

Photos Girlandoni

McC Call

El Mundo

Review of River Platte

Pres. Peron's appeal

Ms. Harrington

Volume on Hydrology

dir France

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ORIGIN

OAKLAND

DESTINATION

SHANGHAI CHINA

DATE OF DEPARTURE

Feb 25/47

FLIGHT NUMBER

109



NOTEBOOK, May 1947



Li-Rite

PATENTS PENDING

Notes

No. 518½

LI-RITE LICENSE NO. 1



O. N. DHAR (DAR)

Working as professional Assistant
in CWINC (SNOW Survey Section)

Coming from:-

SRINAGAR, Kashmir.

S. D. NIGUDKAR

Working as professional
Assistant in C.W.I.N.C.

(Snow Survey Section)

Coming from Poona, Bombay
Province - Geol.

R.D.
Mr. Dhir.

Project officer.

CWINC (Snow Survey
Section).

A. K. Chatterji.
Serving as Professional Assistant.
(From Lucknow, Lucknow
University, United Province).

Wants to study geology in U.S.A but
in Lucknow was commended to me.
Wants to get in party with me to learn
"geology" and survey.

K. J. KABRAJI,
Officer on Special Duty
C.W.I.N.C.
New Delhi

(late Regional Director,
India Meteorological Dept.)

P. M. M. Menon
Feature Editor
Globe Agency (Hulton) Ltd
New Delhi

Address:

80/8 Queensway
Keeling Lane
New Delhi

F.D. DOUGLAS,
Deputy Principal Information
Officer,
Press Information Bureau,
Information & Broadcasting
Department,
Government of India.
(8, Esplanade East, Calcutta.)

Mr T.A.W. Foy
/ Mr Foy Chief Engineer
Projects, Irrigation Branch
Lahore, Punjab

Mr T.A.W. Foy
Secretary to Govt
Punjab Irrigation Branch
Lahore.

C. M. Ganesan
P. A. to Mr. J.
Banerji, I. F. S.,
C. W. I. N. C.,
Curzon Road,
New Delhi.

A. Fulwysar
Irrigation & Waterways Director
Deputy Engineer
North Bengal & Planning
Circle. Paul Mausins
Darjeeling.

K. K. Dutta
Asst. Geologist
Geological Survey of India
Calcutta.

William C Patton

Hydroelectric Project Engineer
Government of Bengal.

BIKASH BASU

Asst. Lecturer, Department of Geography
Calcutta University.
Calcutta.

LIEUT. HAZARA SINGH. i. SIGNALS.

5 DIVISION. SIGNALS.

RANCHI. (BIHAR)

M. ASLAM BAIG

PROFESSIONAL ASSISTANT

C. W. I. N. C

NEW DELHI.

SIRDAR KARMA PAUL
HIMALAYAN TOUR
SERVICE,
DARJEELING.
BENGAL.

M. S. Puri

M.Sc

Assistant Meteorologist
Central Waterways Irrigation
& Navigation Commission
Curzon Road
New Delhi (India)

HARBHAJAN SINGH

M.Sc
ASSISTANT METEOROLOGIST

Central Waterways, Irrigation
and Navigation Commission,
Barracks

ANDRÉ ROCH

Member Swiss Himalaja Expedition 1947

Physician
Hospital
Delhi

M.Sc,
Ph.D. (Edin)

Herbarium
Garden
(Calcutta)

Assistant Director

C. W. I. N. C.

SIRDAR KARMA PAUL
HIMALAYAN TOUR
SERVICE,
DARJEELING.
BENGAL.

M. S. Puri

M.Sc

Assistant Meteorologist
Central Waterways Irrigation
& Navigation Commission
Curzon Road
New Delhi (India)

HARBHAJAN SINGH

M.Sc
ASSISTANT METEOROLOGIST

Central Waterways, Irrigation
and Navigation Commission,
Curzon Road Barracks
New Delhi.

A. R. Choudhri

House Physician
Gurwin Hospital
New Delhi

S. K. Mukerjee, M.Sc.,
Ph.D. (Edin)

(Curator of Herbarium,
Royal Botanic Garden
Calcutta)

Extra Assistant Director

C. W. G. N. C.

K. Bagchi.
Department of Geography,
Senate House,
Calcutta University,
Calcutta.

R. v. Badami.
Met officer 'c'.
Met office.
civil Aerodrome.
Jodhpur.

J. BANERJI, I.F.S.,
17, SAFDARJUNG ROAD
NEW DELHI.

PROJECT OFFICER
CWINC, CWZ in Pond,
N. Delhi.

Sm. Amiya Banerji
17, Safdarjung Road
New Delhi

Bhagvath Upadhyay
Kharidar Biratnagar Goswami
Po. Joghani Distt Patna
(Bihar).

Jr. L. S. Mathur, M.Sc.; S. Plink.
Meteorologist,
The Observatory, Lodi Rd.
New Delhi.

CHJMAN-LALL-PEON

LD

Shiva Ram
Stenographer,
Office of the Director-General
of observations, Lodi
Road, New Delhi
(India).

ABDUL MARZID

Officers Mess
Patanchi House.

Mr. Abdul Rahman
P. A. to

Mr. R. D. Dhir -
Project officer:

CHJMAN-LALL-PEON

20

Shiva Ram

Stenographer,

Office of the Director-General
of Observatories, Lodi

Road, New Delhi
(India).

ABDUL MARZID

Officers Mess

Pataudi House.



PRINTED IN U.S.A

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$\frac{1}{2}$ oz India to America

$26\frac{1}{2}$ As = Re 1-10 $\frac{1}{2}$.

UNIFICATION OF INDIAN AFTER

JUNE 1948

LONDON, May 20: The unifica-

tion of India sooner or later after

the year 1948 was forecast today

by Frederick James, member

of the Indian Legislative Assembly.

He told the East India Associa-

tion that a movement for union

would come not from external com-

pulsion, but from common need and

interest among separate states.—

of Reuter.

Shots Pistol

May 22, 1947

The Indian Nation

Rate Of Subscription TOWN ALL ISSUES

Yearly	...	...	22	0	0
Half-Yearly	...	...	12	0	0
Quarterly	...	...	6	8	0
Monthly	...	...	2	4	0

MOFUSSIL ALL ISSUES

MATRIMONIAL

WANTED—A healthy and beautiful girl for a Bhumihar Brahmin in Government service aged 30 years. Former wife living in indifferent health and issueless. Apply with details to Box 2139 C/o "Indian Nation", Patna. C. 2139-2-1.

Wed. May 21 -
51 West.

From Sealdal to Howrah.
Univ. list. -

Mix up in room pvt + sheets +
pillow. Douglas.

All at Class II but Bedami
left in morning.

Whis's sister-in-law. Wants
to write to me. Cannot
forget "Lives her father".
Cow + memory of calf.

Cool night.

Routed up. From 3 to 18.
Finally 21. "To seat 9".

Day - No monsoon here.
Dry expectation. Falls.

Matrimonial.

Duck + there -
Irrigator from
Langset. Ever green.

My finest plain -

Irrigation Green just starting to

The Ganges - ^{level}

→ Full but not high

Rather quiet -

subsiding.

Snow effect small =

Banaras ^{in evening} Temples & mosque.

Pantheon bridge. Pure river!

"Bone treatment for purifying sugar."

Magnificent sweep of river banks and bend.

Kindra families depart but swamped with sitters and claimants to upper berths till 9 pm (= 10 pm) at Allahabad.

Then crowning huge Indian and Army all doors blocked. II class!

Servants quarters not so much worse. Live dicker crate.

"I can take it" - but - - -

~~Sat. May 24.~~ Friday. May 23

Only 7. Others can not open the doors. Sitting on seats baggage. One Hindu sits in his upper berth. One a bird on roost in midst of his friends.

Today clear & dry

My finest plain -

Irrigation - Green just

The Ganges - starting to
leaves

→ Full but not high

Rather quiet -

subsiding.

Snow effect small =

Bamboo. ^{in evening} Tall mosaic

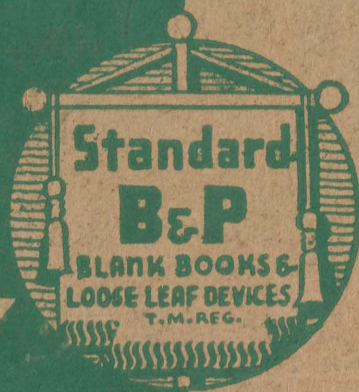
↓ California landscape
waiting for Monsoon. Only
the trees are green. Goats
browse the thin stubble

aerial - Darjeeling tea -
airplane views.

I Church's notebook of
Trip from China to India

Mar. 4, 1947 - April 4, 1947

Standard
LYFLAT
NOTE BOOK



A BOORUM & PEASE PRODUCT

NAME

FROM

TO

NO.

K41

Made in U S A.

(11)

Thursday March 4.

To Mr Wang of China Natl Aviation Corporation. "We are ready to fly, but all grounded except international."

Called Pu. Came over quickly. Urged me to stay with him but compromised on a chance to stay at a hotel. "No families are allowed - for strangers."

So I went with him.

Cold home. Scarcely a store in the city. Can see your breath.

Chinese dinner. Famous for good but slow serving. A college bunch. Boys and girls.

Brother an intern, another a student, father 30 years in police dept. All speak English fluently.

Friday March 5. Juvenal's *Day in Ancient Rome*

Pandemonium - Cross at your risk and choice. auto-taxis, rickshaws, trunks, currencys, bicycles, a few autos, many jeeps. English much spoken.

Sidewalks narrow. Filled.

(2)

with hucksters of every sort.
scarce room to walk. Each pushing.

Pu is at CNNA(?) transportation.
Took me to see Margaret Frame re
South Gate, then I saw Thomas Wong
at Bank of Canton. Both wanted me
to see the Churches of Emma Silver.

