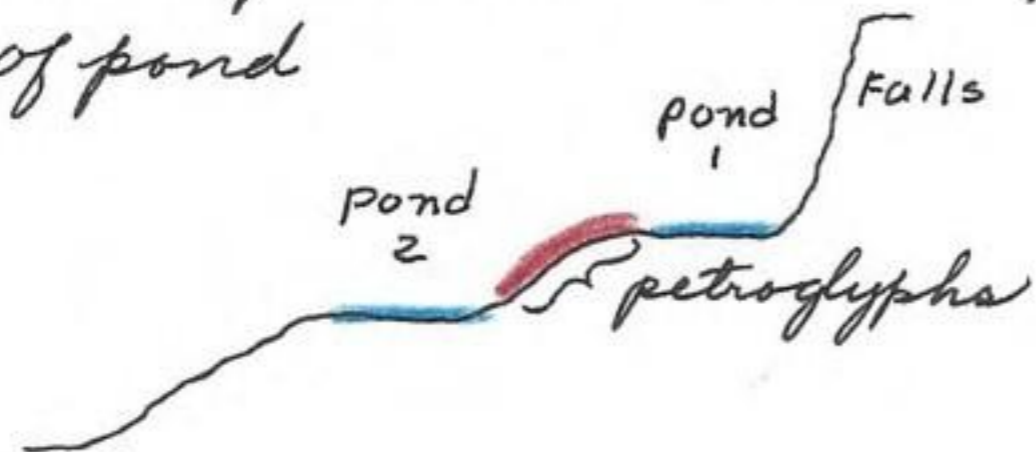
Several negroes have informed us that bats were common at Reef Bay Sugar Mills when the old roof was still in tact. They do not seem to be present today.




Lameshur to Reef Bay, Virgin Islands

July 9, 1957

Made trip to petroglyphs at head of Reef Bay valley <sup>floor</sup> or Conyon. at the area took the following photographs. (570709-1) of Petroglyphs (Carib in origin) NW of Reef Bay Estate House across Conyon. Photo above pond and shows most petroglyphs and adjacent area. Photo no. (570709-2) showing a few at closer range. Photo (570709-3) of 'Cross' on left hand side of pond (2nd pond below water falls. This, upon closer examination is not a cross. Photo (570709-4) a single petroglyph and above last one. Photo (570709-5) of 2 of a set of 4 glyphs, the other two are to the right and not shown. The ones not shown are indistinct. Photo (570709-5a) a composite <sup>drawing of most</sup> of petroglyphs from here and Congo Coy. These photos include all petroglyphs in area. Photo (570709-6) of pond



There was no evidence of recent carving of names by visitors. One large scatter apple tree had fallen into upper pond by erosion of side of conyon and supported green leaves so could not have fallen

too long ago. Three kinds of dragon flies were flying over the water, one a 3" green one, one 3" and purple and one 1" and red. A pair of gray flycatchers were feeding on insects above the pond. At the Reef Bay Estate House took the following photos. (570709-7) coffin and N gate of Estate House. The coffin is made to accommodate wide shoulders. It was taken from cellar to photo and then returned. Photo (570709-7a) of flower, growing in front yard. In conyon valley below house watched a Herpestes auro-punctatus, mongoose, trying to extract food from under a rock (4" across) It used its feet adeptly, first on one side of the rock and then the other side, reaching as far back under the rock as possible. It finally left and on inspection of the rock found six  snails of this size. Returned to Lameshur (N.P. Ranger Station on edge of Lameshur Bay). The trail in daytime is hot except where one gets breeze from Ocean. N.P. should have only horizontal trails on this island. With exertion of walking up grade one is uncomfortably warm on the leeward ridges from the ocean breezes. (At Lameshur photographed a red hebeacue (570713-8) and a white coper flower [insert] (570713-9). The white flower appears to have stamens only.)

On the way over and back noted several birds which I did not record.



570709-15

(back of this page for picture 570709-2)







570709-16

(back of this page for picture 570709-3)





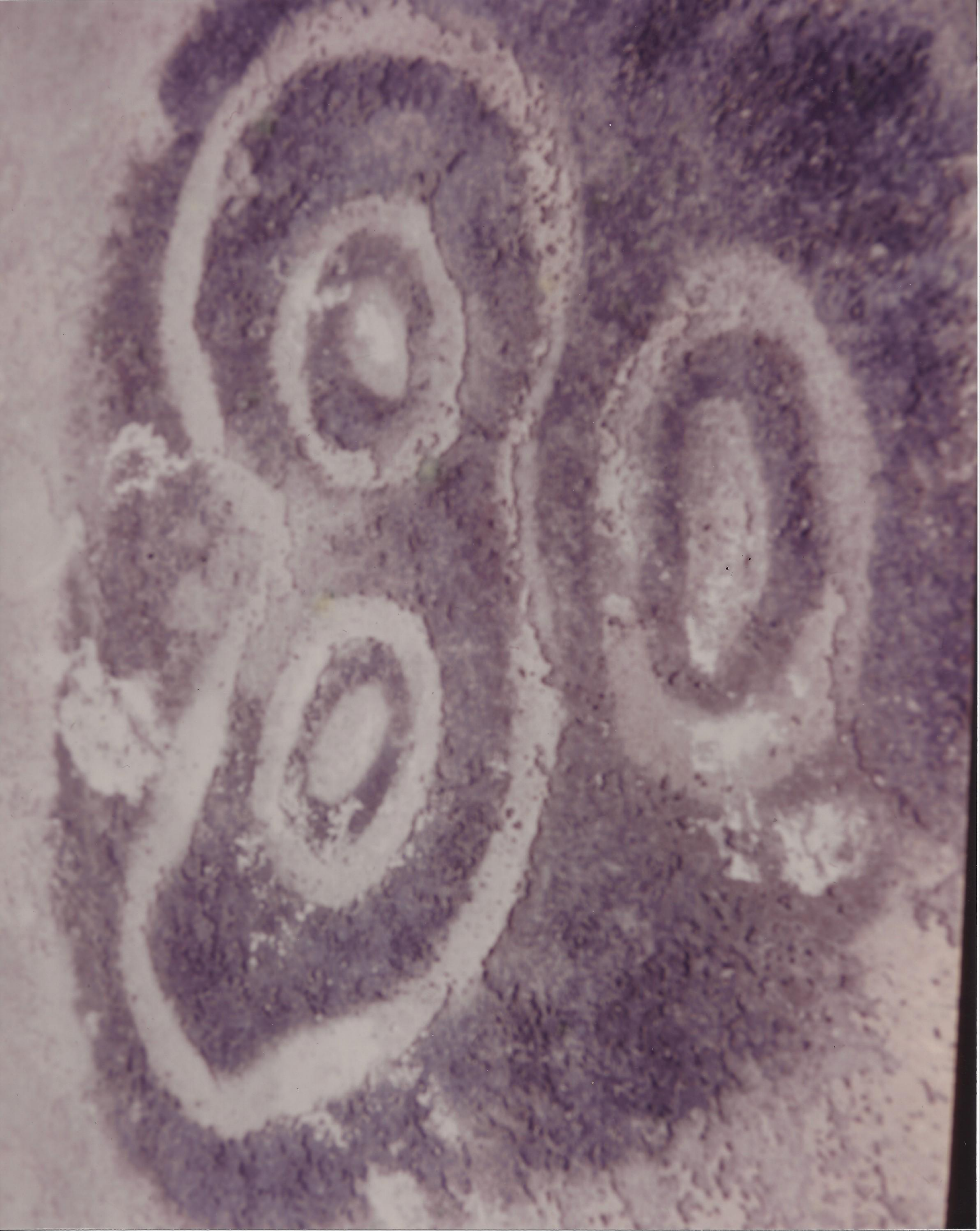


[INSERT] 570709-17 (back of this page)

photo entry  
see 570721-32 on page 570721-46

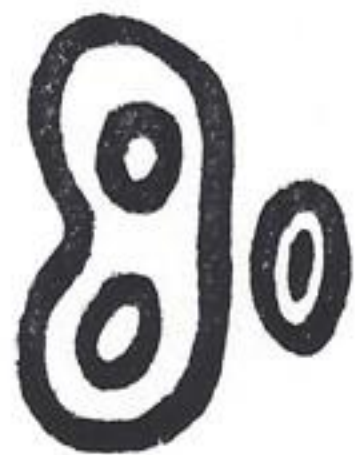
Tracing on page 570721-47





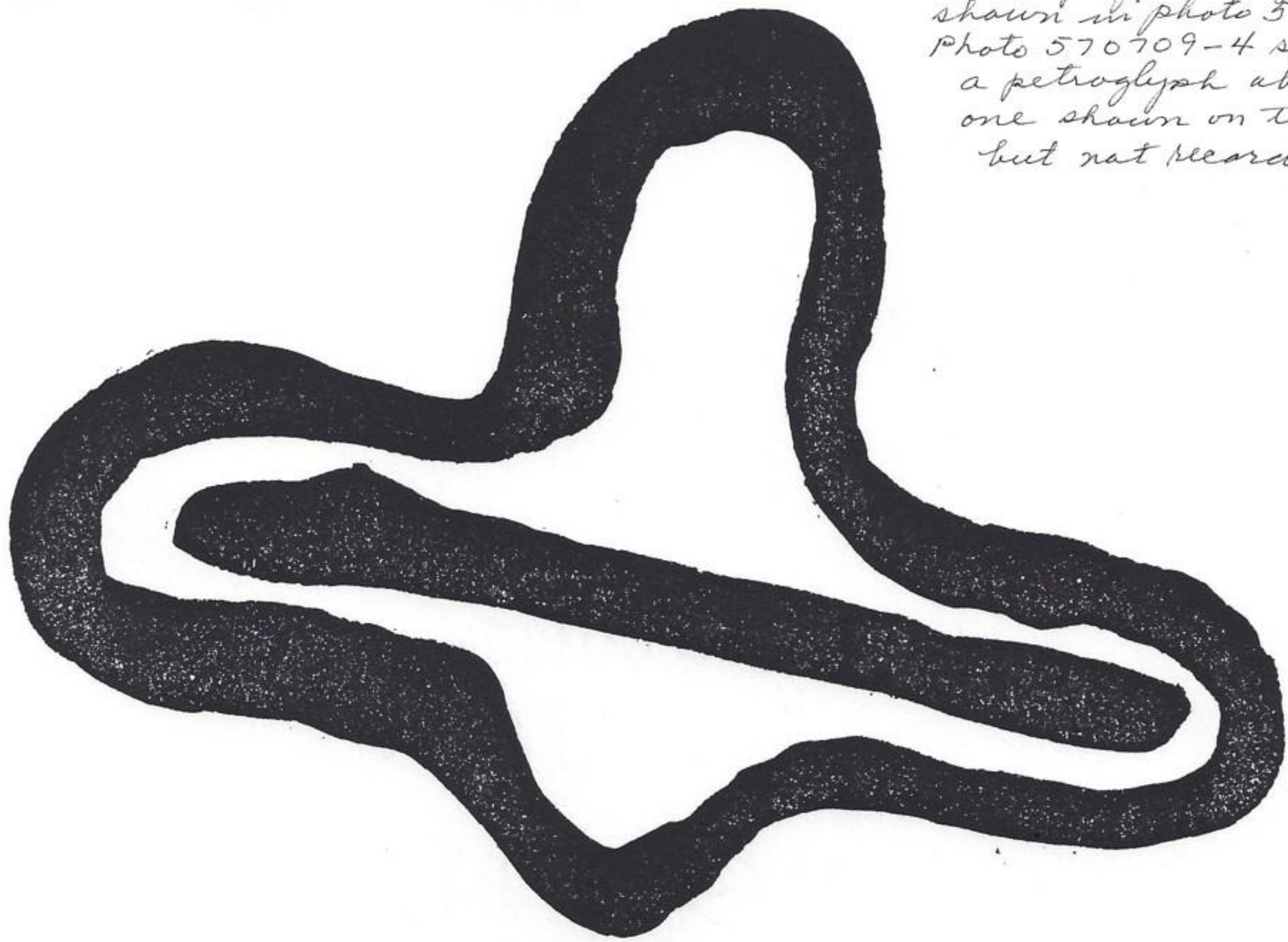


(drawing from photo 570709-1  
and photo 570709-2)



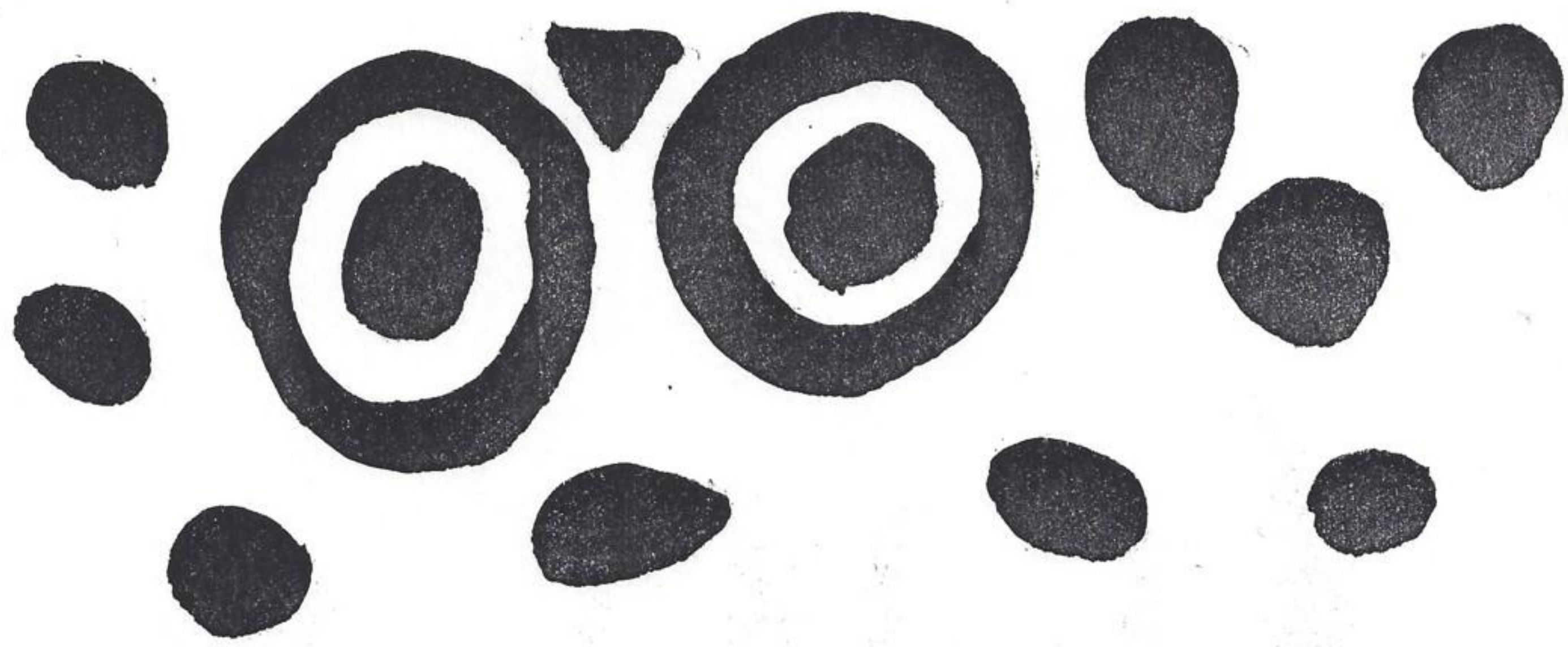
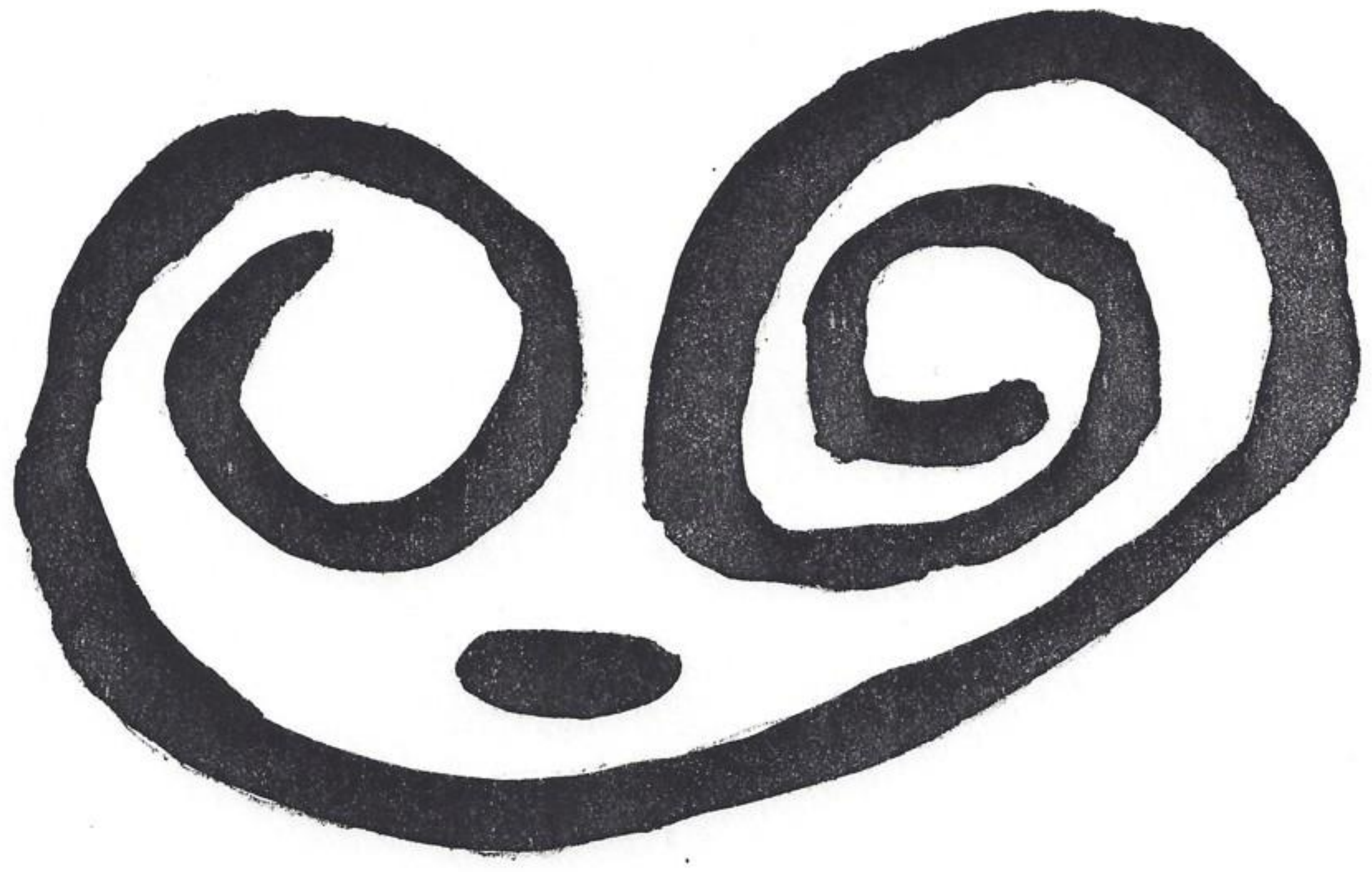


(tracing of petroglyph  
shown in photo 570709-3)  
Photo 570709-4 shows  
a petroglyph above the  
one shown on this page,  
but not recorded on paper)



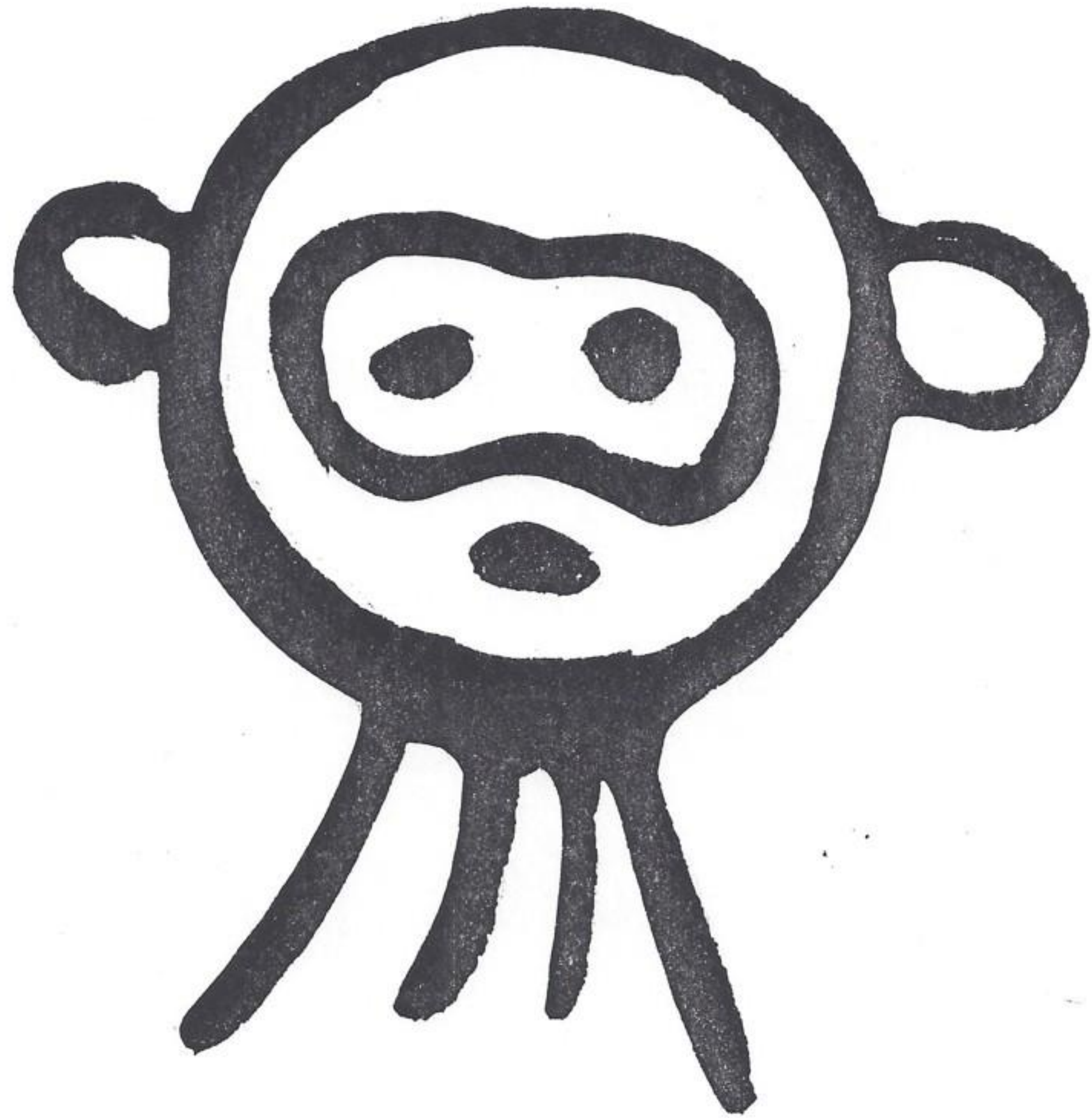


(tracing of petroglyph, see page 18)





(tracing of petroglyph,  
see page 18.)





(tracing of petroglyphs, see  
page 18)





(tracing of petroglyph see page 18)





(tracing of petroglyphs, see page 18.)



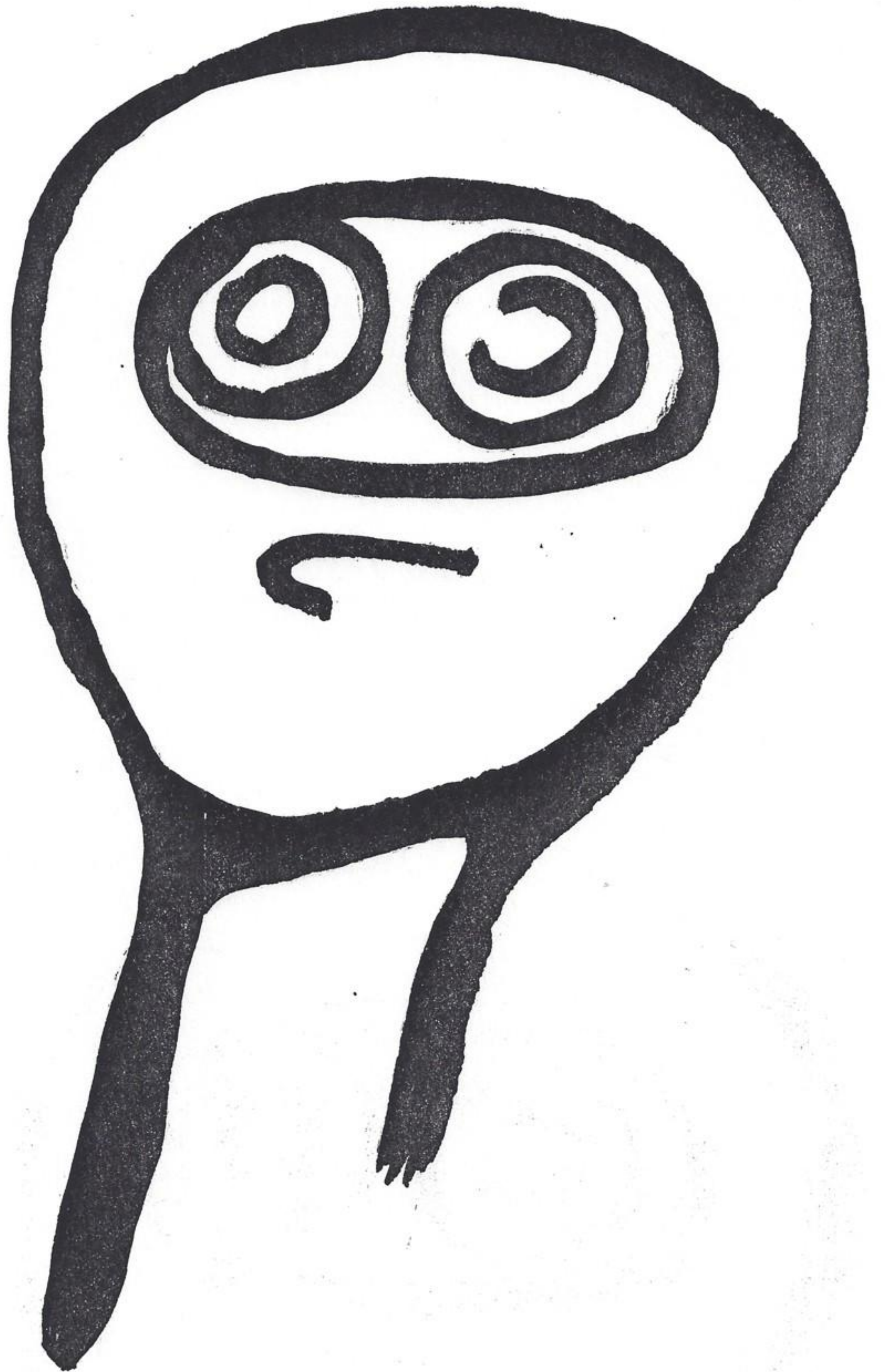


570709-25  
(tracing of petroglyph, see  
photo 570709-5)





(tracing of petroglyph, see  
photo 570709-5)



?

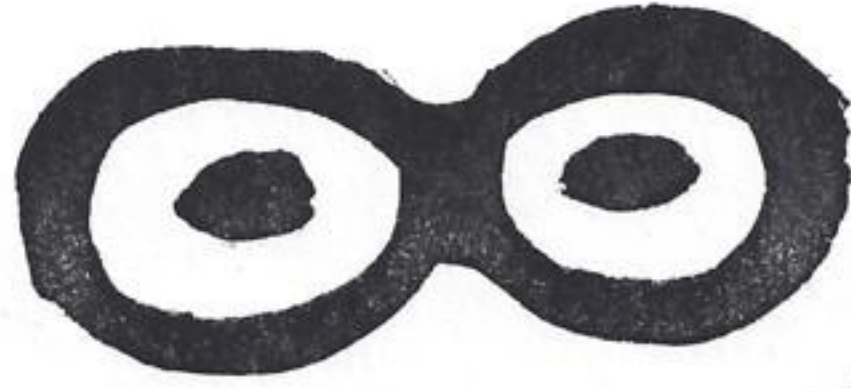


(tracing of petroglyph, see  
photo 570709-4)



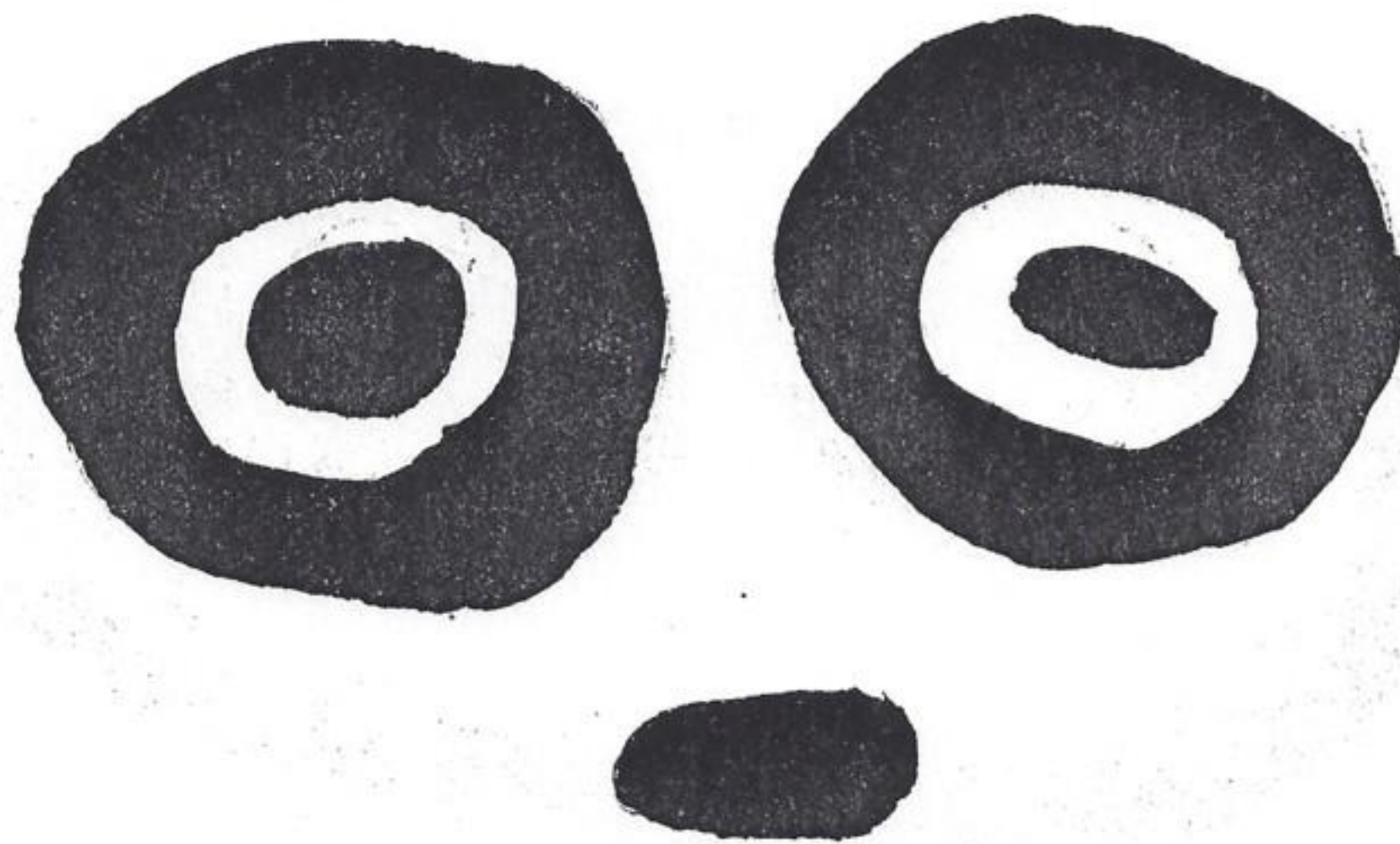
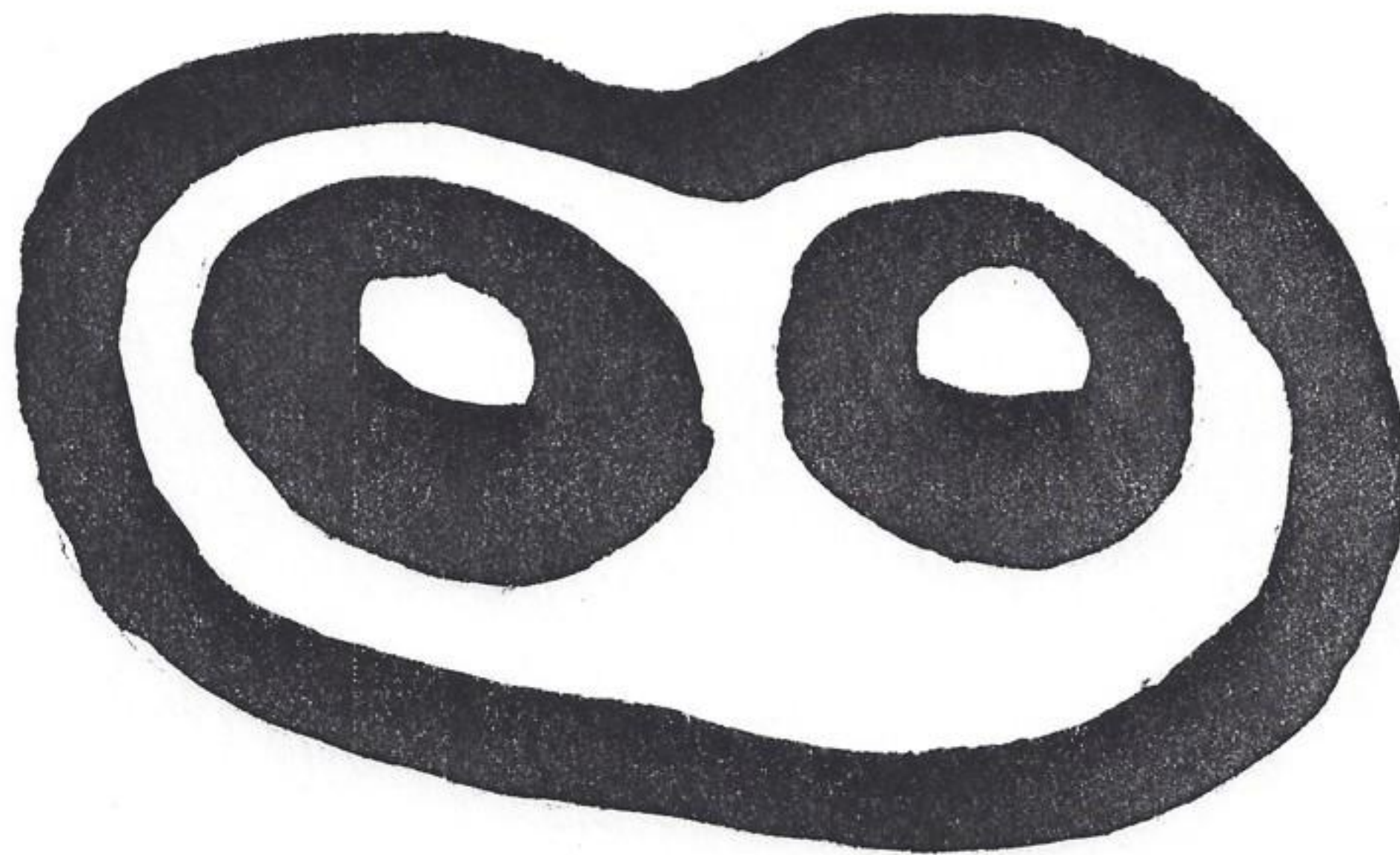


(tracing of petroglyphs, see page 18.)





(tracing of petroglyphs, see page 18.)





Lameshur to Reef Bay, Virgin Island.

July 11, 1957

Made census of *Anolis cristatellus* from Lameshur Ranger Station to Reef Bay Sugar Mill. On last trip I recognized the possibilities of counting these common lizards to determine age groups and habitat preference.

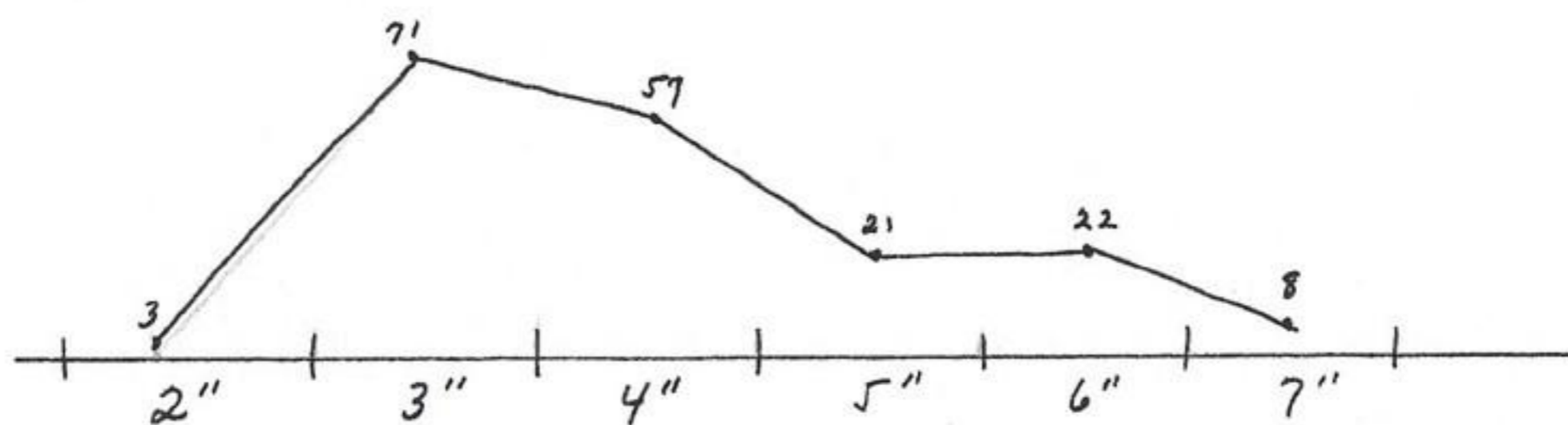
	Time, A.M.	Ground		Tree		Ground		Tree		Ground		Tree		← Length in inches
		2	3	4	5	6	7	8	9	10	11			
valley large trees	9:40		2	0	4	1	0	0	0	3	0	0		
	9:45		2	0	0	3	1	1	0	2	0	1		
dry hillside successional from grass	9:50		2	0	2	0	0	2	0	2	0	0		
	9:55		3	0	0	0	0	0	0	0	0	0		
	10:00		2	0	3	0	1	1	0	1	0	1	1 <i>Anolis pulchellus</i>	
	10:05		6	2	3	0	0	0	0	0	0	0		
mountain side of second growth trees	10:10		0	0	2	1	0	0	0	0	0	0		
	10:15		6	1	2	1	3	1	1	2	0	1		
	10:20		7	1	6	1	1	0	0	3	0	1		
	10:25		1	8	0	4	0	0	1	0	2	0	0	2 <i>Anolis pulchellus</i>
	10:30	1	5	1	2	1	0	1	0	1	0	1	Highest point on trail	
	10:35		7	0	5	1	0	1	0	1	0	0		
	10:40		1	0	2	1	1	1	0	0	0	0	1 <i>Anolis pulchellus</i> 2 " <i>stratulus</i>	
	10:45		3	1	3	0	2	1	0	2	1	1		
	10:50	1	6	1	1	3	0	1	0	1	0	1	2 <i>Anolis pulchellus</i>	
	10:55		4	0	3	0	1	0	1	0	0	0		
Valley of large trees rock fence replaced trees as habitat	11:00		0	1	0	5	0	4	0	1	0	0		
	11:05		0	1	1	2	0	4	0	1	0	0		
	11:10		0	0	0	15	0	0	0	1	0	0		
	11:15		0	1	1	12	0	2	0	1	0	0		
	11:20		0	0	0	1	0	0	0	2	0	0	2 <i>Anolis stratulus</i>	
11:25		0	0	0	4	0	0	0	2	0	0	1 <i>Anolis stratulus</i>		
		2	1	64	7	44	13	10	11	2	20	1	7	

Totals do not include those noted and recorded along stone fence as this is an unnatural condition.

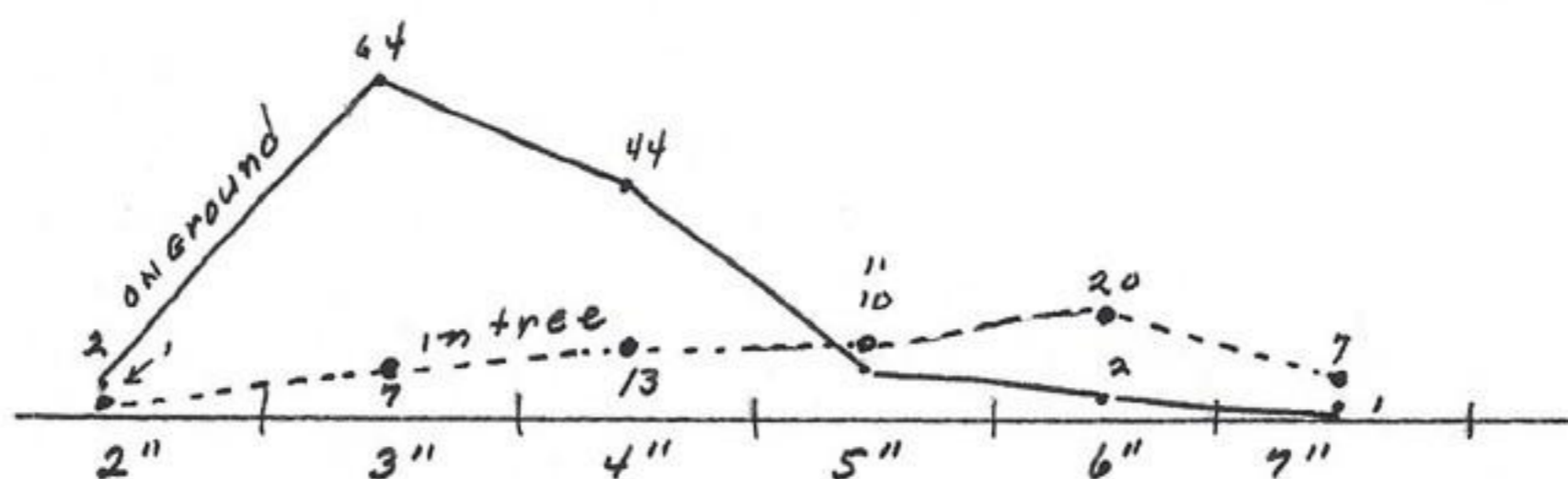
Total of all individuals noted between Lameshur and base of mountain in Reef Bay Valley (along trail as now established) = 180 *Anolis cristatellus*. or for entire trip including rock fence = 243.



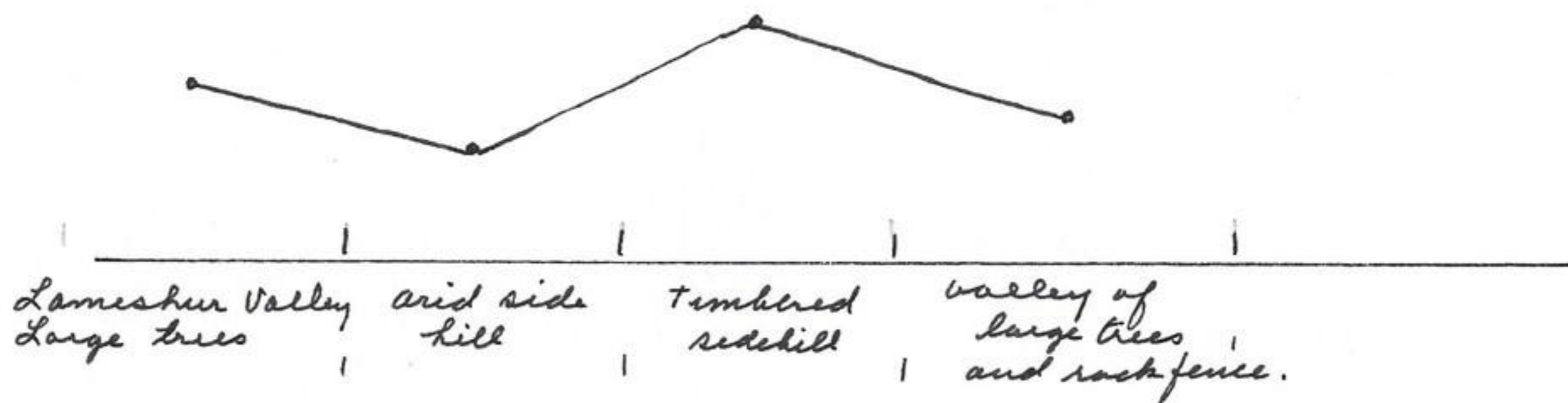
Size groups according to length in inches of lizards of



Anolis cristatellus observed between Lameshur Ranger Station and base of trail on mountain in Reef Bay Valley. Length of individuals by estimation.

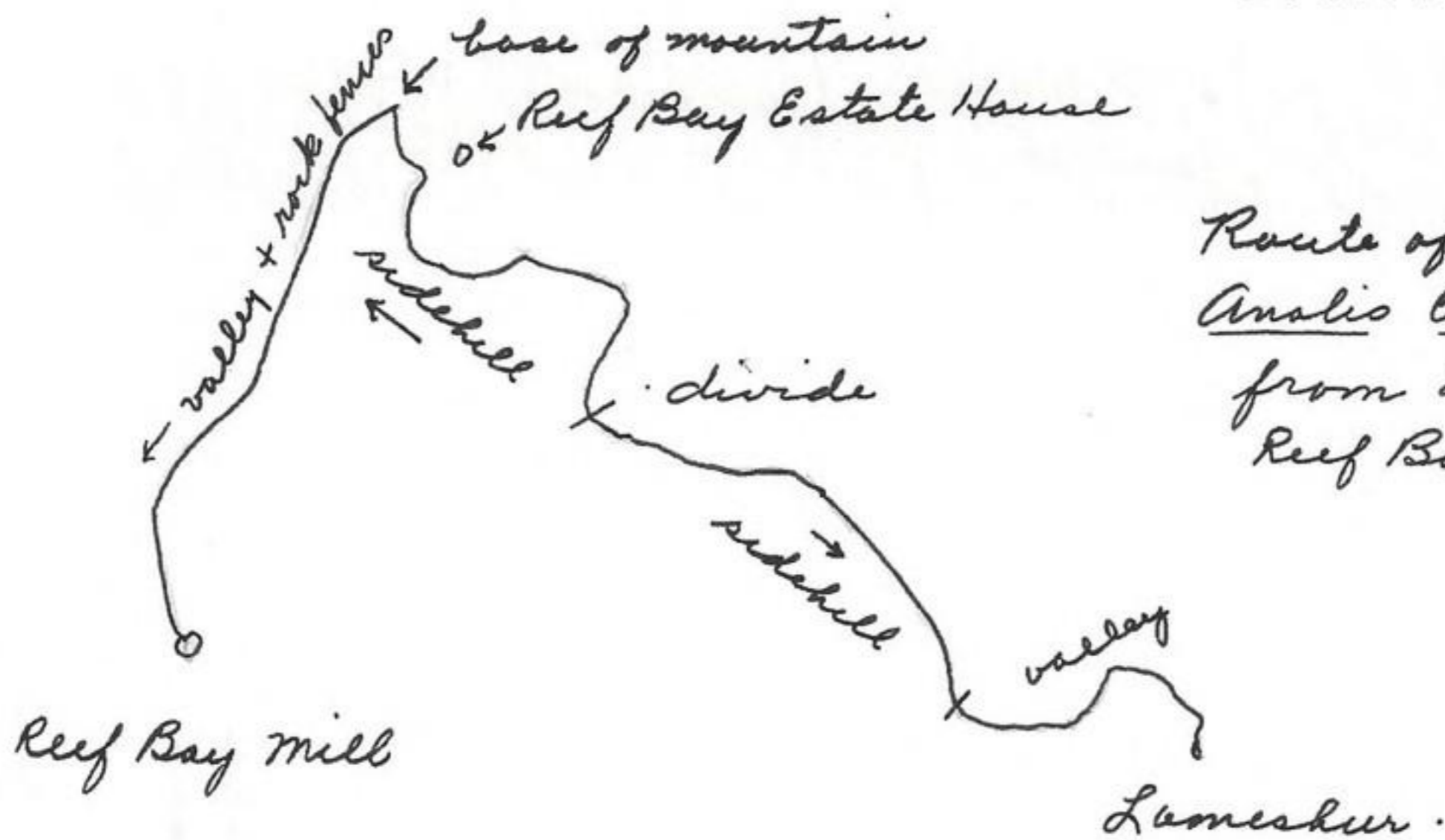


Distribution of Lizard Anolis cristatellus according to size groups. The larger size the more frequently they are found in trees. The average height is approx. 3 feet; the highest 10'. Census area as above.



It is evident that the timbered sidehill supports more Anolis cristatellus. It would be interesting to make transect thru untouched habitat. The above Census was made along trail which made an artificial habitat for these lizards. I do not believe they are as common beyond limits of trail.





Route of census of  
Anolis *cratitellus*  
from Lameshur to  
Reef Bay Mill.

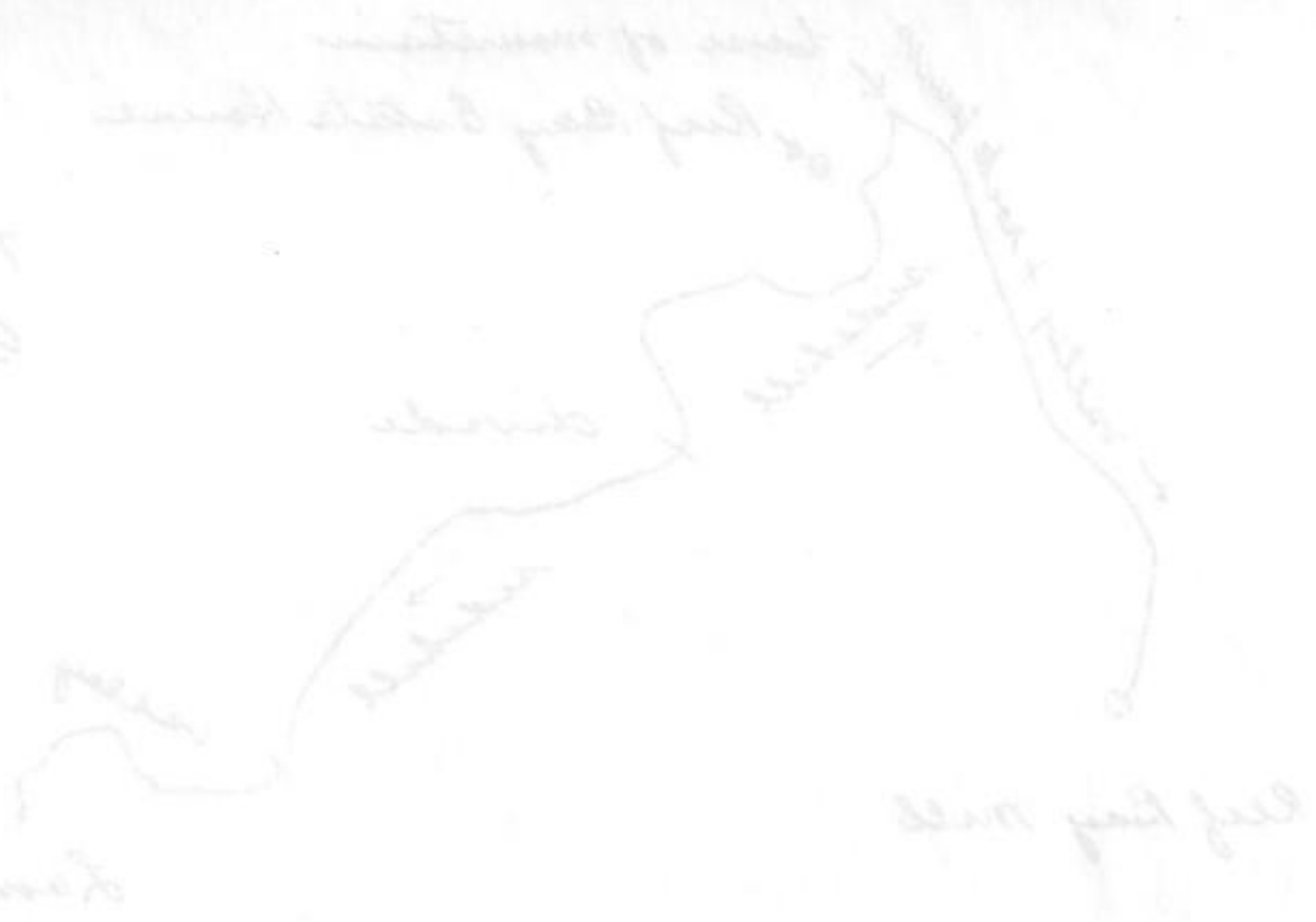
On the basis of this trip and one taken July 9, would estimate that there are approximately 80 'ground partridges' in the lower valley of Reef Bay from the mill to the Inscription Rocks. They are seen mainly on the ground and when approached either walk or run ahead in the fashion of a ruffed grouse or fly into the lower branches of the trees where they strain their necks and heads in the same grouse manner. These birds are definitely associated with the large tree growths from the valleys, where they are most common, to the tops of the mountains. They are not in danger of decreasing because as the forests return to normal the community will be even more favorable than today. The ground dove and mountain dove, in contrast, will be forced to peripheral edaphic areas and along the borders of the ocean.

At Lameshur, Mr. Orlando Myers, a native negro 40 years old and a fisherman + gardner reports: when he was a boy six years old, they planted grass in the valley and sidehills surrounding Lameshur to feed their stock. Above the pure grass slopes were shrubs and trees as we know them today. Rain and floods from the gullies were more common in early days than today. These torrential creeks go clear to the sea when operative. He knows of no Agouti on the island but remembers his family bringing guinea pigs to their farm on St. John where they kept them in cages. These kinds of animals are at present living on St. Thomas Island. Mr. Myers has seen the virgin timber on Tortola Island, but has never known of such timber on St. John Island.

Lameshur to Reef Bay and return, Virgin Islands  
July 14, 1957

The following photographs were made on this trip: (570714-1) a





Large number of  
570715-2  
seen daily at the Ranger Station at Lamesher.

On the basis of the trip and our field notes we estimate that there are approximately 30 plants per acre in the lower portion of the trip from the west to the desert. These are seen mostly on the ground and some are on the rocks. It is not clear that the same species of the same area are seen there. They are mostly seen in the lower portion of the trip from the west to the desert. The plants are mostly seen in the lower portion of the trip from the west to the desert. The plants are mostly seen in the lower portion of the trip from the west to the desert. The plants are mostly seen in the lower portion of the trip from the west to the desert.

(continued from opposite page)  
Only 300 feet away, so must have restricted territory. They are seen daily at the Ranger Station at Lamesher. Photos no. 570715-2 of cacti and yellow flower as above but under better lighting conditions.



burros and young. These animals are used to haul water and carry the natives and their fish to the top of the mountain where they live (Bordeaux). The burros now are doing considerable damage in the N.P. area by keeping trails open and trampling beach areas. Photo (570714-2) of machinery at Reef Bay Sugar mill. The machinery was made in 1809 and the mill stopped operating about 1908. Photo (570714-3) a close-up of above. Photo (570714-4) of the grave of W. H. Marsh at the Reef Bay Sugar mill. He had inscribed on grave marker:

BORN TORTOLA  
A MAY 24, 1832  
DIED JUNE 31, 1909

It is peculiar that this grave is at the mill and not at the Estate House. This grave has not been molested.

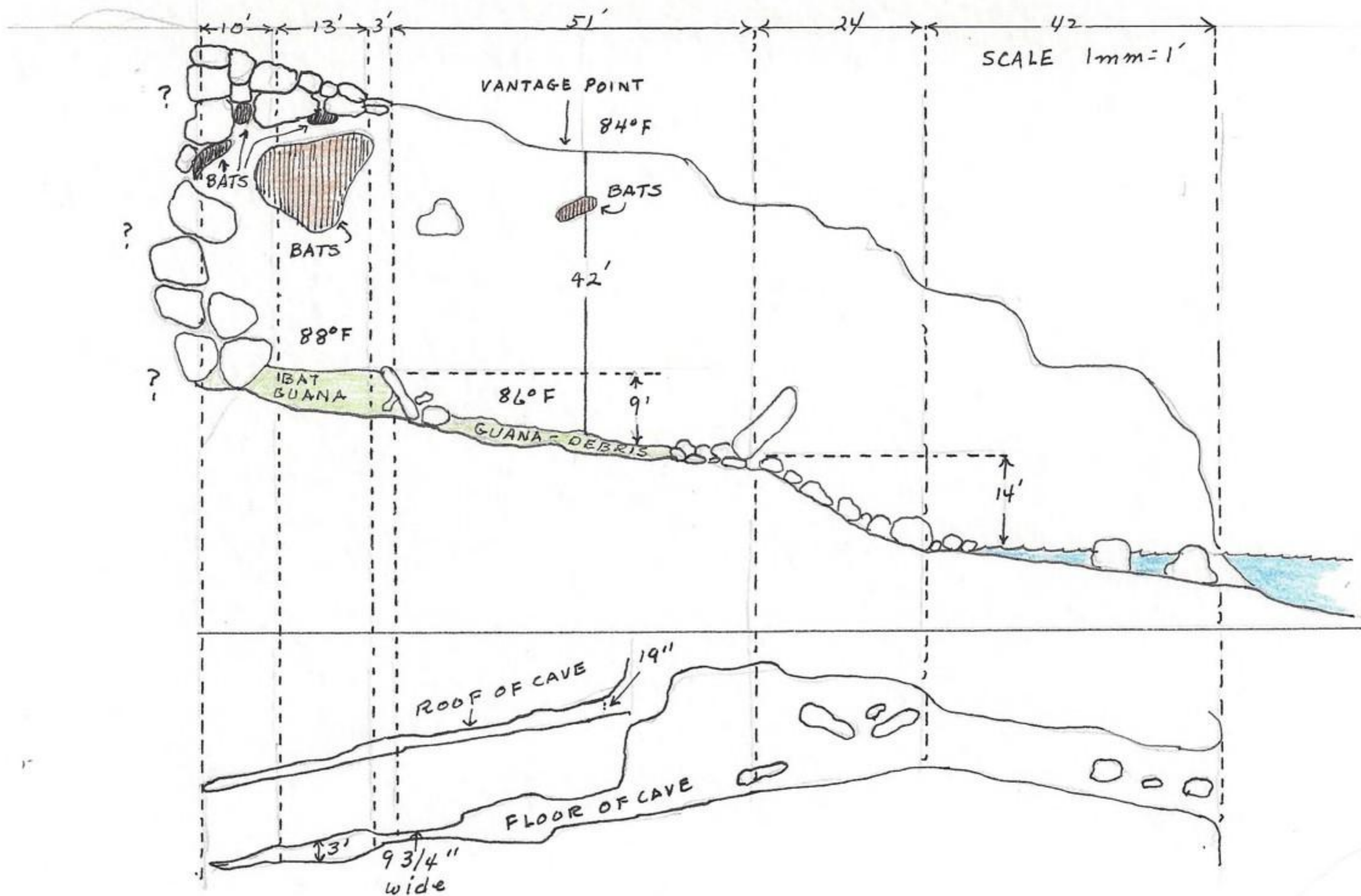
At Lameshur photographed a red yucca-like plant (570714-5). The plants are spiny and normally grow green but preceding the flowering stage they turn red, especially the center, and the white floral center then begins to grow. In three days the floral center grows about a foot in length. The plants, when in patches, are impenetrable by man. Photo (570714-6) of ocean at entrance of cove at White Point SW of Lameshur. This cove supports Brachyphylla cavernarum. (see diagrams following.) Another photo (570714-7) of ocean on east side of cove entrance. These waves enter base of cove and act as barrier to entrance. One must carefully judge both the force and intensity of these waves before entering the cove. At about 200' NW of Ranger Station (Lameshur) photographed a nest of a ground dove (570714-8). The nest is 4 feet above ground and placed in a concavity in the lumb made by fire. Photo (570714-10) of ground cacti and yellow flowers. This cactus is the most troublesome plant on the island. The individual segments when touched penetrate shoes and pants and become lodged in the skin. To remove one, one frequently gets fingers tangled in spines. Most red spotted legs of natives in the field are result of this thorny cactus. Once on your fingers you cannot get rid of it - like chewing gum, and in addition they are known to jump at you! This cacti results from overgrowing.

Lameshur, Virgin Islands

July 15, 1957

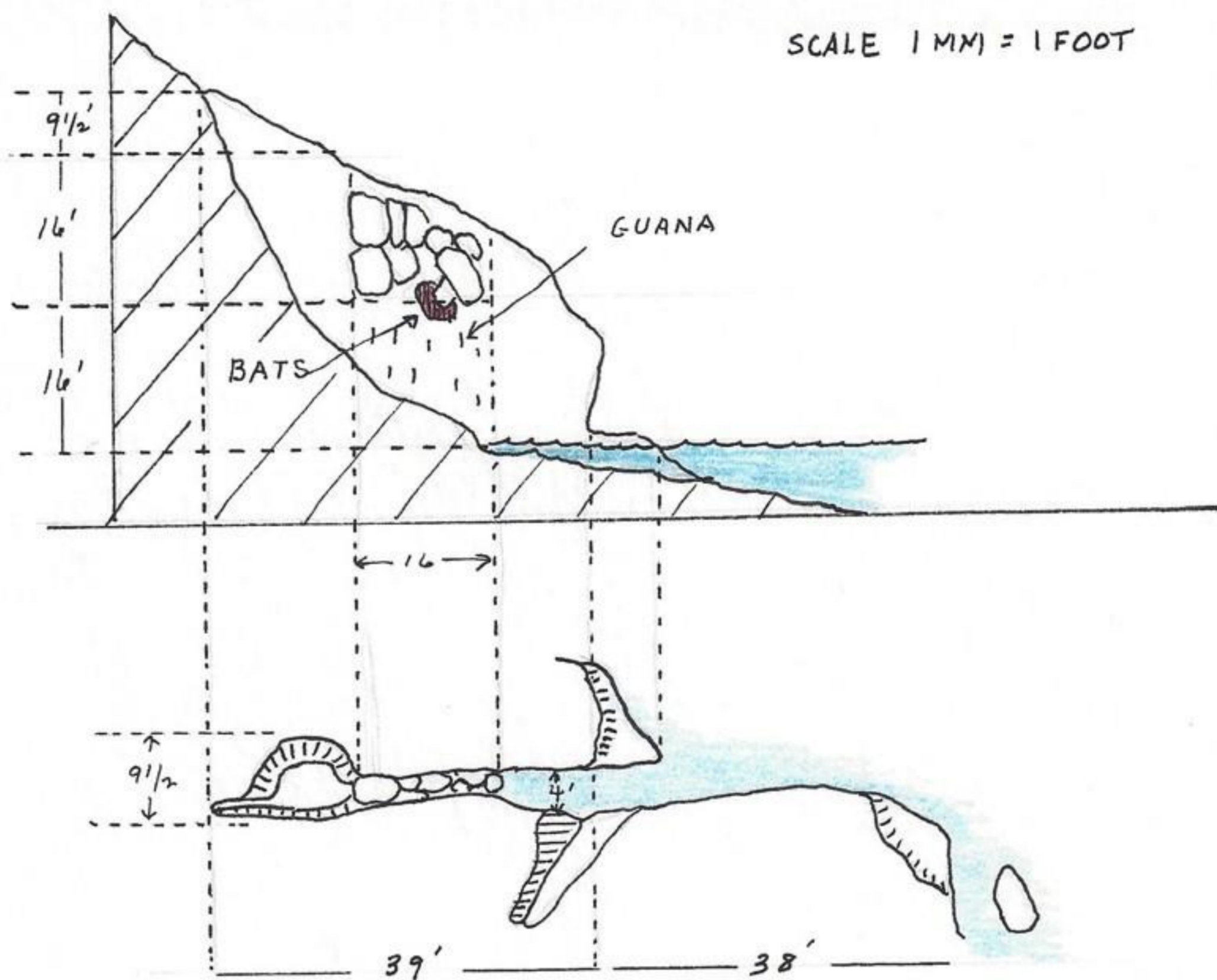
Photo (570715-1) of mocking bird nest and three bluish eggs. Nest in acacia tree and nine feet from ground. This pair only ones at Lameshur and they have not been captured in nets, one of which is





Bat cave at Split Point (603 yds S and 250 yds. W Lameshur Estate House) on July 14, 1957. It was estimated that 200 *Brachyphylla cavernosum* inhabit the cave today as indicated on the above diagram. On July 15 I counted 40 bats and many others were known to be in hidden parts of the cave. This cave has a temperature differential and is too dark to see bats on ceiling and wall without flashlight, although light does penetrate to back of cave. The main areas of cave when bats are located are protected overhead by rocks and dirt lodge in fissure at top of cave; other places are walls of the cave that are protected by slope of cave which slope to W from top to bottom. The entrance to last chamber is 9 3/4" which is just wide enough to squeeze through. This last chamber supports good deposit of guano and is partially protected from tidal waves by rock. Only entrance for man is by ocean entrance where wave act as a barrier wave cut terraces above. This cave is dangerous to work because of loose rocks lodged overhead. From the ocean this cave appears as a split on the rounded point of Split Point (new name given to the point). About 4 square yards of dirt was sifted from the cave from last chamber and middle chamber.

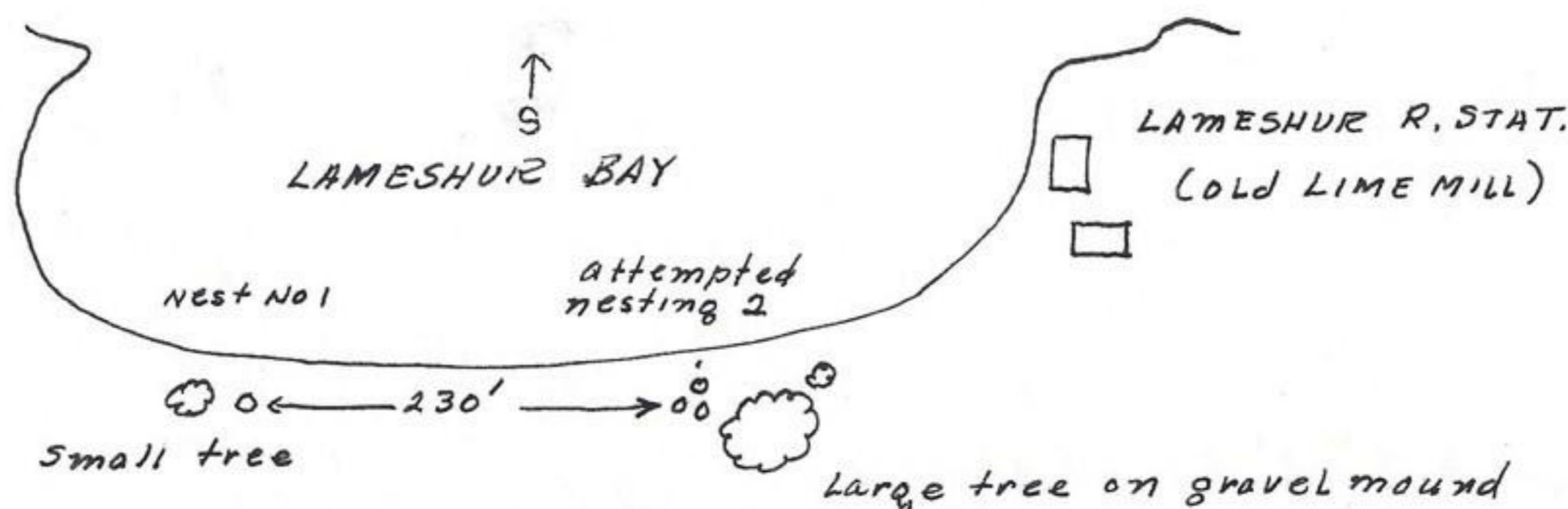




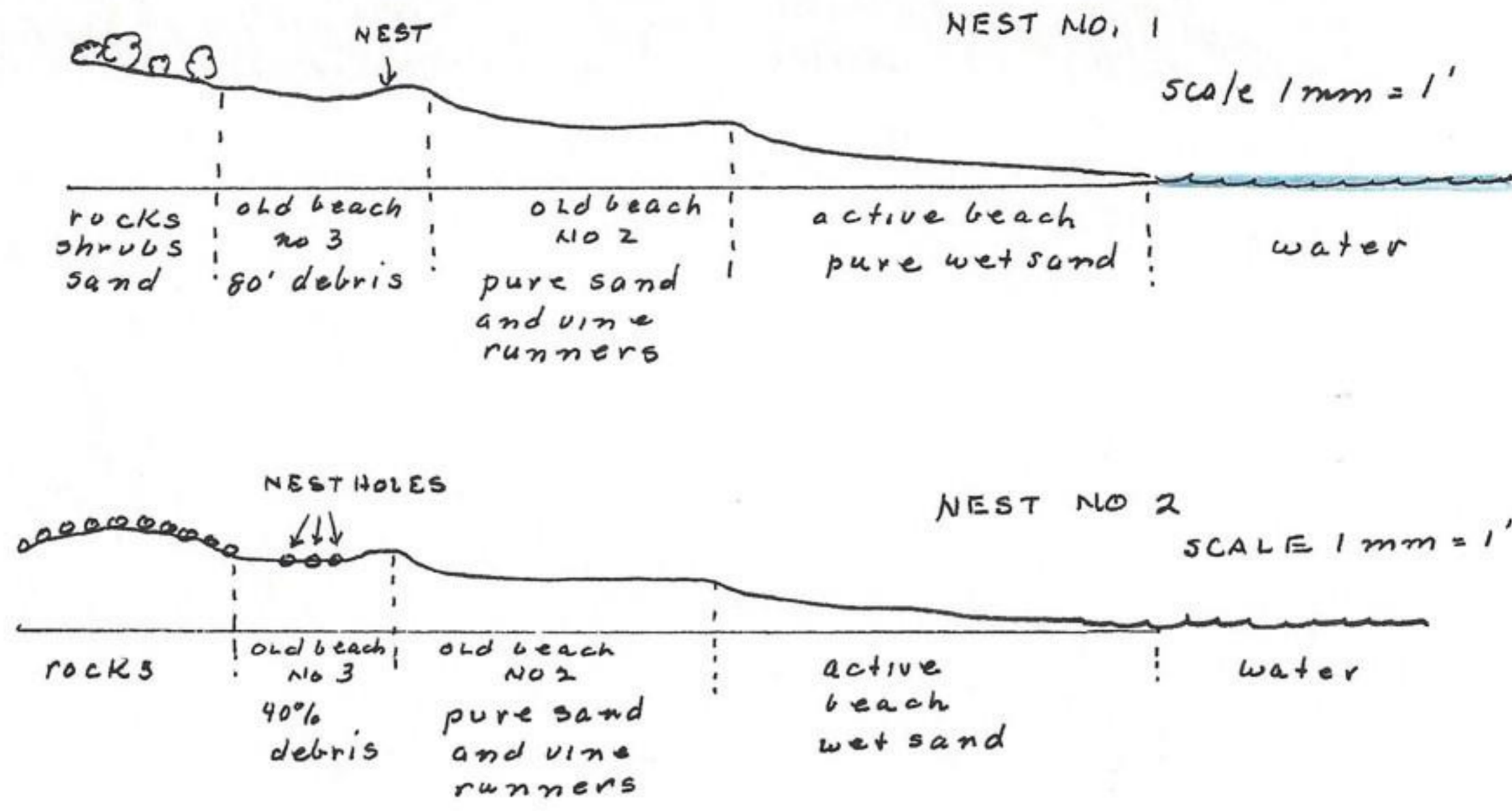
Bat cave at Split Point on July 11, 1957 (just east of larger cave at about 603 yds S and 225 yds W Lameshur Estate House) On July 14, I estimated 30 *Artibeus jamaicensis* inhabiting this cave. On July 15, only two were seen. This chimney type cave does not permit temperature variation and is fairly well lighted. These are the basic differences between the two caves.

Lameshur Bay, St. John Island, Virgin Islands.  
July 16, 1957

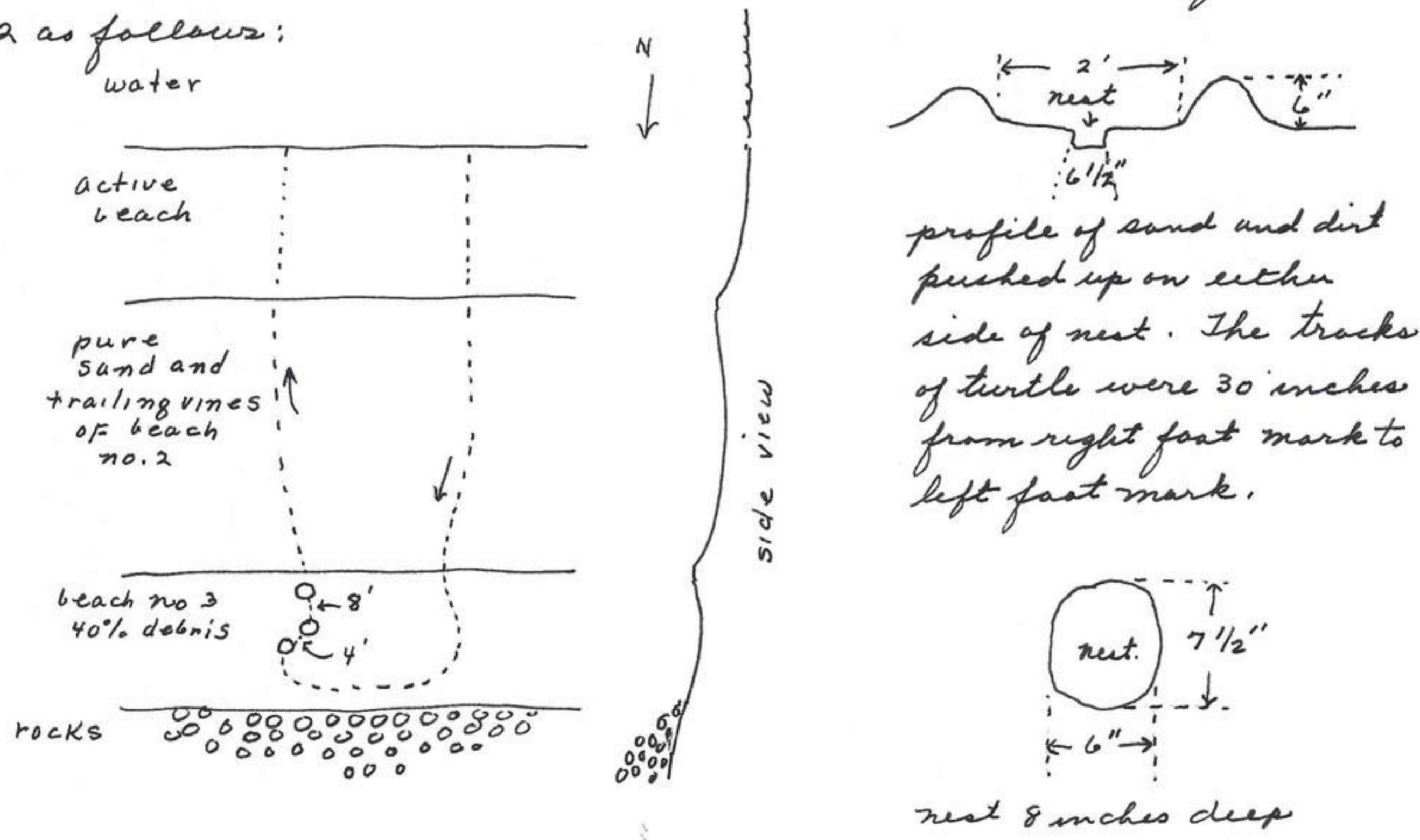
This evening I noted tracks of a green turtle leading from the edge of the beach inland. These tracks were probably made on the night of July 15.







The above 2 nests are on the north shore of Lameshur Bay, nest no. 1 with eggs deposited July 2, nest no. 2 evacuated night of July 15 but area unsuitable and abandoned. Aerial view of nest no. 2 as follows:



This green turtle approached the area from the bay and traversed the sands of the beach in a northerly direction until stopped by the pile of rocks. Turning it to the east it went 10 feet and then leaving rock barrier, turned south again for 5 feet and made first nest excavation. This shallow hole was abandoned because of roots and occasional rock and turned SW for 4 feet



and again made a second attempt but nesting with some difficulty. Turning south she went 8 feet and after one more attempt, left the area. The sands seemed suitable and were moist and warm at the depth she had excavated them. This turtle had chosen the edge of the stabilized upper beach for disposing her eggs. James Mathias says that turtles of this species lay the eggs on three different occasions separated by 15 day intervals. The incubation period is 21 days of which time the young go directly to the water. He claims that the hole is dug to a depth of three feet and as many as 500 eggs are deposited on the three occasions of nesting.

Alfred George, 57 years old, a negro, told me that he worked at the Reef Bay Sugar Mill when he was a young boy of fifteen. The machinery is dated 1861. Lameshur was used to extract juice from limes and to his knowledge has never been in operation as long as he can remember. Fifteen years ago all lower slopes in Lameshur Bay area, Mill Pond and area to the east were grown to grass and cut by hand to be fed to horses, cattle and sheep. Certain areas were always producing a grass crop. The area above the grass slopes are as they are today. He used wood on lower slopes to burn for charcoal. The Mill Pond, contrary to James Mathias' statement, has never been connected with the ocean. I am of the belief that it has. Fishing is becoming more profitable because there is an increasing market and demand and higher prices. Now fish sell from 20¢ to 50¢ lb according to choice of meat, years ago a two foot fish sold for 10¢. Floods have always been active down gullies. Fish population is the same as when he fished years ago. Green turtles return every 15 days for depositing their eggs, (three times).

