

IV. Choijingiin Khurts, Geologist, Formerly the Minister of Mining : Interview conducted in March, 2013

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1. Childhood

Yuki Konagaya (YK): Today we are pleased to meet Ch. Khurts, the Mongolian geologist and former Minister of Mining. I wish to express my thanks to you for taking the time to talk about the development of mining and Mongolian geology. Let's begin with your thoughts and memories of your youth and tell us where and when you were born and about your mother, father, brothers, and sisters.

Choijing Khurts (CK): Certainly. I am also pleased to meet with you. I have worked for many years in the department of Mongolian Geology and Mining as a professional geologist and watched this department grow. However, I have also been a witness to its rapid decline and thus am prepared for all of your questions. But, I will begin with my early life.

I was born on March 2, 1939 in what is now Sükhbaatar *aimag*, Khalzan *sum* and in that year the Khalkhin Gol War between Mongolia and Japan had just begun. The Emperor of Japan with his powerful Kwantung army was on the far side of the eastern border as well as in Inner Mongolia and Manchuria where he was holding secret meetings and starting the war. It is said that the Kwantung army was defeated and chased from Mongolian territory. Each year at the end of August, the victory at Khalkhin Gol is celebrated, as it is still regarded as an important event demanding its own celebration. I have heard, however, that this event is barely spoken of in your country. Is that true? The

reason might be that you cannot talk about this war because Japan was defeated. You were the aggressor and instigated the war. But, these days, it is irrelevant to talk about how the war began. So I will not discuss the war, although I have carefully studied this war, but cannot add or subtract anything.

Just before the war began, there were important events that I will talk about. In 1939, it was clear that Japan was preparing for war, and our northern neighbor, the USSR, wished to send a few professional geologists to Mongolia. Shortly thereafter, Nicolai Andreevich Martinov led a class on a “geological research expedition.” Our government gave this class the assignment to study the resources of the East Mongolian area. At the same time, our government had to account for the results of the Japanese war in the expansive eastern area of Mongolia that was very flat, with few water resources. Since the military was heavily concentrated in that region, it was essential to have access to water. Traditionally, the herders had “hand dug wells” so that both people and animals had the water they needed. However, these “hand dug wells” could not provide enough water for the soldiers, and so Mr. N. A. Martinov directed digging them more successfully. This was the first task of the Mongolian geological expedition, and its success gave a boost to its future work which I will talk about. The Mongolian geological expedition studied up-to-date work methods, which were based on scientific knowledge and were applied to practical measures. Mr. N. A. Martinov directed this class in Mongolian geology for his entire life and devoted all his intellectual energy to these expeditions. He died in 2000 having written many scholarly books. Mr. N. A. Martinov came to Mongolia on November 6, 1939, and the Mongolian government decided to open the Mining Trust next to the Industrial Ministry. Henceforth, our geological expedition was managed by the government administration. From 1939 on, mining grew into a big and important sector of Mongolian geology.

My father was born a herder, but he did not own the herds. Unlike today, he had not attended school, but he read the Mongolian script very well and could also write it. In the 1920s, in our Dariganga area the first forty people were called up to the military, including my father. He said that “as a soldier doing military service, I learned to read and write, and I studied basic issues.” In 1925, he joined the Mongolian People’s Revolutionary Party (hereafter, MPRP). After that time, my father worked hard on assignments from the MPRP in every *aimag* and *sum*. From 1927 to 1930, my father served as a government *sum* leader, and then he adopted me from his older brother. I am an only child, and my parents spoiled me. Perhaps you know all about the “rights and privileges” of an only child! However, both my parents were educated, and I listened to them, and they influenced my thoughts about

people. When I made a mistake or did something wrong, my father did not yell at me, and I don't think that I was afraid of him.

However, when I look back I seem to think that he did inspire awe! With his encouragement, I studied to become a geologist, which was a fine profession and led to government service. When I was working in the government, he advised me that although I was doing alright, there was always the possibility of making a mistake, which had to be corrected. My father was thus very helpful to me, and now that I am a father myself, my sons listen to me when I teach and correct them. I was, in fact, the person in our family who reached a level of success.

I. Lkhagvasuren (IL): When and where did you attend primary school?

CK: I went to school ten years and finished middle school in Sükhbaatar *aimag*. I always rode to school, which began on September 1st, as did most children. Recently in Ulaanbaatar, there are “school buses” for the children or the “school bus” is driven by father or mother! Some people approve of this, while others are more critical. This situation even exists today in the countryside. From October 1 to April 1, I went to the *aimag* center for school. When the holiday season began, I rode my horse in the countryside in sight of the *ger*. In primary school, I was nearly five years old. Now one must learn to read and write, in the Cyrillic alphabet, to be an educated person.

So here is my summary which I hope is of interest. 1944-1945 was the Year of the Monkey, and our area suffered a severe *zud*, as did most of the nation. It is baseless to attribute the *zud* to the Year of the Monkey. The nomadic herders are always deeply invested in the natural world, and so they are most observant and they know, from experience, when a *zud* is coming. That year our area had a lot of snow, so the herds could not be pastured. Nevertheless, people who live in the countryside need snow for their migrations. You know about the migrations. Each spring, when there are fewer storms, the herder migrates. In summer, there is generally less rain, so the pastures deteriorate, which is bad for the animals, so the herders move to areas with more rain. In the fall, the herds have fattened up from the grass and the good water. This migration is traditional and dates back through our history. During that year of the *zud*, my father migrated, and I went with him. I loaded up the camel with piles of sheepskin *deels*, and we went almost to the Mongolian-Chinese border and set up our *ger* in a snowy area, which is now “the frontier,” and herds cannot be pastured there. Others moved with us, and three *gers* were set up for living. At this time, there was a powerful movement for literacy in Mongolia, and teachers were sent from Ulaanbaatar to teach reading and writing to the families in the countryside. So a teacher came to us while we were on the migration, where no one had learned to read or write,

and were not interested in learning as they worked from morning to night. One person watched the animals while another had to search all day for the herds. But I met with the teacher in our *ger*—just the two of us. And I was taught the thirty-five letters of the alphabet and to read and write. We learn all the thirty-three letters of the Cyrillic alphabet, but we have added the “o” and the “y.” So I learned the alphabet and to read and write. I also learned to play chess and dominoes. I went with my father to relatives, and an old man who was a fine chess player taught me how to play. Soon he told me: “Right, kid! You are moving ahead in chess! Shall we both play?” I loved playing chess, and I now play a lot. Chess is an ancient tradition for the Mongols, and we are now participating in a worldwide tournament. I am among our national chess masters. Recently, the World’s Federal President K. Ylemjiinov, a Kalmyk Mongol, came to our country. The World Chess Union is planning a “Chess Palace” in our country because there are so many chess players.

Many people came to our migration *ger*, and most of those seeking their herds spent the night. When there were *zuds*, my father and I took almost all of the herds on a migration for the winter as the snow storms in our area led to a decline in the number of animals. The herders had to go north to get away from the snow storms, which forced many people to hunt for their animals, and sometimes thirty people stayed with us. The sun set at around five or six, and then it was dark. We gave boiled horsemeat to our visitors for the evening meal. All of us stayed up late playing dominoes. And so, the time passed. But during the winter migration, we had to care for the herds that had been pastured all day. Sometimes the animals could find no grass, so we had a lot of work to do finding them fresh pastureland. Maybe some people think that herding is easy, but the herder starts work at four or five in the morning and works until eleven or twelve at night. Father and other men took turns playing dominoes from a sort of watch post and, depending on the weather conditions, then went off to look after the herds. Father and I took turns playing dominoes in the *ger* and looking after the herds. So I learned to play dominoes, which is not a traditional Mongolian game, and when we were not working, playing dominoes passed the time.

When I was little, my father told us folktales and stories that I can tell almost by heart. I memorized all sorts of Mongolian stories, which I can almost recite by heart, since I had memorized them very quickly when I was young.

At school, I was the smallest child in the class, and all the other children were taller and many were older than I, so the teacher sat me at a front row desk. My class and fellow students were good, and I helped those who had trouble, since the smaller kids were picked on. The bigger kids, both girls and

boys, in my class would sidle up to me and threaten to beat me up if I didn't do their math problems. Thus, I completed all the math assignments which I then showed to the teacher! Generally, children did their homework in their *gers*, but I didn't all the time. On a school holiday, I only cared about riding my horse and coming home where I had no time to do school work. My mother was weak on her feet, so I had to help clean the *ger*, get the water to wash the clothes, gather and split the wood for fuel, and watch the lambs and the goats. I remembered everything my teacher said and taught me, which was the pattern I followed for the next ten years, and so I became an excellent student. I finished the tenth grade in middle school at the age of seventeen, and during the summer of 1957 I went, for the first time, to Ulaanbaatar to pursue my goal of attending university.

2. Study Abroad in Moscow

YK: Had you already chosen to go into the profession of geology?

CK: Yes, for many reasons. So I wanted to go and study at the University.

YK: Really? Was your goal to study at the University called “mon adil” (“his dream”—trans.) In fact, is there a school called “mon adil?”

