

1988

Field Notes

Joseph A. Cook

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JAC

#150-
2 CO

5.

June 1st

Esken
-Jorge-

5

Santa Cruz

make traps

~~buy nitrogen, etc~~

make PVC holding tube

buckets for tusas (holding cage)

↳ pit falls?

Food - yeast

cotton - ^{wool?} pin traps? cardboard

~~call Jorge~~

(home - burrow excavation)

~~send Roberto's package, Jackie's package~~

~~write Jaquie~~

Otto's letters ^{Moscoso} militar

Maps - map tubes

pocket size notebook

Have Chris bring down:

S-holding cages (plastic)

pictures that I forgot.

* roll duct tape

xtra keys - room, car

xerox of auto ownership

~~xerox~~

⇒ Juan Carlos Torrey-Munoz

Museo Nacional
Historia Natural
Santiago

⇒ ? Contreras.

Evolution of Otomyidae us my
structure of hair.

JAC

1988

15 May

Bat netting - Santa Cruz Zoo

Set 1 42 ft net between the pond and noctorama. Net set 1 m off ground to 3 m in total height. Captures -

Set below
3 Ficus trees.

18:45 - ♀ *Artibeus lituratus*?

19:00 - " " "

19:05 - ♂ " "

19:45 ♀ " " darker, better defined facial stripes

20:30 ♀ " "

20:30 ♀ *Myotis* sp. *albescens*

Folded nets at 21:30 and hit the hay. Haven't had more than 4 hours sleep in last week. It's nice to be back in the tropics, but there's a ton of things to do this year. Vamos!

16 May

Up at 7:00 and argued for a bit (the gear), before heading to Otto's office. A full day but nobody can get going on a Monday morning. Lots of jumbling in the zoo, nobody's been paid for a month. Things are normal in Bolivia. Arranged meeting with Arturo Mascoso for the afternoon (head of Vida Saneada) and Otto tried to get through to the mayors. Otto left to take his wife to the airport (she's leaving with her asthmatic sister?) so I went to CONETROPS.

3-9-101

Centrop - met w/ R. Uziel. He has the first specimen of *Leishmania* ^(var?) in a rodent and wants me to take it to Syd for identification. He seemed very busy and talked very fast (as always) about very little. He didn't recall the Cerro Amboro paper (is it really being published through CENTROP?), but he said the publication (Jerry Yates & Syd Anderson) on the value of specimens to Bolivia was "in press". It has been for 2 years now. I gave him a few reprints and left a 5 liter plastic jug to get distilled water from him.

Left CENTROP at noon and returned to the zoo. Paolo came by and he, Bruce, Frasty and I all went to lunch at the Pollo Oro (near Hotel Internacional) cost \$20 for 4.

Returned to zoo (dropping Paolo at the university) and received a phone call from Jacqueline Miedler who was calling from the Instituto de Genética in La Paz. I have brought down some chemicals for her for electron microscopy and we agreed to send them by ~~air~~ LAB tomorrow. She had wanted a micropipetman, but had not accurately specified that in her letter.

Talked with Jorge also who will be ~~back~~ arriving in Santa Cruz on the 6th de junio and work with us until 6 de julio. I had sent \$150 with him so he can buy an airplane ticket. He sounded excited about his project on *Akakia boliviana*, but was having problems with the chromosomes and will bring some down to Santa Cruz so that we can work together.

JAE

Monday 1988
16 May

At 15:00 we drove to the CDF office and met Arturo Moscoso the director of the Santa Cruz office and he was very animated. He talked for 30 minutes straight about the projects they have going, parques planned and in progress, conservación, spectacled bears, campesinos; etc. I gave him a certificate for the new museum and a picture of Lee Citygrael for Dante Vidig and then we all left for the masico at the University Gabriel Rene Moreno where we met Teresa Centurion. She and Paolo had done an amazing job with the building and the exposition they are putting together for the grand opening on Friday.

They had a dandy little exposition of stuffed animals, plants and a few rocks. This room is $\approx 8 \text{ m} \times 20 \text{ m}$.

There is another room (with sink) where they are keeping all animal collections. They have 4 mammal specimens (skins), but lots of skeletal material.

There is another room of the same size that houses the herbarium. Centurion is a botanist.

Returned to zoo and while Piroty & Bruce set up bat nets, Otto and I went to check on maps. They were incredibly expensive at the Military

1988

Geographic office \$50/per. we bought none.

Returned to zoo and held B & F catch 4 Artibeus planirostris and 3 Myotis nigilans. Took 1 net down and left the other 2 up.
See Hayward's notes for details.

17 May Checked nets - birds only - Cacique ^(SP) tanagers.

Went to museum and gave them 15 specimens of New Mexico mammals for comparison.

Later went to meet Pancho Kempf vice-rector of the university. He wants us to publish papers in the

He a very excitable fellow, but very favorable of biologists. Even U.S. biologists. He said they needed help writing scientific articles.

We made arrangements to meet him for dinner Thursday night. Otto, Pancho and Teresa Centurion got very excited about one of Arturo Moscoso's people who was supposed to be collecting specimens for the museum, but was instead selling bird feathers.

Returned to zoo, ate lunch at zoo restaurant and then headed to Cotoca with Pablo to a place (2 km SE Cotoca) where he had hermited for 1 1/2 years.

Lots of Cujuchis. We set about putting out traps before dark and had ~ 24 in

5A
1988

17 May
(Cont)

before we could see no longer. Pastor's friends -
alamazo Pay's family - fed us a dinner of
boiled eggs and coffee. These folks are really
poor. We set 12 traps in his field - old
yucca and recently planted corn - and 12 traps
in his neighbor's (Sr. Ordoney) field. That
field was half yucca (~2m tall) and ~~grass~~ ^{beans}.
Caught an immature ♀ at 17:00 and 2 more
at 18:30 h. Damazo's wife gave us boiled
eggs for dinner and we left ~ 19:00 h.

Damazo also gave Paolo a Bothriops bolivianus
reussidii he had been saving for him (alive)
in an earthen jar. Paolo said the coloration
was different from any he had seen before.

