mour him in what I thought was a personal quirk. After all, a hammer is a hammer. I felt no personal attachment to mine. Being obliged to take the hammer took two pounds of what I could take so was quite an imposition. I was too naive to know I could have carried it free of the baggage allowance by putting it in my raincoat pocket. There was none of the security searches we see today. It turned out that the real reason behind Pickering's request was that no hammers had been ordered for the project, consequently there was none on site. It was an omen of inefficiency that I did not have the experience to be concerned about. I had yet to learn how indicative of far greater management problems these minor deficiencies could be.

One evening my father, who as a geologist knew quite a number of people in the business, asked who the project manager was. When I told him it was a C.S. Hitchen he paused and asked "not Charles Stansfield Hitchen" which I had to admit was so. "Oh dear" he said "be careful never to admit that you used to have relatives living in Wandsworth". There had been an uncle and aunt of my father's whom I had only met infrequently and then only when I was a child.

It transpired that as children, my father and his brothers and sister would be taken on Sunday afternoons to visit the particular uncle and aunt who lived in Wandsworth.

After tea, the Hester children and their cousins would be sent into the garden to play. On these occasions they would find young Hitchen dressed in his Sunday best velvet sailor suit alone in the garden next door, whereupon the Hester children and he would exchange mud pies until the mother came out to rescue and chastise him. I could understand my father's point. I never mentioned my knowledge of this piece of Hitchen's background to a soul but would often look at him and imagine him covered in mud and being spanked. The thought was to see me through several trying situations.

From my reading of the reports, it was clear that Hitchen had been sent out to the site to straighten matters up. The previous incumbent of the job had left earlier in the year before completing his contract, as had several of the geologists. Further reading showed the camp had been completely destroyed by a spectacular bush fire. No fire brakes had been cut. The bush fire approached in the early evening and found the crew drinking beer in a communal hut built entirely of grass. The half drunk crew could do nothing more than stand around in the open and cheer as their communal hut and then the tents and other grass huts were destroyed. The entire project was reduced to a pile of ash.

I was part of the new crew. Evidently the project had not got off the ground in a timely manner. The first project manager had coal mining experience but as an electrical engineer and more recently had been in academia. Only one of his two geologists had any coal experience. All three had gone by the time I was reading the reports. The final denouement came with that historic Saturday night when the fire came. All very amusing until hangover time next morning.

Under Hitchen, the staff had little more relevant experience than the first lot. Hitchen had worked in

— "My land routes in Tanzania" —

around the clock so as not to lose drilling time. The effect of the beer and lack of sleep soon put them to sleep for an hour or so. One gentleman with a shock of red hair woke up and leapt onto the table playing his mouth organ. Eventually the food was ready. We all sat down for a meal consisting of roast suckling pig. Stor (big) Peterson, the foreman, sat at the head of the table where he was served with the pig's head complete with an orange in its mouth. The rest of us ate whatever chunk of meat we were given. The oldest man present then gave a speech about the honour and glory of reaching the exalted age of thirty and we all drank toasts of champagne.

For much of the evening I sat next to Turnburg who was rather reserved at the best of times. Tonight he spoke hardly at all. He was embarrassed at having shaved off all his hair the previous weekend so kept his hat on all the time. He explained that the winter underwear I noticed him wearing was to counteract the effects of malaria. The poor fellow was shivering and clearly not enjoying much of the proceedings. When I left at about midnight, I invited him to spend the night in the spare bed at the house where I was staying. He accepted and we rode home together. We rose later than usual. Turnburg was clearly feeling better. As he rose from the bed, the first thing he did was to seize his broad brimmed hat and put it on his head. He then stood in the middle of the room clad only in his winter weight vest and announced that "somewhere last night I have shit" much to my consternation until I realized he was looking for his shirt.

The drills were of an interesting construction and archaic by present standards. The design was intended to make the machines easy to move under difficult conditions so everything came apart easily. The derrick was a gantry made of pipes that could be disassembled and broken down in a matter of minutes. The drill head stood by itself and sported a big flywheel on one side that was detachable. Power was supplied to the drill by means of a belt run over the flywheel that connected to a diesel engine on skids. The circulation pump was separate as it is on modern drill.

