



*At Unchen University, Richard Muggleton, photographer for the Australians, talks with English language students.*

# MT CARSTENZ FORUM

PANEL DISCUSSION ABOUT THE DEVASTATING ENVIRONMENTAL AND SOCIAL IMPACTS WROUGHT BY FOREIGN EXPLOITATION OF NATURAL RESOURCES IN MT CARSTENZ AND WEST PAPUA'S HIGHLAND COMMUNITIES

ACU ART GALLERY, FITZROY  
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## RICHARD MUGGLETON

PHOTOGRAPHER, Australian Universities  
Carstensz Expeditions 1971—1973

“Views of Mt Carstensz from Scientific Surveys  
of the Retreating Glaciers 1971—1973”

—transcription of audio recording

—powerpoint (digitized slides)



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The Northwall of the Mt. Jaya massif from subalpine forest above Lake Discovery  
Photograph: C G E (R. Muggleton)

**VICTOR LASA** Richard Muggleton was born in 1944 and when he was fifteen he decided to join the Royal Australian Airforce.

He was with the RAF for seven years when he decided he liked photography more than the Royal Airforce. So he did a four-year Diploma in Art and Design at the Prahran Art College, and after that was employed by the Victorian Plastic Surgery Unit as a clinical photographer.

In 1971 he was invited, as a photographer, to join the Australia Universities Expedition to the Carstenz Glacier in Irian Jaya.

He returned to Irian Jaya with the scientists in 1972-73 complete the survey of the retreating glacier.

Today he's here with pictures that he made for these expeditions, which show us a country that few of us would now recognize.



I travelled from Australia to Indonesia, and when I arrived around the mine, I found these desolate native huts. These were living quarters, and the mine would destroy them after the period of work so that the natives wouldn't hang around. So it was a conscious policy of dissuading the workers from staying around where they lived.



I joined the group late, and flew by helicopter up to the site where we camped for three months. This was 24th December, and on Christmas Day the tents started collapsing under the weight of snow. Remember this is  $4^{\circ}$  from the equator.



It snowed every day that we were up there. We occasionally had a clear morning, but at 3000mm of rain a year, it was a very wet environment.



One of the things that we did as scientists was collect scat, or dog poo, and bring it back for analysis to see what the diet consisted of for these wild dogs. There were only two groups of mammals that lived in that area or visited. These were the wild dogs, and a marsupial-like rat that also lived in the area, and the dogs would come up to eat them.



We woke up one day, I think it was the 26th December, and there was a wooden cross mounted near our campsite with a message that we managed to decipher that said 'Go away'. This group came over, about half of them armed with bows and arrows, and said we had to leave, and we couldn't disturb the ice because Jesus Christ lived under the ice. At Illaga where we landed there were missions, so they had influenced the beliefs. We negotiated, mostly in broken Indonesian, and had three people stay with us to watch we didn't do the wrong thing. It proved too cold for them, because they weren't dressed as we were dressed, so they went down to the mine, and negotiated a six-week stay for us. So we were doing what we were doing with their permission but for a limited time after the bad experiences they'd had with the mine.

This is the sort of country, where the glaciers had moved down and carved out enormous amounts of rock.

When the glaciers stopped advancing, with the warming, the ice would retreat and leave mounds of rock.

It was a rough area, we wore crampons, had ropes, did all the things that people have to do when you've got crevasses.







As the ice moved over the curves of the mountain it cracked open, and then after a snowfall you'd have a snow-bridge across the crack, which you could tread on and just disappear. Most of the time working on the ice, because of the snow, we had to be roped together. A lot of our work was done on the rock, because an important part of it was establishing the amount of ice, how fast it was flowing, what was happening to it.



There's three of the team, and you can see the melt-water channels and the sort of conditions that we worked there.

This is another melt-water channel.  
These tended to flow down and form  
lakes in places, and also disappear  
into the limestone.

The area is mostly limestone, and there  
are sink holes where the river actually  
disappears and then re-appears  
further down the valley.



We had to establish stakes so that we could measure the ablation—the amount that the snow was being blown away or melting, and the accumulation—how much it was growing, and also how fast the snow was moving.

So we installed these stakes, established them very accurately—we didn't have global positioning things in those days, we are talking about forty-three years ago—and then go back a year later and measure how much these stakes had moved.

You can see two of the team with the brace-and-bit going through the snow and about to set up some stakes.





To get to the ice you often had to dig snow out of the way. They dug snow pits, they did core sampling of the ice, and collected representative samples. Because of our atomic tests in the 1950s, there is a layer of the earth that you can measure very accurately. Once you get to these isotopes you know exactly what the conditions were at the time of the atomic tests. So we used a ten-metre ice-corer, and physically drilled up a core of ice to take back to Australia for analysis.