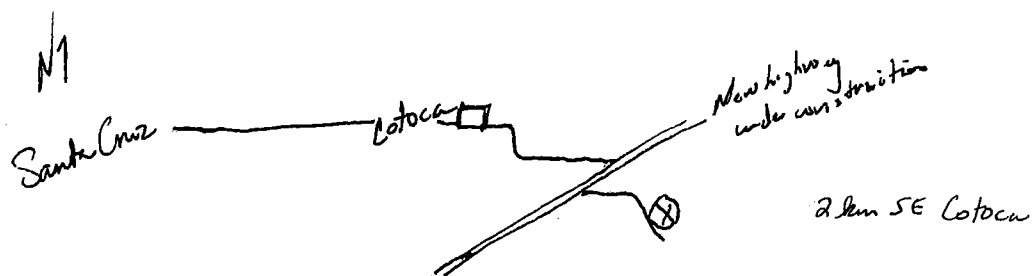
Returned to the zoo but couldn't find
enough distilled water to keep type. (CENETROP
hasn't any yet) so decided to wait until
tomorrow to keep type.

18 May
Wednesday

Up and left for the traps by 8:00. Had
to stop at CENETROP first to get the
distilled water and at the museum to leave
Paolo plans for the New Mexico mammal
display. We had brought some "mammals
of interest" from North America for the
museum and they decided to set up a
separate case to display them for their
grand opening.

Out to Atocha to check ayichis traps

and found lots of activity. Spent a hour



checking traps, recording *Ciguachis*, and setting new
mounds. See data sheets

Returned to the zoo and set about processing
the *Tucos*. We're saving guts in formalin, coecidia
in $K_2Cr_2O_7$, electrophoretic tissue, bacula, karyotypes (when
possible), skin, skeletons.

Returned to Cotoca at 16:30 (it takes 40 minutes
to drive from the zoo on good road most of the
way). We found more *Ciguachis* and set a few
traps before it got too dark to see (18:00 h).
Returned to the zoo and continued processing the
catch until 1 am.

19 May 1988

Thursday. Bruce decided to stay at zoo and process
the remain *Ciguachis* (skin them) while Frosty
and I drove out to Cotoca to pull the *Tuco*
traps (MacAbee) and measure the fields and
distances between each capture. We have not caught
all the individuals in these fields as there

(Ciguachis #)

JAC
1988

19 May (cont)



were... fresh mounds
in several places and several crijachas had escaped (they
set off). It took 3 hours to get all the
measurements done and we returned to the zoo
at 12:45. Ate lunch at the zoo restaurant
and then returned to finish the remaining tubes.
Tonight we will have dinner with Pancho
Knyf, Otto, Teresa Centurion, & Paolo Bettella
because tomorrow is the opening of the museum.

Otto came by at 8 (20:00) and we left
for _____ were we met Pancho, Teresa &
Paolo came 1 hour later as they were
having last minute things to arrange at
the museum. Pancho is very hard to understand
as his Spanish is puro comba and he speaks
very fast. The chatter was a bit different
until Paolo came along to help us translate.
Bruce and Frosty speak very little Spanish.
Pancho ordered alcohol many times and it
was a great meal.

20 May 1988

Today is the grand opening of the museum.
We drove over to the university and dropped
Bruce off and then drove to CEREPRO to
scan a few chromosome slides to see if
the population at Colaba was a 44 or 46.
Barely got the slides stained (were using
Miyeki lab) before we had to leave for the
ceremony at the ~~zoo~~ museum. Quite a few people

Came to the ⁵¹inauguration. The event took place 45 minutes late. Pancho Kempf asked me to present the letter I had brought from MSB and I spoke a little about conservation and the value of natural history museums. There were speeches after the presentation, followed by champagne and caviar. The museum is named after Pancho Kempf's father Noel Kempf Mercado the former zoo director who was shot by narcotraffickers two years ago.

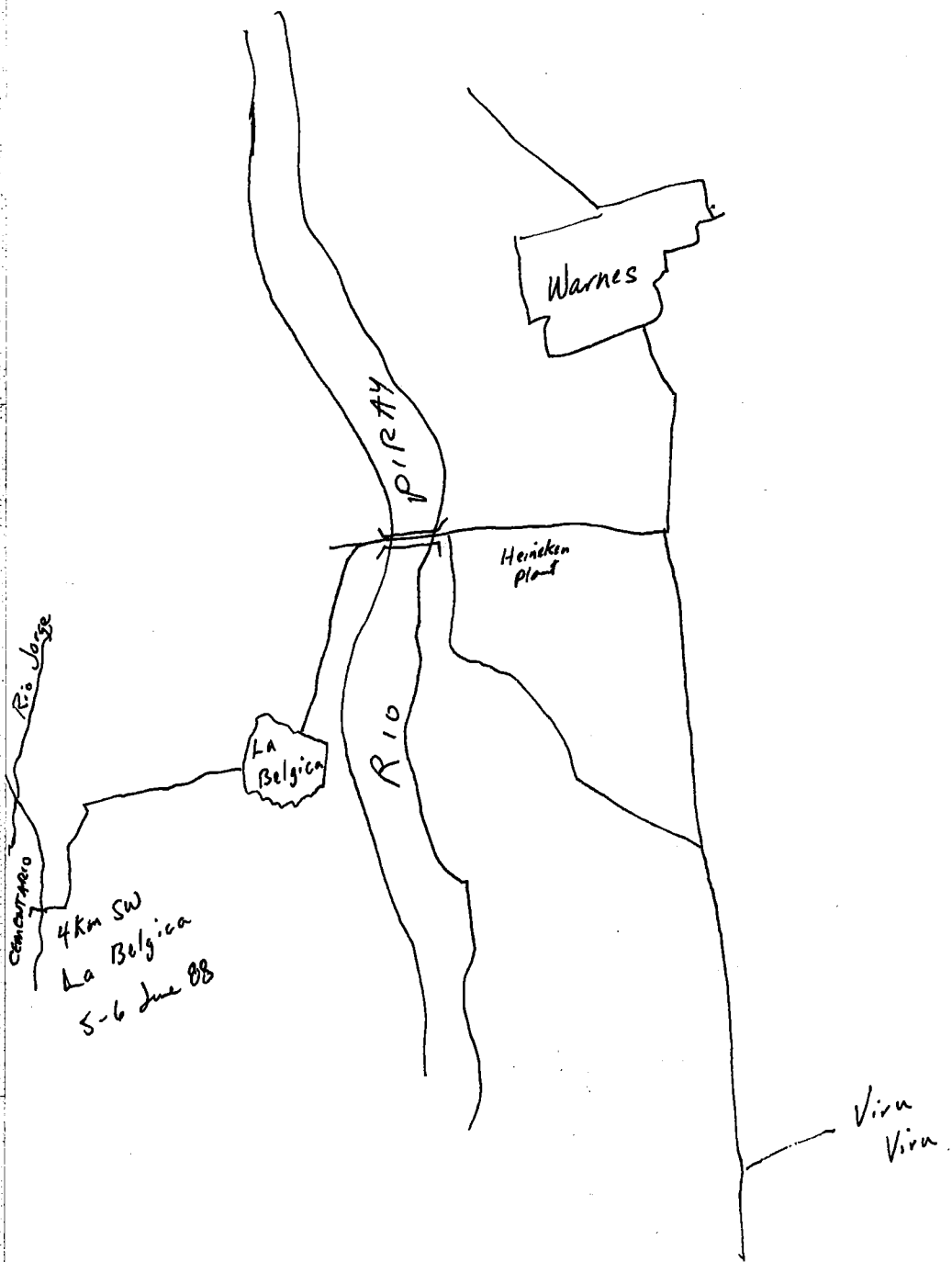
The museum is small and has very few specimens but will become an important resource, especially if good people like Paolo and Teresa Centurion continue to be associated with it.