This evening set traps from Mt. Bordeaux to Lameshur at 20' intervals. This transect was an attempt to determine any zonal arrangement on the island but more specifically to determine the habitat preferences of the various species of lizards, birds and other animal types. This morning photographed Lameshur from ridge to SW showing rain in background <sup>H. G.</sup> (570716-1). At Split Point photos <sup>H. G.</sup> (50716-2) of yucca, organ-pipe cacti and frangipani with ocean beyond, skies overcast.

Lameshur, St. John Island, Virgin Island.

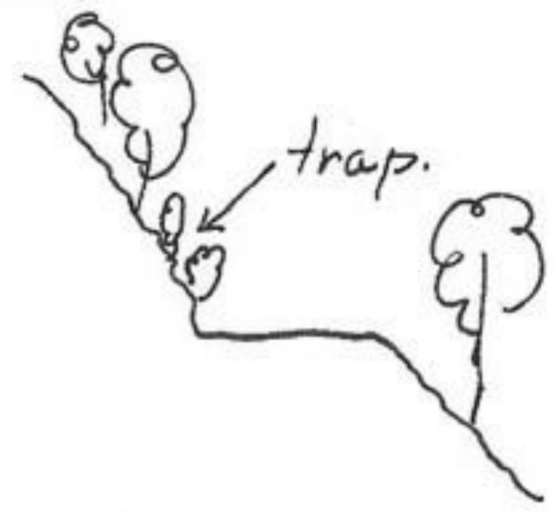
July 17, 1957

From trap line of last night's setting (table includes 18<sup>th</sup> & 19<sup>th</sup>) are

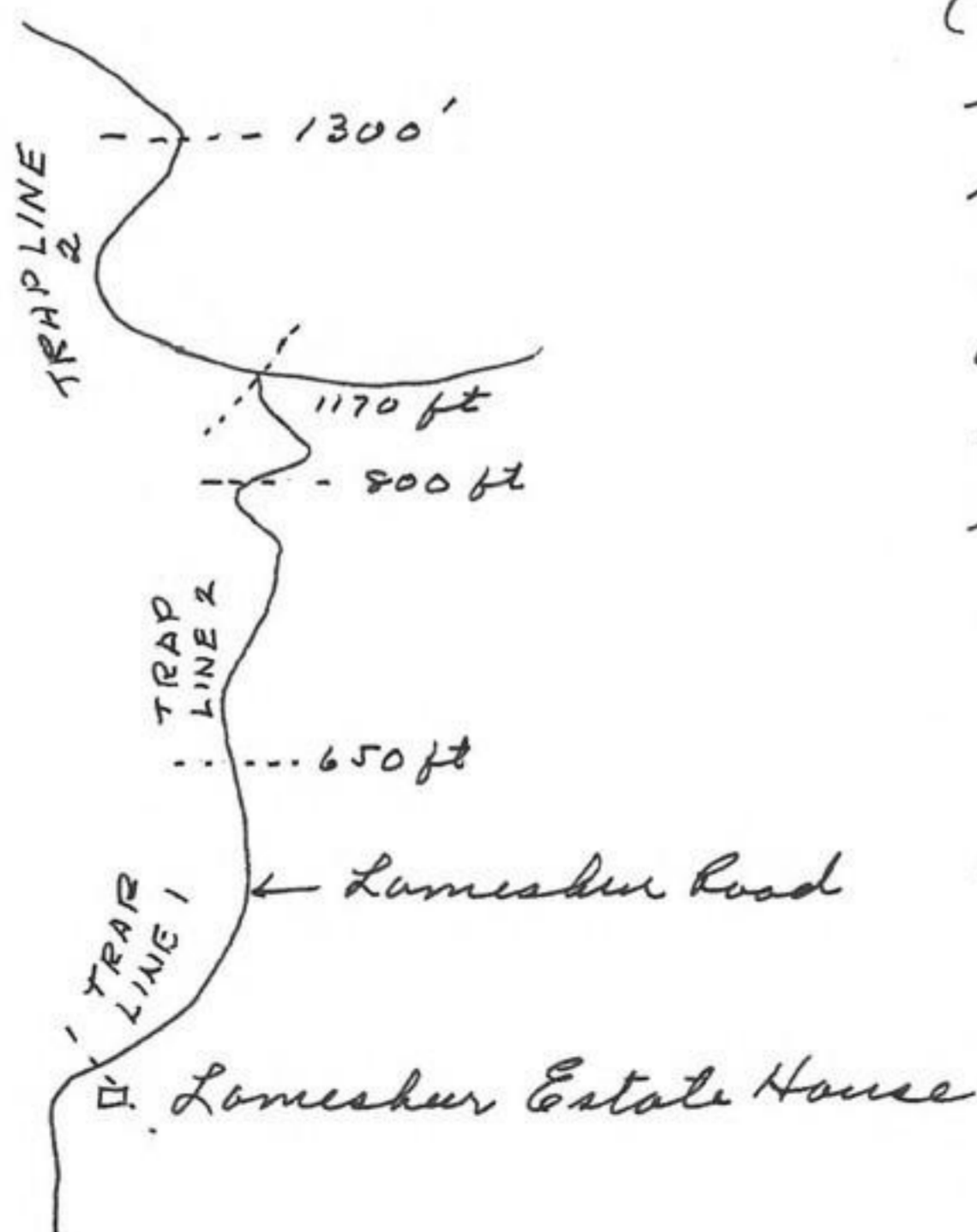


as follows: Trapline 1: 90 traps placed 20 feet apart from Lameshur Estate House at 200 ft to point on road to north at 650 ft or 1600 linear feet. This line traversed successional growths and is characterized by hot, dry climate. Croton and many thorny bushes dominated the line. The upper limit through larger trees but still eric. all traps placed on left or mountain side of trail or road thus:

The niches reminded me of those used by *Peromyscus maniculatus* or *P. boylii*. The second trap line of 50 traps continued up road for 1000 ft from 800' to 1170 ft elevation.



This area is more moist and supports more bromeliads and larger trees. The junction of the Lameshur road with Bordeaux road is the upper limit of this second line of traps. The third line of traps of 1480 feet (linear) was from the above mentioned junction to the highest point of road at divide at 1300 ft (all elevations by Taylor altimeter but obviously in excess of actual elevations) seventy four traps constituted this line which was through the moist upper limits of the mountain in good stands of trees. All traps placed on left or the west side of the road.



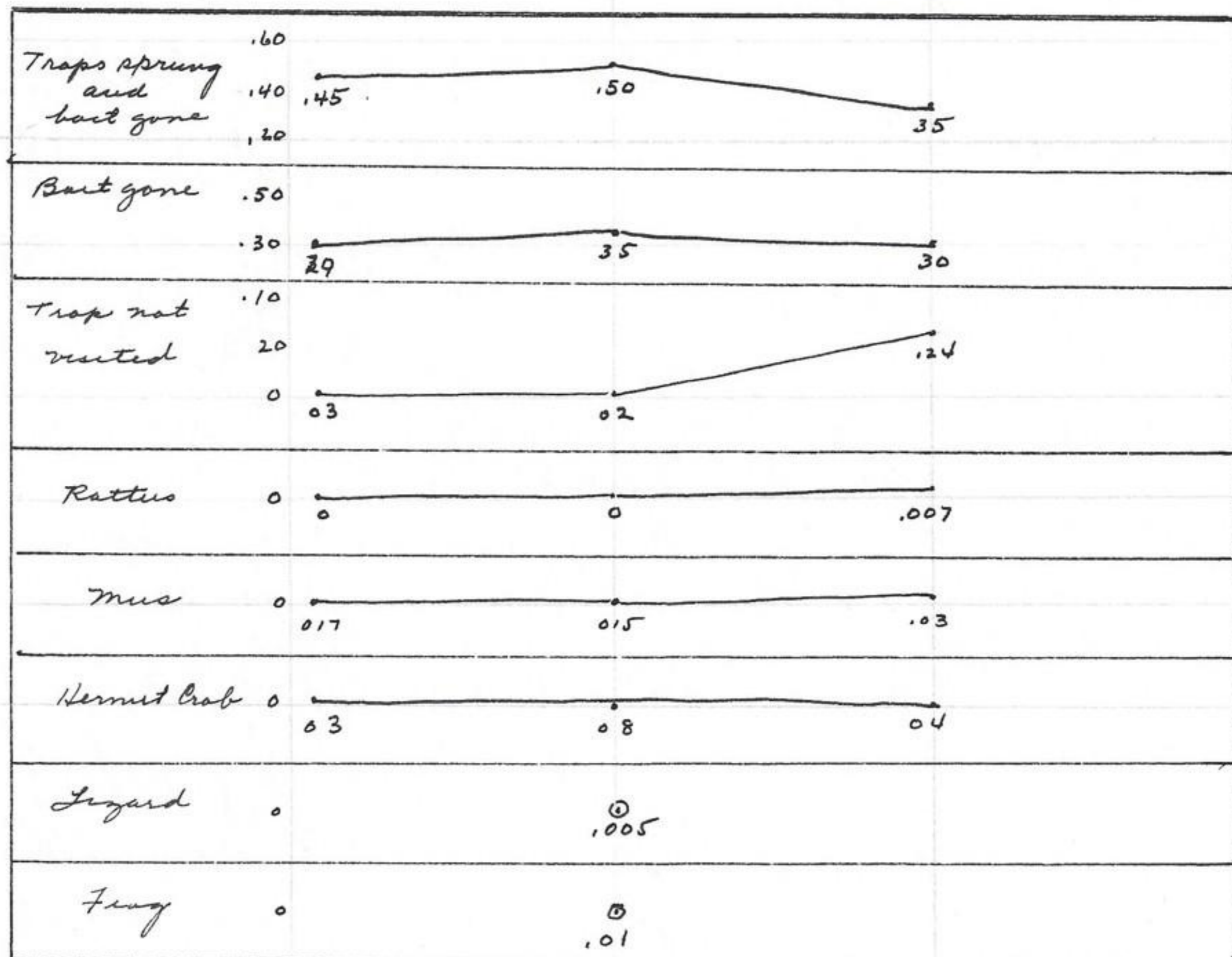
It is believed, from evidence of catch that the hermit crab (specimen no. 570718-7) is the ecological equivalent of the *Peromyscus*-like mammals of north America. All examinations were made at 9:00 A.M. and traps reset and baited at 4:00 P.M. In all areas, but especially line 1 and 2, there were many rodent-like trails which were made and maintained by the hermit crab. Many traps were covered with small grains of debris and sand, probably made by ants but conceivably by the hermit crab. The most

significant data were the diminishing frequency of traps sprung and those uneffected with increasing altitude.



TRAP LINE NO.1      TRAP LINE NO.2      TRAPLINE NO 3

	DATES				DATES				DATES				NUMBER	PERCENT
	17	18	19	20	17	18	19	20	17	18	19	20		
TRAPS SPRUNG AND BAIT GONE	51	49	34	33	27	25	24	24	30	30	25	20		
	.55	.54	.37	.35	.54	.50	.48	.48	.40	.40	.34	.27		
BAIT GONE	29	24	29	26	10	22	21	18	23	23	21	22		
	.32	.25	.32	.28	.20	.44	.42	.36	.31	.31	.29	.30		
TRAPS NOT VISITED	2	5	3	2	1		2	1	11	16	20	25		
	.02	.05	.04	.02	.02		.04	.02	.15	.21	.27	.34		
RATTUS									2			1		
									.02			.01		
MUS	2	1	2	1	1		1	1	4	3	2	2		
	.02	.01	.03	.01	.02		.02	.02	.05	.04	.02	.02		
HERMIT CRAB	6	3	3	5	8	3	2	4	4	2	6	4		
	.05	.03	.03	.04	.16	.06	.04	.08	.05	.02	.06	.05		
ANOLIS CRISTATELLUS					1									
					.02									
ELEUTHERODACTYLUS ANTILLENSIS					2									
					.04									





The abrupt increase of uneffected or unvisited traps at the higher levels or elevations may be due to fewer ants and less possibilities for trail development by hermit crabs as dry leaves cover most of the ground.

From Lameshur Estate House made photo (570717-1) of flamboyant tree and Lameshur Bay beyond. no (570717-2) also of the red flowers of the flamboyant tree as frame and Lameshur Bay beyond. As one can see, this estate house was placed with a beauty of scene in mind. These early Danish people had a eye for the esthetic. These house were not placed for receiving breeze from ocean, as, for example, the Reef Bay House was quite a distance from the ocean. A Mr. Stick owned this house and grounds before Rockefeller bought the land. A Mr. Pock and his wife lived here from 1953 to 1955. Photo (570717-3) of a nest of the grassquit in organ-pipe cactus. This nest is situated about 20' NE of pond (fresh water) 1/10 mi. W Lameshur Estate House. It is well protected from mongoose depredation. At Lameshur Ranger Station (The Lameshur Lime Mill where N.P. has converted into Ranger Station) photographed some misc. marine life on sands of bay (570717-4) and (570717-5) a close up of a large conch shell and a crab. no. (570717-6) of the reef in Lameshur Bay just beyond the porch of our quarters. This submerged reef has many kinds of fish of a hundred varieties and they can be observed with a snorkel tube and glass face mask. Sand sharks frequently pass through the area and pick up these fish. The yellow areas are large table-size fronds of hard coral fans. Sting ray fish and other large fish use this and adjacent sandy areas. The small fish use the corals for protection.

This P.M. at 8:00 P.M. started to keep record of the building activity of the termites on the wall of our sleeping quarters. All measurements taken daily at 8:00 A.M. and 8:00 P.M.

July 17 P.M. - July 18 A.M. = 30 mm

" 18 AM " 18 P.M. = 34 "

" 18 PM " 19 A.M. = 27 "

" 19 AM " 19 PM = 34 "

" 19 PM " 20 AM = 43 "

" 20 AM " 20 PM = 45 "

" 20 PM " 21 AM = 45 "

" 21 AM " 21 PM = 52 "

" 21 PM " 22 AM = 50 "

" 22 AM " 22 PM = 52 "

" 22 P.M. " 23 AM = 65 "

July 23 A.M. - July 23 P.M. = 49 mm

" 23 P.M. - " 24 A.M. = 52 mm

Mr. Shade removed termite corridors from walls this date (July 24)

The average distance cover in day = 44 mm

The average distance cover at night = 44 mm

Termites proceed at a constant rate.



Lameshur, St. John Island, Virgin Islands

July 18, 1957

Checked trap line from Lameshur to Bordeaux (see table for results). Watched an Anolis crestatellus capture a butterfly (2 inches wide, reddish-orange with black body dots) by jumping 10 feet in 3' intervals in a split second. The lizard then went to a small tree and after climbing 1 foot turned itself upside down and remained about a minute without moving, then finally consumed the insect. I have noticed that near the upper limits of the mountains the yucca and silver palms extend their central stalks above the trees which would indicate the forests are no returning to higher growth level or that the yucca and palm have this particular habit of sending their floral or vegetative parts above the tree level. The leaves of these plants are in shade below the other trees. Several of the traps were completely covered with small granular pebbles by either ants, termites, crabs or some other animal. Photo (570718-1) of mangos fruit from tree near <sup>highest</sup> divide of Bordeaux Road. Photo (570718-2) of Grassquit nest at about 500 foot level of Lameshur Road.



July 19, 1957

Checked trap line from Lameshur to Bordeaux (see summation on table of July 17). Fruit of mangos ripe and is being eaten by pearly eyed thrasher. Continued to top of mt. Bordeaux but when on top could not see much beyond because of trees. Did not find trail and going difficult. Examined several garden plots of natives but in each case the areas seemed to be mismanaged or neglected. I am wondering if the government is subsidizing them. Returned to Lameshur (these trap inspection are made on foot) and investigated peninsula east of Lameshur Bay. Photo (570719-16) of old bent frangipanni tree on cliffs of wave eroded rocks. no. (570719-17) of dead stump on beach and cliffs. no. (570719-18) wave action at point. Photo taken into sun. (570719-19) half submerged rock with waves surrounding and over the top. no. (570719-20) of wave action over rocks of various colors - some plant material. These photos taken at south end of peninsula. This peninsula is overgrazed extensively by goats and the entire ground is bare except a multitude of cacti. As much disturbed as this peninsula is, it is still extremely interesting because of the cacti and associated wave action. Many ground doves and mountain doves nest here and white-crowned



doves or pigeons are consistently noted in the area. The small ground cacti is so numerous that one is forced to remain on the narrow animal path, or suffer the consequences. Goats which are caught at end of peninsula can be corralled and, if desired, killed with rocks.

Lameshur, St. John Island, Virgin Islands

July 20, 1957

This A.M. we visited Mr. Ewen McFarlane, who manages the Caneel Bay Resort Plantation. He set up our first trip for tomorrow and we are then to plan our trips by boat for the rest of our stay on St. John. McFarlane reports:

1. 85% of the island has been under cultivation at one time (according to Mrazek) but at different times.
2. Amesva on Sandy Cay, Spanish
3. After the rebellion, the Estate owners left the country and turned the management over to English, Irish and French supervisors
4. Pearly-eyed thrashers eat tomatoes in the plantations gardens and are a real problem.
5. The mongoose are only occasionally noted away from habitation and at the open garbage pits at Caneel Bay, before incinerator placed in operation, as many as 6 or 7 were noted each day.
6. Ground doves and mountain doves increased at Caneel Bay, <sup>resort</sup> in the last 4 years, especially noticeable in the open fields about the cottages
7. Mongoose are important to the ecology of the island in keeping down numbers of rats etc.
8. There are spiders 6 inches in diameter and body about size of nickel.
9. The Caneel Bay Resort is planning to put in a distillation plant to reclaim fresh water from the ocean. Last year they used 1 1/4 million gallons of water from San Juan at 6¢ a gallon. The new process will supply water at 1/6¢ a gallon.
10. Bats are numerous on Norman Island.
11. Would like us to see virgin stand of timber on Tortola and will make necessary arrangements.

On our trip to Caneel Bay Resort Plantation, via regular road, noted 43 pearly-eyed thrashers. On our return trip counted 53. If one were to walk this route and



count calls as well as sight records, the count would be 200 or so. There is a trail that leads down from divide of Reef Bay canyon. The natives use the term gut for canyon or gully. From divide of Centerline road took photo 570720-1 showing east end of island (Coral Bay). Photo 570720-2 same as above. Photo 570720-3 from Bordeaux looking down into Coral Bay and east end of island. This is the classical shot of this end of the island. Photo 570720-4 same as above.

Lameshur, St. John Island, Virgin Islands

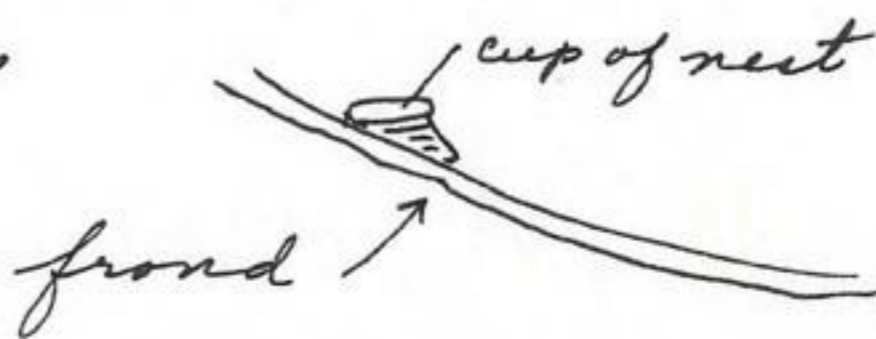
July 21, 1957

Drove from Lameshur to Connel Bay Resort Plantation by jeep, leaving at 8:00 A.M. and arriving at 9:00 A.M. Enroute observed the following: Between Lameshur and 600 ft altitude level on road, off Lameshur, 4 ground doves, 3 pearly-eyed thrashers, 2 gray kingbirds and one cuckoo; between 600 ft level and main Bordeaux road, 1 cuckoo, 2 vireos?, 3 pearly-eyed thrashers, 2 kingbirds; from junction of Lameshur-Bordeaux road to highest divide on road; 3 pearly-eyed thrashers. From this divide to Connel Bay via short cut S of cement rain reservoir (Photo 570721-29, of this sidehill reservoir), 38 pearly-eyed thrashers. One mongoose at about 2 miles before Connel Bay and associated with agricultural areas. At Connel Bay, George Smith piloted a small boat to several cays. At Henley Cay we met Mr. Richard Folk and his wife Linda Folk who formerly were caretakers of the Lameshur Estate owned by Mr. Stick. The Sticks lived at Reef Bay Estate House for 2 years (1951-1952) and at Lameshur (1953-1955). Animals observed on Henley Cay (owned by Lawrence Rockefeller and used as retreat for guests from Connel Bay Resort Plantation) are: Anolis cristatellus, observed 20, one ♂ shedding skin and attempting to dislodge skin from head. Many males in trees in immediate vicinity of house and in area where 2 dogs, 2 peacocks, guinea fowl and a flock of chickens roamed the area.

Crested hummingbird: Feeding in area of the house

Emerald throated hummingbird: One feeding on flowers

Linda showed us a nest of this species which had been built in the frond of a palm thus





Red-necked dove: Folk thought this species nested on the island because a pair, or singles, were observed on many occasions.

No mongoose on island.

Laughing gull: Along shore.

Pelican: Conspicuous along the edge of the island.

Yellow warbler: nests on island.

Yellow oriolelike bird: nests on island

Arreiva arseus: near house and living with dogs, chickens and peacock guinea hens.

Florida blue heron (white plumage) in grass at edge of island.

No pearly-eyed thrasher.

Hemidactylus mabouia: Under rocks and at house at night.

Gray Kingbird: Pair nesting and defending a territory.

Ground dove: Three pairs noted; one with 2 young & deep old; 1 with eggs and one with eggs and young.

Mountain dove: 2 nest, one of which was placed in cliff only 3 feet above upper wash zone of ocean. Nest not accessible from top.

Crabs: Birds eat crabs according to Folk.

Rats & mice: Dog spends considerable time chasing and hunting them.

Bananaquit: Occasionally seen by Folk.

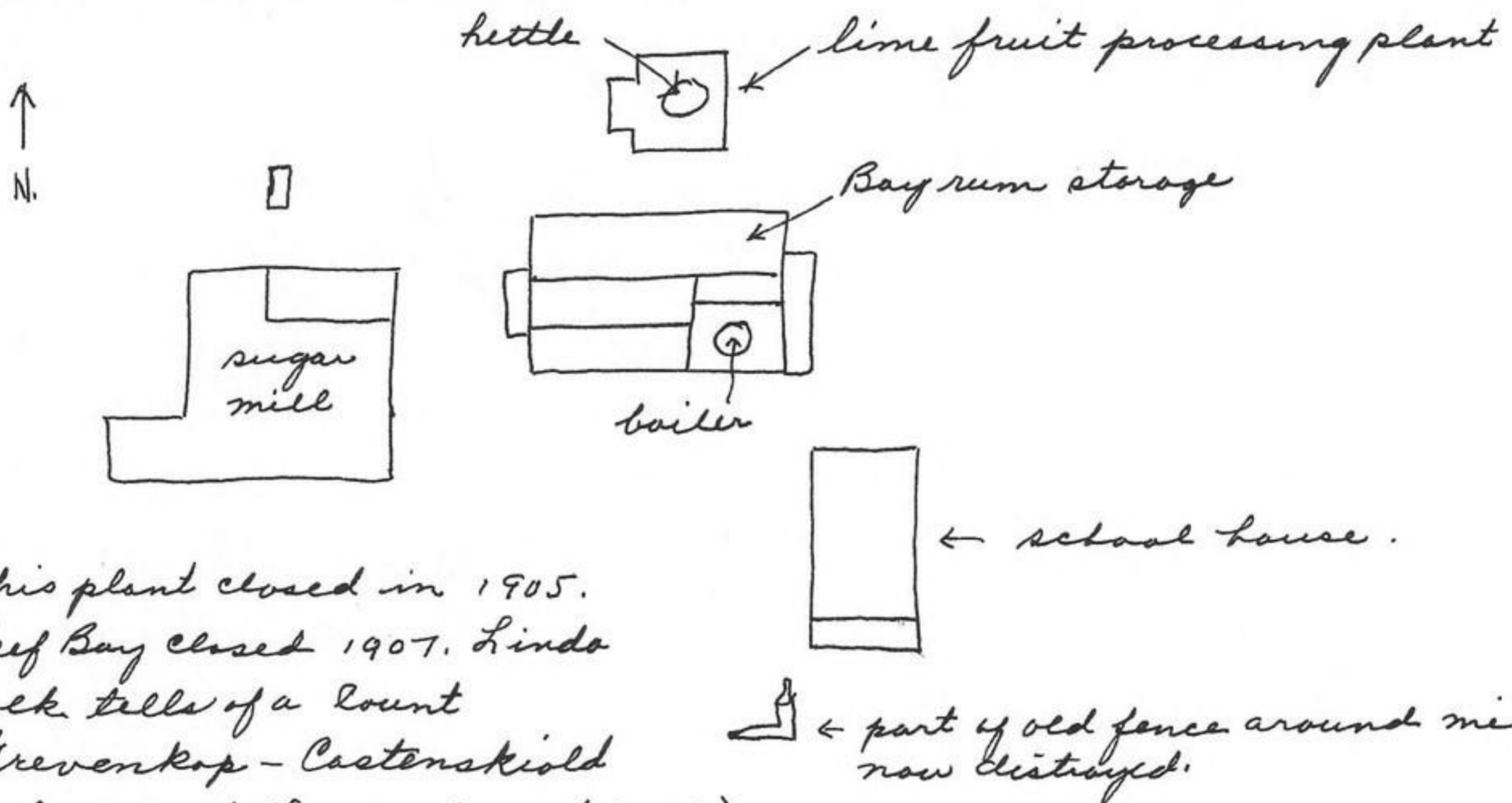
Grassquit: " " " "

Frigate bird: Flew over island.

The dominant vegetation is guinea grass and is rank in growth and dry in appearance, and covers practically all the island except the shore areas and around the house. The grass is the community in which is found the mice and rats. Tropicfruit and limes grow in the garden. Frangipanni common, Croton invading. The north slope is terraced for holding soil and moisture for grasses which were used to feed stock before the island became property of Caneel Bay Resort Plantation. A tomatolike plant is used for tea. One manpu tree bears nuts. Fifty two years ago a white woman (Smith, now living on Lavango Island) lived on this cay. Mr. Palk said that the negroes used to kill the brown pelican for food and was considered a delicacy. He also said that the Agouti were, or had been on St. John and on Dominica and a Mr. Walter Dalmata of Bordeaux could fill in many details, especially as relates the early life on the island. Palk told me that a



Senator Moorehead of Cruz Bay has troubles with bats (*Artibeus?*) in the attic of his home. Reef Bay Estate House and the Reef Bay Sugar Mills did not have bats but Lameshur Estate House had them in 1953-1955. In 1953, the slope below the Lameshur Estate House was in grass and was burned. It returned and in 1955 was almost a pure stand. An army photograph (aerial) taken in 1955, shows this grass slope and there is no acacia, croton or other shrub vegetation on the slope, even up to the edge of Lameshur House. This slope now (1957) is grown to croton and a thorny type shrub. The bulldozed top of ridge SW of Lameshur (west of Lameshur Bay) is now in croton and some other shrubs. The fig tree N of Lameshur Estate House was favored by bats (*Artibeus?*). Mr. Folk described the Lameshur mill area as:



This plant closed in 1905.

Reef Bay closed 1907. Linda

Folk tells of a Count

Grevenkop - Castenskiold

who owned Lameshur (1905?)

whose wife ran away with one of the supervisors of the plantation. The surveying of Lameshur, Reef Bay and Bordeaux was done mainly by Mr. Wey whose report is in the city files of St. Thomas. This information was gathered and she was kind enough to allow me to copy the information. The tamarind tree is still in existence at the end of the ridge road west of Lameshur.

A short stop at Ramgoat Cay revealed the following.

Ground dove nests; 3 old nests, six nests of 2 eggs, 1 nest of 1 egg and 1 young. There were probably 5 times this number of nests. All nests were placed in prickly-pear cacti trees, each nest averaging 5 feet above ground. Photo 570721-30 shows one nest with Henley Cay in the background. A plane crashed into



Henley Cay as can be seen (thermometer) in picture. Four Anolis cristatellus were captured and many more were present. One yellow warbler nested in a tree 8 feet high (nest) and had 4 young. The male sang nearby and the only song heard on the island. One pair of gray kingbirds were noted on the west side of the island. This island is completely covered with grass except where areas are grown to trees and shrubs. Some of the shrub and tree vegetation are: sea-grape, frangipanni, pipe organ cacti, croton, a large tree, mauchemel, pink cedar, gumbo-limbo and others. Two goats grazed on this island. It is interesting to note the lack of pearly-eyed thrashers although figs were common and ripe. No mongooses present. Termites with nests. The usual complement of sea birds were in the surrounding waters including brown pelican, fregate bird and laughing gull.

From Ramgoat Cay we travelled north to Corval Rocks and noted the sooty tern, noddy tern and bobby (14) as nesting birds. Roseate tern (3) and oystercatchers (1) were also there. The nesting rocks were considerably whitewashed.

We stopped at Congo Cay and went ashore near east end of island. The only doves noted were 4 mountain doves which left the rocks at the east end of the island. They departed in pairs but did not seem to be nesting. Recorded the following photographs on Congo Cay:

(570721-32) <sup>(next page for tracing and insert 570709-17 for insert of photo)</sup> one of the 5 or 6 petroglyphs (Carib in origin) at the extreme east end of island (on upper flat surface). The black color had been added. These petroglyphs compare in general form with those at Reef Bay Falls but are on flat surfaces. These petroglyphs do not appear to me to be very old.

(570721-33) to west showing the high rocky nature of the island with vegetation on south side and abrupt perpendicular north slope caused by erosion of perpendicular bedding planes in the marble (limestone) like type of rock. This island is, in fact a marble ridge, partly submerged.

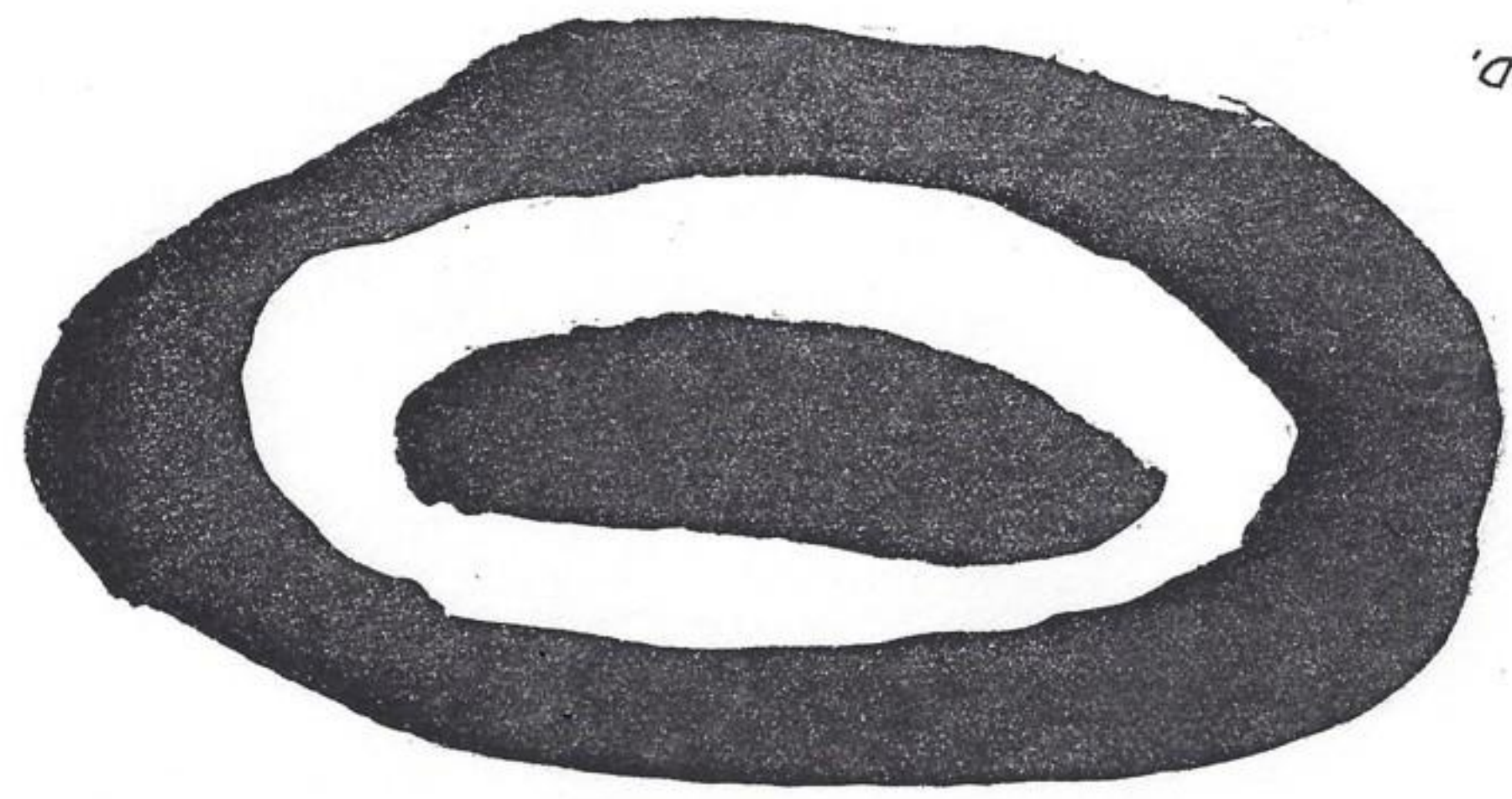
(570721-34) from Congo looking east across inscription or petroglyphs to Corval Rocks to the east where many marine birds nest.

(570721-35) of Congo Channel and Lavongo Island to left. Sea grape tree borders right. At about the center of Lavongo is a bat cave on n. side.

(570721-36) George Smith in Caneel Bay boat used for inspection of the islands. The blue waters are relatively



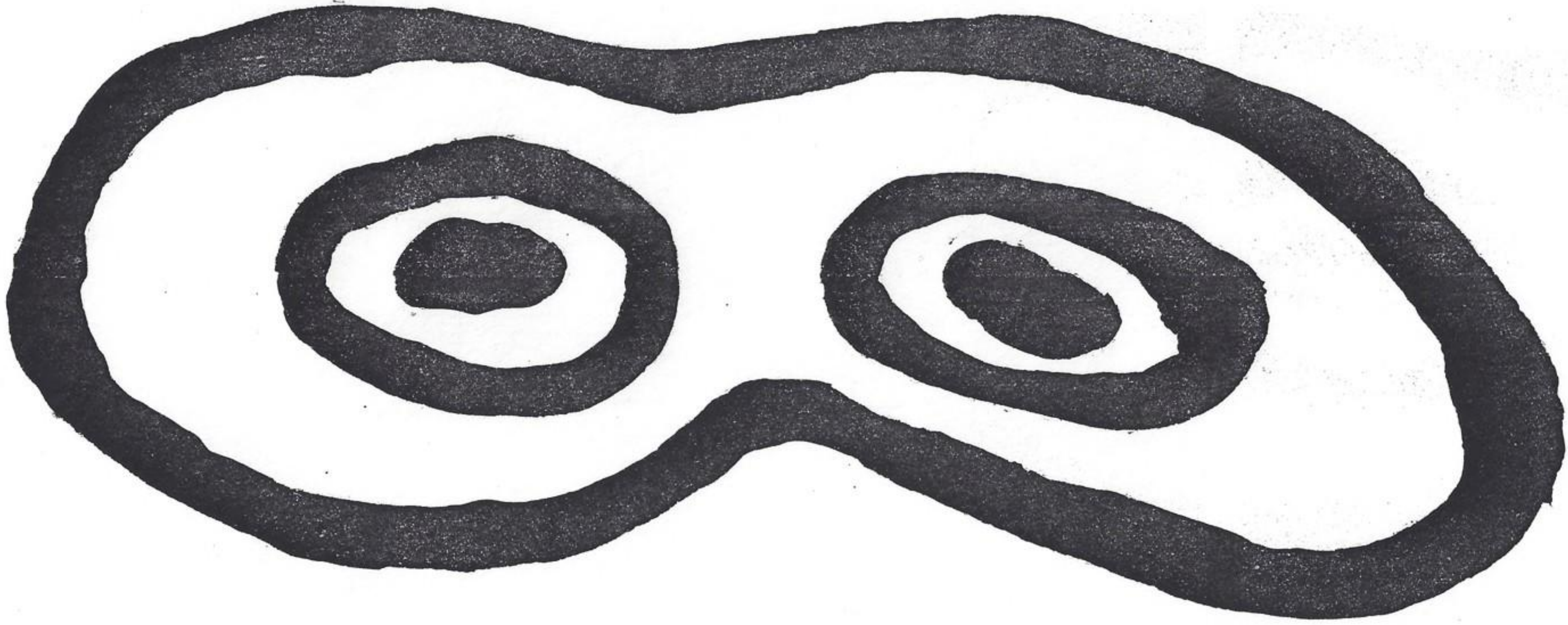
FROM PHOTO 570721-32  
CONGO CAY, ST JOHN ISLAND,  
(OTHER PETROGLYPHS ON  
CARVAL ROCK BUT WERE NOT PHOTOGRAPHED)



*Photo of this petroglyph  
see page 570709-17 insert*

BLACK = GROOVE

WHITE = BLACK COLOR  
APPLIED ON  
PETROGLYPH



570721-47

47



shallow through this channel which produces a quality of color which is distinguished from the deep blue of the waters beyond. The submerged coral beds can be differentiated near the Congo Cay.

(570721-37) from on top of Congo Cay showing a large tree and the blue waters beyond. In the leaf mold at the base of this tree are Sphaerodactylus macrolepis but of infrequent occurrence as compared to St. John Island.

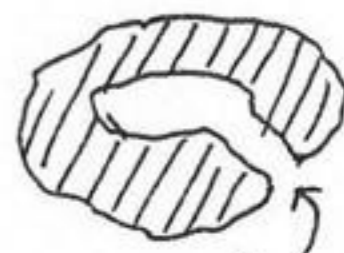
(570721-38) a frangipanni tree infected with a hawk moth caterpillar. The tree of approximately 8' x 8' x 6' in area supported about 120 caterpillars. Another tree, of the same kind, 10 feet away was free of this insect. I had wondered if these insects were utilizing the juices or milk of this tree as I did not see damage to the leaves. I was told, however, that this caterpillar would completely consume the leaves.

(570721-39) of a rare barrel type cactus which is found on only a few island according to Smith. A small flower can be seen at the top of the cactus. These cacti and the Turks cop frequently grow out of small fissures in solid rock.

Examined one nest of a honey-creeper which was placed in a prickly pear cactus. The nest was 3 feet from ground and the hole was lower than the cup of the nest.

The two adults were feeding young nearby and the only pair observed or heard on the island. Anolis cristatellus was on island but not as common as on St. John Island. They

had the same habits of the <sup>adult</sup> males frequenting trees and the females on the ground. This high rocky island supports a good growth of trees which are of the variety that could be transported by birds as either seeds or fruit. The north face of the island is precipitous and does not support vegetation. One isolated clinging patch of vine-like vegetation on the face of the cliffs on the east end supported 4 pearl-eyed thrashers. These birds were calling and making sounds that were not typical of this species. I had never heard this call on St. John Island. The silver palm, fig, gumbo-limbo, white mako, musket nut and frangipanni constituted the dominant vegetation. Goats have grazed this island and the soils are nearly bare of ground vegetation. On the east end of island a noddy tern is nesting with young about the size of adults. (Photo 570721-33 shows the area of this nest in large



entrance

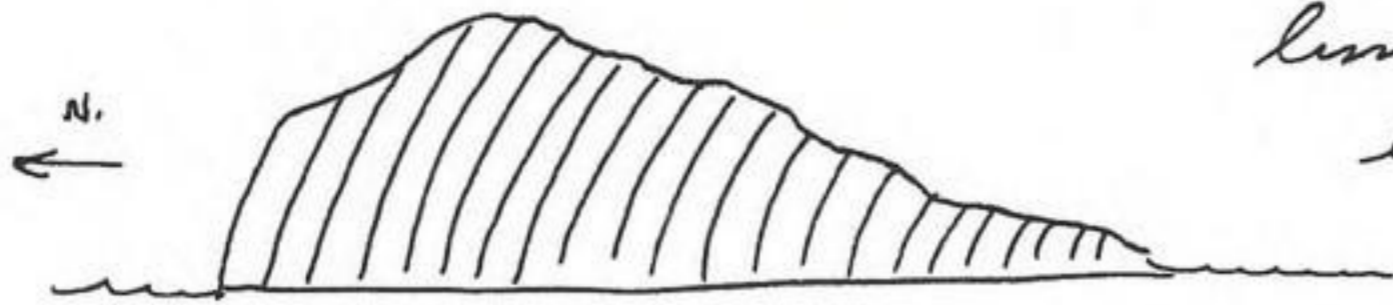


high rocks). The brown pelican has claimed the island for roosting and nesting in the trees on the south side of the island. Several stick nests were examined of the size of those used by snowy egret (of N. America). These nests were near the top of the island. The west end of the island is a rocky point, partly separated from the mainland and used for resting and perhaps for nesting. In general, this island is suitable for nesting of the larger sea birds like the noddy and sooty terns and the booby but is not used too extensively by smaller birds.

From Congo Cay we crossed to Lovango Cay and went ashore on the beach at the N.E. end of the island. This island is larger and not so steep on slopes, except the north facing slope, near water level which is perpendicular. This island has considerable stratified metamorphosed limestone rocks and the bedding is almost perpendicular. The vegetation is similar in appearance to Congo Cay. Goats have grazed this island heavily and many cacti result, some covering parts of sidehills. Ameiva exul were common along the beach of rocks and pebbles and under the trees adjoining the beach. The large flat blocks of calcareous tuft (conglomerate) supplied many places for retreat. Three laughing gulls were feeding on this beach. We remained here only long enough to eat and to collect Ameiva, Anolis crustellus and Anolis stratulus. The Ameiva and A. crustellus were common but the A. stratulus were not common. Anolis crustellus were not as common as on St. John Island. As we cruised west along this island, we noted a bat cave about 1/2 way down the cay and directly south of the west end of Congo Cay. This cave was eroded from a wide zone of brecciated rock along a fault zone. The fault line carried across the island as a low divide. On approach to the cave a large tarpin fish (3 feet long) left the waters of the cave and swam out into the channel. Smith says that 'jewfish' inhabit this cave and are 8-12 feet long and weigh as much as 800 lbs. Bat odors come from cave. We will examine this cave when a dinge or small boat is available for entering the cave. Jelly fish floated near the entrance of the cave. From here we continued west along Mingo + Grass Cays and crossed to south side between Grass Cay and Thatch Cay, as other crossing had exposed rocks in channel. Grass Cay has a wrecked ship on the east end. These Cays are characterized by abrupt and pre-



Cipitous north slopes and trees and grass on the south side. The stratigraphy is as follows: overturned beds to north. The bedding planes of metamorphosed limestone?, caused easy erosion of Atlantic ground swell to erode the N side to an almost perpendicular slope. Considerable faulting and intrusion has occurred.



Goats now graze on all these Cayes. Grass covers all open exposures. Returning on the south side of these Cayes we noticed an increased rough sea whenever we passed by the water gaps between the islands or Cayes. Grass island would be suitable for a more extensive faunal survey.

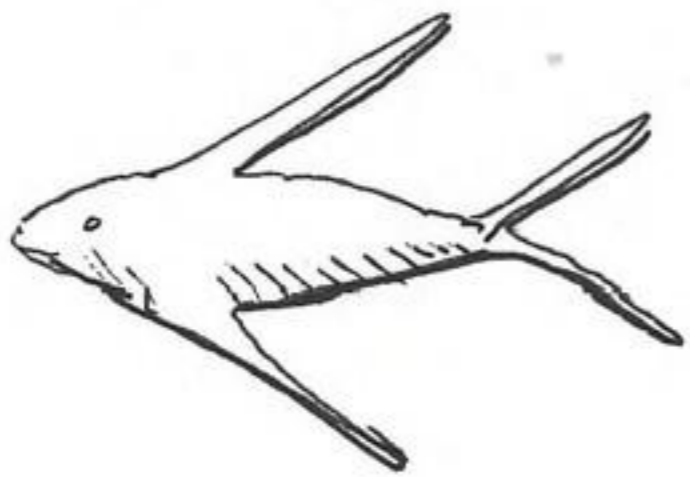
At Rata Cay in the Durlse Caye we inspected the Cay and found 21 nests and eggs of the ground dove and 8 nests of the mountain dove. The ground doves nested in prickly-pear trees and the mountain doves were on the ground associated with ledges. Both males and females of the doves were on the island as about twice as many doves were present as nests. One nest contained 4 eggs - 2 yellow and 2 white. This small island has more prickly-pear cacti trees per unit area than any other island or Caye examined. The closest distance between two nests of the ground doves was 8 feet. It is believed that the ground dove nests here because of favorable nesting habitat and because of the lack of human habitation or interference. One wonders if the use of prickly-pear cacti as nesting loci is not because of mongooses but is an innate habit of the bird. The per cent frequency of dove nests is in inverse ratio to the distance from the mainland of St. John, there being many nests on nearby Cayes and only a few on the most distant islands, thus showing the dependence of the mainland to these outlier Cayes. The peninsulas on the main island serve as islands for nesting doves. This condition of arid community may be produced by goats and the more xeric conditions are more favorable for ground doves. The wind blown peninsulas will always be available for ground doves after the main successional forests of the island become sealed with solid tropical forests. The forest type birds will be favored and the open field communities will become more unfavorable or more limited for existence. On Ratta Cay the grass is in good stands although limited to only a few square yards. Ratta Cay is apparently too small to support goats. Several terns



remained on the N. end of the Cay and a pair of laughing gulls acted as if they had eggs or young. Only 4 female Anolis cristatellus were seen on the island. Return to Caneel Bay Resort Plantation and returned to Lameshur by jeep on regular road. On way back from Caneel Bay counted 32 pearly-eyed thrashers. On the previous day we counted 52 of these birds between Lameshur and Caneel Bay. These birds are most numerous about 2 miles east of Caneel Bay where there is considerable fruit growing. Also in higher elevations of the island and in lower valleys grown to high trees. One mockingbird was noted at Caneel Bay.

Lameshur, St. John Island, Virgin Islands  
July 22, 1957

Photographed a trunk fish (570722-1) presented by James Mathias. The flesh of this fish is without bones and is a very delicate texture. The hard case eliminates the need of muscles or body support and so the meat is white and tender. This evening photographed (570722-2) the<sup>n</sup> east end of Lameshur Bay about 1 1/2 hr. after sunset. While swimming today a barracuda came to within 20 feet and was interesting but did not come closer. One sting ray fish fed on sand bottom 50 feet from shore. A purple sea urchin set two stingers in my third right finger. The spine penetrated 1/8 inch and left a purple base. The skin turned white surrounding the area of the nematocyst.



A white, transparent fish is associated with the sandy beach at NE side of Lameshur Bay where sands are uninterrupted from high beach to deep bay. They are not found where gravel is part of the beach. A school of these fish (10) swam in an unconcerned manner with a barracuda 30 feet away. They have a tremendous capacity for speed and frequently hit the sand in swimming by. They swim 3 or 4 feet from one (a person) and always try to get in back of you. Commotion draws them nearer. A hawk-billed turtle swam among coral reef in same area as yesterday but further to the south along the shore. Mr. Alfred George caught three turtles today in nets set near entrance of Lameshur Bay.

Lameshur, St. John Island, Virgin Islands  
July 23, 1957

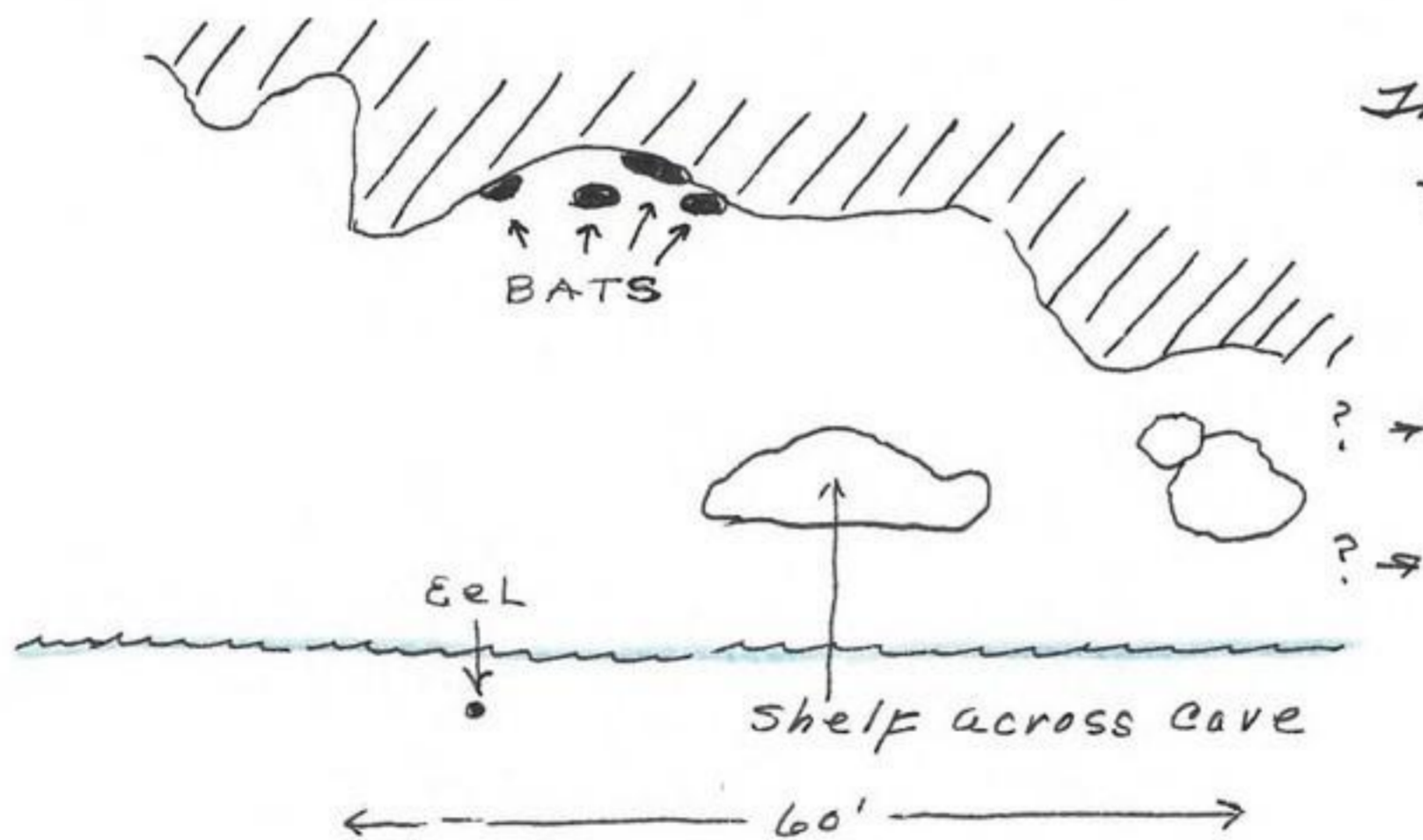
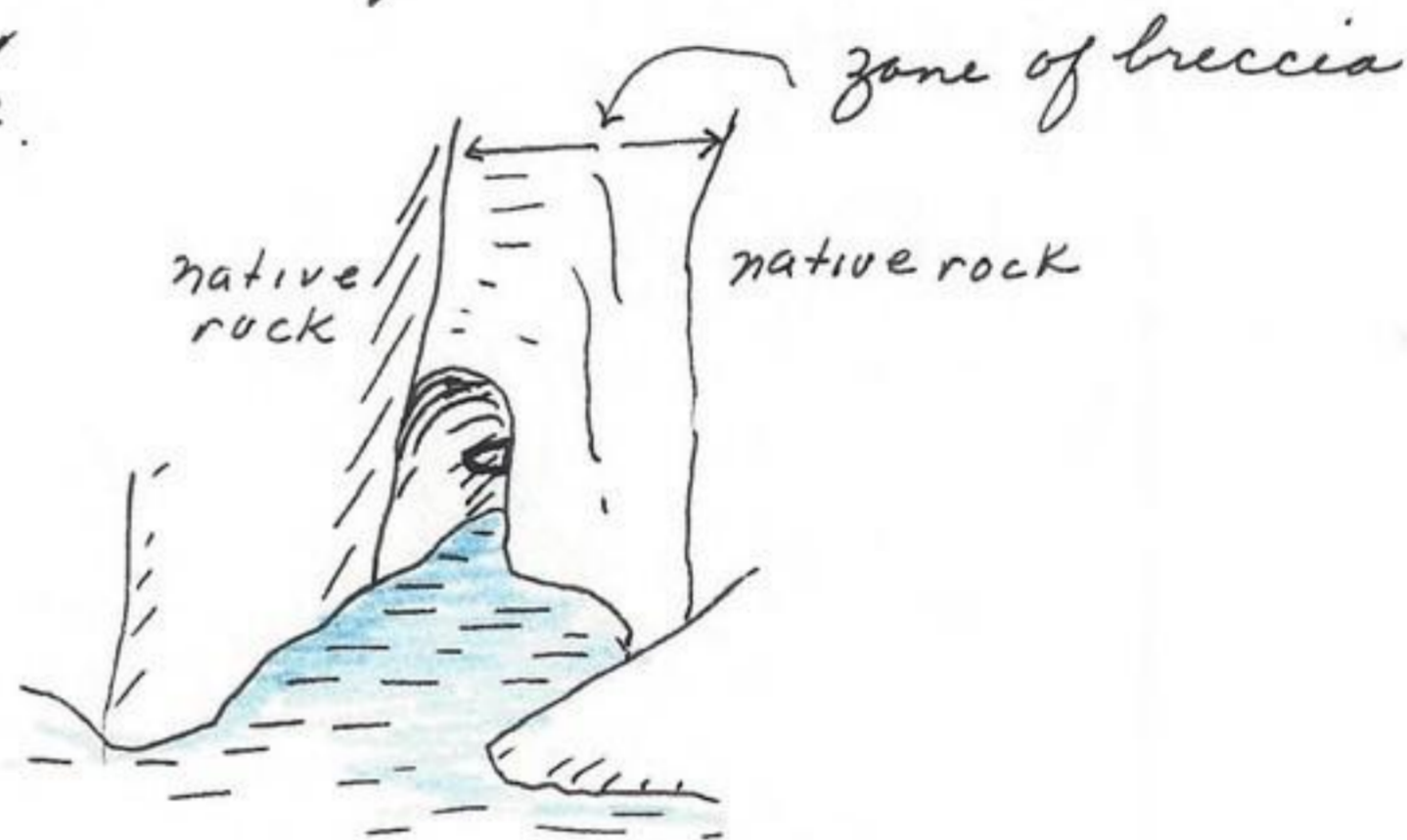
Departed this morning, 9:00 A.M., for Caneel Bay to arrange for boat trans-



portation to islands. Enroute made census of pearly-eyed thrashers as follows: 4 between Lameshur and Bordeaux road; 4 to highest divide; 5 to centerline road; none to Adrian Estate; 26 in a half mile of Adrian Estate area; 1 to Caneel Bay.

Mr. Ewen Mae Farlane was <sup>not</sup> in so, through previous arrangement, took boat to bat cave on north side of Lovango Cay. While waiting boat repairs, photographed Caneel Bay from boat docks of boats and dock. (570723-1) and (570723-2). Caneel Bay Mary, Rockefeller's yacht, in distance. no. (570723-3) taken from Caneel Bay Resort Plantation Hotel showing sandy beach through palms. (570723-3) and (570723-4). These beaches are robed periodically throughout the day. At the bat cave on the northern side of Lovango Cay made the following observations.

The mouth of the cave proper is about 8 feet wide, the native rock, which has been eroded looks like a conglomerate type.



The cave is about 35 feet high and water extends the entire distance of the cave. The breakers strike the end and produce an unusual noise. Light is subdued. The shelf is a portion of the un-eroded breccia of

conglomerate-like material and is about three feet above the water. There did not appear to be a thermal gradient in this cave. When fired upon the bats remained inside of the cave except 6. The original number was approx 50. One dropped into the water and an eel immediately picked it up with a splashing of water. All bats fell into water when shot. The cave was clean of guano but from the outside of cave one could definitely smell bat odor. Guano may have been lodged on the sides of the cliff inside the cave. Thousands of fish, small



in size circulated in the water of the cave. No other large fish were noted contrary to Smith's statement that an 800 lbs jew fish was in the cave. Smith said that bats also occur on Dog Island. Return to Connel Bay and enroute to Lameshur (along Centerline Road to Coral Bay, thence along ocean around east & south side of island. Census of pearly-eyed thrasher as follows: 3 to Adrian area; 21 in Addian area; 3 to dividing leading down to Coral Bay; 2 to Coral Bay and three from Coral Bay to Lameshur. One small snowy egret (green legs) noted at Coral Bay in the mangroves. A family of sparrow hawks were noted at Connel Bay and one at divide of Centerline Road. At Lameshur, James Mathias caught a hawk-billed turtle in a net in bay east of peninsula at Lameshur. Photo 570723-5 and 570723-6 of this ♀ turtle. James is in one picture. This turtle attains a weight of 130 lbs. The bite of this turtle can break a finger. If these turtles are turned on their back, and food and water administered, they will live for weeks. If a ring is placed three feet and staked by rope in the bay, will last for months. Most turtles are kept by tying together the two front feet which immobilizes the animal. Alfred George also caught three turtles, both species represented, from the entrances of Lameshur Bay. According to James Mathias, these turtles differ from the green turtles in size and color. He is to return tomorrow and break out some wells for chowder. Conch shells are used for food but this should be discontinued. Wrote letter to MacFarlane for use of sloop and Captain to investigate outlying islets.

Dear Mr. MacFarlane:

July 23, 1957

In reference to our conversation July 20, I have compiled a suggested itinerary of islands which should be visited to determine which are free of Old World Rodents, the mongoose and the pig. If native animals exist on these islands they can be used to restock exterminated forms on St. John Island.

The use of a sloop for 12 days would be useful in helping us realize our objective.

July 29 Frenchman's Cap, Dog Island, Little James Island, Great St. James Island.

July 30 Thatch Cay

July 31 Grass Cay, Mingo Cay

Aug 1 Whistling Cay, Mary's Point, Watermelon Cay.

Aug 2 Flanagan Island, Le Duck Island, Bobby Rocks, Water Creek

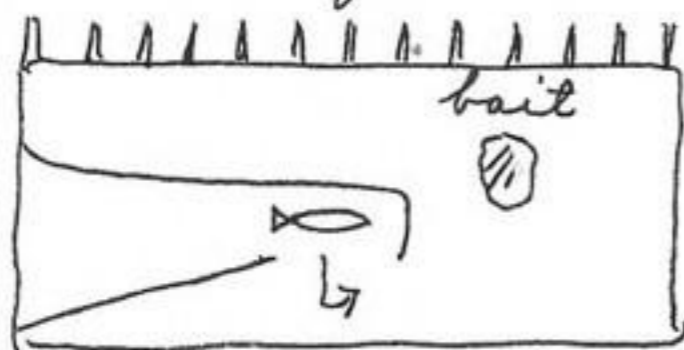


August 3 Tortola  
 " 4 Norman Island  
 " 5 Peters Island  
 " 6 Virgin Gorda  
 " 7 Anegada  
 " 8 Jost Van Dyke  
 " 9 West end Tortola  
 " 10 Conceal Bay

Sincerely  
 James W. Bee.

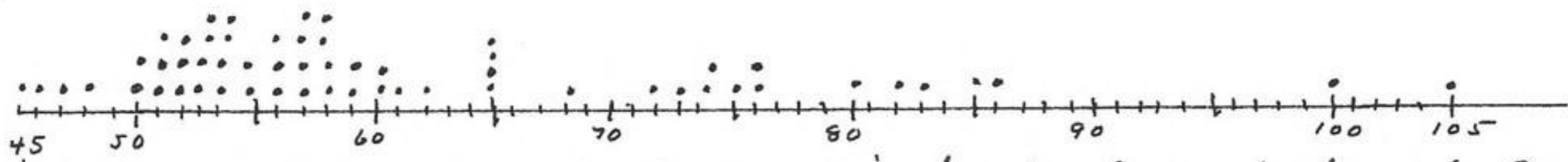
Lameshur, St. John Island, Virgin Islands  
 July 24, 1957

Photo (570724-1) of James Mathias repairing his fish trap (one of 5 he owns). His boat in background and the water of Lameshur Bay in background. This morning he set a turtle trap (net)



east of White Point. His fish trap is constructed so: The frame is of stakes and chicken wire and strengthened by small sticks. The trap is covered by a slim and is

inconspicuous. This afternoon photographed an Arctibeus specimen female no 570723-9 from Lovango Cay (570724-2). Photo (570724-3) of a gastropod (~~whelk~~ whelk) which is used by the natives for food and especially for fishing bait. The largest shell in the photographed measured 100 mm in diameter, an operculum measured 38 mm in diameter. These shells are also used by hermit crabs and are carried by these crabs to the uppermost limits of the mountains. It would be interesting to correlate size of whelk shell and elevation. The foot part of the animal's body makes excellent chowder. The distribut-



ion of size in a group of whelks of individuals picked up by James Mathias for eating purposes. It is believed that the selection is random. The average size is about 10 mm in diameter. The largest operculum was 38 mm in diameter and the smallest one measured 16 mm in diameter. James Mathias says that mongooses never touch turtles that are on their backs.



Lameshur, St. John Island, Virgin Islands

July 25, 1957

This evening drove over to Caneel Bay for gathering of friends of Mr. MacFarlane, manager of Caneel Bay. All members of his staff and friends were at the party. Talk to the gardener (a Russian Opera singer!) about certain experience with the mongoose. He has rarely seen the animal after dark and then only early in the night while driving on the road. They are mainly found around dwellings but occasionally away from habitation. He has seen mongooses near chickens and ground birds but neither of which they has bothered. He also reports having seen a night-jar like bird that flies down the road in front of the car lights. This evening, enroute to MacFarlane's home from Lameshur to Caneel Bay, counted 42 pearly-eyed thrashers. This evening there was considerable rain for the first time in several weeks and the frogs were in full chorus. There are two types of calls - one a plaintive peep call and one a more basal call of a single note, sometimes 3 or four notes in succession. These calls probably represent two species of frogs or less likely females and males of the same species. The lower north side of the island is predominantly the call which is the low basal call while high in the mountains the low basal call is still dominant but less so than in the lower levels of the mountain. The east and S.E. corner of the island had only a few calls and mainly of the peep type. I would say that 90% of the island supports these two kinds of frog calls and in great numbers at any one place. There were no frogs in the road or along <sup>temporary</sup> ponds associated with the road. It is remarkable that with millions of frogs on all sides, there would not be some in road. It would indicate that these frogs have definite ecological niches in the bromeliads and other kinds of plants that support water at the base of their fronds. Some of these frogs must surely cross the road in getting to new breeding places.

Lameshur Bay, St. John Island, Virgin Islands

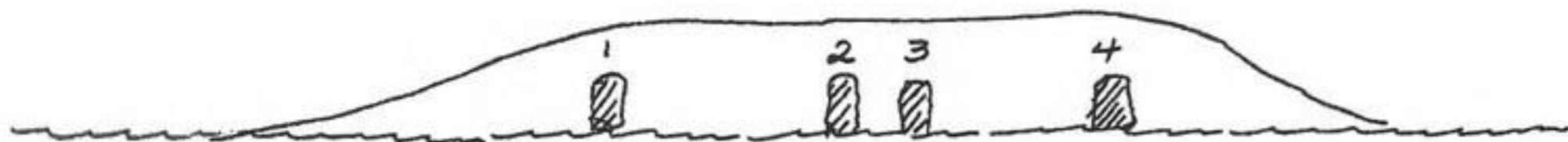
July 26, 1957

Departed Lameshur at 8:00 A.M. for Caneel Bay arriving at 9:00 A.M. Enroute counted 48 pearly-eyed thrasher, most of them in the Adrian area. At Caneel Bay Cutler and I joined party on a trip to Tortola in the Caneel Bay Mary (Rockefeller's yacht.) at.

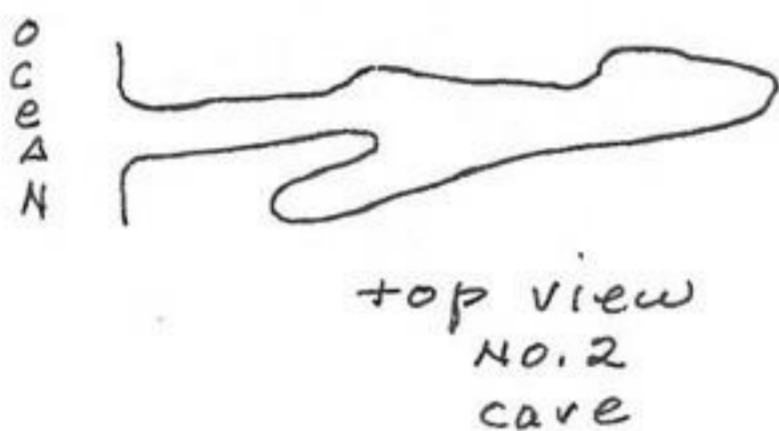


Tortola photographed part of village from pier (570726-1). Tortola is under cultivation and the open fields of grass give the island a greener appearance than St. John. This island shows the possibilities of agriculture on a large scale.

At the west end of Norman Island examined three coves.

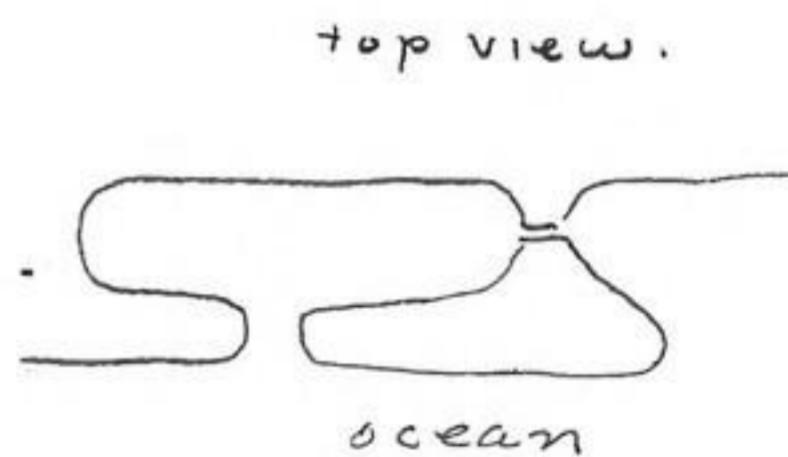


no. 1 was not examined, no 2 is about 100 ft deep. This cove had about 80 Brochophylla cavernarum in it and 10 were collected. Several adult females were feeding young the size of the adult. The young were climbing all over the females but and were not clinging to females as do



young of other species. My first thought was that the males and females were copulating. As practically all females were lactating (mammary glands averaging 5 grams per 2 glands or 2 1/2 gram per mammary gland) it was assumed that the association was mother and young. Many of these groups were separated from the main group of bats and some at entrance of cove where the indirect light was nearly as intense as outside in the shade. Other groups were in 5 to 20 individuals. When gun was fired, they flew about in cove from one face of cove to other and when flashlight was shown on them, they flew again. Only two left the cove. They called frequently as individuals and as separate groups. This cove had a floor of water and no guano was present. Thousands of small fish swam in the waters.

Cove no. 3 was shallow and at this time did not support bats. Cove no. 4 was the most productive in numbers of bats and favorable cove conditions for bats. This cove had 2 entrances, one which was used by the bats and faced the ocean. The cove was about 20-30 ft high and 60 feet long. The floor is water. Approximately 250 bats, B. cavernarum, hung from the ceiling, some in clusters of 40 or 50. As was the case in the second cove, the bats remained inside the cove when fired upon. They flew back and forth from one end to the other, lighting temporarily and then, when





the flashlight was shone on them, they flew to another part of the cave. They called continuously. When alighting on the wall they alighted upside down. They climbed the walls in reverse direction. As this cave had a water floor, there was no guano. The highly colored corals may be produced as result of guano placed directly in water. These red, yellow and purple inside the cave are brighter than any color of corals outside the cave. One sea urchin had 3 or 4 white spines among the purple ones. The small fish were so numerous that it was impossible to see the bottom of the cave. Larger fish 3 or 4 feet long, some yellow stripes down back, were in deeper water on the outside of cave. Two laughing gulls were at the cave when we arrived. As was the case in cave no. 2, the females were suckling young nearly the size of the adults. Photo (570726-3) and (570726-4) of these caves. Left Norman Island and at Romshead Point found rough water. C.B. Mary put us ashore at Lameshur. These larger boats stir sands and debris in the bay and in time will do irreparable damage to the reefs of coral. In skinning the bats, I found the breast muscles to cling to the skin when being prepared. The breast muscles are not as tough as those of Artibeus. The tail varies from 8-10 mm. I have noted that bats in caves with water floors are in better condition with fewer ectoparasites than in caves with earth floors and guano deposits. This evening noted a female Anolis cristallinus with a young lizard of the same species 1 inch long in its mouth. The young was dead. Photo (570726-5) of beach at Lameshur in evening.

Lameshur, St John Island, Virgin Islands

July 27, 1957

Prepared bats today. Mr. O'Connor, who has a garden on top of Bordeaux says: A large pig digs his garden at night and he cannot catch it. This pig destroys all newly planted things. He claims that this pig was one of several that escaped from a woman living at Reef Bay. It will take a pack of dogs to track it down. These pigs or boars can kill and eat a human. The native people are living on fish, meats, fruits and some items they purchase at the store.

Lameshur, Virgin Islands

July 28, 1957

Drove to Caneel Bay and joined Mr. MacFarlane and his staff



and guests for a trip to St. Croix in the C.B. Mary. 2 1/2 hrs on way. Enroute saw, about 3 miles N of St. Croix, a porpoise. Also several flocks of shearwaters and groups of shearwaters plus laughing gulls, terns, b. pelican, booby, sooty tern and noddy tern and others. At St. Croix collected 8 Anolis cristatellus in the cemetery at Christiansted. This cemetery uses conch shells to decorate the graves, some placed around the grave in dirt and others sealed in cement. The purple inside shell is decorative as well as supplying refuge for the Anolis lizards. These lizards were most numerous in trees. The venter is yellow and differs in this respect from those on St. John. Mr. Noble says that iguana are on the island. Took several photographs here:

- (570728-1) Conch shell on grave and Church in Cemetery.
- (570728-2) St. Kitts sailing vessel and some of its personnel.
- (570728-3) Mill (wind) and ships at anchor.
- (570728-4) Old prison and part of the City from the Cay in harbor. This city is required to maintain its old Danish Character.
- (570728-6) C.B. Mary in Lameshur Bay. After we were placed ashore at Lameshur, we drove to Caneel Bay. Enroute at 3:00-4:00 P.M. counted 43 pearly-eyed thrashers. On return trip (5:00-6:00 P.M.) counted 32. Only a few frogs were singing where last night the entire countryside was alive (after dark). Mr. Mac Farlane and Mr. Fafalla of Caneel Bay Gardens says pearly-eyed thrashers leave in late autumn and go to the mountains. Fafalla has seen them chase a cat, eat tomatoes, drink milk from cat pans. He considers them the worst enemy of the gardeners.

Reverend Thompson of Coral Bay says Abak are witch doctors and charge \$5.00 to dissolve evil spirits from the body. Use bottled soils, sweet-scented beads, rings etc. He says there is no agriculture but fishing is profitable. Fish become plentiful and then disappear before a hurricane. The native accept relief reluctantly. The wife of a husband who dies, wears black nightgown below waist to prevent intercourse with spirits.

James Mathias says he catches about 8 turtles per year. Flesh of turtle never dies until put in hot water.

At Lameshur made the following photographs, some copy work etc.

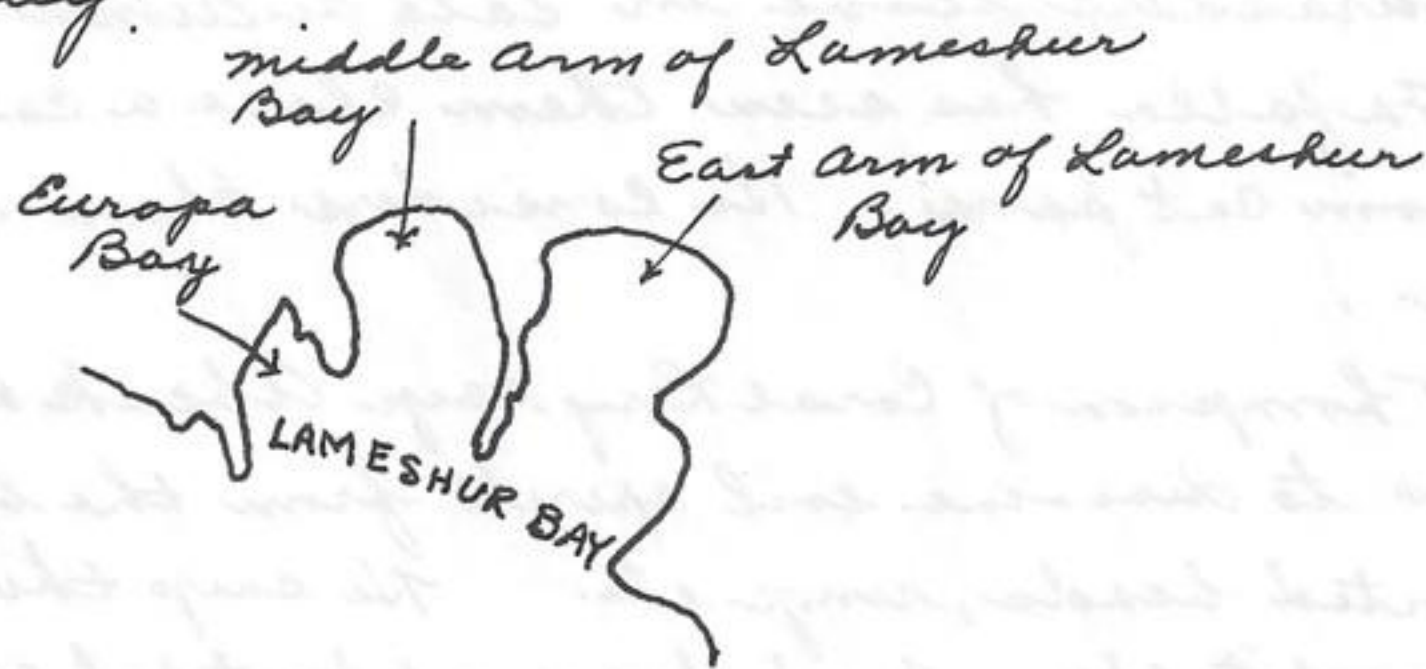
- (570728-6) Lameshur Ranger Station (the old rum mill)
- (570728-7) Sea urchins showing spines which are hazardous to touch.



East Arm Lameshur Bay, St. John Island, Virgin Islands.

July 28, 1957

Lameshur Bay is divided into 3 arms: Europa to the West, middle arm of Lameshur Bay and East arm of Lameshur Bay:



All references to Lameshur Bay = middle arm of Lameshur Bay. Europa and East arm Lameshur Bay are referred to by their specific names. Lameshur is the Estate House area, specifically the range station there.

All shells, <sup>and other marine specimens saved for collection</sup> were collected at the middle arm of Lameshur Bay and given the field no (570728-37). The purpose is to generate a list of names of organisms from one restricted area of the island as a basis for judging change in community composition according to time. Large numbers of some species were collected at random for size determination within a single species. The specimens represent average preservation of shells on the beaches.