CK: Let me tell you about my “mon adil” school. I finished middle school and at that time in the countryside there were a few students who attended foreign universities, although most entered the Mongolian State University, and only the best went abroad. Students from the city and the countryside were judged equally. Those who did go abroad to study were supported by the government, and I got the opportunity to go to a foreign university. Since your Japanese educational system is different from ours, perhaps it is hard to understand what I am talking about. At that time, there were no fees for education, and children went to the university free of charge if they did well on the entrance examination. Thus, I went to Ulaanbaatar for the first time in 1957.

I can't compare Ulaanbaatar then and now as they were as different as night and day, and it was the only big city that I knew, and at seventeen years old, I had only heard of such wonders. When I first went there, cars galloped toward junctions in the roads amid colored *gers*, and when I first visited the capital, I never left my father's side for fear of getting lost.

At that time, students who wished to go abroad had to get permission from the Central Committee of the Mongolian People's Revolutionary Party (CC/MPRP), so I followed my father as we asked for information on studying at a foreign university. I knew that one could study to become a mining, electrical, flour industry or meat and milk engineer, but I wished to become a professional geologist. However, there was no school for such a profession since it was believed that “a geologist was someone who visited the mountains

and waters of the earth thereby angering the land and water spirits/deities.”

The Mongolians believed that “there were guardian spirits in the earth, and they did not wish to anger them by willfully cutting down trees, digging into the earth, dirtying the waters, engendering a *zud*, huge downpour, or drought, all of which could lead to great suffering and a difficult existence!” For hundreds, perhaps thousands, of years since the earliest people this was the belief. Every spring and fall the guardian spirits of nature and the earth were talked to or cajoled, and the *oboo* was worshipped. You have been to our countryside and seen the *oboos*, which gather together the guardian spirits above the earth. The best dairy products or white food are placed at the *oboo*, and this is the procedure known as “worshipping at the *oboo*.” From ancient times, the government leader secretly gave offerings at the *oboo*, and the nobility were committed to worshipping there. However, in socialist times, worshipping at the *oboo* was forbidden, although the tradition was revived in 1990. A recent presidential decree states that “the government has revived what had for so long been concealed *oboo* worship at the Khan Khentii Mountain *oboo*, the Altan *oboo*, the Khan Khokh Mountain *oboo*, and the stupa Merciful Mountain *oboo*.” The government has restored this tradition by encouraging *oboo* worship every four years. The President, Prime Minister, and government officials are required to participate, while most herders have always cherished and worshipped the earth.

If I had decided to become a mining engineer, I would have worked at the Nalaikh mine near Sühbaatar *aimag*. You know where the Nalaikh mine is—about 45 kilometers east of the city—no further by road. The Nalaikh mine is one of the oldest mines and supplies Ulaanbaatar with most of its coal. In 1922, the People’s Government decided to develop the coal mining industry at Nalaikh, and by 1945, it was in full operation. Later, the Shargol coal mine and the Baganuur coal mine were also up and running, and now work is being done to prepare the Tavan Tolgoi deposit—one of the largest in the world.

So I went with my father to the CC/MPRP to register to become a mining engineer and, at the time, the only place one could study that profession was in the USSR. The government paid all expenses if a student was selected to study to become a professional. The Ministry of Industry was responsible for me since I wished to become “a mining engineer.” A student stipend for a year starting from the period of the summer vacation included traveling from Mongolia and returning (by train) as well as a payment for studies and a monthly allowance. Certainly students needed a little spending money while abroad. A staff member from the department and the CC/MPRP registered me and informed me that I had to come back on August 15th when I would have been officially accepted as a student. I was told to rest up, so father and I

returned home. It was summer, and Naadam was near. You know about our most important holiday for which we can't wait. My father and I returned home in a hurry and, even though going abroad to study was important, at that moment I was even more excited about Naadam, and we began to get ready for the races. My father loved a fast horse, and each year at the time of Naadam he tethered his horse to condition it and was famous in our area for being a leader in the races. I always went with him and had tethered many a fast horse myself, and this year my tethered horses were good gallopers at Naadam. Since I knew that I would serve my government by studying abroad, Mongolian Naadam was for me! Naadam seemed to represent those young animals which, as the Mongol people envisioned, would grow up. All of this was wondrous to me. There was even a proposal for UNESCO to appoint "Mongolian Naadam" part of the World Cultural Heritage.

At that time, I spent the summer visiting many people's homes, including my own family group which consisted of seven or eight families of brothers and sisters with up to ten children each—altogether forty children, so the local people called our family group "the multitude." We had more than 1000 sheep, more than 200 horses, about 150 to 160 camels, and about 200 cows and oxen. We came back quickly to tether our horses, and that year Naadam went very well, and the tethered horses galloped better than they had in the past. However, by mid-August we went back to the Ministry of Industry in Ulaanbaatar where students from various parts of the country were given their placements for their study abroad. The department head introduced the young people by name from their home areas, with their placements for study abroad. I waited with two or three others and hung back waiting to be called. Two students left, and then I heard "Banzragchiin Adiya from Dundgov will be going to the Moscow Geological and Prospecting University!" I stopped listening when I heard Sükhbaatar *aimag* Choijingiin Khurts, and I stepped forward and heard "mon adil" ("his dream") I asked myself what was the school called "his dream?" I was so inexperienced and wondered what was going on.

My father and I had to make the preparations for my going abroad. Even though I was given a little money from the Ministry of Industry, I needed to buy an overcoat, a suit, and boots among other things. I thought to myself that "I can't wear a Mongolian *deel*," but I didn't know about wearing European clothes. All my things had to go in one wooden travelling chest, which I had to keep near me. The chest held many of my things, including a sack, and this long journey seemed like that of the Mongolians, who in the past, travelled by camel caravan. We also bought a small suitcase from the market which kept my clothes a bit better. When the day for my departure arrived, father and I

didn't take one of the rare taxis or buses and instead walked the long way to the Ulaanbaatar station, and my poor father carried a very heavy load. When we reached the station, we saw whole families, celebrating with food and drink and who had gathered to see their young students off, and there was such a crowd that there was no place to put your feet. The last minute instructions were given, and there was talk of letters. We had a splendid send-off to the famous universities where we would study. It was a big change for youngsters to leave the family to study abroad. In 1990, the USSR and the European countries began to change, and so did our relations with them. In addition, there was a decline in the number of students going abroad, although it has now rebounded with students going primarily to the Western countries where they have to pay their own way. Students from Ulaanbaatar can take a plane to most countries.

My father and I were in the midst of many people all sweating profusely as we tried to find my train car. Then a man from the Ministry of Industry, which furnished our tickets, called out our names and train cars. My father and I listened and heard: "For the Moscow Geological and Prospecting University, here is the car and seat for Choijingiin Khurts!" and I was off to study at the Geological and Prospecting University and had started on the path to becoming a geologist. That was fifty-five years ago.

IL: Was Moscow difficult in the beginning?

CK: From the minute I reached Moscow, it was great, but I had little time to explore this huge city when I was a student, and I know it better now. I have a wonderful memory of sitting in the first train car on the way to Moscow in my snow white shirt, suit, and tie. I looked out of the open window all day long. The Siberian countryside was like my Mongolia, but then the long column of the train quickly passed through villages and towns. I met Russian people and understood nothing they said, and everything interesting and strange caught my eye. After five days on the Siberian Railroad, we arrived at the Yaroslavsky station in Moscow, and our white shirts and new clothes were now pitch black. The youngsters who had attended middle school in Ulaanbaatar knew the Russian language much better than those of us who had gone to school in the countryside. There was no Russian language teacher in our *aimag* school so we had to take an entrance exam in Moscow, and we muddled along. In fact, I had been an excellent student for ten years, and since I lived among Russians in Moscow, I thought I could learn the language quite easily. The teacher taught the lessons entirely in Russian, and so I hoped I could pick it up easily with no exam! Did I have a big head? Only two people had graduated from our middle school with excellent results. I was one, and the other was the academician D. Tomortogoo. He is a very learned man who

teaches at the Mongolian Academy of Sciences, has published many excellent books on the Mongolian language, and has served on the Education Committee. The entrance exam was given only to those students who had not followed the rules, so I decided to take it and was given tests in Russian and mathematics. In fact, the Mongolian State University offered classes in Russian language for those going to the USSR, and three students from that class were taking the test. The first part tested spoken Russian which five people, including Chimed from Khovd *aimag*, who had also finished middle school, took with me. A man who had served as the leader of the Industrial League Committee from Bayan Ölgii *aimag* also took the test.

So we took the exam in a hall, and we were asked to write a so-called travel journal and since I knew barely any Russian I just sat there and wrote nothing while everyone else seemed to write away. Some even wrote on both sides of the paper. I definitely needed help, so I asked another student, S. Chuluundorj who sat near me and had finished if he would help me, but he was not eager to do so. This Chuluundorj had worked in the Ministry of Foreign Affairs for many years and was a professional diplomat who represented Mongolia at our embassy in Poland. So all I could write was Ulaanbaatar and an arrow pointing to Moscow. I had some nerve! I took the math exam several days later with no difficulty, and I shared my test paper with the youngster sitting next to me who copied it problem by problem. I couldn't help thinking of all those students who could have helped me on the Russian exam when I asked "Here's my question—what do you think?" I soon found out that because I had done so badly on the Russian test that I had been assigned to a Russian language class. However, I did very well on the math exam.

