JOURNAL 1955

JAMES W. BEE

550103-1

Pan-Am. Hotel
Guatamala City.
Jan. 3rd., 1955

Dear Annette, Chris, Polly, Jay and Grandma:

Back from the wilds of Guatamala and straight to the Am. Embassy where I found many surprizes and long anticipated news from Home. I have never felt the true X' mas spirit or missed the family so much as this year. Tell P.C. and Jay they sure know what daddy needs on his field trips-and to Grandma, I must say the dates had a proffesional touch, the like of which has never been produced on the Bee production line. And to you, my dear senora, mucho gracias for the splendid way in which you have conducted the activities and X'mas for the children. It sounds like the last week has been an active one for all. Tell Chris that I did so enjoy her "I love you" notes and to Jay, that this is my lucky day, to-day, in Guatamala. I think that Santa made a very good choice in the pres--ents this year.

In Guatamala the X'mas season seems to start earlier and last longer than in the States. It appears to me that there is more celebration the day after the occasion than on the proper day. I actually believe the people do not realize the exact date until someone starts the show. In the City, the occasion is much like in the States; but, outside in the wilds, the trend is different.

It is really unique the way these more primitive peoples improvise the natural elements into symbolical signs of X'mas. For instance, they actually pave the road with pine needles which is something new to me in decoration. Their decorations are more compactly arranged and more colorful in reds, greens and yellows. They use the fresh plants of the jungles and wilds, such as, orchids, poinsettas, colorful epiphytes or parasitic plants that are a mass of color and blooms and many other flowers of the forest. The long lines of decoration which we string ceilingward are made of pine needles and other plant material.

Candles which they excell in production, are the mellow sources of light. They can create X'mas trees from bare branches and commonly do so instead of using our conventional fir or spruce tree.

The Catholic Church which seems to be the dominant church in Guatamala is really enchanting to behold, especially on the inside where the candles are so arranged to give a most pleasing atmosphere of color and warmth. The condition that prostitutes the holliness of the day is the drunken natives, especially those individuals that are completely outlining the roads and sidewalks.

Each Pueblo produces a different impression. At Huchuetenengo, the holidays are marked with orderly celebration with people enjoying themselves in a leisurely fashion . Certain groups serve hot drinks and special pastry and candies. The City Center is much like a park on a weekday.

At Totonicapan, which I passed thru on a week day, the streets were packed with mobs of people -each individual standing or walking about sans em--motional expression. These people were from the mountains and were too primitive to know just what to do on such an occasion. Again, in some villages drunkeness is the rule .

On X'mas day, I was camped 2 miles south of San Juan Ixcay at an alt. of 9,400 ft.. The Village was several thousand feet below and beyond any casual visit. However, one family appeared in camp to present me with 2 oranges, 5 small tomatoes, one avocado and a fruit of some unknown kind, plus 5 pieces of carmel candy-paper wrapped. This was their X'mas present for me. Everything was eaten except the tomatoes. The carmel or butterscotch candy was on the order of some of my less acceptable makes of candy-but good at that.

On X'mas I tested my capacity to put up skins and ended the holiday with 60 skins which is my record for one day. With each skin, I thot of my family (barbarious-isn't it ?) The nearest I came to the traditional American X'mas was at the home of Ray Elliott's in Nebaj where was a pine tree decorated a la U.S. style. The Ibarras had a tree without leaves, which had been brightened with conventional drapery plus soap fluff, which, to their sorrow was redristributed about the room by their 3 year old boy. Needless to say, he got much of it in his eyes.

For me, I think I had the most gorgeous X'mas tree in Guatamala-a canopy of clous-forest trees with bright flower stars hanging from their branches -a silence so profound you could almost hear the Bee family some thousand or so miles away. To add to the environment were temperatures I know you will question-even to my surprise, were lower than Alaska's Artic. At Chemal at 11,030 ft where I had one of my camps, the temp. fell to 12° F. or 20° below freezing. No snow only because it is the dry season-no r rain that night, The water froze in the cans, the evaporated milk made good ice-cream and the mice which had been collected froze like icesicles. Fortunately the car had anti-freeze and unfortunately I did not. Even with my two sleeping bags, a wool blanket, a canvas tarp., and all my cloths, I was still cold. Fortunately Carlos had departed for Guat. City for X'mas or we would have both frozen. For one week at these high altitudes the nightly temp-

eratures ranged from 14 to 16° F. Agriculturewas out of the question at these low temperatures. Even the sheep herders choose to remain below 10,000. With little or no interference by man, theextremely high country is primitive and virgin.

There are two zones in Guatamala which suit me best; one as above noted and the other extreme- the lowland jungles. The intervening country has been developed for agricultural purposes and, of course, not suited to my needs.

The high country which is called the Alta Vera Paz is a high and continuous area above 10,000 ft. with many large islands above 11,000 feet. The savannas of the high Uintas and the Kaibab are comparables. As these areas have not been explored, I am not surprised to find new animal life there. With seven stations a transect has been made from the north side of the Sierra del los Cuchmatones to the south side of this critically important range of high mountains. I have over 300 skins, several skeletons and many birds from the area. When we arrive at Guatamala City we will spend mucho tiempo there.

It is interesting to compare the 'altos', cloud forests and pine forests. In the cloud forest, the wind seldom blows. When it does it is of a sporadic nature. Except for the many birds which sing or call continually, the forest is silent. It is always cold except in the sunshine, which, because of the many trees, seldom remains trained on one for more than a few minutes at a time. At night, the silence is ocassionally broken by a falling limb or creak of a tree. These forests are like the dense rain forests of the northwest U.S.-Washington-Oregon and like those areas, have large trees-some 10 feet in diameter with the logs and trees covered with mosses and lichens and many eriphytes growing from the branches. In many respects the lichens and mosses are like those of the Artic.

In the pine forests the winds seems to blow continually and the soft murmur of the trees has a soothing effect. The birds or at least those that sing are few in number compared to the cloud forests. In the high country, the winds are erratic and harsh.

Of all the 'wildlife' in Guatamala, the people are the most interesting-in one way or another. The further one penetrates the backward areas the more one finds the natives have the impression that I am a communist. I don't think these peoples have been brot up to date on the change of their government. To date, they have broken two windows, scratched the car, written ten words of communism on the car, stole 130 traps, a flash light and any thing else they could get their hands on.

Their stealing is more resentment than thiev ery. The old men and women, particularly, go by muttering to themselves in a scornful way. And, if I am skinning outside of the car on the table and a group of natives come by and haven't noticed me, they chatter, especially about the Kansas seal on the car door. Tho I do not know what they are say ing, I recognize the word 'communista' in their conversation; so, I bring them around. Showing them the animals I am working on, I explain that this is a expedition scientifico etc. Finally they catch on and change their minds as to my status.

It is a challenge to sit at a skinning table with five or six natives standing back of you, each carrying a machete-bright and shiny. It is my practice to place two cups and two plates on the table and when they ask me if I am 'solo', I say no'tiengo uno amigo' Much can be done to enlighten these people. At one camp along the side of the road, 160 people (4 busses carrying 40 people each) acquired the habit of stopping to observe this curious individual preparing specimens. To indoctri nate with good will 160 people a day for a 2 month period may make for good relations with Guatamala.

There was one bus that stopped every trip, bor rowing my car pump which by now is about worn out-any excuse to see the show. If you sit by C. Murphy again, you might ask him what there is is the Kansas seal that throws these people into a tailspin of communism. Regardless of their repercushions I am always kind and courteous as I think it will pay in the end or perhaps on the head.

Incidentally when I speak of busses, I think you visualize the oriental one-people crowded into an old broken down truck with property effects piled high on the top and back of the vehicle.

When I show these people the small shrews, they seem to think of them as young of the bat. It would be of interest to learn how they acquire this notion.

The more I see of this country the more I am convinced that the tourist is getting a raw deal on the scheduled tours. They are shown second rate features at best. They are told they are being taken over an unusually scenic drive between such and such a place. Actually it isn't worth the wear and tare on the equipment. Their days journey is timed to reach the companies facilities which are few and far between. If the tourist could be taken to the top of the range of mountains north of Huch-- uetenango he would be given a real experience. I had a camp on the edge of this range of mountains overlooking Guatamala. It was the most in

spiring vista that has unfolded to date. The volcanoes and the great expanse of country can be viewed from my car house from daybreak to late after noon.

The view of Atitlan Lake and the volcanoes is intriguing. The amazing thing, however, is the weather-reminds me of the Artic with the ever changing mood of the cloud formations. One feels as tho he were a part of them. The Pacific Ocean winds send large white clouds in from the south and the Carribean trade winds put up a defense. Together the jostle their formations back and forth around the volcanoes and above the lake. The mood is ever changing with weird and interesting effects. Have always liked the play of clouds and weather over the landscape and Guatamala has the best thus far.

Mailed two rolls of film-35 mm-today. Use them but for record purposes keep them as arranged in the boxes. Both cameras are defective and am missing many shots on that account. The shutter sticks on the 35 and the winding mechanism is defective on the movie..

This afternoon went down to Customs to send you three packages. It took two hours and seven offices to clear, plus postage 30¢. plus $1.79 extra postage. It would appear these whitecollar boys feel they must make the job last. The more I see of Guatamala the more in evidence is the line of demarkation of classes-the master on the one hand and on the other, his dogs (the natives)

I am sending a map of Guatamala which I have used. Keep until I return when it will be turned over to K.U. as it was purchased with their money. It will be a challenge for Jay to find the localities I speak of. Many of these place names are represented by only one or two huts, and some after searching for hours for them, turn out to be only place names and not villages. This map is by far the best I have been able to find for Guatamala.

In regard to your question about the cablegram I sent a note in with Carlos on the 22nd. of Dec. on which day he returned to Guat. City. Ibarro, I think, sent the note on on the 24th. Chemal did not have facilities for sending tàlegrams-it turned out to be a pass on a mountain ridge.

So much for the disorganized chit-chat-will keep you informed. Tomorrow I leave for Coban and intermediate points (approx 10 to 15 days) From past experience I don't think youllexperience trouble locating the Bee Expedition in Guatamala.

Love to all,

James

550103-6

FORM. NO. 144A

G. 10526-2CM-10-52

BANCO DE GUATEMALA

GUATEMALA, C. A.

Nº 695923

RECIBO DE INGRESO

RECIBIDA DE Juan M Bu

LA CANTIDAD EN QUETZALES, MARCADA POR LA MAQUINA EN EL MARGEN DERECHO, CONFORME LIQUIDACION EN POLIZA No. 11005 DE LA ADUANA

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ADUANA CENTRAL DE GUATEMALA
CAJA
DE
ENE 3 1955
CANCELADA

DE 19

BANCO DE GUATEMALA.

ORIGINAL.—PARA EL INTERESADO

TIP. NACIONAL—GUATEMALA

550114-7

January 14, 1955

Dear Mrs. Bee,

Excuse a rushed note, - but I thought you might appreciate a glimpse of your husband as he looked here in Nebáj about Christmas time. We certainly enjoyed his brief visit. It isn't often we have English-speaking company here, and especially from Kansas!

My wife has a brother George Belcher, at. K.U. now - 1222 Mississippi. My older brother graduated from there (1948) and Helen's sister got her nurse's training at. K.U. Center in Kansas City, so feel were almost related!

Our greetings to you, and be assured that, though your husband wanted to be home at Christmas time in the worst way, we appreciated having him here just a few days earlier.

Sincerely yours

Ray Elliott

Helen, + the four children

550121-8

From Lawrence Journal World, Jan 21, 1955, Lawrence, Kansas, sent by Annette in a letter, and indicating the political atmosphere in Guatemala at the time I was in that country.

Guatemala Roundup Pushed as Uprising Against Armas Fails

GUATEMALA (AP) — The government pushed a roundup of Communists and supporters of ex-President Jacobo Arbenz Guzman today after beating down an uprising aimed at unseating anti-Red President Carlos Castillo Armas. At least 100 persons already were under arrest.

Government troops held Guatemala city and other strategic centers in armed grip. Castilio Armas announced that 10 persons were killed and an undetermined number wounded in a brief clash yesterday between loyal forces and rebels seeking to capture Aurora Air Force Base, outside the capital. He blamed the Communists and Arbenz's supporters.

The anti-Red government—in office less than seven months—promptly declared a state of seige—modified martial law. But authorities announced they were in control throughout the country.

Machine gun-carrying soldiers mounted tight guard on military posts and strategis points. A 10 p.m. curfew went into effect in the capital.

A presidential decree said the state of siege was necessary to snuff out the "subversive groups" which "in connection with Communist elements disturbed public tranquility and by an armed action tried to overthrow the legally constituted government."

Press censorship was ordered but so far no checks were placed on foreign correspondents' dispatches.

550121-9

20 feet S Languin Cave, 1098, Guatemala

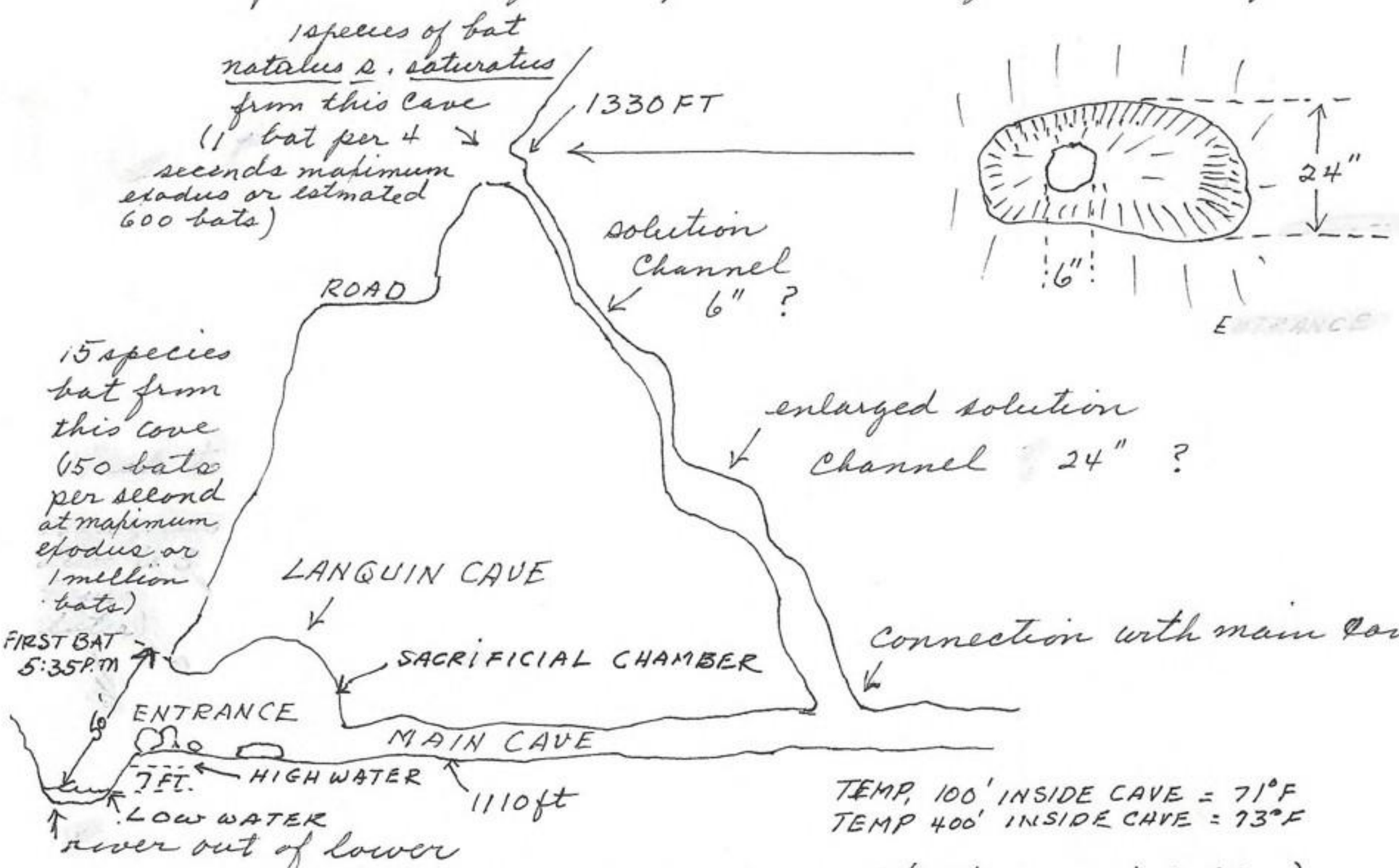
Jan 21, 1955

This fissure is at road level (10-12' feet above road on cliff face). The following Funnel-eared bats, Natalus stramineus saturatus were captured between Jan. 16 and Jan 21, 1955 and are listed according to days and numbers.

	no.	♂	♀
Jan 16	17	15	2
" 17	16	15	1
" 18	14	5	9
" 20	8	0	8
" 21	6	2	4
TOTALS	62	37	25

The collections were made between late twilight and 9:00 P.M. and specimen captured on a random basis. On the 16th and 17th males predominated whereas on the 18th, 20th and 21st females were dominate. It may be that the males became wary after the first 2 nights and females increased because of lack of male pressure.

The formation of this fissure is as follows; (profile)



The entrance or exit of the Natalus solution channel is 6 inches in diameter produced a warm current of air with the characteristic bat odor. The current was controlled by the direction and intensity of the wind against the entrance of the main Languin cave. This solution channel is nodoubt connected to the central cave.

Early in the evening (late twilight) single natalus came to the entrance of the solution channel and without leaving the exit would turn around and return to the deeper depths of the chamber.

One would first hear a faint hum or rumbling of the wing beat of the bat and perhaps some echo location noise. This soft purr would increase the nearer the bat approached the entrance. One could judge the position of the bat in the solution channel and predict the very second of exodus. The first evening activity of bat movement consisted of a bat coming to the mouth of the entrance and then returning without leaving the channel. Later individual bats would duck out and right back into the channel. Later they would range out 6' to 10' and then return. Later the flight would be consistently outward only, at first flying in the immediate area and later the flight was directly to distant feeding grounds without return to channel entrance or hunting in the immediately area of the entrance. The cycle of the exodus was irregular at first, then regular, then maximum exodus, then decrease in number. at 10:30 P.M most of the bats had left. At midnight there was no activity at entrance until return in early morning.

Capture was by butterfly net which was held flat in front of entrance and as the bat flew from the hole the net was raised to a perpendicular position and quickly turn again to hold the bat in the net. The exact moment to net manipulation controlled by sound of bat as it approached the entrance to leave.

It is interesting to note that only <u>one</u> Natalus was captured at the main entrance of the Langcim Cave in several nights collecting with mist nets.

In direct light from a flashlight did not affect the activity of the bats (Natalus) as they left the solution channel of the funnel-eared bat site.

550204-11

MINISTERIO DE LA DEFENSA NACIONAL

REPUBLICA DE GUATEMALA, C. A.

OFICIO No._____ 04FEB1955 01711 HECHO_____

RESUMEN:

EL MINISTERIO DE LA DEFENSA NACIONAL

Concede autorización al Sr.JAMES BEE, por el término de TRES MESES (3), a contar de la fecha, para que pueda portar un -- ARMA DE CACERIA,-

Guatemala, 4 de Febrero de 1,955.-

MINISTERIO DE LA DEFENSA NACIONAL - GUATEMALA, C. A.

4

Esta licencia es valida para la presente emergencia.-

MINISTERIO DE LA DEFENSA NACIONAL
GUATEMALA, C. A.

550206-12

R. G. Bee

Provo, Utah
February 6, 1955

Dear Ann and James,

A belated thank you for the fidelity of your much enjoyed letters. Also, the delicious stuffed dates sent at Yuletime. The picture of the kiddies was superb and we are proud of our grandchildren. Mother was sufficiently alert when it arrived to be conscious of their being and smiled with satisfaction when holding the photo. Have depended upon the letters sent by Mary to keep you Kansas folk informed of the course of Mother's illness. Our daily record of her illness soon indicated a definite trend. The period between the strokes or spasms created by new pressure areas formed by the breaking down of the arteries became shorter as time went on, and the pattern well indicated what we could expect as her illness continued. Her vital organs all suffered from the initial stroke and especially her throat, making it difficult for her to take enough nourishment (mostly liquid) to sustain her frail body. Her mind as well as her body deteriorated toward the last, so she reacted only through habit behaviour. She talked not at all; lacked coordination to read or recognize people; she alternated between periods of constipation and the opposite, which on the one hand made her toxic and on the other gave little chance for the food to be properly assimilated. Previously to her passing, she was unable to take food or drink--both made her choke and created mucous, which prohibited her normal breathing. Breathing in the last three days was extremely labored and cyanosis was prevalent which gradually enveloped her. We are grateful that she suffered little or at all after the initial stroke, and the end and the beginning came without spasm or pain.

The funeral, as the notice states, was private. There were few very close friends came, such as Dr. C. L. Jones and wife. Callers before the service the previous day and Sunday included Don Daynes and wife, Dr. Clarence Cottam, Dr. Tanner, and Dr. Hayward and his wife--all close friends of James.

The service was in the Culbertson tradition--scriptural passages dealing with immortality and spiritual values--not a single personal remark. Many commented on its unusual beauty. Dr. Carter is a very finished scholar and his readings impressed all. The selections chosen wereneither too long or too brief. No music to unduly upset your emotions. A little later I will mail a booklet of those attending, pall bearers, biblical references which will enable you to read the entire service. The dress and slippers were selected by Phyllis and Mary and were in keeping with Mom's style of clothes. The casket, far from being ornate, was plain-of broadcloth with flesh-colored lining--restful. Her corsage was pinned below her neckline. Floral blanket of white cornations and red roses with various other pieces gave comfort.

Close now, with love and kisses to all. Dad

550206-13

Amatitlan Lake,
Feb. 6, 1955

Great White Fleet
UNITED FRUIT COMPANY

Dear Annette and all the family,

Finally finished diplomatic mission in Guatemala City and am now on my way into the field. The extension of collecting required revisions of authorizations from the Government which under ordinary conditions should have not caused much trouble or delay but which turned out to be as diffecult as the original applications for permits etc. It appears that with the change of year (1954-1955) there was a new policy put into effect which revised the entire procedure and instead of being made simplier is even more complecated. If these people dont start to make some shortcuts in their administrative procedures they will become hopelessly bogged down in red tape. The system is an army one and is ten times more complecated than our own army system of check & double check and 15 copies please! The only difference is that we hate are army system but the Guatemalecas take great pride in using such a technical and complex method.

I am now parked in a rather secluded spot — the only one around the lake — and will write this letter until time to set traps and then after supper will finish it. The lake is, although not to be compared in size & surrounding with the lakes in Kansas, is arganged much in the same way. Beautiful home taking up the select beaches, a recreational town at one end, the rest available for us natives. The big volcanos with many angry clouds make the background. On the lake are the best of cruisers, speed boats, sailboats and water-skiers. These people seem to have more ambition for water sports than our own people. Needless to say, the temperature is warm like our Kansas summer temperatures.

when I returned from the field on Feb 1, I was about ready to turn in my toothbrush and head for the states. I must say that Hall proposition actually does not appeal to me, as, of this date, I have seen about all of Guatemala, at least the representative parts. I already have 800 skins which I think is a good representation of Guatemalan mammals. The extra 7 weeks will, however, permit a more through coverage of the Republic and justify the big expense in sending out the expedition. This collection will be the most noteworthy and significant one to come out of Guatemala. However, while I have told Hall that I would collect for seven more weeks, I will use any excuse to come home - for instance if the U.S gets tangled up in Formosa - I think that I will immediately head for the U.S. Central Am. is not safe, especially Guatemala, when the Russians and Communistic Chinese are agitating the world.

When I talked to you the other day I did not give you much of an opportunity to defend your side of the story because of the lack of time but I will say that I am using poor judgment by staying and that I should not be away from the family so long. This will be the last time I will collect for Hall until I have a degree and, now do the practical thing, which is to take the family into the field. For instance, Dr. Stewart of Michigan arrived yesterday and every year he brings his family with him and keeps them at Atitlan Lake. Stewart married into a million dollars and they live in the big hotel at the lake, but I find that to live like a king in Guatemala, does not take millions to do it. Have you noticed any ill-effects in the children because of papa's absence. From what I heard on the telephone the children seem to be development, at a rapid speed inspite of their daddy being away. It will be a happy day when we can get together again.

I had planned to write to you at Cobon but as I entered the City I found that Guatemala was in a state of seige and after being cleared was conducted out of the city and told to go directly to Guatemala city, which I did, except that I took 10 days to get there. I was not going to turn right around when I had fought the road and country to get there.

Much country and many experiences have transpired since I wrote to you last. I will try to high-light them and will fill in the details when I get home. Incidently I am now listening to symphony music on a new radio which I bought yesterday in Guat. City - a shortwave - medium wave and regular band - battery + regular house current - an English model, and I must say a very good one. I purchased it from a Mr. Thompson who is a graduate from Washburn in Topeka - and has lived in Topeka for some time, while I was stopped at a stoplight he thrust his hand through the open window and yelled - Rock Chalk - Jay Hawk!! It was later that I took advantage of his hospitality in purchasing this radio, a used one, for nearly cost. He said that when I return from the field again he will connect an RCA longplaying player to the radio and I can have my choice of music at any time. This will indeed be a good arrangement but I must confess I only wanted shortway to listen to news from the states, however, I will listen to music as long as it is there. The music in Guat. is good, more symphony than in the states and always a good marimba band. There are 13 stations in Guat. City. It is really amusing how these people pattern after the announcers in the U.S. — always bed-room voices, as you would put it, and long unimpressive commentation about the music, especially symphonic. Bach, Beethoven, Rossini, Mozart, Mendelsohn are their favorites and I

do not disagree with them. They have the same old patended announcements about Coca Cola, cigarettes etc.

After having visited the high country north of Huehuetenango & returned to Guatemala City. about the only noteworthy thing that happened was the breaking of the window by some anti-american. I will always remember Quetzeltenango for its narrow streets which are only wide enough for on car — the second largest city in Guatemala. From Guat. City I went to Ypocapa for a few days before going north to Coban and Languin. This pueblo is situated on the shoulders of one of the volcanos. Senor Ibarra accompanied me and as a result the results dropped considerably. These people just do not know how to plan for effeciency. Ibarra hired a guide to take us to a cave - this I knew would be fatial. It was predicted as a one and a half our trip but which turned out to be 5½ hours (one way) and we never did find the cave. This guides, as is true of all Guatemalecas, like to show their prowss in the jungle and for 5½ hours we fought the bottom of a deep canyon of vines, underbrush, and thorns to go to a place that later proved to be within 20 minutes walk from a place along the main road where a car could be driven. This boy falsified the fact that there was other ways of getting to this place. I did not object because I did see some rather pretty country that I would have missed otherwise. Due to my insistence of setting traps before we left saved the day. This boy continually spoke of mucho maniferous of which we did not see one. This part of Guat. is excellent for coffee growing. most of the coffee beans are turning red. Before the bean is roast the bean is tasteless. From Guat. City I went north to visit Languin Cave. It is amusing how these Guatemalecas operate. After it was known that I was to visit these bat cave, a Senor Jose Storck insisted on coming along to show me where the cave

was as it was difficult to find (It proved later that if you did not fall into the cave from the road you were lucky) and the morning we left he said he was obligated to take a guide along which meant another individual. At the last moment Senor Ibarra decided to go. The car was already heavily loaded but that did not seem to make any difference to them. The payoff came when Storks wanted me to pick up an old graphonola which, luckly proved to be too big to get into the car. Well with 4 aboard we drove to Longuin over the worst road travelled so far. At the Cove; Ibarra disappeared to the village about 1½ miles away. Storck and I and the guide who had never been inside the cave before proceeded to explore the Cave. In 5 minutes Storck was hopelessly lost and Bee had to bring them out. a little oatmeal sprinkled along the way assured my safe return. Ibarra and Storck had bad words and Ibarra left the next day and Storck the following day - after having eaten all my food that I had so carefully planned for my two week stay. Storcks only intent was to get to the cave with his labor man and to start digging for bat guano. The labor who was to help me in the field was never seen again! while all this was happening I did not loose a stick and came out with 15 species of bats and about 200 individuals. The guano later proved to be poor in quality and while Storck was to work the cave for three months, his help quite after 15 days. At last Storck 3 dollars a hundred pounds to get the stuff to Guat City where he was only able to realized 1.50 a hundred thus loosing 1.50 per sack. It was amusing to see the governor of Coban at the Cave the next day after my arrival and on the third day to see a crew of road repairers building the road from Longuin Cove to the road terminal — the road stopped 1½ miles from Longuin. With this unfinished part the people of Longuin were not troubled with

vehicles but at the same time coued realized
considerable money from the services they supply
in portaging. I do believe the governor thought
I had more designs on the cave than just the
bats. The terminal of the road proved to be
one of the most annoying comps I have ever
made but at the some time the most informing.
You can feature a wide space in the road in the
canyon where a truck could turn around and two
huts. There was no other place to park than in the
hot sun at this turntable. At 4:00 A.M. in
the morning, people waued come in to wait for
the bus (2 trucks) which left at nine oclock. They
wanted to be sure of getting standing room on the
vehicle. Well from the time I awaken in the
morning until the bus left I had 15 or 20 onlookers—
people peering into the car while I dressed,
prepared my breakfast and skinned the animals.
Then from about 10 oclock to 12 oclock I had
cargo carriers, pack train drivers and other people
who could not get on the bus, and the regular
families that lived in the two huts, always at the
car. In this hot climate working in the car
is different but when 20 people block off the windows
and doors with as many heads, the inside become
unbearable! — people chewing, coughing, sneezing,
expectorating continually and emitting unpleasant
odors. I have discovered that the native
Chiapas people spit more than the Guatemalteco,
undoubt because of their language which uses
more parts of the mouth and vocal apparatus,
after they spit all morning and blow their noses
on the ground, the little children from the huts

spend the rest of the day playing in the dirt where these people have stood. When the bus returns around noon with about 60 more people & go through the same needing. It is remarkable how these small children at the huts can carry on conversations with either the natives or the spanish people. This wide space on the road also made an excellent place for the herds of pigs to stop overnite. Usually they tied two pigs together by their hind legs which kept them partly immobilized on the other side of the road - 15 feet away - but by morning most of the pigs would be sleeping against the tires on the car. Between the pigs, dogs, cats, chickens, asses horses, cows and more pigs, I had a terrific time keeping skeleton material around or uncleaned animals which I normal keep outside and under the car where it was cool. The people in the hut had a good racket - they grazed their chickens around the car where the chickens fed continually on flesh of rats & bats and then they would sell me the eggs at 5¢ a piece, I didn't object eating rat made eggs but I did object to the price! I think in my 12 days at this spot I saw more of Guatemala than at any other place — every conceivable kind of produce, real primitive natives from the east, every possible character in the passengers who travelled between the east & Coban, drunk men and women by the scores, deceased ones although deceptially few, fights, many different kinds of costumes, some

without costume, governors, mayors, lovely native
farms, children until they stuck to me on all sides,
etc. etc. The cave was the most interesting
however, It is a large one indeed and should be
made available to the public. It is many times
larger than Tsmp cave but does not have as delicate
a formation of stalagmites. From the entrance issued
a river (about 500 gals + more a second) which is
a most gorgeous greenish blue in color. This
cave has never been explored and will prove to be
one of the biggest and longest in the world. At
about dusk the bats start to leave and for
3 hours or so they stream out of the cave at about
150 per second. It is a site to really behold.
For twelve days I collected from a bat net
placed near the entrance of the cave. The first
night I blocked off about 30% of the entrance
and at dusk, the owls and bats almost ran
away with the net. It is remarkable with hundreds
of thousands of bats flying out of the cave and you
standing right in the way, that they are able to
evade you. I was never hit once by a bat.
15 kinds were taken from this cave while another
cave only 200 feet away produced only on species
in great numbers.

After the twelth day I was glad to leave
and the people were sorry to see me go. But I
was getting tired of having 20 people crowded
around the table while I washed or ate my meals.
Nor will I forget the children playing all day
with the knife-edged cans that I would
throw out, although I did try to help them
cutting them as smoothly as possible. On the
first night I went to the toilet and used
cotton which at that moment was the most

convenient. For 11 days the children would take every body that was interested to see this curiousity. Why they were so curious about this thing is beyond me as the whole country side at this terminal was marked with piles and piles. Do you suppose they thought I had eaten the cotton ?!! — oh well just another ethnological fact left unexplained.

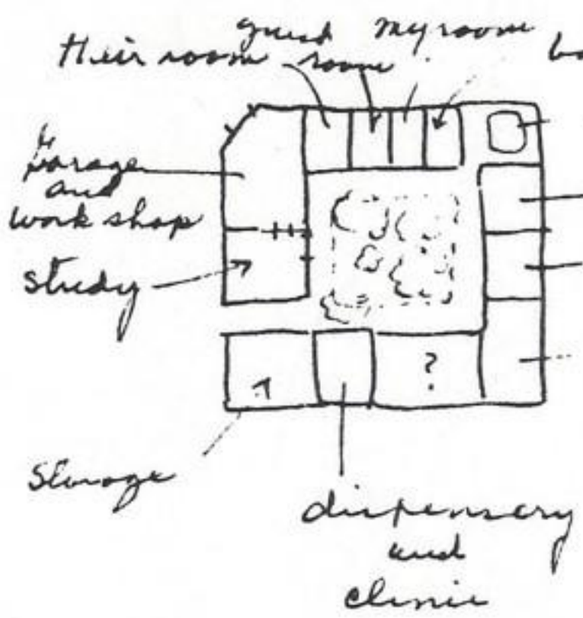
On the way back from Longuin to Guat. City I ran into this state of national seige which put every body on their toes and I was inspected at every village and even on the mountains away from village where two or more policemen would be sent out to investigate a curious individual parked along the side of the road. These policemen would always pick up the small pieces of cotton that I would throw out of the car and put it in the inside rim of their hats to give the uplift look to their caps. I kept 2 of them 4 hours, inside the car, while it rained outside. They sort of hinted at taking them to the city about 8 miles away and 4000 feet below but I thought they needed the walk. The army is like ours made up of lazy officers and hard working enlisted men ☺ but the enlisted men are natives and have no capacity to analyze a problem. I remember going to a Guardia Civil for information and at the door a native jumped up and charged me with cocked gun. He had been instructed to challenge everyone that entered the building. These guards were all jumpy because they were expecting the worst to happen and at any moment.

At this season of the year the cattle are being driven from the dry region to the north around

Coban. At one camp 11 miles S Coban I was parked along a spring at the side of the road and in one day 280 cars passed the car. The spring looked clear and the water good enough to drink but I held off just on principals. In one day this harmless little spring gave 45 people a drink of water. Of these 45 people, about half of them washed their feet, 3/4 of them washed their heads & arms, 1/2 of them washed their mouths before drinking, a few dampened their clothes, and 5 or 6 of them washed their crotch. This does not include the many cattle, horses, pigs and dogs that also partook of the clear refreshing water. The pig herders are interesting people. Usually for a group of 20 pigs there will be a leader who whistles a monotonous note in which the pigs are expected to follow. The other herders drive the pigs on with switches. The other combination is to have one herder per pig. Sometimes you will see a truck with 30 people and 1 big hog in the middle. A full truck load of pigs is noisy indeed with unearthly squeals at every shift of the truck which seems to be continuously.

At Salamá stay one night at the home of Rev. and Mrs. Russell W Birchard who is the Council President & District Superintendent of the Nazarene missions in the wild provences of Petén, and also the areas of Alta and Baja Vera Paz. The Nazarens are a big outfit in Guatemala. His wifes mother has been a missionery in that for 50 years. Rev. Birchard is an intelligent and esthusiastic man - with me you would never realized he was a preacher. He assisted me in selling out tires & gathering them in the morning. Their meals were better than I had ever eaten in

Guatemala and all prepaid by servent help. Fresh bread, roast, potatos & gravy, carrots, cauliflower, beans, salad, ice cream, cookies, strawberry jam (of which she gave me one quart and a fresh loaf of bread to take on the way), milk, tea and candy. For breakfast - ham, potatoes, beans, eggs, toast, cereal, milk, tea, The cereal is something you might practice on before I get home. It is grape nut home made. I could not tell the difference. Prepare regular brown bread, cut as thin as possible, carmelize in oven and then fragment. In the patio were growing bananas of two kinds, oranges, grapefruit, palmegrants, avocados and other fruits. Her table was set to perfection. Their home is like such



Her clinic is a pharmacy actually, where she sells drugs, most of the the most modern and recent of development, at near cost - much to the displeasure of the town pharmicist, a man who had been cheating the natives with exhorbiant prices. - pills for 10¢ a piece that cost him 50¢ a thousand. Sister Burchard had pulled 570 teeth last year! She delivers babies, and does many minor pieces of surgery but without a license. Rev. B. acted as mediator between the communists and the anti-communists during the last reign of Peralo and Arbenz. He did more to keep the death rate down than any other man in

the area. According to B. Roman Catholicism has given the protestant people the name of communists as it serves their own interests. The comments were deadly against the Roman Catholic Church during Arbenz office and any one else against the Church were put in the same category. He and all his missionaries are repeatidly called Communists. He believes that this situation is the explanation of my frequently being called a communist because my car is similar to those driven by the missionaries and of course, my godly countence is so striking! This may also explain why there has not been more violence in my travels as missionaries are still respected and seldom is bodyly injury inflicted. However, there has been two partitions to have B. arrested & executed. Salama was quite a hot spot during the reign of Arbenz. He told me of 5 men who came up in a jeep as representing the new anti-communist government. They put all the government men in jail and then proceeded to rob the bank which they did - months later two of these men were apprehended and shot and the other two escaped to mexico. There are so many odd things that happen in Guat. that you do not know what to go my on. He also told me of the brutal tortue of many people in Salama by the communists. A list of instructions was captured from the communists and it disclose full instructions as to just who was to be killed, homes to be burned and a list of property to be destroyed. Eight of his friends were cut, beaten and made to stand naked before machine guns which were to be fired on order of some offecial in Salama. They remained in this tense situation for 15 hours but luckly the word never come for the execution. other of his friends were allowed to remain in the church until he could get them to Guatimala City. Richards wife remained with him at all times. Before I left I took a roll of movie of the two in their home etc and will have developed and

sent to them so that they can send it to their children in the states. Burchard gave me two bags of peanuts before I left which I am still chewing on.

Burchard is a good contact because he can place me with missionaries in Peten - a part of Guatemala that is difficult to work because of its inaccessibility. also he is a good man to know in time of political trouble. He told me that 2 of his missionary - young women - were driving down from the states in a new car and that I was to help them if they passed by - these young people were both from Kansas. It seems like 90% of the people I meet are from that state. On the way back from Salama I had nothing but cold rains and as a result my collecting dropped from 30 a day to 25 a day! These high mt. passes are always in misty clouds or rain. At Motagua valley which is the lowest area I have tested I could skin until about noon and then the animals started to spoil. On arrival I expected to camp by the bridge along the coal river but someone had started a fire on someone elses property and the pueblo was up in arms so I continued on for a few blocks up the canyon and made a hot-dusty-roadside camp. You can always tell when the people are in trouble. This was the last stop before Guat. City.

Stayed at Ibarra's home which was against my better judgment but a necessary political move. I cannot understand how so intelligent a people can ignore the simple rules of sanitation. Their neglect has produced ill effect on the body and I am sure both of the parents suffer from intestinal troubles. They eat like wild dog as if they had to supply the fauna as well as the body. For instance I asked Mrs Ibarra if the milk was pasteurized and she didn't know. Every morning a man brings a bucket of milk and a dipper which he dips for a quart or so to another pail supplied by Ibarras. Oranges are purchased from natives who peddle them from door to door. These oranges are cut into two half without washing and then are squeezed for juice. all the outside germs are carried into the juice. Lettuce is used without washing fresh vegetables diced without being cooked, the water is used from the tap which is a risky proposition all the bread and biscuits are purchased from dirty crummy peddlers. there are no screens to keep mosquitos out, Dogs feces remains in the patio until someone steps in it, the toilet is like a service station room - the toilet doesn't work, the kitchen is filthy - charcoal pit for stove, rough surface for preparing food and hard to keep clean, open garbage can

I must eat & drink the things they serve or it embarrasses them. Their favorite dessert is ~~ice~~ ice cream, purchased from a store around the corner, ice cream made from I don't know what. Everytime I leave their home I have a little touch of intestinal disorder for a day or two. The servant is a native girl which I wouldn't trust for health - she completely plans and prepares all meals - in fact they work her like a dog - from daybreak to late at night. She gets up in the morning and cleans the house, washes cloths and prepares breakfast, washes breakfast dishes, more washing, dresses the young boy, prepares dinner, washes dishes, more cloths, irons, prepares supper, washes dishes, makes beds etc. She not only prepares

meals but serves them and changes all diapers at the same time. A certain amount of servant-help is good but to turn the entire responsibility of the home over to one is not good. Jorge respects the servants but not his mother & father. Their little baby is always sick and is continually attended by some young squirt just back from getting his Dr. degree in Switzerland. She vomits continually and has bulging eyes. They keep her in a nearly dark room in a crib that she cannot see out of, and, except for the attention given by the maid - seldom has human contact. Mrs Ibarra was the Queen of Chiquimula Departmento in the pre-nuptial days & don't get me wrong - she a good mother.

My health has been good except for one siege of food poisoning which reduced my weight from 190 to 165 lbs. The blow was hard and the recovery slow. It seemed like it got my haemoglobin as I had not capacity for activity without forced breathing. For two days my intestine churned continually. I am now taking vitamin tablets which may help the situation. I think that the poisoning came from a powdered soup that had eggs and milk and other ingredients which could have been spoiled. The soup comes in tinfoil packages (made in Germany). I imagine the powerded eggs might have been ptomained.

I cannot understand how the Catholic could have been in Guat. for 500 years but have had no influence of the sanitation the country. The children still play in the yard with the pigs and cattle. The dogs are nothing but disease carriers and keep the children infected. A clean face & hands is the exception. Toilet sanitation is unknown. There are many eye diseases and defects which indicate the poor sanitary conditions under which they live. Dust and smoky huts are contributing to the upper respiratory diseases. Cancer runs unchecked, as do other open type wounds. Little Children to 8 years of age are much like our children but after that age they turn into old men & women! At Rabinal I met a man leading a horse which had a beautiful little girl about Chris age. She had a open wound on her nose and running wounds on her legs where she had continually scratched her legs from fly bites. I have the same trouble with the pesky flies. He was taking her to some horse doctor for cure. I gave them a dinner, water and 50¢ for medicines which the papa will spend on whiskey on the next pueblo. According to Bernard, there is only one doctor for something like 180,000 people in Peten - other areas are without medical help. Why don't you come on down and we will set up business - be sure to bring the meat saw down. Speaking of flies - that has them. Each time a group of natives come to the car,

they bring with them a whole new complex of flies - just like a herd of horses or cattle will do. I believe the biting flies carry many diseases in this country.

If it were not for the oranges and bananas and the nourishment and vitamnins they supply - the people would always be ill. Fortunately these two food are plentiful and cheap. I still can not get over the idea of paying a penny for 4 oranges and as many as 5 bananas for a penny. You can fill a bag and the bill is about 10 or 15 ¢. At these prices the well-to-do people in Guat. City will still argue for lower prices which they generally get. This is definetly wrong. The nativ is really poor than the hose. These poor people are required to pay for booth space in the city market (along the side of the street) and then to be talked into selling their produce for practically nothing. I tell you - the revolutions are not over in Guatemala!

I think that I better stop the Chit-chat and answer some of your questions. I am glad the banana receipt book is so popular and so will Rudard Bump. When I stop in to see him again I will pick up some more.

Tell Luckau that we must mediate for normal rent or we will have to leave. She must accept some of the losses in the business. When I get back we will arrange to either make a go of the Luckau homestead or find a new place.

When you use oak it is necessary to first drill a hole for the screw otherwise the head of the screw will tear off before it goes in.

The Jay-bike episode sounds like me at about his age or older although I used to go away for a day or two. His enthusiasm for the bike will pass in time. He should tell you where and how long he will be gone. Be sure he has all the literature he needs for cub scouts and never let him become badge happy. I'm sorry that I will not be able to be at the cub dinner on 20 Feb. but there will be others.

If you are disappointed in winter in Kansas you can get some down here. Next time I will bring my parka.

Tell Chris that her drawings were well done and that I will love to paint her a picture of Guatemala while I am down here. Thank Jay for his letter and tell him to keep them coming. Polly signature was almost readable - by the time I get home she will be writing big long paragraphs on all the walls.

Polly named in Spanish is Paulina (Mary - Maria). Annette is not used in Spanish but Christine is Cristina. My name become Jaime Guillermo Aleja.

Must close now and get some traps out. Tomorrow I am going to San Jose on the coast so will write to you from there! Then I will go to Chiquemulilla and work from there to the Canal along the coast. If this country proves profitable I may remain there for about 2 weeks.

Love

James

550206-28

P.S. Tell mother maccad that if she will fly to Guatemala City I will pick her up there and show her the most interesting parts of the Republic. It will break the monotony of Kansas.

San Jose, Guatemala
Feb 9, 1955

Dear Annette;

I write you by the roar of the Pacific Ocean. The sandy beach is steep and the waves have an extra good time expending their energys in such a short run. This roar can be heard for at least a mile away.

After stopping at Amatitlan Lake I drove down past Escuntla to San Jose. From San Jose I drove east, on a good road that is not shown on maps to Iztapa. At this village there is a canal between the town and the ocean whereas at San Jose you park your car within 100 feet + so of the ocean. At 2 3/10 miles west of Iztapa I made a camp along a river. In only a white shirt + pants you perspire all the time. I remained here for 2 days but find I am not ready for the hot tropics so today will drive back to Escuntla a hence to Chiquimulilla where the climate is a little, but not much, cooler. At this camp east of Iztapa I found a fascinating site on the fish life of the tropical rivers. You have to see it to believe it. First there are millions of fish of all sizes and the waters are continually being churned by the big fish chasing the little fish. Small schools of several thousand minnows (about 2 inches long) are continually on the move and about one in every 10 seconds the school is preyed upon by other fish. When this happens the minnows jump out of the water and skip on the surface until out of

danger, or into more danger. When I first went over to the river and stood on the edge, the whole surface became agitated and millions of silver fish about 5 inches long jumped out of the water and race upstream on the surface, and I mean the entire top surface of the river was boiling with fish. With these millions of fish I thought it would be an easy matter to catch one of by hook, but try as I did, was only able to get three or four in about an hour. While they appear to be living recklessly I found them to be highly integrated, in a protective sense, and just as educated as the sunfish at Potters Lake! The dozen of different kind of herons, kingfishers etc. did not seem to have any difficulty.

At camp I had one of those annoying boys (12 years) who hid around camp all the time, setting in your seat, getting into everying with more than curiosity alone. Just before he left I asked him to dump out his pockets which he did and which I reclaimed; 1 watch, pair scissors, three traps, spool of thread, wire, mosquito repellent, 75¢ which may or may not have been his, 6 shot gun shells, 4 twenty two shells, and several pieces of cotton. It was after I missed my scissors that I suspicioned the boy. Ordinarly they stand by the article and watch yours eyes every second and when the moment arrives — the disappearing act takes place.

At Amatatlan Lake I had to reclaim 3 traps from a man that visited camp before daybreak. Nice people these Guatemaltecos. I don't know what there is about a mouse trap but they will take one whenever they see one.

Took 2 photos of the ocean. Will write from Chiquimulilla.

Love to all the family — James.

550210-30

UNIVERSITY OF KANSAS
MUSEUM OF NATURAL HISTORY
LAWRENCE, KANSAS

February 10, 1955

Mr. James W. Bee
c/o American Embassy
Guatemala City, Guatemala

Dear Jim:

Thanks for your letter of February 2. I am glad that you can see your way clear to stay on for two extra months. We will expect you back here about April 15. In the meantime good luck with your collecting!

In answer to your question about saving both the skin and skeleton of an armadillo, I will have to answer that I meant "as much of the skeleton as possible". Actually I have removed the tail vertebrae from an armadillo but that was when I was preparing one here in the Museum shop where I had a hacksaw and certain other equipment whereby I could split the tail all the way to the tip, both on the top side and on the under side, and so pry off the armor and remove the bone. Of course I had to wire the two halves of the armor of the tail back together. I am convinced that it would not be desirable to attempt to do this in the field; a person's time could better be spent in preparing other specimens. In the field it would be best to save only as much of the skeleton of an armadillo as could be saved conveniently apart from the "skin". Later, here in the Museum, the remaining parts of the skeleton could be removed from the skin as it was necessary to have these additional parts. When I suggested saving the skeleton of an armadillo, I did not have in mind ~~necessarily~~ the 8-banded armadillo but, instead, the other species that is much rarer, much smaller, and much wider between the ears.

You ask about the manuscript on the Arctic mammals. Fitch has been working at it diligently for some weeks and I hope to have his revised version in hand before long.

It seems to me that you would be well advised to have a native with you in your work. If we had some foreigner up here in eastern Kansas running around the country, doing strang things, who could not speak the language well, there would be chances of his running into difficulty and these chances could almost all be done away with if he had in his employ some native young man.

With all good wishes for continued success, I am

Sincerely,

E. Raymond Hall

ERH/mr

550217-31

THE FOREIGN SERVICE
OF THE
UNITED STATES OF AMERICA

AMERICAN EMBASSY

Guatemala, Guatemala, February 17, 1955.

Mrs. James W. Bee,
1323 Kentucky Street,
Lawrence, Kansas.

Madam:

The receipt is acknowledged of your letter dated January 31, 1955, concerning the welfare and whereabouts of your husband.

Mr. Bee receives his mail in care of the Embassy, but he has not called during the past two weeks. It is understood that he is on another field trip in the interior of Guatemala. I will request him to communicate with you immediately upon his return to Guatemala City.

Very truly yours,

James W. Boyd

James W. Boyd
American Consul.

550226-32

Provo, Utah Feb. 26th. '55

Dear son James:

A belated letter to tell of mother's passing. She became gradually weaker in body and mind from the time when you last saw her until the transition to the immortal came at 5.55 P.M. on Feb. 2nd. The constant breaking down of the arteries formed masses which in turn reacted on the central nervous system in the brain. The spasm periods became more frequent as time progressed indicating a definite pattern and the inevitable.

We were aware that only good nursing care could be given and our hope of her recovery was dispelled by statements from all medics contacted which included several. That it would be progressive to the end which proved correct. With the use of a hospital bed, oxygen tank, on hand at all times (this necessary when stroke or spasm occured) and some one constantly at her side night and day, we felt mother should have no less.

Phyllis and Max came down week ends and Phyllis was certainly faithful in being on hand when needed although she had her family to care for and was employed regularly in the post-operative ward of the L.D.S. hospital in S.Lake. She provided all the drugs and accesories used in these cases and her long experience was invaluable when applied to mother's case.

Thot it best when you planned your trip not to discuss with you too thoroughly the seriousness of mother's condition. Felt that there was nothing you could do that we wern't already attending to here and thot it best to releive you from as much worry on your trip as possible.

Mother was speechless the last half of her sickness and could take liquids only, as the paralysis envolved the entire right side, vocal cords and swallowing. The last few days, phlegm accumulated in her throat. Swallowing became more difficult as well as breathing. Her heart made a desperate effort to carry on-it was not able to endure against her xtremely weakened condition and the inevitable.

As Ann has probably written before now, the funeral was private, in the Culbertson tradition and was held at home with the immed family attending, together with relatives, Dr. Jones and Elsie and Jack Reynolds. Service was verses and passages of the scriptures well read by Wade Carter ThD-no personal remarks-no music to tear out your heart. Requested no flowers. This was not observed to the letter as many pieces and potted plants arrived. (mother had fresh flowers in her room during her entire sickness) The body was taken to the family plot in a grey bread

cloth covered casket-not ornate but in keeping with your mothers preferences. Clothes were well chosen by Mary M. and Phyllis. She looked lovely in death.

Graveside service was brief and agin scriptures. The sun shone briefly at time of services and burial, for which we were thankful. Heavy snows and severe weather proceeded.

Have a transcript of the service, names of callers and of those sending sympathy cards and letters etc. which will be available on your return.

Didn't realise mother's influence had reached so deep and so far untillm flood of mail came from far and wide. as a result have had about 125 letters to write. Have answered about 85 to-date with many more to go.

An understanding mother and wife.
Loyal to friends and relatives
Ever conscious of spiritual values.
Mother suffered little if at all after the initial stroke and her passing was peaceful.

Enjoyed your letter from Havana and a number from you to Ann which she forwarded for me to read. You overlook little in your study. You enlighten us on the social, political, economic and educational status of the people your works take you among as well as topography and climatic conditions of the country.

As there are no sets of the black vulture, Andean vulture, quetzal or gallinule; also, any of the kites, in the collection, why not have Guatamala's museum curator procure these for us and we will send him some of our good material for same. The information on the incubation of sets, formerly requested, was appreciated and completes the datas on these species.

Among the callers previous to mother's funeral wers Drs. Cottam, Tanner, Hayward and Beck. They are anxious for me to finish catalog-uing and indexing notes ornithological. Have worked out a system of keeping notes etc by adapting a uniform page the size of an ordinary volume with margins sufficient for the bindery to work into a book if desired. This sheet is a sample. Have completed four volumes and find it works out satisfactorily. Treatment of subjects of each species used in the index are similiar to those noted by Bent-thus one can determine from the index which will designate dates,not book and page, the occurence-migration, breeding etc of any species noted without necessarily going to the notes for detailed information.

Have been thinking I would make the B.Y. a deal-if they would give me a grant of say $6,000 would spend a year in rewriting notes, injecting

as much descriptive information of the species as our experience has given us. Also, complete index as above noted. Make all datas in duplicate -retaining a copy-showing elevations and exact locations etc. If they agree would turn over to them the collection of eggs. Considering there is a fortune involved, this should merit their serious consideration. What is your reaction to this proposition.

Close with this word "you will see your mother again."

Love Dad

550301-35

Astillero, 25 ft., Guatemala

March 1, 1955

The Molossus ater nigricans, Black mastif bat, start to forage at early twilight and continue until at least dark. Some leave crevices high in trees; some returned as other left. At about dark they start to drink water. In flight they fly rapidly and without much deveation. As darkness approaches them forage more and dart down to pick up insects (moths one inch in size. These bats fly above clearings and at the edge of forest rather than in the forest. Some flew at edge of trees along water courses. When caught in nets over water they frequently fall into water when they swim over to the bank and climb out. Movements in water and on land are rapid and agile. When in water or on land they are not capable of becomming airborne. In trees the bats drop downward from their roosting spot then with increased velocity make an upswong. The call in flight is characteristic and increases in loudness when pursuing prey. These bats are capable of strong bites.

550301-36

March 3, 1955

Dear Dad.

On my return from a three week trip to the jungles along the Pacific Coast I learned that mother had passed away. My greatest concern in Guatemala has been that I might not be in contact with the outside world in time of emergency. It is consoling to me and I know it has been to you that everything humanly possible has been done for mother and that the final rites were according to the traditional ceremony of the Bee and Culbertson family. It has been an outstanding example of a perfect wife and mother cared for in times of need by a perfect husband and father. My life's work will be dedicated to both you and mother. Extend my sympathies to many of you who have been so helpful in the caring for mother during her illness.

I would love to have you spend a week or so in Guatemala with me — the separation is only a matter of 6-7 hours by plane. I love all the facilities here for visiting the country.

Love

James.

I would like to know the details of the funeral which I understand you will send latter.

550303-37

MINISTERIO
DE
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MUSEO NACIONAL DE HISTORIA
NATURAL

PARQUE NACIONAL AURORA
CAMPO DE LA FERIA
TEL. Nº 9342
GUATEMALA, C. A.

March 3, 1955

Dear Annette

Returned yesterday from Astillero to find the full story waiting in your letters and I must say, quite properly analyzed. The Bee family is leading a very complex life and we must start to "unplex" some of the problems. It is impractical to try to solve these problems by mail or at this particular time but when I return we can fully discuss them and take certain actions. Let's go native in Guatemala and eliminate the complexities of life.

Wrote Dad today and sent in what will be the second and last expense account while in Guat. At the time of mothers death I was in the jungle along the Pacific Ocean in one of the most "out of the way" places I have been in since in Guatemala. It is consoling to me to know that everything humanly possible had been done for mother and that the funeral was carried out according to the tradition of the Bee and Culbertson family. My regret is that I was not able to share my share of the responsibility in caring for mother during her illness. Dad, Mary & Mac shouldered the full physical and emotional strain and my greatest respect is extended to them. My memories remain of the perfect mother of her pre-illness days and I am thankful for that. Dad will never completely recover from the emotional strain and, as you suggested, a visit to the children would help to relieve the tension. I have asked him to fly down to Guatemala and spend a week or so with me before I return to the States.

I have reservations to return to the U.S. via United Fruit Co ship on April 8 but will not know until about 26th of this month as to when the car can be shipped by freighter. If the passenger and car shipment can not be synchronized within 2 or 3 days I will ship the car and fly to New Orleans. This is one of the many difficulties of getting in and out of Guat. by ship.

Monday or Tues I fly to Petén (Peso Caballo) in the NW part of Guat. This is the wildest part of Guat. The trip is being made at the invitation of W. W. Brown who is the big chief of the Construction Co building the new highway from Guat. City to Puerto Barrios (Atlantic Highway). He expects to get the other contracts of road development in Guat; (as he said get 64 of the 65 million dollars available for development) His interests in Petén are hunting and oil and at this stage the work is exploratory. A helicopter and several planes are at his disposal. His interest in me is my knowledge.

550303-38

MINISTERIO
DE
EDUCACION PUBLICA

MUSEO NACIONAL DE HISTORIA
NATURAL

PARQUE NACIONAL AURO
CAMPO DE LA FERIA
TEL. Nº 9842
GUATEMALA, C. A.

of wild animals as he has many requests from the states to supply wild animals to zoological parks and experimental laboratories. I may be able to show him some of the animals he may be interested in. I asked him if he had ever been approached by any institution to supply logistic support to a Zoologist for collecting animals and birds on his many field parties working in Guat. He said no but thought it a good idea — at which point my responsibility ended. If Hall wishes to take on from there he may. To use University finances to further my personal interests would be frowned on by Hall.

I have two other trip to make in Guat. and then I start packing for home. Will write to you on return from Petén.

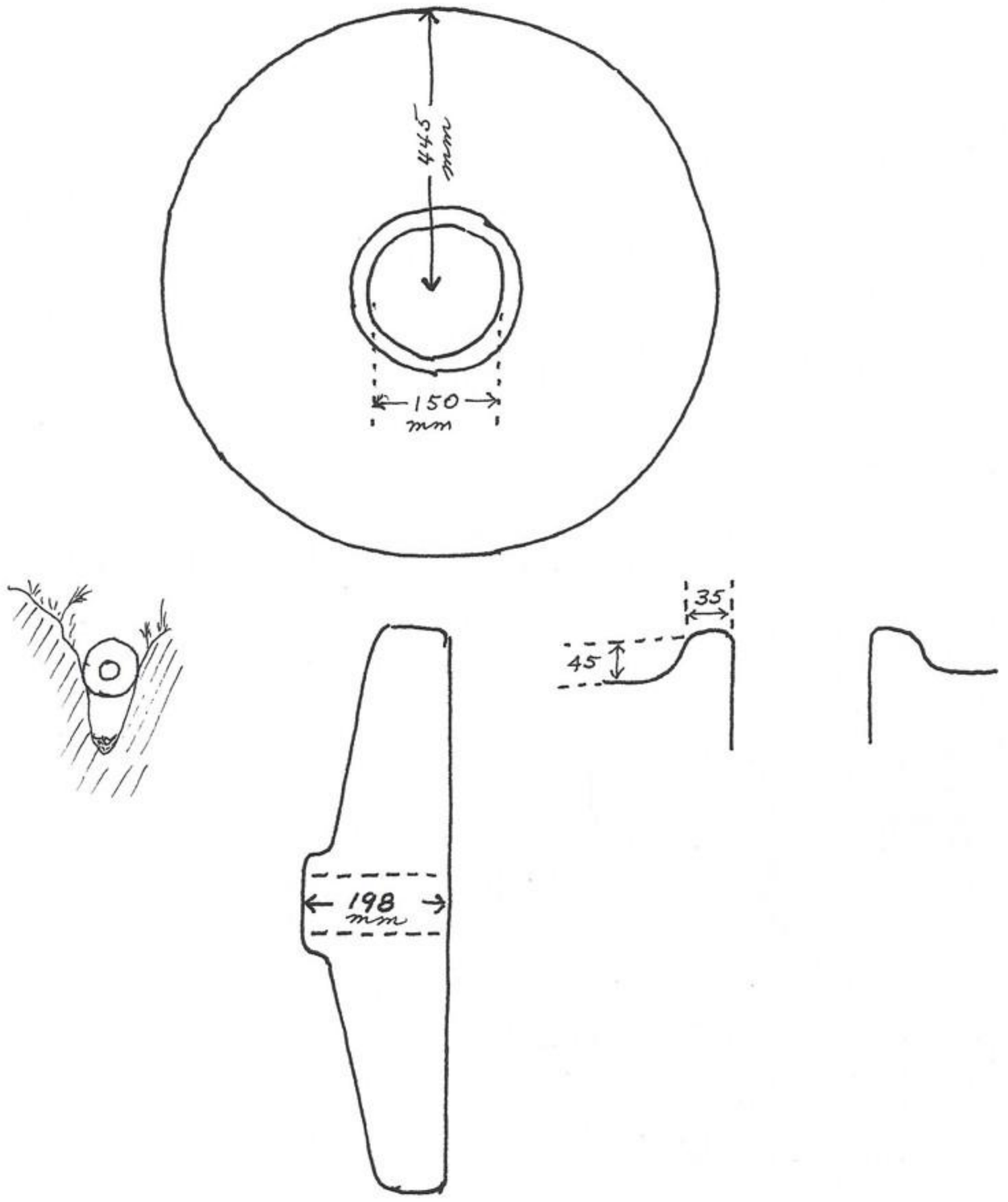
It's good to hear that Polly is well again and I hope Chris & Polly had a good birthday. Sorry I could not send some ammunition for their guns!

Love
James

550323-39

10 mi. E and 4 mi S Totonicapán, 10,000 ft., Guatemala

March 23, 1955



Old granite? stone wheel found at Xetezic, Piedra Redonda, about 10 mi. E of Totonicapán. The wheel was nearly upright in an eroded creek about one blck south of main road at a point just beyond 151 kilometer marker. The elevation may be a hundred or so under 10,000 ft. The eroded channel appeared new and my opinion is that it was buried in soil and the channel eroded down to and under the wheel, rather than a wheel fallowing into an eraded depression.

550330-40

Marzo 30, 1955
Ciudad de Guatemala

Dear Annette, Polly, Chris and Jay.

Your letters have been coming thru with faithful regularity — I wish I could claim the same.

Tomorrow morning I will put the car on a flatcar which will take it to Puerto Barrios. On the 4th of April it will be on its way to New Orleans on the freighter 'Lempa.' On the 8th I sail on the Chiriqui which will arrive in New Orleans on the 10th. According to the schedules, the car and I should arrive on the same date but there may be a delay in the arrival of the car if the unloading of the freight at Houston, Texas takes longer than normally expected. At any rate I will be home by the 15th or before. Customs at New Orleans could throw a wrench into the schedule if they decide to retain specimens until a decision is reached as to whether they keep them for fumegation etc. Whatever occurs at New Orleans Customs will never compare with the red-tape in Guatemala — I have never seen nor heard of such detailed and time absorbing routine as they have here. This is the 4th day that we have been processing my departure and as yet we have not encountered customs as yet. As soon as the car is secured on the flat car and the car is moved into the custom house they will start processing — sealing every article in the car. I have a broker, shipping firm and Sears Roebuck working

all day every day. I was amused yesterday at the national Palace where we were getting permissions to leave the country- I asked for the mens room and was directed to an office where the keys to all the offices are kept. The clerk called a Captain in the army who in turn gave permission to me for using the toilet- another sub clerk call a floor man who in turn call a janitor who in turn went to the office and got a key!! According to Ibarra and others the director of Customs could be a communist at least he is not working in the best interests of the government. Four days is considered the normal length of time required to pass customs- if we finish tomorrow we will be lucky indeed. Have

On the first of April Leon Ibarra and I planned a trip to Petén in northern Guatemala. This trip is to fill in the time from the time the car leave Guatemala City and the time I leave on the 8th. Petén can only be reached by plane. Today an american women came to the museum and presented an unusually fine collection of polished stones to the museum. In the conversation she expressed a desire to go to Petén and before a gentful remark about her going the expedition could be withdrown she was pronounced the third member! She is nodaubt a valuable asset to the museum but not to our field party. She is a very enthusiastic person- married- and quite harmless I assure you. This third member is Ibarras idea- not mine! Personally Im tired of entertaining Ibarras friends in the field - but politics is politics.

The last letter that I wrote to you was just prior to an anticipated trip to Petén with Brown but which was never realized because of airplane troubles - his plane was forced down in Nicaragua for repairs and his helicoptur had to go to Venezula - so he claimed. Every day for one week he assured us that the plane would be in service. I finally

considered it better to go into the field and then go to Peten at the end of my field work when I did not have use of the car. This Brown outfit is amusing. He is the practical business man of the organization. His partner is a rich play-boy, very dumb but money to finance the business. The third member is an engineer & geologist who does all the field work. Brown and his rich dumbhead can be found at any time at the Pan-American Hotel where they are entertaining one or two guests around the table in the lobby - this is their business office. One afternoon Ibarra and I interrupted Brown conversation with ex-mayor LaGuardia of New York at the table! to find out if the plane was ready for Peten! I think that Brown has entertained every Ministerio in Guat. City. Ibarra thinks him a fine man but I judge the bunch as purely off color operators. They aggrobate their importants and financial backing - for instance Brown said that it costs $50.00 to call New Orleans and Miami but I happen to know that it is considerably less. They live in a second rate hotel and the last that I heard he had left the hotel without paying his rent! I hope LaGuardia didn't get gipped in worthless oil stock.

