

1987

Field Notes

Joseph A. Cook

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JAC
1987
Journal

BOLIVIA - 1987

25 June 1987

Leave Albuquerque International and already there is a hopefully slight malfunction at this early hour of 7. We had 12 packages to check onto the airplane and I only received 11 claim checks. Didn't realize this until we were all loaded on the plane.

The 1987 crew consists of three undergraduate biology students, Mariel Campbell, Paulette Ford, and Rosanne Humphrey, my new wife Nella Sanchez and myself. Nella's mother, Nell Sanchez, is accompanying us to La Paz for a vacation. Bruce Hayward, from Western New Mexico University will be joining us on 15 July and we hope to have 2 Bolivian students accompany us also.

Mariel will be studying helminth parasites of Mus mus and Monodelphis, Paulette is interested in coccidia of Otenomys and Rosanne is helping describe geographic variation in the chromosomal forms of Otenomys boliviensis.

They are funded with a small grant from NSF. I've received some small grants from American Society of Mammalogists and USM, otherwise we're funded by accumulated student loans.

We fly continental to Houston where I unsuccessfully attempt to locate the 12th box and then on to Miami. In Miami,

after considerable finagling the baggage folks report that our 12 boxes are on the plane to La Paz (well, as we later discover). We have 3½ layover in Miami and then leave Miami at 6:30 PM for Lima; change planes in Lima and on to La Paz at 2:30 AM. Cleared customs easily with help from documents we've obtained in the past (Academia Nacional de Ciencias, etc) and caught 2 expensive taxis ^(\$30) down into La Paz. From the South American Handbook we decided to try out Residencial Rosario (704 Illampu, tel.) which turned out to be pretty charming and cheap (\$4/person) and many times better than the more expensive ~~expensive~~ dark, dank Hosteria Claudia. Got to bed a little after 4 AM. It's good to be back in Bolivia, but this flight schedule needs to be rearranged. Oh yeah, ~~in~~ 2 boxes did not show up - the N_2 tank and another box w/ generators/tents, and our medical kit.

26 June 1987

Up at 11 AM. Called Jorge and he said he'd be up in 1 hour. Breakfast (for some) at the small (but good) restaurant at Residencial Rosario. Jorge arrived a little after 12 and reported the local news.

JAC 1987

26 June
(cont)

The museum personnel are upset that Syd returned only 5 specimens from the 1986 collecting trips (over 1000 specimens taken to states). It is an extremely awkward situation for us. It seems a bit more could be done to foster good relations with our scientific colleagues in Bolivia.

We had brought along a few (15) representative specimens from New Mexico which cooled things a bit. Took a bus with these specimens down to the museum in Cota Cota. Met Eliana Flores and Jaime Sarmiento (a young ichthyologist) at the museo and was informed that a new Bolivian law prohibited any ~~collecting~~ collecting or exportation of mammals. Eliana said we should apply for an exception to this to the Fauna Sylvestre here in La Paz. Eliana was helpful, but a cool air prevailed at the museo.

I called Felice Desjeaux who reported that he couldn't even get a collecting permit in La Paz Dept. He said he would call back at the Residencial Rosario. He is leaving to accept a position w/ WHO in Geneva in Sept. He said he'd help us with any problems.

JAC
1981

3

27 June

Slow organizing this morning, still recovering from yesterday's flight. Called Eastern Baggage in El Alto (810114, 810115) and spoke with Emma who said she thought she'd located our two missing boxes, 1 in Miami, 1 in Houston, which means the Miami baggage folks did not count them as they reported.

Jorge and Jackie went to the field today so we cannot get into the museum to arrange our equipment; so the crew did a little site-seeing Museo Nacional de Arte, Correo, Plaza de Murillo, and then we checked train and bus schedules and prices to Santa Cruz.

Bus to Santa Cruz - 36 h, w/ 8 h layover in Cochabamba. Cost ~ \$15 w/ 20 kg/persons extra Kgs B\$.80 (\$0.40) each
leaves in evening, all night driving

Train - Ferrobús to Cochabamba direct
\$11, excess baggage no problem
leaves in morning 3 days/week

Returned to R.R. and worked on the documents that Eliana said we should submit to the Minister of Agriculture to apply for a permit to collect animals. (vitar, project description, personell description, value to Bolivia). Jorge will help us translate this tomorrow. Otto Carlos called from Santa Cruz and said

4210
he would fly to La Paz to help us get the permit if necessary. He sounded very confident, typical Otto. So the permit may not be too big a problem.

The rest of the crew spent the afternoon wandering the La Paz streets. Things are a bit different here from the U.S. Evaporie seems fairly content. Felipe did not call today.

After dinner, (Ballivian - near plaza San Francisco expensive / < fair service), we went to a peña or Folklorico (all except Mariel & Rosanne) who went to bed. The peña was near plaza Murillo at the Marca Tambo and was really hot. Six different groups from various parts of the country played music typical of their region. It cost \$4 entrance and lasted ~ 3 1/2 hours (starting ~ 10:30 pm).

Returned to the R.R. and the night watchman was away from the desk so it took us 45 minutes before we could get Rosanne & Mariel to wake up and find the errant watchman to open the front door. There were 10 people waiting to get in by the time he arrived.

JAC
1987

Palabras para hoy - posillo - bowl
chulla - stocking cap
Zampoña - 6-Flutes
estornar - to sneeze
ala - wing

④

28 June 87
Sunday

Another slow morning, waited for Jorge to call so we could head down to the museum to type the permit request and sort our gear. Carmiña's Miranda's younger brother came by and I gave him a photocopy of Chaetophactes nazoni chromosomes. He said Carmiña will have surgery next month to remove a tumor on one of her ovaries.

We had agreed to meet Jorge at the Museo at 3:00 PM so we nosied down the Prado toward Cota Cota. There were several groups playing music for a large political rally - Banzer again. He was a conservative candidate in the 1985 election. Ate lunch across from the Hosteria Claudia and then caught a bus (10¢/ea) down to the Museo.

Jorge and I worked on the permit request while the crew inventoried the equipment. We have one large tent to work in that needs a considerable amount of work (patching + no zipper). Arranged most of the gear and it looks like we'll have ~ 15 boxes this year. Amusing how much equipment we have.

Decided to wait until mañana to type the permit and then (hopefully) get Eliani to go with us to take it to the Forestales Office. They (Jorge + Eliana) say no problem but these bureaucratic

things always drag into several lost days if they are not ~~they~~ watched in Bolivia.

Ate hamburgers for dinner in Cota Cota with Jorge, David and Roberto Rea and the gang, then returned to La Paz and Roberto (a Bolivian we know from UNM) and I took a taxi (1st) up to El Alto to pick up the lost baggage. Both boxes were there and we caught a ride down with a young Swiss fellow that works for a chemical company in La Paz.

Hit the hay at 11.

Monday
29 June 1967

The crew decided to go to Tiwanaku ruins today while I was running around trying to get the permit. They left around 9:00 and planned to take micros (buses) out there (the native way) as it's much cheaper.

I called Otto who said he'd already cleared a permit in Santa Cruz for us. Also said we could stay at the zoo in a room (probably with the javelinas) thus reducing our hotel costs immensely. Told him we'd arrive on Friday morning by bus. He laughed at our method of transportation.

Down to the museo. The secretary was 1 hour late so the document wasn't typed till after lunch and Eliana didn't want

Tuesday 30 June 1987

Took the crew to IBBA (Instituto Boliviano de Biología de ^{Philippe} Altura) and we met Felipe Dosjeux. He was his usual hospitable and energetic self. The new research facilities are progressing rapidly and should be done by January 1988. It's a 2 story (+ basement) building that will be very up to date and is due in part to Philippe's hard work. He is leaving before it is completed. He leaves 24 Aug.

Nell, Nella and I then went to lunch at Sr. Jorge Velasco who is the father of Juan Velasco a good friend of Nell's in Santa Fe. Juan is the brother of Jorge Jr (Loco) who is a parasitologist that wrote his thesis on Lutzomyia and described 2 new species. Lutzomyia is the genus of sand fly that transmits leishmaniasis. Jorge Jr and Philippe are very good friends (Jorge was Philippe's best man). Jorge Jr was also at the lunch and he was very friendly and helpful. He said he would call CENETROP in Santa Cruz to let them know we are coming and try to arrange a vehicle. He also said we should be saving Oryzomys spleens in Nitrogen to send to Walter Reed Hospital as they are interested in the "pechinde" virus (from Arana virus group) as (hemorrhagic fever) has been found in Oryzomys from Ecuador. He said Carl Johnson is working on this problem. Jorge thought it might be a good source for future funding. Jorge gave me his card and I'll write him when I return.

JAE
1984

5

29 June
cont

to take it to the Forestales office today so we'll have to wait until Wednesday as there's a general strike tomorrow. Eliana is a fairly resolute person and I couldn't ~~be~~ persuade her to go.

Finished arranging the gear and then returned to La Paz to make bus ticket reservations on Condor bus lines, the only bus that will carry our cargo (40¢/kg).

I did get to meet Dr. Mario Boudier who is the director of the Instituto de Ecología this afternoon. He studied bot fly parasitism of Peromyscus for his doctorate at Michigan. He seemed cordial and I'll need to talk with him later. Also, was interviewed by Eliana's sister for a magazine article.

The theme was generally over a foreign biologist's work in ^{and} Bolivia.

Also met Flavio Huojosa this am. He said he was interested in going to the field with us, but I'm a bit leary. The American Museum gave him \$1000 for work in Bolivia and as we're on a shoestring this year, I suggested the possibility that he pay his own way. He seemed less interested. Also had heard some less than favorable reports from some folks he had worked with at the Smithsonian.