Getting around Moscow for the first half of the year was hard but full of small adventures that amuse my children when I tell them my stories. One such tale includes a ride I took on a Moscow bus full of people. At that time, many buses had wooden doors in the front which were reached by stairs. I had tried to tell the driver where I wished to get off, but he did not understand me at all. So I just looked out the window watching for my station stop. Then as I prepared to move to the front of the bus and step down to the door, I found myself blocked by a huge, fat Russian man, and Russians were, indeed, tall and big-bodied. By comparison, we Mongols were small though well-built. I was eager to get off the bus and wondered why he was blocking my path, but I couldn't say anything in Russian, so I thought that I just had to wait for him to move. Then I decided to give him a gentle push, and he turned around and glared at me saying "What do you want?" All I could answer was a spluttered "ah, ah, ah" as the bus continued on its way. Another Russian man smiled

slightly at me and got off the bus as I saw my stop slipping away.

Another day I went to the university cafeteria at tea time and waited in the long queue wondering about Russian food, about which I knew nothing. I listened to the Russian students who said: "Please give me 'Shoshay' which I thought meant 'sidewalk'." Then the young woman server put two or three thin red fingerlike objects on a plate which I figured must have been the "shoshay." I didn't really know what these "shoshay" were, but when my turn came to order food I said "Give me the 'shoshay!'" and the young server replied: "What do you mean?" and asked me again, and I stated once more "Give me your 'shoshay'" I said loudly as all the students in the dining hall burst into uproarious laughter. I thought I was talking in my best Russian and did not understand why everyone was laughing at me. Finally, a young Russian student asked me "what do you mean by 'shoshay?'" so I pointed to the red finger things as the server said "Oh, those. They aren't 'shoshay'—they are 'sosiskii'(sausages—trans.)", and she picked up one on a fork. I was very different from these tall, handsome, and good-looking Russian young people who were shameless and seemed frightened of nothing when they caused me this great embarrassment. I was standing in front of this elegant young woman, and since I didn't know Russian all I could do was splutter as she mocked me until I broke out in a cold sweat. Really! In Mongolia "shoshay" referred to a "paved road" and a "soski" was a baby's pacifier. One or two mistaken words can entirely change the meaning as I learned on becoming the laughing stock when "shoshay" became "sosiski."

Generally, when one begins to study Russian, the words with their difficult intonations are strange and frightening. This was the case for the first six months, and then things got a bit better, so I could even argue in Russian. I finished the first year at the Moscow Geological and Prospecting University as a "special" student with a good result. I had to read the book *Mathematical Problems* by S. N. Berman from our university which contained more than 400 problems, which I did with another student. There was a mathematics lesson guidebook, consisting of four thick notebooks of problems which were passed around to all of the thirty Mongolian students in the dormitory, except me. I served on the Mongolian Student Council and was selected leader. In addition, all the Mongolian students in Moscow were members of the Revolutionary Youth League, with a leader and committee members. At this time, I joined the MPRP, and during my student years we participated in many social events and activities, and those students who didn't take their exams were expelled. As leader of the Mongolian Student Council, I led a discussion about our country's need for professional geologists, while some of our students who didn't take their exams in a course in Descriptive Geometry were

being expelled. However, the Mongolian students had never studied this subject, so they were not prepared, as we explained to the teacher. Finally, this subject was included in the students' curriculum, and our students were not penalized, and eight of us finished the school that year.

3. Geological Survey at the Geological Institute

When I finished the university, I returned to Mongolia where the Mongolian State University had opened a research class in geology and prospecting. My classmate and I were interested in teaching there, but those of us who had studied abroad had their places of work decided by the CC/MPRP. Thus, I was informed that although I had done well and had finished my education that I was needed in industry and would not be appointed to teach at the University. The CC/MPRP told me that I would work near the Council of Ministers at the Geological Research Institute while S. Tomortogoo was appointed to teach.

Maamkhaviin Tserendorj was the director of my new work place where eleven people had graduated from the Mongolian State University, seven from the State University of Czechoslovakia, and seven came from the university in the USSR. So there were more than twenty professionals and some Russian engineers who were working in Mongolia. There were two or three geology prospecting classes, and each year one class was appointed to work in the countryside, and every year four Russian professionals joined it. One day the leader told me that I would also go with the class, so off I went. The Russians were very smart and excellent professionals and were revered as gods, although some of them were quite unfair, and if we didn't agree with them, we were considered "anti-Soviet" and hostile to "Mongolian-Soviet friendship." Thus a fierce dispute over the exchange of ideas arose between the two countries.

Some mineral riches were known about by the geological prospectors, but there was less knowledge about how to extract, precipitate, or concentrate these minerals. For example: wolfram (tungsten) is an element that is tied to other elements and is not isolated in its natural state. The Mongolian geologists could identify those elements wolfram was attached to, but the Soviet professionals disagreed, saying they did not believe that wolfram was joined to other elements, and thus a dispute arose. The Soviet geologists insisted they had never heard that wolfram was connected to other elements and that we were wrong. Since the Russians knew not a word of Mongolian, I argued with them in Russian. Even though we were professionals, we were told that we would be in trouble with our government if we argued with the Soviets. So I listened to my friends who told me to back off. Therefore I did not pursue this

issue with my boss who, I later found out, had a different opinion, and praised me for my spoken Russian, which made me a little stuck up!

We finished our work and returned to Ulaanbaatar. Shortly thereafter, a department leader was appointed at the Geology Research Institute, and there was a decision made to appoint a department leader. I had worked there a year and three months when the government decided to organize the Ministry of Geology and Mining. Those of us who worked at the Geological Research Institute saw our ranks elevated, and I started a new period in my life as organizer of the Ministry of Geology and Mining. Mr. M. Tserendorj was not a professional geologist, but became our new Ministry's leader, and even though he may not have grasped all issues before him, he was humane, intelligent, and a diligent worker. I was appointed to serve with him in the economic planning department. As for the Geological Institute that I have spoken of, it was to exist alongside the Ministry of Geology and Mining, and its head geologist "would do double duty" and work at both places. Many thought this all very odd, but we set to work. One day, Minister M. Tserendorj said: "Hey, Khurts—bring me a plan!" and he gave me a summary of what he wanted in such a plan. The Minister was not pleased that he had appointed a long-time, but inexperienced, director of the class in geological prospecting and so, as part of my plan, I moved him and made him leader of the auto resources division, which was under the jurisdiction of the Ministry of Geology and Mining. Minister M. Tserendorj read my proposal and, saying little, focused on one part of my plan and said: "So, you appointed this person and this is the sort of plan you write?" I answered "Yes," and he continued: "What you wrote is so confusing. Why didn't you just write that you fired this man? Are you Mongolian or Russian? What you wrote has not one Mongolian sentence in it. Take this." And he gave my plan back to me. With this severe critique of my proposal, I went back to my office where I realized that the meaning was not clear and was, indeed, most confusing. For many hours, I reworked my plan, read it aloud, and copied it over four or five times, before I went to see the Minister again. He read it attentively and looked at me and said gruffly: "So this is it. You didn't spend much time on this plan! In the future, you will be responsible for many issues which you cannot write up like this. Absolutely not! You are a professional geologist, and you need to organize and manage all the issues connected to mining for the government's central administration. To do so, you need to understand the inner workings of the Ministry and have a solid knowledge of all its legal decisions and regulations. You are responsible for knowing about every decision—big or small—pertaining to Mongolian geology and mining."

Since I had to meet his demands or be put to shame, I worked hard and

came to know the Ministry like the back of my hand, thanks in part to the many experienced people who helped me and who I now remember with gratitude. Then I was appointed Deputy Minister in the Ministry of Geology and Mining, but I wondered if I would be able to be effective in my position, which included working on the economic plans of the Ministry. There I was at 26 years old and shortly thereafter I received another major appointment—to the CC/MPRP. The MPRP had more than ten thousand members and the power to build a strong government. The CC/MPRP had about a hundred members, and I was only 26 years old. Soon I was elected a deputy to the Great Khural from Ulaanbaatar’s Tenth District, and I am now a member of the UIKh or the Great State Khural. I was also an elected member of the Central Committee of the Mongolian Revolutionary Youth League, so within a short time period I held many offices as well as serving from 1976 to 1980 in the Ministry. In addition, I served on the Council of Mutual Economic Assistance for all the socialist countries and as General Secretary in the Division of Geology and Mining. And later, I was the General Secretary of Mining and Geology to the sitting Mongolian ambassador to the USSR.

I had to meet every week with the Deputy Minister from the Ministry of Geology and Mining to clarify our policies. I liked all of this work as our Division of Geology and Mining was gaining special attention for its rapid development. In July, 1961, the MPRP’s 14th Great Khural met and drew up a ten to fifteen year plan with the major goals in geology and mining. The other socialist countries were working together in drawing up their own development plans in geology and mining when our Ministry began its own interesting work.