For some reason never apparent, the contract between CDC (my employer) and Craelius, the drilling company, required CDC, or us, to move the drills from site to site. I have never seen this arrangement since. In the dry season, we would simply send over a truck which the drillers would load up and move to the next site. In the wet season conditions were such that trucks could not reach many of the sites and Hitchen, our manager, was faced with the problem of what to do about moving the drills. For some reason of his own, he gave me the job. At least it broke the monotony and the day usually concluded with a good time with the Swedes. Each time I moved a drill, the circumstances would be different. Sometimes the whole rig would have to be moved by hand. On other occasions it was simply a matter of making a road so the trucks could pass between the sites. In the wet weather, we often had to break the drill down into small pieces so it could be moved by hand. The job generally fell on a weekend so there was plenty of labour available at overtime rates. We paid each man a shilling. The usual

rate for a day's work was sixty cents so there were plenty of takers (there were 100 cents in a shilling). I would ask for one hundred men, divide them into ten teams of ten with one man as a foreman. I would also have four youths, two of whom would be stationed at each end of the move where they would brew up hot, sweet tea so each porter could have a cup as he passed. On wet days this was a welcome incentive. I would stand at the departure end and estimate the weight of each piece of equipment so I could allocate the number of men needed to carry it. For heavy items like pumps, we would build a crude cradle in which to carry the object. And so the job went until completion.

The diesel engine was the heaviest item. It was mounted on skids so it could be dragged through the mud. The problem was to get the men persuaded that given enough of them, they could pull it. Whenever there was a heavy lifting or pulling job to be done, the foreman would use one of several chants that went like this —

Foreman (or me) — ***gorombe gorombe (or rrrrrcha)***
Men — ***cha.***
Foreman (or me) — ***gorombe gorombe (or rrrrrcha)***
Men — ***cha.***
Foreman (or me) — ***wanaume wote nguvu sawasawa pamoja (all men strong together)***
— **said very quickly with the voice rising on the last word**
Men — **(as they pull)** — ***waaaaaaaaa.***

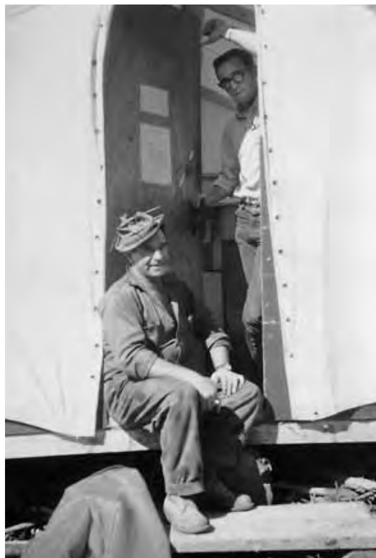
To this day, I have no idea what gorombe or "cha" mean. Once I had learned the ritual, I decided I could lead the shouting so against some initial opposition, had the foremen pulling as well. When it came to the diesel, I would line everyone available with their hands under the skids and on the appropriate "wanaume wote…" command, they would lift the diesel much to everyone's amusement. "Now" I would tell them, "if you can lift it, you can surely pull it" and off it went, just like a toboggan on snow.

On one occasion, all we had to do was get the road across a stream. There was no way we could build a bridge in the time so decided to build a 'drift' across a big outcrop of rock in the river bed. This simply involves reducing the rock to a flat surface so the trucks can drive over it, possibly up to their axles in water, but adequate enough. To flatten out the rock we had to drill and blast holes. The mining engineer Alec MacMurray, and I did the job together. We both had blasting certificates.

Soon we had forty men each thumping a drill steel into the rock by hand. We had no compressor to drive a pneumatic drill. After a couple of hours the men had the holes finished to sufficient depth and we loaded them up with dynamite. We cut the black powder fuses into lengths of five feet and crimped the detonator onto one end of each. We then pushed the detonator end of the fuse into a stick

treated, after coffee in the cookhouse, to the core shack where our efforts of the previous day had the Commission persuaded that the core had never left the site.

The attorney was a man called Ed Jaegerman who formed a liking for me, possibly prompted by my offering his party lunch in the cookhouse on site. This relationship was to be to my advantage ten years later. I also got along well with the mining engineer, a man called Butler. Several years later I was called on to represent TGS on another matter before the SEC at Washington where Butler was the chief inquisitor. Butler left the head table and strode down the room to where I was sitting in order to greet me — much to the surprise of our New York attorneys. "How is it that you know him?" I was asked several times.



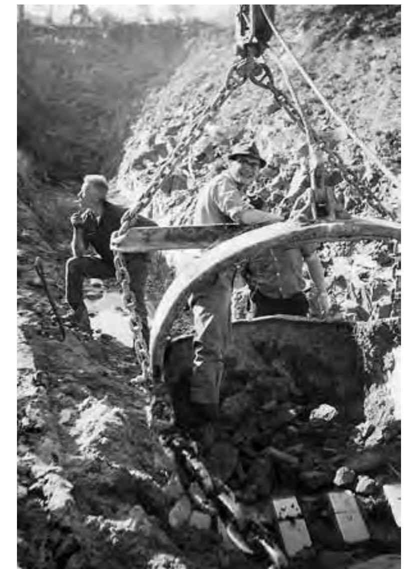
Rene Gervais, the drill foreman with the hat he always wore. He was a good friend and great mentor. He died of a tropical disease in Liberia not long afterwards. Franklin Jones in the background was a recent graduate who went on to a senior position with Kennecott mining company.