The gals returned from Tiwanacu after 2130 exhausted from riding the local buses.

Tuco Data Sheet

Locality:

Date:

Weather Comments:

Soil Samples #

Vegetation:

Tucoumy

Size:

Number Burrows:

Active:

Trapping Info

| Number Caught | Total |
|---------------|-------|
|---------------|-------|

Sex

Age

D

JAC
1987

Tuesday
30 June (cont)

Jorge Velasco Wallin
Coordinador de Proyecto

CEIC Centro Interdisciplinario de Estudios Comunitarios

Belisario Solano 228 Primer Piso

Cs. 11a 159 La Paz Bolivia Tel 355008

address
(July-December)
1987

Philippe also gave me the new IBBA directors
name

Dr. Jean Pierre Dedet

Laboratoire de Parasitologie Experimentale
Institute Pasteur

25 me du docteur Roux

75724 Paris Cedex 15

He will arrive in La Paz in Jan. 1988 and has
worked extensively in Africa.

Lunch was very good served by a couple
Indians. The Velascos (he's in import/export
business) are obviously in the upper crust
of La Paz.

Returned to the R.R. where we met the
rest of the crew (M, R, & P) who had been out
shopping all afternoon. It's hard to resist
purchasing some of the numerous hand-crafts in the
shops near the Plaza San Francisco.

We all headed down to Cota Cota to have
dinner at Roberto and David Rea's mother's house.
They are students at UNM. We met Jacqueline

Miralles at the Plaza San Francisco and she took us down to meet one of her and Jorge's professors Volga Rojas. She is a Bolivian who studied genetics in Russia (master's degree) and is interested in collaborating on a population genetics course next year. I won't be able to be involved in a full fledged course next year, but offered to give a few ~~courses~~ lectures, especially ~~at~~ over Chromosome preparation and electrophoresis. We talked for over an hour and then left for the Plaza ^{late} ~~at~~ ~~the~~ ~~same~~ ~~time~~ and returned to the R.R. after 11.

Volga Miguez Roja
Casilla 6243
Instituto de Genética Humana
UMSA, La Paz, Bolivia

Wednesday, 1 July 1987

Up at 5:30 and Nella and I caught the ENTE (new bus system, fast and 25¢/person) down to Cota Cota where we were to meet Philizze and Jorge so that we could transport our 6 boxes up to the Residencial Rosario. Jorge was late so we went to Philizze's for breakfast. There we saw Clare, the 3 daughters and the new son Fabiano who is now 8 1/2 months old. Fabiano had a coarctation of the ^{pulmonary} aorta when he was born and they had to fly him to France for surgery. Fabiano seems to be doing well but this may have played a part in their ~~new~~ upcoming move to Geneva.

JAL
1987

Wednes 1 July
(Cont.)

After breakfast we returned to the Museo, met Jorge and loaded up the gear. Nella and Philippe then set off for La Paz, while Jorge and I waited for Eliana so that we could go to the CDF (Centro Desarrollo de Forestales) to meet the director to obtain a collecting and export permit. Eliana did not show so Jorge called her at home. She said she'd gone the previous day and was unable to get a permit from the director. I suspect something is a little bit askew as we'd agreed to go together.

R.R. = Residencial
Rosario

Oh well, at any rate I did get a letter from the museo that said we are cooperating with them, essentially a letter of introduction. There does seem to be a certain amount of tension with Eliana this year.

Returned with Jorge to the R.R. where we finished packing up the boxes so that we can leave today. After lunch Nella and I went to BBT met Philippe and took the gear from the museo to the bus station. We then returned to R.R. and took the remaining boxes in 2 taxis to the bus station. The bus station: we had 22 items to ship in total and these weighed 548 kg. They (Flota Copacabana) gave us 20 kg each free.

Wednesday 1 July

(cont)

So that meant we had to pay for 468 kg at \$40/kg. After considerable dickering and pleading they reduced our bill \$50. Neither group was very satisfied with the arrangement (I was hoping it'd all go free).

Returned to the R.R., ate dinner, and said goodbye to Nell and Nella who are going on to Machu Picchu in Peru for a couple weeks. Nell will then fly home and Nella will fly to Santa Cruz with Jorge on the 15th of July. M, R, P and I then took a taxi to the bus station and climbed aboard the Marco Polo ^(8:15 pm) bus of the Flota Copacabana for our 8 hour ride to Cochabamba and then on to Santa Cruz.

It was raining as we left La Paz and by the time we were in the altiplano we were driving into a pretty good snow storm. Our bus was moving pretty slowly and stopped about 4 in the morning at the beginning of a long climb. The road was snow packed and it was still snowing at 8 the next morning when we set out up the mountain. We slowly worked our way up the hill passing 1 vehicle after another that had slide off the road. Before long vehicles coming from Cochabamba began to

Thursday
2 July

JAC
1987

8

Thursday 2 July
am

appear and then all hell broke loose. There were easily more than 200 vehicles either stalled, stuck or unable to pass due to the narrow slick road. We spent most of the day waiting for people in front of us to move and made about 20 km. It was extremely frustrating and by nightfall we were stuck in the middle of some 100 vehicle half coming, half going, with ~~was~~ nobody going anywhere. The temperament of the drivers was such that no one would allow someone else to pass and if your vehicle was broken down no one would go by you if you could help it. We spent ~~on~~ the second night on the mountain without food and feeling extremely frustrated and cold. My thermometer registered at -5°C in the bus for Thursday night and the wind howled like crazy throughout the night. It also continued to snow.

Friday 3 July

Up at 6:10, after another sleepless cold night. It was a rather incredible site this morning with cars, buses and trucks lined up in both directions for miles. Many vehicles froze their engine blocks during the night and these vehicles further congested the narrow gravel road.

Friday 3 July 1987
(cont)

Several folks said this was the worst snow storm in 10 years and it was obvious the people were unprepared for the situation. I didn't see a single vehicle with chains on the tires and a good 30% were not running due to a lack of antifreeze.

The situation was pretty grim this morning (my grave, no?). By 8 am people starting appearing from their vehicles trying to work out a solution and this culminated in 2-3 h of screaming and shouting, so that by 11 nothing had yet happened. It was extremely frustrating and tiring as my empty stomach didn't keep my body very warm in the windy sub-0 weather.

In retrospect it was classic Oblivia. So yes there is retrospect, we finally decided to walk out (anywhere from 10-30 km to the nearest pueblo) and ~~the~~ our bus (now the lead vehicle) moved 200 meters down the road. We decided (rightly) to stay with the vehicle and by 1600 h we were finally moving faster than 5 km/h. We arrived in Cochabamba (after a flat tire) 40 h late, rather hungry and exhausted. It was a long cold (2 night) experience in the Bolivian Andes.

Arrived in Cochabamba at 19:30 and by 21:30 we'd cleared the bus station and headed to

3 July
(cont)

the aeropuerto to catch a delayed flight to Santa Cruz. The tickets cost \$28 each but were well worth not having to spend another hour on a Bolivian bus.

Arrived in Santa Cruz at 10:50 pm and caught a ride to the Hotel Internacional with a man Merrill had befriended Hans Beyer, Sateca Ltda., "suministros tecnicos" (technical supplies), Av. Montes 615, tel 324706, Cas 1493 La Paz. He was getting a bit looped in the Cochabamba aeropuerto and brought us all Singani and sprite drinks. Said he was in the skin trade business, although he retracted abit when Marel said she was interested in conservation.

I also met a Dr. Rudolfo M. Barriga Cuellar (Torre Central, pisos 5 al 10, avda Luis Roche, Atlanina, Caracas, Venezuela, Tels-261 3377) who is a lawyer with Corporacion Andina de Fomento, which is a cooperative export/import agency of Bolivia, Columbia, Ecuador, Peru and Venezuela. He is from Santa Cruz, but is living in Caracas and we had a good conversation about Ctenomys genetics and evolution in general.

Arrived Hotel Internacional after 2300 h. The place has been spiced up considerably as has

Dr. Otto Carlos Jordán Camacho
DIRECTOR
Zoo. Santa Cruz - Fauna Sudamericana



3 July
1987

the price (\$13/person). It was good to hit the sack in a real bed with 72° weather.

4 July
1987

Independence day USA. No big hurrah here in Santa Cruz although there is some graffiti referring to the "invasion" by U.S. marines last fall to bust cocaine production. H&C.

Called Otto first thing. He'd been waiting for us the entire previous day at the bus station. We went first to the zoo where he is now director and he showed us around, including his new office and the room he had cleaned for us to use. Our room is next to the kitchen and is large and very nice for our work.

He then drove us in the zoo flat bed to look at vehicles to buy (expensive, and/or heavily worn). Returned to Hotel at 12:45 checked out and moved our clothes (gear is still in transit from Cochabamba) to the zoo. Not much happens in Bolivia on a Saturday afternoon, but we had to prove it to ourselves by attempting to shop for supplies. ~~Ended~~ Ended up buying 3 sodas and returning to the zoo.

The zoo is very nice, particularly for a city the size of Santa Cruz. It is nicely

JAC 1987

4 July
(cont)

laid out and has some very nice animals, including a Tremarctos ornatus and the 1st record of a Catagnus wagneri taken near Villamontes. Many other things we'll hopefully get a chance to explore in the next few days.

5 July 1987

Even less happens on a Sunday in Sunday Bolivia. Best to be in the field. Went to the bus station first thing (8:00) to see if our equipment had arrived from Cochabamba. It had, all except 1 package of 40 shermans (\$400 worth). I'd seen the package in Cochabamba when we arrived, but it didn't arrive here.

Otto arrived with two fellows from the zoo and the flat bed truck and we hauled the gear to the zoo.