She helped me reach Fr. Gherzi. He
met Pu and me for lunch at American
Club. Actively heated. Brother Gherzi
a super-tall pessimist. People, esp.
mountaineers, not reliable. Meas. stick
upside down. So always high measurements.
His magazines often are "directed
enroute". But he received the Commission
letters. Weather and children are coincident.

Spent much of day at Police Headquarters
for permission to leave China. Govt
has many obstructions but firms are
eager and helpful. The Chinese are
smilers and shasters.

Long talk at home about Pu's studying
at Nevada. Will China grant a passport,
must he deposit \$3000 in U.S.A.?
I can pledge a home for him.
His father believes that he can
and will come.

Filled my bed with coats.
Windows opened in morning for fresh air.

- Kawajlein -

Friday Feb. 28 -

12 am. but 4 pm

Yesterday by my watch

Hot + cool 4 mi sq

Red. Nevada Division

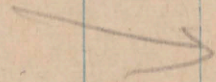
"Crossroads" - 35 f

Careful

Away at 2 pm local

Better - sleep better

Moonlight on clouds



Down - looking clouds
puffy white on part of the
near - edge of red
and green or orange
behind us. Moon before

Hume, American
Prize Fight

a charismatic call to
modesty.

Mrs Hugh Montgomery. ✓

(3)

Thursday. March 6 - a close chance.

a storm on? Still cold.

Our truck failed. So by bicycle-taxi.

Customs waiting but our guard ran away
in error by mistake. Part of our. So Pu
remained by the Bonded baggage and I
rushed to CNAC. Received with a yell
and tickets thrust into my hands.

Pu was waiting with the bags and parted quickly.
Will call Thomas Wong of Canton Bank and
Mr. Casaday.

Excess credited on my balance. Only 35¢.

Back to Kengwan (Hainan).

a cold wind, slow to start but best
plane I had seen - Lang. More than
40 passengers, sat with Chinese lady.

In rear only 58° F. Shivery. Exhausted
steadily at 8000 FT

"Turning back" Rain at Hong Kong,
Betwee - Foochow and Amoy. Compass
reversed. Swan turned south again
to try at Canton.

* Just at dark ~~she~~ descended to
field encircled with mountains.
No lights except in shack.

Bus came out for us, emptied at
a hotel. Crowd flooded rooms and ebbed.
The natives took me to room - two
youngsters, carried bag and took me
to a native restaurant. Gave \$1000 bill
to each a bit high native.

The bus may come tomorrow at 8 am
So up at 6. I'm the only foreigner left here

Canton -

(41)

Friday March 7 This is not an International city. No language for me here Chinese. Where are the others?

A quick recovery. Up finally at 6 am for train or plane. Notice tells us to wait for transportation tomorrow.

Rainy. Sounds like pouring from our gutters. Windows wide open for fresh air in hotel vestibule. So sit in hat, overcoat and muffler, but enjoy it. Fresh but not Shanghai cold.

"8 o'clock?" White Cloud Field. Turn

Hongkong.

Room 8, 200 Chinese. 382 of American. My mad an unceasing source? I gave lad \$1000 to take me to restaurant!

Will money survive to Hongkong?

Chinese beds. 1 blanket, 2 pillows, 1 mattress.

Rain scene. Waxed umbrellas, rattan and reed hats. Rickshaw has copper tarpaulin.

Tomorrow Calcutta but how do we get from here?

Delivering milk: glass bottles, like our snow-sampler sections on either side of frame.

at 8, it was 9. No language but gesture. One boy "from America" said three teams daily.

Better "first class" than up. Suddenly a porter "calling" wagon.

I galloped down and up a plank to a truck mainly of our passengers.

at first class hotels others paid 2000 each for double room

try repeated looked my room down after me.

(5)

"Clear in Hong Kong" odd yesterday,
the reverse.
Delicious ride out, with an Indian
from Bombay as appreciative as I.
Bay hills and greens of S. F. Bay area
in winter. Red roads, chuckholes
water-filled on truck bench at speed.

"Seven planes" at least two from
Calcutta grounded here, but at
early 3pm. We just arrived - a close
chance.

"My room?" \$8,600.00. "We paid
\$4000. Took all our British, American
and Chinese money, but we had private
bath, hot and cold water, sheets - \$3⁵⁰ away

My little boys at \$1000 each must
feel like millionaires.

No further examination!

Coffee and cakes \$3600.

The field is a puddle of water but
truck carried us from shack to ladder.

a momentary glimpse of contained
gardens and farms with villages surrounded
by moats. All green and in midgrowth.

"So different the people from those of Shanghai
cutthroats, extortioners, interested in money
rather than gain; says my friend from Bombay.

Lucky Pui. returned my bundle
of bills. Lucky too the money
could stretch.

(6)
Feel much better but wobbly
Yesterday breakfast, butter-toast and
milk. Lunch "Eating on the Wing"
sandwiches, salad, coffee, cake, tangerine
candy. Dinner coffee and pancakes.
Today a tiny coffee ^{at airport} and cakes.
Finally too little, I can eat more than
I can get.

Bouncing. 6500 Ft. In cloud - Sun
almost comes thru. 66°F. But I'm
warm today.

Hang Kong -

a wonderful entry, cruising along
peaks and ridges like Maine and
S.F., with bays everywhere below
in labyrinthine series. How does
train get in?

Pinnacled peaks must have caused
the crash of the money plane.

We swing out to sea and turn back
and down onto our harbor shelf.
on Kowloon. The only nook.

By truck to Peninsula Hotel until
tomorrow. Lucky indeed. H.K. had
been blocked for two days. Now the
clouds have settled again upon the
peaks - Raining.

But go by ferry to Victoria Island
like Bergen in slopes and aspect
but a French-Chinese city in its
shops to English in its fronts.

- 7 -

Saturday March 8.

up at 5:10. Raining.

at 5:45 assemble. No examination except called from truck at last moment to declare contents of carton. Swung my arms in protest. "Band ^{to} Manila. Band, band, band". Must learn to smile. Perhaps we can not fly today.

Stewardesses. Elizabeth, Lan - Shanghai-Hong Kong
Annie Liang - Hong Kong - Calcutta

Good landing fields at Kunming and Calcutta. "So no fear", says Annie.

Cloud caps on Hong Kong hills -
Our plane yesterday L 204, today L 206.
Sailed out the harbor entrance, then east and up into clouds.

all placed in front. "Plane too heavy behind. Want you cooperate? Fasten belts" - Annie.

When released from belts 10,500 FT.
Temp. 64° F. "Now you are happy" - Annie.
Plane cold, but heat turned on,
still climbing, 11,350 FT - Sun peeps thru but stratus still above.

Now 12,100 FT. 70° F, In the sun.
"Do you want oxygen?" - Annie. Just a slight faintness below belts.

"China Natl rates very cheap
now, Shai to HK less than
\$20 American, but may be
increased soon."

Annie wants my story of the trip today. Happy that I'm going all the way to Calcutta. "Yes, many have called our planes the best, but most of our landing fields are without lights. We used to fly round trip Shanghai, Peiping, Tientsin, Canton, Hongkong from 5 am to 10 pm. But some smashes frightened the public. So night flying forbidden."

So Skymasters, American crews, but no landing fields. India has the fields but can not afford the Skymasters.

Our Reserve Pilot will land us at Kungming, then pilot us over the "Hump".
"No fear at Canton." Gas enough to have returned to Amoy if dark.
Our turning back was a mistake by operator at H.K. Enquiry then made to Shai and we turned back.

"Hope we don't go higher. Have accustomed myself to some oxygen above 10,000 ft."

"Summer icing from monsoons only above 10,000 ft."

"Snow at 8000ft but only temporary."

Why not try to return to Lhasa or fly over Nepal to Brahmputra?

"alt set at Pilots ~ 29.92. Highest today 11,950 ft. My aneroid is 3000ft too high."

12,200 Ft. 72°F. Want to inhale deeper. Annie needs her mask for "she has to walk", "Passengers can have bottles."

Now at 11,700 Ft. Over a sea of cloud. China is below it.

Annie has given me a map of China on lunchbox cover.

12:30 pm

at 10,700 China beneath the clouds.

Red earth. Terraced. Trunk roads
Green patterns. Some water.

A city. Kunming! Much water.
Lanes? An immense one.

8,600 Ft. Moved forward for
landing. a river, Mountain ranges
City and city park. Lagoons and
bridges.

rows of them: "lane and a flood
beyond", a few ornamental trees.

a great landing field for Amer. troops and greatest part of entry.

Now worn down. The gravel rises in the runways.

Elev. of plateau $6700(-400) = 6300$ ft but my chest hurts to walk fast.

Most of our Chinese passengers left as here, but an Am missionary(?) or woman got on.
No Danish

Dinner at canteen; soups, pane chops, potatoes, greens, beans, coffee, cake \$1200.⁰⁰ (Chinese) 12¢

Annie: "CNAC needs traffic. Works with Phil. Air Corp. Has every type of beacon control, radar. Weather every half-hour. Checked from Shanghai".

Had head wind - So arrived late. Now 2pm. Checking engines. 4 hrs. normal to Calcutta and arrived 5:30 (Calcutta 3:30) but uncertain of the wind.

"We fly only to east and over mts of 10,000 ft. Now raining. So shut in again as we were shut out this morning. 100 mi to north we could see peaks 20,000^{ft} high - Moore.

The Indians at table call me "Grandpa".

" Lesses, feels like Nevada.
Distinct mts, dry grass, pines.

Down the valley even greener.
Irrigation. Big lake fully 20 mi. long
and another like it 5 miles beyond.
Climate bracing as today.

But mountains watering plateau are
to north (about 15,000 Ft) making watershed
between Yantra and it. Some snow
on mts but none visible from here.
Lake has overflowed its dike and
covers lower land. Since winter rain
is light, whence this water?

* Get near poor landing field

at 11,500 Ft. sharp, worn
mts, zigzag roads, narrow
mt valleys, green in bottoms.
Some traces. Much bare,

Now 11,800 Ft.

a lamasonry in a pass?
12,000 Ft. In the clouds.

