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In my varied life as a Mining Engineer and Geologist I have had many experiences. One of the most important was to have spent my most formative years living (and going away to the USA to school for 9 months at a time) in a mining camp in Northern Chile. It was here that I arrived as a boy of 13 and left 7 years later as a young man ready to face the world. The people that I met, the work ethic that I inherited, and the splendor of the high and rugged Atacama Desert have colored my life ever since. When I left El Salvador on August 20, 1962 to return to Montana to finish my degree in Mining Geology I gave little thought to making a farewell to the magnificent bare mountains that I loved so well. I knew I would be back in two years to take up my professional life as a supervisor of some kind at El Salvador. From there, at least in my mind, it was but a short step to the Managers office!

I had worked the (northern) summer vacation doing a lot of surveying for the Geology Department, as well as working at the Geological Research Laboratory for John Hunt. John was an infectious teacher and hard worker, and he presented me with just what my Dad wanted, a role model to follow. Lewis Gustafson arrived half way through the summer and he became another light to follow. This was the fourth vacation I had worked at El Salvador and I was becoming well known around the place.

On the day before my departure, my Dad had sent me down to the *caja*, or pay office, to collect my pay for the summer. Due to problems with visas and the like I had been employed on the Staff of Alberto Fuentes unofficially as a sampler for the summer. The pay was not much in American terms, but this was figured by me to be the least of problems. Experience was the name of the game. I could easily balance my budget at the Montana School of Mines working underground in a stope at the Stewart Mine that winter. When I collected the pay, there was also a note from Harold Robbins, the Manager of the El Salvador Operation, and one of two Assistant Managers of the Andes Copper Mining Company. Could I please come to his office? He was an important man, so I went down the hall and knocked on the right door. Harold, or Robbie as he was always known, was not only in but answered his own door, and guided his (very young and nervous) visitor into a chair himself.

In this day and age it would be called recruiting. There were polite question about the courses that I might take, and where I wanted to go in life. He then gave me the Dutch Uncle treatment! Robbie stated that El Salvador would always need men that were well educated and prepared to think and work. He knew I had a good academic record in the hard bits, Chemistry, Physics and Math. He also pointed out that it would be difficult for me to hope to work in the Geology Department as long as my Dad was the Chief. He said the problem was not my Dad who was very fair, but if I were to prove to be good enough to get a promotion, the world would put it down to family interest. Other father-son teams had worked well for Andes Copper in the past, the Hoffman's, the Kuchs and the Watson's being the best known. They had always worked in different departments. Further, Chuquibambilla was full of more examples. I had worked two summer vacations in the mill already, a summer sampling in the mine, and this last summer in the Geology Department. These summers could be counted as time and experience, a head start. I spoke and read passable Spanish as well. He was not fussed in what I did my degree in, so long as I did it well. The message was clear, when I finished at Montana in 2 years, come home and make a career of it.

I left El Salvador and Potrerillos feeling 10 feet tall, on a LADECO DC-3 with only one motor working. The plane really had two motors, but one of them leaked oil. The plan was to take off on two and fly to Calama on one motor. This was such a usual thing; I just jumped on to the plane. I soon noticed that I was the only one on board,

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and went up and talked to the pilot. He assured me all was well, it was his wedding anniversary, and he was going to be home in Antofagasta that night. Off we went to Calama, and indeed all turned out well as far as Calama, but that is another story. (It was a month before it flew again!)

When the plane wheeled north from the old Potrerillos strip, I looked intently to the north east at the graceful volcanic cone of Doña Inez. Some sort of premonition came over me; would I ever behold this sight again? This thought was taken from my mind in an instant, and I should have paid some attention to it! I wouldn't see it again for 44 years.



Volcan Doña Inez, from the south side of Salar de Pedernales

When I did graduate from The Montana School of Mines, I had a number of job offers, one of which seemed to offer a good chance of getting some where as a geologist, something that the Andes Copper Mining Company could not really offer me at the time. Off I went with ASARCO, to Wallace Idaho, and Bonanza, Nicaragua. This went well for some time, but I decided I was not getting anywhere and returned to the USA. I had an immediate offer from Placer to become the Chief Geologist at an unknown new mine called Endako in British Columbia, and another from Kennecott to become the Junior Mine Geologist at Ely, Nevada. I wrongly chose Ely with the mistaken idea that I might learn some geology there. I did learn a lot about open pit mine operations, and a lot more about slope stability and copper heap leaching. I combined this last interest with my previous excellence in Chemistry and started out to see how I might use it to find a niche for myself in the copper industry.

This interest attracted the attention of William J. Van Matre, new head of the Mining Engineering Department at Montana Tech, late The Montana School of Mines. Van made me an offer to study for a Master degree in Mining Engineering while working full time for The Anaconda Company at their Geological Research Laboratory at Butte on leaching problems. This seemed to be an ideal job with a straight path to Chile at the end.

I finished the Master degree in 1968. My Dad was mystified. He praised my thesis, but wondered why I had done a Chemical Engineering thesis in a Mining department. At any rate, there was talk of me going to Chuquicamata to work for Frank Monninger, one of the senior men there starting up the then new idea of heap leaching low grade sulphides waste dumps. All seemed well.

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Late on the afternoon of (Friday at 4:50 PM) September 21, 1968, Charlie Goddard the Chief Geologist at Butte called me up to his office. Bill Swayne, the Chief Geologist of Anaconda, was there, and he told me that it had been decided that it would be a good thing for my career if I went to Western Australia for a year to work in Exploration. I was given until Monday morning at 8AM to make up my mind. It was then 5:30, so I would not be wasting any of The Anaconda Companies paid work time thinking about the decision. I accepted on the spot, and was in San Francisco Monday evening. The rest is, as they say, history.

I stayed with Anaconda Australia for about 3 years. It was obvious by then that the day of the gringo was over with in Chile. I was never happy working in the USA, being one of those "Third Culture Kids" that the mining, construction, and military industries produce with such ease. Australia became my home, and when I met Helga Schnirring in Perth in 1976, this sealed it. She did not want to go live in the USA, and I did not want to go live in Germany, so we married and stayed in Australia where we both seemed to belong. Thirty years later, it still seems just right.

I have spent much of my life thinking about Chile and the wonderful people that lived there. On November 28, 2006 I found myself experiencing one of those déjà vu moments in life looking around the Miami airport for the LAN Chile counter. The point where the American Airlines baggage pick-up now is was the exit of the old Miami International Airport, and one could see the remains of the back of the old control tower just to the west when you stepped out of the building. I was on my way to Chile at last, partly doing an industrial tour of copper heap leaching operations in Chile, and partly a vacation with my brother, Paul Trask. My companion for the first part was Stewart Robinson, Stewie is the Operations Manager for Tennant Limited, and I revel in the title of Technical Manager. Stewie is a scream to travel with. He is an intense and driven worker with a great sense of humor. He is also much younger than me and complains about having to travel with his father!

Miami was a revelation to me in terms of language. I had not spoken any Spanish since I left Nicaragua in 1965 excepting one week in Mallorca in the September just past. I found myself experiencing the "multiculturalism" that so many on the left side of politics in both the USA and Australia admire. Here I was in the USA, trying to purchase a lens for a camera, and **had** to speak Spanish to the shop assistant. He then let it be known in Spanish that it was ignorance not to speak Spanish, which really got my back up. I let him know in quite clear Spanish what ignorance really was! Maybe it was only in that store, so we tried others. Stewie was trying to buy a present for his wife back in Australia, and we ran into the same problem again and again. Without my rusty but improving Spanish, we had to wait for someone to come and translate what we wanted.

People live in tribes, and there was a time when migrants to the USA wanted to join the English speaking, reading and writing tribe. It was an essential part of the requirement to become a citizen. In this imperfect world today where the USA is vilified by one and all, many people who do not want to join this tribe still value the Yankee Dollar, the Green Card, and US Citizenship as the three good stable things in the world. Everyone wants the good things that this brings without becoming part of the tribe. And, just like in Australia, there are politicians who say that it is alright to not become part of the tribe, but be sure and vote for me who will protect you and way you are choosing to live. Thus the nation is getting split into more and more tribes. Again, like in Australia, all of a sudden the votes of a select group of people that might make up only 2-3 % of the whole population are sold for political concession. One of these things is citizenship in both the old and new countries as well

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as bringing your culture with you and living in that culture. Australia has pools of ignorance in Sydney where small areas look, act, and sound like the Middle East. These have become breeding grounds for organized crime, and those caught by the law know how to use the legal system to make life easier for them. The use of the "R" word is the first of these, they are discriminated against, misunderstood by the vicious racist police, they need a translator to appear in court, and the excuses go on and on, all fueled by zealous young left wing lawyers who live off legal aid.

I noted in Miami that the police I saw in South Beach were multicultural in that they could all speak both Spanish and English. I suspect they need both languages to get sense out of reluctant people. It was therefore with some gladness that I boarded the LAN flight to Santiago. Studying the time table revealed that they are keeping the old Panagra (DC-8) schedule, almost to the minute. There is a mid evening departure from Miami, and an early arrival in Santiago 10 hours later. The reciprocal trip is scheduled for an early morning arrival in Miami. The trip is short by Australian standards, where we are used to 14 hour legs to get anywhere.

I also am immersed in Spanish totally for the first time, and discover that I can understand almost all that is said. Once the word is spoken, the meaning comes back, but remembering the words I need to answer back is not working worth beans! The vocabulary has to be rebuilt. I have also forgotten how much slang, rapid speech and poor accent that the Chileans use. I learned my basic Spanish or Castellano in the high country of Southern Ecuador between the ages of 4 and 10. There the people spoke with an accent that had not been altered since the arrival of the first monks from Spain to the monastery at Zaruma around 1580. They have kept the language clear as a bell, and people, hearing this accent, assume that I must be a scholar who knows perfect grammatical Spanish. Well at least it gets you a bit of respect for a few minutes.

The flight was in a brand new 767, and the Business Class seat that Stewie had would not lie down. I guess someone had forgotten to check them out at the factory. Dawn arrived as we crossed the Chilean coast just to the south of Chañaral. I could recognize the geology, but the low clouds made identification of any other point rather difficult. The bay at La Serena was easy to spot. I wondered where Aconcagua was, and then had the question answered by a single peak that simply dominated all others. The landing in Santiago was through very dense smog, much like LA 30 year ago on a bad day. The plane quickly unloaded, and we got a good taste of Chilean government. Citizens of the USA, Canada, Australia and Mexico were asked to line up and purchase a visa. The cost was variable, and exactly the same cost that a Chilean has to pay to get a visa into the respective country. I could choose between being an American or an Aussie. At a cost of \$US100 and \$US 67.50 respectively, being an Aussie was cheap and easy!

Good for the Chilean government too. They stick up for themselves and at least some of their citizens.

The first hour in the airport was busy, purchasing a SIM card for a mobile phone, trying to learn how to use the Chilean wireless internet (very hard at all times), and getting our bags checked through to Calama. The airport is nice and modern, but certainly not up to the polish like the new airports in Bangkok, Kuala Lumpur, Singapore, Hong Kong and the like. It is busy and I for one am impressed. Chile has obviously undergone a metamorphosis since I was there in the grim old days of 1962. The first test was the toilets. They were spotless, and a contractor made sure they stayed just that way. Another impressive thing was the number of cargo jumbos that landed and after pouring out a number of ISO containers, took more on board and

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were gone. The waitress at Starbucks informed me that it is fruit going to New York and Europe. She tells me the best of the crop is sold for foreign exchange, so Chileans never get to eat really good fruit.

After 6 hours of waiting, we finally got on the plane to Calama. I got a good seat on the right hand side, and was ready to take photos of El Salvador and Doña Inez as we flew by. What I had not understood was that there was a stop at Antofagasta. We flew up the coast, and I could only just identify the peaks of Vicuña and Doña Inez. Cerro Indio Muerto stood out quite well, but the distance was too great to see any trace of the town or mill. The tailings dam was easy to spot, but I thought that it must be something to do with Mina Carmen outside Pueblo Hundido. Almost everything on the coast side of the central valley was lost in clouds.

Cerro Moreno, the airbase and airport for Antofagasta had the main runway closed, and the planes were operating off the taxi way, which was the old strip from around 1950. There is a large and unusual collection of fairly modern jet fighters, along with an assortment of 1960 era anti-submarine type aircraft. The tin hanger where we used to board the Panagra plane was still there as were a number of others. I thought I could see the old Panagra symbol on the door. Close inspection later showed that it was a similar symbol for Lloyd Aero Boliviano, who must have used it after Panagra went away. The edges of the old airport looked crummy, crumbly and dirty, and the new "modern" airport terminal looked clean in contrast, but was in fact quite average.



The old Panagra Hanger at Antofagasta, now lost in the junk

Passengers were not allowed off the plane, and after a quick refueling, we were off on the short hop to Calama. One real difference that I can see is that the country has been disturbed. Other than the old nitrate **officinas**, one could, in the 1960 era, fly for hours over the Atacama and never see a track. Now there are random 4WD tracks every where, and these have geometrically correct drilling patterns superimposed over

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them in endless variations. There is and has been a lot of exploration taking place in north Chile. It might still be desolate, but it is not isolated.

A quick taxi ride to the Aguas de Desierto Hotel in Calama showed that not much had changed. Calama was and is the end of the road. The Hotel is quite nice, and is the retreat for salesmen and other types trying to sell to Chuquicamata. The great thing was the sight of Chuquicamata to the north. The waste heaps simply defy description. The smelter stacks that dominated the view of the foot hills in the 1950-1960 era are hardly to be seen. The other thing is that the clear desert air is clear no more. If you want to find a mine in Chile, look for a dust cloud, and in the case of Chuquicamata look for the biggest of the dust clouds. It could be seen extending a good 40-50 km away into the sunset. The pit itself is a marvel, some 9 kilometers long and 6 wide. This panorama is taken looking south. It is 1050 meters vertically from top to bottom!



Panorama of the pit at Chuquicamata. 9.5 km to the end , 6.1 km across, and 1050 m down the wall!

About 1 in the morning I got a knock on the door, and found my rather distraught traveling companion clutching his chest and claiming he was having a heart attack. Without reference to anything, I told him he was suffering from the **puna**, or **soroche**, altitude sickness. He had a very fast heartbeat and was out of breath. I spoke to the desk clerk who found a taxi in record time. I also found out that there were two **Polyclinicos** in town, one for Codelco employees and one for the public, and choose the public. The taxi driver sped us through the packs of roaming dogs and drunken people wandering the streets with great efficiency. I gave him \$C10, 000 (about \$A25.00) and asked him to wait. The run-down clinic did not hold out much hope to poor Stewie who was convinced he was seeing his last. It had a large sliding corrugated iron door and a harsh and ill smelling waiting room. Off to one side was a small window that was covered with 1 inch crusher screen. I spoke to the man inside and conveyed what I thought might be happening. They asked for Stewie's Passport number, and within a few seconds he was laid out inside a small cubicle. The place looked about like it might have looked in 1950, stained (but very clean) concrete floors, stained walls, and very rudimentary furniture such as schools might have throw out around 1950. Poor Stewart was in a real flap by now. Within 5 minutes a nurse had taken his pulse, blood pressure, blood sample, done an electro cardiogram, and laid out a file for the Doctor. She also said to tell your friend he is fine, there is no heart attack, just the altitude sickness. The doctor arrived a few minutes later, confirmed the diagnosis, and prescribed two hours of sleep under an oxygen mask.