1 June 1968 Lots going on. — Returned to Don Chano's field
first thing this morning. We had 5
new subjects in this area.

5 June 88

Up at 06:00. Put skins and skulls out to dry. Last night was very cold (in the 30's) and clear. Today promises to be sunny and warm. It hasn't been nice clear weather for the past three weeks. Went to the Frijoles tree locality (after taking down the 3 bat nets - no more bats since the 3 Toxotis and 1 Stornia early last night) and pulled all the traps. It takes 30 minutes to drive to this spot from camp (see map) and we've caught nearly all the tricos there. Two more this morning and 1 escape. All other traps (1-25) had no activity.

At 10 we drove over west of La Belgica to a spot Frosty et al had found yesterday that had a considerable amount of trico activity.



Mays 1: 50,000

Estancia Luquillas
Wames
Montero
Juan Lafrio

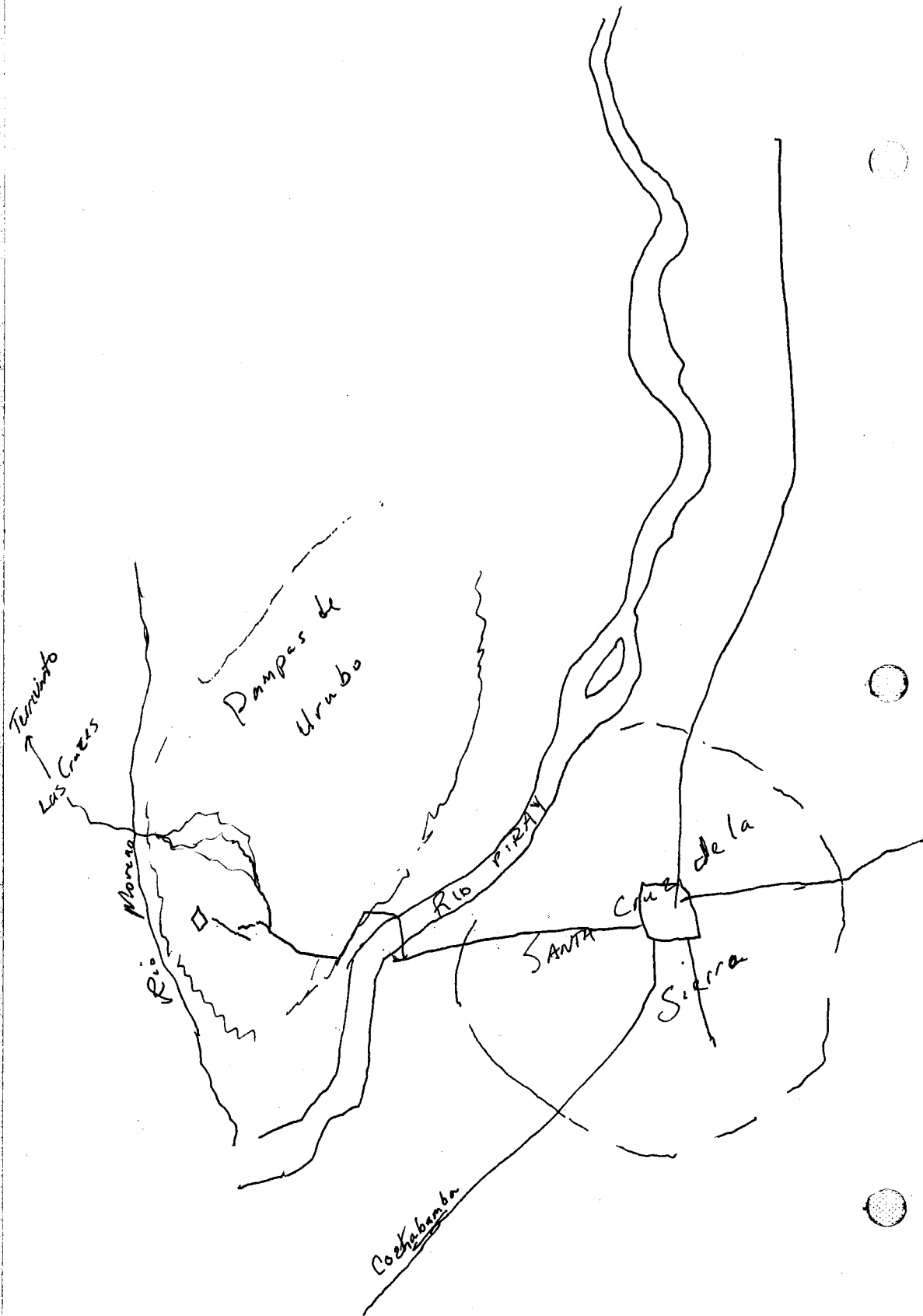
JAE
1988

Tuesday
7 June

Up early, today we finish packing and leave for a new locality. We have been at Don Luis Balcazar's house 10 km SE of Montero, just east of El Carmen, a small community on the main highway (S.C./Montero) for 7 days. We've worked several populations in this area and collected more than 50 tucois in the area.

Zoo truck was supposed to be here at 7:30. At 9:00 we decided to go find it in the jeep and get a jeep on buying groceries. Found the zoo truck just south of Jim-Three and continued on into Santa Cruz. Spent over \$200 in groceries and \$50 more on a battery for the jeep. Left dried specimens at the zoo and left Santa Cruz at 13:20 headed west on the Terrevinto Rd. This is the road that runs straight west out of Santa Cruz and immediately crosses the Rio Piay. The crossing is not good even though it hasn't rained for a week. We nearly got stuck and ended up wading out to get the hub in.

Continued on down the Terrevinto road that leads from the river. After ~4 km we reached a fork that ran (continued) west along the fence line. The main road cut back in a northwestern direction. The road ~~was~~ very difficult to follow and we ended up ~~turning~~ ^{weaving} around several times trying to make our way.



JAC
1988

June
continued

Ligeron

over to the only estancia you can see on the pampas. Lacho and I had seen this place last Friday when we drove out here with Prof. Coimbra.

We drove up to the estancia and talked with Felipe Lopez the caretaker who agreed to allow us to stay on the place and set up our lab on the porch. The estancia has several buildings and a fairly large, "modern" house with generator and well, etc. The owner lives in Santa Cruz and his name is Papi Costedo.

Arrived at 14:30 and while Darwin, Frosty, Chris, Edilberto and Sarge set traps we set up the lab and tents. The area to the west and north of the house is open fairly flat grassland with small, sandy knolls (< 10 m high) where the traps are most active. The low country between the sandy knolls is fairly damp, marshy in some spots and some small ponds.

We caught our first *Cujacha* at 17:30 and had 4 by 23:15.

Cray Fasciolatus

8 June 88

Up at 6:30. ~~Stidman~~ (bird) raising hell outside the tent door, viciously attacking Hayward's shoes. Inco traps checked and only 1 ♀. Slow day so we decided to start excavating a couple burrow systems.

Spent 3 hours with 2 gangs excavating.

Measuring depth of tunnel every 1 m (surface to top of tunnel & diameter of tunnel) and distance between every fork (depth of fork too.) See data sheets.