I have my first criminal record - driving the car without permit. I had returned from one of my field trip 2 days after my permit had expired (each month you have to renew the permit) and one of the policemen picked me up, took me to the police station - booked me and impounded the car. I went to the head of the Departamento de Transito and in short order the poor policeman was sentenced to several days suspendem, for meanviendo an american scientist. and the judge cancelled my fine. It is good to have friends in

the Dept. of Transito.

To show how uncoordinated the offices are in the Govt. Ibarra and I renewed my tourist card which in my judgment should take only a few seconds but it took us 2 day and contact with 7 offices. On the second day at one of the higher levels of immigration department she were informed that the card did not have to be renewed until 6 months! It is just unbelievable how technical and confused some of the departments are. In the office of the Menesterio de Education I noticed that of the 5 people at desks - one read a newspaper, one wrote a love letter, one talked continually to the fourth member and the 5th chatted with someone from another office. One man could do the work of 4 or 5 people in these governmental offices. These people are living on good wages and doing nothing while the rest of the population is starving. As I see it, these political parasites should be cremated and a new honest and efficient and intelligent crew installed.. Ibarra says that the Director of the Zoo will get money for 100 bags of feed but actually will buy only 10 or 12 bags and pocket the rest of the money. It is the feeling of many of the large finca owners that it is not wise to give Guat. too much money as it is sure to fall into the hands of dishonest politicians. It seems so remarkable that Guatemala has copied and parroted in the fields of science, literature, dress and customs but has not revised its archaic administrative procedure

One of my first trips since the last letter was to El Salvador. I have one locality record in that Republic. Thanks to 2 state cops which I gave a ride to the border or frontier custom station. When I picked them up I told them that if they would arrange to get me over the border I would give them the lift.

It was so arranged and I have crossed a border that would have otherwise required visas' customs inspection, fees etc. but on return to Quatemala pay an unanticipated entrance fee. The country in this area is dry and hot and is a continuation to the south of a dry belt that runs irregularly through the Republic of Guatemala. The animals I captured there are similar to those in Mexico.

The entire country was in fire, beautiful forests on the higher mountains being completely destroyed. no attempt seemed to be made to check them. I believe that it is easier to clear land for grazing and farming by burning than to cut the timber. The newspapers here suspect that many of the fires have been set by communists and arsenists. & think that it is just carelessness and ignorance on the part of the people in trying to burn localized field or slopes and then have the fire get out of control. At the Salvador border I camped at a rather pretty lake. The road is terrific. The first night out I got onto a new road construction and followed it for about 30 miles until I come to a dead end. There was no way to turn around so had to back up for about 3 miles until I could finally dig out a place to turn around. There are no detour signs, warning signs. or even highway numbers - you get about the country by inquiry - Cual es estos caminos va a ciudad de Chiquimulilla? etc. A small piece of brush, laid across the road will signify that a bridge is out or that the road in impassable.

The next trip was in the opposite direction - to Champerico on the west. The first night out I camp at Escuintla. This was one of the centers of intense communistic activity because of its high value for agricultural purpose, especially sugar cane. They tell me that during the reign of Arbenz the natives

were put into responsible position of land ownership and managment which they could not manage but did have more money then they could use and as a result they bought typewriters, refrig, cars and other equipment which they could not use or needed. The society degraded because of the misconduct of the people with much money but not knowing how to properly manage it. Stopped at - or rather - was invited to one of the big sugar factories by an American Engineer who said that he was tired of looking at natives all year and would welcome an American face. It is unbelievable how much liquid they can squeeze out of a stalk of sugar cane. The first pressing machine produces a river of liquid about 12 inches wide and six inches deep. This river of juice produces 2,000 100 lb bags of sugar in one day. From this liquid the dirt is extracted which amounts to many tons every day - & found out that the size of grains of sugar is not the result of a grinding process but the size of the crystal which is allowed to grow to the desired size - Guatemala prefers large crystal sizes. The cane must not only have a good quantity of sucrose but must also have sufficient fiber content to use for fuel for the furnace that runs the plant. If there is not sufficient fiber content they have to use wood for fuel which is expensive and difficult to get. This factory employs 1500 people, all natives except the engineer and a certain am. chemist. They use the statistical control which means that every hour they test the productivity of the plant at various points and if the graphs show variation or deviation from the norm they can easily trace it to machine or man failure. The community was getting ready for their assignment of land for planting their corn which usually starts on Easter as the rains begins to fall for the rainy season.

This country has a hot climate and fewer clothes are worn. I have been tempted to use the movie camera to show how hot the climate can get but know that such evidence would be censored at the Kodak Processing plant. If I ever have a car accident in Guatemala it will be at a bridge ~~n~~ however, getting now so that I can cross a bridge without looking at the road!! I am quite convenced that I should become an engineer and build bridges in Guatemala.

The road from Retalhuleu to Champerico is paved and takes only 30 minutes to drive. Before the paving the trip took 8 hours of dusty, rough travelling. You can just imagine how beneficent such roads are to people who have milk, butter or perishable fruits that have to get to market. Most of these new paved roads were built by the Communists! All along the way the tropical forests were being burned and cut down to ~~raise~~ make room for cane sugar and cattle grazing. The waste of a forest by burning is inexcusable - the wood should be cut to lumber or used for heating and cooking. At Champerico observed the full influence of the hurricane that struck a hundred miles or so of the coastal forests. It will take many years for Champerico to dig out and rebuild. The natural forests are all wind eroded in the upper story and the fallen trees make passage almost impossible. Champ - is right on the beach but was not suitable for trapping area so went a east is a Finca owned by David Percey who is interested, luckily in preserving the wild life of the area. I camped on the beach where there were no natives or other human beings but a prodegous number of birds. I have never been so alone as at this camp.

I was almost within spray distance of the wild ocean and only a few feet from a tranquil inland lagoon. For 4 days I swam in the surf 3 times a day - at about sunrise - 3 o'clock - and at sundown or late

twilight - any hour of the day the water was perfect for comfort. (no swimming suit required at this seclusive spot). The surf is dangerous in two ways - first the sandy beach is steeply inclined and the waves break close to shore, in fact, while I was cleaning a felicaw at the edge of the water a high wave broke over me and like a ton of weight threw me down onto the sand and took the skin off my forehead. The undertow or water from the wave that expends its energy on the beach, rushes back to the ocean where it meets another oncoming wave which throws water into the air as high as 30 feet or so. Double waves are common and side or lateral wave come in unexpectedly. The churning action of the water is terrific. One can really abuse himself in the surf by exposing himself to these angry waters. Secondly, and after the second day of bathing in the surf I discovered that the sharks were common in the waters between where the waves break and the beach. In fact I counted 18 in ½ miles of beach. The smaller ones come in as near as 2 feet from the edge of the water. Beyond the breakers were many whales, especially in the morning. On the beach the crabs continually ran races with the incoming waters. My first swim was followed by a washing of my hair and clothes. The clothes came out ok but my hair was impossible. Have you ever got soap into your hair and then could not get it out. This sea water seals it in as securely as if coated with varnish. The salt impregnated clothes I believe are good for sunburn but somewhat irritating to the skin. At night the waters are phosphorescent or rather luminescent. Your body is coated with a million stars. A pair of socks I had washed and when shaken came to life with glowing jewels. To agitate the sands with your hands or feet would

produce the same temporary effect. The grandeos
desplay was the waves which were breaking or
rushing landward. During the day the cool wind
blows in from the ocean and at night the winds blow
seaward. Regardless of how hot the weather was, these
breezes kept the car comfortable - a car that would
be unbearable under windless conditions. Most of
the beach is pure sand but there are small packets of
shells of many kinds and shapes. One day I was
bathing and saw a flock of pelicans flying down the
beach toward me so I stated to run over to the car to
get the gun. I got about 20 feet away a found the
sands so hot that I had to crawl back to the beach.
I think I actually burned my soles. I got my first
sunburn cleaning a pelican on the beach and I
mean a sunburn - clear to the bone and so completely
debubuled. I did not sleep for 3 nights because I
could not find a position that was not sunburned.
I got a fever and was almost sick from the effects.
I got my second pelican by digging a hole in the beach
an then waiting in this hole until some unsuspecting
pelican came along, - if they see you first they will
fly out over the water or fly inland. While I was reclaiming
this bird a large wave come up over the hole and
drowned my gun, shells, and shoes with water and
sand. Needless to say that the gun suffered most of
all or maybe it was my displeasure. From the car
I could watch a colony of about 3000 man-of-war birds -
some with eggs & ochers with young. I shot a roseate
spoonbill and before I could reclaim it another lit
by the side of the dead one. The bird life was indeed
prolific. One afternoon I paddled a boat,
which Davies offered me, up a river for about 5 miles -
thru jungle forests. In the evening I returned

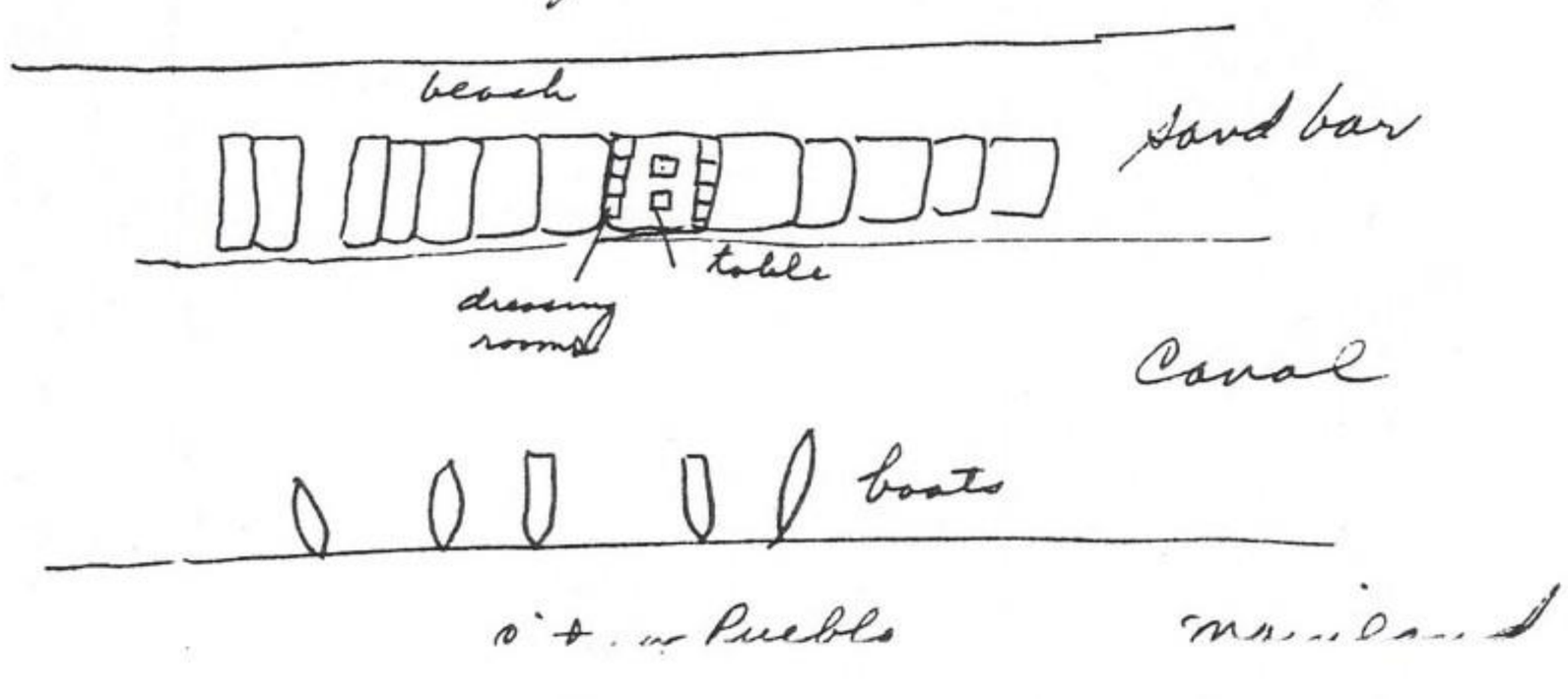
and hunted with the spotlight after dark along the way. This trip remains as one of the most unusual experiences that I have had in Guat. If we ever come to Guat. we will surely have to make one of these canoe trip down one of the many rivers that flow through jungle lands.

From Champerico lands I drove to the highest extensive mass of upland in Guat. north of San Marcos: To get there I directed by misinformed people who led me a merry chase over some of the most impassible roads in the country. I gave two different people rides – the best road was always in the direction that they wanted to go and as a result I got into some pretty bad country. The woodmen are cutting down the fine forests in the high lands – theck activity reminds me of termites – slow but continuous and effective. I have found a keen correlation between the condition of a road and the condition of the buses that use the road. By observing the buses in the pueblos I can tell which roads are the best or worst. Buses that travel the bad roads are have differential movement in every connection – the hood goes up and down, the fenders in a different direction and the bumper dances ~~lite~~ in all directions. To meet these buses on the road reminds one of a hula-hula dances.

From San Marcos I went to the scenic spot in Guat – Atitlan Lake. As at Champerico I camped on the sandy beach of the most secluding part of the lake. Hanging from the cliffs above me was the summer house of a Mr Samuel Greene of the United States. This home is really a dream house. It is 75 feet above the water with almost perpendicular slopes on either side. The approach is made by a long stone and

cement stairway on the side of the cliff." The front slope is terraced with green grass, oriental trees and a profusion of flowers. From the house the view is unexcelled with the lake and volcanoes in view from every picture window. this house is the type of "Shangrila" I have always dreamed about but never realized existed. The house is called Verdenango. Bathing platform and boat house lay at the base of the cliff. In the morning I hunted for the pied billed grebe which is a unique bird in the Atitlan Lake area. The native caretaker took me out in his boat made of a hollowed tree. Same was not in Guatemala but the native caretaker took me through the house. The inside native is Mayan and very interesting and attractive. Maybe one day we can have such a dream house - in such cases you live by inspiration alone. The road out of this part of the lake was the steepest road I have ever ascended or descended in Guatemala. Returned to Guatemala on Pan-american Hiway. There have been considerable improvement on the road since I travelled it the first time in December. For instance it took me 7 hours to come from Atitlan Lake to Guat. Only in December but only three hours this date.

Last Sunday I take Starro, wife, son and servant down to Iztapa along the Pacific as I wanted to collect a pair of water-turkeys. I got my birds and had a very pleasant afternoon on the beach besides.



This place is a resort in a primitive sort of way for primitive people. From the village on the mainland you pay 10¢ to cross canal in a boat. The sand bar is crowded with shelters of bamboo and flat thatched roofs. Each family has a shelter with about 6 dressing rooms of bamboo and a table or two to serve meals. The bathing room have a frond of a palm tree for a rug and the bamboo have spaces about 2 inch apart – no privacy. While we ate there waves came into the eating area. During early March the waves wash clear across the sand bar through the rooms!

You ask about my intestinal disturbances. I can now report that the adjustment period is over and my resistance to the "Guatemalan complaint" is nearly complete. It is surprising how completely lacking is the American body in immunity to foreign foods and especially water. But after eating and drinking contaminated foods you build up the necessary resistence. I have been careful to avoid mister amoeba. The initial period of intense diarrhea is universal in every american that comes to Guatemala.

Must close tonite but will try to inform you tomorrow on the outcome of customs inspection. Tell Polly, Chris & Jay that I am saving up many kisses & hugs for them when I get home and maybe I will even have one or two for you too If you continue to be a nice little girl and not to worry about your esposa in Guatemala.

Love

James.

550330-52

Guatemala City, Guatemala.
March 30, 1955

James H. Tamplin - apiculter Americano
Apartado Postal 55, Guatemala, C.A.
Sold interests on Pacific Coast and now
in Lake Izabal area. Has cabin at
Esperanza and lumber interests at San
Felipe. This man has offered to collect
mammals from this area. He says that
SW of lake is most primitive area. I
gave him special instructions to get an
otter for me.

Arnold E Mezger - Finca Buena Vista,
San Sebastian, Dept. Retalhuleu
offered to take me to jungle SW of United
Fruit Co landings at Playa Grande.
Best area of jungle or 'montaña' on
Pacific coast. Is now building
cabin on sea shore at Iztán. He
suggests I see Ewald Kaehler,
Chalet Verde, Barrio Nuevo in
Guatemala City to see if he still
has osteological collection of Guatemalian
mammals collected by his father.

Dr. William C Paddock

Formerly Univ of Iowa now Plant
Pathologist of Agropecuario. Working on
new corn for Guat. "Caso de Nidris"
at La Reforma. Good contact for Agropecuario.

David Vela - President of Institute of
Anthropology and History. member Guat.
Geographical Society. President Apes.
Newsmen in Guatemala. Deputy of

Congress. Combated Communists, Most
cultured man in Guatemala. Director
El Imparcial newspaper head in
Central Am. Prof. Univ in School of
Humanities. Publications caused to be
translated and published by
1 Facultad de Ciencias Kuímicas
(" Ciencias Naturals y Far-
macia.) or Ministerio de Educacion
Publica

Pedro Solé. Own tannery and residence
east of town. He is to supply me with
four skin showing thickness of skin &
color variation. Authority on Rum
Rame magazines.

Carlos Samalloa. Director Institute
of Anthropology & History. Writer only &
knows nothing of his book.

Jose Storck. State Geologist. Knows coves.

Julio Beltranena. Prof Engrg
School & School of Forestry. Geologist
& Mineralogist in Institute of Petroleum
of Guatemala. Knows country

Oscar H Horst - Ohio State Univ. address
in Guat. City. 12 Calle # 6-10, Oriente.
Geographer on scholarship. Wife living
with him.

L. R. Ostheimer - Finca Pantaleon, Siquinala, Guat.
address me states P.O Box 485, Houma, La.
Conducted me through sugar cane factory.
He is engineer of plant. A mr. Alexander
Romance is the other non-Guatemalean
member of plant. Is to let me know
if a certain employ can get me the skull

and hide of a Virginia deer

Jorge Maria Cabrera Dahila - Finca vielolobas. He will try to get mammal for me. His father Rosalino Dahila is administrator of Finca

Samuel Greene - Own Shangri-la on shores of Atitlan Lake. Place known as Verdenango although of only one private house - just south of Finca Jaibal where I got permission to drive and camp on shore of lake of the residence Verdenango. Will look him up in the states.

Percy Davies - Finca Helvetia, San Sebastian, Rep. Guatemala. Owner of salt holdings east of Champerico and other lands. Desires to make area into wildlife reservation. Interested in making movies of birds. Invited me to Helvetia. Gave me boat to hunt river east of Finca. Helped Handley when he was in Guat, especially grey fox.

Medrico Sarasate - City Civil Sanitation Engineer. all H-O good - "Guatemalan Complaint". Hunting is hobby.

W. W. Brown - Third member of company to exploit oil in Peten. offered to take me to Paso Caballos. Has 2 motor cruns and helicopter at his disposal. Own large yacht at Livingston. Has contract to build Atlantic Highway from Guat to P. Barrios. This man is a fake.

Pedro _____. Own saw mill at Retalhuleu. Gave permission to use facilities at mill. Has boat & yacht at Livingston, and hunting is hobby. Could organize men for getting mammals.

Julio Herrera. Guat City. Owns Finca 6

mi. S Chiquimula. Stayed at his finca for several days.

_____ _____ owner of Santa Clara Finca and gave permission to hunt in Astillero.

_____ Bump. President United Fruit Co in Guat. gave full logistic support to fund party. Transferred to Boston.

_____ Fallon Replaced Bump and have not met as yet.

_____ Luis Arbenz. Representative to Congress. Own 7 Fincas at Chajul and invited me to visit some. Has plane and air field near Finca. Will arrange pack train to get into remote country. Could not reach his Finca by car but tried. Road only passable by jeep.

Rev. Russell W. Birchard, Salamá. Knows Peter, Abago and Alfo Vera Pop well. Could place me at any one of the homes of the many missionaries in this remote area. Is now Pastor and Superintendent of the Nazarene church.

Mr. Ray Elliot.

Wanted like to have me stay with them and could arrange for accommodation with other members of the linguistic Group in Guatemala

These people are in direct contact with native peoples and could solicit their support in getting mammals.

Mr. Canton Head passenger & freight service of United Fruit Co in Guat. Can make special arrangements for accommodation & getting cargo back to states. Replaced Mahoney.

550330-56

Mr. ~~Howes~~. Head of Departamento
Transits. Car permits etc.
Mr. Ignacio Aguilar - Prof of Botony of School
of Agriculture - Interested in grasses & may be
good for trade material.
Jorge A Ibarra. Director museum natural History. Guat. City.
Jorge Estuardo Ibarra - son
Claudia del Pilar Ibarra - daughter.
Pilar Anfiano Urrutia de Ibarra - wife
Finca Vialabas is 6 mi. S Guat. City, elev. 4200 ft.

Guatemala City, museum natural History, Guatemala.

march 30, 1955

Entered a catalogue of photographs this date. Photos beyond april 2, 1955 are included in the text of journal according to date: (all in Guatemala).

550127-101 Approx. 3 mi-n Salama. Serpentine formation & red vegetation.
550128-102 Salama. Banana fruit.
550206-103 Amatetlan Lake. Framed with large tree.
550206-102 ibid
550208-109 2 3/10 mi W and 1/4 mi n Aztopa, River.
550208-110 ibid, aireal root systems.
550209-109 Vulcan de Fuego to n W., near Otocingo?
550209-112 1/4 mi. E Otacingo
550209-113 marsh-vegetation. Several jacana here, ponds at least waist deep.
550209-114 ibid.
550209-116 ibid
550209-117 ibid.
550211-114 5 mi. S Chiquemulilla
550302-101 Astillero. children of the village
550302-102 " children of the village
550302-103 1/2 mi. NE Astillero. Isolated trees are characteristic
550302-104 Asteellero. Small stream approaching ocean.
550302-105 Asteellero fog trees.
550302-106 " Trail thru coastal jungle. Many night living mammals along these trail. Cowkish calls at night,
550302-107 Colored tree of summer defoleation.
550302-108 Heat of summer turns ground vegetation to brown. Trees and bushes loose leaves. Landscape appears as if burned by fire.
550302-109 2 mi S Chequemulilla. From road to E,
550302-110 n Esquintla. On highway looking S.
550302-111 same area as 550302-109,
550305-116 Cuilapa. Old eroded road thru city,
550305-117 3 mi E Cuilapa. Burning of forests
550305-118 Atescatempa Lake, 2900ft. Vulcan de Chingo in El Salvador beyond to S,
550305-119 Atescatempo Lake. Good grasses.
550305-120 " " Road repair marked by limb in road.
550305-122 " " Villagers pay me a visit at camp.
550305-123 Ascension Mts and recent volcanism. Tahen W of City, 2300 ft.
550306-122 Atescatempo Lake. Fields in foreground.

550306-124 East of Cuilapa at 4000 ft. To west.
550306-125 E of Cuilapa. Fire, glazed & unglazed.
550306-126 E of Cuilapa. Effects of erosion on road bed.
550306-127 E of Cuilapa. 3200 ft. Erosion outwash
550306-128 Native girl bathing by river.
556306-129 SW of Cuilapa, 2850 ft., View to S.
550306-130 S of Cuilapa, Valley, hills & mts.
556306-131 Guatemala City. View at 5800 ft to east.
550306-132 " " from E to SW. Road reflected.
550307-118 Guatemala City. Archeology museum
550307-119 " " " museum Natural History.
550307-120 Interior museum Natural History, Guatemala City, Guatemala
550307-121 " " " " white hawk mounted by Senior Jorge Ibarra,
550309-110 Astillero. Outside bake oven.
550310-138 Guatemala City. Jorge Estuardo Ibarra and Claudia del Pilar Ibarra. Son & daughter of Jorge. Ibarra.
550316-101 Bull ring, Guatemala City,
550316-102 " " " " .
550316-103 " " "
550316-104 Wrecked car in Guatemala City,
550317-121 Retalhuleu village,
550317-122 10 mi. N Champerico. Savannas and tall trees,
550317-123 N Champerico. Partly collapsed bridge. Many bridges are out and fording of rivers are nessary. For wooden bridges, one must get out of the car and check each one before crossing.
550317-126 Champerico and surf on beach. The surf on the Pacific beach is short and powerful when a wave vertically breaks on shore. Beach steep & abrupt.
550317-127 ibid
550317-128 ibid
550317-129 ibid
550317-130 ibid
550317-131 ibid
550317-136 ibid
550317-137 ibid
550317-138 ibid
550317-139 ibid
550317-140 ibid.
550317-141 ibid
550317-142 ibid

550317-143 surf on Pacific Ocean at Champerico. Guatemala
550317-143a ibid
550317-144 ibid
550317-145 ibid.
550317-146 ibid
550317-147 ibid
550317-148 ibid
550317-149 ibid
550317-150 ibid
550317-151 ibid
550319-109 2 mi. SE Champerico. Colony of man-o-war.
550319-110 Champerico. Surf along beach.
550319-111 ibid
550319-112 ibid
550319-113 ibid
550319-114 Canal thru village of Champerico.
550319-115 boat on canal at bridge at Champerico.
550321-102 along river near beach 2 mi. SE Champerico
550321-103 surf along beach 2 mi. SE Champerico
550321-104 shells along beach 2 mi. SE Champerico
550321-105 Brahma bull at Champerico.
550321-106 Between Retalhuleu and Champerico. man controlled fire.
550321-107 ibid.
550321-108 ibid
550321-109 Color change of leave from intense summer heat.
550322-101 Grove. Yard North of Bajapita.
550322-102 Village N of Bajapita. On benchland above deep canyon.
550322-122 Cemetery. San Marcos.
550322-123 Road and pathway deeply worn. San Marcos, 9000 ft.
550322-124 Approx. 5 mi. E San Marcos. Conifers and grasslands.
550322-125 Deeply eroded pathway. San Marcos.
550322-126 E of Totonicapon?
550323-106 10 mi E and 4 mi. S Totonicapon, 10000 ft. stone wheel (see march 23, 1955 for drawing of wheel)
550323-107 ibid (conifer forest)
550323-108 ibid (microtus guatemalensis in damp areas in these forests.)
550323-109 ibid (forests old and worn)
550323-110 ibid (wheel in forest)
550323-111 ibid (grasses & shrubs of microtus community)
550323-112 Approx 11 mi E and 4 mi. S Totonicapon, 9800 ft.
550323-113 ibid (a hummocky grass is characteristic)

550323-114 Approx. 11 mi. E and 4 mi. S Totonicapon, 8800 ft. General view of standing conifers and cleared areas of forests. Bunch grass characteristic.

550323-115 W. of Encuentros, 8700 ft.

550323-116 Solala, 6850 ft. Village on top of flat mt at edge of abrupt drop into lowlands.

550323-117 South of Solala, 6100 ft.

550323-118 South of Solala, Village on top mt to right.

550323-119 Verdenango, Atitlan Lake. (mouth of River)

550324-103 Tzanyuyu, atitlan Lake, NE side.

550324-104 Verdenango, atitlan Lake. Private summer home of individual living in U.S.

550324-105 Caretaker of above home site.

550324-106 fish at dock below home (above)

550324-107 Tzanyuyu, atitlan Lake.

550324-108 San Antonio, Atitlan Lake. Volcano in several of above.

550324-109 Verdenango (on point, right) atitlan Lake.

550324-110 Waller fall along road E of Verdenango, Atitlan Lake (specifically above Tzanyuyu)

550324-111 Verdenango (house) can be seen on ridge. Trail leads E. It was on this trail on abrupt slope that I set traps.

550324-112 Verdenango, mouth drainage below house on ridge. Volcano in background, Atitlan Lake. Wood and oranges being brought here from elsewhere on the lake. University carryall in extreme right. Camped at this spot.

550324-113 native bring in produce. Caretaker of Verdenango also car. in photo.

550324-114 Caretaker of Verdenango Estate on ridge on beach below house.

550327-2 Iztapa. Senior Jorge and wife Ibarra, (Director nat. Hist mus., Guat.)

550327-3 ibid

550327-4 Iztapa. Picnic of family of Jorge Ibarra.

550327-5 Escuintla,

550330-61

REPUBLICA DE GUATEMALA — LIBERTAD 15 DE SEPTIEMBRE DE 1821 — VALE — DIEZ CENTAVOS DE QUETZAL

No. C 4556694

"IMPRENTA NACIONAL" TALLER DE GRABADOS GUATEMALA, C. A.

REGISTRO

Nº 4557610

QUINQUENIO
de 1953 a 1957

SEÑOR MINISTRO DE AGRICULTURA.-

PALACIO NACIONAL.-

SEÑOR MINISTRO:

JAMES W.BEE., ---- ATENTAMENTE RUEGA A UD., SE SIRVA-
DAR SUS APRECIABLES ÓRDENES A DONDE CORRESPONDA A EFECTO QUE-
SE LE CONCEDA LICENCIA PARA PODER SACAR DEL PAÍS UNA SERIE DE
PÁJAROS Y ESPECÍMENES CIENTÍFICOS SECOS Y DEBIDAMENTE FUMIGA-
DOS, LOS CUALES SALDRÁN CON DESTINO A LOS ESTADOS UNIDOS DEL-
NORTE, EL 4 DE ABRIL VÍA PUERTO BARRIOS EN EL SS/LEMPA.-

SE ACOMPAÑA LISTA DE LOS ESPECÍMENES A SACAR.----------

DE UD.ATTO.SS.,

James W Bee

JAMES W.BEE.,

GUATEMALA, 30 DE MARZO DE 1,955.-

SECRETARÍA DE HACIENDA Y CRÉDITO PÚBLICO — LIBERTAD 15 DE SEPTIEMBRE DE 1821 — REPÚBLICA DE GUATEMALA

550330-62

Guatemala City, Guatemala

March 30, 1955

Spent the day in the museum of natural History preparing for Petén expedition and organizing collections and truck for shipment to Puerto Barrios and thence to New Orleans.

April 2, 1955

Jorge Ibarra and I left by plane for Petén. Ibarra had arranged for transportation thru the Gualemala Government. Took just enough equipment for sleeping, food and collecting material. Photo 550402-1 from plane over Cabon. Photo 550402-2 of jungle beyond Cabon. Photo 550402-3 Last range before lowlands of Peten, near Cabón. Guatemala from Pacific Coast to Petén is a series of ranges and river valley, trending E, W. Photo 550402-4 of C47 plane at airfield in Flores. Photo 550402-5 of Flores. This area supports a large beautiful lake, a good aquatic & marsh community. Photo 550402-6 at airport on Guatemala - British Honduras border. The pipes demarcate the border. Photo 550402-8, at Uaxactun, Peten showing runway of airstrip and thatched houses we stayed on opposite side of the airstrip runway. Trapped area bordering the runway. The first evening a native brought a skin of a jaguar to the hut we were staying in and the odor of this skin caused the horses and mules in the area to wildly race up & down the airstrip as if actually being attacked! The photo 550402-8a is of Senior Ibarra, myself and two local helpers at Uaxactun with the hut in the background on n side airstrip. Slept with nets over cots as the hut or 'basha' were mainly open side structures of spaced upright planks.

550402-8a (no. neg.)

x (from opposite page)
Recorded some info from guide about the turkey.

Shot 5 turkeys in one year, 200 birds in last 15 years.
1954 high population
1955 low "
Lows are every other year.
more common now than 15 years ago.
nest June and July, 12 eggs each.
Flock in groups of 8-10.

On trip from Uaxactun to Tikal by horse observed 7 birds.
The measurements of birds collected:

Eggs average 35 mm
testes 15 mm.

Photo 550402-7 of Uapactun, Guatemala showing village in foreground and lowlands to the east. Airstrip to right. Photo taken from top a one of the old Mayan ruins. Photo 550402-9 at Uaractun N of village showing lowland jungles to E. Photo 550402-10 of mayan ruins NW of the village at Uaractun, Peten, Guatemala. Old trees anchored on temple ruins no dead. In the jungles W of this ruin found several round cap stones on the ground that covered cists excavated into the ground thus: (are empty). Photo 550402-11 of Uapactun village (warehouse for rubber gathered from trees in jungle: There is a large spring just W of these huts that supplied water for the village which at this time seems to be deserted. The spring was clear and water appealing. As I was nearing my stay in Guatemala I decided to test my immunity to village water and drank a full cup. This proved to be desasterous and I paid the penalty for the next week.

Remained in Uapactun all this day:

April 3, 1955

Checked area of Uapactun.

April 4, 1955

Travelled to Tikal by horseback. visited ruins in afternoon.

April 5, 1955

Last night after dark hunted the native Ocellated Turkey Agriocharis ocellata. These turkey roost in the tops of dead trees that tower above the other trees of the jungle. The birds are spotted using the moon and its sky light as a background for spotting the turkeys. When found we maneuvered so that the pellets of the shotguns would penetrate from the back of the bird into the body along feathers. To shoot from the front was less successful because of the deflection action of the feathers. Birds not hit would leave the trees and fly elsewhere in the dark. The high position of their roosting limbs allowed good positions for gaining flight power when they departed. Photo 550405-27 is one of the birds killed last night. Photos 550405-28, 550405-29, 550425,30 are other specimens of this species of turkey. This Turkey is a diminitive form and has characteristics that separate it from Meleagris gallopavo: The contour feathers are tipped with green and bronze

and the rounded tail feathers with a reddish bronze. The naked head and neck are bright blue with scattered red and white tubercles. Besides the frontal carunde is a fleshy knob on the crown. The call is different than the eastern turkey of the U.S. This turkey is wary and takes to the air immediately with a good strong flight. Photo 550405-31 is hut at Tikal where we stayed and prepared specimens. The individual is a mineralogist from Guatemala City. As a benefactor to the museum Ibarra was obligated to bring her along on the Petén expedition. This hut had not side walls and to my estimation is superior to the slatted ones in Uaxactun for both comfort and visibility.

Photo 550405-32 of the two guides with Ibarra and the mineralogist on trail to the main ruins. Ibarra demonstrated the water holding capacity of a vine that graws in the jungle. 1 3 foot length held a cup of water. Howler monkeys called continuously in the forest and in several directions. Several were observed in tree tops. We were told that when one is shot (killed) in the tops of trees they will lodge themselves in the crotches and will not fall to earth until a rain softens the animal and bark at which time they slide from their position in the trees. The trail was just wide enough for single file and not unusually worn. Photo 550405-33 of one of the major mayan ruins taken frm the top of another high ruin at the opposing end of the complex of ruins. It will be noted that the ruins are completely grown to jungle trees, except edifices higher than tree tops. Photo 550405-34 one of the high ruins showing trees, bushes and grasses growing on slopes of crumbled blocks of the slope of the building. Photo 550405-35 of a stela near the base of one of the high ruins showing a ram-like or plumed figure. Several others were noted, some roundish. Photo 550405-36 a large stone dish that could be a colander of some sort.

In the late afternoon we started back to Uaxactun and arrived there sometime late after dark. The entire trail was grown to small trees and bushes and one had to continuously hold an arm over one's eyes to protect them. The guides place 100% choice to the horses and mules in following the trail after dark. It seemed incredible that these horses could find their way for such a long trip in near total darkness. They must depend entirely on odor. I'm sure they faired the trip better than I.

550406-65

MINISTERIO
DE
EDUCACION PUBLICA

MUSEO NACIONAL DE HISTORIA NATURAL

PARQUE NACIONAL AURORA
CAMPO DE LA FERIA
TEL. Nº 9342
GUATEMALA, C. A.

April 6th, 1955.-

TO CUSTOMHOUSES:

This is in order to stated that the following specimens have been prepared and shipped un - der the following conditions:

a) All specimens have been fumigated in the Museo Nacional de Historia Natural in Guatemala city.

b) Specimens are now in close containers containing paradiclorobenzene, and

c) Mammals skins have been repared with s - terilized cotton from Lockport, N. Y. (Two Star Cotton, Lockport cotton batting Co. and arsenical powders.

Sincerely yours,

Jorge A. Ibarra
-DIRECTOR-

MUSEO NACIONAL DE HISTORIA NATURAL - GUATEMALA, C.A. - DIRECCION

10

550406-66

P. O. BOX
APARTADO POSTAL 585

GUATEMALA, C. A.

Guatemala City, Guatemala,
April 6, 1955

JOSE STOREK

GEOLOGO

I requested Senor Storek to put down some information about caves in the area to enhance my research on cave bats.

En Lanquin, Alta Verapaz además de cuevas que ahora se están explorando y tienen más de 20 kilometros de largo ya explorado, existen en el plano de Fernando Chévez dos cuevas más de pequeña tamaño. En dirección para el río Cobán existen dos cuevas más, y la que está más cerca al pueblo, hay versiones que en ella está enterrado el tesoro de la iglesia. Caminando por el río Lanquin para abajo, en la parte izquierda existen dos cuevas. La más baja se llama cueva del Aguila. Cerca de Cahabon hay varias cuevas. Alrededor de Chahal hay seis cuevas. A inmediaciones del pueblo las cuevas del Sagrado Corazón, sobre las márgenes del río Chiu y estas como otras cuevas de Guatemala, están visitadas por los indigenas que allá queman copal-pom como ofrenda al Dios Tzul-Takaa, señor y dios de cerros y planes. Tienen por creencia que todo indio que va a la casería no deja de visitar antes a hacer la ofrenda a éste dios, y si no hace ofrenda al dios de cerros y planos, la casería no dará buen resultado. Otras cuevas de Chahal se llaman de Los Huesos por la cantidad de huesos que existen en su interior; en lengua los indigenas Quechíes dicen Sebac que quiere decir huesos y así también le llaman a la cueva. Nadie sabe el origen ni decir la historia de huesos humanos, que se encuentran adentro.

Cerca de cinco kilometros de Livingston en Izaba, en las las márgenes del río Dulce existe una cueva que le denominan de la Cocha con - largo aproximado de un kilómetro (1. Km.). A tres kilómetros de Cayuga existe una cueva llamada también Cayuga que parece un tunel y tiene más de dos kilómetros de largo con río en su interior. A diez kilómetros de Gualán existe la cueva de Doña María. En la finca San Lorenzo, municipio de Río Hondo existe una pequeña cuewa. En Rabinal existe una cueva llamada La Ventana. De Tactic a Cobán en la finca Río Frío, existe una cueva con enorme tziguan que interrumpe el paso. Cerca de

550406-67

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GUATEMALA, C. A.

JOSE STOREK
GEOLOGO

Santa Cruz Alta Verapaz existe una cueva del mismo nombre. En Tucurú se conocen varias cuevas pequeñas. Senahú tiene en la finca del Sr. Koestler una gran cueva que en su interior tiene una laguna; dicha finca se llama Seamay. En el departamento del Petén se conoce la cueva de Jovitzinaj a cinco kilómetros de Flores. En la finca Santa Cecilia cerca de Carchá existe una cueva. Cadenas cobre Río Sarstun tiene dos cuevas. Cerca de San Luis en el departamento del Petén se conoce la cueva del Padre y la del Negro. Entre Cobán y Lanquín en la finca denominada Cojaj hay una cueva. Al Oriente de Santa Eulalia, en el departamento de Huehuetenango, hay una importante cueva en el cerro Chojzunil, donde los indigenas efectuan cada año sus sesiones secretas y eligen sus Caciques; igualmente sucede como en la cueva Ajul en Concepción del mismo departamento. En la república de El ¡Salvador hay en Corinto en el departamento de Morazón una cueva con dibujos de Indios, tambiéen en Estanzuelas del departamento de Usulután existen cuevas. En el departamento de Chalatenango se encuentra la cueva El Ermitaño, de El Ocotal, de dulce nombre de María. En la república de Honduras en el departamento de La Paz en el lugar denominado Potrerillos, existe una cueva que se denomina con el nombre de Cueva del Viejo y se sabe que comunica con el lago de Yojoa y debe tener otra salida cerca de Siguatepeque. Cerca del departamento de Copán existe una cueva que tiene por nombre Tibulca. Al sur de Belize existen también cuatro cuevas. En la república de México, además de las cuevas de Coahuila, existe la de García, Nuevo León y Saltillo. En Yucatán se encuentran la cueva de Calkehtoc.

Este es el pequeño inventario de cuevas en la América Central. Pero en éstas pocas líneas se encierra posibilidad para enormes exploraciones en el futuro. Según mi opinión,en Guatemala hay lo menos veinte

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GUATEMALA, C. A.

JOSE STOREK
GEOLOGO

mil kilómetros de cuevas. Las exploraciones se hicieron sólo en Lanquín; todo lo demás es vírgen, intacto. Nadie se atrevió a descubrir el velo de los secretos, por temor a algo, y por falta de recursos e iniciativa. Pero un estudio sistemático nos recompesará ampliamente por el esfuerzo y trabajo invertido. Mi mayor deseo es que mi artículo despierte interés entre gente de empresa y deseosa de impresiones inolvidables. Las fotos de las Cuevas de Lanquín, que acompañan éste artículo, son sólo mudo testimonio de la grandeza subterranea que existe en Centroamérica.

I have translated the information on caves that was presented to me by Senior Storek, State Geologist. The translation should be checked as my knowledge of Spanish is minimal: In Languin, High Verapaz, on the plain of Fernando Chévez, besides caves with more than 20 kilometers of length already explored are two more caves of small small size. Toward Cobán River are two more caves. One of these is near the town. There is the belief that in that Cave is buried the treasure of the church. On the left of the Languin River are two caves. One of these is called the Eagle. Near Chadhal there are several caves. Near the town are the Sagrado Corazón (sacred heart) caves near the Chiu River. These caves like others in Guatemala are used by natives who use them to burn copal-pom as a religious offering to the God TZUL-TAKAA, Lord and God of the mountains and plains. There is a belief that all Indians before going hunting visit these caves and offer a religious offering to the God of the mountains and plains. If he does not make an offering, the hunting will not be good.

Other caves of Chadhal are called "caves of the bones", because of the great amount of bones there. Quechies natives call these caves Sebac that, in their own tongue, means bone. nobody knows the origin of the human bones found in the caves.

Five kilometers from Livingston in Izaba, near Sweet River is a cave about 1 km in length, called the Cocha. Three kilometers from Cayuga is a cave also called Cayuga. This cave looks like a tunnel of about 2 km length and has a river in it. Ten kilometers from Gualán is the cave of Doña maria. On the Saint Lorenzo farm, Rio Hondo department is a small cave. In Rabinal is a cave called La Ventana (the window). From Tactic to Coban on the Rio Frio (cool river) farm, there is a cave with a big projection which blockades the way. near Santa Cruz, High Verapaz, there is a cave which has the same name. In Tucurú there are several caves. Senahú has on the Mr. Koestler farm a big cave with a lake in its interior. Mr. Koestlers farm is called Seaway. In Petén, five kilometers from Flores is the cave of Jovitzinaj on Santa Cecilia farm, near Carchá is another cave. Very close to Sarstun River there are two caves. Near Saint Louis, in the Petén department are two caves - the cave of the father and the cave of the Negro. Between Coban and Languin on the farm called Cojaj, there is a cave.

In Santa Eulalia (eastern part) is the Huehuetenango department is one important cove placed in the Chojzunil peak. In this caves the natives every year hold their private sessions to elect their caciques (Indian Chief). In Conception, town of the same department is the Ajul Cave, which is also used by Indians to hold their meetings.

In the Republic of Salvador, in Corinto, department of morazón, is a cave with Indian drawings. Also in Estanzuel , department of Usulután are caves. In the department of Chalatenango are the following caves: The Hermit, the Ocotal, and the sweet name of Mary. In the Republic of Honduras in the department of Paz, in a place called Potrerillos is a cave called the cave of the old man. This cave connects with the Yojoa Lake and should have another exit near Siguatepeque. Near the department of Copán is a Cave called Tibulea. In the south part of Belize also are four caves.

In the Republic of Mexico are the following caves; Coahuila of Garcia, Nuevo León and Saltillo. In yucatán is the Cave of Calkehtoc.

In Guatemala there is at least 20,000 kms. of caves. Only Lanquin Cave has been explored. Nobody has wanted to discover the secrets of these caves, perhaps because of fear of entering these caves or lack of resources or initiative

550406-71

Uaxactun, Peten, Guatemala.

April 6, 1955

Remained here durmg morning and packed for return to Guatemala City, Prepared specimens, espeically the wild turkeys. Photo 550406-1 of Senior Jorge Ibarra holding one of the turkeys he collected in Tikal. Photo 550406-2 of Senior Ibarra after skeletonizing process was completed. The skeleton will be, both wrapped and held together with string until dried.

Enroute to Guatemala landed at Itza Lake and thence to Guatemala City.

Senior Ibarra addressed a letter to custon house people to assist getting specimens into the U.S.

Visited Joe Storck, the State Geologist a picked up information about cave that he had promised me.

museum natural History, Guatemala City, Guatemala.

April 6, 1955

Recorded some, mise recollections of my stay in Guatemala.

1. Roads are either standard maccadamized, dirt and gravel roads of good grade made by and maintained by shovel and hole and the remote roads that are barely passable with jeep. Most all road are maintained with human labor. (shovels + and brand hoe). These roads can be smooth or rough according to how long it has been since they were raked smooth or the amount of rain. The workers build temporary shelters alng side of road wherever they are working at the time. Rough sections of macadam are dug down to bedrock and replaced rather than patch on top. Branches of tree in road are only signals of these areas of major repair. Shoulders of roads can be abrupt and dangerous. There are no white lines to demarck center or sides of the road, most bridges have collapsed or nearly so.

2. Children seem smarter for age than in U.S.

3. music loud. Radio imitates U.S to a perfection in content and tone. The voices are loud, fast and hysterical. All american sayings. They love soop operas. Nearly all american music and more consistently played (classical) than in U.S. No cowboy adds. Radio fades in and out.

3. Each home has floral display surround a picture of Christ or the Cross. The flowers usually Callalilies. Funeral similar to those in India. Coffins and effigues carried on plateform with people following. Coffins

beautifully carved in wood.

4. Goat herds generally about 2 dozen with pairs tied together. Young would run free. Herds moved in city and residential area and the goats are milk and fill containers brought by the residents. There is always a problem of sanitation after a herd of these goats pass by.

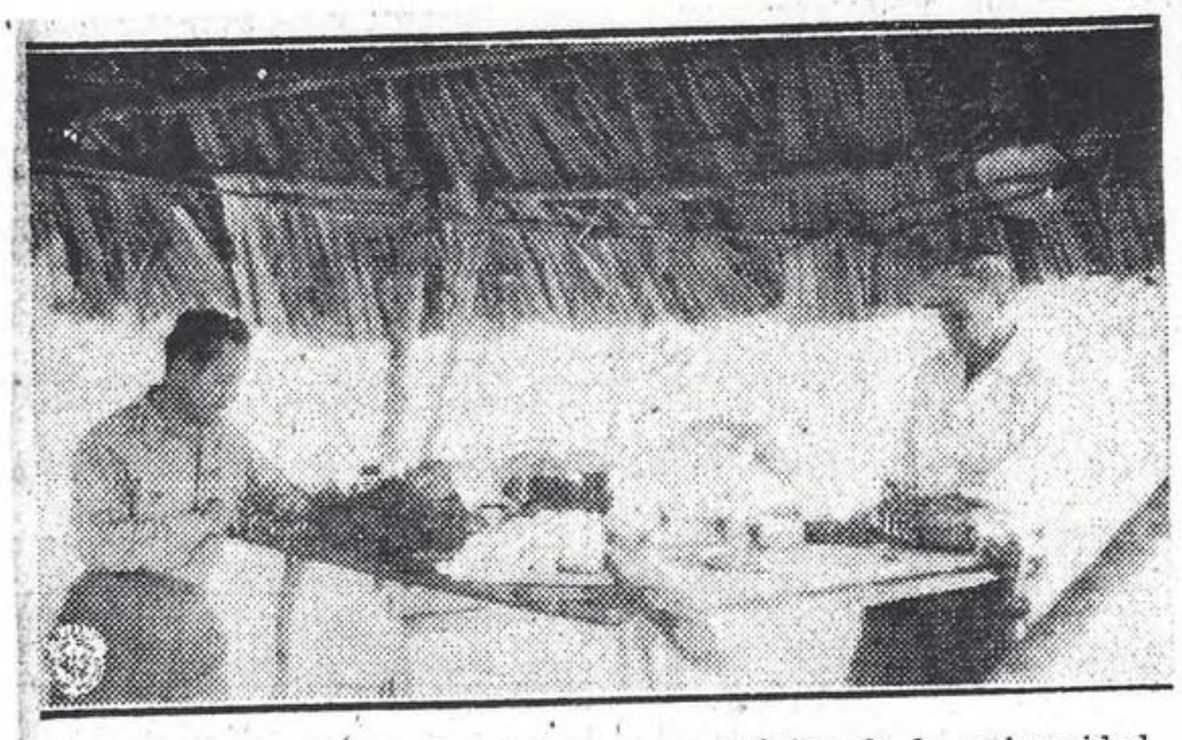
5. After a rain, at night especially, one can smell a hut or rural residence long before you can see it. Sanitation in residences is unbelievably primitive when children, pigs, cows etc. share the same yard.

6. The upper class always refer to the natives as "those poor people."

Inserted April 7, 1955

550407-73

newspaper clipping from El Imparcial, June 28, 1957 from Jorge A. Ibarra, museum director of the Natural History Museum of Guatemala City, Guatemala who accompanied me on the trip.



El doctor James Bee del museo zoológico de la universidad de Kansas, Estados Unidos, aparece a la derecha del presente grabado; a la izquierda el autor de este artículo. Al examinar las vísceras de dos pavos se comprobó el hallazgo de fragmentos de culebras venenosas. Photo Tical, Peten, Guatemala April 5, 1955

Animales Utiles del Petén

SE ALIMENTAN DE CULEBRAS VENENOSAS EL ARMADO O ARMADILLO Y EL PAVO

Las serpientes cuentan con enemigos bastante numerosos. Entre ellas mismas se hacen la guerra, existiendo casos de canibalismo fratricida cuando especímenes de la misma familia se devoran. De no suceder este fenómeno existiría tremenda cantidad de culebras que harían imposible la vida del hombre en la selva y en la montaña.

Entre los ofidios hay serpientes que poseen veneno para aquellas que son mortíferas para el hombre, mencionemos a dos ejemplares denominados científicamente Clelia clelia clelia (no secrea que es un error de máquina escribir tres veces el nombre de este ofidio) que habita en el lado del Atlántico hasta los 600 metros y Clelia clelia scytalina que es frecuente en la costa del Pacífico hasta los 600 metros de altura. Estos ofidios, cuya mordedura no mata al hombre, muestran cierta predilección por nutrirse de serpientes venenosas como la barba amarilla a la que combate encarnizadamente hasta succionarla, no importando que el tamaño del ejemplar vencido sea mayor que el ofidio que le ha dado muerte y que no constituye peligro alguno para el hombre, todo lo contrario, su presencia debe estimarse como de gran valor económico. Los animales mejor dotados físicamente se encargan de guardar el equilibrio de la naturaleza y este equilibrio se trastorna cuando interviene el hombre (pleno de ignorancia o anegado de las más absurdas supersticiones) en la captura de especies que son valiosas para mantener el imprescindible control de natura.

El armado o armadillo

No cabe duda que uno de los más notables enemigos de los ofidios venenosos es el armado o armadillo, capturado en gran escala por nuestra gente, ¿cuál es la razón? Pues, sencillamente que le carne del armado se expende en abundancia en todos los mercados de Guatemala. Usted ha comido alguna vez carne de este animal, ¿verdad? ignorando que este notable mamífero se alimente preferentemente de culebras venenosas.

Es deber nuestro ver con profunda simpatía al armadillo y no permitamos su innecesaria matanza. En los departamentos de Suchitepéquez y Escuintla están sucediendo serios casos de mordeduras de culebras venenosas y nosotros ya sabemos cuál es la causa y creemos contribuir a la protección de la fauna, defendiendo a uno de los más interesantes animales, cuyo paciente y útil trabajo en el campo no lo desarrollaría ningún campesino con tanta eficacia como lo lleva a efecto el armado o armadillo. Repetimos que la inmoderada cacería de dicho animal ha provocado considerable aumento de serpientes venenosas y que por lo tanto urge sugerir a las autoridades departamentales, donde tal animal existe, se prohiba dar muerte a tan valioso espécimen.

El pavo del Petén es otro de los enemigos de los reptiles venenosos. Es considerado por los nativos de aquel departamento como una especie que provee deliciosa carne y cuya piel de plumaje abundante en colores tornasolados verde al turista.

El pavo era común en los alrededores de La Libertad, Uaxactún Tikal, etcétera. En la actualidad ha ido buscando zonas intrincadas pero el campesino lo captura aunque tenga que caminar varios kilómetros. Conoce los bosques donde el pavo ha fijado su guarida y allí se interna sin necesidad de hacer uso de la linterna. Durante el día es arisco, mas en la noche no es difícil contemplar su forma en árboles bajos escasos de hojas; es una especie torpe, de nulo instinto de conservación y que dentro de unas pocas décadas va a desaparecer de nuestra fauna. Conocí a un campesino que cazaba de ocho a diez pavos cada vez que se le antojaba salir de cacería.

Puede servir, para evitar en parte la voracidad de los cazadores de pavos, el descubrimiento realizado con respecto a la nutrición de dichas aves. Al examinar las vísceras de dos ejemplares, hallamos restos de coral (Micrurus elegans elegans). Fue en un viaje que realizáramos con el doctor James Bee de la universidad de Kansas, Estados Unidos. Escribimos estas líneas a propósito del aumento de población en el Petén. El pavo que allí todavía existe es enemigo de los ofidios venenosos, mereciendo por consiguiente nuestra más profunda simpatía.

JORGE A. IBARRA

550407-74

Guatemala City, Guatemala

April. 7, 1955

Photographed some 70 of the 79 species of mammals collected by James W Bee on the Guatemala expedition. Photos 550407-1 to 550407-6.

550407-75

550407-76

550407-77

550407-78

550407-79

550407-80

Entered in journal April 7, 1955

1 mi. N E Nebaj, 6000 ft., Guatemala

Dec. 15, 1954

54 1215-1	♂	Peromyscus mexicanus saltatilis			256-135-25-19-54 gms, testis 12 mm
54 1215-2	♀	Sigmodon hispidus zanjonensis			215-102-31-16-47 gms, ut. normal.
54 1215-3	♀	"	"	"	190-86-27-16-38 gms, ut normal
54 1215-4	♀	"	"	"	202-100-29-16-40 gm, ut normal
54 1215-5	♂	Reithrodontomys sumichrasti dorsalis			175-97-19-15-15 gms, testis 5 mm
54 1215-6	♂	"	"	"	167-91-19-16-15 gm, testis 7 mm
54 1215-7	♂	"	"	"	155-84-19-15-11 gm, testis 3 mm
54 1215-8	♂	"	"	"	176-100-19-14-14 gm, testis 6 mm
54 1215-9	♀	"	"	"	172-98-19-15-15 gm, placental scars
54 1215-10	♀	"	"	"	162-88-18-15-15 gm. 4X0 emb. 15 mm
54 1215-11	♂	"	"	"	170-99-19-15-14 gm, testis 7 mm
54 1215-12	♂	"	"	"	154-90-18.5 14-10 gm. testis 3 mm
54 1215-13	♂	"	"	"	112-58-18-14-9 gm, testis 3 mm
54 1215-14 m. only	♀	"	"	"	162-88-17-15-12 gm. placental scars
54 1215-15 m. only	♀	"	"	"	152-90-18-13-9 gm,
54 1215-16 m. only	♂	"	"	"	150-87-18-14-9 gm,
54 1215-17 m. only	♂	"	"	"	160-87-18-15-15 gm,
54 1215-18 m. only	♀	"	"	"	175-97-19-15-18 gm,
54 1215-19 om. only	♂	"	"	"	110-57-16-14-8 gm
54 1215-20	♀	"	"	"	109-58-16-15-8 gm

Dec. 16, 1954

54 1216-1	♀	Dasypus novemcinctus fenestratus			705-295-93-35-9 lbs, ut. normal
54 1216-2	♀	Didelphis marsupialis labascensis			720-313-56-50-3 lbs. ut normal
54 1216-3	♂	Oryzomys C. couesi			257-160-29-18-36 gms, testis 5 mm
54 1216-4	♂	Peromyscus mexicanus saltatilis			250-133-26-19-46 gms, " 13 mm
54 1216-5	♀	"	"	"	178-90-23-17-22 gms, ut. normal
54 1216-6	♀	Sigmodon hispidus zanjonensis			235-118-30-17-66 gms, 1X2 emb, 12 mm
54 1216-7	♀	"	"	"	236-105-29-17-72 gms, plac. scars
54 1216-8	♀	"	"	"	118-51-18-11-8 gms, ut. normal
54 1216-9	♂	Reithrodontomys sumichrasti dorsalis			168-95-19-15-11 gms, testis 5 mm
54 1216-10	♂	"	"	"	172-100-19-15-12 gms, ut. normal
54 1216-11	♀	"	"	"	152-80-18-14-10 gms, ut. normal
54 1216-12	♀	"	"	"	150-81-19-15-9 gms, ut normal
54 1216-13	♀	"	"	"	158-90-19-15-10 gms, ut. normal
54 1216-14	♂	"	"	"	144-88-19-15-11 gms, testis 4 mm
54 1216-15	?	Mephitis m. macroura			( )-320-60-26-( ).

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Dec. 17, 1954

54 12 17-1	♀	Peromyscus mexicanus	saltatilis		[230]-[100]-25-20-68 gms, 2x3 emb. 9 mm
54 1217-2	♀	"	"	"	248. 125-25-19-60 gms, 3x2 plac. scars
54 1217-3	♀	"	"	"	235- 124-25-20-48 gms, 2x3 " "
54 1217-4	♀	Sigmodon hispidus	zanjonensis		180- 86-27-18- 34 gms, ut. normal
54 12 17-5	♂	"	"	"	235- 125-32-19- 94 gms, test. 10 mm
54 1217-6	♀	Reithrodontomys	sumichrasti	dorsalis	151- 87-19-14- 10 gms, ut. normal
54 1217-7	♀	"	"	"	145- 81-19-15- 8 gms, " "
54 1217-8	♀	"	"	"	168-92-19-15- 10 gms, " "
54 1217-9	♀	"	"	"	145-84-19-15- 11 gms, " "
54 1217-10	♂	"	"	"	150-85-18-13- 9 gms, test. 3 mm
54 1217-11	♀	"	"	"	150-86-18-14- 11 gms, ut. normal
54 1217-12	♂	"	"	"	147-82-19-15- 7 gms, test. 3 mm.

Dec. 18, 1954

54 1218-1	♂	Sigmodon hispidus	zanjonensis		[223]-[70]-35-19-122 gms, test. 20 mm
54 1218-2	♀	"	"	"	250- 113- 31-17- 9 gms, plac. scars.
54 1218-3	♀	"	"	"	[178] [25] 32-18- 111 gms, plac. scars 182- 72-28-17-42 gms, ut. normal
54 1218-4	♀	"	"	"	
54 1218-5	♂	"	"	"	210-85-31-18-64 gms, test 5 mm
54 1218-6	♂	"	"	"	215-95-30-18-58 gms, " 6 mm
54 1218-7	♂	Reithrodontomys	m. saltatilis		[213]-[95]-27-18-56 gms, " 12 "
54 1218-8	♂	"	"	"	185-94-24-18- 22 gms, " 4 "
54 1218-9	♂	"	sumichrasti	dorsalis	168-95-18-15-13 gms. " 6 "
54 1218-10	♀	"	"	"	170-93-18-15- 12 gms, ut. normal
54 1218-11	♀	"	"	"	170-91-18-15-12 gms, " "
54 1218-12	♂	"	"	"	168-98-20-15-11 gms, test 6 mm
54 1218-13	♂	"	"	"	160-85-18-15-12 gms, " 5 mm
54 1218-14	♂	"	"	"	155-85-19-15-11 gms. " 3 "
54 1218-15	♀	"	"	"	155-88-18-15-12 gms, ut. normal
54 1218-16	♀	"	"	"	168-95-18-15-13 gms, " "
54 1218-17	♂	"	"	"	155-87-19-15-8 gms, test. 3 mm
54 1218-18	♂	"	"	"	148-72-19-14-10 gms, test. 3 mm
54 1218-19	♀	"	"	"	145-78-18-14-9 gms. ut. normal
54 1218-20	♀	"	"	"	155-94-18-15-9 gms. ut. normal

3 mi. N E Nebaj, 6150 ft., Guatemala

Dec 18, 1954

54 1218-21 ♂ Trogon elegans elegans length 310 mm

1 mi. NE Nebaj, 6000 ft., Guatemala

Dec. 19, 1954

541219-1	♀	Sigmodon hispidus zanjonensis	288-125-32-19-150gm. wt. normal
541219-2	♀	" " "	215-100-31-19-65gm, " "
541219-3	♀	" " "	150-66-65-25-28gm, " "
541219-4	♀	" " "	166-73-26-15-33gm. " "
541219-5	♀	Oryzomys c. couesi	210-106-29-15-30gm. " "
541219-6	♂	" " "	230-123-29-16-40gm, test. 7mm
541219-7	♂	Peromyscus mexicanus saxatilis	243-130-25-21-56gm, " 13mm
541219-8	♀	Sigmodon h. zanjonensis	141-61-23-15-20gms, wt. normal
541219-9	♂	Peromyscus m. gymnotis	200-96-24-20-34gm, test. 9mm
541219-10	♂	" m. saxatilis	220-110-25-20-45gm, " 12 "
541219-11	♀	" " "	190-100-23-17-26gm, wt. normal
541219-12	♀	Reithrodontomys mexicanus havelli	170-102-19-15-10gm. " "
541219-13	♀	" sumichrasti dorsalis	154-89-18-14.9gm. " "
541219-14	♂	" mexicanus havelli	160-98-18-14-10gm, test 3mm
541219-15	♀	" sumichrasti dorsalis	180-100-20-16-15gm wt. normal
541219-16	♂	" " "	170-95-19-15-15gm test 3mm
541219-17	♂	" " "	158-84-19-16-12gm " 3 "
541219-18	♂	" " "	150-80-18-14-10gm, " 3 "
541219-19	♂	" " "	150-79-18-14-9gm " 3 "
541219-20	♂	Colaptes cafer mexicanoides	length 300, wt 140
541219-21	♂	Turdus grayi rufitorques	" 238, " 80

Dec. 20, 1954

541220-1	♂	Turdus ignobilis differens	
541220-2	♂	" rufitorques	
541220-3	♀	" "	
541220-4	♀	Cyanocitta stelleri ridgwayi	
541220-7	♀	Myioborus miniatus intermedius	
541220-8	♀	Trogon mexicanus mexicanus	length 310, wt 78gms
541220-9		Xiphocolaptes promeropirhynchus emigrans	" 324, " 133 "
541220-10		Lepidocolaptes a. affinis	" 233, " 33gms
541220-12	♂	Dendroica townsendi	" 122, " 9 "
541220-13		Ptilogonys cinereus molybdophanes	" 208, " 31 "

Dec 21, 1954

541221-1	Aspatha gularis (Stiel language - top-pat)
541221-2	Dendroica townsendii
54122-3	Myioborus miniatus intermedius
54122-4	Bubo virginianus mayensis

54,221-5 ♀	Peromyscus	mexicanus	saxatilis 2	223-112-25-19-80gm, 2x1 emb. 22mm
54,221-6 ♂	"	"	gymnotis	229-118-25-19-47gm, test. 9 mm
54,221-7 ♂	"	"	saxatilis	235-122-25-19-50gm, " 13 "

5 mi. E and 1 mi. N Huehuetenango, 7000 ft., Guatemala.
Dec 22, 1954

54,222-1 ♂	Peromyscus	boylii	levipes	210-105-23-20-35gm, testis 13 mm
54,222-2 ♀	"	"	"	[182]-[80]-22-19-38 " , plac. scars
54,222-3 ♀	"	"	"	200-93-23-20-37 " , " "
54,222-4 ♀	"	"	"	220-110-23-20-42 " , 2x1 emb 16mm
54,222-5 ♀	"	"	"	200-100-23-19-32 " , 2x0 " 8 "
54,222-6 ♂	"	"	"	[180]-[80]-22-19-35 " , test 12 mm
54,222-7 ♂	"	"	"	195-95-22-19-30 " , " 7 "
54,222-8 ♀	"	"	"	190-94-22-19-26 " , ut normal
54,222-9 ♂	"	"	"	205-108-23-20-28 " , testis 10 mm
54,222-10 ♂	"	"	"	211-110-23-20-31 " , " 9 "
54,222-11 ♂	"	"	"	180-93-23-19-26 " , " 6 "
54,222-12 ♂	"	"	"	180-80-22-18-23 " , " 4 "
54,222-13 ♂	Sigmodon	hispidus	zanjonensis	202-88-27-16-42 " , " 4 "
54,222-14 ♀	Reithrodontomys	m.	howelli	185-110-19-16-11 " , ut. normal
54,222-15	"		sumichrasti dorsalis	151-83-19-14-10 " , test 3 mm
54,222-16	"		mexicanus howelli	170-100-19-16-10 " , ut normal
54,222-17	"		sumichrasti dorsal	155-87-19-15-11 " , test. 3 mm
54,222-18	"	"	"	140-77-18 14-8 " " 3 mm

2 mi. S San Juan Ixcoy, 9340 ft., Guatemala
Dec. 23, 1954

54,223-1 Allapetes b. brunneicucha L. 215, wt 40 gm

Dec 24, 1954

54,224-1 ♂	Peromyscus	g.	guatemalensis	263-139-30-22-72gm, test 16 mm
54,224-2 ♂	"	"	"	260-130-30-23-82gm, " 17 "
54,224-3 ♂	"	"	"	259-131-31-23-75gm, " 16 "
54,224-4 ♂	"	"	"	237-128-31-20-58gm, " 6 "
54,224-5 ♀	"	"	"	246-128-30-22-52gm, plac. scars
54,224-6 ♂	"	"	"	258-140-30-24-60gm, test. 14 mm
54,224-7 ♂	"	"	"	258-130-31-33-61gm, " 12 "
54,224-8 ♀	Peromyscus	mexicanus	saxatilis	240-120-24-29-50gm, 3x0 emb. 5 mm
54,224-9 ♀	"	g.	guatemalensis	238-125-29-22-46gm, ut. normal
54,224-10 ♂	"	mexicanus	saxatilis	242-122-26-18-48gm, test 13 mm
54,224-11 ♂	"	"	"	248-130-25-19-52gm, " 11 "
54,224-12 ♂	"	g.	guatemalensis	280-151-30-23-74gm, " 17 " .