There was not one thing more that could have been done in the most modern clinic in Australia. In fact they would probably have done a lot less because they would not have known what altitude sickness was. This **polyclinico** in Calama obviously

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has a budget that is several orders of magnitude lower than that available to even the worst emergency clinic in Australia. Yet, even with these limited resources, they had the very old place clean, efficient, and medically modern. They did not do anything wrong, and a lot of things right. They managed and administered the place by asking the central question, "What is the best thing to do for this patient this minute?" It is certainly a lesson that medical administrators in Australia could take to heart. There the ultramodern and sterile emergency waiting rooms are crowded with people, and they apparently have no means to treat anyone but the absolutely urgent cases. This is supposedly due to a shortage of staff and facilities. All of these are money problems, and the system has money problems because of the commitment to provide the best care to everyone. This highly technical level of care takes endless amounts of money doing endless tests that are done to avoid endless legal liability. There are huge insurance costs in our system as well. Maybe we would be better off with some 1950 clinics staffed with a few people that did basic emergency work under a policy of all care taken but no responsibility assumed. All citizens could then even take the same egalitarian risk! There was a huge amount of groaning from the cubicle next door, and Stew presumed that the man must have been having a heart attack. It turned out that he had a knife wound in his stomach, and was being stabilized for the transfer to the Codelco Hospital (The Roy Glover Hospital) at Chuquicamata. He walked to a waiting taxi in a few minutes!

I saw Stew safely under the oxygen mask, and slipped out to the entry cubicle to see what we needed to do. Since Stew was not a Chilean citizen, there would be charges. These amounted to about \$A95.00. This is in contrast to a single ambulance ride in Australia costing around \$A500.00. The pleasant bits came next. The taxi driver was still there, and took me back to the hotel. I asked him if he could return and wait for Stew, and offered him more money. He said he had plenty, and that it was his pleasure. Stewie arrived home on time, and looked a lot better, in fact quite good for a man who was going to die three hours ago! The driver had tried to give him some change!

Morning found us eating a "health" breakfast in the dining room and waiting for the representative from Cognis that was going to take us to El Tesoro, a copper leach mine about half way to Antofagasta. We delayed things by stopping to purchase some aspirin to thin the blood, and a lot of water, Most of Stewarts trouble had been traced to dehydration from the extreme dry desert air, and 2 days without sleep in a proper bed. Stewie was short on sleep, so he simply bundled up in the back seat of the crew cab Nissan pickup. These seem to be the Chilean equivalent of a Cadillac, and are everywhere.

Calama is even worse than I remember the place from 1962, the same old mud brick walls, and the legions of stray dogs, the garbage, and the general sense of disorder. New two story town houses, modern designs of the units built at El Salvador 50 years earlier, are built in endless repetition fringing Calama. This is the replacement for Chuquicamata that will eventually house all who are evicted from the old town in order to make room for more waste. The road south from Calama is still very familiar. The old Dupont Tronador plant is still there, once the largest explosives factory in the world. It still makes something, but our host knew nothing of it. He himself is an educated Chemical Engineer, and from Toconao, a small rustic Colla village some 60 km south of San Pedro de Atacama. This is a real change from my time. For any of these people to ever get access to higher education shows a huge

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change in the country, and that this huge change has been on for quite some time, not just in the past 10 years or so.

The old road southwest suddenly comes to a change in direction, and changes to a new and very modern road. Dead ahead lies the Spense Project of BHPB, a new copper leach mine that is scheduled to produce some 200,000 tonnes of copper per year. The road to Calama ran right over the top of it for most of one hundred years. People like my Dad had no idea what might have been there. It is also covered with many meters of alluvium transported in great alluvial sheets and mud slides from the now distant Andes.

The side of the old road is crowded with hundreds of monuments. Some of them are full blown shrines while others are a simple small stone collections a meter or so high. They all have several things in common. There is a lamp or something that looks like a light, to provide light for the soul of the departed, for these are the locations of fatal accidents. There is also a house for the soul, and often a grotto for Mary to live in as well. Many of them are kept up with fresh plastic flowers and the like by family, and others have not been looked at in 50 or more years. Most of them are right beside the road and capable of causing another fatal accident should a fast car strike them. I cannot imagine why the road safety authorities have left them there.

The road itself is busy. The main occupants seem to be single tri-axle trailer sulphuric acid trucks with something like 15m³ capacities. There are simply hundreds of them, and they travel in bunches of three or four. I wished I had a CB radio, because I am sure they would have had a lively conversation going. A number of very large trucks with massive pieces of machinery like 40 m³ shovel buckets came crawling by. The very biggest of these rated a *carabinero* escort, but most of them simply had a flashing light with no escort. The total absence of road trains is a real contrast to Australia, but the topography is a real contrast to Australia as well.

We turned off the road to go south to El Tesoro, and found ourselves on a much better class of road that was not paved. It is a salt road, where the local clay is mixed with 20-40% salt by weight, and this is then wetted and compacted, and formed as a plastic mass. It is allowed to dry. As long as it does not rain, these roads are great. El Tesoro came up, and we spent almost 45 minutes getting through the security. This is a feature of all mines all around the world today. However in Australia and North America older men who would no be too comfortable in a hard working position always man it. In Chile, the security people were much younger, very fit looking, and wore snappy and well fitted uniforms, some of them (Codelco in particular) cut to look a lot like a *carabinero* uniform.

The Plant Manager, Marco Murija, met us. He is a slim man in his early 40's, of middle height, with a pleasant, almost shy smile, who takes us to his office. Our guide has no English, and Marco let it be known that "hello" was about his limit, so it was over to me to get value out of the visit. I started by apologizing for my poor Spanish and got on with it. Marco is the very sort of man you would want looking after your mine, modest, well educated, fond of a good joke, and very capable of efficient management. We had spent a few minutes while waiting looking at the public schedule of his safety regimen, and even with the language barrier, it was obvious that we were looking at Worlds Best Practice Safety system. My heart absolutely sang to hear this man recount how they started the mine, overcame their many operational problems, and made it into a success. He is the product that some (but not all by a long shot) within the old Anaconda Company said could never exist, an educated Chilean that could and would run a mine. Yet here that man was in the very first senior

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management person that we met. It either had to be incredible luck or else a very common occurrence. He also had an original and deep insight into the technical detail that can only come from a good basic education in the Physical Sciences. I never had a right time to ask where he went to school, but it was certainly in Chile. This is the second example that we have met in one day that shows that good technical education has become available for the large mass of Chileans, not just a few.

The consensus amongst the many people that we spoke to over the next two weeks was regardless of how much people hated him; Augusto Pinochet had made a difference. Appointing Managers with politically correct qualifications like belonging to the Young Socialist League had wasted the first halting years of Codelco. After September 1971, it became recognized that Codelco was an opportunity to do something right, and technical education was opened up at many different universities for people of many different backgrounds. Pinochet cleaned out people in the universities who were there with a self appointed mission to teach correct political attitude and installed people that were interested in education and Chile going forward. Education, like the highways, power lines, subways, the economy, and almost every other improvement in modern Chile and its institutions stands as Augusto Pinochet's enduring monument. Other lesser people like Salvador Allende need to have their family home preserved as a monument so that there will be something to remember him by. The little he actually did for Chile was ruinous.

This brings up the political position of the elected Chilean government in the post-Pinochet years. It has always been a center left government that hated Pinochet, and the government has in recent years spent massive amounts of money trying to sully his name and reputation. Yet no charge from these government supported attempts to indict Pinochet has ever stuck. I did not talk to a single Chilean, from waiters, plant managers, people in stores, and service station attendant as examples, who did not praise Pinochet. Yet the anti-Pinochet people are in power with a narrow but very definite majority, some 52/48%. I can only assume that the parts of Chile that I saw were where people were doing things, and they saw life very differently than the city dwellers. In this, the place is very like both the USA and Australia. Look at a map of the USA on a county basis, and see where people lived who voted for Bush or Kerry in 2004. It is simply the cities against the rest of the country.

From El Tesoro, we went back to the Calama -Antofagasta road and went south to the Mantos Blanco turnoff and went to the coast road at Mejillones. From there we went north to the old Caleta of Michilla. I had been here with my Dad in 1959 to visit a small mine. There was an old flotation mill that ran with seawater located here, and the ruins of the mill are right where I remember them. We are going up to visit the new mine at Michilla, and this involves climbing a zigzag from sea level to around 2000 meters over about 15 km of road. A quick scan of the zigzag revealed at least 10 different acid tankers either going up or coming down. This was not quite as hair raising as the old zigzag at Potrerillos that went to the airport in 1955, but quite enough for flatland visitors from Australia! The village at Caleta Michilla looks about the same, ramshackle adobe and iron houses, with a scattering of small fishing boats, and about 30,000 tonnes of sulphuric acid storage capacity in three large tanks. The copper boom has had some effect here.

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View from the front gate at Minería Michilla there is 15 km of zigzag on the hillside

The mine turned out to be managed by one Horacio Bruna Orchard, obviously the son of Horacio Bruna Sampaio and his wife Alicia Orchard who both worked on the construction of El Salvador as joint Managers of the contracting firm of Orchard y Bruna. He was unfortunately away at Copiapo for the week, so I was unable to meet him.

We made a late return into Antofagasta. The huge number of stray dogs was simply amazing. Many of them were well bred animals, but they were obviously not cared for, thin, mangy, and many with obvious signs of old age hip breakdowns. I would have thought that the humane society would have a program to put stray animals down, but there does not seem to be anything in place. A decent public health system would act to control this dog population. We had reservations at the Hotel Raddison, which is right down on the south side of Antofagasta. I wondered why a new hotel had been built in this remote location far away from both downtown Antofagasta and the airport, and then realized that it was very close to Coloso, the port for the BHPB Escondida Mine. The lobby was absolutely swarming with the big boys of the international mining industry. I recognized the heads of both BHPB and Falconbridge in the dining room. I paused to remember how Charles Brinkerhoff, President of Anaconda half a century ago used to calmly polarize the lobby of the Antofagasta Hotel simply by his powerful presence. Brinky would have been right at home here tonight, tall, patrician, with a commanding countenance and aura that would have branded him as The Leader amongst the big fish in the big pond!

The lower elevation had revived Stewart, and he at least had some good color in his face. The fish on the menu (lenguado) certainly lived up to the old reputation for good seafood at Antofagasta. It was early to bed and early to rise. We are spending the morning at Mina Ivan, a small heap leach mine near Mantos Blanco. John Hunt, who was in the Geology Department at El Salvador for many years, discovered this mine as part of a private venture, and he is well known to the staff. Once again, we are made welcome and provided with all sorts of information. The people are uniformly polite and well educated, and are very genuine with their effort to help. We came back to Antofagasta for a late lunch, and are catching a plane to Copiapo. I once

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again got a seat on the correct (left hand) side so that I could have a good look at El Salvador and Potrerillos on the way by. All I saw was Salado and a bit of the Chañaral Batholith just to the east of Chañaral. Instead of landing at the old Copiapo airport, we landed at the very new and modern Aeropuerto Desierto de Atacama, which is much closer to Caldera than to Copiapo. We were to spend a night at the Hotel Bahia de Rocas in Bahia Inglesia, and it proved to be a most comfortable hotel.



Aeropuerto Desierto de Atacama, inside main Terminal

I got a real pleasant surprise at Bahia Inglesia. I was unable to use my cell phone (no credit), so I went down on to the waterfront to use a public phone to call Helga. I spoke to her; rather loudly it seems, for a short while until my phone card ran out. I turned to walk away, and a quite old man stepped up and asked if I was Frank Trask. A name was proffered, and a possible distant memory of a Julio that used to work as a sampler in the El Salvador Mine came back.

He said that I looked quite close to what I did at 20, and for this I must say I am grateful. He has ignored sparse white hair amongst many other things, but his recognition of me is overwhelming. Here at a remote coastal resort that is almost deserted due to it being the off season it had to be a very long chance. He is retired, and I could not figure out if it was Caldera or Copiapo where he had retired. I was soon being regaled with phone calls over his mobile from people who I could not remember at all. One of them was to Mary Trench in Barquito, whom I could at least remember the name of.

I managed to escape from the small restaurant that I had ended up in with Julio and back to the Hotel. We had a busy day planned for tomorrow, visiting the mine and leaching operation at Mantosverde. Again, I had visited this place in the past with my Dad. The two of us, accompanied by Ferd Liebenow had gone to Vallenar on a Friday afternoon to go dove hunting on the estacion of Guillermo Fonk, who was a prominent mine timber and firewood supplier to Andes Copper. After a pleasant Saturday spent shooting, attending an *asado* for lunch and a formal dinner party, we had gone back through Copiapo, and had taken the then new (and unpaved) Pan

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American Highway north from Caldera towards Caleta Flamenco. From here, we took an old wagon road (the road left the coast about 15 km south of Barquito) up the Quebrada to the deposit. There had been a lot of old mining done on small high-grade oxide veins, and the deposit had been investigated once as a possible replacement for Potrerillos. Dad had never been to the place before, but quickly formed an opinion that it might be big, but it was low grade and a long ways down to any sulphides that Andes might be interested in. We climbed a prominent hill, got a good look around and bounded down the hill to try and catch the afternoon tide at Flamenco. Ferd was waiting in the truck with his wooden leg and very little patience since he wanted to go fishing. And fish we did, with 3 very nice **lenguados** being caught right on the top of the tide. When the tide turned, that was the end of the fishing.

The ride up the coast on the "new" Pan-American Highway in 2006 was a long anticipated drive. Each little bay seemed familiar, and when we finally got to the turnoff at Playa Flamenco, the color and forms of the hills and sparse vegetation became just right. A great homesickness for the Atacama and all of its glorious topography welled up within me. Every fiber in my body called out that this was home, the place where I belonged, and had at last returned to. R.L. Stevenson's immortal lines of "Home is the hunter, home from the hill, and the sailor, home from the sea" came to mind. I was borne along within an almost surreal suspension that was brought to an abrupt end by a mine inspection.

The mine is controlled by Anglo-American, and while managed by Chileans, was obviously under Executive Direction of the parent company. The people here did not seem as independent or even as well educated as the people that we had met at the first three places. There was a lot of open scoffing and ridicule of whoever the Manager was from his employees who were a long way down the pecking order from him. I would not stand for a manager being ignorant or tolerant of this and can only imagine that the scoffers are protected by "the system" that works at many mines. Driving to the top of a hill where there was a lookout completed the visit. I discovered that this was the very hill that Dad and I had climbed in 1962. You could look far to the east and just catch the tops of Cerro Hueso, and Cerro Bravo Alto, both behind Potrerillos, and the slight tip of Vicuña, which is to the west of Potrerillos. To the north you could see the valley of the Rio Salado, and also the village of Salado. The perpetual cloud over the mountains to the north side of Chañaral Bay was also there to be seen. Unfortunately our host had to catch a plane from Aeropuerto del Desierto Atacama in a few hours, and we were not going home via Chañaral.

We did stop at El Barco, a small Casa Posada at Balneario Obispito. Here we got to see what Chilean copper miners did for a beach side house, which on an average is not much. There were some nice places there as well, and I was surprised to hear that many people from Potrerillos and El Salvador had built weekenders there in the late 1960 era. El Barco looked like a poor hope for much of a meal, but our host insisted that this was the best. The lunch was one of the finest I have had in years, a fine crab salad and grilled fish that you would die for. I did not recognize the name of the fish, and still cannot remember it, but it came from deeper water, and was not one that people fished for in my youth. From there we drove to the airport and picked up our own rental car. The plan was for Stewart and I to drive to La Serena on Saturday and have two rest days. We would then visit the Andacollo mine on Monday, and he would return to Santiago on Monday night and fly to Sydney. Stewie was still unwell and had a sharp pain in his chest. Once back in Australia, this was traced to a pulled muscle on his sternum, but when you think you have had a heart attack, you think you have had

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one! Stew got on the phone and changed his reservation out of Chile to Sunday night, the best he could do.