"Thunderstorms go up 30,000 Ft.
but planes are steady and fly
thru them." Moore,
Rough flying mt.

11,500 ft

Silt basins - Terraces in
the silt itself.

Some forests

cascade, streams? Long,
narrow - into a broad river

Silt river - landing field

"No, just Hump" says Moore,

"Over Banna now" - Valley wide

Stream wide, Flat land

landscape, still at 10,500 ft

forests but some clearings,

"Jungle, Wild animal hunting

"White River", we always called

it. Not Chit river -

Five minutes ago we passed

Blanco, Over Banna Road

now.

A river now rising in the jungle
and flowing in "White".

"White" a braided stream with broad
yellow silt flats.

Over Katha? Here a big battle
during the war.

—14—

10,400 Ft. 72° F

"This is Monsoon area. Extends
almost to Kunming", Is this the
answer?

XT - TO6 - No. on our wing.

"Then a thunderstorm today."

Streams from the jungles
quickly form, as in Michigan,
or are these cleared land? Yes

long out of clouds but
distance murky. 10,400 Ft.

Now 10,000 Ft. 72° F

[We are to cross Ganges below
the Banaputra, so quite to east]

One tributary stream makes a
delta in the "Whits". Very pronounced
No Chinwin

10,800 Ft. Sierra wooded
peaks below, some bare slopes.

The Amer. River canyon

"This range, about 120 mi wide
a series of parallel canyons
from wooded pyramidal peaks.

An impressive highway
over the range. "Japs may have
built it. They retreated over
this range".

Have these slopes been eroded
and reforested? A few have areas
seem to be in process of
regeneration. An abundance
of runnels are fully reforested.
One hamlet on a peak why?

Getting warmer 9,600 Ft 72°F
Over the range,
Now 9,100 Ft.

Parallel troughs, Cross eroded,
like a geologic furrow, repeated
across the range. Not water
courses, now but cross eroded
from parallel sides.

7,600 Ft. Over the broad valley
of summer-fallow fields, compounds
with trees and reservoirs in
rectangular walls. Roads
green areas, narrow meandering

5900 Ft. Barges in a meandering river.

4500 Ft. Clusters of trees with homes beneath. Over the Ganges Broad in main channel braided 5* times as wide, "Rather low right now". The braided islands broad and green * Really with parallel streams 10 times as wide - Very impressive. 4150 FT.

Cruising at 4300 Ft.

Paddy fields under water, Homes even flooded. Trees in water,

4150 Ft. Bell for landing 7:03 pm
No Calcutta yet.

Dum Dum Field -

The airfields of India are neat and commodious but the Chinese planes are "sky-masters".

Little Annie and the crew remain until Thursday before returning to H.K. and Shanghai. She wants a copy of anything I write about the trip.

The officials are native and also British. "Take it away" said of his

tea plate represents the latter.

From 7 till 11 before bed. Thoroughly wearied. My protest rose highest tho quietest.

The instruments must pay duty tho belonging to India. He added up the valuation. Duty \$135.00 but they must have Rupees. "I could go to bank Monday for exchange" tho I wanted to go to New Delhi tomorrow. Then I could bring the money tomorrow. He would meet me.

"He hope I would have success with my tools in trade". I assured him that I was now too weary to use them. We laughed wanly.

Then with CNAC and INA - ten miles on the wrong side of the road to Victoria House. Got a porter to carry half of load to Grand Hotel. I carried the other half - "only a block". It was only a fulong. The porter had faith. I had no India money and he would select none of my assortment. He was contented with 1/4.

I reached India battered. I shall now preach "This cellular world" - not people but red tape. The word URGENT is the only gang plank across the pits. Even the British will

accept this,

Sunday, March 9 - Reunited

Calls in the early morning.
Dr Banerji is in Calcutta, wants
me to take tea at his home this
afternoon, then take the evening
train with him to New Delhi.

Then suddenly bursting thru the door
came J. Banerji and Dr Kabraji filled
with the excitement of their trip to the
Teesta and Kosi which I was to join.
Banerji's eyes sparkled with enthusiasm
and his body was a source of energy.
I called him "Pegasus". I could ride on
pony or in a 4-bearer arm chair. I was
too precious to injure. They would guard
me. Kabraji was slight but deeply earnest.
J.B. was a forester and K. a meteorologist,
off for the hills. "70 packers"!

at 3:30 tea at Dr B-s. as fine and more
modern than the homes at Cairo. Mrs K -
Indian and charming. She shook hands with
me but placed her hands in an N to her forehead
to the others in greeting and parting. a very
girlish daughter-in-law was present at table.
Three servants stood at attention when
we departed.

Monday, March 10.

Trying the Army Depots. Takes time but tomorrow probably. Lose Dr K—

Taken by J. B. to visit Mr Auden of Indian Geological Survey. Member of Karakoram Expedition to Tibet.

Tibetan hills rolling. Water from great glacier 20 x 40 mi(?) came down suddenly in volume so great that they would have been barred had they not previously crossed the river. Like the river on the Greenland Inland Ice
Is it ice only or higher snow?

Auman and Col. Cook laid out the routes for J. B. in the Kosi and Teesta.

Must read the Himalayan Journal esp, Vol X. 1938 "Ascents in Tibet". Oxford, "Will the Himalayan Club die with the departure of the British?" Will the Snow Surveys supplement it?

at 6:30 tea at Dr and Mrs Pandya's. He is an engineer from MIT, she a botanist trained in England and has visited America. Her sister is now a student in nuclear physics in England.

He is a mountaineer for the love of nature. Once was caught at 17000 in autumn (October?) snowstorm and escaped only by fleeing down trail. This was in the Kosi in Nepal. a doctor and coolie caught higher up,

failed to escape and were never found.

On the Teesta side near Tibetan border at same elevation in Col. Younghusband's old camp, autumn snow also was found.

* So snow does fall in the winter in the Himalaya.

Mrs Pandya is eager to go with us. "Don't let this be an April Fool," Is she a second Marina? "My husband will care for the children." As she stood at the head of the stairs, I tried to make the parting Indian salute to the eager laughing of all.

Tuesday March 11 -

Down the Ganges in jeep and truck to select equipment from samples in the warehouses.

T. B.'s old province Bengal. Date palms, coconut palms, flat land, cat holes, water held over from the monsoons, malaria. Need drainage like U.S. brought to Assam.

a hot day. Carts of every kind

and draft animal and motor.
All on the left. How do they escape
collision?

Past the railway and ship wharves
to the wide great river like the
Columbia with smokestacks on
the skyline.

Our depot was a dismantled
factory with machinery stacked. "Some
day soon."

Were fortunate in types of shoes.
Shall use soft ones. Dr K. has a ~~descen~~
descending bone in his foot. So got an
Esquimo sandal for him. Tents, sleeping bags
were found.

Back at 3 pm. Left at Grand until
Dr K. returned for carton.

Dr Sen of ~~the~~ N. B. had called often by
phone to visit his office, but I did
not dare leave. Will visit when I return
to Calcutta.

a floor servant eagerly brought tea
lunch and arranged for 5:30 am call.
A rupee tip for lunch was attractive. He
waited for a repeat.

Bill room and meals 20 re daily.

Wednesday, March 12-

Calcutta to New Delhi.

Call for 5:30 am but helped by keeping light on all night.

Last evening Kabraji took carton to Darjeling. Great box balanced on head of porter squeezing thru door. We have servants and porters. First ends at door or earlier. Quite English.

Tea at 5:30 exact, "yes, VI six" but it was 6:15 am. Coolie squatting with servant at door. Carried 2 satchels on his head all way to Victoria House. 1 rupee satisfactory. Excess still 14^{rs} = 14 rupees.

Study in garbs - Muslim to immaculate white and clean Hindu.

Missed my goggles. Cant get to suitcase so phoned Grand Hotel - Calcutta 1700 (zero zero) x 2 + Enquiry. They will look but I must send forwarding address.

Off exactly on time as told me in China, 2-motor. Capy about 20 passengers, "Belts" but no smoking at all permitted.

Slowly climbing 3000, 4000, now 5400 (-300). Overcast. Have put my coat (but not nest) back on again.

Took off undershirt yesterday. Comfortable at Max 97° (Min 77°) and max. humid 99% (min 26%)

But have acquired a very runny cold - retreating this morning in left nostril.

Calcutta residential, scenic with gardens and pools. Crossed the Ganges above the long bridge.

Land becoming redder and browner. Spring delayed.

Up a silted river bed toward Allahabad
Silt deposits on lee bank



Mist closing in.

We are flying "EAST INDIAN".

Now 5,800 (-300)

" 6,700 (-300) 86°F.

* In low wooded mountains. Winding roads, silted streams. Water only a thread. Only monsoon rains? Little or no snow-water, at least in early March.

Plane maneuvers.

Hungry, had tea at 5:30, coffee at 7:30. Breakfast promised at Allahabad 33/4 hrs from Calcutta.

10:10 am, 9,050 Ft (-300 Ft)

Thru a storm. Ceiling still higher.

27 Matson
28 Matson
29 Matson

10:25 am W-NW 5000 (-300)

10:28 4,700 (-300)

Streams winding but not silty.

One reef and waterfall.

Int agric. land.

Free newspapers - coffee - and finally breakfast.

10:30 am 4,200 (-300) Sunshine - Clear.