That's one of the ablation stakes about to go in.

As well as that, there were lakes. We studied the cryo-plankton and the various collected samples of what was living in the lake.

We took a rubber dingy, rode across them, took temperature-probe samples at different depths of the lakes, and got up water samples to see what was actually living in them.



On the left is Randell Champion from the Meteorology Department (Melbourne University) who established contact with the mining company and set up the first expedition. And Geoff Hope from the Australian National University).

Geoff has a gravimeter. That's a vacuum flask with a very very fine spring in it and a weight. It measures gravity, and changes in gravity. They were using it to establish the thickness of the ice, which they were able to do because rock is a different density to ice.

The gravimeter had to be carried up in a back-pack, flown in a plane, as you couldn't tilt it side-ways or you would snap the spring. It was quite a delicate instrument that was nursed all the way.







Establishing levels. We took theodolites and levels to establish the different points on the glacier to get the flow rate. That was an interesting process, because everyday the wind came up and you could see the cloud come up the valley, and when it got to where we were we had to stop working. Occasionally there were thunders storms as well. Being with a metal theodolite on top of a mountain—because that's where you did the surveying—was very dangerous. You'd feel the electrons making your hair stand on end: it physically stood on end. And you could hear the sound of these electrons flowing through you. When that happened you very quickly moved away from the theodolite and packed up for the day.



This was taken by one of the other members. I'm the centre figure there. Ian, the glaciologist, was actually twice my weight, so I made a case that my pack should be half the size, and he agreed to that provided I only got half rations.



That's Ian going up carrying some of the stakes that we sunk into the ice.

So you had an accumulation of snow and of ice. As the snow compacted it formed ice and flowed down the mountain.





People commented on the coloured lakes. This isn't a great picture of them; unfortunately over the forty years the colour has changed slightly. Bright blue lakes and green lakes. We think it was the cyro-plankton that lived there. Another thing we found in the ice were small birds and butterflies. They got blown up, and died on the ice, so got preserved there.



Amongst the trials and tribulations of living in a tent for a number of months was the joy of producing an upside-down pudding.

We were visited by some of the Freeport pilots who quickly went down with mountain sickness. We were photographing them, and they just sank before our eyes. When I flew in the first time, with a surveyor from Sydney University, we both got mountain sickness. The others had gone up a week or two before us, but we were flown in by helicopter directly to that height, and we both got very sick. I believe when the Indians and the

Chinese had border skirmishes at that sort of altitude, they lost more soldiers to mountain sickness than they lost to bullets. It is a horrible thing. When I walked the Annaperna Trail, a young German doctor flew in, and he was dead in twenty-four hours. So Ted, the chap from Sydney Uni, had to go back to Australia. I walked him down to the mine, and because I thought I was recovering I went back up to our site, but did have to crawl the last two or three hundred metres.

The second time I went in we flew into Illaga. It was one of those airstrips where the plane comes to a halt going uphill. Two or three hundred people had gathered around the airstrip. We thought it was a welcoming committee, but found out they had come to see us crash, because that was the first time a two-engine plane had landed at the Illaga airstrip. Our team of six or seven fitted into this small two-engine plane, but our supplies were coming the next day. So we just had our tents and sleeping bags. Well it was six days before the weather cleared and the plane could attempt another trip. So we traded with the locals for small tomatoes and a tuber of some sort, and I have never been as hungry in all my life. I was craving for meat, or fish, anything, while we waited for our supplies to arrive. From there we had a six-and-a-half day walk up about 3000 metres to to the mine site, with twenty or thirty porters helping carrying the gear, all the scientific stuff and our supplies for three months.

Some Indonesian university students joined us for a rief time. The had a mountaineering club that had visited the glacier, and knew of rock caves where people had camped. They weren't big caves, more like shelters, but that's where we got animal bones and charcoal that assisted in identifying the range of animals that had lived in that area.

Michael Rambiak, Lecturer in Geography at Unchen University, Jayapura, points out features of lamination in lake deposits over-ridden by neoglacial deposits.



I mentioned that I had trouble leaving and had to stay an extra few days by the airstrip, and that was an opportunity to meet some of the locals rather than the Indonesian soldiers with guns. I traded about everything that I had. I came back with my trousers held up with a bit of rope, but wonderfully armed with lovely bows-and-arrow, head-dresses, and stone axes.

**VICTOR LASA** Thank you so much Richard. That was great. It must have been a real adventure. Your purpose was purely scientific. Do you think the locals understood that?

**RICHARD MUGGLETON** Local people had seen geologists and all sorts of groups with a scientific background before, but I think they were still very suspicious.