I was to meet my brother Paul in La Serena on Sunday afternoon. Stew and I drove from Bahia Inglesa to La Serena on the Saturday morning and checked into a nice hotel, the Costa Brava. This turned out to be an excellent choice with fine service and nice meals. We enjoyed the waterfront at La Serena; drove over to Coquimbo and saw all the markets, the lot. It was very mild but windy. This was our first day off in 2 weeks of traveling, which had started out for me going from Perth to Hong Kong, San Francisco, Reno, Toronto, and then to Chile. I dropped Stewart off at the La Serena airport at 4PM on Sunday afternoon, which left him plenty of time to make the connection with the 11:30 PM flight to Sydney. This Sydney-Santiago flight is a real surprise. It started out 2 years ago with a single weekly A340 from LAN doing the flight in partnership with Qantas. In two years it has grown to 6 flights a week and they are all crowded.



The fish Market at Coquimbo, the large lenguado is almost 1 meter long!

On my return to the hotel, I found Paul sitting in the bar experimenting with his first Pisco Sour. We had a happy reunion, and went into the dining room for an early supper. I looked up and saw a man enter and nudged Paul. I told him that if I did not know better, that the man who just walked in had worked with me at the WA School of Mines in Kalgoorlie. He looked right at me, and I did not get any recognition, so I assumed that it might not be Ernesto Villescusa, the Prof. of Rock Mechanics. As it so often happens in things like this, Ernesto was sitting at the next table wondering what Frank Trask would be doing in La Serena. When he heard me laugh he stood up and joined us for dinner. I guess I was getting pretty casual about being recognized in Chile. An hour later a man came up and asked if I was Frank Trask, and I was tempted to say no. Thankfully it turned out to be Eliado Rojas who was the Cognis Companies representatives that was going to be taking us to Andacollo the next day.

Ernesto was in Chile in his official capacity as Professor of Rock Mechanics and, after an extensive tour of a number of mine sites was in La Serena to teach a special course in Rock Mechanics for a two-week period. This cooperation between the WA

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School of Mines (WASM) and various Universities in Chile has been a great success story. The Mineral Economics Department at WASM has over 100 students in Chile, most of them middle to high-ranking executives in the big companies. CODELCO is strongly represented amongst these students. According to all of the men that have gone over to Chile from WASM to teach, they are able students who arrive prepared. They also have a much better grasp of the Physical Sciences and Mathematics than Australian students do. This is not surprising. The Teachers Unions have been dictating the course of Australian Secondary Education for several generations now, and they have dumbed the courses down to the point where all we get at University level is immature, unprepared students that expect to be told they are brilliant and when they are not told that they get upset! I am glad to be done with my teaching. I am all for Teachers Unions, but people should recognize that these organizations exist to get better pay and work conditions for their members, not better education for the public. This is something like expecting a bank to give you extra interest when it in fact is there to derive a profit for its shareholder's. It ain't gonna happen! The unions do, however, represent a large and virtually guaranteed supply of votes to the left side of politics, and this leverage allows them to dictate to the State governments what they want. In Australia this means less work for teachers, smaller classes, more members, and higher but equal pay for all. Membership also seems to oblige the teachers to espouse political propaganda in place of good education. And make no mistake; good education is much harder working than mediocre education. After the defeat of the left in the last Federal election in Australia, the head of the National Teachers Union berated her members for failing to properly educate the masses. Her claim was that only ignorant and uneducated people would vote on the other side of politics. This is a very good way of getting voters mad at you. Supporters of Mr. Kerry and Mr. Gore have made the same mistake. Intelligent people do not like being told that they are ignorant, and in a democracy are quite capable of voting the way they want to!

It would seem as though what I have been observing casually about the improved availability of education in Chile has been confirmed by the experience of a number of my former colleagues at WASM.

The trip to Andacollo the next morning was again a visit to place where I had been with my Dad many years ago. (When the copper boom started I should have just gone and pegged all the old places we had visited.) We had gone down there in 1956 for a quick look and Dad spent lots of time there for many years trying to make this obviously huge porphyry system into a mine of the caliber that copper companies of that era wanted. Minimum grades in the supergene zone had to be in the order of 1.2-1.5% Cu. Andacollo never came up to anything better than 0.7%.

Dad had a near miss in a car accident at El Tofo in 1957 when he and Blaine Wiseman were driving past an iron ore truck while driving from Andacollo to Potrerillos. An oncoming truck came out of the dust and ran right over the hood (bonnet to Australians) of the car. They escaped with only a floating rib and a few scratches, but the car was a write off. Again in 1978 he was there with Anaconda for an intense look. He caught typhoid eating a hamburger in La Serena, and lost his good health for life.

I was surprised when we came to the place. There are now two different mining companies operating separate pits on the same deposit. Both are leaching what was regarded as very low grade copper, and would still be very low grade copper if the price went back to what it was.

The copper price has, for almost all of the 20th century gone down in terms of economic exchange. This has also been true of almost every other commodity. Plot the

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price per pound, barrel, tonne, etc. of any natural resource over the whole century and then plot the ratio of that price against some measure like average weekly wages, the cost of cars, the cost of a house, almost anything. In terms of this measure, the pounds of copper that you could buy with a weekly wage has always gone up, hence the real price in un-inflated money has gone down. This trend has been made painfully aware to the owners of the vast oil reserves of the Middle East. These reserves were and still are valueless without a civilization to consume them. That civilization has been North America, Japan and Europe, and these countries have pursued economic policies that have inflated their money and made it worth less. Imagine the joy at the Royal House of Saudi when they finally realized that oil at \$0.50 in 1950 was a better deal than oil at \$30.00 in 2000. In normal commercial terms this is cheating. The people that are running (and own) mining companies also do poorly. They have a fixed resource that the shareholders get less and less of. It seemed at one time that capitalism might run all of the resources into the ground by devaluation. Then all of a sudden economics changed, and the true price of almost all commodities has risen to the point where one can say that they have really gotten to a higher (but still modest) true price. Governments are caught in the middle of this. Most governments derive income from mining, one source is royalty and the other is tax on profit. High values make for good streams of income from both of these sources, but they also make the cost of infrastructure much more expensive. In Australia there has been a tendency to collect the money at least on the State level, and forget about infrastructure.

One of the important things that I have seen over the past few days is that infrastructure is being built all over Chile. The huge power lines (SING, an acronym for *Systemas Intergrado Norte Grande*) and water lines that extend the whole length of the Norte are expensive, and they have been put in using some high proportion of national spending. They also make the opening of new mines easier for new investors, something that will carry prosperity forward for a long time. I also have seen at least 4 new bulk shipping ports being built to ship out iron ore. (Contrast this to Western Australia, the greatest exporter of iron ore in the world. The whole of the coast of the state is now taken up with Nature Reserves, and it is virtually impossible to build a new bulk loader excepting in the existing ports) Most people do not think of Chile as an iron ore exporter, but in fact it has a myriad of unusual hydrothermal iron deposits spread up and down the Coast Ranges. These invariably seem to be funded by Japanese steel mills, and numerous signs pointing up a dirt track to "Mina Japonesa" attest to the high activity that is going on here.

At any rate back in Andacollo, the very large church of Carmen de Andacollo has not substantially changed since I saw it 1956. Neither has the town, which is still run down and fly blown, full of stray dogs and absolutely overwhelmed by myriad small piles of old mill tailings that generate dust in the wind. One of the problems of years ago was to effect the amalgamation of all of the old small *pertenecias* (claims) into a single entity. These numerous environment problems are some of the tribulations left because it was not done a century ago. There is some hope. The best grapes that I saw on the whole trip were being grown on the side of an old mine dump, basically in clay rich rock. Add water, and pride maketh the desert bloom.

The mine visit was of particular interest. It is owned by a Canadian Company, and they expected more work from their people. In return for this they apparently gave more pay, and allowed the workers the luxury of living in La Serena, being transported by company expense. The invariable shift routine for all seems to be 4 days of 12 hours on, and 4 days off. The highways everywhere are filled with Executive Class Bus fleets. These have really comfortable seating that would rival

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what one finds in a good Business Class airline seat. The people at El Salvador and Potrerillos for example, have become very mobile, and many prefer to live in Copiapo, Vallenar, or even La Serena. The last is a 6-7 hour trip, and easy to take if you are actually asleep in a comfortable machine.

Paul and I went back to La Serena with Eliado, had lunch at a nice seafood restaurant, and headed north. We are unusual (half) brothers. Paul was just 2 ¾ years old when I left El Salvador in 1962, and I did not see or meet him again until 1989. Then I visited him and his wife for a day in Dallas, Texas. Again on a business trip in 1992 I saw him for a few hours in San Francisco. Finally in 1994 we were able to spend 2 weeks together at Deer Lodge, Montana and start to get to know each other. In 1997 we spent a few days together at our Dad's Memorial service at Deer Lodge. In 2004, his son Mike was going through a hard time, so Helga and I had him out to live with us in Australia for a school term. Paul came out at the end of the term and we spent a short week on a trip into the outback. During that trip we promised each other that if one of us could make it to Chile, the other would join him. This had now happened.

One of the wonders of the open road in Chile is the number of Casas Posadas. How they can all survive is the wonder. From La Serena to Copiapo they are staged about as often as you would need them if you were on horseback, not driving a modern automobile. Almost all of them are ramshackle little things that sell various bottles of water, soda pop and occasionally dried staples and even petrol. They also offer sandwiches and empanadas. The latter have been one of my few disappointments about Chile. When Stew and I were in La Serena we went on a tour of downtown cafes that looked quite middle class in search of a Chilean Empanada. It was not successful, and after 2 weeks in the country I left without tasting one. Empanadas as such were easy to get, but they were a pre-made pastry triangle filled with low quality whey cheese or the like, stored frozen and deep fried and nothing like the original hand made pie of my youth. The labor cost of making a real one simply does not fit into the middle to lower class price budget. These pre-made bits are about like bar snacks the world over, great if you are hungry for anything, I mean anything, but not much chop. This was the culinary disappointment of the trip.

Back to Casa Posada's. They all had a name which often was that of famous old mines located fairly close by. The road is in fact the same old road that we used to take before it was paved, and except for a few new rock cuts it is the original wagon track to the Grande Norte from around 1830 or 1840. Certainly the places are so close to one another that this could be the only explanation. The historical names are also a good hint. The people in most of these places are worn down from time, weather, and probably lack of cash and look uniformly dusty and downtrodden. But when you speak to them you get a cheeky and cheerful answer. Optimism is a stock of trade for the Casa Posada owner of El Grande Norte. They will all tell you of the great new prospecting finds, just over the hill that are going to bring prosperity to the old place. There were some that were very prosperous, and these ones always had a large number of trucks stopped in front of them. They were fixed up much better, offered rooms, showers and quite good meals. The owners of these did not look quite so time worn, and are among the many winners from the new capitalism that infects much of Chile.

Many of the truck drivers, who are owner-drivers, quite fancy themselves as Knights of the Open Road. They usually have a female co-driver, and these gals get in and do their share of everything, including living rough when they have to. They are introduced casually as "La Senora" as a drawling outback Aussie might introduce "Th Missus". I can only hope that the gals are really partners in the obviously profitable

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trucking business. The road north to from La Serena to as far north as Copiapo is filled with trucks that deliver goods to the mines, buses moving mining crews around, and trucks with ISO container trailers that are rushing packed fruit to the Santiago airport. There are also signs outside even the smallest of villages admonishing the buses not to empty waste. I presumed this meant not flushing the toilet. Following an executive bus soon proved to be a hazard to your windscreen amongst other things! Pass them quickly! Outside Vallenar and Copiapo there are huge fruit packing sheds with the most modern equipment to do anything. The export dollar in the middle of the northern winter is the Holy Grail of these people.

With this huge industry cranking away, I was surprised to see almost all of the fields beside the highway between Copiapo and Bahia Inglesia brown and disused. The simple answer is that the owners have sold their water rights to a mining company, and it is more profitable than struggling a living from the ground.

We were planning to stay at the nice hotel at Bahia Inglesia, but a quick phone call revealed that they were booked out. Less than 4 days before Stew and I had been the only guests on a Thursday and Friday night, so it looks like the season has started. We went into Copiapo and spotted the Hotel Miramonte as looking good, and being right on the corner of the highway. It was good quality, with a fair rate and an excellent table. There was a statue in a park in front of the hotel dedicated to "Los Mineros Atacameños", The Atacaman Miners, showing him with a leather back pack for carrying ore, and a pick. His outstretched hand held an empty beer bottle, just like mining statues do in the USA and Australia. I noted it was not far from the Copiapo School of Mines. The students from the Montana School of Mines often put a beer bottle in the hand of Marcus Daly, whose statue survey's Butte from West Park Street.

Anyone who had driven around Chile 40 or more years ago will remember the police force or the *carabineros*. They had a large number of check points, and all drivers were expected to stop and show *cedulas*, driver licenses and the like at every one. I had gone through a goodly number of these this trip, and the man in attendance had never signaled that we should go into the inspection lane. We were driving out of Copiapo the next morning, and seeing the post, I casually wondered aloud how they picked which ones to stop. Paul was driving and found out how. The use a radar speed detector and anyone going over the speed limit gets pulled over and either ticketed or spoken to. Paul showed them a Washington State License, and they let him go with a stern warning that speed limit was exactly that, a limit, and not a suggestion!

An early morning start got us on the road to Barquito, and we sped through quickly. We stopped to look at an unusual outcrop of orbicular granite. This is one of the best exposures in the world of this enigmatic stone, and I took a huge number of pictures to give to my former colleagues in the teaching industry.

The entry into Barquito marked one of the moments of great emotional expectation in my life. I was quite emotional at seeing the exact old places that I had known so intimately as a boy, houses we had stayed in, and houses where people we knew had lived. Once I realized what was being done, I lost some of my emotion. The place is simply being left to fall apart, with no maintenance, no paint, no nothing. The beautiful gardens and hedges have been grubbed out or left to die. We saw almost no one, although the houses were obviously occupied. A friendly dog took us on a tour from B Row to A row, but with no snacks forthcoming, he went home again. Our walk led us from the Old Rancho, past the hospital, up the path to the Gerencia, and then around the corner to the house where the Woodroffe family lived. All of these houses are occupied, and are in need of very substantial maintenance if they are going to survive to be 100 years old. This milestone is only 6 to 10 years away for the older

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ones. At any rate, wandering around the side of the hill each house reminded me of some one who lived there or stayed there during a vacation, and it was very nostalgic. We finally came to the east side of the hospital, beside one of the old camarotes where the single younger men who worked on the lighters lived in the 1950 era. The sign over the back door listed the conditions of living in the place, and was officially signed by CP Love as head of *Bienestar, Andes Copper Mining Co., 1949*. I remember the exact same sign being there in 1956, so you can see that not much other than falling apart has gone on in this section of Barquito. It would seem that rules about the use of alcohol and the entry of females must still be the same!



A friendly dog as tour guide, Barquito, 2006, looking ahead at old Hospital, Camarotes beyond it, and Duplex B1 and B2 (Red and white roofs on left). Paul Trask in foreground. A good view of the top of a granite batholith.

There was a young man walking into the old Hospital building when we came by. I spoke to him and asked him if it was still a hospital or not. His reply was that his mother lived in one of two apartments that had been made out of the old building, and when she died, the ownership of the building would be resumed by the Municipality of Chañaral. He seemed a bit taken aback when I informed him that the outbuilding that they were using for a kitchen had been the morgue in 1956. On the plus side, the two venerable fig trees on the grounds were still there, and held every promise of a good crop. I was too late in the year to see if Mr. Peake's freesias were still blooming all over the place.