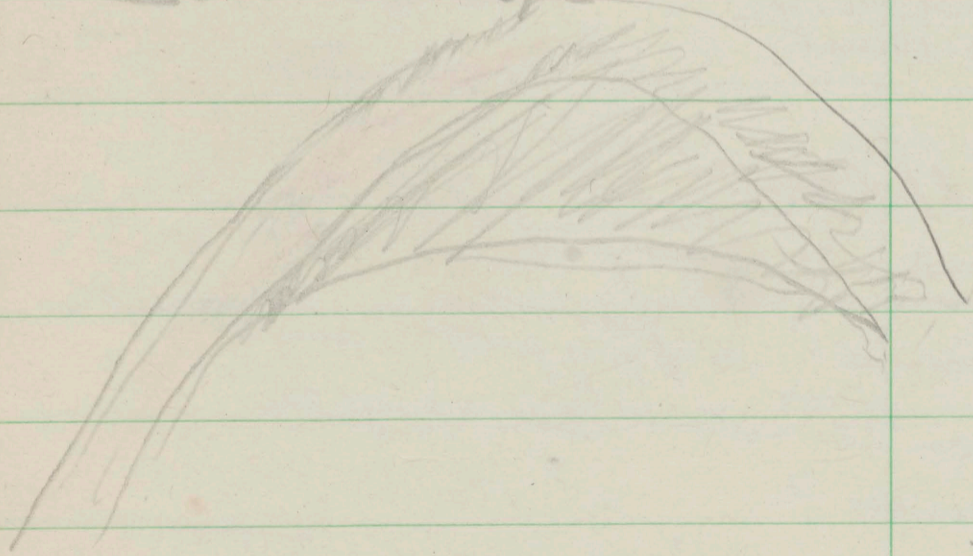
Lanes of mod. size.

10:33 4,050 (-300) Long direct roads.

Occasional trees and in groves.

Otherwise fields - a wide river.

Some silt.



10:42 2700 (-300)

Groups of farm dwellings.

Eroded river banks like Missouri R.

Thatch roofs.

10:46 am 2600 (-300) 80°F

Railroad below
 100 planes below

Tanks, garden lanes - like
 ancient Egypt.

10:52 1400 (-300) 84°F. Wands

Raided towers below.

Fields dry 800 (-300)
 Ramsey - track.

20 minutes for lunch: flaxen, eggs, toast
 marmalade, tea, bananas.

Slip of field 319 ft, but a bit
 instead.

Lv. 10:30 am (my watch 11:30 am)
 Fully asleep, traveling -
 Campfire for 40 miles.

* Lv. Campfire 11:25 (= 12:25 pm)
 Hassat - India - California - around
 Sacto and Bay in midsummer
 awaiting monsoons?

An immense and perfect landing field.
 12(?) cement strips wide,
 Sheet metal hangars, and white
 stucco. Very neat and standard
 Now need planes.

26-
Warm on ground 80° F 2400 (-300)
on wing -
4,400 (-300) East

a long water canal with some
trees - in straightness and direction
like a highway -

1:05 pm Plane's log just came
thru altitude 7000 ft (Crews 7000 - 300)
Speed - air 174 mph; ground 180 mph
En time Blue Delhi 13 pm local time
= 13 pm ? = 1 pm

In Teesta Valley

heavy snow in autumn - Dr. and companion
fled from 17000 and escaped. But Englishman
and cook were never found - not even
the next summer

Trying to reach a glacier area.
* Has pictures of peaks 10000 ft higher
than moraine and 20 mi. beyond
Snow is winter snow, not June

along Tibetan border - compound
made by British in young husband days.

Some day a temporary road will
be opened, but monsoon washes it
out. Has picture of road on off.

Mrs — wants to go with
us here —

* If snow is heavy enough, we
may have snow survey areas.
But should have access and
shelter huts and cut down the
Crew - Must have shelter in storms
and out door parking - like the 2-
man paths mentioned by Dr. —

Stream gaging — for glacier melt
Summer and Autumn — after June —
Snow-melt gages above 9000 ft —
Monsoon at 7000 ft?

1157 (= 13 hrs)
1157 over Delhi 1750 ft (-300)

Perfect lawn patterns, State buildings.
Country around dry paths - Laminar

Saturday Mar. 15 - New Delhi, India

Solving the Problems
of Snow-Storming in the Himalaya
Since Hong Kong, the following facts
have been established:

1. Floods may occur in March at Kunning. Is it winter rain? or is it snow-melt on the divide between Yangtze and Kunning.
2. The eastern "Hump" is below 12,000 Ft. and trees grow even to the summits. Our CNAC copilot believes that the monsoon reaches almost to Kunning. Corroborative of this are the numerous garden terraces high up the peaks that slope only somewhat less than the mountain and are not fed by irrigation. This country is plainly rain-fed.
3. In the valleys of Burma, Assam and Bengal, are silt-laden streams, some irrigation, many lakes and pools, and much land waterlogged from the previous monsoon and because of the flatness poorly drained.

4. The western "Hump" 100 mi. west of our course is never 20,000 Ft high. "This is snow-fed", said our copilot.

5. "The largest Asian glaciers are in the Karakoram in Chinese Turkestan. and the stream flow from them or this area is sudden, heavy and continuous for the season. Had we not crossed (the Bramputra?) when we did (by fording, there were not bridges), we could not have crossed it for a year - Mr. Aungmye of Genl. Survey of India.

Was this glacier ice only? or the winter snow accumulated on and about the glaciers? or in the high mountains?

The Tibetan plateau lies mainly above 14,000 Ft. Can a "sno-cat" be used there? are there landing fields?

In the Teesta Col. Cooke shows by map to confirm his own experience that above the labyrinth of narrow eroded ravines there is a gentle rolling mesa at the base of the glacier peaks where snow-courses are ideal. This is also the snow source of the streams. But it is! "You can ride to it: a winter trail comes it!" (17,000 Ft.)

6. "In the Kosi (Nepal) and the Tista or Teesta (Sikkim), at 17,000 Ft. autumn snowfall can be heavy. In the Kosi, Dr Panyam escaped only precipitates retreat and an English doctor (?) and attendant farther up perished without trace even the next summer.

In the Teesta Dr P has photos of snow in autumn along the trail at about 17,000 Ft.

The snow, therefore, accumulates in winter but at only a high elevation.

What, however, is the relative area of the seasonal snow fields and the relative quantity of snow-melt runoff?

Col. Coore has photos of winter (or monsoon?) snow-layers 4 FT thick on the glaciers. A suggestion of depth of snow is visible.

7. "In the Punjab and Kashmir the snow cover comes low - even to the auto roads and the slopes are gradual in their ascent." Mrs Dhiv.

8. There is only a trail to the snow-line in Sikkim and Nepal. The one suspension bridge is only 4ft wide and suspended on small cables. Parts of the trail cut on a shelf in the gorge slough off (probably during monsoons) and could not carry a vehicle.

The "sno-cat" is effective only on snow. It would be broken or ruined by rocks or dirt.

Here, therefore, only ponies or chains. Too far, too high for legs.

Shall we send the "sno-cat" back for resale? "No, send it to Kashmir for use there" - Div.

9. Time for snow-survey?

Depends upon latitude and altitude and relative precipitation.

"The winter snow falls earlier in the western Himalayas (?) at least the snow accom-

"ranging monsoons falls later in the eastern Himalayas". - Col. Cooke.

The monsoons are heavier toward the east but Dr B. and Rabinathan doubt whether the "monsoons rise no higher than 9,000 Ft". That may be true in Cashmir, they say.

Western Himalayas are farther north and snow-line comes low. Temp. is not so high (?) Humidity is lower. See chart in Himalaya Journal.

The Central Himalayas are farther south, esp Nepal and Sikkim. The snow-cover is plainly high.

In the Eastern Himalayas no snow remains at all in March at 10,000 Ft and the range is scarcely higher.

10. - Ranging by foot or by air to determine the snow-line is necessary.

We know only that winter snow must exist in Nepal and Sikkim at 17,000 Ft. and at perhaps 6,000-7,000 Ft (according to passengers from India at Canton) in Cashmir.

Perhaps the snow-survey should

This has just brought
news that the plane will
be available, Mar. 20, 21, 22,
or 23. From Gaya Field. Have
agreed to Mar. 21 if not cloudy.
Col. Cooke expects to go.

start in Nepal - Sikkim March 1.

Observations for the snow-line
from the air or actual snow-
surveys can determine this.

We should try to make a survey
in the Teesta by April 5.

Negotiations are on for the
reconnaissance cruises by air.
"Cloudy just now."

X

11 - Air Map of Snow-line.

The India Aerial Surveys under
Col. Wilson are willing to make
a continuous snow map for
reference, from which snow-survey
sites can be selected or upon
which they can be mapped.

Ceiling of plane only 20,000 Ft.

On one earlier occasion 25,000 Ft.

Can try oblique camera ^{to determine elevation of snow line} work but
vertical far better for selecting actual
snow-survey sites.

But the mesas selected in Sikkim
by Col. Cooke are at 17,000 Ft,
leaving only 3000 Ft. clearances
among encircling peaks.

a "Spitfire" of 30,000 Ft ceiling would be better but must be imported from England.

Col. Cooke suggests a cautious rather than an intrepid pilot and that precautions should be taken against (a) ~~rising~~ vertical currents, (b) side winds and (c) lack of ceiling for recovery.

The complete mapping camera, I understand from Col. Wilson, includes the ground and the two horizons. This could be use in the midst of peaks or for the view of the snow-line.

Owing to cloudiness, the mapping plane has been withdrawn to the west coast but can be available by April 15.

12 - The Snow Cover of the Cashmir Himalayas.

"The snow descends to 5,000 Ft. There are highways leading to the

snow "Cooke and Dhir". There is even a highway leading direct from Delhi to Simla.

The slopes are gentler than in Eastern H —. The "Snow-cat" can therefore be kept at New Delhi and transferred quickly by platform truck or special 2-wheel trailer to and from the snow-fields. This will greatly accelerate access to the Western H —.

13. Initial Snow-Survey System.

The Himalayas is drained ^{southward} by a series of parallel watersheds in the divisions of Bhutan, Sikkim, Nepal, United Provinces, the Punjab States, Punjab and Kashmir.

of immediate urgency because of storage and stream control are the Teesta, Kosi and Sutlej River basins. But the upper Sutlej, Indus and Brahmaputra drain

- 36 -

or rise in the same mountain area and compass the entire H—. The Indus and B— are trunk streams and should be included in the forecast system. Snow courses should also be established lower down on these streams.