Caught 8 *Cujrebia* today.

12 June 1988

Up before sunrise (6:15) to get the crew going to move camp today. We've been at the 8 km W Santa Cruz locality for 5 days now and have collected another good sample of *Crychis* (>30). Found a couple fresh burrows just down the driveway from the house. Beautiful day, spent morning getting the camp torn down. Two more *Crychis* caught this am. Picked these and Otto and Armasgol came walking up to the estancia at 10:30. The geo truck was stuck down the road in the sand. Lots of people this year so several went to help get the truck unstuck and we were able to leave the hacienda by noon.

Drove to the geo to leave specimens, buy groceries, eat lunch and get ready to go again. We managed to get going by 16:00 h and headed south to Las Comitas. The owner & caretaker of the field we were leaving last year had changed so we had to wait until ~~until~~ the caretaker returned from his day work and it was nearly dark by the time we could get permission to set up a camp.

Set up lab on the porch facing north. Clear, beautiful night. Caught 1 *Artibeus planirostris* in a 30' net set along fence.

Monday

13 June 1988

15 km S Santa Cruz

Up at 6:45, sun already up. Spent some time detailing the troops on the agenda in this area for the next week. They set off after breakfast to put their Noctules in the ground. They are paired up so that there is less chance we'll lose traps. Have lost 25 traps to date, almost all due to forgetfulness. We have also decided not to flag traps as we had so many stolen in this area last year.

I went for a walk to survey the area for additional places to put traps. The field south of the house has much less activity than last year and much of it is more overgrown. But in general it appears much the same as last year. The middle field and field furthest from the house are considerably more overgrown with the grass more than a meter high.

I walked north to the casa that we stayed at last year and gave the senora a photo I had brought of her grandchildren. I took a photo of her, ^(Eugenia Montui) her daughter (Angelina Ponce) and granddaughter (Anais).

Walked back on the road that leads back to El Palmer. Many of the campesinos I stopped to talk with remembered us from last year. Found trees actively in many fields, but none very dense.

JAC
1958

13 June
(cont)

Returned to camp at noon and tucos began rolling in soon after (see data sheets). At 1600h I took Lucho into town to buy him shoes and check into renting an airplane to fly over the tucos sites and over Amboro. Hayward is very interested and said he would foot most of the bill. Met Otto and Julian on the highway. Otto was on his way out to meet us and spend the week. Otto went into town with us and we bought more groceries, boots for Lucho, picked up laundry and called Hermes justiano about an airplane flight.

Hermes is the ex-sub-director of the zoo and now runs a skydiving and photography business in Santa Cruz. He wasn't in so we agreed to meet with him tomorrow at 1500.

Returned to camp after dark (~16:30) and prepped tucos until 2:30 am.

14 June Up at 7:00. Spent morning changing traps around and prepping critters. There is little activity in Box I proper, but a fair amount of activity surrounding the area and in Box II there are several individuals also.

Darwin and Lucho put in traps across the river (Rio Patana).