After ~~over~~ our morning mission, we spent the rest of the day around the zoo watching animals and I made a list of things to do tomorrow.

6 July 1987

Monday

Left with the flat bed truck this morning to buy groceries. Went to Los Pozos, a large market and then to another market with more vegetable stands. The zoo goes to these markets

Liquid N₂

Oxígeno Santa Cruz 20367

27135

30027

Office: 2 1/2 km Carr. al Abate

Plant: Parque Industrial Ferial Paraguará

6 July
(cont)

3 times a week to buy food for the animals. Returned at 11 and then Otto, Julian and I took the N₂ tank to Oxígeno Santa Cruz LtOA. They said it would be ready tomorrow.

Returned to the zoo for siesta. After 2:00 pm we left with Julian again to buy more things for the field. Bought plasticas (for water, gasoline) as the ones we left in the museo the year before were gone. Also bought Asalen, iodine, bread, maté de coca, all the staple items. Dropped the generator by a small engine repair place very near the zoo and then returned to the zoo.

Rearranged the gear for abito, then took a taxi to La Belle Napolita for dinner of pizza. We spent \$24 for dinner about twice what it cost at the same place two years ago. The new spent ~ \$1500 in 1 1/2 weeks. It's expensive to keep all these people fed while we're stuck in the cities. Best to have folks come down a week after the initial arrival so politics and logistics can be worked out.

Returned to the zoo at 9:00 and missed Otto who had come by at 8.

JAC
1987

7 July
Tuesday

(11)

Otto and I went to the zoo ~~to~~ office where there was a general meeting this morning between several parties that are interested in developing a coherent ecological monitoring service. Robin Clark, now director of Cerro Amberó Park, had written a preliminary proposal which he presented to Pancho Kempt, (Noel K. Mercado's son), who is now ^(Viceroy) Chancellor of the university in Santa Cruz ^{U.} (Rene Moreno). The proposal would formalize an arrangement between these various groups that might have an interest in monitoring development. Clark also proposed to begin teaching field classes in ornithology (P.C.), mammalogy (Otto Carlos Jiden), and entomology (), who is working on entomological pest of sugar cane.

Unfortunately, although a good idea, the plan suffers from a lack of expertise in teaching the above courses (except perhaps the entomology section - I don't know this fellow.). Otto has little more than no knowledge of mammalogy especially taxonomy as his training is in Veterinary Science. I have spent 5 months in the field with him and have recently

7 July
'987
(cont.)

discussed with him the rather poor state of the placards describing each animal in the zoo. They need revision and he has asked if we would help him do this - which we'd be more than happy to. Unfortunately, he has no training in mammalian taxonomy. I don't know a great deal about Robin Clarke's credentials as an ornithologist (he does have a B.S. in zoology), but we did spend a little time with him in 1985 at Cerro Ambaró and he was less than helpful. We heard later he had been spreading bad reports of our work in Cerro Ambaró (in 1985) to the university officials in Santa Cruz.

My immediate feeling is that Clark is attempting to shore up his political support in Santa Cruz and establish his place as the ornithologist for S.C. Dept. He took me aside privately and said as much, noting that politically this was the time to do it as there was considerable pro-conservation sentiment in Santa Cruz since the death last year of Dr. Noel Kempf Mercado (previous zoo director - and founder). He referred to this as the "Year of Kempf" and noted that Kempf son, , would be chancellor for only 3 years, so now was the time to consolidate the university's support. I'm fairly well turned off by Clark and apparently he is in the middle of a struggle with Reginald Hardy -

7 July 1987
(cont)

(12)

President of PROENA-UR. Biopolitias.

At 10:30 Otto and I went back to the playa where vehicles are sold, taking with us a mechanic friend of Otto's. There are several Toyota 4x4 trucks for sale, but all are either more than \$6000 and in fair shape, or are <\$5000 and barely running. In addition to the poor condition of those that are within our price range (<\$5000), more than 1/2 do not have legal papers. These have been smuggled in from Brazil and a transfer of title can cost up to \$4000. The police get their take.

We found a fair compromise Toyota 4x4 truck for \$5000 which would severely strain our budget (I'd have to call for more \$!), but when we took the vehicle to the lawyer the papers did not check out. So we returned to the playa - this is the third day we've spent looking for a vehicle - and found a Toyota 4x4 jeep style vehicle for \$3800 (1979). This vehicle will be too small for us, but is all we can afford this year. We'll have to send some folks by bus. I went to the owners house with the young Bolivian who was selling the car for him. The owner is Dr. Jorge Riester, a German anthropologist

JAC
1987

7 July
(cont)

Dr. Jorge Riestler

46714 day
34986 day

51343 lone

who has been working in Bolivia for 10 years. Seems to have several businesses going also (sawmills, etc.). He seemed fairly straight forward and we agreed that I would call him tomorrow at his office at 10 am.

The vehicle needed some work on the starter so Alejandro (the young Bolivian selling the auto) was going to get this fixed tomorrow. Returned to the zoo for the evening.

8 July

Up early and went first thing to get the generator from the shop we'd taken it to have the carburetor adjusted (\$12.00) and to pick up the nitrogen tank (\$65.00). Oxygen Santa Cruz has a new plant that produces it at a much faster rate than in the past.

Returned to the zoo and called Riestler and he seemed surprised that I'd call. He didn't know where the vehicle was and said he had to track down Alejandro.

We agreed to meet at 2:30 in the afternoon. I called CENETROP and spoke with a Dr. Lefuente, who said Dr. Bermudez and Ujel

JAC
1987

(13)

8 July
(cont)

were both on vacation. I told him we had species and mammal keys from Syd and that we needed distilled H_2O so we agreed to meet at 1:30 P.M.

At the almorço at the zoo restaurant (#3/person) and watched the sloths until 1:20 when we left for CENETROP. Meet Dr. LeFrente and he gave us a very informative tour of CENETROP's labs. He concentrates on Chaga's Disease and noted that some areas around the periphery of Santa Cruz had an 80% incidence rate. He said everyone working in his lab had tested positive for Chaga's except one, but declined to say if that was him when I asked. In Santa Cruz, he said you stood a 20% chance of Chaga's infection if you get a blood transfusion.

LeFrente noted that their program involved many angles or aspects of the problem - from prevention, to treatment, to research. Tritoma the genus of the vector has several species around S.C. with T. infestans found in highest prevalence in the city and then replaced by another species as one moves out to more rural situations. There are (hematophagous) blood sucking, plant sucking and insect sucking species with only the first type

JAC
1987

8 July

cont Carrying Trypanosoma cruzi. However, all of the hematophagous species can transfer chagas.

The best way to test for Chagas is to allow lab raised ("sterile") Triatoma to suck the blood from a suspected carrier and then allow these to incubate the Trypanosoma.

So Humberto Cuencá's method of pulling blood from the rodents we caught 2 years ago was extremely ineffective. ~~Le Fuente~~ Le Fuente said there was little chagaz chance he would of detected a positive.

The lab raised Triatoma (he showed us 2 species other than T. infestans) are fed chicken blood which will not allow T. cruzi to live. These Triatoma (used in the test) are thus free of T. cruzi.

He went on explaining his research, but we had to return to the zoo at 2:30 to buy the vehicle. As might have been expected the papers for the car were not in order so we (they) decided to conclude the deal mañana en la mañana. The vehicle was still not running (starting) so I went with Alejandro to get the starter fixed. This took 2 hours and when I returned to the zoo I discovered that it still wasn't running well. Tomorrow they'll have to fix it. It's beginning to feel like Obhiva again. At least the zoo isn't charging us yet for the lodging.

JAC
1987

9 July
Thursday

(14)

Will we leave today? We're all getting pretty restless waiting to hit the field. Today we'll hopefully close the vehicle deal. The papers are supposed to arrive by 9 a.m.

Alejandro arrived at 9 to take the vehicle to his mechanic to get the starter fixed. He said he'd be back by 11:00. The fella with the title transfer papers arrived at 11:50 and after a wild goose chase around Santa Cruz looking for a notary public we returned to the zoo. Siesta time - not much happens. He said he'd return with the notarized papers at 3 pm sharp and I laughed. He called at 4:30 and said everything would definitely transpire tomorrow. Bolivia is without a doubt the land of *manana*. Another wasted day.

Lots of bats flying around the zoo. We'll have to snag some when we return from this trip. I want to leave town tomorrow as soon as possible and processing a batch of bats would further hinder this ~~process~~^{action} at this point. Otto and I obtained a permiso from the militares this afternoon for our work in Santa Cruz.

10 July
Friday

Supposed to make the vehicle title transfer

German Coimbra 2-3665

Michael Nee 4-6070

10 July 1987

at 8:50. It's 9:15 and no word.

Briefly met 2 botanicos this morning, Michael Nee from the New York Botanical Society (4-6070) and German Coimbra (2-3665) who is the new director of the Santa Cruz Botanical Gardens (Kempf was previous director).

Coimbra noted that there were lots of ~~sand~~ cahuichis at "Palmar del Oratorio" on the road to las lomas de arena. I'll have to ask Otto, but I believe this is ~~the~~ the same sand dune area that we've headed to.

Finally got the vehicle act together at 1600h. They had to put a new starter on and we also bought a rack for the top at the vehicle from them. Total cost \$3900.

We drove it over to Otto's mechanic friend who changed the oil, greased, and gave it a ^{general} tune-up (plugs, points, condenser). We'll pick it up tomorrow.

Returned to the zoo and Marel & Rosanne had set up a 42' net in a clearing near the restaurant. We set up another near the porch (27'). The bats fly early here right at sunset and there are lots of them. We collected 5 smaller Artibeus and 1 large A. lituratus? in the larger net and 1 Myotis in the net set near the restaurant porch. It was feeding on the insects of the porch light.