China may possibly be desirous of cooperating in forecasting the runoff of the Yangtze River and understanding the seasonal snow conditions of Tibet. This mosaic pattern will make it possible to understand the water resources and phases of the H— better.

14 - Equipment.

(1) Snow Sampling

In the winter snow belt of leading watersheds snow-surveys should be conducted at fixed snow courses the first of each month beginning March, April, May, June depending on the date

of maximum accumulation of the snow cover before it begins to melt.

Where neither "Sno-cat" nor helicopters are usable, the snow-survey parties should travel as far as possible by motor or pony toward the snow courses.

A shelter cabin should be constructed and maintained at the end of each day's track and near the snow-survey courses on the snow fields.

The survey party need be no larger than 3 or 4. Food, bedding, and clothing should be kept at each shelter. Also medical supplies.

At the snow courses the snow-sampler equipment should be kept and possibly a radio to receive messages and report the snow measurements.

The cabins should be carefully inspected every autumn to make sure that all essential bedding, clothing, food and equipment will be in place when the snow-survey party comes in the spring.

- 38
(2) Precipitation Measurements

One or more recording precipitation gages could be installed on the lower slopes to measure the Monsoon.

In a protected location not far below the snow fields should be a recording precipitation gage for measuring the precipitation during the period of snow-runoff, i.e., March - July.

If feasible, the period of measurement should be longer. Perhaps a seasonal catch-gage could be installed to measure the winter snowfall,

(3) Stream-flow Gaging.

Below the ~~and~~ winter snowfields but above the Monsoon area if possible and above diversions, ~~a~~ one or more stream gages should be installed to measure the monthly, seasonal, and annual flow from the watershed. This is the only quantitative measurement attempted.

The relationship of the snow is merely ~~the~~ ^{its} percentage to its normal and should represent the percentage

of its own normal that the snow-melt runoff of the river should attain. The Monsoon flow is wholly in excess. The snow-melt flow is earlier and may be the river's minimum.

15. Reconnaissance Surveys.

(1) The first reconnaissance by trail will be into Nepal to study the Kosi Basin under the leadership of J. Banerji. It started from Darjeeling March 16.

Mr Chatterji has gone to Bombay to hasten ^{essential} equipment by fast train to Darjeeling. March 21

Meantime, ^{starting} aerial surveys will be made by plane over Sikkim and Nepal from Gaya airfield and over the western ~~H~~ from Ambala. These should guide the land expeditions in Sikkim for its snow surveys April 5 and May 1 ^{in the Teesta Basin} and in Nepal in the Kosi Basin May 1.

(2) The Sitley Basin is far more accessible than believed at first. The basin is 300 miles long and

is separated into two halves by a steep glacial mountain-mass midway.

It will be easy to make snow-surveys in the lower end, and fortunately there is a trail from Bareilly to Gartok that passes thru the upper end of the Sully' at 17,890 Ft, where conditions at 16,000 Ft seem ideal for snow-surveying.

The problem will be the use of ponies and avoidance of avalanches. It may be possible to come up the Indus ~~for~~ by "Sno-cat" from Kashmir. This general area will be central for the Sully', the Indus, and Bahmaputes at their sources.

16 - Flood Forecasting.

Flood-forecasting is difficult because floods are caused primarily by rain.

(1) Rain Floods

If floods are due to rain, they

can be forecasted by the intensity of the storm and the character of the watershed.

after the flood has appeared, it is easy to determine its progress downstream and its heights or stages.

(2) Snow Floods

The probable maximum stage, volume and date of floodflow of snowfed rivers can be approximately forecasted in terms of the seasonal percentage of the snow cover and departure of seasonal percentage from its normal. This is done for the Columbia River at The Dalles, Oregon, U.S.A.

Flash snow-melt floods occur near the snowline where the snow is shallow and can readily be penetrated and melted by the rain.

If the snow is too deep, the rain is held in suspension or

if the snow is sufficiently cold the rain freezes as a crust within it.

Under normal sunshine, the snow melts according to the relative temperature but not as a flash flood. At night the snow ceases melting if the air temperature at 4 ft. above the snow falls to 40°F .

Does the Indus in the Sind rise normally above its dikes or banks whenever the "flood-flow" due to snow-melt occurs?

New Delhi, India
March 17, 1947.

J. E. Church

New Delhi Took Dysentery cure. 2, rat 6.
Settling accounts Patandi following.
uncertain re tips.

Nadir Ali watching his "present". New
night will make a pension of the idea.

Snuff - plenty of Indian brand but
Dhar seeking the foreign "for me". It
was for Nadir Ali Crestfallen - weary.
By jaunting-car taxi 4 mi. to

Old Delhi.

a funeral party of 20 approx. going
to a cemetery - crematorium near
the old Musselman fortress of many
centuries ago. Burn with wood.
Cremation the custom here.

New Delhi a city of vast open
spaces or English gardens considerably
formalized. England has put her touch
and her grandeur

Compartment - Seats 8 - beds 5.

The Tummy - washing, drinking.

Brahma bulls. Newsies disappearing.

Harvest. Many hands, slow work, ever
breaking rock by hand.
Gleaning.

Houses: Everyman his architect and builder.
Roofs neglected - coming apart - tile,
cropping system - New laws coming,
tap-water - all drinks etc.

Bedded.

~~Monday~~ Pakistan Day. Shots. Py signals abandoned

Monday, Mar. 24.

Cafanon R.F.

linen, shoes, and food. Languages Hindustani
75% use Canal To Trade some for trade.

Rangel and bushes - Terroo dyde
palms. a great plain. little
excision except streams

Monday, March 31

a successor of Nadir Khan. He appeared
at 6:30 with tea. Then walked off with
my shoes to polish them. Others had
always asked for a brush. When I showed
that I had only 1 and a half annas in
my pocket, he waived me away as
done just as a little favor to me.

But when I left he reaped a Rizee
and showered gratitude upon me.

Refugees. 16 from 3yr old to grandpa
knocked admittance into our compartment.
No disturbance in their town but they wanted
to get farther away. We all cuddled in
some standing. A boy thanked us in English
as they filed out.

April 1/47.

Hill shafts seem to be brogans

Kuaxiong. 4864 Ft.

On tea-terraced slopes.

Terraces to the top. Some elaborated -
Stone walls.

SNOWVIEW HOTEL

"
Natchenyings can be seen on clear day
Green hills needing rain."
"

at about 6,000 Ft "Seed potatoes" and vegetable

80% slopes but all terraced. Sheet-iron
houses with a few of wood. Whence the
metal?

Overtook the morning train. Autos and
railway have the same grade except for
occasional switchbacks. Grade crossings
innumerable. Tough on the train.
The auto curves are only a bit
shorter. Like a silted river.

First class is a glass cage with

lounge seats. The third class is a chicken coop. Can sit on top of engine cab if cinders not minded or on the roof of the cars. I'd like to ride there. Some freight cars seem less than 10 ft long.

The tiny locomotive is fed coal down the middle of its back. A stoker stood astride it to pass the coal.

The brakeman in the cab seemed to be steering so closely did his turning of the wheel correspond with the curve of the track.

Darjeeling - app. 7,000 Ft.

On both sides of the ridge. a long tall town. Shops tiny but dainty. Old shopkeepers sedately keeping their accounts. Picture postcards!

Races? a blend of Indian, Chinese, Tibetan. I can't tell them apart. A merry Tibetan woman provided our packers. "Midwood" a full half-mile farther on ~~over~~ the north side of

and showered gratitude upon me.

the slope, a stout girl took metal trunk and bed roll. Then offered to carry my overcoat. I indicated that the load would sink her thru the pavement. She could leave me behind like a tortoise.

- Problems -

Every "officer" has an orderly and a stenographer. The radio corps consists of 10 (all Indian) with 2 mechanics. Have Army rations.

Mr Finlayson eager to see me. May not go for Mr Patton is detained in Calcutta by the riots. Patton is familiar with the Teesta and Finlayson is a companion.

The geologist Dutta is here waiting. Met Dhir on the road. Will call 2pm tomorrow.

"Midwood" far too far out. Only furnished house recommended. Really a villa and spacious with view into the depths if only haze permitted. But feels like a semi abandoned fraternity house. Water scant. Provides

your own bedding. This has been sharing with me.

Meals are native with overemphasis on curry and spices. My mouth and throat feel like a burnt-out flue. So I am going hungry and feeling hungry.

Word has come that Mr Patton and Mr Finlayson may withdraw. Farmer detained in Calcutta.

Message has been received from J. Banerji that snow 1-3 ft. deep had been encountered that forced them to detour. They have the lower sections (1-6) of No. 1 sampler.

This depth seems scant.

But photographs of Katchenjunga and Everest in the early autumn are pure white to 13,500 ft indicating the presence of winter snow.

Wednesday, April 2.

a more cheerful day.

Shall move on to Gantok tomorrow for the morale of moving forward.

Mr Finlayson wants to call. We found him at noon seeing me. Invited to lunch in his home. Mr Patton can come. Can leave Friday. Interested in Teesta Dam. Showed me Darjeeling and bright new snow in autumn to 13,000 ft.

Interested in April-May runoff -
There must be some winter snow.
"My trip may not be wholly in vain -

I must get a set of views of and
from Darjeeling -
all plans to drive across to Lantok.
Thursday April 3 -

Late leaving - Road 70 mi, Slow -
7 hrs - Taxis needed early next morning.
So would spare only 3 at first but
we needed 5. yielded when Polit. officer
then granted a truck with escort -
despite narrowness of road. So 5 Taxis
granted -

Slow descent into Teesta - Our driver
got out to kick an overloaded load who
seemed to be jaywalking.

Nepaliese Women (wear a jewel
on side of nose and pendent hanging
from center of nostrils).