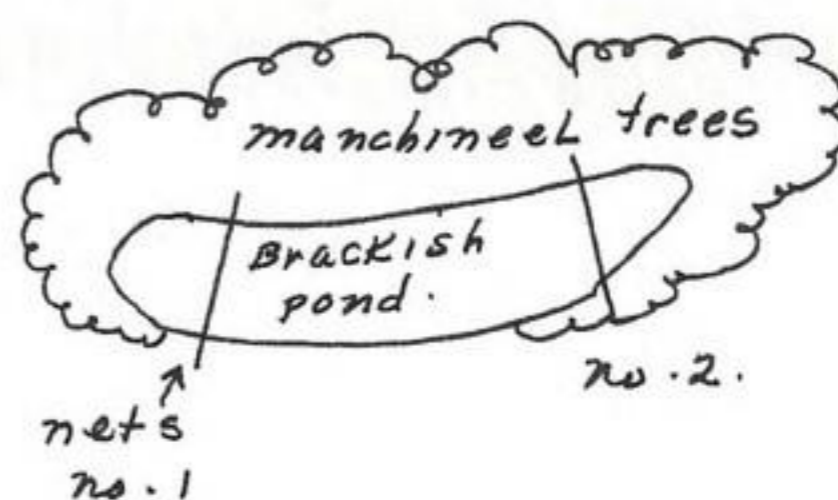
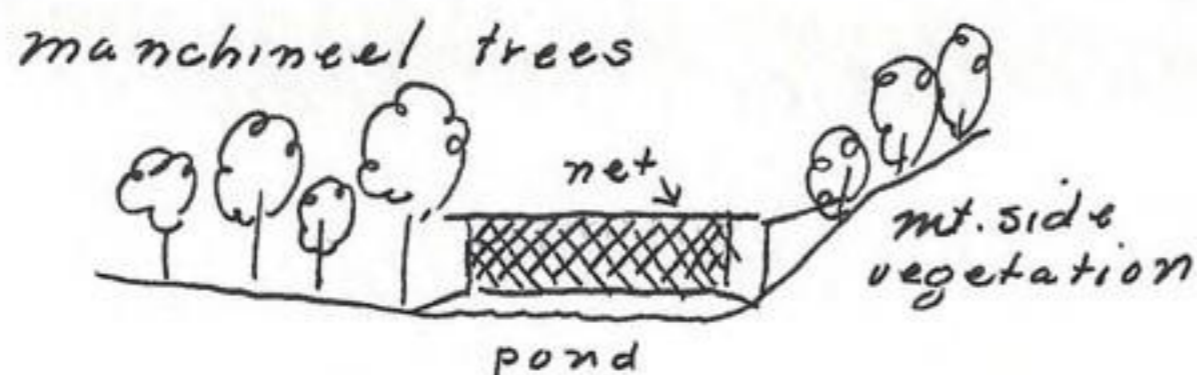



- (570728-8) whelks; (570728-9) sea grape; (570728-10) star fish;  
 (570728-11) rock crab; (570728-12) rock crab; (570728-13) rock crab;  
 (570728-14) representative corals from Lameshur Bay; (570728-15)  
 representative shells from Lameshur Bay; (570728-16) dominant  
 shells on beach on East Lameshur Bay peral shell second and  
 conical one third in abundance; (570728-17) Representative shells  
 from Lameshur Bay; (570728-18) Helmet shell; (570728-19) Hurricane  
 tracts (from Climatological Summary); (570728-20) Caribbean  
 area (from map); (570728-21) Santa maria (from picture); (570728-22)  
 map of Caribbean area; (570728-23) map of Virgin Islands; (570728-24)  
 chart of temperature comparisons; (570728-25) proposed extension  
 of U. I. Natl Park (from Bee's report); (570728-26) travels of Columbus  
 in Caribbean area; (570728-27) East end of St. John Island from  
 N.P. Report; (570728-28) Erinaceae (from Cabrera); (570728-29)  
 misc shells from Lameshur Bay; (570728-30) St John Island  
 from N.P. Report; (570728-31) Physiographic map; (570728-32)  
 current map; (570728-33) moonlight scene; (570728-34)  
 Solenodon; (570728-35) Physiographic map; (570728-36)  
 East end St. John from Bordeaux mountain (from N.P. leaflet),  
 Collected representative shells (mollusca) from E arm Lameshur Bay  
 (570728-37)  
 Little St. James Island, Virgin Islands  
 (see opposite page)


July 29, 1957

Connel Bay picked us up at Lameshur in sloop and placed  
 us on beach, N end of Island of Little St James Island. Camp  
 $\frac{3}{5}$  way to west among sea grapes and only a few feet from  
 mangrove trees which are highly poisonous when touched  
 or when rain falls from trees and carries the juice from the  
 leaves. The sea grape occupies the facing upper slope of the beach  
 and the mangrove tree from the crest to the brackish pond on lee  
 side of the beach. These mangrove extend in an uninterrupted  
 stand from the west end of the beach to the east end of the  
 beach and appear as a zone of light green. Placed tent between  
 two sea grape trees on coral beach. Tent 1 1/2 foot higher than  
 upper limits of wave action and 8 feet horizontally from water.  
 This arrangement necessary to evade mangrove trees. A  
 high surf could give us trouble but would not be serious.  
 This evening set 50 traps along sea grape - mangrove con-  
 tact and in grasses bordering a brackish pond. Predict a  
 100% visitation by hermit crab. Set 2 bat nets at both  
 ends of the brackish pond surrounded by mangrove trees  
 on three sides and mountain slope vegetation on fourth side.





On our arrival 4 laughing gulls were at west end of bay. In the course of the afternoon several birds passed by. Brown pelican (6), frigate bird (2); oyster catcher (2); large tern (1); 3 large pigeons, and 2 boobys. In manchineel trees noted 2 pearly-eyed thrushers, and a yellow warbler. The emerald throated humming bird is common on points where Turks Cap Cacti are numerous. The Ameiva are numerous and mainly on crest of lee side of beach  although their tracks were numerous on the slope of sand facing the ocean. The lee side of the beach mainly is covered with a layer of dry brown leaves of the manchineel. The large Ameiva (18 inches long and weighing 170 gms) move about 12 feet ahead of you and if rapidly pursued, will run out of range. One went under a rock as it moved leisurely ahead of me but when a stick was placed under the edge of the rock, the lizard ran about 80 feet at high speed. These lizards were observed digging among leaves and one dug under the edge of a rock 1 foot square which, when I lifted the rock, held a blattidlike insect one inch long. The trails in the sandy areas almost completely covered the sands. There were no Ameiva beyond (beachway) the sea grapes or vegetational protection.

  
to here but  
not beyond.

Dog Island, Virgin Island.

July 30, 1957

St.

Visited this island from our base camp at Little, James Island. This is the most interesting island investigated so far. Two brackish ponds add to the beauty of this island. Most of the island can be visited on foot. The following birds were observed:

Lesser yellow-legs: Six left one pond and flew back and crossed pond several times. One returned after we left area. Collected one.  
Mallardlike anatids: 2 Left pond and flew directly away.  
Six black-necked stilt were feeding with the lesser yellow-legs.



but did not act as if they had nests or young.

Emerald throated hummingbird: Ten noted and in each case were feeding on the flowers of the Turk Cup cacti. Noted one to fly from Dog Island to Little St. James Island.

Mountain dove: 7 nesting in cliffs and a few feigning a crippled wing or body injury. (The mountain dove is the Zenaidura dove)

Ground dove: most common dove and 8 pairs noted. Old nest examined.

Frigate bird - 4 passed by.

Brown pelican - a few passed by.

Honey Creeper - one noted.

Spotted sandpiper - one noted and appeared to have a nest.

Laughing gull - 8 noted and acted as if they had nests.

Booby - two flew by.

Anolis cristatellus. only lizard noted on the island, a few were collected. These were distributed from edge of water among cliffs to highest point of land. Many in trees. They were not as common as on St. John Island. Took several photos on this island:

(570730-21) Turk Cup cacti and east point of land. These cacti are the most characteristic ones on the island.

(570730-22) N. E. end Dog Island with water foreground and Little St. John Island in background.

(570730-23) Rocks in water on south side.

Examined E, and SW part of NE edges of the island for bat caves but without success. The following plants were conspicuous. Turke Cup; prickly-pear tree blooming; barrel cactus, yellow; sea grape; no manchineel; guinea grass, acacia, gumbo-limbo; sedges on rocks; morning glory with flowers of  $\frac{3}{4}$  inches in diameter; pepi organ cacti and a ground covering plant, dry in appearance but binding most of the ground surface (not cratan?); the leaves were like cratan. This island can be approached from Little St. James Island but only under calm sea conditions, otherwise wave action hinders landing of small boat on Little St. James Island.

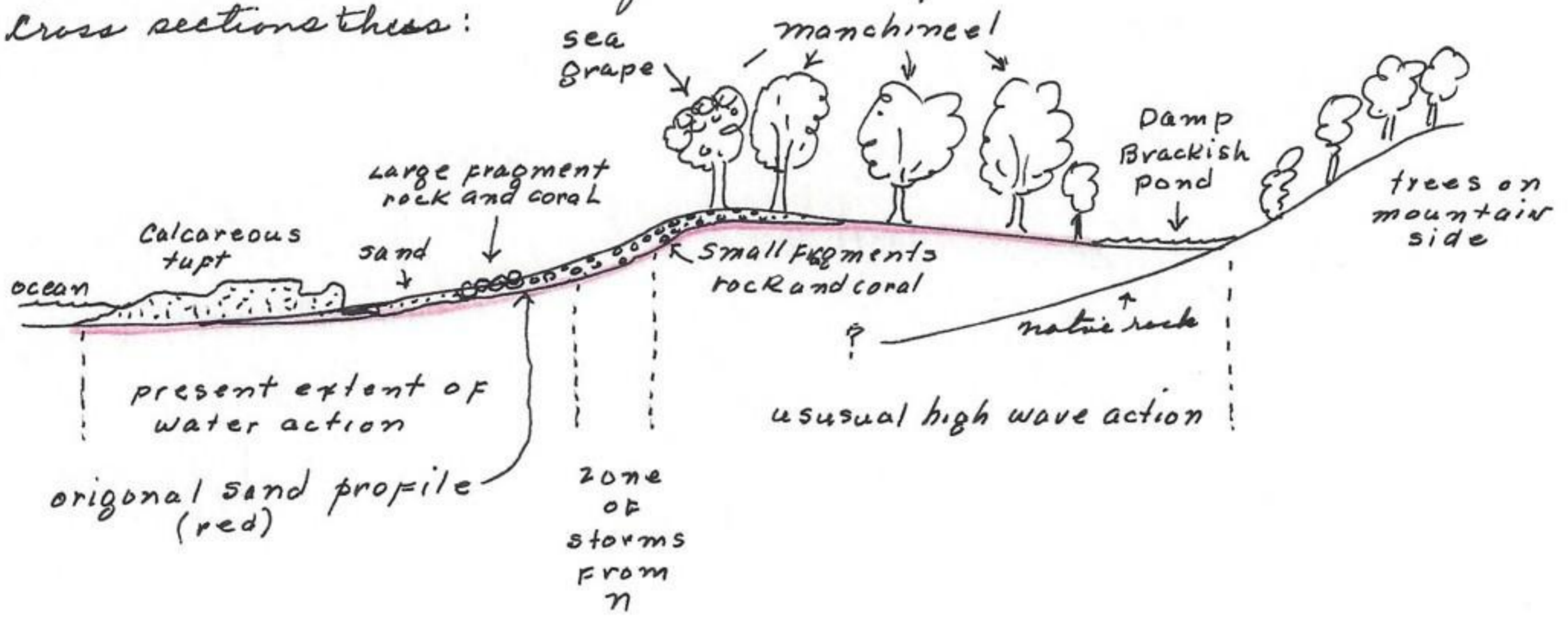
N. end Little St. James Island, Virgin Islands.

July 30, 1957

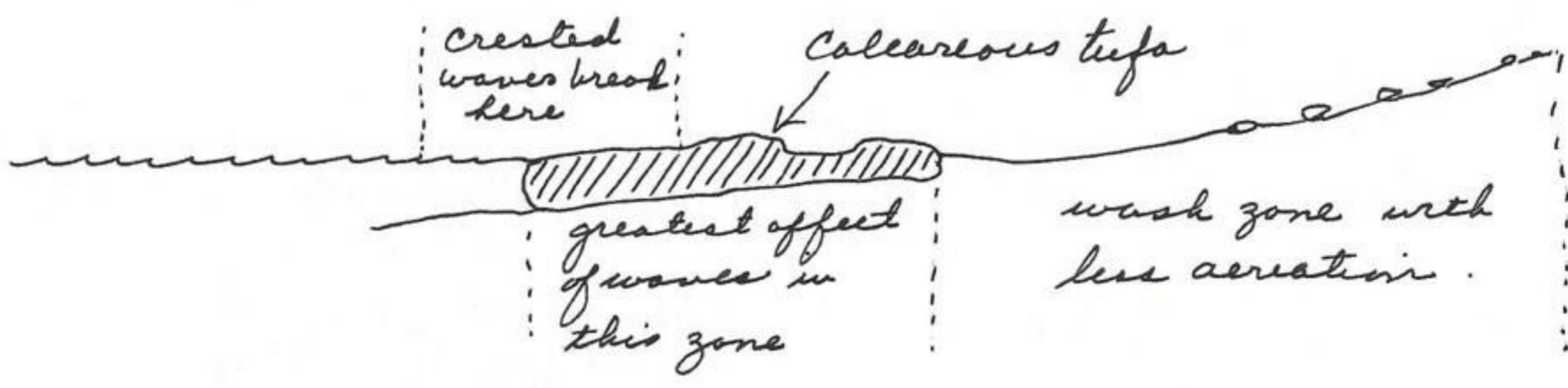
Returned from Dog Island about 11:15 A.M. Photo (570730-24) of a barracuda caught at NW end of Little St. James Island. Another one was feeding with this one. The barracuda weighed about 25 lbs.



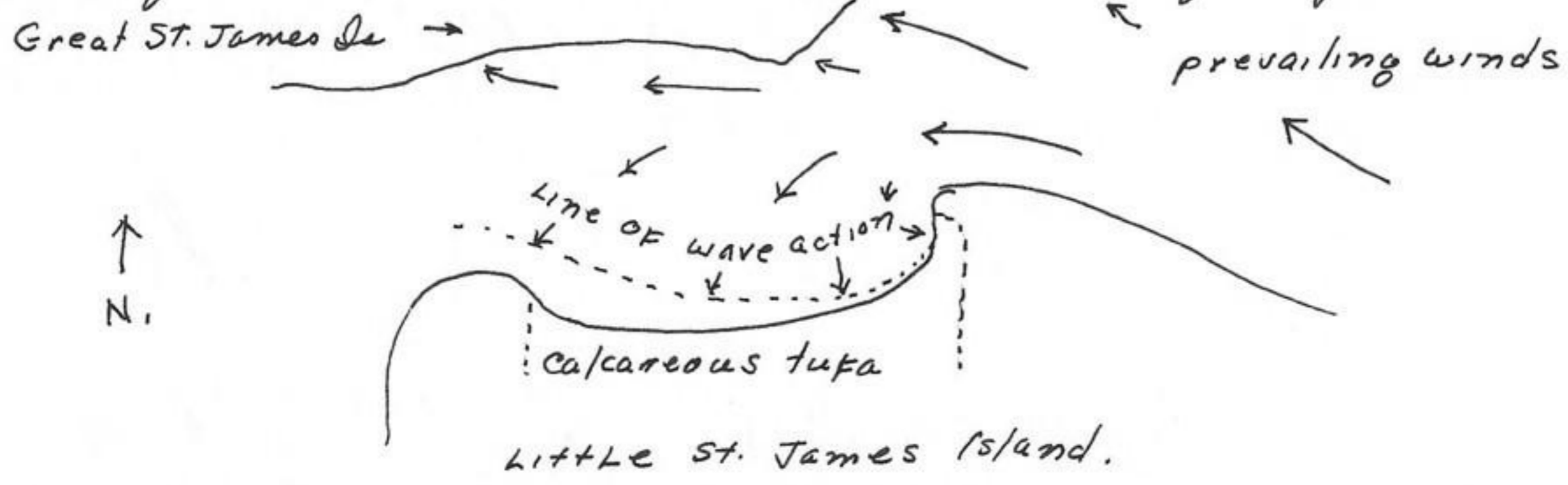
Photo (570730-25) of tree and channel between Little, James Island and Great St. James Island from front door of tent. Surf difficult to navigate this date and small boat swamped twice. Good precaution to have camera and equipment waterproof. Prepared few birds and collected some lizards. On July 29, surf on the bay was about 1 foot high. Last night and today it has been heavy with 2 foot waves and washing on beach 8 or so feet. weather this afternoon with low clouds and rain. Clouds seem to travel wsw rather than nwn. People from Tortola had excavated several beaches for commercial sand and exposed several cross sections these:



The calcareous tufa rests on old sandy beach. Best <sup>rocks</sup> corals now exposed are on SE part of bay where they are on the present beach level and others on storm beach level. The calcareous tufa is now relegated to entire beach.

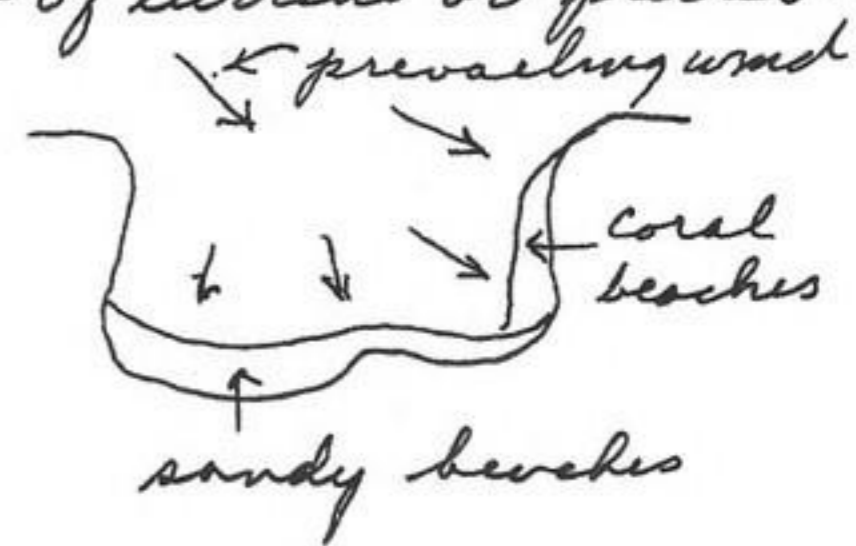


This afternoon checked wave movement of bay between islands:





The deposits of great quantities of coral on a former beach of nearly pure sand would indicate that the deposit of coral was a ~~recent~~ recent event by an increase in the temperature of the water. This accumulation may also be explained on the basis of change of current or prevailing wind. In contrast with Lamesh Bay the coral deposits are on the west side of bay where prevailing wind strikes with greatest force. This condition could also be explained by severe northern storms.



This evening temperature of water at one foot depth  $82^{\circ}\text{F}$ . Temperature 10' from edge of water at waist height at same time (7:00 P.M.) =  $80^{\circ}\text{F}$  or 2 degrees colder than the water. Photo 570730-50 of fragments of dishes used by Danish settlers 300 years? ago. This house is on NW end of Little St. James Island, Virgin Islands

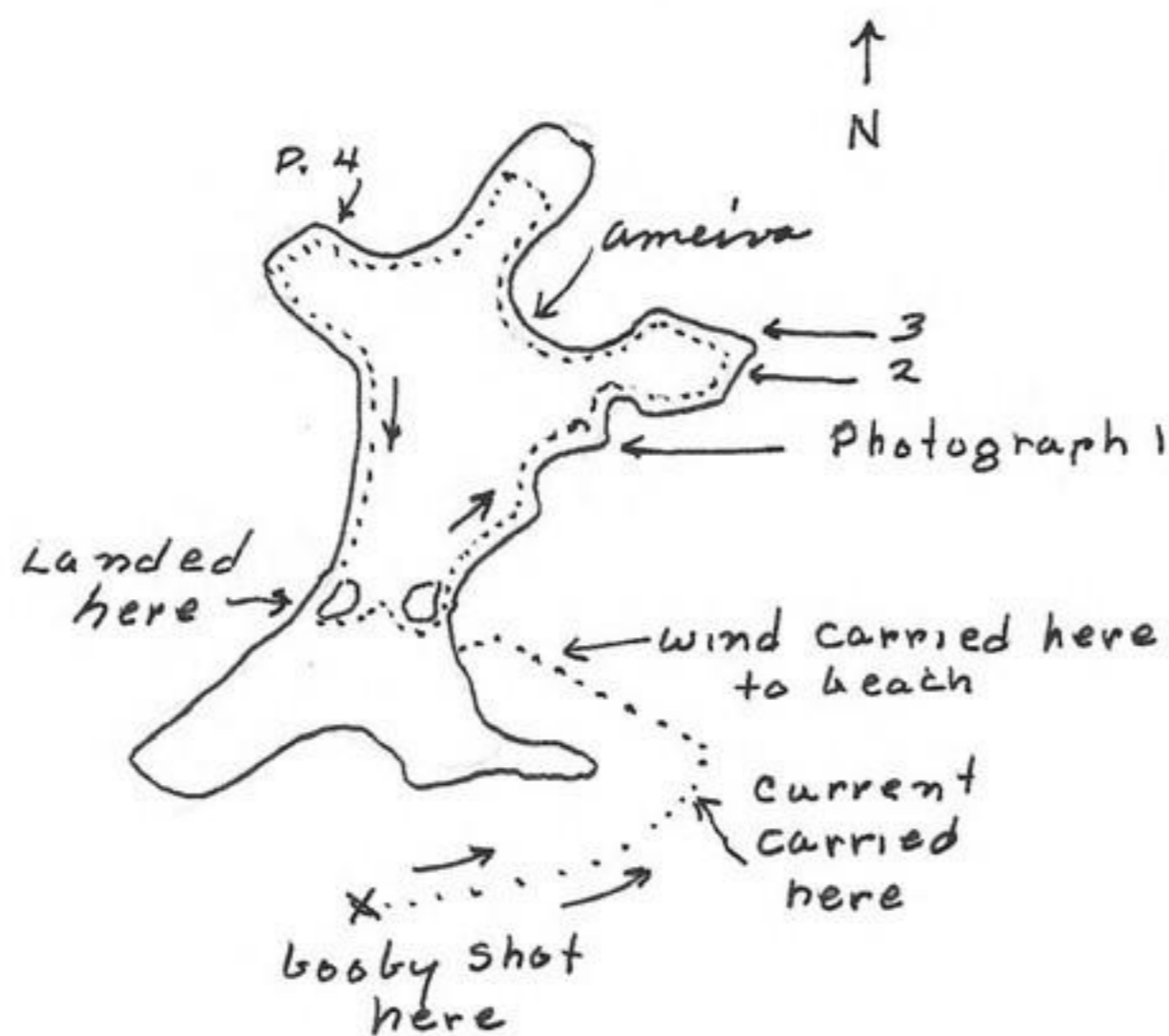
Great St. James Island, Virgin Islands.

July 31, 1957

Arrived this island at 8:20 A.M. from Little St. James Island. Mr. Mac Furlong came over in the boat to see us for a minute or two. On Gr. St. James Island landed on west side of island on sandy beach just west of brackish pond. Mr. Mac Furlong's crew was instructed to pick us up at 1:30 P.M. and haul us back to base camp on Little St. James Island. Started from small brackish pond where I saw approx.

40 lesser yellowlegs;  
10 western sandpipers;  
8 black-necked stilt;  
2 undetermined shore birds.

At pond 2 there was only two small shore-birds. This pond receives the effect of wind from the prevailing winds. These two ponds have been created by wave beaches of coral having been thrown across the entrance of the bays. These coral beaches have



only recently been available as material for these barrier beaches. The entire east side of island shows effect of wind on vegetation. The yellow barrel cactus is common here and occurs in bunches. Five zenaida doves were flushed from



the east side of the island, 3 of which had nests on cliffs, 1 in a tree and 1 in a bush but all near water. Each nest held 2 young about  $\frac{2}{3}$  size of parent except one which was  $\frac{1}{2}$  size the parent. Placed one in water and it was capable of swimming to shore. These birds prefer to nest in ledges bordering the ocean and there appears to be some adaptation to swimming. An equal number of ground doves were flushed, these birds nesting in the prickly pear cacti, also associated with the series slopes bordering the ocean. The Zenaida dove feigns bodily injury when flushed from the nest or young. On the north end of the island, 2 adults had young capable of flight among rocks where there was no nests. The Ameiva were collected from the first sandy beach. Of all the beaches examined so far this one looked to me to be the best one but there were only a few Ameiva noted. The great distance from the sandy beaches to the slope of the mountain, may be a factor. This beach is more extensive than the beach at camp on Little St. James Island. There were no large Ameiva on Great St. James Island. The bay is shallow and will become a brackish pond in time to come. A gray Kingbird apparently nested in this area as well as at our first stop on the island. Also one pearly-eyed thrasher flew by. The only other birds noted were a white crested Elaenia flycatcher, yellow warbler, oyster catcher, brown pelican, Florida blue heron, laughing gull. A few Anolis pulchellus were noted and these were associated with the thick ground brush - not trees. As our objective was snakes, I turned over 5,000 rocks in the following situations; 1) edge of brackish pond, 2) edge of sandy beach, 3) on top of wave cut cliffs, 4) among brush on east slope (wind effected vegetation) and 5) on slope on west side (not wind effected). This island appears to me to be the most favorable for snakes of the several islands examined so far. The island has, at one time, been grazed but not to the extent of the other islands or cays. This island is difficult to investigate because of dense vegetation but less so than islands without beaches and steep sides. I have noted that on barrier beaches, the vegetation is controlled by wind and substrate, more likely wind. Some areas in the wind blown vegetation looks as if there is a trail leading inland from the beach and these trails are maintained for 40 or 50 feet and then the trail ends abruptly. Once a wind channel is started it maintains itself. The east side of the island receives the direct



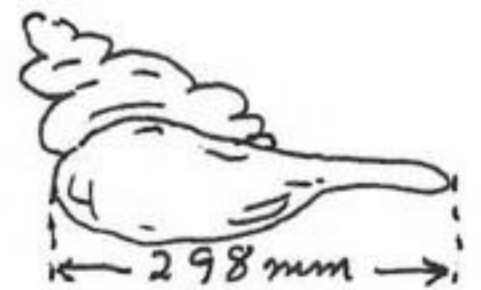
wind from the ESE and it is here, that the channels are maintained. Ordinarily the damaging erosion of sea cliffs is produced by storms other than the direction of the prevailing winds but in this case the more gentle winds of long sustained <sup>in this direction</sup> endurance have produced this biological phenomena. Many of the cliffs look like they may have been eroded 40-50 feet above the present level. The snake taken by cutter was in a tree near the first pond on the west side of the island. At 1:30 P.M. returned to Little St. James Is.

Little St. James Island, Virgin Islands

July 31, 1957

This afternoon collected several Ameiva, some near top of ridge on lee side of island. Watched one medium sized Ameiva try to catch a small Anolis cristatellus. These Ameiva have been captured in areas supporting great numbers of hermit crabs. A few of these crabs are always moving among the dry leaves. Whenever the green fruit of the nutmeg trees has fallen, from 5 to 15 or more hermit crabs will be feasting on this fruit. In the latter part of the day, many crabs will be seen under logs or in protected places. A laughing gull was left out on the ground overnight and the crabs consumed nearly all the flesh and the organs except the feathers. These crabs make trails like rodents. Some are found as high as 8 feet in trees. They are nocturnal and diurnal but mainly, I think, nocturnal. Several different types of shells are used but mainly the whelk. It would be interesting to find out just what kinds of shells are used and correlate with altitude as I know they range to the top of the highest mountain. Examined one shell of the cone which measured 298 mm (greatest distance across operculum). Examined some material which looked like Danish period including plates, clay mug, hand blown bottles etc. at the east end of bay at end of fence line. In own stay at Little St. James Island, I noted the following birds to cross from Great St. James Island to Little St. James Island:

mountain dove (Zenaida)  
ground dove  
emerald-throated hummingbird  
pearly-eyed thrasher  
gray kingbird



I have noted eight instances of medium sized Anolis cristatellus catching and eating Sphaerodactylus and Ameiva catching and

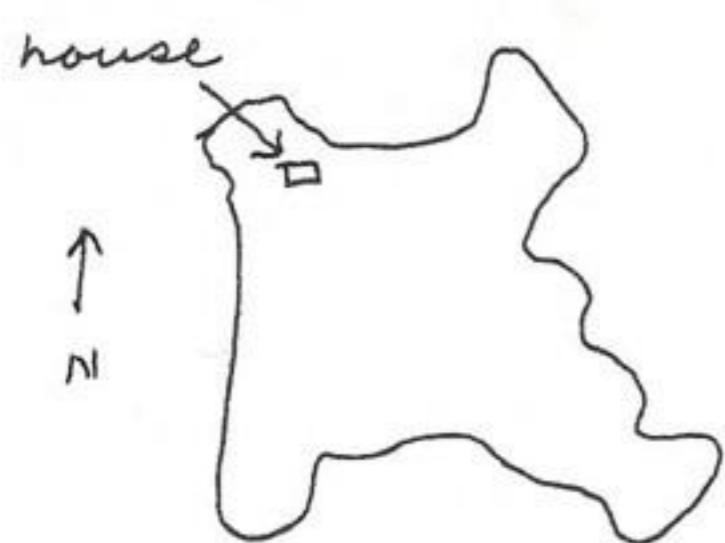


eating small Anolis crustellus.

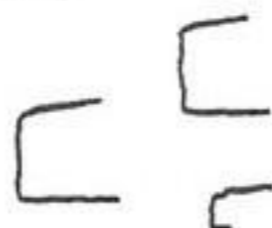
Little St. James Island, Virgin Island

Aug. 1, 1957

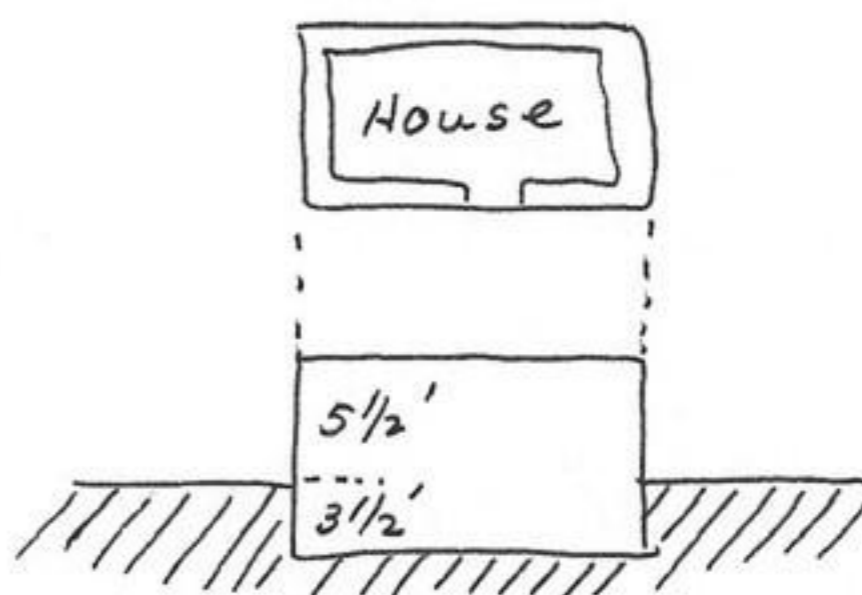
while waiting for Caneel Bay boat, investigated an old Danish ruin on the N.W. end of the island.



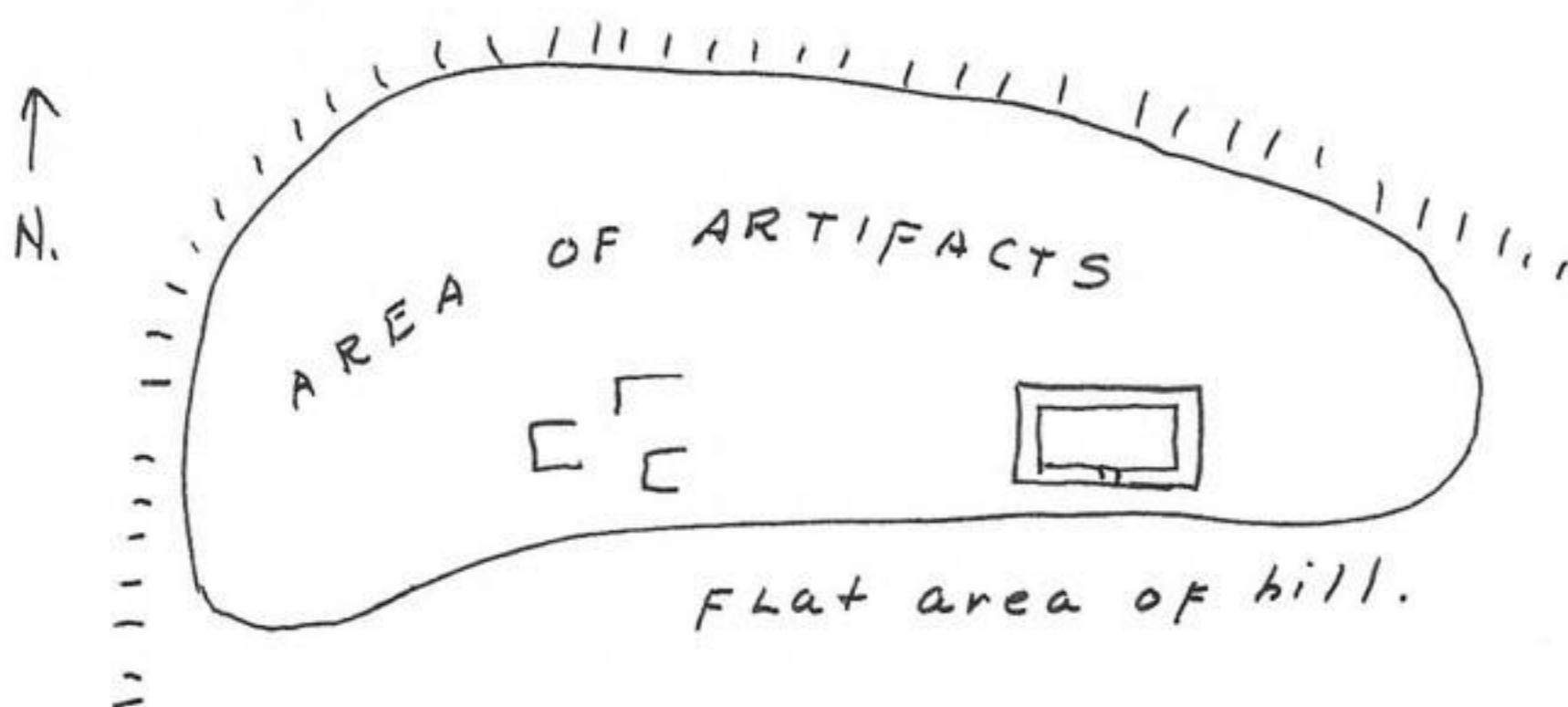
other bases  
of houses



approx 15x10



The house is without a roof although old timbers are present and the house is without door and, as I could figure out, one window. The floor is about  $3\frac{1}{2}'$  below the ground, SW of house about 100' or so is a platform of large flat rocks but no sidewalks. West (30') and a little south are the remains of some type of structure but now reduced to rocks. This could have been a refuge pile as many of the artifacts were near this area. The artifacts were in all directions from the house wherever slope permitted migration away from the house. Although the house (if it is a house) is on a rather flat part of the point, artifacts were on steep slopes from the point to the ocean below.

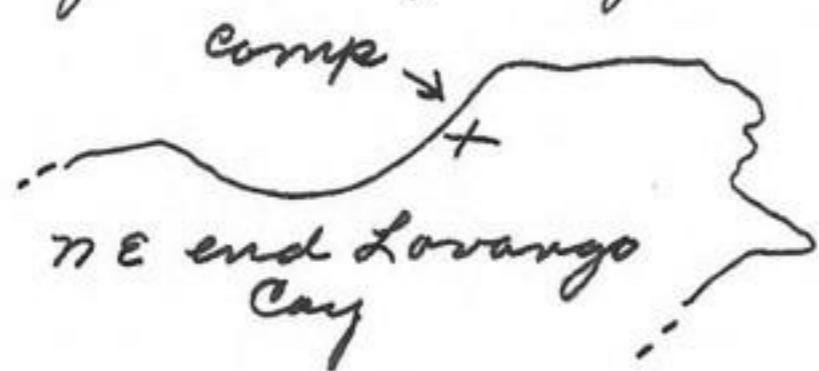


Most of them were in flat areas washed clean by rains. Other favorable areas were present but leaves hid the material. The distribution of these artifacts would indicate that this ruin had never been picked over by man since it was abandoned, although all usable material, of course, was



gone. Certain items were nearly complete when abandoned but were now fragmented and separated by 15 or 20 feet. In general I would say that this house was raided during the rebellion and the household effects were thrown from the house in all directions with idea of destroying whatever was thrown. It would be interesting to excavate this area and make a complete survey of the house and area. In all other ruins I have visited there has never been such an assortment of artifacts lying on the ground. The area has been grown to trees and other shrubs, pipe-organ cacti etc. The slope of the west side of this island were used for growing of grass. The setting is unique and commands an excellent view of the sea and channels below. The objective of the collection of artifacts made here 570801-3 is to classify, reconstruct and date the materials used. Photos 570801-1 and 570801-2 are of some of these artifacts.

Caneel Bay boat picked us up and transported us to the NE side of Lovango Cay where we camped on the upper beach.



This evening at 6:00 P.M. counted 642 pelicans roosting on top of several kinds of trees <sup>(on S side Lovango Cay)</sup> from 15 above the level of the sea to the top of the Cay. Most of them were on the west and

east end of the island, however, the entire south side was used. All or nearly all faced the prevailing wind from the east. This evening, while writing notes and using a Coleman gas lamp, I noticed that there were only a few insects attracted to the light. Other nights have produced the same results, especially in this tree on small cays. It would be interesting to study the numbers of insects per area of cay, as a factor of bird food. Termites and ants are food sources for lizards. Another problem would be to establish the numbers of insects or birds on a cay and then check again after a severe wind or hurricane. The effects of a hurricane should be studied for all vertebrates as a factor of decimating populations. This evening at 7:17, the first bat was noted in the air. Only 4 others were seen. A red-tailed hawk hunted the south end of the beach, keeping in the trees above the water. Frigate birds rob boobys. Boobys feed so:

going from side to side.



In the waters of the channel are thousands of small fish about an inch long. These fish jump out of the water which keep the water boiling. Most fish-eating birds take small fry averaging 3 or less inches long. The natives believe the barracuda are poisonous to eat and are killing and throwing back into water large 30 lb fish that, if not poisonous should be used for food. When disturbed the small fish will swim toward shore and jump clear up onto beach. These fish are consumed by gulls.

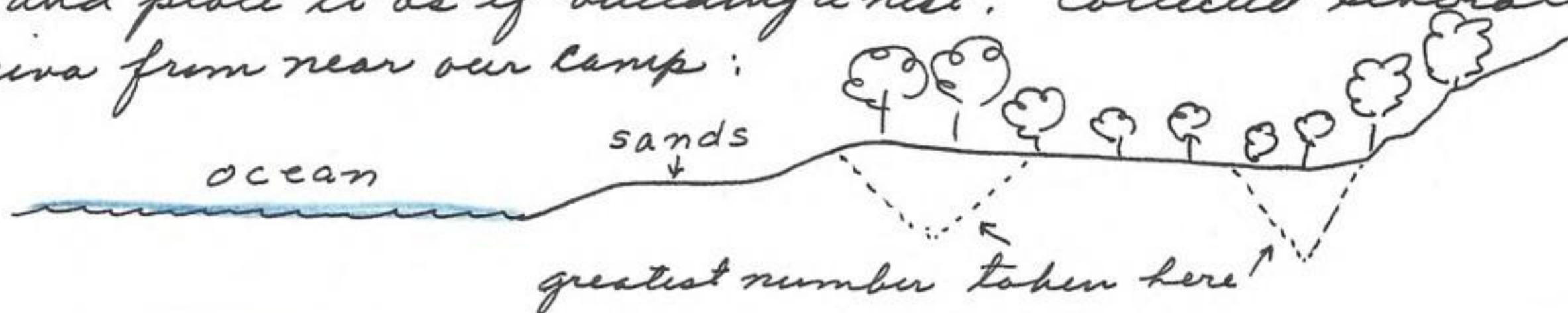
NE side Lovango Cay, Virgin Islands

Aug. 2, 1957

At 8:00 A.M. Caneel Bay boat picked us up and transported us to the SE end of Thatch Cay. I counted the pelican population of the south side of Congo as 608 at 8:00 A.M. Apparently they are late risers. They feed during the day and return in evening to roost. At Thatch Cay I examined the area from the brackish pond area to the eastern point. At the point near the southern limit of the pond, photographed the beach, overhanging with a tree and yucca (570802-30). This area has been used by the Danish people and several cultural fragments were collected (570802-31). It is a crime that these artifacts are not studied and preserved in order to help explain the cultural background of these people. Nearly every ruin I have seen have many of these fragments lying on the ground around the house. As soon as the tourist arrive, these items will disappear for good. On Thatch Cay noted *Ameiva sspul*, *Anolis cristatellus*, *Anolis pulchellus*, *Anolis stratulus* and *Sphaerodactylus*. In this area these lizards were extremely uncommon but I expect that they occur in normal numbers in those area with more natural vegetation. Even the bird life is depauperate. I observed only 2 ground doves, one pearl-eyed thrasher and a gray kingbird. At the eastern point of Thatch Cay, photographed (570802-32) Grass Cay, Mingo, Lovango, Congo and Tortola to the extreme east. There is a considerable gap between this cay and the one to the east and the channel is deep. These islands are in a straight line and must conform to a common geological control. The N sides are steep, the south sides with gentle slope as controlled by bedding planes. The metamorphosed limestone bed dip to the north at nearly 70° or 80° or more and suggest an overturn. The crew of the Caneel Bay boat caught a trigger fish which they say rests on the bottom and springs up to catch their prey. From Thatch Island we went to the straights between Mingo and Grass Cay. On Mingo Cay we noted all kinds of lizards present.



in the general area of this group of outliers. One area on Mingo Cay had been burned of its grass but no snakes had been caught in the conflagration. Photo (570802-33) of Grass Cay on other side of wave cut gap. From here we went to east side of Grass Cay and collected several lizards, we did not have sufficient time to critically examine the cay. Photo (570802-34) of Mingo Cay and others to the east. On the north side of Mingo Cay we noted about 10 purple martin flying into a horizontal fissure about 15 feet from the water. In summary: Anolis cristatellus not as common as they are on St. John Island and the per cent frequency is a matter of size of land mass. They were seen from the beach to highest points examined. The adult males were more frequently on trunk of trees and they averaged 3 feet above the ground. The young and females were on the ground and would run to trees. Frequently a male and a female were associated together. Sphaerodactylus was present wherever leaf mold was present but again not as common as on the larger island. Anolis pulchellus was taken from trunks of trees but more commonly among short brush or grass. Anolis stratulus was taken from trunks of trees in lowland grasses. Exclusive of the marine birds, the land birds were uncommon. On Grass Cay I observed only 1 honey creeper and 1 yellow warbler. (Only a few minutes were spent, however, on this island. On Mingo Cay, I noted a pearly-eyed thrasher, 1 gray flycatcher, and 2 ground doves. In addition to the birds listed for Thatch Island, I saw a yellow-crowned night heron. It was resting in a small tree at the edge of the water and when flushed it flew 10 feet to the hill and walked up the slope among the trees rather than fly away. The navigator of our boat says that each of these cays support rats and mice and while there are goats on all the cays, the ones on Grass Cay are wild. Returned to NE side Lovango Cay at 12:00 A.M. At this time there were only 36 pelicans on the south side of Congo Cay and these on the east end. By 6:00 P.M. the full complement of 634 were back to roost. I am sure that this figure is conservative as some of the birds could not be seen. At 8:00 A.M. one pelican was observed to carry a large stick to the top of his resting tree and place it as if building a nest. Collected several Ameiva from near our camp:





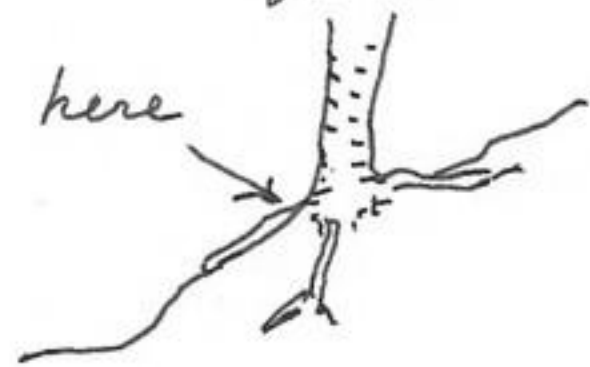
Trails of Ameiva lead from edge of water to top of highest wave deposited beach. Ameiva is also found on mountain slope above the beach area but in fewer numbers. They prefer the high tree, level ground, sandy but supporting dead leaves, not too many nor not too few. Retreat areas are necessary. Most of these lizards start to move or are noticed at about 12-15 feet. They move slowly and deliberately until shot. Sometimes one will run for 40 feet or so without stopping. They are frequently seen digging out debris from under rocks or searching each dead leaf on the ground. At sundown the sunrays bisected the top of Tabago where Linda Folk says there are motmots. The fry, a small 1 to 2 inch silver fish, frequently, in invading prey fish, jump up onto land, several dozens will perish. These fry have been boiling the water all afternoon. These fry move in groups of thousands and when swimming, they will pass by and around you like by the thousands. There were no bats observed this P.M.

Lovango Cay, Virgin Islands

Aug. 3, 1957

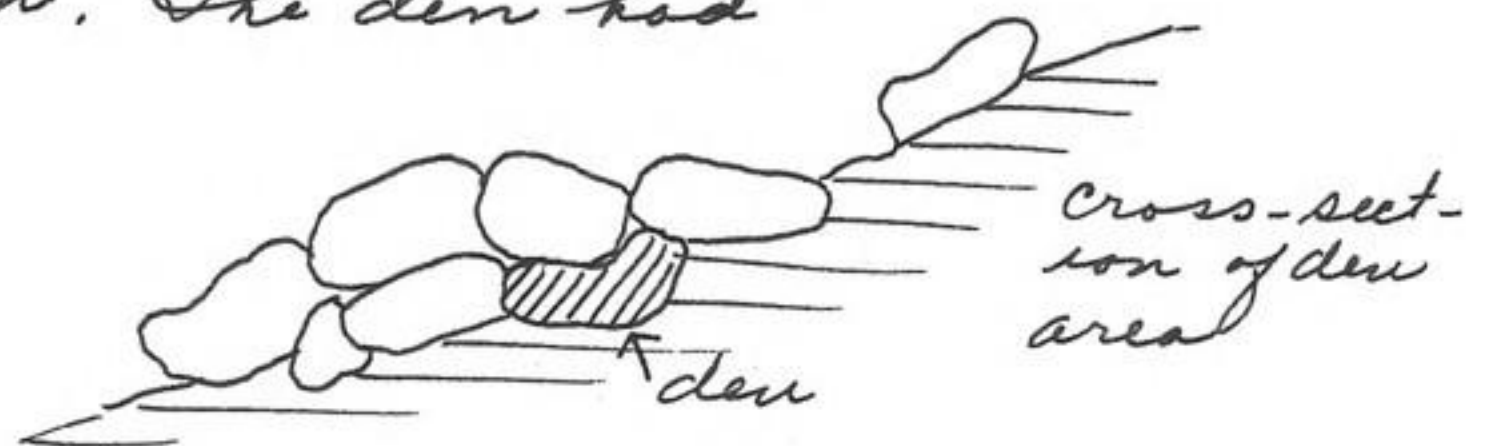
Collected on Cay today. The following birds have been noted on this island today: Brown pelican, Florida blue, laughing gull, booby, sooty tern, noddy tern, frigate bird, pearly-eyed thrasher, yellow warbler, ground dove, mountain dove, smooth-billed ani, honey creeper, red-tailed hawk, emerald throated hummingbird, gray kingbird, great blue heron. This afternoon collected several Ameiva and an Alsophis antillensis. When first observed, the snake was resting at the base of a tree as if waiting for lizards.

An Ameiva was 8 feet away. The snake left suddenly and moved rapidly up around the roots of the tree and then into the rocks three



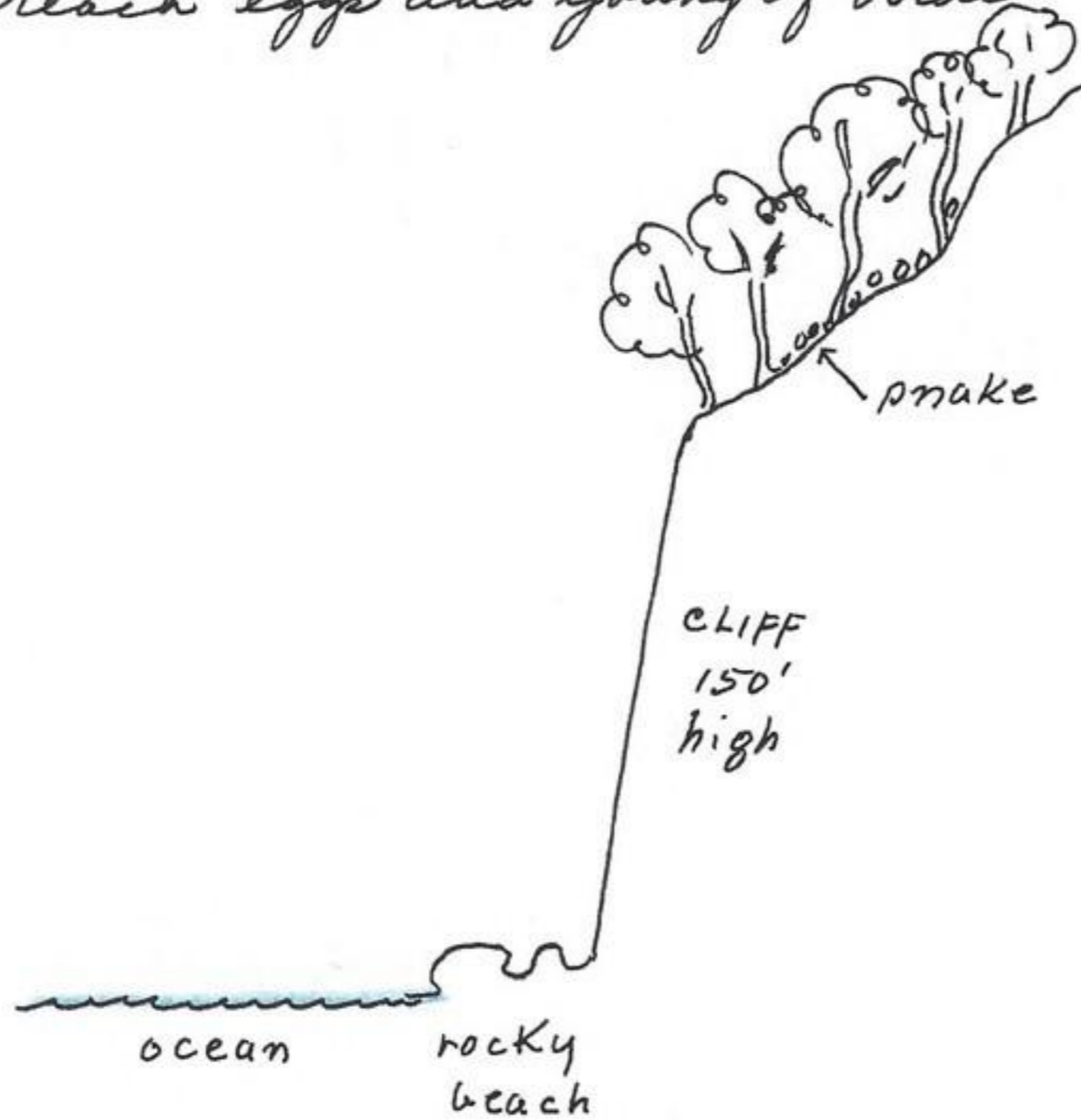
feet away where it disappeared. The rocks were removed and the snake was exposed. This den could have been used as a regular retreat. It would be interesting to know if the tree and den were associated and if this is a usual relationship. The speed in which this snake retreated to the rock den would indicate previous knowledge of the den. The den had three openings and was about 9 inches deep.

The native people say





that snakes come out after rains to dry or warm themselves on limbs and trunks of trees. They can crawl out on limbs to reach eggs and young of birds.



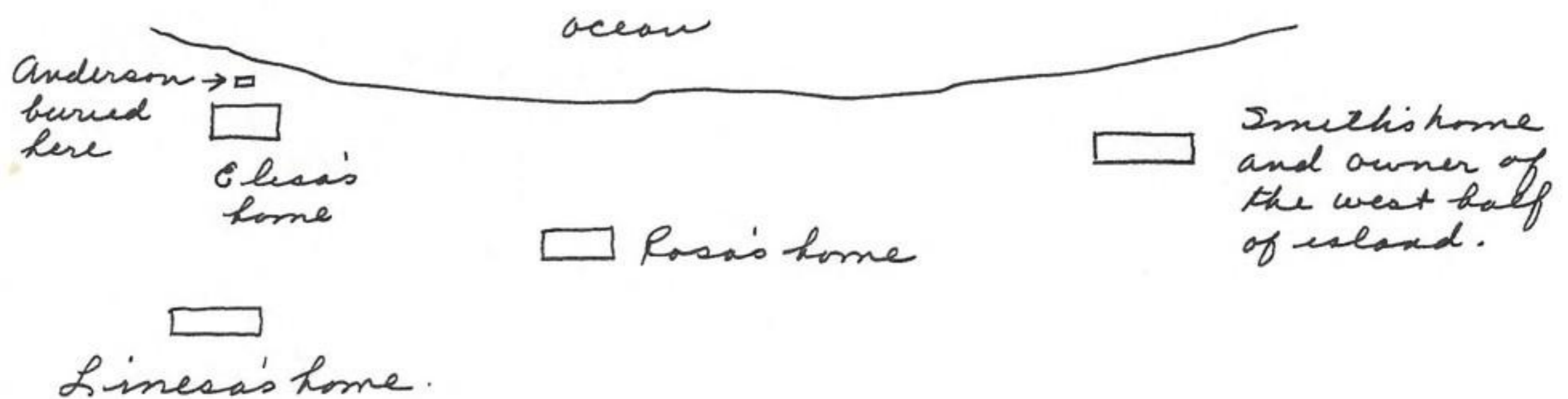
The slope above cliff with large trees and scant underbrush. Rocks covered 15-25% of ground. Rest of surface soil and leaves, the latter covering 20% of surface. This area was shaded and cool compared to slopes without overhead protection. The surface was typical for Arneia which is shade, dead leaves on ground and fairly smooth surface whether flat or on slope. The Arneia occurred approximately (al-

though generally found in groups of 2 or 3) one per 100<sup>linear</sup> feet. This area had been heavily grazed by goats, especially the ground cover. This afternoon visited the owner of the east half of the island, Mrs. Elisa Anderson. Her genealogy is:

Rose (Anderson)                      Anderson (Danish - blue eyed)

↓  
Elisa Anderson → Rudolph De Went.

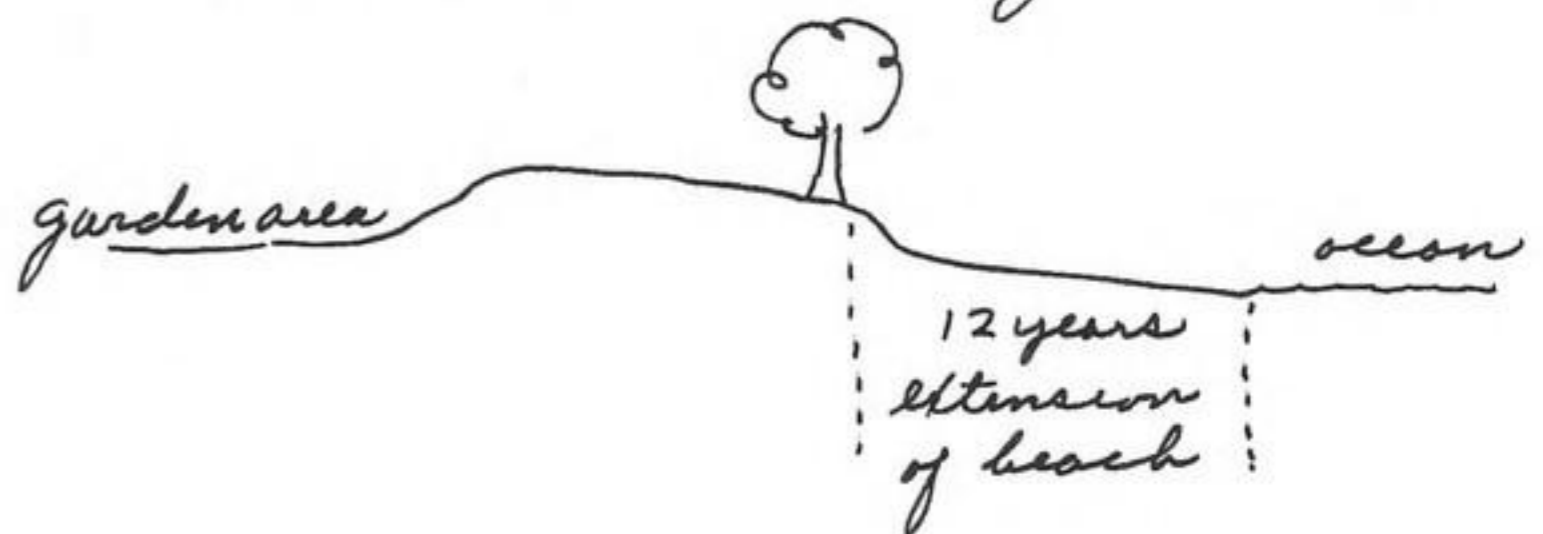
Linesa Anderson (sister of Elisa and has four children) Sisters and relatives now living in Denmark. Rose married Anderson (now buried at the home of Elisa) who had just completed military training in Denmark and had come to Lovango to pursue a garden and animal raising profession which was then important in the Danish colony in the Virgin Islands.





E. Leas's observations are: mockingbird common when she was 8 years old but recently pearly-eyed thrashers have driven them away. She has seen them eat the eggs of the mockingbird. The pearly-eyed thrashers fluctuate according to the availability of food and come to the island in drought years. The mongoose was introduced to control the poisonous snakes which were here in early days and to control the rats, although the rats could have been a factor in the sugar cane industry. When E. Leas was 8 years old (she is 49 years old) they grew carrots as big as your arm, cabbages, potatoes, tomatoes and other crops, now the drought and loss of soil makes farming impossible. The slopes that are now in back of their homes were covered with big trees and deep soils; now a rocky slope with hardly any soil and only small brush, cacti and other successional plants. She claims that in recent years of hard rains the sea around them turned to red because of the soil washed from the bay. One tamarind tree on her property was 3 feet high when she was born, 49 years ago, this tree now is 6 feet in circumference. The beach has grown 50% since she remembered it and in the last ten years has moved 12 feet. In hurricane time the water goes over beach into garden area.

Cacti come in periods of drought. The well has served them for generations and was used to water cows and other stock. The

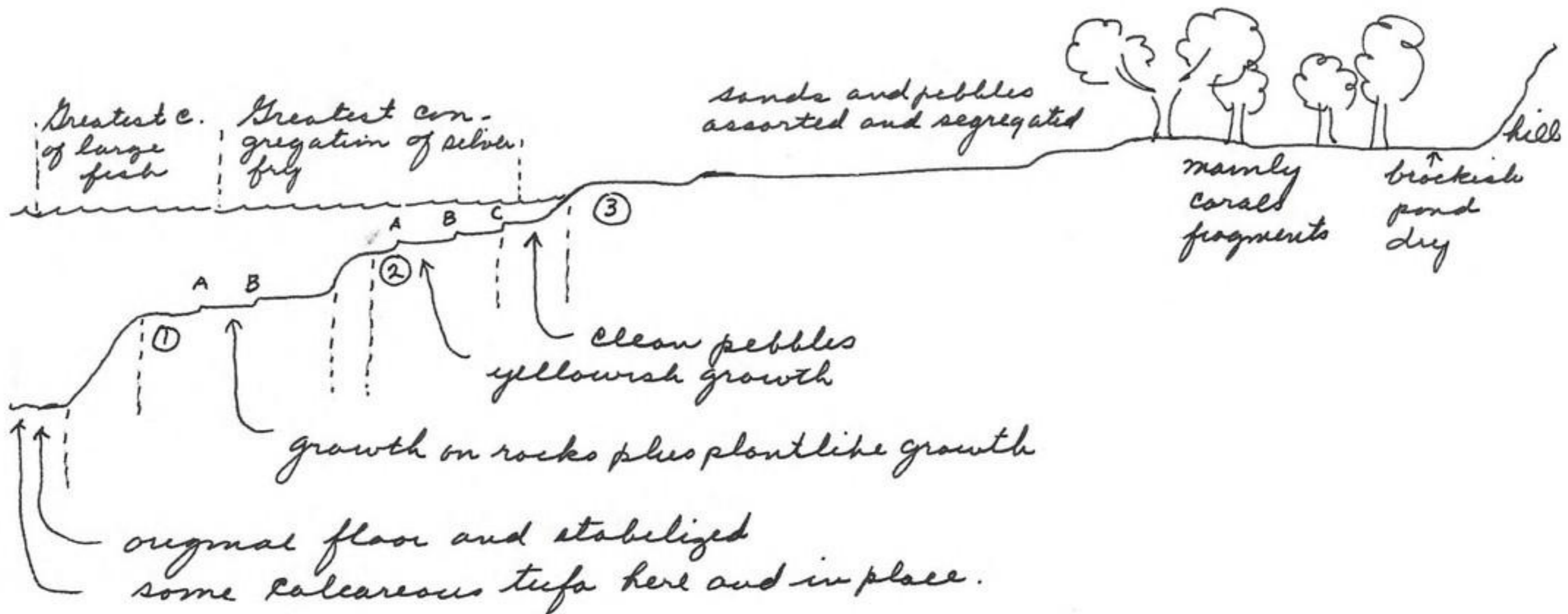


well now is becoming salty and low for first time in its history. When she was 8 years old she knew of a negro 108 years old who remembers emancipation. She claims that pottery around Danish dwellings are of genuine Danish culture.

Took two photos today; (570803-1) of Bell showing at boat at camp and (570803-2) of large tree at south west end of beach just before beginning of steep cliff area. (570803-3) of sunset from camp. Winston Anderson (age about 9 and son of L. Leas) says snakes come out after rain to sunny spots on trunks or limbs of trees and on top of grass. He brought us a gecko (woodslave) taken from his home. The nuttegg tree is only poisonous to eat whereas the fruit of the manchimeel looks like the nuttegg, is poisonous to handle and eat. When rain falls on manchimeel and then onto you, the skin blisters and hurts for several days.



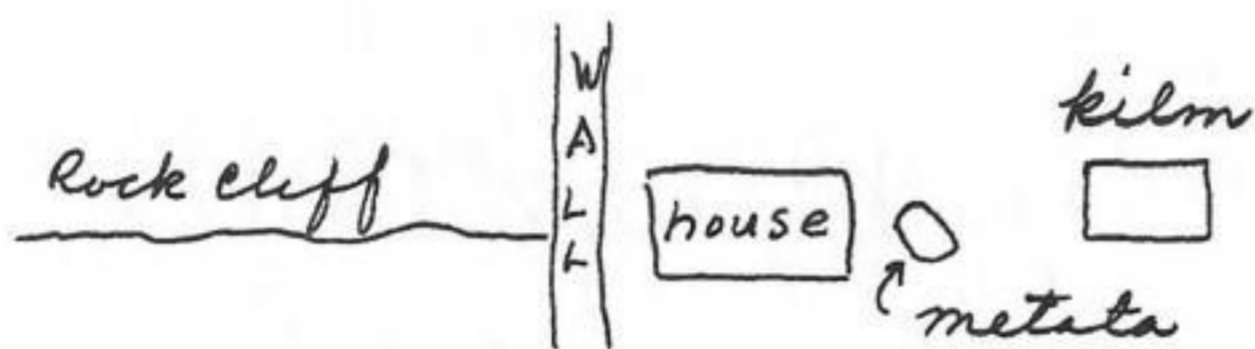
Mrs. Elias Anderson also said that when she was a girl of 8 the bay was sandy and one could wade out into the bay as far as the outlying rocks. Now corals have moved in in recent years by hurricanes (more likely warmer waters or bays have filled in thus bringing bottom nearer the warm layers above or for some other cause). In 40 years a brain coral has grown from one about the size of a basketball to one as big as a table. The nearer the surface of the water the faster they grow. The conch shells are becoming uncommon or less numerous than in older days. A hermit Crab occurs in one in a thousand of the queen conch. Colors inside the shell fade in time. Anegada is completely surrounded with conchs which live in shallow water with sandy bottoms. She knows of no other place in the Virgin Islands where the conchs are so numerous. In early days, fishermen would bring in boat fulls of the extracted conchs which are removed in a simple operation of three movements



Beach formations: Boulders below water line mainly, 98%, native rock. Boulders high and leeward to highest point of beach, coral and native rocks. ①, ②, ③ = major levels; a, b, c = minor levels. The silver fry were in the zone (indicated above) by thousands and to the extent that one could not see the bottom of the channel. They swam about 8 inches from the floor of the sunken beach and when not disturbed were arranged or oriented at random, when disturbed they immediately moved in unison. A barracuda is accepted within 2 feet of them. Several dozen species were represented, the larger ones beyond the shallow submerged beaches.



at camp watched an Ameiva eating an Sphaerodactylus.  
 Result of bat nets (Aug. 1-2-3) negative. Result of 50 traps (Aug. 2-3) bait gone, 90%; traps sprung, 30%. There is only rarely a hermit crab in this area and then only small ones. The old Danish ruins from which I got several dish fragments is located about in the middle of the island on a divide. Photo (570803-3) of this ruin and with a large grinding stone in the foreground. Photo (570803-4) and (570803-5) of



calcareous tufa near camp.

A few Tadarida flew by this P.M. from west to east. Grassquits are on the island.

Photo (570803-5) of strangled

goat. Specimen (570803-6) of ventral bone plates of hawk billed turtle from camp.

Lovango Island, Virgin Islands

Aug. 4, 1957

Prepared for departure to Annaberg on St. John Island. Photo (570804-1) and (570804-2) of equipment and boat on the beach. Mac Furlane and family picked us up and transported us to Annaberg. Enroute we visited Whistling Cay on the east end at Toll House. Anolis cristatellus and Anolis stratulus were collected. An island for only a few seconds. Pelicans roosting on west end. Continued east along N side Mary Point Estate but did not see bat caves. Many pelicans and laughing gulls along edge of water. Trees more tropical in appearance. Camped at base of road leading to Annaberg Estate House, about 100 feet from old landing dock. This area is utterly ruined by cattle overgrazing. Spiny acacia pioneer plant. Trees highwater marked by cattle, horses, burrows and ground bare. 3 Tadarida flew from west to east. Checked road corridors of trees but did not see evidence of bats. One mongoose noted. A great place for large crabs. Checked Mary Point Estate House to west and noted only Anolis cristatellus. All country badly overgrazed. From divide on Lovango Cay collected several dish artefacts from old Danish habitation, no (750804-3)

Annaberg, St. John Island, Virgin Island

Aug. 5, 1957

Mr. Mac Furlane and daughter Ann picked us up at 2:00 P.M. and we went to Sandy Cay and Jost Van Slyke. Sandy Cay is



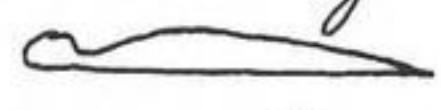
a small Cay purchased by Lawrence Rockefeller for his own island and home while visiting St. John. This island cost Rockefeller \$5,000 and was purchased from the British. He expects to build a home on this cay. It has the best and most extensive sandy beach of any of the islands. The NE side is rugged and wave cut and suffers the full affect of the Atlantic Ocean. Photo (570805-1) shows the east end (30 feet high) where birds have used the white washed rocks for roosting; Tortola in the background. Rockefeller expects to bridge these rocks for fishing platforms. Mac Farlane pointed out several old nests of the booby. He also told me that the native people gather many eggs of this species. This eastern point of Sandy Cay is characterized by cacti of several species - Turke Cops, pipe-organ, pretty pear big and small and several other kinds. The rest of the island is low beach, brackish pond now filled with grass and lillies. Sea grape dominates trees although Mon-chneel formerly was common, some monchneel trees a foot or so in diameter (these trees have been cut out by man). Six ~~Cocos~~ coconut palms add grace and tropical character to the island. Photo (570805-2) of the sandy beach. This beach, on the SW corner of the island shifts from season to season. About 200 Forster's Tern and 15 larger tern were resting on the sand. Other birds observed were: mountain dove (*Zenaida*) nest of 2 eggs in tree 7 feet from ground, three others seen; vireo, 2; yellow warblers; emerald throated hummingbird, young of which just capable of flight; booby; pelicans. This island is the first one examined that lack Anolis cristatellus or for that matter of fact neither Anolis stratulus and Anolis pfeifferi. From Sandy Cay we went to Jost Van Dyke.

### Jost Van Dyke Island.

Aug. 5, 1957

Arrived here from Sandy Cay. Met Caretaker of Sandy Cay for Lawrence Rockefeller and got permission to take lizards on Jost Van Dyke. In the immediate area around the landing dock, took Anolis cristatellus, Anolis stratulus, Sphaerodactylus and although Ameiva were not taken, it was in the area. Hemidactylus also in area. These people were afraid of lizards and when they hit one with a stick to stun them or kill them, they carried them between leaves of trees or in grass. The caretaker says that on Sandy Cay, there are only Ameiva and Sphaerodactylus. There is alleged to be a wild feral cat on Sandy Cay.



Photo 570805-3 of 2 houses of the 6 or 7 on the island. This harbor drops off abruptly and the slopes support better grass than St. John. Returned to Annaberg. Through straits passed a large school of fish 200' x 20'. Trawling thru this school did not produce results. Annaberg is heavily grazed and burrows now eating back acacia trees. The greater number of *Anolis stratulus* would indicate a better area than Lameshur for these lizards or at least a more favorable tree community. These lizards are almost as common as *Anolis cristalellus* (65% *Anolis c.* and 35% *Anolis s.*). They are found in certain places more commonly than elsewhere - generally on trunks of trees in groves and in the trees are higher than *Anolis c.* which very seldom go higher than 4 or 5 feet. The heavier stand of large timber on this side of the island may be the difference. *Anolis c.* at ruins and more difficult to approach than when occurring on trees. On slopes below ruins, found a knife  about 18 inches long and an axe; both items left in original position. Many fragments of dishes etc. remain and should be picked up and recorded and saved. This place should be reconstructed and brought back to its original operation. 30 or 40 buildings are in the area, some indicated by only a few stones. Photo (570805-6) of windmill tower and (570805-7) of Mary's Bay with coral nearly taking over bay. Most of it is shallow and waves of large size carry across it like a school of jumping fish. I have also wondered why the windmills were placed on the lee side of islands from the prevailing winds from the S.E. 5 *Tadarida* were noted this evening.

Annaberg Estate House, Virgin Islands (St. John).

Aug. 6, 1957

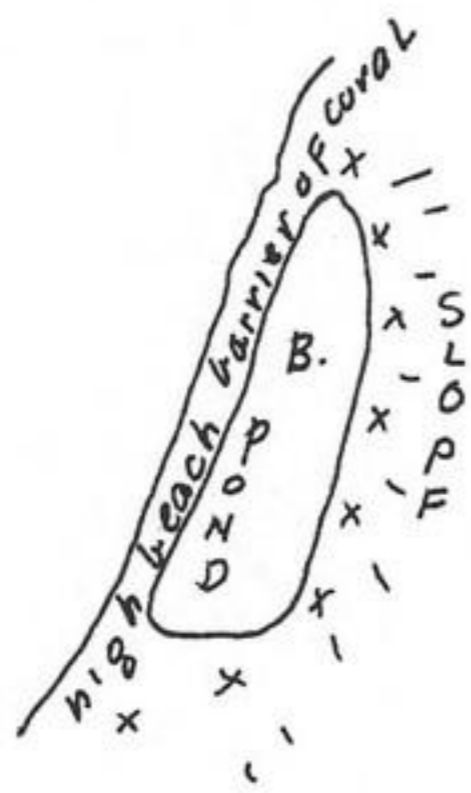
Larger crabs here than at Lameshur. Also more numerous. Watched a pearly-eyed thrasher ~~bathe~~ bath in a hole of a tree that supported fresh rain water.

Aug. 7, 1957

This morning took a *Tadarida* from a sun lit wall 6 feet south of furnace chimney at Annaberg. It was incapable of flight and had 18 cacti spines in its body, feet, wings, ears and throat. One on the throat and leg were infected. Could not fly as wing was immobilized by spines. Apparently had fallen or been dropped thru cacti and then it climbed wall where it was found this A.M. Departed this A.M. for Watermelon Cay. Photo 570807-1 of SW end of Mary

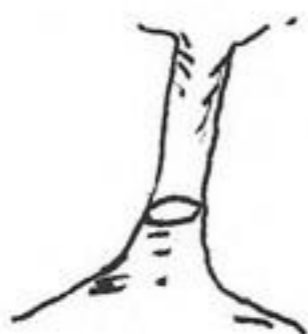


Point in distance. This small island had been burned on east end. no nesting activity of sea birds. Anolis cristatellus on this Cay. On way to Flanagan Island encountered white butterflies flying from N to across straits or 1 per every foot or so. On Flanagan Is. photographed <sup>Common</sup> ~~Forester~~ and Noddy Tern colony on S E corner (570807-2). most young in air. Some nests of single eggs which were apparently not fertile. Terns concerned with areas as if young were on ground. Estimated 150 Noddy terns and 400 Common terns. Photo (570807-3) of the south side of island and St. John in distance. This side of island nicely curved by sea waves. Ameliva, Anolis cristatellus and Sphaeroductylus on this island. Good harbor on west side. no mongoose and as far as we could tell no rats or mice. Continued to Le Duc Island. This is an interesting island, especially the east side so beautifully curved by the sea. The surf is tremendous. Photo (570807-4) and (570807-5) of this area.



On the south side of the brackish pond there was a greater concentration of Ameliva than on any island examined so far; one about every 8-10 feet. They left the edge of brackish pond lined with trees and ran to smaller trees on the slope. This island is second to Rata Cay in numbers of nesting doves and because of this condition should be given protection from

hunters and trespassers. According to Kent(?) Mathias who is a cousin of James Mathias, his father had sheep on this island when they lived on the mainland across the water from the island. As far as he can remember this island is the same today as it was when he was a boy. On this island observed 18 nests of Zenaidura (mt. dove) and 25 of the ground dove. Nests ranged from one egg to young ready to leave the nest. This was true of each species. Nests of the ground dove were mainly in prickly pear cacti, but one was in a crevice of rock on the ground; one was on the ground under a sea grape; one was on a ledge above the uplands; one was in a tree (bush type) and one was on a protected ledge above the sea. The mountain dove



nest in crevice of rock.

nested mainly in cliffs above the sea, there were, however, nests on the ground under sea grape, in trees and in bushes. These



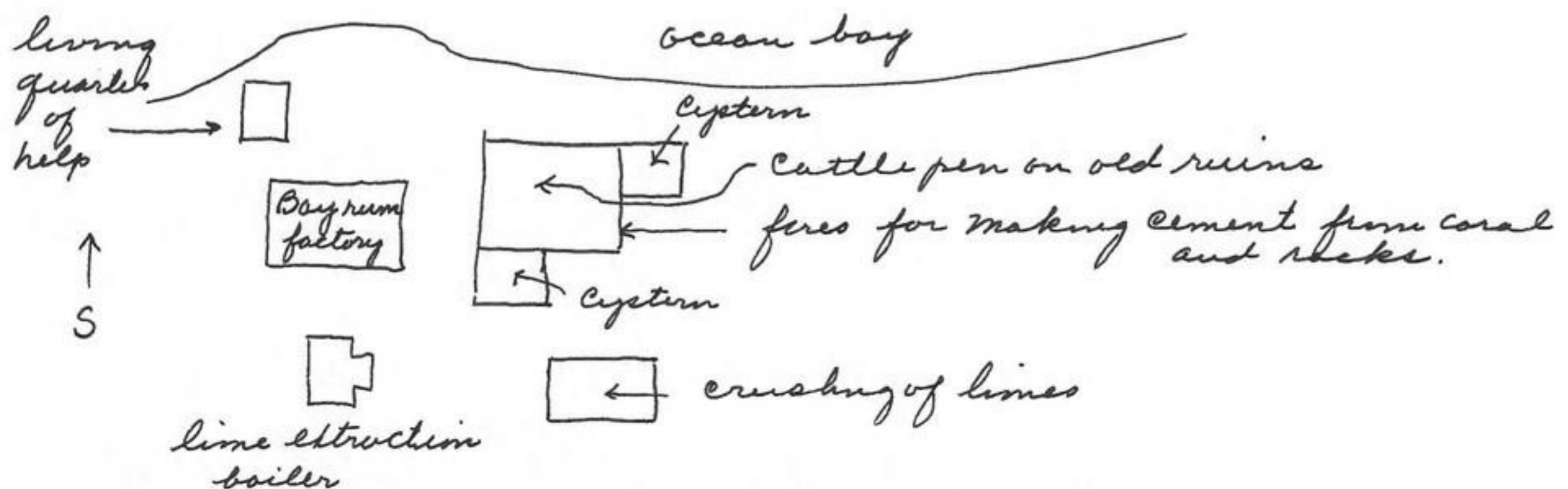
birds feign injury and when on the ground will vibrate their wings when dropped beside them. There are, at present, no goats <sup>or</sup> mongoose on this island. From Le Duce Island continued to the south side of east peninsula at Haulover Estate. Made camp on beach about 50 feet west of the National Park boundary line.

Haulover Peninsula (south side), St. John Island, Virgin Island.

August 8, 1961

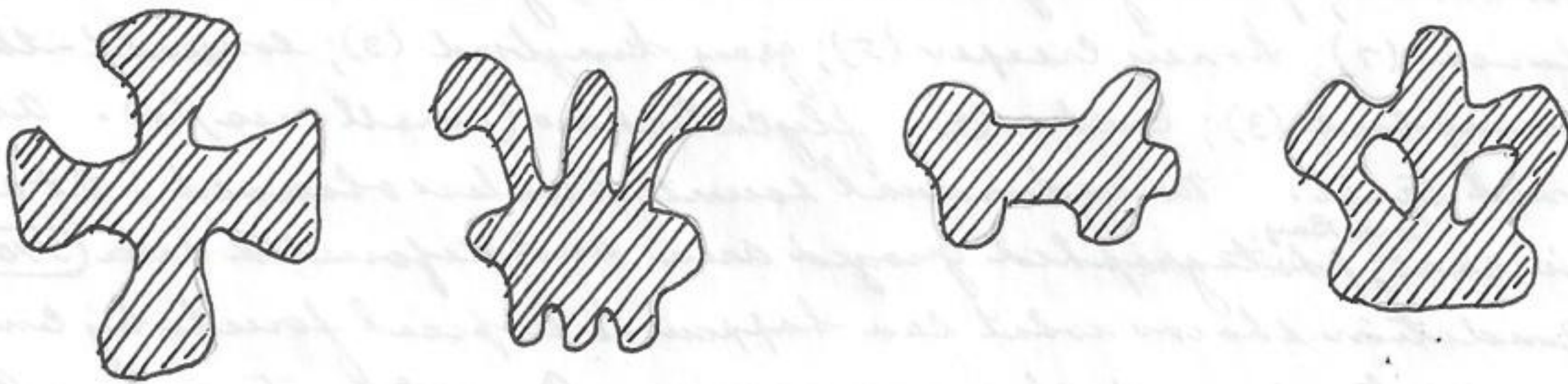
Made census of birds from camp to Coral Bay (from 8:00 A.M. to 9:30 A.M.). Walked along road: Grassquit (32) mainly along road mountains; yellow warblers (8), mainly in mountains but several in lowlands; pearly-eyed thrasher (15); ground dove (20); mountain doves (7); honey creeper (5); gray kingbird (3); emerald-throated hummingbird (3); Cockoo (3); flycatchers (small ones) (4). All birds observed trail. No individual counted unless observed. At about 3/10 mi east <sup>Coral Bay</sup> photographed grazed area and deforested area (570808-1) <sup>(over?)</sup> This condition shows what can happen to tropical forests by complete removal of timber and then overgrowing. On return trip from Coral Bay to Haulover Camp observed only a fraction of the above birds because of the time of day which was the hottest part of the day. Hiking so laborious during this time 1:00-3:00 P.M. This afternoon collected several Ameiva and Anolis cristatellus at camp along flat shaded area of beach. Several A. cristatellus were taken on return from Coral Bay. The lizards are not very common here as compared to Lameshur. Photo (570808-2) of charcoal pile ready for lighting. Most of the pits I have seen have been about 10 feet from a large tree - each tree showing evidence of the intensive heat, producing a rugged and expanded base.

