

Professor Qiusheng Zhang's Contributions to Geology: In Memory of the 30th Anniversary of His Passing

Jianzhao Yin

Orient Resources Ltd., Canada

Abstract: Professor Qiusheng Zhang (1929.8-1987.12), the most well-known geological professor at Changchun University of Earth Sciences, a top school of geology in China and now part of Jilin University, suddenly passed away on December 28, 1987 while travelling on Flight 938 from Sharjah, United Arab Emirates to Beijing. He contracted a local disease while on a field trip in Tanzania for an international conference, and developed life-threatening malignant malaria as a result. Aged 58 at the time, Zhang's passing shocked not only the geological world but also had a severe impact across China.

Amongst Zhang's impressive resume are numerous key roles, including: Director of the Institute of Mineral Deposits; Chairman of the Geologists Association of Jilin Province, China; China Working Group leader for both Projects 91 and 247, International Geological Correlation Programme (IGCP), UNESCO; the first President of the International Working Group of IGCP Project 247 (1989-1990); and Member of the International Association of Mineral Deposits.

In addition, Zhang made many contributions to the development of geological sciences, including: recognizing the granitization of Jushan Group in Jiangsu Province, China; building the evolutionary model and study method of the early Precambrian geological structural cycles of China; recognizing Paleozoic ophiolite in the eastern Qin Mountain region, China; proposing the Liaojitite Suite, a special eugeosynclinal facies of the early Proterozoic in Liaoning and Jilin Provinces, China; proposing deep liquid source beds underneath the ancient crust at continental margins; researching metamorphic cycles and associated mineral deposits in China; among many others.

As his master's student, the author of this paper describes Zhang's overloaded schedule in 1987, the reactions of his wife, postgraduate students and colleagues before, during and after his final trip to Africa, and his significant geological contributions.

Key words: Prof. Zhang, December 28, 1987, Precambrian, Tanzania, Africa, malignant malaria

1. Introduction

Professor Qiusheng Zhang was the most well-known geological professor at Changchun University of Earth Sciences, a top school of geology in China and now part of Jilin University ("the University" hereinafter). Amongst Zhang's many other professional roles includes: Director of the Institute of Mineral Deposits at the University; Chairman of the Geologists Association of Jilin Province, China; China Working Group leader for both Projects 91 and 247, part of the International Geological Correlation Programme

(IGCP), United Nations Educational, Scientific and Cultural Organization; the first President of the International Working Group of IGCP Project 247 (1989-1990); and Member of the International Association of Mineral Deposits.

Prof. Zhang suddenly passed away on December 28, 1987 while travelling from Sharjah, United Arab Emirates to Beijing, China aboard Air China Flight 938. Aged 58 at the time (1929.8-1987.12), Zhang's death shocked both the geological world and the entirety of China. He contracted a local disease while on a field trip in Tanzania for the Arusa International Conference on Precambrian Metallogeny Related to Tectonic and Computerized Mineral Resource Assessment Methods

Corresponding author: Jianzhao Yin, Ph.D.; research areas/interests: ore deposits and mineral exploration. E-mail: jimyin7@yahoo.ca.

Applied to Metallogenic Provinces, and developed life-threatening malignant malaria as a result.

2. Zhang's 1987

2.1 Overloaded 1987

1987 was one of Zhang's busiest and most overloaded years. He not only went to Jilin, Hebei, Liaoning, Ningxia, Hubei and Jiangsu Provinces to make nine geological speeches, but he also organized and hosted three China national academic conferences, took part in four professional meetings, accepted and hosted two international conferences, wrote eight geological papers and scientific reports, spent more than four and half months in the field in Hebei and Liaoning Provinces, personally instructed 19 doctoral and master's students, and lectured approximately 100 master's students.

Considering Zhang's hectic schedule for the first 11 months of 1987, Prof. Mao, Zhang's wife, advised him not to go to Africa for the conference. In part, this was because of the Chinese perception that Africa was a dangerous continent. Zhang himself really felt exhausted and hoped to take a break. As a result, he tried to recommend another Chinese geologist to take part in the conference on his behalf. Unfortunately, the organizing committee of the conference told him that the financial aid for the conference trip would only be available if Zhang himself went to the meeting. It was also too late for another Chinese geologist to get a passport and visa, which was a lengthy process for Chinese people wishing to travel abroad in the 1980s. Under these circumstances, Zhang decided that he had to go to the conference. Of course, it was also due to his strong desire to visit Africa, and see both the typical granite green stone belt and the east Africa rift.

On November 24, 1987, as Zhang returned to Changchun, the capital of Jilin Province, from a trip to Nanjing, the capital of Jiangsu Province, several of Zhang's students went to his office to advise him to give up the Tanzania trip. They knew Zhang was too tired to make the upcoming long trip to Africa.