Friday, April 4.

Banged into Dak ^("Post") Bungalow. Comm.
Hapkinson tried to head us off by
wireless to Darjeeling but Patton
refused to accept the message
and Polit. Agent said we had
started. We received the returned
message, was read. Paul made
peace for us. I was even
invited to stay at the Residency.
Saha's student came. Dr _____

- 45 -

sent a truck load Paton
but remained to rest and
purchase. Most of provisions
not purchased,

Comin. H. has lived in
India since 1920 after First World War,

Bob Ford, radio operator has
lived 6 mos in Lhasa, 16 to 20
days trip.

Snow cover down to Lyang(?)
slightly under 10,000 ft, its stream
flows into Bengal.

Has skied at Tungas Lake,
fair. Snow storm of pine flakes
at 13,000 but not places toward
10,000 ft, snow about 3 ft deep.
Hope rises with the Teesta.

Ripper's candy wins - a wise
girl.

Troubles - no doctor - Some
examinations fail. Datta and
Dhira, High blood pressure and
hemorrhoid tendency, tried to accept
responsibility.

Late bed,

- 46 -

Saturday. a day of calls and calls
back. Two lads to visit the maharaja
"usually they fear white faces". Told
the story of Tahar and Theetas.

Chhanganu

San Juan

Total Basin 26000 Km²

active Basin 13000 Km²

average runoff

68 m³/s

volume per year

2200 Km³

$$\frac{22 \times 10^8 \text{ m}^3}{130 \times 10^8 \text{ m}^2} = 0.17 \text{ m}$$

$$\frac{0.17 \text{ m}}{0.5} = 34 \text{ cm}$$

Bays' Life 27.5
Bienvenida

269.7

220.2

249.8

739.7

2129.0

Forest

Looney

Far from the Madding Crowd

The idle thoughts of an Idle Fellow

Three Men in a Boat to & from

Vice Versa (author?)

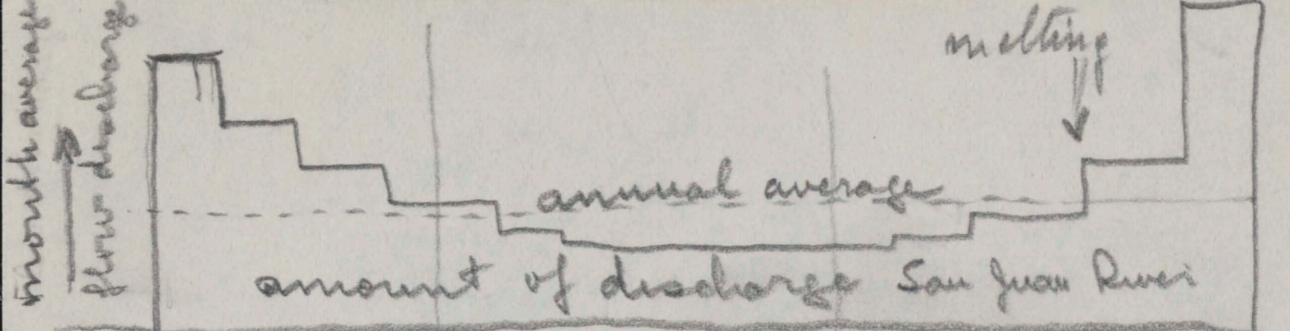
We would very much

Nahuel
Kouapi

Naty Patacra Amé Orelt
1234 56789101112 13141516171819

38000000 Rs. for
streamgaging -

50000000 Rs. (10000000 Rs.
yearly) for 5 years for
studies of snow and
glaciers



Jan Feb Mar Ap. May Jun Jul Aug. Sep Oct Nov Dec

period
repetative

← Winter →

period
repetative

San Juan River

minimum minimum	464 cusecs
maximum maximum	90,000 cusecs
^{annual} average in 40 years	2464 cusecs

Major Runoff

Rio San Juan	Oct (last $\frac{1}{4}$)	To	March (first $\frac{1}{2}$ or entire month)
Rio Mendoza	Oct (all or last $\frac{1}{2}$)	To	March (first $\frac{1}{2}$ or less often entire month)
Rio Diamante	"	"	"
Rio Atuel	"	"	"
Rio Colorado	Oct (last $\frac{1}{2}$)	"	"

But major flow of Colorado is rather Oct - Feb (5 mos)

Compute average of all years for October and March
for comparison.

Sachal } 280 Km
San Juan }

San Juan } 180 Km
Mendoza }

Mendoza } 95 Km
Tunuyan }

Tunuyan } 70 Km
Diamante }

Diamante } 55 Km
Stuel }

Stuel } 110 Km
grande }

790 Km

- PG = precipitation gage
- SC = snow courses
- GS = gaging station
- SH = shelter hut
- R = reservoir
- ≡ = road
- | = trail

1
2
3
4
5
6
7
8
9
10

Miss Butler - Tel. Co.

Zona de glaciares: frente
a Concepcion al Sud
~~est~~ y a Ovalle en el
Norte.

La línea de nieves perma-
nentes se considera a
3000 m. (10000 pies ~) al
Sud y 5.500 m (17.000
pies ~)

1,5 a 2,5 cuasos km^2 in Chile River
 $\frac{1}{4}$ cuasos km^2 in Mendoza Rivers

100 to 200 inches year South
~~Chile~~ 42° Chile

10/0 -

Glenn

Sm

Mendoza Province

3000 m (10000 ft ~)