It seems that Jaegerman was the youngest lawyer ever to be called to the New York Bar so he was off to a meteoric start. Now he was head attorney for the Securities Exchange Commission but he had other, greater ambitions. He left the Securities Commission a few years later to enter the stock brokerage business as one of the principles of the firm. This lasted only a few years before the firm went bankrupt and poor Jaegerman was declared bankrupt too. Unknown to me, he was friend of Bill Alpern who was a customers' man with a stock brokerage firm in New York with whom I had an account. Bill took Jaegerman under his care and gave him room and board until he could straighten out his life. All this was ten years since I had last seen Jaegerman and we were living in Australia.

Later I'll write about my experiences in Cornwall but for the present, suffice it to say, that I had 7500 shares of a stock called Cornwall Tin and Mining for which I had paid $75 and which I was prevented from selling because the shares were in escrow. I was an 'insider' of the company and was precluded from selling. By the time Jaegerman came back into my life, I was no longer an insider but did not know how to get the restriction lifted. Bill explained to me about Jaegerman's misfortunes. Jaegerman agreed to get the restriction lifted (which he did in a couple of weeks — my own efforts did not even raise an answer to the application I addressed to the Securities Commission). He would take no money but asked me to give 500 of the shares to his daughter to cover her university fees. He undertook on her behalf not to sell until I had sold all my shares.

I started to sell my shares immediately as they were now at $7. 25. The price declined as I started selling but we finished up with the $42,000 we used eventually as the down payment on our house in Arvada, Colorado when we bought it in 1974. Poor Jaegerman eventually got back on his financial feet but was divorced by his wife. He lived alone in a small apartment in New York while he was trying to rebuild his life. It was not discovered for several days that he had died there alone. I still keep a letter of introduction to the Yale Club in New York that he gave me so that I could be entertained at his expense whenever I felt like it. An interesting person who certainly did me some good despite the trouble he gave the TGS management. All that I had done for him was to give him a lunch and cup of coffee at the company's expense and spend a little time showing him around the site at Kidd Creek.

The road to the site advanced slowly but surely towards camp. Eventually we could see the top of the dragline swinging back and forth as it cleared its way until there it was, in camp. The trucks hauling gravel for the roadbed were not far behind. On the day the dragline arrived, Mollison called me to order that the machine be used to dig a trench down to the ore. "I want you to select the site for the trench and to call me as soon as the ore is exposed. I don't want anyone to go into the trench until I get there". By that time we had drilled nearly one hundred holes and I had their collars plotted on a map. Henri and I quickly plotted the thickness of clay overburden at each drill site and contoured the map to reveal where the clay was thinnest.



Standing in the bucket of the dragline just after it had completed the trench that exposed the Kidd Creek orebody for the first time.

The dragline was put to work to dig a trench where the thickness contours showed was the best place to achieve our objective. Bedrock was soon exposed. I called Mollison who flew in from Timmins in his helicopter. He quickly climbed into the hole and knocked off the first piece of ore in what must have been a great feeling of accomplishment. He turned to me "send the helicopter back to town. The pilot knows what to do". Once I had carried out that order, I too, climbed into the trench. I was five feet eight inches tall at the time but was standing on solid ore with my head and shoulders above ground level. Only another five feet of erosion at the site and this point of the deposit would have been exposed to surface and found fifty years earlier by prospectors.

Suddenly the helicopter was back on site and landed alongside the trench. On each skid was a big box. Mollison turned to me and ordered "stop all the drills and tell the drillers to come here. You go

A celebratory dinner at the Goon Vrea Hotel at Perran–ar–Worthal in Cornwall in 1968 following the drilling programme that established what was to become the Mt. Wellington tin mine.