However, Zhang said that he would like to be the first Chinese geologist to develop an understanding of African geology.

Before departing Changchun for the conference via a stopover in Beijing, Zhang met almost all of his assistants, postgraduate students and colleagues to make the necessary arrangements. At 11:30 am on December 2, 1987, Zhang told one of his students at Changchun Airport that he would come back to Beijing from Africa on December 22 and report to officers of the Ministry of Geology & Mineral Resources there, before coming back to Changchun on December 24, 1987.

At his last lecture to postgraduate students, Zhang told them that the evolution of the Earth was not always gradual, but occasionally catastrophic. He also mentioned by chance that one well-known geologist from the Soviet Union was killed in a car accident in Africa a few years prior. As a result, another famous geologist from the Soviet Union did not want to go to the same Arusa international conference that Zhang would be attending. This did not deter Zhang, who said that he would share wonderful geological photos with these students after coming back. From then on, the students were deeply expectant of his return from Africa.

During Zhang's time in Beijing spent in preparation for the trip, one of his geologist friends phoned him and asked him to cancel his trip, because this geologist almost died of a local disease years ago when he visited gold mines in Africa. Also in Beijing, Prof. Cheng, Chief Geologist of the Ministry of Geology & Mineral Resources, Chairman of the China Association of Geologists and one of Zhang's best friends, knew that he had some important information that he needed to convey to Zhang, but could not figure out what it was. When Cheng finally realized that he needed to remind Zhang to take a vaccine shot, Zhang was already on his way to Beijing Airport and it was too late.

At around 9:00 pm on December 6, 1987, Zhang got on Air China Flight 932 and left Beijing for Africa.

This would be his last time in China.

2.2 Hard Africa Trip

The Arusa International Conference was organized by the International Working Group of Project 247 of IGCP, COGEODATA, and Africa Association of Geologists, and hosted in northeast Tanzania from December 2 through 18, 1987. Approximately 800 delegates from 23 countries from all over the world were present at the conference, many of whom came to Africa for the first time, just like Zhang.

According to his final summary report on the conference, Zhang's last trip was extremely difficult. His checked luggage got lost and still has not been located, a full 30 years later. When Zhang reached the conference on the night of December 7, he had already missed the 3-day Kilimanjaro trip and part of the 6-day pre-meeting field trip. Due to poor organization and the limited local economy, all conference plans were out of schedule and incidents occurred almost every day. The poor access roads meant that vehicles frequently broke down without a mechanical engineer available to fix them. During the field trips, there was no drinking water available, thus they had to rely on local fruits for hydration. Meanwhile, they only had one meal a day, and could not sleep as the hotels were full of mosquitoes. Even so, they still visited nine locations by travelling 950 km within 6 days, an average of 150 km per day. Due to the combination of these factors as well as his own exhaustion, Zhang contracted early-stage malaria.

On December 20, under heavy fever and extreme dizziness, Zhang missed his originally-scheduled flight to Dubai and instead took a flight to Cairo, Egypt. Zhang was put in custody immediately upon his arrival at Cairo Airport for five days due to his lack of a valid travel visa. The five days would ultimately prove to be his undoing, as it significantly delayed the medicine and hospital care that may well have saved him. While the Chinese ambassadors in Cairo were able to visit Zhang during those 5 days, they did not realize that he

had been infected with malaria, and instead brought him cold pills to treat his cold-like symptoms.

On December 23, Zhang's light and intermittent fever worsened significantly. Even so, he still finished his final summary report on the conference with trembling hands. In the last paragraph of the report directed to the Chinese government, he stated that: "In order to save foreign currencies for my beloved country, I selected a longer flight route via Sharjah and Dubai. But now I realize my folly, as the lack of a reliable system to transfer checked luggage between the two locations meant that my own luggage was lost and made my ensuing trip extremely uncomfortable. In the future, it's better to send at least two young and able scholars to take part in conferences in Africa together."

After finally securing his visa in the afternoon of December 25, Zhang got on a flight to Dubai from Cairo. The five days without any proper medical treatment had put him on the edge of death.

At a hotel at Sharjah International Airport in Dubai, Zhang had to spend a further three days to wait for a flight to Beijing. His worsening symptoms, including a sharp pain in his liver area, blurred vision, and temporary feelings of shock made him realize that his disease was no mere cold. Even so, he still felt confident that he would successfully make the trip back to China. At Sharjah Airport on December 28, 1987, Zhang wrote his last sentence in his working notebook, "I do not think I'll go", meaning that he did not believe that he was dying. In Chinese culture, the word "die" is considered taboo, and instead the word "go" is often used.