4. Cooperation with the USSR

YK: How did the other socialist countries work with the Mongolian Division of Geology and Mining?

CK: Many countries worked well together, and we worked with other socialist countries with the USSR as the leader. In 1962, our country began to look into the possibility of working with the socialist countries in geology and mining through the Council of Mutual Economic Assistance.

The USSR was one of the world’s leaders in developing geology and mining. After the October Revolution, the USSR began to develop its geological and mining department. And the Russians affirmed the truth that “The Mendelian Periodic Table presented all the elements!” The Russian Academy of Sciences was organized by the scientist M. V. Lomonosov who stated that “Russia is a prosperous and flourishing country including Siberia!” You have read this I am sure. Diamonds, gold, and silver were among its rare

elements, and there were also supplies of oil, coal, and iron ore. Russia's communist society initiated a period of technological development although some branches of the economy lagged behind.

Today Russia has fallen behind in some ways because many of its mineral resources have been mined. However, oil is now extracted in Siberia, and I see that with its great stocks of natural gas that Russia is the most powerful country in the world and, I think, has set the world standard. Mongolia, in the past, needed the USSR's support and financial aid and although our interests conflicted on some issues we often had to defer to the Soviet Union. However, there were always two sides to an issue which were unavoidably connected to each country's demands. When I was at the Ministry of Geology and Mining, I worked with the Soviets on a joint "uranium expedition" to discover uranium deposits. We, however, were responsible for all the expenses, and I thought to myself that our two governments needed to settle some of these issues. I said that I knew that uranium was essential to the Russians and that they needed to pay their own expenses and that we couldn't afford to pay them! In the next year's budget for "uranium prospecting" there was not even a *tugrik* from the Russian side. I was criticized for supporting this plan, but I had to consider the issue of "Soviet-Mongolian friendship." As of 2000, it was clear that Mongolia, a small country, could not pay the expenses from uranium mining, and I think about this in a rather unfavorable light. In the past, the Soviet and Mongolian geology and mining departments had worked together on the Novosibirskii Council, which was named after the city where the work would take place. I attended the meeting and said some tough words. At that time, there was a mining class in geological prospecting in Dornod *aimag*, which searched for quartz crystal found abundantly in nature and used to make high quality and elegantly decorated lenses. East of Ulaanbaatar was the tourist town of Terej and near to us was Gorkii where there was a crystal processing industry. In one year tons of an excellent quality of quartz crystal were produced, which added an annual twelve million *tugriks* to the budget—not a small sum at that time. I began to look into what one ton of quartz would sell for on the world market considering the current rate of exchange, and it was clear that the USSR paid less than the world market price for every ton of quartz. Their payments amounted to very little. Was this generally known? I decided to write a letter to the CC/MPRP about this low price for a ton of quartz, and I hoped this would lead to a price rise. My letter reached the State Planning Commission, which received it favorably, and in 1964-1965 decided to cut the budget supporting the exploration for quartz deposits and the quartz processing industry. In point of fact, this decision was ultimately reversed by the MPRP and was never implemented, which I thought was unjust.

There were some Soviet geologists who lacked a strong knowledge of their profession, as was clear from our disagreement over plans for expeditions. I could not confirm their proposals, so I wrote plans for the Russians, which I told them to follow. Then the gossip about me erupted, and it did not seem possible that we could work with the Soviet Department of Geology and Mining. I was seen as bullying the Russians whose knowledge of their profession was poor and who were under a great deal of pressure. So our talks just rambled on. One day Mr. M. Tserendorj urgently called me to his office, and I guessed that he wished to talk with me about these issues. When I entered, he said nothing to me and continued writing. After a while, he asked what I was doing, and I explained what had been going on. He answered that he had heard all sorts of talk and warned me that I could not continue to work at the Ministry if I maintained such a bitter professional relationship with the Soviet professionals. He continued: “You went to the university in the USSR and studied there, and you should know not to speak badly of the profession. It is essential that you stop such talk immediately!”

I then answered him: “Minister, the Soviet professionals in geology and mining who came to us included many mediocre people with little knowledge of their subject. One had only completed the Technicum and had reached the status of a research engineer. Such people cannot work out an expedition plan, so it would be wrong to entrust this task to them. Therefore, I did not approve their poor plan!” He listened to me and said: “You may have been right in not approving their expedition plan, but you must always talk with me before sounding off on your own. Such issues are usually decided in talks between our two government committees. Each year, the Mongol-Soviet Commission meets to work out its plan together and settle such problems. You criticize without listening and before you really know what you are talking about!”

Thus, I refrained from entering into further disputes with the Soviet professionals. Certainly, you have heard or read about the Erdenet Mineral Enrichment Industry.

5. Establishment of Mining in Erdenet

Copper and molybdenum are plentiful in deposits that the local people call the Erdenet Oboo. The ancients regarded this place as a “jewel,” and there is a huge copper deposit there. I imagine that you have heard the interesting story of the Czechoslovakian geologist who came to Mongolia in 1960 and spoke about developing a plan with our geologists. We met in Khövsgöl *aimag* and proposed to draw up a map. Khövsgöl *aimag* is full of natural beauty, and we call it our Switzerland. You must see Bayanzurkh, Ulaan Uul, and Tsagaan Nur in Khövsgöl *aimag*.

YK: We had been there! I have already been to many places in Mongolia and almost all *aimags*. I am eager to see more of the country with its imposing and eternally snow covered mountains, wide rivers, and dazzling and expansive deserts! The plants, animals, and the climate are all so interesting. It is unfortunate that the Japanese people do not really know Mongolia.

CK: Ah yes! Japanese people do not know Mongolia!! I have an idea for you. Ordinary Japanese people must only imagine that Mongolia is just one huge country, so we must tell them more about our nation. The Japanese are great tourists, and they visit Mongolia to enjoy our vast steppe country, our nomadic way of life, and our traditions! To the Japanese, Mongolia must seem a spacious steppe land with few people. Is that right? But I also think that the Japanese might be interested in our geological formations and our precious natural resources and riches, but they don't seem eager to look at our maps. So perhaps there should be more involvement between Mongolia and Japan in such endeavors.

Khövsgöl *aimag* has great natural beauty, and perhaps that is why the Czechoslovakian geologist and his compatriots decided to map it, which they did after a year. I accompanied them to Khövsgöl *aimag*, and we passed through Bulgan *aimag* on the way to Erdenet Oboo, where the Czechoslovakian professionals offered sacrifices. They then explored a bit and suggested that there might be copper or molybdenum deposits. The Czech was an experienced geologist and knew how to run an expedition and "place a scar." Ultimately, in 1964, we had a joint expedition to Erdenet Oboo, and I went to Czechoslovakia to meet with their professionals about how we would work together in spite of the many disputes.

Emanuel Komenek was the name of the highly professional Czechoslovakian geologist who knew the work like the back of his hand. We, too, did not always agree on some of the methods supported by the expedition committee. For example, I believed that the drilling area had to be 3,000 meters long and 1,500 meters wide, while the Czech geologist believed the area should be square and 135 meters x 135 meters in a ratio of three bore holes. I told him that his method was used in the past and that he needed to move ahead ten years and that there had to be 400 meters of space for seven drilling lines, with 200 meters between one line and the one next to it. The Czech could not agree with me, so we argued continuously. He asserted that he had tested three bore holes in the ratio of 135 meters x 135 meters for drilling, and he was sure that such a method would lead to a deposit. He stated clearly that he knew what he was talking about and if he didn't he certainly would not be considered a world famous geologist!!

I said to him that my procedure took air into account, which was essential

in this work, but we argued for some time over our different approaches. Then Moimir Krater, the Deputy Minister from the Czech Ministry of Mining and Geology, came around. He had finished Sverdlovsk University in the USSR. I was asked to talk with him and explained my side of the issue, and it was clear that he had worked on many expeditions. We shared a glass of vodka in “the Russian tradition” and talked until midnight. On leaving, it was hard not to argue, and I told him directly that we should follow my methods of drilling as I did not support his. He was silent and then told me that he was a specialist on these issues. And the next day he reached a decision on all my methods of drilling.

YK: Was there co-operation between the Mongolian and Russian governments in setting up a processing industry for copper and molybdenum deposits? Did the Czechoslovakian government refuse to participate in this work? Why?

CK: The Czechs did not refuse to co-operate as part of the Mongolian Russian Co-operative Agreement which I will tell you about. In the fall of 1968, we had only begun to work with the Czech geologist, which was a big deal, when in socialist Czechoslovakia a strong and popular anti-government movement arose which was known as the Prague Spring. In 1956, there had also been an uprising in Hungary. What were people hoping for from these uprisings? They were protesting their governments’ refusal to meet their demands, and their efforts encouraged dissidents in the USSR as they criticized their own government, economy, and society. However, the Soviet military had been sent to Budapest to squash the rebellion, and the Czech government followed the provisions of the Warsaw Pact and also called up its military. Thus, although our Czech geologist began to work, he could not finish. Generally the work of a geological expedition in exploring for ore deposits is done in three stages. The Czech geologist and one of our Mongolian geologists worked on the first stage of reaching the deposits of the ore, and preparation for work on the second stage had begun. However, the foreigners all went home, leaving our geologist on his own to continue with the second stage of getting to the ore. Fortunately, the Czech and I had prepared well, and there were no obstacles, so later in the year we began the third stage of the work, even though we did not have a source of funding, which necessitated our government’s search for financial support. Finally, the Soviet government took up this issue and made a very speedy and positive response to our proposal. This was unusual since it generally took months or even years to receive a response from the USSR, which often ended in a refusal. There is a reason that such was not the case this time.