Mr. Julius Sprauve of Coral Bay, now living at Cruz Bay, said that he worked at Lameshur from 1910-1914. Lameshur closed about 1920; Reef Bay 1916 because of hurricane damage. While he worked at Lameshur the place looked like this:





at a point on a ridge east of Coral Bay where road crosses  
and drops down into the lowland near the bay, found



RJS

a fork with the following inscription:  
The road had been made through the  
remains of an old habitation, now reduced  
to a mound. This site is in the general  
vicinity of photo 570808-1.



570808-1a





Sprague said that Louis Devillias brought a male and female mongoose from Haiti - year? Sprague has seen domestic rabbits, guinea pigs on St John. East of Coral Bay the provincial government is building a new road or greatly modifying the old one into a two lane highway. This road is being made without survey and will require some blasting. The judgement as to how the road will go is up to the driver of the bulldozer. This road should be discontinued immediately as irreparable damage is being done to the natural features of the park and will pollute the waters of the bays along with the road runs or drains into. Even if the road were to be expanded, it is a mistake to carry it on in the same ecological route.

South Haulover Bay, St. John Island, Virgin Islands.  
August 9, 1957

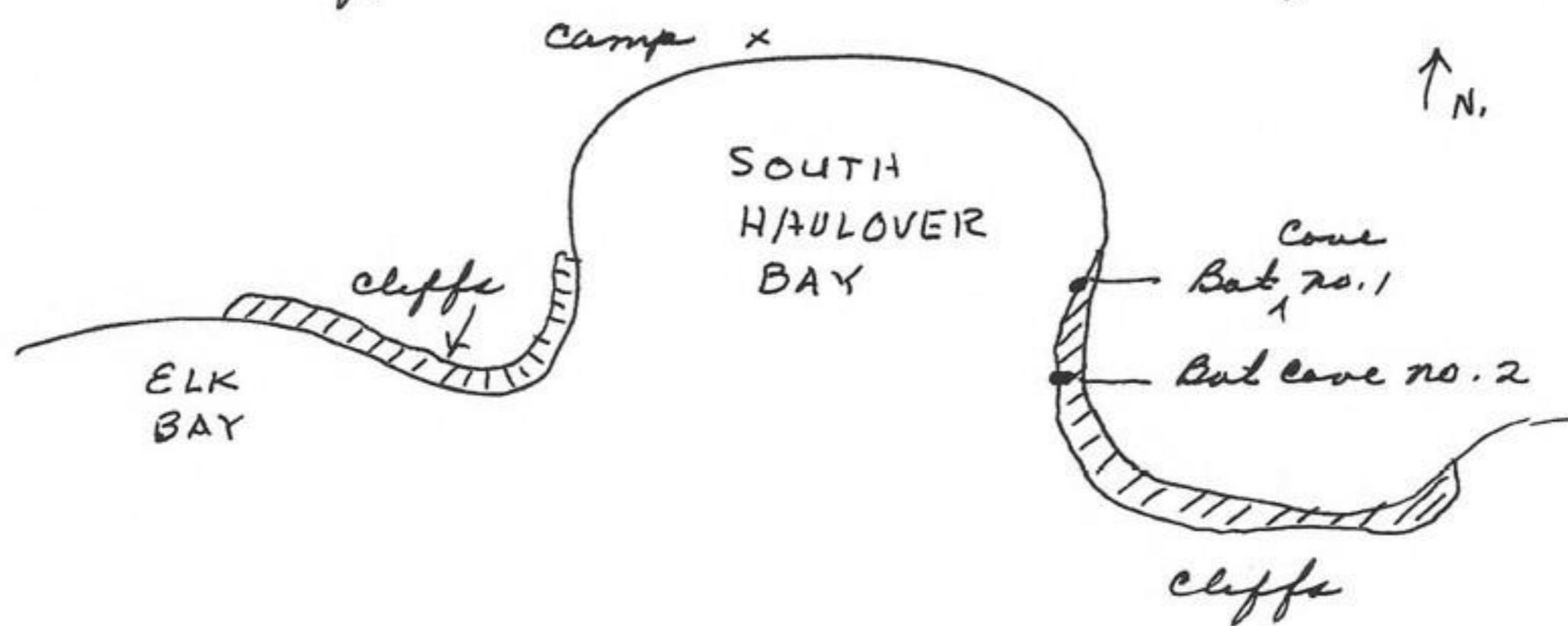
Mac Furlane was to pick us up at <sup>North</sup> ~~East~~ Haulover to take us to Virgin Gorda but trip cancelled. While at NE end of Bay, photographed a sandy beach (570809-1). Returned to South Haulover Bay and spent the rest of the day looking for bat caves. One lone with one single Artibeus. The Ameiva are common on north side of beach of South Haulover Bay and on east side and west side of North Haulover Bay. There were no large Ameiva in these areas although all size ranges up to those captured. They inhabit the relatively flat areas of the beaches and prefer shaded areas under trees where leaves have accumulated. Some Ameiva have moved up slope where conditions of high overhead protection is provided. I have watched these lizards capture and eat Anolis cristatellus and Sphaerodactylus. One large Ameiva broke off and ate the tail of a wounded lizard that had entered its territory. The action was rapid. Growing tails for food for each other may be a profitable business and puts more logic into the nature of the fragile tail of the lizards. In no instance have I seen these lizards in trees or even in low bushes. When shot, these lizards are hot to the touch, especially when captured in the open or on rocky surfaces. On the ground, and if high overhead protection is available, these lizards will use rocky soils, bare soils, leaves and even old charcoal pits. On two occasions today, I have just ready to place my hand on a Sphaerodactylus when an Anolis cristatellus, medium size, captured the small lizard from under my hand. It is surprising the competitive nature and areas controlled by Anolis. If one lizard enters another's territory a chain of reactions is set off involving sometimes as many as



individuals. A large male Anolis cristatellus and a smaller female (?) is a usual association on a tree trunk or any other surface. Seldom are two adult males found together. Smaller males (?) will frequently appose each other and contest each other with bodily movements. As usual, Anolis pulchellus was on bushy growth and Anolis stratulus was on bare tree trunks, large and small in good stands of timber. A stratulus is definitely a rain lover.

South Haulover Bay Camp, St. John Island, Virgin Islands.  
Aug. 10, 1957

Early this A.M. watched 2 mongooses, one large and one medium (maybe ♂ + ♀) feeding on refuse outside of tent door. Larger one controlled activity but smaller one gave good resistance. The mongooses ate - candy wrappers, remains of corn beef in can, licked holes of evaporated milk can, remains from luncheon meat can and other cans. These mongooses have been seen daily in this area but from our camp to Coral Bay and return I did not see one animal. Cutter did not see a mongoose between Haulover and Lameshaer (walking via Bordeaux) while waiting for the boat, I examined cliffs on the east and west side of South Haulover Bay.

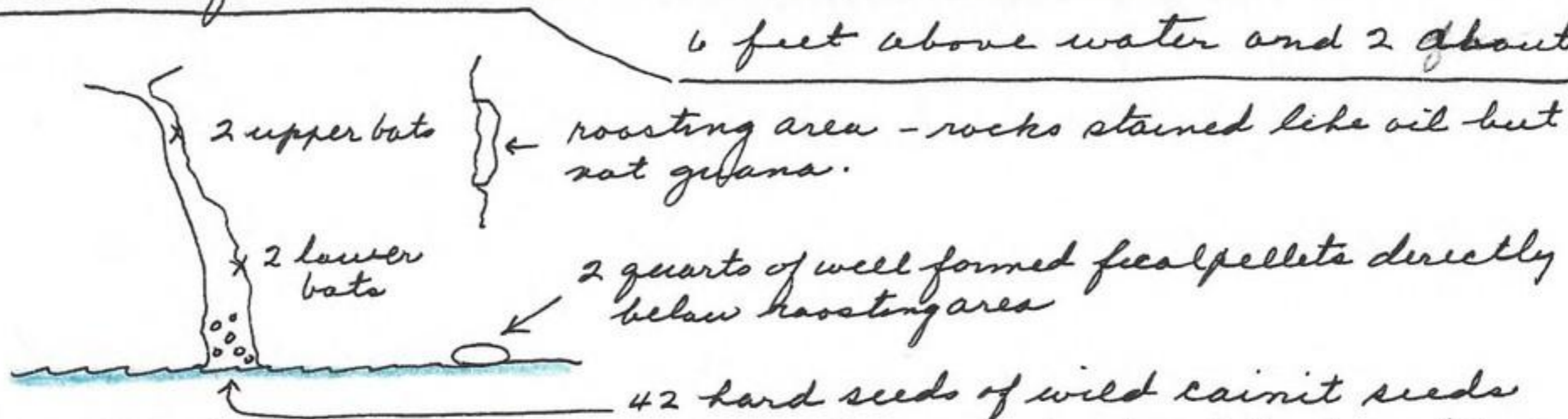


The entire cliff line between <sup>S.</sup> Haulover Bay and Elk Bay was without bat caves or signs. On the east side of Bay found 1 bat Artibeus in cave no 1. This cave was approximately 5 feet deep, 6 feet high and at the edge of water. The walls and base of cave were streaked with a red stained guano in limited quantities. The cave faced north and was located in those cliffs which were those formed first from the beach. The bat flushed from this cave last night was not here this A.M.





About 100 feet to the south, a high fissure in the cliffs supported 4 bats, two of which were collected (Artebeus). Two were about 6 feet above water and 2 about



20 feet above the water.

These bats fly out of shallow

coves and do not return. The two upper bats were both adult males.

At 1:00 P.M. Mr. Mac Farlane and daughter Ann, picked us up in sloop. Photo (570810-1) of this boat in S. Haulover Bay. Sailed to Lameshur via Booby Rocks.

At Lameshur checked bat nets without results (Mr. Shade has checked nets in our absence as following:

Aug. 3, 1 Artebeus and 1 ground dove); Aug. 5, 1 Artebeus; Aug. 8, 2 Artebeus; Aug. 9, 1 Artebeus or 5 small. These five are recorded as taken Aug. 10). Letter awaiting from Mr. Hall requesting answers to three questions: (Letter report no. 2).

Returned from field August 10 to receive your letter of July 31 requesting report of field activities. I would like to preface such a report by saying that Mr. Harold Hubler of the National Parks has been most cooperative in arranging for permits, ground transportation, lodging and meals and that Mr. Owen Mac Farlane, who is manager of Canal Bay Plantation, Inc., has done everything possible to further the realization of our objective. He has had a keen interest and understanding of our problem and personally has made all arrangements for services and boat travel. His participation in this program has apparently been done without formal instruction from the Rockefeller Office in New York.

In regard to the three questions which you have asked I can say that (1) we have had no material success in recovering bones of land vertebrates that are extinct on the island. We have sampled cave dirt from one site but we did not find fossil material. This cave is on the beach level and is so situated to exclude most mammals or vertebrates except bats. Most of the sea cliffs we have examined are at sea level and the cave dirt is periodically washed by tidal action. Most caves, in fact, support sea water as floors. Caves or crevices higher on the face of the



Cliffs do not accumulate dirt. Realizing that these caves might be temporary features of the changing coastline we have searched the uplands as well. Some 40 natives have been interrogated concerning caves or sheltered areas but in each case the answer has been negative. We will try to contact Donnelly in St. Thomas on Monday and determine if, from his geological investigation of St. John, he has gained any intelligence about caves.

Question no. 2 is about time devoted to searching for fossil bones and teeth. As our main objective is to establish evidence of extinct forms, we have devoted nearly all our energies to realizing this objective. I would estimate that 80 per cent of my time has been devoted in searching for caves in sea cliffs and other rock outcroppings.

Question no. 3 asks what amount and nature of attention you have been able to give to the fauna of land vertebrates of islets that are close enough to St. John to be properly spoken of as outliers of St. John, instead of as outliers of other islands. To date we have collected on 18 outlier islands of St. John and six other islands which are to be construed as members of the Virgin Island group (including St. Croix, Jost Van Dyke etc.) Our practice has been to camp (complete field equipment) on one island for 4 days in which time we examine this island and those adjacent island which can be reached by a small row boat. At the end of 4 days Connel Bay would transport our gear to another group of islands for another period of 4 days. Some of these 4 days stops have been on the mainland of St. John where it is impractical or impossible to reach by vehicle. On the island, on which we camped, we set out traps, bat nets, collected by day and night and examined the shorelines and uplands for caves. On the adjoining islands to our camp we collected by gun and searched for caves.

Biologically the Virgin Islands are indeed depauperate of vertebrates. Our collection as of Aug. 10 includes 64 specimens of bats of three species (*Tadarida*<sup>b</sup>; *Artibeus j.* and *Brachyphylla c.*) nearly all the birds which have been noted in the field and of all but one species of reptile suspected to occur on the island. It was early recognized that the relationship of the outliers cays & islands to St. John Island could best be determined by geographic variation among the herps. Almost all of the various kinds of birds have been noted to fly from the mainland to the outliers. Of the vertebrates the reptiles are perhaps



less capable of bridging the water gap. As a result we have collected from nearly all the islands, adequate series of Anolis cristalellus, Anolis pulchellus, Anolis stratulus, Ameiva exsul, Bromicus, Alsophis antillensis, Amphibaena, Hemidactylus, Sphaerodactylus, C. leutherodactylus and possibly others. Our combined catalogue specimen number well over 1000 and are predominantly of the common native vertebrates - the lizards. A small collection of about 20 fish has been made by a native fisherman who has a fish trap at Lameshur Bay - an unusual opportunity to get a sample of the dominant and more bizarre forms of fish from this area. Our bat net nights are 330 and our trap nights are 1700. \$1500 in traveller's checks still in contact. I will welcome any new approach or appraisal of our problem on St. John Island.

Sincerely, James W. Bee.

Lameshur, St. John Island, Virgin Islands.

Aug 12, 1957

Trip to St. Thomas (Charlotte Amalie). Enroute from Lameshur to Cruz Bay via Coral Bay, Centerline road (9:00 A.M.) found the pearly-eyed thrashers in usual numbers. 38 grassquits between Coral Bay and divide - all along hillside edge of road. Hillside green because of recent rains. On boat noted 2 pairs of zenaeda dove flying from St. Thomas Island to St. John Island.

Lameshur, St. John Island, Virgin Island

Aug. 13, 1961

Found a light and dark Sphaerodactylus under each of several rocks examined under a Tamarind tree. Collected one group of frogs nos 570813-1 to 570813-8 from one isolated clump of three bromeliads. The call is " - - " and was given at about 3:00 P.M. but in shade of mountain. Noted 2 red-necked pigeons doves at the forks of the road at Bordeaux & Lameshur.

Walter Dalmlida of Bordeaux reports:

1. The story of Indians and slaves jumping to death on top of mt. Minna is factual but contrary to James Mathias who says there is a deep dark hole, the jumping off place is a perpendicular cliff.

2. Ownership of Lameshur - Moran?, Grevenkop - Castenekiold, Mrs Westerbrosk?, Mrs Creque, Mr Slick, National Parks

3. Dalmlida worked at Lameshur at the same time as



Julius Sprauve.

4. He has watched mongooses prey on ground birds and on land crabs. Mongooses never are active after dark or before sunlight in the morning. They are everywhere in the bush and will not come readily to trap or snare. Mongooses steadily increasing in numbers.

5. He knows of no cave on the island except the hermit cave on the east end of the island.

6. Snakes common and large lizards before introduction of mongooses. Mongooses have 4 or 5 young. No one knows where they stay at night.

7. Big fish feed in mangrove at night. His usual catch with line is hard-nose and yellow fin. His daily catch by hook was about 30 individual fish.

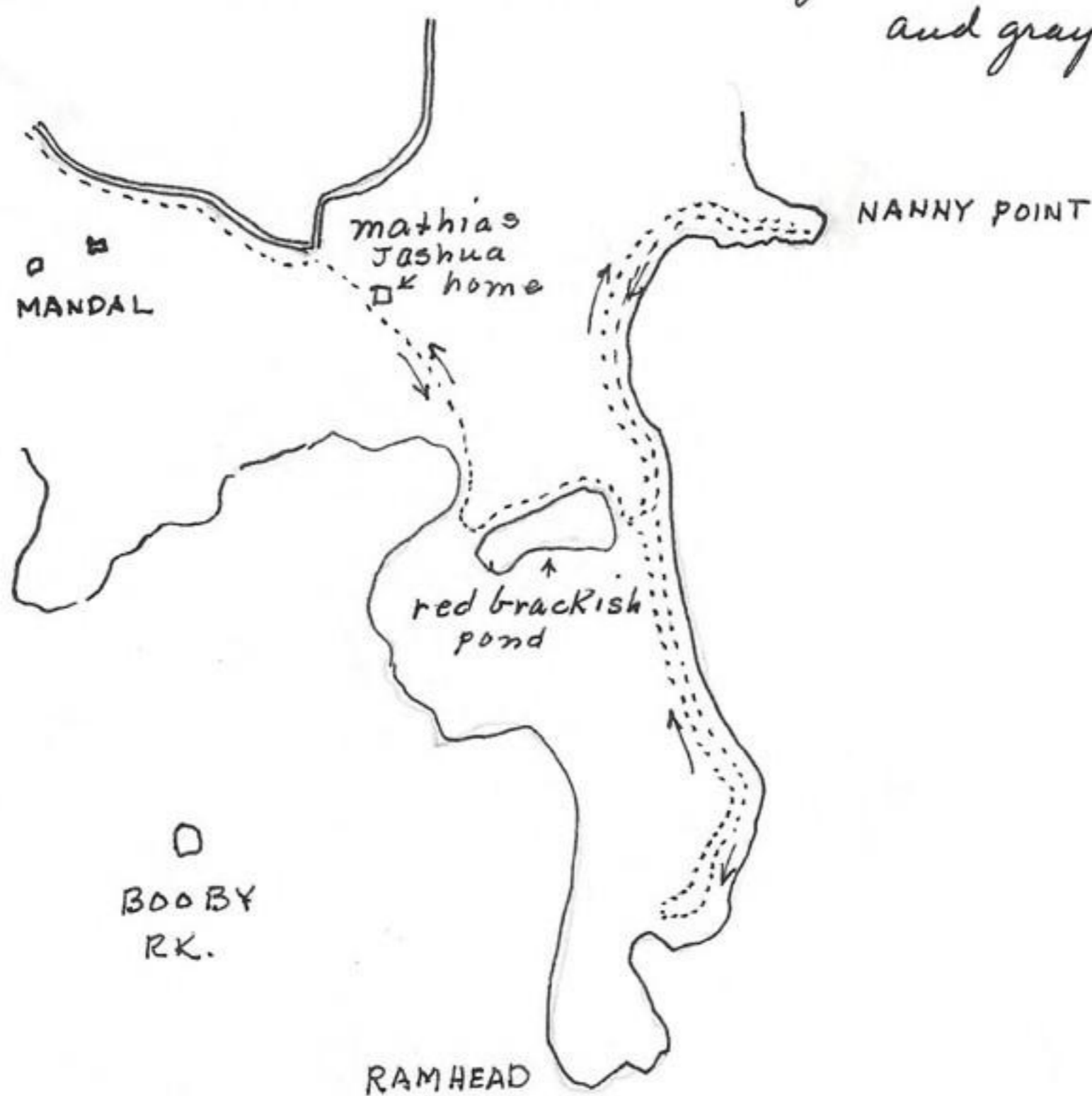
8. Big bass, mullet, gar, barracuda in canal at mangrove in East bay of Lameshur. This evening inspected bat nets where have not been examined since August 10, One Stenoderma.

(570813-22) from net no. 4 at 1/5 mi. SW Lameshur Estate House. It was dissected and preserved in alcohol. Probably caught sometime between the 10th & 13th.

Lameshur, St John Island, Virgin Islands.

Aug. 15, 1957

Trip to Ram Head via Mathias - Joshua home. Walked from Lameshur. On beach beyond brackish pond with yellow warbler and gray kingbird most common birds.



In the brackish pond (of salt & red water) noted 12 Black-necked stilts, 6 western sandpipers (?) and 1 sparrow hawk. The sparrow hawk was resting under the foliage protection of the tree rather than on top of the tree. The tree was on the west edge of the pond. On the ocean front took the following pictures. (570815-1) (inserted here but taken on divide east of Lameshur showing Lameshur,



mangrove trees, brackish pond and the *Croton-acacia* <sup>lower</sup> slopes of Lameshur valley.

(570815-2) Wind swept vegetation east of salt pond on ocean front. This area is almost impenetrable.

(570815-3) Rocky beach and surf at south end of beach. This section of the beach is characterized by large boulders and no sand.

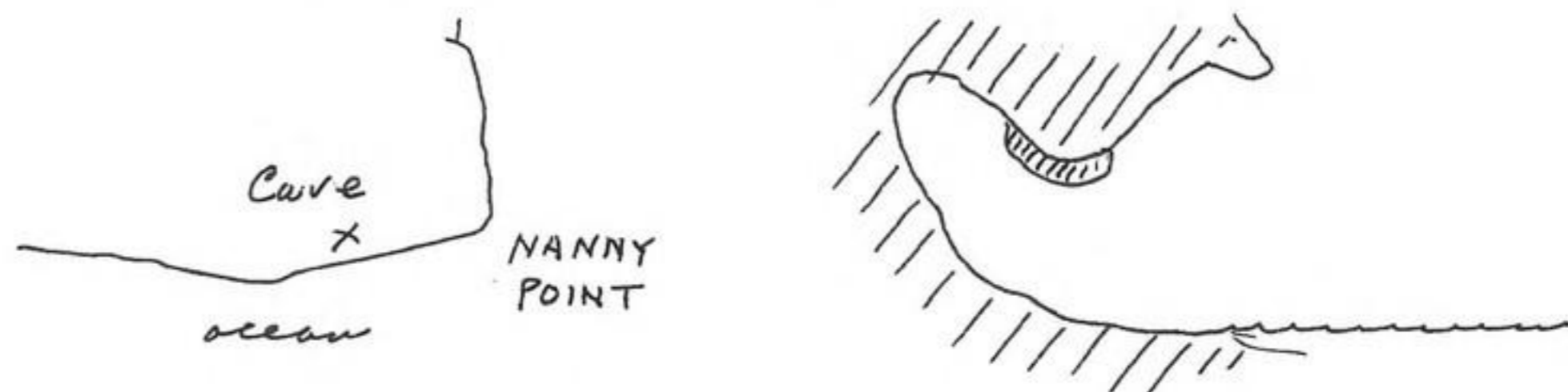
(570815-4) Colored rock and whelk.

(570815-5) Surf from peak with solid rock slope to west.

(570815-6) Sea fans and shells in spray zone.

(570815-7) Surf on rocks.

At Nanny Point collected four *Artibeus* from a rove at Nanny Point.



On return photographed the red water in brackish pond. Salt gathered when salt water evaporates. No (570815-9) of water reservoir at the Gladstone Mathias - Joshua home, showing covered roof, opening on outside, steps etc of old Danish culture. *Ameiva* are uncommon but are found from Nanny Point to Rom Head and west as far as the above mentioned house. I did not see large *Ameiva* but one of the natives said that they were formerly common before the introduction of the mongoose. Noted two oystercatchers on ocean front south of Nanny Point. Returned to Lameshur and photographed an *Artibeus* taken from net no. 4. This photograph no 570815-10. Photo (570815-11) a flamboyant flower and no (570815-9) and (570815-12) of a brown and green *Anolis crestatellus* after sundown. The brown line, alive, struck the formalized lizard 6 times, each time with a squeaking voice. The brown lizard could be prompted to attack by moving a stick in front of it. Two females (prominent stripe down back, were also concerned with the activity. It would be interesting to see what would happen by placing other formalized specimens like no 12 of above of different age groups and other species in the territory of another large ♂ *Anolis crestatellus*.

Lameshur, St. John Island, Virgin Islands.

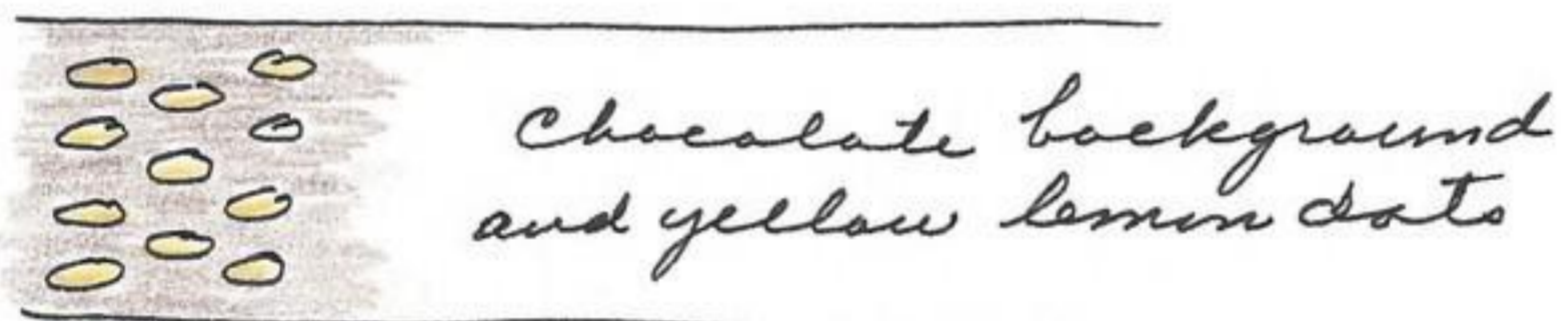
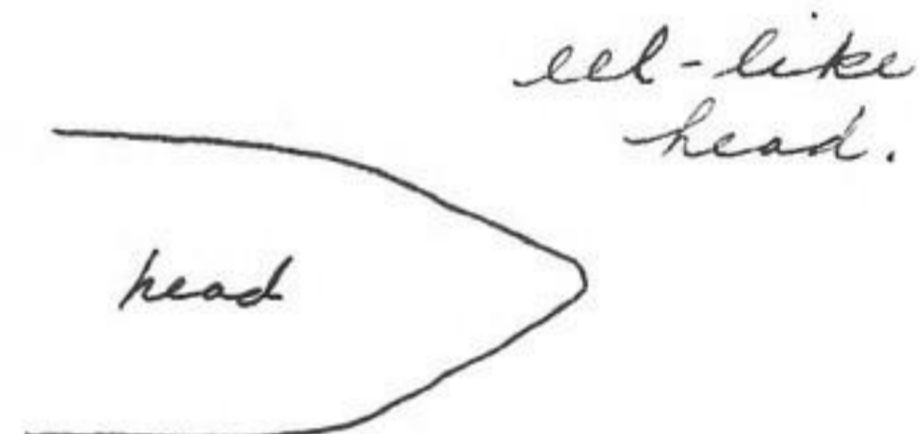
Aug 16, 1961

For the last few days have been gathering guano from Split



Point for examination (cove described July 14, 1957). Two bags were put thru sieves and fragments of bones examined. Brochophyll-  
ura present. Approx. 300 bats were in the cove, collected 18. Zenaida (mountain dove) nest of 2 eggs on ledge on east wall of cove. This nest is the most secure of nests examined so far. Most other nests of this species have been in small cliffs. Two other ground doves and their eggs, one with nearly full fledged young. Laughing gulls were chasing fry which were being disturbed by Bonita fish just of point to left. This evening went to home of Park Ranger Mrozek at Cruz Bay. Present were Mr & Mrs Ewen Farlane and daughter Ann, Mr & Mrs Wilcut, Mr & Mrs Henry Fafalla, Mr & Mrs Gardam, Mr & Mrs Harris and Mr Shade. Mr Fafalla reported two instances of sea snakes, one in shallow water and one on the sands. His description is as follows:

snake like  
3' x 3/4 inch  
another  
18" x 3/4 inch



This does not seem to be the pattern of the sea snake but I do not know of any other snake or animal it could be except one of the eels. Sea snakes do not occur in the Atlantic Ocean.

On <sup>way</sup> back to Lameshur from Cruz Bay I did not see a frog (after dark) in the road, although they were calling by the hundreds on all sides. The three different calls are:

1. a 2 note (see-saw call) like the peep of a small chicken or new born chick.
2. double yelp of a lower tone than above.
3. series of 5 notes of some note - a croaking call.

Lameshur, St. John Island, Virgin Islands.

Aug. 17, 1957

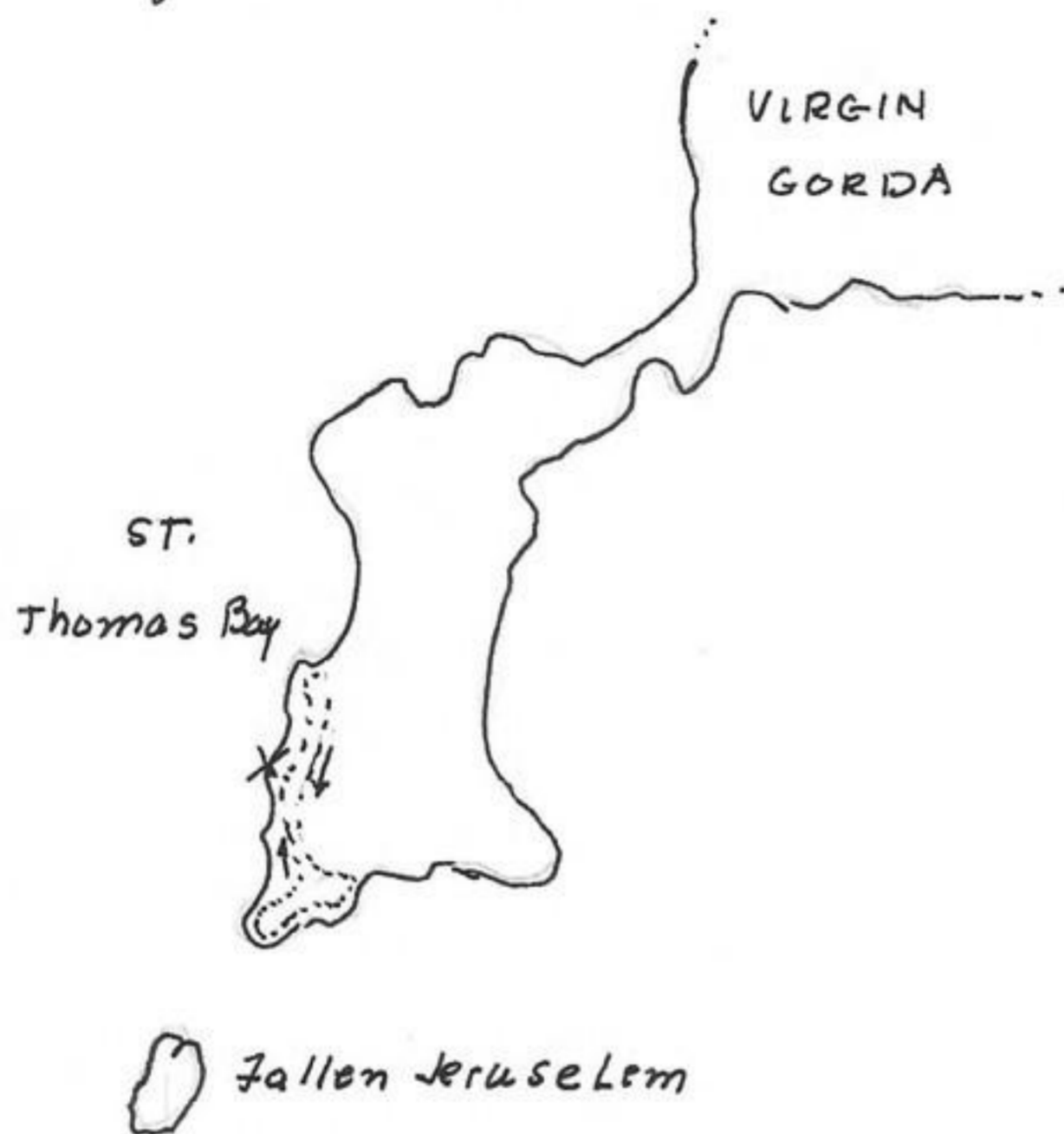
Prepared specimens and collected more guano material. Photo 570817-1 of area inhabited by Sphaerodactylus. Leaf mold under tree.



Virgin Gorda, Virgin Islands

Aug. 18, 1957

Trip to Virgin Gorda with Supt. Harold Hubler and wife, Thomas Donnelly and wife and 4 guests from St. Thomas at the SW end of this island.

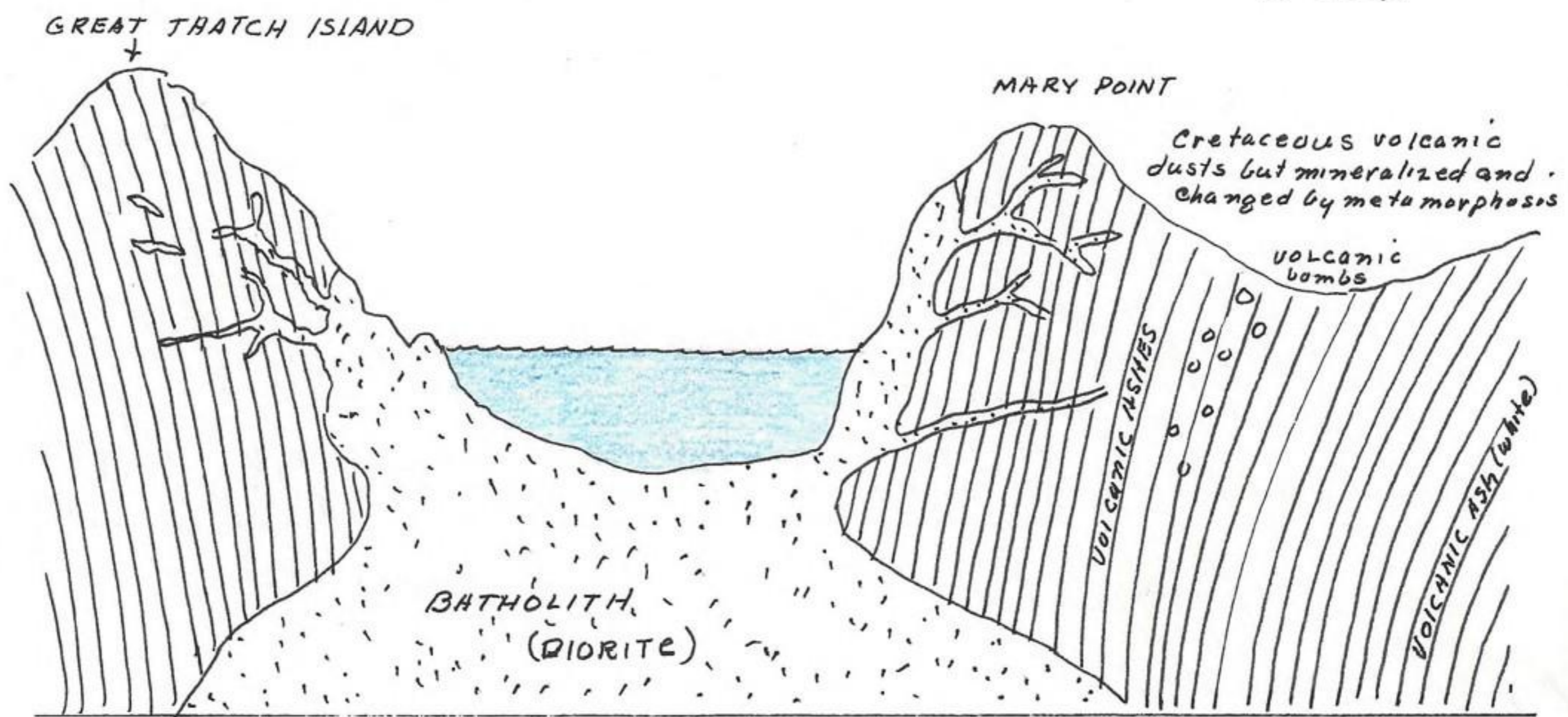
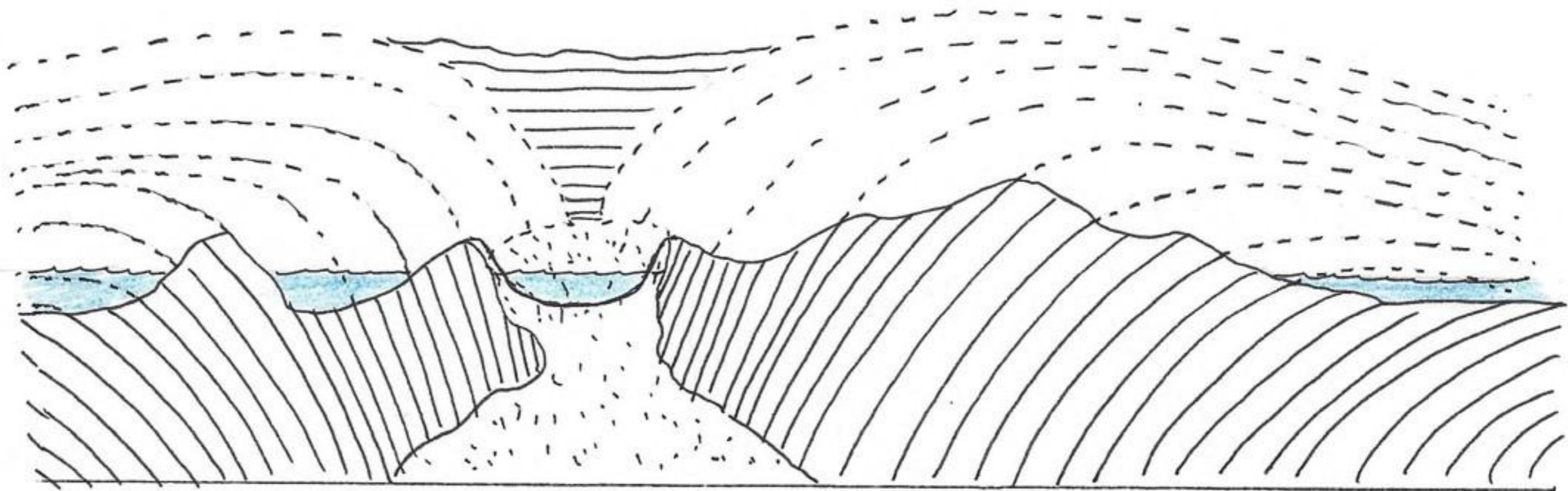


Took 9 pictures in this area of large rocks (570818-1) to (570818-9). These rocks are diorite which is a close relative of granite and because they were formed at great depths and cooled slowly they fractured into large blocks. These blocks have been eroded by general atmospheric elements although some high concretions suggest wave action at high levels of the ocean. The erosion is by concoidal fracture and surface grain deterioration. The diorite is made of phenocrysts of feldspar, microcline and others. Some of these individual blocks are about 90' high. The areas between the blocks are very in-

teresting and cool. On short trip to north and then to south to extreme tip and return, observed the following birds: Kildeer (2 pairs); smooth-billed ani, gray headed Kingbird; grassquit (nest of 3 eggs) placed in cacti; laughing gull; noddy; tern; mockingbird; western sandpiper; red-necked pigeon(?); ground dove; and 5 species of lizards - Anolis crestellus, Anolis stratellus; Ameiva; Sphaerodactylus. Some Ameiva extremely large. This island is connected with the large island adjoining would be an excellent island to study as it is easy to get about and there are unique ecological niches not represented on other islands. This island of large boulders (not main Virgin Gorda) is an exposed part of a batholith which, submerged, carries west thru Sir Francis Drake Channel to near the eastern end of St. Thomas Island. The following reconstruction shows a possible way in which these islands could have been formed. This idea is only a working hypothesis. The infolding is from shrinkage and convection of the surface of the earth. The volcanic bombs at point NE of Caneel Bay and the great thickness of volcanic



ash would indicate its nearness to the original source of the sedimentation of volcanic material. It is interesting to note that the sedimentary rocks are best formed in the vicinity



of the batholith. On either side and at least to the south the sedimentary condition is less evident. This area may be a local fold of a much larger one to the north. These rocks suggest or remind me of overturns in Utah along the Wasatch. The area of Virgin Gorda is the batholith, which has faulted up or bend above the old erosional level of the area. Returned to Lameshur by way of Connel Bay and hence by jeep to Lameshur. Virgin Gorda and Anegada remind me of round domes of localities that are probably of different origin. I did not have chance to examine them at close range.



Lameshur, St. John Island, Virgin Islands.

Aug. 20, 1957

Observed male and female Anolis cristatellus in act of copulation. Collected the female (570820-1). During act there was no noticeable movement. Observed another pair copulating. The female was shedding skin and about



80% complete. Yesterday evening at sundown or at time the sun was behind hills to west of Lameshur, I set markers at the terminal growth of the sand vine (railroad vine). This morn-

ing before the sun reached the vine at 7:00 A.M. measured the growth of last night. The difference between the night and day growth is as follows:

	<u>Nights growth</u>	<u>Days growth</u>
plant 1	115 mm	12 mm
" 2	90 mm	30 mm
" 3	110 mm	15 mm
" 4	120 mm	12 mm.

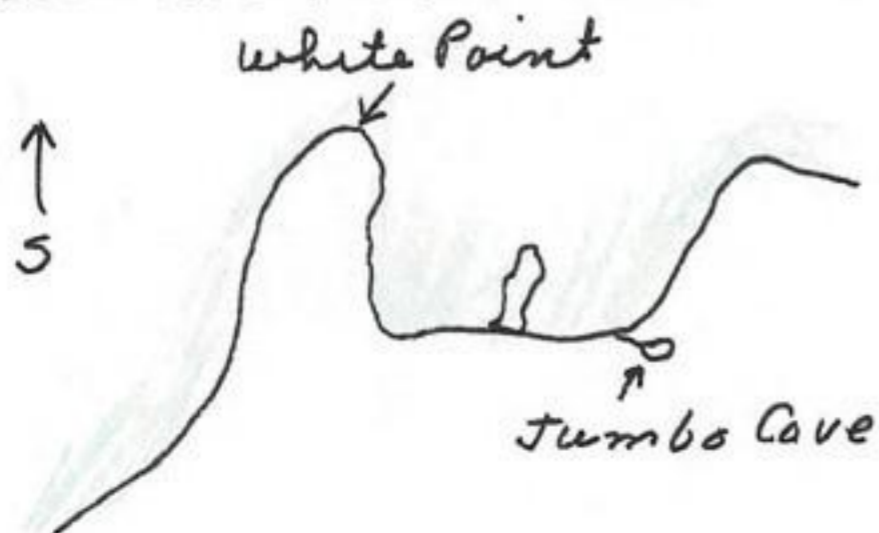
Apparently this vine grows at night and only a few millimeter in the day when the days and sands are hot. Examined the holes made by white crabs. The holes were interconnected.



Lameshur, St. John Island, Virgin Islands

Aug. 21, 1957

This A.M. photographed a shark (570821-1) presented by James Mathias and taken from Lameshur Bay in fish trap. This afternoon investigated cove at White Point, SW of Lameshur. Bats in cove but I could not see without light. This



cove is 800yds S. and 750yds W. of Lameshur Estate House. This cove has possibilities for sifting cove dirt. This area is little visited by man. This cove is known as Jumbo Cove (approx 200 ft west of White Point). The beaches are not picked

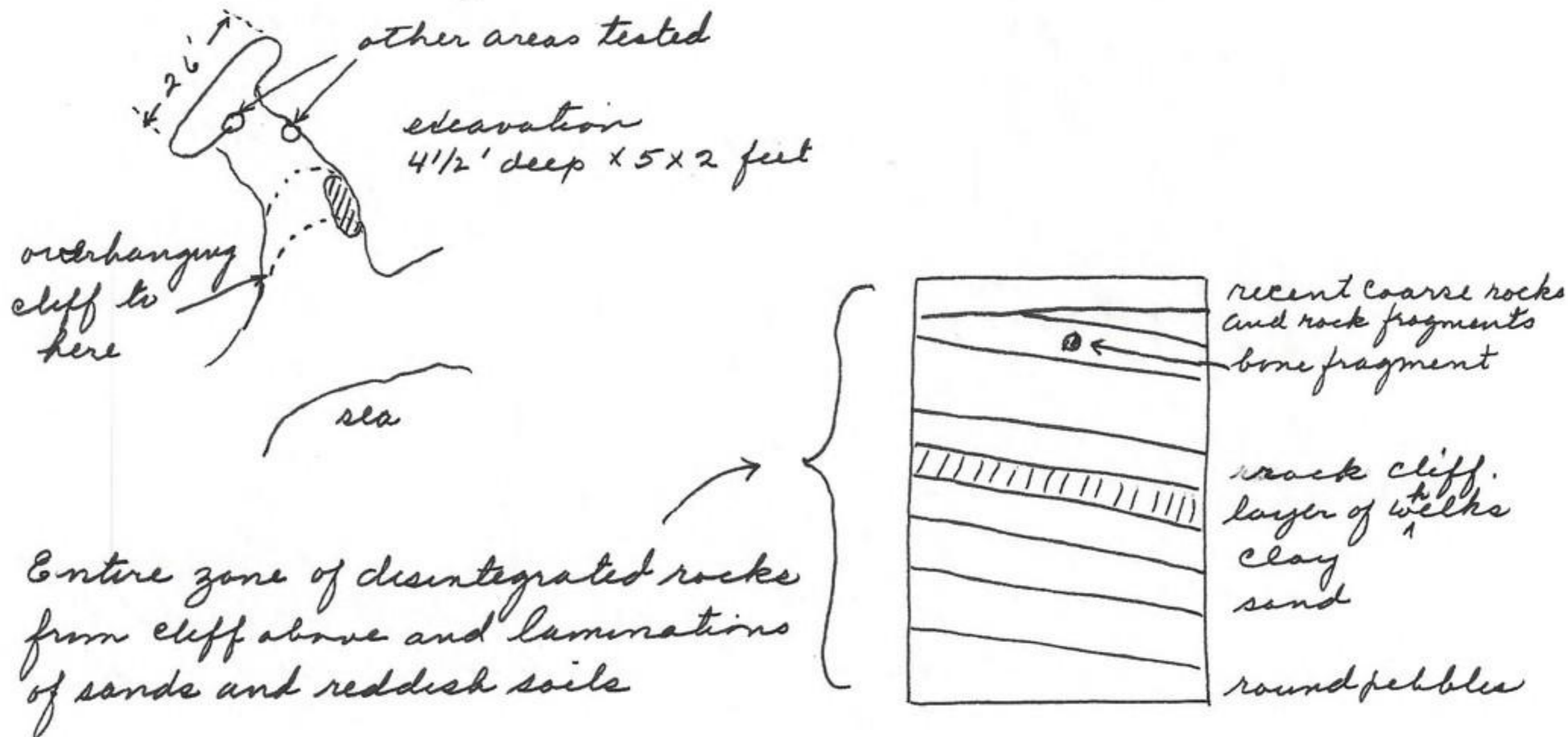
over as on the more accessible beaches.



Jumbo Cove, w White Point, St. John Island, Virgin Islands

Aug. 22, 1957

Inspected this cove and sifted dirt but without material success. The measurements of this cove are:



This cove would give best protection to aboriginals of any cove examined although limited in area.

Lameshur, St. John Island, Virgin Islands

Aug. 23, 1957

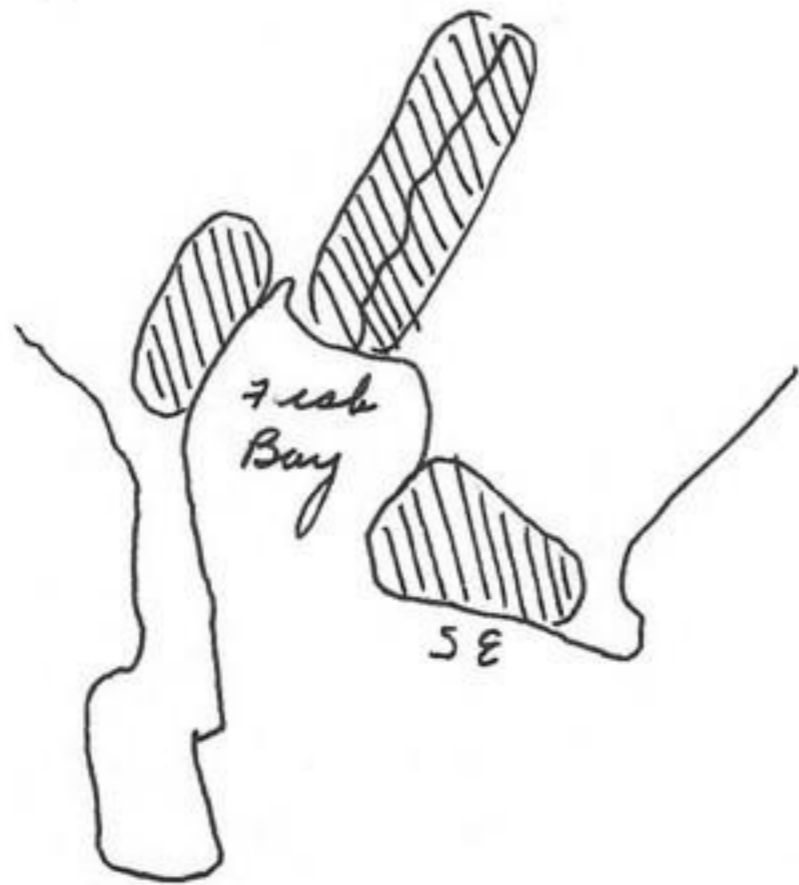
Went to St. Thomas to make return air reservations. Pearly-eyed thrashers in usual numbers except in Adron Estate where they were gone from those places most frequently see. As trees mature fruit these birds are attracted temporarily. Some of the different kinds of fruit <sup>and other food</sup> eaten by pearly-eyed thrasher (according to Austin Delmida, a native) are: soursop, wild fig, papaya, mango, scatter apple or wild onion, manē, tomatoes, banana, pineapple, guinea, cucumber, watermelon, lizard. On the same trip to Cruz Bay



noted an increase in mountain doves and a reduction of numbers of grassquits. At St. Thomas, Mr Hubler took me to where he saw an Agouti or Capromys so 20 years ago at Carnival Rocks. We searched the ground but did not find evidence of the skeleton or teeth. The animal when originally observed had not been dead too long. On return trip a Mr. Arnet Marsh drove me to head of Lameshur Road. His grandfather is W.H. Marsh who is buried at the Reef Bay Sugar mill. His family (father and relatives of Arnet) own Annaberg, Moho Bay Estate and do not intend to sell to National Parks. He is going to dig graves at ruins at head of Reef Bay Gut on north side of road. Arnet was driver of car of some of the original investigators of the N.P. He told me that Mr. Vose was killed in Alaska when he was inspecting his interests in the salmon packing industry. His secretary was killed in the same plane. His wife, previously had committed suicide at their home in St. John Island and was buried at sea 40 miles to the north. Vose's secretary's two sons now own the property.

Lameshur, St. John Island, Virgin Islands.  
Aug 24, 1957

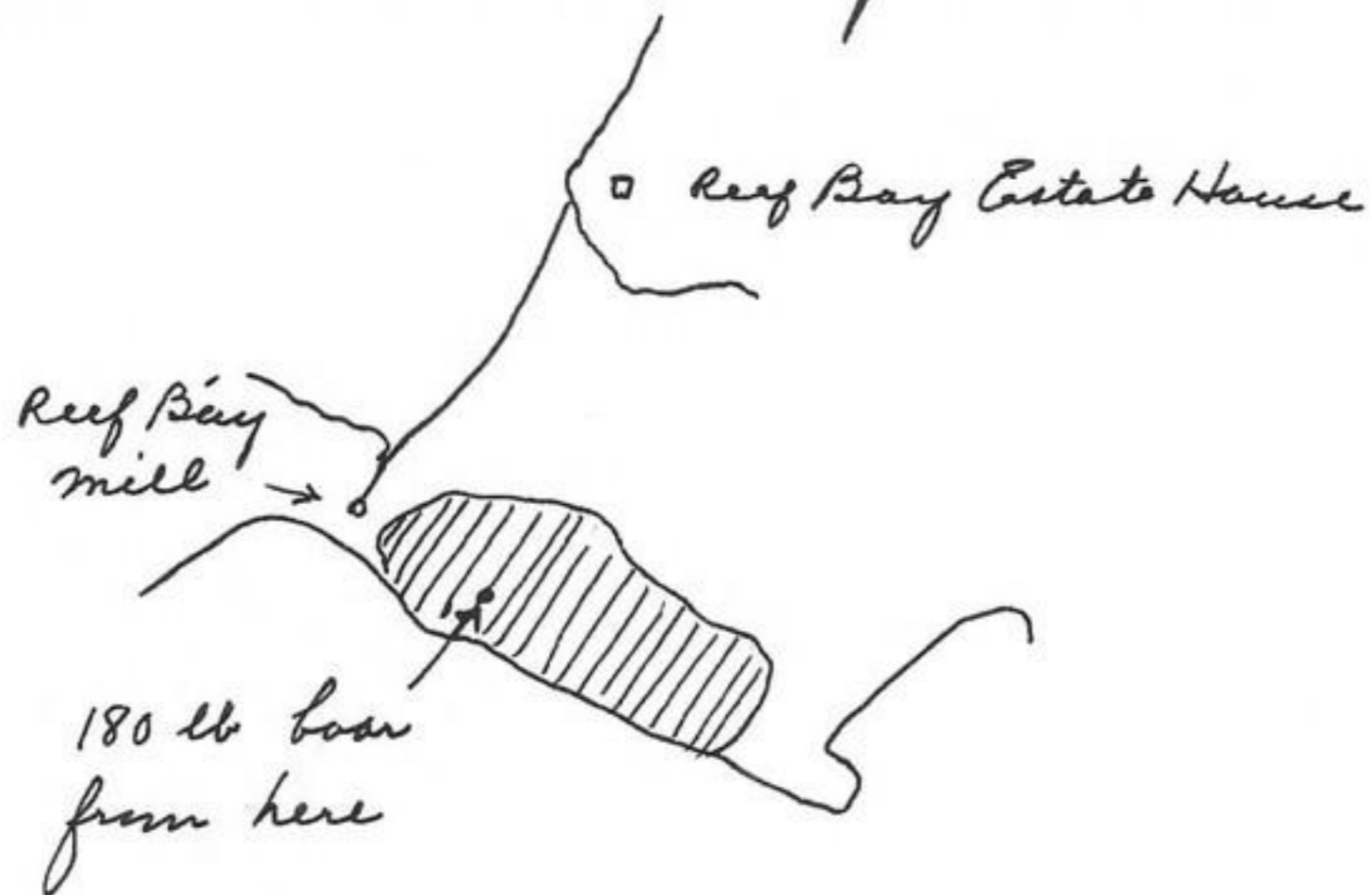
Lancelot Wiltshire gave the following information about the wild pigs of the island. The areas now supporting wild pigs or hogs are those least affected by man. The hogs in this area are the result of several kinds of pigs from different parts of the island. These breeds are: small ones with brown hair on neck, some red colored ones; some spotty and some black and white with white band on front shoulder. The areas now supporting wild pigs are: Northwest of Fish Bay on bottomland and N.E side of Fish Bay to Estate Siebon where roads join and at S.E side of Bay. There are now about 100 pigs in this area. Five were recently (Aug. 20, 1957) seen S.E. of Bay in lowlands of coconut trees.



There is considerable disturbance of soils in this area but not as much as in the Reef Bay area. Pigs eat coconuts which they open with their mouth and teeth and the yam-like potatoes which grow all year. Other foods are eaten and are seasonal in growth. The dry weather discourages pigs to turn over soil. Most rooting

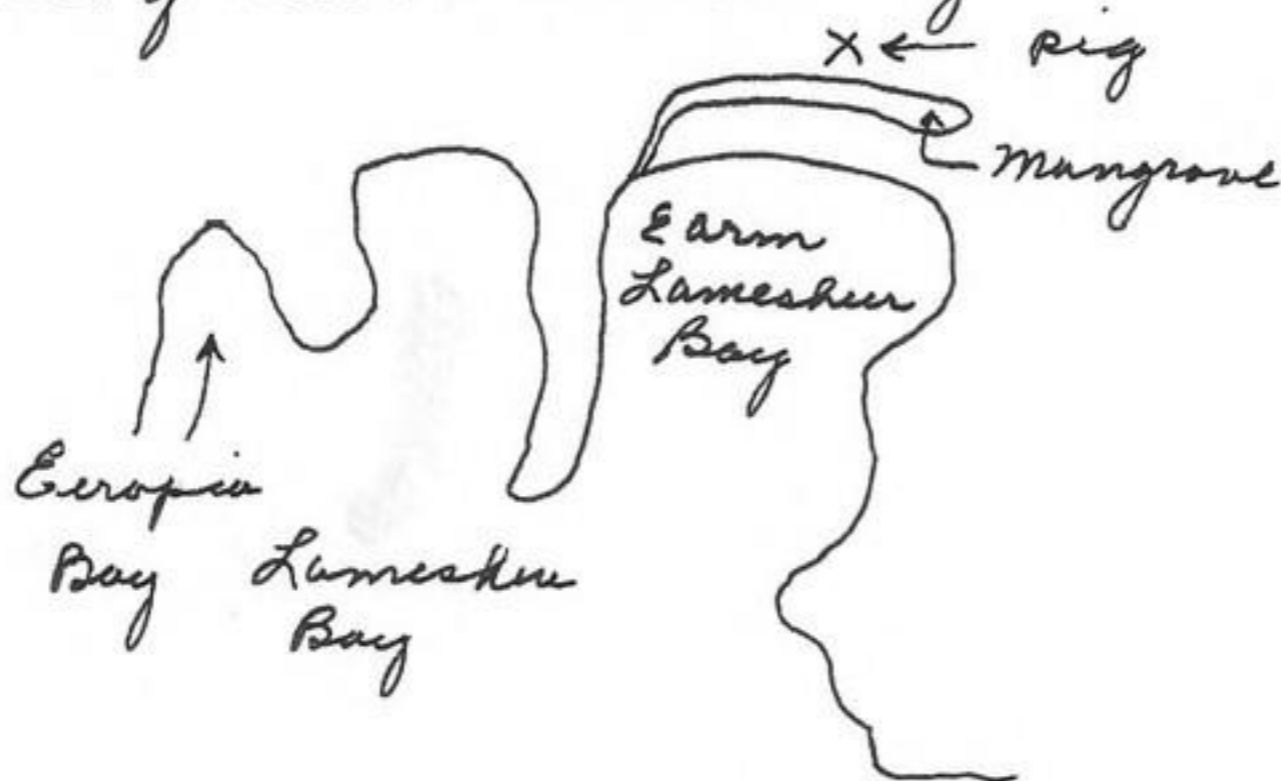


is done in wet weather. At Reef Bay there are, at present, approximately 200 wild pigs. Two were killed north of Reef Bay Estate House in middle of June, 1957. One weighed 66 lbs, the other 20 lbs. There were many pigs in this get but not as many as in the lowlands SE of the mill to White Point. On July 15, 1957, 10 hogs were captured here and were medium in size. One female, captured June 1957, weighed 180 lbs. This animal was the largest one taken so far. The lower and upper tusks were given to Hebler. Austin Dalmida has the other pair and will bring them to me.



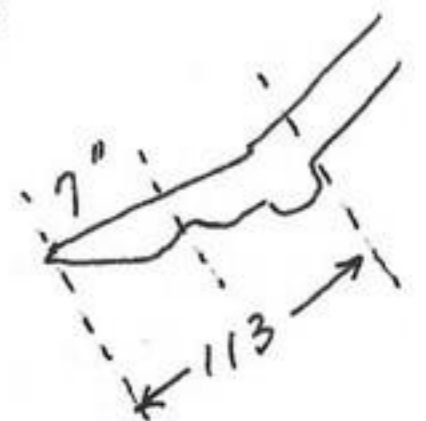
Lanceyot said that a former owner at Reef Bay raised pigs and when she left the pigs became feral. There is considerable digging by pigs and damage to small trees in this area. Mr. Philip O'Conner and Alfred George both report

pigs and damage to their gardens. O'Conner says he has been trying to get a big pig that had been eating his crops in July & August. This area is at Bordeaux where Lamesher road enters Bordeaux road. This pig fed at night and hid in the bush by day. On August 25, 1957 at 1/5 mi. E of Lamesher, Lanceyot captured a ♀ pig, approx 150 lbs at the eastern end of the mangrove on bay just east of the Lamesher Bay.



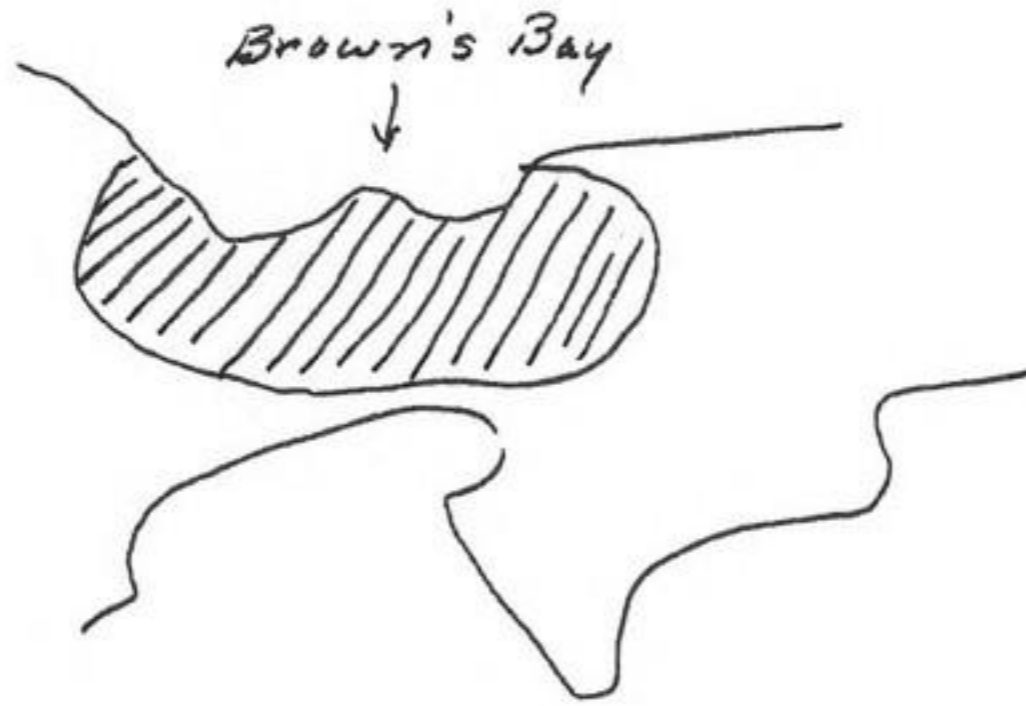
Mr. Louis Jackson, Henry Anthony and Lanceyot Wiltshire captured this pig. Photo 570825-1 of this animal. It is believed that this animal was the one which had been destroying crops at Bordeaux, and had come down to the mangrove swamp to feed on the small crabs (with large

chela). The large crabs are too fast for the pig to catch. Photo 570825-2 of the skull of this animal. The measurements of this pig are: total length, 5'7", ear from notch, 7"; hind foot tail 14", length of skull (approx.) 15 1/2", foot 11", tusk 25 mm; 8 nipples, 6 active; 2nd lower measured 34 mm. Head profile more like a

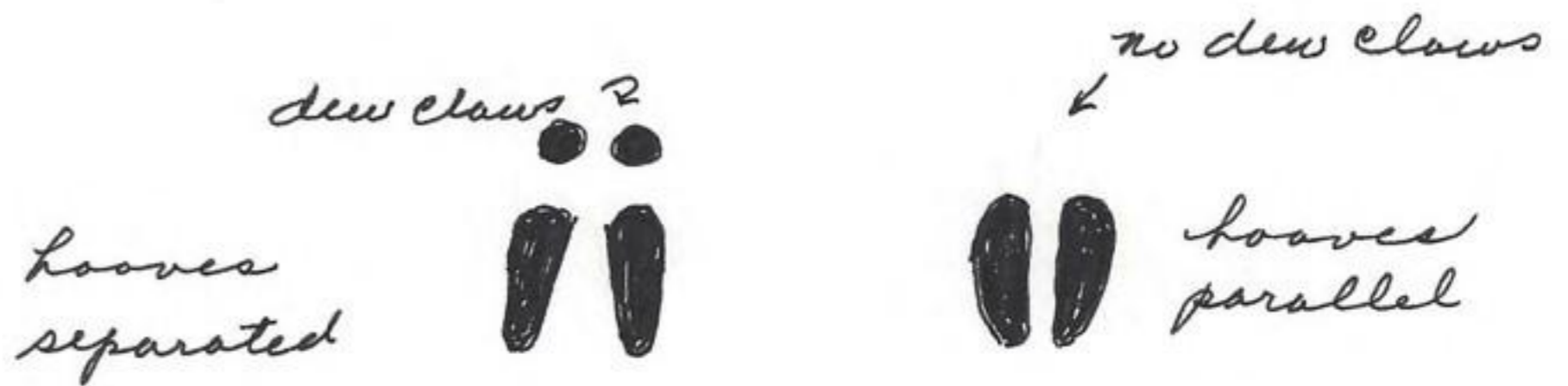




boar than a domestic pig. Two other pigs were seen in Marie's Bottom west of Larnesher; one a ♂ and the other a female. They would weigh about 60 lbs apiece. Seen Aug. 25, 1957. There are approx 50 pigs (mixed) in the Annaberg, Abrahams Fancy and Moko Bay Estate areas and also more than 100, some of the largest pigs seen in the Brown's Bay - Hermitage area. On August 23, 1957, a male 100 lbs was taken here.



These pigs, as are all pigs in other areas, are of the mixed variety. On August 29, a ♂ hog was taken at Hermitage weighing 165 lbs. One can differentiate a pig & goat thus



If one comes on to a large hog it will remain motionless and then gives a loud grunt before leaving. Pigs are captured by dogs of which there are only 4 or 5 on the island trained for hunting pigs. The dogs pick up the odor and when contact is made the one dog will grab the hind foot of the hog and when the hog turns around it is grabbed by the throat or neck by the other dog. Both dogs then get a hold on the head which is never released until the hog is bound by the capturer. A dog that is not trained will let go and the hog will then rush you. The muzzle is bound and all four feet. It is tied to keep alive, by one front foot and one hind foot - both on same side and ends secured so legs are kept apart but not so that the animal cannot stand upright. He says that when hogs are chased with dogs, the hogs run in all directions whereas the goats keep together. For eradication the hogs he would advise 3 or 4 groups of dogs with 2 handlers to each team of dogs. These teams would work in each of the various areas at the same time. After the dogs are cornered the hog, the hog could then be despatched with a rifle. As each ♀ pig gives birth to 10-15 pigs, it would be necessary to kill all pigs before more could be propagated. Then there is the continual problem of pigs getting loose from natives who live on the surround.



ing edges of the national Park. For the best interest of the Community pigs should be taken above at intervals to feed the families on the islands. Goats can be more easily cornered with dogs and if in cliff area, can be easily shot with a gun. He does not have hope for control or extermination of the moongoose, rat or mouse. He says that the Surinam frog which is large, flat and has tiny feet has been at Inscription Rock ponds from since he was a small boy up to at least 2 years ago. He remembers that as a boy he threw bread crumbs into the pond and the next day they were gone.

In regard to the history of Lameshur, Lancelot says that he has worked for the following people.

Grevenkop - Casteriskield (owner)

Benning White (manager)

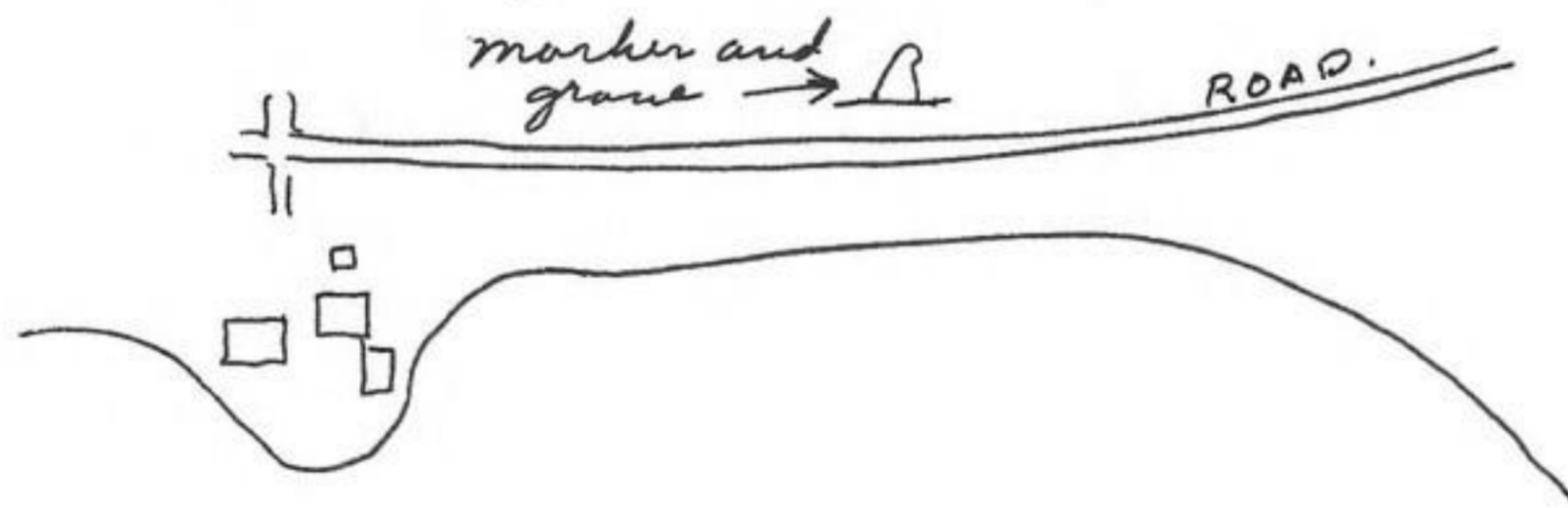
Westbrook (manager)

Nestsenfeldt (sp.?) (manager)

Creque (owner)

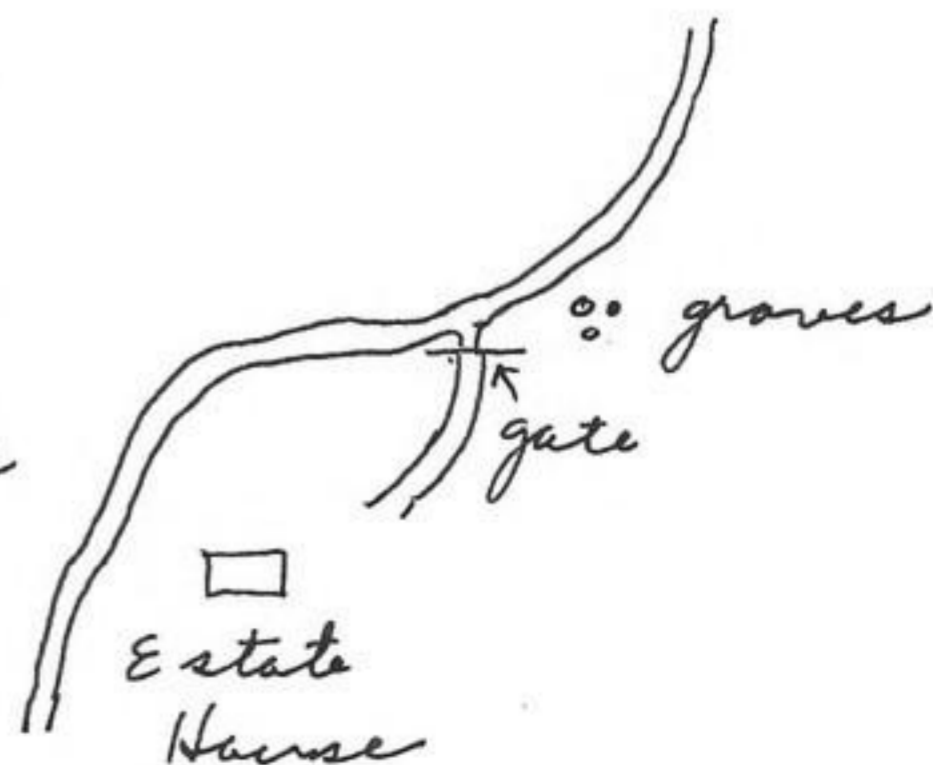
David Stick (owner)

Stick bought Lameshur from Creque. Lancelot pointed out the grave of one of the personal workers at Lameshur.



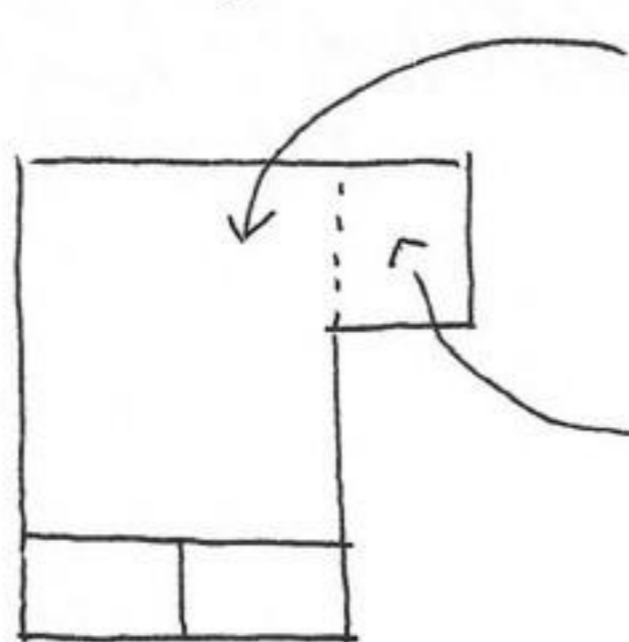
He said and I have seen the head stone marker as indicated in the drawing. Others are buried here as well as at the upper

Lameshur Estate House. He has never known the water from Lameshur Bay to inundate the grove on the north side of the road at the Lameshur mill. He tells the some story about Countess Casteriskield riding naked on a horse and that she and Randolph Schleamger (a white servant) ran away together or, as he said, returned to Denmark. Lame was transported by burros from head of Reef Bay gut <sup>and</sup> to Bordeaux to Lameshur for processing. Bay oil was extracted not bay rum. He identified the buildings at





Lameshur as follows:



cattle enclosure for cows and calves which were brought in at evening for milking.

raised hay oil

milked cows (2 at a time in enclosure)

Bred donkeys and horses to get mules which in turn were used for transporting materials. Special enclosures were used for breeding purposes. Lime for cement was made on the beach below the corral. Used lime corals and placed between successive layers of wood which was burned for processing the lime. He has no knowledge of Agouti, Capybara or any other distinct mammals. He frequently sees the white-tailed deer which has been introduced.

Today made short trip to Mill Pond, SW of Lameshur and took the following pictures

(570824-1) Termite nest and trail corridors on sides of trees. One nest, which was on the side of the trail, was damaged on each of several consecutive trips on successive days and on each trip the ants had repaired the damaged nest.

(570824-2) Closeup of termite corridor, there is really no place that these termites cannot reach by extending their corridors.

(570824-3) Agava and turpentine tree. These Agava are growing below overhead canopy of trees and I am wondering if they <sup>are berry</sup> may be crowding out by the higher trees.

(570824-4) Lameshur Ranger Station.

(570824-5) " " "

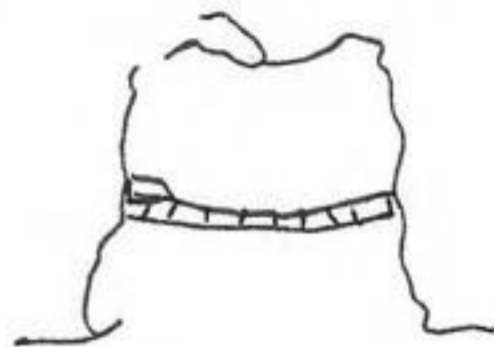
East End St. John Island, Virgin Islands.

Sept. 1, 1957

Mr. Mrazek and I visited the hermit who lives on the east end of the island. This man lives by himself and, although not too irregular in character, does things that remind one of Robinson Crusoe. There were many things along the trail that suggested a <sup>compulsion for</sup> ~~psychosis~~ of certain habits. One of his



demonstrations was not so had an idea. He had taken fronds of Agava and other long-broad ribbed leaves and placed them in such a way that they acted as catchment basins and directed the water into cans and bottles which were placed along the ocean at intervals to always supply water while away from his dwelling. One cave, a shallow surface fracture cave, was used for a resting place with a build-in wooden bed which was suspended from one side of the cave wall to the other side. This bed was precariously placed with several ton boulders overhead, each on ready to fall. I predicted that he could meet his death here. I asked him if he would mind being photographed and publicized and he did not object to either. This hermit and his environs would make an interesting feature article for Life Magazine.



On return from the hermit's place we followed on side island to N Sandover Bay, thence road toward Coral Bay where we picked up the jeep. At Francis Bay (Mary Point area) I took photo of a sea grape (570901-6). The navy had landed in this area for maneuvers and had done considerable damage to the Estab House and especially littering the area with beer cans. I counted 143 of them. Returned to Lameshur. Photo (570901-7) of tools (from Bordeaux W of junction Lameshur and Bordeaux Roads (about 2/10 mi.) and a specimen of the mongoose. artefacts are: 570901-8 chisel; 570901-9 hoe; 570901-10 chisel.