541224-13 ♂	Peromyscus	g. guatemalensis	255-128-31-22-68gms., test 15mm
541224-14 ♂	"	"	"	268-140-31-23-68 " , " 14 "
541224-15 ♂	"	"	"	250-130-30-24-64 " , " 13 "
541224-16 ♀	"	mexicanus	sahatilis	258-131-30-23-51 " , ut. normal
541224-17 ♂	"	"	"	238-120-25-19-50 " , test. 13 mm
541224-18 ♀	"	"	"	243-124-26-A-51 " , plac. scars
541224-19 ♂	Reithrodontomys	microdon	microdon	168-100-19-17-9 " , test 4 mm
541224-20 ♀	"	"	"	182-109-20-16-11 " , ut normal
541224-21 ♀	Sorex	saussurei	godmani	123-55-16-8-8 " , ut normal

2 mi. S San Juan Ixcoy, 9340 ft., Guatemala

Dec. 25, 1954

541225-1 ♂	Reithrodontomys	m.	microdon	175-105-20-17-9gms, testis 3mm.
541225-2 ♂	"		sumichrasti	dorsalis 175-96-20-17-13 " , " 5 "
541225-3 ♂	Peromyscus	mexicanus	sahatilis	224-125-24-19-33 " , " 7 "
541225-4 ♂	"	"	"	212-105-24-18-38 " , " 10 "
541225-5 ♀	"	"	"	220-115-23-19-38 " , lxo emb. 4mm
541225-6 ♂	"	g.	guatemalensis	258-132-30-24-65 " , test 14 mm
541225-7 ♂	"	"	"	263-136-31-24-69 " , " 17mm
541225-8 ♂	"	m.	sahatilis	215-115-23-19-31 " , " 7 mm
541225-9 ♀	"	g.	guatemalensis	286-159-31-24-75 " , ut. enlarged
541225-10 ♀	"	"	"	276-149-30-24-63 " , " normal
541225-11 ♂	"	"	"	271-150-30-24-64 " , test 15mm
541225-12 ♂	"	"	"	259-142-31-23-61 " , " 13 mm
541225-13 ♀	"	"	"	280-142-30-24-58 " , ut. enlarged
541225-14 ♀	"	"	"	223-115-24-19-41 " , plac. scars
541225-15 ♂	"	"	"	206-101-24-19-32 " , test 8 mm
541225-16 ♀	"			235-122-28-23-44 " , ut. normal
541225-17 ♂	"	g.	guatemalensis	265-134-31-25-63 " , test. 12 mm
541225-18 ♂	"	"	"	[231]-[110]-30-24-64 " , " 14 "
541225-19 ♂	"	m.	sahatilis	200-105-24-19-24 " , " 7 "
541225-20 ♀	"	g.	guatemalensis	255-130-31-25-49 " , ut. normal
541225-21 ♂	"	"	"	266-140-31-25-64 " , test. 8 mm
541225-22 ♂	"	m.	sahatilis	215-112-24-19-32 " , " 7 "
541225-23 ♂	"	"	"	230-120-23-19-32 " , " 8 "
541225-24 ♂	"	g.	guatemalensis	262-133-30-24-57 " , " 11 "
541225-25 ♂	Reithrodontomys	m.	microdon	178-102-19-17-10 " , " 5 "
541225-26 ♂	"	"	"	175-109-19-17-9 " , " 5 "
541225-27 ♂	"	"	"	171-100-20-17-9 " , " 4 "
541225-28 ♀	Peromyscus	m.	sahatilis	190-93-23-19-23 " , ut. enlarged
541225-29 ♂	"	"	"	210-103-25 18-33 " , test. 7 mm

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541225-30	♂	Peromyscus	mexicanus	saltatilis	195-193-2~~3~~[4]-16-~~23~~[18] gm, testis 3 mm, wt. ~~enlarged~~.
541225-31	♂	"	g.	guatemalensis	278-145-30-24-71 gm, test. 17 mm
541225-32	♀	"	"	"	276-135-32-22-74 ", plac. scars
541225-33	♀	"	"	"	268-136-31-24-51 ", " "
541225-34	♂	"	"	"	278-145-30-23-70 ", testis 15 mm
541225-35	♀	"	"	"	238-118-30-22-45 ", wt. normal
541225-36	♀	"	"	"	260-130-30-22-54 ", " "
541225-37	♂	"	"	"	270-140-32-25-62 ", testis 14 mm
541225-38	♀	Aphelocoma	unicolor	coelestris	L. 325, wt 130.
541225-39	♂	Lepidocolaptes	a.	affinis	L. 233, wt 32.
541225-40	♀	Junco	phaeonotus	alticola	L. 175, wt 26.
541225-41	♂	Micratus	g.	guatemalensis	148-43-20-14-35 gm, test 7 mm
541225-42	♀	Reithrodontomys	m.	mirodon	179-110-19-17-8 gm, wt normal
541225-43	♀	"	"	"	175-105-19-18-8 " , " "
541225-44	♀	"	"	"	178-110-19-18-9 " , " "
541225-45	♂	"	sumichrasti	dorsalis	151-82-20-15-9 ", test 4 mm
541225-46	♂	Peromyscus	m.	saltatilis	240-125-24-17-49 ", " 13 "
541225-47	♀	"	"	"	244-123-~~26~~[24]-20-49 ", 1x2 plac. scars
541225-48	♂	"	"	"	243-122-25-19-45 ", test 12 mm
541225-49	♀	Reithrodontomys	m.	mirodon	180-110-20-17-9 gm, wt. normal
541225-50	♀	Sciurus	d.	deppei	380-170-53-28-315 gm, plac. scars
541225-51	♂	"	"	"	382-172-55-25-327 gm, test 28 mm
541225-52	♀	Peromyscus	g.	guatemalensis	260-138-30-23-55 ", plac. scars
541225-53	♂	"	"	"	260-140-30-24-58 ", test 15 mm
541225-54	♂	"	"	"	261-132-31-25-64 ", " 17 "
541225-55	♀	"	melicanus	saltatilis	210-105-22-19-33 ", plac. scars
541225-56	♂	"	g.	guatemalensis	267-135-31-22-67 ", test. 15 mm
541225-57	♂	"	"	"	252-125-29-23-56 ", test 14 mm
541225-58	♂	"	"	"	240-120-29-23-58 ", " 14 "
541225-59	♂	"	"	"	276-143-32-24-70 ", " 16 "
541225-60	♀	"	"	"	262-139-28-22-63 ", plac. scars

Dec. 26, 1954

S.O.	541226-1	♂	Peromyscus	g.	guatemalensis	263-135-31-23-68 gm., testis 11 mm
S.O.	541226-2	♀	"	"	"	284-152-32-24-70 ", plac. scars
S.O.	541226-3	♂	"	"	"	262-132-30-24-69 ", testis 18 mm
S.O.	541226-4	♀	"	"	"	247-128-30-23-54 ", plac. scars
S.O.	541226-5	♀	"	"	"	243-123-29-23-53 ", wt. normal
S.O.	541226-6	♂	"	"	"	258-135-30-24-60 ", test. 10 mm
S.O.	541226-7	♂	"	"	"	265-140-30-23-64 ", " 12 mm
S.O.	541226-8	♀	"	"	"	280-150-32-24-65 ", plac. scars

S.O	541226-9	♀	Perrnyeeus	g. guatemalensis		251-130-31-23-59 gm, wt. normal.
S.O	541226-10	♂	"	"	"	279-144-32-23-71 " , test 14 mm
S.O	541226-11	♂	"	"	"	254-130-30-22-63 " , " 9 mm
S.O	541226-12	♀	"	"	"	258-135-30-24-52 " , wt. normal
S.O	541226-13	♀	"	"	"	272-142-30-23-64 " , plac. scars
	541226-14	♂	"	mexicanus	saturatus	[195]-[89]-25-17-28 " , test. 7 mm
	541226-15	♀	Junco	phaeonotus	alticola	L. 176, wt 27. gm
	541226-16	♀	Lepidocolaptes	a. affinis		L. 232, wt 30 "
	541226-17		Atlapetes	b. brunneinucha		L. 222, wt 50 "
	541226-18	♂	Ergaticus	ruber	rubifrons	L. 130, wt 8 "
	541226-19		Catharus	occidentalis	alticola	L. 178, wt 29 "

31/2 mi. SW San Juan Ixcoy, 10,120 ft., Guatemala

Dec. 27, 1954

	541227-1	♂	~~Blarina~~	Cryptotis	goodwini	105-30-14-7-12 gm.
	541227-2	♂	Sorex	saussurei	godmani	125-50-15-9-8 " .
	541227-3	♀	Microtus	g. guatemalensis		149-34-20-15-32 gm, wt normal
	541227-4	♀	"	"	"	140-35-20-13-31 " , " "
	541227-5	♀	"	"	"	147-38-20-13-30 " , " "
	541227-6	♂	"	"	"	144-38-20-14-32 " , test. 5 mm
	541227-7	♂	"	"	"	145-36-20-13-29 " , " 6 "
	541227-8	♀	"	"	"	142-32-19-13-29 " , wt. normal
	541227-9	♂	"	"	"	142-35-20-13-30 " , test. 4 mm
	541227-10	♂	"	"	"	139-32-19-13-30 " , " 4 "
	541227-11	♂	"	"	"	147-35-20-14-31 " , " 5 "
	541227-12	♂	"	"	"	146-35-20-14-35 " , " 7 "
SK	541227-13	♀	Perrnyeeus	g. guatemalensis		278-140-32-24-67 " , wt. normal
SK	541227-14	♂	"	"	"	260-130-30-24-58 " ; test 5 mm
SK	541227-15	♀	"	"	"	270-140-32-23-65 " , plac. scars
SK	541227-16	♂	"	"	"	280-145-32-24-68 " , test. 9 mm
SK	541227-17	♂	"	"	"	252-131-30-22-53 " , " 5 "
SK	541227-18	♀	"	"	"	258-132-30-23-46 " , wt. normal
SK	541227-19	♀	"	"	"	265-132-30-24-68 " , wt normal
SK.	541227-20	♂	Reithrodontomys	m.	mexicanus	173-86-18-15-14 gms, test 3 mm
SK.	541227-21	♀	"		rufuchrasti dorsalis	172-100-20-15-10 gms, wt. normal

[Also 6 short-tailed adult Reithros and 7 subadults; two long-tailed adult Reithros & 2 subadults on same trap line]

Dec. 28, 1954

P.S	541228-1	♂	Reithrodontomys	tenuirostris		201-115-23-18-22 gms, test 8 mm
P.S	541228-2	♀	Sorex	saussurei	godmani	115-48-15-8-8 gms

541228-3	♂	Sorex saussurei godmani		129-53-15-9-8 gm.
541228-4	♂	Microtus g. "guatemalensis		140-36-19-14-34 gm, testes 6 mm
541228-5	♀	microtus g. guatemalensis		145-37-20-14-25 " , ut. normal
541228-6	♂	"	"	145-39-19-14-26 " , testes 4 mm
541228-7	♂	"	"	139-37-20-14-28 " , " 5 mm
541228-8	♀	"	"	132-32-19-14-28 " , ut. enlarged
541228-9	♀	"	"	142-36-20-13-28 " , " normal
541228-10	♀	"	"	132-33-20-13-26 " , ut. normal
541228-11	♀	"	"	140-35-20-13-27 " , ut. enlarged
541228-12	♀	"	"	149-20-20-14-36 " , ut. normal
SK. 541228-13	♂	Peromyscus g. guatemalensis		282-144-31-25-81 gm, test 10 mm
541228-14	♂	Reithrodontomys m. microdon		174-105-20-15-8 " , " 3 "
541228-15	♀	"	"	187-108-20-17-10 " , ut. normal
541228-16	♂	"	sumichrasti dorsalis	160-85-18-15-12 " , test 2½ mm
541228-17	♀	"	"	175-92-19-15-13 " , plac. scars
541228-18	♂	"	"	156-88-19-15-11 " , test. 3, mm.
541228-19	♀	"	"	146-75-18-15-8 " , ut. normal
541228-20	♂	"	"	162-88-19-14-9 " , test. 4 mm
541228-21	♀	"	"	160-88-19-15-10 " , ut. normal
541228-22	♂	"	m. microdon	172-102-19-16-9 gm, test 2 mm
541228-23	♂	"	sumichrastes dorsalis	175-95-19-16-10 gm, " 3 "
541228-24	♂	Peromyscus g. guatemalensis		278-149-31-23-71 " , " 8 "
541228-25	♂	"	"	274-145-31-24-65 " , " 10 "
541228-26	♂	"	"	268-145-30-23-57 " , " 5 "
541228-27	♂	"	"	269-147-31-24-60 " , " 5 "
541228-28	♂	"	"	262-138-31-23-48 " , " 5 "
541228-29	♀	"	"	250-131-30-23-50 " , ut. normal
541228-30	♂	"	"	265-135-31-23-52 " , test 5 mm

[2 subadults Reithro, (long tailed) also taken on trap line]

2 mi. S Chemal, 11,030 ft., Guatemala

Dec 29, 1954

541229-1	♀	Reithrodontomys sumichrasti dorsalis		174-90-19-15-15 gm, ut. normal
541229-2	♂	"	"	155-80-19-15-8 gm, test 2 mm
541229-3	♀	"	"	146-75-19-14-8 gm, ut. normal
541229-4	♀	Peromyscus boylii levipes		198-101-23-19-24 gm, " "
541229-5	♂	Sciurus g. griseoflavus		502-238-67-30-( ), test 28 mm
541229-6	♀	Colaptes cafer mexicanoides		~~503~~
541229-7	♂	Sciurus g. griseoflavus		503-245-67-30 ( ), test 30 mm

Dec 30, 1954

541230-1	♀	Reithrodontomys s. dorsalis		161-83-19-14-12 gms. ut. normal

550407-88

541230-2	♀	Reithrodontomys sumichrasti dorsalis			160-87-20-15-10 gm, wt. normal
541230-3	♀	"	"	"	156-82-18-14-10 ", " "
541230-4	♀	"	"	"	151-80-19-14-10 ", " "
541230-5	♀	"	"	"	[85]-[20]-19-15-10 ", " "
541230-6	♀	Peromyscus boylii levipes			212-110-24-18-34 gm, wt normal
541230-7	♀	"	"	"	183-88-23-17-25 ", " "
541230-8	♀	"	"	"	199-100-22-14-23 ", " "
541230-9	♂	"	"	"	205-105-23-18-32 ", test 5 mm
541230-10	♂	"	"	"	200-100-22-18-27 ", " 5 "
541230-11	♂	"	"	"	210-108-23-19-29 ", " 5 "
541230-12	♀	"	"	"	190-91-23-19-29 ", wt. normal
541230-13	♀	"	"	"	192-98-22-19-24 ",

5 1/2 mi. N and 1 mi. E Chiantla & 9700 ft., Guatemala

Dec 31, 1954

541231-1	♂	Reithrodontomys sumichrasti dorsalis			158-83-19-15-12 gms, test 2 1/2 mm
541231-2	♂	"	"	"	182-95-19-15-13 ", " 3 "
541231-3	♂	"	"	"	151-80-18-15-12 ", " 2 "
541231-4	♀	"	"	"	172-92-19-15-16 ", plac scars
541231-5	♂	"	"	"	157-83-18-15-11 ", test. 5 mm
541231-6	♀	"	"	"	157-81-18-15-13 ", plac. scars
541231-7	♂	"	"	"	165-94-19-15-14 ", test 5 mm
541231-8	♂	"	"	"	157-82-19-15-13 ", test 3 mm
541231-9	♀	Peromyscus g. guatemalensis			266--131-29-23-65 gm, plac. scars
541231-10	♂	"	"	"	247-130-30-23-48 gm, test 4 mm
541231-11	♀	"	"	"	249-130-30-23-48 gm, wt. normal
541231-12	♂	"	boylii levipes		210-115-23-20-31 gm, test 9 mm.
541231-13	♀	"	"	"	220-115-23-20-43 ", plac. scars
541231-14	♂	"	"	"	182-90-22-20-23 ", test 3 mm
541231-15	♂	"	"	"	182-92-22-19-24 ", " 3 "
541231-16	♂	"	"	"	200-100-23-19-30 ", " 9 "
541231-17	♂	"	"	"	192-98-23-20-25 ", " 4 "
541231-18	♂	"	"	"	210-108-23-19-32 ", " 10 "
541231-19	♂	"	"	"	220-112-23-20-38 ", " 11 "
541231-20	♀	"	"	"	212-105-23-20-35 ", 2 x 2 emb 4 mm
541231-21	♂	"	"	"	210-105-23-20-34 ", test 11 mm
541231-22	♀	"	"	"	206-100-23-20-33 ", plac. scars
541231-23	♂	"	"	"	200-102-23-19-32 ", test 10 mm
541231-24	♂	"	"	"	[150]-[50]-22-19-26 gm, test 5 mm
541231-25	♀	"	"	"	[142]-[31]-22-20-31 gm, plac. scars
541231-26	♀	Reithrodontomys sumichrasti dorsalis			162-78-18-15-9 gms, " "

SK	541231-27 ♀	Reithrodontomys	sumichrasti	dorsalis	174-93-19-15-12 gms,	ut normal
SK	541231-28 ♀	"	"	"	163-89-18-15-12 " ,	" "
SK	541231-29 ♂	"	"	"	[138] [60]-18-15-12 gm,	test. 3 mm
SK	541231-30 ♀	"	"	"	167-90-18-13-13 gm,	plac. scars
SK	541231-31 ♀	"	"	"	170-90-19-15-11 " ,	" "

1/4 mi. S Calel, 6500 ft., Guatemala

Jan. 1, 1955

550101-1	♀	Peromyscus	boylii	levipes	218-112-22-21-35 gm,	ut normal
550101-2	♂	"	"	"	190-95-23-17-28 gm,	test 9 mm

10 mi E and 4 mi S Totonicapán, 10,000 ft., Guatemala

Jan 2, 1955

550102-1	♂	Reithrodontomys	tenuirostris		195-115-22-17-17 gm,	test 3 mm
550102-2	♂	"	"		190-105-22-18-16 " ,	" 3 "
550102-3	♀	"	"		205-120-22-18-21 " ,	ut. normal
550102-4	♀	"	"		209-121-22-18-23 " ,	plac. scars
550102-5	♂	"	sumichrasti	dorsalis	165-88-18-14-15 " ,	test. 3 mm
550102-6	♂	"	"	"	162-92-19-15-11 " ,	" 2 1/2 "
550102-7	♀	"	"	"	170-90-19-16-12 " ,	ut. normal
550102-8	♀	"	"	"	170-88-18-16-13 " ,	" "
550102-9	♀	"	"	"	181-95-18-15-13 " ,	" "
550102-10	♀	"	"	"	165-90-18-15-12 " ,	" "
550102-11	♂	"	"	"	164-87-19-15-9 " ,	test. 3 mm.
550102-12	♀	"	"	"	175-92-18-15-13 " ,	plac. scars
550102-13	♀	"	"	"	170-93-19-15-11 " ,	ut. normal
550102-14	♂	"	"	"	171-95-19-15-16 " ,	test. 4 mm
SK. 550102-15	♂	Microtus	g. guatemalensis		148-35-19-15-35 " ,	" 5 "
550102-16	♀	"	"	"	152-34-20-15-39 " ,	0x1 emb 6 mm
550102-17	♀	"	"	"	158-40-20-14-40 " ,	plac. scars
SK. 550102-18	♀	"	"	"	138-35-20-14-28 " ,	ut. normal
550102-19	♀	Peromyscus	g. guatemalensis		260-135-29-24-48 " ,	" "
550102-20	♂	"	"	"	228-120-30-20-37 " ,	test. 4 mm
550102-21	♀	"	"	"	238-122-30-22-43 " ,	ut. normal

Rio Queleya, 1/2 mi. E Yepocapa, 4300 ft., Guatemala

Jan. 7, 1955

550107-1	♀	Heteromys	d. desmarestianus		288-159-36-16-68 gms,	plac scars
550107-2	♂	Peromyscus	hondurensis		238-124-25-18-40 " ,	test ~~10~~ 7 mm
550107-3	♂	Oryzomys	alfaroi	angustirostris	[215][115]-26-17-33 " ,	" 5 "
550107-4	♀	Chilonycteris	parnellii	fusca	90-21-14-24-21 gms,	ut. normal

550107-5 ♂	Oryzomys	alfaro	angusticeps	230-128-26-18-40gm, testis 5 mm
550107-6 ♀	"	"	"	210-117-24-17-33 ", 1x1 emb 22 mm
550107-7 ♂	"	"	"	215-115-24-17-31 ", test 5 mm
550107-8 ♀	"	"	"	212-112-25-17-28 ", plac. scars
550107-9 ♀	"	"	"	205-110-23-18-28 ", " "
550107-10 ♂	"	"	"	205-112-25-17-25 ", test. 5 mm
550107-11 ♀	"	"	"	210-112-25-17-23 ", ut. enlarged
550107-12 ♂	"	"	"	212-113-25-17-29 ", test. 12 mm
550107-13 ♀	"	"	"	195-102-22-16-22 ", plac. scars
550107-14 ♂	"	"	"	205-112-26-17-23 ", test. 5 mm
550107-15 ♀	"	"	"	210-118-24-17-26 ", 1x1 emb. 18 mm
550107-16 ♀	Chilonycteris	parnellii	fusca	95-25-( )14-19 gm, ut. normal
550107-17 ♂	"	"	"	95-25-14-24-23 gm, test 4 mm
550107-18 ♂	"	"	"	95-25-14-23-21 gms.

3/4 mi E and 1 mi. S Yepocapa, 4280 ft., Guatemala
Jan 7, 1955

550107-19 ♀	Chilonycteris	parnellei	fusca	95-27-14-21-18 gms, ut. normal
550107-20 ♀	Lonchorhina	aurita		122-55-14-30-14 gms, " "
550107-21 ♀	Chilonycteris	parnellei	fusca	96-26-14-21-21 ", ut, normal
550107-22 ♀	"	"	"	96-25-14-20-21 ", ut normal
550107-23 ♂	"	"	"	94-23-14-22-21 ",
550107-24 ♂	"	"	"	100-27-14-22-24 ", test. 4 mm
550107-25 ♂	"	"	"	93-24-14-22-18 ",
550107-26 ♀	"	"	"	98-25-14-22-20 ", ut normal
550107-27 ♀	"	"	"	95-25-14-22-19 ",
550107-28 ♀	"	"	"	98-25-14-22-22 ", ut. normal
550107-29 ♀	"	"	"	98-26-14-21-18 ", " "
550107-30 ♂	"	"	"	95-25-14-21-18 ", test 4 mm
550107-31 ♂	"	"	"	96-26-14-22-17 ", " 4 "
550107-32 ♀	"	"	"	94-24-14-21-17 ", ut. normal
550107-33 ♂	"	"	"	97-24-14-22-21 ", test 4 mm
550107-34 ♀	"	"	"	93-23-14-21-18 ", at. normal
550107-35 ♀	"	"	"	96-24-14-22-20 ", " "
550107-36 ♀	"	"	"	94-24-14-21-19 ", " "
550107-37 ♂	"	"	"	96-24-14-22-18 ", test 4 mm
550107-38 ♂	"	"	"	95-25-14-22-20 ", " 4 mm
550107-39 ♀	"	"	"	95-24-14-21-19 ", ut. normal
550107-40 ♀	"	"	"	94-24-14-21-17 ", " "
550107-41 ♀	"	"	"	93-24-14-21-17 ", " "
550107-42 ♂	"	"	"	93-23-14-21-20 ", test 4 mm

550107-43	♀	Chelonycteris	parnellii	fusca	98-26-14-22-19 gm, wt. normal
550107-44	♀	"	"	"	94-25-14-21-18 " , " "
550107-45	♀	"	"	"	93-24-14-21-17 " , wt. normal
550107-46	♀	"	"	"	95-24-14-22-19 " , " "
550107-47	♀	"	"	"	96-24-14-21-18 " , " "
550107-48	♀	"	"	"	97-24-14-22-20 " , " "
550107-49	♀	"	"	"	98-24-14-22-17 " , " "
550107-50	♀	"	"	"	97-24-14-22-18 " , " "
550107-51	♀	"	"	"	95-24-14-22-20 " , " "
550107-52	♀	"	"	"	96-25-14-22-20 " , " "
550107-53	♂	"	"	"	95-24-14-22-21 " , test 4 mm
550107-54	♂	"	"	"	97-26-14-22-21 " , " 4 mm
dist. 550107-55	♀	Trogon	"	"	
550107-56	♀	Chelonycteris	parnellii	fusca	96-25-14-22-18 gms , wt normal
550107-57	♀	"	"	"	95-24-14-22-18 " , " "
550107-58	♀	"	"	"	97-25-14-22-17 " , " "
550107-59	♂	"	"	"	98-25-14-22-18 " , test 4 mm
550107-60	♀	"	"	"	97-24-14-22-18 " , wt. normal
550107-61	♀	"	"	"	96-24-14-22-18 " , " "

Langvin Cave, 1,022 ft., Guatemala

Jan 11, 1955

550111-1	♀	Artibeus j.	yucatanicus		85-( )-18-21-44 gms
550111-2	♀	Ajello	m.	megalophylla	90-27-11-14-16 gms
550111-3	♂	Chelonycteris	parnellii	fusca	93-23-12-21-20 " , test 4 mm
550111-4	♂	Pteronotus	davyi	fulvus	71-23-10-15-8 " , " 5 "
550111-5	♀	Balantiopteryx	io		64-19-9-12-6 " , wt normal
550111-6	♀	"	"		58-15-9-12-5 " , " "
550111-7	♂	Chelonycteris	psilotis		68-19-11-15-9 " , testes 7 mm
550111-8	♀	"	"		67-21-11-15-8 " , wt normal
550111-9	♀	"	"		71-19-11-15-7 " , " "
550111-10	♂	Pteronotus	davyi	fulvus	74-21-11-16-9 " ,
550111-11	♂	Artibeus	jamaicensis	yucatanicus	92-( )-18-22-50 gms , test 7 mm
550111-12	♂	"	"	"	90-( )-18-22-45 " , " 4 "
550111-13	♀	"	"	"	90-( )-18-22-39 " , wt normal
550111-14	♀	"	"	"	95-( )-19-22-53 " , " "
550111-15	♀	"	"	"	90-( )-18-22-47 " , " "
550111-16	♀	Ajello	m.	megalophylla	96-29-10-15-15 gm , wt normal
550111-17	♂	"	"	"	95-27-10-18-16 " , test 2 mm
550111-18	♀	"	"	"	96-28-11-14-17 " , wt normal
550111-19	♂	"	"	"	93-25-10-14-18 " , test 3 mm

550111-20	♂	Aello m. megalophylla		92-26-10-14-15gms, testes 3 mm
550111-21	♂	Chilonycteris psilotus		68-18-11-15-8", " 6 "
550111-22	♀	"	"	67-16-11-15-6", wt. normal
550111-23	♂	"	"	68-16-11-15-7", test. 7 mm
550111-24	♀	Aëllo m. megalophylla		92-27-11-14-14gm.
550111-25		" "	"	-

Longuin Cave, 1,022 ft., Guatemala

Jan 12, 1955

550112-1	♀	Balantiopteryx io		59-15-7-13-4gm, wt. normal
550112-2	♀	"	"	58-15-7-13-4", " "
550112-3	♀	"	"	60-17-7-13-5", " "
550112-4	♀	"	"	58-14-7-13-4", " "
550112-5	♂	"	"	58-15-7-13-4", test. 2 mm
550112-6	♀	"	"	60-17-7-13-5", wt normal
550112-7	♂	Chilonycteris psilotus		68-18-11-15-8", test 6 mm
550112-8	♂	"	"	64-16-11-15-9", " 6 "
550112-9	♂	"	"	72-18-11-15-8", " 7 "
550112-10	♂	"	"	66-17-11-15-8", " 6 "
550112-11	♂	"	"	66-18-11-14-9", " 6 "
550112-12	♀	Pteronotus davyi fuliginosus		76-26-11-17-9", wt. normal
550112-13	♂	"	"	75-26-11-17-8",
550112-14	♀	"	"	77-23-11-17-9", Wt. normal
550112-15	♀	"	"	80-25-11-16-10", " "
550112-16	♀	"	"	76-24-11-17-8", " "
550112-17	♂	"	"	76-25-11-17-9", test. 5 mm
550112-18	♂	"	"	75-26-11-17-8", " 5 "
550112-19	♀	Chilonycteris parnellii fusca		97-26-14-20-19", wt. normal
550112-20	♀	"	"	93-24-14-20-22", " "
550112-21	♂	Aëllo m. megalophylla		92-25-11-13-15", test 2 mm
550112-22	♀	"	"	91-26-11-13-13", wt normal
550112-23	♂	"	"	92-27-11-14-15", test 4 mm
550112-24	♀	"	"	90-25-11-14-13", wt normal
550112-25	♂	"	"	95-28-11-14-16", test 5 mm
550112-26	♀	"	"	90-25-11-14-16", wt normal
550112-27	♀	"	"	96-28-11-14-14", " "
550112-28	♂	"	"	88-24-11-14-13",
550112-29	♀	"	"	91-25-11-14-14", wt normal
550112-30	♀	"	"	90-24-11-14-13", " "
550112-31	♂	"	"	95-27-12-14-20",
550112-32	♀	"	"	98-29-11-14-18", wt. normal

	550112-33 ♀	aëllo m	megalophylla		95-28-11-14-15 gms, wt. normal
	550112-34 ♀	"	"	"	88-24-10-13-13 " , wt. normal
	550112-35 ♀	"	"	"	88-26-11-13-12 " , " "
	550112-36 ♀	"	"	"	95-27-11-14-17 " ,
	550112-37 ♂	"	"	"	91-27-11-14-17 " , test 3 mm
	550112-38 ♂	"	"	"	91-25-11-14-16 " , " 3 "
SK.	550112-39 ♀	Chilonycteris	psilotus		69-20-11-16-8 " , wt. normal
SK.	550112-40 ♀	"	"		68-20-11-15-7 " , " "
	550112-41 ♀	aëllo m.	megalophylla		98-27-11-14-14 " , " "
	550112-42 ♂	"	"	"	91-26-11-14-12 " , test 3 mm
	550112-43 ♀	"	"	"	92-26-11-14-13 " , wt. normal
	550112-44 ♂	"	"	"	90-25-11-14-15 " , test 3 mm
SK	550112-45 ♂	"	"	"	91-26-11-14-16 " ,
SK	550112-46 ♂	"	"	"	90-26-11-14-16 " ,
SK	550112-47 ♂	"	"	"	94-27-11-14-18 " ,
SK	550112-48 ♂	"	"	"	95-28-11-16-16 gms.
SK.	550112-49 ♂	"	"	"	88-25-11-14-16 "
SK.	550112-50 ♂	"	"	"	92-26 11-15-16 "
SK.	550112-51 ♂	"	"	"	89-25-11-14-17 "
SK	550112-52 ♂	"	"	"	93-26-11-15-16 "
SK.	550112-53 ♀	Balantiopteryx	io		60-16-8-13-4 " , wt normal
SK.	550112-54 ♀	"	"		63-16-8-13-4 " , " "
SK	550112-55 ♀	"	"		59-16-8-13-4 " , " "
SK.	550112-56 ♀	"	"		58-15-8-13-4 " , " "
SK.	550112-57 ♂	"	"		59-15-8-13-4 " , test 1 mm
SK	550112-58 ♂	"	"		61-16-8-13-4 " , " " "
SK	550112-59 ♂	"	"		59-15-8-13-4 " , " " "
SK	550112-60 ♂	"	"		62-17-8-13-4 " , " " "
SK	550112-61 ♂	"	"		61-15-8-13-4 " , " " "
SK.	550112-62 ♀	Chelonycteris	psilotis		78-22-10-16-8 " , wt normal
SK.	550112-63 ♀	Balantiopteryx	io		60-16-8-13-4 " , " "
SK.	550112-64 ♀	Chilonycteris	psilotis		69-20-11-17-8 " , " "
SK.	550112-65 ♀	"	"		67-19-10-16-6 " , " "
SK.	550112-66 ♂	"	"		68-17-11-16-8 " , testis 7 mm
SK.	550112-67 ♂	"	"		69-19-11-16-9 " , " 6 "
SK.	550112-68 ♂	"	"		66-17-10-15-6 " , " 6 "
SK	550112-69 ♂	"	"		70-19-12-16-9 " , " 7 "
SK	550112-70 ♂	"	"		68-18-11-16-8 " , " 6 "
SK.	550112-71 ♂	"	"		67-18-11-16-8 " , " 6 "
SK	550112-72 ♂	"	"		68-18-11-16-8 " , " 6 "
SK	550112-73 ♂	"	"		71-19-12-16-9 " , " 7 "

SK ↓	550112-74	♀	Pteronotus davyi fulvus		80-26-11-16-11 gms, wt. normal
	550112-75	♀	"	"	75-24-11-16-9 " , " "
	550112-76	♀	"	"	76-25-10-16-9 " , " "
	550112-77	♀	"	"	80-26-11-16-10 " , " "
	550112-78	♀	"	"	74-25-11-16-8 " , " "
	550112-79	♀	"	"	78-25-11-16-9 " , " "
	550112-80	♀	"	"	78-25-11-16-8 " , " "
	550112-81	♀	"	"	78-25-11-16-8 " , " "
	550112-82	♂	"	"	74-25-11-16-8 " ,
	550112-83	♂	"	"	77-26-11-16-9 " ,
	550112-84	♂	"	"	73-25-11-16-8 " ,
	550112-85	♂	"	"	78-26-12-16-10 " ,
	550112-86	♂	"	"	78-26-12-16-9 " ,
	550112-87	♂	"	"	76-25-11-16-8 " ,
	550112-88	♂	"	"	81-25-11-16-10 " ,
	550112-89	♂	"	"	79-26-11-16-9 " ,
	550112-90	♂	Äello m megalophylla		91-25-12-15-18 gms, test 3 mm
	550112-91	♂	"	"	92-27-12-15-18 " , " 3 "
	550112-92	♂	"	"	92-26-12-15-18 " , " 3 "
	550112-93	♂	"	"	94-27-12-16-19 " , " 3 "
	550112-94	♂	"	"	90-25-12-15-17 " , " 3 "
	550112-95	♂	"	"	93-26-12-16-18 " , " 3 "
	550112-96	♂	"	"	90-25-12-15-19 " , " 3 "
	550112-97	♂	Pteronotus davyi fulvus		78-24-10-16-10 " , " 2 "
	550112-98	♀	"	"	77-22-10-16-9 " , wt. normal
	550112-99	♂	"	"	75-22-9-16-8 " , test 2 mm
	550112-100	♀	"	"	74-22-9-16-8 " , wt. normal
	550112-101	♂	"	"	77-24-10-16-10 " , test. 2 mm
	550112-102	♂	Artibeus aztecus aztecus		L. 256, wt 74 gms
	550112-103	♀	"	"	L. 260, wt 86 "
↑ SK	550112-104	♂	Mormoops megalophylla lesueuri		L. 490, wt 155 "
dis	550112-106	♂	"	"	
dis	550112-107	♂	"	"	

Langquin Cove, 1022 ft., Guatemala

Jan. 13, 1955

550113-1	♀	Natalus mexicanus saturatus	105-57-9-13-5 gms, wt normal	
550113-2	♀	Pteronotus psuapurensis centralis	93-25-12-18-16 ", wt normal	
550113-3	♀	Balantiopteryx io	61-17-8-13-4 gms, wt. normal	
550113-4	♀	"	"	60-16-8-13-4 " , " "
550113-5	♀	"	"	58-16-8-13-4 " , " "

	550113-6	♀	Balantiopleryx io	63-18-8-13-4 gms, wt normal
	550113-7	♀	" "	63-18-8-13-4 " , " "
	550113-8	♀	" "	61-18-8-13-4 " , " "
	550113-9	♂	" "	61-17-8-13-4 " , testis 2 mm
	550113-10	♀	" "	61-18-8-13-4 " , wt. normal
	550113-11	♂	" "	60-17-8-13-4 " , test. 2 mm
	550113-12	♀	" "	62-17-8-13-4 " , wt. normal
SK.	550113-13	♀	" "	60-17-8-13-4 " , " "
	550113-14	♀	Chilonycteris psilotis	66-17-10-17-8 " , " "
	550113-15	♀	" "	72-19-12-16-8 " , " "
SK.	550113-16	♀	" "	68-18-11-16-8 " , " "
	550113-17	♀	" "	71-18-11-16-8 " , " "
	550113-18	♀	" "	66-17-11-15-8 " , " "
	550113-19	♂	" "	70-18-11-16-9 " , test 4 mm
	550113-20	♀	" "	68-17-11-15-8 " , wt. normal
	550113-21	♂	" "	70-18-11-16-9 " , test. 4 mm
	550113-22	♂	" "	68-17-11-16-8 " , " 7 mm
	550113-23	♂	" "	69-18-11-16-9 " , " 7 "
	550113-24	♂	Sciurus d. deppei	370-182-53-20-253 gms.
SK.	550113-25	♂	Aëllo m. megalophylla	90-25-11-14-14 gms.

Langucin Cove, 1022 ft., Guatemala

Jan 14, 1955

dist.	550114-1	♂	awl	L. 356
dist.	550114-2	♂	motmot	L 450
	550114-3	♀	Balantiopleryx io	58-18-8-12-5 gms. wt normal
	550114-4	♀	" "	59-18-8-12-5 " , " "
	550114-5	♀	" "	58-18-8-12-5 " , " "
	550114-6	♂	Chilonycteris psilotis	68-18-11-16-8 gms, testis 7 mm
	550114-7	♂	" "	66-18-11-15-8 " , testis 2 mm
	550114-8	♂	" "	68-17-11-16-8 " , " 7 "
	550114-9	♀	Platyrrhinus auripurensis centralis	88-26-12-18-17 gms. wt normal
	550114-10	♂	Aëllo m. megalophylla	91-26-11-14-15 " , test 3 mm
	550114-11	♂	" " "	92-27-12-14-15 " , " 2 "
	550114-12	♂	" " "	93-26-12-14-16 " , testis 3 "
	550114-13	♀	" " "	90-26-12-14-16 " , wt normal
	550114-14	♀	" " "	90-27-11-14-17 " , " "
	550114-15	♂	" " "	88-26-12-14-14 " , test 3 mm
	550114-16	♂	" " "	93-28-12-14-14 " , " 2 mm
	550114-17	♂	" " "	92-26-12-14-17 " , " 3 "
	550114-18	♂	" " "	92-27-12-14-18 " , " 2 "

550114-19	♂	Aëllo m. megalophylla	98-28-12-15-20 gms
550114-20	♀	Artibeus jamaicensis yucatanicus	88-( )-19-22 ~~gms~~ 45 gms
550114-21	♀	" " "	89-( )-19-22-46 gms
550114-22	♂	Aello m. megalophylla	90-28-11-14-13 gms, test. 3 mm
550114-23	♀	" " "	91-27-11-14-15 " , ut. normal
550114-24	♀	" " "	95-32-11-14-14 gms, ut. normal
550114-25	♀	" " "	96-28-11-14-14 " , " "
550114-26	♂	" " "	90-26-11-14-14 " , test 2 mm
550114-27	♂	" " "	91-25-11-14-15 " , " 3 "
550114-28	♂	" " "	93-30-12-14-16 " , " 3 "
550114-29	♀	" " "	90-26-11-14-15 " , ut. normal
550114-30	♂	" " "	92-27-12-14-16 " , test 3 mm
550114-31	♀	" " "	98-29-12-14-17 " , ut. normal
550114-32	♂	" " "	88-26-11-14-14 " , test 3 mm
550114-33		Invertebrates from cave	

1/5 mi. W Longuin Cove, 1220 ft., Guatemala

Jan 16, 1955

550116-1	♂	Marmosa c canescens	295-160-20-22-38 gms, test 8 mm
550116-2	♀	Ototylomys phyllotis guatemalae	298-156-29-22-76 gms, plac. clear
550116-3	♀	Rattus rattus	320-180-33-20-68 " , ut. normal

1/2 mi. W Longuin Cove, 1330 ft., Guatemala

Jan 16, 1955

550116-4	♀	Peropteryx m. macrotis	66-15-9-15-8 gms, ut normal
550116-5	♀	" " "	65-15-9-14-7 " , ut normal
550116-6	♀	" " "	67-18-9-15-6 " , " "
550116-7	♂	" " "	58-12-8-15-4 " , test 2 mm
550116-8	♂	" " "	60-16-9-15-6 " , " 2 "

20 feet S Longuin Cove, 1098 ft., Guatamala (level of road)

Jan. 16, 1955

550116-9	♂	natalus mexicanus saturatus	95-52-9-13-5 gms, test 2 mm
550116-10	♂	" " "	99-56-9-13-6 " , test 2 "
550116-11	♂	" " "	95-50-9-14-6 " , test 2 "
550116-12	♂	" " "	102-57-9-14-8 " , test 2 "
550116-13	♀	" " "	102-56-9-13-7 " , ut. normal
550116-14	♂	" " "	103-56-9-14-8 gms, test 2 mm
550116-15	♂	" " "	101-53-9-15-7 " , test. 2 mm
550116-16	♂	" " "	92-51-9-14-5 " , " 2 "
550116-17	♀	" " "	101-54-9-14-6 " , ut normal

550116-18 ♂	Natalus mexicanus saturatus			102-54-9-15-7 gms, test 2 mm
550116-19 ♂	"	"	"	96-52-9-14-6 gms, " 2 mm
550116-20 ♂	"	"	"	95-50-9-14-7 ", " 2 mm
550116-21 ♂	"	"	"	101-54-9-14-8 ", " 2 "
550116-22 ♂	"	"	"	101-53-9-14-6 ", " 2 "
550116-23 ♂	"	"	"	99-54-9-14-7 ", " 2 "
550116-24 ♂	"	"	"	99-53-9-14-6 ", " 2 "
550116-25 ♂	"	"	"	95-50-9-14-6 ", " 2 "

Longuin Cave, 1022 ft., Guatemala

Jan 16, 1955

550116-26 ♀	Balantiopteryx io			61-17-8-12-4 gms. wt normal
550116-27 ♂	Pteronotus davyi fulvus			78-25-10-16-10 ", test 5 mm
550116-28 ♂	Diello m. megalophylla			93-24-11-14-18 ", " 3 "
550116-29 ♀	Balantiopteryx io			62-18-8-13-4 ", wt. normal
550116-30 ♂	"	"		61-18-8-13-4 ", test 2 mm

20 feet S Longuin Cave, 1098 ft., Guatemala (level of road)

Jan 17, 1955

550117-1 ♀	Natalus mexicanus saturatus			98-53-9-14-5 gms. wt normal
550117-2 ♂	"	"	"	96-53-9-13-6 ", test 2 mm
550117-3 ♂	"	"	"	98-53-9-14-6 ", " 2 "
550117-4 ♂	"	"	"	95-52-9-13-5 ", " 2 "
550117-5 ♂	"	"	"	95-52-9-13-5 ", " 2 "
550117-6 ♂	"	"	"	100-55-9-15-7 ", " 2 "
550117-7 ♂	"	"	"	95-52-9-13-5 ", " 2 "
550117-8 ♂	"	"	"	98-53-9-14-6 ", " 2 "
550117-9 ♂	"	"	"	96-53-9-14-6 ", " 2 "
550117-10 ♂	"	"	"	92-52-9-13-5 ", " 2 "
550117-11 ♂	"	"	"	95-53-9-14-5 ", " 2 "
550117-12 ♂	"	"	"	97-54-9-14-6 ", " 2 "
550117-13 ♂	Sciurus d. deppei			380-180-50-24-281 gms
550117-14 ♂	Natalus mexicanus saturatus			100-56-9-14-7 gms, test 2 mm
550117-15 ♂	"	"	"	104-56-9-14-7 ", " 2 "
550117-16 ♂	"	"	"	98-54-9-14-6 ", " 2 "
550117-17 ♂	"	"	"	97-54-9-14-6 ", " 2 "

Longuin Cave, 978 ft., Guatemala

Jan 18, 1955

550118-1 ♀	Ototylomeyes phyllotis guatemalae			242-124-27-21-66 gms, plac. scars
550118-2 ♂	"	"	"	305-151-30-23-75 ", test 11 mm

550118-3 ♀ Sciurus deppei zanjonensis 205-85-28-16-55 gms
20 feet S. Longuin Cove, 1098 ft., Guatemala (level ground)
550118-4 ♂ Natalus mexicanus saturatus 101-55-9-14-7 gm, testes 2 mm
550118-5 ♂ " " " 98-54-9-14-6 " , " 2 "
550118-6 ♂ " " " 100-56-9-14-8 " , " 2 "
550118-7 ♂ " " " 99-57-9-14-6 " , " 2 "
550118-8 ♀ " " " 95-51-9-14-7 " , at normal
550118-9 ♀ " " " 98-51-9-14-7 " , " "
550118-10 ♀ " " " 97-51-9-14-6 " , " "
550118-11 ♀ " " " 96-51-9-14-5 " , " "
550118-12 ♀ " " " 100-54-9-14-6 " , " "
550118-13 ♂ " " " 96-50-9-14-6 " , testes 2 mm
550118-14 ♀ " " " 95-52-9-14-6 " , at. normal
550118-15 ♀ " " " 98-53-9-15-7 " , " "
550118-16 ♀ " " " 95-52-9-14-7 " , " "
550118-17 ♀ " " " 95-53-9-14-7 " , " "

1/10 mi. W Longuin Cove, 1210 ft., Guatemala
Jan 18, 1954

550118-18 ♀ Sciurus d. deppei 376-190-54-24-230 gms, at normal
det. 550118-19 Jay. 426 L., 225 gms.

Longuin Cove, 1022 ft., Guatemala
Jan 20, 1954

550120-1 ♂ Chilonycteris psilotis 65-16-11-16-8 gms, test 2 mm
550120-2 ♀ Aëllo m. megalophylla 94-29-10-13-15 " , at. normal
550120-3 ♂ " " " 90-28-9-14-16 " , test 3 mm
550120-4 ♂ " " " 90-28-9-14-15 " , " 3 "
550120-5 ♂ " " " 92-25-9-14-16 " , " 3 "
550120-6 ♀ " " " 88-24-9-13-16 " , at normal
550120-7 ♀ Chilonycteris parnellii fusca 92-24-14-20-20 gms, " "
550120-8 ♂ " psilotis 70-18-11-15-10 " , test 7 mm
550120-9 ♂ " " 65-17-11-15-9 " , test 7 mm
550120-10 ♂ " " 69-18-11-15-10 " , " 7 "
550120-11 ♀ Pteronotus davyi fulvus 75-23-11-16-10 " , at normal
550120-12 ♀ Aëllo m megalophylla 95-26-9-14-15 " , " "
550120-13 ♀ " " " 97-25-9-14-15 " , " "
550120-14 ♂ " " " 91-24-9-14-13 " , test 3 mm
550120-15 ♂ " " " 91-25-9-14-14 " , test 3 mm
550120-16 ♀ Pteronotus davyi fulva 78-23-10-17-9 gm. at normal
550120-17 ♂ Chilonycteris psilotis 65-13-10-16-8 " , test 7 mm
550120-18 ♀ Pteronotus davyi fulva 79-23-11-17-8 " , at normal

550120-19 ♀ Pteronetes dorsi fulva 78-22-11-12 8gms, wt. normal
550120-20 ♀ " " " 78-23-11-17-8 " , " "

1/2 mi. W Lanquin Cave, 1330 ft., Guatemala
Jan 20, 1955

550120-21 ♂ Corallia subrufa 60-( )-13-18-16 gms, testis 6 1/2 mm tapes

1/10 mi. W Lanquin Cave, 1210 ft., Guatemala
Jan 20, 1955

dest. 550120-22 ♀ ~~Humming bird~~ Sémnus d. deppei 415-181-54-23-308 gms.

1/2 mi. W Lanquin Cave, 1250 ft., Guatemala
Jan 20, 1955

SK. 550120-23 ♀ Humming bird

20 ft. S Lanquin Cave, 1098 ft., Guatemala
Jan 20, 1955

550120-24 ♀ natalus mexicanus saturatus 100-52-9-15-6 gms, wt normal
550120-25 ♀ " " " 93-51-9-14-6 " , wt normal
550120-26 ♀ " " " 101-57-9-15-6 " , " "
550120-27 ♀ " " " 98-54-9-15-6 " , " "
550120-28 ♀ " " " 98-53-9-15-6 " , " "
550120-29 ♀ " " " 97-53-9-15-6 " , " "
550120-30 ♀ " " " 98-54-9-15-6 " , " "
550120-31 ♀ " " " 98-53-9-15-6 " , " "

Jan 21, 1955

550121-1 ♀ natalus mexicanus saturatus 100-56-9-15-7 gms, wt normal
550121-2 ♂ " " " 105-54-10-15-8 " , test 2 mm
550121-3 ♂ " " " 101-53-9-15-7 " , " 2 "
550121-4 ♀ " " " 97-53-9-15-6 " , wt. normal
550121-5 ♀ " " " 92-51-9-14-6 " , " "
550121-6 ♀ " " " 94-52-9-14-6 " , " "

Lanquin Cave, 1022 ft., Guatemala
Jan 21, 1955

550121-7 ♂ Pteronetes dorsi fulvus 78-23-10-17-9 gms. test 2 mm
550121-8 ♂ " " " 80-24-10-17-10 " , " 2 "
550121-9 ♀ " " " 80-24-10-17-9 " , wt. normal
550121-10 ♂ " " " 75-23-10-17-8 " , test 2 mm
550121-11 ♀ " " " 81-24-10-17-10 " , wt. normal
550121-12 ♀ " " " 78-23-10-17-9 " , wt normal

550121-13	♀	Pteronotus davyi fulvus			78-24-10-17-9 gms, wt normal
550121-14	♀	"	"	"	76-22-10-16-9 ", " "
550121-15	♀	"	"	"	78-24-10-16-10 ", " "
550121-16	♂	"	"	"	74-22-9-16-8 ", test 2 mm
550121-17	♂	"	"	"	80-25-10-16-9 ", " 4½ mm
550121-18	♀	"	"	"	80-25-9-16-9 ", wt normal
550121-19	♂	"	"	"	78-24-9-15-9 ", test 2 mm
550121-20	♀	"	"	"	80-25-9-16-9", wt normal

Sacuzyo, 3900 ft., Guatemala

Jan 22, 1955

550122-1	♂	Cissilopha m. melanocyanea	325 L., wt 105 gms
550122-2	♀	Desmoccaya velox	L. 530; wt. 185 "

2 mi. E Sacluc, 4640 ft. Guatemala

Jan 22, 1955

550122-3	♂	Cissilopha m. melanocyanea	L. 338; wt 112 gms

11½ mi. S and 3½ mi. E. Coban, 4925 ft., Guatemala

Jan 23, 1955

550123-1	♂	Oryzomys f. fulvescens			193-118-23-14-14 gms, test 3 mm
550123-2	♂	"	"	"	172-105-22-12-12 " " 2 "
550123-3	♂	Reithrodontomys sumichrasti dorsalis			164-95-18-14-8 gms, test 2 mm
550123-4	♂	Oryzomys c. couesi			268-152-32-17-54 ", " 9 "
550123-5	♀	Peromyscus g. guatemalensis			268-141-34-23-64 ", wt. normal
550123-6	♀	Oryzomys c. couesi			263-146-32-15-52 ", " "
550123-7	♂	"	"	"	229-122-29-15-38 ", test 9 mm
550123-8	♀	"	"	"	223-120-28-14-34 ", wt. normal
550123-9	♀	"	"	"	259-146-31-14-43 ", " "
550123-10	♂	"	"	"	259-123-29-15-36 ", test 6 mm
550123-11	♀	"	"	"	210-110-28-15-32 ",
550123-12		Cuniculus paca	(presented by natives and killed in mts 1½ mi. E		
550123-13		"	"		of above locality)
550123-14		"	"		

Jan 24, 1955

550124-1	♂	Reithrodontomys sumichrasti dorsalis			159-92-18-14-10 gms, test 3 mm
550124-2	♂	"	"	"	163-82-18-14-11 ", " 3 "
550124-3	♀	"	"	"	146-80-18-14-8 ", wt. enlarged
550124-4	♀	Oryzomys f. fulvescens			175-100-23-13-11 ", wt. normal
550124-5	♂	Reithrodontomys s. dorsalis			156-85-17-13-10 ", test. 4 mm
550124-6	♀	"	"	"	147-84-19-14-10 ", wt. normal

550124-7	♂	Oryzomys f. fulvescens	170-98-20-13-12 gms, tst 3½ mm
550124-8	♀	Reithrodontomys sumichrasti dorsalis	148-80-18-13-9 " , ut. normal
550124-9	♂	Oryzomys f. fulvescens	159-92-22-13-10", tst 3 mm
550124-10	♂	Peromyscus boylii levipes	195-100-23-19-27", " 3 "
550124-11	♂	" " "	219-115-25-18-42", " 6 "
550124-12	♂	" g. guatemalensis	320-170-36-25-105", " 11 "
550124-13	♂	" " "	280-152-34-24-69", " 4 "
550124-14	♂	" " "	291-153-34-25-70", " 4 "
550124-15	♂	Oryzomys c. couesi	300-162-33-15-87", " 13 "
550124-16	♀	" " "	236-130-29-17-40", ut. normal
550124-17	♂	Sigmodon h. zanjonensis	219-102-29-16-55", tst 15 mm
550124-18	♂	" " "	200-100-27-16-37", " 10 "
550124-19	♂	Cratophaga s. sulcirostris	L 360, wt 85
550124-20	♀	" " "	L 335, wt 70

2 mi. W Purulha, 4950 ft., Guatemala
Jan 25, 1955

550125-1	♂	Oryzomys c. couesi	248-135-30-15-38 gms, tst 7 mm
550125-2	♀	Peromyscus g. guatemalensis	268-136-33-24-60 " , ut. normal
550125-3	♂	" " "	272-142-35-23-70", tst 6 mm
550125-4	♂	" " "	265-144-34-22-48", tst 5 mm
550125-5	♀	Reithrodontomys s. dorsalis	150-82-18-14-( ) ut normal
550125-6	♀	Peromyscus	208-110-25-20-29 gms, ut normal
550125-7	♂	Oryzomys f. fulvescens	178-104-22-13-11 " , tst 3 mm
550125-8	♂	" c. couesi	242-130-31-15-43 " , " 8 "
550125-9	♂	" " "	235-130-31-14-38", tst. 8 mm
550125-10	♂	" f. fulvescens	177-106-21-12-12", " 2½ "
550125-11	♂	" " "	172-101-22-13-11", " 3½ "
550125-12	♂	Reithrodontomys s. dorsalis	142-76-18-14-10 gms, " 2½ "
550125-13	♂	Oryzomys. f. fulvescens	198-115-22-13-17 " , " 5 mm
550125-14	♂	" c. couesi	289-159-34-15-65", " 10 mm
sk. 550125-15	♂	Passerina cyanea	149 length, 15 gms wt.