Perhaps you have read about the Chilean Revolution of 1973 when General Augustino Pinochet bombed the Presidential Palace of Salvador

Allende and overthrew his People's United government, and with his military junta, Augustino Pinochet took over the government. At that time, the USSR and the People's United government of Salvador Allende had drawn up a major agreement on copper concentrate that collapsed with the advent of this Chilean revolution. Just at this sensitive time, our government presented a joint geological study on the reserves of ore in our precious copper and molybdenum mines, which explains why the Russians answered us so quickly. In November, 1971, we undertook a huge geological expedition and quickly determined the deposits of copper and molybdenum—a task which usually took a year. For the first time, we saw good results because the USSR worked so effectively with us.

IL: How many tons of precious copper and molybdenum from the deposits were there?

CK: In 1972, 546 million tons of ore from the first deposit were guaranteed with an additional 4.3 million tons available. These deposits were mixed in with stones and earth, but this metal meant that this ore held the possibility of containing copper and molybdenum, as well as other elements. The first expedition went quite deep to study the “skin” of the deposit and found out that there were three places of ore deposits and two areas of “metal” deposits. The geologists calculated, after more than thirty years of mining, that this would necessitate digging deeper to find these rather scant deposits and would raise the price for processing the concentrate. Now in a year, the industry extracts 25 million tons of ore in which there are 500,000 tons of copper concentrate. The Erdenet Mining Industry, which has successfully worked in our country for over thirty years, employs 6,000 people, and more than 90,000 people live in Erdenet, which is our third largest city.

The first successful work on these reserves of ore handled by the Erdenet Mining Industry was organized in an agreement between the Mongolians and the Soviets, which was profitable but still could not be considered a good agreement. Although the places where the deposits were located were discovered, the Soviet ideological interests blinded them to certain issues like their refusal to sell copper and molybdenum on the foreign market. This difference led to great tension in Mongolian-Soviet relations because in the years after the opening of the Erdenet Mining Industry Mongolia had received none of the profits and had, in fact, actually paid the USSR from its State budget.

In the early 1980s, our General Secretary of the CC/MPR, Mr. Yu. Tsedenbal, urgently wished to ameliorate this situation and added people to the State Planning Commission. However, they could not support Mr. Yu. Tsedenbal on such a contentious and talked about issue. Then, in August,

1984, at the Eighth All Khural the General Secretary Yu. Tsedenbal was, for a mysterious reason, relieved of his post by the CC/MPRP. At the time, Mr. G. Nadirov wrote a clear account of this event and explained the connection between these two events in his book on Yu. Tsedenbal. Maybe you have read it. He was also active in revising and improving the agreement with the government of the Russian Federation. In the 1990s, the USSR and all of the socialist countries had become democratic and were confronted with a million decisions, and so this pact was undergoing its fifth revision, which was later improved upon. There were many references to the copper and molybdenum deposits, and there were directives regarding the industry that were unknown to the director. Both sides were forced to reach an agreement, and in 2000 the industry in our country began to pay taxes.

Now our government owns 51% of the ore reserves that are, nonetheless, exploited by the Russian Federation, which owns 49%. Now with its 51% ownership of the Erdenet Mining and Processing Industry Mongolia has the executive authority to appoint people, so in the 1990s, the government appointed a Mongolian director which was, in fact, somewhat disadvantageous. Whoever was the victor in the Parliamentary elections, either the MPRP or the AN (Democratic Party), wanted to select its own director, which was not a very good situation for such an important position. In about thirty years, the reserves of copper and molybdenum could be exhausted, and the Erdenet Mining and Processing Industry could close down, and the difficult issue of what to do with the workers could arise. This problem commands our attention and must be confronted.

6. Brief History of Mining in Mongolia

IL: There had been a long history of Mongolia's use of mineral resources. When did the study of geological formations in Mongolia begin?

CK: Mongolians have traditionally followed a herding existence that entailed finding pastures for their animals in all four seasons, as well as enjoying their country's great mineral wealth. Our archeological studies confirm this, and you can see proof at the Zanabazar Museum (in Ulaanbaatar) in its interesting exhibitions of stone, bronze, and iron weapons and implements. The ancient Mongolians made elegantly decorated silver and gold objects that have been unearthed along with bronze and iron implements, all of which exhibit a high level of skill. More study must be conducted on the herders who, from the earliest times, possessed a unique ability to build and live in their settlements.

Some of the historical sources describe the profession of the smiths among such people as the Xiongnu, the Xianbei, the Tuoba, the Juan-juan (or Ruanruan), the Türks, the Uyghurs, and the Kyrgyz, and our senior archeologist,

D. Navaan, has written about this. According to the Mongolian calendar, in the winter of 552, the Türks in the Altai mutinied, and the Juan-juan state collapsed. Historians call this uprising “the revolt of the smiths.” In 911 C. E., the Khitans organized an iron industry. At about this time, the great Mongolian state was beginning to be organized to deal with its mineral riches. However, because the Mongolians revered the mountains and rivers, digging for precious stones and gold and silver was prohibited. You certainly have read about Chinggis Khan’s Law Code, rather unique at the time, which expressed a reverence for the natural world, which had to be strictly observed in all the conquered areas. Still, the Mongolians developed the basic technology that enabled them to find precious minerals, some of which they used to make weapons. They did not yet, however, have the proper mining technology. Japan’s lack of rich mineral resources and her weak military technology and weapons industry during World War II impeded her war effort.

I myself have read the works of some foreign scholars who say that the Mongolians did not mine minerals for weapons and did not make the weapons themselves. I am not a historian, but I do not subscribe to this view, and I find it incomprehensible how some people write about the Mongolians. In earlier times, we did have our own technology and arms industry for the Mongolian military, although there was no mixture of steel and iron to fashion into swords. Still, the iron was very hard, light, and resilient which is why the Mongolian sword was of such a high quality, remained sharp and did not break, or become dull or rusty. The chemical analyses of archeological finds confirm this. So the commonly held view that all Mongolians did was to gallop about on horses is challenged. More effective technology for mining ore enhanced the traditional production of well decorated weapons so necessary in war.

In 1727-1728, the traveler U. F. Timkovskii wrote in his travel notes, which are in our archives, that at Eroo River, iron ore was being smelted and poured into a cauldron for trade with Kiakhtha and that an agreement was being discussed for an iron ore concession with a foreign company. In the eighteenth century, travelers from England, Sweden, Russia, and America started to come to Mongolia and brought to the attention of the world Mongolia’s mineral wealth. At the beginning of the twentieth century, there were more than 200 European and American expeditions to Mongolia, which collected information on Mongolia’s geological formations and its mineral riches. In 1864, the American geologist R. Pompell traveled southeast from Beijing to Kalgan, Orgoo, Khiagt, Siberia, and Mongolia to collect information and evidence on our geological formations and mineral wealth, all of which is very interesting. In 1869, another American geologist/scientist W. A. Wait, and in 1877, J.

Milna published works on Mongolia's geological formation and mineral wealth. An English scientist/geologist D. Carruthers, the Austrian scientist M. P. Price in 1910, the Austrian scientist/geologist E. Zooss in 1910, the American scientist/geologist Roy Chapman Andrews (1918-1919, 1922-1925, 1928, and 1930) all came to Mongolia in the years indicated and compiled works about our country's geological formations.

Works about Mongolia as part of Central Asia dealt with many issues including the Russian Geological Association, which at the beginning of the nineteenth century, sent many expeditions to Central Asia, led by such esteemed scientist/travelers as N. M. Przewalski (1870), M. B. Pevtsov (1878-1879), and G. N. Potanin (1876-1899) who studied the geological formations and mineral wealth. The talented Russian scholar-geologist V. A. Obruchev directed an expedition from 1892 to 1894, and scholars D. A. Clemens (1891), Rachkovskii (1903), P. K. Kozlov (1907-1909), A. A. Chernov (1910), M. A. Usov (1913-1914), M. K. Korovin (1914), and A. E. Fersman (1917) directed expeditions which included Mongolians. The Russian Geological Association produced important studies on the geological work of its scientists.

They wished to learn about world geology and since their time geologists have focused their study on the folds in the tectonic plates undergirding China and Siberia.

IL: How long has the Mongolian government's Department of Mining received foreign investment? What was the initial response to this issue?

CK: It has been very hard for Mongolia to control her own mining and mineral wealth when so many foreign expeditions have come to study her geological resources, and so we started to regulate these expeditions and especially supervised gold, silver, and precious stones.