One of my favorite memories of Barquito was the smell of the cedar hedges beside the Gerencia. They are there no more, and I found out why. Fifty years is a long time in the life of a cedar hedge, and they have simply grown to the point where they had to go. There was one plant left, and it was more like a tree than a hedge. I was unable to get to my old favorite haunts around Barquito, the pier, the lighter repair slips, the power house, and the associated industrial gear. All of this is, in the style of modern safety regimens, locked away from the public. How do they expect eager young fellows to learn all about how these places operate in the future? The lighters (*maulinas*) are all gone, and there is a landing available on the shore where

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ships of some capacity seem to be able to tie right up, and everything looks like it is not used too much. There are three huge fuel tanks halfway around the bay on the way to Chañaral. These belong to Mantos Verde, and are set up to transfer diesel either by rail or truck to Salado and thence on to the mine. The Ferrocarril de Potrerillos does not seem to operate to Barquito any more, with many of the venerable freight cars; flats, etc sitting rusting on a siding. The powerhouse has been gutted for scrap, and is an empty shell. There are no wires on the HT towers that once headed to Potrerillos, even though the pylons look in good shape. There is some rust on them, but nothing that I could see that would preclude their use. Cheaper power is being made elsewhere, and that is the end of it. Barquito could have had a future as a coal burning powerhouse, but there is simply no room for the very large stock yards that are needed to hold the inventory of coal. Aruba crude oil was so cheap in the 1930 era when the decision was made; burning coal was not even an option. Standing here nearly 80 years later at the start of the last half of the Age of Oil, things look very different. I do not even think that any copper is shipped from Barquito any more.

There was a large oil tanker in the harbor, and its lines had just been handled by a very large and modern looking tug. A careful look around the harbor finally brought into sight the old Potrerillos, once the biggest tug in the place.



MV Potrerillos, Barquito Harbor, 2006

It was sitting on a mooring, looking quite small and forlorn with a piece of canvas cast over its superstructure to keep the worst of the bird guano damage at bay. The other workboats, the Barquito, the Andes, and the Colusa (actually a Grace Line tug) were not to be seen. Presumably they have either been worn out or have been sold on to new lives. They were all good quality steel hulls with very good quality post-war GM Diesel engines.

My favorite fishing point is now an iron ore terminal. This is not a shock, since I actually saw the first of the iron ore being shipped in 1962. Continuing on to Chañaral, we went past what was the fishing port or Caleta, and were unable to find a parking spot. The start of the old Malecon is now totally gone under tailings. The new highway veers to the north and quickly takes you out of town, and we had to take a turnoff to

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even see Old Chañaral. I remembered almost nothing as being the same, but that is impossible. I did not see where anything could have been identified as changed or new, so there the place is, erased from what has been shown to be a pretty good memory. The church and small Plaza de Armas around it were at least familiar. We had a mediocre late lunch at a very cheap price in a small restaurant that had a busy clientele. It was more of a bar than restaurant, and I am sure that if we had ordered pisco sours instead we would have been more impressed. I remembered Mr. Libenow saying that Chañaral was the sexiest town in the world, that if the termites ever quit making love the place would fall down!



Valley of the Rio Sal, 10 Km. east of Chañaral, full of wind blown sand from tailings.

Leaving Chañaral, nothing is really familiar compared to the 1955-62 view. The whole valley is full of sand that was not there many years ago. This is due to the much greater tonnage of tailings that has been drained into Chañaral Bay over the years between 1959 when El Salvador got started and 1986 when Codelco finally got over the legal troubles and were able to use the tailings dam at El Salvador that had originally been planned. Much of the edge of the great outcrop of the Chañaral Granite that stood proud along the banks of the Rio Sal has been covered in wind drifted sand. A quick look with a hand lens showed this very angular sand to be derived from fresh ground tailings. I will not go into the sad detail of these tailings being dumped into the bay. Broadly, Potrerillos had run out of economic tailings space somewhere in the late 1940 era, and they were allowed to dump into the bay in an effort to keep a struggling mine alive. It made a mess, but not one that was going to be irreversible. The legal proceedings that kept Andes from using their new tailings dam at El Salvador in 1959 really set the potential disaster course for Chañaral. The beach is now extended several thousand meters ocean ward from where it was in 1956. Worse, it is almost certainly in the form of a perched deltaic foreset bed under the depth of wave action, and a violent earthquake or tsunami could collapse the lot into the Humboldt Deep as a turbidity current. The new highway and a goodly portion of the new town of Chañaral will also go into the ocean if this happens. I will write a letter to the Municipality and air my fears in due course. As well as this the coarse wave sorted beach material has a significant load of sulphides that are oxidizing in the surf and

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spreading acid and heavy metals throughout the fish in the immediate region. Chañaral looks run down, and this is probably the reason why!

Once past the Pan-American turnoff to the north, the road, although paved begins to follow a very familiar course. Salado comes up into view, and is both much worse and much better than before. Again, the tailings have caused a great deal of wind borne pollution. Many of the old shacks are still there, but there are some new. The old ENAMI Mill is gone without a trace, and the main function of the town seems to be to serve as a turnoff to Mantosverde.

Diego de Almagro comes into view, and it is certainly recognizable as Pueblo Hundido! The old train from north to south does not seem to run anymore, but as with a number of railways in Chile, I find that the state of the track does not really mean anything. I saw some section of the FCAB near Antofagasta that I assumed were abandoned, only to see a train going by in a few minutes. Paul and I stopped here and covered up a few oversights. Firstly, we had come to Chile without hats, something almost unimaginable. This was quickly cured at a small tienda. I then spent about a half hour trying to find Miguel Cortez, a former student of mine from Kalgoorlie. Miguel had originally been born in Poterillos, and later lived in El Salvador. His parents had migrated to Australia, and Miguel had ended up doing a Geology Degree at WASM. He went to Chile to visit relatives and found work with a Canadian exploration company at Pueblo Hundido. I did not have an address, but assumed that in a small place like this a general inquiry would lead to him in minutes. I drew a complete blank. There are so many foreign exploration outfits working in the area that no one seems to know who is who. This is certainly a departure from a sleepier time when everyone knew what was happening. Diego de Almagro is trying to get to be something more than the rail stop on the way to Potrerillos. It was the "hell hole" for the miners to blow off steam in the early days when Potrerillos was a dry camp, and this reputation is hard to wear off. The old name of Pueblo Hundido or "Sunken Village" seemed to be a little too accurate for a town which had brothels and bars as its main industry and the town elders desired another name. Here is an old newspaper report of Pueblo Hundido:

In October 1919, El Progreso, a local newspaper, reported a violent incident in Pueblo Hundido, a small town located in Chañaral, Chile. The fight started when Guillermo Cambell, owner of a well-known brothel, asked an employee of Andes Copper Company to pay. The argument escalated into a massive brawl, more than 20 people described as drunk were involved, the police interfered and the Andes Copper employee was taken to the company hospital in Potrerillos.¹ In the following two decades, the local

Sergio Chavez tells me that even the effort to change the name has ended sadly. The residents voted to change the name of the town to Diego de Almira. He was an upright local man who had been a prospector, and known for his discoveries in the area. The name was sent in to some committee who decided that the people really meant to honor one Diego de Almagro, one of the original Spanish Conquistadors. This man was known as a particularly cruel and money hungry so and so. His claim to fame was to behead lagging Indian slaves that were being moved in harnessed coffles. It was simply easier to behead them to remove the harness than it was to remove the harness from a live man. A poor start for a new name!

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New Seventh Day Adventist Church, Diego del Almagro

The road from Diego del Almagro to Llanta is a post El Salvador road, and goes right beside the railway up the valley of the Rio Sal. The sides of the valley are Tertiary conglomerates that form most of the valley sides up to Potrerillos. There is a stretch between Llanta and Encanche where the rail leaves the Rio Sal and enters Quebrada Pasto Cerrado and here the walls are composed of igneous bedrock. The conglomerates are the relic of a former time when there was a lot of rainfall, and they are a portion of a huge clastic wedge or braided stream valley. The near flat peneplain opposite Potrerillos shows the near un-eroded surface of this past time. About two thirds of the way up the side of the formation is a bed of pumice, indicating a former volcanic ash flow. This is volcanic ash that has been laid down as the result of a large and violent volcanic explosion. One can see a massive outcrop of this bed on the road to La Ola as you descend into the intermountain valley that contains Salar de Pedernales. The same formation is easily seen about two thirds of the way up the north side of Pasto Cerrado below the old airport. It is continuous for over 45 km, getting thinner and thinner to the west, until it either disappears, or has not been exposed by erosion. An examination of the base of this formation in one place showed significant gouging and mixing with the sediments over the lower 10-20 cm. This is a sure sign of an ignimbrite, or glowing ash flow. The most famous of these in history was the eruption of Vesuvius which buried Pompeii, and Pliny the Elder lost his life recording it. The massive ignimbrite from Mt St Helens in 1980 exceeded the speed of sound for most of its 40 km journey down a river valley. This particular formation is probably from the volcanic cone to the south of Doña Inez, which has been partially destroyed by collapse or explosion, or a combination of the two.

Llanta was the next stop. The work train from the old F de P was still parked on the same siding beside the engine house. The rescue crane or "elephant's trunk", an old steam powered Baldwin from around 1920 was still there, but looks like it has been modernized with either electric driven or direct hydraulics and was diesel powered. The rail Gerencia was also there with the same palm trees. I could almost see Guilford Hamilton and his wife still sitting on the porch sipping lemonade. His son Ronny might still be, but we did not stop to enquire. Beside the road is a very large Pentecostal Chapel. Ronny went back to the USA to theology school in 1957 and returned as a

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Pastor. He worked among the local population for many years and I suspect that this church is his legacy in the area. There were several new Protestant Chapels in Diego de Almagro, a new Kindergarten (supported by Rotary and Jim Feeney) as well as a Seventh Day Adventist Church.

The roads to Potrerillos have changed radically since my youth. The old way to Potrerillos was to go south from Pueblo Hundido for a few kilometers, and then the road to Potrerillos went off on top of the south side of the Quebrada. This line was followed to the point where it intersected the Camino Inca. The main road then turned south to Inca del Oro and Copiapo, and the north fork went down the side of the **Quebrada** at a place called **Caballo Muerto** or sometimes called **Topon Azul**. . This grade came out on the floor just below the gulch that led upstream to Agua Dulce. The modern road simply goes up the bottom of the **Quebrada** alongside the railroad which it crosses many times. It is quite wide to allow acid trucks to use it to cart sulphuric acid from Potrerillos to Mantos Verde.

The addition of the road to the bottom of Quebrada Pasto Cerrado has only been made possible by the closing of the flotation mill at Potrerillos in 1959. Before this there was just room for the flowing creek and the railroad, which was constantly being eaten at by erosion. Thus, this part of the trip is all new. I was really eager to see if I could identify any of the scenes. I had a flashback to September 1955 when I first did this trip, and saw the ever-higher canyon walls with their fabulous array of colors, ranging from scarlet to yellows to greens. What I saw this day was much more muted in color, but the scenes were very familiar. (I think that they are called cataracts when they get worse.) I really wanted to see Punta Negro, a small stone shack upstream from the point where the Rio Sal runs into Pasto Cerrado, just before the crossing loop at Encanche. This shack was the scene of a short story that I had written some 10 years ago, and a photo of the relic would add a completion to it. Alas, diligent searching failed to reveal the house. I found Punta Negro and was able to ascertain that the new road occupies the position of the old stone house.



Punta Negro where Ted Clements had dog milk in his tea!

The road is difficult to drive, as there are dozens of rail crossings, all requiring a stop. Chilean drivers seem to obey the rule to stop at rail crossings quite well. They just

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have to learn about passing on hilltops and curves, and the monument builders will then be out of business! Encanche shows up, with the derelict buildings from the 1920 era looking even more derelict if that is possible. Posters from the recent presidential election plaster the building. All of a sudden we arrive at the outlet of Agua Dulce, and there is a good modern road disappearing up the gulch. A number of acid trucks were pulled over and the drivers are either sleeping in the cabs or gathered around a small picnic area where they seemed to be sharing a late lunch. We were late, and did not stop. I do not know if the road goes up the gulch to the new camp, but suspect that it does. We came to the point where the road split off to the right to go "up the hill" to Potrerillos, and there is a substantial lake on the valley floor where El Jardin used to be. There is a constant flow of water down the gulch that used to carry septic sewerage from Potrerillos. I was assured later that this was a natural flow. The old road up the south side of Pasto Cerrado to Potrerillos follows exactly the same route as in past times, with no change other than it has been widened from a very narrow single lane road to a quite substantial two lane road. It is salt stabilized, and quite capable of taking the many acid tankers that constantly go up and down. Standing at the bottom of the Quebrada, one gets an extraordinary sense of the timelessness of the place. The roads are wider, there is a lake where El Jardin used to be, but the same roads go to the same places, only somewhat improved.

The "Potrerillos Erosion Pattern" is what all poorly cemented alluvial sediments weather to. The distinct vertical and then curved striations of the erosion patterns are not commonly seen in the huge dimensions observed around Potrerillos, and are almost a signature of Potrerillos. This has been caused by the weathering of the great Tertiary clastic wedge that was emplaced by the weathering of the Andes. With the major uplifting from Oligocene time onward, the sediment has been systematically redistributed into the central valley and even the ocean by erosion. There are very few places in the world where these unstable sediments are exposed quite like they are on the side of Pasto Cerrado.

All of the mistakes of the early El Salvador development are still there to be seen. The current road up the south side was only built in 1957. The old zigzag was further to the east, and has at least 5 switchbacks on it. One had to, in 1955, reverse twice to get around each corner. This road is still clearly there, but has been partly filled in with eroded material from the slopes above. The new (1956) railway grade from Montandon Siding to the west (this was to go to El Salvador) going up the north side of the Quebrada to a tunnel entrance is still there, uncompleted and abandoned after 6 months work, and also partly filled in. Even the abandoned conveyor grade up the south side is still there. Looking at these works reminds me strongly of Mud Couse and his assistants, Sr. Raphael Varleta and Sergio Chavez. They formed the Engineering Office at Potrerillos, and were responsible for all sorts of work around the area. Mud came out of the rail industry in Pennsylvania, and went to Potrerillos some time in the 1930 era. He was a self taught engineer who really knew his stuff. (He became a Registered Engineer in Chile by examination, no mean feat.) I can remember the rail grade to Indio Muerto starting in February, 1956. These engineers had faith in their real ability to do things. The grade was started using hand labor at about 6-8 different places up the side of the Quebrada. The routine was to use pick and shovel to load into wheel barrows and dump the waste over the side. Since the slope of the valley wall was very near the angle of repose of the loose stone, one had to be very careful where this material was dumped so it would not cover the railroad below in time. All of these little diggings that were started soon began to work towards each other, and it was apparent that were going to meet on grade perfectly. Then all was stopped

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around June 1956. The ore reserve position at what was then Indio Muerto had improved to the point that the old plans to get the ore to Potrerillos were abandoned. The perfectly aligned start to the railroad stands as an eternal tribute to Mud Couse and his men. If you are not impressed, I can only admonish you to try doing it! It was not easy in the pre-laser days.

There is now a whole series of new roads on the Potrerillos side that have been apparently put in to explore the limestone bed to the east of Potrerillos. One can see where this bed has been progressively mined further and further from the smelter to get at much needed flux.

Looking east up Pasto Cerrado, one can just see the angular slope of Sifon Bajo, and the curve of the railroad as it begins its heroic climb into Potrerillos. George Montandon was the great engineer that made the feat possible. In this modern day and age we seldom stop and recollect that efficient and reliable automobiles and trucks have not really been around that long. To start to exploit Potrerillos in 1919, it was essential to build a railroad. Once the railroad was in, and it had been proven that one could haul heavy loads into the place with ordinary equipment, the decision to go ahead was made. Looking up "the hill", I recall Ferd Libenow telling me that Chevrolet had not made a car that could climb from El Jardin to Potrerillos with a tail wind without boiling until 1955. I also recall many older men telling me of George Montandon, a most extraordinary man, a man amongst men and a gentleman. He could squat around a campfire with his workers grilling a piece of meat on a shovel in the morning, and dine in formal clothes that evening. He was equally at home with both situations. This remarkable Anglo-Chilean was the man to tame the Andes, and Anaconda had firmly made their plans around him being the senior Executive in Chile. His brilliant life was brought to a tragic end in a construction accident. There was (and hopefully still is) a heartfelt monument at the Potrerillos Rail Station dedicated to his memory. The local Masonic Lodge retained his name as do numerous streets in Chilean towns, many topographic points, and at least one rail siding. Looking up at his challenge from the valley floor, I can only say that with a hundred years of new engineering experience in the world, the project would still be daunting. The topography was and still is overwhelming. **Vale George Montandon!** If you wish to see his true monument, look around you!

