

CINNA LOMNITZ IN HIS OWN WORDS

Arturo Iglesias Mendoza
 Director of Instituto de Geofísica
 Departamento de Sismología

*... Allí, en el comienzo de la primavera marina,
 cuando el ave asustada y hambrienta persigue a la nave
 y en la sal apacible del cielo y el agua aparece el aroma
 del bosque de Europa, el olor de la menta terrestre,
 supimos, amada, que Chile sufría quebrado por un terremoto.*
 (Pablo Neruda, "Terremoto en Chile", La Barcarola, 1967)

*...la ciudad desfallece
 bajo el quinto sol,
 no la castiga el agua,
 ni el tigre,
 ni la furia del viento,
 ni tan siquiera el fuego ardiendo
 en el plumaje sagrado
 del crepúsculo,
 sino el socavón
 de sus entrañas...*

(Mirta Yañez, "La Poesía del Terremoto", 1985)

How many people would have had the misfortune to be present near the epicenter of the largest earthquake ever and also the most destructive quake ever occurred in Mexico?

Certainly not many people, but they are even less of those dedicating their lives to the seismology.

Cinna Lomnitz was born in Cologne, Germany, in 1925, twelve years before migrating to Chile.

In his own words, he describes his migration like:

"At the beginning of 1933, few weeks after Hitler's ascension to power, I emigrated from Germany since my father, following advice from his closest friend, an important member of the Nazi Party decided to auto exile himself. I was seven years then and had heard nothing about Mexico.

A couple of years later, we spent the summer in the 'Knokke beach', in the Belgian Riviera, my father, a young successful lawyer, was thinking to redo his life as far as possible from a Europe precipitating to a war abyss...." (Nexos magazine, 1st April 2003)

He studied Physical and Mathematical Sciences in the Universidad de Chile, where he graduated in 1948. He did a Master degree in Harvard University with a thesis on soil mechanics. There he studied with Karl von Terzaghi, considered one of the "fathers of soil mechanics". Lomnitz wrote a text entitled "Remembrances of Terzaghi" where he makes a strange homage to his teacher, here are some lines from that text:

"...The fact is that Professor Karl von Terzaghi exerted a lethal fascination over his students. Monday, Wednesday and Friday we were all well seated in the semicircular auditorium of Harvard engineering department, waiting his appearance as a malicious vampire..." (Nexos magazine, September 1999).

In numerous texts, Lomnitz remembers his experiences with the great Professors of that epoch; no doubt they had a strong influence over his scientific trajectory but on his life also. A couple of examples:

First:

"...Hugo Benioff was another genial character in CalTech; he enjoyed inventing diverse instruments: from electric guitars to seismographs. I believe he was the most important theoretician at that time. He proposed me the topic of my doctoral thesis, since he believed that the ways rocks are deformed is correlated with seismic prediction. But I demonstrated in my thesis that this was not so. He was disappointed, science is like that..." (¿Cómo ves? magazine, No. 10, September 1999)

Another example:

"I almost registered myself with Dick Feynman. But Anderson had already won the Nobel Prize, Feynman had not yet. Furthermore, Feynman was rather eccentric; he started his lectures playing drums to weaken students. These were the physics lectures that became famous over the world during the twentieth century." (Jaime Urrutia, www.100.unam.mx/pdf/cinna-lomnitz-aronsfrau.pdf)

He did a PosDoc of two years in CalTech after obtaining his PhD, hired by Richter as his assistant.

In 1957 he returned to Chile as Director founder of the Instituto de Geofísica at Universidad de Chile.

Cinna Lomnitz participated in an oceanographic expedition in 1959. The scientific leader of that expedition was Maurice Ewing, one of the most notable geophysicists in history. Lomnitz refers:

"Maurice Ewing, an enormous Texan, never raised his voice. I met him after his second heart infarct, when he invited me to be part of Expedition 15 of his oceanographic ship, the Vema, a three wooden stick yacht, modified to serve as a floating laboratory. Ewing worked as possessed. The pirate flag was hauled on deep sea by Doc's (as we called him) orders. There was no other law than his then. Ewing was the last of the great explorers and discoverers of the ocean sea..." (Nexos, 1st April, 2003).

In the morning of 21 may 1960, a series of earthquakes that shacked the south of Chile began. In the international catalogues an earthquake of 8.6 magnitude, another of 8.1 and one more of 7.1 are reported between 6 a.m. and one in the afternoon, besides an important number of lesser magnitude quakes.

On the day after, Lomnitz travelled to the city of Concepción, a city placed over 400 km from Santiago, close to the epicentral zone of the earthquakes of the previous day. He arrived in Concepción airport around 3:15 p.m. when the largest earthquake in instrumental seismic history took place: 300 km south of Concepción, near to the city of Valdivia, an earthquake of 9.5 magnitude started. Lomnitz describes the movement:

"At 3:15 p.m. of 22 may 1960 I was walking along the airport of Concepción City when I started to feel an enormous, slow movement, the trees were moving in circles, there were airplanes without people in the runaway that were moving back and forth... rolling. The epicenter was over 200 km of distance but the movement was highly impressive." (Cinna Lomnitz, interview given for the video commemorating the 100-year anniversary of the Servicio Sismológico Nacional, Instituto de Geofísica, UNAM).