We knew that the large foreign geological expeditions had as their hidden goal the exploitation of Mongolia's mineral wealth and so, to protect ourselves, we had to be on our guard and find out as much as we could about the foreigners' aims. Thus, territorial orders were issued for Sechen Khan, Tüsheet Khan, Sayin Noyan Khan and Jasaghtu Khan *aimags* prohibiting the search for and mining of precious minerals, but these orders were hard to follow

In the 1780s, there had been similar searches and mining for gold, silver, and precious stones that led to the development of a kind of historically renowned intelligence service known as the "gold watchmen" who supervised all prospecting. They observed what was going on in the southwestern part of Sayin Noyan Khan *aimag*, the northeastern part of Jasaghtu Khan *aimag*, and the southern part of the Altai range. The posts of "gold watchman" lasted for a long time and slowly the scope of their observations included a much broader area. However, the archives report that even though the miners were

monitored, the searches for gold, silver, and precious stones continued.

In 1900, the Mongolian government's Department of Mines began to speak about measures connected to foreign investment. On March 13, 1900 the joint stock company "Mongolor," which focused on gold, was started. According to the archives, this company, "Mongolor," was run from St. Petersburg and supplied the widowed Czarina Maria Feodorovna and the Belgium King Leopold with gold. There was also a Russian Gold Society called "Zolotoros" and a similar organization in Paris, while in Berlin there was the "Mendelson K" Society. There were, in addition, many state banks in St. Petersburg and Paris, like the Netherlands Bank and the Russian-Chinese Bank, that attested to the great involvement in this work. The leadership council of the Chinese-Russian Bank included Li Hongzhang who served as a go-between regarding capital investment and permission from the Mongolians. The goal in 1900 was to transfer, through the Russian-Chinese Bank in Beijing, one million gold rubles to Li Hongzhang who had sent the Belgian Von Grot to Mongolia to start the mining process for the Russians. Von Grot had previously worked at the American Embassy in Beijing, and it seems that he had initiated this project and organized the work force. Von Grot obtained permission to mine Mongolian gold, and it was clear that the Belgians and Russians were leaders in this mineral exploitation. The Russian sitting consul in Mongolia, S. N. Shishmarev, tried to help in this venture but was not successful because the Mongolian side did not give permission, but Von Grot began the gold mining anyway at Eroo River and the Khuder, Khargana and Khuiten River basins. At this time, Von Grot started "The Mongolor Society" and began to direct all the work regarding the Mongolian gold trade. Not long after, the leaders in TüsHEET Khan *aimag* and Sechen Khan *aimag* found those involved in mining did not have permission and demanded that all mining cease immediately.

YK: Did they stop the works of "Mongolor"?

CK: No, they did not. The local people resented the miners, believing that their mining activities angered the earth's spirits and so joined the resistance. However, the "Mongolor" gold society did receive official permission from the government to continue mining, and in 1908, a twenty year contract was drawn up that gave the Mongolians 16.5% of the profits, which seemed quite a good arrangement for the Mongolian side and led the Bogdo Khan (the head of the Buddhist establishment-ed.) to renew the agreement for another twenty years. However, as of May, 1921, the Mongolians were to receive 20% of the profits. This new agreement gave the "Mongolor Society" the possibility of continuing to mine gold, which it did with the assistance of more than forty Americans and American technology. Although the American techniques were

profitable, most of the mining was done by hand. In 1915, our Financial Ministry reported on the activities of the “Mongolor Society” for which more than 2,500 people mined gold. The gold was sent to Hamburg, Amsterdam, and Paris, where it was traded for the set market price. The “Mongolor Society” mined fifteen tons of gold which were worth ten million American dollars. From looking at our archives, you can become acquainted with this material on mining. How the Mongolian government handled the issues relating to our mineral wealth and the treatment of foreign capital investors is worthy of attention. The Mongolian government began to search for precious stones and minerals and encountered all the issues relevant to the period, but the policies that the Bogdo Khan’s government followed cannot be attributed to any one person. The work of the geologists and miners was, by and large, regulated by the 1913 objective, which supported the regulations concerning gold and silver mining. By these rules, all domestic and foreign companies had to agree to a concession that entailed leasing an area for mining. The cost of the lease depended on the different types and amounts of precious minerals and their reserves. Leasing areas with gold, silver, and copper provided the Mongolians with 20-30% of the profit, areas with tin and lead for 15-20%, areas with coal for 10-20%, and areas with iron for 5-15%. The lease on platinum and diamond mines gave the Mongolians 40-50% of the profits, while rock crystal and precious stones yielded 30-40%. If a Mongol wished to get such a concession, he had to petition the Ministry of the Interior, and a foreigner had to petition the Ministry of Foreign Affairs for the same. In addition, it was necessary to have a specific plan of your mining activities. There were three types of permission that had to be obtained: (1) License to search (permission for an expedition-ed.); (2) License to dig (permission to determine reserves-ed.); (3) License to mine (permission to operate a mine-ed.) It was made clear through a harsh directive that when these licenses were granted no sacred lands where the Mongols worshipped, especially near a mountain or a lake, were to be violated. The government of the Bogdo Khan seemed to know about the deposits of precious stones and the reserves of coal, ferrous metals, copper, gold, silver, lead, tin, zinc, salt, and graphite, but there was little progress in mining them. However, around 1915, there was some foreign and domestic capital investment in about twenty gold mines and in about ten coal mines, including the great Nalaikh coal mine. In the beginning, mostly Russian professionals worked there, but on December 22, 1922 our government implemented the goal of the 1921 People’s Revolution and made the Nalaikh coal mine a state owned and controlled mine. On that day, Mongolian mining became its own department, and each year there was a celebration to remember this event. This year we celebrated the ninetieth

anniversary of the Mining Department.

7. Process of Nationalization

YK: When the People's Government opened the Mining Department in 1921, did it nationalize all mining enterprises?

CK: Yes. Before the Revolution, the mining industry was composed of private enterprises, so the new government had to decide whether to maintain the existing system of ownership or nationalize everything. This was a major issue for our entire economy and society.

In 1921, the People's Revolution triumphed, and the government, the economy, and our social relations changed. Mongolia was the second country after the USSR to follow the road to socialism. In a socialist society, private property was generally abolished and could only exist with governmental permission. Thus, after the victory of the People's Revolution, it was important to develop a policy regarding how the Department of Mining would fit into a state controlled economy, and the government raised the issue with the Finance Ministry, which had a new interior division called the Department of Developmental Resources. The Finance Ministry knew that "Mongolor" had amassed enormous wealth that had been appropriated by the government through a "command manifesto."

In 1922, the People's Government drew up its "Economic Policy" with regulations for the Mining Department, which were presented on August 30th, 1923. It was clear from these regulations that all mining was state owned and that private exploration of and mining for minerals were strictly forbidden. There were four parts in these regulations, each with fifty-two directives relating to the development of mining, including the cancellation of the private concessions and leases for the exploitation of mineral wealth.

In 1924, the People's Government decided that Mongolian geological expeditions were to be carried out under the aegis of "The Literary Committee" —a precursor of the Academy of Sciences. From 1923 to 1925 this "Literary Committee" went on a joint geological expedition to the Khangai, the Altai, and central and western Mongolia with the Soviet Academy of Sciences, which was directed by the geologist/scholar I. P. Rachkovskii. Other expeditions for the Soviet Academy of Sciences were directed by M. F. Neiburg (1923), V. I. Krijanovskii (1923-1924), E. E. Kostiliv, N. M. Prokopenko (1925) and went to central Mongolia and to the eastern zone. In 1925, Z. A. Lebedev directed an expedition to the western zone at Uvs Lake. In 1925, the President of the Soviet Academy of Sciences, V. L. Komarov, directed what was called "The Mongolian Commission," which was involved in research expeditions. From 1929, "The Literary Committee" and the Geology Department of the

Soviet Academy of Sciences drew up a long term contract. By this agreement, the Soviets began to search Mongolia for hydrogeology in central areas to point out water sources for the herders. However, the work of mapping the geology of Mongolia began slowly.

In 1928-1929, the Soviet Academy of Sciences came to eastern Mongolia for research under the direction of the geologist N. G. Smirnov because our Minister of Industry and Trade had requested a study of coal resources in Bayantumen and Jargalant *sums* in Dornod *aimag*. In 1938, “The Literary Committee’s” geological section increased its membership to include the professional geologist Mr. J. Dugersüren who had studied in France in 1920 and later in the USSR. In 1939, the Fabric Factory School opened and had its first graduate in 1942. Many students who went into mining graduated from there. In 1940, the Mongol-Soviet society, “Sovmongolmetal” was organized.

In 1937, the Soviet Academy of Sciences began to work on “the eastern research expedition” which lasted in Mongolia until 1957. Its main purpose was to provide the military with wolfram, tin, iron, coke, and coal. J. Stalin assigned the director to this expedition “to discover major deposits for wolfram mining!!!” This eastern research expedition identified places in Chuluunkhoroot, Shur khad, Tumentsogt, Chono gol, Modot, Byrentsogt, Ikh Khairan and organized an industry for enriched wolfram. The fluorspan/fluorite deposit was at Berkh, and a mining industry was set up there. Coal mining also increased at the Nalaikh mine and in eastern Bulgan, while oil was found in Zuunbayangiin, and mining began. In 1957, the Government of the USSR covered the expenses of this “eastern geology expedition,” which collected information for geological research and provided the technology and equipment that the Mongolian budget could not provide.