25 inches average rain
and snowfall

400 miles east 700 m
(2100 ft ~) 4 inches
average rain and
snowfall

Chile

West ← East

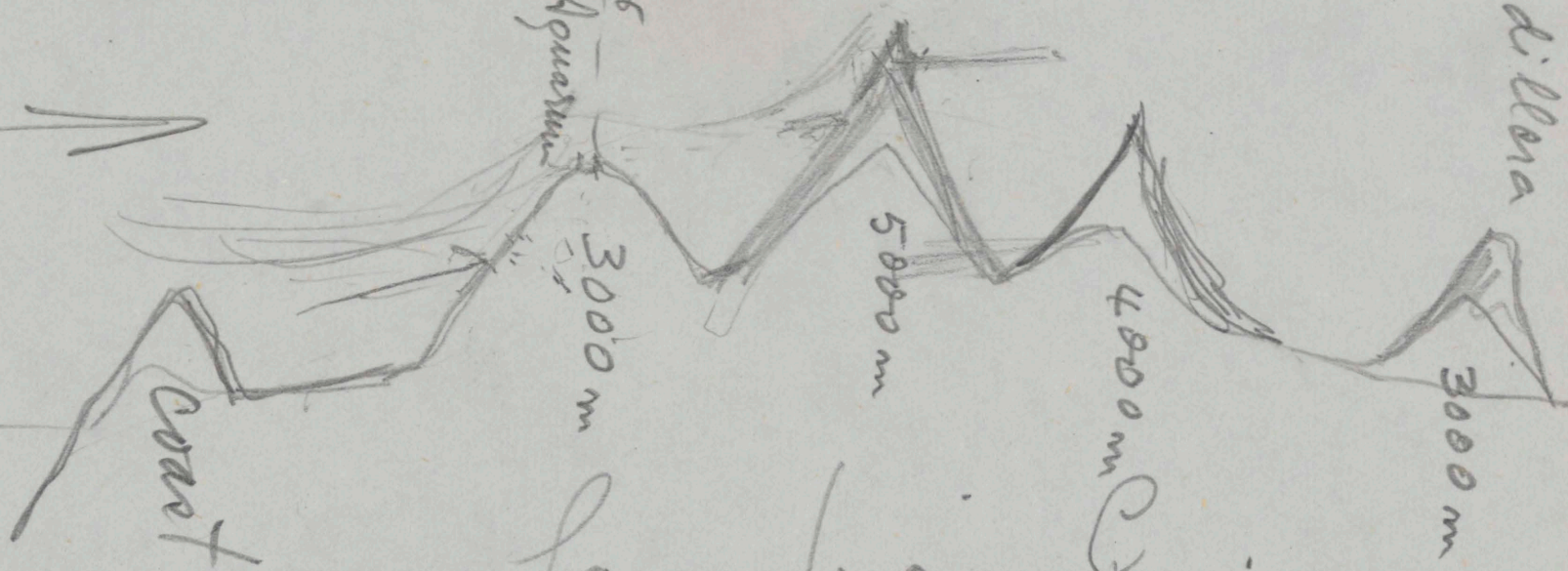
Argentina

Pre cordillera

Bordes
del
Norte
Austral

Vientos

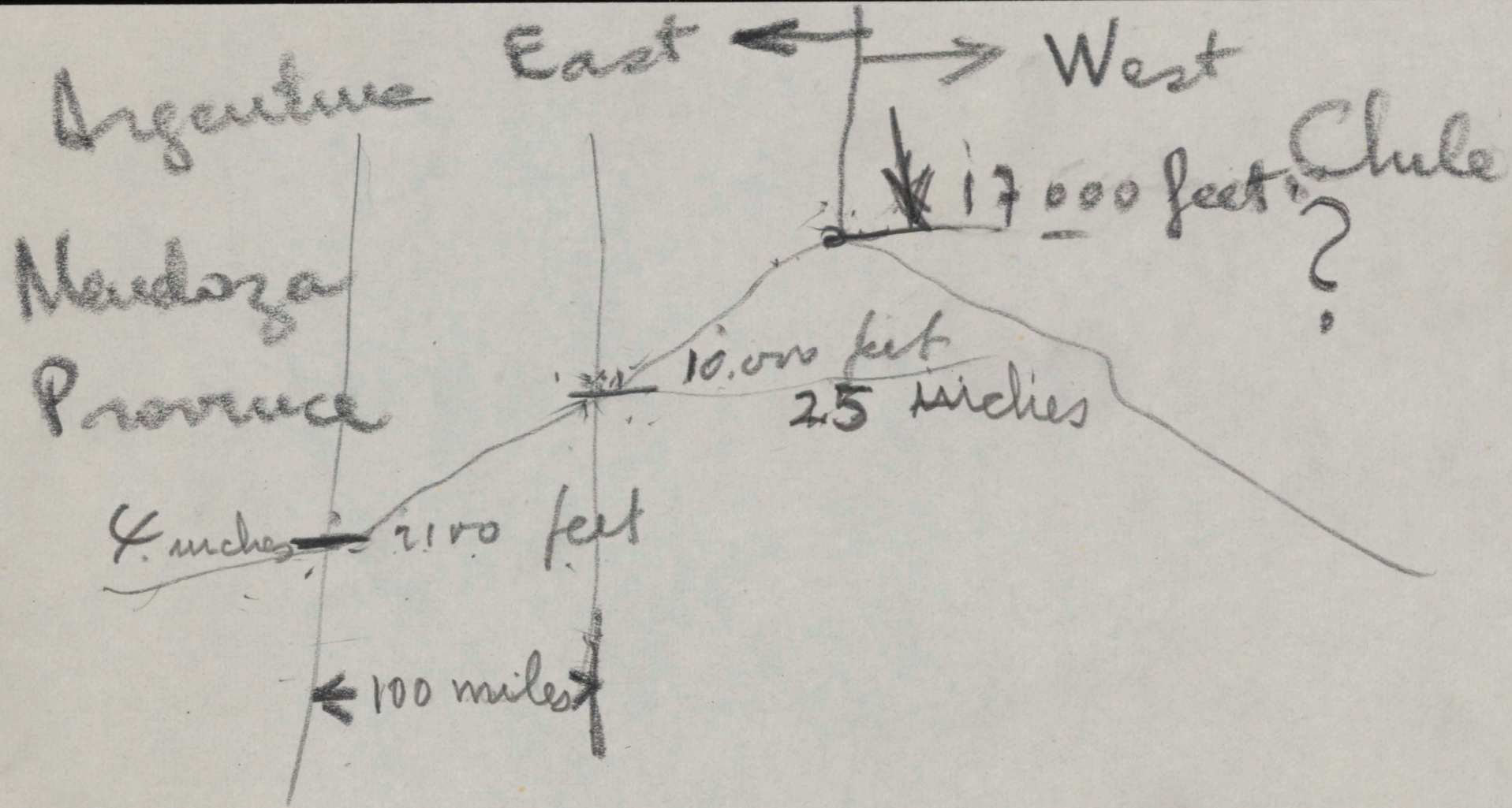
Pacifico



Coast Range

San Juan Province

Andes



$$\begin{array}{r}
 028 \) \ 13000 \\
 \underline{11200} \\
 1800 \\
 \underline{16800} \\
 1200
 \end{array}$$

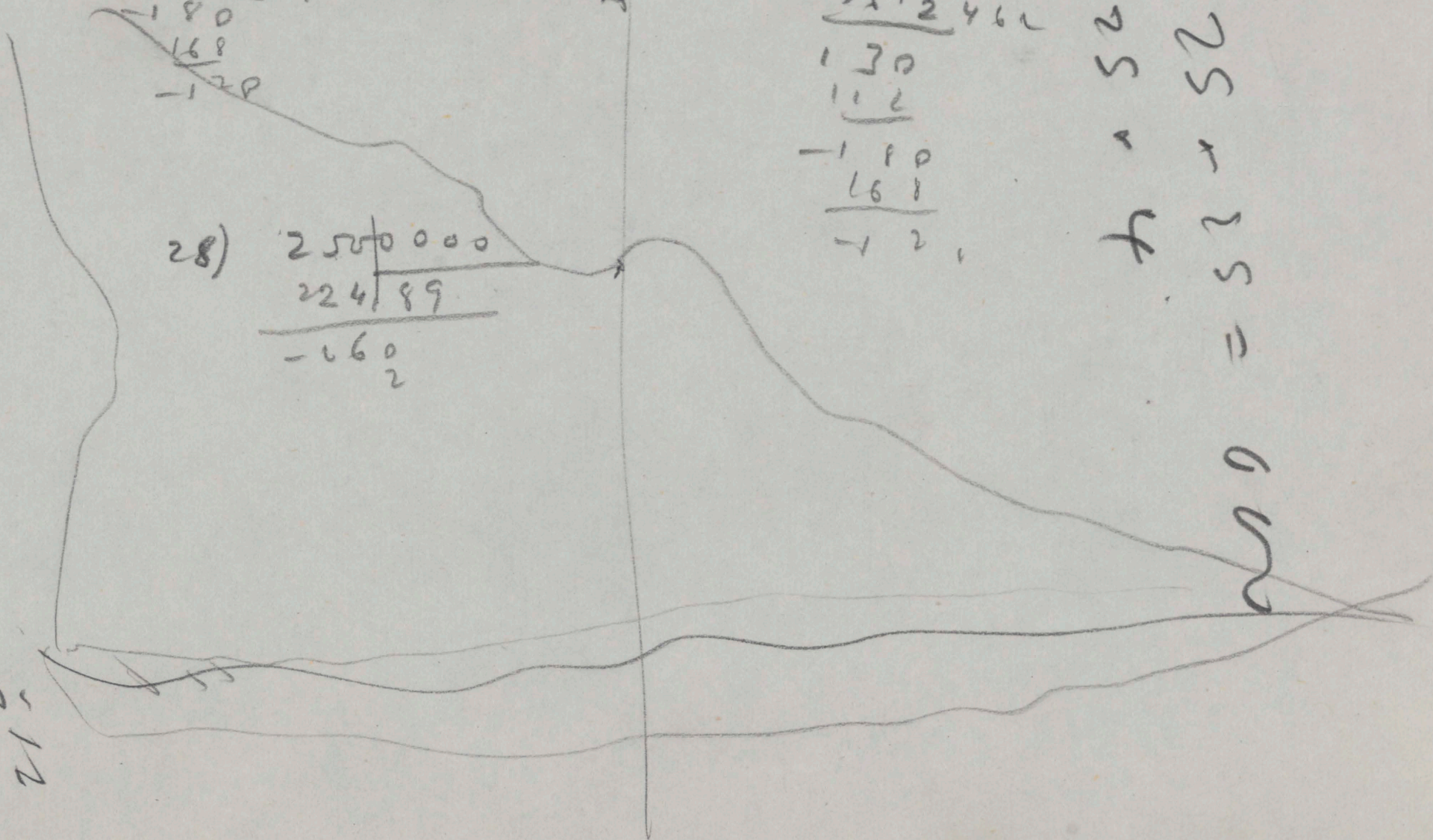
$$\begin{array}{r}
 28 \) \ 2500000 \\
 \underline{224000} \\
 26000
 \end{array}$$

$$\begin{array}{r}
 28 \) \ 68000 \\
 \underline{56000} \\
 12000 \\
 \underline{11200} \\
 800
 \end{array}$$

$$\begin{array}{r}
 25 \times 25 = 625 \\
 25 \times 4 = 100
 \end{array}$$

54

215



EL FUEGO ES EL MAYOR
ENEMIGO DE LOS
PARQUES Y RESERVAS
NACIONALES.

PARQUE NACIONAL
NAHUEL HUAPI
PLANO GENERAL



MINISTERIO DE OBRAS PÚBLICAS
DIRECCIÓN GENERAL DE PARQUES NACIONALES Y TURISMO
REPÚBLICA ARGENTINA

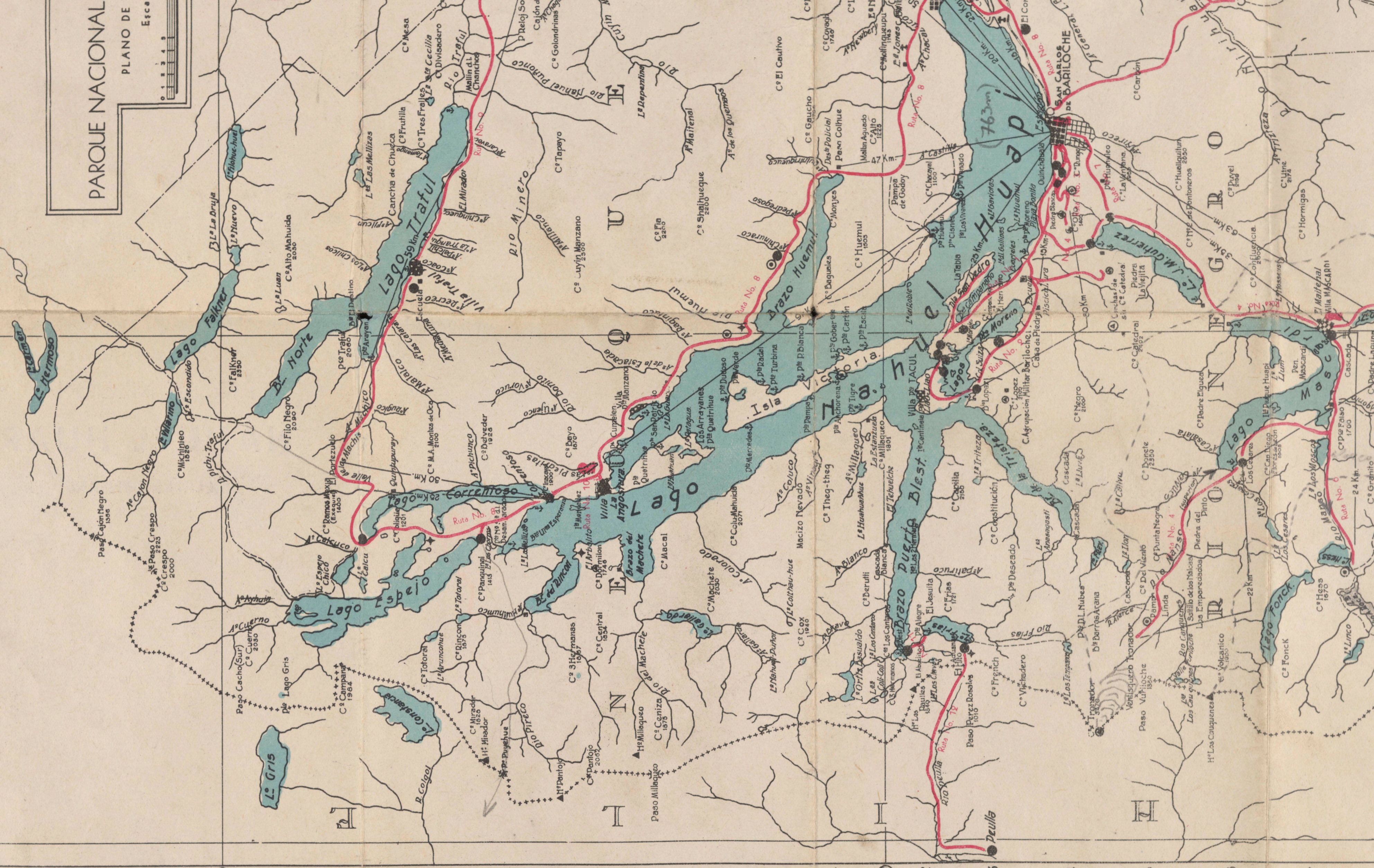
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PARQUE NACIONAL