On December 28, under his own strenuous effort and supported by the flight attendants, Zhang boarded Air China Flight 938 from Sharjah to Beijing. At approximately 8:00 am, Zhang felt very bad. At 10:00 am, he felt even worse. The attendants and an on-board doctor all tried their best to help him, but it was far too late. At 10:30am, as the plane entered into the air over northwest China, Zhang told flight attendant captain Ms. Hou, "I am so exhausted and helpless; I want to

have a break.” Then, he passed away, with his left hand pushing on his liver area firmly and his right hand holding the back of his head. Blood came out of his nostrils, ears and mouth.

Both Zhang and his father died under unfortunate circumstances. Zhang's father was the chief geological engineer of Anshan Iron mine in northeast China, the biggest iron mine in the country. His father committed suicide during a political movement in the 1950s.

2.3 Prof. Mao

Prof. Mao, Zhang's wife, did not feel good from the very beginning as soon as she knew he would go to the conference, and tried to stop him. As with the many others who tried to dissuade Zhang, she failed to convince him otherwise.

At around 11:00 pm on December 5, Zhang called Mao from Beijing where he was preparing for his trip, stating that he had received all of the required travel documents and was ready to go for the conference. This was to be the last time that the couple would speak with one another.

When Zhang left Beijing for Africa on December 6, Mao wrote in her journal, “Dear Qiusheng, I really worry about you going to Africa. Wish you a smooth trip.”

On December 7, Mao again wrote in her journal, “I have never so worried about your trip abroad before.” She was quite worried that he might be mistaken for a wealthy Japanese businessman and kidnapped, but was not especially about his health, because he had been very healthy.

On December 18 and 21, Mao did not receive any form of communication from Zhang, even though he promised to reach out on these two days prior to leaving for Africa. The lack of communication greatly increased Mao's stress levels, and caused her to constantly lose sleep. Even so, she still tried her best to decorate their apartment to welcome his return and greet the upcoming New Year's Day of 1988.

On December 24, one of Zhang's master's students went to Changchun Airport to pick him up, but Zhang did not show up according to his original schedule. Zhang effectively disappeared. Nobody in China knew where he was.

Finally, news came in that Zhang was in Cairo. The brief message made Mao, Zhang's students and colleagues very happy. They all believed that Zhang took the opportunity to visit the ancient civilizations of Egypt, and nobody could have guessed that Zhang was dying of a local disease at the time.

Zhang's students had also been preparing a celebration for the upcoming New Year's Day. The original plan was to hold the event on December 25, but this was later changed to December 28 when they got the message of Zhang's delayed return date.

Mao commented on her December 25 journal, “Dear Qiusheng, please never go abroad alone anymore in the future.”

At about 5:15pm on December 28, a call came into Mao's home and she thought it was from Zhang, her beloved husband. When she answered the phone, a strange voice told her coldly that Zhang had passed away on the plane and that his body was in a mortuary in Beijing. They had found his home phone number from searching his belongings. Upon hearing this, Mao fell in a faint. Her ominous premonition about his trip came true. The sad news of Zhang's death rapidly spread across the country and astonished all who knew him. They all could not believe that Zhang, who was full of vim and vigour, could have passed away so suddenly.

At around 5:50am in the cold (minus 21 degrees Celsius) morning of January 9, 1988 at Changchun Railway Station in northeast China, over 300 teaching and administrative staff as well as students witnessed Zhang return home. Sadly, it was his cinerary casket, and not the vigorous and lively Zhang himself. Zhang's memorial meeting was held in Beijing and his body was cremated there on January 7, 1988.

After the funeral, Mao developed senile dementia and has been living together with her two sons for the last several years.

3. Zhang's Contributions to Geological Sciences

Zhang's major contributions to geological sciences, which among others focus on the geology and metallogeny of the early Precambrian, are as follows:

- Recognized granitization of the Jushan Group, Haizhou area, Jiangsu Province, China
- Built the evolutionary model and study methods of the early Precambrian geological structural cycles of China.
- Recognized the Paleozoic ophiolite in the eastern Qin Mountain area, China
- Correlated geology of the Early Precambrian in eastern China
- Researched the Proterozoic crustal evolution of the east Liaoning Peninsula.

- Proposed the Liaojitite Suite, a special eugeosynclinal facies of the early Proterozoic in Liaoning and Jilin Provinces, China.
- Researched the formation and transformation of the early Precambrian meta-strata bound deposits in China.
- Proposed deep liquid source beds underneath the ancient crust at continental margins.
- Researched metamorphic cycles and associated mineral deposits in China.
- Discussed the rules of the early Precambrian regional mineralization in China.

References

- [1] Qiusheng Zhang et al., *Geology and Metallogeny of the Early Precambrian in China*, Changchun, China, Jilin Publishing House (in Chinese with English Abstracts) 1984.
- [2] Chengyun Mao and Liandeng Liu (Eds.), *Selected Papers of Zhang Qiusheng*, Changchun, China, Jilin Science and Technology Publishing House, 1988.