4½ mi. N Salama, 5000 ft., Guatemala
Jan 26, 1955

550126-1	♀	Peromyscus boylii levipes	180-95-22-19-25 gms, ut normal
550126-2	♀	" " "	198-102-22-19-32", " "
550126-3	♀	" " "	200-102-22-19-33", plac scars
550126-4	♀	" " "	189-92-22-19-26 ", normal ut.
550126-5	♀	" " "	210-110-22-19-31 gms, plac. scars
550126-6	♀	" " "	195-97-22-19-29 " " "

550126-7	♂	Peromyscus boylii levipes			200-102-22-19-30 gms, testes 9 mm.
550126-8	♀	"	"	"	215-112-22-19-37 gms, plac. scars
550126-9	♂	"	"	"	208-112-23-18-32 ", test. 9 mm
550126-10	♀	"	"	"	110-115-23-19-32 ", plac. scars
550126-11	♂	Reithrodontomys sumichrasti dorsalis			160-87-19-15-14 gms, testes 5 mm
550126-12	♂	Peromyscus boylii levipes			180-93-22-18-24 ", " 4 "
550126-13	♂	"	"	"	182-96-22-18-24 ", " 4 "
550126-14	♂	"	"	"	180-92-22-18-20 ", " 4 "
550126-15	♂	"	"	"	190-100-22-18-27 ", " 7 "
550126-16	♀	"	"	"	180-92-22-18-22 ", wt normal
550126-17	♂	"	"	"	198-98-23-19-29 ", test. 7 mm
550126-18	♀	"	"	"	205-106-23-19-27 ", plac. scars
550126-19	♂	"	"	"	192-95-22-18-24 ", test. 4 1/2 mm
550126-20	♂	"	"	"	185-89-22-18-23 ", " 4 "
550126-21	♀	"	"	"	205-105-23-19-29 ", plac. scars
550126-22	♀	"	"	"	210-110-23-19-29 ", " "
550126-23	♂	"	"	"	178-94-21-18-22 ", test 4 1/2 mm
550126-24	♀	"	"	"	[192] [89]-23-19-32 ", wt normal
550126-25	♂	"	"	"	195-102-23-19-30 ", test. 8 mm
550126-26	♂	"	"	"	192-100-23-18-24 ", " 6 "
SK. 550126-27	♂	"	"	"	202-105-22-18-26 ", " 3 "
550126-28	♂	"	"	"	[160]-[61]-22-18-24 ", " 5 "
550126-29	♀	"	"	"	[138]-[46]-22-18-22 ", wt normal
550126-30	♀	"	"	"	199-102-23-18-23 ", " "
550126-31	♂	"	"	"	200-103-23-18-27 ", test 6 mm
550126-32	♀	"	"	"	201-103-22-19-33 ", plac. scars
550126-33	♂	"	"	"	200-104-23-18-24 ", test. 4 mm
550126-34	♂	"	"	"	201-102-23-18-27 ", " 7 "
550126-35	♂	"	"	"	200-103-23-19-18 ", " 6 "
550126-36	♂	"	"	"	186-96-22-18-28 ", " 4 "
550126-37	♂	"	"	"	199-101-22-18-24 ", " 5 "
550126-38	♂	Reithrodontomys sumichrasti dorsalis			165-93-19-15-8 ", " 3 "
SK. 550126-39	♀	Oxmophila rufescens gigas			L. 195, wt 37 gms
SK. 550126-40	♂	"	"	"	L. 193, wt 36 gms

4 1/2 mi. N Salama, 5000 ft., Guatemala

Jan 27, 1955

550127-1	♀	Peromyscus boylii levipes			212-115-22-18-33 gms. wt normal
550127-2	♀	"	"	"	192-100-23-18-26 ", " "
550127-3	♂	"	"	"	215-110-22-18-31 ", test 8 mm
550127-4	♂	"	"	"	195-92-22-16-29 ", " 8 mm

550127-5	♂	Peromyscus	boylii	leviper	195-96-22-18-30gms, testis 7mm
550127-6	♀	"	"	"	[131]-[32]-22-18-32gms, ut. normal
550127-7	♂	"	"	"	188-90-23-18-32gms, testis 4mm
550127-8	♀	"	"	"	188-97-22-18-31 ", plac. scars
550127-9	♂	"	"	"	177-89-21-18-22 ", test 5mm
550127-10	♂	"	"	"	[128]-[31]-22-18-28 ", test 8mm
550127-11	♂	"	"	"	178-98-22-18-24gms, testis 4½mm
550127-12	♀	"	"	"	205-105-23-18-28gms, ut. normal
550127-13	♀	"	"	"	204-108-23-18-31 ", " "
550127-14	♂	"	"	"	186-96-22-18-23 ", test 4mm
550127-15	♂	"	"	"	190-93-23-18-26 ", " 6 "
550127-16	♂	"	"	"	190-100-22-18-24 ", " 4 "
550127-17	♂	"	"	"	180-90-23-18-24 ", " 4 "
550127-18	♂	"	"	"	187-93-22-18-27 ", " 4 "
550127-19	♂	"	"	"	170-85-22-18-23 ", " 4 "
550127-20	♂	"	"	"	180-91-22-18-23 ", " 4 "
550127-21	♂	"	"	"	207-106-23-19-30 ", " 4 "
550127-22	♀	"	"	"	180-95-22-18-20 ", ut. normal
550127-23	♂	"	"	"	[140]-[42]-23-18-32 ", test 6mm
550127-24	♂	"	"	"	178-90-22-18-21 ", test 4mm
550127-25	♂	"	"	"	[152]-[59]-22-18-22 ", " 4 "
550127-26	♀	Reithrodontomys	sumichrasti	dorsalis	165-90-18,5-14-11gms, ut normal
550127-27	♂	"	"	"	149-78-18,5-14-12 ", test 4mm
550127-28	♀	"	"	"	153-83-18,5-14-9 ", ut. normal
550127-29	♀	"	"	"	148-81-18-14-9 ", " "
550127-30	♂	"	"	"	169-96-19-14-13 ", test 6mm

½ mi. N and 1 mi. E Salama, 3200ft., Guatemala

Jan 28, 1955

550128-1	♂	Baiomys	musculus	griescens	123-53-16-12-11gms, test 4mm
550128-2	♂	"	"	"	112-48-16-12-11 ", " 4 "
550128-3	♂	"	"	"	118-49-16-12-12 ", " 4 "
550128-4	♀	"	"	"	116-47-16-12-10 ", ut. normal
550128-5	♂	"	"	"	115-50-16-12-8 ", test 4mm
550128-6	♀	"	"	"	112-48-16-12-9 ", ut. normal
550128-7	♂	"	"	"	133-55-16-13-12 ", test 4½mm
550128-8	♂	"	"	"	128-50-16-13-12 ", " 4 "
550128-9	♀	"	"	"	118-48-16-12-9 ", ut normal
550128-10	♀	"	"	"	101-41-14-11-8 ", " "
SK. 550128-11	♂	"	"	"	113-48-16-12-9 ", test 4mm
550128-12	♀	Reithrodontomys	fulvescens	chiapensis	145-80-17-14-8 ", ut. normal

550128-13 ♀ Sigmodon h. zanjonensis 205-97-28-16-34 gms, teste 5 mm
550128-14 ♀ Leomys salvini salvini 215-108-28-13-33 gms, ut. normal
550128-15 ♂ " " " 253-135-30-16-57 " , test 15 mm

1 mi. S Rabinal, 3450 ft., Guatemala

Jan 29, 1955

550129-1 ♂ Peromyscus boylii levipes 185-96-(22)-18-24 gms, test 4 mm
550129-2 ♀ " " " 192-95-22-18-25 " , plac. scars
550129-3 ♂ " " " 190-95-22-18-25 " , test 6 mm
550129-4 ♂ " " " 203-102-22-16-29 gms, test 7 mm
550129-5 ♀ " " " 175-90-22-16-20 " , ut normal
550129-6 ♀ " " " 215-110-23-16-34 " , plac. scars
550129-7 ♀ " " " 192-95-22-16-24 " , " "
550129-8 ♀ Leomys s. salvini 209-110-27-13-30 " , ut. normal
550129-9 ♀ " " 210-110-27-13-31 " , " "
550129-10 ♀ Reithrodontomys fulvescens chiapensis 161-88-18-14-10 " , " "
550129-11 ♀ " " " 160-95-19-14-8 " , " "
550129-12 ♀ " " " 141-82-17-13-6 " , " "
550129-13 ♀ " " " 142-84-18-14-8 " , " "
550129-14 ♂ Baiomys musculus griseiventris 115-48-15-12-10 " , test. 3 mm
550129-15 ♀ " " " 118-45-15-12-9 " , ut. normal
550129-16 ♀ " " " 110-46-15-12-8 " , " "
550129-17 ♂ " " " 116-47-15-13-8 " , test 2 mm
550129-18 ♂ " " " 173-48-15-12-8 " , " 2 "
550129-19 ♀ " " " 115-46-15-12-9 " , ut. normal
550129-20 ♀ " " " 112-48-15-12-9 " , ut. normal
550129-21 ♂ " " " 110-46-15-12-8 " , test. 2 mm
550129-22 ♂ " " " 114-46-15-12-10 " , " 2 "
550129-23 ♂ " " " 110-45-16-12-8 " , " 2 "
550129-24 ♂ " " " 108-43-15-12-8 " , " 2 "
550129-25 ♀ " " " 122-50-15-12-11 " , ut. normal
550129-26 ♂ " " " 106-45-15-12-8 " , test. 2 mm
550129-27 ♀ " " " 130-52-15-12-10 " , ut. normal
550129-28 ♂ Peromyscus boylii levipes 200-112-22-16-28 " , test 8 mm

5 mi. N and 1 mi. W El Chal, 6000 ft., Guatemala

Jan 30, 1955

550130-1 ♀ Scotinomys teguina teguina 135-57-17-14-14 gms. plac scars
550130-2 ♀ Peromyscus mexicanus ← eyes pigmented 245-130-25-19-40 " , ut normal
550130-3 ♀ Reithrodontomys sumichrasti dorsalis 170-100-21-13-11 " , " "
550130-4 ♂ " " " 161-91-20-14-13 " , test 3½ mm

550130-5 ♂	Reithrodontomys	sumichrasti	dorsalis		151-88-18-15-10gms, testis 3 mm
550130-6 ♂	"	"	"		160-91-18-14-11", " 3 "
550130-7 ♂	"	"	"		[146]-[70]-20-15-13", " 4 "
550130-8 ♂	"	"	"		170-97-19-14-13", " 4½ "
550130-9 ♀	"	"	"		168-90-21-15-13", " 4½ "
550130-10 ♀	"	"	"		177-98-19-14-14", plac. scars
550130-11 ♀	"	"	"		160-91-18-14-12", ut. normal
550130-12 ♂	"	"	"		169-93-18-14-13", test 4½ mm
550130-13 ♀	"	"	"		176-102-19-14-13", ut. normal
550130-14 ♂	"	"	"		[150]-[80]-19-13-11", test 3½ mm
550130-15 ♂	Peromyscus	boylii	levipes		225-115-26-19-43gms, test 6 mm
550130-16 ♂	"	"	"		221-110-25-24-37", " 4½ "
550130-17 ♂	"	"	"		218-114-25-19-38", " 3½ "
550130-18 ♂	"	"	"		213-111-25-19-32", test 4 mm
550130-19 ♀	"	"	"		219-110-25-19-36", ut normal
550130-20 ♀	"	"	"		200-102-24-18-30", ut normal
550130-21 ♀	"	"	"		190-101-21-17-27", ut enlarged
550130-22 ♂	"	"	"		200-100-24-19-33", test 3 mm
550130-23 ♂	"	"	"		[195]-[95]-25-19-29", " 3 "
550130-24 ♂	"	"	"		210-106-24-17-35", " 3 "
550130-25 ♀	"	"	"		110-108-25-20-30", ut. normal
550130-26 ♀	"	"	"		198-105-24-18-30", " "
550130-27 ♂	Sciurus d.	deppei			880-170-53-25-325gms, test 25 mm
550130-28 ♀	Cryptotis	goodwini			115-31-14-7-18gms, ut. normal
+skel. 550130-29 ♀	Peromyscus	mexicanus			248-134-25-20-50", plac scars
550130-30 ♂	Reithrodontomys	s.	dorsalis		160-92-18-14-12", test 3 mm
550130-31 ♂	"	mexicanus	lowelli		178-103-19-15-13", " 5 "
550130-32 ♂	"	s.	dorsalis		165-95-18-15-14", " 3 "
550130-33 ♀	"	m.	lowelli		177-108-19-15-14", ut normal
550130-34 ♂	"	s.	dorsalis		162-91-18-14-11", test 3 mm
550130-35 ♀	Peromyscus	boylii	levipes		210-110-25-19-31gms, ut normal
550130-36 ♂	"	"	"		218-112-25-19-40gms, test 6 mm
550130-37 ♂	"	"	"		198-102-22-19-33gms, " 7 "
550130-38 ♂	"	"	"		221-113-25-18-38", " 3½ mm
550130-39 ♀	"	"	"		208-105-24-18-44", ut. normal
550130-40 ♂	"	"	"		204-106-24-18-30", test 3½ mm
550130-41 ♀	"	"	"		220-110-25-18-40", ut normal
550130-42 ♂	"	"	"		218-115-25-19-43", test 5 mm
550130-43 ♀	"	"	"		178-90-24-17-26", ut. normal
550130-44 ♀	"	"	"		178-93-21-18-22", ut normal
550130-45 ♂	"	"	"		229-123-26-19-44gms, test 6 mm

550130-46 ♀	Peromyscus boylii levipes		221-116-25-19-41 gms, wt. normal
550130-47 ♀	"	"	224-123-25-19-34", " "
550130-48 ♀	"	"	200-105-22-19-29", " "
550130-49 ♀	"	mexicanus gymnotis	200-103-24-19-23", " "
550130-50 ♀	"	boylii levipes	230-120-25-19-41", " "
550130-51 ♂	"	"	182-94-22-19-24", test 5 mm
550130-52 ♂	"	"	103-102-25-18-33", " 4 "
550130-53 ♀	"	"	218-109-25-19-36".
550130-54 ♀	"	"	220-110-24-19-34", wt. normal
550130-55 ♂	"	"	192-96-22-19-28", test 5 mm
550130-56 ♀	"	"	186-96-23-18-22", wt. normal
550130-57 ♀	"	"	192-98-22-19-27", wt. normal
550130-58 ♂	Oryzomys f. fulvescens		170-105-22-13-10", test 3 mm
550130-59 ♂	Reithrodontomys sumichrasti dorsalis		160-88-20-15-9", " 3 "
550130-60 ♂	"	"	170-100-18-15-10", " 3 "
550130-61 ♀	"	"	160-82-18-15-12", wt. normal
550130-62 ♀	"	"	151-90-18-14-5 gms, " "
550130-63 ♀	"	"	168-92-18-15-7", " "
550130-64 ♂	"	"	175-104-19-15-10", " "
550130-65 ♂	"	"	166-90-19-15-8", " "
550130-66 ♂	"	"	150-83-18-14-6=", " "
550130-67 ♂	Peromyscus boylii levipes		190-95-22-18-19 gms,
550130-68 ♀	"	"	198-98-23-19-21", wt. normal
550130-69 ♀	"	"	210-105-25-20-37", " "
550130-70 ♀	"	"	185-96-23-18-20", " "

Rio Grande, 3 mi. S and 1½ mi. W Granados, 200 ft., Guatemala
Jan 31, 1955

550131-1 ♀	Liomys s. salvini		216-115-28-13-36 gms
550131-2 ♀	"	"	200-110-28-13-38",
550131-3 ♂	Reithrodontomys s. dorsalis		156-90-19-13-9 "

Feb 1, 1955

550201-1 ♀	marmosa c. canescens		244-140-19-21-23 gms, wt normal
550201-2 ♂	Oryzomys c. couesi		231-125-30-( )-33 gms, test 8 mm
550201-3 ♀	"	"	245-135-31-15-48", wt normal
550201-4 ♀	"	"	243-148-30-16-49", " "
550201-5 ♂	"	f. fulvescens	190-117-23-12-18", test 5 mm
550201-6 ♀	Liomys s. salvini		242-130-28-12-47", wt normal
550201-7 ♀	"	"	230-118-29-14-43", " "
550201-8 ♂	"	"	223-122-28-13-36", test 7 mm
550201-9 ♀	"	"	205-105-27-12-33", wt. normal

550201-10 ♀ Lesmys s. salvini — 218-120-29-13-30gms, wt. normal
SK. 550201-11 ♀ Piranga

Amatitlan Lake, 3880ft, Guatemala
Feb. 7, 1955

550207-1 ♂ Oryzomys couesi — 229-124-30-14-35gms, testes 8mm
550207-2 ♂ Sigmodon h. zanjonensis — 247-125-32-18-70 " , " 14mm
550207-3 ♀ Podilymbus podiceps — L. 310, wing 120, wt 430gms, largest egg 11mm

2 3/10 mi. W and 1/4 mi. N Iztapa, 05 ft., Guatemala
Feb. 8, 1955

550208-1 ♂ Oryzomys couesi — 206-106-27-14-28gms, testes 9mm
550208-2 ♀ Lesmys crispus setosus — 210-102-26-12-44 " , plac. scars
550208-3 ♂ — 242-122-29-13-70 " , test 18mm
550208-4 ♂ — 200-92-27-12-42 " , " 14mm
550208-5 ♂ Oryzomys couesi — 275-145-30-17-78 " , " 18 "
550208-6 ♀ — 248-126-30-14-53 " , wt. normal
550208-7 ♀ — 222-120-27-13-26 " , " "

Feb. 9, 1955

550209-1 ♀ Lesmys crispus setosus — 182-93-26-11-35gms, wt. normal
550209-2 ♀ — 218-115-29 ( )-40 " , " "
550209-3 ♀ Oryzomys couesi — 209-115-26-14-27 " , " "
550209-4 ♂ Lesmys crispus setosus — [172]-[50]-27-14-70 " , test 18mm
550209-6 Hummingbird
550209-7 Campylorhynchos castaneus rufinucha, — L. 196, wt. 34
550209-8 Amblycercus h. holosericeus — L 242, wt 59

1/4 mi. E Otacingo, approx. 50 ft., Guatemala
Feb. 9, 1955

550209-9 ~~Lesmys crispus setosus~~ Jacana s. spinosa — L. 225, wt 82
550209-10 Jacana s. spinosa — L 220, wt 80
550209-11 " " " — L. 223, wt 82

9 mi. N and 3 mi. W San Jose, approx 70 feet., Guatemala
Feb. 9, 1955

550209-12 Caracara cheriway auduboni

5 mi. S Chiquimulilla, 200ft., Guatemala
Feb. 10, 1955

550210-1 ♂ Didelphis marsupialis tabascensis — 770-380-69-51, testes 18mm
550210-2 ♂ Oryzomys f. fulvescens — 187-108-28-12-17gms, test. 7mm

550210-3 ♀	Oryzomys concesi	228-120-27-15-31gm, wt. normal
550210-4 ♀	Saccopteryx leptura	170-19-11-14-5 gms,
550210-5 ♀	Oryzomys concesi	212-118-28-14-25gms
550210-6 ♀	" "	230-125-28-14-32 "

Feb 11, 1955

550211-1 ♂	Saccopteryx leptura	65-17-10-14-7 gms, testis 3 mm
550211-2 ♀	Oryzomys concesi	238-120-26-14-48gms. wt normal
550211-3 ♀	" "	205-105-26-13-23 " , " "
550211-4 ♂	" "	193-90-25-13-19 " , test 6 mm
550211-5 ♀	" "	210-106-26-13-27 " , wt. normal
550211-6 ♂	Liomys crispus	188-85-26-11-31 gms,
550211-7 ♂	Sigmodon h. griseus	232-108-32-18-75 " , test 9 mm
550211-8 ♀	" " "	231-103-31-17-62 " , wt normal
550211-9 ♀	" " "	200-90-28-15-39 " , " "
550211-10 ♂	Oryzomys concesi	232-119-30-16-38 " , test 8 mm
550211-11 ♂	Sigmodon hispidus griseus	215-100-31-17-54 " , " 5 "
550211-12 ♂	Guaiel	L. 230

Astillero, 25 ft., Guatemala

Feb 12, 1955

550212-1 ♂	nasua narica isthmicas	1100-520-100-40-8 lbs
550212-2 ♂	" " "	1015-550-100-41-7 1/2 lbs
550212-3 ♀	" " "	860-460-92-38-4 lbs, wt normal
550212-4 ♂	Dove	L. 185, 51 gms
550212-5 ♂	Crotophaga s. sulcirostris	L. 310, 75 gms
550212-6 ♂	Amblycercus h. holosericeus	L. 250, wt 68.
550212-7 ♀	Butorides virescens virescens	L 450, wt 240
550212-8 ♂	Jacana s. spinosa	L. 224, wt 80
550212-9 ♀	" " "	L. 230, wt 70
550212-10 ♂	Sciurus variegatoides goldmani	535-290-69-32-470 gms, test 11 mm
550212-11 ♂	Crypturella c. cinnamomeus	L. 300, wt 440
550212-12 ♂	Artibeus literatus palmarum	90-( )-16-22-46 gms. test 7 mm
550212-13 ♂	Sciurus v. goldmani	530-280-68-32-580gms, test 28 mm
550212-14 ♂	" " "	531-279-67-31-575 " , " 25 "
550212-15 ♀	Xiphorhynchus flavigaster eburneirostris	L. 260, wt 48 gms
550212-16 ♂	Lepidocolaptes a. affinis	L. 215, wt 26
550212-17 ♂	Pipra cayana thermophila	L. 428, wt 85
550212-18 ♀	Scardafella inca	L. 220, wt 48
550212-19	Odocoileus virginianus truei	Killed in June 1954
550212-20	" " "	" " " "
550212-21	Pecari angulatus	Killed in April, 1954
550212-22		

570407-109

Astillero, 25 ft., Guatemala

Feb. 14, 1955

550214-1	♀	Liosnipa crispus setosus	205-100-28-14-35 gms, ut. normal
550214-2	♂	Peromyscus hondurensis	225-108-25-21-43 ", test 16 mm
550214-3	♀	" "	205-101-24-17-31 " , ut normal
550214-4	♀	Oryzomys couesi	235-125-30-12-40 ", ut "
550214-5	♂	Peromyscus hondurensis	235-125-26-18-37 ", test 16 mm
550214-6	♀	Oryzomys f. fulvescens	182-162-21-11-12 ", ut normal
550214-7	♂	" " "	165-92-20-10-8", test 4½ mm 4 young 32 mm in pouch have 12 after shot
550214-8	♀	Rhelander opossum pallidus	592-312-49-33-570 gms, total length - not curled
550214-9	♀	Urodenma bilobatum	62-( )-10-17-15 gm, 1X0 enb 30 mm,
550214-10	♂	Sturnira lelium parvidens	60-( )-12-14-13 "
550214-11	♂	Glossophaga soricina leachii	60-( )-10-14-7 "
550214-12	♀	Crax rubra rubra	L. 910, wing 400, tail 330, 7 lbs
550214-13	♂	Dasypus novemcinctus fenestratus	800-365-100-42-14 lbs.
550214-14	♀	Artibeus literatus palmarum	95-( )-18-22-66 gms, 1X0 enb 30 mm curled
550214-15	♂	" f. yucatanicus	87-( )-16-20-36 gms, test. 8 mm
550214-16	♂	" literatus palmarum	92-( )-17-22-45 ", " " "

Feb. 15, 1955

550215-1	♀	Oryzomys couesi	212-115-29-15-30 gm. ut normal
550215-2	♂	"	208-108-29-14-31 ", test 9 mm
550215-3	♂	" f. fulvescens	178-98-22-13-17 gms. test 7 mm
550215-4	♀	" couesi	240-125-30-15-40 " , ut normal
550215-5	♂	" "	201-105-27-13-23 ", test 7 mm
550215-6	♀	" "	210-110-28-15-26 ., ut normal
550215-7	♀	Peromyscus hondurensis	218-104-24-18-36 ", " "
550215-8	♂	Liosnipa crispus setosus	250-125-29-13-64 gms, test 18 mm
550215-9	♀	Otatylomys	252-126-26-19-52 " , ut. normal
550215-10	♂	marmosa c. canescens	237-137-18-20-19 gms.
550215-11	♂	Artibeus jamaicensis yucatanicus	82-( )-16-20-38 " , testis 8 mm
550215-12	♀	Cairina moschata	no meas.
550215-13	♂	Trogan violaceus braccatus	L. 250, wt 73 gms
550215-14	♀	Lateralleus r. ruber	L. 170, wt 52 gms
550215-15	♂	Habia gutturalis wetmorei	L. 200, wt 45 "
550215-17	♂	Campylorhynchus rufinucha castaneus	L. 193, wt 33 gms
550215-18	♂	Thryothorus r. rufalbus	L. 175, wt 25 "
550215-19	♀	Campylorhynchus rufinucha castaneus	L. 175, wt 24 "
550215-20	♂	Passerina ciris pallidior	L. 154, 14 gms wt.

Astillero, 25 ft., Guatemala

Feb. 16, 1955

550216-1 ♂	Oryzomys f. fulvescens	162-93-20-12-11 gms, testes 5 mm.
550216-2 ♀	" Couesi	240-128-30-15-39 ", wt. normal
550216-3 ♀	Liomys crispus setosus	205-102-28-13-38 ", " "
550216-4 ♂	Peromyscus hondurensis	233-120-24-19-42 ", test 16 mm
550216-5 ♀	Oryzomys Couesi	208-115-27-13-26 ", wt. normal
550216-6 ♂	Liomys crispus setosus	228-110-26-13-53 ", test. 19. mm
550216-7 ♂	molossus nigricans	130-47-13-17-37 ", " 7 "
550216-8 ♀	Glossophaga soricina leachii	65-7-10-13-10 ", 1X0 emb. 18 mm
550216-9 ♂	Habia gutteralis velmorei	210 L., 40 gms
550216-10 ♂	Amazona ochrocephala auropalliata	L. 370, wt 445 gms
550216-11 ♂	" " "	L. 400, 510 wt
550216-12 ♂	Trogan m. mexicanus	L. 305, wt 70 gms
550216-13 ♂	Dryocopus lineatus similis	L. 330, wt 160 gms
550216-14 ♀	Amazilia beryllina devillei	L. 94
550216-15 ♂	Pinya cayana thermophila	L. 438, wt 100 gms
550216-16 ♂	Synathaka erythrothorax	L. 145, wt 14 gms
550216-17 ♀	Zone-tailed hawk	L. 510,
550216-18 ♀	Dasyprocta punctatus chiapensis	5-60-25-135-43-8 lbs

Astillero, 25 ft., Guatemala

Feb. 17, 1955

550217-1 ♂	Oryzomys Couesi	244-121-29-13-49 gms, test 7 mm
550217-2 ♀	Liomys crispus setosus	192-96-26-12-30 "
550217-3 ♀	" " "	195-95-28-13-37 "
550217-4 ♀	" " "	197-96-26-12-27 "
550217-5 ♂	Philander opossum pallidus	642-327-50-35-466 gms, test 17 mm
550217-6 ♀	Artibeus literatus palmarum	93-( )-17-22-60 gms. 0x1 emb 25 mm
550217-7 ♀	Tamandua tetradactyla	1043-485-93-44-11 lbs, wt. normal
550217-8 ♂	Dasyprocta punctatus chiapensis	500-24-133-39-6 lbs., test 30 mm
550217-9 ♂	Dasypus n. fenestratus	730-
550217-10 ♂	" " "	750-
550217-11 ♂	Potos flavus campechensis	930-450-102-40-7 lbs, test 24 mm
550217-12 ♂	Sturnira lilium parvidens	62-( )-13-16-16 gms, test 5 mm
550217-13 ♀	Artibeus literatus palmarum	88-( )-17-19-51 " , wt normal
550217-14 ♂	" " "	102-( )-16-23-60 gms, test 8 mm

Feb. 21, 1955

550221-1 ♂	Callicitla formosa azurea	480 l. 185 gms
550221-2 ♀	Didelphis marsupialis tobascensis	683-355-55-50-2 lbs. 7 young 65 mm. total
550221-3 ♂	Tamandua tetradactylas	1103-560-97-43-11 lbs.

	550221-4	♀	Rhilander opossum pallidus	580-310-44-34-445gms, 5young 48mm (T.L.)
	550221-5	♀	Artibeus turpis	53-( )-10-15-9gms, wt. normal
	550221-7	♂	Toderostrum cinereum finitamum	L. 103, wt 6gms
	550221-8	♂	Pinya cayana thermophila	L. 400, wt. 100gms
	550221-9	♀	Leptotila verreauxi bangsi	L. 275, wt. 120 "
	550221-10	♀	" " "	L. 270, wt 118 "
	550221-11	♂	Dryocapus lineatus similis	L. 320, wt 160 "
	550221-12	♂	Aratinga c. canicularis	L. 230, wt 82 "
			Feb 22, 1955	
	550222-1	♀	Didelphis marsupialis tabascensis	696-375-55-53-2 lbs, 7young 54mm (T.L.)
	550222-3	♂	Nyctidromus a-albicollis	~~696-375-5~~
			Feb 23, 1955	
	550223-1	♂	Sciurus variegatoides goldmani	602-322-70-34-680gms, test 26 mm
	550223-2	♀	" " "	568-290-68-34-580 " , wt normal
	550223-3	♂	Capromys-	285 L., 62 gms wt.
	550223-4	♂	Buteo magnirostris	L. 391, wt 315 gms
dist.	550223-5	♂	Warbler	L 133, wt 9 "
	550223-6	♂	Campylorhynchos rufinucha	L. 180, wt 30 "
			Feb 24, 1955	
	550224-1	♀	Nasua narica isthmica	1102-540-102-40-8 lbs, wt normal
	550224-2	♂	" " "	750-360-98-37-3 lbs.
	550224-3	♂	Dasyprocta punctatus chiapensis	510-24-125-41-7 lbs.
			Feb. 25, 1955	
	550225-1	♂	Amazona a. albifrons	L. 285, 240 gms
	550225-2	♂	Turdus grayi umbrinus	L. 230, 75 "
	550225-3	♂	Icterid.	L. 242, 93 "
	550225-4	♂	Centurus aurifrons santacruzi	L. 388, 70 "
	550225-6	♀	Centurus " "	L. 226, 75 gms.
	550225-8	♂	Pinga cayana thermophila	L. 435, wt 100 gms
	550225-9	♀	" " "	L. 412, wt 98 "
	550225-10	♂	Amblycercus h. holosericeus	L. 200, wt 56 "
	550225-11	♂	Leptotila verreauxi bangsi	L. 295, wt 200 gms
	550225-12	♀	Scardafella inca	L. 210, wt 53 gms
	550225-13	♂	Artibeus turpis	56-( )-10-16-12 gms, testis 5 mm
	550225-14	♂	Oryzomys f. fulvescens	168-96-20-10-10 gms.
	550225-15	♂	Melanerpes pucherani	128-45-14-16-32 gms, test 6 mm
	550225-16	♀	" "	120-49-14-16-31 " , wt normal
			Feb 27, 1955	
	550227-1	♂	Phloeoceastes g. guatemalensis	L. 352, wt 260 gms
	550227-2	♂	Centurus aurifrons santacruzi	L. 250, wt 95 "
	550227-3	♀	Turdus grayi umbrinus	L. 255, wt 78 "

SK ↓
550227-4 ♂ Icterio pectoralis anthonyi L.220, wt 52 gms
550227-5 ♀ Phenicaeus melanocephalus maculatus L.192, wt 46 "
550227-6 ♀ Brotogeris j. jugularis L.177, wt 64 "
550227-7 ♂ Habia gutturalis welmorei
550227-9 ♀ Thraupis verena diaconus L.170, wt 36 "
550227-10 ♂ Todirostrum cinereum finitimum L.110, wt 6 "
550227-11 ♀ Platyspiza oglaiae sumichrasti L.178, wt 37 "
↑ SK 550227-13 ♂ Cyanerpes cyaneus carneipes L.131, wt 11 "
550227-15 ♂ Glossophaga soricina leachii 63-( )-10-13-10 gms, testes 3 mm
550227-16 ♀ Coendou m. mexicanus 560-230-60-23; 2 lbs.
550227-17 ♀ Sciurus variegatoides goldmani 560-285-68-33.

Feb. 28, 1955

550228-1 ♀ Dasypus novemcinctus fenestratus 452-368-97-39-8½ lbs
550228-2 ♀ Didelphis marsupialis tabascensis 780-463-60-51-2½ lbs, 7 young 73 mm (T.L.)
550228-3 ♂ " " " 755-384-59-50-2 lbs, test 18 mm
550228-4 ♀ Sciurus variegatoides goldmani 418-215-64-35-210 gms
550228-5 ♀ " " " 508-280-63-34-325 "
550228-6 ♂ " " " 540-284-65-35-585 gms
SK ↓ 550228-7 ♂ Campylorhynchus rufinucha castaneus L.170, wt 25
550228-8 ♀ Sciurus v. goldmani 548-294-64-35-535 gms
550228-9 ♂ Ortalis vetula leucogastra L.580, wt 1½ lbs
550228-10 ♀ notharcus macrorhynchos hyperrhynchus 280 L., 108 wt.
550228-11 ♀ Pulsatrix perspicillata obturatus L.452, wt 2¼ lbs, fully formed egg
550228-12 ♂ Heterocnus cabanisi L.851, wt 2¾ lb.
550228-13 ♀ " " L.900, wt. 3 lbs
550228-14 ♂ Rhoecocetes g. guatemalensis L.358, wt. 235 gms
550228 15 ♂ " " " L.375, wt. 255 "
↑ SK 550228-16 ♀ Heterocnus cabanisi L.930, wt 3 lbs.

March 1, 1955

550301-1 ♀ Rhojessa parula tumida 72#28-5-13-5 gms, 1X0 emb 4 mm
550301-2 ♀ " " " 70-27-5-13-5 ", 1X0 emb 7 mm
SK 550301-3 ♀ Saltator coerulescens hesperis 232 length, 64 gms wt.
550301-4 ♂ Sciurus v. goldmani 538-282-68-33 gms, testes 37 mm
SK 550301-5 ♀ Synallaxis erythrothorax L.170, wt 17 gms
SK 550301-6 ♂ Habia gutturalis wetmorei L.193, wt 40 "
SK 550301-8 ♂ Amazilia beryllina devillei L.113, wt 6 "
550301-9 ♂ mormoza c. canescens 295-180-23-21-45 gms, testes 10 mm
SK 550301-10 ♂ Pitangus sulphuratus derbianus L.250, wt. 65 gms

Chiquimulilla Canal, 3 mi. S Astillero, 0 ft., Guatemala
March 1, 1955
550301-11 ♀ Rhojessa parula tumida 78-30-7-12-5 gms

550301-12 ♂ Calicitta formosa azurea L. 445, wt 205 gms

SK 550301-13 ← Caneel

Astillero, 25 ft., Guatemala.

Mar. 1, 1955

550301-13 ♂ Platyspiza oglaiae eumichrosti L. 185, wt 34 gms
550301-14 ♀ Cyclarhis zujonensis nicaragua L 160, wt 31 "
550301-15 ♀ Habia gutturalis wetmorei L. 173, wt 28 "
550301-16 ♂ Chiroxiphia linearis L. 230, wt 16 "
550301-17 ♂ Cyanerpes cyaneus carneipes L 127, wt 13 "
550301-18 ♀ " " " L. 33, wt 10 "
550301-20 ♂ Icteria virens virens L. 194, wt 36 "
550301-21 ♂ Turdus grayi umbrinus L. 245, wt 77 "
550301-22 ♂ Mniotilla varia L. 132, wt 10"
550301-23 ♂ Muscivora forficata L. 278, wt 41"
550301-25 ♂ Ceryle alcyon alcyon L. 325, wt 150"
550301-26 ♂ Butorides v. virescens L. 420, wt. 185

5 mi. N Astelluo, approx 80 feet, Guatemala

Mar. 2, 1955

550302-2 ♂ Cumomota superciliosa bipartita

2 mi. N and 1 mi. W Cuilapa, 2980 ft., Guatemala

Mar. 5, 1955

550305-1 ♂ Baiomys musculus nigrescens 104-42-15-13-10 gms, test 2½ mm
550305-2 ♀ Reithrodontomys fulvescens chapmani 156-90-19-13-9 gms, at. normal
550305-3 ♀ " " " 163-96-19-13-9 gms
550305-4 ♀ Liomys crispus setosus 212-111-26-13-35 gms
550305-5 ♀ Peromyscus mexicanus gymnotis 236-128-28-19-38 "
550305-6 ♂ " " " 224-118-25-19-40 " test 18 mm
550305-7 ♂ " " " 245-140-26-20-42" test. 15 mm
550305-8 ♂ " " " 221-118-25-19-25" testes 12 mm
550305-9 ♂ Baiomys musculus nigrescens 100-36-15-13-9 gms

5 mi. N Cuilapa, Approx 4000 ft., Guatemala

Mar 5, 1955

550305-10 Felis pardalis pardalis killed by native Feb. 15, 1955

2½ mi. W and 2¼ mi. N San Cristóbal, 2900 ft., Guatemala

Mar. 5, 1955

550305-11 ♀ Otus cooperi
550305-12 ♂ Glossophaga soricina leachii 70-8-10-14-15 gms, testes 5 mm

550305-13 ♂ *Glossophaga soricina leachii* 69-8-10-14-13 gms, testis 3 mm
550305-14 ♀ " " " 68-8-10-14-16 gms. 1x0 emb 22 mm

Mar. 6, 1955

550306-1 ♂ *Baiomys musculus nigrecens* 113-40-15-11-11 gms, testis 5 mm
550306-2 ♂ *Reithrodontomys gracilis anthonyi* 117-95-18-14-14 ", testis 9 mm
550306-3 ♂ " " " 170-100-18-14-12 ", " 9 "
550306-4 ♀ " " " 198-113-18-14-16 ", ut. normal
550306-5 ♀ " " " 194-111-18-14-13 ", " "
550306-6 ♀ " " " 181-106-18-14-17 gms. 2x0 emb 18 mm
550306-7 ♂ *Liomys s. salvini* 210-112-27-14-37 "
550306-8 ♀ " " " 210-105-25-13-38 ", ut normal
550306-9 ♀ " " " 195-102-27-12-29 ",
550306-10 ♀ " " " 208-108-27-13-42 ".

2 mi. SE San Cristóbal, 2950 ft., Guatemala El Salvador

550306-13 ♂ Reithro. grac. anthonyi (Mar. 6, 1955) 188-111-18-14-14 gms. test 9 mm
550306-14 ♂ *Liomys. s. salvini* 201-104-26-12-30 ", " 5 "
550306-15 ♀ *Reithrodontomys gracilis anthonyi* 161-98-18-12-11 ", ut normal.

5 mi. S Guatemala City, 4950 ft., Guatemala

550306-16 Mar. 6, 1955
↳ *Sylvilagus floridanus chiapensis* 420-53-97-67-( ) gms

Mar 7, 1955

550307-1 ♀ *Baiomys musculus nigrecens* 120-50-16-13-10 gms. ut normal
550307-2 ♀ *Reithrodontomys sumichrasti dorsalis* 148-82-18-13-9 ", ut. "
550307-3 ♀ " " " 165-85-17-13-10 ", ut normal
550307-4 ♂ " " " 155-85-18-13-10", test 3 mm
550307-5 ♂ " " " 147-80-17-14-9", " 5 1/2 "
550307-6 ♂ " " " 137-75-16-14-8",
550307-7 ♀ *Peromyscus boylii levipes* [168]-[63]-22-19-32 gms, ut normal
550307-8 ♀ " " " 210-105-23-18-30 ", " "
550307-9 ♀ " " " 190-95-22-18-26 ", " "
550307-10 ♂ " " " [198]-[92]-22-18-30 gms, test 6 mm
550307-11 ♂ " " " [152]-[63]-22-18-26", " 7 "
550307-12 ♀ " *mexicanus gymnotis* 222-120-26-22-37 ", ut. normal
550307-13 ♂ " " " 230-118-26-22-40", test 3 1/2 mm
550307-14 ♂ " " " 250-137-28-22-50", " 6 "
550307-15 ♀ " " " 146-132-25-20-50", ploc. acaro
550307-16 ♀ " " " 235-120-27-22-47", " "
550307-17 ♀ " " " 262-137-26-21-50", " "

1 1/2 mi E Guatemala City, approx 5400 ft., Guatemala
Mar. 8, 1955

550308-1 ♂ Reithrodontomys sumichrasti dorsalis [108]-[37]-17-12-9 gms, test 3 mm

4 mi. S Guatemala City, 4700 ft., Guatemala
Mar. 9, 1955

550309-1 ♂ Reithrodontomys sumichrasti dorsalis 162-87-18.5-15-9 gms, test 5 mm
550309-2 ♀ " " " 152-85-18-15-9 ", ut normal
550309-3 ♀ " " " 156-84-18-15-12 ", " "
550309-4 ♂ " " " 158-87-19-15-10 ", test 3 mm
550309-5 ♂ " " " 152-85-18-15-8 ", " 3 "
550309-6 ♂ " " " 153-78-19-15-8 ", " 3 "
550309-7 ♂ " " " 158-89-18-15-10 ", " 4 "
550309-8 ♂ " " " 144-77-17-14-7 ", " 4 1/2 "
550309-9 ♀ " " " 150-82-18-14-8 ", plac. scars
550309-10 ♀ Baiomys musculus myrescens 120-48-15.5-13-9 ", ut. normal
550309-11 ♀ " " " 122-49-16-13-13 ", " "
550309-12 ♂ " " " 112-46-15-13-9 ",
550309-13 ♀ Liomys s. salvini 224-118-29-14-36 ", ut. normal
550309-14 ♀ Peromyscus mexicanus gymnotis 232-125-26-21-39 ", " "
550309-15 ♂ " " " 242-182-27-21-40 ", test 8 mm
550309-16 ♂ " " " 235-126-26-23-37 ", " 7 "
550309-17 ♂ " " " 232-123-26-21-35 ", " 8 "
550309-18 ♀ " boylii levipes 220-112-24-19-30 ", ut. normal
550309-19 ♂ " " " 190-92-22-18-25 ", test 6 mm
550309-20 ♂ " " " 200-105-23-19-24 ", " 5 "
550309-21 ♀ " " " 188-95-22-18-18 ", ut. normal
550309-22 ♀ " " " 188-93-24-20-20 ", ut. normal
550309-23 ♀ " " " 195-98-22-18-26 ", ut. normal
550309-24 ♂ " mexicanus gymnotis 241-128-27-22-40 ", test 3 mm
550309-25 ♀ " " " 234-123-28-22-43 ", ut. normal
550309-26 ♂ " " " 250-132-25-21-46 ", test 4 mm
550309-27 ♀ " " " 240-130-26-22-40 gms, ut normal
550309-28 ♂ " boylii levipes
550309-29 ♀ " mexicanus gymnotis
550309-30 ♂ " " "
550309-31 ♂ " boylii levipes

6 mi. S Guatemala City, 4680 ft., Guatemala
Mar 10, 1955

550310-1 ♂ Marmosa c. canescens

	550310-2	♂	Peromyscus mexicanus	orizabae	180-102-19-15-16 gms, test 6 mm
	550310-3	♂	"	"	188-110-20-15-15 " , " 6 "
	550310-4	♂	Reithrodontomys mexicanus	orizabae	180-110-20-15-12 " , " 3 "
	550310-5	♀	mus musculus		148-76-18-14-11 " , ut. normal
	550310-6	♀	Reithrodontomys umbrosti	dorsalis	160-85-18-13-10 " , " "
	550310-7	♂	Baiomys musculus	nigrescens	96-37-15-11-8 " , test 4 mm
	550310-8	♀	Reithrodontomys s.	dorsalis	152-85-17-14-18 " , ut. normal
	550310-9	♂	"	"	"	143-78-18-13-8 " , test 2 1/2 mm
	550310-10	♂	"	"	"	160-90-18-14-10 " .
sk.	550310-11	♀	"	"	"	144-78-18-14-8 " .
sk.	550310-12	♂	"	"	"	140-73-17-13-8 " .
	550310-13	♂	Peromyscus boylii	levipes	[180]-[88]-23-18-26 " , test 5 mm
	550310-14	♀	"	"	"	196-100-23-19-26 " , ut. normal
	550310-15	♂	"	"	"	[190]-[88]-24-19-29 " , test 7 mm
	550310-16	♀	"	"	"	180-94-23-18-22 " , ut normal
	550310-17	♂	"	"	"	200-102-24-20-31 gms, test 7 mm
	550310-18	♀	"	"	"	192-100-22-19-24 " , ut. normal
	550310-19	♀	"	"	"	210-110-23-19-30 " , plac. scars
	550310-20	♀	"	"	"	200-102-22-18-26 " , ut. normal
	550310-21	♀	"	"	"	185-103-22-18-22 " , " "
	550310-22	♀	"	"	"	200-103-23-18-26 " , " "
	550310-23	♂	"	mexicanus	gymnotis	222-120-27-22-32 " , test 4 mm
	550310-24	♀	"	"	"	230-118-27-21-34 " , ut. normal
	550310-25	♀	"	boylii	levipes	208-103-23-19-32 " , ut. normal
	550310-26	♀	"	mexicanus	gymnotis	230-122-27-21-34 " , " "
	550310-27	♀	"	"	"	250-128-27-20-49 " , plac scars
	550310-28	♂	"	"	"	270-150-28-23-47 " , test 6 mm
	550310-29	♀	"	"	"	235-128-28-22-36 " ,
	550310-30	♂	"	"	"	[243]-[128]-27-22-47 " , test 4 mm
	550310-31	♀	"	"	"	243-127-27-21-39 " , ut normal
	550310-32	♀	"	"	"	233-120-27-20-38 " , ut "
	550310-33	♀	"	"	"	225-118-27-20-36 " , " "
	550310-34	♀	"	boylii	levipes	210-108-23-18-33 " , " "
	550310-35	♀	"	m.	gymnotis	235-128-25-20-26 " , " "
	550310-36	♀	"	"	"	232-128-27-21-37 " , " "
	550310 37	♀	"	"	"	230-125-25-20-33 " , " "

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5 mi. S Guatemala City, 4950 ft., Guatemala

March 11, 1955

550311-1	♀	Reithrodontomys mexicanus	orizabae		175-105-18.5-16-11 gms. ut normal
550311-2	♂	"	"	"	180-107-18.5-15-12 " , test 3 1/2 mm

550311-3	♂	Baiomys	musculus	nigrescens	120-51-15-12-10gms, test 3 mm
550311-4	♀	Reithrodontomys	sumichrasti	dorsalis	151-85-18-13-8", ut normal
550311-5	♀	"	"	"	162-87-18-13-11", " "
550311-6	♂	Peromyscus	boylii	levipes	147-76-22-17-12", test 6 mm
550311-7	♂	"	"	"	178-97-22-17-19", " 7 "
550311-8	♂	"	"	"	[165][72]-22-18-22", " 4½ "
550311-9	♂	"	"	"	177-92-23-17-18",
550311-10	♀	"	"	"	184-97-23-18-20", ut normal
550311-11	♀	Amaphila	rufescens	gigas	L.195, wt 40gms
550311-12	♂	Peromyscus	boylii	levipes	190-99-23-18-23 gms, test 3 mm
550311-13	♂	"	"	"	188-97-22-18-24", " 3½ "
550311-14	♀	"	"	"	192-98-22-17-23", ut. normal
550311-15	♂	"	"	"	200-102-23-18-26", test 4 mm
550311-16	♂	"	"	"	[160]-[68]-23-20-30gms, test 6 mm
550311-17	♂	"	mexicanus	gymnotis	258-137-28-23-54", " 9 "
550311-18	♀	"	"	"	265-140-27-21-48", plac. scars
550311-19	♂	"	"	"	262-142-28-22-52", test 8 mm
550311-20	♀	"	"	"	238-130-28-21-38", ut. normal
550311-21	♂	"	"	"	[245]-[122]-27-23-52", test 13 mm
550311-22	♂	"	"	"	262-138-27-22-51 gms, test 9 mm
550311-23	♀	"	"	"	238-122-26-21-45", plac. scars
550311-24	♀	"	"	"	[232]-[118]-27-22-44gms, ut normal
550311-25	♂	"	"	"	240-130-27-21-39gms, test 4 mm
550311-26	♂	"	"	"	246-128-27-21-38", " 4 "
550311-27	♂	"	"	"	250-135-26-21-47", test 16 mm
550311-29	♀	Eptesicus	fuscus	miradorensis	122-52-12-17-20gms, ut normal
550311-30	♀	"	"	"	118-50-12-18-18 gms, ut normal

Mar 12, 1955

550312-1	♂	Oryzomys	f.	fulvescens	175-102-22-13-10 gms, test 3 mm
550312-2	♂	Baiomys	musculus	nigrescens	121-50-15.5-14-10", " 3½ mm
550312-3	♂	"	"	"	112-47-15-12-9",
550312-4	♂	Reithrodontomys	s.	dorsalis	146-78-17-14-8",
550312-5	♂	"	"	"	147-79-17-14-
550312-6	♀	"	"	"	156-85-19-14-11 gms
550312-7	♀	"	"	"	150-85-18-13-9 gms
550312-8	♀	"	"	"	[105]-[38]-18-14-10gms
550312-9	♂	Liomys	s.	salvini	212-111-27-12-35gms, test 6 mm
550312-10	♀	"	"	"	200-102-27-12-32", ut. normal
550312-11	♂	Peromyscus	boylii	levipes	198-108-23-20-25gm. test 5 mm
550312-12	♂	"	m.	gymnotis	240-126-26-21-40gms, test 14 mm

mar 13, 1955

	550313-1	♂	Sylvilagus floridanus chiapensis	360-40-90-59-820 gms, test 20 mm
skel.	550313-2	♀	Aimophila rufescens gigas	190 L., 40 gms wt
skel	550313-3	♂	" " "	L. 197, wt 40 gms
skel	550313-4	♂	Passerina cyanea	L. 140, wt 15 "
skel	550313-5	♂	Cassidix m. mexicanus	L. 412, wt 240
	550313-6	♀	marmosa c canescens	230-142-8-22-26 gms
	550313-7	♀	Baiomys musculus nigrescens	[115]-[40]-16-13-13 gms
	550313-8	♀	" " "	118-48-16-13-11 gms, wt normal
	550313-9	♀	" " "	122-53-16-12-11 " ,
	550313-10	♂	" " "	108-45-15-11-8 " , test 3 mm
	550313-11	♀	Oryzomys f fulvescens	186-108-21-12-13 gms, wt normal
	550313-12	♂	Baiomys musculus nigrescens	115-48-15-12-10 " , test 3 mm
skel.	550313-13	♀	" " "	112-46-14-12-9 " , wt. normal
	550313-14	♂	Reithrodontomys fulvescens chiapensis	165-102-19-14-11 gms, test 3 mm
	550313-15	♂	" " "	167-102-20-14-8 " , test 2 "
	550313-16	♀	Liomys crispus setosus	212-108-27-14-34 " , wt. normal
	550313-17	♀	" " "	218-114-27-14-38 " , " "
	550313-18	♀	Peromyscus boylii levipes	[188]-[88]-22-18-26 " , " "
	550313-19	♀	" " "	201-102-22-19-29 " , " "
	550313-20	♂	" " "	199-99-22-18-22 " , test 5 mm
	550313-21	♀	Artibeus jamaicensis yucatanicus	92-( )-18-21-52 gms, wt. normal
	550313-22	♀	Eptesicus fuscus miradorensis	122-52-11-20-17 " , wt "
	550313-23	♀	" " "	126-53-11-20-22 " , wt. "

7 mi. S and 6 mi. E Guatemala City, 5800 ft., Guatemala

mar. 14, 1955

	550314-1	♀	Reithrodontomys mexicanus orizus	192-110-20-17-18 gms, wt. normal
	550314-2	♂	" " "	192-113-20-17-16 " , test 9 mm
	550314-3	♀	" fulvescens chiapensis	178-100-18-14-12 " , wt. normal
	550314-4	♀	" sumichrasti dorsalis	160-83-18-14-13 " , " "
	550314-5	♂	" " "	147-80-18-14-9 " , test 3 mm
	550314-6	♀	" " "	140-70-17-13-8 " , wt. normal
	550314-7	♀	" " "	146-85-18-14-8 " , " "
	550314-8	♀	" " "	148-81-17-15-10 " , " "
	550314-9	♀	" " "	144-81-18-14-10 " , " "
	550314-10	♀	Peromyscus mexicanus gymnotis	235-125-28-24-39 " , " "
	550314-11	♀	" " "	258-141-26-21-51 " , " "
	550314-12	♀	" " "	222-122-26-21-30 " , " "
	550314-13	♂	" " "	242-132-27-21-45 " , test. 11 mm
	550314-14	♂	" " "	247-131-27-22-43 " , " 9 mm
	550314-15	♂	Turdus grayi umbrinus	L. 256, wt 80 gms

Sayfachi, approx. 400 ft., Peten, Guatemala
March 14, 1955

550314-16 ♀ Felis p. pardalis — died in zoo at Guatemala City this date 690-290-96-50-3 lbs

5 mi. S Guatemala City, 4950 ft., Guatemala
March 15, 1955

550315-1 ♂ Cissilopha m. melanocyanae — L. 340, wt 122
550315-2 ♀ " " " — L. 338, wt 108
550315-4 ♀ Amophila rufescens gigas — ~~L. 251, wt 51~~
550315-5 ♂ Melozone kieneri biarcuatum — L. 195, wt 37
550315-6 ♀ " " " — L. 163, wt 30
550315-7 ♂ Ammodramus savannarum — L. 175, wt 31
550315-8 ♂ Basileuterus r. rubifrons — L. 120 +40, wt 15
L. 140, wt 11

4 mi. W Escuintla, 880 ft., Guatemala
March 17, 1955

550317-1 ♂ Oryzomys f. fulvescens — [178]-[98]-23-13-20 gms, test 6 mm
550317-2 ♀ Liomys crispus setosus — 198-96-26-12-38 ", ut. normal
550317-3 ♂ Peromyscus mexicanus gymnotis — 192-95-25-18-28 ", test 7 mm
550317-4 ♂ " " " — 210-104-25-18-37 ", " 19 mm
550317-5 ♀ " " " — 218-103-24-18-45", 3X0 emb 13 mm
550317-6 ♂ " " " — 230-118-26-19-45", test 19 mm
550317-7 ♂ Sigmodon hispidus zanjonensis — 183-88-27-16-35 ", " 6 mm
550317-8 ♂ Oryzomys — 177-102-23-12-16", test 5 mm
550317-9 ♀ Sturnira lilium parvidens — 58-( )-12-15-20 gms, ut. normal
550317-10 ♂ " " " — 61-( )-13-15-20 gms, testes 5 mm
550317-11 ♂ " " " — 60-( )-12-15-15 gms, " 2 1/2 "
550317-12 ♀ " " " — 61-( )-12-15-18 gms, ut. normal
550317-13 ♀ Artibeus jamaicensis yucatanicus — 86-( )-16-20-55", 1X0 emb. 34 mm
550317-14 ♂ Oryzomys (light colored) — 180-105-21-12-15 ", test 6 mm
550317-15 ♀ Liomys crispus setosus — 178-84-25-11-23", ut. normal
550317-16 ♀ Peromyscus mexicanus gymnotis — 226-111-25-19-40", " "
550317-17 ♂ " " " — 225-112-26-19-47", test 18 mm
550317-18 ♂ " " " — 215-105-25-18-33", " 17 mm
550317-19 ♂ " " " — 193-95-25-18-27 ", " 15 "
550317-20 ♀ Sigmodon hispidus zanjonensis — 135-60-20-12-13 ", ut. normal

3 mi. W Mazatenango, 1250 ft., Guatemala
March 18, 1955

550318-1 ♂ Oryzomys couesi — 250-136-30-16-51 gms, testes 11 mm
550318-2 ♂ Liomys crispus setosus — 211-107-28-13-47 gms, " 19 mm

2 mi. SE Champerico, 0 ft., Guatemala

March 19, 1955

550319-1	♂	Artibeus jamaicensis yucatanicus	86-( )-19-19-40 gms, testes 7 mm
550319-2	♂	Fregata magnificens rathschildi	L. 882
550319-3	♀	" " "	L. 1060
550319-4	♂	Scardafella inca	L. 225
550319-5	♂	Ortalis vetula leucogastra	L. 548
550319-6	♂	Oryzomys couesi	160-85-23-12-13 gms, testes 4 mm
550319-7	♀	" "	162-85-23-12-13 " , ut. normal
550319-8	♀	" "	166-86-23-12-15 " , " "
550319-9		mollusca (to Lemard)	

4 mi. E Champerico, 10 ft., Guatemala

March 20, 1955

550320-1	♀	Cochlearius c. zeledoni	
550320-2	♀	" " "	
550320-3	♀	" " "	
550320-4	♂	Pelecanus occidentalis Californicus	L. 1192
550320-5	♀	Ceryle t. torquata	
550320-6	♀	Fregata magnificens rathschildi	
550320-7	♂	Icterius spurius	
550320-9	♂	Fregata magnificens rathschildi	L. 1006
550320-10	♂	Phalacrocorax olivaceus mexicanus	L. 640
550320-11	♀	Agaia agaia	L. 695
550320-12	♂	" "	L. 692
550320-13	♀	Ortalis vetula leucogaster	L. 540
550320-14	♀	Phalacrocorax olivaceus mexicanus	L. 648

2 mi. SE Champerico, 0 ft., Guatemala

March 21, 1955

550321-1	♀	Pelecanus occidentalis Californicus	L. 1280

Bajapita, 250 ft., Guatemala

March 21, 1955

550321-2	♂	Crotophaga s. sulcirostris	L. 310, wt 82

3/4 mi. N and 3/4 mi. E San Marcos, 9500 ft., Guatemala

March 22, 1955

550322-1	♂	Peromyscus g. guatemalensis	235-121-29-22-46 gms, test 9 mm
550322-2	♀	Reithrodontomys tenuirostris	200-118-22-18-12 " ut. normal
550322-3	♂	" m. microdon	168-98-19-17-10 " test 7 mm

550322-4 ♀	Reithrodontomys sumichrasti dorsalis		156-84-19-14-10 gms, ut. normal
550322-5 ♀	"	"	159-86-18-16-12", " "
550322-6 ♀	"	"	157-86-19-15-9", " "
550322-7 ♂	Peromyscus g. guatemalensis		248-124-28-23-63", testes 15 mm
550322-8 ♂	"	"	265-143-28-24-68", " 16 "
550322-9 ♂	"	"	250-135-29-24-50", " 12 "
550322-10 ♂	"	"	255-132-29-24-61", " 17 "
550322-11 ♀	"	"	241-122-28-23-51", ut normal
550322-12 ♀	"	"	245-129-28-23-43", " "
550322-13 ♀	"	"	258-132-30-23-56", plac. scars
550322-14 ♀	"	"	278-149-29-24-60", ut. normal
550322-15 ♀	"	"	241-121-28-23-48", " "
550322-16 ♀	Sciurus g. griseoflavus		[502]-[210]-69-32-574 gms, plac. scars

10 mi. E and 4 mi. S Totonicapan, 10,000 ft., Guatemala
March 23, 1955

550323-1 ♂	Microtus guatemalensis		149-39-20-14-38 gms, test 6 mm
550323-2 ♀	"	"	153-37-20-14-39", ut. normal
550323-3 ♂	"	"	157-39-20-15-42", test 6 mm
550323-4 ♂	Reithrodontomys S. dorsalis		150-86-19-15-10", " 21/2 "
550323-5 ♂	wren		L. 115, wt 13 gms.

Verdenango, Atitlan Lake, 5173 ft., Guatemala
March 24, 1955

550324-1 ♂	Peromyscus boylii levipes		[186]-[85]-22-18-32 gms, test 6 mm
550324-2 ♀	"	"	226-120-22-18-36", plac. scars
550324-3 ♂	artibeus toltecus		66-( )-11-18-18 gms, test 5 1/2 mm

7 mi. S and 6 mi. E Guatemala City, 5800 ft., Guatemala
March 25, 1955

550325-1 ♂	Sciurus d. deppei	398-175-58-25-274 gms, test 9 mm

1/4 mi. E Otacingo, Approx. 50 ft., Guatemala
March 27, 1955

550327-1 ♂	Anhinga anhinga		L. 810
550327-2 ♂	"	"	L. 802

La Gomera, Approx. 990 ft., Guatemala
March 29, 1955

550329-1 ♀	Tamandua tetradactyla mexicana	1200-550-85-52-9 lbs

Uaxactún, 1500 ft., Guatemala

April 3, 1955

550403-1 ♂ Reithrodontomys g. gracilis 178-106-18.5-14 ( ). testis 11 mm
550403-2 ♀ Oryzomys f. fulvescens 185-105-21-13-( ). 2x1 emb. 13mm
550403-3 ♀ " couesi couesi 240-120-28-15-( ) plac. scars
550403-4 ♂ Sigmodon hispidus saturatus 225-100-30-18-(). test 16 mm
550403-5 ♀ Reithrodontomys g. gracilis 175-102-19-14-(). ut. normal
550403-6 ♂ Sigmodon h. saturatus 192-85-28-17-(). test 16 mm
550403-7 ♂ " " " [182]-[48]-29-18-(). test 21 mm
550403-8 ♀ Oryzomys f. fulvescens [165]-[69]-( )-( )-( )
550403-9 ♂ Arremenops conirostris chloronotus L. 168
550403-10 ♂ Habia gutturalis littoralis L. 195
550403-11 ♂ Sittasomus griseicapillus sylvioides L. 153
550403-12 ♂ momotus momotus lessonii L. 350
550403-13 ♀ Psilorhinus mexicanus cyanogenys L. 382
550403-14 ♂ Habia rubica rubicoides L. 202
550403-15 ♀ L. 326 Columba speciosa
550403-16 ♀ L. 980, wing 362, tail 345. Ara rubra rubra

April 4, 1955

550404-1 ♂ Sigmodon hispidus saturatus 262-110-30-19-( ) testis 21 mm
550404-2 ♂ " " " 255-115-32-19-(), " 21 "
550404-3 ♀ " " " 210-88-26-18-( ), ut. normal
SK. 550404-4 ♂ " " zanjonensis 135-60-24-12-( ),
550404-6 ♀ Ramphastos s. sulphuratus L. 502 mm
550404-7 ♂ " " " L. 565
550404-8 ♂ owl L. 412
550404-9 ♀ Amazona farinosa (sp.?) guatemalae
550404-10 ♂ Galbula ruficauda melanogenia L. 250
550404-11 ♀ Cryptorella soui meserythurus L. 248
550404-12 ♂ bird L. 205
550404-13 ♂ Trogon violaceus braccatus L. 280
550404-14 ♀ Habia rubica rubicoides L. 194
550404-16 ♂ Warbler L. 134
550404-18 ♂ Monasatus momotus lessonii L. 448
550404-19 Thamnophilus doliatus mexicanus L. 178
550404-20 ♂ Sigmodon hispidus saturatus L. 250-105-31-18-( ), test 20 mm
550404-21 ♀ " " " 230-92-29-18-( ), ut. normal
550404-22 ♂ " " " 190-40-27-17-(), testis 10 mm

Tical, apprx. 935 ft., Guatemala

April 5, 1955

550405-1 ♂ Phyllostomus discolor verrucicis 97-18-18-34-( ), testis 4 mm.

550405-2 ♂	Phyllostomus dicolor verrucosus	94-18-17-33-( ), testis 3 mm
550405-3 ♂	Saccopteryx bilineata	77-21-10-16-( )
550405-4 ♀	Phyllostomus discolor verrucosus	96-18-18-34-( ), no embryos
550405-5 ♀	" " "	98-18-18-33-( ), 1X0 emb 32 mm
550405-6 ♀	" " "	98-18-18-34-( ), 1X0 emb, 30 mm
550405-7 ♀	" " "	103-18-18-35-( ), 1X0 emb 34 mm
550405-8 ♀	" " "	101-18-18-34-( ), 1X0 emb 29 mm
550405-9 ♂	" " "	94-18-17-33-( ), testes 3 mm
550405-10 ♂	" " "	
550405-11 ♂	" " "	100-18-17-34-( ), testes 4 mm
550405-12 ♀	" " "	92-17-17-33-( ), 1X0 emb 28 mm
550405-13 ♀	" " "	97-18-18-33-( ), 1X0 emb 32 mm
550405-14 ♂	" " "	97-18-17-33-( ), testes 4 mm
550405-15 ♂	" " "	96-18-18-34-( ), testes 3 mm
550405-16 ♀	Saccopteryx bilineatus	78-21-10-16-( ), 1X0 emb 15 mm
550405-17 ♂	Sigmodon	190-90-27-17-( )
550405-18 ♂	Phyllostomus discolor verrucosus	102-18-17-34-( ), testes 4 mm
550405-19 ♂	Oryzomys c. couesi	250-128-29-16-( ), testes 12 mm
550405-20 ♂	Sigmodon h. saturatus	290-125-31-20-( ), testes 21 mm
550405-21 ♀	Oryzomys. c. couesi	260-130-28-15-( ), no embryos
550405-22 ♂	Sigmodon hispidus saturatus	215-95-27-18-( ), testes 12 mm
550405-23 ♀	Oryzomys c. couesi	218-108-27-15-( ), no embryos
550405-24 ♀	" " "	225-118-27-15-( ), no embryos
550405-25	mollusca	
550405-26 ♀	Agriocharis ocellata	L. 885, wing 360, tail 285, ear 205, 1 ev emb. 22

Lake Itza, Petén, Guatemala

April 6, 1955

550406-1 Fresh water shells.

COLLECTING PATTERN.

1545 = 1328 mammals, 217 bird skeleton (Repteles, fish & invertibrates excluded)

151 days on expedition - (nov 22, 1954 – april 21, 1955)

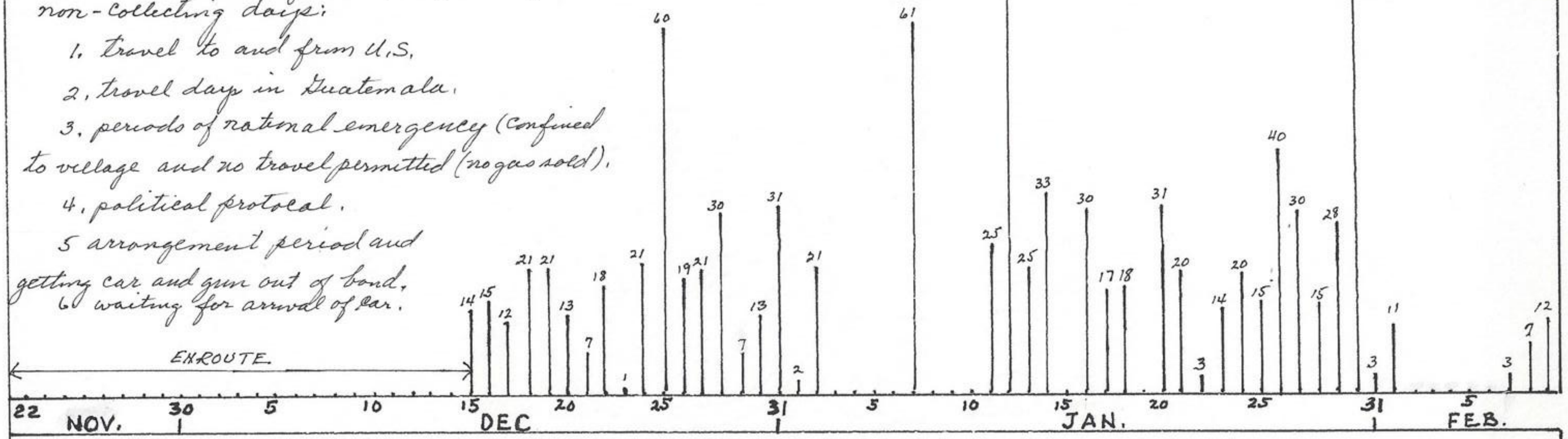
110 days in Guatemala, 83 collecting days.

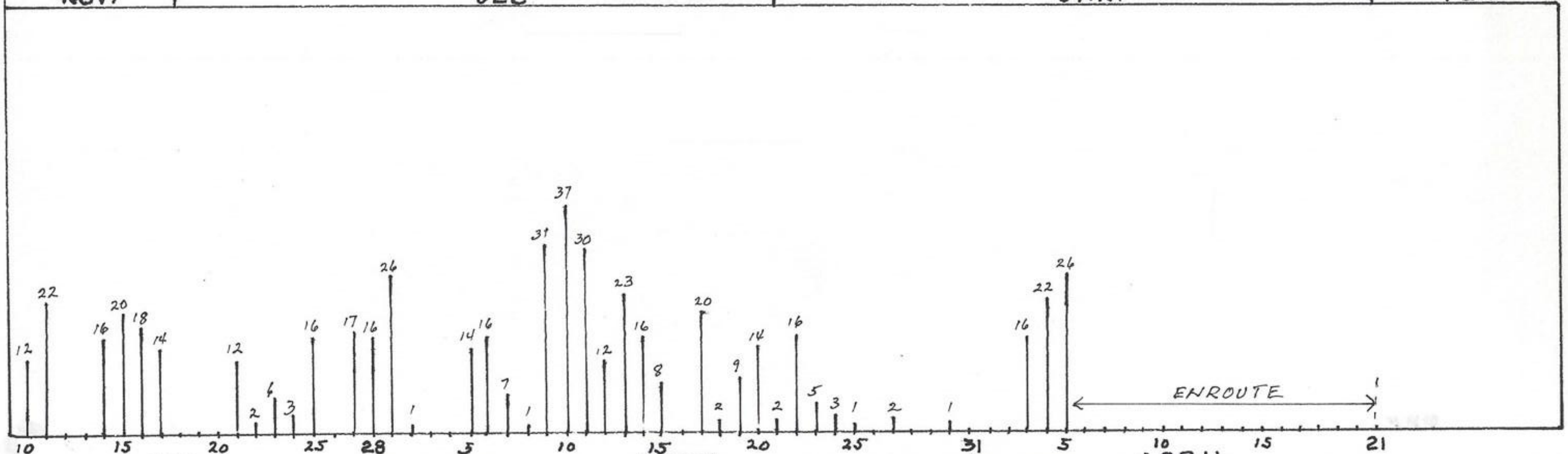
60 days with 10 specimens or more per day. (museum quota)

26 specimens per day average of 60 days.

non-collecting days:

1. travel to and from U.S.
2. travel days in Guatemala.
3. periods of national emergency (confined to village and no travel permitted (no gas sold).
4. political protocal.
5 arrangement period and getting car and gun out of bond.
6 waiting for arrival of car.





550407-124

Collecting localeties in Guatemala (1954-1955) arranged from north to south.

Uaxactún, 1500 ft.
Tical, approx. 935 ft.
Garbutt's Falls
Flores
Santo Toribio
Sayaache, approx. 400 ft.
Poctun
2 mi. S San Juan Ixcoy, 9340 ft.
3 1/2 mi. SW San Juan Ixcoy, 10,120 ft.
Languin Cave
Languin Cove, 1022 ft.
1/10 mi. W Languin Cove, 1210 ft.
1/5 mi. W Languin Cave, 1220 ft.
1/2 mi. W Languin Cave, 1250 ft.
1/2 mi. W Languin Cove, 1350 ft.
20 ft. S Languin Cove, 1098 ft.
Lacuyo, 3900 ft.
2 mi. S Chemal, 11,030 ft.
2 mi. E Sucluc, 4640 ft.
5 1/2 mi. N and 1 mi. E Chiantla, 9700 ft.
3 mi. NE Nebaj, 6150 ft.
1 mi. NE Nebaj, 6000 ft.
5 mi. E and 1 mi. N Huehuetenango, 7000 ft.
11 1/2 mi. S and 3 1/2 mi. E Coban, 4925 feet
2 mi. W Purulha, 4950 ft.
4 1/2 mi. N Salamá, 5000 ft.
1/2 mi. N and 1 mi. E Salamá, 3200 ft.
1/4 mi. S Calel, 6500 ft.
1 mi. S Rabinal, 3450 ft.
5 mi. N and 1 mi. W El Chol, 6000 ft. 15° N, 90° 30' W
3 1/4 mi. N and 3/4 mi. E San Marcos, 9500 ft.
Rio Grande, 3 mi. S and 1 1/2 mi. W Granados, 2000 ft.
10 mi. E and 4 mi. S Totonicapán, 10,000 ft.
Bajapita, 250 ft
Verderango, Atetlan Lake, 5173 ft.
1 1/2 mi. E Guatemala City, approx 5400 ft.
4 mi S Guatemala City, 4700 ft
5 mi. S Guatemala City, 4950 ft.