Left to right — Barbara, my father Sydney Hester, Hilda Knuckey, Barbara's mother Emma 'Toots' Fulkerson, Edgar Knuckey, our consultant engineer, my mother Eleanor and me.

times about his life as a miner in Arizona, or Michigan, sometimes about his experiences locally that is where my interest lay. On one such occasion, he pointed to a row of cottages. "You see the one at the end?" "Well there used to be a miner living there when I was a boy, called Billy Miner, he told me he worked at that mine" he pointed out the derelict stone engine house known as Cusvey's "and that he helped sink a winze (or underground shaft) on a tin lode (vein) on a cross–cut (tunnel in waste rock) running south from the shaft. I believe that lode is the one worked over here on my property". Not only was the old chap right but I found that Cusvey's closed in 1838, and this was 1967, 130 years later. Another old engine house had the date "1856" carved into the stone. Wellington told me "My daddy worked in that shaft. That was before he went to America. He fought in the Civil War you know before he came home. He always said that Mr. Lincoln was an awful fine man". Mr. Wellington himself had worked in many mines in the U.S. He was an interesting exposure to history. One day he insisted we climb an old dump to see some feature or other he wanted me to see. Up we went together with no trouble to him at all. Poor Edgar Knuckey, then a sprightly 68, had developed hip trouble and had difficulties climbing. "Look at 'im" Wellington said. "I'm old enough to be his father", which I suppose he was.

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The Toronto branch of the Canadian Institute of Mining (CIM) organized a trip to see the mines in Sweden. I persuaded Steve to let me join this. We started in Stockholm and after visiting various suppliers we took a train on which we travelled throughout the country to visit the various sights, and sites. We went as far north as the Arctic Circle where we went into the huge iron mine at Kiruna, then down to the coast at Narvik in Norway to see the loading facilities for the iron ore, then back south to various copper and zinc mines at Boliden and elsewhere. It was a great trip. The mine at Kiruna was a huge underground operation with a row of shafts for hoisting the high grade iron ore. We went underground in a bus down a long ramp. The miners were fed hot lunches which were brought underground in heated containers. We were all very impressed.

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No women worked underground anywhere in Canada at that time but here were women working in a variety of capacities such as locomotive drivers and hoistmen. At Boliden, we saw what they called the Boliden Circus that consisted of a mobile plant used to mine small ore bodies. Everything was mobile, the headframe, the hoist, and all the change rooms etc. I was very intrigued with the concept. Back home I mentioned to a contractor how useful the equipment would be for entering all the old mines we had. In no time we had a two man cage, about the size of a telephone booth, and a crane which we began using to enter many of the old mines to cut samples and study the geology. All the old mines had been shut before anybody took any interest in geology so while the plans of workings were complete, they showed nothing of the rock types veins or other features.

While travelling around Sweden on the special train, somebody picked up the news item that Texasgulf's final lawsuit was settled in the company's favour. Walter Holyk would tell me later that he celebrated with Jim White, then a geologist with the company, in a night of gay abandon in Santiago, Chile. Walter was the witness on whose testimony much of the case depended. The stress of those months in court led to health problems from which he never recovered although the outcome left him very wealthy. He eventually took early retirement and bought an apple orchard in British Columbia.

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Because of the cost of pumping the enormous quantities of water encountered underground in Cornwall, all the old mines had drainage tunnels, or adits, driven from the lowest spot the miners could find, in order to take away the water that was pumped out of the mine and to save having to pump it all the way to surface. Many of these adits still drain but are largely inaccessible due to collapses. These adits often drain the top few hundreds of feet of a mine. It was into these dry workings that we went. Some of the places were quite spooky with prints of the miner's hobnailed boots still clearly imprinted in the mud a century after they were made. In another place, I found the skeleton of a rat completely replaced by the copper carbonate malachite. It was very fragile and fell apart in my hands — what a wonderful specimen that would have been.

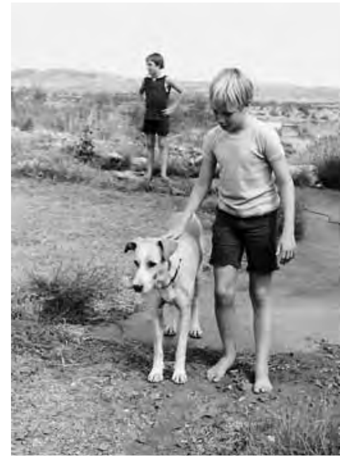
Eventually money was raised and we started drilling. For a while, we had drills working at both ends of the county so I was busy dashing between them. Results from the western property were spectacular. One intersection was 18 feet of material containing seven percent tin. One local mine was working veins with less than one percent across only five feet so we were in high cotton.

Hirshhorn floated Cornwall Tin and Mining Corporation in New York. He sold me 7500 shares at the par value of one cent but when the shares were sold to the public they paid $3.50 and it was oversubscribed. I was deemed to be an 'insider' and so was prohibited from selling my shares without going through the elaborate procedure I eventually followed as described in Chapter 14.