Enough of this, as I am putting off writing about the real reason for the trip. I have really come home to face the ghosts of past memories, to put the painful ones away and to strengthen the happy ones. I also want to get a panorama photo of Potrerillos from near the old airport before the sun gets so low that there will be too many shadows. We only have a few minutes left, so we speeded up the new zigzag.

All of a sudden, there Potrerillos is, laid out almost exactly to memory from 44 years before. Potrerillos has always been a place of much love and pain for me. As I write these words, it is just a few days short of 50 years since my Mother died there. The loss of her was devastation to all of my family. My older brother never recovered from the depression that came over him, and he died a poor and lonely alcoholic, committing a slow suicide with the bottle. My Dad found a lot of solace in his work and a new family, but as he passed 80 he began to express hope in an after life that might allow him to be reunited with his beloved wife. He also died quite alone, but welcoming death as the end of bereavement and the beginning of hope for reunion. He also had loved El Salvador. It was his mine, he defined it, and he understood it as no man has ever before understood an ore body. He also trained a whole generation of fine new young mining geologists there. He had his greatest pride in the accomplishments of these men who were in fact his professional sons. He also had

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great pride in some of my accomplishments, but he was such a gruff person that he never told me, I had to hear it from others. His ashes are scattered on Cerro Indio Muerto not as a tribute to him, but as the place where he had made his greatest contribution in life and therefore gained his greatest happiness. (More on this point later.)

As to myself, I have lived my whole life with a yearning for my Mother, her warm pleasant view of life, her sharp wit, her real intellectual ability, her many artistic talents, and even her many deep flaws. I had become an adult thinking that my parents had been happily married, only to recently learn otherwise. Two years ago my mother's youngest brother died, and I inherited the old family house at Columbus, Ohio. Every letter that my Mother ever wrote home had been saved in shoeboxes, and they made riveting reading to me. I discovered in these letters that my Mother was a very complex, very artistic and disturbed woman. She loved her husband, but also hated him because he insisted on dominance. She valued her children above all else, and viewed my departure from Potrerillos to go to Year 9 in the USA as her husband taking me away from her. She then wrote to her Mother in quite cold terms that she would soon die in order to get even with him, and that was her will to do so. Her behavior from that point on is one of a person who was doing everything in her power to hasten the process of death, to leave this earth and all of its sorrow. She had publicly recovered from Cancer, having survived 5 years, which was good in those days. When we came to Chile she was supposedly free of it, but she alone knew the truth and had suppressed it. She had a morbid (and probably justified) fear of the X-ray therapy that she had endured earlier, and welcomed the idea of going to Chile as a way of getting beyond the reach of these doctors and their peculiar form of torture. She had lung cancer and insisted on smoking; she had suffered a stroke and had high blood pressure and insisted on consuming as much alcohol as she could possibly get her hands on. One would think that in a closed camp like Potrerillos, a man could control his wife's access to alcohol, but it turned out to be impossible. She even wrote in triumph to her mother about how she beat Dad in his schemes to control her! She wrote a chatty letter to her mother dated May 1, 1957 telling her about how much fun she had helping a neighbor girl (I believe this must have been Bessie Dudley) clean out an old chicken coop and turn it into a play house. Two days later, two months short of her 42 birthday, she was dead from pneumonia. My brother emulated her means of hastening death 43 years later, a very disturbing thing. I have recently found out from her extended family of the "Blake Curse", and the fact that there is someone in every branch of the family that suffers from depression (and often the alcoholism that goes with it) in every generation. This is well documented and goes back to around 1780.

Looking across Pasto Cerrado at Potrerillos all of these and many other thoughts went through my mind. But soon eclipsing all thoughts was the remote ethereal beauty of the place. The sun was still a few minutes behind the point where I feared it might be, and I took the beautiful and evocative panorama that is reproduced below. (It is available as a very large electronic file if you wish it. Send me an email (ftrask@bigpond.net.au), and I will forward it to you. I have printed copies of it on canvas that are 1.2 m across, and the detail comes out quite well.)

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Panorama of Potrerillos, December 5, 2006

There are many changes. A trip to the east from this point 50 years ago was trip into a remote and unknown part of the Andes. Now there are signs warning the traveler of the times that the Customs House on the Argentinean border closed. Apparently traveling overland to Argentina is now an accepted thing. There is even an airstrip at La Ola on the map. We headed north over the airport plateau and down into the valley of the Rio Sal, into a quite surprising world. There was, by Atacama standards a lot of vegetation on the sides of the hills, and many small bushes and clumps of plants are blooming. They look very like the helicrysums (paper flowers) of Australia, and this is not surprising, as they are flowers of plants that bloom in a very arid climate.



The road to El Salvador is very familiar, every minute turn and twist is the same. When we come to the "backdoor", where the original road went into the Cerro Pelado area and the Old Camp, it is blocked off with a gate and fence that seemingly surrounds the whole mine area. From this point the road goes west, down the side of Granite Gulch. Cerro Torre on the left hand side bristles with communication antennae of all kinds. It is also the peak above the old airport that can be seen from Potrerillos and serves to provide communications for both places. The road sweeps around to the right, and El Salvador comes into view. There is a great shanty town (Called Portal del Inca) built up to the edge of the mine compound, and within this there is a large number of really substandard houses, shanties, bars, whore houses, poor sanitation and the usual hordes of dogs. It is Pueblo Hundido transferred up the hill, and appears to serve the same historic functions. Later in the evening we were warned that people from this area were the cause of trouble, and not to wander the streets of El Salvador at night.

The concentrator looked the same, excepting that there are a large number of new buildings erected around it, and the point where the ore trains from the Inca Adit dump is radically changed indicating a whole new crushing system. Even from the

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distance of the concentrator, El Salvador looks tired, not bright and snappy like it did 44 years ago. The edges are not so distinct, the pattern broken with new and different types of housing, and some new colors. The Motel Camino del Inca is supposedly on Avenida El Tofo. I have the original map from the 1958 edition of Engineering and Mining Journal that shows the streets and their original names, and await a lesson in politics. How many of them have been re-named? Two turns up and down the street do not reveal a sign or anything that indicates a Motel. We finally turned into what had been a visitor's center in the old days, and found out that this was it. Prefabricated in the early 1960 era, it has survived quite well. Paul and I checked in, grabbed our cameras, and headed off on foot to look at where we had lived, Memory is a poor thing, and the slightest change will put you off. There were many vacant lots on the gringo side of El Salvador when I left in 1962, and many of these had new houses I did not recognize on them. Paul had left there in 1965 as a 7 year old, and he could remember the new houses, but as to the actual identification of the exact house, he was all at sea.



Casa Trask, 501, Corner of Anaconda and Kuchs

I had to imagine driving down El Tofo, turning left on the first corner, and going to the third house on the left on the corner of Avenida Kuchs. This worked OK, and we came to the correct house first try, No 501. It is still painted the same color, and from the state of the barge boards, I suspect that it has never been repainted in the 46 years of its life. There were two women seated on the front step, who gave a cheerful welcome when we walked up to the gate. We explained that we had lived in the house 44 years before, and they instantly invited us in. We declined, not because of shyness, but simply not wanting to intrude into their lives. I also remembered a bright spacious house with fine music and good books. I did not want to shatter this memory. We traded polite banter about the past for a few moments, until a car pulled into the drive. It turns out that her son had broken an arm in a sporting accident that afternoon, and was returning from the hospital. Visitors from the past were forgotten, and we went on our way. We wandered around, and I identified the houses where the Hunts, Novaks, Couses, Loves, Pollishs, Dudleys, and Dunstans lived in 1962. This was a pretty good test of memory. There were a number of other houses where I got it down to one of two families in the house, but that was the end of my skills. Paul could

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identify where all his play mates had lived, with the house where the Leonards were being the first that he picked. Surprisingly, the street names have remained the same, excepting Avenida Anaconda. I forget the new name, but every other one remained the same. There were contentious names in the original plan, and these celebrated the likes of Oscar Kuchs, Albert Hoffman, Roy Glover, William Braden, William Wraith and Cornelius Kelly. All these names are still there, properly remembering people for their past contribution to the place. Avenida Cuatro de Julio is still beside Avenida Dieciocho de Septiembre, and this reflects the origin of the town and the spirit in which it was built. (Avenida Charles Brinkerhoff is still shown on maps of Chuquicamata)

El Salvador was a genuine effort on the part of Anaconda management, and Roy Glover in particular, to transplant American middle class living standards to an Andean mining camp. In my opinion, it was a success. The people that moved from La Mina to El Salvador made a leap in living standards across most of a century. The more sophisticated types from Potrerillos (who had after all lived their lives with modern conveniences like open septic sewers running down the sides of the streets, and could walk to a cold shower) were a bit more blasé. Now they all lived in a modern 3 or 4 bedroom duplex houses with showers, bathtubs, a sewerage plant and hot water. There was certainly an immense pride in achieving this standard of living in 1960. The **Sindicato** reminded the men that the modern housing was the result of struggle, not benevolence, and in this I would agree with them. Most of the struggle was done by Roy Glover and Rodolfo Michels. In my experience, the people that moved into these houses cherished them, and these dwellings have set a housing standard for much of the next 40 years in Northern Chile.

No one has bothered to paint them since the day they were finished from what I could see. The mine has been ready to close next year for much of the past 15 years, and budgets to get the exterior of housing up to a standard would be hard to come by. From what we could see of the interiors of the houses through windows, all looked clean and neat and very well furnished. After inspection of the old American enclave, we watched the sun set on Indio Muerto and tried to get a decent shot of the alpen ghluen. The rather mixed result is shown here, and did not match my memory of the splendor of other evenings many years ago. One of the problems is the extensive mining that has nibbled away at the feet of Indio Muerto, and changed its profile.



Sunset at Indio Muerto

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From here we went by car to inspect the main town. When the first of the 3 bedroom duplex's were finished, the senior staff of Andes were the first to move into them. I tried to find the duplex that Dad and Aglae lived in, and could not find it positively. There were two alternates that were the right color and position, so I again had to use a "virtual walk", to go three blocks uphill to a house of a different color where Marla Grey used to live. I made this walk often enough one summer and easily found the unique combination of colors and distances that allowed me, with some assurance, to point out to Paul the house that his parents had lived in when he was born. One real change in almost all of the old duplex houses was that the front fences had been torn down and altered to make room for a driveway and carport. No one, in his or her wildest flight of imagination, ever expected a Chilean mineworker to get a car. It has easily come to pass in my time.

As the new houses in the Gringo enclave were finished off, the foreign staff moved across. The order in which they moved was a clear and public indication of the total social standing they individually had within the company. It was a lot more involved than Mr. Koepel's public shuffling of the new cars every year, and a lot more direct. I had heard that there were resignations over one person getting a house ahead of another.

As it got completely dark, we went back to the Motel for dinner. We walked in to what was obviously a grand social event. The dining room had been shrunk to a few tables in the bar, and a well laid out arrangement of tables was set for a large buffet dinner. A pianist was already at work providing background music, and lots of really elegantly clad ladies were standing in the hallway. Suddenly the front door opened, and in swept a woman who was obviously the Queen Bee of this group. All the others automatically turned to her. She greeted them, and they greeted her back in unison. I assumed that she must be Mrs. Manager. It turned out that it was Secretary's Day, and the Queen was the secretary of the Manager. At any rate their husbands soon joined them, and then their bosses and their wives, and all proceeded to enter into a cocktail hour followed by dinner and dancing to a good band that lasted until 2AM. People at Andes Copper could always find something to celebrate, and to celebrate in style. Anyone who had been at Potrerillos in the 1950-70 era could have joined in the celebrations and felt quite at home. They even played and a few danced (quite well) one Charleston and I could not imagine this happening any other way than by tradition! There was no rock and roll, just Latino tunes, dispersed with waltzes, foxtrots and, as pointed out, one Charleston! Tradition has carried on through the most difficult of social, management, cultural and ownership changes. What was a good time at Potrerillos in 1950 is still thought to be a good time in El Salvador in 2006. I watched the proceedings for a good hour after dinner, and wished for the sort of audacity that some men have to gate crash a party and enjoy it.

We contented ourselves with a walk over to the commercial center to see what sort of action the town might hold. While walking up the street, my mobile rang, and it Miguel Cortez, my former student, calling from Pueblo Hundido. (The bush telegraph still works, albeit slowly!) I spoke to him in English, and made an appointment for the day after tomorrow. When I hung up, a rather worried looking young man approached Paul and I. He introduced himself as a German who ran a travel agency in El Salvador, and warned us directly that there was great personal danger in walking the streets alone at night. I replied that it all looked pretty peaceful to us. He then pointed out that there were people from the squatter's camp on the other side of the mill (Portal Inca) that were pretty much desperados, Bolivians, even dreaded Peruvians! We still did not see anyone, but gave up on our mission to check out the few nightspots and a

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workers club that sounded quite jolly from the outside. Home and to bed under a full moon that was bright enough to read the paper with.

Morning found us contacting Senor Vargas of the CobreSal Public Relations Department. It seems that no one other than the mine starts at 7 AM, but they work late compared to the old Gringo standards. His assistant, Priscilla, who was to be our guide for the day, met us in front of the theatre. The planned tour is quite extensive. First, off to visit the Geology Department, have a look at the surface changes in the place, thence off to Potrerillos to look at the old camp and other memorabilia, and then back to El Salvador to visit the concentrator where I had worked for two summers. I had assumed that we would simply be given passes and allowed to drive to the various localities, but we were provided with a guide in the form of Priscilla, a fine new Chevrolet sedan, and a chauffeur. It is about what Andes Copper would have raised for an important visitor 40 years before, and done in good grace and style! I suspect that the standard of hospitality, much like that of entertainment, has simply carried on. This hospitality was never an American thing in the first place, but an attempt by an American company to be more Chilean in their approach to life.

Our first stop is the Geology Department. We were expected, and greeted by Walter Orquera, a well known geologist who has published on El Salvador in a number of journals. Paul and I had prepared a nice photo of our Dad logging core at El Salvador in 1959. It was first given to me by MariLou Fines, and was fitting that it was passed on to the El Salvador Geology Department on a day that proved to be her 90th birthday! At any rate the gift was accepted with enthusiasm and hung in the hall way. The Geology Department now occupies what was the Mine Superintendents Office on the 2600 Level. This level is now closed, and all mining takes place either in open cuts or from the Inca Adit. We were introduced to the staff as Frank Trask's sons, and it was evident that the memory of our Dad here is both real and affectionate. He and his influence have touched all of these people. One of the first things we were shown was a machine that embossed aluminum strip. It was the same machine that Dad had installed in 1955 to start and make the storing and retrieval of core reliable. He founded a system whereby the tags were ordered in a book, and an internal check was performed to ensure that the job was done, and signed as correct by a third party. This exact system is still in use, but with Book No. 8 or 9 now! This gave me my first taste of what Codelco management had done at El Salvador. The credo seems to be that if the system works, there is no need to fix it. There is no need to change something for the pleasure of changing it. The primary job was to produce copper cheaply, and this is what they have stuck with.

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View inside the Geological Research Lab, Priscilla, FT, Paul T, and unnamed Lab Tech

From the 2600 Level, we went up the hill to the old Geology Office that was used from 1956 until it was partially vacated in the past few years as the 2600 shut down. Things were very familiar, and on going through the front door, I saw that the same sign on the door to Dad's office was still intact.