6 mi. S Guatemala City, 4680 ft.
7 mi. S and 6 mi. E Guatemala City, 5800 ft.
3 mi. W. Mazatenango, 1280 ft.
1/2 mi. E Yepocapa, 4300 ft.
3/4 mi. E and 1 mi. S Yepocapa, 4280 ft.
Amatitlan Lake, 3880 ft.
5 mi. N Cuelapa, approx. 4000 ft.
2 mi. N and 1 mi. W Cuilapa, 2980 ft.
4 mi. W Escuentla, 880 ft.
2 1/2 mi. W and 2 1/4 mi. N San Cristóbal, 2900 ft.
2 mi. SE San Cristóbal, 2950 ft., El Salvador
4 mi. E Champerico, 10 ft.
2 mi. SE Champerico, 0 ft
La Gomera, approx. 990 ft.
9 mi. N and 3 mi. W San Jose, approx. 70 ft.
5 mi. S Chiquimulilla, 200 ft.
1/4 mi. E Otacingo, approx. 50 ft.
2 3/10 mi. W and 1/4 mi. N Iztapa, 5 ft.
5 mi. N Astillero, approx. 80 ft.
Astillero, 25 ft.
Chiquimulilla Canal, 3 mi. S Astillero, 0 ft.

material collected

1162 skins (mammal)
1218 skulls (")
106 skeletons (")
2 lower jaws (")
2 pr. antlers
217 bird skeletons
1 snake
1 lot invertebrates
150 mollusca

mammals collected in Guatemala

Philander opossum pallidus	
Didelphus marsupialis tabascensis	
Marmosa canescens canescens	
" mexicana mexicana	
Sorex saussurei goldmani	
Cryptotis goodwini	
Saccopteryx bilineata ✓	Greater white-lined Bat
Trachops cirrhosus coffini	Fringed-lipped Bat
Peropteryx macrotis macrotis ✓	Lesser Doglike Bat
Balantiopteryx io ✓	Thomas' Sac-winged Bat
Pteronotus psilotis	Dobson's mustached Bat
Pteronotus parnellii fuscus	Parnell's mustached Bat
Pteronotus davyi fulvus	Davy's Naked-backed Bat
Pteronotus suapurensis	Suapuré Naked-backed Bat
Mormoops megalophylla megalophylla	Peter's Leaf-chinned Bat
Lonchorhina aurita aurita	Tomes' Long-eared Bat
Phyllostomus discolor verrucosus	Pale Spear-nosed Bat
Glossophaga soricina leachi	Pallas' Long-tongued Bat
Sturnira lilium commissarisi	Gardner's Long-tongued Bat
Sturnira lilium parvidens	Yellow-shouldered Bat
Carollia subrufa	Hahn's Short-tailed Bat
Uroderma bilobatum bilobatum	Tent-making Bat
Artibeus lituratus palmarum	Big Fruit-eating Bat
artibeus lituratus yucatanicus	Jamaican Fruit-eating Bat
Artibeus phaeotis nanus	Dwarf Fruit-eating Bat
Artibeus toltecus	Toltec Fruit-eating Bat
Natalus stramineus saturatus	Funnel-eared Bat
Eptesicus fuscus miradorensis	Big Brown Bat
Rhogeëssa tumida tumida	Little yellow Bat
Molossus ater nigricans	Black mastiff Bat
Tamandua tetradactyla mexicana	
Dasypus novemcinctus fenestratus	
Sylvilagus floridanus chiapensis	
Sciurus variegatoides goldmani	
" deppei deppei	
" griseoflavus griseoflavus	
Liomys crispus selasus	
" crispus (sub sp.?)	
" salvini salvini	
Heteromys desmarestianus desmarestianus	

Oryzomys alfaroi angusticeps
Oryzomys Cousei (Sub-sp.?)
" Cousei Cousei
" flox fulvescens fulvescens
Ototylomys phyllotis guatemalae
Ototylomys (sp.?)
Reithrodontomys sumichrasti dorsalis
" microdon microdon
" mexicanus howelli
" fulvescens chiapensis
" gracilis gracilis
" mexicanus orizus
" gracilis anthonyi
" tenuirostris
Peromyscus mexicanus gymnotis
" mexicanus (sub. sp.?)
" mexicanus saturatis
" guatemalensis guatemalensis
" boylii levipes
" hondurensis
Baiomys musculus griescens
" " nigrescens
Scotinomys teguina teguina
Sigmodon hispidus saturatus
" hispidus zanjonensis
" " griseus
Microtus guatemalensis guatemalensis
" gualemalensis (sub. sp.?)
Rattus rattus
Mus musculus
Coendou mexicanus mexicanus
Dasyprocta punctata Chiapensis
Nasua narica isthmica
Potos flavus campechensis
Mephitis macroura macroura
Felis pardalis pardalis
Cuniculus paca
Pecari angulatus
Odocoileus virginianus truei

79 species + subspecies

Birds collected in Gualemala

Podilymbus podiceps podiceps
Pelecanus occidentalis Californicus
Phalacrocorax olivaceus mexicanus
Anhinga anhinga
Fregata magnfecens rothschildi
Butorides virescens virescens
Heferocnus cabansii
Cochlearius cochlearius zeledoni
Crypturella soui mesorythrus
cinnamomeus cinnamomeus
Ajaia ajaia
Carina maschata
Buteo magnirostris
Geranospiza nigra nigra
Caracara cheriway auduboni
Crax rubra rubra
Ortalis vetula leucogastera
Quail
Agriocharis accellata
Laterallus ruber ruber
Jacana spinosa spinosa
Columba speciosa
Scardafella inca
Leptotila verreauxi bongsi
Aratinga astec astec
" canicularis canicularis
Brotogeris jugularis jugularis
Amazona albifrons albifrons
" ochrocephala auro-palliata
Piniya cayana thermophila
Crotophaga sulcirostris sulcirostris
Geococcyx velox pallida
Colaptes cafer mexicanoides
Dryocopus lineatus similis
Centurus aurifrons santaecruzi
Phloeoceastes guatemalensis guatemalensis
Sittasomus griseicapillus sylvioides
Xiphocolaptes promicropirhynchus emigrans
Xiphorhynchus flavigaster eburneirostris
Lepidocolaptes affinis affinis

Synallaxis erythrothorax
Thamnophilus doliatus mexicanus
Platyrpsaris aglaiae sumichrasti
Chiroxiphia linearis
Muscivora forficata
Pitangus sulphuratus derbianus
Todirostrum cinereum finitimum
Calocitta formosa azurea
Psilorhinus mexicanus cyanogenys
Cissilopha melanocyaneus melanocyaneus
Aphelocoma unicolor coelestris
Cyanocitta stelleri ridgwayi
Campylorhynchus rufinucha castaneus
Icterus pectoralis anthonyi
" spurrnus
Cassidix mexicanus mexicanus
Amblycercus holosericeus holosericeus
Thryothorus rufalbus rufalbus
Turdus rufitorques
" grayi umbrinus
" ignobilis differens
Catharus occidentalis alticola
Ptilogonys cinereus molybdophanes
Cyclarhis gujanensis nicaraguae
Cyanerpes cyaneus carneipes
Mniotilla varia
Dendroica townsendii
Icteria virens virens
Myioborus miniatus intermedius
Ergaticus ruber versicolor
Basileuterus rufifrons rufifrons
Thraupis virens diaconus
Habia rubica rubicoides
" gutturalis wetmorei
" littoralis
Saltator coerulescens hesperis
Pheucticus melanocephalus maculatus
Passerina cyanea
" ciris pallidus
Atlapetes brunneinucha brunneinucha
Arremonops conirostris chloronotus

Melozone kieneri brachyatum
Arremophila rufescens gigas
Junco phaenatus alticola
Otus kennicottii
Bubo virginianus mayensis
Pulsatrix perspicillata saturata
Nyctidromus albicollis albicollis
Amazilia beryllina devillei
Trogon mexicanus mexicanus
" elegans elegans
" violaceus braccatus
Ceryle torquata torquata
" alcyon alcyon
Aspatha gularis
Electron carinatus carinatus
Eumomota superciliosa hispartida
Momotus momota lessonii
Galbula ruficauda melanogenia
Notharcus macrorhynchos hyperrynchus
Rhamphastos sulphuratus sulfuratus

100 species & subspecies

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Guatemala City, Guatemala
April 7, 1955
map used to locate localities (marked in red dots)

92º

91º30'

18º

17º30'

ALTURAS

Metros	VOLCANES	CERROS	LAGUNAS	Metros
4.300				4.300
4.200	Tajumulco 4211 m			4.200
4.100				4.100
4.000	Fécaná 4064			4.000
3.900	Acatenango 3960			3.900
3.800	Fuego 3835			3.800
3.700	Sta María 3768			3.700
3.600	Agua 3752			3.600
3.500				3.500
3.400				3.400
3.300	Atitlán 3525			3.300
3.200				3.200
3.100	Cerro Quemado 3172			3.100
3.000	Tolimán 3153			3.000
2.900	San Pedro 3024			2.900
2.800				2.800
2.700	Lacandón 2748			2.700
2.600				2.600
2.500	Pacaya 2544			2.500
2.400				2.400
2.300				2.300
2.200	Jumay 2200			2.200
2.100				2.100
2.000				2.000
1.900	Sacchitán 2042			1.900
1.800	Jumaitepeque 1810			1.800
1.700	Chingo 1780			1.700
1.600	Moyuta 1684			1.600
1.500	Ipala 1670			1.500
1.400				1.400
1.300	Pueblo Viejo 1300			1.300
1.200				1.200
1.100				1.100
1.000	Amayo 1050			1.000
900				900
800				800
700				700
600				600
500				500
400				400
300				300
200				200
100				100
0				0

	CERROS	LAGUNAS
	Cotzic 3620	
	Serchil 3606	
	Santo Tomás 3505	
	Cuilco 3493	
	Ovichó 3402	
	Chemal 3370	
	Calel 3290	
	Tecpán	
	Barrios 2930	
	Santa Clara 2841	
	San Francisco 2840	
	Sta María 2623	
	Sta Eulalia 2620	
	Xucanel 2550	
	San Lucas	
	San Pedro 2190 2114	
	Guacamayas 2166	
	Tahuacal 2025	
	Cerro de Oro 1894	
	El Choi 1870	
	Cruz Quemada 1692	
	Flores 1598	
	Morán 1526	
	Paz 1478	
	Siliún 1445	
	Gosete 1424	
	Viboras 1297	
	Buenavista 1204	
	Monterrico 1320	
	Chauvite 1170	
	Ticanlú 773	
	San Isidro 741	
		Calderas 1780
		Atitlán 1560
		Ipala 1510
		Ayarza 1450
		Amatitlán 1245
		Pino 1040
		Salut 530
		Guija 470
		Chipechech 410
		Yaxhá 130
		Petén-Itzá 133
		Izabal 10
		Petexbatum 95

MEXICO

Río Usumacinta

El Limón

Cedrillo

Río S

Nuev

Guanal

La Venecia.

ESTAPILLA.

Revanch

Cabecera.

Concepción

Matadero.

TENOSIQUE.

A.

El Recreo.

Santa

Polevá

Al

La Horqueta.

Lag. de Cobá

Cobá.

San Carlos.

El Chinal.

Tiucal.

San José.

Pictun.

Xotal.

GUATEMALA

550407-133

91º

90º30'

M E X

S

San Ramón.
Mundo Nuevo.
Río Limoncillal
Laguna Misteriosa
Laguna Escondida
Sasi
Batea
Arroyo Carrizal
El Limón.
Dana.
Río Julubal
Río Candelaria
Vértice de Campeche
Cº Limón
Cº del Hule
Río Paixbán
Paixbán.
Ciénaga de Paixbán
Batcab
Río Nuevo León
Isla del Cuervo
Tumbo.
Arroyo Xán
La Resaca.
Arroyo La Ventura
Río Escondido o Chiquero
Mameya
Elena.
Ar. Cucufate
Río San Pedro
Arroyo Chocop
Ximil.
Cabrito
B.

550407-134

90º | 89º30' | 89º

I C A N O

Jacalmaas.
Chacambacal.
Jacalobispo.
Jacalzin.
Chumbaas.
CHICHANHA
Jacalzizin.
ICAICHE.
Branch
lhá.
Los Tigres.
Aguada Unión
Marihuana.
Altamira.
Villahermosa.
Monterrey.
La Fama.
San Felipe.
Discordia.
Balakbal.
Uxul.
Puerto México.
Santo Tomás.
Chumbec.
La Gloria.
Alami.
Ruinas Altas.
Santa Lucía.
La Bandera.
Chilar.
Naachtún.
El Mirador.
Bambonal.
Laguna San Miguel
San Miguel
Retiro.
La Muralla.
Desquite.
Tintal.
Las Anima
San Francisco.
Triunfo
Pantano.
Enrique Torres.
La Unión.
Laguna Torres
Zacatal.
Boleta.
La Ventana.
San Francisco.
La Gorda
El Cántaro
Paraíso.
Dos Hermanos.
Nanzal
Tintal.
Lechugal
Chilar.
Santa Mónica.
Minas de Oro.
El Caldero.
La Milpa.
Nacimiento.
Lechugal.
Sibal.
El Palo.
Arroyo.
Salto.
Santa Isabel.
La Gloria.
Arroyo Santa Isabel
Uaxactún
Camerón.
Tintal.
Tialipa.
Tolla.
Santa Rosa.
San Blas.
La Lucha.
Santa Rosa.
La Miseria.
Balanza.
Juventud.
Don Juan.
La Palma.
El Cambio.
La Manteca.
Las Pocitas.
La Sierra.
Esperanza
Zapote.
Los Achiotes.
Canjá.
Victoria.
Achiote.
Bejucal.
Carmelita.
Charco.
Agua Salada.
Isla.
Uaxactún
Juventud.
Reforma.
Aguada Verde
Milpa
Unión.
Muxanal.
Pensamiento
Río Azul
Santa María
Arroyo Seco
Aguas Turbias.
Vértice de Belice o Aguas Turbias
Naranjo.
Chunhuas.
Pujil.
Río Azul
Río Bravo
Quam Hill.
Joyac.
Góngora
Bajo de Azúcar
Danta.
Jahuactal
Muerto.
Chochkitán.
Río Ixcán
Miseria.
Hormiguero.
Porvenir.
Saptán.
Infierno.
La Honradez.
La Gloria.
Hato Quemado.
La Cal.
Xmakabatún.
Petipet.
Xultún.
Salomán.
Centenario.
Rumonal
Desván.
La Machina
Hato de Uria
Ixcanhrio.
Cubeta.
Santa María.
Hato de Jonny.
Ojo de Agua.
San Román.
La Pita.
San Máximo.
San Clemente.
Triunfo.
Aguila.
Caldero.
Río Holmul
Yaloch Viejo
Pensamiento
Candelaria.
Corozal
Lechugal
La Portia
La Pita
Tasital.
Naranjo.
Laguna Colorado
Colorado.
Sibal.
Xaxe Venic.
Bullet Tree
Kaxuinic.
Río Mendoza
Naranjal.
San José.
Isnoca
Pedregal
Limón
C.

550407-135

88°30'

88°

18°

17°30'

CHETUMAL
Conejo
Santa Rosa.
Laguna Chen Chuc
Punta Calentura
Porvenir.
Fraguas.
Sac Xaan
Palmar
Santa Rita
BAHIA DE CHETUMAL
San Andrés
COROZAL
Estévez
Pachchacán
BAHIA DE RIO NUEVO
Rocky Point
El Chilar
Douglas
Warree Point
Sarteneja.
Rio Hondo
BIGTH
LOWRY'S
San Fernando
Lowrie New Town.
Miguel
Santa Cruz
Caledonia
Cudjoe Lagoon
Barracouta Pond
Shipster Lagoon
Progreso
Chan Bank
San Antonio.
Cacao
S. Esteban
Lowry's Lag.
San Francisco Botes
Cabbage Ck.
Little Belice.
ORANGE WALK
Calderas.
Africa
Millers Right
Freshwater Creek
Faber's Lagoon
Deer Cay
Ar. Agua Blanca
Tower Hill
Griffith's Ck
Agua Blanca
Hobson's Choice
Savanna Lag.
Sweb Cay
Blackadore Cay
Richmond
Water Bank.
Rio Nuevo
Isla
Guinea Grass
Guana Cay
Gold Button Ck.
Pineridge.
Mosquito Cay
Savanna Cay
Corozalito.
Shipyard
Hato Torre.
Bulk Head
Dos Bocas.
Fireburn
Achiote.
Bomba Bank
Maskalls Bank
River
Northern
Spanish Falls
Dry Falls
Water Bank
Cangrejo Cay
Revenge Lagoon
Cutter's Lagoon
Driving Camp.
Back Landing
Northern Lagoon
Cacao Ck.
Indian Church
Tigre Bank
San Carlos
Burnham Hill
Western Lagoon
Midwinter's Lagoon
Cabbage Ridge.
Corker Cay
Booth's River
Mexico Lagoon
Hill Bank o
New River Lagoon
Polly's Lagoon
Chapel Cay
Encuentro.
Southern Lagoon
Jones.
Little Rocky Point
Hick's Cays
Lime Walk
Salt Ck
Limonal.
Baker.
Long Cay
Paslow Creek
Governor's Ck.
Hill Bank
Crawl Catcher Lagoon
Mussel Ck.
Big Burrel
Bamboo Patch.
Rangoat Creek
Holotonitch
Isabella
Boon Town.
Reid's Lagoon
Rider's Cay
Rancho Dolores.
Bermudian Landing
Scotland
Cook's Lagoon
Haulover.
Two Head Cabbage
Mucklehany Lagoon
Sibún Swamp
Drowned Cays
Faber's Lagoon
O'Brien Bank.
BELICE
Rogues Point
Gallows Point
Cox Lagoon
Hector Ck
Monkey Run
Swiming Landing.
SIBUN BIGTH
Cocquericot.
Hope River
Labouring Ck
Butcher Burn
Curlew Cay
Paslow's Falls
English Ck.
Water Cay
White Water Ck.
Irish Creek
Jackson Ck.
Hicate Hole.
Geoff Cay

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MAPA DE LA REPUBLICA DE GUATEMALA

COMPILADO POR
FEDERICO P. DE TORROELLA
INGENIERO CIVIL

1948

17º
16º 30'
16º

COMITAN
Yocnabaj.
Quistaj.
Naltic
El Valle
Río Comitán
San Marcos.
Santo Tomás.
El Rosario
Santa María.
La Blanca.
San Rafael
Laguna Tepancoapán
Yalmutz.
TRINITARIA.
San Francisco
Santa Rita
Jotor
San José
Montebello.
Lag. Pojop
Tziscao.
San Lázaro.
Santiago
Vértice Santiago
Panorama.
Santo Domingo.
Rosario.
Marías
Cº Ixbul
Quetzal.
Concha
Yolapox
Corral de Piedra.
Gracias a Dios.
Trinidad.
Lag. Yolnabaj
San José
Ajaloncú
Azantic.
San Francisco.
Queen Santo.
Soste.
Mucansul
L. Yalajmetet
Bulej.
Santa Ana
San Vicente
Piedra Redonda
Chaculá.
Yalambojoch
Yolquén
San Lucas
Pedregal.
Río Jataté
Tzendales.
La Constancia.
San Antonio.
El Triunfo.
Río Zapotal
El Retiro.
Río Santo Domingo
Río San Juan
Ar. Seco
Hormiguero
Río Azul
Cº Esperanza
Yisquisis.
Yxcansa.
Miraderc.
Chaquenal.
Chaquenalito.
El Triunfo.
Río Yich
Pajón
Yxquisis.
Río Cristóbal
Ar. Tempestad
Ar. Pie
El Retiro.
ro de Tepexco
Raudal El Baluarte
Vértice Usumacinta
Tres Champas.
Río Chocolá
Ar. Porvenir
El Porvenir
Ar. Seco
Piedras
Raudal El Porvenir
Chocolá.
Caobano
Río Budsilhá
Budsilhá
Cayo Venado
El Granizo
Champa Larga
La Mar
Lancanjá

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San Claudio.
Dio de Agua.
El Sayah.
El Copo.
Santa Clara.
Kantús.
Progreso.
Callejones.
Naranjo
Chapulá
Cabeza.
Providencia.
Porvenir.
Santa Rita.
Resguardo.
Mactún.
San Pedro.
Chocop
Río San Pedro Mártir
Tampeña.
Estero Grande
Campamento.
Desempeño.
Aguada
San Juán
Batún
Paso San Antonio.
Salchiché.
Paso Caballos.
Jobalché.
Laguna Agua Dulce
Sacluc
Laguna Larga
Caobal.
Julac.
Lag. San Isidro
El Repasto.
Arroyo.
Negras.
Horqueta.
Xotal.
La Pita
San Venancio
Valpino.
Serranías
La Pava
La Gloria
A Pie Lagarto
A Pié de Gallo
Texcoco
Desempeño.
Ar. del Sol
Santa María
Corozal.
Co Mirador
Aguada de Reyes.
Co Mójoc
Yastchilán.
Río Yastchilán
Lag. Yeso
87 Laguna Perdida.
Laguna Perdida
Ar. Caribe
Orizaba.
Ar. de La Luna
370 Laguna de la Cruz
Poza Lagarto
Piedra Nemegue
Chicozapote
Raudal de Anaité
Playa Alta
Salvamento.
Río Usumacinta
Anaité.
Chotal.
Ar. Yaxchilán
318 Limón
Dolores.
350
San José.
363
Bocut
Lag. Bolonchac
Lag. San Joaquín
El Sotz 186
Lag. Sotz
Lag. Guacamaya
L. San Diego
Tiquinaba.
Lag. Canyá
258 Canya
San Diego
Itsinté.
Co Colorado
San Pablo
Yaxchilán.
Menché.
Tres Marías
Ar. Anaité
Lacanjá
Caribal Cerón
Ar. Balón
Agua Azul
El Porvenir.
La Miseria.
Ar. Agua Azul
San Nicolás.
Egipto.
La Lucha
El Rebumbio.
Río del Cedro
Lago Lacanjá
Río Lacanjá
Ar. El Machete
El Chorro.
La Constancia
Polol.
Santa Te
Boca del Mon
San Juan
Paso Subín
El Tanay.
Ar. Puclé
Ar. El Porvenir
Ar. El Puch
Ar. Ixtumelá
Río del Subín
La Bolsa
San Lorenzo
Nueva Guatemala
Ar. Caribe
Tres Naciones
Caribal
A Sta Rosa
Santa Rosa
Ar Ixcoch
Santa Rosita
Lag. Itzá
El Curro
Florida
Unión.
Aguas Calientes.
Actéal
San Juan
Acul.
Río Acul
L. San Juan
Ar. Yalcachimbé
Paso Real.
Lag. Comixtún.
Comixtún
Pasión
SAN ANCHE.
Retiro
Paso Santa Cruz.
Ar Aita Gracia
Nueva Esperanza.
Ar Aguila
Repasto.
Victoria
Oaxaca
Pabellón.
Esperanza
Trapiche
Plancha de Piedra
Caribe.
Cedro.
Ar. Cuz
El Cedro.
Lo Veremos.
Santa Rosa.
Pico de Oro.
Playa Ya lo veremos
Reforma.
Victoria.
Reforma
Petexbatún.
Lago de Petexbatún
Río Agua Verde
Río Chixoy
Río San Román
Log. Ineco
184 Chapayal.
Ar. Rompido
Delicias.
Sekantutz.
Caribe.
Ar. Caribe
Ar. Yaaltutú
Ar. Canutz
Zacatal.
Arroyo Las Delicias
Río Jatate
Lomita Escondida
Río Ixcán
Africa.
Río Chajul
Río Cantalac
Caniyá
Caniyá Viejo.
Buenavista
Salinas.
Victoria.
Río Yalmalchac
Santa Elena
San Francisco.
Vértice Chixoy
Quimalá.
Santa María.
Río San Román
Río Chinajá
Chinajá
Sachiquil.
Caribal Quin.
La Unión.
La Constancia.
Río Tzendales
Río Lacantún
Isla Pico de Loro
Isla del Chayotal
I. del Jolchero
Tres Islas
F.

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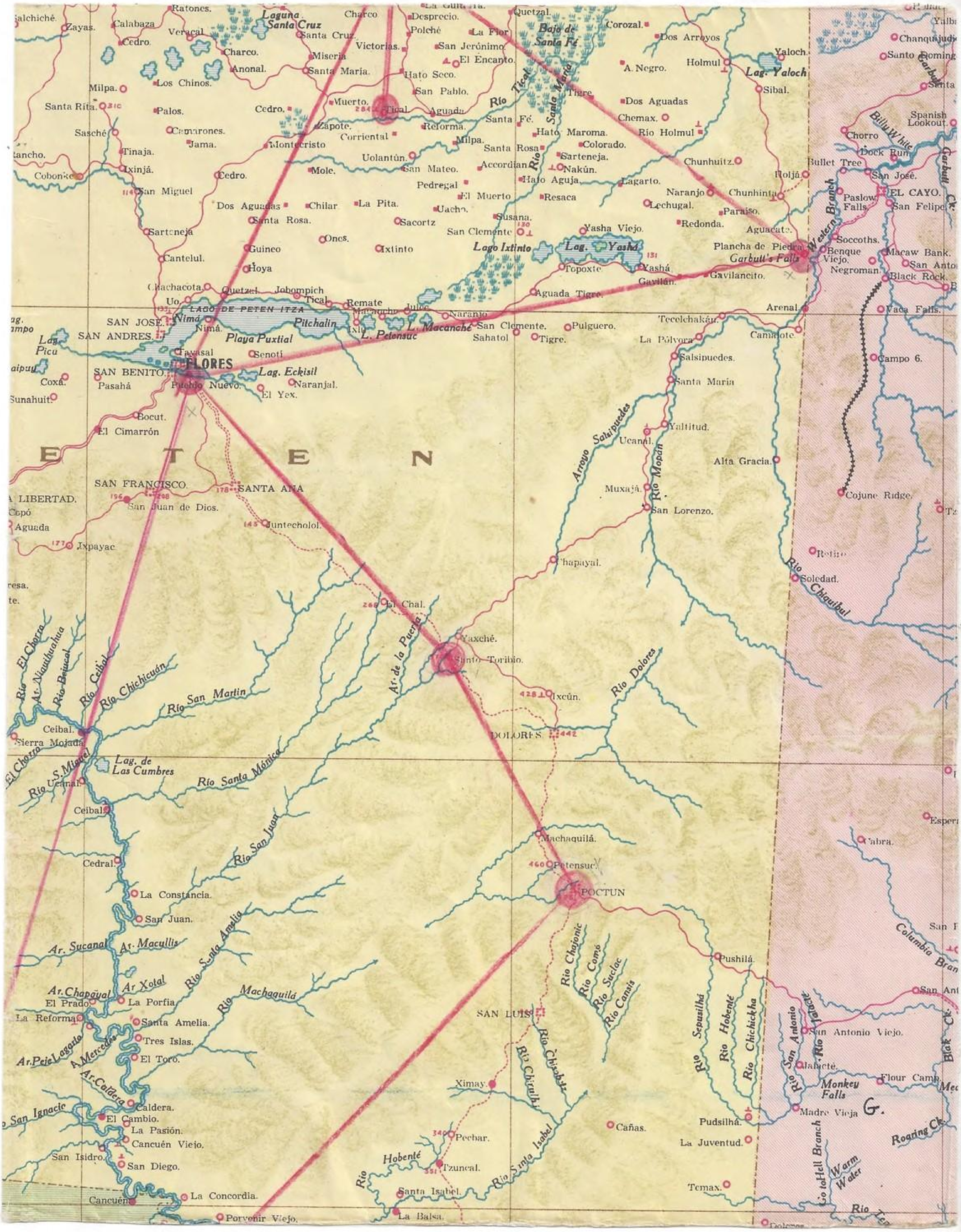
Ratones.
Laguna Santa Cruz
Charco
Desprecio.
Quetzal.
Zayas.
Calabaza
Cedro.
Veracal
Santa Cruz.
Polché
La Flor
Bajo de Santa Fé
Corozal.
Dos Arroyos
Charco.
Victorias.
San Jerónimo.
Miseria
El Encanto.
Yaloch.
Anonal.
Santa María.
Hato Seco.
A. Negro.
Holmul
Lag. Yaloch
Chanquijudio
Santo Domingo
Los Chinos.
San Pablo.
Sibal.
Milpa.
Tigre.
Dos Aguadas
Santa Rita.
Palos.
Cedro.
Muerto.
Tical.
Aguada
Rio Tical
Santa Maria
Santa Fé.
Chemax.
Río Holmul
Spanish Lookout.
Billy White
Sasché
Camarones.
Zapote.
Reforma.
Corriental
Hato Maroma.
Chorro
Jama.
Montecristo
Milpa.
Santa Rosa
Colorado.
Dock Run
Tinaja.
Uolantún.
Accordian
Rio
Sarteneja.
Nakún.
Chunhuitz.
Bullet Tree
San José.
Garbutt Ck.
Ixinjá.
Cobonke
Mole.
San Mateo.
Pedregal
Hato Aguja.
Lagarto.
Roljá.
San Miguel
El Muerto
Resaca
Naranjo
Chunhinta
Western Branch
Paslow Falls.
EL CAYO.
San Felipe
Dos Aguadas
Chilar
La Pita.
Uacho.
Lechugal.
Paraiso.
Santa Rosa.
Sacortz
Susana.
Redonda.
San Clemente
Yasha Viejo.
Aguacate.
Sarteneja
Ones.
Soccoths.
Guineo
Ixtinto
Lago Ixtinto
Lag. Yashá
Plancha de Piedra.
Benque Viejo.
Macaw Bank.
Garbutt's Falls
Cantelul.
San Antonio
Hoya
Topoxte
Yashá.
Negroman.
Black Rock.
Gavilán.
Gavilancito.
Chachacota.
Quetzel.
Jobompich
Aguada Tigre.
Tical
Uo.
Remate
LAGO DE PETEN ITZA
Macanche
Julec
Arenal.
Vaca Falls.
Nimá
Naranjo
SAN JOSE.
Nimá.
Pitchalin
Ixlú
L. Macanché
San Clemente.
Pulguero.
Tecelchakán.
SAN ANDRES.
Playa Puxtial
L. Petensuc
Sahatol
Tigre.
La Pólvora
Camalote.
Lag. Picu
Tayasal
Senoti
FLORES
Salsipuedes.
Campo 6.
SAN BENITO.
Lag. Eckisil
Coxá.
Pasahá
Pueblo Nuevo.
Naranjal.
El Yex.
Santa María
Sunahuit.
Bocut.
El Cimarrón
Yaltitud.
Arroyo Salsipuedes
Ucanal.
Río Mopán
E T E N
Alta Gracia.
SAN FRANCISCO.
Muxajá.
SANTA ANA
Cojune Ridge.
LIBERTAD.
San Juan de Dios.
San Lorenzo.
Copó
Aguada
Juntecholol.
Ixpayac
Chapayal.
Retiro
Soledad.
Río Chiquibul
El Chal.
Río El Chorro
Ar. Niquihuahua
Río Bejucal
Ar. de la Puerta
Yaxché.
Santo Toribio.
Río Ceibal
Río Chichicuán
Río San Martín
Río Dolores
Ixcún.
Ceibal.
Sierra Mojada
DOLORES.
El Chorro
Lag. de Las Cumbres
Río S. Miguel
Río Santa Mónica
Ucanal.
Ceibal.
Esperanza
Cabra.
Río San Juan
Machaquilá.
Cedral.
Petensuc.
La Constancia.
POCTUN
San Juan.
Columbia Branch
Ar. Sucanal
Ar. Macullis
Río Santa Amelia
Pushilá.
Río Chajonic
Río Comó
Río Suclac
Río Cansis
Ar. Chapayal
Ar. Xotal
Río Machaquilá
El Prado.
La Porfia
La Reforma
SAN LUIS
Santa Amelia.
Río Sepusilhá
Río Hobenté
Río Chichickha
Río San Antonio
Río Jalacté
San Antonio Viejo.
Ar. Peje Lagarto
A. Mercedes
Tres Islas.
El Toro.
Río Chirulhá
Río Chiquibitz
Jalacté.
Flour Camp.
Ar. Caldera
Ximay.
Monkey Falls
Caldera.
Madre Vieja
Río San Ignacio
El Cambio.
La Pasión.
Pudsilhá.
Cañas.
Cancuén Viejo.
Pecbar.
La Juventud.
Roaring Ck.
San Isidro.
San Diego.
Río Hobenté
Tzuncal.
Río Santa Isabel
Go to Hell Branch
Warm Water
Cancuén
La Concordia.
Santa Isabel.
Temax.
Porvenir Viejo.
La Balsa.
Río Temash
G.

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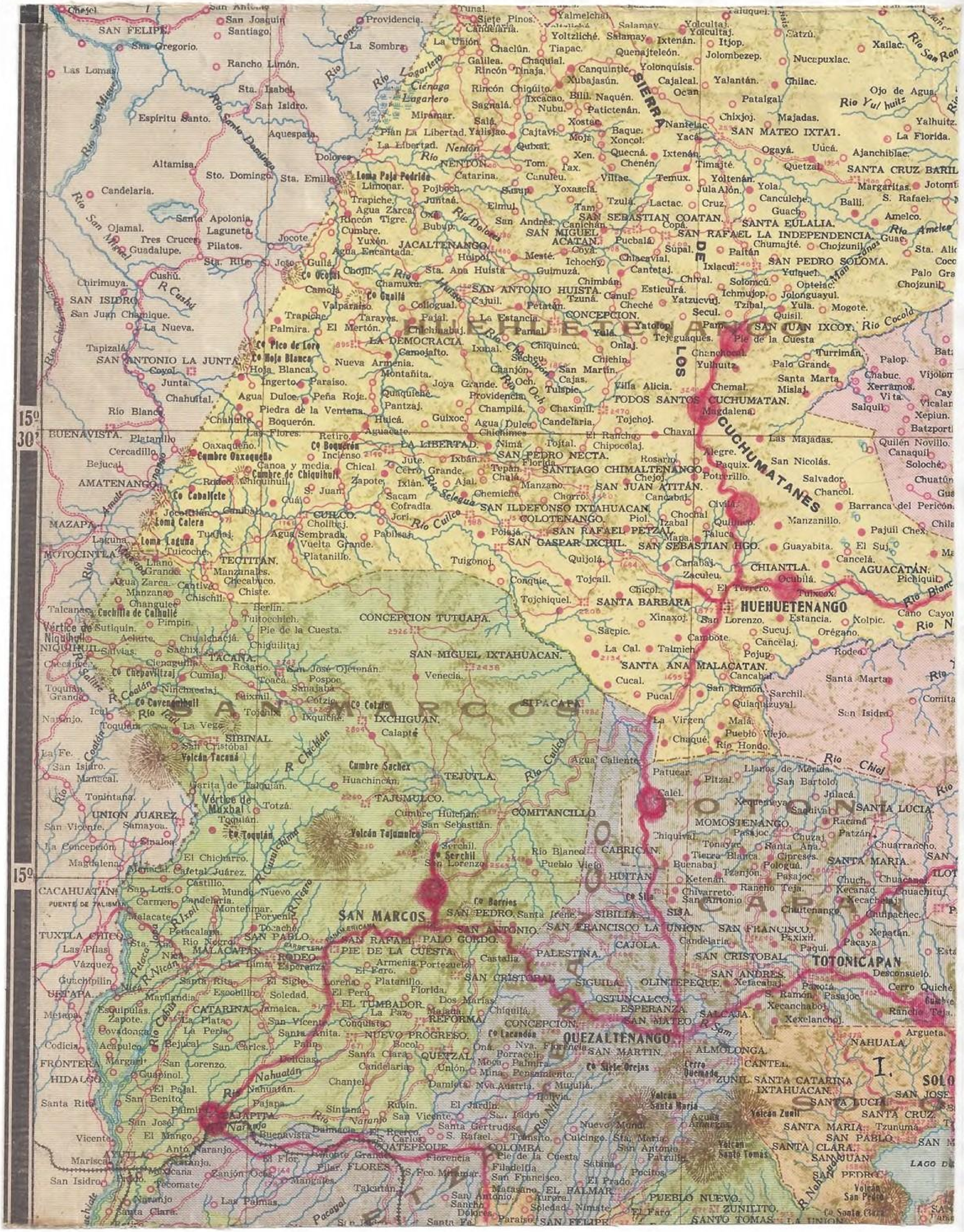
Rápidos Meditación
Rockdondo.
Churchyard
Never Delay.
San Pedro.
Banana Bank.
Mt. Pleasant
Nancy Porter Ck.
Teresa
Orange Walk
Benque Ceiba
Guana Ck.
Old Jim.
Hog Style.
Mt. Hope
Society Hall
Branch
Caves
Barton Creek
Roaring Creek
Monkey Ck.
Dark Caves
Ck.
Indian
Silver Ck.
St. Herman
Ligth Caves
Right Hand
Left Branch
Manatee River
Baldy Ben.
Baldy Sibun.
North Branch
Middelesex
South Branch
Guatemala Bank.
Pico Fowler
Rubber Camp.
Pico Moloney
B E L I C E
min Max.
Pico Altán
1016
Pico Victoria
1233
Pico Jeriningham
MONTANAS
Pico Bellamy
912
COCKSCOMB
Stopper
MAYA
Pico Wilson
990
Rio Frio
MONTANA
Cow Pen.
Bladen Branch
Hopital.
Indian Ck.
Hell Gate
Deep River
Hope Ck.
Freshwater Ck.
Monkey River
Paddy's Bluff
Harding Ck.
Pedro
Lubaantun.
Golden Stream
Laguna Icacos
Middle River
Big Hill
318
Sta. Maria Bank
Doublin Ck.
Seven Ck.
Seven Hills
PUERTO HONDURAS
Jacinto Ck.
Rio Grande
Pork and Doughboy Point
Sickle Cay
Stuart Cay
Meditación Falls
PUNTA GORDA
Amado Ck.
Punta Naranja
Punta Mother
Barranco.
Wagner
Freshwater
North Lagoon
Sapodilla
Cornhouse Ck.
Southern Lagoon
Plantation
Jenkins
Quamina Ck.
Mangrove Ck.
Mullins
Mullins Creek
Salt
Colson Point
Big Ck
Hill Bank
Melinda.
First Branch
False Branch
Middle Bank.
STANN CREEK.
Punta Iguana
Silk Grass Creek
New Town
COMMERCE BIGTH
Sittee
Sittee River
Kendal.
Freetown.
Punta Sittee
Sarpón.
Regalia.
All Pines.
Blue Creek
South Stann Creek
Riversdale
Silver Creek
Jonathan Point
Quamina Cay
False Cay
Placentia Lagoon
Seine Bigth.
Runt Point
Lark Cay
Placentia Point
Run Cay
Rio Senis
Harvest Cay
Bougie Cay
Scipio Cay
Laguna Indian Hill
Palmeto Cay
Boni Cay
Rocky Point
Gt. Monkey Cay
Li. Monkey Cay
Punta Negra
Punta Icacos
Bedford's Cay
Mangrove Cays
S. Snake
Moho Cays
Robinson Point
One Man Cay
English Cay
Ransey's Cay
Grennels Cay
Samphire Spot
Midle Long Cay
Long Cay
Gray Fish Cay
Bluefield Range
Rendevouz
Alligator Cays
Colson Cay
Glory Cay
Southern Long Cay
Columbus Cay
Sand Fly Cay
Fly Range
Grass Cay
Garbutt's Cay
Tobacco Cay
Coco Plum Cay
Tobaco Range
Twin Cays
Blue Grand Range
Water Cay
Stewart Cay
Weewee Cay
Ellen Cay
Curlew Cay
Spruce Cay
Norval Cay
Douglas Cay
Elbow Cay
Pelican Cays
Channel Cay
Lagoon Cay
Bush Cay
Corker Sand Bore
Round Cay
Crawl Cay
Tarpurm Cay
Long Cocoa Cay
Gladden Cay
Baker's Rendez ous
Jack's Cay
Wipperi Cay
Button Wodd Cay
Spidder Cay
Cary Cay
S. Moho Cay
Long Cocoa Cays
White Bank
Lit. Water Cay
Hatchet Cay
Laughing Bird Cay
Queen Cay
Shamphir Cay
Round Cay
Pompion Cay
Ranguana Cay
Tom Owens Cay
Seal Cays
N. E. Cay
Grass Cay
Nicolás Cay
Hunting Cay
Low Cay
South Cay
Sapodilla Cay
GOLFO DE HONDURAS
H.
17º
16º 30'
16º

550407-140



SAN FELIPE.
San Gregorio.
Rancho Limón.
Las Lomas.
Río San Miguel
Espíritu Santo.
Sta. Isabel.
San Isidro.
Río Santo Domingo
Aquespala.
Altamisa.
Sto. Domingo.
Sta. Emilia.
Candelaria.
Río San Miguel
Santa Apolonia.
Laguneta.
Ojamal.
Tres Cruces.
Guadalupe.
Pilatos.
Jocote.
Sta. Rita.
S. José.
Chirimuya.
Cushú.
R. Cushú
SAN ISIDRO.
San Juan Chamique.
La Nueva.
Tapizalá.
SAN ANTONIO LA JUNTA.
Coyol.
Junta.
Chahuital.
Río Blanco.
15º 30'
BUENAVISTA.
Platanillo
Cercadillo.
Bejucal.
AMATENANGO.
MAZAPA.
Laguna.
MOTOCINTLA.
Providencia.
La Sombra.
San Joaquín
Santiago.
Dolores.
Loma Paja Podrida
Limonar.
Trapiche.
Agua Zarca.
Rincón Tigre.
Cumbre.
Yuxén.
Agua Encantada.
JACALTENANGO.
Co Ocotal
Camojá.
Co Gualló
Valparaíso.
Trapiche.
Palmira.
El Mertón.
LA DEMOCRACIA.
Camojaíto.
Co Pico de Loro
Co Hoja Blanca
Hoja Blanca.
Nueva Armenia.
Montañita.
Ingerto.
Paraíso.
Agua Dulce.
Peña Roja.
Piedra de la Ventana.
Chahuite.
Boquerón.
Las Flores.
Oaxaqueño.
Cumbre Oaxaqueño
Co Boquerón
Incienso
Canoa y media.
Cumbre de Chiquihuil
Rodeo.
Chiquihuil.
Co Caballete
Loma Calera
Loma Laguna
Tuajaj.
Tuicoche.
TECTITAN.
CUILCO.
Chollitej.
Agua Sembrada.
Vuelta Grande.
Platanillo.
Río Cuilco
Río Selegua
LA LIBERTAD.
Tunal.
Siete Pinos.
Candelaria.
La Unión.
Chaclún.
Galilea.
Rincón Tinaja.
Rincón Chiquito.
Sagnalá.
Miramar.
Plan La Libertad.
La Libertad.
NENTON.
Río Nentón
Yalmelchal.
Yoltzliché.
Salamay.
Ixtenán.
Quenajteleón.
Canquintic.
Xubajasún.
SIERRA DE LOS CUCHUMATANES
Yolcultaj.
Itjop.
Jolombezep.
Yolonquisis.
Cajalcal.
Ocan.
Yalantán.
Chilac.
Patalgal.
Nucapuxlac.
Xailac.
Río San Ramón
Ojo de Agua.
Río Yulhuitz
Chixjoj.
Majadas.
SAN MATEO IXTATAN.
Yalhuitz.
La Florida.
Nantelac.
Yacá.
Ogayá.
Uucá.
Ajanchiblac.
Quetzal.
SANTA CRUZ BARILLAS.
Timajté.
Yoltenán.
Jula Alón.
Yola.
Margaritas.
S. Rafael.
Canculche.
Balli.
Guach.
Amelco.
SAN SEBASTIAN COATAN.
SANTA EULALIA.
SAN MIGUEL ACATAN.
SAN RAFAEL LA INDEPENDENCIA.
Río Amelco
Chumajté.
Chojzunil.
Paitán.
SAN PEDRO SOLOMA.
Río Manzanas
Ixlacuí.
Yulquel.
Solomcú.
Onteiac.
Ichmujop.
Jolonguayul.
Tzibal.
Yula.
Mogote.
Quisil.
Secul.
SAN JUAN IXCOY.
Río Cocolá
Pie de la Cuesta
Tejeguaques.
Turrimán.
Palo Grande.
Santa Marta.
Mislaj.
Chemal.
Yulhuitz.
HUEHUETENANGO
Sta. Ana Huista
SAN ANTONIO HUISTA.
Cajuil.
Petatán.
CONCEPCION.
La Estancia.
Pamal.
Yalá.
Chiquincú.
Onlaj.
Chichin.
Ixmal.
Sacheu.
Chanjón.
San Martín.
Cajas.
Tulspic.
Villa Alicia.
TODOS SANTOS CUCHUMATAN.
Magdalena.
Providencia.
Champilá.
Chaximil.
Candelaria.
Tojchoj.
Guixoc.
Agua Dulce.
Chichimes.
El Rancho.
Chaval.
Nimá.
Tojtal.
Chipocolaj.
SAN PEDRO NECTA.
Rosario.
Alegre.
Paquix.
Potrerillo.
San Nicolás.
Salvador.
Chancol.
SANTIAGO CHIMALTENANGO.
Chejoj.
SAN JUAN ATITAN.
Cancabal.
SAN ILDEFONSO IXTAHUACAN.
COLOTENANGO.
Piol.
Chochal.
Izabal.
Civilá.
Quilinco.
Taluca.
Mapa.
SAN RAFAEL PETZAL.
SAN GASPAR IXCHIL.
SAN SEBASTIAN HGO.
Manzanillo.
Barranca del Pericón.
Pajuil Chex.
Guayabita.
El Suj.
Cancelá.
CHIANTLA.
AGUACATAN.
Pichiquil.
Ocubilá.
Tuixcox.
Zaculeu.
El Terrero.
Canabaj.
Quijolá.
Tuigonoj.
Conquie.
Tojcail.
Chicol.
Tojchiquel.
SANTA BARBARA
Xinaxoj.
San Lorenzo.
Estancia.
Xolpic.
Sucuj.
Orégano.
Cancelaj.
Sacpic.
Cambote.
La Cal.
Talmich.
Pojup.
Rodeo.
SANTA ANA MALACATAN.
Cancabal.
Santa Marta.
Cucal.
San Ramón.
Sarchil.
Pucal.
Quiaquizuyal.
San Isidro.
La Virgen.
Malá.
Pueblo Viejo.
Chaqué.
Río Hondo.
Río Chiol
Palop.
Chabuc.
Xerramos.
Vita.
Salquil.
Vijolom.
Xepiun.
Batzport
Quilén Novillo.
Canaquil.
Soloché.
Chuatún
Río Blanco
Cano Cayot
CONCEPCION TUTUAPA.
SAN MIGUEL IXTAHUACAN.
Venecia.
SIPACAPA
SAN MARCOS
Manzanales.
Checabuco.
Chiste.
Agua Zarca.
Cantiva.
Manzana.
Chischil.
Changulee.
Talcanac.
Cuchilla de Calhuilé
Vértice de Niquihuil
NIQUIHUIL.
Sutiquin.
Pimpin.
Achute.
Berlín.
Tuitocchich.
Pie de la Cuesta.
Chualchacjá.
Chiquilitaj
Salvias.
Sachix.
Cienaguilla.
TACANA.
Rosario.
San José Ojetenán.
Checanté.
Co Chepavitzaj
Cumlaj.
Toacá.
Pospoc
Sanajabá
Toquián Grande.
R. Coatán
Ninchacalaj.
Ixmil.
Cotzic.
Co Cotzic
Co Cavenguihuil
Tojchix.
Ixquiché.
IXCHIGUAN.
Calapté
Naranjo.
Icul.
Río Icul
Toquián.
La Vega.
SIBINAL.
San Cristóbal
Volcán Tacaná
R. Chichán
Cumbre Sachex
Huachincán.
TEJUTLA.
Río Cuilco
Agua Caliente.
La Fe.
San Isidro.
Manecal.
Tonintana.
Garita de Talquián.
Vértice de Muxbal
Totzá.
Toquián.
Co Toquián
TAJUMULCO.
Cumbre Huitchan.
San Sebastián.
COMITANCILLO.
Volcán Tajumulco
UNION JUAREZ.
San Vicente.
Samayoa.
Sinaloa.
La Concepción.
Magdalena.
El Chicharro.
Cafetal Juárez.
Castillo.
Mundo Nuevo.
R. Cusulchima
R. Negro
Serchil.
Co Serchil
San Lorenzo.
Río Blanco.
Pueblo Viejo.
CABRICAN.
HUITAN.
15º
CACAHUATAN.
PUENTE DE TALISMAN
San Luis.
Carmen.
Candelaria.
Montelimar.
Porvenir.
Malacate.
R. Ixpil
Petacalapa.
Tocache.
SAN PABLO.
TUXTLA CHICO.
Sta. Ana.
Río Negro.
MALACATAN.
Las Pilas.
Vázquez.
Nica.
R. Nicán
La Lima.
RODEO.
Esperanza.
Guachipilín.
Santa Rita.
El Siglo.
UNTAPA.
Marilandia.
Escobillo.
Soledad.
Metapa.
Esquipulas.
Zapote.
CATARINA.
Jamaica.
Covadonga.
La Plata.
La Perla.
Río Cabús
San Vicente.
Santa Anita.
Codicia.
Acapulco.
Bejucal.
San Carlos.
Pajín.
FRONTERA HIDALGO.
Margarit
San Lorenzo.
Guapinol.
Delicias.
El Pajal.
Nahuatán
Río Nahuatán.
Santa Rita.
San Benito.
Pajapa.
Palmira.
PAJAPITA.
San José.
El Mango.
Vicente.
Río Naranjo
Buenavista.
Anto. Naranjo.
AYUTLA.
Mariscal.
Naranjo.
Mexicana.
Zanjón Ocho.
San Isidro.
Tecomate.
Naranjo.
Las Palmas.
Santa Clara.
El Flor.
Pilar. FLORES
Mangales.
Talcután.
Pacayal
SAN MARCOS
CARRETERA PANAMERICANA
SAN RAFAEL PALO GORDO.
PIE DE LA CUESTA.
Armenia.
Portezuelo.
El Faro.
Lorena.
Platanillo.
El Perú.
Florida.
EL TUMBADOR.
La Paz.
Dos Marías.
Majada.
REFORMA.
Conquista.
NUEVO PROGRESO.
Bocol.
Santa Clara.
Candelaria.
QUETZAL.
Unión.
Chantel.
Damiota.
Rubín.
Sintana.
San Vicente.
Dalmacia.
El Recreo.
S. Carlos.
COATEPEQUE.
Florencia.
S. Fco. Miramar.
Co Barrios
SAN PEDRO.
Santa Irene.
SIBILIA.
SAN ANTONIO.
SAN FRANCISCO LA UNION.
Castalia.
PALESTINA.
CAJOLA.
SAN CRISTOBAL.
SIGUILA.
OLINTEPEQUE.
Chiquilá.
OSTUNCALCO.
ESPERANZA.
CONCEPCION.
SAN MATEO.
SALCAJA.
Co Lacandón
QUEZALTENANGO.
Ona.
Nva. Florencia
SAN MARTIN.
ALMOLONGA.
Porraceli
Moca.
Palmira.
Co Siete Orejas
Cerro Quemado
Mina.
Pensamiento.
Nva. Austria.
Mujulia.
Bolivia.
El Jardín.
San Isidro
Río Nil
Volcán Santa María
Santa Gertrudis.
Nuevo Mundo.
Aguas Amargas.
S. Rafael.
Tránsito.
Culcingo.
Sta. María.
COLOMBA.
San Antonio.
Volcán Santo Tomás
Pie de la Cuesta.
Patzulín.
Sabina.
Filadelfia.
San Francisco.
Pocitos.
El Prado.
Matasano.
EL PALMAR.
San Antonio.
Aurora.
PUEBLO NUEVO.
Soledad.
Nimate.
Dolores.
El Faro.
ZUNILITO.
Santa Fe.
Paraíso.
SAN FELIPE.
SANTO TOMAS.
LA UNION.
Co Sija
SIJA.
Patucar.
Pitzal.
Llanos de Mérida.
San Bartolo.
Julacá.
Calel.
TOTONICAPAN
Xequemeya.
Saquival.
SANTA LUCIA.
MOMOSTENANGO.
Racaná.
Pasajoc.
Chuzaj.
Patzán.
Chiquival.
Tonayac.
Santa Ana.
Chuarrancho.
Tierra Blanca.
Cipreses.
SANTA MARIA.
Buenabaj.
Pologuá.
Tzanjón.
Pasajoc.
Ketenán.
Chuch.
Chuacanal.
Chivarreto.
Rancho Teja.
Xecanac.
Chuachituj.
San Antonio
Xecachelaj.
Chuitenango.
Chuipachec.
SAN FRANCISCO.
Paxixil.
Xepatán.
Candelaria.
Paqui.
Pacaya.
SAN CRISTOBAL.
SAN ANDRES.
Xetacabaj.
Desconsuelo.
Pacotá.
S. Ramón.
Pasajoc.
Cerro Quiché.
Xecanchaboj.
Rancho Teja.
Xexelanchoj.
R. Sam.
Argueta.
NAHUALA.
CANTEL.
I.
ZUNIL.
SANTA CATARINA IXTAHUACAN.
SOLOLA
SAN JOSE.
Volcán Zunil
SANTA LUCIA.
SANTA CRUZ.
SANTA MARIA.
Tzunumá.
SAN PABLO.
SANTA CLARA.
SAN JUAN.
R. Nahualate
SAN PEDRO.
LAGO DE
Volcán San Pedro
Co Santa Clara

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EL QUICHE
ALTA
BAJA
VERAPAZ
CHIMALTENANGO
SIERRA DE CHAMÁ
MONTAÑA BOLONEB
MONTAÑAS VICHOX
MONTAÑAS COCHAXA
SIERRA DE CHUACÚS
COBÁN
SAN PEDRO CARCHA
SAN JUAN CHAMELCO
SANTA CRUZ VERAPAZ
SAN CRISTOBAL
TACTIC
TAMAHU
PURULHA
SALAMÁ
SAN MIGUEL CHICAJ
RABINAL
CUBULCO
EL CHOL
GRANADOS
CHISEC.
NEBAJ.
CHAJUL.
SAN JUAN COTZAL.
CUNÉN.
SACAPULAS.
SAN MIGUEL USPANTÁN.
SAN ANDRES SAJCABAJA.
SAN PEDRO JOCOPILAS.
SANTA CRUZ DEL QUICHÉ
CHINIQUE.
CHICHE.
ZACUALPA.
JOYABAJ.
SANTO TOMAS CHICHICASTENANGO.
SAN JOSE POAQUIL.
SAN MARTIN JILOTEPEQUE.
SANTA APOLONIA.
COMALAPA.
TECPAN.
SANTA CRUZ BALANYA.
PATZUN.
PATZICIA.
ZARAGOZA.
CHIMALTENANGO
SAN RAIMUNDO
CHUARRANCHO
SAN PEDRO AYAMPUC
SAN JOSE DEL GOLFO.
SAN JUAN SACATEPEQUEZ.
SAN PEDRO SACATEPEQUEZ
CHINAUTLA.
PALENCIA.
SAN ANTONIO LA PAZ
SANARATE.
MORAZÁN.
SUMPANGO.
XENACOJ.
CONCEPCION.
SAN ANDRES.
PANAJACHEL.
SANTA CATARINA.
SAN ANTONIO.
ATITLAN
Rio Tzejá
Rio Xacbal
Rio Cotzal
Rio Copón
Rio Santa Ana
Rio Pagüil
Rio 4 Chorros
Rio Naranjo
R. Lancetillo
Rio Negro
Rio Uspantán
Rio Xequincé
Rio Grande
Rio Icvolay
Rio San Simón
Rio Tual
Rio Sehachichá
Rio Salbá
R. Setzac
Rio Chisap
Rio Salamá
Rio Sumal
Rio Nombre de Dios
R. Tupilaj
Rio San Juan
Rio Motagua
Co Chiotinamit
Co Sanché
Cumbre Ajanté
Tierra Blanca.
San Isidro.
San José.
San Marcos.
San Antonio.
Chailá.
Monte Cristo.
Ixcán.
Patcuxin.
Yulnacap.
Santa Ana Vichox.
Hatmoxán.
Bombaltz.
Cancu.
Chel.
Cajchixlá.
Bisquichimi.
Santa Joaquina.
Canuleu.
Copón.
Chuluncé.
Cancap.
Tziajá.
Patul Chajul.
Xamacán.
Chimlahá.
Calanté.
Chicamán.
Catá.
Chixoy.
Chivaquil.
Chuavancaj.
Pajales.
Belejuh.
San Bartolomé.
Rancho Teja.
Pasajón.
Caniyá.
Caleras.
Chuchuca.
Pasojoc.
Sinaché.
Turbalá.
Agua Caliente
Potrero Viejo.
Cuslá.
Tunajá.
Xeabaj.
Tululché.
Laguna Seca.
Temal.
Pachilip.
Chuaquenún.
Pachalún.
Llanos.
Piedras Blancas.
Tumbadero.
San Francisco.
Boquerón.
La Garrucha.
La Piedad.
Gálvez.
Canejal de Medina
Patzaj.
Magueyes.
San Martin.
Las Canoas.
La Merced
Buenavista
Carretas.
Quimal.
Catalán.
Xejuyú.
La Virgen.
Xexuy.
Rosario.
Naranjo.
Esmeralda.
San Jacinto.
Santa Isabel.
Monzón.
Alameda.
Tejar.
Chichoy.
Santa Elena.
Molino Venecia.
Molino Helvetia.
Ixinche.
Chocoyos.
San Gabriel.
La Sierra.
Chitatul.
San Sebastián Lemoa.
Utatlán.
Santa Rosa Chujuyub.
Chamá.
Chixcuxhá.
Chirusim.
Candelaria.
Sacachito.
Sachaf.
Semocalet.
Sepacheia.
Pecajbá.
Cantoloc.
Yalicar.
Selabaxup.
Tocolá.
Yaxcabnal.
Sibicté.
Tyanzul.
Setzuc.
San Antonio.
Zapote.
Secac.
Bentzul.
Sacacnab.
Sexpens.
Secanón.
Seacté.
Sechilté.
Chancarael.
Sapox.
Aquil.
Sebob.
Sacaranilá.
Rubeltem.
Chimaxap.
Pec Santo.
Sebalán.
Chijob.
Salaun.
Samac.
La Unión.
Sechuhá.
Pampur.
Pampoj.
Pampache.
Pacayas.
Sacaval.
Baleu.
Chichaj.
Tres Cruces.
Chixoy.
San Joaquín.
Chitem.
Tusul.
Chixín.
Santa Ana.
Chichólom.
Santa Rita.
Patal.
Santa Rosa.
El Retiro.
Sto. Tomás.
Unión Barrios.
Llano Largo.
Rincón Judio.
La Cumbre.
Pacalá.
Chocojá.
San Nicolás.
La Paz.
Los Pinos.
Laguna.
Santa Elena.
San Ignacio.
Rincón Grande.
Buenavista.
Cañal de Castro.
El Chile.
Los Ramones.
Las Limas.
Rancho Viejo.
Vainillas.
Palmas.
Las Vigas.
Chuacús.
Llano Grande.
Amates.
Platanitos.
Carrizo.
Portezuelo.
Chical.
Buenavista.
San Diego.
Agua Blanca.
Estoraque.
Jícaro.
Cruce.
San Rafael.
Sabaneta.
Caballero.
Cinaca.
Sta. Cruz.
Sto. Domingo.
San Nicolás.
Agua Caliente.
Suquinay.
Planes.
Concepción.
Sansirisay.
Sampaquisoy.
Terrero.
Sansur.
Chato.
Cintul.
Cabes.
Anonas.
Tizate.
Pacayas.
Santa Paz.
Jocotales.
Tapias.
Lavarreda.
Carmen.
Chillani.
Brigada.
Naranjito.
Palomar.
De Bran.
Mejía.
Primavera.
Carrizalito.
Ramos.
Potosi.
Trojes.
Zet.
Cruz Blanca.
Asunción.
Chuazán.
S. Anto. Pachali.
Carmen.
Nacahuil.
Ciénaga.
Esperanza.
S. Ant Flores.
Encuentros.
Lo de Reyes.
Azacualpilla.
Chau.
Montúfar.
Candelaria.
Suacité.
Pamocá.
Concepción.
Buenavista.
Sauce.
S. Anto.
El Angel.
Petaca.
Puente.
Encuentros.
Estancia Grande.
Guates.
Santa Ana.
Salitre.
Trapiche Grande.
Tablones.
Curup.
Pita.
Ocusco.
Chiquín.
Sequenes.
Naguarón.
Chuisec.
Pasuj.
Naranjito.
Pachin.
Chayes.
Ciprés.
Cornejo.
Santa Inés.
Escobas.
Mico Viejo.
Encuentros.
Godínez.
Concul.
Trinidad.
Chic.
Pozanes.
Quequesque.
Cerritos.
Suchico.
Sta. Rosa.
Colmenas.
Casas Viejas.
Lochuyes.
Suchicul.
Jobos.
Burras.
La Canoa.
Jute.
Victorias.
Anonp.
Tejas.
Concepción.
San Nicolás.
Chivac.
Patzisilla.
Balanché.
Apazote.
Pacoc.
Cumatzá.
Toloxcoco.
Xixin.
Concul.
Xeabaj.
Suculacán.
Paraiso.
Dolores.
Sta. Rita.
San Rafael.
Anonas.
Chisiguán.
San Rafael.
Porvenir.
Encuentros.
Pasocón.
Coxojabaj.
Pasahú.
Choacarlic.
Canchel.
Chechó.
Satún.
Tactic.
Paguezá.
Patzojón.
Turbalá.
Paoj.
Sajsiquún.
Santa Rosa.
Morales.
Joya Ramos.
Cabrera.
Ramacal.
Peñasco.
Cuervos.
Agua Caliente.
Vegas.
San Antonio.
La Unión.
Saltán.
Las Dantes.
Alibalabaj.
Papit.
Chiul.
Buenavista.
Rabinalá.
Malena.
Laguna.
Chicushtín.
Xococ.
Naranjo.
Buenavista.
Chicalán.
Shinacati.
San Juan Carmelo.
Chisantiago.
Yerbabuena.
Zarespino.
Chitos.
Vegas.
Chicruz.
Xolacuil.
Carrizal.
Popabaj.
Platanix.
Chirramos.
Xechojop.
Laguna.
Las Minas.
Canchún.
Patzirán.
Tres Pinos.
Sucab.
Chuchitucán.
Mogotillo.
Nimacabaj.
Pachicá.
Santo Domingo.
Tempisque.
Santa Rita.
Las Minas.
Los Perdomo.
Tierra Blanca.
Camalmapa.
Santa Rita.
Chicholón.
Chitucán.
Tocoyito.
Manzanas.
Chup.
Chupel.
Agua Caliente.
Parrachoch.
Malasano.
Cachil.
Paso Ancho.
Samolón.
Guaxpax.
Chintún.
Chizolai.
Coyocté.
Guajxac.
Chamisún.
Chirescoh.
Chilax.
Semox.
Chipoloc.
Saicué.
Sosay.
Sasis.
Olpán.
Esquipulas.
Chacalbe.
Rubeló.
Chiqueley.
Kanchal.
Chimay.
Chicocón.
Choval.
Rosario.
Biltitum.
Yaxpatz.
Cancal.
Benzul.
Chimoté.
Sucum.
Chirisquihé.
Chelac.
Xehú.
Chipac.
Sejalab.
Chisap.
Eilbá.
Sesanay.
Chirenimá.
Secacao.
Semay.
Chiachal.
Yalipur.
Petaté.
Dolores.
Cubilgüitz.
Seco.
Nueva América.
Yulá.
Alta Luz.
Muxá.
Naranjo.
Perla.
Caba.
Ilón.
Ixtupil.
Lupita.
Panchita.
Cabá.
Colli.
Piedra.
Juil.
Sacsiguán.
Amelia.
Vixamac.
Jalabitz.
Victorias.
Buena Vista.
Cotzol.
Alta Vista.
Zapote.
Rosario.
Xix.
Vipaná.
Vega.
Choché.
Xequincé.
Acul.
Jacanac.
Naximatín.
Natzú.
Chemal.
Chiul.
Salinas Magdalena.
Cocop.
Rio Blanco.
Llano del Coyote.
Encuentros.
Maria Tecun
Cerro de Oro.

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VERAPAZ

SIERRA DE LAS MINAS

MONTAÑA CHIMOXAN

EL ESTOR

LAGO DE IZABAL

SIERRA DE SANTA CRUZ

MONTAÑA CHAHAL

EL PROGRESO

ZACAPA

CHIQUIMULA

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BAHIA DE AMATIQUE
Barra del Sarstoon
Sarstoon
Cabo Cocales
San Juan
LIVINGSTON
Miramar
S. Jacinto
El Cedro
Machacas
R. Dulce
El Quetzal
Tameja
Punta Palma
GOLFETE
Río Tameja
Río Frío
Santa Isabel
Río Frío
Río Juan Vicente
Río San Marcos
San Marcos
DEL
Cabo Tres Puntas
Manabique
Punta Manglar
BAHIA GRACIOSA
Laguna Santa Isabel
Yarilla
S. Blas
Boops
Río Negro
Canal Ingles
Río Piteros
Mar
PUERTO BARRIOS
BAHIA SANTO TOMAS
Cacao
Escobas
Santo Tomás
El Vista
Argentina
Manaca
Co de San Gil
San Francisco
Entre Ríos
Río San Francisco
Hopi
Kickapoo
Andes
Inca
Lag. Tinta
Mojanales
Maseta
Cinchado
Eskimo
Colón
Sesteadero
Peor es nada
Machaca
Buenos Aires
Cacao
Champona
Buenavista
Olimpio
Conejo
Chachagualilla
Co Ermitaño
Co Jimerito
Tenedores
Zapotes
Monterrey
Mangulito
Peñitas
Chiknanuk
Cayuga
Navajo
Darmouth
Río Negro
Río Chiquito
R. Piratanos
Río Frío
Río Animas
Río Negro
Santa Lucia
Francia
San Carlos
MORALES
York
Seneca
Bananera
Machaca
Virginia
Oneida
Francisco
La Libertad
Sioux
R. Bobos
Las Quebradas
Río Animas
Co Petatillal
Co Animas Negras
Co Grande
Coral Laudo
Laguna Verde
Correderos
Co Ojo de Agua
Co Aguacate
Joconal
Azacualpa
LOS MONOS
QUIMISTAN
Co Bonillistas
Onandaga
Limones
Playitas
Comanche
Vigra
Cheyenne
Arapahoe
Mojanales
Tepemechines
Lagartos
Buenavista
Remolino
Lancetillal
Cuchilla Joconal
Cuchilla de Palmichal
Cuchilla de las Damas
Cuchilla de la Casimira
Los Tarros
El Oro
Zapotal
Piladeros
MACUELIZO
MONTAÑA
Juyama Laudo
Laguna Villa Hermosa
MONTAÑA DE LA CRUZ
R. Juyama
R. Chivenilo
R. Agua Fría
SIERRA DEL ESPIRITU SANTO
Co Elencia
Co Azul
Co Dantas
Co Resumidero
Las Crucitas
El Limón
FLORIDA
SAN JERONIMO
Santa Lucia
Co Vara de Cohete
Coloradas
Vertientes
DOLORES
SIERRA DEL GALLINERO
DULCE NOMBRE
SAN AGUSTIN
LA UNION
CUCUYAGUA
HONDURAS
BAHIA DE OMOA
PUERTO CORTES
OMOA
Punta Gorda
Punta Delgada
Soto
Conventillo
Punta Delgada
Barra del Río Motagua
La Barra
Barra
Chachaguala
Río Chachaguala
Cuyamel
Buenavista
Paraiso
Veracruz
Masca
Río Masca
La Manga
Cuyamel
Río Cuyamel
Tegucigalpa
Cuyamelito
Río Cuyamelito
Río Chiquito
Mogoton
Co Ocotal
R. Colón
R. San Carlos
R. Santa Tomás
R. Jimerito
R. Cuyamel
R. Nuevo
Río Cuyamel
Río Cacao
Q. Blanca
Río Frío
OMOA
Co San Ildefonso
Co Escarpado
Co Guanal
Las Anchas
SIERRA DE
Cofradía
Naco
15º 30'
15º
88º
Mauguer Cay
Crawl Cay
Three Corner Cay
17º 30'
Joes Hole
ISLAS TURNEFFE
Gran Point
Calabash Cay
Grand Bogue
Deadman Cay
Big Cay Bokel
Aguada
Xcalak
Estrecho de Bacalar Chico
Reef Point
San Pedro
Sweb Cay
Guana Cay
AMBERGRIS
18º
L.