In the 1930s, it was easier for the geological profession to prepare and handle such issues. In the 1960s, geologists grew in number and sometimes students who had matriculated in geography, chemistry, or physics were retrained as professional geologists to work on the expeditions. At the end of the 1950s, more than 270 middle school youngsters who had high grades went to study geology in Germany, Czechoslovakia, and Hungary and to train as professionals. And I was one of them.

From 1960 to 1990, the Mongolian Department of Geology and Mining had its so-called golden generation. During that time, the Mongolian geologists who were involved in expeditions undertook an enormous amount of work, which included producing fourteen maps of all mineral deposits, as well as a so-called forecast metallurgical map to determine mineral locations and formations. At that time, the Mongolian geologists had to work very hard to accomplish what today we can do with greater ease.

In the 1990s, there were more than eighty types of precious metals and the discovery of about 1,800 deposits although, in the future, geologists may find 4000.

Only in the Cretaceous period were there a billion tons of ore in reserves and about twenty deposits of coal. There is the possibility that sixty-four billion tons of coke and coal can now be found in Ömnögovi *aimag* in “The Five Heads” area. “The Five Heads” and “Ovootain” coke and coal deposits cover a 2,000 kilometer expanse including four ore deposits. There has not been enough time to dig for these four ore deposits and search another vein with eight deposits.

8. Challenges of Privatization and Oyu Tolgoi

YK: How were the deposits of copper and molybdenum found at Turquoise Hill?

CK: A lot of copper and molybdenum can be found at Turquoise Hill so called since the olden days because of the priceless and rare stones found there. In the 1930s, other valuable minerals were also found there. However, some thought on how to proceed was required since, according to the map, these minerals lay within “the special pasture zone.” In the 1960s, study expeditions were sent out, but we geologists, aided by the Russians, focused, primarily, on mining at the Erdenet Oboo for the the Erdenet Mining Industry. In 1979, our geologists reconnoitered near Turquoise Hill and set to work in two or three areas near an *oboo* where ore was located in an area for a smelting furnace. This was 16x12 meters square, 0.8-0.9 meters high, with a 3.5 meter long ditch for the molten flow from a central area where *zag* (saksaul, a kind of desert brush-trans.) was burned, releasing a great deal of energy and turning into white ash. Such was the mining process used since olden times. We did not have the opportunity to do research on the amount of ore at Turquoise Hill and on financing the technology. Geological expeditions were generally very costly and risky. In the beginning of the 1990s, each expedition had to get permission or “a plan to begin excavating.” (an expedition license—ed.) BHP, a transnational corporation and one of the world’s largest, initiated talks with the Mongols and was the first company to obtain this license. Before permission was granted, the local companies had to return their licenses, but I believed, at the time, that all the dealings were honest. The expedition license made clear that the work had to start within three months or the permission would be revoked. Then, more demands were made on us, and they transferred their license for Turquoise Hill to the Canadian company, Ivanhoe Mines. Our law, however, states that the transfer of a license was tantamount to cancellation. BHP left and just transferred their license, which had expired, to

Ivanhoe Mines, though there is no evidence that they sold it. Then our Bureau of Mining Licenses reregistered Ivanhoe Mines and in so doing broke our own laws, which led to a big scandal with rumors that our high government officials were involved. Ivanhoe Mines was directed by Robert Friedland who was known by the nasty nickname in the mining world as “Toxic Bob.” He wished to organize expeditions to Turquoise Hill for his company, Ivanhoe Mines, Inc., Mongolia, which was registered in the Virgin Islands with its lighter tax burden. There was talk that a Mongolian may have made a capital investment in this company. So Ivanhoe Mines, Inc., Mongolia was a Canadian company and the sister company of Ivanhoe Mines. Then, Ivanhoe Mines Inc., Mongolia used the cancelled expedition license for Turquoise Hill and set off, illegally, on a geological expedition.

Robert Friedland hired many Mongolian geologists for his expedition, people who had previously worked at Turquoise Hill. The leader, D. Garamjav, was an excellent professional geologist, with ten years of experience, who had little work in the late 1990s when many geologists were unemployed. At that time, our government made the big mistake of dismissing more than five thousand highly qualified geologists and because of this, my research was known to very few of them, which was unfortunate and exerted a negative influence on many things. There was a lot of talk about the foreign capital investors in Mongolia and that some Mongolians had become their “right-hand” men.

D. Garamjav, the leading geologist, worked for several years on about 150 bore holes, but the drilling was not completed and continues to this day. Our geologists believed that some very rich high quality copper and molybdenum deposits existed 600 meters deep at Turquoise Hill, and so the work began to mine these reserves.

It has now been established that the Turquoise Hill deposit contains 45 million tons of copper, 1,800 tons of gold, 6,000 tons of silver, (72 billion ounces of copper and 30 million ounces of gold), which is all the copper Japan would need for 40 years! But this is hardly a full scale measure of all the copper and metal resources, as it is well known that the numbers of the reserves have been increased. Thus there needs to be a more precise evaluation. Turquoise Hill’s copper and molybdenum deposits are equal to Chile’s Kodelko reserve, which was considered the largest in the world, but we certainly compete with it and we may even surpass it.

IL: In 2009, the deposits at Turquoise Hill were exploited through “a capital investment agreement” with the two capital investment firms, the Rio Tinto group registered in Australia and Ivanhoe Mines registered in Canada. What was involved with the Australian registered Rio Tinto?

CK: Rio Tinto bought a lot of shares in Ivanhoe led by the Canadian Robert Friedland, so Rio Tinto became the leading investor in Turquoise Hill. But we don't know how many shares Rio Tinto bought in Ivanhoe, and even today it is not clear. There was talk that they controlled 51% of the shares. The Canadian registered company Ivanhoe Mines was not financially large enough to make such a huge capital investment in Turquoise Hill, and there were many companies with mining departments. Ivanhoe Mines sold its shares to Rio Tinto after Robert Friedland organized another company called Turquoise Hill Resources that was registered in the Netherlands and had its office there. This company was called "Oyu Tolgoi Netherlands BV," and the two companies would divide the profits and Robert Friedland would evade taxes.

The Rio Tinto group mined the ore deposits at Turquoise Hill, looked for hidden mines, built a copper concentrate industry, and set up "Turquoise Hill Company Inc." which was registered in Mongolia.

The industry for processing metal concentrate was opened with world standard equipment and modern technology. The process was 90-95% automated, and there was both a plan and a director for this Delta V system, which would be run by no more than two or three people. This open mining had an average capacity of 0.6%, and the ore was 25% enriched copper, which could be processed into copper concentrate and six kilograms of copper could be mixed with a ton of enriched ore to yield 250 kilograms of industrial copper concentrate. In one of the hidden mines, the ore contained 2% copper, and 1.8% could be used in the enrichment process. In 2019, mining these hidden deposits would begin.

In the first year, our "Erdenet Mining Processing Industry" had the capability of treating sixteen million tons of ore and then increased its capacity to twenty-six million tons. Finally, the Turquoise Hill processing industry handled 100,000 tons daily and thirty-five million tons of ore a year with a plan to expand to fifty-six million tons of ore. There was a plan that in June, 2013 products from open mining would be exported. However, I was dubious about this and saw that several issues needed to be settled including how to begin operating the hidden mines.

A minister from the Ministry of Finance and a minister from the Ministry of Minerals and Energy signed the capital investment agreement and later it was signed by our, in name at least, state owned Mineral Turquoise Company, which handled and was responsible for issues relating to reserve deposits. A directing council was set up with six Mongolian members and nine members from Rio Tinto, which would be responsible for capital investment in deposit areas and would regulate decisions regarding capital investment.

YK: Now that Mongolia is in the world news, the capital investment groups

have provided the best equipment, but it seems that disputes have arisen. What has caused these arguments?

CK: There are many reasons, but a primary one is that the investment agreement in Turquoise Hill increased by a billion dollars. The first capital investment agreement was contracted for 5.1 billion dollars but now the capital investment of the Rio Tinto group has grown to 7.1 billion dollars. Both sides had to accept a mining agreement for 14.6 billion dollars which, now, has grown to 24.4 billion dollars, and unless the two sides can reach an agreement on capital investment the disputes will continue. The world press has covered this argument, which has stirred up a lot of “noise” in Mongolia.

YK: Really? But you have told us that they have built a productive open mining factory to operate in areas with hidden mines. Isn't that why the costs of operating these hidden mines has increased? How and why did all these capital investments that had been agreed on stir up these disputes?

CK: I will explain the one main reason for this argument between the two sides of capital investors, which goes back several years. In 1992, Mongolia passed its fourth Constitution. I was, at that time, a Deputy to the People's Great Khural (and now a member of the State Great Khural—ed.) I approved this new Constitution and the law which clearly stated that “the wealth both above and below the ground belonged to the people!” This directive was included in the Constitution and plainly stated that the minerals above and below ground were not private property.