Fish Bay, St. John Island, Virgin Islands

Sept. 2, 1957

Made trip to Fish Bay from Lameshur via trail to Reef Bay Sugar Mill, thence along ocean to the Fish Bay proper. At Fish Bay observed 8 turnstones, one Wilson ploverlike bird, 4 oystercatchers. Sand flies, which are of the greatest concern to man on beaches, seem to be driven from the foliage when it rains and are most numerous then. They may live in crab holes. As bad as these sand flies are, they should not be controlled - man must use repellents and live in tents which are insect proof. It would be impossible to sleep on or near beaches without being literally eaten alive by these insects. I have tried to tolerate their bites for a five minute period but had to give up at about 2 1/2 minutes. At Fish Bay, on east side, counted 180 green conchs which had been opened. Four sharks (approx. 3' long) fed in 1 foot of water among aquatic plants. Tail of shark



out of water most of time and may have had some significance as a weed separator. The following photos were made:

(570902-1) Fish Bay and sandy foreground.

(570902-2) Waves SW of Reef Bay.

(570902-3) " " " "

(570902-4) Cliffs (light colored) east of Fish Bay. Beautiful reds in rocks. The natives will not eat fish taken from waters near here or at White Point because they believe they are poisoned by the white material in the rocks.

(570902-5) Cliffs from Point.

(570902-6) Knot pine at Lameshur.

(570902-7) Lameshur.

Lameshur, St. John Island, Virgin Islands

Sept. 3, 1957

Prepared to leave United States. Photo (570903-1) of mangroves east of Lameshur Bay. Taken at <sup>left</sup> ~~right~~ side of canal. The barracuda enters this channel and when disturbed leaves at a great speed. There are many kinds of fish at the entrance of this channel which are different from the coral areas. The needle fish is a conspicuous fish of this area.

Photo (570903-2) Stenoderma rufum.

Photo (570903-3) Different kinds of bats collected in the Virgin Islands including:

Mexican bull dog bat, Noctilio leporinus mastivus (Bohl)  
 St. Vincent fruit eating bat, Brachyhylla cavernarum Gray  
 Jamaican fruit-eating bat, Artibeus jamaicensis jamaicensis Leach  
 Red fig-eating bat, Stenoderma rufum E. Geoffroy St. Hilaire  
 Brazilian free-tailed bat, Tadarida brasiliensis antillarum (Miller)  
 Large mastiff bat, Molbaeus major fortis Miller.

According to James Mathias the genealogy of some of the people in his area are:

James Mathias - Mandal area.

E. Manuella Mathias - mother of James Mathias, living at Mandal.

Mary Mathias Anthony - sister of James Mathias

Woodfield Mathias - brother of James Mathias - Bordeaux.

Abertina Delmida - mother of Austin Delmida

Austin Delmida - living at freeze.

Phillip O'Conner - Bordeaux, 1st house to left.

Overton E. Delmida - " 1st cousin of Austin.



Walter Delmida - father Overton E. Delmida - Bordeaux.  
 Lancelôt Wiltshire - John Fally area.  
 John Testimark (sp. ?) - Bordeaux - travels frequently with  
 O'Connor.  
 Alfred George - Salt Pond Hill  
 Melvin Joshua - N. Salt Pond  
 Arnet Marsh - second son of W.H. Marsh (deceased)  
 Margiana Mathias - Grandmother of M. Joshua.  
 Antonio Sewer - store owner - old name Plas, new name Bluning  
 Dale.  
 Anesta Sewer - wife of Antenia  
 Gracia Sewer - daughter "  
 Henry Anthony - Mary's son  
 Margueret, Coral, Modesta - daughters of Mary.  
 John Anthony - Concel Bay - son of Mary.  
 Claudine, Manda, James, Mary, Peter, George, Vera, Rondalph,  
 Neicia, Blanch, Winfield, are children of Emanuella Mathias.  
 (all children are married).

Austin Delmida says that sparrow hawks eat lizards and small  
 chickens. Red-tailed eat: chickens, mongoose, mice, rats, doves.  
 The rats are larger in the bush. He has seen a few deer at  
 Concordia and at Lamesher.

Some of the trees on St. John are:

Amorris caryophyllata, bay rum tree  
Melicocca bijuga, genip  
Anthurium, large leaved herbaceous plants.  
Bursera simaruba = gumbo limbo  
Plumiera alba, wild frangipanni  
Opuntia repens, low cactus  
Bromelia pinguin  
Cephalocereus rayeni  
Agave  
Rhizophora mangle, red mangrove  
Laguncularia racemosa, white mangrove  
Coccoloba uvifera, sea grape  
Opuntia rubescens tree prickly pear  
Croton astractus, moran  
Acacia macrocarpa  
Calatropis procera, giant milkweed



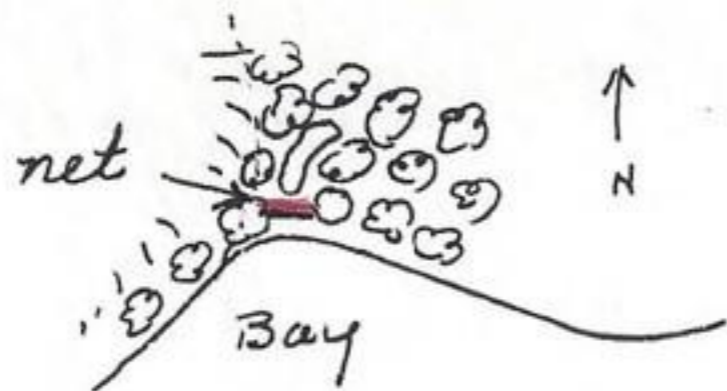
The following 9 pages are entered here as 570903-99  
 The general date of Sept 3. Composite records under  
 RECORD BAT NETS - LAMESHUR.

DATE	1/5 mi. SW (brackish pond)	1/7 mi. SW (under large tree)	1/5 mi. W (under Tamarind)	1/5 mi. SW (along rd in forest)	1/5 mi. 4/5 W (MILL Pond)	Lameshur Estate House
nets set Evening July 6	2 vireos					
July 7	1 G. Kingbird	2 Artibeus	P. e. thrasher	none	none	none
" 7	2 vireos 2 B. quit	none	none	none	none	none
" 8	1 vireo 2 G. Kingbird	1 p. e. thrasher	1 p. e. thrasher	none	none	none
" 8	none	2 Artibeus				
" 9	none	ground dove G. flycatcher	none	none	none	ground dove
" 10	p. e. thrasher	small flycat.	none	none	none	none
" 11	none	none	none	none	none	none
" 12	p. e. thrasher	ground dove G. flycatcher	none	none	none	none
" 13	G. Kingbird G. Quit	B. Quit yellow warbler	none	none	none	none
" 13	vireo	G. quit				
" 14	small flycat	E. T. Hummer	none	none	none	none
" 15	yellow warb.	ground d.	none	none	none	none
" 16	none	p. e. thrasher	none	none	none	none
" 17	none	none	none	none	none	none
" 18	none	none	none	none	none	none
" 19	small fly. eaten by mong.	none	p. e. thrasher eaten by mong	none	none	none
" 20	none	none	none	none	none	none
" 21	none	none	none	none	none	ground d.
" 22	yellow warb.	none	yellow warb	none	none	none
" 23	none	ground d.	none	none	none	none
" 24	none	none	none	none	none	none
" 25	2 yellow w.	none	none	none	none	ground d.
" 26	1 gray flycat	none	none	none	none	none
" 27	none	ground d.	none	none	none	none
" 28	none	none	none	none	none	none
" 29	discontinued	discontinued.	none	none	discontinued	discontinued
Aug 10	↓	↓	none	5 Artibeus	↓	↓
Aug 13	↓	↓	none	1 Stenoderma	↓	↓
" 15	↓	↓	none	1 Artibeus	↓	↓
" 21	↓	↓	none	1 Noctilio	↓	↓
Aug 30	1/10 mi W ← (net placed over pond) Lameshur					
	2 Stenoderma					
	1 Artibeus					
	7 Tadarida					
Aug 31	2 Tadarida					
Sept 2	2 Tadarida					
Sept 3	3 Tadarida					

All nets were placed and never removed until discontinued.

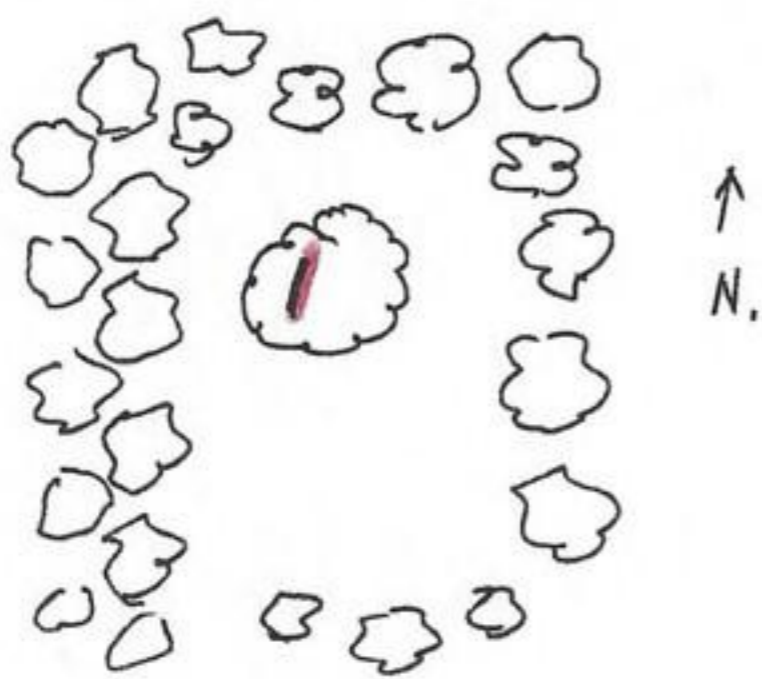


570903-100  
 (or 400's and 700' W Lameshur Estate House)  
Bat net 1/5 SW Lameshur Estate House. This net was placed



area is in small trees of the beach and flat area beyond. Net to ground.

Bat net 1/7 mi SW Lameshur House E. (or 1/5 SW or 500's and 610' W Lameshur E. House)

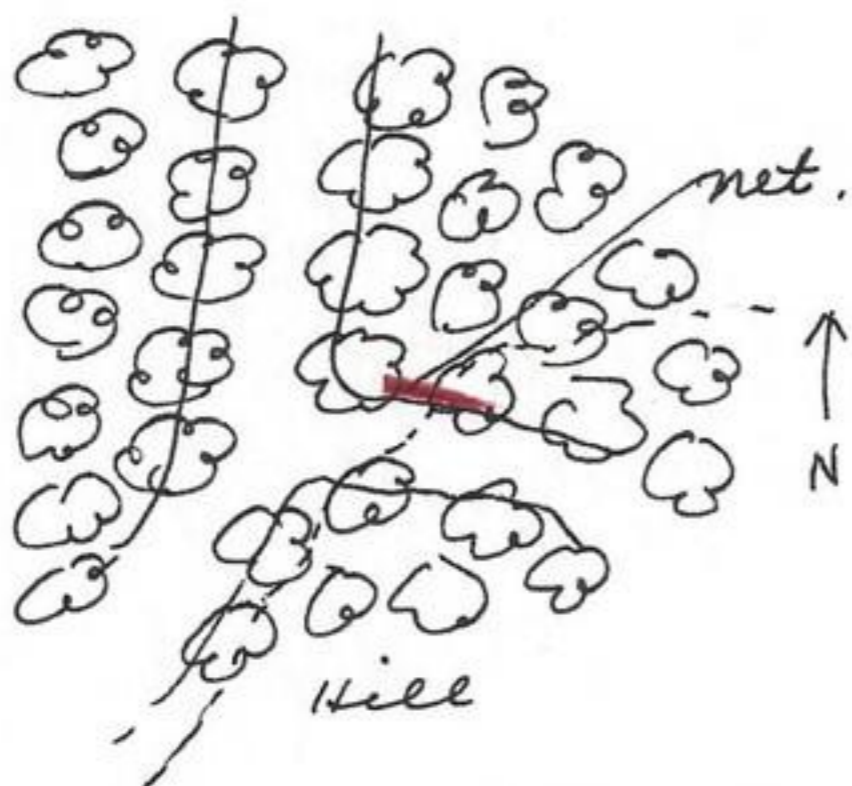


of the tree

This net was placed under a large tree in flat area of old brackish pond area, now dry except when storm or tidal waves force water into area. The large tree was in open surrounded by <sup>new</sup> forested area of old estate area. This net was about 3 feet from ground (lower edge) and stretched between the large branches

Bat net 1/5 mi. W Lameshur Estate House (or 150' S and 1050' W Lameshur Estate House.) This net was placed beneath a Tamarind tree which was completely surrounded by other trees. In effect the area under the tree was clear but otherwise could be considered as being enclosed by forest without flyways. This is the next most frequently visited by mongoose.

Bat net 1/5 mi SW Lameshur Estate House (or 1/5 mi W.S.W. or 350' S and 930' W Lameshur Estate House). This net was placed at edge of old road, now a trail. It intercepted a faintly defined drainage course. Trees now grown on all sides and although there



were flyways which were better marked than above, the net was not interrupting them. The area is flat except hill to south. Bay a few hundred feet to SE. The net would have been better to have been placed across flyways or open corridor but horses + burros would have interfered with the operations. It is remarkable that this net did not capture more bats in the month of July. In August the bats were taken. net 2 feet above ground.



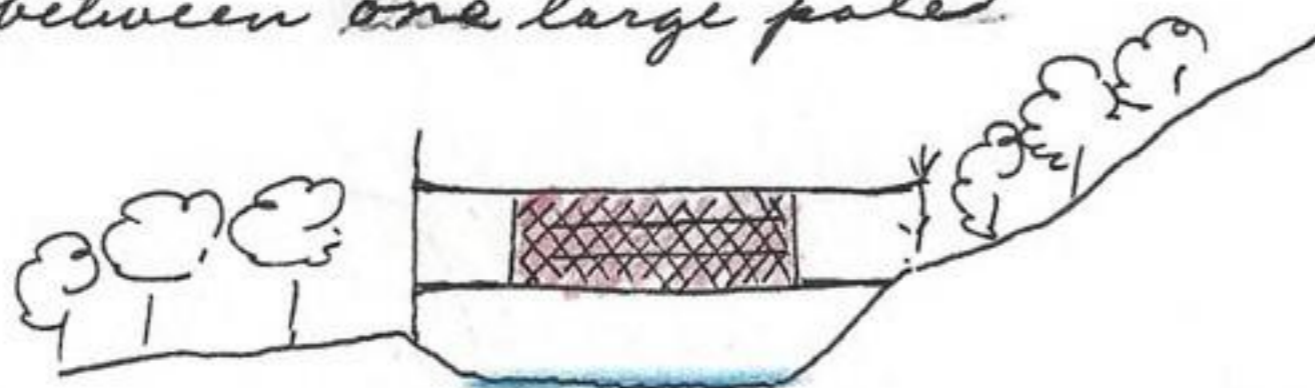
Bat net at Mill Pond (or 1/5 mi. S and 2/5 mi. W Lameshur Estate House)



This net placed at edge of trees bordering a muddy embayment and about 30' from the edge of the pond. It was placed for Noctelis but remarkable as it may seem, I did not catch a single bird or mammal in 23 days and night of continuous netting.

Bat net at Lameshur Estate House. Place across open veranda on east side of house.

Bat net at 1/10 mi. W Lameshur Estate House. net was stretched between ~~one~~ large poles



which I erected and a small tree on the side of the canyon so that the bottom of the net was 5 feet above a made-made, freshwater pond at the mouth of a canyon 1/10 of a mile

from the net at 1/5 mi. SW (or 1/5 mi. W.S.W) of Lameshur Estate House. The canyon supported large trees as far down as the pond and cut over clearings continued toward the beach. Each of 2 Stenoderma were in middle of net.

Sept. 4, 1957

LIST OF BIRDS NOTED AND COLLECTED.

NOTED

ON SAINT JOHN ISLAND AND ADJACENT OUTLIERS

<i>Pelicanus occidentalis</i>	<i>Sterna fuscata</i>	<i>Sericornis holoserena</i>
<i>Sula leucogaster</i>	<i>Sphrapicus varus</i> (holes)	<i>Orthorhynchus edilis</i>
<i>Ardea herodias</i>	<i>Puffinus thomsoni</i>	<i>Tyrannus dominicensis</i>
<i>Bites jamaicensis</i>		<i>Myiarchus stolidus</i>
<i>Falco sparverius</i>		<i>Margarops fuscatus</i>
<i>Haematopus ostralegus</i>		<i>Vireo altiloquus</i>
<i>Actitis macularia</i>		<i>Alcedo petechia</i>
<i>Columba leucocephalus</i>		<i>Securus aurocapillus</i>
<i>Columba squamata</i>		<i>Coereba flaveola</i>
<i>Anthracoceros dominicus</i>		<i>Hirundo lunifrons</i>
<i>Elaenia martinica</i>		<i>Tyrannus carolinensis</i>
<i>Progne dominicensis</i>		<i>Larus atricilla</i>
<i>Mimus polyglottis</i>		<i>Sterna albifrons</i>
<i>Casmerodius alba</i>		<i>Anous stolidus</i>
<i>Ardeola ibis</i>		<i>Ceryle alcyon</i>
<i>Nycticorax nycticorax</i>		<i>Crotophaga ani</i>

BIRDS COLLECTED

<i>Fregata magnificens</i>	<i>Vireo altiloquus</i>
<i>Florida caerulea</i>	<i>Alcedo petechia</i>
<i>Buteo virens</i>	<i>Securus aurocapillus</i>
<i>Nyctanassa violacea</i>	<i>Coereba flaveola</i>
<i>Hirundo lunifrons</i>	<i>Tyrannus carolinensis</i>
<i>Tringa flavipes</i>	<i>Larus atricilla</i>
<i>Zenaidura macroura</i>	<i>Sterna albifrons</i>
<i>Columbigallina passerina</i>	<i>Anous stolidus</i>
<i>Scolecophagus</i>	<i>Ceryle alcyon</i>
<i>Coccyzus minor</i>	<i>Crotophaga ani</i>



Sept. 4, 1957

570904-102

Mongoose observed, (composite records)

July 6	Lameshur area	(1/2 hour) 2, (2 hours) 0.
July 7	"	(2 hours) 5, (2 hours) 0.
" 8	"	(1/2 hours) 3, (2 hours) 0.
" 9	Reef Bay - Lameshur	(5 hours) 3.
" 10	Lameshur - Reef Bay	(5 hours) 2.
" 10	Lameshur	(1/2 hour) 1, (2 hours) 0.
" 11	"	(2 " ) 2.
" 12	"	(1/2 " ) 1, (2 hours) 0.
" 14	Reef Bay area	(2 hours) 2.
" 14	Lameshur	(1/2 hours) 1.
" 15	" Estate House	(3 hours) 1.
" 16	Lameshur, Bordeaux, Lameshur	(4 hours) 1.
" 17	" " "	(4 " ) 2.
" 18	" " "	(4 " ) 1.
" 19	" " "	(4 " ) 0.
" 20	Lameshur, Connel Bay	(1 hr by jeep) 2.
" 21	5 Cays	(7 hours) 0.
" 22	Lameshur	(2 hours) 2.
" 24	"	( " " ) 1.
Aug 6	Annaberg	(5 hours) 4.
Aug 8	Haulover to Coral Bay and return	(6 hours) 0
" 9	" Bay	(3 hrs) 2.
" 10	" "	(2 hrs) 1.
" 11	Lameshur - Bordeaux	(4 hrs) 1.
" 12	" "	(4 hrs) 2.

The best time to see these animals is in the early morning or in the evening, although I have seen them during all hours of the day. Many of these sight records are duplicates especially the Lameshur ones, although I have watched one individual travel two blocks without stopping. It is my opinion there are many more mongooses than one is led to believe on the basis of sight records. Although they are generally distributed they are more commonly seen around places of habitation where they can feed on refuse and other scraps. It is also believed that these animals could be accustomed to feed at baited areas and then shot, or hunted systematically until exterminated. To eliminate the rat would be more difficult or impossible without affecting other kinds of native wildlife.



Sept. 4, 1957

570904-103

Recorded some observations of the lizards as follows:

Anolis cristatellus

1. most common
2. most wary
3. jumps from tree to tree, as broad as 770 mm.
4. wide latitude of range from edge of sea on rocks to top of mountain.
5. young and females on ground, adults, especially males in trees or on protruding rocks
6. young 1 inch long are very active and move like an insect.
7. have special gyrations, move one step at a time.
8. highest in tree 10 feet.
9. average size 3-4 inches.

Anolis stratulus

1. lives mainly on smooth barked trees located among other trees, and on trees which have several trunks coming from common base and without limbs or few limbs.
2. from 1 inch to generally 3-5 inches
3. easiest to capture.
4. more numerous after rains - they love wet surfaces of bark.
5. gular and head crests prominent and frequently displayed.
6. Two males have special demonstration.
7. less wary of three small lizards.

Anolis pulchellus

1. 2nd most wary of three lizards
2. small limbs near ground and slender branches
3. low open shrub areas. sometimes in grassland.
- 4.



Sept. 4, 1957

570804-104

Problems that seem worthy of analysis.

1. Taxonomic variation, distribution and habits of the amphibians and reptiles of St. John Island and its outcrops.
2. List of fishes collected from Lameshur Bay, St. John Island, Virgin Islands.
3. Per cent frequency of mollusks in East Lameshur Bay, St. John Island, and a statistical analysis of the four most common forms (individual variation, growth curve, size versus weight of shell, age groups, significance of marking as adaptive survival).
4. A bat, Stenoderma rufum, from St. John Island, giving complete description of skin, skull, and habits and a review of the history of the species.
5. Key and description of bats of the genera Brachyphylla, Artibeus, Molossus, Tadarida and Natalus from St. John Island. Compare.
6. Similarities and dissimilarities between St. John and Puerto Rico in regard to suitability of habitat for subrecent forms.
7. Reconstruction of old Danish culture from surface artifacts collected on Little St. James Island.
8. Synonymized - (to Stenoderma)
  - Ardeops
  - Phyllaps
  - Ariteus



List of birds collected on St. John Island, Virgin Islands  
(July 7, 1957 - Sept. 3, 1957)

- Fregata magnificens rothschildi* Mathews. magnificent  
Frigate-bird.
- Butorides virescens maculatus* (Boddaert) Green Heron  
Examined by Alexander Wetmore, breeding bird
- Florida coerulea caerulescens* (Latham) Little Blue  
Heron. Breeding bird.
- Nyctanassa violacea violacea* (Linné) yellow-crowned  
night heron. Breeding bird.
- Actitis macularia* (Linnaeus) Spotted sandpiper. Breed-  
ing bird.
- Totanus flavipes* (Gmelin) Lesser yellowlegs
- Erolia minutilla* (Vieillot) Least sandpiper.
- Himantopus mexicanus* (Miller) Black-necked stilt. Breed-  
ing bird.
- Larus atricilla* Linnaeus Laughing gull
- Sterna hirundo hirundo* Linnaeus Common tern.  
Breeding bird.
- Sterna anaethetus recognita* (Mathews) Bredled tern.  
Breeding bird.
- Zenaida aurita zenaida* (Bonaparte) Zenaida dove.  
Breeding bird. Examined by Alex. Wetmore.
- Columbigallina passerina portoricensis* (Lowe) Ground  
dove. Breeding bird. Examined by Alex. Wetmore
- Geotrygon mystacea* (Temminck and Knap) Ruddy quail-  
dove. Breeding bird. Examined by Alex. Wetmore
- Coccyzus minor vesicatus* Cabanis mangrove cuckoo.  
Breeding bird. Examined by Alex. Wetmore.
- Crotophaga ani* Linnaeus Smooth-billed ani. Breeding  
bird.
- Sericotes holosericeus holosericeus* (Linnaeus) Emerald-  
throated hummingbird. Breeding. Alex. Wetmore  
examined.
- Orthorhynchus cristatus epilis* (Gmelin). Antillean crest-  
ed hummingbird. Examined by Alex. Wetmore.
- Tyrannus dominicensis dominicensis* (Gmelin) Gray king-  
bird. Examined by Alex. Wetmore.
- Elaenia martinica riisii* Lesser Antillean  
alaena. Breeding. Examined by Alex. Wetmore



- Prognathodominicensis dominicensis* (Gmelin) West Indian martin. Breeding. Examined by Alex. Wetmore.
- Mimus polyglottos orpheus* (Linnæus) Mockingbird. Breeding. Examined by Alexander Wetmore.
- Margarops fuscatus fuscatus* (Vieillot) Pearly-eyed thrasher. Breeding. Examined by Alex. Wetmore.
- Vireo altiloquus altiloquus* (Vieillot) Black-whiskered vireo. Intermediate toward *V. a. barbadensis* Ridgway. Examined by Alex. Wetmore.
- Dendroica petechia cruceanus* yellow warbler. Breeding. Examined by Alex. Wetmore.
- Coereba flaveola santi-thomae* Bananaquit. Breeding. Examined by Alex. Wetmore.
- Tiaris bicolor ornassa* (Jardine) Black-faced grassquit. Breeding. Examined by Alex. Wetmore.

Additional birds observed on St. John Island.

- Phaethon lepturus* yellow-billed tropic bird
- Pelicanus occidentalis* Brown pelican
- Sula leucogaster* white-bellied booby
- Ardea herodias* Great Blue heron
- Buteo jamaicensis* Red-tailed hawk
- Falco sparverius* Sparrow hawk
- Gallinula chloropus* Florida gallinule
- Fulica caribaea* Caribbean Coot
- Haematopus ostralegus* Oystercatcher
- Charadrius wilsonia* Wilson's plover
- Charadrius vociferans* Killdeer (seen on Virgin Gorda)
- Columba leucocephala* White-crowned pigeon
- Columba squamosa* Red-necked pigeon
- Casmerodius albus* American Egret
- Ardea ibis* Cattle egret
- Arenaria interpres* Ruddy turnstone
- Sterna dougalli* Roseate tern
- Sterna fuscata* Sooty tern
- Anous stolidus* Noddy.

The following specimens were sent to Alexander Wetmore for identification:

34359, KU.	34383	34397	34412	34421	34433	34442
34375	34387	34399	34413	34425	34434	34445
34377	34392	34403	34414	34426	34435	34446
34378	34394	34407	34416	34427	34436	34447
34380	34395	34410	34418	34430	34440	
34381	34396	34411	34420	34432	34441	



## List of Caribbean names

Anegada = ä'nä.gä'dä  
 Jost = yöst  
 Vieques = vyä'käs  
 Culebra = koo.lä'brä  
 Utuado = oo.twä'thō  
 Saint Michel = sän.mē'shēl'  
 Moravia = mō.rō'vēs  
 Caba Rojo = kä'bō.rō'hō  
 Quebradillo = kä'brä.thē'yās  
 Lares = lä'rās  
 Corozal = kō'rō.säl'  
 Cayup = kē.ä'  
 Cayman = kē.män'  
 Eleuthra = ē.lē'thēr.ä  
 Abaco = äb'ä.kō  
 mariguana = mä'rē.gwä'nä  
 mayaguana = mä'yä.gwä'nä  
 Cardena = kär'dä.näs  
 Daguiri = dī.kē.rē'  
 Nipe Bay = nē'pō Bay  
 Salado = sä.lä'thō  
 atalaye = a'tä.lä'yä  
 Jeremie = zhā'rā'mē'  
 Port de Paix = pōr'dē.pē'  
 Juemel = zhak'mēl'  
 Bayamon = bä'yä.mōn'  
 Luquillo = loo.kē'yō  
 Maricao = mä'rē.kä'ō

Ceiba = sä'bä  
 Barbados = bär.bä'dōz  
 Barbuda = bär.boo'dä  
 Grenada = grē.nä'dä  
 Guadeloupe = gwä'dē.loop'  
 Martinique = mār'ti.nēk'  
 Montserrat = mönt'sē.rät'  
 Nevis = nē'vis  
 St. Lucia = tü'shü.ä  
 Tobago = Tō.bä'gō  
 Marie-Galante = mä'rē.gälänt'  
 Anquilla = ang.gwil'ä  
 Tortola = tör.tō.lä  
 Saba = sä'bä  
 Mona = mō'nä  
 Rio Piedras = rē'ō.pyä'driäs  
 Humacao = hō'mä.kä'ō  
 Fajardo = fä.kär'dō  
 Aguadella = ä'gwä.thē'yä  
 Yauco = yä'ō.kō  
 Ponce = pōn'sä  
 Caguas = kä'gwäs  
 Cay = kē (in west Indies)  
 El Yunque = ēl.yōng'kä  
 Trujillo = trōo.kē'yō  
 San Miguel = sän.mē.gēl'



Sept. 4, 1957

570904-108

CATALOGUE OF SPECIMENS COLLECTED ON ST JOHN ISLAND AND  
ADJACENT ISLANDS, 19571/5 mi. SW Lameshur, St. John Island, Virgin Islands

July 7, 1957

- 570707-1 ♂ *Artibeus j. jamaicensis* 89-( )-15-19-38 gms, testis 8 mm  
 570707-2 ♂ " " " " 87-( )-15-19-37 gms, " 8 mm  
 570707-3 ♂ *Vireo altiloquus* <sup>inter barbadensis</sup> *altiloquus* L. 158 - wt. 20 gms, testis 7 mm  
 570707-4 ♀ *Coereba flavicola sancti-thomae* L. 112 - wt 10 gms, breeding  
 570707-5 ♂ " " " " L. 166 - wt 23 gms, ovum 10 mm.  
 570707-6 ♂ " " " " L. 111 - wt 10 gms, testis 7 mm  
 570707-7 ♂ *Herpestes auripunctatus* 552-256-63-26, testis 19 mm.  
 570707-8 ♂ *Anolis cristatellus*  
 570707-9 ♂ *Geotrygon mystacea* L. 298 - wt 222 gm, testis 14 mm  
 570707-10 ♀ *Tiaris bicolor omassa* L. 100, wt. 17 gms, ovaries enlarged.

July 8, 1957

- 570708-1 ♀ *Margarops fuscatus* L. 282 - wt 108 gms, largest ova 3 mm  
 570708-2 ♂ *Dendroica petechia crucians* L. 132 - wt 14 gms, ova 2 mm  
 570708-3 ♀ *Dendroica petechia* " L. 128 - wt 16 gms, ova 17 mm  
 570708-4 ♂ *Orthorhynchus cristatus exilis* L. 89, testis 1 1/2 mm  
 570708-5 ♀ " " " " L. 85, breeding.

1/5 mi. S and 4/5 mi. W Lameshur, St. John Island, Virgin Islands.

July 8, 1957

- 570708-6 ♀ <sup>Hemantopus</sup> ~~Recurvirostra~~ *mexicanus* L. 350, largest ovum 2 mm  
 570708-7 ♀ *Tyrannus d. dominicensis* L. 230, 45 gms, ovary undeveloped  
 570708-8 ? *Dendroica petechia crucians* L. 130 - 13 gms.  
 570708-9 ♂ *Artibeus j. jamaicensis* 86-( )-16-20-44 gms  
 570708-10 ♀ " " " " 82-( )-15-19-36 gms

Reef Bay Sugar Mill, St. John Island, Virgin Islands

July 9, 1957

- 570709-1 ♂ *Crotophaga ani* L. 380 - wt 130 gms, testis 18 mm  
 570709-2 ♀ *Anolis cristatellus*  
 570709-3 ♀ " "  
 570709-4 ♀ *Sphaerodactylus macrolepis* (*Anolis*)  
 570709-5 ♀ *Anolis cristatellus*  
 570709-6 ♀ " "  
 570709-7 ♀ " *stratulus*  
 570709-8 *Sphaerodactylus macrolepis*  
 570709-9 " "  
 570709-10 ♀ *Anolis cristatellus*



Reef Bay, Estate House, St. John Island, Virgin Islands

July 10, 1957

- 570710-11 ♂ *Coccyzus minor nesiotus* L. 310 - wt 73 gms, testis 6 mm  
 570710-12 *Anolis stratulus*  
 570710-13 *Hemidactylus mabouia*  
 570710-14 " "  
 570710-15 " "  
 570710-16 *Anolis cristatellus*  
 570710-17 " "

1/10 mi. S Lameshur, St. John Island, Virgin Islands (Ranger Station)

July 10, 1957

- 570710-18 ♀ *Nyctanassa v. violacea* L. 570 mm.  
 570710-19

1/2 mi. S and 2/5 mi. W Lameshur, St. John Island, Virgin Islands

July 11, 1957

- 570711-1 ♂ *Artibeus jamaicensis* 86-( )-15-21-40 gms, testis 9 mm.  
 570711-2 ♀ " " 84-( )-15-20-43 gms, no embryos  
 570711-3 ♀ " " 82-( )-17-21-44 gms, 1x0 emb, 13 mm  
 570711-4 ♀ " " 84-( )-17-20-44 gms, 1x0 emb, 14 mm  
 570711-5 ♀ " " 81-( )-17-20-40 gms, 1x0 emb, 19 mm  
 570711-6 ♀ " " 80-( )-15-19-45 gms, 1x0 emb, 12 mm  
 570711-7 ♀ " " 84-( )-16-20-45 gms, 0x1 emb, 14 mm  
 570711-8 ♀ " " 83-( )-16-19-40 gms, 0x1 emb, 12 mm  
 570711-9 ♀ " " 86-( )-17-20-47 gms, 1x0 emb, 20 mm  
 570711-10 ♀ " " 85-( )-17-21-49 gms, 1x0 emb, 20 mm  
 570711-11 ♀ " " 84-( )-16-20-40 gms, suckling  
 570711-12 ♂ *Anolis cristatellus*

1/10 mi. SW Lameshur, St. John Island, Virgin Islands

July 12, 1957

- 570712-1 ♀ *Anolis cristatellus*  
 570712-2 ♀ " "  
 570712-3 *Anolis stratulus*  
 570712-4 " "  
 570712-5 " "  
 570712-6 " "  
 570712-7 *Hemidactylus mabouia*  
 570712-8 " "  
 570712-9 " "



570711-10	♂	<i>margarops</i> <sup>d.</sup> <i>fuscatus</i>	L. 242 - wt 86 gms, testis 10 mm.
570711-11	♂	<i>Anolis cristatellus</i>	
570711-12	♂	" "	
570711-13	♂	" "	
570711-14	♂	" "	
570711-15	♂	" "	
570711-16	♂	" "	
570711-17	♀	" "	
570711-18	♀	" "	
570711-19	♀	" "	
570711-20	♀	" "	
570711-21	♀	" "	
570711-22	♀	" "	

July 13, 1957

570713-1	♀	<i>Anolis cristatellus</i>	
570713-2	♀	" "	
570713-3	♀	" "	
570713-4	♀	" "	
570713-5	♀	" "	
570713-6		<i>Hemidactylus mabouia</i>	
570713-7	♀	<i>Anolis cristatellus</i>	
570713-8	♀	<i>Tyrannus</i> <sup>d.</sup> <i>dominicensis</i>	L. 133 - wt 40 gms, largest ovum 1 mm.
570713-9	♀	" "	L. 135 - wt 50 gms, " " " "
570713-10		<i>Tiaris bicolor omisaa</i>	
570713-11		<i>Dendroica petechia crucians</i>	
570713-12	♀	<i>Coereba portoricensis s.t.</i>	L. 110 - wt 80 gms.
570713-13	♀	<i>Vireo altiloquus altiloquus</i>	L. 165 - wt 16 gms. (inter barbadensis)

July 14, 1957

570714-1		<i>Hemidactylus mabouia</i>	
570714-2		" "	
570714-3	♂	<i>Anolis cristatellus</i>	
570714-4	♀	" "	
570714-5		" <i>stratulus</i>	
570714-6		<i>Sphaerodactylus macrolepis</i>	
570714-7		" "	
570714-8		" "	
570714-9		" "	
570714-10		" "	
570714-11		" "	



570714-13 *Sphaerodactylus macrolepis*  
 570714-14 *Anolis cristatellus*

1/2 mi. S and 2/5 mi. W Lameshur, 38 ft., St. John Island, Virgin Islands  
 July 14, 1957

570714-15 ♂ *Brachyphylla cavernarum* 108-10-23-23-50gms, testis 4mm.  
 570714-16 ♂ " " 97-6-22-22-50gms, " 3 "  
 570714-17 ♂ " " 102-7-22-23-55gms, " 7 "  
 570714-18 ♂ " " 102-7-23-22-50gms " 6 "  
 570714-19 ♂ " " 108-5-22-22-50gms " 5 "  
 570714-20 ♂ " " 96-4-23-23-46gms " 5 "  
 570714-21 ♂ " " 102-6-22-23-52gms " 6 "  
 570714-22 ♂ " " 103-7-23-23-49gms " 5 "  
 570714-23 ♂ " " 109-5-23-22-50gms " 5 "  
 570714-24 ♂ " " 107-9-22-23-50gms " 5 "  
 570714-25 ♂ " " 106-8-23-23-55gms " 6 "

Reef Bay Sugar mill, 10 ft., St. John Island, Virgin Islands  
 July 14, 1957

570714-27 *Sphaerodactylus macrolepis*  
 570714-28 " "  
 570714-29 " "  
 570714-30 " "  
 570714-31 " "  
 570714-32 ♀ *Sphaerodactylus macrolepis* L. 118, wt 6gms, breeding.  
 570714-33 ♂ *Sphaerodactylus macrolepis* L. 152, wt 21, testis 5mm

1/2 mi. S and 2/5 mi. W Lameshur, 38', St. John Island, Virgin Islands  
 July 15, 1957

570715-1 ♂ *Brachyphylla cavernarum* 95-(4)-22-23-46gms, testis 5mm  
 570715-2 ♂ " " 104-(7)-23-23-49gms, testis 6mm  
 570715-3 ♂ " " 99-(6)-22-21-52gms, testis 5mm  
 570715-4 ♂ *Dendroica <sup>petreola</sup> ~~sectera~~ crucianus* L. 131, wt 13gms, testis 5mm.

1/3 mi. S and 2/5 mi. W Lameshur, sea level, St. John Island, Virgin Islands  
 July 15, 1957

570715-5 *Hemidactylus mabouia*  
 570715-6 ♂ *Anolis cristatellus*  
 570715-7 ♀ " "  
 570715-8 " *stratellus*  
 570715-9 " "  
 570715-10 " "



Lameshur, St. John Island, Virgin Islands

July 16, 1957

570716-1	<i>Anolis stratulus</i>
570716-2	" "
570716-3	" "
570716-4	" "
570716-5	" "
570716-6	" "
570716-7	" "

7/10 mi. n. Lameshur, St. John Island, Virgin Islands.

July 16, 1957

570716-8	<i>Anolis pulchellus</i>
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Lameshur, St. John Island, Virgin Islands

July 16, 1957

570716-9	?
570716-10	?

4/5 mi. n and 1/10 mi. w Lameshur, approx 1200ft., St. John Island, V. Islands

July 18, 1957

570718-1	♀ <i>Rattus norvegicus</i>	285-150-31-21-55gms, ut. normal
570718-2	♂ " "	330-
570718-3	♂ <i>Mus musculus</i>	170-84-18-12-15gms, testes 7mm
570718-4	♀ " "	
570718-5	♀ " "	168-80-17-12-15gms, ut. normal
570718-6	♀ " "	167-80-17-12-18gms, 272 emb 13mm
570718-7	Hermit crab.	

3/10 mi. n and 1/10 mi. w. Lameshur, approx 620ft., St. John Is., Virgin Islands

July 18, 1957

570718-8	♂ <i>Mus musculus</i>	161-80-17-12-13gms, testes 6mm
570718-9	♂ " "	[125]-[42]-18-12 <sup>16</sup> gms, testes 3mm
570718-10	♀ " "	152-75-18-13-12gms, ut. normal
570718-11	♂ <i>Rattus norvegicus</i>	210

Lameshur Bay, St. John Island, Virgin Islands

July 18, 1957

570718-11	Sooty	fresh
570718-12	yellowtail	"
570718-13	sea noddle	"



- 570718-14 wenchman or coral  
 570718-15 Queen mullet  
 570718-16 Jew fish  
 570718-17 grass grunt  
 570718-18 Pogy

4/5 mi. N and 1/10 mi. W Lameshur, approx 1200 ft., St. John Is., Virgin Islands  
 July 19, 1957

- 570719-1 ♂ *Mus musculus* 160-75-16-13-14 gm,  
 570719-2 ♂ " " 161-78-17-13-16 gm, testis 6 mm  
 570719-3 ♂ " " 165-79-17-13-17 gm, testis 7 mm  
3/10 mi. N and 1/10 mi. W Lameshur, approx 620 ft., St. John Island, Virgin Islands  
 570719-4 *Eleutherodactylus* July 19, 1957  
 570719-5 " "  
 570719-6 ♂ *Mus musculus* 160

Top Bordeaux Mountain, <sup>approx</sup> 1277 ft., St. John Island, Virgin Islands  
 July 19, 1957

- 570719-6 ♂ *Anolis cristatellus*  
 570719-7 " *stratulus*  
 570719-8 ♂ " *cristatellus*

1 mi. N and 1/5 mi. W Lameshur, St. John Island, Virgin Islands  
 July 20, 1957

- 570720-1 *Eleutherodactylus antillensis*  
 570720-2 " "  
 570720-3 " "  
 570720-4 " "  
 570720-5 " "  
 570720-6 " "  
 570720-7 " "  
 570720-8 " "  
 570720-9 " "  
 570720-10 " "  
 570720-11 " "  
 570720-12 " "  
 570720-13 " "  
 570720-14 " "  
 570720-15 " "  
 570720-16 " "  
 570720-17 *Sphaerodactylus microlepis*  
 570720-18 *Anolis stratulus*



- 570720-19 *Cleutherodactylus antillensis*  
 570720-20 *Anolis cristatellus*

Lovango Cay, NW St. John Island, sea level, Virgin Islands.  
 July 21, 1957

- 570721-1 *Ameliva epuel*  
 570721-2 " "  
 570721-3 " "  
 570721-4 " "  
 570721-5 " "  
 570721-6 *Anolis stratulus*

Congo Cay, NW St. John Island, sea level, Virgin Islands  
 July 21, 1957

- 570721-7 *Anolis cristatellus*  
 570721-8 " "  
 570721-9 " "  
 570721-10 " "  
 570721-11 " "  
 570721-12 " "  
 570721-13 " "  
 570721-14 " "  
 570721-15 " "  
 570721-16 *Anolis stratulus*

Rata Cay, NW St. John Island, sea level, Virgin Islands  
 July 21, 1957

- 570721-17 *Anolis cristatellus*

Ramgat Cay, NW St. John Island, sea level, Virgin Islands  
 July 21, 1957

- 570721-18 *Anolis cristatellus*  
 570721-19 " "  
 570721-20 " "

Larnesher Bay, St. John Island, Virgin Islands.  
 July 22, 1957

- 570722-1 Trunk or box fish  
 570722-2 blade-eye fish



Lovango Cay, NW St. John Island, Virgin Islands

July 23, 1957

570723-1 ♀	<i>Antibeus f. jamaicensis</i>	86-( )-16-21-43 gm, 1x0 emb. 14 mm
570723-2 ♀	" "	86-( )-17-22-50 gm, 0x1 emb. 17 mm
570723-3 ♂	" "	88-( )-16-21-44 gm, testes 10 mm
570723-4 ♀	" "	90-( )-16-21-46 gm, 1x0 emb. 20 mm
570723-5 ♀	" "	90-( )-16-22-52 gm, 1x0 emb 21 mm
570723-6 ♀	" "	88-( )-17-20-43 gm, 1x0 emb 13 mm
570723-7 ♀	" "	83-( )-16-20-38 gm, no emb.
570723-8 ♀	" "	88-( )-17-21-44 gm, 0x1 emb 24 mm
570723-9 ♀	" "	89-( )-17-21-48 gm, 1x0 emb 19 mm
570723-10 ♀	" "	80-( )-17-22 40 gm,

1/10 mi. SW Lameshur, 10 ft., St. John Island, Virgin Islands

July 24, 1957

570724-1 ♂	<i>Tadarida brasiliensis</i>	98-36-9-12-44 gm.
570724-2 ♂	<i>Anolis cristatellus</i>	
570724-3 ♀	" "	
570724-4	" <i>stratulus</i>	
570724-5	" "	

Lameshur Bay, St. John Island, Virgin Islands

July 24, 1957

570724-7	Trigger fish or shoemaker
570724-8	shell fish
570724-9	rainbow fish
570724-10	butterfish

1/10 mi. NW Lameshur, 50 ft., St. John Island, Virgin Islands

July 24, 1957

570724-11	↑	
570724-12	<i>Eleutherodactylus antillensis</i>	
570724-13	" "	
570724-14	" "	
570724-15	" "	

W end Norman Island, Virgin Islands (Br.)

July 26, 1957.

570726-1 ♂	<i>Brachyphylla cavernarum</i>	107-5-22-22-53 gm, testes 5 mm
570726-2 ♀	" "	106-4-21-23-56 gm, no emb
570726-3 ♂	" "	107-4-23-24-52 gm, testes 5 mm
570726-4 ♀	" "	94-4-21-23-60 gm, no emb



570726-5 ♀	<i>Brachyphylla cavernarum</i>	106-8-22-24-55 gms,	no emb.
570726-6 ♂	" "	103-7-22-23-53 "	testis 6 mm
570726-7 ♀	" "	97-5-21-23-56 "	no emb.
570726-8 ♂	" "	94-4-22-23-48 "	testis 4 mm
570726-9 ♂	" "	95-5-22-23-50 "	testis 5 mm
570726-10 ♀	" "	103-7-22-24-50 "	no emb.
570726-11 ♂	" "	104-8-22-24-50 "	testis 5 mm
570726-12 ♂	" "	100-5-22-24-48 "	testis 4 mm
570726-13 ♂	" "	102-4-23-23-90 "	testis 5 mm
570726-14 ♀	" "	108-10-23-24-56 "	no emb
570726-15 ♀	" "	96-5-21-23-48 "	no emb
570726-16 ♀	" "	107-9-23-24-60 "	no emb
570726-17 ♂	" "	94-4-22-23-45 "	testis 5 mm
570726-18 ♂	" "	103-7-23-23-52 "	testis 6 mm
570726-19 ♂	" "	96-4-22-22-52 "	testis 5 mm

Christiansted, St. Croix Island, Virgin Islands.

July 28, 1957

570728-1	<i>Anolis crustatellus</i>
570728-2	" "
570728-3	" "
570728-4	" "
570728-5	" "
570728-6	" "
570728-7	" "
570728-8	" "

N end Little St. James Island, Virgin Islands.

July 29, 1957

570729-1	<i>Armeiva exsul</i>
570729-2	<i>Anolis</i>
570729-3	<i>Armeiva exsul</i>
570729-4	" "
570729-5	" "
570729-6	" "
570729-7	" "
570729-8	" "
570729-9	<i>Anolis crustatellus</i>
570729-10	<i>Armeiva exsul</i>
570729-11	<i>Anolis crustatellus</i>



Dog Island, Virgin Islands.

July 30, 1957

- 570730-1 *Anolis cristatellus*  
 570730-2       "       "  
 570730-3       "       "  
 570730-4 ♀ *Anolis cristatellus* L. 270 - wt 85 gms.  
 570730-5 ♂ *Anolis cristatellus* L. 400 - wt 290 gms, largest ovum 5 mm.

N. end Little St. James Island, Virgin Islands.

July 30, 1957

- 570730-6 ♀ *Anolis cristatellus*  
 570730-7 *Ameiva ameiva*  
 570730-8       "       "  
 570730-9       "       "  
 570730-10 *Anolis cristatellus*

N. end Great St. James Island, Virgin Islands

July 31, 1957

- 570731-1 *Ameiva ameiva*  
 570731-2       "       "  
 570731-3       "       "  
 570731-4       "       "  
 570731-5 *Anolis cristatellus*  
 570731-6       "       "  
 570731-7 *Sphaerodactylus macrolepis*

N. end Little St. James Island, Virgin Islands

July 31, 1957

- 570731-8 *Ameiva ameiva*  
 570731-9       "       "  
 570731-10       "       "  
 570731-11       "       "  
 570731-12       "       "  
 570731-13       "       "  
 570731-14       "       "  
 570731-15 *Anolis cristatellus*  
 570731-16       "       "  
 570731-17       "       "  
 570731-18       "       "



NW end Little St. James Island, Virgin Islands  
Aug 1, 1957

570801-1	<i>Ameiva essul</i>
570801-2	" "
570801-3	" "
570801-4	" "
570801-5	" "
570801-6	<i>Anolis crustaceus</i>
570801-7	" "
570801-8	" "
570801-9	" "
570801-10	" "
570801-11	" "
570801-12	" "
570801-13	<i>Sphaerodactylus macrolepis</i>
570801-14	<i>Anolis pulchellus</i>

End Thatch Cay, Virgin Islands

Aug. 2, 1957 [note Aug. 2 has Aug. 3. no.]  
for all material taken this date.

570803-1 *Ameiva essul*

E end Grass Cay, Virgin Islands

Aug. 2, 1957

570803-2 *Anolis crustaceus*

W end Mingo Cay, Virgin Islands

Aug. 2, 1957

570803-3 *Ameiva essul*.

570803-4 *Sphaerodactylus macrolepis*

NE end Lovango Cay, Virgin Islands

Aug 2, 1957

570802-5 *Ameiva essul*

570802-6 " "

570802-7 " "

570802-8 " "

570802-9 " "

570802-10 " "

570802-11 " "

570802-12 *Anolis crustaceus*

570802-13 " "



570802-14	<i>Anolis cristatellus</i>
570802-15	" "
570802-16	" "
570802-17	" "
570802-18	<i>Ameiva exsul</i>
570802-19	<i>Anolis cristatellus</i>
570802-20	" "

NE end Lavango Cay, Virgin Islands

Aug. 3, 1957

[note. Aug 3 field notes carry Aug 4 date]

570804-1	<i>Anolis cristatellus</i>
570804-2	" "
570804-3	" "
570804-4	" "
570804-5	" "
570804-6	" "
570804-7	" "
570804-8	" "
570804-9	<i>Anolis stratulus</i>
570804-10	" "
570804-11	" "
570804-12	<i>Anolis cristatellus</i>
570804-13	<i>Ameiva exsul</i>
570804-14	" "
570804-15	" "
570804-16	" "
570804-17	" "
570804-18	" "
570804-19	" "
570804-20	" "
570804-21	" "
570804-22	" "
570804-23	" "
570804-24	<i>Alephis antillensis</i>
570804-25	<i>Anolis cristatellus</i>
570804-26	" "
570804-27	" "
570804-28	<i>Anolis stratulus</i>
570804-29	" "
570804-30	<i>Ameiva exsul</i>
570804-31	<i>Alephis antillensis</i>

L. 400 mm, wt 80 gms, lower mandible red.

(presented by Henry Fafalla of Canal Bay.)



E end Whistling Cay, Virgin Islands.

Aug. 4, 1957

570804-31	<i>Anolis cristatellus</i>
570804-32	" "
570804-33	" "
570804-34	" "

Annaberg Point, St. John Island, Virgin Islands

Aug 5, 1957

570805-1 ♂ *Flourensia caerulea cavulescens* L. 510 mm, testes 4 mmSandy Cay (Rockefeller Island), Virgin Islands.

Aug 5, 1957

570805-2	<i>Ameiva etaei</i>
570805-3	<i>Sphaerodactylus microlepis</i>
570805-4	" "
570805-5	" "

S. E. Jost Van Dyke, Virgin Islands

Aug 5, 1957

570805-6	<i>Anolis cristatellus</i>
570805-7	" "
570805-8	" "
570805-9	" "
570805-10	" "
570805-11	" "
570805-12	" "
570805-13	" "
570805-14	<i>Anolis stratulus</i>
570805-15	" "
570805-16	" "
570805-17	<i>Anolis pulchellus</i>

Sandy Cay, Virgin Islands.

Aug. 5, 1957

570805-18	♀ <i>Dendroica petichia crucians</i>	130 length
570805-19	♀ <i>Sterna anaethetus recognita</i>	

Annaberg, St. John Island, Virgin Islands

Aug 6, 1957

570806-1 ♀ *Elainea mortonica riissii* L. 158 - wt 11 gms, ovary 6 mm long



- 570806-2 ♂ *Tiaris bicolor omissa*  
 570806-3 ♂ *Coereba flaveola sancti-thomae*  
 570806-4 ♀ *Tiaris bicolor omissa*  
 570806-5 ♂ *Orthorhynchus crustatus epilis*  
 570806-6 ♀ *Sericornis holosericeus*  
 570806-7 ♂ *Coereba flaveola sancti-thomae*  
 570806-8 ♀ " " " "  
 570806-9 *Hemidactylus <sup>mabouia</sup> microlepis*  
 570806-10 " "  
 570806-11 *Anolis pulchellus*  
 570806-12 *Sphaerodactylus muraletis*  
 570806-13 " "  
 570806-14 " "  
 570806-15 *Anolis crustatellus*  
 570806-16 " "  
 570806-17 " "  
 570806-18 " "  
 570806-19 " "  
 570806-20 " "  
 570806-21 " "  
 570806-22 *Anolis stratulus*  
 570806-23 " "  
 570806-24 " "  
 570806-25 " "  
 570806-26 " "  
 570806-27 " "  
 570806-28 " "  
 570806-29 " "  
 570806-30 " "  
 570806-31 " "  
 570806-32 " "  
 570806-33 " "  
 570806-34 " "  
 570806-35 " "  
 570806-36 " "  
 570806-37 " "  
 570806-38 " "  
 570806-39 ♂ *Tadarida brasiliensis* 100-37-9-12-13gms, testes 4mm

Waterlemon Cay, Virgin Islands

570807-1 *Anolis crustatellus* Aug 7, 1957



570807-2 *Anolis cristatellus*  
 570807-3 " "  
 570807-4 " "  
 570807-5 " "  
 570807-6 " "  
 570807-7 " "  
 570807-8 " "

Flanagan Island, Virgin Islands

Aug. 7, 1957

570807-9 *Anolis cristatellus*  
 570807-10 " "  
 570807-11 " "  
 570807-12 " "  
 570807-13 " "  
 570807-14 " "

Le Duce Island, Virgin Islands

Aug 7, 1957

570807-15 *Anolis cristatellus*  
 570807-16 " "  
 570807-17 " "  
 570807-18 " "

Coral Bay, St. John Island, Virgin Island.

Aug. 8, 1957

570808-1 *Anolis cristatellus.*

Fortberg Hill, St. John Island, Virgin Islands

Aug 8, 1957

570808-2 *Anolis cristatellus*

Brown Bay, St. John Island, Virgin Islands

Aug 8, 1957

570808-3 *Anolis cristatellus*

Borek Cr., St. John Island, Virgin Islands

Aug. 8, 1957

570808-4 *Anolis cristatellus.*



Princess Bay, St. John Island, Virgin Islands.

Aug. 8, 1957

570808-5	<i>Anolis</i>	<i>crestatellus</i>
570808-6	"	"
570808-7	"	"
570808-8	"	"
570808-9	"	"

Elk Bay, St. John Island, Virgin Islands

Aug. 8, 1957

570808-10	<i>Anolis</i>	<i>crestatellus</i>
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Haulover Bay, St. John Island, Virgin Islands.

Aug 8, 1957

570808-11	<i>Anolis</i>	<i>crestatellus</i>
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2/5 mi. S Garded Point, St. John Island, Virgin Islands

Aug 8, 1957

570808-12	<i>Ameiva</i>	<i>elsul</i>
570808-13	"	"
570808-14	"	"
570808-15	"	"
570808-16	"	"
570808-17	"	"
570808-18	"	"
570808-19	<i>Sphaerodactylus</i>	<i>microlepis</i>
570808-20	<i>Anolis</i>	<i>stratulus</i>
570808-21	<i>Anolis</i>	<i>crestatellus</i>
570808-22	"	"
570808-23	"	"
570808-24	"	"
570808-25	"	"
570808-26	"	"
570808-27	"	"
570808-28	"	"
570808-29	"	"
570808-30	<i>Anolis</i>	<i>stratulus</i>
570808-31	"	"
570808-32	"	"
570808-33	"	"



2/5 mi. S Gowed Point, St. John Island, Virgin Islands

Aug 7, 1957

- 570809-1 *Ameiva eteul*  
 570809-2 " "  
 570809-3 " "  
 570809-4 " "  
 570809-5 " "  
 570809-6 " "  
 570809-7 " "  
 570809-8 " "  
 570809-9 " "  
 570809-10 " "  
 570809-11 *Anolis stratulus*  
 570809-12 " "  
 570809-13 " *crustellus*  
 570809-14 " "  
 570809-15 " "  
 570809-16 " "  
 570809-17 *Ameiva eteul*  
 570809-18 " "  
 570809-19 " "  
 570809-20 " "  
 570809-21 " "  
 570809-22 " "  
Gowed Point, St. John Island, Virgin Islands  
 570809-23 *Anolis crustellus* Aug. 9, 1957  
 570809-24 " "  
 570809-25 " "  
 570809-26 " "  
 570809-27 " "  
 570809-28 " "  
 570809-29 " "  
 570809-30 ~~lunus~~ L. 32 mm  
 570809-31 *Sphaerodactylus microlepis*  
 570809-32 " "  
 570809-33 " "  
 570809-34 *Anolis crustellus*  
 570809-35 " "

E side South Haulover Bay, 20 ft., St. John Island, Virgin Islands

Aug 10, 1957

- 570810-1 ♂ *Artibeus j. jamaicensis* 86( )-16-20-40 gms, testes 10 mm



1/5 mi WSW Lameshur, 15 ft., St. John Island, Virgin Islands

Aug 10, 1957

[ This locality is given as 1/5 mi. SW Lameshur Estate House or 350' south and 930' W Lameshur Estate House ]

570810-2	♂	<i>Artibeus f. jamaicensis</i>	83-( )-16-20-( )	testes 8 mm	skinned
570810-3	?	"	"	"	"
570810-4	♀	"	"	86-( )-17-21-( )	"
570810-5	♂	"	"	79-( )-16-20-( )	testes 8 mm
570810-6	♂	"	"	no measurements	"

Lameshur Bay, St. John Island, Virgin Islands.

Aug. 10, 1957

570810-7	moray eel
570810-8	fish
570810-9	fish
570810-10	fish
570810-11	fish

Aug 11, 1957

570811-1	<i>Anolis stratulus</i>
570811-2	"
570811-3	"
570811-4	"
570811-5	"
570811-6	"

2/5 mi W and 1/2 mi N Bordeaux mt., 1000 ft., St. John Island, Virgin Islands

Aug. 12, 1957

570812-1	<i>Cleutherodactylus antillensis</i>
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1/10 mi SE mt. Bordeaux, approx 1150 ft., St. John Island, Virgin Islands

Aug 13, 1957

570813-1	<i>Cleutherodactylus antillensis</i>
570813-2	"
570813-3	"
570813-4	"
570813-5	"
570813-6	"
570813-7	"
570813-8	"
570813-9	<i>Anolis cristatellus</i>
570813-10	"



570813-11	<i>Sphaerodactylus microlepis</i>
570813-12	" "
570813-13	" "
570813-14	" "
570813-15	" "
570813-16	" "
570813-17	" "
570813-18	" "
570813-19	" "
570813-20	" "
570813-21	<i>Anolis cristatellus</i>

1/5 mi. SW Lameshur Estate House, sea level, St. John Island, Virgin Islands. [This locality is more exactly 350'S and 930'W Lameshur Estate House. It is nearer 1/5 mi. W.SW Lameshur Estate House than 1/5 mi. SW Lameshur Estate House.]

Aug. 13, 1957

alcoholic	
570813-22 ♀	<i>Stenoderma rufum</i>
570813-23	<i>Hemidactylus mabouia</i>
570813-24	" "
570813-25	" "
570813-26	<i>Sphaerodactylus macrolepis</i>
570813-27	" "
570813-28	" "
570813-29	" "
570813-30	<i>Anolis cristatellus</i>
570813-31	" <i>stratulus</i>

Lameshur, St. John Island, Virgin Islands  
Aug. 14, 1957

570814-1	<i>Anolis cristatellus</i>
570814-2	<i>Anolis stratulus</i>
570814-3	<i>Anolis cristatellus</i>
570814-4	" "
570814-5	" "
570814-6	" "
570814-7	" "
570814-8	" "
570814-9	" "
570814-10	" "
570814-11	<i>Sphaerodactylus macrolepis</i>



570814-12	<i>Sphaerodactylus macrolepis</i>	
570814-13	"	"
570814-14	"	"
570814-15	"	"
570814-16	"	"
570814-17	"	"
570814-18	"	"
570814-19	"	"
570814-20	"	"
570814-21	"	"
570814-22	"	"

Ramhead, St. John Island, Virgin Islands  
Aug. 15, 1957

570815-1 *Ameiva exsul*

Narrow Point, St. John Island, Virgin Islands  
Aug. 15, 1957

570815-2 ♀	<i>Artibeus f. jamaicensis</i>	89-( )-17-21-43gms	1x0 emb. 14 mm
570815-3 ♀	" "	90-( )-17-21-43gms	0x1 emb 17 mm
570815-4 ♀	" "	90-( )-17-21-45gms	1x0 emb 19 mm
570815-5 ♀	" "	91-( )-17-21-45gms	1x0 emb 19 mm

1/5 mi E Narrow Point, St. John Island, Virgin Island  
Aug. 15 1957

570815-6 *Ameiva exsul*

1/2 mi. N.E. Kiddle Point, St. John Island, Virgin Islands  
Aug. 15, 1957

570815-7 *Ameiva exsul*

1/2 mi. W Narrow Point, St. John Island, Virgin Islands.  
Aug. 15, 1957

570815-8 *Ameiva exsul.*

4/5 mi. E and 1/2 mi. S Lameshur, St. John Island, Virgin Islands  
570815-9 *Anolis crustatellus*

7/10 mi. N and 1/10 mi. W Ramhead, St. John Island, Virgin Islands  
Aug 15, 1957

570815-11 *Sphaerodactylus macrolepis*

570815-12 " "



570815-14 *Sphaerodactylus macrolepis*  
 570815-15 1/5 m " "

1/5 mi. SW Lameshur, 15 ft., St. John Island, Virgin Islands  
 Aug. 15, 1957

570815-16 ♀ *Artibeus j. jamaicensis* 90-( )-18-21-43 gms, 1x0 emb 34 mm CrL.  
 wing spread 140 mm.  
 570815-17 " " " imm.

1/10 mi W Lameshur Estate House (fresh water pond), St. John Island,  
Virgin Islands.

Aug 15, 1957

570815-17 cat fish (also lives in sea)  
 skull only  
 570815-18 Goat.

Lameshur Bay, St. John Island, Virgin Islands  
 Aug. 15, 1957

570815-19 Karren - stump  
 570815-20 Horen goodtoo  
 570815-21 Banana goodtoo  
 570815-22 Blue doctor  
 570815-23 Buck doctor  
 570815-24 Katy  
 570815-25 Stump Karren  
 570815-26 Sting perate, honton  
 570815-27 grass grunt  
 570815-28 Queen mullet  
 570815-29 Lion fish  
 570815-30 moray's eel  
 570815-31 Conal fish  
 570815-32 Pilat fish  
 570815-33 whopper grunt  
 570815-34 docipē  
 570815-35 long gar  
 570815-36 sweet-head fry  
 570815-37 long gar.

1/2 mi. S and 2/5 mi W Lameshur, 38 ft., St. John Island, Virgin Islands  
 Aug 16, 1957

570816-1 ♂ *Brachyphylla cavernarum* 102-8-23-23-47 gms, testis 6 mm.  
 570816-2 ♂ " " 106-10-23-23-54 gms, " 6 "



570816-3 ♂	<i>Brachyphylla cavernarum</i>	104-9-23-22-53 gms,	testis 6 mm
570816-4 ♂	"	101-9-22-23-52 "	testis 5 mm
570816-5 ♂	"	103-9-21-20-32 "	testis 5 mm
570816-6 ♂	"	103-8-21-23-48 "	testis 5 mm
570816-7 ♂	"	91-6-21-21-38 "	testis 4.5 mm
570816-8 ♂	"	97-5-21-23-55 "	testis 6 mm
570816-9 ♂	"	100-8-21-23-50 "	testis 4 mm
570816-10 ♂	"	99-9-21-23-45 "	
570816-11 ♂	"	97-7-21-23-40 "	
570816-12 ♂	"	98-8-21-23-44 "	
570816-13 ♂	"	97-7-21-23-40 "	
570816-14 ♂	"	106-9-23-23-52 "	
570816-15 ♂	"	99-8-23-23-48 "	
570816-16 ♂	"	103-8-21-23-51 "	
570816-17 ♂	"	102-7-21-23-49 "	
570816-18 ♂	"		no measurements
570816-19	Bone material from cove		
570816-19a	"	"	
570816-19b	"	"	

S.W. end Virgin Gorda, sea level, Virgin Islands  
Aug. 18, 1957

570818-1	<i>Anolis aeneus</i>
570818-2	<i>Anolis cristatellus</i>
570818-3	" <i>stratellus</i>
570818-4	" "
570818-5	" "
570818-6	" "

Lameshur Bay, St. John Island, Virgin Islands  
Aug. 18, 1957

570818-7 Large gar

1/5 mi. SWS Lameshur, St. John Island, Virgin Islands  
Aug. 20, 1957

570820-1 ♀ *Anolis cristatellus*

Lameshur Bay, St. John Island, Virgin Islands  
Aug. 21, 1957

570821-1 Shark



1/5 mi SW [WSW] Lameshur Estate House, St. John Island, Virgin Islands

Aug 21, 1957

570821-2 ♂ *Nactilis leporinus mastus* 116-27-29-26-40 gms, testes 4 mm, wing spread 578 mm.

1/2 mi. N Charlotte Amalie, St. Thomas Island, Virgin Islands

Aug. 25, 1957

SKEL.  
570825-1 ♀ *merquips f. fucatus*

1/10 mi. W Lameshur, St. John Island, Virgin Islands

Aug. 25, 1957

570825-2 ♂ *Progne d. dominicensis* L. 185, testis +3(?) mm. <sup>correct</sup> may be 3<sup>4</sup>.  
570825-3 ♂ " " " L. 195, testis 3 mm  
570825-4 ♀ " " " L. 196, ♀ ovary.  
570825-5 ♀ feral swine, lower tusk (presented by Austin Delmida, killed June 1957)

Reef Bay, St. John Island, Virgin Islands

Aug. 29, 1957

SK. only  
570829-1 feral swine. Collected by Bill Cutter.

1/10 mi. W Lameshur, St. John Island, Virgin Islands.

Aug. 30, 1957

570830-1 ♂ *Stenoderma rufum* 61-(notail)-15-18-(no wt), testis 6 mm  
570830-2 ♀ *Molossus fortis* 102-41-9-12-(no wt)  
570830-3 ♀ " " 102 42-9-12-(" " )  
570830-4 ♀ *Stenoderma rufum* 65-( )-16-18-( ).  
570830-5 ♂ *Artibeus jamaicensis* 93-( )-18-20-( ), testis 10 mm  
570830-6 ♀ *Tadarida brasiliensis* 95-37-9-15-( ), suckling  
570830-7 ♀ " " 95-36-9-15-( ), "  
570830-8 ♀ " " 96-38-9-15-( ), "  
570830-9 ♀ " " 101-40-11-13-( ), no emb.  
570830-10 ♀ " " 108-42-11-13-( ), " "

Aug. 31, 1957

570831-1 ♂ *Tadarida brasiliensis* 108-39-40-12 ( ), <sup>40</sup> testis 6 mm, parasite on neck  
570831-2 ♀ " " 104-38-10-12 ( ), suckling

Sept 2, 1957

570902-1 ♀ *Tadarida brasiliensis* 103-39-10-12-( ) no embryos  
570902-2 ♀ " " 104-38-11-12-( ) suckling.

Sept 3, 1957

570903-1 ♀ *Tadarida brasiliensis* 103-38-11-12-( )  
570903-2 ♀ " " 102-39-11-12-( ), 1 x 0 emb. 15 mm.



1/5 mi. E Lameshur, St. John Island, Virgin Islands.

Sept 3, 1957

570903-3 ♀ feral swine (see notes of Aug. 25, 1957)

570903-4 " goat

570903-5 horse tooth

570903-6 cow tooth.

W end St. Thomas Island, Virgin Islands.

Sept. 3, 1975

<sup>skeleton</sup>  
570903-7 Iguana (from loose high on mt.)



List of herp specimens catalogered showing catalogue number (K.U.), numbers of specimens from each locality and date: (collectors combined)

Ameiva essul cat. nos 45442-45588, 46687 = 148 specimens.

<u>number</u>	<u>Locality</u>	<u>Date</u>
4	n end Great St. James Island	July 31, 1957
1	SW end Virgin Gorda	Aug 18, 1957
7	nw end Little St. James Island	Aug. 1, 1957
5	Le Duck Island	Aug 7, 1957
6	Flannigan Islands.	Aug 7, 1957
7	2/5 mi S Gowed Point, St John Island	Aug. 8, 1957
1	Ram Head, St. John Island.	Aug. 15, 1957
1	1/5 mi E Nanny Point, St. John Island	Aug 15, 1957
1	1/2 mi NE Kiddle Point, St. John Island	Aug 15, 1957
1	1/2 mi. W Nanny Point, St. John Island	Aug 15, 1957
16	2/5 mi. S Gowed Point, St. John Island.	July 9, 1957
20	n end Little St. John Island	July 29, 1957
17	Sand Cay,	Aug. 5, 1957
28	Haulover Point, E end St. John Island.	Aug, 9, 1957
5	NE St. John Island, Lavango Cay.	July 7, 1957
1	E end Thatch Cay	Aug. 3, 1957
8	NE end Lavango Cay	Aug 3, 1957
3	Lavango Cay, St. John Island	July 21, 1957
3	NE end Lavango Cay	Aug. 2, 1957
1	W end Mingo Cay	Aug 2, 1957
12/2	NE end Lavango Cay	Aug 4, 1957

Leptodactylus albilabris no. 45629 = 1 specimen.

1	Annaberg, St. John Island	Aug 6, 1957
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Amphisbaena fenestrata Cat. no. 45630 = 1 specimen

1	W end Great Saint James Island.	July 31, 1957
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Iguana i. iguana. Cat. no. 45688 = 1 specimen

1	W end St. Thomas Island.	Sept, 3, 1957
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Alsophia antillensis Cat nos. 45669-45672 = 4 specimens

2	NE end Lavango Cay	Aug 4, 1957
1	W end Great St. James Island	July 31, 1957
1	S. end Little St. James Island.	Aug 1, 1957



Eretmochelys imbricata Cat. no. 46692, 46691 = 2 specimens

- 1 n E end Lavango Cay (plastron elements) Aug 2, 1957  
 1 1/5 mi SE Lameshur, St. John Island (skel) July 23, 1957

Hemidactylus mabouia Cat. nos. 45673-45687, 46678-46686, 45632, = 25

- 1 S side Lavango Cay Aug 3, 1957  
 2 1/5 mi. SW Lameshur, St. John Island. July 7, 1957  
 1 Lameshur Ranger Station Aug. 12, 1957  
 3 Reef Bay, Estate House. July 10, 1957  
 6 1/10 mi. SW Lameshur July 12, 13, 1957  
 1 1/5 mi. S + 7/5 mi. W Lameshur July 15, 1957  
 2 Annaberg Aug. 6, 1957  
 6 Lameshur Ranger Station July 20, 26, Aug 12, 1957  
 3 1/5 mi. WSW Lameshur, sea level Aug. 13, 1957

Eleutherodactylus antillensis Cat. nos. 45589-45628, 45631, 45633-45668 = 77 specimens.

- 40 1/2 mi N and 1/5 E Lameshur, St. John Is. July, 18, 19, 1957  
 7 1/10 mi. SE mt. Bordeaux, San Juan Island. Aug. 13, 1957  
 1 St. John Island. Aug 12, 1957 [570812-1]  
 5 1/2 mi N and 1/5 mi. E. Lameshur. Aug. 15, 1957  
 17 1 mi. N + 1/5 mi. W Lameshur. July 20, 1957  
 1 4/5 mi. N and 1/10 mi. W Lameshur. July 19, 1957

Anolis pulchellus. Cat. nos. 46491-46523 = 33 specimens.

- 1 1/2 mi S and 7/5 mi SE Lameshur July 12, 1957  
 2 1/5 mi. SE Lameshur July 11, 1957  
 1 7/10 mi. N. Lameshur July 16, 1957  
 1 1/5 mi. NE Lameshur July 14, 1957  
 10 1/5 mi. SW " Aug. 14, 19, 1957  
 1 3/5 mi. SW " July 14, 1957  
 1 Annaberg, Aug. 6, 1957  
 5 Reef Bay Sugar Mill July 9, 1957  
 1 1/5 mi. SE Lameshur Aug 11, 1957  
 1 Haulover Point (E. end), St. John Island Aug 10, 1957  
 1 SW end Virgin Gorda Aug 18, 1957  
 1 Lavango Cay, NW St. John Island July 21, 1957  
 2 W end Great St. James Island July 31, 1957  
 1 NE end Lavango Cay Aug 3, 1957  
 1 NW end Little St. James Island Aug 11, 1957  
 1 1/2 mi. N Charlotte Amalie, St. Thomas Island Aug 23, 1957.



- 1 W end mingo Cay Aug 2, 1957  
 1 SE just Van Dyke Aug 5, 1957

Sphaerodactylus macrolepis

Cat. no. 46524-46677 = 154

- 1 1/5 mi. SE Lameshur July 6, 1957  
 1 1 mi. N + 1/5 mi. W Lameshur July 20, 1957  
 5 2/5 mi. NE Lameshur July 8, 1957  
 8 2/5 mi. SE Lameshur July 7, 11, 1957  
 7 1/10 mi. SW Lameshur July 14, 1957  
 2 Lameshur July 11, 1957  
 56 1/5 mi. SW Lameshur Aug. 14, 15, 1957  
 4 1/5 mi. WSW Lameshur Aug 13, 1957  
 5 Reef Bay Sugar mill, 10 ft elev. July 14, 1957  
 2 7/10 mi N Reef Bay Sugar Mill July 10, 1957  
 5 7/10 mi. N and 1/10 mi. W Ram Head Aug. 15, 1957  
 2 Anneberg Aug. 6, 1957  
 11 Lameshur Aug. 14, 1957  
 1 SE just Van Dyke Island (British) Aug. 5, 1957  
 6 SW end Virgin Gorda (British) Aug 18, 1957  
 4 2/5 mi. S Sawed Point Aug 8, 9, 1957  
 10 1/10 mi. SE mt. Bordeaux, 1150 ft. Aug 13, 1957  
 1 W end Great St. James Island July 31, 1957  
 1 N end Great St. James Island July 31, 1957  
 1 NW end Little St. James Island Aug 1, 1957  
 4 W end mingo Cay Aug 2, 1957  
 7 Sandy Cay (Lockefeller Island) Aug 5, 1957

Anolis evermanni

Cat. nos. 46331-46490 = 160 specimens.

- 7 Lameshur July 16, 1957  
 5 1/10 mi SW Lameshur July 12, 1957  
 2 1/10 mi. SW Lameshur, 10 ft elev. July 24, 1957  
 1 1/5 mi. E Lameshur July 8, 1957  
 5 1/5 mi. SE Lameshur July 6, 13, 19, 1957  
 3 2/5 mi. SE Lameshur July 11, 1957  
 7 1/5 mi. SW Lameshur, sea level. Aug 13, 14, 19, 1957  
 2 1/5 mi. NE Lameshur July 14, 1957  
 1 1 mi. N + 1/5 mi. W Lameshur, 1200 ft., July 20, 1957  
 3 1/5 mi. S + 2/5 mi. W Lameshur, sea level July 15, 1957  
 5 Lameshur Bay Aug. 11, 1957  
 1 Lameshur Ranger Station July 20, 1957  
 1 Mary Point Estate House Aug 4, 1957







2	1/10 mi S Lameshur, 10 ft.,	July 24, 1957
5	3 mi. N Lameshur, 1020 ft.	July 10, 1957
1	1/2 mi S + 2/5 mi W Lameshur	July 11, 1957
19	2/5 mi. S Gowed Point	Aug 8, 9, 1957
7	Gowed Point	Aug 9, 1957
1	Coral Bay	Aug 8, 1957
1	Fortberg	Aug 8, 1957
1	Brown Point	Aug 8, 1957
1	Bore Creek, St. John Island	Aug 8, 1957
5	Princess Bay	Aug 8, 1957
1	Eek Bay	Aug 8, 1957
1	Naulover Bay	Aug 8, 1957
15	Naulover Point, east end St. John Island	Aug 9, 1957
9	Reef Bay Sugar Mill	July 9, 1957
2	Reef Bay Estate House	July 10, 1957
7	2/10 mi N Reef Bay Sugar Mill	July 10, 1957
18	Anneberg	Aug 5, 6, 1957
1	1/5 mi S + 2/5 mi W Anneberg Estate House	Aug 6, 1957
2	Top Bordeaux mt., 1577 ft.,	July 19, 1957
2	1/10 mi. SE mt. Bordeaux, 1150 ft.	Aug. 13, 1957
16	N end Little St. James Island	July 29, 30, 31 '57
7	NW end Little St. James Island	Aug 1, 1957
2	N end Great St. James Island	July 31, 1957
9	W end Great St. James Island	July 31, 1957
11	Dog Island	July 30, 1957
6	Christiansted, St. Croix Island	July 28, 1957
2	Lavango Cay, NW St. John Island	July 21, 1957
41	NE end Lavango Cay	Aug 2, 3, 1957
18	Watermelon Cay	Aug 7, 1957
10	Flanagan Island	Aug 7, 1957
11	S side Thatch Island	Aug 2, 1957
16	SE post Van Dyke	Aug 5, 1957
4	E end Grass Cay	Aug 2, 1957
4	Le Duck Island	Aug 7, 1957
3	W end Mingo Cay	Aug 2, 1957
9	Congo Rock, sea level	July 21, 1957
11	Congo Cay, NW St. John Island	July 21, 1957
3	Rata Cay	July 21, 1957
10	Ramgoat, NW St. John Island	July 21, 1957
12	E end Whistling Cay	Aug 4, 1957
4	SW end Virgin Gorda, sea level	Aug 18, 1957



- |   |                                   |               |
|---|-----------------------------------|---------------|
| 5 | Lameshur                          | Aug 14, 1957  |
| 1 | 1/10 mi SW Lameshur               | July 14, 1957 |
| 1 | 1/10 mi SE mt. Bordeaux, 1150 ft. | Aug. 13, 1957 |
| 1 | 1/3 mi. SE Lameshur               | July 12, 1957 |

Total of 1014 specimens.