Pops old office door

The guide assured me that the interior of the office was untouched from the "old days", but it was locked and he did not have a key. The Geological Research Lab was still there with much of the same (and now quite old) equipment. The laboratory seems to have been preserved in working order, and the Technician proudly showed off all of the spare parts that were needed to keep the place running into the distant future. A shelf of familiar reference books was above the microscope bench. I opened a standard book on Mineralogy from the 1955 era, and was emotionally overcome when I recognized my Fathers handwriting in the neat printing that declared that the book

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was "The Property of The Andes Copper Mining Company, Indio Muerto, Chile" While we were shown around the laboratory, and it was stressed again and again that this was an important part of the heritage of the mine. I suggested that if they were not using the equipment that they might make it available to the Copaiipo School of Mines to teach with. This did not get a response, but it would have been what my Dad or John Hunt would have done with gear if it was not being used. The laboratory is something that was and is really important in the world of copper mining as a whole. The careful work carried out over many years by John Hunt, Lewis Gustafson, and many others under the supervision of Dad led to some of the most important economic geological papers ever published, and these were in part responsible in leading people to begin to understand how and why porphyry copper deposits were emplaced. The Codelco Geology Department at El Salvador feel a responsibility to this heritage, and have consistently spent real cash over many years to advance the study of this once great ore body. Alas, the days of the ore body are almost over with. El Salvador is getting by leaching some exotic ore deposits, mining small supergene blanket remnants around the edge and boldly attacking the low grade proto-ore under the 2600 level. This last effort has made El Salvador into a smaller copper mine but a much bigger molybdenum mine. There are also a number of years of low-grade molybdenum ore at Cerro Pelado available to an open cut, but the geologist said that Codelco did not want to waste time on it. One will presumably find the El Salvador mill and property for sale in a few years.



Panorama of the "M Gulch" Pit, 2006

The general *bon homme* atmosphere did not mention any of the sadder moments in the past. There is a minor but unspoken tension between the Gringos, (Them) and Chileans (Us), and by and large they are far too polite to bring it up. One can feel it a bit in the way that questions are sometimes avoided or answered evasively. There is however a great open and genuine admiration for the men and women that discovered, built, operated and lived in El Salvador in the past. I wistfully mentioned my plans as a 20 year old to return and work at El Salvador, and how the election of Salvador Allende had ended the day of the Gringo. Chilean politicians at the time referred to El Salvador as Gringo Vivo, contrasted to Indio Muerto!

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We enjoyed our tour, and much of the enjoyment came because we were able to tangibly feel our Fathers presence through the deference and admiration that these people had for him and his people! We chose not to try and visit the point where my Fathers ashes had been scattered in 1997. To a Christian that believes in the word of the Bible, the location of your remains is of no consequence, and if you believe that there is no hereafter, it is again of no consequence. Dad's ashes were placed there to satisfy the feelings of people other than me. Yet, I am glad they are there, since it shows the local community that we (and he) had a care and love for them as well.

Priscilla reminded us that we were due to have lunch at Potrerillos, and that it was time to get going. The driver gunned the big Chevrolet, and took us out of town in fine style, sweeping a cloud of sand and dust on to the small street shops at Portal Inca past the mill. The trip was again one of great nostalgia, but also one of trepidation to me. What would my emotions be at seeing Potrerillos? Would the sadness of my Mothers death there overcome the memories of kind people that had made a difference to me? I had once heard it said that people belong in families, and families are composed of people who can say, "What happens to you matters to me", and using that definition I had a lot of family in Potrerillos over the years! Numerous men showed a real interest in my development from boyhood, and these included (but not exclusively) John Hunt, Gene Wheeler, Norbert Koepel, Ferdinand Libenow, Bill Bates, Ernie Lucero, John Hoffman, Henry Dunstan, Harold Robbins, Slim Welch, Sergio Chaves and Mud Couse.

Among the women of the camp that stand out (and this again is only a partial list) were Bess Bennett, Bess Barnes, Ruth Bates, Peg Dunstan, Josephina Robbins, Mrs. Nona Marsh and Francis Grey. Before we had left the bottom of the Rio Sal, I had come to the conclusion that one live happy memory was worth much more than many sad dead ones, and that visiting Potrerillos should be a happy occasion. The trip proceeded along, with the only real difference being that the roads were much wider. The climb up from Jardin to the camp was much the same, the same ruling grade if 1 in eight or possibly nine, which is punishing on cars and trucks alike. On the up trip, the driver seemed to assume the right of way, and he swept along at a great speed. I have never made the trip quicker, and Sergio Chavez and I tried to set some records going to Potrerillos for parties around 1962! The usual security was in place, but before the old Carabinero Post. Waiting here, one got a good view of what is left of D and C rows. D row itself is almost non-existent. To be sure, there are lots of houses there, but the original stone and concrete houses are simply gone, and replaced with pre fabricated wooden ones. We swept around the ring road, going down what was a one-way street in the wrong direction, and did not see a single house that I could recognize until we came to the Sub-Gerencia.

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Remains of the Sub Gerencia, 2006

The doors and windows are gone, but almost all of the rest of the building is intact. I knew the house quite well from 1955, and all was very familiar, including the rather steep stairs down to the cellar where the furnace was. The beautiful oak flooring is of a quality that I wish I could purchase today! Rather sad, but all that is valuable that could be moved cheaply is gone, the rest abandoned. The Gerencia itself is simply gone! There is only one other house on D row that is left standing, and I think it was the one that the Vetersnecks lived in. The picture is reproduced below, and I would welcome correction or confirmation.



The last man standing, D Row, Potrerillos, Chile, 2006

From here we walked up to the schoolhouse. The first thing that you notice is that the playground is filled with bulk bags packed with a white material. I would

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presume this to be arsenic trioxide, and the guide simply says it is pollutant that has been stored. I first went into the old library in the cellar. The floor is covered with library cards, and I instantly recognized the hand of Mrs. Marsh on many of them. I tried to grab one as a keepsake, but was told that the site was polluted and removal was not allowed. From here we went around to the side door on the south side and entered the gates of learning.



The Gates Of Learning, American School, Potrerillos, 2006

The door was ajar, and the interior of the school had been changed from when I was last in it. In 1955, the east side was for grades 5-8, the room in the middle for Spanish lessons, and the long room on the west side was for Grades 1-4 if my memory serves. This last room was where my Mothers funeral Service was conducted in May 1957. John Cotter took on that most difficult of jobs, holding his composure while reading the grand words of commitment from Crannages Book of Common Prayer. The middle room has been removed, making two large classrooms. The walls have stood the many years quite well, and standing quietly I could easily hear Mrs. Marsh in her wounded tone of voice, berating me for forgetting to do the dreaded Monday Morning Essay. She called it willful disobedience, and she was, as always, right! The playground equipment was as I remembered, except that the space was packed full of "pollutants". This causes me to remember that we were told when we came to Potrerillos that we had to take real care of the dogs feet. If a dog got a cut in the feet, it would die in time was the story. This was openly attributed to arsenic from the smelter stacks. We certainly got our daily dose of sulphur dioxide from the very short and inadequate stacks that served the reverberators and the converters separately. Maybe if they had followed the practice at Anaconda and had put in a large flue up the hill some 2-300m in elevation, and then a relatively short but single stack, the problem might not have come out in the same way. It was considered one of the attractive things (in 1924) about the investment in Potrerillos that they had saved money on not building a "giant" stack to draw the sulphur gas, and had installed the new wonder of the age, modern induction fans. Codelco have said that they had to close the town of Potrerillos because of the heavy anhydrous sulphuric pollution of the whole town site. The exact quote from a website is:

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(A mediados de los años 90, la Comisión Nacional del Medio Ambiente detectó en Potrerillos una alta contaminación por anhídrido sulfuroso, lo que amenazaba la salud de la población)

This might be so, but I think that they are, for publicity reasons, reluctant to use the word arsenic. There were certainly copper-arsenic minerals found at both El Salvador and Potrerillos. I further know of almost no smelter that does not have trouble with fuming arsenic getting into the stacks and causing problems. Our group, the children that lived in Potrerillos probably have a high arsenic content in our hair, tissues and bones. Statistically, we should have a higher than average death rate from lung cancer, and a very specific type of cancer at that.

Many years ago, the Anaconda Company had a number of serious health problems amongst the workers at Butte and Anaconda. A Doctor Ferguson was hired to get to work on them. The first problem was the "Con", short for consumption or silicosis. Dr Ferguson and Mr. John Warren of the Ventilation Department found the right formula of clean dust free air and people with strong lungs that were resistant and eliminated this dreaded disease from the mines at Butte in a few years. This was the progress of man in the modern scientific era as it should be! Doc Ferguson was then put to work on the arsenic lung problem at the smelter. This was a hell hole of a place, where the vaporized arsenic was condensed in porcelain "kitchens", hand scraped from the walls and removed for burial behind the Big Stack. It makes my flesh creep just to write this. Just about the only Negro's employed in the state of Montana worked in the Arsenic Plant, one of the most blatant examples of racial abuse from the old USA that I know of. At any rate, "Doc" Ferguson was supposed to have gone to an AMA meeting, and during a talk on lung cancer he told the speaker that he was wrong, that biopsy was arsenic lung not lung cancer. He had seen dozens of them and knew. Deer Lodge County where the Anaconda smelter was located had the highest incidence of lung cancer of any county in the United States for many years. It was also the county with the highest per capita consumption of tobacco and alcohol, so there are a number of lessons to draw from there. There is a high incidence of lung cancer at Tacoma where there was an arsenic emitting smelter for many years. I hope we all escape this possible fate.



Casa Daspit

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We preceded up the hill, past the house where the Daspits lived on the right, the Wheelers on the left. All of C Row seems intact. Why should these houses survive when all of D Row was wiped out in the earthquake? I do not know much about the differences in construction methods, but that must be the answer. From here we went past the house where the Gillow's lived, and later the family of Stan Davis.



The Gillows (and Stan Davis) old family home, 2006

Across the road was the duplex where Dad lived after Mother died. Farlow and Ann Davis lived next door. I surprised myself by remembering so many places and people. Down C Row, I found the house that Mrs. Marsh lived in, the Luceros, and a portion of the foundation of the Robbins house on D Row. From here we went to the old Copper Club, the centre of all social activity in Potrerillos.



Entry to the Copper Club

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The entry, despite some stains from rusting roofing, remains much the same. A quick turn to the left revealed the familiar bar area. Someone has taken the bar home, but the work space in the back is still there. The bowling alleys look much the same, but there were no balls or pins, but there was modern graffiti on the walls. Old score cards are scattered around on the floor, but the dates are in the 1990 era.



Ballroom of the Copper Club, on hard times!, 2006

Walking into the “ballroom” was pure nostalgia. One could almost hear Eddy y Sus Muchachos pumping away on a waltz or a Cha Cha Cha as you walked in. Memories of a happy life from long ago flooded into me. It was all there, the thrill of adolescence, the friendliness of the people, and the special relationships with others. I could remember Nona Couse teaching me how to dance a Charleston to perfection! This was what I truly missed about Potrerillos, Chile, the people that we knew at the time!

We lived, as Wilfredo Beltran of Cerro de Pasco wrote on the passing of an era at that famous mining camp,

“ To the bilingual and carefree children
who played against the backdrop of the Andes
And knew it later for a privileged kingdom.”

I am afraid that all of us had the same trouble; we were not able to see that we lived in a privileged kingdom until we went away. I was perhaps fortunate in having lived in a number of other, and possibly tougher, South American mining camps and knew something more of the world that might have escaped some of us. When we went “outside” to school, most got a fair bit of bark taken off right away by very democratic and egalitarian Americans. I can remember one matron waxing eloquently about how edifying it was for her children to be so international and cosmopolitan! They actually had flown in an American cocoon (Panagra) to Chile, where their parents swept them up and placed them in another. They did get to learn Spanish, but only because the Chilean Government mandated that it was part of a real education. Some children never went to the “Otro Lado”, or the other side, where real humanity in the raw lived out their lives as best they could with what they had. To me, life started

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over there (or in the rough camerotes of El Salvador or Barquito) and I was constantly meeting and talking to people about what they did, where they did it, and why. My interest was anything industrial, mechanical, anything out of school. Looking out from the porch of the Copper Club towards Volcan Doña Inez, I recognize the remains of the limestone mine beyond the hospital.



View of the top of the old limestone mine

When we arrived in 1955, Clarence Edward "Pappy" Johns was in charge of the limestone mine, the inclined hoist that drew the limestone uphill, and the limekiln that made a portion of it into quicklime to adjust the pH of the flotation circuit. The other portion was added to the smelter slag as flux to lower the melting point. I was attracted to Pappy for a number of reasons, but the first was his voice. The bell system on the incline was broken and he had kept the place going for the day by shouting the directives some 4-500 meters up the slope from the mine. Try it some time. He was close to 60 then, and he really had a stentorian voice. For some reason he befriended me and showed me how the place worked. The mine with the rough room and pillar stope system, the inclined hoist, the small crusher and the old oil fired limekiln was a real education. I have since spent much of my professional life in the lime industry, and can tell you that the thermal efficiency of the Potrerillos plant was shocking. No one knew any different, and they were happy that it simply ran. Pappy had a way that allowed him to be a friend of all. Many foreign staff looked at him rather darkly, and thought that he had "gone native". This charge was quite true, but he saw it very differently. He was sure that he had the better end of the bargain, and after reflection, I would contend there is no denying that he achieved happiness and honor amongst his people. In 2006 a casual mention of his name in a bar at Copiapo got instant recognition. He has become an urban legend. Most people could not even tell you who the President had been in 1955, but they remember Pappy Johns.

He apparently made one trip home to Cornwall around 1958. He took a ship from Santiago to Panama, thence to New York and Southampton. He sent 2 weeks of his 3 month holiday there, and boarded another ship for Buenos Aires, and took the train home to Copiapo. It was his first trip since he had arrived in Chile around 1937. I

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asked him why he had delayed the trip, and he replied that he had waited for a "few old cops to retire first".



Cerro Doña Inez near sunset with its famous *alpen ghluen*

I got some nice shots of Doña Inez from the Copper Club parking lot. This most graceful peak is the symbol of Potrerillos, and if the town were to have a heraldic shield designed by me, the outline of the peak would be the background! From here we walked uphill to the old Guest House and Rancho. There are lots of photos of people taken in front of this building in my Dads collection, and a modern photo seemed to be of interest. I was able to identify the house where Charlie Bachelor had lived as well as the one where Aglae del Pozo and her Mother had lived before she married Dad. The Hospital is gone. We then went to lunch in a modern mess hall just to the west of the Oficina General. The office itself is on sad times, with the windows broken out, and abandoned. I asked why, and was told as comfortable as the offices were, the upkeep simply cost more than building a new one. It was and is a magnificent structure, and was built that way on purpose. The idea was to present the employees with a symbol of both solid responsibility and wealth. It did just that for many years, but its time has come!

The lunch itself was in the usual mess hall style, with a tray, knife, fork, and an ability to choose an entrée and one main course. The quality is comparable with good mine mess halls in Australia. It should be, as I noticed the contractor had a parent company that operates many similar facilities in both the USA and Australia. Sitting down made it easy to look over the crowd and to try and make some sort of assessment of what sort of people they were. Doing this 50 years ago would not have been possible, you simply did not mix enough to actually dine with workmen on anything other than a very formal occasion. They were well dressed, and their table manners a whole cut above Australian miners in the same situation. They were also more orderly; there was little of the shouted conversation across the room that is a feature of Australian mess halls. The dress was of course Codelco work uniforms, and to pardon a pun, they are uniformly neat and clean as befits an industrial site where

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there are pollution problems. They look like well cared for workers, although again by Australian standards, there are way too many of them..