Will process these tomorrow, Little (no) activity after 2100h. Took nets down at 22:45.

JAC

11 July 1987
Saturday

(15)

The jeep was finally ready for the field so we packed up the gear, ate lunch and headed for the dune area with the Flatbed truck hauling all our gear. Otto has been very generous. Drove all the way out the road to the dunes and camp in a grassy field 1 km N. Spent 2 hours looking for two mounds, but found only ant hills. We noted trees on the drive in so will scout out that area tomorrow. Mariel & Otto set out 40 shermans along the wooded area / grassland ecotone north of camp.

Spent the evening teaching M, P & R how to skin bats, pull tissue, etc. The crew is pretty inexperienced, but doing a really fine job. Several men drove by on their 4 wheelers to see what we were doing. They said they're part of a "Club Camping" group that is staying ~ 2 km away. They said they'd seen cahuichi (two) mounds back in the dunes where it is drier and they offered to carry us there in their vehicles. We'll see. Hit the sack at 11:30. Lots of bats early in evening.

12 July 1987

Set out first thing this morning to find trees. Took the jeep down the road that returns to Santa Cruz and stopped at the house just south of the Rio Pontano where there is a gate and the people charge a 50¢ toll to cross

Their land to get to the dunes. We scouted for tucos in the fields to the west of this house (found little) and then asked if he knew where there were tucos (cahuichi). He directed us down a road leading east paralleling the Rio Pantano. We crossed 3 fences and arrived ~~at~~ another more heavily traveled road that ran north across the Rio. Pantano. The Rio is about 5 meters wide now and runs throughout the year. Its ~~side~~ ^{width} is enough and deep enough that you'd get your feet soaked crossing (I did).

We set out eight Macabee sets on the south side of Rio. There aren't any situations that looked like they'd avoid themselves to the population study we want to undertake so we crossed the rio and found 2 ^{and banana} casas directly on the other side. Both had yucca fields with tucos in them. The fields are surrounded by open fields, forest, or the rio so these should serve our purposes. There seems to be ~~to~~ a high concentration of tucos in these areas, too. Set 3 burrows worth and then asked if it would be okay to camp on their land. An older woman seems to run the one place (west of road) and said it would be fine to move in under ~~her~~ her trees.

1400 Returned to camp near the dunes where Mariel had been waiting for us - she'd cooked a great stroganoff. Packed up camp and with the help of a couple young Bolivianos who were hanging around talking to the gals

JAC
1984

(16)

12 July
cont

We took the gear over to the new spot (known locally as Las Lomitas). One of the young ~~sons~~ Juan Carlos, took several boxes in his truck. These guys had an amazing number of motorized toys and after we arrived at the new camp M, R & P went off for a ride on the four wheelers and dirt bikes.

1600

We caught 3 tucos ~~■~~ south of the river when we checked them as we drove by and two other sets produced 2 more a little after that. The field north of rd and east of road produced 1 this evening. We starting setting up camp and the girls returned just before dark. They'd gone for a ride in the dunes.

Set up the lab and I processed the dead tucos we'd caught. Will do the others in the a.m. Guts on dead animals didn't get processed this evening. Will have to encourage more rapid deployment.

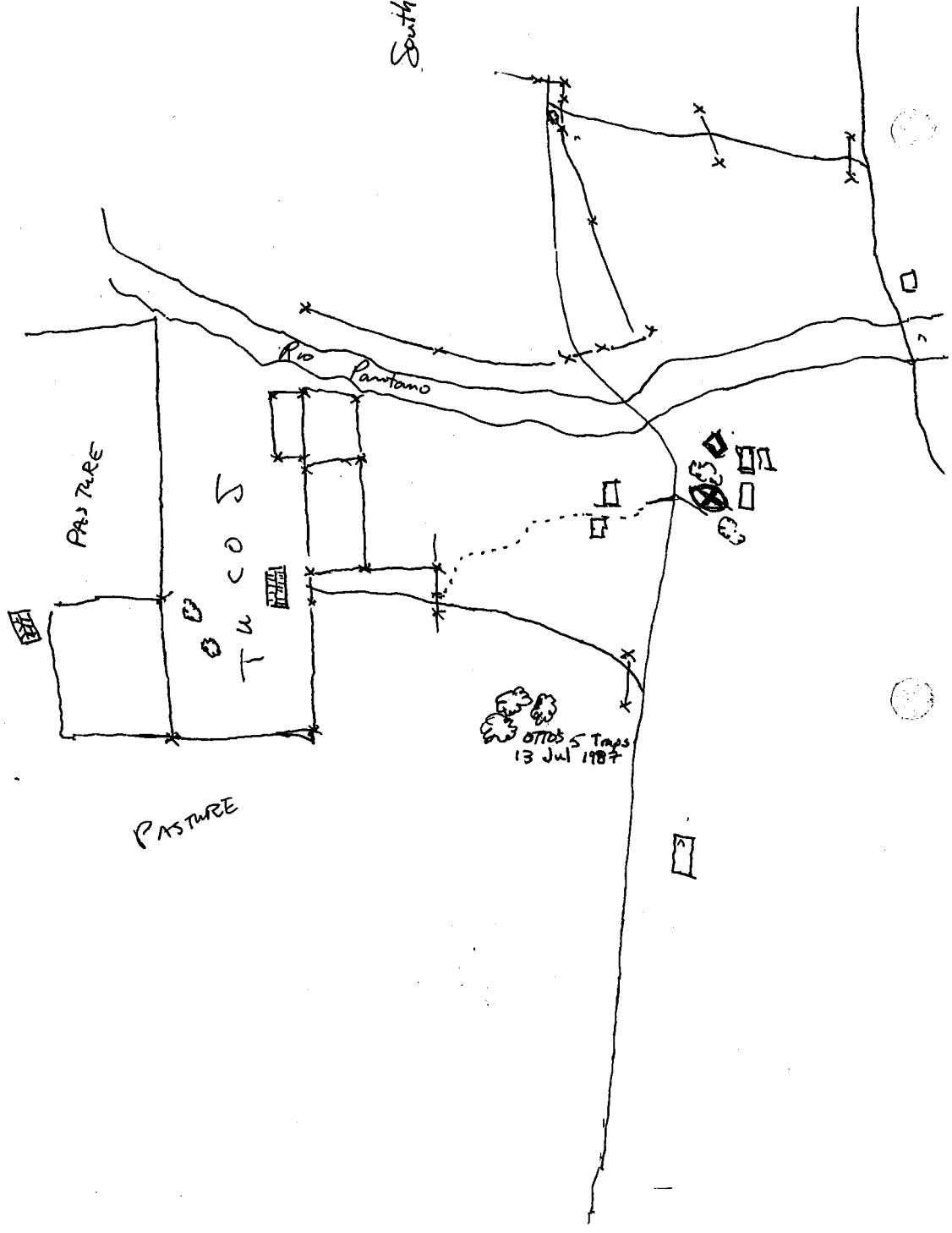
13 July 1984
(Monday)

Juan Chavez

Up at 6:00. Spent the a.m (after everyone finally got going) setting two traps in the field east of the road (≈ 1 km). The family living there is caretaking for the patron who lives in Santa Cruz. They have a nice herd of dairy cows (20) and were very friendly. The kids are especially helpful. I am keeping separate data sheets on the precise ^{location of} tucos captures, dates etc. Refer to those for details.