Saint John Island, Virgin Islands  
~~see the museum, virgin islands~~

Sept. 4, 1957

The following photographs are of specimens of cultural artefacts collected on Saint John Island and the adjacent outliers (Cay & island). See notes of this expedition on specifics of these collections. A note of the history of the islands will put the collection of artefacts in proper time sequence. There is, however, no information, except the specimens, that would allude to the period of the occupation of the islands.

Columbus was the first European to see Saint John. At that time, Carib Indians were occupying the islands. These Indians were pre-Columbian. The petroglyphs on the rocks at Reef Bay near the waterfalls and those on Congo Cay and Carval Rock were made before arrival of Columbus. Potsherds on Old Oven Hill near Leinster Bay have been associated with these Carib Indians. The Caribs came from South America by island hopping on the Lesser Antilles. In 1555 the Caribs were driven off the <sup>Virgin</sup> Islands by Charles the Fifth of Spain. There were no Indians on the Islands <sup>St. John</sup> when the first <sup>European</sup> settlers arrived in the 17th century. The settlers on the Virgin Islands was 1625 but St. John was not successfully settled until 1684. Earlier attempts to settle on St. John failed because English from Tortola drove them off. In 1687 the Danish West India & Guinea Company laid claim to St. John but it was not until March 25, 1717 that the permanent colony was founded. Twenty planters & 5 soldiers landed at Coral Harbor and defended it against the British. Fort Berg was built on Fortberg Hill to help defend the island. By 1726 all land on St. John was taken for sugar plantations. On November 13, 1733 the slaves revolted and planters fled to Peter Sturlieu's estate (Caneel Bay Plantation). They remained there until soldiers from Martinique Island stopped the riot and carried many of the negroes back to Martinique. With the abolition of slavery in mid 1800's it was impossible to keep up the old estates and the settlers returned to their respective countries, mostly Danish. Since the the country has returned toward the original climatic forests The original conditions.

Complete deforestation of the island for opening areas for sugar cane cultivation and need for wood energy eventually cause the population to leave the island, a case of overutilization of a resource, which in this case was wood.

The following photographs represent some period of the above history  
 570904-1 to 570904-14 (entire collection artefacts)



(see notes in journal for specific localities and associated information about the cultural artifacts, in photographs following. (Aug. 1, 1957, Aug. 2, 1957, Aug. 4, 1957, Sept 1, 1957.)  
 Specimens in photos can be matched with actual specimens in the collection. (see color slides 570730-50; 570801-1; 570801-2; and 570901-1 for photos of some of these artifacts)



photo 570904-1



Photo 570904-2





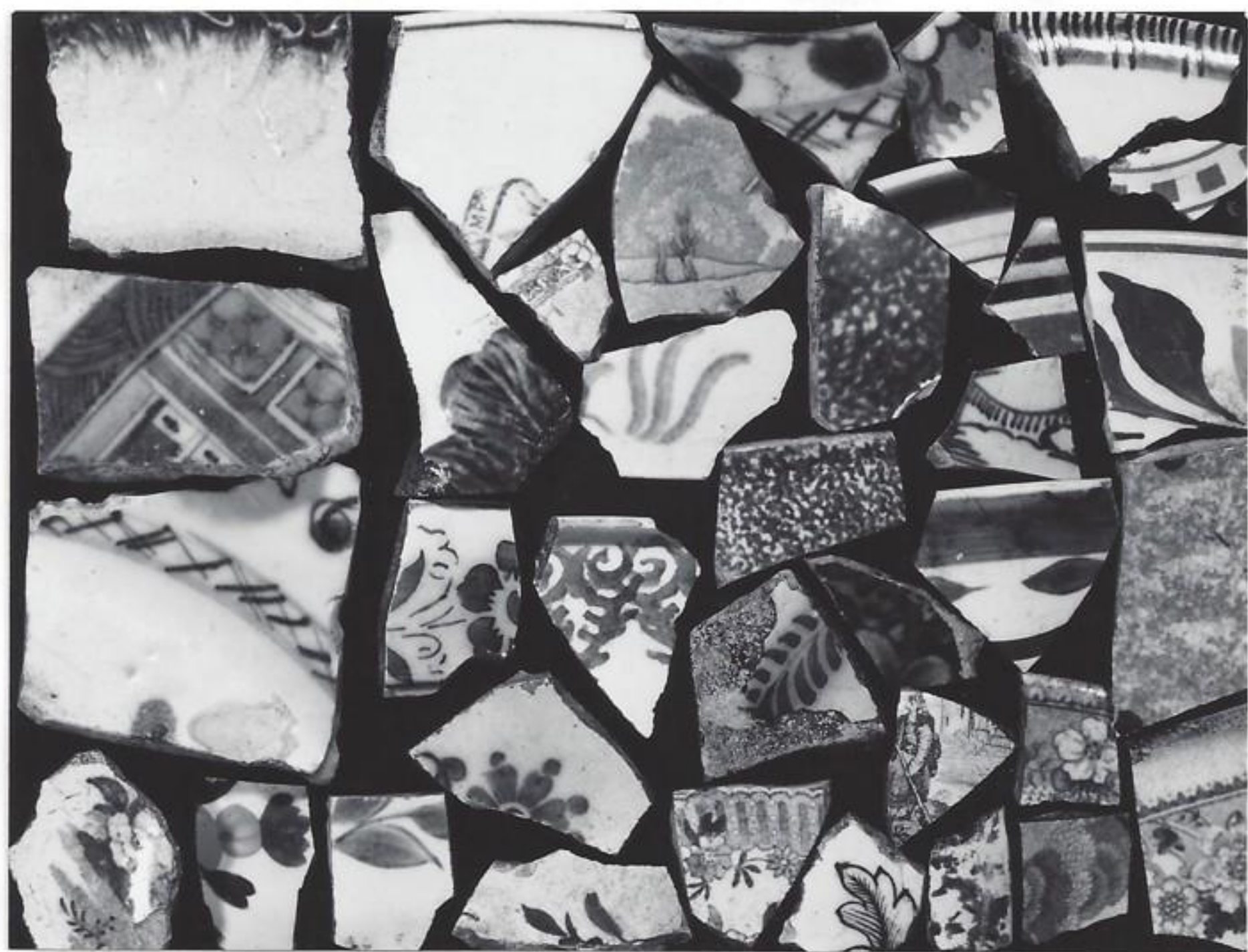








*photo 570904-3*



*photo 570904-4*

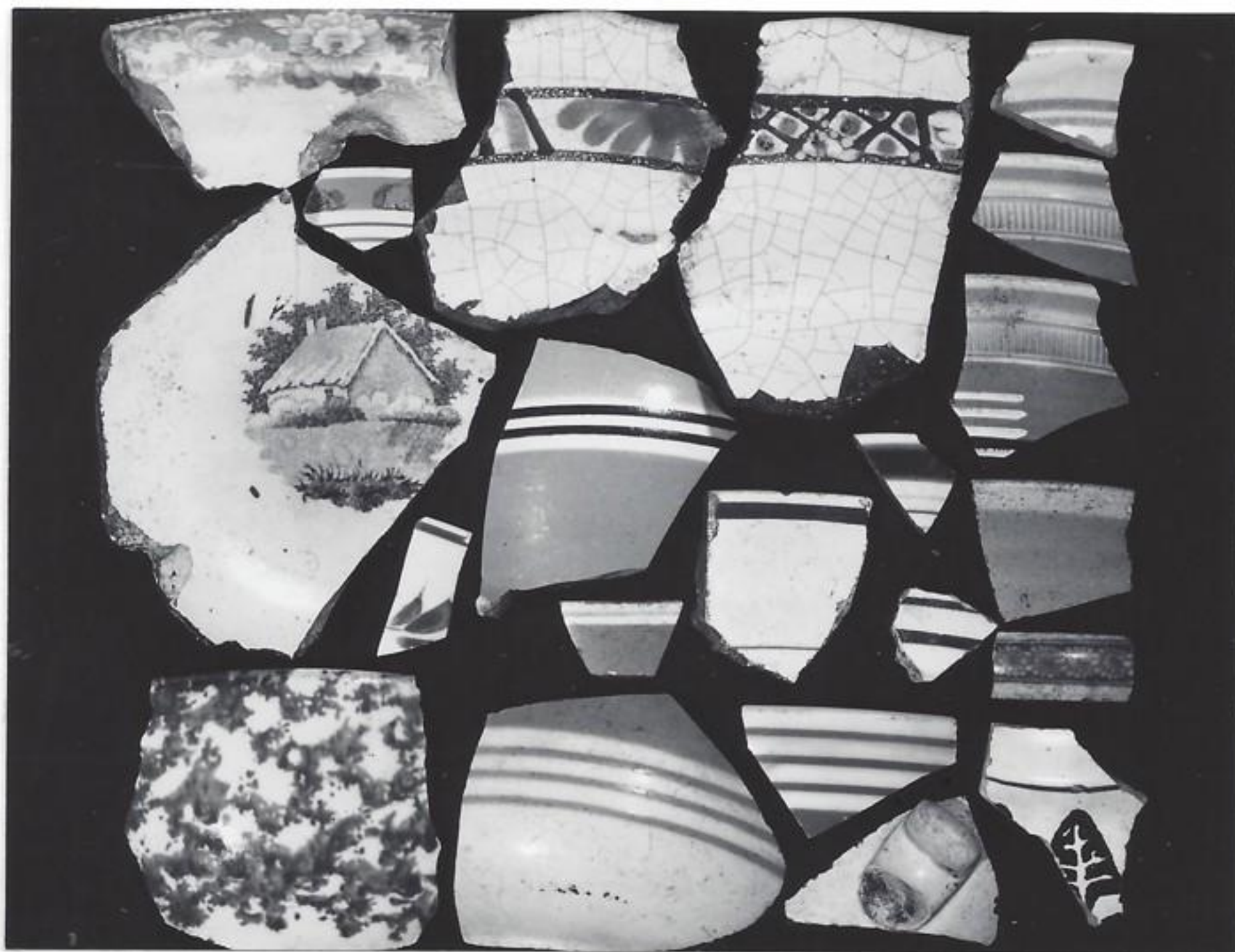












*photo 570904-5*



*photo 570904-6*













photo 570904-7



photo 570904-8













*photo 570904-9*



*photo 570904-10*













photo 570904-11



photo 570904-12



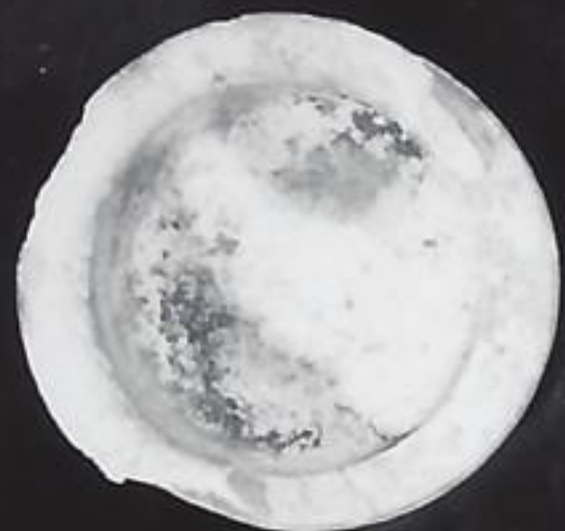
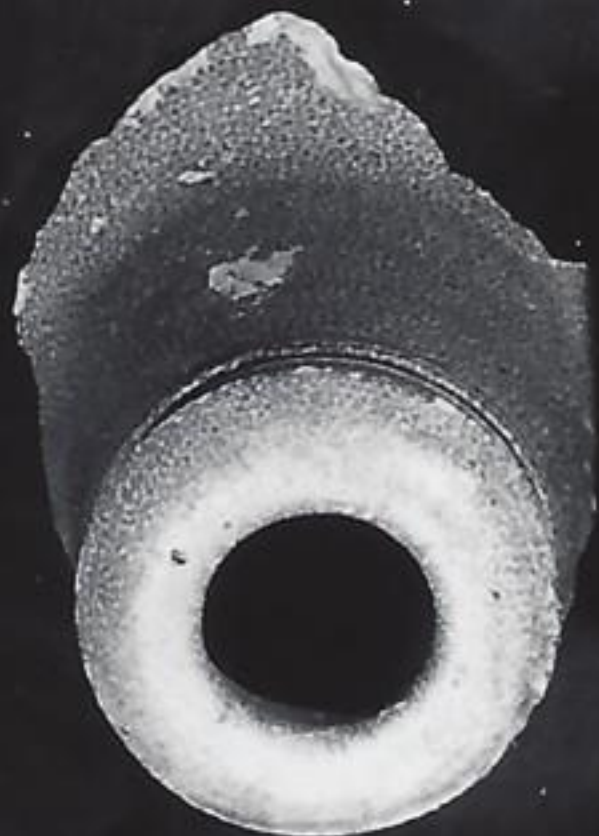
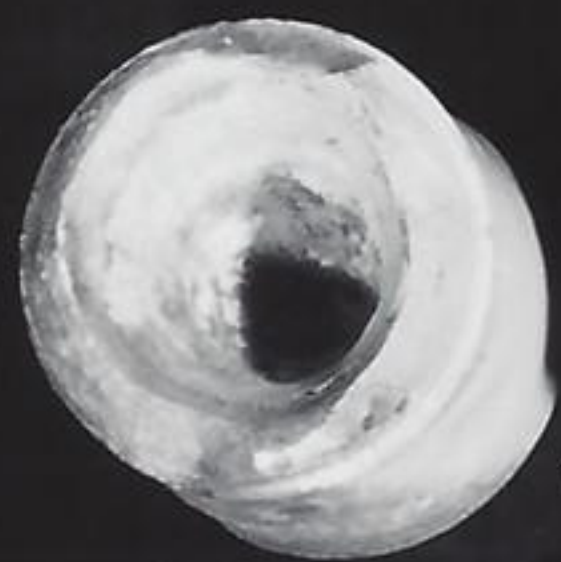










photo 570904-13



photo 570904-14







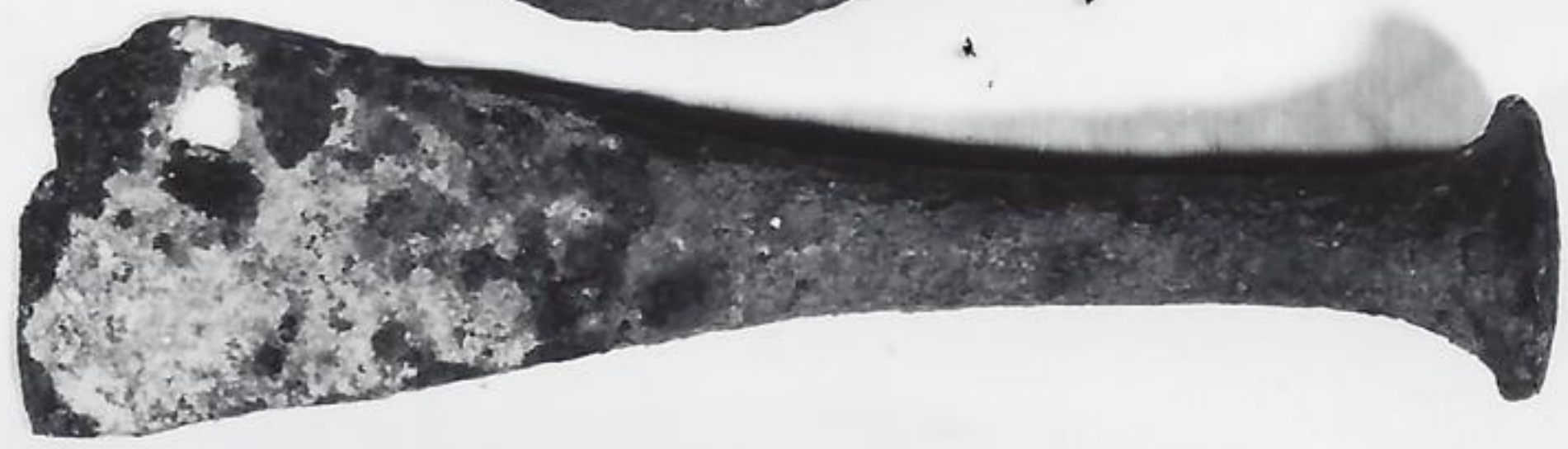






photo 570904-15

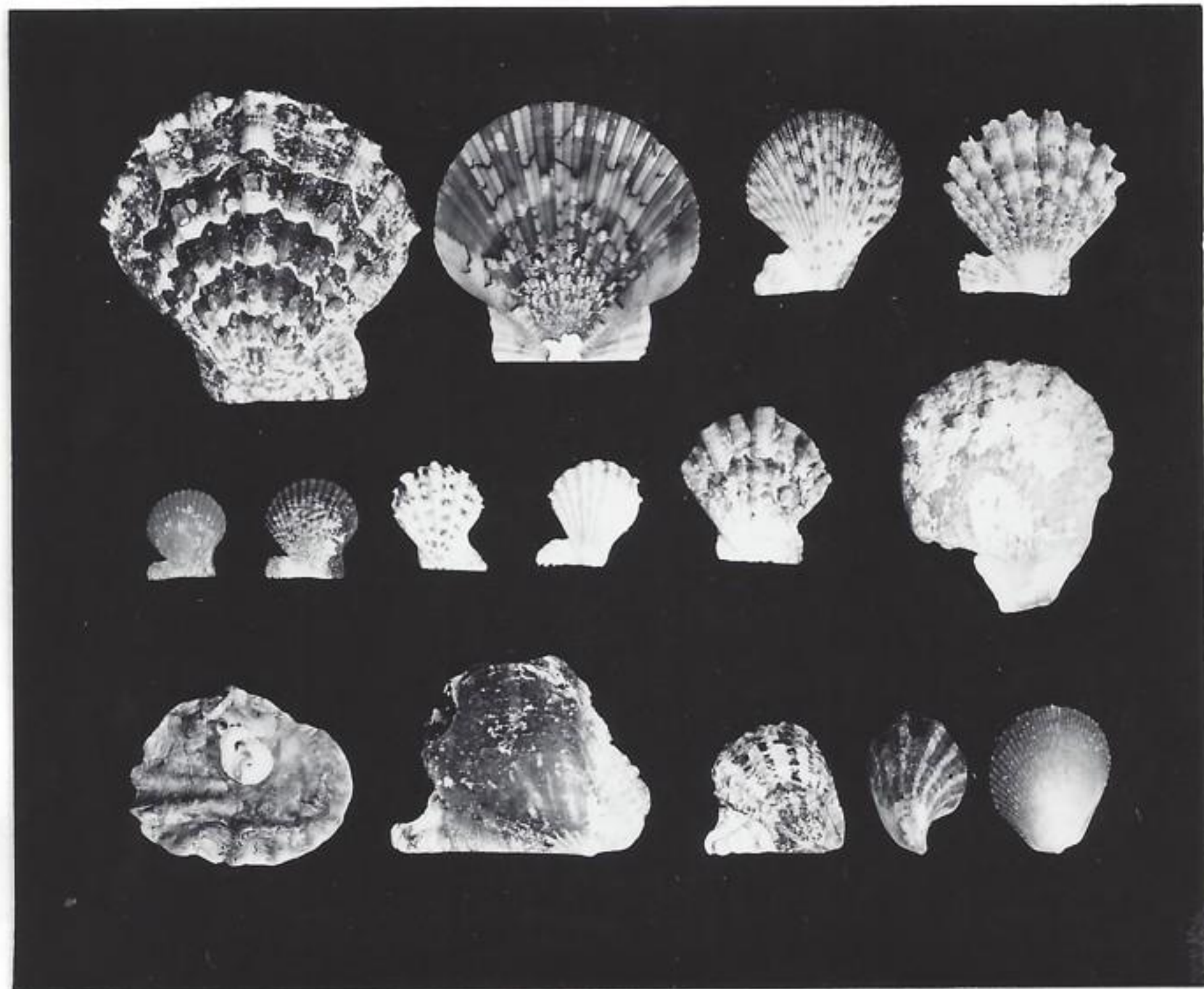




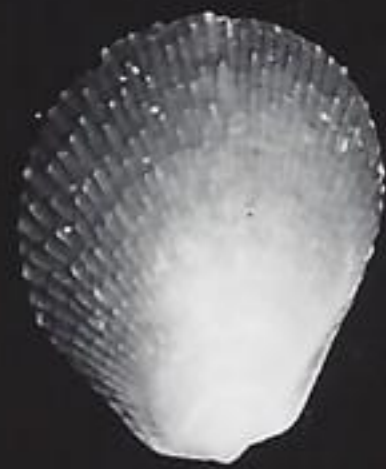
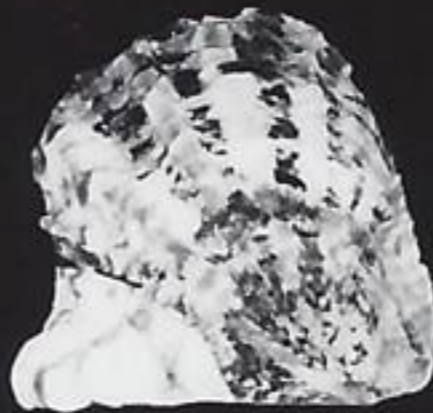


Lameshur Bay, St. John Island, Virgin Islands. The following photographs are shells & coral from the shores and beaches of Lameshur Bay which is the only locality represented. It would be interesting to sample this bay 20 years from now for comparison. (see page 140 for number of color photo of conch. Also page 59 for field numbers of other color slides;

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570728-17  
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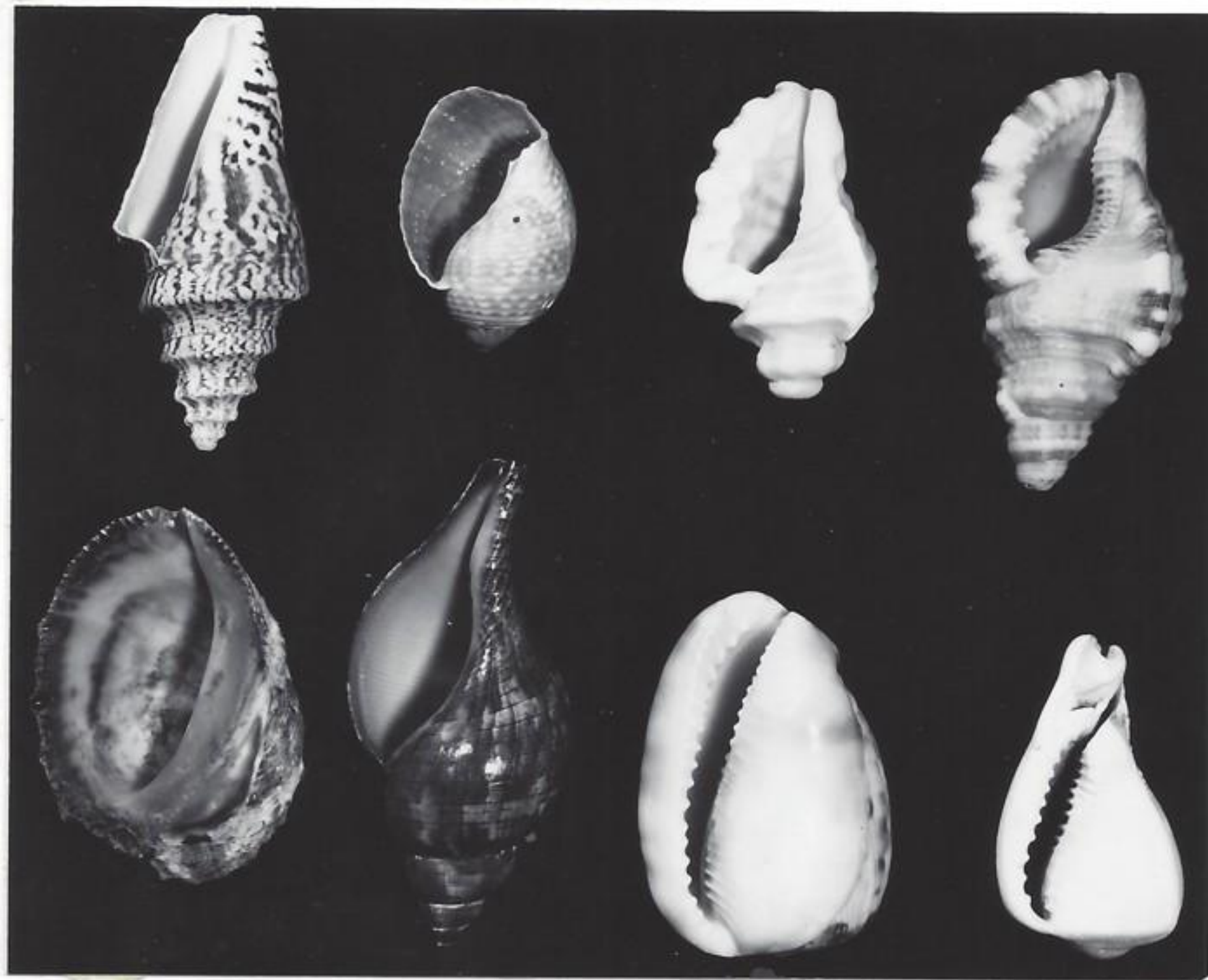




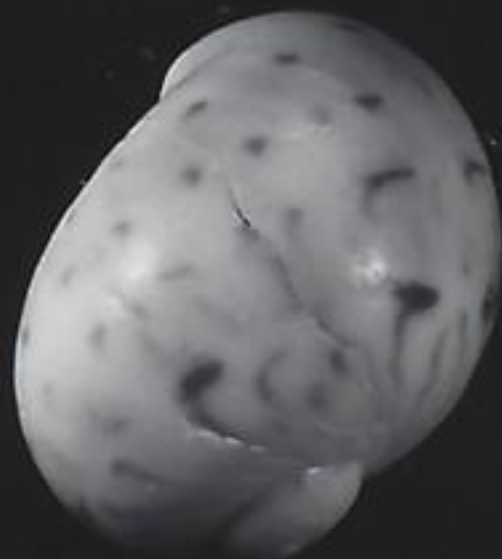
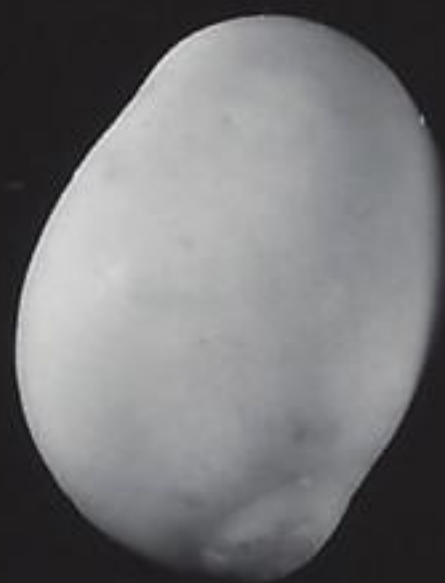
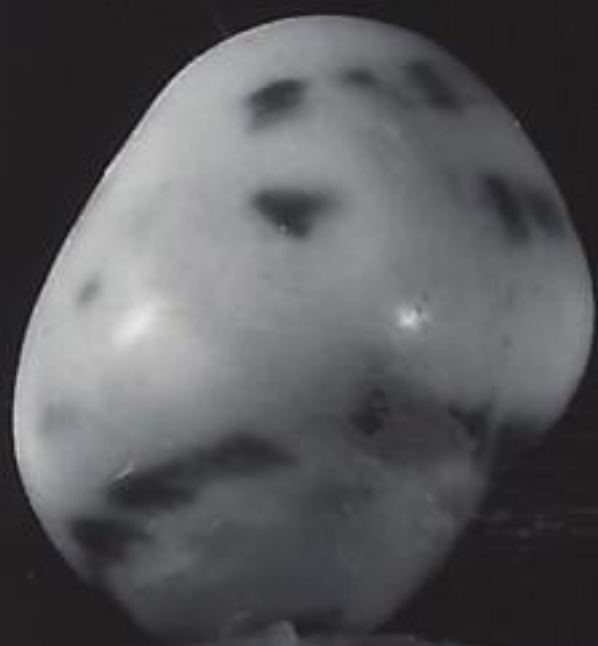
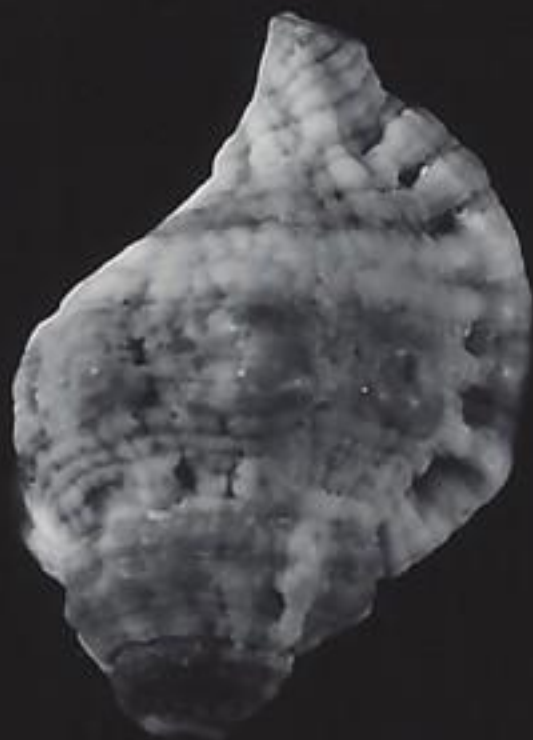




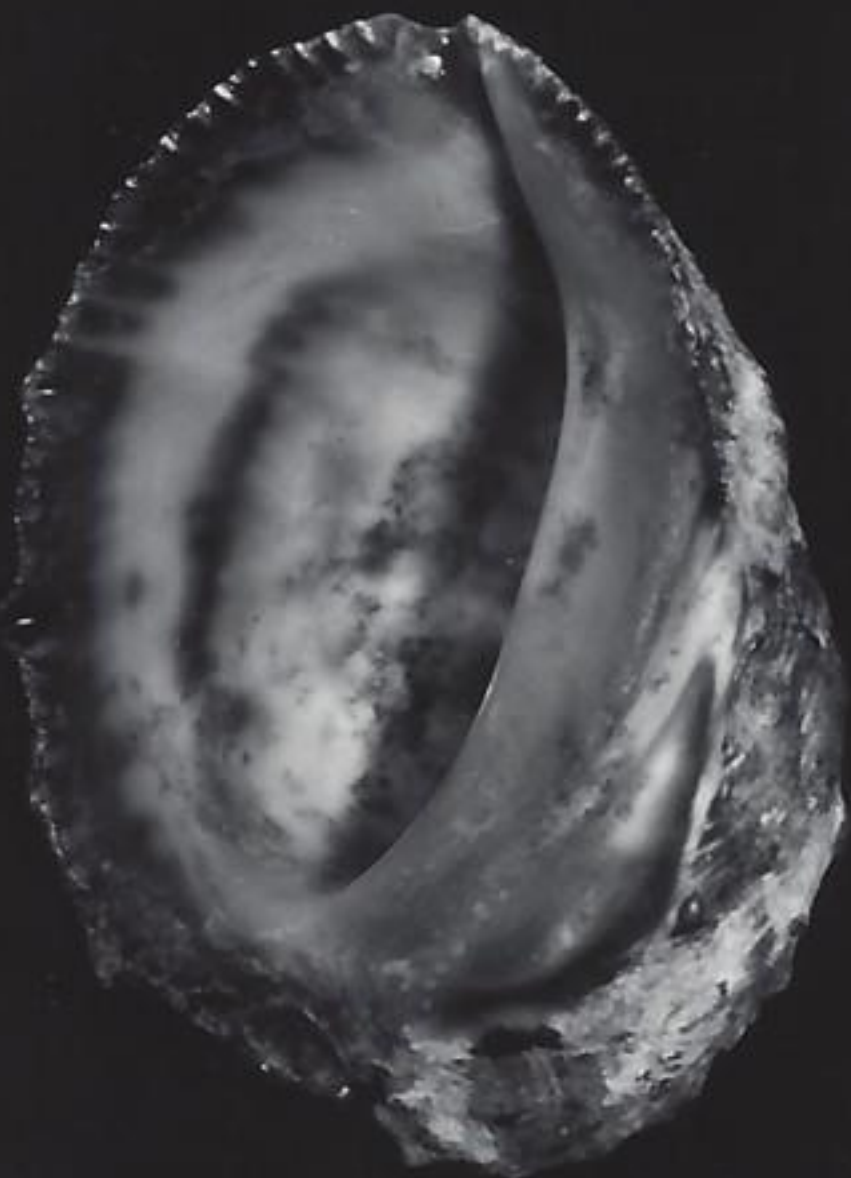
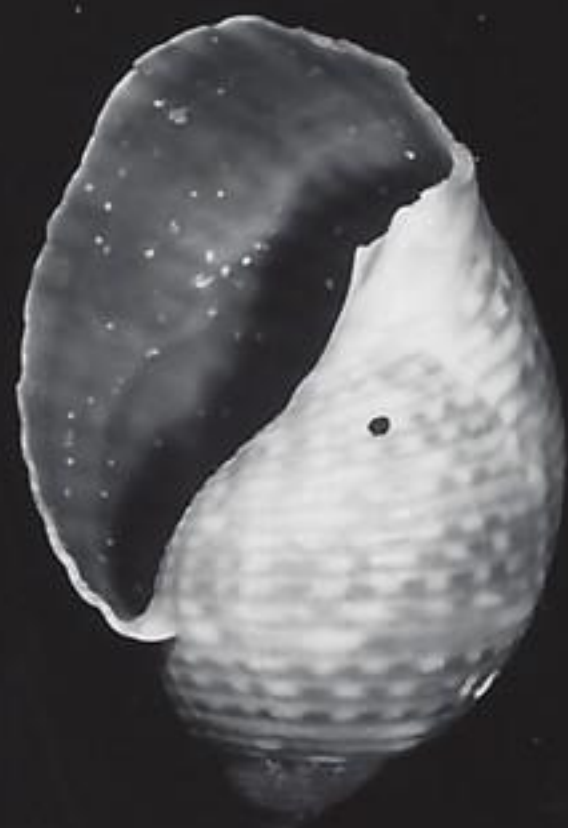




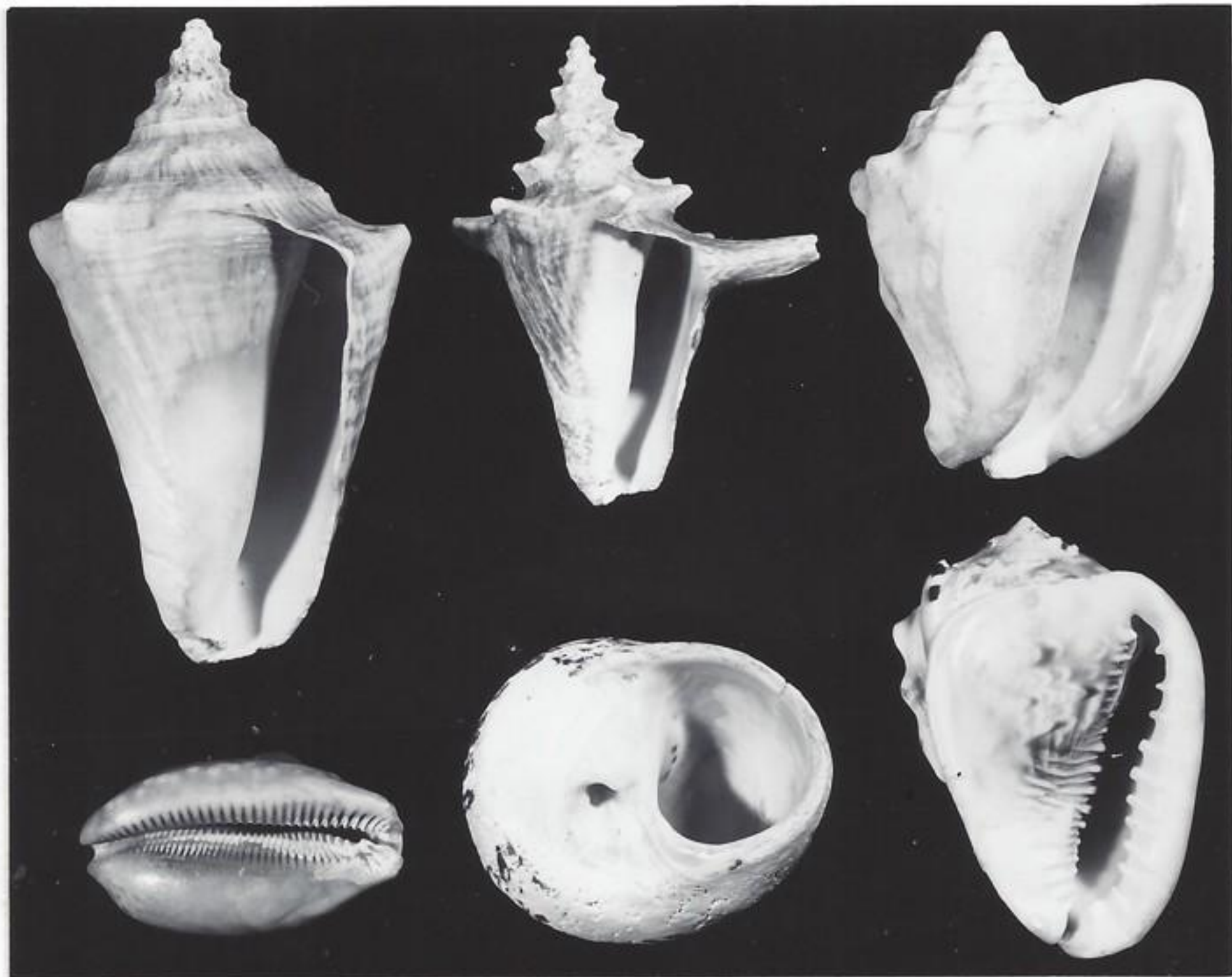




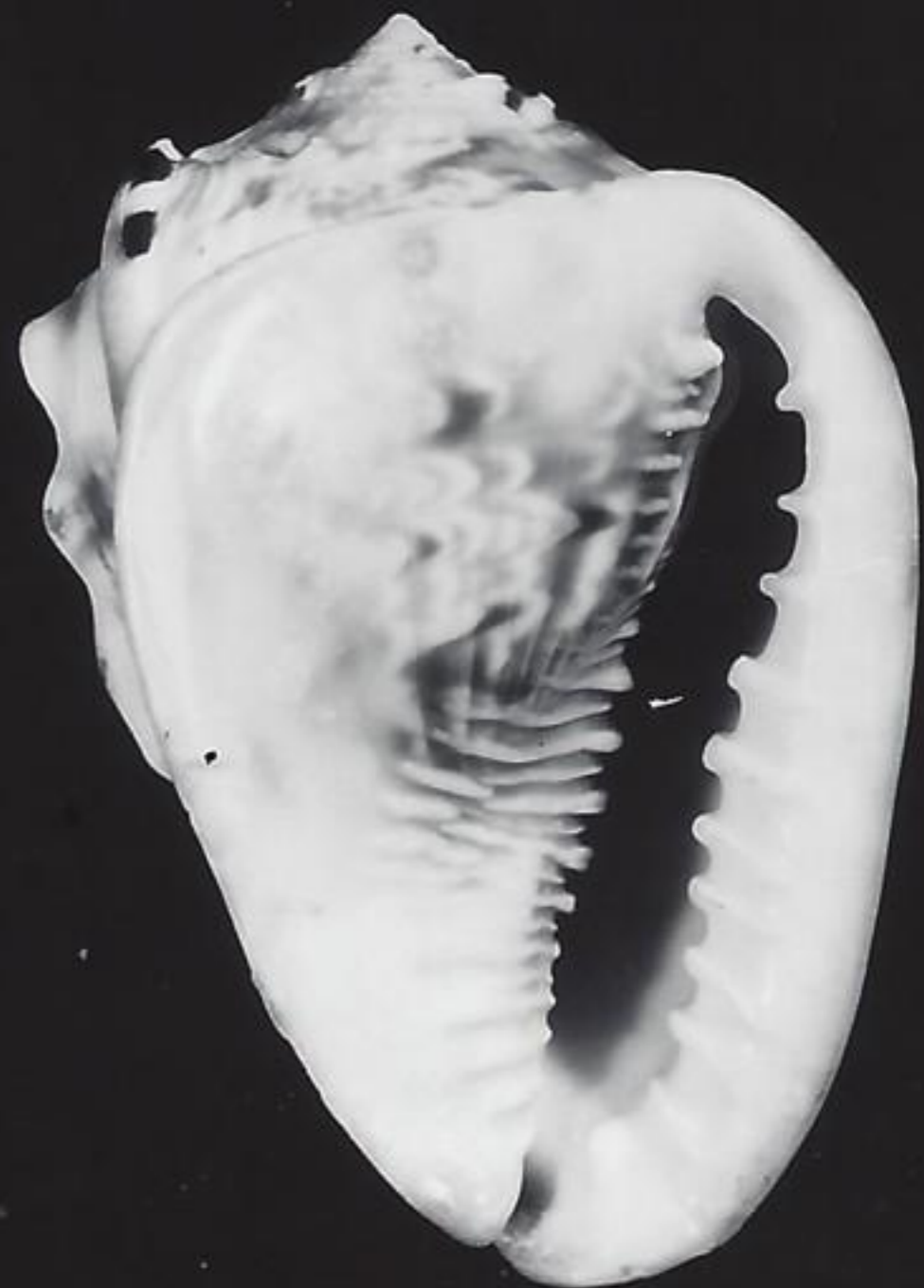
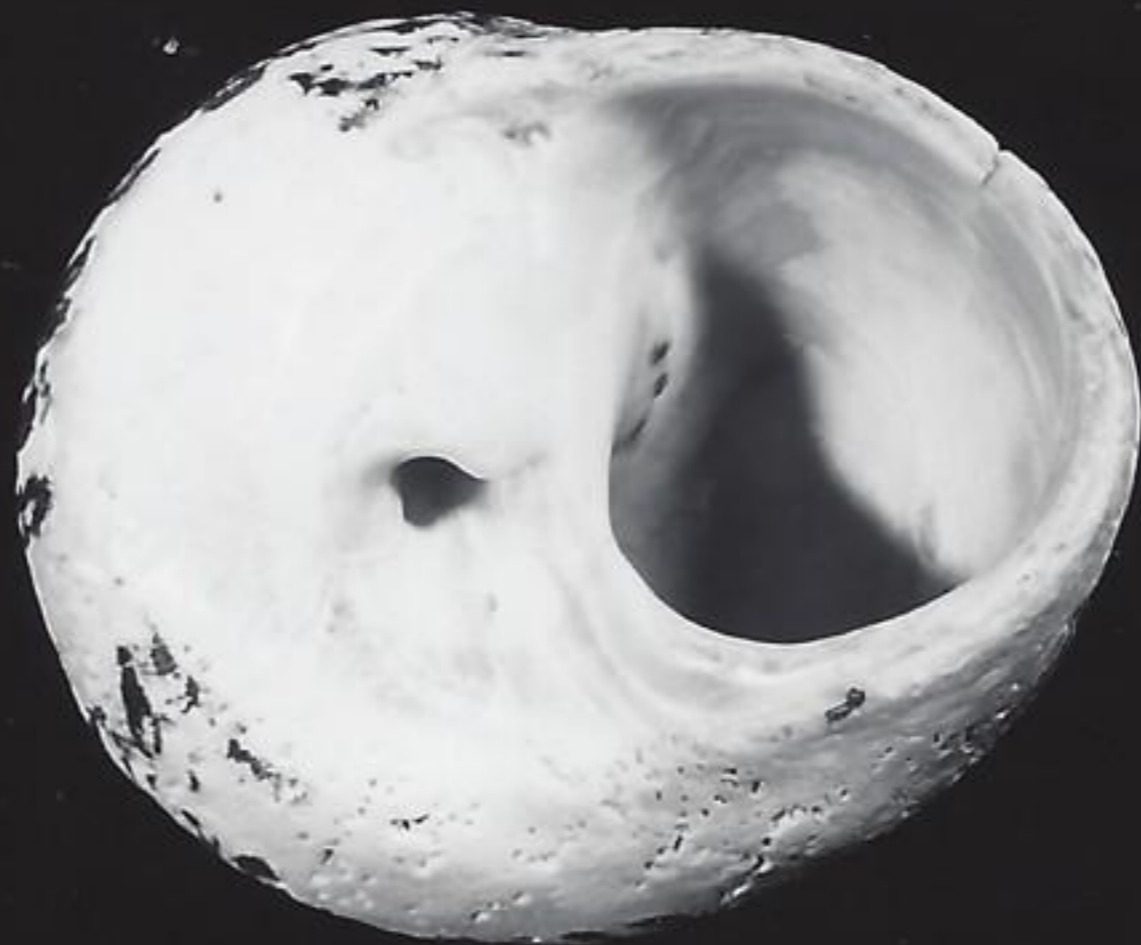








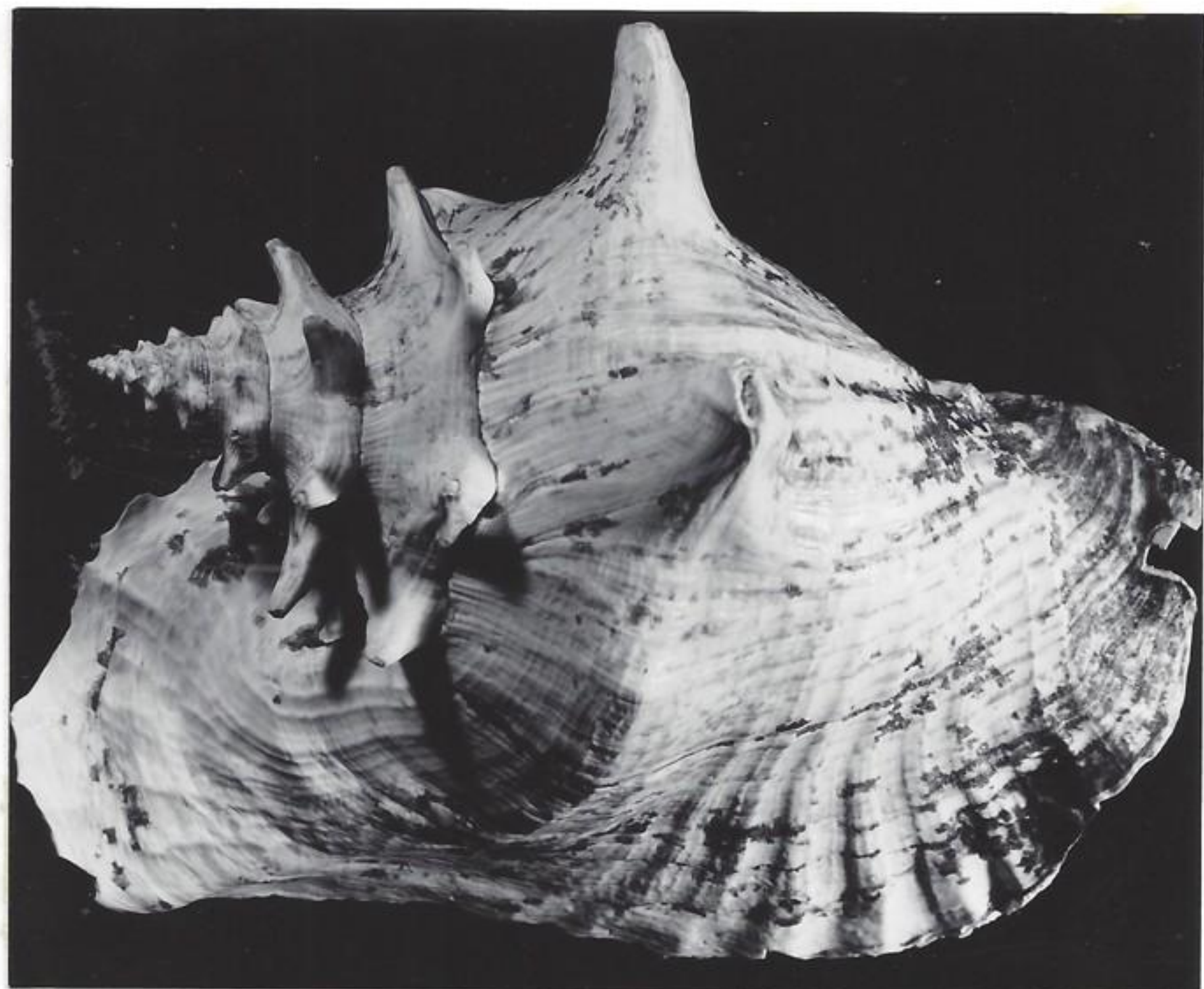












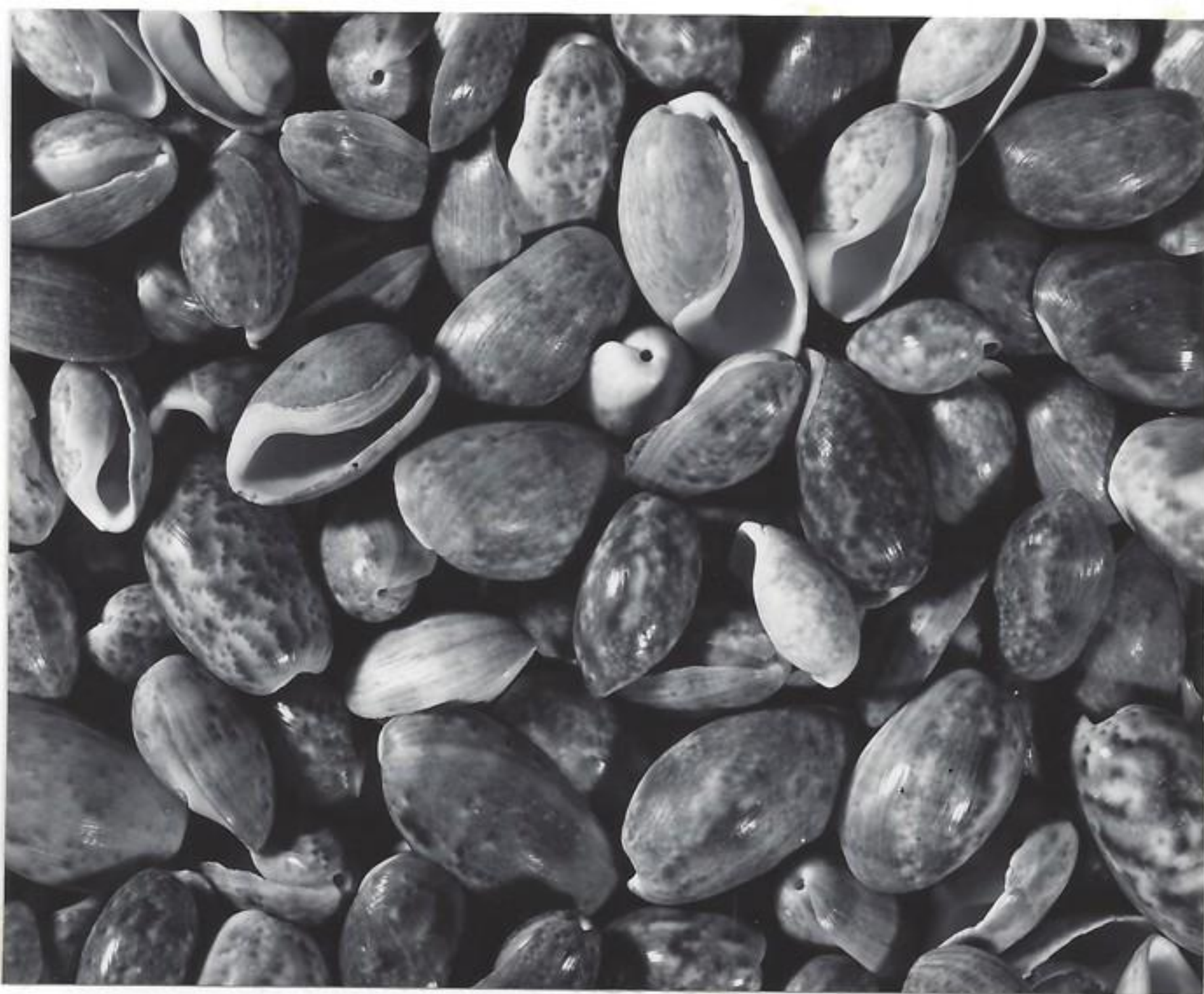












*The above is complete sample from n beach of Lameshuv Bay.*



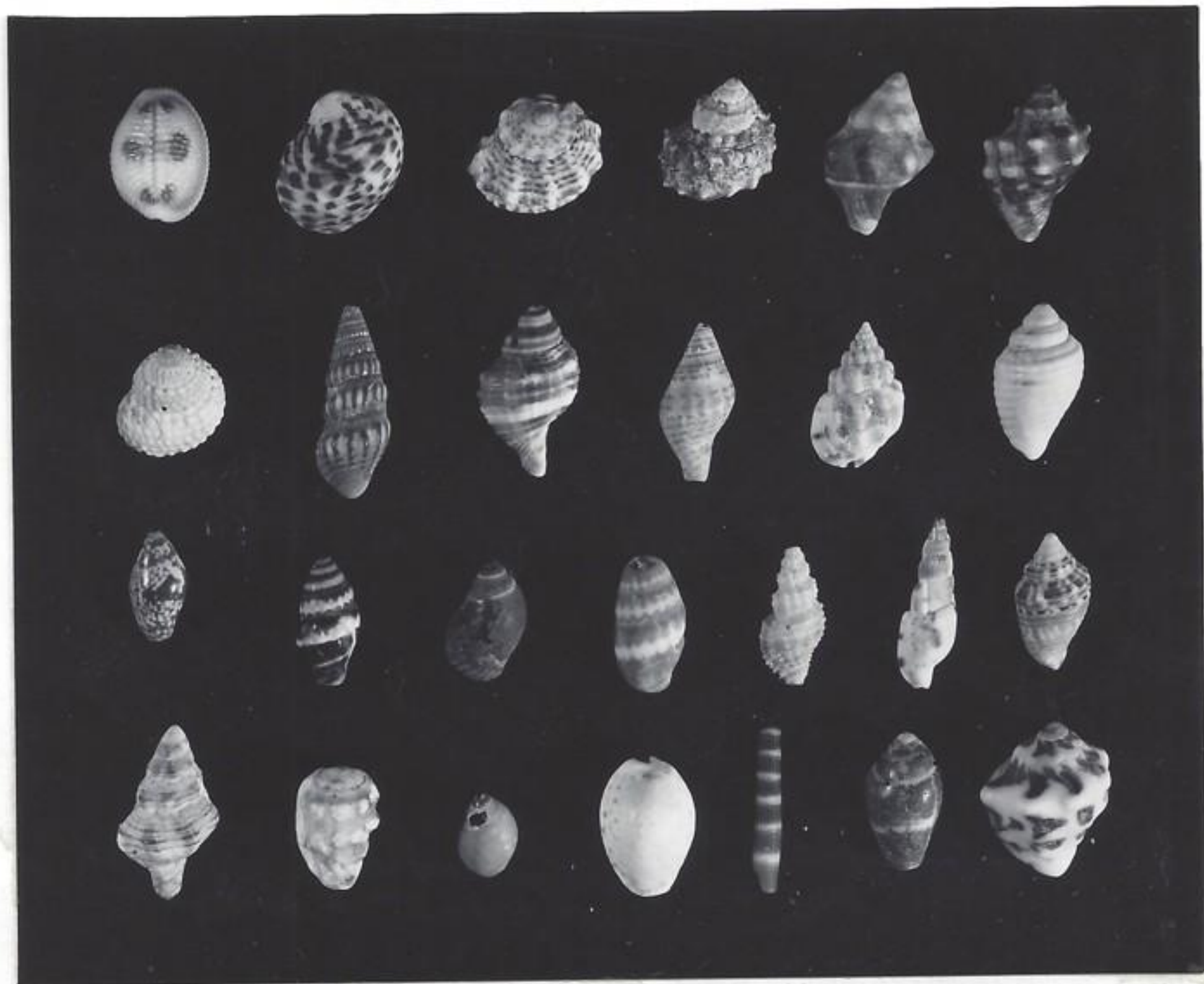




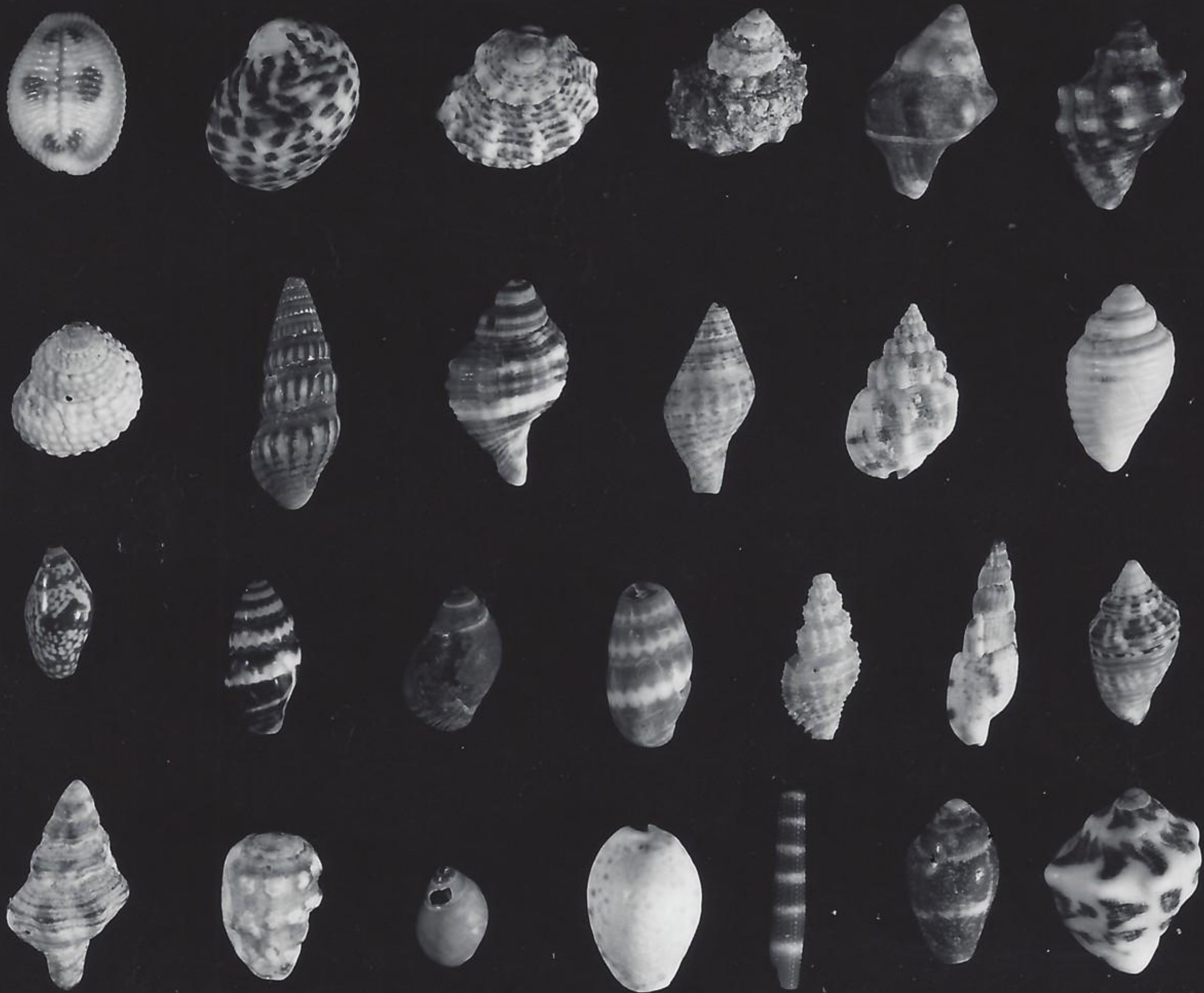












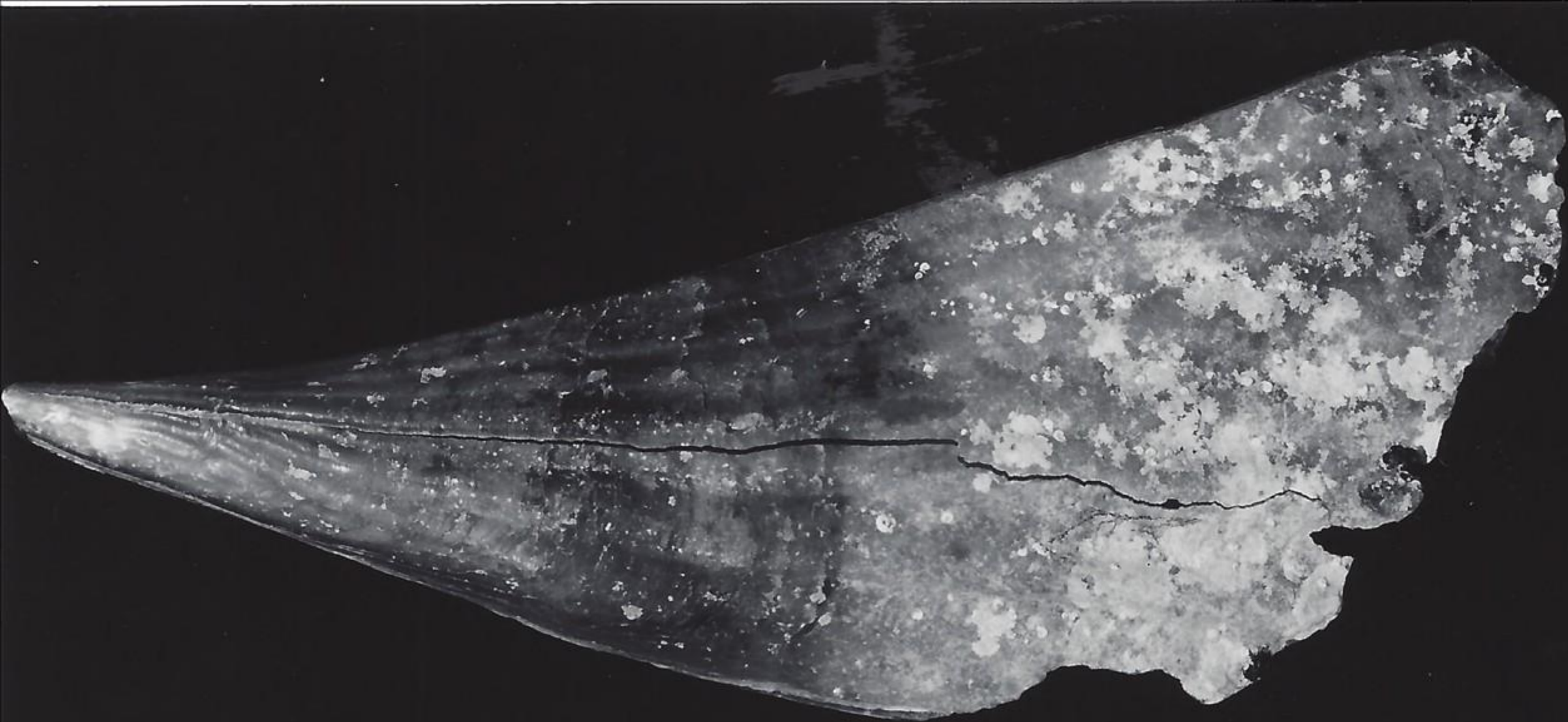








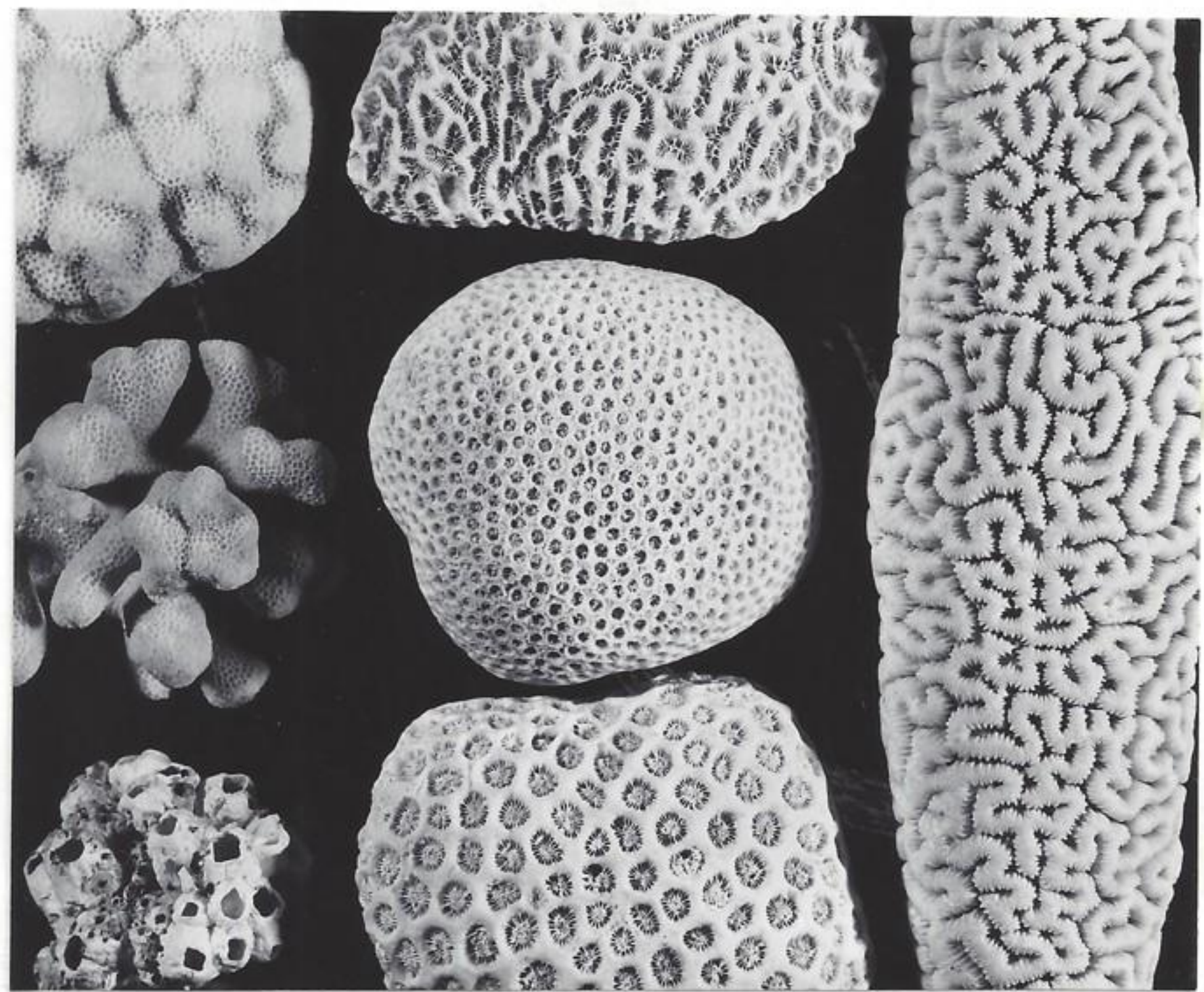
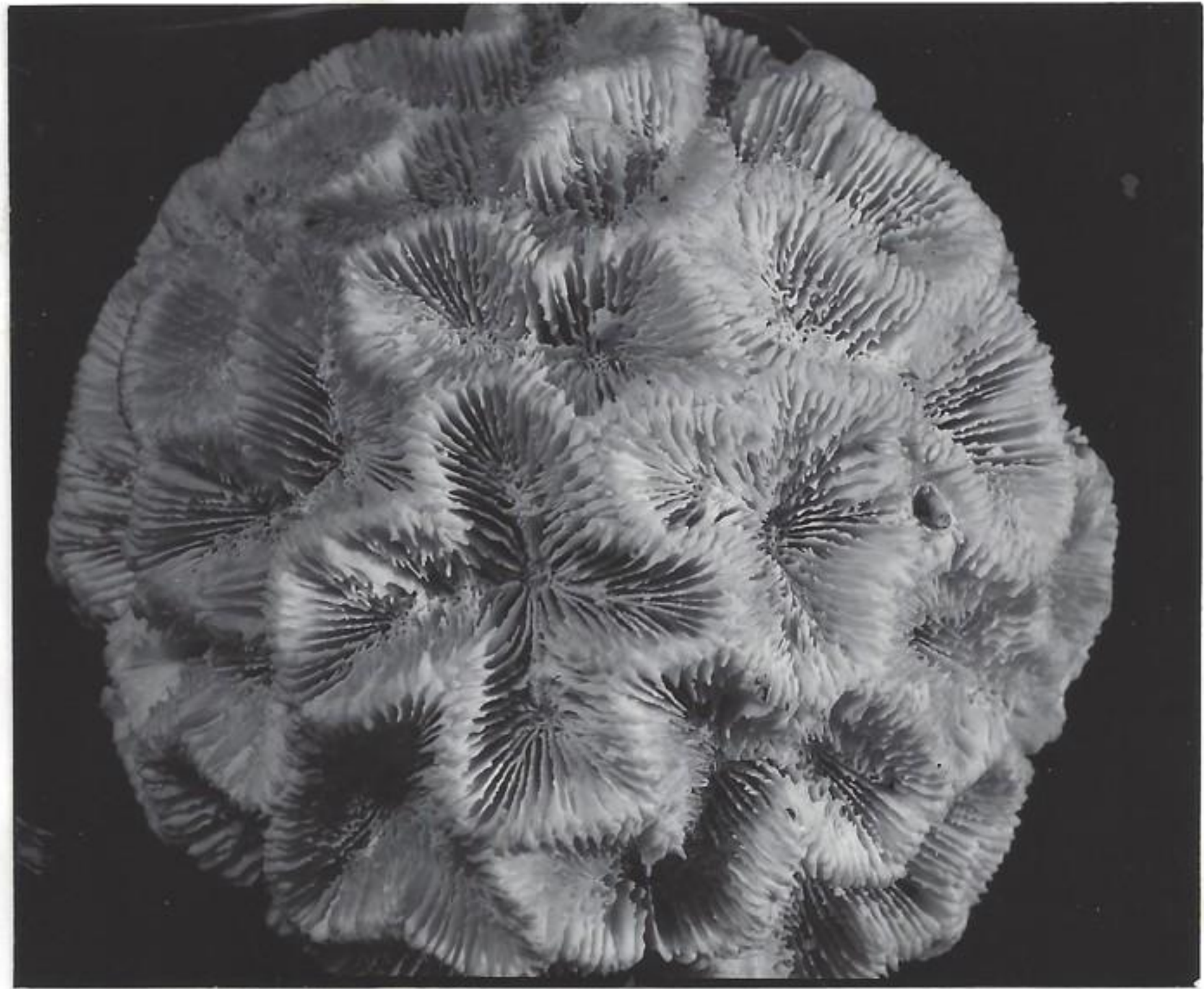




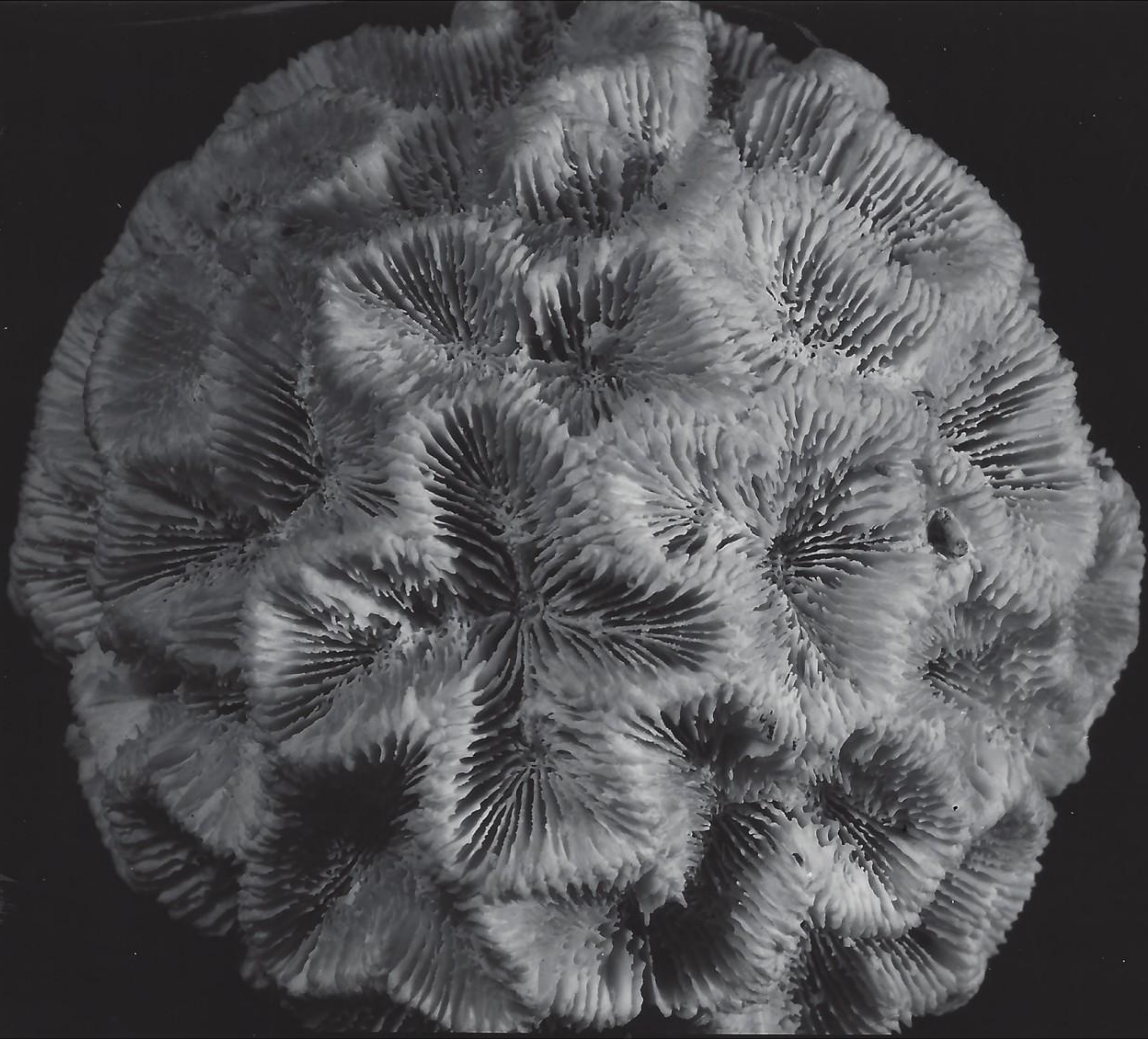




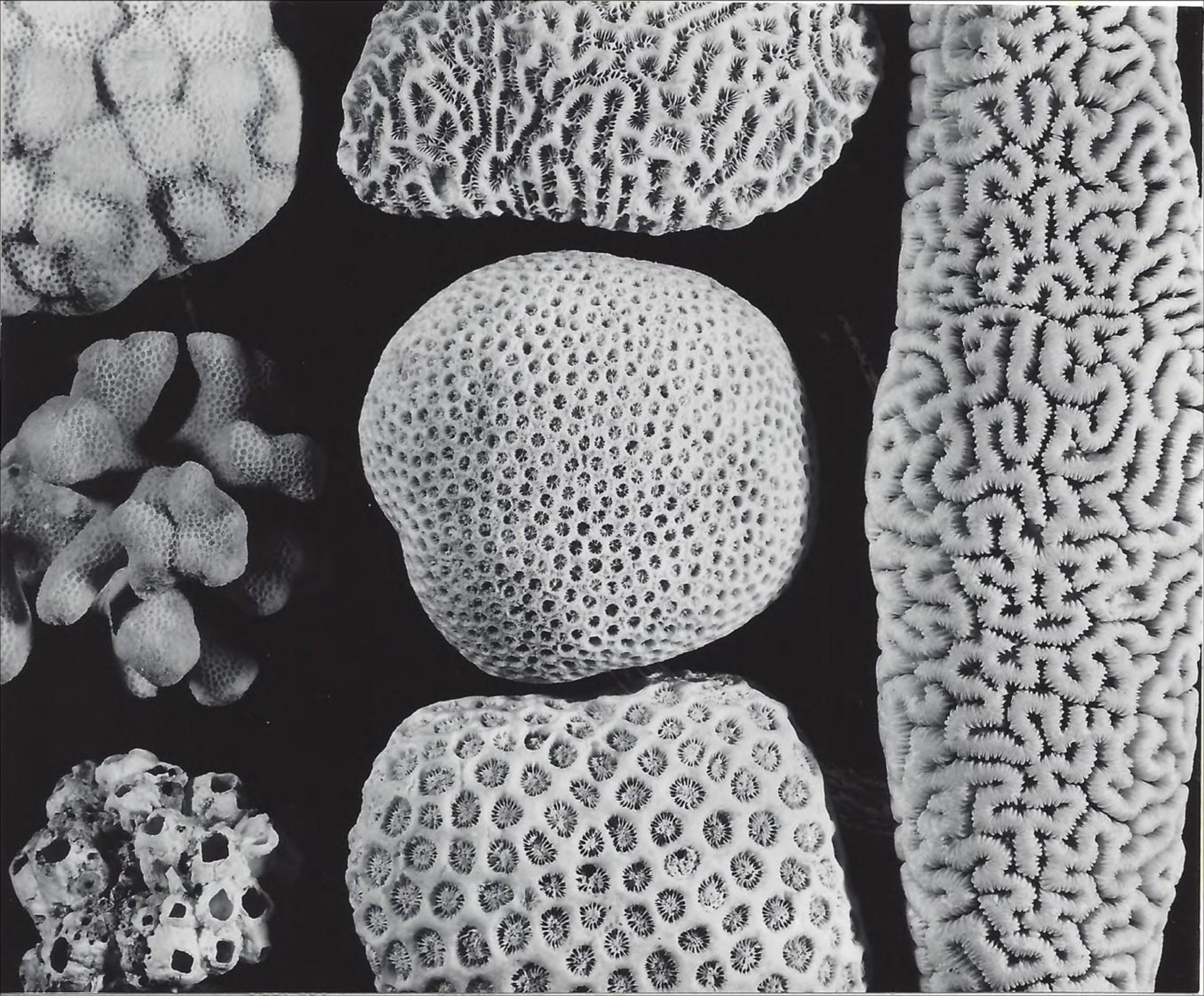




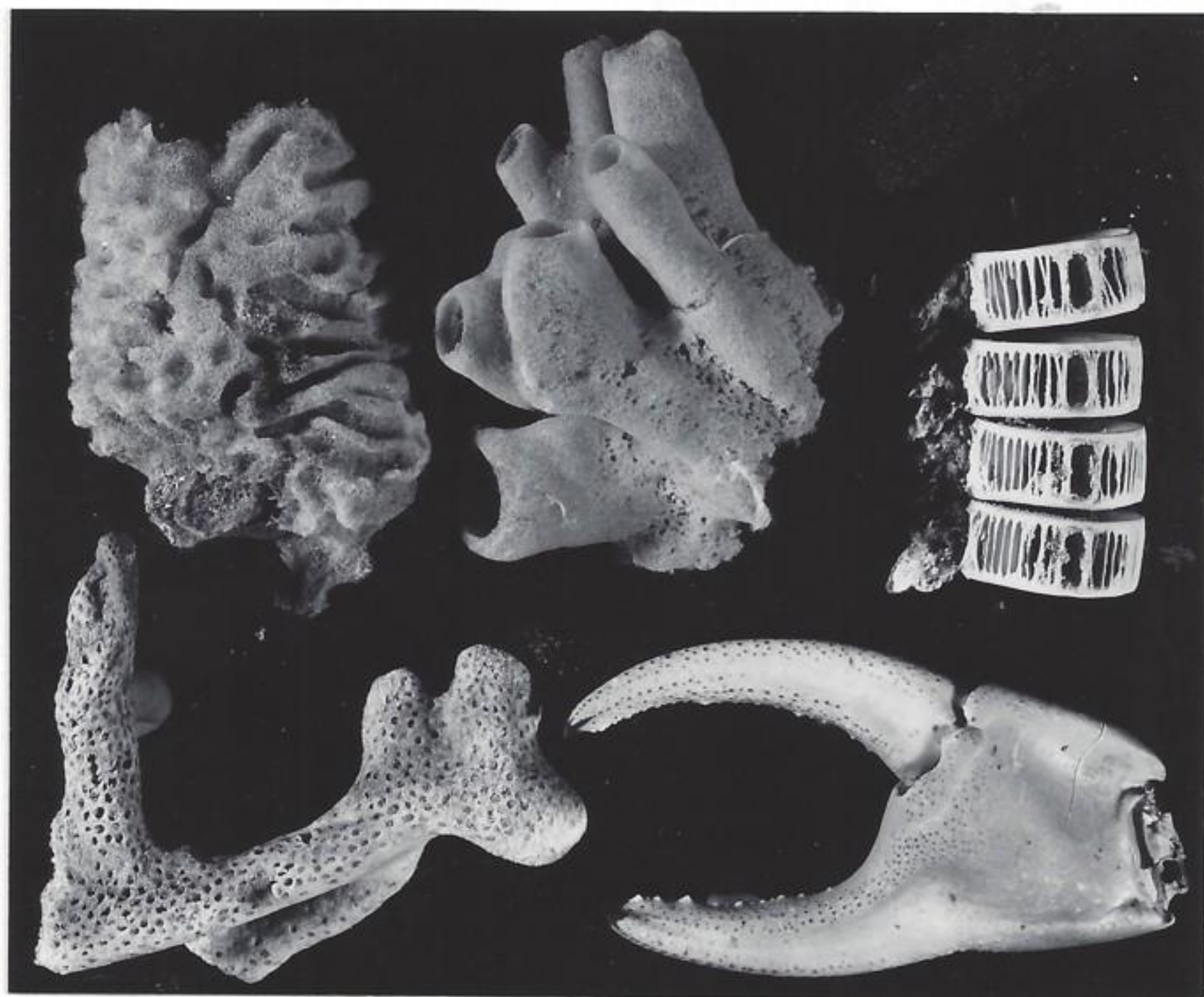
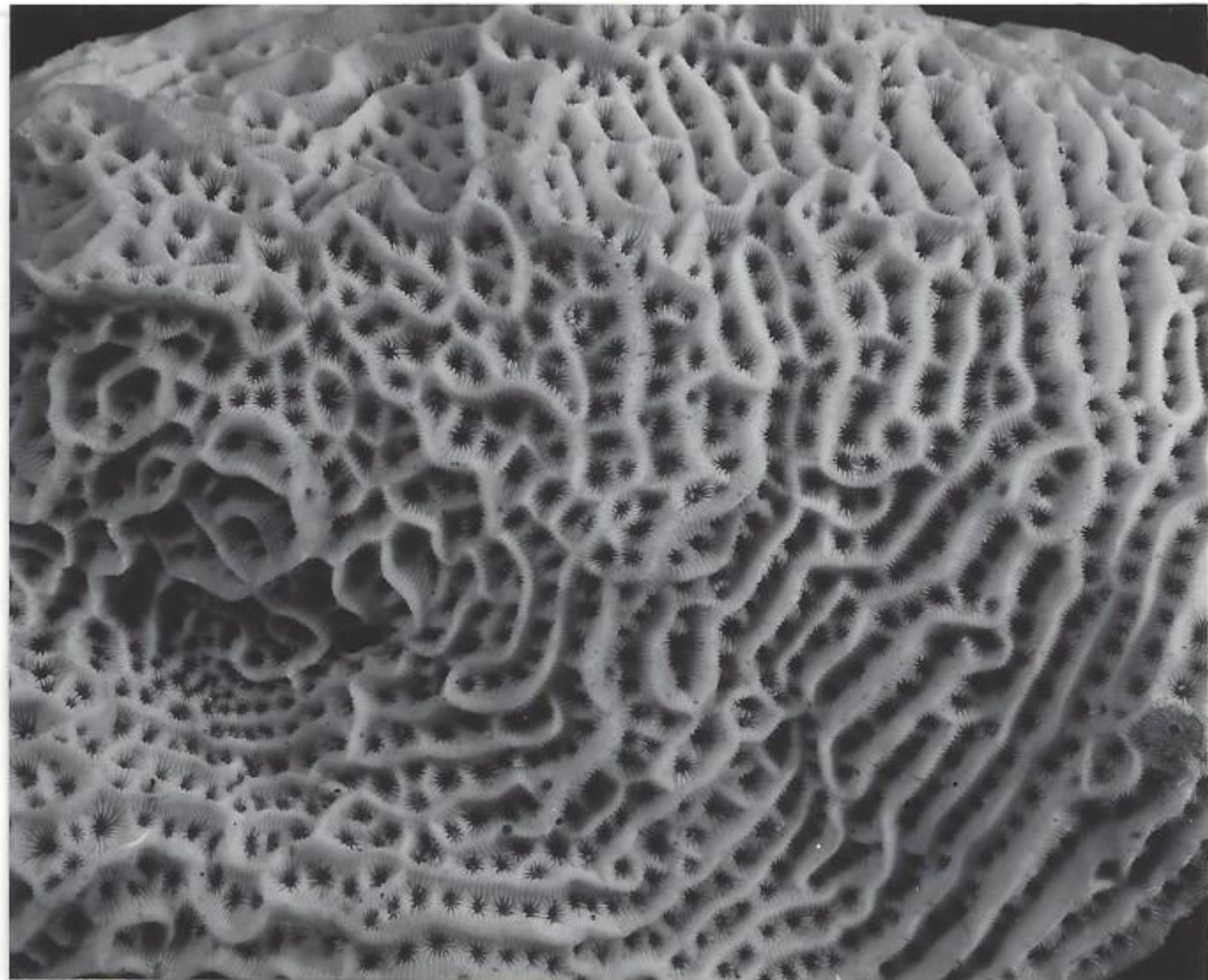






















UNITED STATES NATIONAL MUSEUM  
BUREAU OF AMERICAN ETHNOLOGY  
ASTROPHYSICAL OBSERVATORY  
NATIONAL AIR MUSEUM  
NATIONAL ZOOLOGICAL PARK



SMITHSONIAN INSTITUTION

*Washington 25, D.C.*  
*U.S.A.*

NATIONAL GALLERY OF ART  
NATIONAL COLLECTION OF FINE ARTS  
FREER GALLERY OF ART  
INTERNATIONAL EXCHANGE SERVICE  
CANAL ZONE BIOLOGICAL AREA

November 29, 1957

**RECEIVED**

DEC 2 1957

Ref'd to.....  
Ans'd By.....  
Date.....