JAL
1988

18 June
Saturday.

Up at 6:30. Zoo life starts slow on Saturday morning. Met Otto in his office at 8:20 and we talked a little about the vehicle. He thinks he can get a loan from his brother to buy it - if the price is right. Nella called at 9 and everything was fine in New Mexico. She hasn't been to the midwife for a couple weeks.

Lucho and José showed up at 9:30 and we bought supplies and finally headed out of Santa Cruz at 12:00. The jeep has a brake problem now - left rear wheel cylinder is leaking fluid rather badly. Yet another chapter in the repair history of this vehicle.

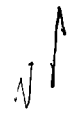
Everyone busy when we arrived in Las Lomitas - somewhat hungry. We're running through ~\$200 in groceries above every week. There are now 9 of us in camp. There were 12 last week.

Lots of trees rolled out in today. At 22:00 there were 8 alive so we decided to run 5 through. It's 1:46 next day now.

19 June
Sunday

Windy today. Decided to collect a population to the south of Las Lomitas in an attempt to monitor for a pure 2n=46 population. We took the road that comes into Las Lomitas from the El Palmero highway and continued south (across the Rio Patomó and down the east side of the sand dunes. Just 2 km

~~Alto~~
Santa Cruz



Palmas de
Oratorio

Rio
Duro (Cone)

Las Lomas

Laguna
Laguna
Lomas de
Arenal

Estancia
Guay

JAC
1988

19 June
(cont.)

Monday

south of our camp at Las Lomitas we found a singable population of *Cynchis* and I left Darwin, Lucho, Frosty and Jose setting traps in the field at 13:00 h. Returned to Las Lomitas and pressed through the afternoon. Jose came drifting in about 17:30 saying we should go set shermans and bat nets at that locality. I had already left 1 net with them and decided we had enough work without setting more shermans. The rats (4 *A. akodon*) from the day before had not yet been pressed.

Drove out to their camp (1 tent, 17 km S Santa Cruz, $17^{\circ}56'S, 63^{\circ}08'W$) at 20:00 h and took them some dinner. They already had 11 truces and captured 1 more while we were there. Frosty and Jose returned with me to camp and we pressed animals until 5 am.

20 June
Monday

Up at 8:00. It's going to be another long day - drove to the 17 km S Santa Cruz locality where Darwin & Lucho had spent the night and they had four more *Cynchis*. Pulled all the traps and drove further south to the Estancia Guayaba which is very near the dunes. Was briefly stuck in a deep mud pit - so

we decided not to continue S on the road.
It was getting rather ugly. Dropped Darwin & Lucho
off at a small Estancia where there appeared to
be a fair amount of activity. Left them at
2:25 and it took 12 minutes to return to Las
Lomitas. Both of these localities (the last 2
days) are easily accessible. Maria Dolores,
Chris and I then headed into Santa Cruz
to buy groceries and get the brakes fixed.
Maria's father is a mechanic and was able
to repair the broken brake line. Picked up a
few things at the gas and then stopped at museo
where we met Teresa Cinturacion. She asked
about the research and seemed pleased that the
students were getting a chance to work with
us. She went to get a small amount of \$
from the university to help pay some of the
bills (food, laundry, gas, etc) as it's all been
on us.

Chris, Maria and I went to the market
and bought supplies and returned to museo.
Teresa had \$50 for us. Every little bit helps.
Returned to Las Lomitas and then drove
west to Darwin and Lucho's camp at 20 km S
Santa Cruz ($17^{\circ}57'05''S, 63^{\circ}09'W$). We are calling this
Paroda

27 June
1988
Monday.

Up at 6:30 lots to do today. We've had minor drying problems with some of the tricos recently so we managed to get all the more or less fresh skins and skulls out and drying. Coyote skins are large enough that they take several ^{warm} days to dry sufficiently to store and if they are drying well they rapidly begin to slip.

Drove downtown and walked to LAB to get tickets confirmed for our departure. Arrived at 11:45, but they wouldn't offer any help. Siesta starts early for LAB employees. There service is pathetic. Lunch at Los Pozos and then grocery shopping + other supplies. Fixed the tickets (leave July 6) in the afternoon and returned to zoo at 1:00 hr.

Lucho has been running around getting medicine for Slamon today. Slamon seems to be having a recurrent bout with malaria. Jomona will have a blood test done. Lucho also met with the gingo bunch that just came in and is headed to Hnanchaca to conduct a bird survey. As it turns out 2 of the 4 are from New Mexico (Greg Schmidt & Janna Cole) and the other two are grad students at LSU - John Bates & Kathryn. They had originally planned to go to Perm, but could not obtain a permit. I went

with Luchs and Joyce to dinner at then to the
Hotel Asturias (39611) to see the USA crew.

They are planning 3 months at Huanchaca
collecting birds and Luchs and Darwin will be going with
them in 2 weeks. Abel Castillo has been making
the arrangements for them. Abel has been working
with Luchs and Darwin on a bird survey of
Santa Cruz. But the results had not been good
(few specimens, none deposited in museum) so their
work had been cancelled. Abel works directly
for Arturo Moscoso ^(Famul Silvestre) and is now the scientific
advisor for Parque Noel Kempf Mercado (Huanchaca).

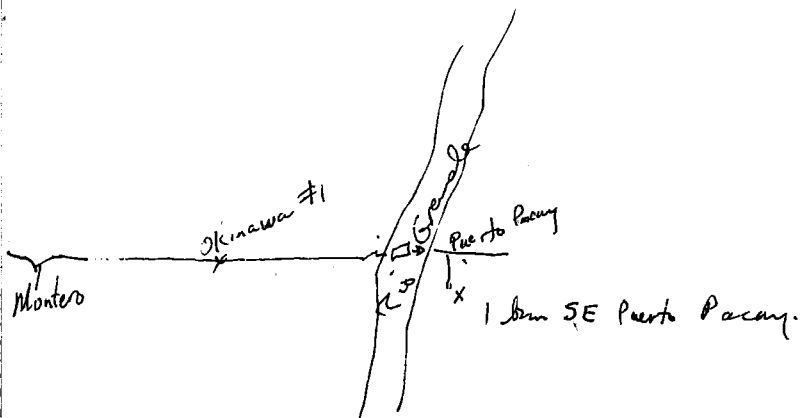
JAE
1988

28 June
Tuesday

Left Santa Cruz at 10:05 am. Julian is leading the way in the zoo truck with our equipment. We are headed to Okinawa #1 where I have heard there are lots of caguachis. The group is the same except for Lucho and Darwin who stayed behind in Santa Cruz to get Darwin's blood tested. Darwin appears to be having a relapse of malaria. He has been feeling bad since the 2nd of June.