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RETALHULEU
SUCHITEPEQUEZ
ESCUINTLA
OCEANO
14º 30'
14º
92º
91º30'
Suchiate
Barra del Suchiate
Barra del Manchón
Limones
La Blanca
La Zarca
La Zarca Vieja
Infamia
Río Tilapa
Jícaro
Chorrera
Huamuchal
Pumpurruchal
Encantada
El Manchón
Cataluña
Laureles
Bélgica
América
Estero del Tormento
Santa Sofía
Lag. La Carila
Lag. La Garitilla
Lag. Tomatal
Piñuelas
Caballo Blanco
Amberes
La Junta
Río Jesús
San Juan
Toquiná
Agrícola
Acapán
Granada
Acapán. Lag. La Grande
Rosario
Angeles
CHAMPERICO.
Tulán
Colombita
Nueva Candelaria
GENOVA
Río Zarrones
Río Talcuyán
San Miguelito
San Rafael
La Soledad
Castaño
Repositos
EL ASINTAL
Abrigo
Mangales
Bustamante
R. Cantel
Río Ajal
Sibaná
R. Nil
Aurora
NUEVO SAN CARLOS
SAN ANDRES
SAN MARTIN
Zambo
Abundancia
ZAPOTITLAN
Dolores
CUYOTENANGO
SAN SEBASTIAN
Chitalon
MULUA
RETALHULEU
MAZATENANGO
Quisquil
SAN GABRIEL
El Retiro
S. Miguel
Las Cruces
San Jerónimo
Casa Blanca
Magdalena
Paraíso
Santa Elena
Delicias
Jesús
Nueva Linda
Providencia
R. Nal
Río Bolas
Río San Juan
Río Ixpas
Río Samalá
Concepción
Flor
Las Pilas
Río Ixquén
San José
Bella Julia
Platanar
Z. Paz
Z. Seco
Coluza
Marilandia
Río Oc.
Z. Jabalí
Mimosa
Espinal
Peñón
Victorias
Zanjón Escolapio
Río Manacal
Valona
Playa Grande
Cabo San Luis
Santa Julia
Laguna Escondida
Lag. Guiscoyol
Lag. Tendedero
Lag. El Tormento
San Luis
La Verde
Barra del Tulate
SAN PABLO
Medellín
SAMAYAC
Nanzales
SAN BERNARDINO
SAN ANTONIO
CHICACAO
PANAN
La Patria
Andes
Cutzán
Ujuxtes
Mi Tierra
Palo Gordo
SAN LORENZO
Pachonté
SANTO DOMINGO
Animas
S. Miguel Mocá
Monterramos
SAN JOSE EL IDOLO
San Jerónimo
Tesoro
Baluarte
Memoria
Buenavista
Nagualate
Regalo
Río Bravo
R. Mocá
Belén
Copalchi
Las Cruces
Guadalupe
Brisas
Rosario Mocá
Canales
Salvador Nagualate
Monterrey
María del Mar
Panagua
Río Julín
Río Ixtacapa
Río Tulate o Icán
Niza
Bolivia
Zapote
Totonicapán
La Grande
Conacastillo
Morales
Cristo
Encuentro
Chucera
Chiquistepeque
Tahuesco
Chicán
Lag. Huamuchal
San Julián
Esperanza
Tiestos
Nueva Venecia
Bethancourt
Barra del Nagualate
Río Nahualate
L. Panamá
Z. Panamá
Santa Inés
Sta. Amalia
Monte Carlo
Camelias
Trinidad
Monte de Oro
India
Valles
Olas de Mar
Moca
Patria
S. Rafael
San Basilio
Revolución
Cortina
SANTA BARBARA
Capital
San Luis
Flores
Palmeras
PATULUL
Guatalón
Camelias
Paraíso
Santa Elisa
La Cabaña
Santa Clara
Soloiá
Socorro
Mixqueño
S. Marcos
Arenas
Siguacán
Carmen
Babilonia
Morazán
Sta. Elena Mopá
Salamá
TIQUISATE
San Felipe
Recuerdo
Cuntán
Petén
Pinula
S.Fco. Mopán
Izabal
Santa Rosa
Santiago
Panzós
Esquipulas
Verapaz
Jocotán
Paso Mogoyón
Concepción
Noria
Santa Teresa
San Benito
Puente
Mico
La Sierra
Zanjón Mico
Agostadero
Viñas
Burrera
Filipinas
Barranquilla
Trinidad
Nicaragua
Poza Verde
Concha
Bueno Aires
Z. Noria
Río Madre Vieja
Río Tinto
Perla
Infancia
Salto
Z. Sinacal
Ausencia
San Carlos
SANTA ANA
San Felipe
Seco de la Puerta
R. Coyolate
Deidad
Chichimecos
Pensamiento
Zapote
Ríos Cuaches
REFERENCIAS
Capital
Cabecera Departamental
Cabecera Municipal
Villa
Pueblo
Aldea
Caserío
Finca
Aguada, Paraje, Campo chiclero
Oficina Telegráfica
Carretera Panamericana
Carretera
Camino carretero de verano
Camino en construcción o proyecto
Camino de Herradura
Ferrocarril
Ferrocarril abandonado
Frontera internacional
Frontera interdepartamental
Puerto marítimo
Ruinas
Volcán
Río Caudaloso
Río y arroyo
Ciénaga
Altura en metros
379
ESCALA = 1: 600.000.
M,
10 0 10 20 30 40
Kilómetros
10 0 10 20
Milla Inglesa = 1,609 metros.
10 0 10 20
Milla Geográfica = 1852 metros.

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GUATEMALA
ANTIGUA
ACATENANGO
POCHUTA
YEPOCAPA
SANTA LUCIA COTZUMALGUAPA
SIQUINALA
ESCUINTLA
PALIN
SAN VICENTE PACAYA
AMATITLAN
VILLA NUEVA
SAN MIGUEL PETAPA
VILLA CANALES
FRAIJANES
SANTA CATARINA PINULA
SAN JOSE PINULA
MATAQUESCUINTLA
SAN RAFAEL
CASILLAS
SANTA ROSA
NUEVA SANTA ROSA
SANTA CRUZ NARANJO
BARBERENA
CUILAPA
ORATORIO
PUEBLO NUEVO VIÑAS
IXHUATAN
SANTA ROSA
TECUACO
CHIQUIMULILLA
GUAZACAPAN
TAXISCO
PASACO
GUANAGAZAPA
LA DEMOCRACIA
MASAGUA
LA GOMERA
MIXTAN
SAN JOSE
IZTAPA
Volcán Acatenango
Volcán de Fuego
Volcán de Agua
Volcán Pacaya
Volcán Tecuamburro
Volcán Jumay
Volcán Moyuta
Lago de Amatitlán
Lag. de Ayarza
Lag. del Pino
Montaña de las Nubes
Rio Madre Vieja
Rio Coyolate
Rio Guacalate
Rio María Linda
Rio Los Esclavos
Rio Paz
Canal de Chiquimulilla
Barra del María Linda
Barra de Los Esclavos
Barra del Jiote
Barra del Limón
Bocana del Paz
PACIFICO
N.
91º
90º30'

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EL SALVAD
Yerbabuena.
Miramundo.
Soledad.
Llano Grande
Aguacate.
Candelaria
Salfate.
Santo Domingo
Palo Blanco.
Altupe.
Pablones.
Achiotes.
San Juan.
Quequesquillo
Trapichillos
Trapiche
Argueta
Miraflores.
Villita
Carrizalito.
Estancia
Coyolito
Salamo
Piedras Blancas
Jutiapilla
San Antonio.
Quebraditas.
Ingenio.
MONJAS.
Damián.
Espinal
Pozo Verde.
CHAPARRON.
Aguijotes.
ALZATATE.
Reforma
San Pedro
Animas.
Pinal.
Terrones
Ovejero.
Rodeo.
Coyoles.
Sabaneta.
Lag. Hoyo
Lagarto.
Obrajuelo.
Varejones
Volcán Tahual
Lag. Retana
SANTA CATARINA MITA.
Horcones.
Tuna.
Papalguapa
Suchitán.
Volcán Intecapeque
Volcán Suchitán
Limones.
Cerro Blanco.
Guevara.
Carrizal.
Uvas.
EL PROGRESO.
Estanzuela.
Zapuapa
Trapiche.
De Vargas
Acequia.
ASUNCION MITA.
Guacamayo
Santa Gertrudis.
Sitio.
Arada.
Casita.
San Antonio.
Cerrito.
Volcán Amayo.
Don Diego.
Quezada.
Cues.
Amayito.
JUTIAPA
Río Tamaulapa
S. Matías.
Tiucal.
Trapiche Abajo
Tablón.
Hda. Cruz Roja.
Valle Nuevo.
El Coco.
Reforma.
Barracos.
Rosario.
Platanar.
Chaparrón
Celbita.
Jicaro.
Marías.
Cohetero.
Calderas.
Co Sillón
Sillón.
San Marcos.
Río Paz
YUPILTEPEQUE.
Pinal.
Matilisguate.
Melón.
Tierra Blanca
ATESCATEMPA.
Trapiche
ADELANTO.
San Cristóbal.
Caparrosa.
Palmas.
Animas.
San José
JALPATAGUA.
Jicaral.
Lag. Ruedón
Sta. Bárbara.
ZAPOTITLAN.
COMAPA
Cuje.
Melonar
AZULCO.
Crucitas.
Estanzuela.
Tierra Blanca.
Escuinapa
Pericán.
Co Bonete
Valle Nuevo.
MOYUTA.
Agua Blanca.
Montecristo.
Guayacán.
Sta. Cruz.
Las Palmas.
El Gigante.
Chimamas.
Talpetatillo.
Pilas Colorado.
Pueblo Viejo.
Río Frío.
El Tigre.
ATIQUIZAYA.
Jute.
Co Jute
Hervideros
Los Toles.
Franco.
S. Antonio.
Durazno.
El Espino.
Loma Larga.
Chagüite.
TACUBA.
Agua Fría.
Sincuyo.
Talpetates.
Himalaya.
ATACO.
Santa Isabel.
Mistepe.
El Corozo.
El Refugio.
Cara Sucia.
New York.
SAN JOSE EL NARANJO.
Garita Palmera.
San Antonio.
Porvenir.
Guayapa.
Zapote.
Delicias.
Bocana de Santiago
Santiago.
La Isla
Metalillo
Bocana del Cauta
ACAJUTLA.
IPALA.
Morán.
Carrizal.
Estanzuela.
Tunal.
Cuernavaca.
Volcán de Ipala
Cubiletes.
Jutumichapa.
Padre Miguel.
Guacamayo.
Amatillo.
Cacaotepeque.
Chile.
Calderas.
AGUA BLANCA.
Achiotes.
Co Achiotes
Cañas.
Lajas.
Rincón Grande.
Co Gordo
Santa Bárbara.
Cuenta.
Shilito.
Abajo.
Río Angue
Guayabillas.
Pita.
Hoja.
Cañada.
S. Benito.
Sta. Inés.
Chepe.
Co Tunquillo
Hda. Ostún.
Río Ostúa.
Zapotitán.
Platanar.
Hda. Cruz Roja.
Valle Nuevo.
El Coco.
Barracos.
Rosario.
Tablón.
Monos.
Sunsunul
Prepatadero.
San Rafael.
Cocos.
Lag. de Jicaro
Atescatempa
Co Viboras
Lo Flor.
S. Cristóbal.
La Joya.
Piedras Azules.
Paraje Galán.
Amatepeque
Naranjo.
Viñas.
El Paxte
Contepeque.
Sta. Bárbara.
ZAPOTITLAN.
Papaturro.
JEREZ.
Volcán de Chingo
Co Matadero
Esmeralda.
Las Flores.
Río Pinos.
Río Guevapa
S. Matías.
Río Chinto
CANDELARIA.
Las Mesas.
La Ceiba.
Tablón del Coco.
La Magdalena.
Las Mercedes.
S. Juan Chiquito.
CHALCHUAPA.
SANTA ANA.
Refugio.
SAN SEBASTIAN.
Valle de Doña María.
AHUACHAPAN.
Volcán Santa Ana
Lago de Coatepeque
Volcán Izalco
SAN PEDRO PUXTLA.
JUAYUA.
JUJUTLA.
Izalco.
SONSONATE.
Nahuilingo.
San Julián.
ACAJUTLA.
Tatumico
Encuentros.
Dolores
Soyate.
Rodeo
ESQUIPULAS.
Peñas.
Cruz de Piedra.
Espinos.
Atulapa
La Brea.
Agua Caliente.
Santa Rosalia.
Obraje.
San Nicolás.
Plan de Arada.
Jicaro.
CONCEPCION.
Co El Sillón
Ermita.
La Leona.
Carrizal.
Alambradas.
Anguiatú Arriba.
Anguiatú Abajo.
Río Angue
Co Rojo
Co Montecristo
El Tablón.
Mesas.
Mal Paso.
Naranjo
La Joya.
Jicaro.
Sta. Cruz.
Rosario
METAPAN.
Hda. San Miguel.
Lag. de Metapán
San Rafael
San Diego.
Llano Largo.
Volcán San Diego
Las Piedras.
El Cóbano
Belén.
El Sitio.
La Bodega.
Angeles.
Vadito.
Zapotillo.
Río Lempa
Lo Flor.
S. Ant. Pajonal.
El Sauce.
Marías
Casitas.
Piletas.
San Miguel.
Guaymuyo
TEXISTEPEQUE.
Guachipilín.
La Palma.
Morazán.
La Reina.
Agua Caliente.
Cujucuyo.
Camones.
Tejutla
Agua Caliente.
Nueva Concepción.
COATEPEQUE.
Opico.
Guazapa.
Conac
Nejapa
Apopa.
Volcán San Salvador
SAN SALVADOR
SANTA TECLA
Volcán San Jacinto
Armenia.
Comasagua.
Tamanique.
Zaragoza.
Panchimalco.
Fonfolo.
La Peña
Zarzal.
Aradon.
Co Bolillo
Penitas.
Rincon.
Cuestona.
Entre Ríos
Co Peña Blanca
Co Malcotal
Co Oscuro
Co San Isidro
Guayabito.
FRATERNIDAD.
Barbasco.
SANTA FE.
Florpundio.
Co Tecomapa
CONCEPCION.
Rosario.
Chagüitón
Olvido.
Tablas.
Amatal.
Mojanal.
Santa Anita.
Vado Ancho.
SINUAPA.
Malcotal.
Reunión.
NUEVA OCOTEPEQUE
Comunidad.
Ocotepeque.
Plan Grande.
La Huerta.
El Limo.
CITALA.
Río Lempa
Jocotillo
San Ignacio.
90º
89º30'
89º

SAN PEDRO DE COPAN.

CORQUIN.

LUCERNA.

MERENDON

Fernando.

La Laguna

CHALATENANGO.

Azacualpa.

O R

aste.

San Martin. Michapa.

COJUTEPEQUE.

Laguna de Ilopango

locuilta.

SUPERFICIES

República de Guatemala

108.889 Klmts.²

Territorio de Belice
(En disputa con Inglaterra)

22.286 Klmts.²

VERTICES DE LAS FRONTERAS

DENOMIMACION	LONGITUD	LATITUD
Barra del Río Suchiate	92°13'43" 10	14°32'27" 30
Plan de Muxbal	92°03'	15°05'
Vértice de Niquibuil	92°12'	15°16'
Vértice de Santiago	91°44'	16°04'32" 21
Río Chixoy	90°26'38" 73	16°04'32" 21
Confluencia de los Ríos Chixoy y Pasión	90°31'56" 65	16°28'45" 85
Vértice del Río Usumacinta	91°26'25" 23	17°15'12" 05
Vértice del Ceibo	90°59'22" 20	17°15'12" 05
Vértice de Campeche	90°59'22" 20	17°49'
Vértice de Belice	89°09'22" 10	17°49'
Barra del Río Hondo		18°28'30"
Barra del Río Sarstoon	88°56'20"	15°53'55" 40
Barra del Río Motagua	88°13'24" 59	15°43'28" 80
Confluencia de los Ríos Motagua y Tinto	88°19'33" 05	15°40'24" 10
Cerro Escarpado	88°28'30" 60	15°30'54" 00
Cerro Juyama	88°50'54" 08	15°14'39" 70
Cerro del Jute	89°13'47" 94	14°53'03" 05
Cerro Bonete	89°13'32" 61	14°50'10" 97
Cerro Sepultura	89°11'46" 42	14°47'55" 98
Cerro San Cristóbal	89°10'14" 88	14°46'35" 04
Cerro Ojo de Agua	89°10'02" 32	14°43'59" 48
Confluencia de los Ríos Templador y Sulay	89°07'59" 04	14°42'52" 97
Cerro Obscuro	89°12'40" 08	14°35'04" 84
Cerro Monte Cristo	89°21'28" 46	14°25'20" 07
Volcán de Chingo	89°44'	14°07'
Barra del Río Paz	90°08'23"	13°45'17"

REFERENCIAS GEOGRAFICAS

Departamentos	SUPERFICIE Klmts. Cuad.	HABITANTES	Cabeceras Departamentales	Latitud	Longitud	Altura en metros
Guatemala	2,126	319,197	Guatemala	14°38'	90°31'	1,485
Sacatepéquez	465	83,024	Antigua	14°34'07"	90°43'35"	1,533
Chimaltenango	1,979	177,123	Chimaltenango	14°38'57"	90°49'10"	1,740
Chiquimula	2,376	144,011	Chiquimula	14°47'34"	89°32'27"	420
Alta Verapaz	11,582	282,562	Cobán	15°28'25"	90°18'58"	1,320
Santa Rosa	2,955	169,774	Cuilapa	14°16'03"	90°17'20"	899
Escuintla	4,384	176,280	Escuintla	14°17'42"	90°47'06"	338
El Petén	35,854	11,475	Flores	16°56'05"	89°53'50"	133
Huehuetenango	7,400	176,480	Huehuetenango	15°18'37"	91°27'38"	1,877
Jalapa	2,063	124,855	Jalapa	14°38'00"	89°59'40"	1,380
Jutiapa	3,219	200,416	Jutiapa	14°16'45"	89°53'36"	892
Suchitepéquez	2,350	182,162	Mazatenango	14°31'31"	91°30'00"	380
El Progreso	1,922	65,302	Progreso	14°50'	90°05'	520
Izabal	6,142	83,153	Puerto Barrios	15°43'04"	88°35'44"	2
Quetzaltenango	2,087	233,655	Quetzaltenango	14°49'44"	91°30'27"	2,334
Retalhuleu	1,880	69,974	Retalhuleu	14°31'44"	91°40'15"	239
Baja Verapaz	3,124	96,182	Salamá	15°06'30"	90°15'50"	920
El Quiché	8,378	158,662	Santa Cruz Quiché	15°01'03"	91°07'12"	2,017
San Marcos	3,791	204,208	San Marcos	14°57'07"	91°47'35"	2,371
Sololá	1,061	86,625	Sololá	14°46'06"	91°10'30"	2,103
Totonicapán	1,061	92,292	Totonicapán	14°54'05"	91°21'23"	2,504
Zacapa	2,690	145,797	Zacapa	14°58'10"	89°31'02"	225
TOTAL	108,889	3.283,209				

P.

PUERTOS

Champerico	14°16'58"	91°55'02'	6
Iztapa	13°55'37"	90°43'11'	4
Livingston	15°48'56"	88°44'02'	10
Ocós	14°30'38"	92°11'10'	7
Puerto Barrios	15°43'04"	88°35'44'	2
San José	13°55'01"	90°48'58'	5

Litografía Arimany Guatemala.

14º 30'

14º

88º30'

550408-148

[March 12, 1957]
Inserted April 8, 1955

Dear Kenneth C. Brown:

I would be glad to advise you and your group on a trip to Guatemala. May I compliment you on your enthusiasm and courage and especially on your aspirations and the scope of your undertaking. I am sure with your experience in the field you will realize your goal.

As my experience in Guatemala was during a period of communistic unrest, and was based on a one man expedition fully equipped for independent operation and with institutional sponsorship, precise information for you will be difficult. Because of the variables of size of group and the complex interrelations of objectives, fields of interests and non-institutional representation, a certain caution should be excercised in accepting my information as applicable to your plans.

With your background of experience you could justifiably eliminate the short period reconnaissance which under ordinary circumstances would be advisable in a country that is so diversified in physiography, and so rich in flora and fauna and archeological material. In addition, when so much time and expense is required to go to and from a place as far away as Guatemala, there is good reason for making a full summer of field work instead of separate trips of shorter duration. To sample the several areas of suspected differentiation of fauna and flora (centers of probable speciation), to visit all the type localities of kinds previously named, and to take adequate samples of the several kinds of animals and birds will require the entire summer. I advise you, therefore, and assuming that finances are not too limiting, to plan on a full scale basis and start out as a specialized field party.

Enclosed are several items from my last trip to Guatemala of correspondence and documents which I have annotated, and which I hope will help you to see vicariously the problems of conducting field work in Central America. I am sorry not to be able to send my field notes, as they are presently in use. Retain the annotated sheets, but kindly return the original letters, documents and the map. In addition to these enclosed exhibit items, and additional statement or two can be made of some of the more general problems of conducting field work in Guatemala. I shall not attempt to organize ~~this, data~~, but I will jot down those ideas that spontaneously come to mind as being relevant in your case and not duplicated in the enclosed.

There are a number of things for you to do before leaving. 1) Check with the Alumni Office for a list of all former graduates of B.Y.U. who are now living in Mexico and Guatemala. 2) Get a list of all Latter Day Saints' missionaries in Guatemala, and where they can be found. 2) Have an international Certificate of Vaccination (World Health Organization) issued to you by the Trans-World Airlines. This organization will give you the vaccinations and certificate free of charge. Other agencies, however, have the authority to issue the certificate. Include the following for Guatemala: smallpox, yellow fever, typhoid, tetanus, and typhus. Allow a month for the completion of the series.

Smallpox is required to re-enter the United States. 4) Get possession of the certificate of ownership and motor serial number of your car. 5) Have a photostatic copy of your birth certificate and a few passport photographs. 6) Have your bank issue you a letter establishing credit at any bank in Guatemala, otherwise, you cannot cash an emergency check without cablegram of authorization which will cost you $10.00. Convert all of your money into travelers checks, even though you will not be able to cash them except in the larger villages in Guatemala. Many of the Guatemalans are not acquainted with this monetary exchange. 7) Collect a good set of maps of Guatemala, including World Aeronautical Charts, newest road map issued by Esso Oil Company, National Geographic maps and detailed maps of those areas in which you expect to work for specifying collecting localities. 8) Write for gun and collecting permits. 9) Contact nearest Guatemalan and Mexican Consuls to acquire tourist cards ($3.00 each). 10) Compile a list of all equipment (for customs) including serial numbers of cameras, binoculars, guns etc. 11) Arrange with railroad company in Mexico City for a flat car to transport your car into Guatemala. This can be arranged more conviently on the spot in Mexico City, but if you are driving straight through, an earlier reservation is desirable. 12) Get your collecting equipment together. Here is a partial list of equipment that I took into the field in 1954--22 long rifle shells, 410. shotgun (over-under), 410 shotgun shells Nos. 4-6-12, cleaning outfit for gun, frying pan including lid, spatual, spoon, knife, fork, pressure cooker and extra rubber gasket, dish pan, scouring pads, soap, rinse pan, five gallon white gas can, gasoline stove (extra generator) small funnel, gas lamp (extra generator and mantles), tarpolin and ropes, window screens for car, cot net, aerosol banbs, nets for bats, maps, books, camera and film, tripod, cotton for preparing specimens, metal boxes for storing specimens, skinning equipment including sawdust and large fleshing knife, binoculars, altimeter, compass, counting disk, water cans (2 No. 10 gals.) traps (Mus. Specials, gopher, steels (No. 1)), collecting bags, oatmeal for trap bait, spot light, medical ket including halazon tablets, medicine for amebic dysentery and malarial fever, kneesboots, hdead net and hat, thermometer, pen points and Higgins Eternal Ink, soft lead pencils for marking traps, relector mirror, watch, alarm clock, paradichloribenzene, extra mosquito netting, small sleeping bag, skinning table and chair, notebood paper, wrist pad, insect killing jar, cigar boxes, insect net, jars and alcohol for reptiles, receipt book, stamps, stationary, interspring mattress and pillow, blankets, plant press, collecting chests and trays, siphon hose, bucket, matches. Of the staple foods which I carried with me are: Crisco, canned butter, bread, cereal, salt, peper, canned milk, postum, crackers, canned fruit, canned soups and vegetables, bacon, potatoes, eggs, canned meats, fresh fuits including bananas, pineapple, oranges and grapefruit. 13) arrange with your local police for a statement of your record. 14) Get a statement from your doctor of your present state of health. 15) Be sure to include your drivers license.

In regard to transportation, I would advise using a two-ton truck, which is especially equipped to meet the requirements of living, storage and laboratory. Drive to Guatemala via Mexico. According to present Guatemalan Customs regulations you should have no trouble getting your car through. All that is necessary

is to have the certificate of ownership (preferably showing you as owner or part owner, or a letter from the owner). They will issue you a poliza provisional, or provisional permit for the time desired. A tourist card is required and serves the purpose even better than a pass-port. A drivers license and registration certificate should be carried. Any documents yielding colorful seals and bold signatures are impressive and the more you can present, the more you are respected and assisted. A certificate of present health, police record, and a half a dozen pass-port photos migh help eliminate unncessary delays if involved under exceptional circumstances. The international health certificate is required, of course. I would also investigate liability accident insurance for Mexico and Guatemala.

Getting your fiearms legally into Guatemala is recommended. You should write the Minesterio de Defensa Nacional, Palacio Nacional, Guatemal City, Guatemala, immediately, asking for a firearms permit. In the letter you should explain the quantity of arms, ammunition, types and purposes for which you wish to bring them in. It is absolutely necessary to have the permit before leaving Provo, lest the guns be impounded on arrival. You can get them out of customs after you reach Guatemala City but this I do not recommend except as a last resort. Let me also point out the advisability of checking with the nearest Guatemalan Consulate about the trip as he will have the latest official word. It never hurts to get further assurances from a Guatemalan representative. Any letters signed by these officials about your trip might prove useful on the customs-inspector level. When in Guatemala avail yourself of the services of the American Embassy as they can direct you to individuals who will be the most useful to you. In any event sign in with them and have all your mail sent to you in care of them. Air-mail takes from five to nine days to reach Guatemala City from Provo. Never send correspondence except by air-mail unless the time factor is unimportant. Pan-American Airways provides regular plane service and is quite reasonable in price for fare. My telephone-shortwave calls to Lawrence, Kansas were approximately $8.00 per three minutes.

For your initial stay in Guatemala City I would recommend the Pan-American Hotel which is conveneintly located to the Palacio Nacional (two blocks away) where you will be required to spend considerable time if your permits have not already been prearranged. It is located on the exclusive Sixth Avenue which is the famed shopping street where nearly all of your needs can be obtained such as film, groceries, extra field equipment, clothing, etc. Although expensive ($5.00-$12.00 per day American plan) it is where American needs of health and sanitation are satisfied.

The most desirable part of the year for collecting in Guatemala (at moderate altitudes) is between the months of November and April. The days are generally comfortably warm to cool and are generally supported by brilliant sunshine. At one of my camps at Thumal, 12000 feet., the temperature dropped to 12° F. and at other camps in lower elevations the temperature became so high that I was forced to withdraw from the field between the hours of 10:00 a.m. and 3:00 p.m. A permanent antifreeze in your

car is desirable. I have never experienced the wet season (May to October) except a brief period at the beginning and at the end of the season when showers fell every day in the afternoon. From conversation with natives of the country I am led to believe that the rainy period is the less desirable of the two seasons as far as concerns traveling throughout the country and camping out-of-doors, especially in the extremes of altitudes. In any season be prepared to protect yourself from mosquitoes and other insects--such protection including a head net supported by a broad rimmed hat of light weight. A winter weight cap to protect your ears but light enough to be worn under the hat is an excellent combination. Most any insect repellent is effective--my choice si 6-12. An aerosol bomb is sufficient to eradicate periodically the mosquitoes and insect in your tent or housing quarters. Protection against the omnipresent tick in the lower altitudes is a must. Sprinkling sulphur on the clothing of the lower extremeties will help but is not by any means a complete repellent. Clothing should include a heavy coat for high altitudes. At any altitude be sure to have a pair of knee boots and a rain-coat.

In answer to your question about the people of Guatemala I can say that the primitive Indians are good people and easy to get along with. In some areas where poverty is pronounced, these natives will appropriate any article left unguarded. Ninety per cent of the natives, however, are trustworthy and are actually helpful. The modern cosmopolitan society of Spanish-Americans is also to be trusted, but it is in this educated society that one should guard against subversive activity and real personal danger. Another group in Guatemala are thos engaged in translation work in various dialects, and while they are not missionaries in the true sense of the word, they are splendid Christians and are anxious to see and help one in any way they can. These people have obtained a conversational knowledge of the language, having translated some portions of the Scriptures and have prepared some studies in grammar and analytical word lists toward a dictionary. Incidentally, your Spanish will be absolutely worthless in some regions of Guatemala. The church of the Nazarenes is the dominant missionary organization in Guatemala, especially in the nort ern section. These missionaries have been in Guatemala since 1904 and are throughly aquainted with the people and the country. Other individuals who can be of service to you are the officials of the United Fruit Company and the Spanish-American owners of the larger fincas and plantations.

Prior to my arrival to Guatemala the communist government announced a threatened invasion by anti-communists. This was later confirmed and for several weeks a reign of terror brought death and torture to thousands of Guatemalans. This period was characterized by anti-North American propaganda which carried over into the period of my field work. At that time collecting was hazardous. Political conditions have changed since then but even today the anti-American indoctrination remains in some areas especially in regions where political enlightnment has not caught up with the change of government. According to several missionaries I interogated, the natives are taught that anyone who is against the Catholic Church (the communists being the greatest offenders) are communists. Naturally it followed that

all Protestants were communists; and were so named and so treated. The basis for the attitude of these natives to non-Guatemalans is a result of a mixed confusion of these several factors. Most of my work was with the native population far removed from centers of communistic activity where the people were amenable and cooperative. In other places I was mistaken for a communist and the people would write comunista on the dust of the car. Mud and rocks were thrown, the paint was scratched, two windows were broken, the gasoline capwwas taken on five occasions, the mirror was twisted out of shape as well as the windshield wipers and license plates. These acts were not of the usual thieft and destruction of property by spiteful acts of revenge or hate of one unfortunately mistakne for a communist. These people were immediately enlightened as to my mission and that I was an American and was their friend. I think that I probably contributed more to the friendly relationship between our country and Guatemala than all the American agencies combined. My record--fed 88 natives a meal, gave 215 a drink of water or milk, gave medical aid to several dozen people and told countless hundreds about our great country and the people to the north. Speaking of medical aid --in Northern Peten, there is one non-registered doctor attending 70,000 Guatemalans. In Guatemala City, however, there is a modern hospital which can treat any emergency short of neurosurgery. In fact, as far as tropical medicine and the native brand of parasitology is concerned, these doctors are mor experienced than are many North American doctors. You should attain a list of the medical men and their ratings in Guatemala City from the American Embassy in case of emergency. As far as your health is concerned you can expect periodic attacks of dysentery. The first attack is always severe and incapacitating--subsequent attacks are less damaging but annoying. Until your system is contaminated you will never develop immunity which come after the third month! The greatest source of contamination is the water supply. Be careful and do not drink water that is not boiled. I used a sterile (distilled) mineral water called Salvovedos water at 35 ¢ per five gallons, which is a fiar price to pay for good health and in addition it is convenient to acquire. Do not drink milk or ice cream(except American brands of evaporated or powered milk) as most of the producing cows are tubercular. Naturally green vegetables grown on or in the ground are taboo. The safest way to avoid dysentery is to eat out of cans. This is not always possible as the price of canned foods is from two to four times the price in the States. Fruit grown on trees, however, is good and is reasonably priced. Oranges are two for one cent and bananas are five per penny.

I should not attempt to advise on the conditions of the roads because of the changes that have occurred since my travels in 1954. In fact the United States Government had given Guatemala $64,000,000 to get her roads in repair and I imagine that considerable work has been realized. The communists impressed the country by building a few good standard paved highways at the expense of maintenance of secondary roads. Although the road bed and grade of these secondary roads are genera ly good, the surface is terrible. Their concern is to have a road that will stand up under rainy weather and naturally the surface is rocky. These people just do not understand the techniques of engineering a good road surface. As a result travel is slow (5-10 miles per hour), exhausting and abusive to tires. Many roads shown on

maps are actually impassible to ordinary motor vehicle.

Your car, inaddition to being equipped with new tires, should have a good set of tire chains. The paved roads are exsellent and standard in every way except one--damaging chuch-holes, some a foot heep, are left unmarked. Driving these roads requires constant vigilance and a keen eye for such death traps. The one thing that remains vividly in my mind is the precariousness of the secondary roads and the lack of places to pull off the road to camp. The price of gas and oil varies according to the distance from centers of distribution. I paid from 40¢ to 90¢ per gallon for gas.

The enclosed map shows areas (red dots) I was bble successfully to reach by car. Many other areas are also accessible by roads. The Pacific lowlands can be reached by excellent paved roads in any season but elsewhere in the lowlands the roads are impassible in the rainy season. The northern country of Peten can be reached only by plane.

Guatemala is such a fantastic country that I could not specify one part of it as being more interesting or profitable for investigation. Nor is there one area that could be considered as more important for collecting than elsewhere. There are unlimited problems for biological research, several of which come to mind--and to mention only a few of them: variation of fauna and flora of the -zones of the geographically separated volcanos and high mountains; tracing the southern extension of the lower semi-desert life-zone through Guatemala and likewise the northern extension of the tropical elements from the south; conducting a general survey of Peten; study of bats in general. Of the individual species of mammals I would say that the taxonomy and geographical distribution of the gophers of Guatemala would constitute a problem high on the agenda of important research to be done. In fact, there is not a single species that could not be studies profitably from either the taxonomic or ecologis approach. Ornithological-wise there remains much to be investigated. In botany the successional studies of areas used and abandoned by natives is important. Prof. Stewart of the University of Michigan has been working methodically for many years with herps but still there is much to be done.

Of the archeological sites that I visited--Zaculeu, Bananera, Tikal andUaxactun are noteable. I would suggest seeing Zaculeu because of its accessibility and because of its comple reconstruction. The United Fruit Company, because of its Middle American association, restored this example of Maya civilization and is only one of seseries of cultural projects that they have undertaken. This company could give you certain logistic support. Start your archeological exploration by first contacting the Guatemalan Institute of Archeology and History in Guatemala City. Your archeologist should establish his headquarters there. And while you are in the city, and before you begin your field work, be sure to see the relief model of Guatemala which is located in the northern sector of the city.

If these generalities on the problems of field work in Guatemala have perchance evoked specific qestions I will be glad to answer them in detail.

Sincerely yours,

James W Bee
Mus. Nat. Hist
Univ of Kansas

ADDENDA TO LETTER SENT KENNETH C. BROWN.
inserted Apr 28, 1955

I do not believe that a permit is required to capture small mammals and birds in Guatemala but it would be a diplomatic gesture to make application to conduct research from the Director of the Museo Nacional de Historia Natural in Guatemala City. The Director, in turn, will issue to you a letter which is useful in dealing with the authorities of the various departments of the Republic. The most important thing is to let the Director know of your plans and objectives. More than likely you will fenefit considerably more from the contact with this official than the time it requires to acquire the permit

If collecting privileges for Mexico are desired, and I am sure they will be, a permit is required from the Fish and Game Department. (Two photographs or yourself must accompany the request for permit.)

A permit to own and carry a gun is required in Guatemala, and is issued and renewed by the Ministerio de la Defensa Nacional, Palacio Nacional in Guatemala City. Depending on the prevailing emergency of the country the acquisition of this permit can be difficult or impossible but never routine. I would advise you to allow at least one month for the transaction of your business with the Ministerio.

In Mexico a gun permit can be acquired from the General of the military district in which you are working. Always remember that only an authorized official of the Mexican Government can confiscate your gun.

A certification of police record is important when entering a foreign country and while I did not have occasion to use mine beyond the need for acquiring a gun permit, I could conceivably see that if one were to get in trouble with the police or unfortunately get involved in an active revolt, or revelotion, that the letter certifying your police record would talk.

A certification letter of intentions and objectives whould be issued, providing the expedition is sponsored by an institut on. This letter holds considerable weight when applying for permits, shipping or carrying specimens across the international borders.

I add the short form bill of lading of the shipment of my car to and from Guatemala. Travel service bureaus or freight forwarders will quote you the price for shipping your car from the states to Guatemala but seldom do they let you understand that the return shipment back to the states will be considerably higher. Note the increase rate of from $253.00 to $352.02, the latter figure of which I paid for the return trip.

In 1954 the charges were 40 cents per cubic foot plus New Orleans tollage of 15 cents per 2000 lbs. All charges must be fully prepaid. Expect delays all along the way as schedules are being continually changed.

A letter to the Custom Houses should be issued by the Director of the Museo Nacional de Historia Natural or the Ministerio de Agricultura to the effect that your specimens have been properly fumigated or preserved. The customs at the border, especially the U.S. Customs will demand such a certification. Many collections have been quarantined because, for example, unsterilized cotton or foreign cotton was used in preparing the specimens.

The Departamento de Transito (Guardia Civil) requiresthhe registration of your vehicle immediately upon arrival to Guatemala City. The permit is issued and must be renewed every month. If not so renewed your vehicle will be impounded. Only after delay and a payment of a substantial fine (especially Americanos) will the car be relinguished. As I remember, three days were required to renew my permit for the month of January as this period was the beginning of the fiscal year and they had not as yet received authorization or had established a new procedure for the coming year! If, unfortunately, you apply at the end of the month you can anticipate standing in line far at least two or three hours.

The Civil Guard, Department of Defense, Secret Service and Customs Officials indepently have the power to inspect your car at any time. These inspections invariably are made without your knowledge or consent. Your equipment is not respected--I remember one occasion when they released fifteen batts of cotton which I had sealed under pressure and it was all they could do to get the door of the car closed again.

If you are, from time to time, expected to receive packages from the States always remember that a full day and considerable expense generally is required to get them through customs in Guatemala City. Customs in Guatemala are hopelessly confused with military red-tape and if every administrative cog is not smoothly meshed, a days delay is enevitable. Note thatin the example, seven authentications are required--each authentication requiring a waiting period of at least a half an hour.

To freight a car by rail from Guatemala City to Puerto Barrios which, incidently is the only route possible between these two cities, cost me $89.94 which included securing the car to the flat car of the train. "Conia" in Guatemala City and"Matton" in New Orleans are two firms which show some degree of effieiency and integrity, but firms which must be continually rejuvinated to get the job done. For example, you will note that in his letter he states that the car was shipped April 13 which was already a week delayed but actually the car did not leave Guatemala until April 21. This delay of 21 days which would spell disaster to a short period expedition, is not uncommon when shipping freight or equipment by rail or steamship. Always allow at least one week for more for this type of inconvenience.

If zoological or botanical specimens are shipped air freight from Guatemala, they should be sent to the United States Customs nearest to Provo, probably Salt Lake City, and labelled thus:

To be held in bond at U.S. Customs at Salt Lake City, Utah.

Either you or an appointed Customs House Broker can them clear them through the Customs. If not so stipulated, the specimens will be retained at New Orleans Customs and clearance will be delayed by endless correspondence.

Guatemala City, Guatemala.

April 8, 1955

Left Guatemala Cety this date? Personal luggage taken by porter after custom inspection and he was instructed to place on train at my reserved seat but the luggage never arrived and there was no time to check with officials before train pulled out of station. At Zacapa I checked other parts of the train but without success so I wired back to the railroad stations back along the line and told them to check the train that was following my train by one hour but again without success so I radioed the station in Guatemala City and they had found the bags and they were holding them at the main station. I arranged to have the United Fruit Co. to send my suitcase and bags to New Orleans by air-freight which they did. By the time I finally received the bags in New Orleans on April 12 I found that the collecting gun (.410 ^ 22 over-under) and my field notes and some other items had been taken, either by the red-cap porter, railroad office or people at the airport, the police or Customs. When I arrived at Puerto Barrios I noted that the truck carryall was on a freight car and had not been shipped as promised (on April 4). Departed by United Fruit Co ship this evening just shortly after arriving in Puerto Barrios by train. Without dress clothes for travelling was obligated to accept dress clothes from sympathetic passengers on the ship. Travelled on ship 11 and arrived in New Orleans April 12, 1955

[see page 550420-159 for entry of april 10, 1955]

New Orleans, Louisiana

April 12, 1955

Stayed in New Orleans until car arrived by ship from Guatemala. It was loaded on ship april 13 and arrived New Orleans April 19, 1955.

New Orleans, Louisiana

April 12, 1955

The following photographs from New Orleans (French Quarters).

550412-1 Audubon House,
550412-2 artists on street
550412-3 Church in center of French Quarters
550412-4 Iron decorated building.
550412-5 Grave yard above ground.
550412-6 mosoleum burial.
550412-7 cemetery
550412-8 Flowers in Park.
550412-9 Audubm Park.
550412-10 Elephant at Zoo.
550412-11 Kodeak Brown Bear
550412-12. alligator in Park.

New Orleans, Louisiana

April 13, 1955

This is the date the carryall was loaded on ship at Puerto Barrios.
[see page 550420-159 for April 13, 1955 entry]

April 19, 1955

Carryall arrived by ship from Puerto Barrios. Although the car was placed in bond in Guatemala City until arrival in New Orleans, the seals had been broken and the contents were turned upside down and totally rearranged. I presume the entry was by Guatemala police. I remember when the carryall entered Guatemala and the police broke open 6 bales of cotton that were forced under pressure into a small unit. The car was completely filled with cotton from ceiling to floor and front to rear.
Left New Orleans, and arrived in Lawrence, Kansas April 21, 1955.

550420-159

TRANSPORTES - MUDANZAS - EMPAQUES

C A N I Z

8ª AVENIDA SUR, Nº 70 • • TELEFONO 46-82

MIEMBRO DE

M E M O R A N D U M

PROVISIONAL.- Guatemala, 1o. de Abril de 1955.-

POR $100.00

Recibimos del Sr. JAMES W. BEE la suma de CIEN QUETZALES, 0/100 como depósito para el pago al Ferrocarril por transporte de un Panel Chevrolet verde de la Universidad de Kansas, de Guatemala a Puerto Barrios. Si el importe del flete es menos se devolverá la diferencia y si es mas la cobraremos por correo.-

p. Transportes y Mudanzas
"CANIZ"

MUDANZAS Y EMPAQUES
-C A N I Z-

rd.-

El recibo de esta suma se comprobará con el Envio de Exportación de IRCA No.545.-

DEPARTAMENTO DE TRANSITO
GUARDIA CIVIL
REPUBLICA DE GUATEMALA

No. 364.-

El Jefe del Departamento de Tránsito, de conformidad con los artículos 13 y 14 del Reglamento de Tránsito en vigor, concede permiso hasta el 14 de Abril de 1955 *a* 1 Sr. James W. Bee *para circular en la República con las placas Nº* DG1289 *de* Estado de Kansas *que usará en su vehículo marca* Chevrolet, *chassis* 5JPA-6389, *motor* -- ---------. *El interesado queda responsable del uso indebido que haga del presente permiso, debiéndose sujetar en todo a lo prescrito en el Reglamento de Tránsito en vigor.*

DEVUELVASE A SU VENCIMIENTO.

DEPARTAMENTO DE TRANSITO: Guatemala, 16 *de* Marzo *de* mil novecientos cincuenta y cinco.-

GUARDIA CIVIL REPUBLICA DE GUATEMALA, C.A. JEFE DEPARTAMENTO DE TRANSITO

Jefe del Departamento de Tránsito.

G. 13138-10m-1-55

TIP. NACIONAL—GUATEMALA

550421-160

MEMBER

NATIONAL FURNITURE WAREHOUSEMENS ASSOCIATION

TRANSPORTES • MUDANZAS • EMPAQUES

8ª AVENIDA SUR, No. 70
TEL. No. 46-82
APTO. POSTAL No. 35

CANIZ

AFILIACIONES Y CORRESPONSALES EN LOS PRINCIPALES PAISES DEL MUNDO

EMBARQUES Y CONSIGNACIONES

GUATEMALA, C. A. April 21, 1955.

Airmail

Dr. James W. Bee
c/o University of Kansas
Lawrence, Kansas.

Dear Doctor Bee:

With reference to the shipment of the panel truck which you requested us to ship to Puerto Barrios, we - are glad to inform you that the status of your account is as follows:

Railway freight from Guatemala to Pto. Barrios... $ 89.94
Balance in your favor..... " 10.06

TOTAL OF DEPOSIT: $100.00

We expected you on Wednesday April 6, before de -- holy days of the Holy-Week, to fix up accounts, however as you did not show up, we wish to request you to inform us if we can go ahead and send you the check covering balance due you to the address shown above.

We know that the SS "Lempa" was delayed at the port but we have been informed that it sailed on April 13th. We are attaching herewith a non-negotiable copy of bill of lading No.138-A.

It is our desire that everything was received by you in good condition and looking forward to receive your news, we are,

Yours very truly,

Rubelsmuj

p. Transportes y Mudanzas
"CANIZ"

rd.-
encls: (1)

7

550423-161

1233 Ohio Street, Lawrence, Kansas
April 23, 1955

Annette C, James R, Mary P, Annette and I went to the Kansas City Zoo, Mo.
Photo 550423-1 of family at zoo.
Photo 550423-2 of James, Annette & Mary in train

1233 Ohio Street, Lawrence, Kansas
April 25, 1955

Took children to South Park in Lawrence, Kansas.

550425-1	Mary and Annette C Bee
550425-2	Mary, Annette C and James R. Bee in swing.
550425-3	Mary Pauline Bee on granite erratic boulder.
550425-4	ibid
550425-5	ibid
550425-6	Annette C. Bee on erratic boulder
550425-7	ibid
550425-8	ibid
550425-9	ibid
550425-10	James R and Annette C Bee on erratic boulder
550425-11	James R.
550425-12	James R and his bicycle.

550423-162

MINISTERIO
DE
EDUCACION PUBLICA

MUSEO NACIONAL DE HISTORIA NATURAL

PARQUE NACIONAL AURORA
CAMPO DE LA FERIA
TEL. Nº 9842
GUATEMALA, C. A.

Abril 27 de 1955.-

Dr. James W. Bee.
University of Aansas, Laurence.
United States.

Estimado James:

El principal objeto de la presente es saber de su salud que en los últimos dias se vió ligeramente alterada, de ello pude darme cuenta a nuestro regreso de Tikal donde tuvimos un viaje emocionante peró difícil dada la premura del tiempo; lo que más me impresionó y que hasta la fecha me preocupa fué le harida que recibió cerca del ojo, ojala que ésto haya sido pasajero, porque hasta se podría temer por la gravedad del mismo. Tengo le seguridad que no me ha escrito debido a estos malestares de salud. De todas maneras le ruego se sirva decirme cómo ha estado Ud. y apreciable familia.

Tengo la seguridad que todavía recuerda el sabor del agua de Tikal y más aún el sabor de aquel pavo que intentamos comer.

Estoy recordando que no le di exáctamente el nombre de la familia de un ejemplar que adquirimos en Uaxactún, me refiero aquel ejemplar que de un tiro despedacé y del que Ud. casó otro, dicho ejemplar pertenece a la familia Formicariidae, mide 18 cm. y su nombre científico es Formicarius analis pallidus (Laurence).

Mi señora le envía cordiales saludos y mi hijo aún pregunta por Ud. especialmente cuando ve algún carro.

Le envío dos fotografías, han sido las mejores y espero que las guarde como un recuerdo de su difícil viaje a mi país.

Atento servidor y amigo.

Jorge

550505-163

Clipping sent by dad and taken from the Provo daily Herald, dated May 5, 1955, Provo, Utah.

Provoan Heads Expedition To Guatemala

James Bee brought back from a five-month, one-man expedition to Guatemala one of the largest specimen catches — forthe time he spent in the field—ever recorded at the Kansas University Museum of Natural History. His average catch of 14 specimens per working day furthermore was accomplished under admittedly difficult conditions.

The one-specimen catch was made near the town of Languin, Guatemala, near the edge of the humid tropical jungle. In all, Bee's expedition produced 1,200 skins, 150 animal skeletons and 250 bird skeletons, for a total of 1,600 specimens. His best days produced catches in excess of 100 animals.

And although Bee did his hunting during the Guatemalan winter, from November to March, mos quito net and insect repellent rather than warn clothing and hunting boots were of prime importance in his equipment.

Bee's efforts contribute additional data to what already is known about the ranges and habitats of animal creatures of North and Central America. He is working on a research project, supported by non-State funds, which eventually will result in the publication of a comprehensive report.

By meticulously recording information about the circumstances of each catch, such as location, date and measurements of the specimen, researchers can derive a number of different sets of facts from the information they get. Preservation of the skins and skeletons permits additional study in the laboratory by other researchers.

Bee was in Guatemala shortly after the recent governmental upheaval in that country. Among his numerous difficulties was the lack of his car for active productive field work for periods totaling 41 days. Once he was delayed eight days in Guatemala City while a railroad between there and Puerto Barros, on the Gulf of Mexico, was being cleared of a landslide; and he required five days to get the vehicle through customs. Travel within Guatemala was especially difficult because of the extreme tension due to the after-effects of the civil uprising. He was forced on a few occasions to leave the area where he was working. Even so, Bee collected specimens as far north as it is possible to go by car in that country. He even penetrated the wild, unexplored region of El Peten once by air, and collected specimens there.

Bee is a candidate for a PhD. at K. U. He, his wife and three children have lived in Lawrence for the past six years.

1233 Ohio St., Lawrence, Kansas
May 5, 1955

Photos of family (Kodochrome, 35 mm) taken this date.

550510-1 James Robert, Annette Christinie, Mary Pauline Bee and kittens.
550510-2 The above, each with their own kitten.
550510-3 mary on tricycle
550510-4 "
550510-5 "
550510-6 Annette P. Bee
550510-7 " " "

550518-164

May 18, 1955
Lawrence, Ks.

Dear George;

I write this letter not knowing whether you are in the United States or still in Guatemala but presuming that if the former, the mail will be forwarded to you.

First I want to thank you for your letter and the shipment of the ant-eater and bird skeletons which arrived in excellent condition and to again thank you and your good wife for your extraordinary kindness and helpfulness during my stay in your country. I only hope that I may have the honor and privilege of helping you when you visit our land. If there is any place or thing that you would like to do or see while in the United States let me know and I will let your wants be known to the people and organization who are planning your stay in our country.

At the time I said good-by to you at the railrodd station I thought my worries were over but such was not my fate. At Zacapa i checked to see if my suitcase and bag had been placed on the train and found out that they had not so I wired back to one of the stations along the way to have the second train, which was following our train an hour later, inspected for these bags. The other train did not have my bags so I wired to the station in Guatemala City and they had already found them and were holding them at the main office. As the Compania Guatemalteca de Aviacion was not flying that day I could not get my bags to Puerto Barrios before the ship sailed that evening so I arranged with the United Fruit Co in Guatemala City to have the bags sent to New Orleans by air-freight which they did several days later. During the time the porter took my bags at the railroad station that morning you and I were there and the time the bags were placed on the airplane at the Gualemala City Airport, someone had taken my gun out of the bag. It would be dificult to say who was responsible for the removal of the gun as the red-cap porter, the railroad office, United Fruit Co., customs house and the people at the airport all had possession of the bags at one time or other. I would suspect that the customs officers would have been the most logical people to have removed the gun.

I feel guilty in asking any more favors from you as you have already done more than your share in my interest but would you, if convenient question the custom people or the United Fruit Co about this gun. The disappearance of this gun is serious because if someone were to be killed by this gun which is registered in my name, I would be held responsible. If the gun can not be accounted for I wonder if you could find out to whom I should register the lost of the gun. I would imagine that the logical department would be either the police or the national defense office.

My biggest surprise came as I passed Puerto Barrios on my way to the ship and saw my car standining in the sun on a flatcar--my car that "Caniz" promised would be shipped on April 4. It was April 19 some 25 days after I placed the car in his hands that I received the car in New Orleans. I had the customs officers in Guatemala City place their seals on all the doors and motor so that no one could get into the car and disturb the specimens and these seals were supposed to carry the car "in bond" to New Orleans. In spite of this precaution the seals were broken and the car had been inspected again and the carefully arranged specimens had been literally turned upside down. In spite of the disturbance of equipment the material arrived at the museum in Kansas

in perfect condition.

My trip to New Orleans by ship was uneventful except that without my bags I had no cloths or personal effects, however several people on the boat came to my rescue and supplied me with extra clothing for the trip.

I have just completed cataloging the collection of mammals which we trapped in Guatemala. Until the skulls are cleaned by the dermestid beetles and made available for critical examination I can only approximate the number of different kins represented. At this stage I can report to you that we have well over 75 different kinds and that there are several forms which will have to be named as new. Several of the bats have never been recorded north of Panama and many other of the mammals are extensions of range of the species. The birds are still being processed and will send a list of the kins collected at a later date.

Give my regards to all my good friends in Guatemala, especially to your assistants at the Museum. My wife asks to be remembered to you, your wife and family. I imagine that Jorge Jr. is now talking and that Claudia is probably crawling all over the place.

Sincerely,

James W. Bee

550523-166

MINISTERIO
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MUSEO NACIONAL DE HISTORIA NATURAL

PARQUE NACIONAL AURORA
CAMPO DE LA FERIA
TEL. Nº 9842
GUATEMALA, C. A.

May 23th, 1955.

TO CUSTUM HOUSES:

This is in order to state that the following animals have been preserved with arsenical powder and paradiclorobenzene and were cured in the Museo Nacional de Historia Natural in Guatemala by Mr. James W. Bee.

Jorge A. Ibarra
-Director-

MUSEO NACIONAL DE HISTORIA NATURAL - GUATEMALA, C.A. - DIRECCION

[some specimens later shipped by Ibarra to Kansas]

//

550607-167

June 7, 1955

Dear George,

Just a note to say that we received the air shipment of 41 skins of rodents and all arrived in perfect condition—thanks to your efficient and careful packing. I had presumed that they had been misplaced by customs somewhere along the way.

All of the Guatemalan specimes are now catalogued and arranged in the collection. I am anxiously waiting the ~~te~~turn of the skulls from the dermestid house so that I can critically examine some of the material. I am sure that there will be a new ibarraensis or two from your interesting country.

When do you go to Washington D. C. and will you take the family with you. Let me know as soon as you arrive.

Most of the fellows here at the museum and Prof. Hall are organizing to go to California for the annual meeting of the Society of Mammalogists. One group will continue down to Mexica after the meetings to collect mammals and birds for the remainder of the summer. A Mr. Ray Alcorn, who is a professional collector for our museum will be collecting in Mexico, Guatemala, Honduras and Nicaragua this summer.

Thank you again for all your kindness and give my regards to your good wide, Jorge Jr. and Claudia and also the fellows at the museum.

James

P.S. The colored shots may be of interest to you. Keep these originals and when you visit our museum we can go over the rest of the slides and you can make selections of t ose that might be of interest to you. Duplicates can be made of the originals.

550905-168

[COPY] Cincinnati, Sept. 5th, 1955

Dear James:

Weeks ago I received your letter. Ive been with a lot of things to do that really I have time to answer your letter.

I am very very sorry about the trouble you found in our country. when I arrive I'll do my utmost to find out your shotgun

I left my country the 31st of may. Ive visited several beautiful cities in this magnificent country and I could say that now I have a lot of things to write.

In Boston, mass, I had a pleasure to know a very well known scientist from K.U and he knows you well, a Professor Taylor, a real authority in Reptiles and Amphibians. You must be praud of your museum on account of the great many fine publications you are realizing in it. Professor Taylor showed me about 6 great books of pamphlets he has gathered of his writings, its certainly a very valuable work. When I come back home I'll write about all the interesting things I saw in this country and I'll write something about you and Prof. Taylor.

I have three months and five days of being away from home. About my departure George Jr says: "papa volo Peten dosto Bee" that means "my father flew to Petén with Mr. Bee".

The first month in this country I was notoriously homesick.

In Niogara Falls I was fortunate enough to visit the falls.

But let's talk about you. I am very glad about the finding of new subspecies, with this the scientific bibliography has developed a lot and scientists will know more about you. Accept my sincere congratulations. I knew that your fine job should be rewarded and it has been so.

I am going to stay here 5 or 6 days. My nett trip will be to Saint Louis, Mo. I'll remain there 4 days, in Chicago 10 days. I wish you the best of success, meanwhile.

I am very cordeally yours,

Jorge

P.S. my training and observations in many important

museums of the U.S. are of importance to me and will be of benefit to my museum in Guatemala. In a near future I'll publish my observations, some of them will be sent to you.

My regards to your wife and children.

550914-170

Lawrence, Douglas Co., Kansas

Sept 14, 1955

departed at 1:30 P.M for Ely, Minnesota to collect material for moose exhibit. mileage 18172 miles. Sam Dickerson, George Young and I made trip. A one ton panel chev and a 2 ton 4 x 4 Chev were use to transport the plant excessories collected at Ely. Drove until about 7:30 P.M and spent night at Carroll, Iowa. Mileage here 18508 or 336 miles today. Conditions to the north of Lawrence are drier, more open and trees only slightly changed toward full colors; may be due to dryness of country. Saw several large flocks of blackbirds. Weather cooler.

Carroll, Iowa

Sept 15, 1955

departed Poplar motel 7:30 A.M. mileage 18511, after breakfast the time was 8:30 A.M. Iowa with more distant vista, prairielike, with large and higher trees forming islands. Southern Minnesota with terminal moraines, lakes and then northward with relatively flat country thus:

First evidence of fall color at Jackson.
At Sauk Center tree about 1/10 in color but buck mainly green. Sumac in red. The first evidence of lake country and Canadian flora at Willmar. 1 badger, 1 striped skunk and 1 jackrabbit at Spencer, Iowa. Southern Minnesota good corn country but less so toward the north.

Sauk Center, Minnesota

Sept. 16, 1955

departed 8:05 A.M, mileage 18895. Have discontinued mileage as oversize tires give inaccurate reading. From Long Prairie continued east to Little Falls, Brainerd, Crosby, Emily, Remer, Grand Falls, Hebbing, Virginia, Ely. Route from Crosby to Cohasset picturesque. Leaves slightly colored. Hebbing to Virginia mining area with artificial topography like southern Utah and as far as the eye can see.

Arrived Ely and stayed in cabin at Little Long Lake. Color here about 1/3.

Little Long Lake, Minnesota

Sept. 17, 1955

Collected masses and lichens near Burntside Lake. nos 550917-1 and 550917-2 are photos of the general area. Lichens are best developed on glaciated ridges of rock. Masses here as well as in bog areas.

Sept 18, 1955

Collected masses and lichens 1 black down from Nels Lake trail. Colors in this area are far more advanced than at Ely or about 80% maples in full color and 1/2 birch in full color. This is about the peak of color in this area. On way back saw 3 grouse and heard many Tamiasciurus. The area around Nels Lake has more conifers than at Ely. The lichens are more commonly found on glaciated ridges of bare rocks. It may be that they are here because of lack of soil to grow any other kind of plant.

Sept. 19, 1955

took the following photographs of the trees and other plant material.

550919-1 maple; 550919-2 birch, 550919-3 fungi (multiple base). Mr. Otto Kokkanen, owner of the cabins on the east side of Little Long Lake and a resident of Ely since 1907 reports the following.

1. moose in area at Little Long Lake, Burntside and other areas but in about 1915 they disappeared. In 1907 there were many because there was more large trees which they prefer. Lumbering in area for 60 years, and at present everything is second growth.

2. Thirty-five years ago Otto bought camp and at that time all the large trees ~~were cut~~ had already been cut.

3. Few caribou before 1907 at Ely but not seen in 1907.

4. Few deer and many moose in 1907. The deer have increased.

5. Moose males were hunted but the species continued

to decrease so law said no hunting.

6. moose run further than deer and hunters do not track them.

7. Deer run in circles but moose do not.

8. Have seen snowy owls in winter but not many.

9. No wolverines in area

10. Horned owls do not hoot in summer but in fall call is given on the approach of rain or cold weather. Loons also call preceding rain.

11. Large Norway and white pine and many large cedar in early days but now one cannot walk through the forests because of the brush.

12. Moose in swamps in summer and in white pine forests in winter and fall. Maples not numerous in forests in early days.

13. Black ash equally important as birch and more numerous than maples.

14 Tamarack uncommon now and disease killed them shortly after big timber was cut.

15 Grouse numerous in early days. In 1925 took 22 grouse in the camp area.

16. In 1952 snowshoe rabbits in high numbers but none the following year.

17. at 9 miles west of Ely, in brush piles, in 1911, shot 35 in one day.

18. In 1952 an aeroplane shot 45 snowshoes in one winter.

19. Wolves live on deer (12 in one year).

20. Aspen grow where other trees will not grow. Army worms ate leaves and in 3 consecutive years the worms are gone. Army worms come every 9 years and stay for 3 years. First in country 12 years ago. They were so numerous that people could not walk in forests, the lakes were full of them. Birds will not eat these worms. A fly came last years and helped to destroy the tent catpillars. The worm does not effect pines.

21. Fires destroyed as much timber as cut in early days. Fires are controlled only around towns. Moose Lake had disasterous fire in 1918.

22. Selective cutting not the American way of lumbering.

23. The Forest Service only offers fire protection but

is not interested in propogation of forests. In this respect it is the same control as in early times. Labor and demand make it only practical to cut off all the timber at one time.

24. Birch veneer best for doors and most beautiful.

[see Sept 29, 1955 for letter received Sept. 23, 1955]

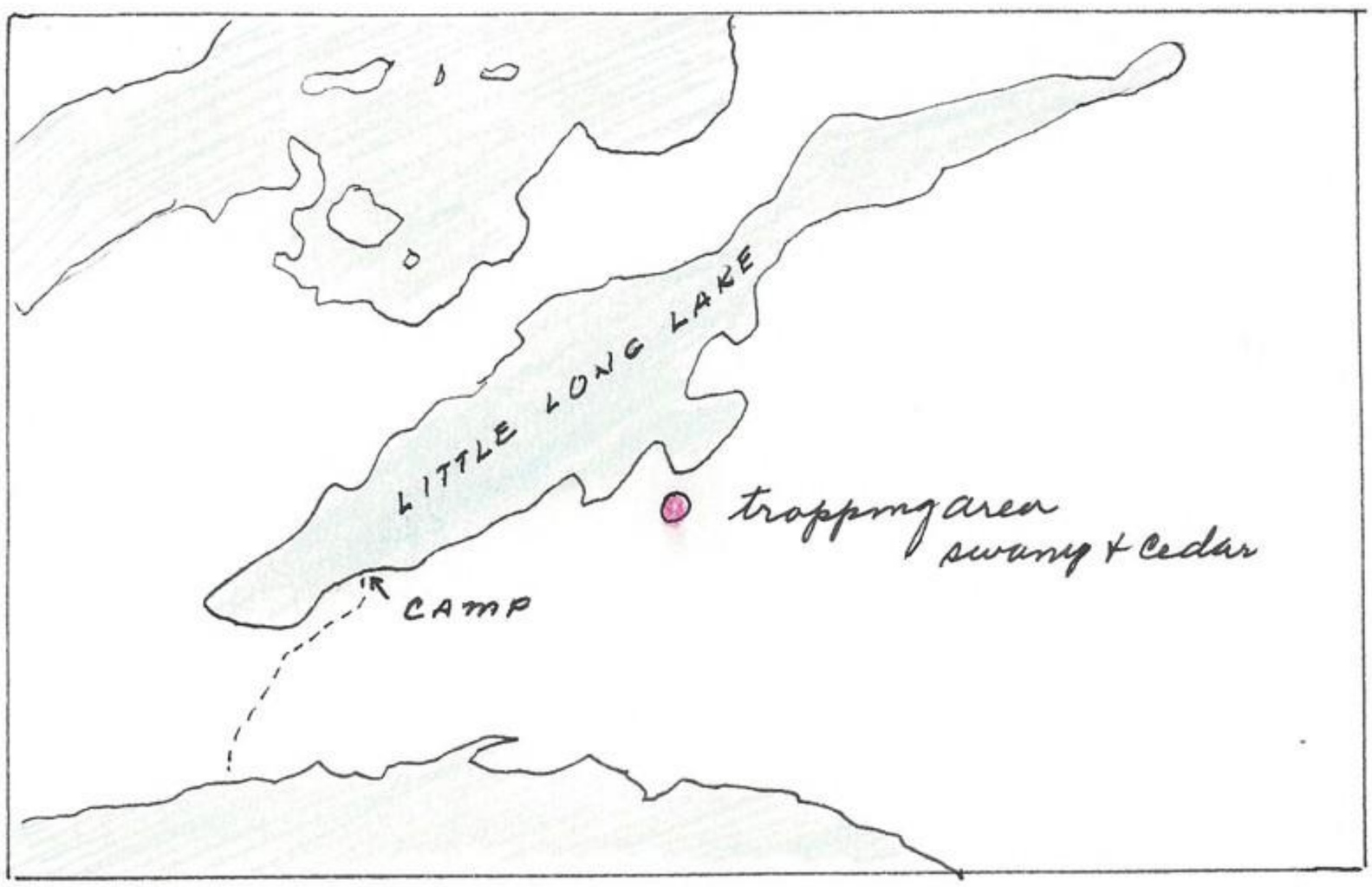
Little Long Lake, 1500 ft., St Louis Co., Minnesota

Sept 25, 1955

Have concluded collection and packing of mosses and lichens and other shrubs and vegetation needed for the exhibit.