DUNES

↑ South



PASTURE

TUSCO'S

Rio Pantano

PASTURE

OTTO'S 5 Traps
13 Jul 1987

Tomorrow

Contact Isabel

Pickup ~~luggage~~

JORGE

BOXES - FOOTLOCKERS

Tube for Luz / check

gut bucket

Coca leaves

eggs

Chloroform

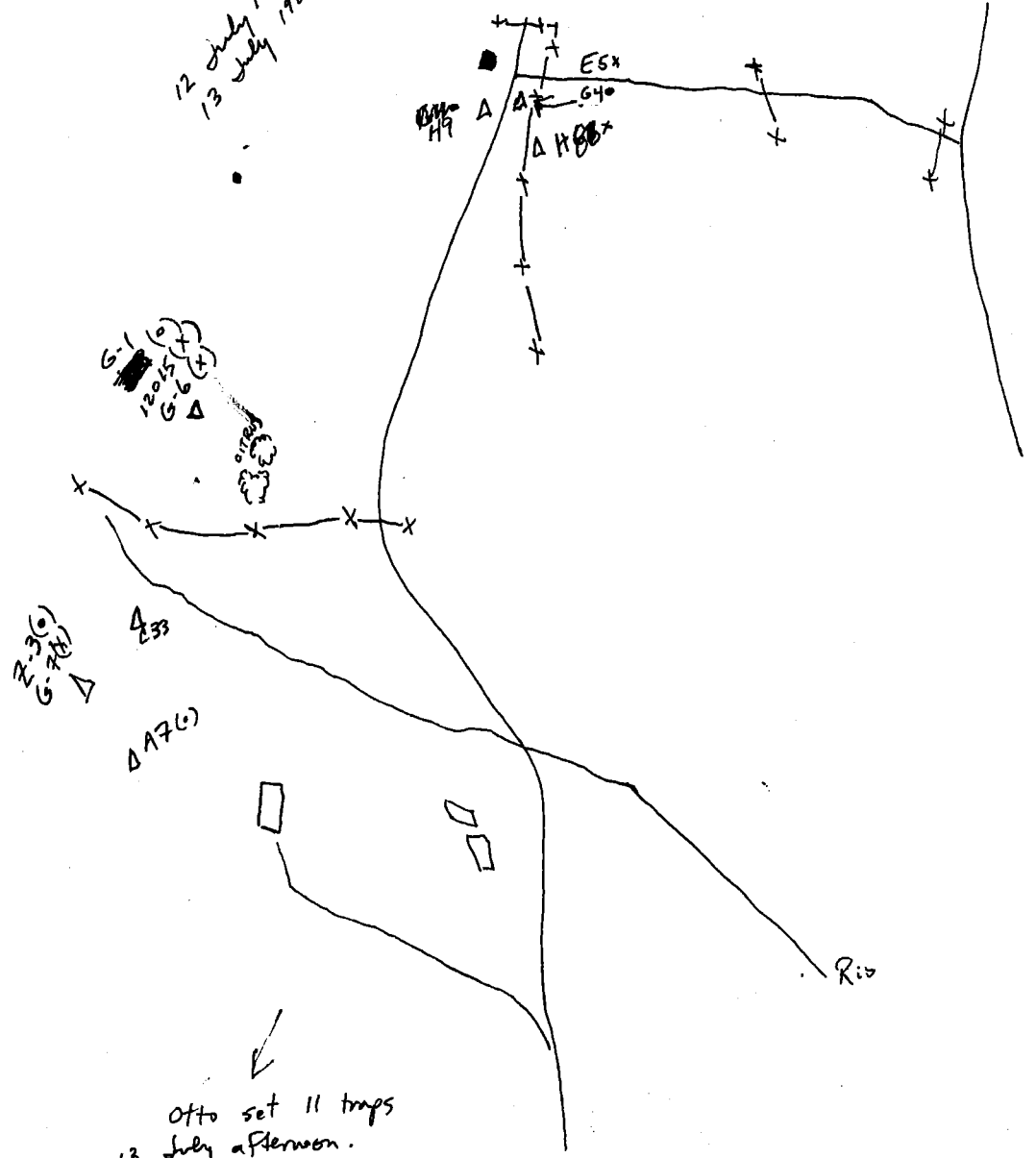
→ La Paz

notepaper

JORGE NELLA ~~ARRIVE~~ FROM LA PAZ

12 July 1987 (+)
13 July 1987 (o)

Santa Cruz



↓
Otto set 11 traps
13 July afternoon.
6:30 check - G7
2026
2034

15 km S Santa Cruz

JAE

13 July
1987

Monday

(17)

Spent part of the morning setting traps with M, P, E, R to get them started on tuco trapping. This sort of trapping requires an extra amount of enthusiasm as you have to get down on the ground and get dirty. Also, requires a lot of digging and perseverance.

The area we're concentrating on is bounded by fences that generally form a rectangle so I measured off 10 m segments to help in determining the location of each capture. The captures are tallied on a piece of graph paper. All burrows that a tuco is caught in is reset with a trap. Each ^{of these} burrows also gets a metal tag so we can keep track of the captures.

Outside of the tuco patch there are pastures and it will be easy to delineate the perimeter of this colony. There are few tuco in the pasture, instead they are concentrated in the banana and yucca patch that the dairy cows are excluded from.

Returned to camp in early afternoon and then began processing our anoles. Marisol set ~20 sherman in the late afternoon and then we processed. Knaptyped several, but found few good spreads so I changed my hypotonic. I had mixed it originally from distilled H₂O we'd gotten from CENESROP. Perhaps there is something wrong? with that H₂O. Switched to

Marisol found a 300cm long Bolitoglossa under a dead banana branch near one of her traps. Collected.

Some H₂O I'd brought from UNM and the hypo worked much better. (May also be the new plastic container it was in.)

Prepped animals till 3 a.m. The crew found Ctenomys skinning abit more challenging than Peromyscus. 1

14 July 1987 Tuesday

Up at 7:00. Went and checked the two sets. See data sheets. It is apparent that the traps should be checked often (every 2 hours) when they're first set as the fucos become wary after their first trap encounter. New sets should be monitored often. We lost 5 fucos this a.m. (Traps with hair in them). It is going to be no small task to eradicate the complete population.

M, P, & R decided they'd like to go to town to take showers (we've been in the field for 3 days), so they will go with Otto into Santa Cruz this evening to pick up Bruce when he arrives tomorrow morning.

Spent early afternoon prepping and then rechecked two traps. The four left at 5:30 and I prepped fucos (+ 1 Proechimys, 1 Akodon that Mariel caught in her shermans) until near midnight. Had lots of local company watching me tonight as I'm alone here. Went through the complete routine with.

June is windy and has been since we got to Santa Cruz. Wind blowing from Northwest and making working conditions extremely dusty. This is some of the best fuco trapping we've had down in Bolivia.

JAC 1987

14 July
(cont)

(18)

Have been catching 2 or 3 individuals in several burrow systems, including ♂♂. Will be interesting to tally all this up.

15 July
Wednesday

Checked the traps in field east of camp (across road) and there's still lots of furo activity. Returned to camp and finished prepping the specimens I'd started last night. The chickens had roosted in a tree above the lab tent last night and crapped all over a bunch of the gear and notebooks. Another field hazard.

One of the neighbor women brought me by some hot lunch today. I think they feel sorry for me having to work by myself. It was good soup. The girls were scheduled to pick up Bruce Hayward at the airport at 6 a.m. and then head out here to camp. Thought they might be in by 9:00 (it's 40 min. to town), but they didn't bog in till 1:30 p.m. Bruce hadn't come in and Jorge had called from La Paz to say he and Nella would be a day late also. So I won't be going to pick them up until tomorrow.

We set a few more traps this afternoon in the furo field and then Mariel set out a line of shermans. We only have 40 shermans until Jorge and Nella arrive from La Paz.

They call this area Las Lomitas, but it is not shown on the topo map I have. This map,

is 1:250,000 called Santa Cruz de la Sierra, Bolivia.

16 July 1984

Thursday We checked things this am and then processed the animals we'd caught. The crew has a hard time getting out of bed before 9. Will have to work on this a bit as it's 10 before they get to field. New crew ~~blues~~. Processed animals until noon when I left for town to pick up Bruce, Nella & Jorge. Also had a long list of things to buy or secure. Stopped at CENETROP on the way in and filled up our distilled jug which was used for dinner 7 night. Met Rolando Urjel who had returned from Brazil where he'd been working with Susan Bardon (from UNM). I said I'd met with him again before we leave.

Continued on to zoo where I eventually discovered that Bruce had arrived this morning, but no one knew where he was. Otto wasn't to be found so I took a cab to buy chloroform (Farmacia Telchi), a jack and tire wrench, and lamp post for the gas lantern. Returned to zoo, found Otto, who said he'd taken Bruce to the Hotel Internacional, and we then went to pick up the "gingo gardo".

The three of us then drove out to the airport to pick up Nella and Jorge. They flew in at 6:45 with extra shermans and a few other supplies.

Bruce's baggage did not arrive with this so we decided to wait till the morning to

16 July
(cont)

see if it does and then go out to camp. Jorge, Nella and I stayed at the zoo.

17 July
Friday.

Went to the market first thing this morning and bought groceries and ate breakfast. Drove to Hotel Internacional picked up Bruce and drove out to airport. His baggage did not come in on this flight so we filed a lost baggage claim and returned to the zoo where we left Otto. We bought a few more groceries and finally left Santa Cruz at 12:45.

It takes 45 minutes to get to Las Lomitas (camp) from the zoo in Santa Cruz. One takes the road south of S.C. that goes to the large IPFB petroleum refinery and then turn left (east) along the road to Palmer Oratorio. This road parallels the aleoducto. The jeep doesn't have an odometer so I'm not sure how far down this road we travel, but it is ~ 10 km. The road is fairly rough and rutted and continues on to the Rio Grande.

Returned to camp and spent the afternoon checking and setting traps. Activity in Box I has dropped off considerably.

18 July (Sat) Checked two traps this am. and then spent some time setting live traps in the field just to the west of camp. We set out 5 PVC live traps. These are going to be considerable work to use. I think it will be difficult for the larger tucoos to enter.

We've been having some problems getting the specimens to dry. The last few days have been very damp and the maggots have hit a few specimens hard. We've been pulling the specimens out every day and hopefully will have some sun soon. The wind has changed from the northwest to coming directly from the south and the weather has really been cool. Pulled out the long johns this am. Bruce ~~had~~ has been wearing my parka around as he has no extra clothes.

19 July 1987 Live capture & release

| LT | RH |
|--------|-------|
| | |
| 109876 | 54321 |

#1) ♂ 320 g
released at 1330
caught in Jerry's live PVC trap

#2) ♂ ad 540 g
released 2245 h
caught by ^{hand} by Brenda 20 m east of camp (near cook shed)

JAC
1987

(29)

19 July
Sunday

Got going about 10:30 this morning. Breakfast was a bottleneck again. Bruce and Moriel had set out ~ 60 shermans near the woods to the northeast of BOL I (~~near~~ Ctenomys boliviensis pop #1) and they caught Akodon, Calomys (in grassy field) and 1 Proechimys. Paulette and Nella set 36 shermans down along the river and caught 3 Proechimys, 1 Akodon and 1 Calomys. They are keeping data sheets so all the sherman traps so these should be referred to for exact details. I set 2 more sites and Moriel & Bruce set one on the way to their trapline. There are a few scattered ~~populations~~ individuals in the fields, but their mounds are easy to see and we will trap these out too.

I am now calling Otto's original trap site BOL 2 as we've taken 9 trees from this field and should catch a few more. We put in 6 new sites in this area today. Returned to camp with a nearly dead tree (most are being caught by hind foot) and we kangotyped and processed several animals. I have kangotyped a representative of the rodent genera we are catching (Akodon, Calomys & Proechimys), but have been concentrating on kangotyping the Ctenomys.