From a geological point of view, the situation was very strange. It was long held that in Cornwall, the metals are zoned with the veins with copper lying above tin. Based on this concept, several major dis-

(LEFT)
Logging trays of drill core at Mons Cupri near Whim Creek WA on a 'winter's day'.

(RIGHT)
Our two boys enjoyed the bush life. Here Jim is with Otis, the camp dog.
Ken is in the background.
Both boys quickly adapted the Australian custom of people their ages going barefoot.



up is still done by aboriginal cowboys, or stockmen, but often the farmer, or pastoralist, performs the work, using the noise of a syren fixed to the wing of his light plane to drive the beasts.

On this occasion, I was working away with the radio playing an Australian brand of country and western music that I enjoyed, while my mind was on the rocks. A favourite jingle of the time concerned the singer's encounter with a Red Back Spider that delivers a painful bite —

> *"There was a redback on the toilet seat when I was there last night*
> *I cannot say I saw him but I sure did feel his bite,*
> *And now I'm here in hospital, a sick and sorry sight*
> *And I curse that redback spider on the toilet seat last night."*

The pilot dived right at me in the plane and turned on the syren right above my head. I don't think I have ever jumped so high.

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At the time, the price of tin was high, as was the interest in the metal that I carried over from my days in Cornwall. I took the opportunity to visit Malaysia on several occasions to search out opportunities for the company. The one opportunity I found was not greeted with any great enthusiasm from head office and it was clear that they had never faced up to the concept of owning and operating something in this sort of locality.

What with my British origins, Canadian passport, Australian domicile and American employer I felt I had sufficient credentials to call at the embassies of all four countries, which I did to advantage. The U.S. embassy in Kuala Lumpur at this time was on the fifth floor of a high–rise office building. You stepped off the elevator to be greeted by the usual marine, suitably armed, who was supposed to pro-

vide security. When I stepped off the elevator to make my call, the marine had his feet up on the desk and was reading "Popular Mechanics". He barely acknowledged my presence. The disaster that this behaviour tempted happened shortly afterwards when five "revolutionaries" bent on expressing their anti–American sentiment, stepped off the elevator with submachine guns blasting. Security arrangements were tightened up after this event.

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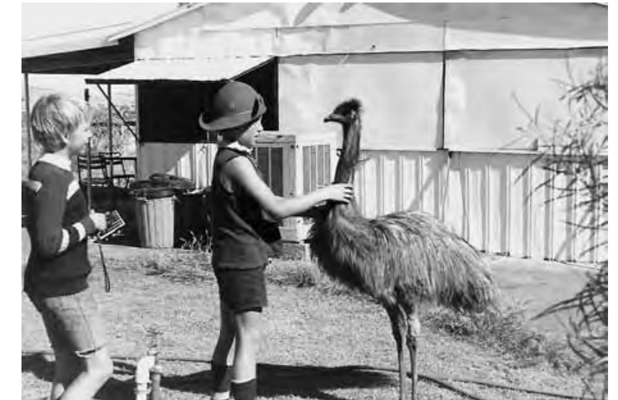
One of those strange coincidences that occur in life happened early in our time in Perth. Back in 1949 I had been sent by a local eye doctor to an eye hospital in London where I was attend by a stream of specialists who were all confused. At last, a short man with a bow tie and the unlikely name of Rugg–Gunn bounced in. After a quick look, he diagnosed me as suffering from Doynes Choroditis, a hereditary condition that would render me blind by the time I reached seventy. I was whisked into a black closet in a back room where I was examined by a succession of students. One I recalled was from Australia who advised me to come to Australia when I finished my studies. From then on, learning Braille was on my list of things to do eventually while I could still see.



Jim with Ken and Percy our tame emu at Mons Cupri.

It was now 25 years later, when I went looking for someone to make a regular eye examination. Harry Gair, one of my colleagues, recommended this particular eye doctor. This doctor gave one look into the back of my eye and asked, "what on earth is going on there?" to which of course I proudly told him the name of my condition. "I've only ever seen one case before" he admitted as he peered around with his little light. When I asked him where that had been, he admitted it had been the hospital I had attended and we both realised that he was the Australian student who had given me advice to come to Australia. All he could advise me now was that it did not appear to be advancing much, which was comforting.

Another 25 years later, I noted an article about how genealogy was being used to track the course of Doynes Choroditis from generation to generation. In response to the offer of my eyes for examination, the author sent an ecstatic reply. The hospital, which was in London but not the one I had attended in 1949, had found only 200 people with the condition. They were most anxious to examine my eyes. In due course, I presented myself only to learn a week or so later that I did not have the condition at all — all of which explains why I still do not read Braille.

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