In retrospect can make the following comment on change of color in trees in this area.

On Sept. 16 at Little Long Lake the birch about 1/10 in color, aspen just starting, maples 1/3 in color. On Echo trail on the same date birch 3/4 to 4/5 in color, maple 3/4 and in maximum color, aspen just starting. On Sept 25 birch 4/5 in color, aspen 1/10, maples 4/5 and beyond brilliant stage. On Sept 19 maples in maximum stage but by Sept 26 maple just beyond color stage. Between Sept 15 and 30 is the best time for color. Black ash deep red, maples pink, yellow and lighter red.



Camp at Little Long Lake.

Catalogue of specimens collected on Minnesota Trip
Entered in journal Sept 25, 1955

Little Long Lake, 1500 ft., St. Louis Co., Minnesota.

Sept 19, 1955

550919-1	♂	Eutamias	203-93-31-16-46 gms
550919-2	♂	Tamias	240-100-37-16-110 "
550919-3	♂	Sorex	92-91-12-7-6 "
550919-4	♂	Blarina	118-28-15-7-20 "
550919-5	♂	micratus	133-42-20-13-23 "
550919-6	♂	Clethrionomys	118-31-19-14-20 "
550919-7	♂	Peromyscus	180-90-22-18-22 "
550919-8	♀	micratus	150-40-19-12-45 " plac. scars
550919-9	♀	Clethrionomys	140-43-19-14-24 gms. " "
550919-10	♀	micratus	140-40-19-12-34 "
550919-11	♀	"	138-39-19-12-34 "
550919-12	♀	"	138-37-20-13-26 "
550919-13	♂	"	132-39-20-13-26 "
550919-14	♀	"	152-48-21-14-35 "
550919-15	♀	"	131-39-19-12-25 "
550919-16	♂	"	140-40-19-12-26 "
550919-17	♂	"	140-39-19-12-27 "
550919-18	♂	"	146-43-19-12-27 "
550919-19	♂	"	139-39-19-12-26 "
550919-20	♂	Blarina	123-30-16-7-23 "
550919-21	♂	"	120-27-18-7-26 "
550919-22	♂	"	120-27-18-7-25 "
550919-23	♂	"	117-27-18-7-21 "
550919-24	♀	"	127-28-17-7-21 "
550919-25	♀	"	115-26-16-7-21 "
550919-26	♀	"	121-30-16-7-23 "
550919-27	♂	"	120-28-16-7-22 "
550919-28	♀	"	111-27-16-7-21 "
550919-29	♀	"	115-27-16-7-21 "
550919-30	♂	"	122-28-16-7-23 "
550919-31	♂	"	113-27-16-7-20 "
550919-32	♀	"	126-32-17-7-23 "

Sept. 21, 1955

550921-1	♂	Sorex	93-40-12-6-5 gms
550921-2	♀	"	106-39-12-6-4 "
550921-3	♂	"	100-40-12-6-4 "
550921-4	♂	Clethrionomys	123-35-18-14-20 "

	550921-5	♀	Clethrionomys	120-34-18-14-20gms
	550921-6	♂	"	128-36-20-15-20 "
	550921-7	♀	micratus	145-38-19-14-34 "
	550921-8	♂	"	161-53-21-14-37 "
	550921-9	♂	Blarina	120-28-16-7-19 "
	550921-10	♀	"	128-31-17-7-20 "
	550921-11	♂	Clethrionomys	120-30-18-13-17 "
	550921-12	♂	Tamias	270-110-37-19-88 gms
	550921-13	♂	Clethrionomys	120-31-18-13-18 "
	550921-14	♂	Tamias	250-100-38-18-96 "
	550921-15	♀	"	255-98-37-18-97 "
	550921-16	♀	Clethrionomys	137-38-19-13-27 "
	550921-17	♂	"	118-32-19-12-18 "
	550921-18	♀	"	121-34-19-13-18 "
	550921-19	♀	"	121-35-19-13-17 "
	550921-20	♂	"	130-36-19-13-17 "
	550921-21	♀	"	128-35-19-13-19 "
	550921-22	♂	"	141-39-19-14-28 "
	550921-23	♀	"	128-34-19-13-20 "
	550921-24	♂	"	188-96-21-19-20 "
	550921-25	♀	"	102-39-11-7-5 "
SK	550921-26	♂	Sorex	99-40-12-7-5 "
↓	550921-27	♀	"	102-41-12-7-5 "
	550921-28	♂	"	101-42-12-7-5 "
	550921-29	♀	"	[88]-[27]-12-7-5 "
	550921-30	♂	"	102-42-12-7-5 "
	550921-31	♂	"	98-40-12-7-5 "
	550921-32	♂	Blarina	123-28-17-7-22 "
	550921-33	♀	"	125-29-17-7-20 "
	550921-34	♂	"	120-28-17-7-22 "
	550921-35	♀	"	124-29-17-7-20 "
	550921-36	♂	"	118-25-16-7-22 "
	550921-37	♀	"	123-28-17-7-21 "
	550921-38	♂	"	124-29-17-7-20 "
	550921-39	♂	"	128-31-16-7-21 "
	550921-40	♀	"	125-28-17-7-20 "
↑ SK.	550921-41	♂	"	130-30-16-7-23 "

Sept 25, 1955

SK.	550925-1	♀	Blarina	120-28-17-7-22gms
SK	550925-2	♂	micratus	135-41-19-11-24 gms
SK	550925-3	♀	"	140-44-20-11-33 "

SK. ↓	550925-4 ♂	Clethrionomys	128-36-19-13-16 gms
	550925-5 ♀	"	125-35-19-13-15 "
	550925-6 ♀	"	132-36-19-13-21 "
	550925-7 ♀	"	115-32-19-13-15 "
	550925-8 ♂	"	121-34-19-13-19"
	550925-9 ♂	"	120-34-19-13-18 "
	550925-10 ♂	Peromyscus	166-84-21-18-15 "
	550925-11 ♀	"	172-91-22-18-15"
	550925-12 ♂	"	165-83-21-18-16"
	550925-13 ♂	"	166-90-21-18-15"
	550925-14 ♂	"	162-78-21-18-17"
	550925-15 ♂	"	172-90-21-18-18"
	550925-16 ♂	"	180-98-22-18-19"
	550925-17 ♀	"	175-90-21-18-16"
	550925-18 ♂	Sorex	105-40-12-7-5"
	550925-19 ♂	"	100-39-12-7-5"
	550925-20 ♂	Clethrionomys	130-36-18-13-19"
	550925-21 ♂	"	175-33-19-13-19"
	550925-22 ♂	"	124-34-18-13-17"
	550925-23 ♂	"	130-37-18-13-20"
	550925-24 ♂	"	140-42-18-14-28"
	550925-25 ♀	"	112-28-17-13-18"
	550925-26 ♀	"	142-40-19-12-27"
	550925-27 ♀	"	127-34-18-13-21"
	550925-28 ♀	"	123-34-17-13-20"
	550925-29 ♂	"	134-38-18-13-21 gms
	550925-30 ♀	"	123-34-17-13-19"
	550925-31 ♂	"	126-33-18-13-20"
	550925-32 ♀	"	133-37-18-13-21"
	550925-33 ♂	micratus	136-40-19-13-22"
	550925-34 ♀	Peromyscus	188-94-20-20-23"
	550925-35 ♀	"	161-78-19-19-17"
	550925-36 ♀	"	168-83-20-19-19"
	550925-37 ♂	"	174-86-20-19-21"
↑ JK.	550925-38 ♀	"	170-82-21-18-20"

550923-177

Lawrence, Kansas Entered Sept, 29, 1955

UNIVERSITY OF CALIFORNIA

MUSEUM OF VERTEBRATE ZOOLOGY
BERKELEY 4, CALIFORNIA

September 23, 1955

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

Dear Jim:

I have been meaning to write to you to thank you for your very good letter of May 16th regarding the occurrence of microtines near Umiat. One man on my team (Dick Hansen) spent about six weeks there, except for brief trips to Kotzebue and the Saviovik River.

We obtained five species of microtines at Umiat, also a shrew. The funny part of it was that Hansen had such a blasted time trying to find Lemmus, whereas Dicrostonyx was found on the river flat as well as on the higher ground far from the valley! This, I take it, is the reverse of your experience. Finally, some time in mid-July, not having gotten a Lemmus in any of our standard sampling lines or in any spot-trapping, he looked the situation over and picked out what he considered the least likely situations, desparation-sites, the most odd-ball habitats, or what have you! And he got two the first nite!! In the remainder of the summer, I believe one showed up in a standard line, but otherwise, none. In other words, Lemmus was really scarce and Dicrostonyx definitely much more common. Otherwise, he found M. oeconomus and Clethrionomys in fair numbers, and also got a few M. miurus.

We got around a fair bit this summer, and collected microtines also at Wainwright, Meade River, Half-moon Three Ranch, and Barrow, in addition to the localities mentioned above. Things are definitely in an upswing phase, and microtines may hit a peak in 1956, and certainly by 1957. They were most numerous at Meade River and Wainwright.

Hope your work on the arctic book is progressing. We all look forward to seeing it.

Best regards,

Frank A. Pitelka

FAP:rm

cc--E. Raymond Hall

Little Long Lake, 1500 ft., St. Louis Co., Minnesota

Sept 24, 1955

Departed 11:30 A.M for Lawrence, Kansas. Good birch between Ely and Lake Superior. Maple color good in area just beyond Ely (Echo Trail on highway no 1). First night at Sandstone, arriving 6:00 P.M. Travelled routes 1-61-23.

Sandstone, Minnesota

Sept. 27, 1955

Departed 8:00 A.M and followed highway 23 to New London, thence 71.5 to Sioux Rapids, Iowa. Willmar, Minn. is the last place that birch trees are in any number. The above route is more scenic than the route we took to go to Ely. Superior Lake has good rocky shoreline and much like the ocean with good beaches.

Sioux Rapids, Iowa

Sept 28, 1955

Departed 8:00 A.M and followed highway to St. Joseph, Missouri, thence 59 to Lawrence arriving at 6:30 P.M. Mileage at Lawrence 20545 or 2373 miles. As the mileage meter is 1/5 in error (2.5 miles more in 10 miles) the actual mileage was 1899 miles or less.

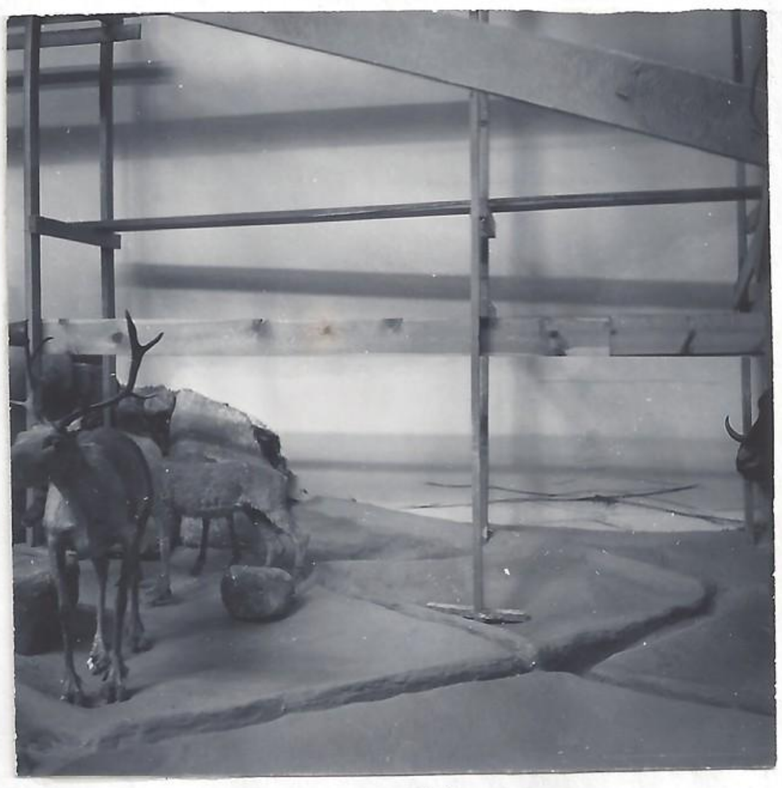
551222-179

[see Dec. 22, 1955 for photos taken Nov. 27, 1955 of panorama]

Museum Natural History, Univ of Kansas, Lawrence, Douglas Co., Kansas.

Dec. 22, 1955

Included here are photographs of the panorama (main floor) of museum, showing progress at Nov 27 and Dec 22, 1955. Worked here from time of salvaging specimens of old panorama to reconstruction of the new exhibit, to completion, having contributed over 90% of results.

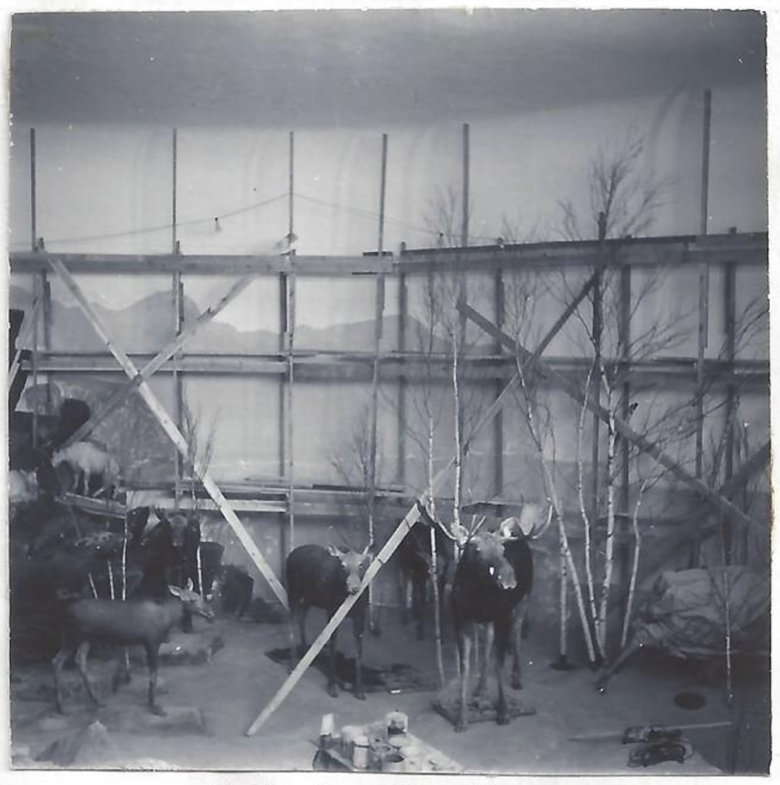


551127-12

tundra showing polygons before developed with masses & lichens. From Alaska photos.

551127-14

salvaged grizzly bear once discarded.



551127-9

Moose exhibit and birch trees in place.

551127-10

Grassland before sod was placed on floor

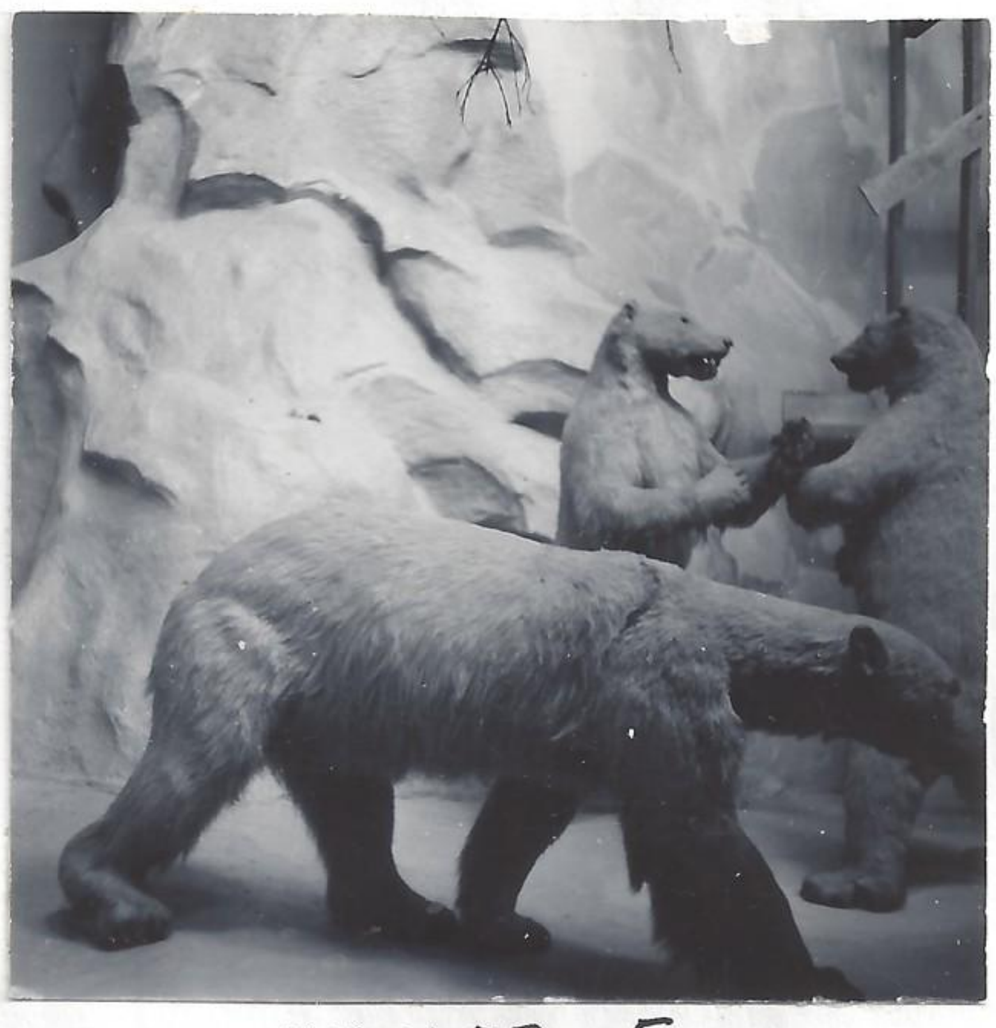
551127-7

moose exhibit, note roche moutonnée in foreground.

551127-8

moose exhibit. Note curved top of walls with ceiling and the recessed center ceiling.

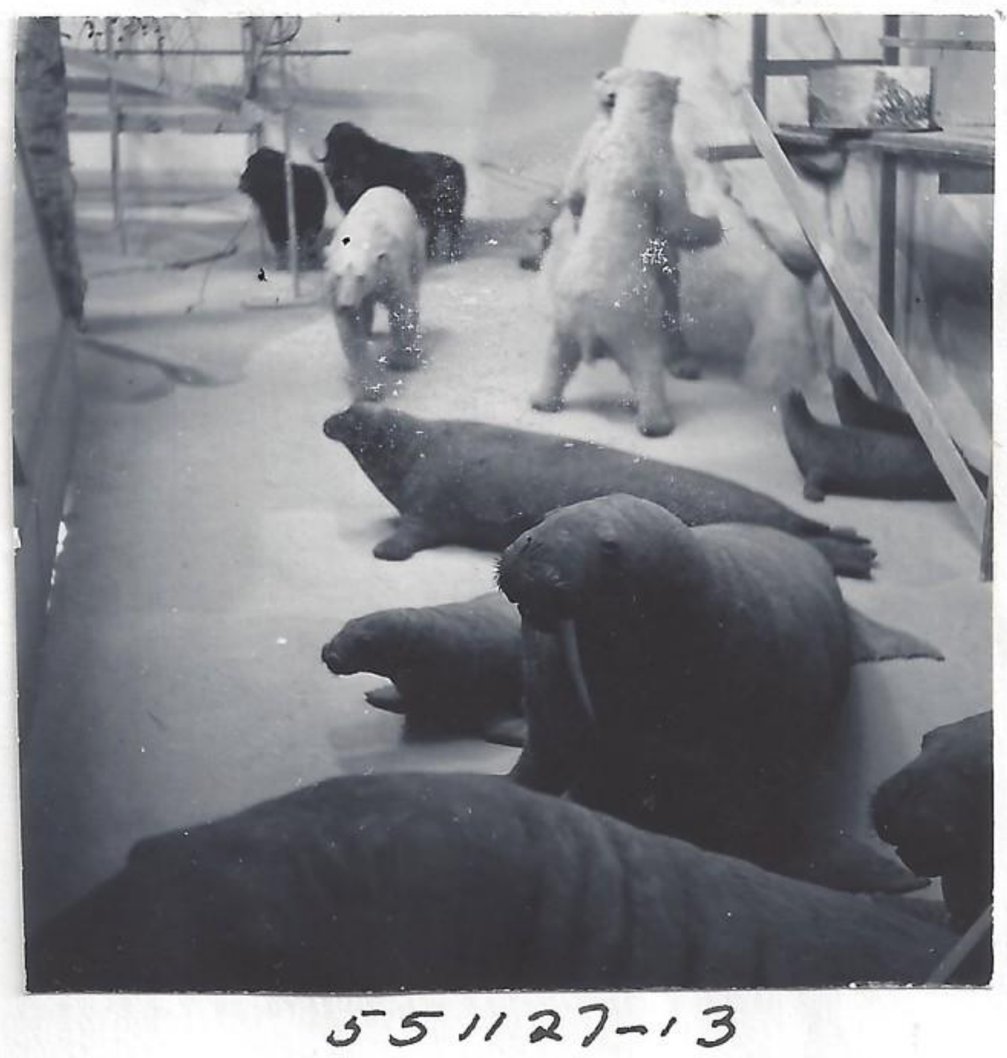
551222-180



55 1127-5
polar bear area with cliffs constructed from a photograph from Greenland.

55 1127-6
Cliffs constructed with idea of blasting with snow and ice.

55 1127-16
mother polar bear and cub.

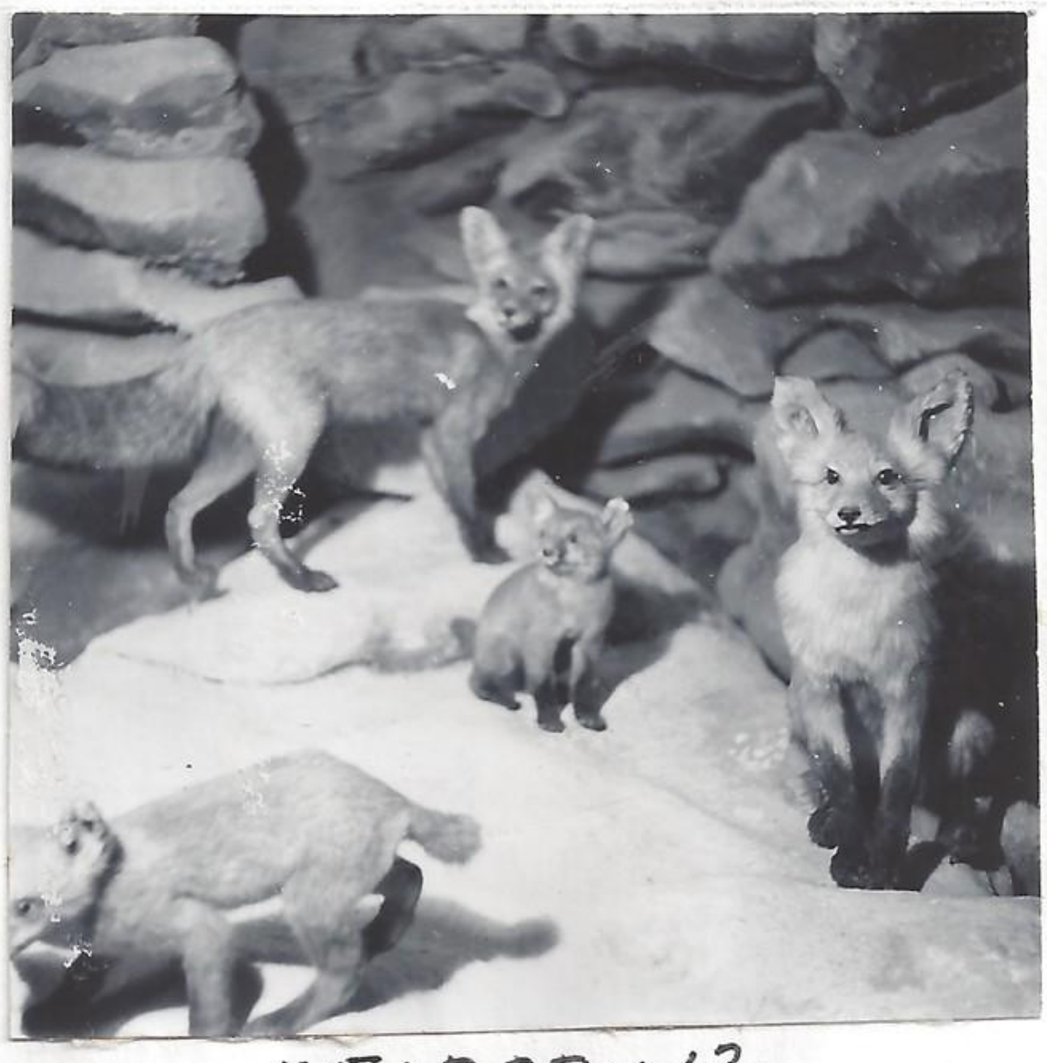


55 1127-13
arctic over walrus & seals with polar bears and muskoken in background.

55 1127-4
ecotone of deciduous and grasslands. Cretaceous cliff on right.

551222-6
caribou and Dall sheep. Cliffs raised above present heights by about 8 feet.

551222-181

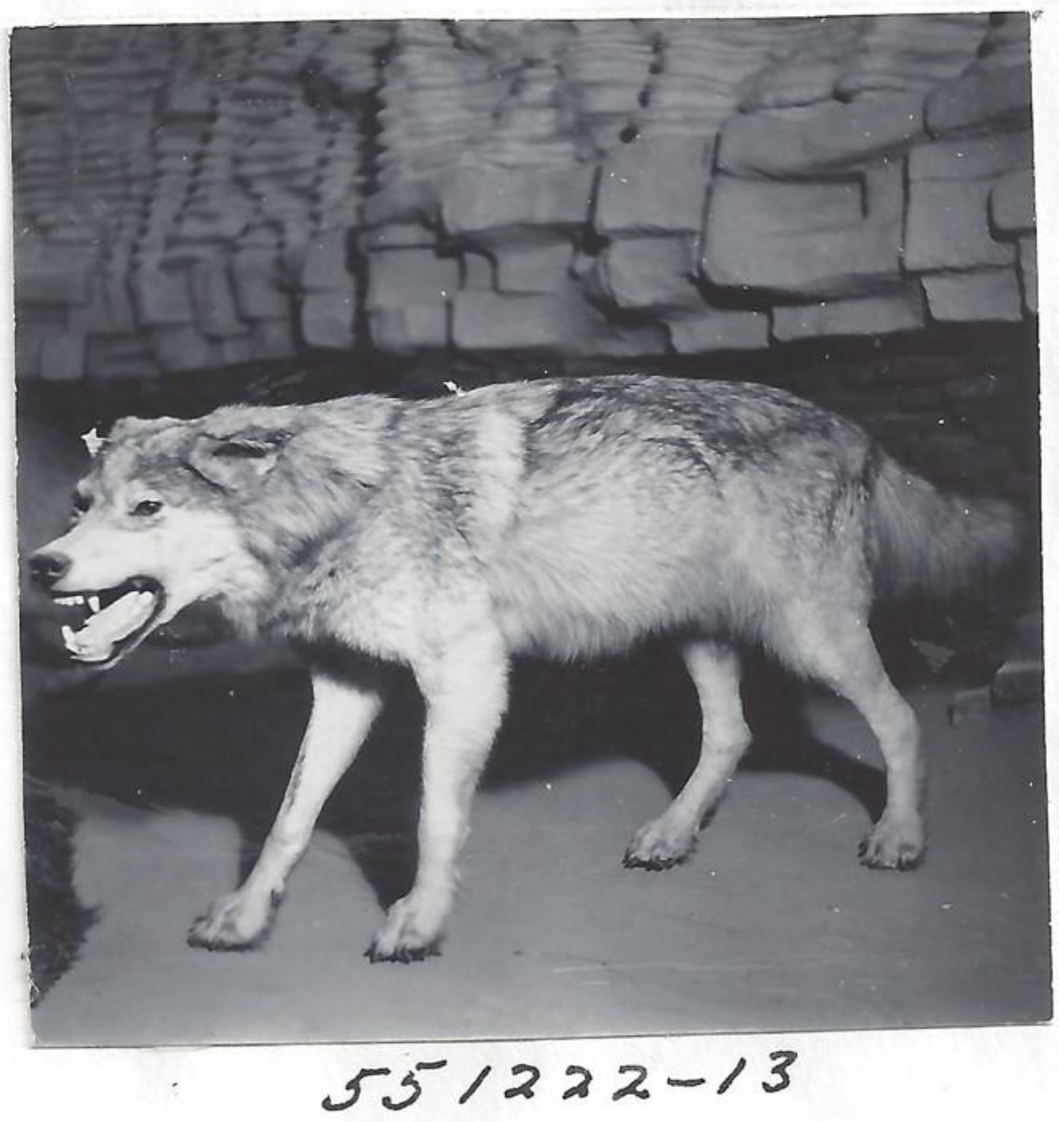


551222-12

Red foxes in Kansas deciduous forests.

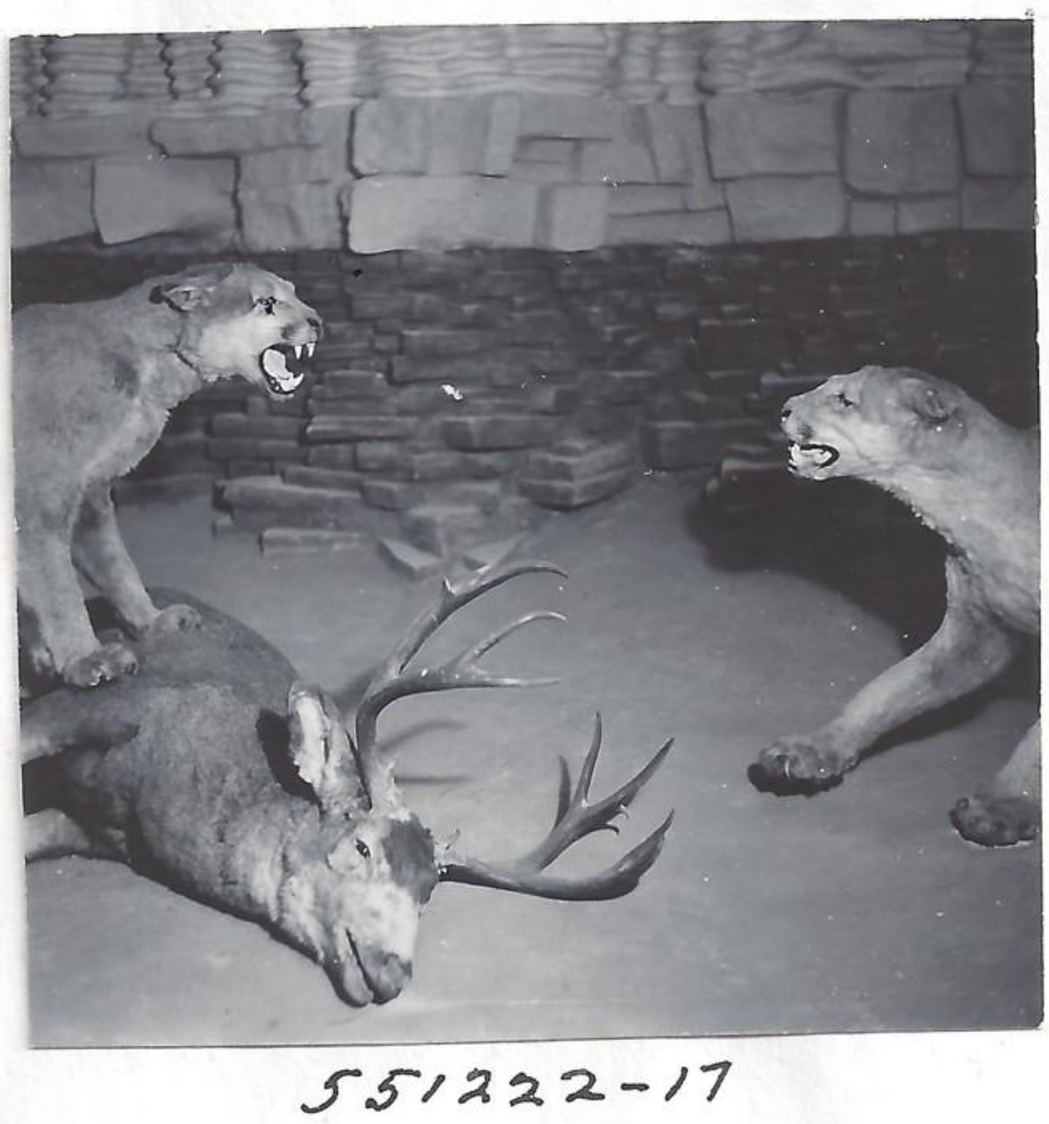
551222-14

mt. goats. Showing enlargement of cliffs by painting on wall.



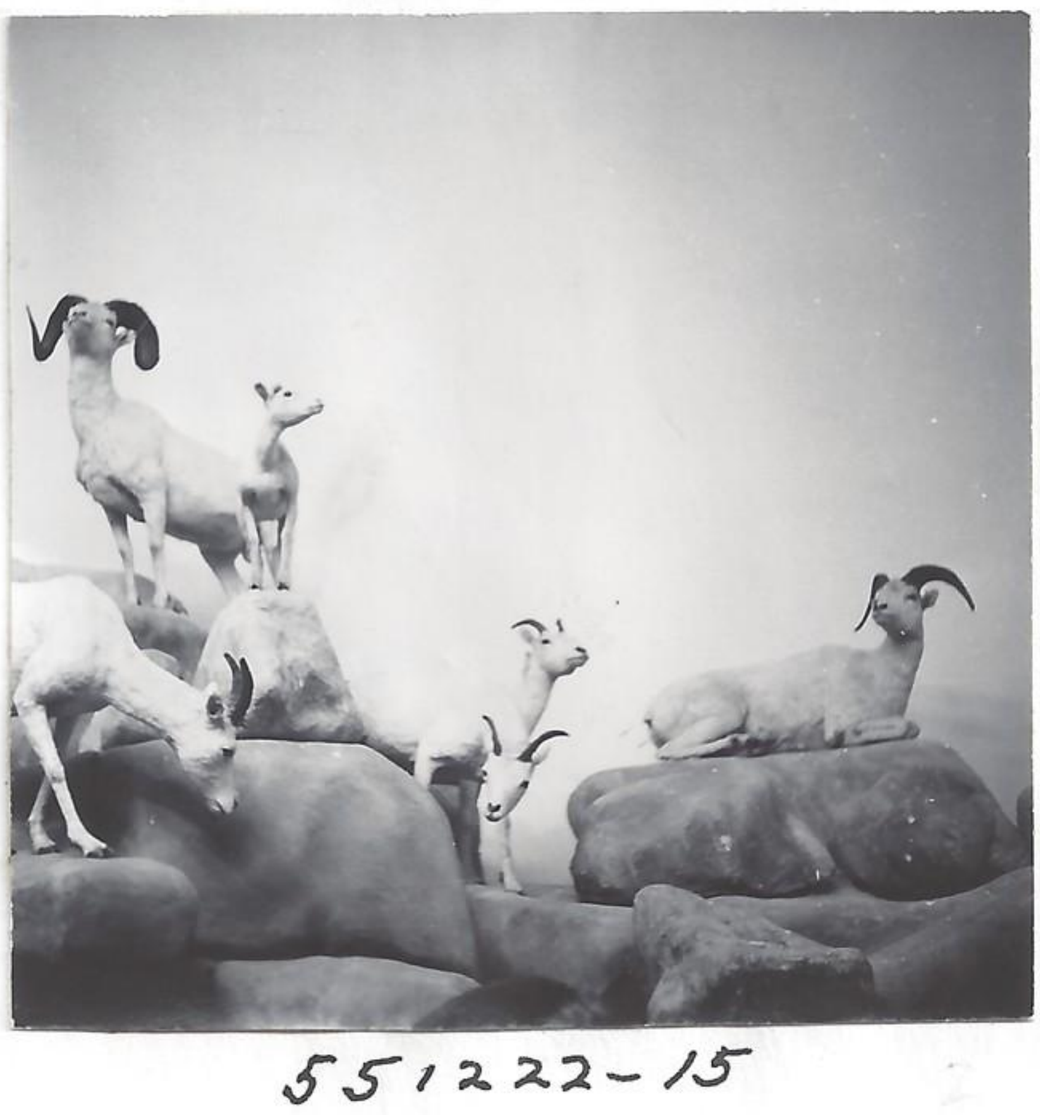
551222-13

wolf.



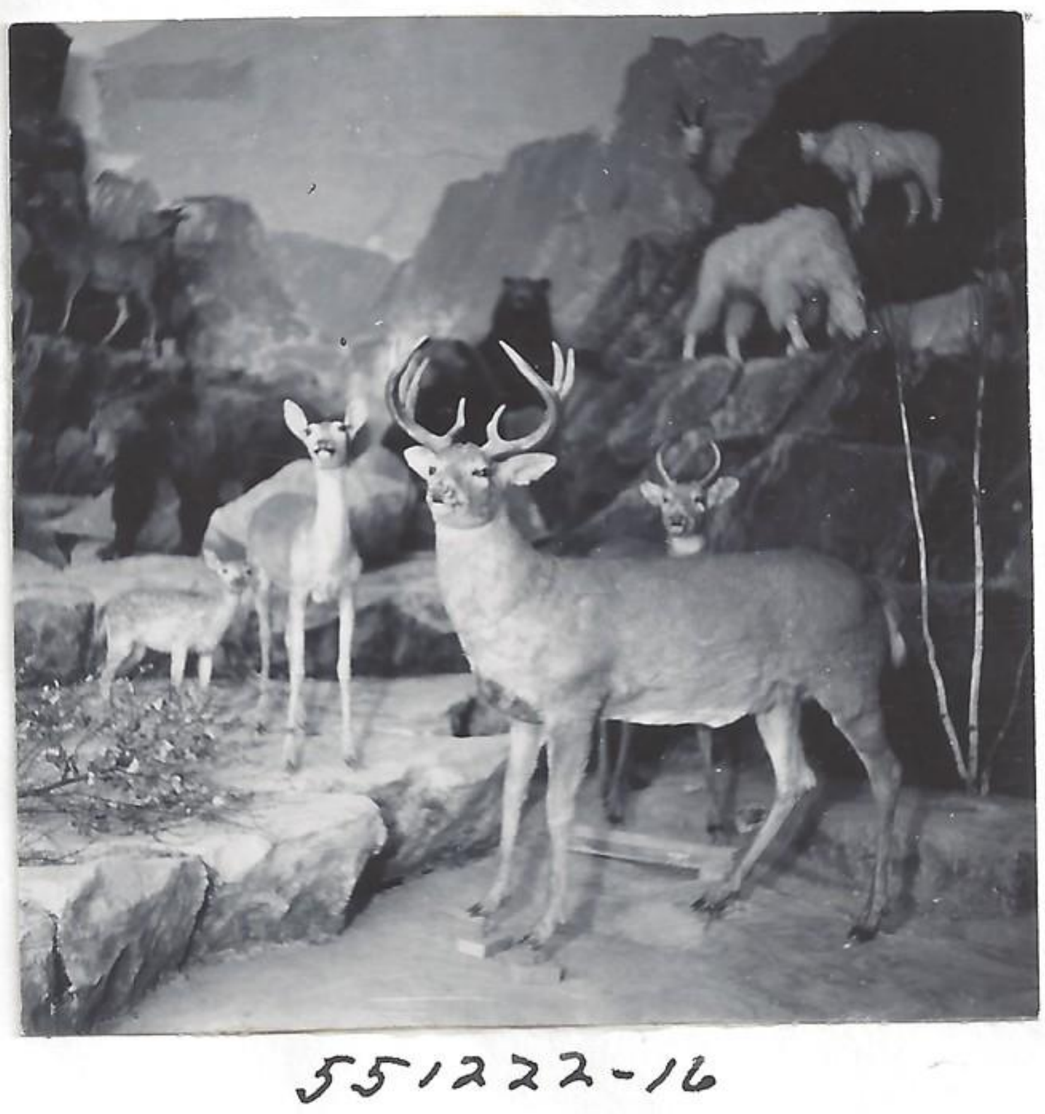
551222-17

wolf scene & mule deer



551222-15

New arrangement of Dall sheep



551222-16

general view, deer in foreground.

551222-182

551222-3

Using foreground and background in desert exhibit

551222-4

same as photo to left.

551222-5

same as above, painting on wall matched with

551222-1

securing artefical plants to flood. Sand dune in upper part of photo.

551127-3

more foreground accessories of plants and animals in desert exhibit

551127-2

building more desert accessories of plants and animals.

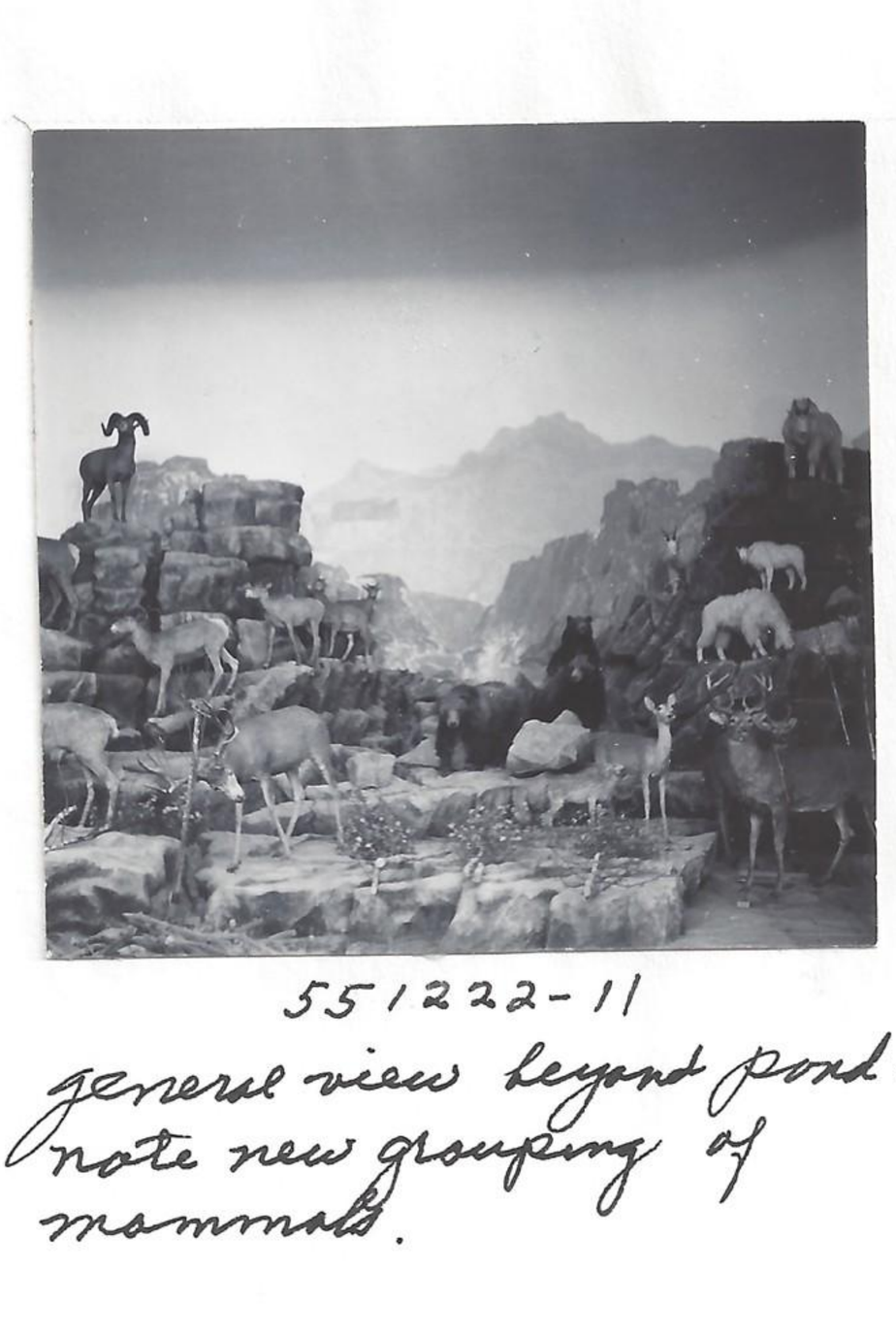
551222-183

551222-8
more birch trees added to moose exhibit

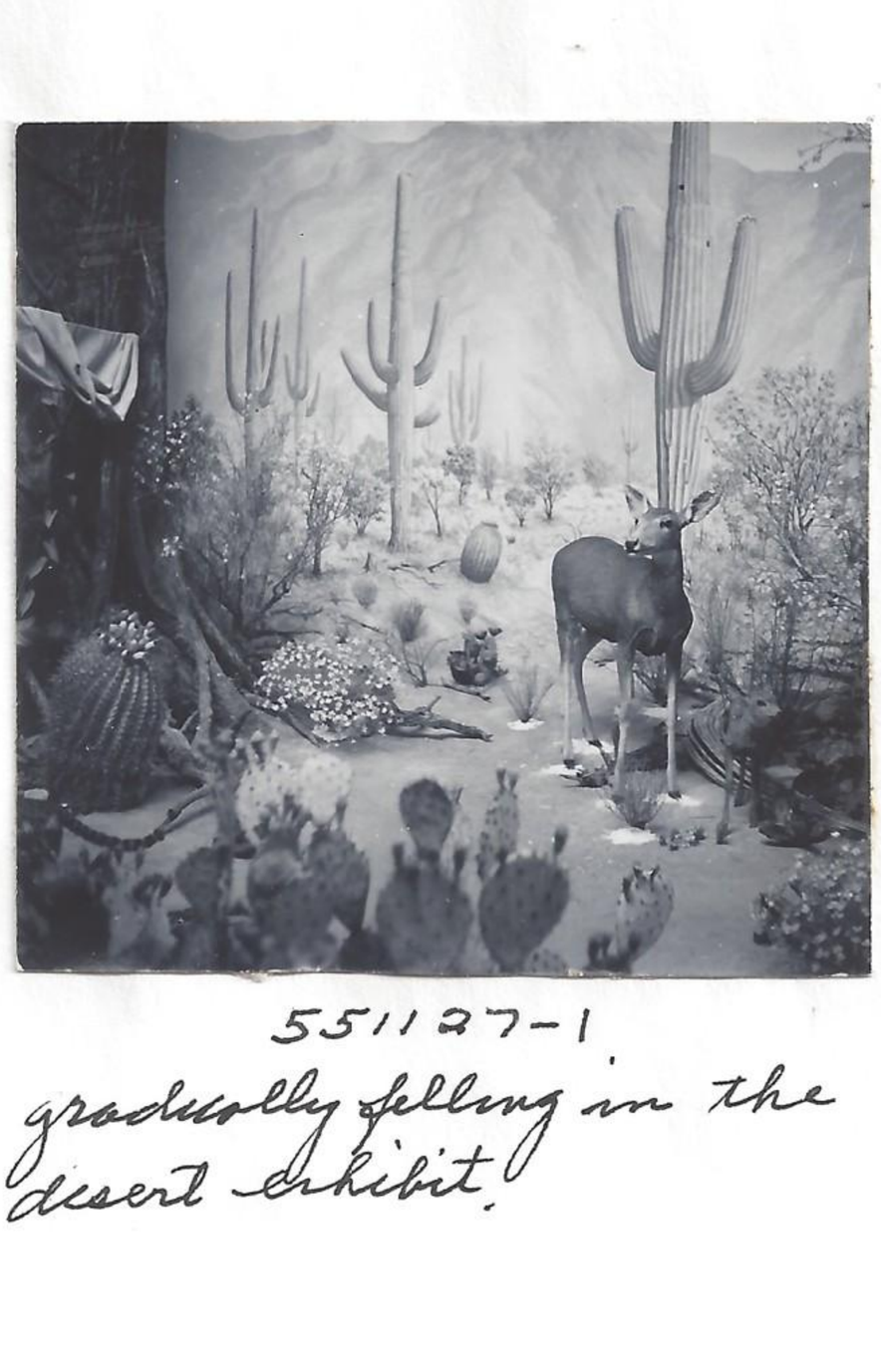
551222-9
moose exhibit. Note use of furrow disc to support trees + some large shrubs. This technique of mine allowed shifting of trees to gain better perpective.

551222-18
deer scene at head of pond.

551222-2
more cacti and mammals now in place in desert exhibit.



551222-11
general view beyond pond. note new grouping of mammals.



551127-1
gradually filling in the desert exhibit.

551222-184

Antelope group. Buffalo grass in place.

Bison group Buffalo grass in place.

551222-185

grizzly bear specimens that had been discarded I reclaimed and placed in a group, far enough from viewing area to camouflage damage and misshapened form.

mountain goats

551222-186

Elk group

deer.

Mt. lion and deer. Buffalo grass in place.

I was assigned the responsibility of forshortening the time for rebuilding and assembling the north American panorama after the complete dismantling of the exhibit when the new walls were furred from the old stone walls. my active envolvement constituted approximately 90 per cent of the reconstruction, exclusive of the background painting.

The new furred walls were necessary because the original paintings on the plaster coated surfaces on the old stone walls of the building were staining and cracking from bleeding of moisture from outside atmasphere.

Preparatory to the construction of the new furred walls, which was to provide an air space between the old stone wall and the new furred wall on which the new background of the panorama was to be painted by Sam Dickinson, I removed all the mammals from the panorama and placed them in the exhibit viewing area (now closed to the public), where they were repaired, cleaned and wrapped to protect them from dust.

During the construction of the new walls, the scaffolding used by construction workers was anchored to the cement floor some 2'-3' below the false floor of the panorama. For these areas I replaced and refinished the false floor and also modified the floor to fit the needs of the new exhibits. Remodeling of the false floor required extensive wood forming and great amounts of plaster surfacing, all performed in an enclosed area of ancient dust + airborne plaster.

Some background ledges and cliffs were built or modified including structures in the Kansas deciduous forest exhibit, the cliffs supporting the mt. sheep and mt. goats, the cliffs of the Dall sheep and the cliffs of the Arctic beyond the polar bear section of the exhibit. The sand dunes in the desert, roche moutonnée in the moose exhibit, the ground polygons of the arctic tundra and other areas were modified from the floor of the exhibit. The pond remained without much modfication except for waterproofing the stream and building the beaver house.

After the floor was finished I returned all the mammal specimens to the panorama and affixed them in place according to the new arrangement.

within each life-zone & arranged the mammals according to good balance and artistic composition. most of the mammals in their new positions had to be anchored thru the false floor.

I first provided plants, grasses, shrubs & trees, and mammals near the backgrokund wall, being sure that no shadows were cast on walls. Mr. Dickinson then painted the walls to blend in with the elements of the exhibit. I advised on the scientific and artistic composition of the background painting. I built and changed the scaffolding used for background wall painting, being complicated after Mr. Dickinson feel on freshly painted floor and later continued painting from a wheelchair on the scaffolding. Color photographs from my files were used as references.

For each of the life-zones I researched the natural plant-animal communities we were to duplicate in the panorama. I collected samples of vegetation for replication and then by first making a plaster cast of the vegetation which in turn was the source of a metal cast used to press images of the vegetation by hydraulic pressure. The plastic imprints in turn were cut, petioles affiped and then painted their natural color. The large trees, vines & bushes were natural and dried in their characteristic life-form. The entire process of making artificial vegetation, except 10% student help in affiping some petioles to leaves, was my personal responsibiteley.

The large trees covering structural supports in the Kansas deciduous forests were fashioned, one in plaster and the other natural bark. All of the leaves on these trees as well as the other trees and this exhibit as also were the trees in fall color in the moose & minnesota exhibits including the shrubs and bracken ferns were all my efforts.

I collected the substantial amount of mosses and lickens, ferns and trees on the Churchill, and Northern Minnesota collecting expeditions

Organized the housing, collecting and transporting the buffalo grass and sod from western Kansas.

& personally laid all of the buffalo grass in the grasslands exhibit consisting of some 2114 sq. feet of sod.

[INSERT] 551222-189

museum natural History, University of Kansas, Lawrence, Kansas.

July 18, 1973
[inserted in journal under date Dec 23, 1955

Recorded some information and recollections of Samuel Trig. Dickenson, the background painter for the museum of natural history and a former student at University of Kansas, Fine Art department (1904-06) Mr. Dickenson was born September 24, 1884 in Russel County, Virginia. He was a rather lean in stature and over six feet tall. In Lawrence he worked as a lamp lighter for the fire department, the town newspaper which preceded the Lawrence Journal World, as a house painter, and as a staff artist for the Hyche museum of natural History. He also worked in theaters in Chicago, St. Louis to as far as Fort Worth Texas, including Kansas City painting scenery for theaters. In those days, scenes were painted on curtains which were changed from one act to the next. Backdrops for stage plays and a mural in a museum in North Kansas City were also painted by Mr. Dickenson. He received blue ribbons at both the Topeka and Sedalia State Fairs.

Mr. Dickenson never married and lived his later years with his sister Ina (seamstress at Weaver's Department Store) at 1027 Connecticut Street, Lawrence, Kansas. They were in and out of Samaritan Lodge several times before he died on July 18, 1973 at the age of 88.

Mr. Dickenson was indeed a man of culture. He read constantly, accumulated an immense library, belonged to several literary clubs and took advantage of the cultural programs at the University of Kansas. Conversation and discussion were his outstanding attributes. He was not an impulsive talker, although I have worked with him and on occasions he has talked continuously from eight oclock in the morning until four or five oclock in the afternoon, breaking the continuity of his well organized thoughts to discuss a thought or question from his listener. It is incredible that stories, thoughts or experiences were never repeated to the same audience. If he should ever repeat a certain statement, the facts were always the same whether it was the depth of snow in a particular year or the time of day. One whole day we discussed the fall of

of the Roman Empire. His conclusions were that dilution of the population by outside ethnic groups caused the dawnfall and overthrow of the Empire. Conversations centered on past and present politics, art, music, people, economics, great masterpieces of writing, religions of the world and their contribution to society, sports etc. He was constantly reciting poetry and great speechs. Mr. Dickenson made the statement that his mixing of paints and putting paint of walls was reflexive and that he had no consciousness of forming the picture with his brush. no wonder, having painted all his life and also the fact that he was painting the scenes in the panorama for the second time in eleven years!

The customs of other countries fascinated him, particularly those of Egypt, Africa and Greece. He travelled with his sister and neighbors, and when he got the job of repainting the panorama, he took a trip to the Field museum in Chicago and U.S. National Museum of Natural History in Washington, D.C., to see the painted backgrounds of habitat groups of some of the mammals in order to paint them more authentically. While on this trip, Mr. Dickenson took photographs of what he saw as well as drew objects in nature, making footnotes beneath his drawings about colors and textures of his subjects. Mr. Dickensons favorites for painting were nature scenes and still lifes.

Mr. Dickenson possessed boundless energy, and wanted to take advantage of as many opportunetees as possible. Some of the words which others have used to describe Mr. Dickenson are: "remarkable", "beloved", "a fine person", "having extreme creativity", and "an individual who was admired by everyone".

as Mr. Dickenson spent most of his time in the panorama a note on the exhibit is included. The Lyche museum was built in 1901 and on November 30, 1932 it was condemned by the State Fire Marshall. Specimens from all over the museum were moved to various K.U buildings and funds were appropriated by the State Legislature and a grant from the W.P.A. The interior of the museum was torn out and until 1939 the wall of the 5'50 foot long exhibit on the main floor of Lyche was bare. Then, C. D. Bunker and H. H. Lane, the director, arranged the format for the walls panorama

of over 200 north American mammals mounted and placed in their natural surroundings. In December of 1939 Mr. Dickenson began painting the background for the panorama. After completion 13 months later, it covered 11,000 square feet at the cost of between $1700 and $2000. The museum re-opened June of 1941. Between 1945 and 1950 two new exhibits, the Tropics and desert, were initiated. In early 1950 the walls directly associated with the original stone walls of the buildings were furred out from the stone walls in order to provide an open space for circulation of air. By about 1956 the panorama was again open to the public. The re-construction of the panorama (exclusive of the painting) was accomplished by James a Bee (at least 90 per cent).

The panorama is one of the largest, if in fact the largest continuous exhibit of its kind in the world consisting of a series of biomes and ecotones Its complex painted background has been praised by many for its the dimensional effects, and according to many art critics is unsurpassed.

The Lawrence Journal World (3-23-40) in reporting on the first painting of the background says: "although the scenes are just paint on flat wall, bushes and trees seem to live in the pictures. A student in the school of fine arts recently moved to within 10 feet of the wall painting before he would believe that it was not a live bush he was seeing. Visitors who have watched the work of renovating the museum home been amazed at the wall decorations, so realistically has Dickenson painted the scenes."

Mr. Dickenson died July 18, 1973 at the age of 88 yrs. The Lawrence Journal World of July 19, 1973 carried the following obituary. Dickenson Services. Graveside funeral services for Samuel T. Dickenson, 88, of the Samaritan Lodge, 205 E. Mich., will be at 10:30 A.M. Friday at Oak Hill Cemetery with the Rev. Paul Durham in charge.

Mr. Dickenson, who died Wednesday at Lawrence Memorial Hospital, was born Sept. 24, 1884, in Russell County, Virginia. He was a staff artist at Kansas University and had painted the nature scenes at the museum of Natural History.

He is survived by a sister, Miss Ina Dickenson, of the Samaritan Lodge. Friends may call until 9:30 A.M Friday at the Warren mortuary.

551223-192

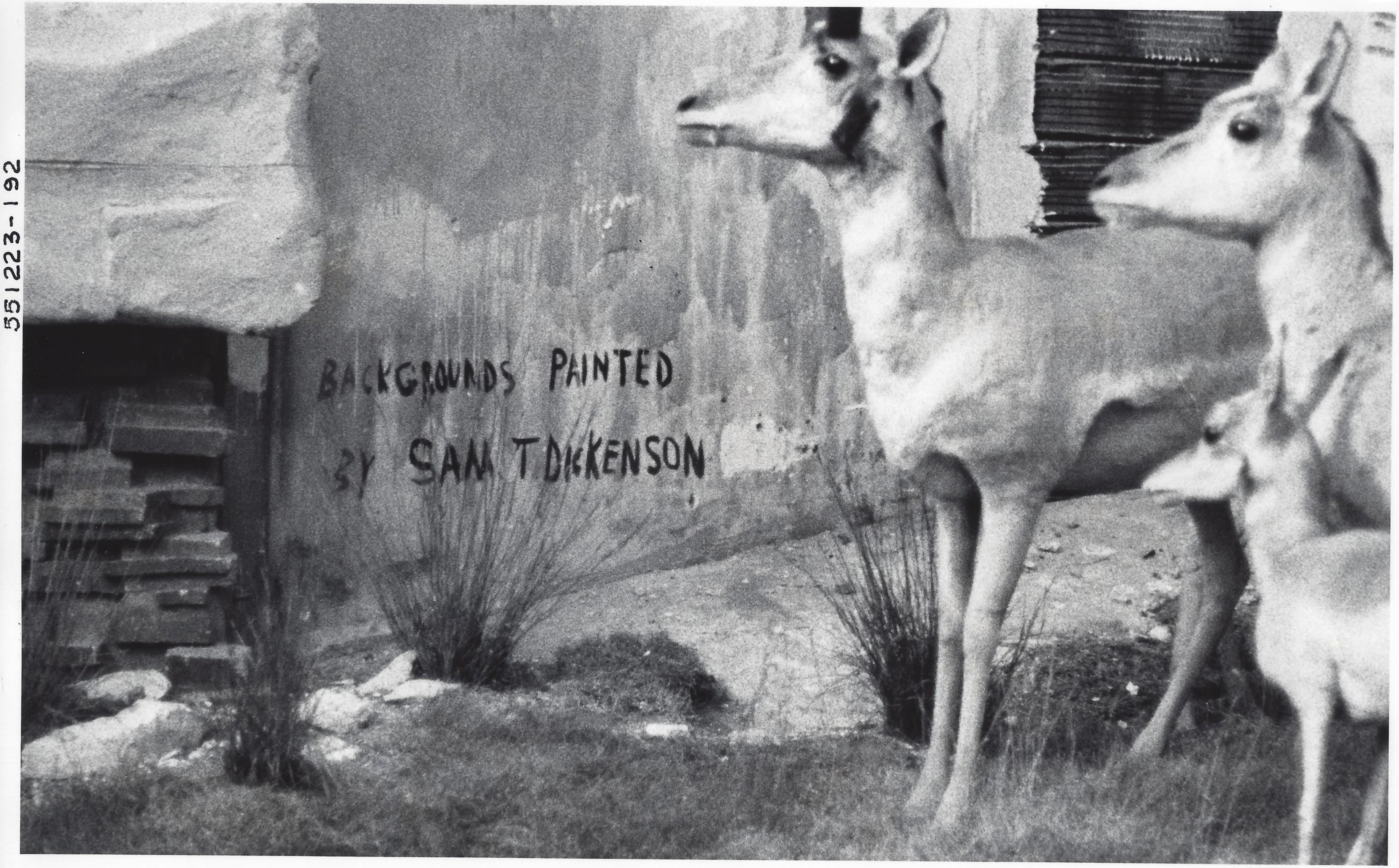


PHOTO OF ARTIST'S SIGNATURE. MUSEUM NATURAL HISTORY, UNIV. KANSAS

551223-193

SPECIAL of

School of Fine Arts.

COURSE IN DRAWING AND PAINTING.

UNIVERSITY OF KANSAS

Name, Dickenson, Samuel Irig
(Reversed.)

Freshman, 190____ *Sophomore, 190____* *Junior, 190____* *Senior, 190____*

		Course.	Grade.		Course.	Grade.		Course.	Grade.		Course.	Grade.
Fall Term.	Drawing I,		I	Drawing II,		I	Painting VII,			Painting VII,		
	English *B* I,			Drawing III,		II	Ornamental Design,			Hist. of Ornament,		
	Composition,			Composition,			Composition,			" Fine Arts II,		
	Perspective,			Ornamental Design,			History of Fine Arts,			Composition,		
	Voice,			Themes,			Advanced Eng. Comp.,			Forensics,		
	Physical Training,											
Spring Term.	Painting VI,		I	Drawing II,			Painting VII,			Painting VII,		
	Composition,		I	Drawing IV,		II	Painting VIII,			Painting VIII,		
	English *A* I,			Composition,			History of Greek Art,			History of Ornament,		
	Perspective,			Ornamental Design,			Composition,			Composition,		
	Drawing I,			Comp. Anatomy,			History of Fine Arts,			Modern Art,		
	Voice,			Themes,			Ornamental Design,			Forensics,		
	Physical Training,						Acoustics,			Graduating Painting,		
							Forensics,					

REMARKS:

B. P Conferred, _____, 190____

ENTRANCE.

Name, Dickenson, Samuel Irig
(Reversed.)

RESIDENCE, Lawrence

Date of Matriculation, September 1904.

Date of Birth, 1884

Preparatory School, India

	Examination.	Certificate.		Examination.	Certificate.		Examination	Certificate	CONDITIONS.	TO BE REMOVED.	REMOVED.
Arithmetic,			English Grammar,			Classics, No.....,					
Algebra,			" Composition,			Composition,					
Geometry (plane),			French, ...terms,			Rhetoric,					
" (solid),			" ..... "			Literature (history),					
Physics,			German, ... terms,			Language History,					
U. S. History,			" ..... "			Historical Grammar,					
General History,			Greek, ... terms,			Latin, I, Grammar,					
Physical Geography,			" ..... "			" II, Reader,					
Civil Government,						" III, Cæsar, ...books,					
						" IV, Composition,					
						" V, Cicero, ...orat.,					
						" VI, Æneid, ...books,					

REMARKS:

551223-194

Name Dickenson, Samuel Trig File 1034
Degrees

Home Address Lawrence

Residence

Citizenship

Birth 1884 Place

Matriculated 1900 School Fine Arts

Preparatory School India

Advance standing from

Parent or Guardian

Address

Nationality

CATALOGUES
1904-06

The School of Fine Arts.

GRADUATES.

Bell, Mrs. Olin, ... Lawrence.
Farrell, Mrs. Joseph, ... *Kansas City, Mo.*
Greissinger, Harriet, ... Lawrence.
Hubach, Mrs. C. E., ... Lawrence.
Leonard, Alice, ... Lawrence.
Nungesser, Ella, ... Lawrence.
Wiedemann, Louise, ... Lawrence.

Graduates, 7.

SENIORS.

Clark, Carlotta, ... Sharon Springs.
Gilson, Helen Louise, ... Lawrence.
Maser, Pearl Bechtel, ... Parsons.
McKoin, Mabel, ... Olathe.
Rose, Myrtle, ... Ionia.
Sweeney, Anna Louise, ... Lawrence.
Taylor, Alice Maude, ... Lawrence.

Seniors, 7.

JUNIORS.