Reset traps in the afternoon including several live ~~at~~ sites (PVC traps) in the field west of

Camp. We will try to live trap and release animals in this area.

Otto did not show up today so Bruce is still without his luggage. We'll go in to Santa Cruz tomorrow to check on it.

We caught 6 Ctenomys today. Bruce, Mariel and I ~~had~~ caught 3 in the 3 sets set by their shermans. There is getting to be less and less activity in BOL I and BOL II.

20 July 1987

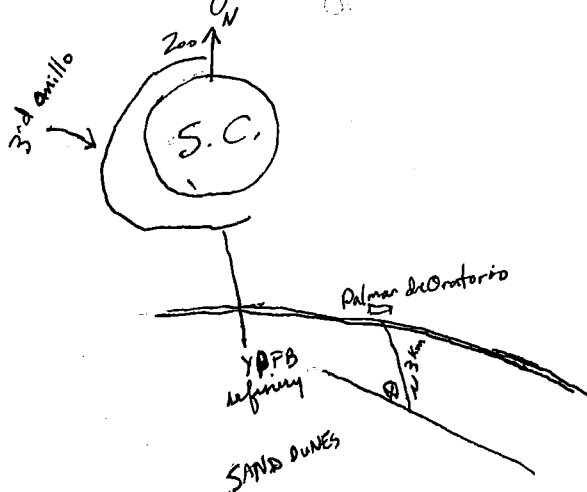
Monday - Nella and I drove into town

at 11:00 to find out about BJT's clothes

The jeep is making some pretty strange noises (transmission?) and we'll have to check it out

before long. The road from camp to S.C. is washboarded pretty badly so it takes 50 min.

to get to the zoo.



JAC 1987

(21)

20 July
(cont.)

Otto was not at the zoo and no one knew of the status of Bruce's luggage so we drove out to the aeropuerto Viru-Itira. After a long tedious wait, we finally were informed that Otto had picked the bags up this a.m. Apparently his bags had travelled around South America and Bolivia for 5 days.

We returned to the zoo and didn't find Otto so we ate lunch at Lido (1 block from Playa) and then drove to Los Pozos and bought specimens for the next few days. Left Santa Cruz at 3:00 and arrived at camp at 4:00. Checked ~~at~~ the two traps and then set 2 bat nets down near the rio. Otto came in at 5:30 with the zoo truck. He brought BJH's clothes, bread and chocolate.

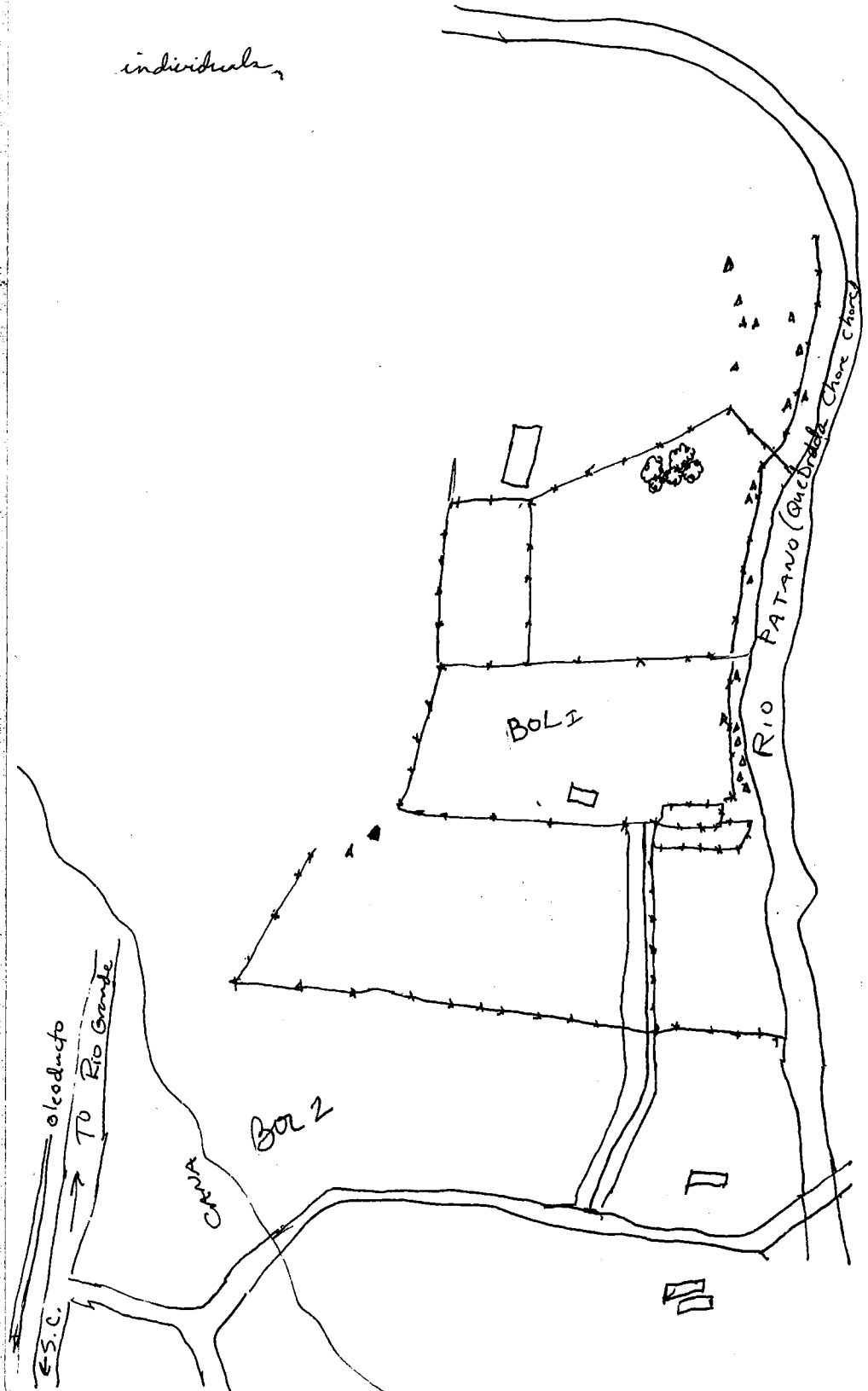
Processed till 1:00 A.M. See data sheets.

21 July

Up and going by 8:00 am. Maribel caught a Philander today. Her first mammal, so her study is underway. Otto took some MacAbee's and made 8 sets by lunch time and then he, Rosanne and ~~Maria~~ Nella took more traps in the afternoon and set them in a field 150 m east of BOL I. This group is connected with BOL 4 by a few intermediately located

▲ New Traps

individuals



JAE
1987

(22)

21 July
(cont)

By 14:00 h we'd caught 2 in these traps and also caught another in Box 2 population. Mariel brought in 1 tuco from among the traps (3 sites) she'd set out northeast (~500 m) of Box I. Our 22 h run resulted in another 3 individuals.

Some of the new traps Otto set were in fairly dense brush which means we'll have to search these areas for fucus also. This brushy area borders the river in a band about 15 m wide. Some of the tuco burrows go right down to the river bank. I am hypothesizing that the river is a barrier to the dispersal in these critters, but this should be tested.

The river bed is ~ 50 m wide and the river varies from 10-20 m wide.

22 July

The wind is blowing again today. It is gusting up to at least 40 mph, but the tents are for the most part holding up. We've been eating dust for most of the time we've been in this camp and the lab is a dust bowl. It's very difficult to keep the karyotypes clean.

23 July Otto left this morning with the jeep to take Thursday it into Santa Cruz to get a few noses checked out. Sounds like 4 joints in the drive line. Gave him \$100 to buy groceries with also. I think there is too much dust here for him. He promised he'd return by evening. We're diet low on food.

Still having problems drying the skins - several are fly blown and have lost some fur. Also, the wind apparently blew a wire full of skeletons off the tree and the dogs dug it off. At least that's the story we get from one of the little kids that are constantly crowding around our camp. We counted up the number of skeletons and are 8 short. Sure miss not having Syd along to keep an eye on the skins and skeletons.

See two and Sherman trap line data sheets for trapping info. Spent day processing cattles and Jorge and I managed to measure a considerable portion of the captures (distances between individuals) today. Julian arrived at sunset with food in the good sack. Otto couldn't make it and our jeep is still at mechanics.

JAC
1991

(23)

July 24
Friday

Twenty-nine years old today and the day passed much as the last few. Lots of wind and dust.

We're beginning to have a bit of a trap & thieving problem, too. Marnel and Paulette reported another couple shevons missing this morning and Paulette said she saw a young boy running from the trap line hiding something, but she didn't feel it was her obligation to investigate. We chatted a bit about that. Have been finding a few of our traps disturbed also with traps turned upside down, etc. So we talked with the young boys that have been following us around.

See data sheets for capture info. Are still catching tucos in Bol I and the field to the ^{east} ~~west~~ of this but the activity is down to just a few mounds in each. We haven't found any new mounds in Otto's field ^(Boyer) by the road for a couple days now.

It is becoming increasingly apparent that these critters aren't as solitary as we thought. We've made several recaptures in the same burrow and it will be great to put all these data together back in the lab.

JAC
1997

25 July

(24)

Things to do today.

- 1) Measure all captures and record on map. ✓
- 2) Find H86 21 July in Box I ✓

We plan on leaving tomorrow for Santa Cruz, if Otto comes out in the 200 truck to pick us up. Our vehicle is (presumably) still at the mechanics, transmission problems. He took it to Santa Cruz on Thursday.