I wished then that I could have been having my lunch in the Rancho at La Mina as it was in 1955. This institution was one of the better management tools that Andes Copper had. The whole of the mine staff sat down to a proper well-cooked hot lunch. The Mine Superintendent presided over the table with a mixture of humor and authority, and much of the conversation was directed at the days work. There was a published roster, and the mine staff were in their turn delegated the responsibility of making out the menu, approving the orders on the food, and checking for quality and cleanliness. All from the most junior to senior shared equally in this weekly assignment. This means of self-management was a feature of many military messes from the 1800 era, and had obviously been borrowed from those traditions. I can remember the Mine Superintendent, John Hoffman sitting at the head of the table like a King on his throne. He had a great booming voice, and he was full of jokes, sharp witticisms and hard questions in more or less equal proportion. My first visit to the Rancho was on a Saturday a few weeks after I had come to Potrerillos, and had gone to La Mina for the day with my Dad. He took me to the Bodega and got me a pair of hobnailed boots, a hard hat, and a sample pick, and took me underground to stretch tape and mark out samples while he mapped. This was day one of my original apprenticeship. Henry Dunstan was the president of the mess for the week, and lunch was a steak and kidney pie, a dish unknown to most Americans. I thought it great until I was told what it was. A number of the younger American men would not eat it, and Rosita, the lady who was cook and general boss around the place, made an alternate with no kidney for them. John Hoffman spotted me and called me up to the head table, where the rules of the mess were explained. Clean your boots before you come in, the wash house was around the corner to wash your hands, take all you can eat, and eat all you take. He then proceeded to ask me to explain what I had learned that morning, welcomed me to the mine, and dismissed me.

John's father, Albert Hoffman, had been the Assistant General Manager at Andes Copper, and John had grown up there. He did some of his elementary schooling in Potrerillos, went back to the USA to attend boarding School, and then the Mackay School of Mines at Reno, Nevada. He had returned after he graduated and started at the bottom of the mine staff. I can today imagine John as a thirteen year-old in probably the same building getting an introduction to work life in much the same way. It was a very free and liberal society, and as I have mentioned repeatedly in this article, many men took an interest in the advancement of young people.

The management at La Mina is an interesting story in it own right. The original Mine Superintendent was a Mr. Leo Greniger. He had also become an Urban Legend amongst the Chilean people by 1955. It seems that he had a real appetite for life in all of its facets, and what he was remembered for amongst the Chileans was his amorous activities. One persistent tale that was told of him and it concerned when he was the Manager of Potrerillos. He was an active Manager, and attended to any problem at any place at any time. There were always problems at the mine on Sunday afternoons that demanded his attention. His wife, knowing of his weakness, would accompany him to the haulage level entry at Las Vegas. Here he would change into work clothes, and disappear into the mine in a great hurry to look at the trouble while she waited in the car. He would then scoot up the internal shaft, and come out on the top and into the arms of his mistress for an hour. He would then appear out of the bottom of the mine, suitably begrimed in a couple of hours, moaning about hard work!

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Oscar Kuchs was the General Manager before Greninger, and he had an opportunity to appoint a new Mine Superintendent when he promoted Leo up to Assistant General Manager. To fill this post he went outside the Andes organization and hired Charles Brinkerhoff from Inspiration Copper. CM, or Brinkie as he was known was a very tall and patrician man who had a reputation of being puritanical and strict. He was also known in later life as the greatest block cave operator in the world. Actions speak louder than words, and when one looks back on his period as Mine Superintendent and later as General Manager at Andes, it is obvious that he ran an informal management school that produced dozens of top executives for both the Andes and the Anaconda organization. Brinkie was posted General Manager at Potrerillos on Greninger's retirement as thanks for an outstanding job at La Mina. He was succeeded by a Mr. Tobie, who soon was poached by Newmont to become the Mine Superintendent and later Manager at San Manuel, a new block cave mine in Arizona. By this time, Brinkie had been promoted to General Manager at Chuquicamata, and Norbert Koepel from the Smelter had become the Manager. The replacement of Mr. Tobie was the problem, and the real problem was that there were at least 6 men who were quite capable of being a top Mine Superintendent. Harold Robbins got the nod, with John Hoffman being named Assistant. The other very strong candidate, Martin Hannifan, was sent to Butte to become General Superintendent of Mines. Martin eventually became VP Western Operations for Anaconda. Ed Tierney was dispatched off to Chuquicamata as Assistant General Manager. When the mineralization at Indio Muerto was discovered in 1954, management (who had opposed and hindered the exploration work as actively as they could) rewarded themselves with another round of promotions. Brinkie went to General Manager-South America (and President three years later), Koepel to being his assistant, and Bill Bennett from the Smelter became the General Manager. Leonard Fines became Assistant Manager and later Manager of Andes after Bill Bennett. Many felt the Managers job should have gone to Harold Robbins. At any rate Robbie, appointed as General Superintendent, was made responsible for actually making the development of the whole Indio Muerto Project happen on the ground. He became the critical man, the Man of Action who made El Salvador into a profitable mine that ran well. Harold later was Assistant General Manager of Andes, and General Manager of Andes de Peru. John Hoffman was appointed Mine Superintendent, a position he only held for two years. John had been marked from a young age for high promotion and was widely and publicly regarded as a future leader of The Anaconda Company. As soon as it was decently possible, he was sent to New York as General Manager of the Mining Department. This made him VP Mining in waiting, and a strong contender to pick up the Presidency of Anaconda when Mr. Brinkerhoff would retire around 1965. It would seem a risky thing to transfer a key Mine Superintendent on the morn of a huge project like Indio Muerto, but Brinkies Management School had left such a tail of talent that there was simply no problem. William Henry Dunstan stepped easily into the position. In fact Tom Dudley was also perfectly capable as were even younger candidates such as Ernie Lucero, Lou Carpenter, John Bain or Joe Novak. They would have had no trouble in taking over at the top. Of these, Tom Dudley went on to be the Mine Superintendent and Assistant Manager of Andes, Joe Novak went on to be Mine Superintendent at El Salvador and Redross in Australia. Ernie Lucero became Mine Superintendent and Assistant Manager at Jackpile, and Lou Carpenter finished his career as Mine Superintendent at Braden. These were tough men who had worked through tough times mining tough rock!

My one regret during the visit of Potrerillos was that I forgot to go to the rail station and take a photo of the Montandon Memorial! We turned down an offer to

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inspect the inside of the Church, had a hurried look at the old Baldwin steam locomotive in the Plaza de Armas, and sped from the scene. The trip down the hill was in great contrast to the trip up. The car hugged the inside of the corners going as slowly as possible in anticipation of large trucks coming around the corner. It is obvious that the up traffic have the right of way. There is a surprising patch of vegetation on the side of one of the arroyos, which can be seen in the panorama when it is blown up. It is watered by a series of springs that lie on the contact between the Tertiary gravels and the bedrock. The tailings and septic sewer were run down a ditch that stood above this for many years. The gravel has obviously absorbed as much water as it can, and it is now draining as seemingly natural springs. It is this water that is forming the lake at El Jardin. There were a goodly number of ducks on the lake as we went by, and they seemed totally unconcerned with cars. Mr. Libenow, Greg Parker or my Dad would not have allowed them this luxury!

Our next visit was to go to the concentrator. I had worked there in the summer of 1959 sampling for the Metallurgists that had been dispatched from Anaconda to start up the mill. I worked directly for Bill Mitchell. I then spent the summer of 1961 working in the Chemical Laboratory doing routine copper assays for three months. I learned a lot of my Chemistry during this summer, and regard it as one of the best I have ever spent. Peter Hobsbawn was the Mill Superintendent during this time. I forget the name of the Chilean Chemist who actually taught me the ropes, which is a shame. He was a good man who taught me a lot, and he deserves to be remembered. The Chief Chemist was Walter Robledo. He spent most of his time trying to get a obstinate XRF machine working. His electronic help came from Carlos Riebeck, and exceptionally astute and intelligent electrical engineer. Both were due to leave Andes to return to school, Robledo going to Cambridge for a Master Degree in Inorganic Chemistry, and Riebeck to MIT for a PhD in Electrical Engineering.

We were made welcome and taken out and around the plant. Much of the equipment was still working exactly the same way from 1959. The rod mills, the rod feeders, the ball mills and ball feeders were untouched. The flotation cells had been replaced with new modern cells, and you could have played a game of Baby Futbol on the open floor. There is a new modern computer control room (remember that computers simply did not exist in 1958) on the south side. Also, the chemical lab had been taken out of the basement of the office and put in to its own building down by the moly plant. The crushers have been replaced with new Brazilian ones that were described as "tough". My impression was of a very well managed and run plant. They had kept the things that worked, and replaced ones that did not. They have never hesitated to modernize the place. I could not imagine Peter Hobsbawn or Harry Astlett who were both very able men doing any better! Harry Astlett's daughter had been there the week before and had placed her Fathers ashes somewhere around El Salvador!

We then reminisced about the past. The subject of Hector Maldonado came up. I remembered him as a day laborer in the mill from 1959. He was constantly asking questions, and was regarded as an eccentric by the other workers. The Mill Super then told a long story about how Hector was affronted by having a toy duck given to him to fix. I was able to supply the story. The new Teatro Inca had just been opened, and movies were free. The whole town went on Sunday night. There was a cartoon with Donald Duck as a robed Professor. The next morning, a mill man named Torres shouted out, "Aqui viene Pato Maldonaldo el Professor"! And he remained Pato for a few years until the joke wore itself out. He obviously still resented it many years later. He has written a number of books about El Salvador and Potrerillos, and obviously had a real

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love for the place. We were given copies of his History of El Salvador. It is mostly a collection of idle chit-chat. There is a picture of Harold Robbins, but he is only identified in the text as the husband of Josephina who ran the phone exchange once upon a time. The theme is fairly constant; the American bosses drank and played golf, while the third level of Chilean management under them actually ran the place out of love! Pappy Johns got three pages, and was the only foreigner so honored.

That was the end of our tour. We went back to the Public Relations Office, and said farewell to Senor Vargas. I gave him an Australian aboriginal artifact as a thank you. A reporter that puts out a weekly magazine, *Andino*, then interviewed Paul and me. This was the same name, and indeed the editions number series has not even been altered, from the magazine that was published by Andes Copper from back in 1950. I was able to tell my story about my dreams of returning to El Salvador and how they were dashed. I understand that they published the interview, but I have been unable to get a copy.

I ended up trying to get a picture of the moon rising over the outline of Doña Inez. I have a program that gives the time and bearing of the moonrise, but had put the wrong time zone into it, not knowing that Chile was on Daylight Savings time. I got a very nice picture right at sunset, and it is included here. Unfortunately the moon was an hour later!

Home to an early bed, and a long drive to Antofagasta in the morning.

After all the years of thinking about El Salvador, it was remarkable how easy it was to simply to turn my back on the place and not look back. This confirmed absolutely what I had found out gradually over the past two days. My memories were about people, and these people were welded together as a real community because of the isolation of the place. True, the grand scenery will sit on my mind all of my days, and I will take every chance to come back and enjoy it. The towns are easy to drive away from! We made a hurried trip to Pueblo Hundido, where I met Miguel Cortez Troncoso, my former pupil. He seems to be doing well in his career, which is very different than one he might have pursued in Australia, He told me that it had always been his plan to return to Chile, and he was back in the midst of an extended family that still had many members in El Salvador. His firm looks like coming up with a decent open pit copper mine just 4 kilometers south of Pueblo Hundido. The whole of the exploration company had taken over a small 'hotel" on Calle Chañaral, and seemed to have good offices. Even though it is a Canadian company, all of the work, reports, etc is being done by Chileans in Spanish. I spoke with his boss long enough to transmit to him the standard of education that we had given Miguel, and found out that he has figured it all out already. It is comforting as we drive away to know that at least one of your pupils has gotten out in the world away from Australia and made a new way for himself! I expect much from Miguel over the years.

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Frank Trask with Miguel Cortez, Pueblo Hundido, 2006

Paul and I fueled the car and decided that lunch in Antofagasta was the best idea. This in turn meant no side trip to Pan de Azucar or Taltal. The road from here north had a lot fewer Casa Posadas along the way, and they were not only newer but worse than the old ones south of Copiapo. The only notable thing in the whole trip, other than seeing the remnants of the southern end of the nitrate mines was a large statue south of Antofagasta. Someone has taken a very large rock and sculpted it in to the "Hand of the Desert", a strange gigantic single hand standing in the desert pointing skyward.

Antofagasta itself has really grown up, with many modern apartment houses and the graveyards all gone. In 1955 the whole upper area of the town was taken up with huge graveyards. It was proudly noted that there were many more dead people than live people in Antofagasta at the time. All of these ruins, mostly dating from around 1820 to 1890 have been simply removed. I understand where relatives could be found, the graves were relocated, otherwise, good records were made, the more artistic and grander examples of mausoleums saved, and the rest crushed up and thrown away. The center of Antofagasta is a much busier place than 50 years ago, but it has aged well. It is quite clean when compared to oriental cities, Singapore excepted. The old English merchant houses, which look just like the buildings of the same era in Fremantle or Melbourne, are still there, occupied and obviously cared for. Certainly new office buildings have gone up, but then the population must have increased by a factor 4 or more.



View from Hotel Antofagasta, December 2006

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We went directly to the Hotel Antofagasta, arriving at 2:30 PM. We were too late for lunch, which is shame, since I had the order prepared in my mind for over 30 years! The dining room was closed, and in fact there would be no dinner since the graduation ceremony of the top private High School was being held there that evening. We made do with sandwiches over the swimming pool, and learned how much sea gull shit there was in the pool! The answer is a lot! When we checked in, I mentioned to the bellhop that I had eaten in the restaurant on the first day that it was opened. He said that it would have been August 29, 1955, which was right. He had been a very young employee at the time. When Paul mentioned that he had fallen down the stairwell and broken his heels around 1966, the same man also remembered the incident. Indeed, he had picked Paul up! There is certainly continuity in this place. We went up to the room and relaxed, wondering what we might do for the evening. Around 6, the crowd for the graduation started to arrive, and it was composed of serious money, in fact I could not imagine a more open display of wealth anywhere in Australia where all people are quite well to do. The standard was to have either a Mercedes or BMW, but some suffered on with Cadillac SUV's and like. One or two well down the pecking order came in a Toyota, and one poor lass arrived in a twin cab utility. If you do not drive a Beamer in Anto, you are nobody in society. This should not come as a surprise, since people like the Lusik family has incomes like \$1 Billion a year at their disposal.

By the time we had quit ogling at high society, it was too late to look for a place to eat, in fact we were still full from the very late luncheon. A stroll into nighttime Antofagasta seemed on the cards. A quick turn up the street revealed quite a nice pedestrian mall with shops everywhere. There were dozens of dogs looking at you in the most appealing manner. One beautiful animal was a pure husky, and the poor thing was really skinny. We looked around for something to give it, and spotted that horrid export of the USA, McDonalds. Paul stood in line for about 20 minutes to get a burger for the animal. When we presented it, the dog sniffed it disdainfully, and politely said, "No thanks, not that hungry yet" in quite fluent and universally understood dog. When we took the meat patty out, he condescended to eat it, but just barely. This has proven to me something that I had always known about McDonalds, but had never been able to really say quite that well! When we got back, we shared the joke with the staff in the lobby, and had all of them laughing for 10 minutes. A number of them even got out mobile phones and shared the tale even further afield. I was able to purchase a beautiful vicuna cape for Helga at a very attractive price, only a fraction of what we would have had to pay in Australia. I also got a Chilean cowboy hat that has the widest brim of any hat I have ever had, a real prize!

Just south of the Hotel Antofagasta is a very nice enclosed shopping mall that would be right at home in Australia or the USA. There was a wide selection of high quality goods, and people were buying with cash in hand. Prices were not cheap by Chilean standards, but as far as Australian prices go, there were some good buys in clothing.