Baumann, Helen, ... Neodesha.
Bonar, Kathryn, ... Lawrence.
Cross, Viah Mae, ... Johnson.
Cullers, Gertrude Estelle, ... Scandia.
Fitch, Louise, ... Lawrence.
Hodgson, Charlotte M., ... Lawrence.
Ingleman, Anna, ... Lawrence.
McNaughton, Lucile, ... Tonganoxie.
Perkins, Margaret Louise, ... Lawrence.
Street, M. Hortense, ... Lawrence.

Juniors, 10.

SOPHOMORES.

Arbuthnot, Lulu, ... Belleville.
Balsley, Helen, ... Oskaloosa.
Bowden, Bessie, ... Lawrence.
Branch, Hazel Elizabeth, ... Wichita.
Butler, Eva Annette, ... Lawrence.
Clevenger, Elda Babbett, ... Lawrence.
* Dickenson, Samuel Trig, ... Lawrence.

CATALOGUES 1904-1906

Courses of Instruction.

DRAWING AND PAINTING.

Professor GRIFFITH.

All courses except 5 are required of students of drawing and painting and are open to other students of the School of Fine Arts who are prepared for them.

1.—FREE HAND DRAWING. Free-hand drawing in charcoal from the cast. The method of instruction aims to teach the student to construct form in a simple and correct manner. Freshman through out the year, Monday, Wednesday, and Friday, 1:30 to 4:30. Professor Griffith.

2.—FREE-HAND DRAWING. Free-hand drawing in charcoal, from life. Designed to give firm construction in drawing and training in grasping the essential character of the model. Sophomore, 1st term and 2d term, (*a*), Monday, Wednesday, and Friday, 1:30 to 4:00 Professor Griffith.

3.—FREE-HAND DRAWING. Free-hand drawing in pen and INK from casts and still life. The technique of pen drawing for reproduction. Sophomore, 1st term, daily, 1:30 to 4:30. Professor Griffith.

4.—FREE-HAND DRAWING. Free hand drawing with water COLORS Wash-drawing for reproduction by the half-tone process. Sophmore, 2d term, daily, 1:30 to 4:30. Professor Griffith.

5.—DRAWING. This course aims to meet the needs of two CLASSES of students: Students who wish training in artistic perception And graphic expression, for its general culture value; and technical students, to whom some drawing is essential. It consists of the And eighteen weeks' work, covered by courses 1, 3, 9, and 10, three hours daily.

6.—PAINTING. Painting with water-color, oil, or pastille, from still life. Students begin the study of color in this class. The observation and reproduction of simple masses of form and color Freshman, 2d term; Sophomore, 1st term and 2d term; daily, 1:30 to 4:30. Professor Griffith.

7.—PAINTING. Painting with water-color, oil, or pastille, from life. Portrait painting is the object of the instruction given in this class. Junior and Senior, 1st and 2d terms, daily, 1:30 to 4:30. Professor Griffith.

8.—PAINTING. Painting of landscape and human figures in the open air. Junior and Senior, 2d term, daily, 1:30 to 5:30. Professor GRIFFITH.

9. COMPOSITION. Throughout the entire course every student is required to study the pictorial compositions of the masters, and each week to make one original composition upon a given subject.

10. , at 1:30. Professor Griffith.

10½. -PERSPECTIVE. Elementary perspective, shadows, and reflec-

11. Freshman, 1st term, Thursday, at 1:30. Professor Griffith.

the princ. PERSPECTIVE. Advanced perspective; the application of term ; ciples of perspective to pictorial purposes. Freshman, 2d

12. Thursday, at 1:30. Professor Griffith.

more -ORNAMENTAL DESIGN. The anatomy of pattern. Sophoment 1st term, (*a*), Wednesday, 4:30 to 5:30. The planning of orna-

5:30 Sophomore, 1st term, (*b*), and 2d term, Thursday, 4:30 to

13. Professor Griffith.

e. 1st ORNAMENTAL DESIGN. The application of ornament. Junment and 2d terms, Monday, 4:30 to 5:30. The history of ornaGriffith Senior, 1st and 2d terms, Thursday, at 11:15. Professor

551225-196

Museum natural History, University of Kansas, Lawrence, Kansas.
Dec. 25, 1955.

written for possible publication, James a Bee

In determining the history of Dyche Museum, it is possible to refer to the architects plans, materials used in construction, periods and personnel that contributed to its annals. But long before the first architects plans or the first shovels broke ground, there was an idea, a concept of the Museum held by a man that can be said to be the foremost factor in the Museum's history. This idea laid the real foundation for a Museum of Natural History to be built at the University of Kansas.

Along these lines there are other important developments that occured before actual construction. Support of that man's idea for a museum by the Chancellor of the University, and the board of Regents was vital. Their willingness to support and back the museum was essential for the concept to materialize.

This paper will attempt to show through letters, documents and other historical aides how the Museum of Natural History was transformed from the notions of one man, Lindsay Lewis Dyche and certain other people, into the building and displays that it holds today. Some may argue that this is not the history of the building as a structure, which is not intended here. But the inspiration of these certain factors and ideas make up the original premises in which the building was conceived.

The first section of this paper will deal with original writings of Dyche, some of his letters that show his feelings and thoughts on creating a house for his collection. Along with

this,other factors will be brought out that may have influenced Dyche in directing his efforts for a Museum.

The following letters will give insight to the plans and options that Dyche had in finding a location for his display.

"In Dec. I go to Chicago with over one-hundred large mammals. I would much rather come see you and have a talk than write as there are many complications in starting a museum.... It is my ambition to leave in some good institution the best collection of North American mammals in the world.

As far as a building for a museum is concerned I believe that I can induce any state in the Union to make appropriations..... Kansas Usity. would undoubtedly pay me $2,000 rather than see me go, Other things being equal I had rather remain here.

The city of Denver, and this is confidential, is also negotiating with me concerning this museum business."

This letter was written to a Professor Leanfield on Oct. 29, 1892. The letter also stated that he wanted to make a museum on a grand scale in accordance with his own ideas. This letter shows that Dyche was definitely considering other options than just his alma mater for placing his specimens.

Along these same lines in another letter to W.T. Hornaday Dyche reveals a bid by the chancellor of the University of Nebraska concerning bids the appropriations of money for a museum. This also was in 1892. At the same time many of W.T. Hornaday's letters tried to get Dyche to go back East because he was such an "artistic taxidermist" and also the fact that he was assured of "higher salaries."

As Dyche took his display the World's Fair in Chicago he wrote the Chancellor of Kansas University, F.H. Snow on on the details how the exhibit was going and the reaction it received on such a national scale.

"More than 70,000 people have been in our buildings in a single day. The advertisement ought to be worth thousands to the University. Duusame (spelling of this persons name was difficult to decipher, may be incorrect) speaker of the would be house of representatives was here yesterday. Our exhibit seemed to take him by surprise. He said that after the World's Fair was over and the Kansas proper had seen our collection that we could get anything that we wanted and get a good museum building for the collection that would be given by the next legislature. This sounded well, whether it means anything or not."

This letter was dated March 23, 1893. Chancellor Snow later proved to be a very strong backing force for a museum building bearing Dyches display.

The second section of this paper will deal with the backing that the University and its chancellors gave to the museum cause. Through the use of historical reports of the Board of Regents and various chancellors spanning eight years it is able to see the need they felt for a museum. Needs ranged from a lack of space in Old Snow Hall to handle the exhibits without interfering with classroom space, to the need for a building that would be a tribute to Dyche and his collection

Also included here will be the culmination of all efforts by Dyche, the chancellors and the Board of Regents in housing Dyches display. Some of this will be shown through the board of regents minutes of their meetings, finalizing construction after the State Legislature had appropriated funds

for a museum. Here the Regents get down to the specifics of location and bidding for the job. The main task had been accomplished with the State finally backing funds for a museum. And it is possible to see through written history the decisions that made and placed Dyche Museum where it is today.

The first report is by Chancellor Francis H. Snow, who was previously mentioned as a major proponet of the Museum. These suggestions were in a report to L.D. Lewelling, Governor of the State of Kansas. It was written in 1893.

"It has been found that the Natural History Building was so crowded that it was impossible to place Prof. Dyches exhibit in permanent condition as an educational factor in the biological courses of the university. Consequently only a temporary arrangement of this valuable material has been undertaken, and the legislature should make immediate provision for the erection of a building commensurate in extent and design with the importance of the collection, and with a reasonable capacity for the future enlargement of the department to which it belongs."

The next section is the Report of the Chancellor in 1897.

A NEW NATURAL HISTORY BUILDING.

The University of Kansas is also in great need of a new building for museum purposes. During the last year a carefully itemized inventory was made of the museum collections. In preparing this inventory a very conservative estimate was placed upon the value of these collections. The entire value of the material in our museums was found to be $107,958.25, distributed among the different departments as follows:

Mounted mammals, birds, and unmounted skins, chiefly the work of Professor Dyche	$51,145 00
Collection of fossils, chiefly the work of the late Judge West and Professor Williston	29,072 00
Collection of insects, chiefly the work of Professor Snow	21,591 25
Collection of minerals and rocks, chiefly the work of Professors Haworth and Snow	5,450 00
Collection of mounted plants in the herbarium, chiefly the work of Professors Snow and Stevens	700 00
Total	$107,958 25

551225-200

In presenting the above estimate of the money value of the natural history collections the writer desires to emphasize the fact that these collections have an intrinsic value which cannot be estimated in dollars and cents. They contain many specimens whose chief value lies in the fact that they are the only specimens in existence. They cannot therefore be duplicated and their destruction by fire would inflict upon the institution a loss which would be absolutely irreparable.

The natural history collections of the University of Kansas are also of especial value from the fact that they embody the personal labor of members of the University faculty, who have not only given their time in summer vacations to laborious service for the good of the University without recompense, but have also endangered life and health in visiting regions infested by hostile Indians, by malarial diseases and by pernicious extremes of heat and cold. The very life of these enthusiasts for university advancement has in a peculiar way been incorporated into the results of their vacation labors. While other great museums have acquired their treasures chiefly by purchase at a cost of hundreds of thousands of dollars, the museum of the University of Kansas has involved no expenditure by the state beyond the mere traveling and living expenses of the professors and students conducting the various collecting expeditions. The total money cost to the state of Kansas of the University collections in natural history has been less than one-tenth of the amount of the itemized inventory as given above. These valuable results of scientific research should be preserved from destruction in a fire-proof building. The present natural history building is already crowded from basement to attic with the laboratories and museum collections of four different scientific departments, and there is no room for future growth of the museum. Moreover, it will be impossible long to retain the services of such men as Dyche, Williston and Haworth unless suitable provision is made for housing the results of their scientific expeditions. Every foot of space in the present natural history building is needed for the laboratory requirements of the various departments of natural history.

And in the year 1897 The report of the Board of Regents went as follows. It was directed to Govenor J.W. Leedy.

Reasons for a Museum Building.—When the present hall of natural history, known as Snow hall, was erected the accommodations were ample for the exhibit of the collections in zoölogy, botany, entomology, and geology, and there was ample provision for the laboratories and lecture-rooms required by the condition of the University at the time of its erection. When that building was erected the present Chancellor of the University was the only full professor, and Mr. L. L. Dyche was the only assistant. At the present time the teaching force in biology has been increased until there are now in Snow hall three full professors, two associate professors, and three instructors, while the number of students has increased threefold. The natural-history collections, through the enthusiastic vacation activities of the force of instruction, have been greatly enlarged, until more than one-half of the entire material is packed away in boxes and attic storerooms, from lack of floor space for its proper display. The University of Kansas now has in this building a large amount of material which is not to be found in any other museum in the world, aggregating in value at least $150,000. This material, whose destruction would entail an irreparable loss, because it could in no possible way be duplicated, is stored in a building of a dangerously combustible character. On sound business principles, a fire-proof structure should be erected for its safe-keeping. Such fire-proof museum building should be erected at a convenient but safe distance from the present natural-history building. Every foot of space in the present building is needed for the work of instruction.

And finally the third report by the Board of Regents to Govenor W.E. Stanley in the year 1899, just previous to legislative session that alloted funds for the construction of a museum facility to store and display the works of Dyche.

> *Need of a Museum Building.* The need of a museum building for the University of Kansas is so well known to every one who is in any way connected with the institution that it seems unnecessary to refer to the subject at length in this report. So urgent has this need become, however, that no efforts should be spared to make it plain to those whose knowledge of the University is less intimate. There are two principal reasons for the immediate erection of such a building: First, the entire structure which now contains the museum collections is needed for laboratory purposes by the natural-science departments; and second, the collections themselves, with the present accommodations, are not only crowded into quarters so limited that less than half of the material can be properly exhibited, but are exposed continually to the danger of destruction by fire. Either of these reasons alone would justify the present legislature in appropriating sufficient funds to erect a museum building.
>
> When the present hall of natural history was erected the accommodations were ample for the exhibit of the collections in zoology, botany, entomology, and geology, and for the laboratory and lecture-room work required by the condition of the University at that time. The various branches of natural science were then included in one department, with the present chancellor of the university as the only professor and Mr. L. L. Dyche as the only assistant. There are now in Snow Hall four separate departments of natural science, with a teaching force composed of three full professors, two associate professors, one assistant professor, and four instructors. For the twenty-nine laboratory courses offered by these instructors, in which during the last year 364 different students were enrolled, only five rooms are reserved. The remaining space is taken up by the workshops of the zoological and paleontological departments and by the greatly increased collections above mentioned. With the present crowded condition of the museum and storerooms, not more than one-third of this building is available for purposes of instruction, yet every foot of space which it contains is needed for laboratory use.
>
> For more than thirty years the natural-science instructors of the University of Kansas have spent a large part of their time during the summer vacations in collecting material for the University museum. As a result of their labors, the hall of natural history now contains collections valued at $150,000. The total cost of these collections to the state, however, has been less than one-tenth of that amount. While other great museums have acquired their treasures chiefly by purchase, at a cost of hundreds of thousands of dollars, the museum of the University of Kansas has involved no expenditure by the state beyond the actual expenses incurred by the various collecting expeditions.

In considering the importance of preserving these collections, it should be remembered that they have a value which cannot be estimated in dollars and cents. They are especially valuable to the University because they represent the work of the faculty and students for a third of a century, and because they contain many specimens which no other museum in the world contains, and which, if destroyed, could not be duplicated.

Whatever the real value of these collections, however, they are of little practical worth unless they can be so displayed as to be made available for illustrative purposes to the students and properly exhibited to the thousands of persons who each year visit the University. Yet such are the present museum accommodations that more than one-half of the material is necessarily packed away in boxes and attic storerooms; this, too, in a building of a dangerously combustible character, and particularly liable to destruction by fire because used for laboratory purposes. On sound business principles, a fire-proof structure ample for the display and safe-keeping of these collections should be immediately provided. For the erection of such a building $100,000 will be required.

All of the preceeding staements of recommendation for a museum facility were either written by a chancellor of the University or members of the Board of Regents. Their purpose being to recommend necessary improvements for the University. These were sent to the Govenor for review in order to be introduced to the legislative session for state funds. These funds were finally obtained in 1901.

The final steps forthe construction of the Museum were up to the Board of Regents. The following are minutes from various board meetings concerning the future of the Museum. The date for the first entry is 2-28-1901

"Whereas in view of the fact that the legislature has appropriated $75,000 for a natural History Museum, the Board hereby requests that the prescence of Professors Dyche, Williston and Haworth be obtained for the purpose of consultation in reference to the building of said Museum. Carried unamimously."

"Moved that the Vice-President procure competitive plans for the construction of a Museum Building to be considered by the Board at the the April meeting. Carried."

"The hour of 8 P.M. having arrived the bids for the new museum building were opened in the prescence of board and bidders. The bids were as follows;

Bidder	Offer	dirt	Concrete	Wood
Henry Bennett	$65,444	.25 1/2	5.40	7.70
Cathbert & Sargent	66,100	.35	4.36	8.19
C.A. Fellows	66,300	.25	5.50	7.00
E.H.P. Schneider	68,044	.25		4.80
Lawrence Plan Mill	74,836	.25	2.70	4.16
Latimer & Benning	79,161	.25	6.00	4.00
Geo. Goodlander	80,769	.55	4.50	5.00

Heating

Graeber Bros.	$2,906
Kermayer Plg. & Blg.	2,737

Plumbing

Graeber Bros.	$477.

Adjourned to meet at the Eldridge House at 7:30 P.M.

Meeting called to order at 8 o'clock P.M. Present Regents Spangler, Hopkins, Forney, Potter and Crowell.

Moved and carried that wooden columns be used instead of iron as per specifications; also that two chimneys and ventilating shafts be eliminated.

Whereas the bid of Harry Bennett for the new museum building was the lowest an best bid so be it.

Moved and carried that Graeber Bros. bid for plumbing and heating in the museum be accepted on signing of a bond."

Also it can be noted in these minutes a certain ironic twist wherein after a museum is to house his specimens he requests money for certain reimbursements.

"The following resolution was introduced and carried. For money expended in expeditions for the collection of museum specimens to the amount of $716.00 and

Whereas Prof. Dyche claims certain specimens of various kinds in the University building as his personal property.

Thereof Prof. Dyche has offered to accept $1,000.00 in full or all claims against the University to any and all specimens of every kind whether acquired by him by purchase or otherwise and in University buildings in order that all specimens may be the property of the University of Kansas, without any claim by said Dyche to some or money paid out and expended by him in making purchases of said specimens or expenses for various trips to collect same therefore, be it.

Received, the the secretary, treasurer and purchasing agent be authorized to pay Prof. L. Dyche $1,000.00, $750.00 in cash and $250.00 on or about July 1."

So Dyche did collect some reimbursement for specimens and travel expenses, but it was a meager sum for the priceless collection of animals obtained by the University and the State of Kansas.

The following letter was one written by Dyche endorsing his own specimens as fitting for a museum. It points out many of Dyches feelings and beliefs on the subject.

551225-205

Entered Dec. 25, 1955

Lawrence, Kansas, November 22, 1900

Hon. C. F. Scott,

Iola, Kansas.

Dear Friend Scott;-

Judge Sams asked me to send you a letter setting forth some claims the University might make for a Museum Building. The Legislature will undoubtedly look at the financial side of the presentation more than any other. I find it difficult to place a dollar and cent value on the museum collections. There is no regular market for such goods. Museum specimens produced in the Taxidermic Shop stand on about the same footing as pieces of statuary and paintings produced in the artist's studio. They are looked upon as luxuries and fancy goods which usually go at fancy prices when they do go. The value of such a collection as the University possesses depends to a very considerable extent upon the degree of its completeness. The more complete the more valuable. Rareness of the material also adds much to the value. Again the value depends as it does with pieces of statuary and paintings upon the manner of execution. In the general statement which follows this I have tried to convey some idea of the value of the museum collections. It is based on information secured while the exhibit was at the World's fair, and on the value placed on such collections by other institutions.

Most of the stuff I am sending you in the general statement that follows has reference to the collection of mammals. It is much easier to interest members of the Legislature and people in general in this part of the museum. Other collections may be just as valuable to an educational institution but are not so easily explained or so attractive to the public.

There is one point I omitted to touch upon in my general statement. It is this: There are at present 125 students in the department of Zoology. There is no class or laboratory room in the institution that the Department of Zoology seems to have any claim upon. For a few years past classes in Zoology have been held in the west basement room of Snow Hall. As classes in physical culture were held in one end of the room at the same time it was almost impossible for students to do creditable work. Students should not be asked to take a course when no better accommodations can be offered them. At the beginning of last Spring term 17 students presented themselves for a course in systematic zoology. After going over the ground thoroughly with the Chancellor it was found that there was no room in any building on the grounds that was available. The class had to be abandoned with the exception of five young men who undertook to do the work in the corner of the Taxidermic Shop, a place not at all suitable for students. If the collection in Snow Hall could be removed to a Museum building, then the large well-lighted rooms now occupied by the collections in that building would become available for class room and laboratory purposes.

In conclusion I want to say that while I am not as old as some people yet I am much older than I used to be. I have done my best for years to build up a good collection of large mammals, and while doing so have gone up against some pretty hard propositions. I want to do one thing more. I want to put the collections I have made in the best possible shape to insure their future preservation. This done I am ready to quit and "go a fishing" all the rest of the days of my life.

Very truly yours,

gwb Lewis L. Clyche

In conclusion it can be said that Dyche and his valuable collection of specimens were the motivating factors for a museum. The work and knowledge of Dyche brought him his collection, and it was that same hard work and knowledge that formed the basis for the construction of a museum. Thru the written history shown herein it is possible to gain a new insight into the creation of the Natural History Museum. Personal and monetary componets also played a major role. The letters reflect many of Dyches true feelings and beliefs. It is possible to view with a wider range the makings of the Museum through original historical writings. The facts and words are right at hand, along with what was actually thought and felt at that time. Not retrospect, but the goings on and agents that made up that point in history. So it is possible to see that the Natural History Museum Building on the University of Kansas Campus is not just a construction, it is a composition ideals, knowledge, hard work and dedication.

551225-209

Museum Natural History, University of Kansas, Lawrence, Kansas

Dec, 22, 1955

written for possible publication. James W Bee

MUSEUM OF NATURAL HISTORY

One of the oldest, built in 1901, structures on Mt. Oread is the Museum of Natural History. The Museum is often called Dyche Museum after Lewis Lindsay Dyche, by whose interests and dedication the idea behind this unique museum made its construction possible. In this history of the Museum, backgrounds of Dyche and of the Museum will be put forth revealing some colorful and informative material. To begin with a short description of Dyche and his links with the University and ultimately the Museum of Natural History will be discussed.

An unusual man was Lewis Lindsay Dyche, combining energy, ability and skill with a flair for showmanship, he brought ro himself and the University. Dyche lived all of life but three months in the Wakarusa Valley. He attended the University of Kansas. After graduating he was asked back to the University in a new role, to teach natural history. In 1866 the young man who was to teach natural history called on Chancellor R. Oliver. In the course of the conversation he asked whether any provisions had been made for collecting specimens. Dr. Oliver replied, "About all you can do now is to take your gun and go hunting." And that Dyche did, with expeditions to the Rockies and elswhere.

One of the men that had a strong influence of Dyche was Francis Huntington Snow, who really laid the foundation for a museum by maintaining a deep interest in natural history.

Dyche first became widely known as the result of a display of more than ane-hundred of his "stuffed animals" at the 1893

Worlds Fair in Chicago. He had mounted them, not in the stiff, formal style of ordinary museum exhibits, but in natural life-like occupations, against a convincingly realistic background of their naturla habitat. Commance, a specimen which he had just finished, was part of the exhibit, It brought press comments from all over the world.. Dyche's fame and popularity continued to grow to such an extent that in 1897, when the Legislature of the State of Kansas instituted a wholesale reduction in University salaries, he was singled out as the sole exception, and in 1901 he and Chancellor Strong combined efforts to induce the Legislatur to provide funds for the erection of a museum to house his famous collection. Called simply the Museum until his death in 1915, it was then officially named "The Dyche Museum." The name was meant to apply both to the building and its contents, hence the present label of "Dyche Hall" is incomplete.

The Museum

The plan of this building is mainly a scheme developed by Profeesor Dyche. The plan which Prof. Dyche has intiated is entirely unique and contemplates showing the animals as nearly as possible in their natural habitat. In order to do that, and form for each group a proper setting, considerable space is required, and for the mountain animals much height.

The general idea of the building is to exhibit in a novel manner and a natural one, pricipally the American mammals and American birds. The building was designated to express out-

wardly its uses. In order that the valuable collection would be safely housed the building was fireproofed.

The material of the outside is of Lawrence native stone, and the trimmings will be of Cottonwood Falls stone and Lyon county stone. Kansas materials were used where practicable. A brief description of the museum by Henry Bennett,

> "The situation of the Museum is directly west of the library, across Oread Ave. So that being on the east of the hill, and in front of the campus, its position will be commanding."

The style used was venetian Romanesque, though the main entrance has the exact lines of the most beautiful Romanesque in the world-Cathedral of St. Trophine at Arles in Southern France. The names Newton, Agassiz and Huxlley that are carved into the building were carved on site by an Italian stonecutter. The gargoyles on the building are also unique. On the Southwest side "rock chalk" is inscribed on its breast, over the front entrance is "j hawk" with a question mark below it, which no one knows why and the third gargoyle has "K.U." written on it.

The contract for the main construction of the building was let to Mr. Henry Bennett of Topeka, The architect was Mr. Root. There were some other unique features implememented into the building. The floors were interwoven with barb wire, this scheme was devised by Mr. Root to give the flooring tensile strenght. Also fireproof plastering was used for the first

time in the Lawrence area. The building was put up at a cost of $75,000.

Since this beginning Dyche Museum has been in the news numerous times. In 1932, December, the Museum was closed down due to the fact that it was judged unsafe, the floores of the structure were found to be too weak to further support exhibits and repairs would require alot of funds which weren't available at the time. This was to begin a very critical period for the Museum and the displays. A period of eight years was to begin, during these years the Museum was mostly closed, improvements were made, work was often stalled due to lack of funds.

Numerous articles appeared when the museum was closed down urging the necessary repairs, " We are wondering what is to be done about Dyche. Dyche has long been recognized as one of the foremost campus museums in the United States."[2] New floors were put in to support one-hundred pounds of pressure per square inch and the fourth floor was also put in at this time at a cost of $34,000.

Then work was suspended due to rising costs. But another personal exhibit was installed. This exhibit was to depict pre-historic animals, the Dioramas in the basement were done by Bernard "Boco" Frazier, a former student and member of the track team. Mrs. Frazier painted the background for the exhibit.

Yet still more crises were to befall the Museum during these times. In 1935, during the repairs of the exhibits many of the specimens were attacked by a fungus, all had to be inspected and cleaned. Some good news followed on July 6, 1936. The Museum was temporarily re-opened to show the Dioramas. But on November 12, of that same year vandals damaged three of the Dioramas, the police were not called and the University handled it by the administration.

Finally in February the Legislature appropriated $55,000 for the completion of repairs. In June 1938 Dyche was to be "re-completed." The improvements were vast. Nearly all of the exhibits were encased in glass. A fan like area surrounded by a wall of glass compromised a major portion of the main entrance. A modern terrazo coating covered the stairway treads and landings to the upper floors.

Then once again there were more problems with the reconstruction, in 1939 PWA funds were not obtained. Public sentiment reached into a swirl. "Dyche Museum represents many 1,000 of dollars in expeditions, equipment and specimens. It is too valuable an investment to be closed."[3] In 1940 a freight elevator was installed.

On the lighter side of the problems, an imaginative method was used by the operators of the Museum in cleaning the 15,000 skeletons that the Museum housed. A swarm of beetles were used to complete this job and it was carried out throughly for a minimum of cost.

Also in that same year, 1940, Sam T. Dickinson, an artist on the Building and Grounds Staff, painted the panorama in the main exhibit. Also special light diffusing glass was put into the main exhibit at this time. The cost for the new paint job was $2,000 which was inclusive of a 550 foot painting.

Finally the end of an era was about to come. Dyche was beginning to take its shape and run a normal course. "The doors to one of the greatest shows in Kansas, a show closed for more than eight years will be swung open to admit visitors during the commencement week, 1941."

On December eight, 1949 still another misfortune befell the Museum. A fire broke out in the Museum tower. The damage was kept to a minimum due to the fine efforts of the Lawrence Fire Department, whose aerial fire equipment was extended to its fullest lenght for the first time ever. There was minor damage to some specimen boxes and skeletons.

Another innovation into the Panorama room was introduced in 1950. The system of silhouette labelling became a new feature thereby assisting visitors in recognizing and naming the various specimens in the exhibits. This labelling system was put in by S.T. Dickenson and Russel Camp. Shortly after this in 1951 yet another addition was made to the Panorama in the form of the Tropical setting depicting birds, plants, vegeatation and other specimen in their natural tropical setting.

An addition of greater magnitude was undertaken in 1962. This was to be another structural change, the Museum was to add

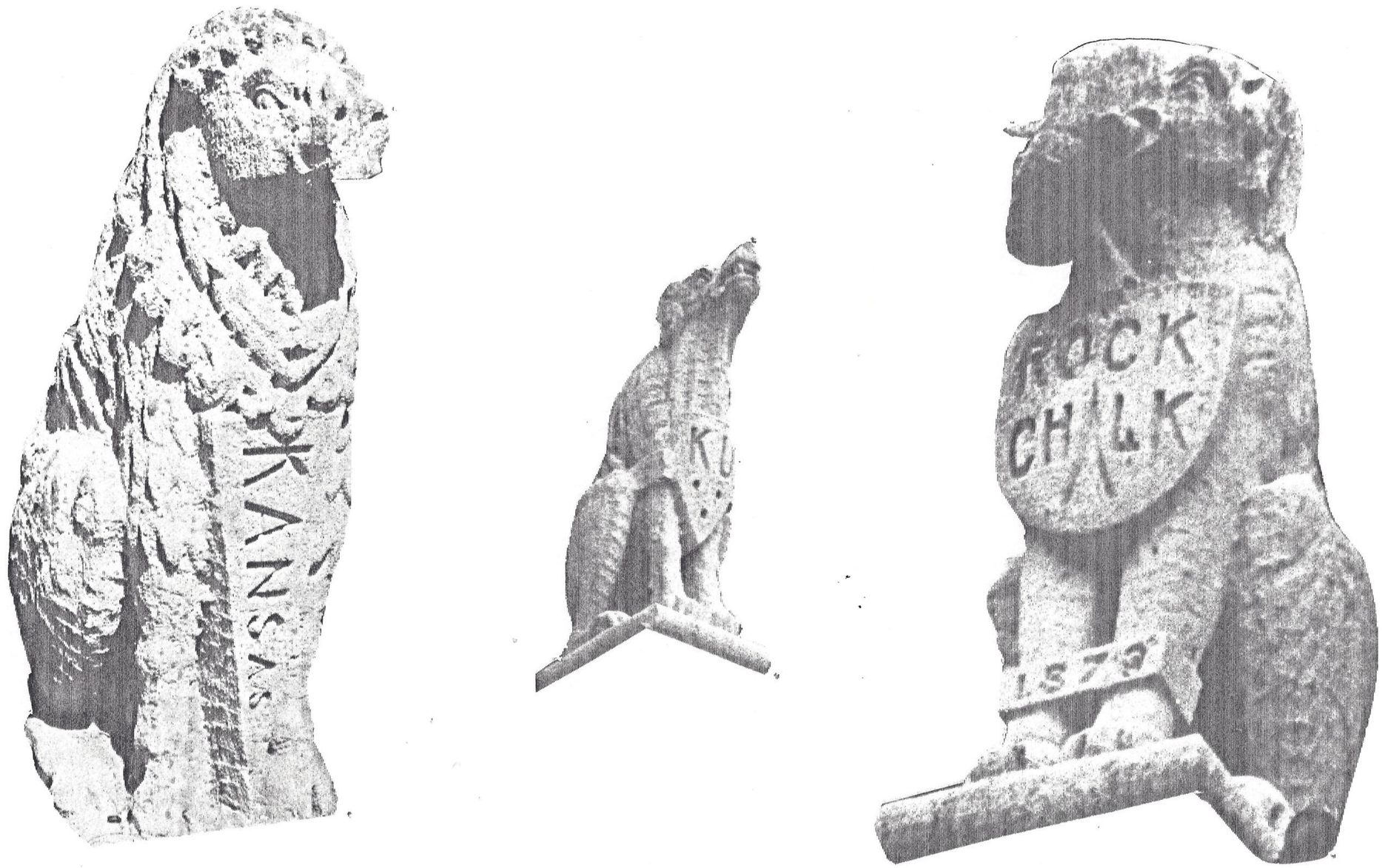
a portion on which would entail seven stories high. It was built on to the north side of the original structure. The outside was rock covered to blend in with the present building. On the inside laboratories, offices and a auditorium were to be housed adding experimental and educational dimensions to the Museum.

The history of the Museum as outlined above has been a long and eventfull one. Dating back to the man it is named for and his concept of what he felt a museum of natural history should be, one can see what has perpetuated it. Innovations along with a great many dedicated people have provided energy for the Museums continuance. Hopefully, new ideas and people will carry on the traditions which is the basis for the Museum.

Museum natural History, University of Kansas, Lawrence, Kansas

Dec. 25, 1955

Photographed the 3 gargoyles that were related to the College yell, Rock Chalk, Jayhawk, K.U.,
note that date on Rock Chalk gargoyle predates the creation and use of the college yell
at. K.U.



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Robert Taft in his The years on mount Oread, pp. 28, 29 describes the Rock Chalk, Jay Hawk: quote" It was used in 1849— possibly there may have been a still earlier use— by a harrawed band of Forty-niners on their way to California... It was used in territorial days in Kansas to designate groups of despoilers, bushwhackers, or members of the opposition, especially as a term of opprobrium for free-state men of southern Kansas. The yell ... was used by the Science Club during the year following school year (1886-87)... it was not long after its first adoption that "Rock Chalk, Jay Hawk, K.U." was was substituted for the original version... Some credulous individuals actually suggested the theory that a jayhawk was a herding combing the properties of a jay and those of a hawk ... but the idea thus inferred and referred to the jayhawk did nat strike popular fancy and most individuals were content to treat the animal as purely a creature of tradition." end of quate.

It has always been my intention to photograph all of the fegures and designs, interpret their signficance and publish a hand book so that others could enjoy the study of the outside archetecture of this interesting building.

The photo on the next page shows the "Jay Hawk" with outspread wing. It stands at the top of the outer SE column of the the 3 columns on the north side of the entrance to the building. Two other "Jay Hawk" figures share the top of this column.

Of the 4 gargoyles removed from the N side of natural History museum, I salvaged 3 from the University outdoor storage field on the campus. The three are:

The lion (Kansas on front)

The ram with curved horns.

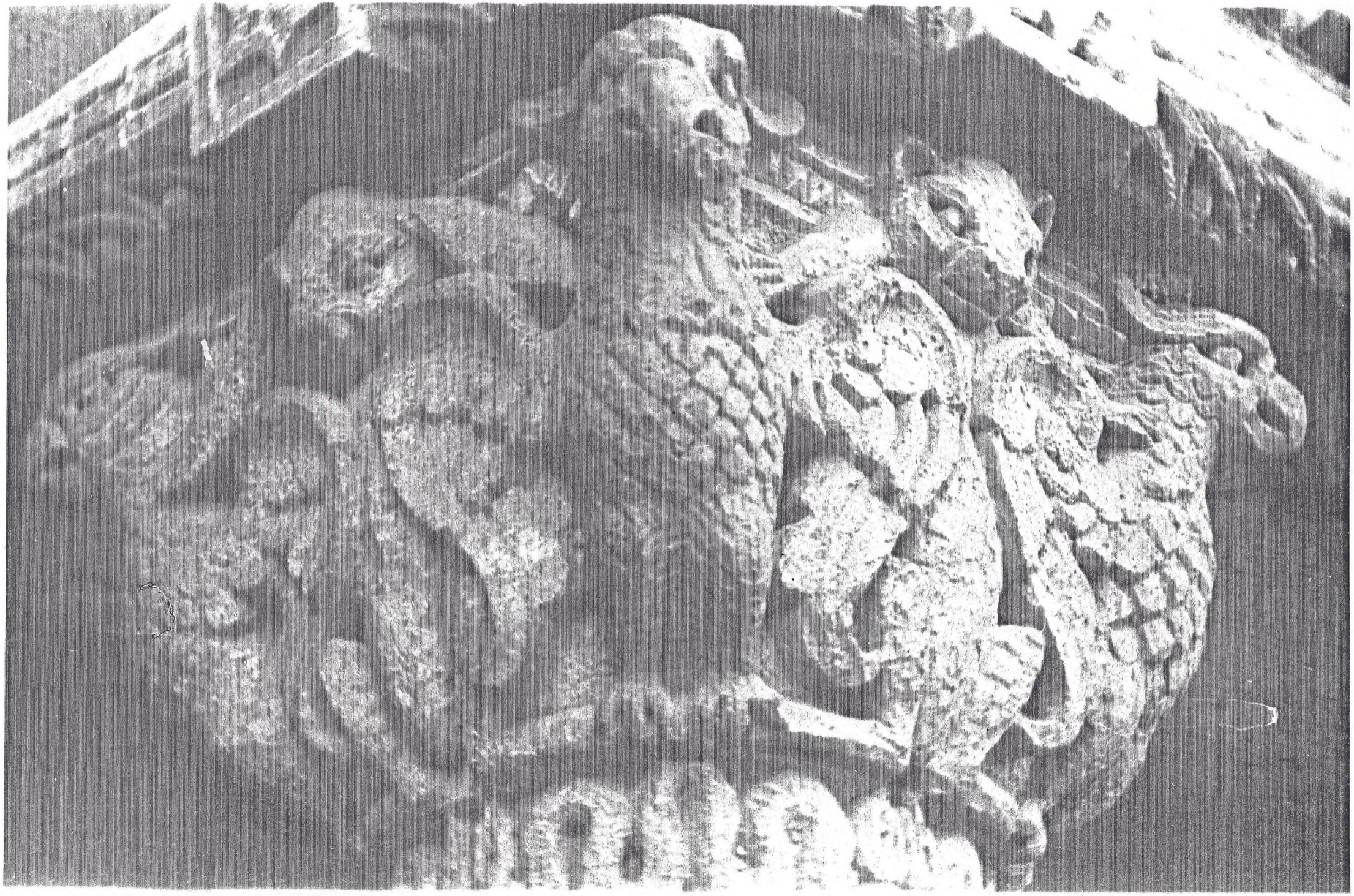
The female, species?

These are now in the basement of the University of Kansas museum of natural History.

The fourth gargoyle removed from N side of building cannot be accounted for.

Museum Natural History, University of Kansas, Lawrence, Kansas.
Dec 25, 1955

Front and center is the original Jay Hawk according to A. Tommasini who, with Fred Pickett, shared in sculptoring the Jay Hawk.



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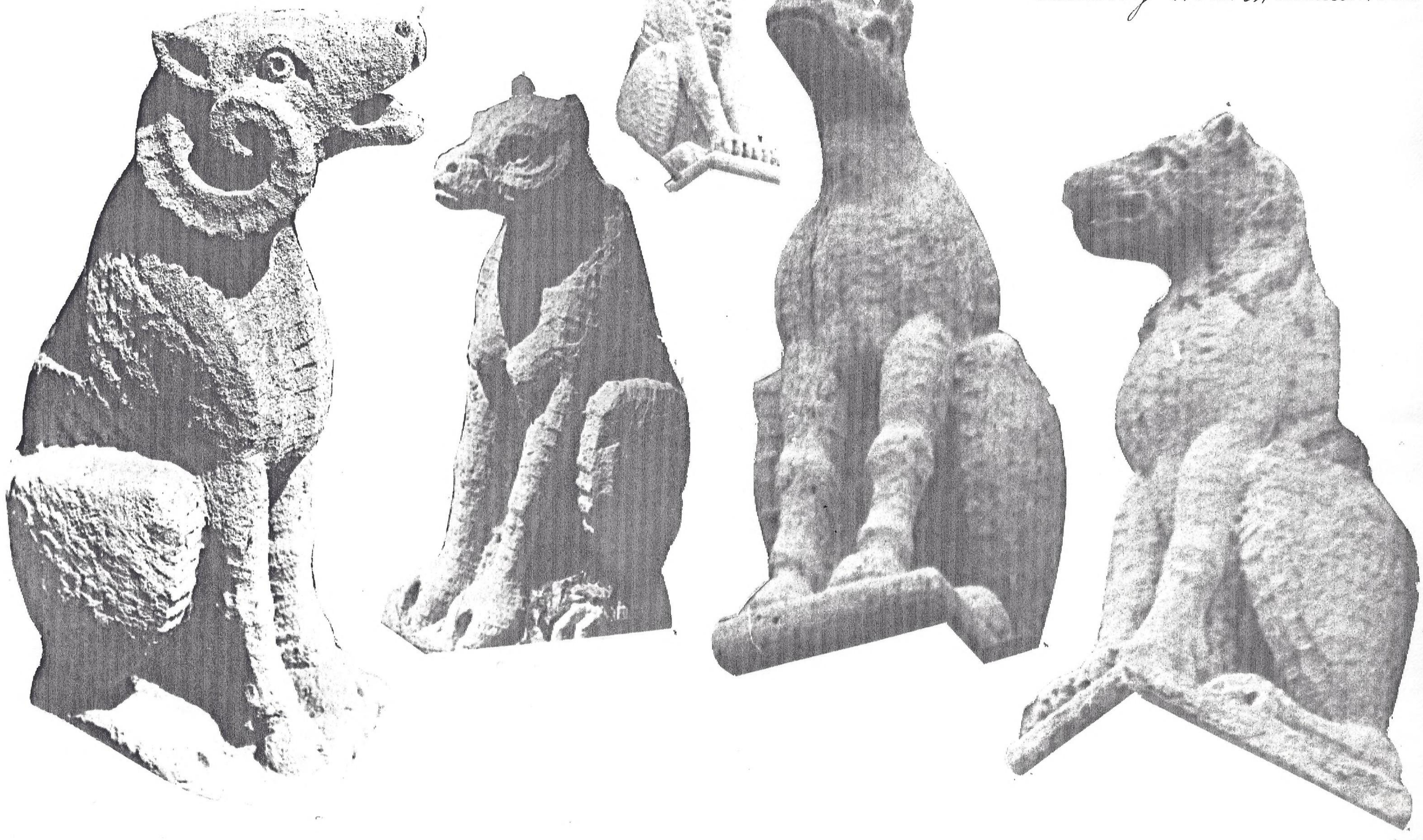
museum Natural History, University of Kansas. Lawrence, Kansas.

Dec. 25, 1955

5 other gargoyles on the museum building (Total on museum 12)



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museum natural history, University of Kansas, Laurence, Kansas

Dec. 25, 1953

Letter written by A. Tommasini to Robert Taft concerning history of gargoyles on mus. nat. hist building

Kansas City, Mo.
March 18 - 1941.

Professor Robert Taft
The University of Kansas
Lawrence, Kansas;

Dear Professor Taft,

Referring to your letter of the 17th inst. regarding the gargoyles on the Dyche Museum, I am pleased to be able to give you the following facts.

All the ornamental stone work on the Dyche Museum including the gargoyles was carved by the master carver and sculptor JOSEPH ROBLADO FRAZEE of Kansas City, Mo. He used no models;- simply set the stone at a convenient height on a flock, made a few marks on it with an arc-light carbon, and started cutting at the top and worked downward,- finally freeing the figure from the encasing stone. All the animal figures were carved on the ground in front of the building and afterward set in the wall by the masons. As I recall, the arch over the entrance is the only work carved in situ.

(continued P 2)

The University is very fortunate in having the Psyche Museum,- for its gargoyles if for nothing else. The creator of the grotesque stone figures, Mr. Frazee, is the son of John Frazee, America's first native born sculptor to carve a portrait bust in marble;- and who made portrait busts of many famous men including Daniel Webster. John Frazee was born in 1790, a year after the birth of the Republic of the United States;- all this and very much more is related in "The History of American Sculpture" by Lorado Taft, 1930.

The work on the museum was done during the years 1901-1902. With Mr. Frazee during the work was his son Vitruvius, then a boy about seventeen. He could tell you everything you wish to know; and is the only one, for Mr. Frazee died two years ago or so. If you write to Mr. Theodore E. Frazee, 5325 MICHIGAN AVE. Kansas city, Mo,- a younger son, he could give you the address of VITRUVIUS FRAZIEE who now lives in California.

I happen to remember about this work now after nearly forty years because I became acquainted with Mr. Frazee during the course of the work and dressed his chisels and points over at the Fowler Shops during the spring of 1902.

(continued P-3)

In the spring of 1902, a fellow student, Fred Pickett-who later became an architect- and myself got the thrill that comes once in a lifetime when Mr. Frazer agreed to let us carve one of the capitals that set atop the four columns which adorn the front of the building; I think it is the one on the inner column of the right hand pair. There is a figure of a jay hawk with wings outspread on the corner of the capital and standing on a skull. Well Fred Pickett carved one face including half the jayhawk and the skull, whil I did the other half. I suppose other students watching us work, accounts for the report that I was the carver.

It has been thirty years sinc I saw Mr. Frazer or his son Vitruvius. I located Theo. Frazer, who I did not know, and told him about this enquiry; and he will be very glad to give you any information he possesses.

Mr. W. Salathiel of Independance, Kansas wrote me about your enquiry about two weeks ago. Difficulty in locating young Frazer and illness delayed my answer till last saturday. Mr. Salathiel got my letter yesterday while you were writing to me; and you may hear from him before you get this letter.

Sincerely Yours,

A. Tommasini

348 ENDER AVE.

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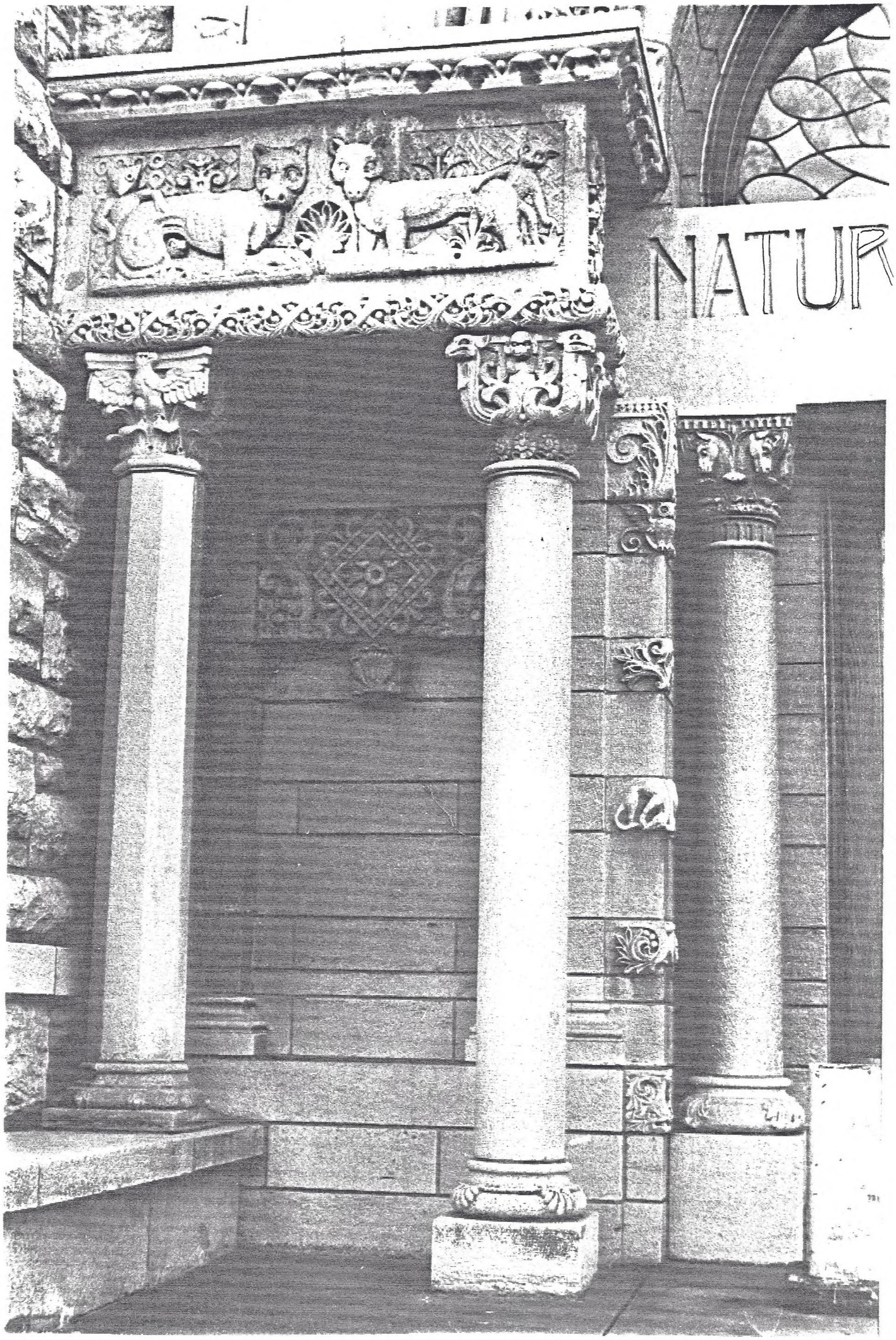
Columns, capitols and other designs on the S side of the entrance to the museum natural history at University of Kansas. Dec. 25, 1955



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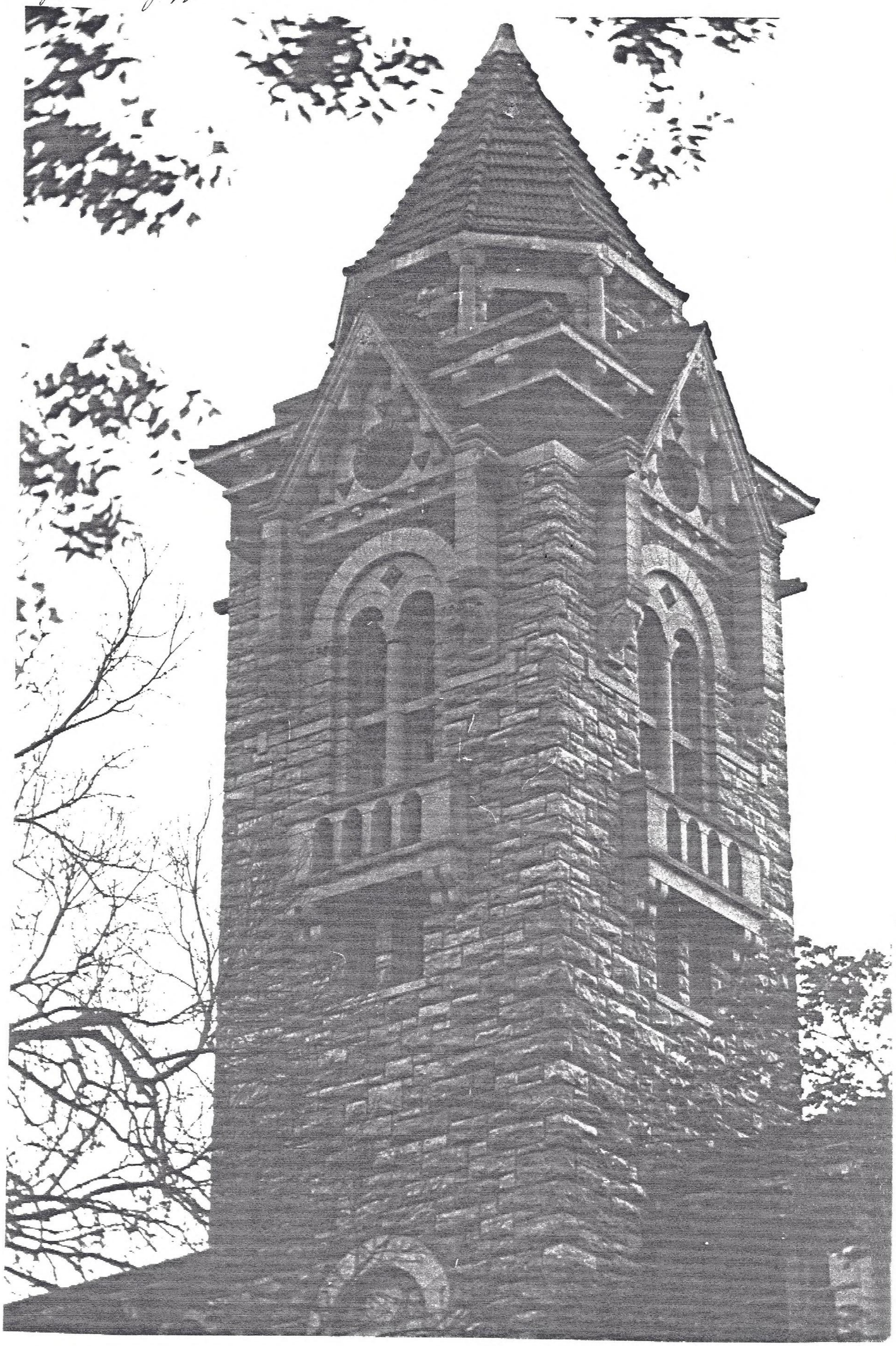
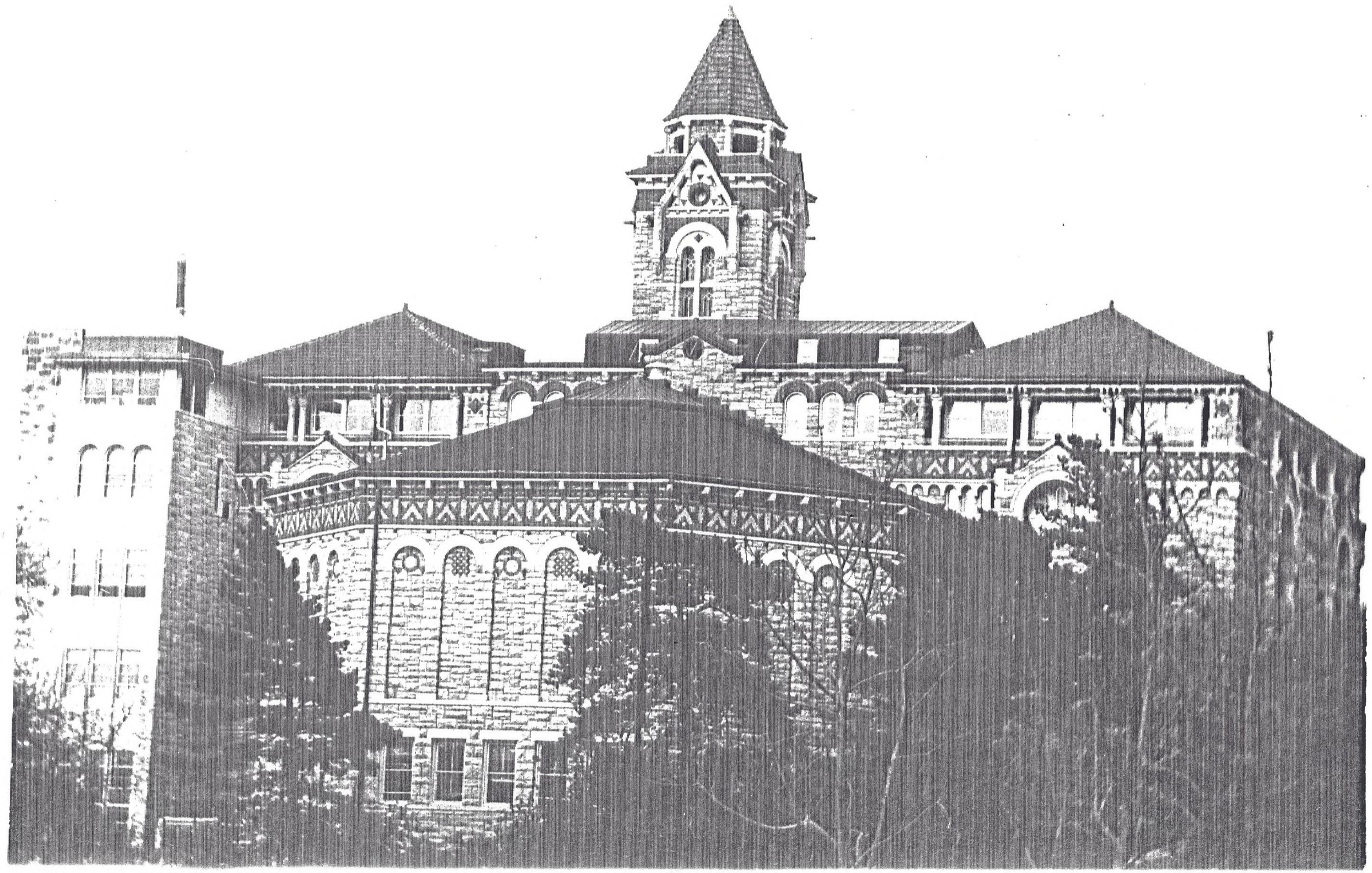
museum natural history, Univ. Kansas., Lawrence, Kansas Dec 25, 1955
For many years my office was in this tower.



Museum Natural History, University of Kansas, Lawrence, Kansas
Inserted in journal Dec. 25, 1955



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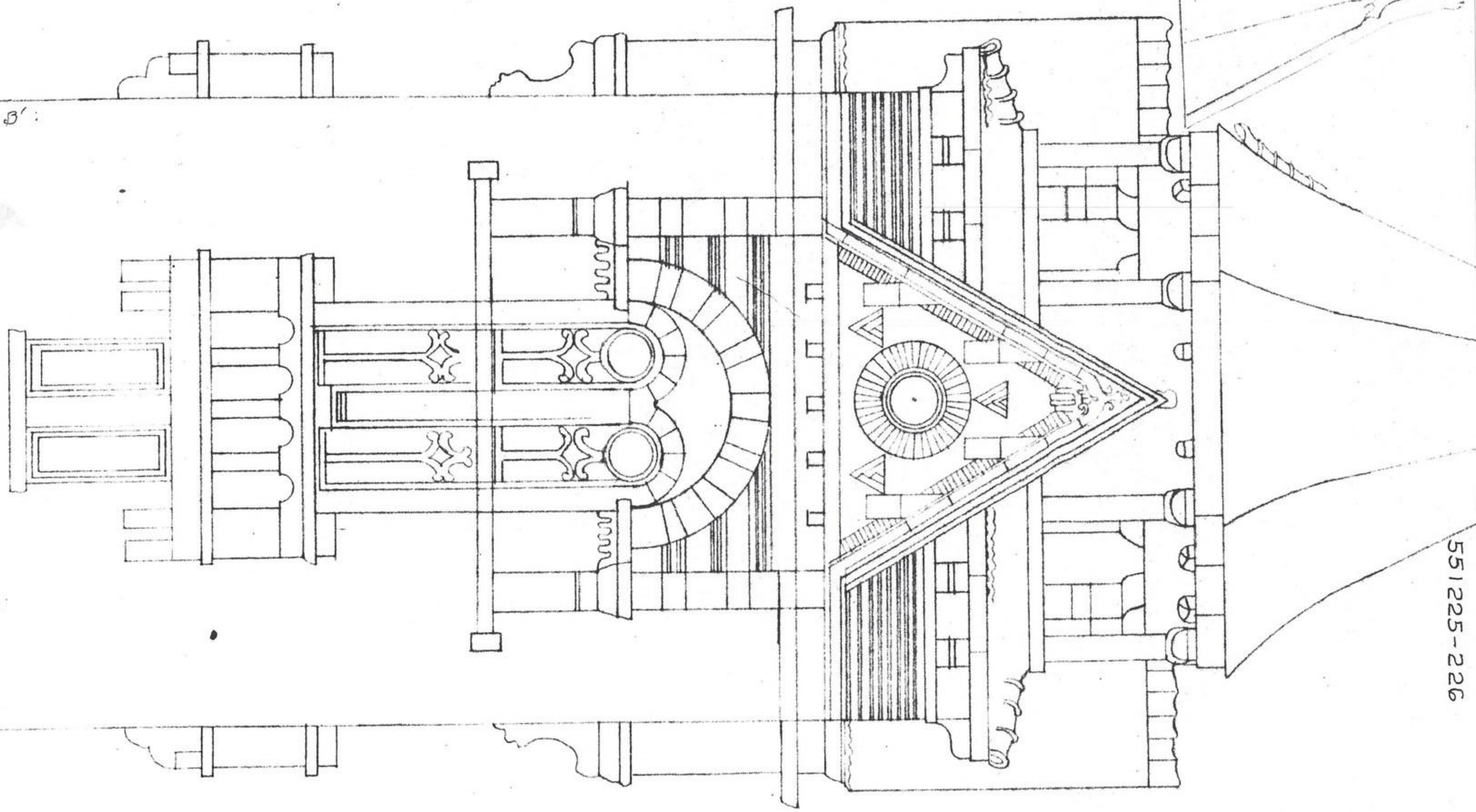
B'

museum natural History, University of Kansas, Lawrence, Kansas
Dec. 25, 1955
From old blue prints of archetectural drawings of Museum.

B':



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About the Project

About the Specimen

About CT Scanning

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Movies Demos

About the Author

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About *Crypturellus cinnemomeus*

Crypturellus cinnamomeus , the rufescent tinamou, is a quail to partridge sized bird from the lowlands of Central America. In fact, the vernacular names for Tinamous are often names such as 'perdiz' or 'codorniz/godorniz' meaning 'partridge' or 'quail' respectively in the local Spanish dialects.

It is one of some forty species of Tinamiform birds found in South and Central America.

The binomial 'Crypturellus cinnamomeus' is a mixture of Greek roots and Latin endings meaning 'little cinnamon coloured hidden one'.

The tinamiformes are possessed of certain affinities with the group of birds defined as 'paleognaths', but their relations to or within the paleognathes are unresolved as the very definition of the group 'paleognath' is inconsistent and somewhat contentious in the field of avian systematics.

Unlike their paleognathous cousins, the rheas, emus, and ostriches, Tinamous are volant. Although possessed of the capabilities of flight, these birds do not have a great command of that ability. The naturalist W. H. Hudson, exploring the pampas of Argentina late in the last century, likened Tinamou flight to the motion of a brakeless engine, powerful but ungovernable.

About the specimen

An osteologic preparation of the tinamou *Crypturellus cinnamomeus* , specimen number KU-34658, comprises the focus of this morphological study. This specimen, a loan from the University of Kansas Museum of Natural History, was originally collected from El Astillero, Guatemala on the second of February 1955. First catalogued as KMNH-550212-11, it was identified as a male by its collecter, James W. Bee.

The specimen is believed to be a mature individual by virtue of the relatively high degree of ankylosis of the parietal-frontal suture. Ankylosis of this suture is known to be incomplete in even relatively mature juvenile specimens.

Last Updated on 12 07 97;
David L. Dufeau *d.l.dufeau@mail.utexas.edu*

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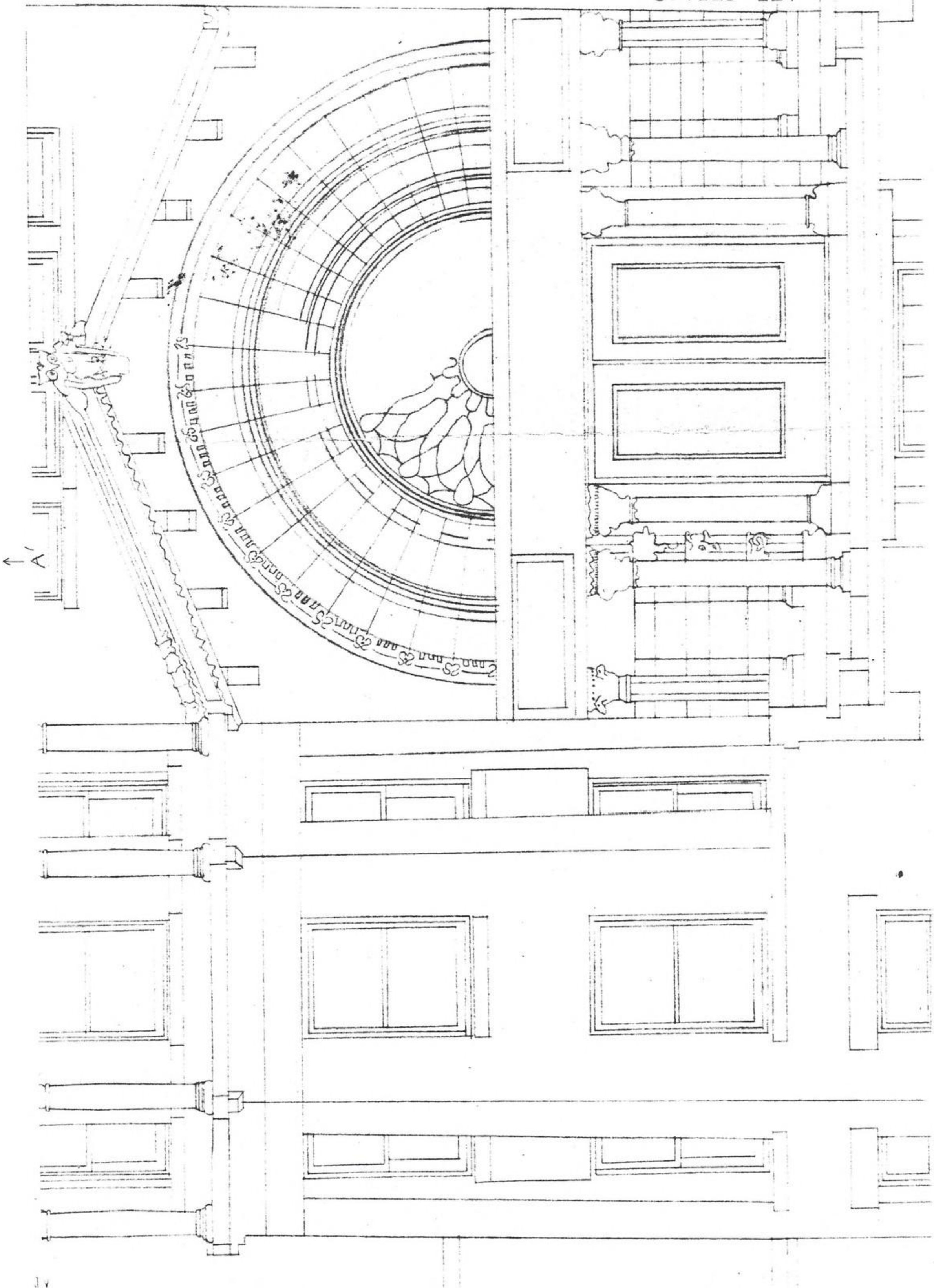

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A

B