Still having problems drying the skins and skeletons. It takes considerable nothing to get them to a preserved state. Went out to the two fields and began pulling traps and putting the finishing touches on the array of traps we've had out. Left all traps that had had some activity in the past 2 days and pulled all others. It's obvious it takes considerable effort to catch all the individuals in a Ctenomys population. We've taken 38 individuals from Box I and caught another large ♂ this a.m. (in set # 22, see data sheets). There is no new activity in the main field (of Box I) and none in Box 2 either. Took several measurements on the new catches (locations) and then returned to camp and processed the animals. Marel & Bruce caught another Marmosa (4 now) and an Oryzomys as well as several (~~7~~⁷ Akodon). ~~Wind~~ Wind blew

25 July (cont) Wind blew like fury all day today again. We never camped where the wind has blown so hard, for so many days. Lousy field conditions.

The family's name ^{is Yanita in whose field} ~~that~~ we are trapping Ctenomys. It is a family of 6 children (boys) and all have been very helpful (Marcelo, Roy, Alejandro and Vladimir in particular). The senora on whose place we're camped is ~~Marcelo~~ ^{Efeumia} and her daughter is Angelina.

Discovered today that were missing about 15 traps (MacBeis) and after talking with the boys figured out most of these had been stolen. We rounded up 26 of these with Jorge's help. Caught 1 Ctenomys in the evening run and processed this when we returned.

Sunday 26 July. Spent morning packing up after ~~unpacking~~ picking up our traps. No trees and Moric caught another Marmosa. She thinks the Sardinias are the trick. No new tree activity except for 1 mound near trap 3 in the northwest corner. Otto showed up at 11:00 and we packed and left by 12:30. Otto confirmed the location of individual 686 21 July which was the only one I was doubtful of its ^{capture} location.

JAE
1987

(25)

26 July

Had lunch at the zoo and met Paolo Battella a young Italian who is working at the Santa Cruz University museum and is attempting to get an insect collection going. He also is interested in Bothrops and other poisonous snakes. He said there were ~ 14 spp of Bothrops in Bolivia, but he has 1 specimen that he is not able to buy out and thinks it may be a new species. He asked if we could take it to someone in the U.S. to find out. He's interested in going with us to the field and although he's very intense I think he would be an asset to the crew and a good person to get acquainted with. He has very little training in biology but a keen interest. He later identified the snake we caught in the Jabita's field (15 km S Santa Cruz) as a false Bothrops and non-poisonous.

We indicated we planned on leaving Tuesday morning and he said he'd stop by tomorrow afternoon. Set a 60' bat net near the duck lagoon in the zoo and caught 12 bats by 8:15 PM.

3 Large Artibeus (planirostris ? jamaicensis),
Hypodroma and a single ⁽³⁾ small Myotis
like vespertilionids.

Vampyrops
lineatus

27 July 1987 Monday

Went with Julia to the market to buy food for our trip while most the others stayed behind to prep bats from the night before. It began raining at 10 a.m. and continued through the day off and on.

Returned to the zoo and we decided to help Otto in the zoo by ~~identifying~~ correctly identifying the mammals in the zoo and by putting the correct scientific ~~at~~ classification and English common name. This will prove to be a good learning experience for all of us too. The animals are in many instances misidentified or the name plates ~~that~~ have the wrong classification (rabbits as rodents).

Paolo came by in the afternoon and we all went to the Bella ~~de~~ Napoli for dinner which was great, but expensive.

28 July 1987 Tuesday

Rained cats and dogs today. Bruce, ~~and~~ Otto, Paolo and I went to the university administrative offices near the main plaza in Santa Cruz this a.m. and met with Pancho Kempf who is vice-chancellor of the university and is interested in increasing relations with the U. of New Mexico and the American Museum. He said he would help us with any logistical problems or political problems we might have. He's interested in

28 July 1987 getting help with the new Natural History museum they are developing in Santa Cruz. After talking with him for about 20 minutes, we went with another administrative type (whose name I didn't get) who gave us a brief tour of the building they plan to convert into the museum. It is a beautiful building across the street from the Correo that was built in the early 1900's and was a copy of a French castle. It rained hard all morning and the road to the zoo was under 2 1/2 feet of water.

Returned to the zoo and began to organize the zoo work (identifying the mammals and giving them the correct names for new name plaques). Everyone wanted to go to the market (Los Pozos) for lunch (wonton soup) so we got the jeep started. Still having problems with the ~~starter~~ starter. By now the road was under ~1 meter of water and a truck that bypassed us sent a wall of water across our hood killing the engine. It took ~45 minutes to get the vehicle going on down to town. Lunch was great.

Spent the afternoon identifying ~~and~~ animals and organizing our project.

Lic. Arturo Moscoso

Fac. de Agronomía

Casilla 702

Sta Cruz

29 July
1984
Wednesday

More rain today. The Rio Piray rose over 3 meters and the road to Buena Vista is impassable. Spent the day working on the zoo project, it's been a good chance for all of us to learn the mammals a little better. With all the rain it doesn't look good for leaving to the field soon—everything is awash. The 21 cm we've had in the past 3 days is a 30 year record. Bolivian weather is hard to fight.

Paolo came by in the afternoon and we went with him to the university to meet some of the biology faculty and students. We went to the museum ~~and~~ on campus and it was obvious it was just beginning, what a great opportunity for someone with some museum background to help these people get this project off the ground. ~~Meet~~ Meet Arturo Moscoso who is a biology teacher at the university and who will soon become the director of the Centro Desarrollo Forestal for Santa Cruz. He seems very energetic and interested in our project and helpful too. He showed us the Parque Huanchaca (now Parque Noel Kempf Mercado) which he and Paolo had just visited. The park is large and located in northeastern Santa Cruz Dept where there is

Ing. Antonio Gonzalez
Subdirector FCA
Cas 3547
Sta Cruz

(27)

29 July
(cont.)

little population pressure except along the eastern border from the Brazilian. He said there were now ~ 10 large Summita operating within the park. This is the area where Kempf was murdered by the cocaine traffickers last year. Mascoso is a peasant who also taught in La Paz (Jorge was one of his students) and we'll need to keep up a good connection with him in the future.

Also meet Ing. Antonio Gonzalez who is the subdirector of the FCA (Facultad de Ciencias Agronomia). There is no biology dept, per se, at the university but many of the ~~biological~~ agronomy faculty teach ~~the~~ biology courses. He said ciguachis were of considerable interest in agronomy because they did so much damage to crops and irrigation systems, especially to the south of Santa Cruz. He was interested in the control of ~~the~~ ciguachis and wanted to know if my studies would have any management applications.

After viewing the museum, we met with 60 "biology" students to let them know what our studies were all about. We got a few questions afterward (45 minutes of stammering along in my best Spanish) and several students stayed around for a bit

29 July
(cont.)

later yet. It's obvious there is considerable interest here.

Dinner at a honey chicken place ~~the~~

3 Aug 1967
Monday

4 km WSW Buena Vista, $17^{\circ}28'S$, $63^{\circ}42'W$,
No action in the two traps this a.m. We
decided to find a better place to set traps
so we walked back down to Comunidad
El Caiso where Otto said a young boy had
told him there were ~~some~~ "harto" and
Cajuchis. We checked out the field and
found no sign. Walked back up to camp and
took the jeep looking for a good Ctenomys
steinbachi locality. Drove north on the fork
at camp, but it quickly dropped down into
a wet, muddy swamp. We turned around and
drove up to Buena Vista where we met
Merriam, the Bolivian wife of Robin Clark. We
went with her to their house (1 km SW
Buena Vista, across the road from the public
school). She asked her neighbor of about
Cajuchis and she directed us to 2 of her
yucca fields which we looked through but
couldn't find any tree mounds.

Had coffee with Merriam and then
decided to drive south from Buena Vista
on the road toward Estancia San Rafael
de Ambaro. There is considerable
farming along that road and we spent
the afternoon stopping, asking and searching
through the fields. The old "Hay harto" and
"Mas alla" were heard repeatedly.

We put in several sets (7) in a field

3 Aug (cont)

6 km S of Buena Vista ($17^{\circ}30'S$, $63^{\circ}40'W$) about 14:00h. We then continued on to the Estancia where we encountered the Durham biologists who had just returned from their two week trip into the Ambozo park. They have been looking at ~~Ambozo~~^{Lutra} behavior and trying to find Pteronura in the rivers of the park.

They also have been netting bats, but have kept very few specimens and are having considerable trouble identifying them. They don't seem to be too serious about their work.

We scouted around the Estancia and south down the new road they had just built and found a few new tree mounds, but the fields were all very grown up and it would be too difficult to work these populations and know with any certainty that we are effectively catching most of the individuals. We returned to the Estancia and the sun was just beginning to set so we set off promptly for our camp.

Stopped at our tree sets just after 18:00h and had caught 3 Ptenopus stimbachi, (2 dead, 1 alive). These critters seem to enter the traps head first much more often than C. boliviensis and thus get the pinches of the Macabee in the chest.

Continued on to camp where we arrived at 19:15. Mosel, Paulette, Bruce, and Paolo had remained in camp and Bruce had skinned over

JAC
3 Aug 1987

20 of the bats were caught last night. We keyed the bats out to Molossus molossus (125), Myotis nigricans? (3), and Lonchophylla thomasi (2). Bull was pretty tired as we all were. I banded the live two and then trapped 10 more bats. The field near camp (behind the mango trees) yielded another dead Ctenomys (the third). Hit the sack at 01:30.

4 Aug.
Tuesday

Have decided the Ctenomys stebachi are going to be too difficult to work at a population level. The vegetation that we're finding these critters in is too dense to really work in. They are primarily in old yucca fields that have become overgrown. The yucca fields here are generally worked from 3 to 5 years and are then allowed to go wild. The newer two fields are kept clean of ~~the~~ undergrowth and we haven't found any mounds in these areas. These animals must not move from area to area very quickly but it will take considerable intensive work monitoring ~~the~~ populations throughout an annual cycle or several years. It would be interesting to correlate the movement of these critters and the yearly change in forming of fields.