The New Constitution adjusted and improved many laws, and in 1994, I was involved in the working draft of the law pertaining to the profits from excavation, and this law was confirmed. I went on to work with the lawyer, B. Chimed, and we studied how people felt about the lease agreements in the law, which was cancelled in 1997 and a new law pertaining to excavation was instituted. In 2006, this law was revised and was confirmed.

This new law divided the mineral wealth into “strategic deposits” and “non-strategic deposits.” The “strategic deposits” would be included under the state budget, which was devoted to geological expeditions and its deposits, and reserves would be established legally. A provision of the law held that the State had the right to more than 51% of the deposits. The “non-strategic deposits” found on geological expeditions could be available to private companies, and the State had a legal right of up to 34% of these mining reserves.

A critic told me that this was a very bad law which encouraged foreign and domestic investors to ingratiate themselves. The Turquoise Hill area was seriously affected by this capital investment agreement, even though it was constitutional.

The laws pertaining to the different types of reserve deposits increased the wealth of Ivanhoe Mines, Inc. Mongolia at Turquoise Hill because it could take advantage of many reserves, which were considered “non-strategic deposits” and garner 66% of the returns, leaving the Mongolians with 34%.

The capital investment contract was drawn up with Mongolia getting 34% of the profits from the mining reserves. Therefore, the Mongolian side had to offer 34% as an initial investment, but since it did not have the means to make such a capital investment, the Rio Tinto Group agreed to give us a loan. We had, in short, to obtain a loan from the Rio Tinto Group to cover the use of 34% of our own resources. So the Rio Tinto Group offered the Mongolian side a loan of about two billion American dollars on the condition that it carried an 8% monthly interest. Needless to say, we incurred a huge debt and as of December, 2012 the interest on that loan amounted to 705 million American dollars.

We had to agree to these terms in order to try and exploit the minerals in our own deposit areas based on our own 34% capital investment. However, the Mongolian side has not made a profit, and our 34% investment has only decreased in value, all of which has led to this dispute.

The decrease in our returns has, by and large, engendered bad things including our inability to pay our debts to the Rio Tinto Group until we had received our dividends. With them, we thought we could pay off the loan in 2019, but it is now clear that we cannot pay it off until 2033 or maybe even later. Since we experienced many years with no dividends, we did not see how we could repay Rio Tinto, and we still needed to sort out with that group the use of the deposits. All of this left us in a most difficult situation.

At the time, we could only guess what profits would accrue from these deposits while the slowly growing debt to Rio Tinto hung over us.

Then our government asked Rio Tinto to explain why their expenses had grown, but the company was not forthcoming with an explanation and finally said that there were costs for management and technical equipment at the world market prices. Our government then called two policy meetings for the investors, but there was little agreement on the issues and the disputes continued.

The Mongolians who attended these meetings did not really know how many laws had been violated as the Ivanhoe Mines Company had sold its shares to the Rio Tinto group and transferred its control of its 70-80% capital investment from Turquoise Hill to a company called “Entrée Gold.” The Mongolians received 34% of this 70-80% and made the decision to transfer 20-30% of Ivanhoe Mines to “Entrée Gold,” which was against the law.

Another breach of the law concerned the Turquoise Hill Company, Inc.

which had been opened by Rio Tinto because the Turquoise Hill Company, Inc. did not use any Mongolian bank for its transactions, and the Mongolians were not privy to information on the export of copper concentrate and the price it was sold for. Nor did the Mongolians receive any of the revenue from these export transactions. Recently, our press pointed out that the Rio Tinto group had signed an agreement for exporting Mongolian copper concentrate from the Turquoise Hill Company, Inc. Much of the information on the measures involved in this deal was not made known to the Mongols, which violates our law. Up until now, the Mongolians had done little laboratory work on the copper concentrate that was exported and without such information the Mongolians lagged behind in their exports and so decided to open their own laboratory.

There was also the issue of a 2% royalty charge the Mongols paid to the BHP Company. I have told you that Turquoise Hill got the first expedition license, which BHP cancelled and the license, then went to Ivanhoe Mines to exploit the mineral wealth at Turquoise Hill. However, exploiting the mines incurred a 2% royalty, which led to a fine for the Mongolians. Under these conditions, the Ivanhoe Mines license for Turquoise Hill was void. But this should not have happened.

Was the Turquoise Hill deposit area owned by BHP or Ivanhoe Mines? One of these firms had to own it. Even though according to our Constitution, the Mongolians possessed 34% of Turquoise Hill, we still did not have authority over the deposit areas. Thus, it was very unclear what we got out of that 34%.

IL: The capital investment agreement which included this 34% took advantage of the Mongolian side and led to the difficulties. In my way of thinking, this would not have happened if the Mongolian side had made a decision without getting involved with Ivanhoe and Rio Tinto. Why didn't the Mongolians seize that opportunity?

CK: Many people have also raised this thorny issue. It was decided that 34% was required in capital investment from the Mongolian side, although this money could not be delivered. This difficulty could have been avoided if we had not taken a high interest loan from Rio Tinto, but our government has kept silent on this matter. The precious metals at the Turquoise Hill deposits belong to the Mongolian people, and it is not right that a foreign capital investor controls them, and it is strictly forbidden by law. Both sides need to address this issue of exploitation because it is apparent that such foreign capital investment is not justifiable. This is our present situation.

A capital investment agreement was later drawn up in our State Great Khural where the members demanded that the Mongolian shares in Turquoise

Hill mining and export ventures should grow to 51%. Our participation in discussions of the “strategic significance of the deposit areas” was stressed. As of now, we are still awaiting a decision from our government.

YK: You speak about very serious issues, and you have presented information about the liabilities that we did not know. You are a professional person, so you are well aware of what is going on and can speak about how such a situation has arisen. Why did all of this happen? Was this because the Mongolian side did not have the proper expertise regarding the capital investment agreement?

CK: I cannot tell you much more as generally the issues related to the exploitation of the Turquoise Hill deposits and mining reserves are kept secret. It is really the responsibility of the Rio Tinto group to clearly present the issues. But now everything is far from clear, and these issues have not been responsibly handled. Until recently, the Mongolian side did not have all the necessary information concerning capital investment when the two sides met. In fact, the meeting was set up before the Mongolian side even knew about the issues concerning the conditions connected to the mining in the Turquoise Hill area. Since I had scant information about the capital investment agreement, I could offer little input. Although we had many demands, we could present only one. But I have only given you a brief summary.

Our economy and market relations began to be transformed in the 1990s, which was not an easy process. Every level of our country’s economy and society encountered profound disorder, which continues even today. In this atmosphere, our government followed a policy of seeking more foreign investments in geology and mining which, I believe, was the right path to follow, although we made many mistakes along the way. Previously, we had a rather trusting attitude concerning both domestic and foreign capital investment, but we started to depend too heavily on foreign investors for our own successes. This started to happen because we did not realize that the foreign companies were in the game for themselves and had no concern for our interests. We erroneously thought that these foreigners would do “our homework” for us, and the media, which praised the foreign capital investors especially at Turquoise Hill, exerted a powerful influence on our psychology, as did some well-known politicians. When I look back on the period from 1997 to 2006, I see that these foreign investors were a very powerful group who were trying to ingratiate themselves with our government officials in order to worm their way into our economy. In 1994, the Excavation Land Use Law was declared invalid, and a new law was proposed with the backing of eight big politicians, four of whom were members of the Democratic Party and four of whom were members of the Mongolian People’s Party. I knew all of

them and saw that they did not know what was good for Mongolia and that the foreign capital investors, with a vested interest in both our government and our economy, could change the Excavation Land Use Law, and their influence could impinge upon many of our other laws. In fact, the Turquoise Hill deposit areas had not, at the time, been determined and a license for use had to be given to Ivanhoe Mines. However, work on the deposits was started through the Technique for Economic Feasibility (TEZU—ed.) without the basic capital investment agreement. It was impossible for the foreign capital investor to do this on his own, and it could only have been possible with support from our government. There was no other way. Under my influence, many questions were raised about these foreign investors who ingratiated themselves and broke the law.

Our movement led to sharp criticism of the violations of the law and immediate demands to correct and improve on the agreements made. I had supported and participated in these actions from the beginning. These struggles had gone on for many years, with little success, as our government often did not listen to our demands. Recently, a capital investment agreement was signed by the Mongolian side that protected a minister's involvement in a company with one of those secret agreements, which included a Swiss bank account and registration in the Virgin Islands. This created a lot of "noise" in our press. And what does this mean? It is the beginning of very frightening things and leads to people asking where was this wealth coming from and what was the goal of that company registered in the Virgin Islands? The Mongolians demanded answers to these questions, and the Anti-Corruption Agency began to look into this problem.

Recently, the Mongolian President opened a meeting at the State Great Khural to a free discussion of the issues surrounding the Turquoise Hill deposit area. The Mongolians were united and said in one voice that at present "the capital investment agreement for Turquoise Hill is unprofitable for the Mongolian side!!"

YK: Yes. Thank you.

CK: You are welcome.