Bought a few more groceries in Montero and continued on (east) to Okinawa where we found no trees. A couple young fellows said there were many on the other side of the river and they rode along with us to get us across the river in boats. As it turned out they were out drumming up business anyway and there may indeed be some caguachis near Okinawa.

Crossed the river at 12:20 (took only 10 minutes) and the zoo truck got stuck in the sand on the other side. Finally got it out and drove through Puerto Paez (directly on the other side (E)). We drove about 5 km E and found a few mounds along the road. Met Vicente Rodriguez who said he had lots in his chaco back near Puerto Paez so we returned to the school and



turned south taking a couple young fellows with us from the village who lead us to the vegetable field (chaca). It was a very large field that had onions, tomatoes, yuca, peppers, papas, carrots, lettuce, cabbage, etc. There was a fair amount of activity (two mice) so Jim and I drove into town to obtain permission from Rodriguez' wife Cornelia who runs a small store in Puerto Paay. She was happy to have someone get rid of their ayuchis. Puerto Paay has about 25 houses and a school. Lots of truck traffic through here.

Returned to camp and set about putting traps out for trees. Had 5 by 22:00 h. Nice to get this sample east of the Rio Grande. ~~That~~ These ayuchis seem to have a much ^{more} golden neck band.

JAC
1988

Monday
4 July 1988

U.S. Army shot down commercial jet killing 270 people last night in Persian Gulf. Up at 7:00. Jorge and I went to Oxigen's plant in the propane industrial and brought 5 kg of into (253) to keep the tank going till Thursday when we arrive in the states. We have more than 9500 tubes in the tank this year (XR-24) and it has lasted 6 weeks.

Arranged ~~to~~ meetings with Moscoso this afternoon and afterward with LAB

Caught	10 June	<u>Baby Cuckoo</u>	<u>8 stripe</u> ♂	<u>No stripe</u> ♀
	11 June		≡ 47 gr	≡ 44 gr.
7 am	12 June	144-49-27	≡ 48 gr	129-49-26 ≡ 43 gr
14:00	13 June	146-47-29	≡ 48 gr	died 15:00 12 June

JAC

Expense List 1983

Dr. Carlos Jordan C.

Zoo Sta. Cruz-Fauna Sudamericana

Dr. Carlos Jordan C.

Zoo Sta. Cruz-Fauna Sudamericana

Date	Description	Amount
13 May	Porter - Miami	\$ 8 ⁰⁰
13 May	Excess baggage - LAB	77 ⁰⁵
13 May	Dinner - Miami	7 ⁰⁰
14 May	Breakfast	4 ⁰⁰
14 May	Porters - Cochabamba	5 ⁰⁰
14 May	Lunch - Cochabamba	5 ⁰⁰
14 May	Taxis	6 ⁰⁰
14 May	Porters	3 ⁰⁰
15 May	Porters	5 ⁰⁰
15 May	Breakfast - food	4 ⁰⁰
14 May	Dinner	8 ⁰⁰
15 May	Lunch - Zoo restaurant	
15 May	Dinner	13 ⁵⁰
16 May	Sent \$150 to Jerry for ticket, etc	
16 May	Taxis CENETROP, MUSCO etc	10 ⁰⁰
16 May	Breakfast pan, tea	3 ⁰⁰
16 May	Lunch Pollo Oro	20 ⁰⁰
17 May	Gasolina	\$ 32 ⁰⁰
17 May	Lunch 200	\$ 12 ⁰⁰
17 May	Dinner	\$ 10 ⁵⁰
18 May	Lunch	\$ 14 ⁰⁰
18 May	Dinner	\$ 2 ⁵⁰
19 May	Gasolina	\$ 12 ⁰⁰
19 May	Lunch	\$ 16 ⁰⁰
19 May	(5 road tolls) last 3 days	3 ⁵⁰
19 May	3 plastic water containers	\$ 36 ⁰⁰
19 May	Wash (clothes)	\$ 6 ⁰⁰
20 May	Groceries	\$ 18 ⁵⁰
20 May	Lunch (solo)	\$ 3 ⁰⁰
20 May	Taxi (otto had jeep)	\$ 5 ⁰⁰

JAC
1988
Expense
List

		\$
20 May	Gasolina	\$ 22 ⁰⁰
21 May	Groceries / breakfast	\$ 6 ⁵⁰
21 May	Lunch / Dinner	\$ 10 ⁵⁰
22 May	Lunch	\$ 16 ⁰⁰
22 May	Dinner	\$ 18 ⁰⁰
22 May	Flat tire	\$ 3 ⁵⁰
22 May	Groceries (many small stores) ^{market place}	\$ 174 ⁰⁰
23 May	Rope, machete, screening	\$ 18 ⁵⁰
23 May	Call to U.S. (supplies for Chris)	\$ 1,500
23 May	Cotton, aralen (3 farmacia)	\$ 18 ⁰⁰
23 May	Gasolina	\$ 44 ⁰⁰
23 May	Pan	\$ 12 ⁰⁰
23 May	Garrafa's (2)	\$ 11 ⁰⁰
26 May	Groceries, bread	\$ 16 ⁰⁰
28 May	Groceries, matinds	\$ 46 ⁰⁰
28 May	Gasoline	\$ 23 ⁰⁰
28 May	Clutch Repair / Fluid	\$ 5 ⁰⁰
28 May	Taxi	\$ 3 ⁰⁰
29 May	Taxis	\$ 5 ⁰⁰
29 May	Toll	\$ 1 ⁰⁰
30 May	Dinner	\$ 26 ⁰⁰
30 May	Taxi	\$ 4 ⁰⁰
31 May	Farmacia / cotton etc	\$ 8 ⁰⁰
1 June	Groceries	\$ 8 ⁵⁰
3 May	Groceries / etc	\$ 178 ⁻
1 June	Gasolina	\$ 18 ⁰⁰
1 June	Chicken	\$ 4 ⁵⁰
2 June	Gasolina	\$ 21 ⁰⁰
2 June	Groceries	\$ 18 ⁰⁰