From 1964 to 1968 Lomnitz was appointed as head of the seismological network of the Berkeley-California University. He remembers that epoch of his life:

"It was an extraordinary experience. At that time it became trendy something that did not flourish later, the "naked dancing". Certain houses were lent, those invited had to adjust to very interesting modes. For example, when dancing it was not proper in what other couples were doing. It was a mixture of Puritanism with very advanced ideas." (Reforma newspaper, June 7, 2016. The interview occurred one year before, approximately).

In that epoch, he was also participant of the UNESCO mission dedicated to the "Seismologic Recognition of the 17 October 1966 earthquake, destructor of Peru", that he shared with Luis Esteva Maraboto, a brilliant Mexican seismic engineer and, at that time, Head of the Structure Department of the UNAM Engineering Institute. It was probably then when his Mexican contacts started. In 1968 after invitations of Emilio Rosenblueth and Ismael Herrera, he incorporated to the Instituto

de Geofísica, whose head was Dr. Ismael Herera, who obtained for Lomnitz the highest position possible: Investigador Titular C (the equivalent of a Full Professor).

In his first years in Mexico, Lomnitz contributed substantially to the modernization of the seismological stations network, proposing an innovative telemetry system, designed and constructed in our country that allowed, for the first time, to have seismological remote signals in real time. In that manner the Red Sismológica de Apertura Continental (RESMAC) was built. RESMAC was one of the great professional satisfactions of Lomnitz. He and his co-workers of the time frequently did emotional relates of the electronic designs and the network installation procedures:

"Our technicians went to the 'other side' (meaning the USA) and returned with their pockets full of special transistors that were not found in our shops. This was really the only way to construct an advanced system at that time..." It was the first seismic telemetric network. Before that each station had to have its warden to send the seismograms to Mexico City, the data arrived late, wrong and never. RESMAC had no need to have personnel in the transmission towers, the microwave network was all over the country, giving an excellent coverage..." (Reforma newspaper, June 7, 2016. The interview occurred one year before, approximately).

I started this text talking about the tremendous coincidence that a seismologist, as Cinna Lomnitz was present in two of the most relevant earthquakes. Beyond coincidences, some seismologists have a sort of fatal attraction for earthquakes. The positive fotoaxia is the pre-disposition of some living creatures of "feeling" attracted to light. Some of them cannot avoid approaching the bulbs that lead them sometimes to fatal results.

It seems that Prof. Lomnitz could not avoid approaching the source of big tremors. In the following text, he speaks of his experience during the 19 September 1985 earthquake in Mexico:

"The house, one of the oldest in San Angel, began to crackle and swing gently at 7:19 in the morning... Seismology has progressed since then, today we could flag the phenomenon –"intensity six in Mercalli scale", I thought-. It was, obviously, a far away event.

When I arrived to the Instituto de Geofísica I found several workmates already there. The seismogram looked enormous, the telephone was dead; there was no way to consult with our American colleagues. But we did a very good preliminary location: epicenter in front of Lázaro Cárdenas, Michoacán. Never mind, let us go there..." (Nexos magazine, 1 November, 2005).

Under the shadow of a positive fotoaxia, Lomnitz gets onboard a little aircraft heading for Zihuatanejo, close to the epicenter. In his visit, Prof. Lomnitz observed manifestations proper of a great quake:

"Flying over the coast I noticed that something had changed. The level of the coast was a little bit higher. Yes, in fact, the tide seemed to have retreated. How much could it be? A meter or two. Then in Lázaro Cárdenas, a city of 150 thousand inhabitants situated at the mouth of the river Balsas, in not very promising soils, the seismic damage was minimum. 'It seems there are no victims'..." (Nexos magazine, 1 November, 2005)

I can imagine the uneasiness of Prof. Lomnitz few hours later:

"It was disastrous, 400 buildings came down, all in the lake zone. Nothing happened in Las Lomas, all damage was concentrated in the old zone of the Mexico Lagoon." (Reforma newspaper, June 7, 2016. The interview occurred one year before, approximately).

Jaime Urrutia, in an excellent biographical text wonders:

"The consequences of the 1985 seism were worst than nobody could imagine. From that moment on, Lomnitz puts aside his previous lines of research and dedicates exclusively to unearth the causes of this catastrophe..." (Jaime Urrutia, www.100.unam.mx/pdf/cinna-lomnitz-aronsfrau.pdf)

In 1990 he opted for the Mexican citizenship. Later he obtained a number of prizes: National prize for Sciences and Arts (1995); Prize of the Universidad Nacional Autónoma de México (1997), Emeritus researcher of the National Researchers System, Emeritus researcher of the Instituto de Geofísica (2002) and the "Angel of the City" given by the Governor of Mexico City (2015).

The life of Lomnitz was not always knowledge, adventure and reconnaissance. There were devastating moments: a terrible disease led to the death of his child, Dr. Jorge Lomnitz Adler, an outstanding scientist himself. Cinna wrote:

"...When a scientist dies, the country is in grief. If he dies in his flourishing years, before reaching the plenitude that his talents promised, there is dismay in the world of science. He was my son..."

Last 7 July 2016, Prof. Cinna Lomnitz passed away. He had just completed 91 years of age. I believe we cannot say he was in his flourishing years, but anyway "there is dismay in the scientific world". Let him rest in peace.

"There are certain things that I cannot tolerate, as violence and war. I am a pacific man, I only get angry when I have accumulated disgust." (Cinna Lomnitz in: *¿Cómo ves? magazine*, September 1999).

Mexico City, September 28, 2016