Decided to go back to working with

C. holivianis, 50 @ me (Bruce, Jorge, Paolo and I)

drove east of Buena Vista ~ 10 km to the San Miguel road that cuts off south and heads toward Caranda. We stopped in San Miguel and spoke with Romulo Sancedo a friend of Otto's who had accompanied him 2 years before to a place where there were many ~~caguichis~~ caguichis near an old military fort. We found Romulo, but he said it would be a 3 km walk to the fort as the road is no longer possible. He mentioned a place north of Monteros where there were many, but Paolo thought he didn't know the caguichi very well.

We continued on down the road towards Caranda asking along the way. Everyone said there were caguichis in Caranda, but none along the way. We arrived in Caranda at 12:30 and asked at a small roadside store if they knew any caguichis. The three fellows there all knew of them and one man lead us off to his garden where there were old mounds. He then took us across the Rio Palometillas to look at an old (2 year old) yuca field. There were no mounds in the field, but a few in the surrounding forest. He said 2 years before there had been numerous mounds.

~~Archie~~
Archie Rivero

4 Aug 1983

We returned to Caranda and met another fellow Argentine who took us further south past the YFFB field camp a few kilometers to an area where there are several new fields of yuca and bananas and some that were fairly overgrown. There were a lot of trees in the overgrown area. We will be able to work this area, but it will require considerable clearing with machetes to find all the trees. This area is only 8 km from Estancia San Rafael de Ambaro where we collected Steinbochi and it will be interesting to see what species it is. I think we'll move here in a few days.

We returned to Caranda dropped off Argentine and headed back to camp. It is almost 1 1/2 hours to camp from Caranda and it will be a chore moving all the gear there.

Arrived in camp at 1500 h and the crew had begun to break camp as I had indicated earlier that I thought we'd leave today. Overcast this afternoon, took =

Theodorisa Velasco (Abuela)
PURO (grandson)
* JIL SAUCEDO GARCIA (Abuelo)

OSCAR SAUCEDO BUENA VISTA
SANTACRUZ BOLIVIA

* SEND FOTOS to Jil's brother
& of us also

PAOLO BETTELLIA

P.O. BOX 4188

SANTA CRUZ DE LA SIERRA BOLIVIA

Dr. Haroldo Cuellar Roca y su esposa
Medico de Niños
Av. Uruguay 289 Santa Cruz Bolivia
Caja Postal 1206

JAR
1987

12 Aug

Up a little late at 7:45. drove to 1 1/2 km SW to check the traps and caught nothing. Two of the traps were set off and we found two new mounds in the field. I think there are at least 5 to 6 in this field. It got hot early this morning. Mairiel caught nothing in the shermans for the second day.

Returned to camp where Jorge and Rosanna had caught nothing in the modified MacAbeia they were using. They removed the traps they had wrapped around the pinches of the traps. Two had escaped from these modified traps the night before. Parlette, Nella, Otto and I went to ~~find~~ find more traps and buy gasoline. There is no gasoline in Caranda so we continued on to Puerto Chulco.

We picked up a few people along the way and they knew of ~~abichas~~ *Cujuchia*, but hadn't seen any recently. Many folks we have spoken with mention that there are lots of trees at certain times of the year, but they conflict as to when this is. Some say they are active during the wet season others say it has been too wet lately for them to be very active. Many also comment on how wet this year has been and lots of wind, too. It was

12 Aug
(cont)

windy again today.
Returned to camp

JAC

16 Aug
1987

~~The~~ Stomach Flu continues this morning. Took the gang down to the city mercado for breakfast and then Jorge and I drove out to the 15 Km S Santa Cruz Teco locality to recheck the sites (populations) we had trapped last month. It was raining briefly or rather intermittently this a.m.

We spent a little over an hour thoroughly checking the fields and found activity in each of them. In the large Field 5021 there were 3 new mounds (see data sheets) and in the small Field east of this there were 2. In Otto's Field we found no

RODENA - BOLIVIAN WILDLIFE SOCIETY - US

to MICHAEL VAN BEUREN

BOLIVIAN WILDLIFE SOCIETY (PB) - US

130 Coconut Row

Palm Beach, FL 33480

Otto - Tel 39939 Zoo → Casilla 754
34016 Home

Carmicha Miranda / Freddy Cáceres Casilla #54
(TEL: 40869 - 40672) Oruro - Bolivia - 5

Casa dirección: Potosí, entre Lyra y Obilitas # 4733

Carmicha Miranda / F.C. Casilla # 6953
Dirección Casa: Ricardo Murcia,
Tele. 350720 La Paz entre Jaimes Freyre y Muñoz
Cornajo # 970

Ecologic Instituto in CotaCota 792582

Jorge, Eliana
Monika, Jaime

Museo Nacional de Historia Natural 795364
Calle 26 Cota Cota

CotaCota Casilla 3405
Roberto, Lucho, David Rea 792337
(Albus) Mother - Lee Calle 18 # 8034

Philippe Desjeux IBBA - 361125
Home - 792781

"Coco"
Thesis: Parasitologist Friend of Philippe/Well
Southern Methodist U
Jorge Velasco W. La Paz 355008
Casilla 159
Jorge Velasco Sr. y Wilma 572 Calle C Obrejas 784929

"CENETROP" CENTRO ENFERMEDADES TROPICALES
DR. Le Fuente, Bermudez, Uziel
Hernán Rolando
Chagas Leishmania

PRADENA - UK Reginald Hardy Tel. 060085388
Tam-yr-allt, LLANTILIO CROESSENTY
ABERGAVENNY, GWENT NP7 8TH
UNITED KINGDOM

For - Jorge gave \$150 to

Eileen Alcorza

Casilla 5322

Student at
University in Boston La Paz, Bolivia

Calle Abdon Saavedra esq. Belisario

Selinas # 2358 Sopochachi

Tel. 359044

La Paz,

Student at
Texas A&M
lives in Cochabamba

Santiago de Col

Calle Buenos Aires # 750 casi esq. Pando

Tel ~~49786~~
49786

To Do

ALBUQUERQUE

WRITE REG

" M. MARES

" Maria Bordin (v sp)

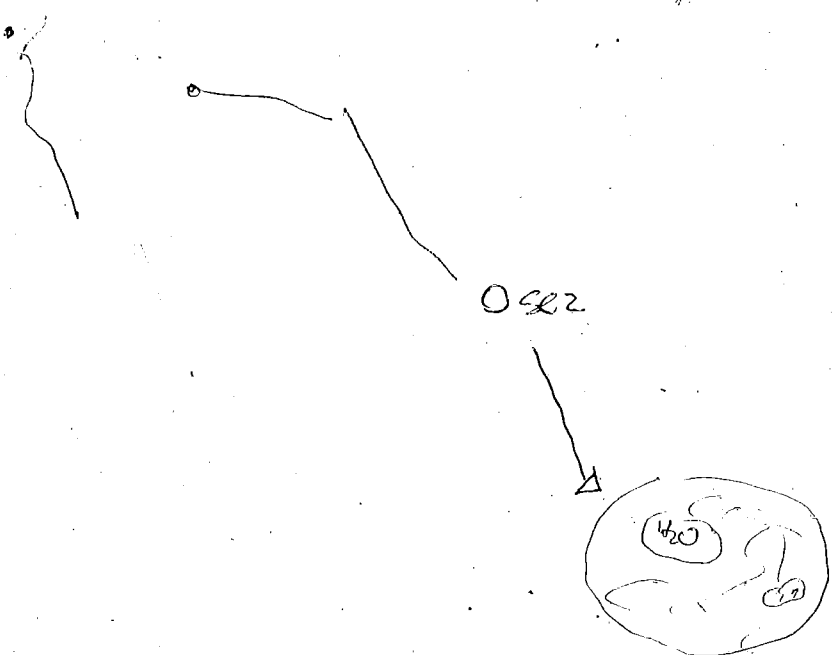
" Eliana Flores

See Otto literature on Catagonus veguiri
South American mammalogy

3900

Dir Luis Hartmann
Convenio entre la Academia Nac de Ciencia
y el Zoo - 2

Get. "5 New World Primates" A study in comparative
J. Terborgh 1983 Princeton Univ



now because
I only go to bed ~~when~~ I'm drunk
not because I'm tired - fanlette 7/10

We couldn't even fit into your pants,
be - mariel 7/10

Handwritten scribbles at the top left of the page.

Rosanne Lee Humphrey D1149955 HOUSTON

MARIEL LEE Campbell G#210616 STANFORD

Nella Marie Sanchez H116825 HOUSTON

PAULETTE LOUISE FORD HG974561 HOUSTON

Joseph Anthony COOK E867735 HONOLULU

Frosty Davis J093860 HOUSTON

Chris Altanbach

Bruce Hayward

Raul Serrano said harto et Laguna Capyuará
Km 6 Cochabamba Highway

- ① Transect through this contact zone - 8 estiripatón
- ② Mark/recapture - 3 separate pops
 > 10 individ (20 mejor)
- ③ Resample 1997 in June

HERMES JUSTOLIANO

Ottobone 34016

Raul Velasco 23235
Hanger 41
23073

Haguel Friday 8:37 PM TWA
Flight # 755

Jose Coimbra alvarez
Coimbra alvarez
Jose Cook

Letter of intent to work
in Huanchaca - Parque Noel Kempf Mercado
Spoke w/ Ing. Nelson Ruiz
Nelson

Suitcase
etc