Dr. E. Raymond Hall  
University of Kansas  
Museum of Natural History  
Lawrence, Kansas

My dear Hall:

Perrygo has given me the 40 bird skins brought on by hand from Lawrence, and I return herewith the first copy of the loan receipt for your records. I see no particular difficulty in making the identifications.

In connection with your letter of November 25, I note Mr. Bee's statement relative to the Yellow-crowned Night Heron. As the specimen is described as having the bill much larger than those from the continental United States, I presume it should be identified as Nyctanassa violacea bancrofti Huey. For a description of this bird, see Wetmore, Smithsonian Misc. Coll., vol. 106, no. 1, Aug. 5, 1946, pp. 16-18. I am sure you have this publication in your files.

I have checked through the other species of large birds that were not forwarded and see no necessity for examining them since the names applied in your letter appear to be appropriate. I will give you the identifications requested presently.

Mr. Perrygo has returned filled with enthusiasm with what he has seen at our old K.U. Museum. I am sure that his visit there will be of profit in connection with our own program. Thank you for the clipping regarding him from the Journal-World.

Sincerely yours,

*A. Wetmore*  
A. Wetmore

Research Associate



UNIVERSITY OF KANSAS  
MUSEUM OF NATURAL HISTORY  
Lawrence, Kansas

January 15, 1958

Mr. Ben H. Thompson, Chief  
Division of Recreation Resource Planning  
National Park Service  
Washington 25, D.C.

My dear Mr. Thompson:

The following information is sent in response to your letter of January 8, 1958, to Dr. E.R. Hall, requesting additional information on why nine islands (or parts of islands) should be included in the Virgin Islands National Park, and supplements my report of December 31 and Dr. Hall's statement of that date. The islands you list are as follows:

Dog Island	Great Thatch Island (British)
Little St. James Island	Southwest end Tortola
Great St. James Island	Peter Island
East end St. Thomas Island	Norman Island
Thatch Island	

GENERAL STATEMENT

Biological considerations: St. John Island alone, is not large enough successfully to maintain several species of birds in their natural and normal numbers; these birds depend in part upon adjacent islands and cays for their complete biological support. Adequate size of biological area is particularly important to St. John Island in times of unfavorable climate and at times when low points in cyclic fluctuations occur in populations. Hurricane damage, for instance, could reduce certain animal populations on that small island to so small a number that the species might not survive. Protection of the biota on one small island does not guarantee perpetuating wildlife; it could be destroyed by natural forces.

Areas of adequate size for nesting, resting, and feeding are necessary in maintaining normal numbers of marine birds, especially colonial species. Some of these have a minimum threshold of numbers prerequisite to successful rearing of young. The brown booby is an example. Colonies too small result in ineffective breeding. Although many of the islands and cays are not, at present, extensively used by marine birds, it is believed that under natural conditions, they would be and that they would support the normal complement of colonial nesting birds. ~~Povungo~~ <sup>Conigo</sup> Island, for example, formerly was used extensively for nesting by the brown pelican. Now approximately 700 pelicans rest on the island at night but only a few breed there because man has disturbed them.



Mr. Ben H. Thompson

Page 2.

January 15, 1958

Animals and plants that are compelled to remain on small insular units can become unnaturally modified by gene action.

In addition to outlying islands acting as modified buffer areas, they all serve as parts of an important corridor permitting natural evolution by dispersal in animals and plants. Lakes and ponds of brackish water on the outlying islands are needed by the several shore-birds and water-birds that inhabit the general area of the park. Control of marine waters enclosed within the proposed park boundary permits effectively controlling boat traffic and only then can adequate sanctuaries be created for the three species of marine turtles and other wary forms of marine life.

Esthetic considerations: The island and cays adjacent to St. John complement the Virgin Islands Park and are necessary in creating the desirable background of remoteness and primitiveness.

Political considerations: The creation of an international park by Great Britain and the United States would be a further useful example of international cooperation.

#### STATEMENT ON INDIVIDUAL ISLANDS

Dog Island supports the best examples of vegetation adapted to exist under strong desiccating winds and supports the most extensive field seen of barrel cactus (Cactus intortus). Many hummingbirds from nearby Little St. James Island visit these cacti to feed on the cactus nectar. During our short stay on this island, 11 different kinds of water and shore-birds utilized the brackish pond. This island supports also a bat cave and has more 'character' than any other island of equivalent size. Most of the island can be visited on foot.

Little St. James Island has the best stand of the poisonous manchineel tree; the entire north beach is lined with an uninterrupted stand of these interesting trees. The coral beach superimposed on the sandy beach, although recently disturbed by excavation for commercial sand, and the calcareous tufa along the water level of the beach is unusual. One old Danish site adds interest to this island.

Great St. James Island has three brackish ponds used by many kinds of water-birds and shore-birds. Because brackish and fresh-water ponds are important bird habitat and because there are but few ponds in the National Park area, they would serve as important breeding and feeding areas. This island is one of the most favorable areas for snakes.

East end of St. Thomas Island is needed for preserving native species the individuals of which normally range from this island to, and east of, St. John. A freeway for natural animal and plant dispersal is essential for the preservation of the natural plant and animal communities on St. John Island. In the foreseeable future, visits to the Virgin Islands National Park (St. John) will



Mr. Ben H. Thompson

Page 3.

January 15, 1958

be by reservation. Parts of St. Thomas and Tortola will provide the most of the accommodations for visitors to the Park. Having parts of these two islands in the Park will permit more visitors to see at least some of the park area in an unspoiled condition. If the east end of St. Thomas Island becomes part of the National Park, hotel accommodations and National Park headquarters should be outside of the National Park boundaries.

Thatch Island is an important stepping stone for animals moving between St. Thomas and St. John Island, and also is picturesque.

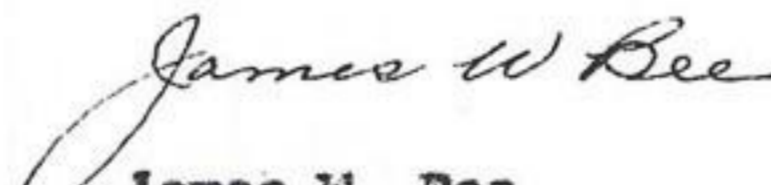
Great Thatch Island is used by many animals that live part of the time on St. John. Because of its proximity to St. John Island, Great Thatch Island is desirable as a scenic background.

Southwest end of Tortola, if commercialized, would destroy the 'atmosphere' of remoteness and primitiveness of St. John Island. This area of Tortola supports the last remnant of Virgin timber in the Virgin Islands and is a source of plant life for natural reintroduction on to the other islands. Also, this area is visited by many persons who otherwise would see little or nothing of any part of the Park.

Peter Island is included because commercialization there would be readily visible from St. John and would destroy the naturalness of the park area as seen by visitors. Also there is useful wildlife habitat on Peter Island.

Norman Island has the best caves for bats. Approximately 400 St. Vincent fruit-eating bats (Brachyphylla cavernarum) use these caves. These bats rest and breed in these caves and it is suspected that in the night the bats fly to St. John Island to feed on the many kinds of native fruits there. Other kinds of bats also use these caves. The marine fauna and flora is exceptionally interesting and colorful in the waters that form the floor of these caves. Marine waters surrounding this and other of the islands are important feeding grounds for marine vertebrates.

Sincerely yours,

  
James W. Bee



IN REPLY REFER TO:

L1417-R



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
WASHINGTON 25, D. C.

January 21, 1958

Dr. James W. Bee  
University of Kansas  
Museum of Natural History  
Lawrence, Kansas

Dear Dr. Bee:

I appreciate very much receiving your letter of January 15 with further information relating to the desirability of adding certain islands and portions of islands to the Virgin Islands National Park. This information is just the kind we need and we are indeed grateful to you for taking the trouble to make it available.

Sincerely yours,

A handwritten signature in cursive script that reads "Ben H. Thompson".

Ben H. Thompson, Chief  
Division of Recreation  
Resource Planning



## VIRGIN ISLANDS NATIONAL PARK

## Procedures, Observations, and Recommendations

James W. Bee

1957

From July 6, 1957 to September 4, 1957, with the assistance of William L. Cutter, an investigation was conducted in the Virgin Islands with the objectives of 1) ascertaining the kinds of living and extinct land vertebrates on St. John Island, 2) to discover whether its outliers preserved kinds of land vertebrates that are not now living on St. John Island because of the presence there of the mongoose and finally, 3) to obtain any other information that would be useful for the National Park Service and to science.

Evidence of species formerly living on St. John Island is essentially negative. The kinds of land vertebrates now inhabiting the island are included in the report.

Material collected in the Virgin Islands is sufficient to permit the following studies, each of which could lead to published reports:

1. Taxonomic variation, distribution, and habits of the amphibia and reptiles of St. John Island and its outliers.

2. List of fishes collected from Lameshur Bay, St. John Island, Virgin Islands.

3. Per cent frequency of mollusks in East Lameshur Bay, St. John Island, and a statistical treatment of the four most common forms (individual variation, growth curve, size versus weight of shell, age groups, significance of markings as adaptive survival).

4. A bat, Stenoderma rufum, from St. John Island, giving complete description of skin, skull, and habits and a review of the history of the species.



5. Key and description of bats of the genera Brachyphylla, Artibeus, Molossus, Tadarida, and Noctilio from St. John Island, Virgin Islands.

6. Similarities and dissimilarities between St. John Island and Puerto Rico in regard to suitability of habitat for subrecent forms.

7. Reconstruction of old Danish culture from surface artifacts collected on Little St. James Island.

Of the numerous individuals and organizations contributing to the efforts of the investigation, I wish to extend special thanks to Superintendent Harold A. Hubler and his staff of National Park personnel at Charlotte Amalie; to Mr. Vincent Mrazek and Mr. Elwood Shade, Chief Ranger and Naturalist, respectively, at St. John Island, and to Mr. Ewen MacFarlane and his staff at the Caneel Bay Plantation Resort. Mr. Laurance Rockefeller and family of New York City, through the Caneel Bay organization, offered substantial logistic support in investigating the numerous islands and cays adjacent to St. John Island. Professor E. Raymond Hall, Director of the Museum of Natural History of the University of Kansas, and principal investigator and one of the members of the original National Park Service group to appraise the new Virgin Islands National Park, negotiated and prepared all the initial plans preparatory to active field work.

#### GENERAL CONSIDERATIONS

The Virgin Islands National Park has many outstanding values, some of which are unique in the National Park system. The following are of significance and desirable for emphasis and are arranged by degree of importance.

1. Unique bio-geographical position, remoteness, and sanctuary for insular fauna and flora.

2. Wave action on sea cliffs (traditional setting for mental stimulation).



3. Natural function of marine communities (plants, invertebrates, fish, reptiles, birds, and mammals).

4. Beaches.

5. Land fauna and flora.

6. Geology.

7. Vantage points.

8. Climate.

9. Archaeology.

10. Historical sites and history.

Three land-marine classifications excluding maintenance and access areas are desirable for sustaining primitive conditions in the park. 1. Areas of biological necessity are essential for preserving natural community function and as places for breeding birds. Use of these areas by man (ranging from non-use to moderate use) should be determined by degree of tolerance of wildlife to unnatural molestation, especially tolerance of breeding birds at critical egg-laying or hatching time. Scientific research essential to the operation of the park should be relegated to areas of biological necessity, providing disturbance of wildlife and flora is kept to a minimum. 2. Inviolable areas are undisturbed sanctuaries for wary forms of life and should be held absolutely inviolable to human trespass. 3. Areas of unlimited use are those places where man, at all times, has freedom of participation as contrasted to reservation schedule of beach use on the northwest side of St. John Island and the reservation of observation facilities on the east and southwest end of the island. Access marine lanes, roads, trails, vantage points, north side of East End, and the southwest side of the island are examples of unlimited use.



Physical participation in certain activities such as fishing, water skiing, boating, snorkeling, and swimming is not compatible with maintaining natural conditions and are best excluded from the park program. These activities, however, should be provided on St. Thomas Island or on some other island adjacent to St. John Island but outside of the National Park, first by commercial interests and secondly by the National Park Service if the program offered by commercial interests is unsatisfactory in presenting to the people the greatest values of recreation.

#### HISTORICAL RECORD

The Virgin Islands National Park is characterized by modified plant and animal communities. An understanding of the changes that have occurred in the past and are occurring today is desirable in appraising and interpreting the successional changes that are now leading toward a climatic climax. The following outline is an approach in gathering these historical data.

Objectives: 1. Define, establish, and maintain pre-Columbian conditions. (Early Danish culture, however, should be preserved for historical record.) All natural arrivals of plants and animals should not be interfered with. 2. Instigate interpretive program emphasizing the philosophical translation of the functions of insular areas and the laws of succession, rather than the enjoyment of the park by physical recreation.

Pre-Columbian conditions: 1. Analyze the past geological history and establish a sequence of events leading to pre-Columbian period, including structural and physiographic changes, climates, and fossil evidence. 2. Define the ecological community existing just prior to the arrival of Columbus. a. Compile information from early Danish pictures, documents, journals, Carib-Arawak legends, mythology, significance of petroglyphs and



interview natives and other people living on the island or who have lived there. b. Gather evidence from subrecent fossil plants and animals, including kinds in existence at the time of the arrival of Columbus. c. Compare the ecological conditions in pre-Columbian period of other islands where original conditions of fauna and flora have not been too greatly modified (example, primitive stand of timber on Tortola).

Post-Columbian conditions: Define post-Columbian changes, including:

- a. History of agricultural uses of the island by the Danish people.
- b. History of grazing. c. Tree cutting for lumber or charcoal. d. Use as a recreational area. e. Keep complete record of National Park Service activities of control of exotics, road and trail building, housing, poaching, and influence of visitors or research. Natives should be interrogated for historical information.

#### ADEQUATE BIOLOGICAL AREA

1. Extend the Virgin Islands National Park to include the entire island of St. John. Local governments, because of their objectives and rightfully so, of commercializing their area of jurisdiction, cannot administer their affairs in the interest of maintaining primitive areas. Even if complete integration of policies of the National Park Service and those of the local government could be established, there could be no guarantee of continual support, as political changes might reverse those policies and relationships. An example of lack of understanding between the local government on St. John Island and the National Park is the construction (July-August, 1957) along a trail right-away by the former government of a two-lane highway across property of the National Park between Coral Bay and East End. This road was made without survey and, according to the bulldozer operator who had full



jurisdiction over the kind of road and the extent of grade, will require some blasting. Unless the road is paved on certain steep slopes, the soil will erode and will unfavorably affect the marine life which cannot tolerate sediment or fouled water in the sheltered type bays there.

Complete control of the island by the National Park would greatly reduce the extensive and expensive patrol system that is required under the present divided ownership of the island. Also by complete control, the problem of introduction or perpetuation of exotic plants and animals could be virtually eliminated. As the purpose of the Virgin Islands National Park is to present and maintain primitive and complete biological area, any suggestion of habitation, not necessary to the operation of the Park, is inappropriate.

2. Extend the Virgin Islands National Park to include all United States outlier islands, cays, and marine waters and, by international agreement or sponsorship, the adjacent British islands and cays. These outlying islands and cays complement the National Park and are relevant in creating a background setting of remoteness and primitiveness; a condition which cannot be maintained if the islands and cays are defaced by commercialization. These cays and islands also are important as breeding grounds for certain kinds of wildlife which, in the post-breeding period, utilize the larger St. John Island. If the Park is to attain the status of a complete biological and primitive unit, it should include the following:

- |                         |                |                         |      |
|-------------------------|----------------|-------------------------|------|
| Frenchman's Cap         | Blunder Rock   | Great Thatch Island     | (Br) |
| Dog Island              | Rata Cay       | Little Thatch Island    | "    |
| Little St. James Island | Henley Cay     | Frenchman's Cay         | "    |
| Great St. James Island  | Rangoat Cay    | West End Tortola Island | "    |
| East End of St. Thomas  | Stevens Cay    | Dead Chest              | "    |
| Island                  | Two Brothers   | Peter Island            | "    |
| Thatch Cay              | Perkins Cay    | Norman Island           | "    |
| Grass Cay               | Trunk Cay      | Flanagan Island         |      |
| Mingo Cay               | Cinnamon Cay   | Le Duck Island          |      |
| Lavango Cay             | Pelican Rock   | Booby Rock              |      |
| Congo Cay               | Whistling Cay  | Cocoloba Cay            |      |
| Carval Rock             | Waterlemon Cay |                         |      |



64° 50'

TOBAGO I.



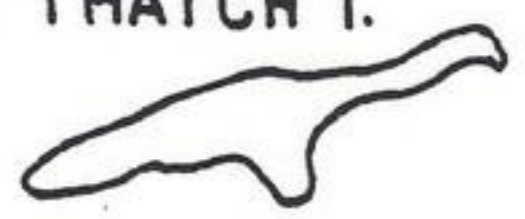
JOST VAN DYKE I.

LITTLE TOBAGO I.



8° 25'

GR. THATCH I.



LITTLE T.I.

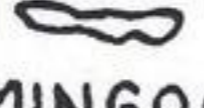
THATCH C.



GRASS C.



LAVANGO C.



CONGO C.



CARVAL R

B.R.

WHISTLING C.

TRUNK C.

CINNAMON C.

MINGOC.

RATA C.

HENLEY C.

RAMGOAT C.

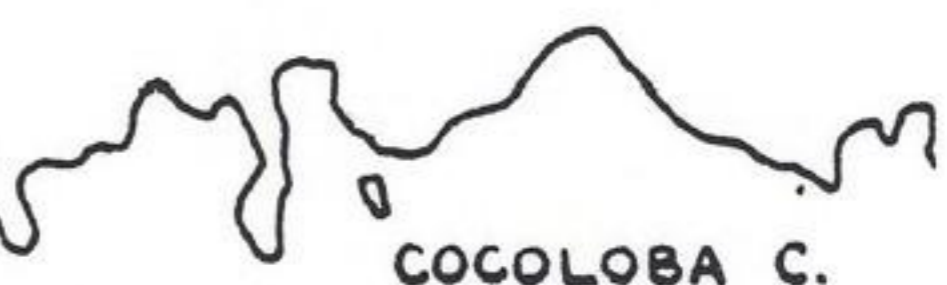
TWO BROTHERS

PERKINS C.

ST. JOHN ISLAND

ST. THOMAS ISLAND

STEVEN C.



COCOLOBA C.

GR. ST. JAMES I.



L. ST. JAMES I.



DOG I.



PROPOSED BOUND

FOR THE

VIRGIN ISLANDS NATIONAL

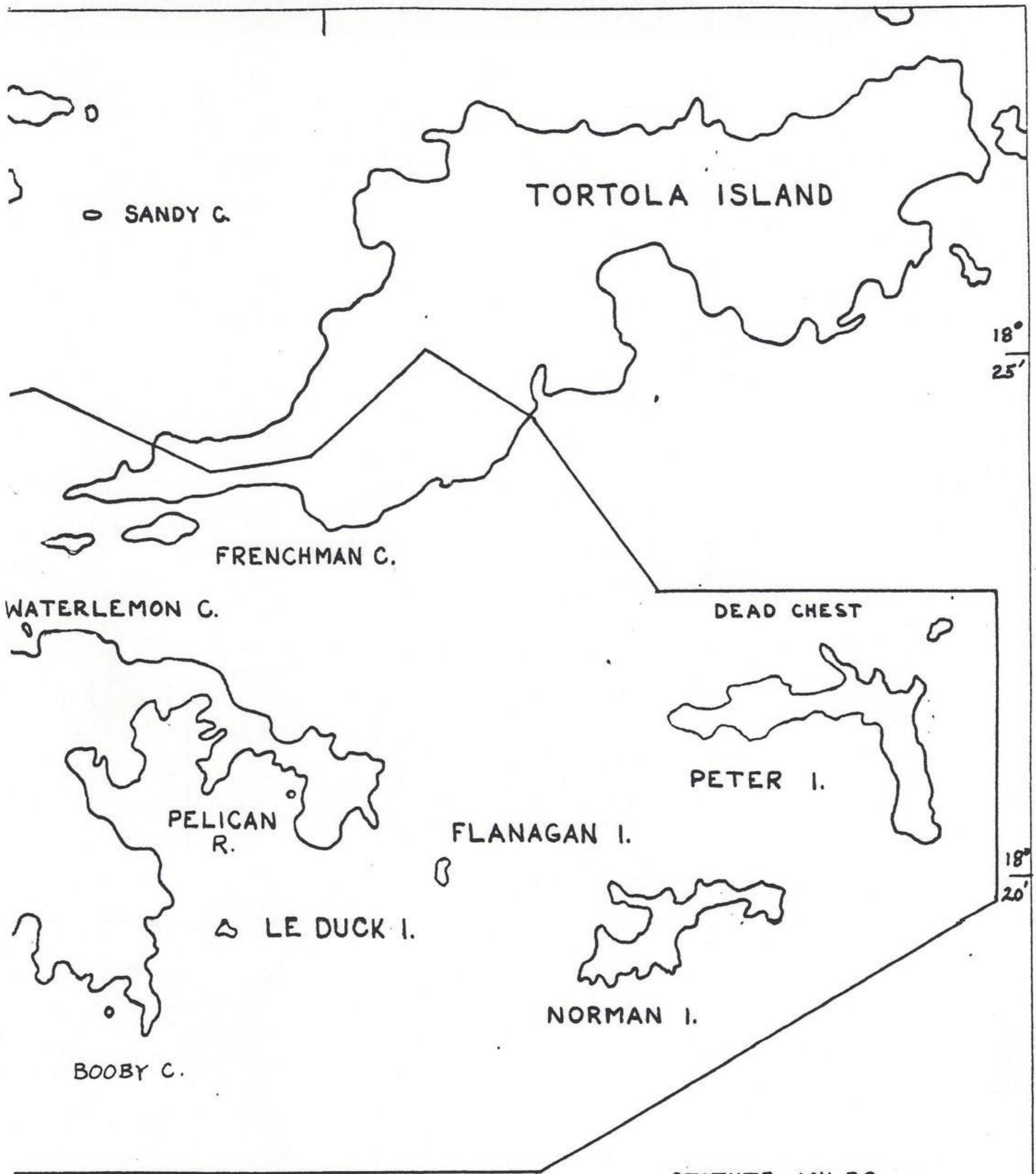
FRENCHMAN'S CAP



64° 50'



64° 40'



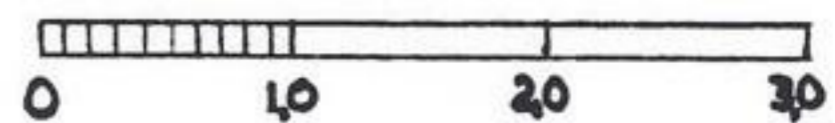
18°  
25'

18°  
20'

ARY

PARK, V. I.

STATUTE MILES —




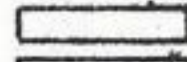

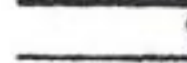






JAMES W. BEE

BASE MAP SCIENTIFIC SURVEY OF PORTO RICO AND THE VIRGIN ISLANDS, N.Y. ACAD. SCI., VOL. IV, PART I, 1926.

64° 40'

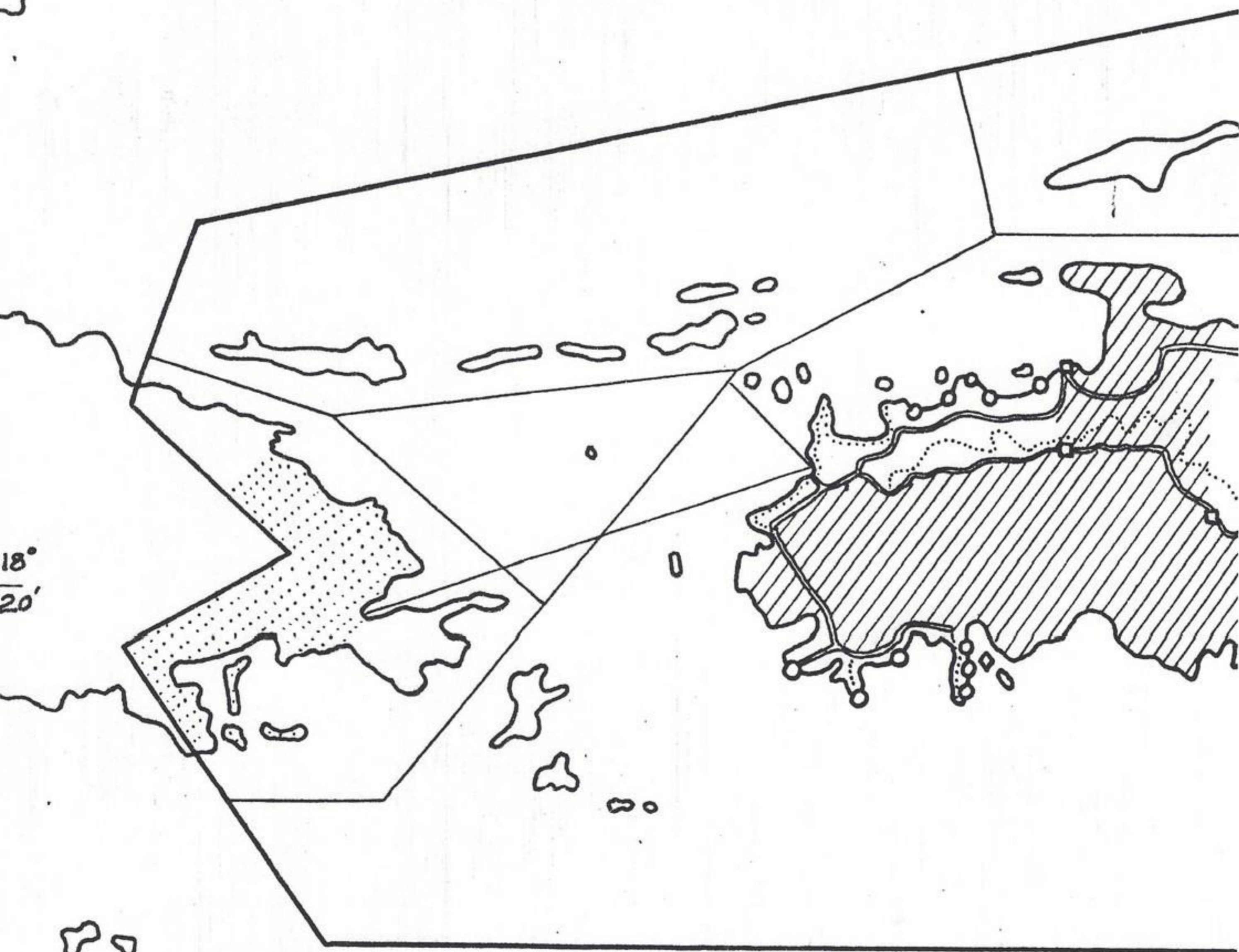


64° 50'

-  INVIOLEATE
-  BIOLOGICAL NECESSITY
-  UNLIMITED USE
-  NAT. PARK BOUNDARY
-  RESTRICTED BOAT LANES
-  OBSERVATION PLATFORM
-  VANTAGE POINT
-  SUBMARINE STATION
-  TRAIL
-  ROAD

18°  
25'

18°  
20'

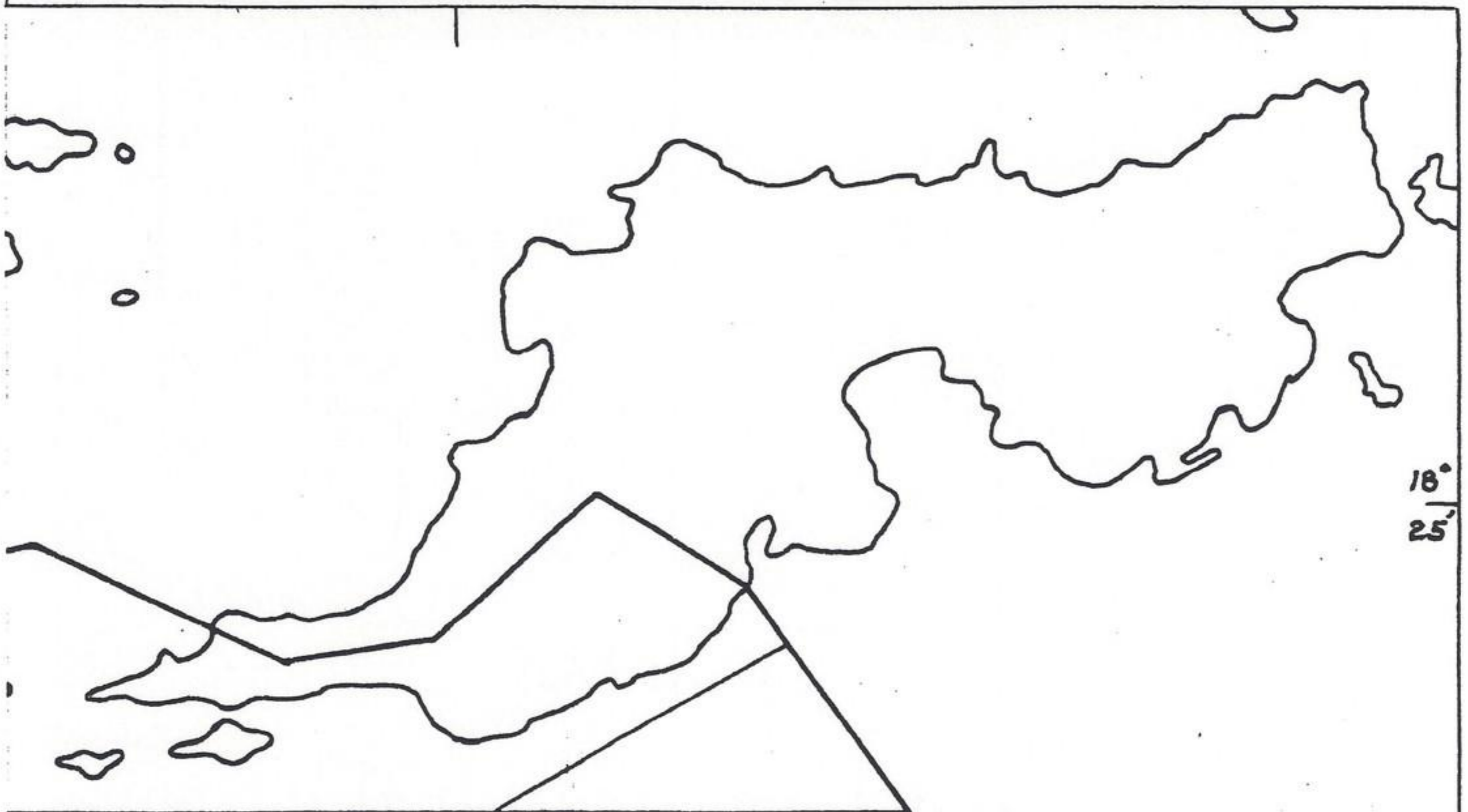


**LAND-MARINE USE**  
 OF THE PROPOSED  
**VIRGIN ISLANDS NATIONAL**

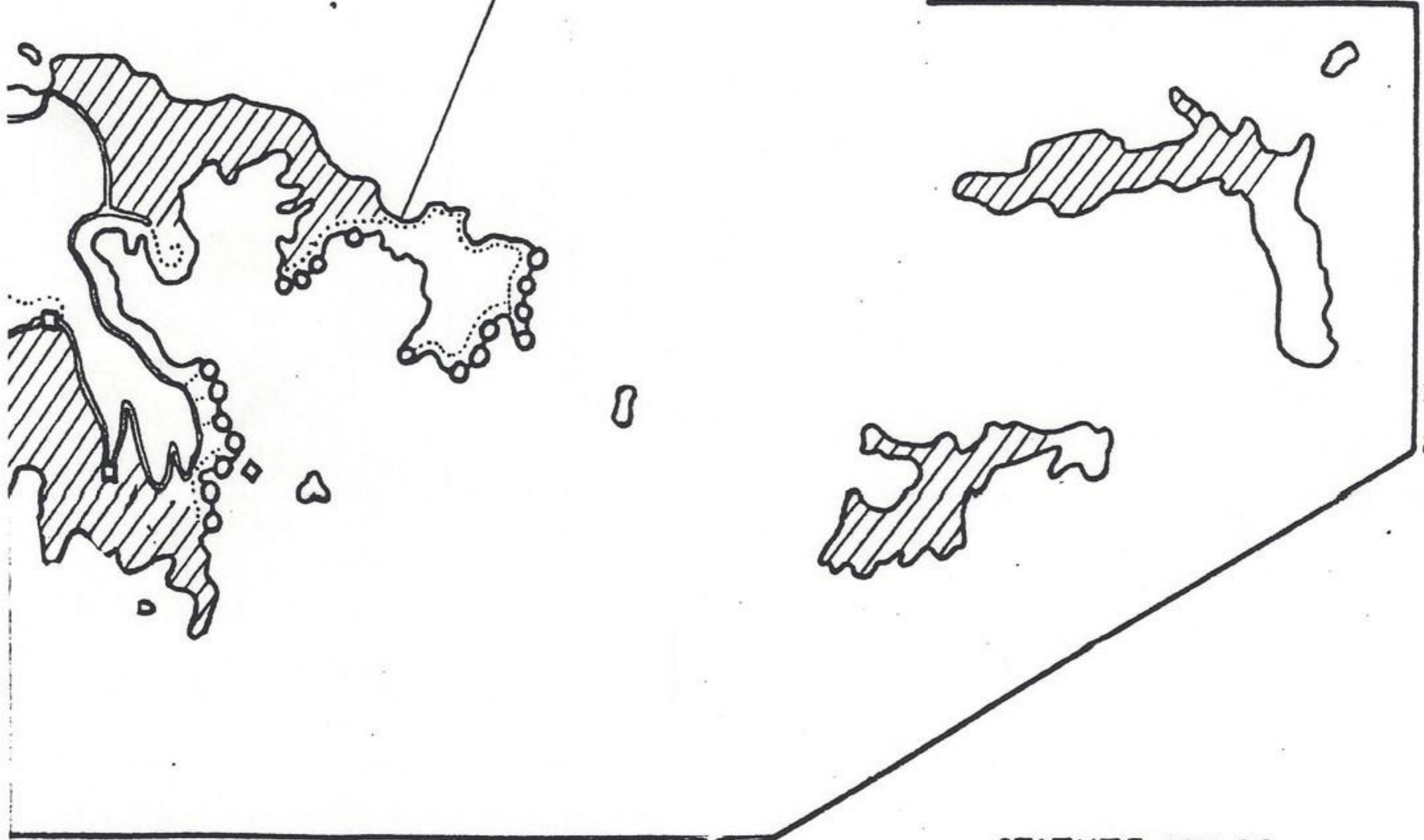
0 | 64° 50'



64° 40'



18°  
25'



18°  
20'

STATUTE MILES



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**PARK, V.I.**

BASE MAP-SCIENTIFIC SURVEY OF PORTO RICO  
AND THE VIRGIN ISLANDS, N.Y. ACAD. SCI. VOL IV, PT. I.

64° 40'



Additional islands, representative of the Virgin Islands in general and including the zone of intergradation between the Lesser and Greater Antilles, would serve as thoroughfares for natural dispersal of many kinds of animals and plants. An extension therefore of the Virgin Islands National Park, to include the British island archipelago (Salt, Cooper, Ginger, Round (Rock), Fullen Jerusalem Islands, and the south peninsula of Virgin Gorda) south of the Sir Francis Drake Channel, would add immeasurably to the scenic and biological value of the Park. The diorite blocks of Virgin Gorda are of National Park quality and should be so preserved.

Displaced persons, resulting from land acquisition by the U. S. National Park Service, should be transferred at the expense of the government to St. Thomas or St. Croix Island where they should be given housing and economically profitable farming land. Individuals requesting life tenure on their homesteads should be retired with pension for life. These persons should not pursue agricultural or business interests nor economically participate in the tourist trade of the island. Qualified personnel for developing and maintaining the operation of the Park should be selected from individuals who are now residents and should be chosen according to seniority of habitation on the island.

#### ECOLOGY

1. Basic research in ecology, especially studies in the periodicity and fluctuation of biotic communities and habitat, is needed to define the present community composition. This information is desirable as basis for comparison with later stages of succession and with the ultimate climatic climax stage of community development. Research should be confined to areas of biological necessity.



2. Determine adequacy of Park as a complete biological unit.
3. Conduct basic research (life histories) on dominant species of the communities, including pearly-eyed thrasher, hermit crab, lizards, ground doves, pelicans, laughing gulls, boobies, coral fish, frogs, ants, and termites.
4. Determine individual range fluctuation and correlate with competition and food supply. Band birds, fish, turtles, and bats to determine extent of movement in and out of Park. Also study effect of hurricanes on movement of fauna and flora.
5. Determine needs for rare or wary forms such as roosting and nesting sites of pelicans, boobies, yellow-billed tropic birds, shearwaters, petrels, turtles, porpoise, bats, and fishes. Determine breeding and feeding requirements for the two species of marine turtles and immediately establish unmolested marine and beach sanctuaries for these reptiles.
6. Determine role of important prey-scavenger species as the pearly-eyed thrasher, hermit crab, other land crabs and especially the non-native mice and rats which, of the exotic mammals, are not likely to be successfully eliminated from the island but should be kept to a low level in numbers so as to minimize their function in the community.
7. Determine the role of exotic plants and animals in the community.  
Determine the status of the coconut as either a native or exotic plant.
8. Study soil profiles in bays and brackish ponds to determine chronology of last 300 years. Barrier beaches should also be analyzed to determine chronology and ecological changes since pre-Columbian times.
9. Determine present effect of man and his influence on the biotic community, especially disturbing contamination, fishing, hunting, and critically appraise each area from time to time for biological implications.
10. Establish effective laws for excluding exotics, both plants and animals.



11. Construct relief model of island for planning purposes.

12. Organize ecological information to show dynamic order and function of the natural community for interpretive purposes.

Our field observations and recommendations on the exotic mammals are as follows:

Swine: St. John Island is without indigenous animals of the size and habits of the domestic hog. As a result, large numbers of hogs have adapted themselves to a feral existence. Being prolific in propagation (10 to 15 per litter) and without natural enemies, hogs are rapidly increasing and are changing the basic ecology of the island. In some areas, the ground-living communities have been completely destroyed by rooting and trampling. Some small trees have been girdled and the roots exposed. We have no substantial information on the interrelationships between swine and the native fauna but we suspect that hogs have been an important factor in the destruction of ground-living animals, especially snakes. The favorite foods of the hog are the jumbie potatoes, coconuts, and other plants which are seasonal in growth.

Several genetic strains of swine were noted in the field; small animals with brown hair on the neck, red-colored individuals, spotty ones with black or brown color and black and white individuals with a white band on the front shoulders. On the basis of a lower incisor (163mm in length) from a female weighing 180 pounds and captured in June of 1957 southeast of Reef Bay and presented to us by Walter Dalmida, we believe that there has been in former times an introduction of the wild hog of Europe, perhaps for food or sport or for the eradication of snakes.

Areas now supporting the greatest numbers of feral hogs are those least disturbed by man. The hogs there are the result of the congregation of several kinds of swine from different parts of the island. Lancylot Wiltshire, a long



time resident of St. John Island, believes that the hogs, at least those on the south side of the island, are the result of a small band released or abandoned at Reef Bay by a woman who formerly raised pigs there for food but later moved from Reef Bay.

The areas supporting the larger swine populations examined by us are as follows:

1. Bottomlands northeast of Fish Bay; from north side of Fish Bay to Estate Sieben (where roads join); bottomlands southeast of Fish Bay. There are now (August, 1957) approximately 80 swine in these three areas. Five were recently (August 20, 1957) seen in the area southeast of Fish Bay by Austin Dalmda. There is considerable disturbance of soil in these areas.

2. Reef Bay. From Reef Bay Estate House north to head of valley; bottomlands southeast of the Reef Bay Sugar Mill. It is estimated that there are 150 pigs in this area. Two were killed north of the Reef Bay Estate House in mid-June, 1957; one weighed 60 pounds and the other 70 pounds. In the bottomlands, 10 hogs were captured on July 15, 1957, and were medium in size.

3. Bordeaux. A large hog was reported to us by Philip O'Conner as destroying garden crops in the area at the junction of the Lameshur-Bordeaux roads. This hog fed at night and withdrew to the bush in the daytime. Attempts to capture this hog were without success. On August 25, 1957, at one-fifth of a mile east of Lameshur at the eastern end of the mangrove, Lancylot Wiltshire and party captured a female hog weighing approximately 150 pounds. (The skull of this animal is in the collection of the Museum of Natural History, University of Kansas.) It is believed that this animal was the one which had been destroying crops at Bordeaux and had descended to the mangrove swamp to feed on small fiddler crabs which are numerous there. (The larger crabs are too agile for swine to capture.) The measurements of this female are as follows: total



length 5'7"; tail, 14"; ear from notch, 7"; hind foot, 5". Six of the eight mammae were enlarged and active. Color mainly black with admixture of brown. Head profile boarlike.

4. Mary's Bottom west of Lameshur. One male and one female weighing approximately 60 pounds each were seen August 25, 1957.

5. Annaberg, Abrahams Fancy, and Maho Bay area. Approximately 50 swine of mixed breeds.

6. Brown's Bay-Hermitage areas. Approximately 100 swine of mixed breeds, some of the largest seen on the island. On August 23, 1957, a male, 100 pounds, was taken at Brown's Bay and on August 29 a male, weighing 165 pounds, was taken at Hermitage. Several small pigs were seen crossing the road between Hermitage and Haulover Bay.

Swine are captured by trained dogs, of which there are only four or five on the island. At least two dogs pick up a fresh trail of a swine and when contact is made one of the dogs will grab the hind foot of the swine and as the animal turns the other dog grabs the throat or neck. Both dogs secure holds on the head of the swine and this hold is never released until the native binds the animal with rope or vine. A dog that is not so trained will frequently release its hold and the swine will then charge the native. The muzzle and all four feet are bound and a pole is placed between the legs for carrying the animal or if the animal is to remain alive in the field a runner is tied to one front foot and one rear foot--both on the same side--and the free ends are fastened to two trees in such a manner that the animal can stand but the tied legs cannot become tangled. The present practice is to capture swine alive and transport them to a meat market where they are sold. Some are butchered by the natives for family consumption.

In the interest of the natives on St. John Island, swine should be taken alive (at intervals according to demand for food) and sold or given to the



resident people. Capture of these swine would require two or three well-trained teams, each team consisting of two natives and two dogs. This system is the one essentially employed today for capturing wild hogs. From the practical standpoint, however, and in the interest of keeping disturbance of the indigenous wildlife at a minimum, the following recommendation holds higher priority than the above method. The full time employment of two men trained as professional hunters. Each hunter, with the use of a silencer rifle and without the use of dogs, will systematically hunt and, with the objective of total extirpation, shoot swine on the island. Each hunter also will supervise two natives in dressing out those animals which are killed near roads and which can be transported to needy families on the island or disposed of at sea. It is not anticipated that the extermination of the swine will greatly influence the normal plant succession or interrelationships of plants and animals as would, for example, the removal of the mongoose from the island. Careful appraisal of the effects of the reduced number of swine, however, should be continually maintained.

Horses, burros, and cattle: Horses, burros, and cattle are causing irreparable damage in many areas of the Virgin Islands National Park. The greatest damage in bottomlands, at fresh water holes and around areas of habitation, is where the ground has been made bare by overgrazing and trampling and the leaves of the trees have been grazed as high as the animals can reach. A notable example of the effects of trampling is at Annaberg Estate House and Mill where the slopes are being eroded by trampling alone. The many Danish artifacts that have come to lie on these slopes are being destroyed beyond recognition--artifacts that could be useful in defining the culture of these people. Burros are girdling small trees (mainly Acacia) and at Annaberg Estate House and Mill, 42 such girdled trees were noted. Damage by cattle is mainly from overgrazing and trampling.



As the National Park stands today, control of livestock calls for immediate impoundment and return of livestock to owners, filling in of artificially constructed fresh waterholes, and encouragement and in some cases supplying material assistance to livestock owners living outside the National Park to build enclosures and fence grazing areas. These native people are not able financially to fence areas nor are their lands suitable for grazing purposes. Sociological and agricultural appraisal by U. S. agencies is indicated.

Livestock raising and breeding, dairy farming and agricultural pursuits on St. John Island have been economically feasible and profitable in the past because of good soils. Today the soils have been washed from the slopes and in many areas only rock soils remain. Hundreds of years will be required to replace these soils and the establishment of the original forest type cover which is prerequisite for the continuance of stabilized soils. Grass was grown and harvested on the lower slopes on a rotational system and a continual supply was available for feeding the livestock.

In the early history of the island, both the lower and upper slopes of the mountain were fired and grown to grass or other agricultural products. In the early 1900's, soil-floods from the ravines were more numerous than today--some reaching to the sea. This is correlated with heavy overgrazing and misuse of the land. It is probable that the Danish cultural and agricultural pursuits terminated as the result of exhausting the natural resources of soil and timber.

Goats and sheep: Goats and a few sheep utilize more area in the Virgin Islands National Park than any other kind of livestock and are the greatest offenders in overgrazing and loss of soil. In some areas, especially on ocean-bordering promontories, goats have completely consumed the vegetation.

The extirpation of sheep and goats from the National Park is not a major problem (although immediate action is required) and can best be accomplished



by shooting. (See plan suggested under swine.) Wild goats have territorial tendencies and are gregarious and when disturbed remain as one group: a combination of factors favorable for their control or extirpation. A female and her kid, for example, remained on one promontory bordering the ocean for one month (August) and when the kid was shot the female joined a group of four burros in another part of the same general area. Goat capturing by the use of dogs is the method employed by the native people. This system, however, is difficult and is accompanied by considerable disturbance to the native fauna. Goats are more difficult to control by means of fences than any other kind of livestock. Impoundment or control also requires adequate pasturage and continual herding.

Mongoose: The first introduction of the mongoose onto St. John Island, according to Julius Sprauve of Cruz Bay, was made by Louis Denilios, who brought a male and female from Haiti. Sprauve did not recall the date of this event. It is the overwhelming concensus of opinion by native people questioned concerning the reason for introduction of the mongoose that these animals were brought to the island not to prey on rats and mice, but to kill the snakes which at one time were numerous and offensive around their homes. Several individuals believe that poisonous snakes were a serious menace on the island when the island was first inhabited. Since the time of its introduction, the mongoose has spread throughout the island. Today the mongoose occurs in every land community on the island, however remote, from the low xeric wind swept slopes bordering the ocean, where it is least common, to the damp forests surrounding Mt. Bordeaux. In the wild, the mongoose is more at home in the low-forested bottomlands of the canyons. The greatest numbers per unit area, regardless of altitude, approximately 80 per cent in the case of our records of occurrences, are associated with human habitations or with man's activities. Mr. Ewen MacFarlane, Manager of the Caneel Bay Plantation Resort, informs us that as



many as 10 mongooses fed at the open garbage pits at Caneel Bay. Now that the new incinerator is installed, there have been fewer mongooses but still four or five are seen each day and these animals are entering houses and buildings where they feed on any kind of food that is available. At Lameshur (July and August) mongooses fed daily at the open garbage pit, especially in the early morning and evening. At our living quarters at Lameshur, anything edible either inside the building or outside, had to be protected from the mongoose. Away from permanent buildings but associated with temporary camp sites, the mongoose soon learns to recognize a new source of nutrition in the debris and food scraps. Once they find this new source of food, they remain in the area until the camp is vacated. Although mongooses appear to remain in one area or territory, we have observed individuals covering one-fifth of a mile with a purposeful direction and speed. Several mongooses have been seen in remote places (far from human habitation). The average number of animals noted along the road on 26 trips (approximately seven miles per trip) between Lameshur and Caneel Bay (excluding areas adjacent habitation) is 2 (0-4). From Haulover Bay to Lameshur (via Bordeaux) and return, we did not see one mongoose. Mongooses were not seen on the outliers of St. John Island. We have never seen the animal before day-break or later than late twilight when lights from the car were needed to illuminate the road for driving. The early morning hours of the day are the best times for seeing these animals in the field.

Although it has been stated by several native people that the mongoose is increasing in numbers, it is evident that this animal is today ecologically stabilized and is ill-adjusted to its food relationships on the island. Its survival has been the result of adaptation to a new source of food. Additional adaptations will occur with change of successional stages in the attaining of a climax condition on the island. The mongoose has changed its normal carnivorous



feeding habits to one of scavenger and garbage feeder and adaptation to eating insects, snails, and marine animals, especially hard-shelled and hermit crabs. At present, the land and hermit crabs are the mongoose's principal scavenger competitor. There are many reports of the mongoose feeding on ground birds, their eggs and young, but we have watched these animals feeding among chickens and other native ground birds but we have never seen any mongoose become too concerned with the presence of the birds. As a scavenger, however, they will take most anything edible. At Haulover Bay, two mongooses regularly fed on our refuse pile. The larger animal controlled the feeding order which the smaller animal respected but not without an occasional fight ate the entire paper wrappers of candy bars, remains of meat from cans, bread, carcasses of animals, cheese, and drank evaporated milk. Mongooses will not, however, touch live turtles which are immobilized on land or molest live pigs, sheep, or goats which are tied and bound. Dead rats and mice caught in snap traps are readily taken and eaten.

In a canyon bottom below the Carib petroglyphs at Reef Bay, we watched (30 feet away) a mongoose feed leisurely on the ground among trees. It inspected all small rocks and dead limbs on the ground. One rock, 6" in diameter and 3" thick, sheltered six gastropods. The mongoose attempted to dig the dirt away from around the rock, first on one side of the rock and then on the other side, reaching adeptly as far back as possible. After four minutes of effort, the mongoose left the mollusks unclaimed and continued on to another rock. The mongoose has been most effective in eliminating the snakes on St. John Island, although not without the aid of man and his livestock, especially the swine. The mongoose also has reduced some birds but certainly not seriously. It is not known but it is suspected that rats and mice have been kept in check by the mongooses. The cause of the increase or decrease of animals and birds such as doves on St. John is to be looked for in the basic changing habitat due



to succession or land use which in turn affects such major scavengers as the land and hermit crab, pearly-eyed thrasher, etc.

The immediate extirpation of the mongoose on St. John Island is indicated, and the following recommendations are made:

1. For historical purposes, define the basis relationships of the mongoose on St. John Island with the present biotic communities there, appraising, from time to time, the effects of the removal of the mongoose. Conduct a major biological study of the mongoose, rats, and mice on some other island in the Virgin Island group, incorporating the scientific information and material derived from the extirpation project on St. John Island. All material should be saved from St. John.

2. Extirpate the mongoose by 1) shooting with .410 and .22 (silencer) guns and by 2) live-trapping at critically placed feeding stations.

3. After total extirpation or reduction in numbers of mongooses to a negative level of importance as a predator, reintroduce the three species of snakes now presumably extirpated from the island but still living on the adjacent cays and islands. These snakes, which formerly were indigenous on St. John Island and adapted to the community ecology on the island, will replace the mongoose as predatory species.

4. Establish strict laws on St. John Island on introduction and possession of exotics (plants, mammals, birds, reptiles, and fishes).

Exotic rats, mice, and other kinds of mammals: Rats and mice have been living on St. John Island since the arrival of Whitemen. These rodents are generally distributed throughout the island and around areas of human habitation. They are most abundant among rock outcrops (not those associated with sea cliffs) where the deep fissures and cracks offer retreats for nesting and escape from larger predators such as the mongoose, cat, and dog. Snakes would be the most effective natural control of these rodents. Control by man at this time is not



recommended, although total extirpation of the rodent is indicated.

At present the introduced guinea pig, rabbits, white-tailed deer, and domestic cat are not considered as of ecological importance, but any one or all of these exotics could potentially become a serious problem.

#### TAXONOMY

(For Plants and Animals)

1. Collect adequate series of each species, where not already available, and be alert to save any remains that come to light of extirpated forms, depositing same where they best have long-time custodial care.
2. List the kinds of species and subspecies now living on St. John Island and ascertain the differences between each of these kinds and its nearest relatives on adjoining islands.
3. Determine reason or reasons for variation by appraisal of the following: Rate of speciation from early Cenozoic to Present; determine numerical degree of effectiveness of barriers; trace clines from point of origin and correlate with environmental gradients; determine effect of topography and ecology on distribution; determine if size of island is correlated with stability of genetic characters--is variation adaptive or non-adaptive; determine degree of adaptability of birds as counterparts of mammals under changing environmental condition on St. John; determine degree of population fluctuation, retraction and expansion of range with morphological change; for purposes of reintroduction of extirpated species, bring back adjoining subspecies into the Park only if variation of the species or subspecies on outlying islands is adaptive; determine role of predator pressure on evolution of insular forms.



FAUNA OF THE VIRGIN ISLANDS (exclusive of St. Croix):

With Special Reference to the Virgin Islands National Park

AMPHIBIANS AND REPTILES

- (1) Virgin Islands National Park
- (2) Within Boundaries of Proposed Park Extension
- (3) Definite Localities Unspecified
- (\_) Specimens Collected by K.U. Field Party in 1957
- (N) Nesting and Breeding in Area

1 2 3 TOADS

X Bufo turpis Barbour

FROGS

X X X Leptodactylus albilabris (Günther)

X X X Eleutherodactylus antillensis (Reinhardt and Luetken)

X X X Eleutherodactylus cochranæ Grant

X Thecadactylus rapicaudus (Houttuyn)

LIZARDS

X X Hermidactylus mabouia (Moreau de Jonnès)

X X X Sphaerodactylus macrolepis Günther

X Anolis cuvieri Merrem

X X X Anolis cristatellus Duméril and Bibron

X X X Anolis pulchellus Duméril and Bibron

X X X Anolis stratulus Cope

X Cyclura pinguis Barbour

X Iguana iguana (Linné)

X X X Ameiva exsul Cope

X X Amphisbaena fenestrata Cope

X X X Mabuya sloanii (Daudin)



1 2 3

## SNAKES

- X X Typhlops richardii Dumeril and Bibron  
 X Epicrates sp.  
 X X X Dromicus exiguus Cope  
 X X X Alsophis antillensis (Schlegel)

## TURTLES

- X X Testudo denticulata (Linne)  
 X X X Chelonia mydas mydas (Linne)  
 X X X Eretmochelys imbricata imbricata (Linne)

## BIRDS

- N Least grebe Podiceps dominicus dominicus (Linnaeus) (Bond, 1956:1)  
 X Pied-billed grebe Podilymbus podiceps antillarum Bangs (Danforth, 1935:465)  
 N Audubon's shearwater Puffinus lherminieri lherminieri Lesson (Bond, 1956:1)  
 N Red-billed tropic-bird Phaethon aethereus mesonauta Peters (Bond, 1956:4)  
 N White-tailed tropic-bird Phaethon lepturus catesbyi Brandt (Wetmore, 1927:279)  
 X N X Brown pelican Pelecanus occidentalis occidentalis Linnaeus (Bee, 1937, MS)  
 N Blue-faced booby Sula dactylatra dactylatra Lesson (Bond, 1956:6)  
 X N N Brown booby Sula leucogaster leucogaster (Boddaert) (Bee, 1957 MS)  
 N Red-footed booby Sula sula sula (Linnaeus) (Bond, 1956, 67)  
 X X N Man-o-war bird Fregata magnificans rothschildi Mathews (Bond, 1956:8; Bee, 1957<sup>MS</sup>)  
 X Great blue heron Ardea herodias adoxa Oberholser (Robertson, 1957, MS)  
 X X X Green heron Butorides virescens maculatus (Boddaert) (Bee, 1957, MS)  
 X X X Little blue heron Florida caerulea caerulea (Latham) (Bee, 1957, MS)  
 X Cattle egret Bubulcus ibis Linnaeus (Bee, 1957, MS)  
 X X Common egret Casmerodius albus egretta (Gmelin) (Bee, 1957, MS)  
 X Snowy egret Leucophoyx thula thula (Molina) (Bond, 1940:8)



1 2 3

- X X Louisiana heron Hydranassa tricolor ruficollis (Gosse) (Bond, 1956:11)
- N Black-crowned night heron Nycticorax nycticorax hoactli (Gmelin) (AOU:1957)
- X X X Yellow-crowned night heron Nyctanassa violacea bancrofti Huey (Bee, 1957, MS)
- X N Least bittern Ixobrychus exilis exilis (Gmelin) (Bond, 1956:14)
- X Glossy ibis Plegadis flacinellus falcinellus (Linnaeus) (Bond, 1950:12)
- X West Indian tree duck Dendrocygna arborea (Linnaeus) (Danforth, 1935:466)
- X Pintail Anas acuta Linnaeus (Bond, 1956:21)
- X X Bahaman pintail Anas bahamensis bahamensis Linnaeus (Danforth, 1935:466)
- X Blue-winged teal Anas discors discors Linnaeus (Robertson, 1957, MS)
- X American widgeon Mareca americana (Gmelin) (Bond, 1956:22)
- X Shoveller Spatula clypeata (Linnaeus) (Bond, 1956:22)
- X X Lesser scaup Aythya affinis (Eyton) (Bond, 1940:18)
- X X Red-tailed hawk Buteo jamaicensis jamaicensis (Gmelin) (Bee, 1957, MS)
- X Marsh hawk Circus cyanus hudsonius (Linnaeus) (Robertson, 1957, MS)
- X X N Osprey Pandion haliaetus carolinensis (Gmelin) (Bond, 1956:31; Robertson, 1957, MS)
- X Peregrine falcon Falco peregrinus anatum Bonaparte (Danforth, 1935:466)
- X Pigeon hawk Falco columbarius columbarius Linnaeus (Robertson, 1957, MS)
- N X Sparrow hawk Falco sparverius loquaculus (Riley) (Bee, 1957, MS)
- X Clapper rail Rallus longirostris caribaeus Ridgway (Bond, 1940:29)
- X Sora Porzana carolina (Linnaeus) (Danforth, 1935:466)
- X X X Florida gallinule Gallinula chloropus cerceris Bangs (Robertson, 1957, MS)
- X Caribbean coot Fulica caribaea Ridgway (Friedman, 1941:222)
- X X American oystercatcher Haematopus palliatus palliatus Temminck (Bee, 1957, MS)
- X Semipalmated plover Charadrius semipalmatus Bonaparte (Danforth, 1935:467)
- X X Wilson's plover Charadrius wilsonia Ord (Bee, 1957, MS)
- X X Killdeer Charadrius vociferus vociferus Linnaeus (Robertson, 1957 MS; J. W. Bee, 1957, MS)



1 2 3

- X Black-bellied plover Squatarola squatarola (Linnaeus) (Robertson, 1957, MS)
- X X Ruddy turnstone Arenaria interpres morinella (Linnaeus) (Danforth, 1935:467;  
Bee, 1957, MS)
- X X X Spotted sandpiper Actitis macularia (Linnaeus) (Bee, 1957, MS)
- X Willet Catopterochus semipalmatus semipalmatus (Gmelin) (Robertson, 1957, MS)<sup>MS)</sup>
- X Greater yellowlegs Tringa melanoleucus (Gmelin) (Robertson, 1957, MS)
- X X X Lesser yellowlegs Tringa flavipes (Gmelin) (Bee, 1957, MS)
- X White-rumped sandpiper Calidris fuscicollis (Vieillot) (Bond, 1940:40)
- X X X Least sandpiper Erolia minutilla (Vieillot) (Bee, 1957, MS)
- X Dowitcher Limnodromus griseus griseus (Gmelin) (Bond, 1956:50)
- X Stilt sandpiper Micropalama himantopus (Bonaparte) (Bond, 1940:41-42)
- X X Semipalmated sandpiper Calidris pusilla (Linnaeus) (Danforth, 1935:468)
- X Western sandpiper Calidris mauri Cabanis (Danforth, 1935:468)
- X Sanderling Crocethia alba (Pallas) (Bond, 1940:43)
- X X X Black-necked stilt Himantopus mexicanus (Müller) (Bee, 1957, MS)
- X Herring gull Larus argentatus smithsonianus Coues (Bond, 1956, 55)
- X X X Laughing gull Larus atricilla Linnaeus (Bee, 1957, MS)
- N Gull-billed tern Gelochelidon nilotica aranea (Wilson) (Bond, 1956:5)
- X N X Common tern Sterna hirundo hirundo Linnaeus (Bee, 1957, MS)
- X Roseate tern Sterna dougallii dougallii Montagu (Danforth, 1935:468)
- X N X Sooty tern Sterna fuscata fuscata Linnaeus (Bee, 1957, MS)
- X N X Bridled tern Sterna anaethetus recognita (Mathews ) (Bee, 1957, MS)
- X Least tern Sterna albifrons antillarum (Lesson) (Danforth, 1935, 468)
- X X Royal tern Thalasseus maximus maximus (Boddaert) (Robertson, 1957, MS)
- X N X Noddy Anous stolidus stolidus (Linnaeus) (Bee, 1957, MS)
- X Black skimmer Rynchops nigra nigra Linnaeus (Bond, 1956:62)
- N X White-crowned pigeon Columba leucocephala Linnaeus (Bee, 1957, MS)



- 1 2 3
- N X X Scaly-naped pigeon Columba squamosa Bonnaterre (Bee, 1957, MS)
- N N N Zenaida dove Zenaida aurita zenaida (Bonaparte) (Bee, 1957, MS)
- N N N Ground dove Columbigallina passerina portoricensis (Lowe) (Bee, 1957, MS)
- N X Mustached quail-dove Geotrygon mystacea mystacea (Temminck) (Bee, 1957, MS)
- X Curacoa paraquet Aratinga pertinax subsp. (Bond, 1956:194)
- N N X Mangrove cuckoo Coccyzus minor nesiotus Cabanis (Bee, 1957, MS)
- X Yellow-billed cuckoo Coccyzus americanus americanus (Linnaeus) (Robertson, 1957, MS)
- X X Smooth-billed ani Crotophaga ani Linnaeus (Bee, 1957, MS)
- X X X Puerto Rican screech owl Otus nudipes newtoni (Lawrence) (Wetmore, 1927:43)
- X Chuck-will's-widow Caprimulgus carolinensis Gmelin (Bee, 1957, MS seen by Fafalla)
- X Nighthawk Chordeiles minor minor (Forster) (Bond, 1956:88)
- X X X Antillean mango hummingbird Anthracathorax dominicus aurentus <sup>and</sup> (Audebert Vieillot) (Wetmore, 1927:451)
- N N X Emerald-throated hummingbird Sericotes holosericeus holosericeus (Linnaeus) (Bee, 1957, MS)
- N N N Antillean crested hummingbird Orthorhynchus cristatus exilis (Gmelin) (Bee, 1957, MS)
- X Belted kingfisher Ceryle alcyon alcyon (Linnaeus) (Danforth, 1930:114)
- X X X Yellow-bellied sapsucker Sphyrapicus varius varius (Linnaeus) (Bee, 1957, MS) holes only)
- N N X Gray kingbird Tyrannus dominicensis dominicensis (Gmelin) (Bee, 1957, MS)
- X Stolid flycatcher Myiarchus stolidus antillarum (Bryant) (Seaman, 1957:110)
- N X Lesser antillean alania Elaenia martinica riisii Sclater (Bee, 1957, MS)
- X Barn swallow Hirundo rustica erythrogaster Boddaert (Robertson, 1957, MS)
- X N West Indian martin Progne dominicensis dominicensis (Gmelin) (Bee, 1957, MS)



1 2 3

- N N X Northern mockingbird Mimus polyglottos orpheus (Linnaeus) (Bee, 1957, MS)
- N N X Pearly-eyed thrasher Margarops fuscatus fuscatus (Vieillot) (Bee, 1957, MS)  
(Vieillot)
- X X Black-whiskered vireo Vireo altiloquus altiloquus inter. barbadensis (Bee, 1957, MS)
- N N X Bananaquit Coereba flaveola sancti-thomae (Sundevall) (Bee, 1957, MS)
- X Black and white warbler Mniotilta varia (Linnaeus) (Robertson, 1957, MS)
- X Worm-eating warbler Helminthos vermivorus (Gmelin) (Robertson, 1957, MS)
- X X X Parula warbler Parula americana (Linnaeus) (Robertson, 1957, MS)
- N X Yellow warbler Dendroica petechia crucianus Sundevall (Bee, 1957, MS)
- X Magnolia warbler Dendroica magnolia (Wilson) (Robertson, 1957, MS)
- X Cape May warbler Dendroica tigrina (Gmelin) (Robertson, 1957, MS)
- X Black-throated blue warbler Dendroica caerulescens caerulescens (Gmelin)  
(Robertson, 1957, MS)
- X Myrtle warbler Dendroica coronata coronata (Linnaeus) (Robertson, 1957, MS)
- X Black-throated green warbler Dendroica virens virens (Gmelin) (Robertson, 1957, MS)
- X Prairie warbler Dendroica discolor discolor (Vieillot) (Robertson, 1957, MS)
- X Oven-bird Seiurus aurocapillus aurocapillus (Linnaeus) (Robertson, 1957, MS)
- X Northern water-thrush Seiurus noveboracensis noveboracensis (Gmelin) (Robertson, 1957, MS)
- X Louisiana water-thrush Seiurus motacilla (Vieillot) (Bond, 1945:132) /1957, MS)
- X Kentucky warbler Oporornis formosus (Wilson) (Robertson, 1957, MS)
- X Hooded warbler Wilsonia citrina (Boddaert) (Robertson, 1957, MS)
- X Redstart Setophaga ruticilla ruticilla (Linnaeus) (Robertson, 1957, MS)
- X House sparrow Passer domesticus domesticus (Linnaeus) (Bond, 1956:195)
- X Troupial Icterus icterus (Linnaeus) (Bond, 1956:196)
- X Baltimore oriole Icterus galbula (Linnaeus) (Robertson, 1957, MS)
- X Glossy cowbird Molothrus bonariensis subsp. (Robertson, 1957, MS)
- X? X Scarlet tanager Piranga olivacea (Gmelin) (Bond, 1956:166-167)
- N N X Black-faced grassquit Tiaris bicolor omissa (Jardine) (Bee, 1957, MS)



Frenchman's Cap, Lavango Island, Carval Rocks, Dog Island, Flanagan Island, and LeDuck Island are the principal islands used by colonial nesting birds. The bridled tern, common tern, sooty tern, noddy tern, brown pelican, brown booby, and white-tailed tropic bird are some of the colonial nesting birds.

Native MAMMALS Obtained on St. John Island

- Mexican bull dog bat Noctilio leporinus mastivus (Dahl)  
St. Vincent fruit-eating bat Brachyphylla cavernarum Gray  
Jamaican fruit-eating bat Artibeus jamaicensis jamaicensis Leach  
Red fig-eating bat Stenoderma rufum E. Geoffroy-St.-Hilaire  
Brazilian free-tailed bat Tadarida brasiliensis antillarum (Miller)  
Large mastiff bat Molossus major fortis Miller

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### INTERPRETIVE PROGRAM

Of the biological and physical features on St. John Island, only undisturbed conditions in natural relationships should be presented to the observers. Presenting the natural conditions can be accomplished in only certain areas and under certain limited situations, and even with the most ideal of circumstances, must be executed with a degree of compromise. Only when a concealed observation station is gained by means of a subterranean tunnel as opposed to a path or road, can the natural community be presented unaltered to the observer. For the Virgin Islands National Park, it is most practical, at this time, to introduce the observer to the natural and physical features of the island by placing the observer at the border of inviolate areas and at borders of areas of biological necessity.

Interpretive museum: Establish museum at Caneel Bay and develop educational program related to insular biology and geology; relationship of living West Indian fauna and flora with extinct forms; affinities of fauna; manner of colonization; marine communities etc.

Observation platforms: Observation platforms or enclosures are individual units (accommodating 1 to 6 persons by reservation) placed for observing undisturbed nature without the observer being a factor in the community function and are to replace camping by tent or trailer. Each unit, varying in size from 3 x 6 to as large as 8 x 12 feet, is so concealed in the sea cliff (above wave action), as not to be seen from any other such unit and provides comfortable and convenient open air facilities including reclining chairs (also used as beds), toilet, food and water. Some units should be provided with enclosed shelters for inclement weather. These units can be constructed and camouflaged without defacing the natural configuration of the land or sea cliff and access is by horizontal or graded trail from road. Observation platforms can be constructed wherever



uninterrupted natural features can be demonstrated including representative ecological communities such as mangrove swamps, brackish water communities, xeric shrub communities, forest communities, rookeries and bat caves, but are most suitable, however, for ocean side observation.

Marine beaches: Undisturbed marine beaches have physical characteristics and a definite biotic composition. Their use by man who modifies the natural formation of beaches, is incompatible with maintaining natural conditions and should therefore be held inviolate to trespass. Already most beaches have been visited and delicate coral fragments have been trampled. In many places beaches also have been modified in form. One compromise to inviolate use of beaches should be the restricted use of beaches on Dennis Bay, Trunk Bay and Cinnamon Bay, by family units or mixed groups of six or less individuals. Each unit will occupy a part of the beach which can be so divided that each unit is entirely separated, visually, from the adjoining unit. A restricted part of the beach can be used for swimming. Each unit, depending upon the reservation pressure, is permitted to remain in the beach area from noon of one day to noon of the following day at which time they will be removed by boat--the only approach to the beach and bay areas. Individuals with boats and reservations for beaches are permitted to anchor their boats in those bays where the boats can be concealed from view from other units. The family units or individuals can be housed in the buildings now in existence or moderate facilities can be supplied. This compromise is considered compatible with the present stage of park development and in the future can be discontinued and all buildings razed..

Commercial exploitation of beach sands and gravel for construction work should be terminated immediately. Sand flies remain the most irritating deterrent to personal comfort. Studies should be made to determine the exact position of the sand fly in the natural organization of the community and effective repellents



for personal use should be made available. Sand flies are driven from their protective places by rains and are most numerous when the ground and vegetation are wet. Beach requirements of the two large species of turtles for egg laying and the requirements for larger birds for feeding purposes should be determined and then their demands satisfied. A study of beach formation and the various types of beaches should be inaugurated.