JAL
1988

2 June	Gasolina	\$ 9 ⁰⁰
3 June	Gasolina	\$ 11 ⁵⁰
4 June	Carne, bananas	\$ 8 ⁰⁰
4 June	Gasolina	\$ 23 ⁰⁰
5 June	Airport tax / porter	\$ 7 ⁰⁰
5 June	Mechanic	\$ 161
6 June	Battery (jeep)	\$ 58 ⁰⁰
6 June	Groceries	\$ 225 ⁰⁰
7 June	Gasolina	\$ 35 ⁰⁰
7-9 June	Ø	Ø
10 June	Gas garafa	\$ 6 ⁰⁰
10 June	Groceries	\$ 68 ⁰⁰
11 June	Ø	Ø
12 June	Immigration / Visa continuation	\$ 38 ⁰⁰
12 June	Lunch	\$ 29 ⁰⁰
12 June	Gasoline (go truck + jeep)	\$ 45 ⁰⁰
12 June	Groceries	\$ 135 ⁰⁰
13 June	Laundry	\$ 12
13 June	Carne	\$ 4
14 June	Groceries	\$ 12
15 June	Carne, paper	\$ 43
15 June	Airplane rental (w/ Hyman)	\$ 260
16 June	Ø	
17 June	Airport tax	\$ 1
17 June		
18 June	Groceries	\$ 165

Paolo Bettella

Casilla 1188

Santa Cruz de la Sierra, Bolivia

- snake keys literature

- biblio of venoms -

- Claves viperinae, colubinae for South America

↳ more comprehensive than checklist

Synopsis of genera

- insects

- animal propagation - Hall

Batrachias ←

DIRECCIÓN de Vida Silvestres

UTD - C D F - S.C.

Casilla # 3430

Santa Cruz de la Sierra

Bolivia

Dante Vitez Roca

Casilla # 4825

Santa Cruz de la Sierra

Bolivia

TO DO IN SANTA CRUZ BEFORE LEAVING 1988

~~200 AROMATIC FRAGS/STEMS~~

BUY GOOD TOPO MAPS OF EACH SITE (2 COPIES)

Darwin Yaca - Icteridae, influence of birds on agriculture.
- agriculture tropical -
citrus, palmaceae, granivore, yuca y comote

Had a nice supper, then to the airport. We left an hour or so late. It was 2240 before we loaded and 2308 before we took off. Goodbye to Bolivia for 1988.

3 km. S Montero: 17° 23' S 63° 15' W 300 m.

2 June, 1988 10 Km. SE Montero THURS.

Up 0700. No one but Edilberto stirring. Overcast, cold, breeze from the S. A surrasso? Joe and Frosty were the last ones up (probably the last to bed). We left at 0820 with Darwin, China and Frosty. Drove to 3 km. S Montero site. Arr. 0840. Strong S wind by now. Saw toco toucans here, 1 coco thrush in the vampire net (and a lot of barbed wire). Nothing in the other 2, we finished about 0850. A dove had been removed from the net for food by the campesino. Frosty and Darwin had 2 tucos in their traps. One set of macabee was stolen here...the gracious host? Pull all the remaining traps there.

Off at 0945 to go to Montero and on to Mineros. It was the same flat country as S of town...a lot of agriculture. The house indicated well to do people. Oil palms etc. Rd. full of chuck holes...a few old attempts at patching them. We arrived in Mineros at 1030 hrs. Went down a track to an elegant cemetery with elaborate burial crypts. Very sandy soil here. There were 2 dead ♀ tucos in the traps here. A lady took us into the sugar cane to show us more tuco mounds...only a few mounds here tho. Others went out to find other mounds. I went to the cemetery to photograph the place. It's amazing what they can do with KILL cans. A very different kind of cemetery than we are used to.

The tuco troops were setting more traps in the sanding areas. Temp. getting quite warm...cane cutters busy, far off burning. Finished setting traps at 12N. We went into Mineros, a rather typical small bolivian town. Drink some refreshing beverages...it was getting hot. We went back to the tuco fields at 1250 and pulled all the traps...it was too far to go here often. No tucos in the traps. We left town at 1315 and head south. Lots of hawks along the road...I counted 12...mostly snail kites and roadside hawks + some vultures.

Today was a national holiday, so we couldn't get gas...tried though. Had lunch at China's parent's house in Montero. Very interesting. We left at 1400 hrs and did a bit of shopping in the market. Back to camp at 1430 hrs. They were worried about us. At 1505 a tuco crew headed S to Warnes to phone Otto and to look for new tuco fields. I killed the 2 dead tucos, China pulled tissue and we started skinning critters. At 4, Maria and I went out to set Shermans. Set 26 in the brushy pastureland E of the casa. 60% of the acreage was covered with brush about 8' tall. The other parts were grazed grassy areas. Set the traps about 10 paces apart, used tunafish/EO and plain rollocats for bait. The line extended to a fence line which we followed to the end of the line. Trees were 20' tall here...it looked like a good place for Marmosa, Calomys and Akodon. We set another 10 among the cattails around the large pond. Total of 36 traps.