In the morning we woke up to the cold reality that this was the end of our joint trip. We were due to fly to Santiago in the late afternoon. Paul was flying on to Los Angeles at 11PM, and I was flying to Puerto Montt to meet Sergio Chavez at 1:30 in the morning. Sergio and Yolanda had graciously asked me to come to Puerto Varas to spend the Saturday with them, and I had accepted. I had some misgivings about mistreating my hosts at 2 in the morning, but Sergio was courteously at the airport to

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meet the very late plane. We had what could only be called a joyous reunion, with every one asking two questions at once. Sergio lives at a lovely location to the north of Puerto Varas, about 1 km back from the lake with a perfect view of Volcan Osorno and also a good view of Tronador. This is beautiful country, like Switzerland without the population density. Many of the houses are obviously north German and Prussian farmhouses. The rural Lutheran Church I saw later is so Germanic it would not even be noticed in Northern Germany.

Sergio and I stayed up to 4 AM talking over old times, one dead mans name leading to another. With a few exceptions like Sergio almost all of the people that I knew in Potrerillos that are still alive are like me, children of the people that actually worked there. There are many more from El Salvador still around, but they are all 10 or more years older than me. I found it interesting how the friendships that had been formed at these two places has welded people together for life. Several hours talking left us both exhausted and ready for bed.

Sergio and Yolanda live on an attractive property fronting the Lago Llanquihue at Puerto Varas, a small town a few kilometers north of Puerto Montt. The perfect and graceful cone of Volcan Osorno and the peak of Tronador is visible among the high Andes on a clear day. The day was overcast, so I never did get to see much more than a glimpse of Osorno from the house.



The House that Sergio and Yolanda Built, Puerto Varas

The house itself is a fine wooden structure that would rival the best of "hunting lodge" type homes in North America or Europe. In addition, they have a second log cabin on the property that their daughter lives in. Sergio's brother has retired in the same area. He recounted to me how he purchased the property and built the building. He brought Yolanda down from Santiago for a look. She responded by moving into the local Hotel while Sergio sent the furniture down from Santiago!

In the morning we went into town to run various errands. There were a large number of people selling fruit and the like from various stalls, and the price and quality were certainly much better than anything we see in Australia. From there we went to a fish shop to get a salmon for lunch. Again, the quality and price were both superlative! The only disappointment that we met was when Sergio went into a clock shop to check on the status of a repair job. The man cheerfully suggested that we go get a beer, it would disappoint less than the news that the clock was not ready yet!

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Modern Hotel at Puerto Varas, 2006

Thinking back on Calama, Chañaral, and parts of Antofagasta, it is hard to believe that we are in the same country. Everything is neat, clean and well ordered. I suggested that there might be more money here, and Sergio told me that it was in fact the opposite case. The people here get by on lower incomes than the Norte by a substantial amount. There is a great deal less drinking, less gambling, and few purchases of very expensive cars. Money is put into real estate that has a long-term history of value retention and growth. The land itself is some of the most prosperous farming land in the world. From a geological point of view, the volcanoes are constantly depositing new rich high potassium soil over the whole area. This makes the cost of living much lower than in El Norte, where everything from a glass of water on up has to be painfully brought in.



Rural Lutheran (Evangelista) Church, Near Puerto Varas

After an excellent lunch, Sergio took me out as a Turista to look at the falls at Petrohue and Lago Todos Santos. This gave us beautiful views of Volcan Osorno to the north, and Volcan Puntagudo to the north east. There is probably more water flowing over the falls than there is flowing in all of southern Australia! This was a cloudy and fairly dark afternoon, but some occasional clear patches allowed us to see the mountains and get good photos. It also gave me a chance to learn about modern Chile.

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Once again the theme was the same. Modern Chile was the result of Augusto Pinochet asserting that the nation would not become another Cuba. Many Chileans in fact view what the leftist press in Australia, North America and Europe call a bloodthirsty monster as nothing less than a savior. Sergio and Yolanda were safely away in North America when the worst of the excesses by Allende came about. After the ascendancy of Pinochet and the relaxing of foreign investment rules, Sergio came back to Chile as Manager for Bechtel Construction. After a short time there, he accepted a job as President of Homestake Chile, where he worked for many years. He has a plaque in his study where has been honored by Instituto de Ingenieros de Mina de Chile as the recipient of the Society's Gold Medal for the year. He is rightly proud of this accomplishment, the equivalent to winning the Presidents Medal from the Australasian IMM. The medal recognizes superlative contribution to the mining industry. He is probably, as a professional, the most honored man that ever came from Potrerillos, Charles Brinkerhoff excepted!

My visit was at the height of the last campaign against Pinochet by the present government. After trying to prosecute him for almost everything else and failing, there were now accusations of massive accumulated wealth. The possibility of this being true certainly distressed Sergio. He pointed out that Pinochet, like all other Presidents in Chile had access to some discretionary funds, which could be spent without accounting for them. This is a good and liberal view in my way of thinking. In the USA and Australia, the people think that the leader should be poor. The Prime Minister of Australia is paid less than local Shire Clerks get, and every cent seems to be begrudged. No poor man could ever be President of the USA now, and that is because of poor pay! One of the anomalies that show up is as follows. The last two Prime Ministers of Australia, both Labor Party men, and both people that worked their whole lives in positions within Labor Unions and Parliament where their salary is written out in a book for all to see, upon retirement each purchased houses for cash that were worth nearly as much as the whole of the wages they had earned in their lives. They claimed to be good managers!



Volcan Osorno, from Lago Todos Santos

One of the things that Yolanda and Sergio have in their home is a very large and striking mobile made of copper and glazed pottery. It is beautiful. He told a great story of its acquisition. He spotted it in a store in Santiago, where the works of many artists were displayed. There was no price on it, and they were very hesitant in giving a price. He finally came back and pressed them, and at last a reluctant price was

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mentioned. He paid it instantly, and then the story came out. Mrs. Pinochet has asked them to hold it for her some time ago and had not been back. There were apparently no repercussions. I have lived under Military Dictators in Nicaragua and can assure you that if Mrs. Samozá said that she wanted something held for her in a shop, she expected it delivered gratis before the day was out! Her husband's bullyboys would have been around that night to correct a social affront like that! Pinochet seemed to have been lacking in the finer points of being a Military Dictator in the best of Latin American traditions.



Sergio Chavez, December 2006

The Plaza de Armas in Puerto Varas was all dressed up for Christmas. There were around 20 Christmas trees erected and decorated, each one done by one of the service clubs or organizations like the Fire Department or Carabineros. I can only marvel that this was December 9, and everyone expected the trees to remain there unharmed until January. If this were in any town or city in Australia, they would be torn down and destroyed on the first night! There is no respect for public property at all within Australia, and this is not a new thing. In the 1970 era, there was a joint meeting in Australia of the Australasian Institute of Mining and Metallurgy and the American Institute of Mining Engineers. The President of the AIME was James Boyd, former President of Kennecott, Copper Range, and Head of the US Bureau of Mines. He had been the first child born in Kanowna, an abandoned gold mine some 20 kilometers north of Kalgoorlie. He arranged to place a brass plaque at the site of the old Post office there in memory of his Father. It was a heartfelt memorial of a much-loved parent, and spoke volumes about the quality of his family life. The plaque was stolen before the day was out and sold for scrap metal! I think the Chileans have a better civilization than we do!

The day ended all too soon, with a nice light supper of the rest of the salmon and a salad. The plane back to Santiago left at 6AM, and I had to leave Sergio's place by 4AM to catch it. He arranged a Taxi, who charged me 14,000 pesos for the 35 or so kilometers to the airport. This is a very reasonable fare by Australian standards. I turned my back on Puerto Varas with a lot more reluctance than I did to El Salvador or Potrerillos. Sergio and Yolanda were everything that I had remembered them to be, gracious and witty hosts and friends after 44 years apart! There is an open invitation to come back and bring Helga for a month!

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Sergio gave me a book for Christmas. It is titled, "Un Historia de Pioneros", and is published by Corporacion Minera y Cultura. It carries ISBN No 956-8072-06-03, and might be hard to get. There were only 3000 copies printed in what is probably its one and only printing. The author is Maria Celia Baros Mansilla. The main instigator appears to have been Bruno Behn Theune, who was the Gerente at El Salvador from 1990 to 1995. It is a very nice paperback, with a very complete history of Potrerillos and El Salvador. It is also a well-balanced book from the point of view of history. People that did things get the credit for doing them. The author has done this writer the honor of quoting a small article that I wrote a few years ago on "The History of Indio Muerto" and published by Jim Feeney on www.Losandinos.com. Because of this the Geology Department has a much better write up than many. I am unable to find the book for sale on the Internet. Sergio is interviewed and quoted for a great deal of material as well. A good read if your Spanish is moderate or better.

The short flight to Santiago put me in there at 8AM. I had an appointment to meet Hans and Adelita Langerfeldt for lunch, so I have a bit of time. Since all I had for an address was a phone number and Los Condes, I checked my bags into storage for the day, and went out looking for a taxi. A word of warning to all! Be very careful that you get a real Taxi, one with a meter in it. Every shark in Chile is milling around the front door of Arturo Benitez Airport. I got a "taxi" driver who came from Barcelona, and was a wise guy. I told him I simply wanted to be set down at the main shopping center in Los Condes. Then the sell starts, he can do a really good tour, and it only costs 40,000 pesos, a small and trifling amount to a Gringo. He also warned me to never leave the cab, Peruvian thieves would have my camera in an instant! I stated again that I wanted to go to Los Condes directly, and then noticed that there was no meter in the "cab", which was not a cab at all but a licensed tour bus. My advice to others is to step out once you see that the thing does not have a meter. At any rate he agreed to take me directly, and off we went. After the second circling of Cerro Santa Lucia I lost my temper and demanded that we go directly to Los Condes. When we got there, he demanded 36,000 Pesos, about \$90 Australian, and far too expensive for the fairly short ride. Going on what I had paid at Puerto Montt a few hours earlier, I offered him 10,000. When he protested, I invited him to speak to the Carabinero who was standing on the sidewalk. He took the money and sped away!



Hans and Adelita Langerfeldt, December, 2006

I went to Han's apartment around noon, and we had a cheerful reunion. Hans lives in a very nice apartment with his lovely wife, Adelita. Both taught at the

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University of Chile until very recently. Hans was Professor of Economic Geology, and she Professor of Mineralogy. They are a nice comfortable couple. I was made very welcome for my Fathers sake, and soon I felt, for my own. Hans told me about the involvement of Chile with Allende. He said that he was told by his own sister to get out of Chile. She had told him anyone who was educated was scheduled to be eliminated. In the month before Pinochet grabbed power, over 1000 members of the armed services, most of them officers were assassinated on the streets of Chile. Over 100,000 weapons had been landed the previous month at Valparaiso, and distributed throughout the communist cells and labor organization along with a huge amount of ammunition. The western press likes to portray Allende as an innocent and peaceful man. He was in fact the man who started to assassinate (murder) people, lots of them, and he had very clear plans to get rid of a lot more! This is never mentioned in polite politically correct circles, and is in fact denied today. I asked Hans what about the stories of the torture, and the killings that took place. He replied that there was indeed torture, and sometimes to innocent people, but these activities were what were needed to get these illegal weapons out of the community. As soon as the weapons were accounted for, Augusto Pinochet began the long and hard process of handing power over to proper government. He certainly placed many checks and guards in the way to try and ensure that the hard work he had done did not have to be done again. He successfully altered Chile and its institutions into ones that worked, and successfully infected much of the place with an active capitalism that is driving the standard of living forward at a great pace today. The only institution that he did not touch was Codelco!

We walked to a local restaurant and had a fine lunch of fish in the best tradition of Chile. Hans has totally retired, and has even sold his automobile. He still has a dachshund named Alex, just like he did in El Salvador in 1962! There have apparently been a few Alex's over the years.

The discussion turned to the circumstances that existed at Potrerillos before the discovery of the Indio Muerto ore body. Hans recounted the friction that existed between the staff at Potrerillos and the rather free spirits that worked at Indio Muerto. The first cause of friction was that the Indio Muerto people were the only people that had access to automobiles that could be taken out of camp on the open road without seeking specific permission from Norbert Koepel. Mr. Koepel was very jealous of his privilege to control. Secondly, Mr. Koepel regarded Bill Swayne's exploration efforts as nothing more than antics, and thought the exploration drilling a waste of the Anaconda company's money. Thirdly, Mr. Koepel felt it a slight that work should be going on under his nose without the people reporting to him. For all of his fine qualities as an active Manager, it seems that at the time Norbert Koepel was flawed in understanding how a mine investment really works. Firstly, to manage one needs assets, and these are discovered by Geologists, not found beside the road. Management by penny pinching is not a good idea excepting where people have decided that the company is going to disappear. It is in fact the way to make it disappear. All of these guys from Potrerillos were quick to reap the benefits of high promotion and much better job conditions when Bill Swayne pulled off his gamble and found a great ore body.

Sergio also told a great story about Norbert Koepel. The bachelors (1954) lived in really rough accommodation in the old Camarotes around the Copper Club. The messing was as poor as the accommodation. One of the other bachelors enlisted Sergio to help front Mr. Koepel about the living standards. Off they went to Keps place on a Saturday afternoon. Koepel opened the door before they even knocked, and welcomed

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them to the house and proffered a drink. Sergio says they got a tumbler of scotch each that would have stunned a mule! They were speechless in a few seconds, and another quick drink saw them being fare welled out the same door without a word of protest being raised. Kep told them how nice it was to see them, that they were welcome at any time, and seen off. Wise old fish! He probably had a special issue of scotch just for tackling this problem!

After an afternoon spent talking over old times, I decided that I had better start for the airport. I went early, since I am one of those people that like to get there with time to spare. We went out on to the street, which was very busy, and hailed a cab. I said goodbye to Hans and was on my way.

The driver then informed me that Augusto Pinochet has just died, and that the news was certain to bring on massive traffic jams. He added that we were to soon pass the military hospital where he had died, and said that it was sure to be the focal point of many demonstrations. By the time we got there, a huge number of Carabineros has appeared, armed with riot gear. A hearse was pulling out with a police escort, and it would have almost surely contained Pinochet's body. There were two factions on the sidewalk, one group clearly mourning and trying to sing some sort of hymn, and the other victorious people who welcomed his death with glee and laughter. The police were simply trying to keep the two factions apart, to lessen the friction. The taxi driver then took the ring road south to avoid central Santiago. The main road was totally blocked, and he had to get off and use the side streets, but eventually after one and half hours we got to the airport. There were certainly some ugly scenes to be seen, and one of the worst was watching some burning tires being rolled into a crowd of Pinochet supporters. Even in death Augusto Pinochet caused division. I can only hope that his death in some way can unite the country and get this horrible faction split in the nation healed.

The airport was very welcome when we finally got there, and the flag fall on the taxi came to 18,000 pesos, just half of what my friendly "tour guide" wanted for a much shorter and quicker journey that morning. In addition, I found that I had a pleasant companion who was interested in the world, and what went on around him, not in money. We talked over the mercenary problems with Christmas, and he concluded that the Bible ordered no celebration of Christmas, and as such, there was no reason to celebrate it other than commercial! Santiago, and particularly Los Condes was decorated in really good taste, but it was certainly a transformation of the American commercial Christmas, not any local event. Rather sad.

I spent about two hours watching the crowds come and go within the airport, had a last and unsuccessful try to buy a real empanada, and got on the plane. A long 17 hours to Sydney lay ahead of me, and then another 5 hours to Perth, and another hour home to Kalgoorlie. The purser had to break up two fights in the rear of the plane, both about politics.

We are almost exactly 180 degrees around the globe away, and a non-stop flight to Perth would go over the South Pole. I cannot turn my back on Chile as easily as I did Potrerillos!

If you have any additions, corrections, or comments, please email me at ftrask@bigpond.net.au

If I have offended anyone by my view of politics, please accept my apology now!