Snorkeling and deep sea exploration: Snorkeling and deep sea exploration cannot be performed without seriously affecting the natural marine communities and therefore do not present natural condition of these communities. Here again, such activities should be encouraged in those areas outside of the National Park. Presentation to marine communities can be accomplished without interfering with the natural organization of the communities by permanent submarine stations placed in marine communities in primitive and undisturbed area. Submarine stations are observation rooms with one-way window vision and approach is by tunnels in native rocks from areas of unlimited use. This is an example of presentation without molestation. Submarine travel and observation should be encouraged in recreational areas outside of the National Park.

Fishing: Fishing and all related aspects including spear-fishing, line fishing, glass-bottom boating, trolling, surf fishing, etc., are not compatible with preserving the natural marine communities or presenting nature in an undisturbed form. These phases of recreation should also be relegated to areas outside the limits of the National Park.

Boating: Remoteness and primitive conditions cannot be maintained with free use of marine water by sailboats, high speed boats or any form of boating. Certain areas should be held inviolate to boating for reason of biological necessity and for maintaining primitive concepts of the island. Wherever boats are permitted to dock or use bays, they must be so regulated as not to disturb



the bottom surface of the bay or to foul the waters with displaced bottom material. Zoned limits for sailing within the limits of the marine water of the National Park should be established (see map of land-use). Ideally there should be no sailing except by one access line to the island. Aircraft and helicopters should not be permitted to enter the National Park area.

#### ROADS AND TRAILS

Immediately stop all road construction and eliminate existing roads not included in planned program. All roads that are constructed or eliminated from the island should be approved by headquarters and personally supervised by the Park Naturalist who in turn should be governed by the result of investigations of the necessity and biological requirements of the island. All roads should be (except at Caneel Bay) one way and for unlimited use in presenting to the observer the various and representative biotic and geological areas of the island and in placing the observer at vantage points in the field. The physical nature of the island does not permit standard roads (two lanes) and even in those areas where standard roads could be developed, it would not be desirable to construct this type of road. Roads most suitable are single narrow-laned (driveway type) roads with complete overhead canopy of trees. In no case should a road be constructed where canopy is lacking. This condition eliminates roadside succession of plants and obscures the position of the road from other vantage points or from other points surrounding the island. The road should be of the type of paving that will permit trees to grow to the edge of the road and colored to blend with the flora. The grade of road should be consistent with safe travel and should be constructed with road character of random curves, bends and fewer straight sections. Water drainage from the road should be released from side of road at frequent intervals to eliminate erosional gullies



in communities below the road. The road bed should be built rather than excavated from the side of the mountain and should be supported by rock wall. Develop all vantage points below the crest of mountains or ridges and among trees with overhead canopy except at the top of Mt. Bordeaux where an open platform type observation area can be developed. Roads and trails should be hand tailored by native craftsmanship rather than by modern road equipment or methods.

Trails should be one way and only be constructed where they cannot be seen from any other part of the island. The width never should be over 24 inches and should be covered overhead with a forest canopy. As in the case of roads, trails should be built rather than excavated on the sidehill and should be paved with character. Walking in the Virgin Islands, especially below 500 feet and on steep grades, is exhausting and hot; therefore, trails should be horizontal. One such trail should follow the 750 contour line on the north and east slope of the island from the southeast end to the northwest end. Traffic on trails should be regulated to establish intervals between groups or individual hikers.

#### HISTORICAL SITES AND MODERN BUILDINGS

Both the Carib petroglyphs and kitchen-middens and the culture of the early period of Danish occupation of the island are of outstanding interest and historical value. All Carib and Arawak culture should be preserved and facilities made for viewing the petroglyphs without physical contact. Disposition of the Danish sites is suggested as follows (All sites should be surveyed, photographed and modeled to small scale.):

1. Restore Durlieu Estate and Mill (within the confines of the Caneel Bay Resort Plantation) to the conditions existing at the early period or highest



degree of development of Danish occupation. On St. Croix or St. Thomas Island reconstitute one of the typical Danish mills and estate houses, if such occurs on National Park property, and put into actual operation the growing of sugar cane and the manufacture of its products, and any other activity that was associated with the function of the mill or estate.

2. Reconstruct buildings at Annaberg and Fortberg with qualified supervision.

3. Stabilize all other Danish buildings and rock walls and keep trees from damaging structures except the buildings of the Reef Bay Sugar Mill and the Reef Bay Estate House. These two units should be reclaimed by natural forces of destruction operating on the island. The sugar mill is within the influence of tidal waves and hurricanes and appropriately could be allowed to demonstrate the impact of nature on buildings made at one period in the span of time.

Before forests reinvade areas around Danish buildings, surface artifacts should be reclaimed and employed in a reconstruction of the old Danish culture. These artifacts may soon be lost or damaged beyond usefulness as evidence.

All modern buildings should be removed from Danish sites and from the island in general except those buildings at Caneel Bay and buildings which are inconspicuously placed at beaches east of Caneel Bay as far as Maho Bay. These buildings, provisionally, can be used to accommodate persons who are placed at the various beaches by reservation. Ultimately these buildings should be razed.

Ideally, all buildings (including concession housing) and hotel accommodations should be placed outside the limits of the National Park. Only those buildings necessary for maintenance and for placing people in the field should be located on St. John Island. Caneel Bay Plantation Resort in cooperation and with support of the National Park Service could officially serve both the general public and their own clientele.



## ARCHEOLOGY

The petrolyphs and their scenic background at Reef Bay have not been modified by White Man. The two fresh-water ponds and the accompanying petroglyphs should be observed only from an inobtrusive vantage point immediately adjacent to the area. As fresh water here is unique on the island and many kinds of birds, a few mammals, amphibians and many insects depend on this water resource for either feeding, drinking or bathing, it is important that these animals be allowed to continue their activities uninterrupted. To watch the natural performance of nature under undisturbed circumstances is one of the greatest values of the park. The petroglyphs on Congo Cay and Carval Rock are also in areas used by wildlife that should not be disturbed. A certain compromise will be required if these Indian inscriptions are to be presented in their natural setting to the observer. Other petroglyphs or midden sites, if in areas of biological necessity permitting limited use, should be developed and made available for observation.

Transmitted December 31, 1957.



Lameshur, St. John Island, Virgin Islands.

Sept. 4, 1957

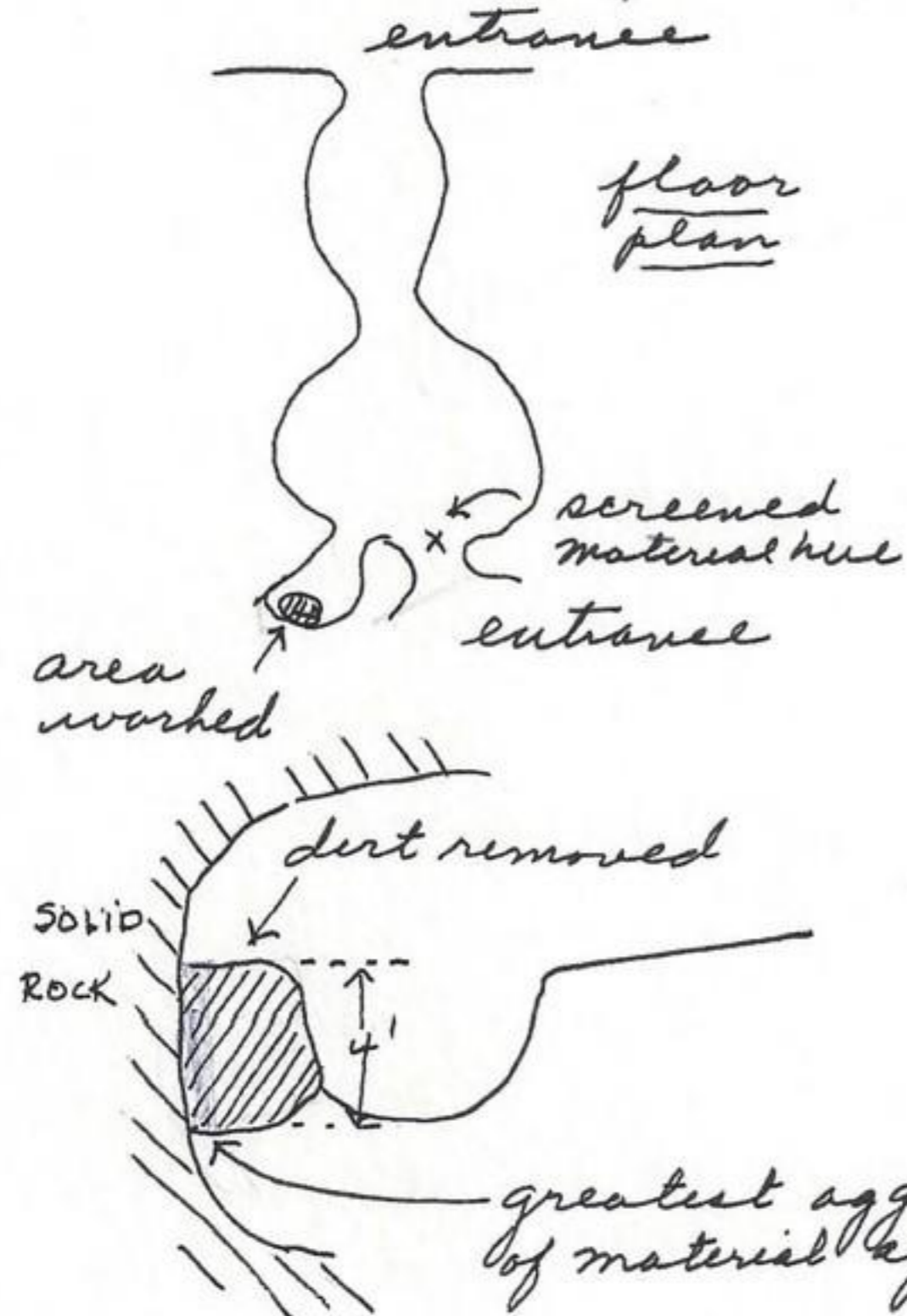
Depart for St. Thomas Island this A.M. in preparation for departure to San Juan. On boat met Mr. Folk (Ridge Folk). He said that he had planted the following fish in the fresh water pond 1/10 mi. W Lameshur Estate House: African Perch, fresh water mullet, Gobies and a shrimp. I had seen several fish in the pond, one of which remained near the edge of the water until you approached and then quickly swam away.

Departed St. Thomas Island, <sup>9:30 A.M.</sup> after seeing Hubler and Anderson and arrived San Juan Puerto Rico. Mr. Julio Marrero met me and transported me to Moravia. Camped at property of Antonio Davila. B.O. Barahona Branch, Moravia R.R.

Moravia, Puerto Rico

Sept. 5, 1957

Worked Cueva del Perro (see map) for two days. Excavated



dark chamber as indicated. Removed approx. 4 sq yards of loose dirt. This room is relatively free of previous digging except removal of guano in center. This room could support 30 or 40 square yards of pay dirt which is stratigraphically in place. A light is necessary. The material from this cave is all from this room and represents undisturbed material from the surface to 4 feet deep.

profile of room.

Returned to camp, which was about a 30 minute walk. Photo

(570905-1) of the Davila family and (570905-2) of camp.

Sept 6, 1957

Continued screening as above. Photo (570906-1) of representative material from cave. Photo (570906-2) of Neosphenes skull and (570906-3) of misc. bones and material.





clear cave -  
Cueva de Clara  
(They call it Cueva  
la Oscura)

fine caves in this area

Rio starts

photo 570908-1 from here  
showing general formation  
of cone area. These  
canyons were at one time  
underground river channels

steep wall canyons, some show  
original cone surface

Cueva Los Silva

Valleys

Rio

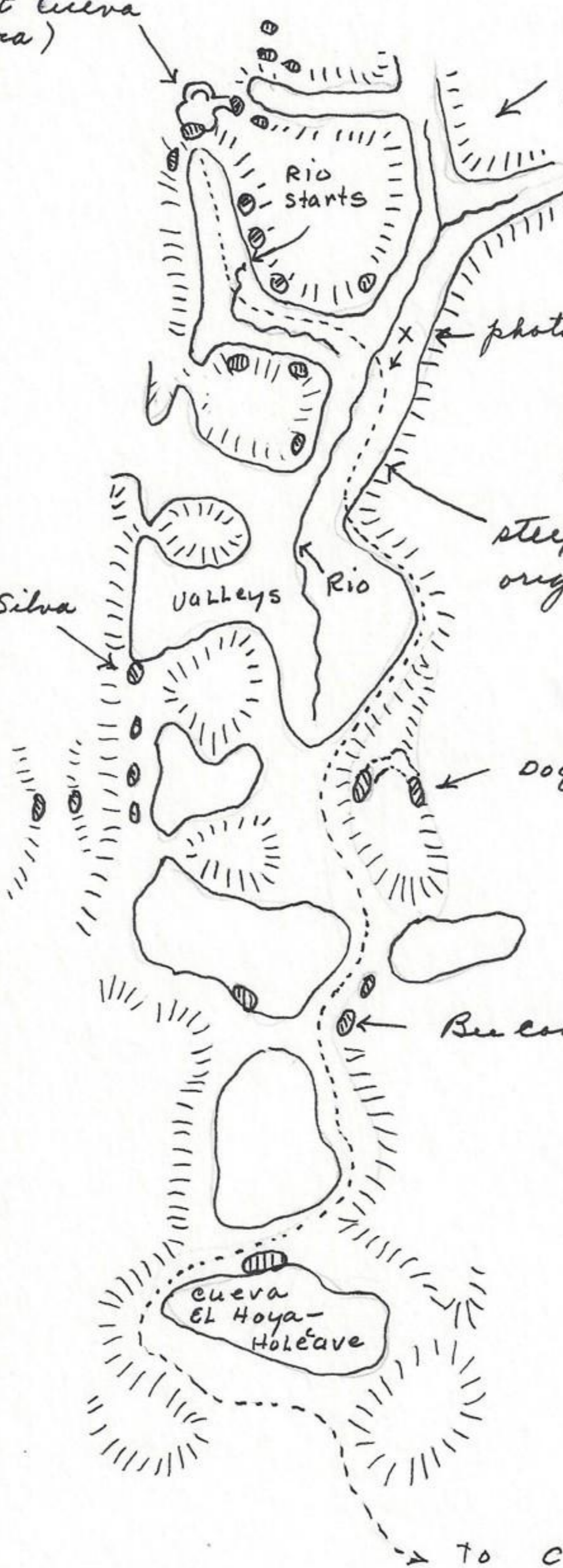
Dog cave - Cueva del Perro

Bee cave, El Enjambre

cueva  
El Hoya -  
Holeave

25 Caves visited in  
the morris area.

TO CAMP

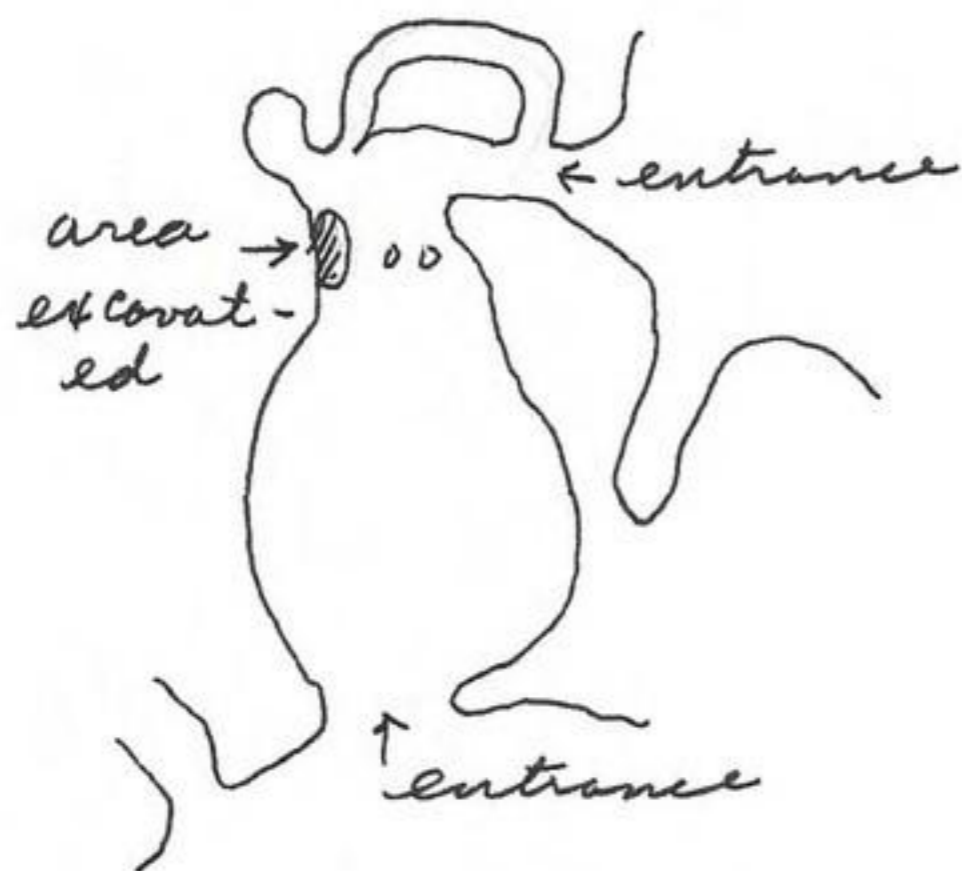




Moravia, Puerto Rico,

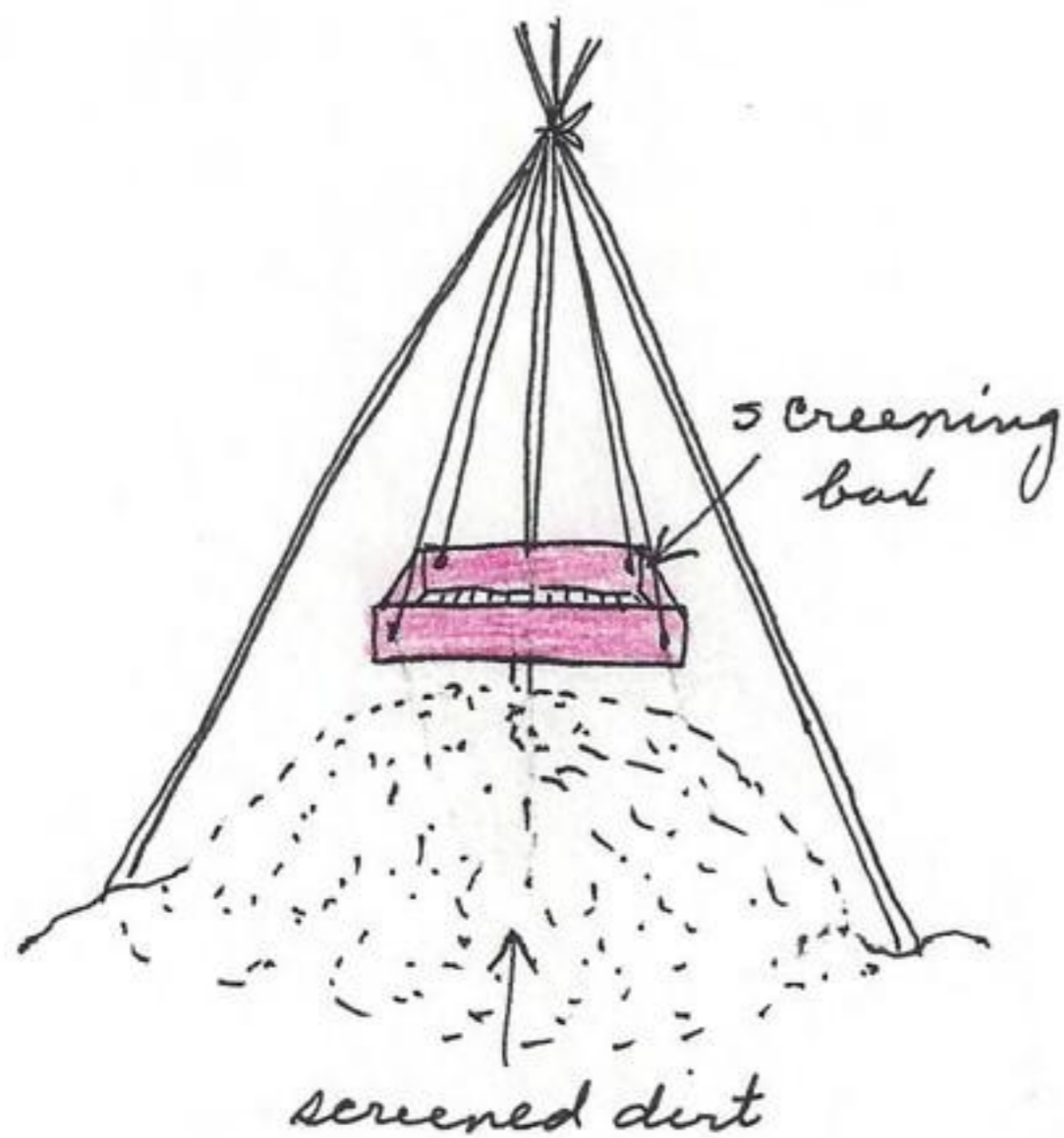
Sept. 7, 1957

Located cave high on slope (Cueva el Oscura - Cueva de Clara) and excavated recessed pockets in S end of cave. About same



amount of dirt removed as from Cueva <sup>del</sup> Ferro. This cave has been worked by plantation workers (years ago) who took the bat guano to fertilize the pineapple fields. Hundreds of tons of guano <sup>have</sup> been removed from this cave - what a loss to science. One should choose a cave which is high on walls of limestone and not accessible to man

except by ropes. If such a cave could be found it would be worthwhile to dig it stratigraphically and save all material to get some idea of community composition. A screen was made at Lawrence, Kansas which was about 18" x 3' lined on the bottom with an 1/8' mesh. Other mesh screens were included and interchangeable. This screen box was suspended by ropes to a pole tripod. As dirt accumulated below one could move tripod. It is important have proper dirt platform or backaches will develop, especially when screening for 8 hours a day.



Sept 8, 1957

Continued excavating as of yesterday. for about 8 hours, 1/2 of which was used to explore Cueva las Sierras

where gross excavation with pick revealed some large bones and forest shells. This cave was different than other caves in cave dirt. Returned to camp and visited the Davilas. Their family consists of 15 - (from oldest to youngest; David (father), Alejandrina Cabrera Davila, wife; Antonio, Ernesto, Joberto, Judith Camelia, Elba Melly, William, Carmen Alicia, Lydia, Gladys, Henry, Madalena, Mydda and Norma Idalia. Senor Ramon Rivera, who lives SE of Davila assisted in Spanish Translation. These people are subsidized by the government.



Moravia, Puerto Rico

Sept 9, 1957

Mr. Julio Marrero, of the National Parks, picked me up this AM and we returned to San Juan. Marrero contacted newspaper and after arranging for shipping equipment departed San Juan 12:30 P.M. for the United States. Arrived Kansas City 7:30 A.M. Sept 10, via Miami, St. Louis. Annette and Children were at the K.C. airport to meet me.

[copy of Puerto Rico field notes to Storrs L. Olson Nov. 17, 1976]  
Smithsonian Institution  
Washington, D. C.



Reserved for bones & photo  
see addenda

See also volume 1 p. 12 to 2000. List of bones  
for the bones of the skeleton



**Estudio en Morovis****Zoólogo Insta Conservar Cuevas que Hay en Isla**

Por DOUGLAS D. RICHARDS

Un zoólogo del afamado Museo de Historia Natural de la Universidad de Kansas instó ayer que se conservaran las cuevas de la Isla para el estudio científico y como una atracción turística.

El zoólogo, el profesor James W. Bee, dijo que el 90 por ciento de la tierra en las cuevas de la Isla con huesos y artefactos de gran valor para la investigación científica, ha sido eliminado para lograr propósitos agrícolas, y que las cuevas más importantes deberían de ser conservadas por el Gobierno. Sugirió que se hiciese un estudio de las cuevas de la Isla para determinar cuáles contenían las mejores posibilidades para el estudio científico.

Acompañado del señor Julio Marrero, historiador de Parques, del Servicio Nacional de Parques, el profesor Bee se detuvo brevemente en San Juan antes de volar hacia los Estados Unidos. Acababa de completar una semana de exploración de las 22 cuevas en el área de Morovis y se llevó consigo una caja con las muestras que de las cuevas sacó.

**ESQUELETO**

Huesos, incluyendo huesos de mamíferos, pájaros y reptiles que se han extinguido en la Isla, y que datan de la época precolombina, se encontraban entre las muestras que el zoólogo obtuvo en Morovis. Entre sus hallazgos más importantes, según dijo el profesor, se encuentra el esqueleto de una fiercecilla que sólo existía en las Antillas Mayores. Esta fiercecilla (que los científicos llaman *Nesophontes edithae*) vino a Puerto Rico hace 60 millones de años.



James W. Bee

La especie puertorriqueña del animal permaneció sin cambiar mientras que la del Continente demostró haber pasado por un proceso de evolución a través de los siglos. Esperaba el profesor haber encontrado suficientes huesos como para reconstruir el animal por completo.

Otro hallazgo importante fue el de un hueso de un perezoso con patas de tres dedos. Y entre las otras cosas descubiertas en Morovis, se encuentran 15 variedades de murciélagos ya desaparecidos, varios tipos de reptiles que ya no existen, entre los cuales había lagartos y culebras.

El profesor Bee que ha hecho recorridos de 36 islas en el Caribe para hacer colecciones como la hecha aquí, dijo que el material adquirido sería usado para hacer un estudio compara-

do en investigación zoológica.  
**CUCHILLOS**

La evidencia que mostró que los indios habían usado las cue-

vas de Morovis para matar algunos de los animales y reptiles, probablemente para usarlos como alimentos, se encontró en el hecho de que los huesos parecían haber sido cortados con instrumentos afilados. Las pruebas científicas para determinar la edad exacta de los huesos se llevaron a cabo en la Universidad de Kansas.

Además de los hallazgos de valor científico que aún quedan en las cuevas, el profesor Bee declaró que debido a su topografía tan poco común, muchas de las cuevas tendrían gran interés para el público en general. Muchas de ellas tienen cientos de pies de profundidad y varias cuentan con ríos subterráneos, dijo. Pero en su estado actual, no sería recomendable que los turistas las exploraran.

Sugirió que el Gobierno de Puerto Rico reservara y conservara en buenas condiciones como atracciones turísticas, varias de las cuevas que son de un enorme interés geológico.

Durante su estancia en Morovis, el zoólogo acampó cerca de las cuevas. Dijo que un número de estudiantes y de personas del pueblo había demostrado gran interés en las cuevas y en sus hallazgos.

La investigación zoológica del profesor Bee lo ha llevado al Asia, a la América del Sur y hasta el Artico. Dijo que había llevado a cabo un estudio de la vida animal en el Artico por orden de la Marina.

Los estudios del desarrollo de la vida animal en las Antillas, al ser comparados con los del desarrollo de la vida animal en el Continente, pueden descubrir pistas de gran significado para la comprensión de la relación física de estas islas con el continente en una época que data de hace millones de años.



Museum Natural History, Lawrence, Douglas Co., Kansas

Sept. 15, 1957

under Sept 15.

Including information of Jan 29, Feb 18, June 10, of identification of material from excavations at Provo, Utah. The following information sent to Mr. Ross T. Christensen, Dept. Archeology, Brigham Young University, Provo, Utah. (Jan 28)

I am enclosing list of identifications of mammals and birds from UH 11, Kinckley mounds, Provo, Utah. The specimens were returned Jan 28 1957. The molluscs and the fish material are not yet reported but I will try to send you these soon. I had a delightful time working over this material and seeing vicariously the original fauna of Utah Valley.

The list of mammals and birds was compiled on the basis of your consecutive catalogue number. Where this number was not on the specimen I used the full field no. Only two instances of misnumbering were encountered, nos 154 & 102 were duplicates. The number on one of the specimens of *Homa sopena* was illegible. No. 181 is most likely but this number is preoccupied so it could have been either 131 or 151. In a few cases, where several different species were in one envelope, I subdivided the aggregate and placed each kind of bone in a separate envelope. Each envelope, so subdivided now carries the same number as the original number. The subspecific name has been added to the species name of the mammal on the basis of present day distribution and is so employed for your convenience of ready reference to the literature on these mammals or birds. In no instance, however, is it construed that the identification was made on the subspecific level.

The only forms now extirpated from the area are the mountain sheep (*Ovis canadensis*) and the bison (*Bison bison*). These two animals, however, were formerly in either Utah Valley or in the adjacent Wasatch Range (Mt. Timpanogas). There is significance in the fact that except for the three ungulates and exclusive of the birds, all forms dig subterranean burrows and therefore conceivably could be post-humans habitation. A careful correlation of field data and position of specimen will separate the accidental introduced elements from those in situ.



Identification Lot no. 2 of archeological specimens  
from UH 11, Provo, Utah. Brigham Young University.  
Submitted by Dr. Ross T. Christensen and identified by  
James W. Bee. (Site UH 11)

- Homo sapiens Man. nos. 74, 126, 138, 167, 181 (this  
number indistinct and probably 131 or 151), 185  
(UH 11 17R7 L. 11),
- Lepus t. townsendii Bachman. white-tailed jackrabbit.  
nos. 130, 143, 160.
- Sylvilagus nuttallii grangeri (Allen) Nuttall Cottontail.  
no (UH 11 5R4 L. 11),
- Marmota flaviventris rosophora Howell yellow-bellied marmot.  
no. 57
- Thomomys bottae albicaudatus Hall Botta pocket gopher  
nos (UH 11 5R4 L. 11), (UH 11 17R6 L. 111).
- Castor canadensis rostralis Surrant and Crane Beaver  
nos. 131, 149, 164, 176 (UH 11 13R9 L. 111).
- Ondatra zibethicus osageensis (Ford) muskrat.  
nos. 15, 39, 54, 85, 91, 102, 102 (duplicate number), 124, 133, 134,  
135, 139, 152, 154, 156, 166, 171, 172, 173, 174, 175, 178, 183, 186, 188, 189,  
191, 192, 193, 195, 197, (UH 11, 5R4 L. 11), (UH 11 14R4 L. 10), (UH 11 18R7 L. 101),  
(UH 11 14R4 L. 10), (UH 11 18R7 L. 101), (UH 11 17R7 L. 11), (17R4 L. 10 2.0-2.5)
- Canis latrans ? Coyote  
no. 18.
- Taxidea taxus taxus (Schreber) Badger  
no. (UH 11 5R4 L. 111).
- Mephitis mephitis major (Howell) Striped skunk  
no. (UH 11 trench A 128).
- Dama hemionus hemionus (Rafinesque) mule deer  
nos. 42, 58, 159, 162 (part of specimen no. 42), (UH 11 17R7 L. 10).
- Ovis canadensis canadensis Shaw mountain sheep  
nos. 5, 10, 13, 25, 47, 96, 97, 103, 114, 118, 158, 165, 200, (UH 11 5R4  
L. 111), (UH 11 17R6, L. 111), (Ovis no number).
- Bison bison bison (Linnaeus) Bison  
nos 19, 110, 148, 198, 199
- Branta canadensis Canada goose  
nos 45, 77, 86, 99, 111, 146, 147, 153, (UH 11 5R4 L. 111).
- Anas acuta pintail  
nos. 106, (UH 11 17R4 L. 10).



*Anas platyrhynchos*

Mallard

nos. 20, 28, 51, 52, 72, 76, 80, 82, 84, 113, 121, 129, 150, 181, 187, 190.

*Aythya affinis*

Lesser Scaup

nos. 136, 154

*Aythya marila*

Greater Scaup

nos. 22, (UH 11 17R4 L. 110).

*Mergus merganser americana*

American Merganser

nos. 56, 94, 168, 194, (UH 11 1747 L. 110).

*Recurvirostra americana*

Avocet

no. (UH 11 20R4 L. 110).

Identification of fish and molluscs to follow.

On Feb. 18, 1957 wrote to Dr. Ross T. Christensen concerning the identification of the fish and molluscs. I just received the archeological material (fish) recently sent to the University of Michigan for identification. As Dr. Meller had departed for Mexico, the responsibility was relegated to the Curator of Fishes, Prof. Reeve M. Bailey whose authority is respected. The fish material will be shipped to you this date. This leaves the molluscs to be identified.

At the time I was working with the fish material, I thought that the pharyngeal teeth were, in fact, the Utah chub as I am familiar with these elements and have found them many times along the shores of Utah Lake, however, in an attempt to key them out and because of the incomplete set of teeth, I consistently ended with two other kinds of fish Siphateles and Hesperoleucis, neither of which occurs in the Bonneville Basin. The Utah chub is the large, abundant and widely distributed minnow of Utah Lake and would almost certainly have been used as food by the Indians. This species actually has a dental formula of 2, 5-4, 2. Since both of the arches you sent are from the right side, they fit perfectly in having four teeth. The scars, where the two weak teeth of the minor row were attached on each bone, can be seen. These scars agree perfectly in position with the location of the teeth in arches of recent specimens. The teeth on these two arches are considerably heavier and notably more worn than those of the younger fish, but this is what one would expect in large specimens. The slope and weight of the arches and the position of the teeth, however, are in ex-



(Continued from opposite page.)

I am enclosing a map from my journal which shows the location of those caves which I visited and the general area which I believe to have scenic values on the level of a State Park. My recommendations are to establish inconspicuous graded trails to those caves which could be visited without disturbing the colonies of bats found therein; preserve the flora and fauna and especially to preserve for science, the loess dirt which supports the remains of a unique pre-Columbian fauna. Mr. Earl Jenkins of Moravia, Box 353, is in a position to offer assistance to you in drawing up more detailed plans for the establishment of a non-commercial State Park in the Moravia area.



cellent agreement with the modern specimens. I would postulate that the fish represented by the arches were approximately 15 inches in length which is a fairly large fish for the Utah Club and a size suitable for food. Lot no 2 identification of UH 11 is as follows:

*Gila atraria* (Seard)

Utah Club

nos. 71, 137, 140, 196, (UH 11 11R9 L. 11), (UH 11 17R4 L. V 2.0-2.5),  
(UH 11 5R4 L. 11).

a letter sent June 10, 1957 to Dr. Ross T Christensen included the following information. The molluscs were mailed to you this date and concludes the identification of Lot no. 2 of UH 11 Site (Winkly Mounds) at Pravo, Utah. These molluscs are as follows:

*Lymnaea palustris* Muller

nos. (UH 11, 13R9, 1.0-1.5, L. 1111); (UH 11, 11R9, 0.5-1.0, L. 111);  
(UH 11, 17R8, 1.0-1.5, L. 1111).

*Helisoma trivolvis trivalvis* (Say)

no. (UH 11, 10R7, L. 111).

*Helisoma trivolvis benneti* (Tyron)

no. (UH 11, 11R9, 1.0-1.5, L. 1111)

*Physa utahensis* Clench

no. (UH 11, 11R8, 1.10).

*Sphaerium pilobryanum* Sterki

no. (UH 11, 17R7, 2.0-2.5, 1.10).

*Anodonta nuttalliana* Lea

nos (UH 11, 13R7, 1.0-1.5, L. 1111); (UH 11, 17R8, L. 1111); (UH 11, 13R9, 5-1.8, L. 11); (UH 11, 13R7, 1.5-2.0, L. 110); (UH 11, 5R4 (?), 0.5-1.5, L. 11); (UH 11, 13R9, 1.0-1.5, L. 1111).

This identification concludes the identification of archeological material for Dr. Christensen.

The following information was sent Sept. 28, 1957 to Mr. Frank T. Martucci, Puerto Rico Industrial Development Company, San Juan, Puerto Rico. I would be glad to provide you with information for your Master Plan of Tourism Facilities. My views and those of Mr. Julio Marrero concerning the scenic values and needs for preserving the scientific material contained within the Caves of Morris are stated in the news article (El Mundo, Sept 11, 1957).



Natural History Reservation, NE Lawrence, Douglas Co., Kansas

Sept 16, 1957

Conferred with Mr. Henry Fitch concerning National Science Foundation Project on the Copperhead study. 20 hours per week is

to be devoted to collecting and marking Copperheads on the Natural History Reservation. made map of reservation and outlined rock outcrops (ledges).

The areas in red are good cliffs, blue = rock fences, green = wire fences.

dotted lines are drainage systems outlining natural divisions of the reservation.

Field landmarks are as follows:

Bluff Ledge: Leanng tree, Sign Hack, Sta. 15, Split Elm.

Top Ledge: Paved Hack, Strip Locust, Y Oak, Triple Elm, Twin Hack

Quarry Ledge: Widow Hack, Tomb Rock, Tin Wall, Square Point, Quarry Box SW

L Ledge: Cave Rock, Snake Trap, Cave Rock.

Hole Ledge: Plank Log, Center Hack, Pen Elm, Pit Elm, Rat Log.

Skunk Ledge: Cave Elm, Rock Elm, Snake Point

Budge Ledge: SC Gully

Bottom Ledge: Point Oak, Rattler Rock, Pilot Elm, Last Oak.

North Ledge: North Hack, Sumac Elm, Side Oak, Rag Elm.

Fork Ledge: Fork Hack, Table Rock, Drope Elm, North Elm, Corner

Hack, Dog Rock.

NE Ledge: Creep Elm, Straight Oak (NE oak), Point Oak, New Oak.

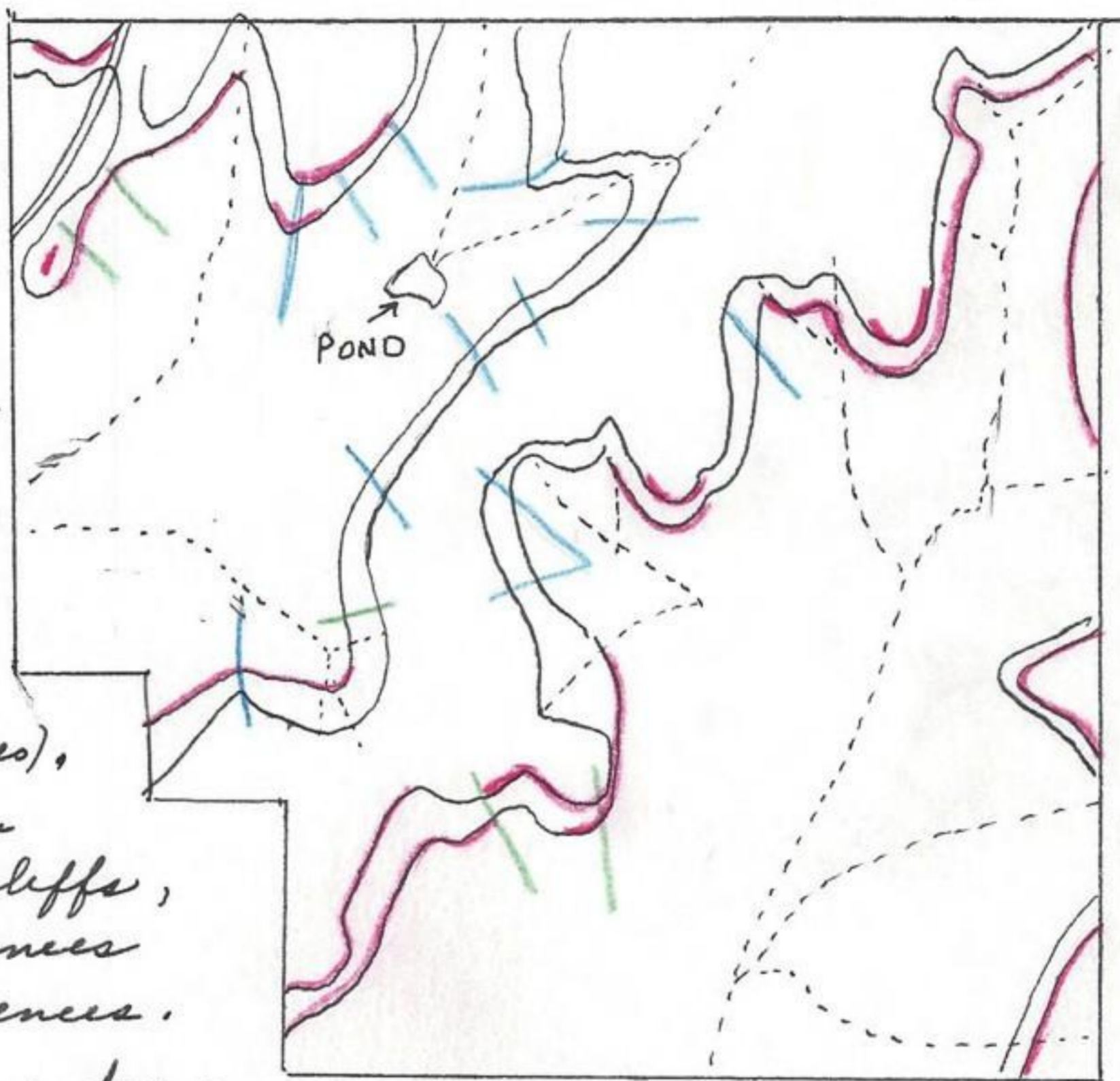
Point Ledge: Black Oak.

Steep Ledge: Poison oak, Poison Elm, Split Elm, Rough Hickory

Slope Ledge: Arm Hack, Shag Hack, Angle Elm.

V Ledge: Poison Elm, Crotch Oak, Boulder Hack, White Elm.

Gully Ledge: Moss Elm, Vine Hack, Big Elm, Kell Elm, Overhang Rock, Overhang Elm.



Area  
1 square  
mile, minus  
SW corner.



Possum Ledge: Deer Hack

Hawk Ledge: Shoulder Hack, Turn Hacks, Branch Elm, Fork Coffee

Rat Ledge: SW Elm, Little Hack, 2nd Hack, Turn Elm, Big Hack, Rat Walnut, Broad Lick, West Elm, East Elm, Brush Elm, Choke Elm, SE Hack, Hallaw Haw, Double Locust, Curve Elm.

Angle Ledge: Cross Elm, Rattler Hack, Hawk Hack.

Funnel Ledge: Salamander Elm, Funnel Elm.

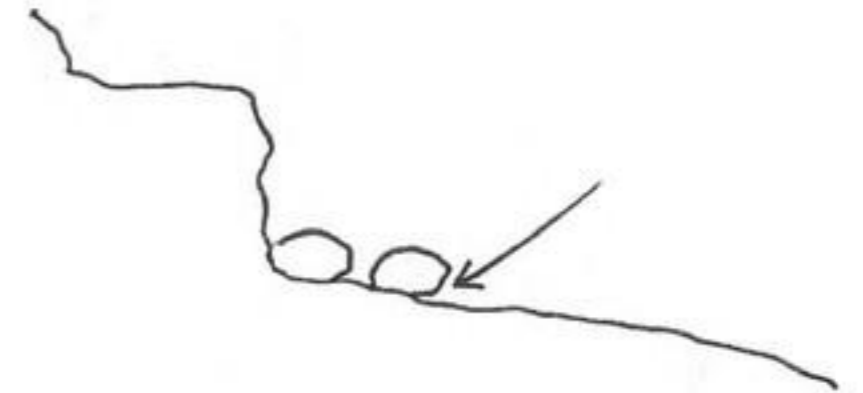
Barn Ledge: Barn Hack, Turn Hack, Rock Walnut, Arm Walnut, Brick mound, Barn maple.

East Ledge: Balance Lick.

Wall Ledge: Chimney Ledge, <sup>Deep Walnut</sup> Front Hack, Dead Tree

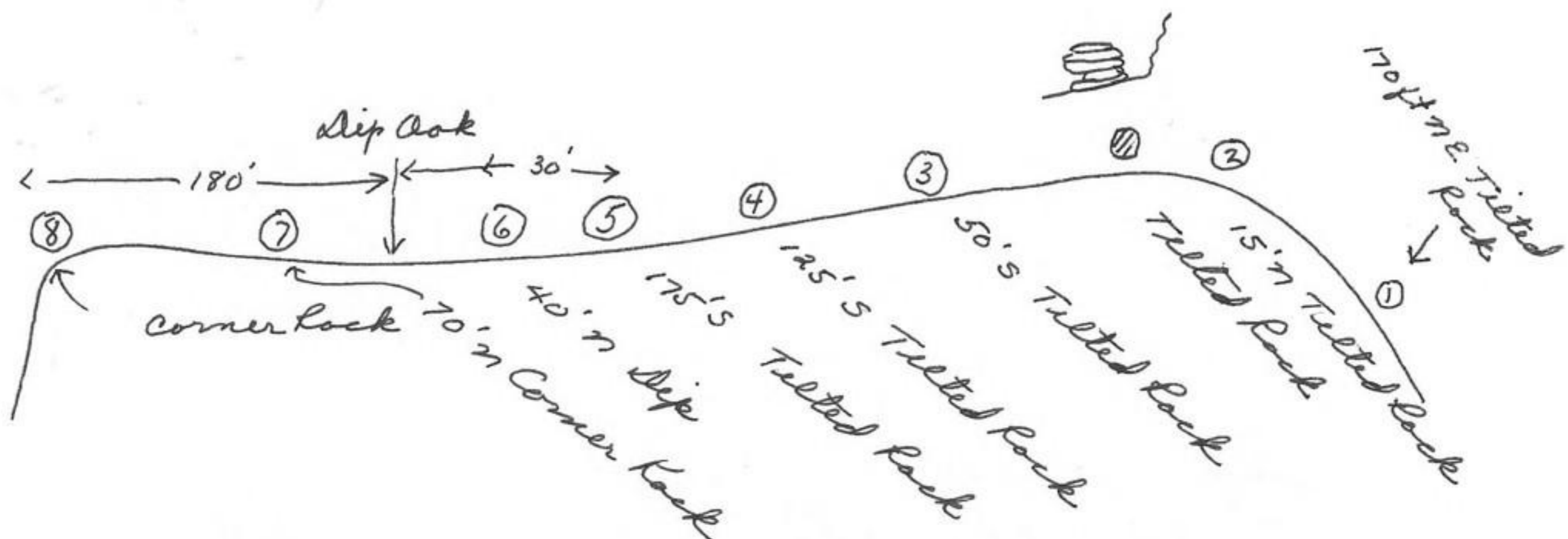
Spider Ledge: ~~Deep Walnut~~, ~~Dead Tree~~ Spider Ledge, moki, albacked.

This afternoon checked a trapline for Copperheads. One *Agkistrodon contortrix mokeson*, a gravid ♀ from near base of ledge on N exposure, 4 feet from base of ledge and at the entrance to a hole between two rocks 1 foot in diameter. The tail was within 2 inches of the hole when first observed and when a stick was placed over its head it backed into the hole 5 inches. ~~away~~ This snake was plainly visible from the trail but only one step ahead when first noticed. It was on soil and dead leaves. The anal temperature was the same as the atmospheric temp. When placed in bag, the fangs extruded a yellow venom which saturated the bag for approx. 400 square millimeters.



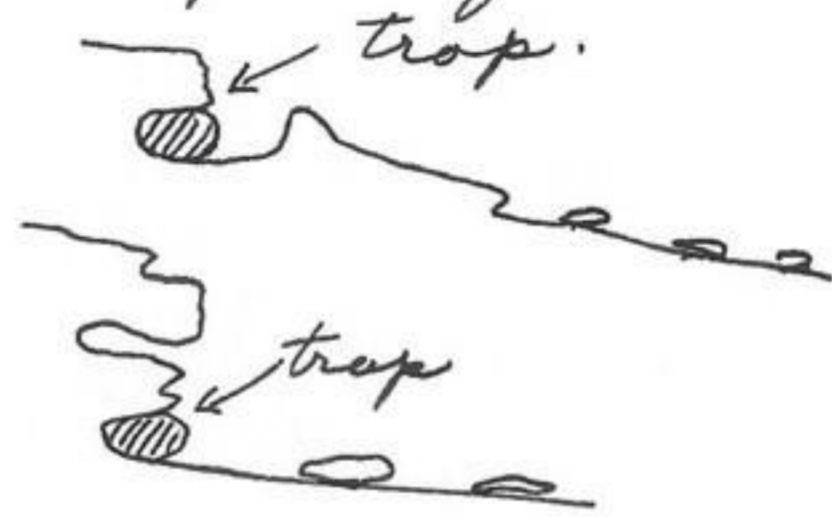
Sept. 17, 1957

Set 8 snake traps along Rattler Ledge (upper). The positions are as follows: (new landmarks named this morning are: Tilted Rock, Dip and Corner Rock).





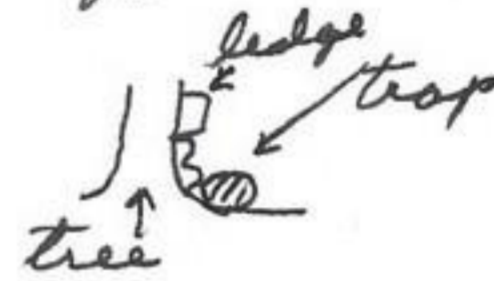
A small Copperhead snake was captured 25' S Tilted Rock on the Upper Lattler Ledge. The tail of this snake was within 2 inches of the hole in which it started to retreat when captured. Anal temp. 17.9C, atmospheric temp 19.9C. Three *Eumeces fasciatus* were 150' E of Tilted Rock, above the ledge but within 5' of the rocks. Birds extremely uncommon on reservation. Sparrow hawk and shrike in new upland grassland. Trap no 4 set 175' S of N. Boundary



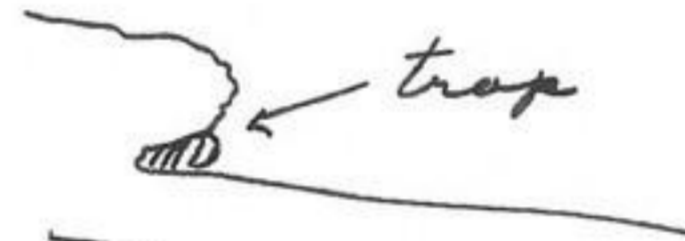
Trap no. 5 190' S of N. Boundary

At 10:45 A.M. set a line of 7 traps along upper N ledge on SE part of Rockefeller Tract.

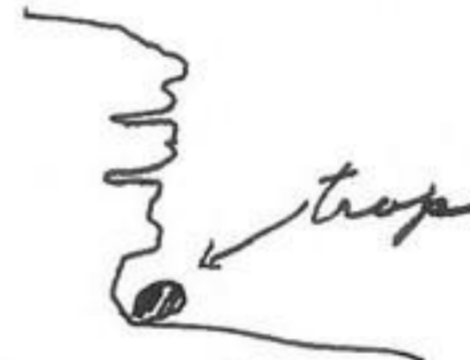
Trap no 1 at 75' SSE County road



Trap no 2 110 SSE County road



Trap no 3 125' SSE County road



Trap no 4 45' SSE Spread Elm



200' NW from Angle Rock is Spread Elm.

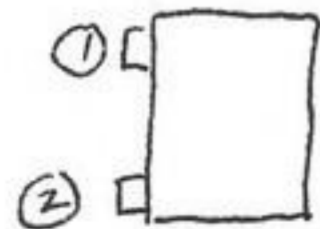
Sept 18, 1957

*Chaetura* (chimney swift) still at house on Rockefeller tract. Set 2 snake traps at the barn this morning at 8:10 A.M.

↑<sub>N</sub> no 1 at NW corner, west exposure.

no 2 at SW corner, west exposure.

Two domestic pigeons in barn.



Also this morning established line of 5 snake traps along upper Ash Ledge in the NE part of the upland grassland of the Rockefeller tract. Wall Ledge was given this outcrop of ledge this morning because of its similarity to a wall. All traps set according to a point from on the north boundary line. Ledges run approximately north and south. The lower ledge is not suitable for traps. Settings are as follows:



Trap no. 1 18' S of n boundary line.

Trap no 2 75' S of n boundary line

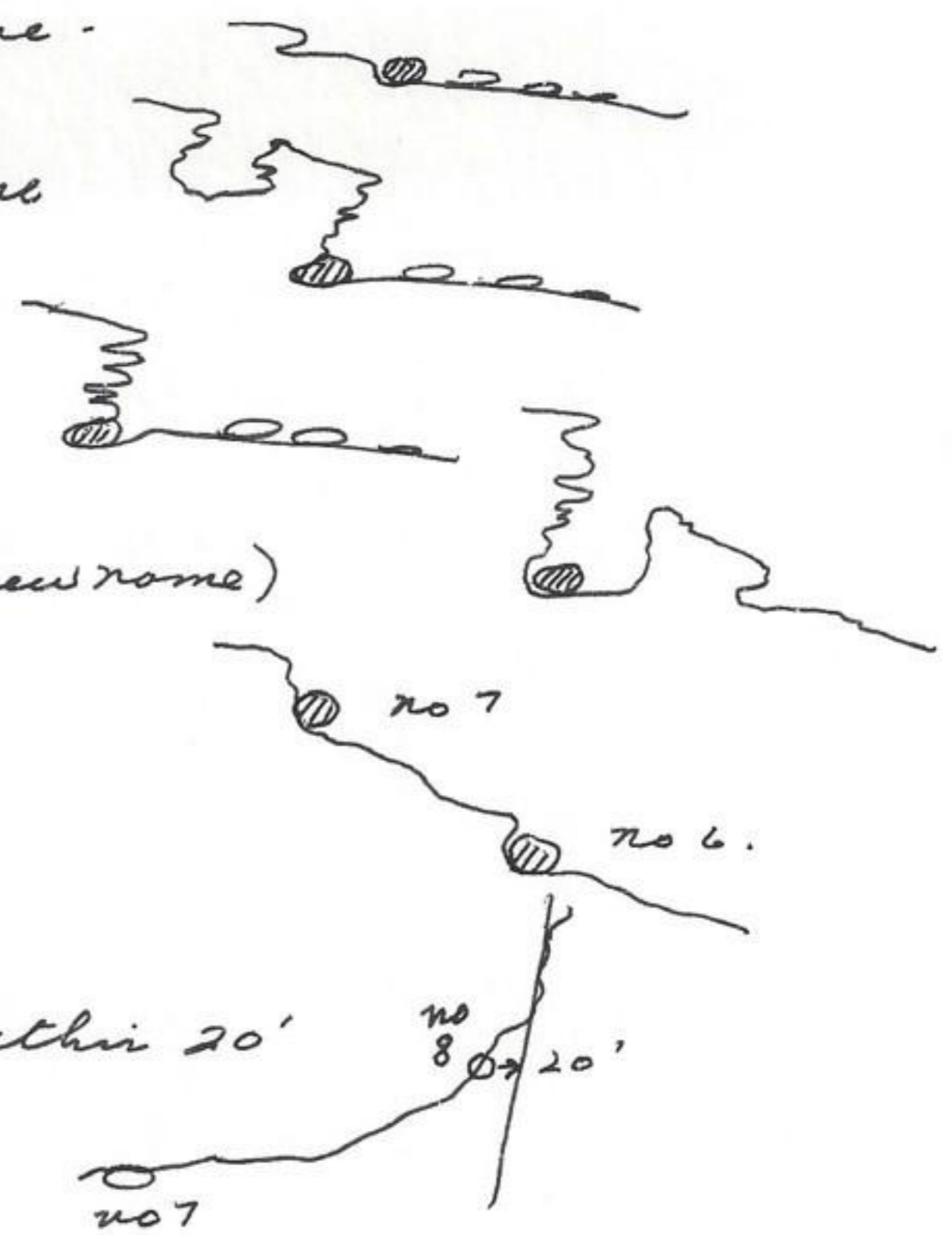
Trap no. 3 125' S of n boundary

Trap no 5 5' E Angle Rock (new name)

Trap no 6 59' E Angle Rock  
(or 160'?)

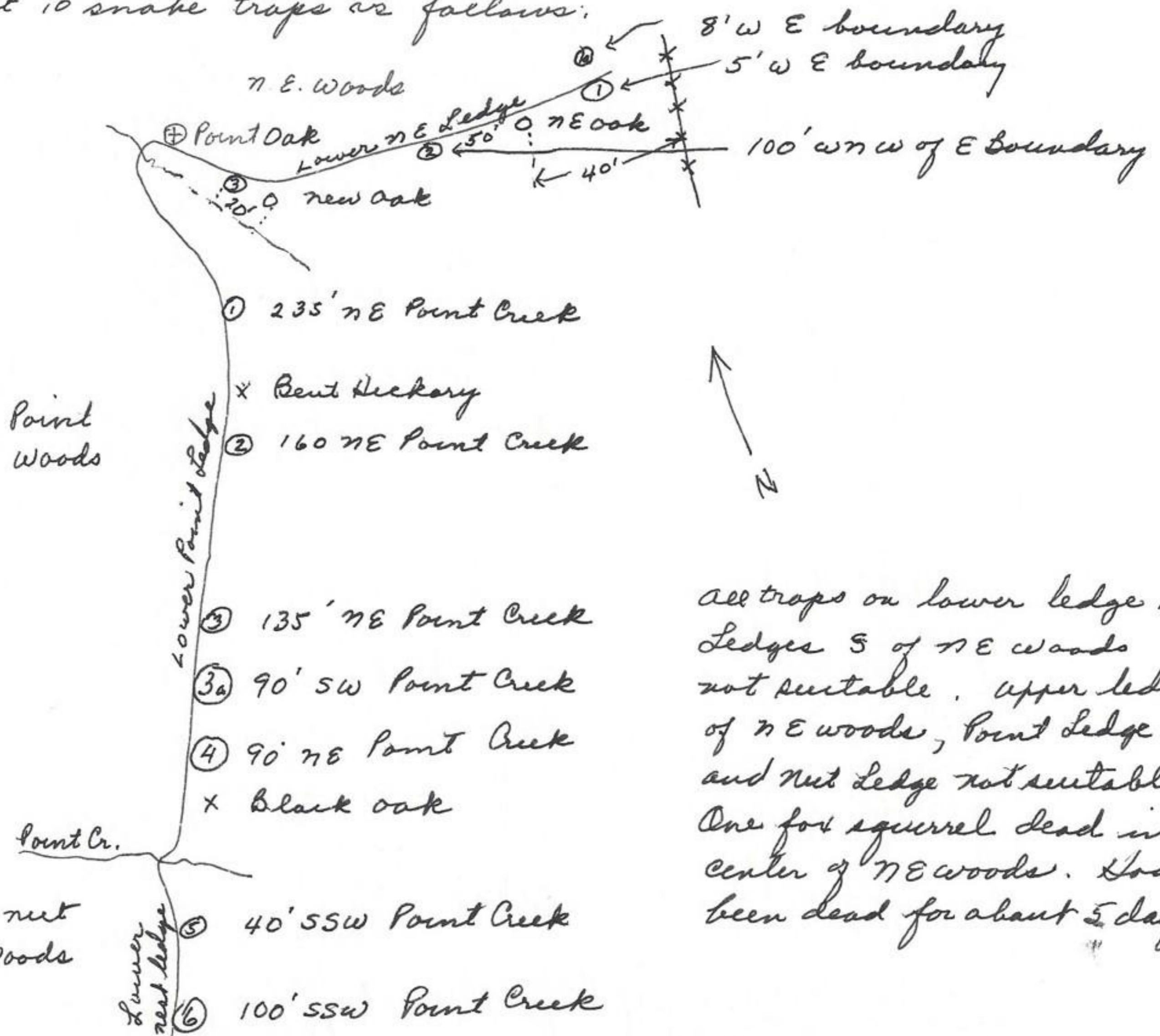
Trap no 7 60' E Angle Rock

Trap no 8 280' E of no. 7 and within 20' of the east fence



Sept. 18, 1957

Set 10 snake traps as follows:



all traps on lower ledge. Ledges S of n E woods not suitable. upper ledge of n E woods, Point Ledge and nut Ledge not suitable. One fox squirrel dead in center of n E woods. Had been dead for about 5 days



Started food experiment on young *Ankistrodon*.

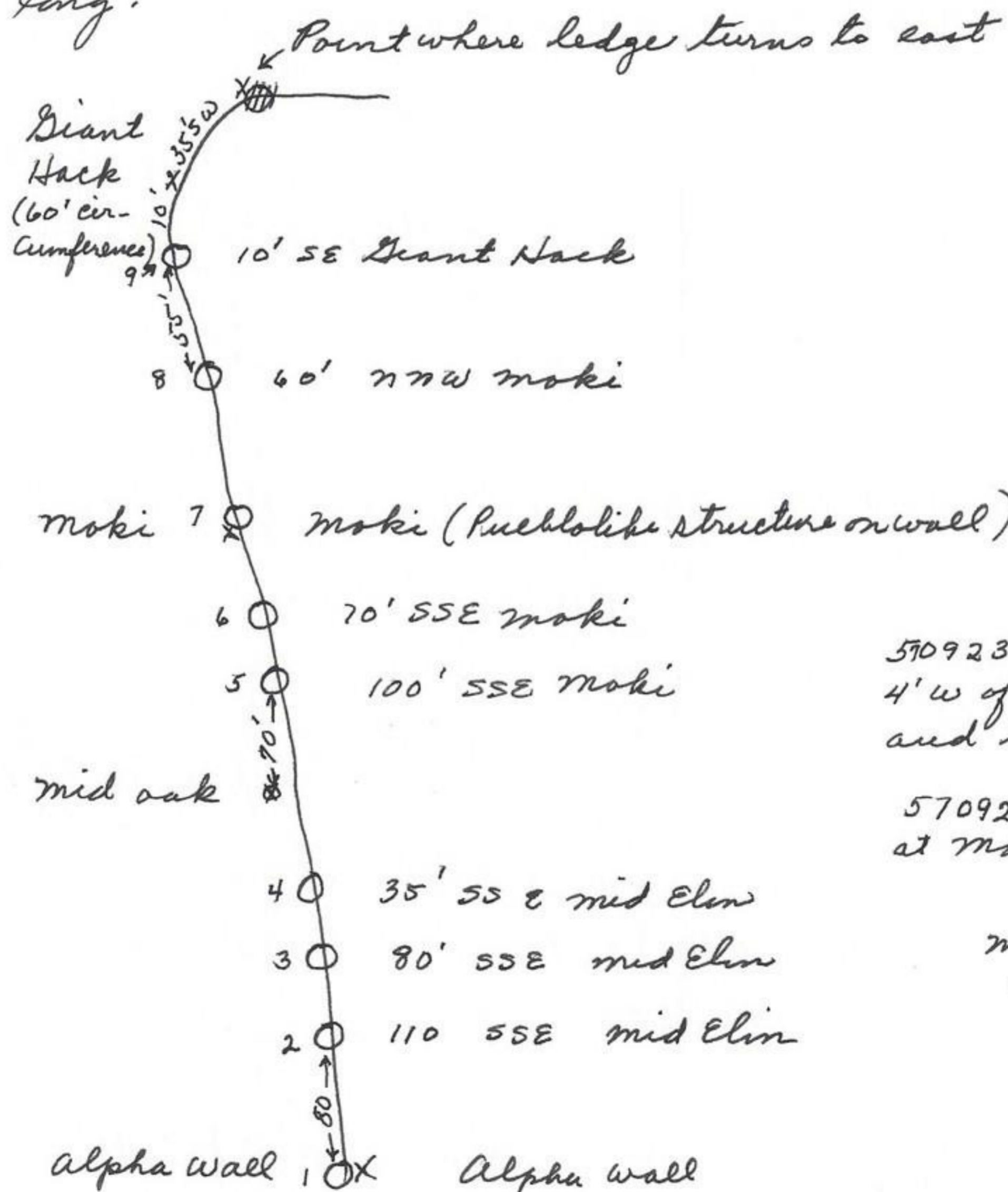
group 1 (youngest) struck at a log & killed a frog  
 group 2 (next youngest) " " " " "  
 group 3 (oldest) " " " " "

Sept 20, 1957

Spent this afternoon transferring field notes on to cards. Rained last night and this A.M. - .81 inches by noon.

Sept 23, 1957

Enroute to Natural History Reservation noted 18 bluejays in one flock at 2 miles S of Reservation. This morning set 9 snake traps in upper ledge of Spider Woods. Reference points new in this area are: Giant Hack, moki, mid Elin and Alpha Wall. Noted *Eumeces fasciatus* at Giant Hack (5 inches long); moki, 10'S (8 inches long); 100'S moki (7 inches long).



570923-1 *Ankistrodon* at 4' W of trap at 100'S moki and took to lab.

570923-2 *Eumeces fasciatus* at moki. To lab

most traps thus



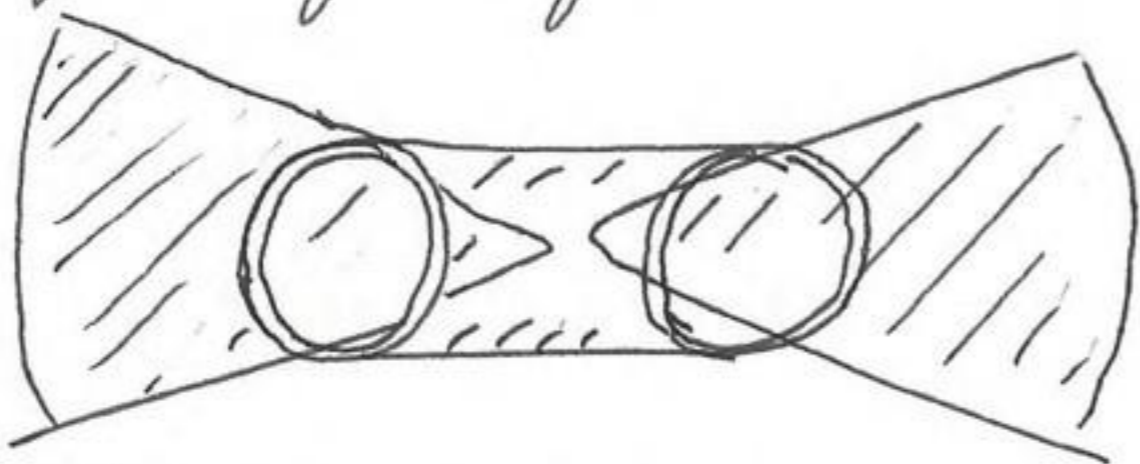
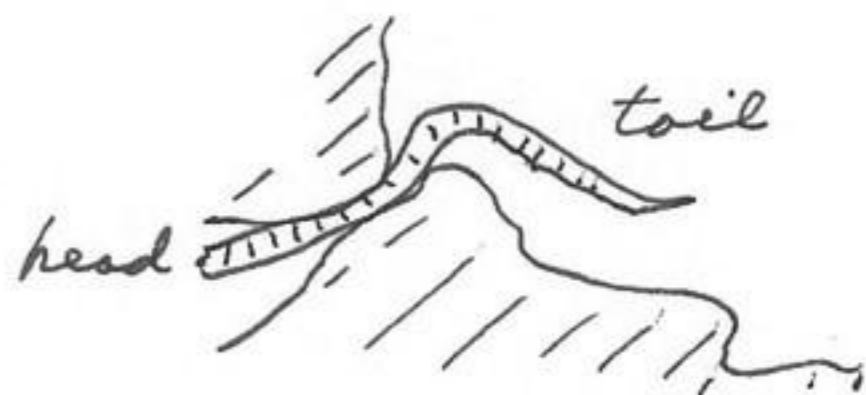
Started trapline 8:30 A.M., completed 11:30 A.M.



Natural History Reservation, NE Lawrence, Douglas Co., Kansas

Sept. 25, 1957

Checked trap routes in N8 Woods, Point Woods, Nut Woods, Scope Woods, V Woods and Steep Woods. Collected 5 *Agkistrodon* and an *Elaphe obsoleta*. Copperheads; when released, usually remain motionless then move either up, down or horizontally, in contrast to some snakes that always escape down slope. One copperhead forced venom 3 feet when glands were squeezed with thumb and fingers. There is usually expulsion of liquid from anus (100 or more). One skin shed (complete) on upper slope ledge. The skin started to peel in fissure and remained attached at that point while the snake crawled out of the fissure. Several traps had been visited by raccoons or skunk and the traps were messed up. As reinforcing ring was added to the traps thus: a wire ring was placed on the wire funnel so that the funnel ring was forced against the cylinder ring. Straight wires thru the



Cylinder + funnel secured the funnel to the cylinder so that if the trap was trampled or dislodged the funnel would not bend or become detached from the cylinder.

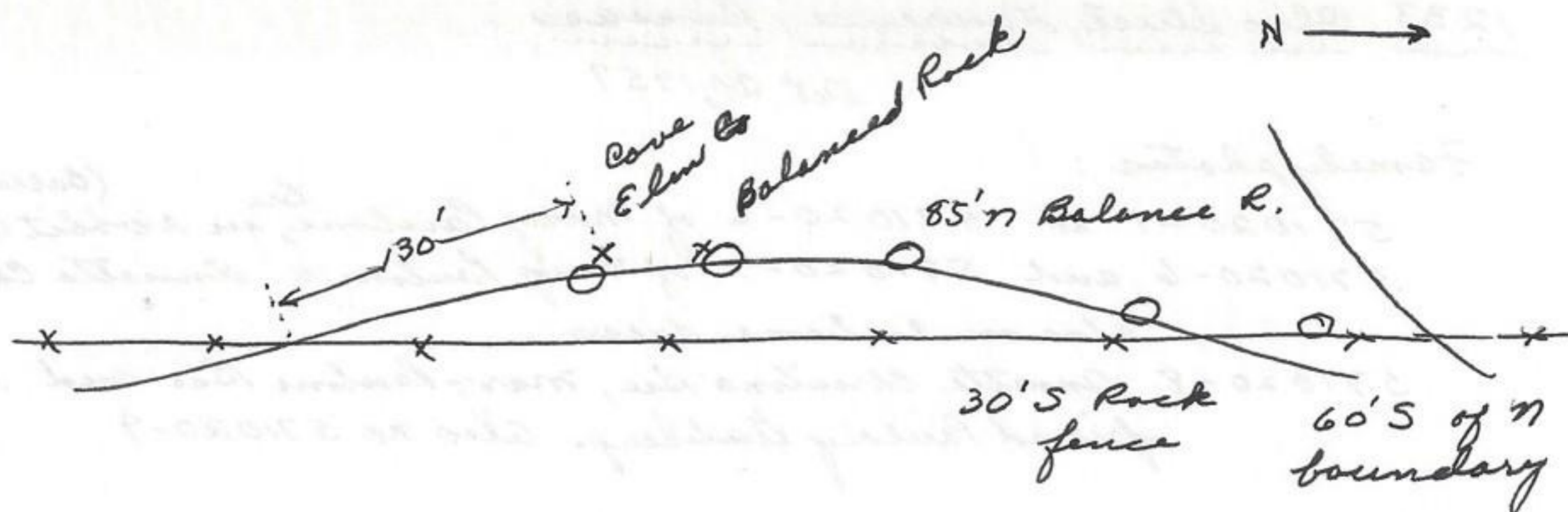
Natural History Reservation, NE Lawrence, Douglas Co., Kansas

Sept 26, 1957

Set series of traps in Quarry and mapped set. At Tim Wall a small copperhead and a microhyla were under the same rock and only 6 inches apart. Two ring-necked snakes were under a large piece of wood at Quarry.

This A.M. established a new line of traps in an area of the reservation that had not been tested before for copperheads. This area is in the East Woods and is along the lower ledge of rocks. The ledge enters the reservation and then leaves the reservation after forming a gentle arc. The line required new location points of which the following were named today: Cove Elm Balance Lock,





natural History Reservation, NE Lawrence, Douglas Co., Kansas

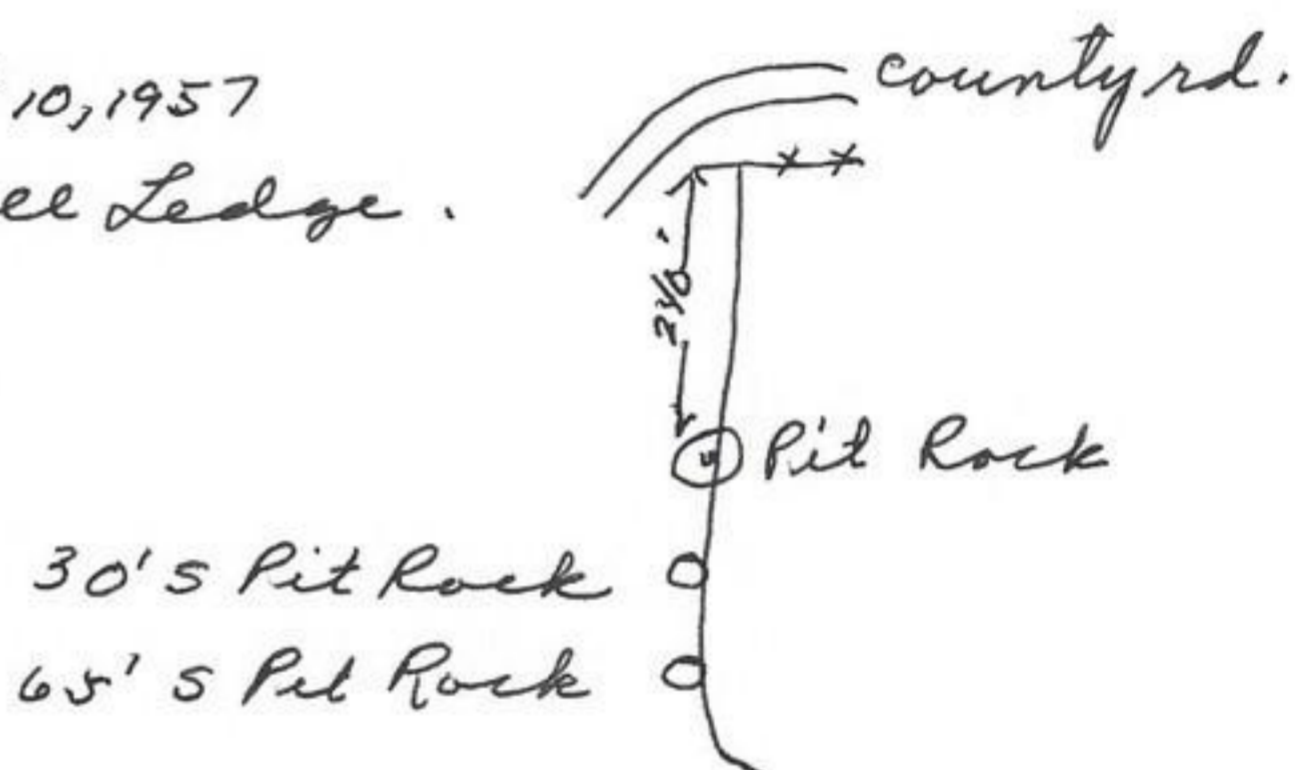
Oct 3, 1957

Checked Fattler Ledge (upper). Lost skin of Copperhead at 125' S Tilted Rock.

Oct 10, 1957

Set three traps on upper Hill Ledge.

Have noticed several juncos in the field.



Oct 14, 1957

Few Le Contes sparrows in uplands in grassland.

Oct 17, 1957

Whip-poor-will flushed 18' E of New Oak on upper ledge of NE Woods. It flew 30' and alighted on an old horizontal limb. When approached it flew east and alighted on the ground.

Oct 18, 1957

Whip-poor-will flushed again from identical spot as of yesterday from ground under an oak bush below cliffs. As of yesterday, it flew to the bent limb (resting parallel with the limb) and when approached flew SW instead of to the E as of yesterday encounter.

Oct 19, 1957

On a route from NE to SW corners of reservation counted 17 *Sceloporus*, all under rocks. 50% in pairs, the largest



1233 Ohio Street, Lawrence, Kansas  
Oct 20, 1957

Family photos:

571020-1 to 571020-6 of Mary Pauline Bee (Ballet Costume) in Rabbit Costume  
571020-6 and 571020-7 of Mary Pauline & Annette Christine Bee also in costume dress.

571020-8 Annette Christine Bee, Mary Pauline Bee and their friend Cindy Gallup. Also no 571020-9

Central Park, Lawrence, Kansas  
Oct 21, 1957

Annette Christine Bee and Mary Pauline Bee under wheels of train  
Photo 571021-1



number under one rock was 3. On a previous trip (Oct 3) on identical route did not see a single *Sceloporus*.

←

Natural History Reservation, NE Lawrence, Douglas Co., Kansas.

Oct 23, 1957

A Cooper Hawk dove over a pond on the Rockefeller plot in a manner similar to a duck hawk. It became entangled in utility line. The creek 1/2 mi. S school house with 1 foot of water at 8:00 A.M. At 12:00 noon the crest was near its upper banks 10 feet higher than this A.M. although only a small amount of rain fell this after 8:00 A.M.

Oct 24, 1957

Caught a *Cryptotis* in trap 15' NE Hawk - Rat boundary fence in lower ledge. Several *Cryptotis* in cliff areas among deciduous trees. One *Pitymys* in trap 20' N on upper Sleep Ledge. Some animal had dug under the trap. Water running in most of the otherwise dry stream beds.

Oct. 28, 1957

*Polestes canadensis*, a wasp, were net in unusual numbers especially along cliffs and buildings. These wasps were generally distributed throughout the area between the reservation and Lawrence. On the country road along W boundary of res. The wasps were 1 per 20 feet. One king snake left a hole in the ledge. Released a copperhead at N Ledge along wall. It went into rocks immediately and thrust out its tongue about every inch of travel.

Nov. 7, 1957

Checked snake traps but temperature too cold for reptile activity. Seven disturbed and dislodged traps. One trap, 130' SSW of N end Hawk Ledge, found 1 fire lined skunk in trap which in turn had been displaced but rolled down the hill.

Oct. 29, 1957

Oakley Creek, 1/2 mi. SE Leecompton, Douglas Co., Kansas

Oct 29, 1957

Following photos of Mary Pauline Bee that we made in upper drainage of Oakley Creek. Photos 571029-1 to 571029-14

Oct 30, 1957

Mary Pauline Bee along Kaw River at mouth of Oakley Creek, Photo 571030-1



## ADDENDA

1957

Placed prints 570906-1 of representative bone material of sub-recent mammals, birds & herps from Puerto Rico Caves on this page. Also 570906-2 of resophontes skull and 570906-3 of misc. bones and other material. These are on page 570906-200. See Jour. Mamm., vol 49, no. 3, Aug. 20, 1968, pp 400-412 for report of this material I collected from Cueva de Clara, Cueva del Perro and Cueva de Silva; located approx. 1/2 mi. N and 3 mi. W. Morrovis. Camped on property of Antonio Davila, B.O. Burahona Branch, Morrovis, P.R. See page 407-409 of above Jour. Mamm. for new species Stenoderma rufum anthonyi