Expenses Bohia 1987

4 July 87	Food/snacks	B 14
5 July 87		
- 8 July	spent \$185 - Food/taxis/airfare/groceries	\$ 185
8 July	generator fix	B 25
8 July	nitrogen	\$ 65
8 July	lunch	\$ 15
9 July	groceries	\$ 27
9 July	taxis	B 17
10 July	LUNCH/DINNER	\$ 35
11 July	Toyota 4x4, 1979 (my own cash)	\$ 3800
11 July	Mechanic	\$ 55
11 July	LUNCH	\$ 23
12 July	chicken	B 10
13 July	Pan / leche	B 10
14 July	Duck / leche	B 15
11 July	Groceries / beer / sodas, etc	\$ 115
15 July	groceries / gas / laundry	\$ 38
16 July	Dinner / lunch	\$ 35
16 July	Airport /	\$ 10
16 July	JACK/WRENCH	\$ 30
16 July	Chloroform	\$ 12
16 July	Tube for lantern / taxi	\$ 18
17 July	Groceries	\$ 105
17 July	Gas	\$ 15
18 July	∅	
19 July	milk	\$ 2
20 July	Groceries / gas / lunch	\$ 85
21 July	milk / cheese cheese	B 7
22 July	Duck / milk	B 15

		Buses	Exchange $B_2 = \frac{\$}{\text{B}}$
Thurs	6/25	Miami - Lunch \$18 ⁰⁰	
	6/26	Aasama - \$5	
	6/26	Taxis from El Alto	\$30
	6/26	Buses to/from Museo Cota/Cota	\$5
	6/26	LUNCH	\$11
	6/27	LUNCH	\$9
	6/27	DINNER	\$26
	6/28	Lunch	B\$ 24
	6/28	DINNER	B\$ 44
	6/28	Nell gave me \$200 ^{LT} + 1400 more loan)	
	6/29	Breakfast	B\$ 22
	6/29	Trufis/Taxi	B\$ 12
	6/29	Almuerzo	B 5
	6/29	Trufis/Taxis	B 3
	6/30	Breakfast	B 12,400
	6/30	Taxis	B 9,000
	6/30	Lunch	B 10,000
	6/30	Taxis	B 14,000
	6/31	Rooms & Food	B 395,000
	7/1	Bus tickets	B 132,000
	7/1	Excess bus baggage	\$ 250 -
	7/1	Nella & Jorge's tickets (LP-SC)	B \$110
	7/1	Taxis	B 20 -
	7/1	Dinner	B 35 -
	7/3	Taxi (Cochabamba - aeropuerto)	B 9 -
	7/3	Dinner	B 18 -
	7/3	Plane tickets (Coch - S Cruz)	B 240 -
	7/4	Hotel Internacional	B 90 -
	7/4	Lunch	B 35 -
	7/4	Taxis	B 16 -

23 July	OTD - groceries -	\$ 100
24 July	☺	
25 July	Pollo / milk	B 15
25 July	- payment to Roy's father for using his field	B 40
26 July	Restaurant / gas	B 62
26 July	Hamburgers	B 30
27 July	Groceries	\$ 150
27 July	dinner / Italian	B 112
27 July	Taxi	B 10
28 July	Breakfast / lunch	B 42
28 July	Vehicle parts / welding	\$ 273
28 July	rack for truck	\$ 100
28 July	Gas for 200 truck	\$ 40
28 July	Dinner	\$ 48
28 July	Taxi	\$ 4
29 July	Breakfast	B 22
29 July	Lunch	B 49
29 July	Dinner (chicken)	B 52
29 July	Taxi	B 12
30 July	Breakfast / lunch	B 72
30 July	Starter part for jeep	\$ 36
30 July	Dinner	\$ 43
31 July	Groceries / supplies ^{cotton}	\$ 173
31 July	2 gas tanks (goraffan)	\$ 10
31 July	gas	\$ 22
31 July	lock for tire	\$ 3 ⁵⁰
31 July	breakfast / lunch / dinner	\$ 68
1 Aug	gas for 200 truck	\$ 17
1 Aug	breakfast	\$ 12
1 Aug	groceries - / shovel	\$ 49

Expenses	Bonvix	
2 Aug 1987	gasoline both vehicles	\$42
2 Aug 1987	lunch	\$ 22
3 Aug	groceries	\$ 26
4 Aug	gasoline	\$ 9
4 Aug	garage	\$ 650
6 August	gasoline	B 19
6 August	lunch	B 28 50
6 August	groceries	\$ 65
7 August	lunch	B 42 50
9 August	groceries	B 195
9 August	gasoline	\$ 15
10 August	2 chickens	B 9
11 August	lunch	B 26
12 Aug	groceries	B 56
13 Aug	gasoline	B 12
13 Aug	lunch	B 21
14 Aug	Ø	
15 August	gasoline (200 € ours)	B 72
15 Aug	dinner (lunch)	B 129
15 Aug	refrescos	B 15
16 Aug	breakfast / lunch / dinner	B 165
16 Aug	Taxi	B 5
17 Aug	breakfast / lunch	B 73
17 Aug	Excess baggage	B 110
17 Aug	Airplane tickets (SC-LP)	\$ 255
17 Aug	Taxis	\$ 35
17 Aug	Porters	\$ 10
17 Aug	Dinner	\$ 38
18 Aug	Food	\$ 78
18 Aug	Taxis	\$ 12

19 Aug	Food	\$ 95
		\$ 107
20 Aug	Food	\$ 8
20 Aug	Taxis/buses	\$ 303
21 Aug	Hotel / Food (breakfast) (4 nights + 1)	\$ 29
21 Aug	Lunch	\$ 35
21 Aug	Taxi	\$ 225 ⁸⁷
21 Aug	Excess baggage	\$ 50
21 Aug	Asansa	\$ 22
21 Aug	Dinner	\$ 19
22 Aug	Lunch Miami	\$ 15
22 Aug	Porter Miami	

Instituto Geografico Nacional
San Jose

Mapa - Barba, C.R.
Escala 1:50,000

copied to scale from
this map

10°05'N

Bosque de la Hoja

Rio de la Hoja

Rio Segundo

Xetsemani

Finca de
Rodrigo Gutierrez
10°03'N, 84°06'W
1540 m

Alajuela

Barba

San Rafael

Heredia

San Jose

84°05'W