PLANO DE T

Escala



Lago Espejo

Lago Falkner

Lago Moreno

Lago Nahuelbuta

Lago Nahuelhuapi

Lago Fontana

Lago Fontana

Lago Fontana

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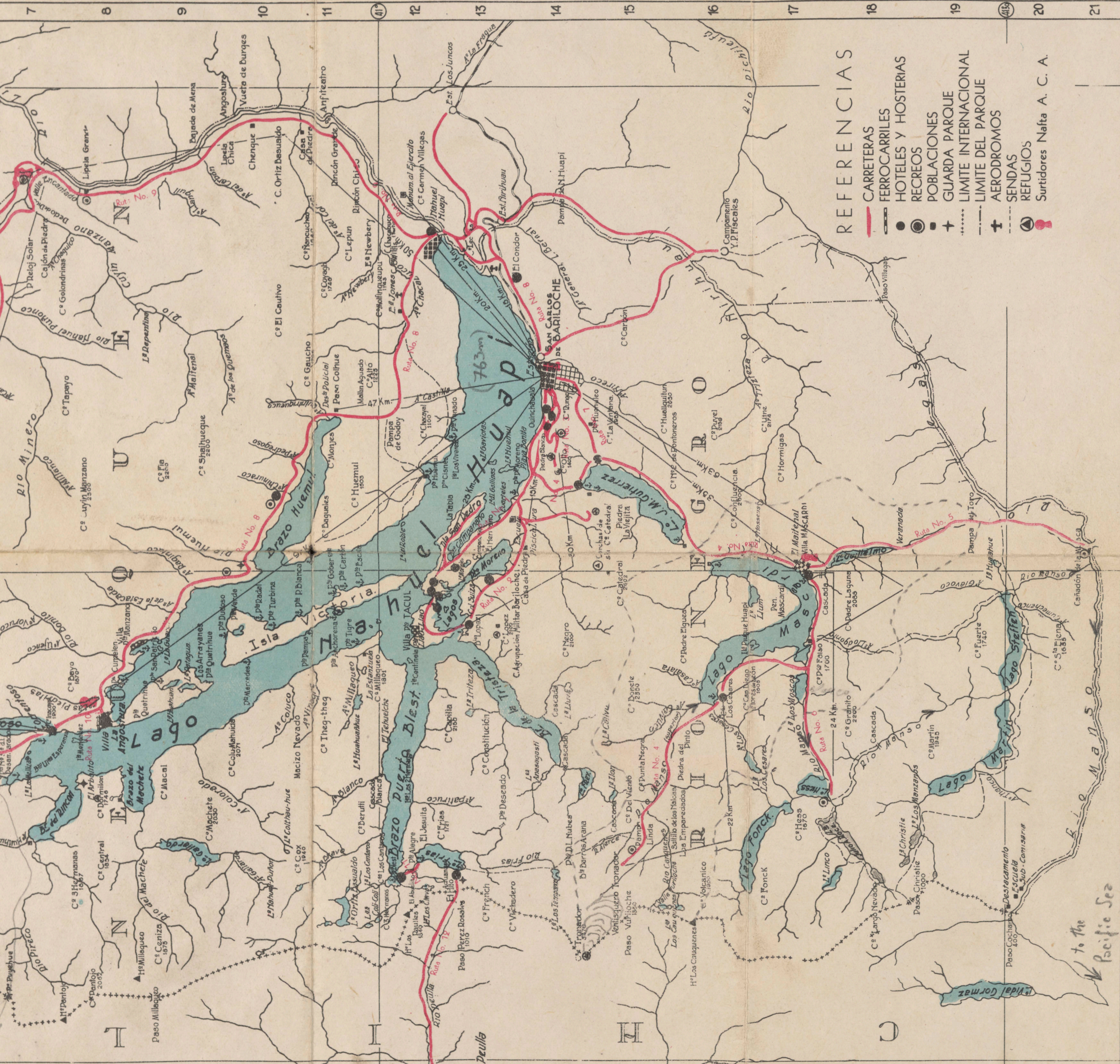
Lago Nahuelbuta

Lago Nahuelhuapi

Lago Nahuelbuta

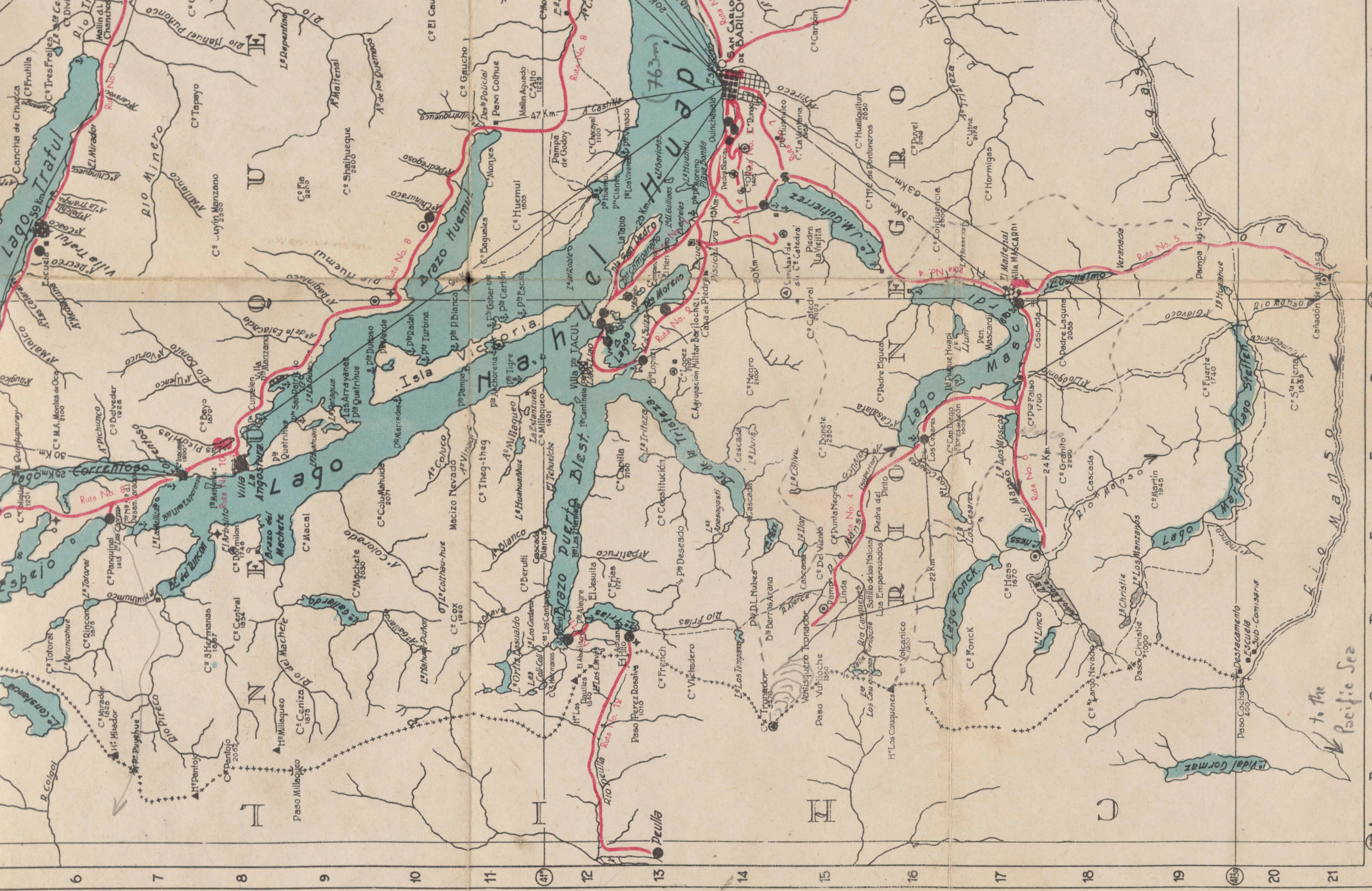
Lago Nahuelhuapi

Lago Nahuelbuta



REFERENCIAS

- CARRETERAS
- FERROCARRILES
- HOTELES Y HOSTERIAS
- RECREOS
- POBLACIONES
- ⊕ GUARDA PARQUE
- ⋯ LIMITE INTERNACIONAL
- ⊕ LIMITE DEL PARQUE
- ⊕ AERODROMOS
- ⊕ SENDAS
- ⊕ REFUGIOS
- Surtidores Nafta A. C. A.



70° A B C D E F G H I J K
71° H

to the Pacific Sea

