MEMORIAL OF YATSENG T. CHAO

The death of Mr. Y. T. Chao at the hands of bandits in Yunnan is a tragedy, the magnitude of which few can realize, and a loss to China which is absolutely irreparable. Modern science in China is so young and able men of science are so few, that the ruthless cutting off, at the very threshold of his career, of the ablest and most promising young scientist that China has ever had, is a national calamity.

Mr. Chao was one of my first students in China. Almost from the beginning I recognized that he was one of those exceptional types destined to become a leader in his chosen field of science. I have been engaged for more than 30 years in training young men for a scientific career, and I can truthfully say that in all that time I have never had one of whom I have had greater expectations, and a more confident belief in the certainty of future achievement than I have had of Mr. Chao. He was a brilliant refutation of the charge sometimes made by superficial western observers, that the Chinese mind is not adapted to critical scientific work. Mr. Chao was as critical, as accurate, as painstaking and as unsparing of himself in his work as any young man whom it has ever been my lot to know. Of robust health, great physical vigour, possessed of a driving ambition, which was nevertheless held in check by a keen mind, and determined to become the master of his subject, he was of that type of student that delights the teacher engaged in training specialists for the exploration of new fields, and makes him feel that his work has not been in vain and that it will be carried forward when he himself relinquishes it.

Even before graduation Mr. Chao began his research work and after his four student years with me, at the National University, he became my assistant and at the same time a junior member of the Geological Survey where he soon rose to become a valued member of its staff of geologists and palaeontologists. He might have taken for its own the motto adopted by the oldest scientific academy of the world, Nunquam Otiosus, for he was ceaselessly active at the work which he loved, and which meant more to him than opportunities for advancement and pecuniary gain. Mr. Chao had many offers of positions which would have gained him a comfortable livelihood and much prestige among his fellow men, but he preferred to remain quietly in the laboratory of the Survey and carry on his research work. And that work was thorough. Realizing the importance of foreign literature, he set about,

after having mastered English, so that he spoke and wrote it with remarkable fluency, to become thoroughly conversant with German and French, and he had even begun the difficult task of acquiring a knowledge of the Russian language. With Japanese, he was perfectly familiar. He was a critical student, but he also was an extremely modest one, and never undervalued the work done by others. Indeed, he had a young man's reverence for the great names in his science, and always thought of himself as a beginner and hoped some day to achieve and gain a position where he might be a worthy representative of his country and his nation among the brotherhood of scientific men.

For a man only six years out of college, Mr. Chao's contributions to his science are exceptional. He has published four monographs in the *Palaeontologia Sinica* and they are absolutely his own work, although he was always ready and indeed eager to accept advice and criticism. He has also published many shorter papers. I consider his work thorough, critical, scientific, and in every wav equal to the best type of work done in this field elsewhere. Not content with mere laboratory work, he again and again took the field to investigate the stratigraphic relations and make careful collections of fossils from the formations in which he was interested. He was engaged in field work when he met his end.

Mr. Chao was a critical observer of details in the field. Professor Arnold Heim, who spent some time in the field with him, has testified to Mr. Chao's exceptional qualifications as a stratigrapher and during our many discussions of stratigraphic relationships I learned thoroughly to appreciate his ability as an observer, and his critical analysis of observations. That stratigraphic and palaeontological science has gone forward by leaps and bounds in China, is in no small measure due to Mr. Chao, whose own restless activity was a constant spur to his colleagues and his younger associates.

And with it all he was a man of exceptional likeability. His modesty, and his appreciation of the work of others, endeared him to his teachers and older colleagues as well as to visiting men of science, with whom he came in contact. He had many correspondents among scientific men in other countries who helped his work with advice and with material loaned or exchanged. With his young colleagues he was on exceptional friendly terms and he was a good teacher and eager exponent of the science to the young men of the succeeding classes in college and of those picked few of these who were accepted as junior members on the Survey.

Science has lost one of its most earnest and most promising devotees. China has lost one of its future leaders, and we, his teachers and colleagues, have lost a valued friend and co-worker. But China's loss is the greatest. It has urgent need for every one of its builders on the slowly rising temple of science, and of its master builders before all.

Let the Nation mourn, for the loss is National.

Yatseng T. Chao was born in 1898 in Li Hsien, Hopei province, North China, graduated in 1923 from the Geological Department of the National University of Peking. Entered to the Geological Survey service in the same year. Promoted to geologist of senior class in 1926 and in charge of the Palaeontological Laboratory of the Survey in 1927. Recipient of First Scientific Price awarded by the China Foundation for the promotion and education and culture. Killed by bandits during his field work at Cha Hsin Chang of Chao Tung district, North Yunnan, on Nov. 16, 1929.

By Amadeus W. Grabau (signed)
Peiping, November 28, 1929.

BIBLIOGRAPHY

- The Structure of the Nankou district. Bull. Geol. Soc. China, Vol. II, No. 1-2, pp. 111-115. June, 1923.
- Geology of the gorge district of the Yangtze (from I-Chang to Tze-kuei) with special reference to the development of the gorges. (with J. S. Lee) Ibid. Vol. III, No. 3-4. pp 351-392, Dec. 1924.
- 3. On the Stratigraphy of Tze Chow and Liu Ho Kou Coal Fields, S. Chihli, and N Honan. (with C. C. Tien) Bull. Geol. Surv. China, No. 0, pp. 67-86. Dec. 1924.
- Stratigraphy of Lin Cheng Coal Field, Chihli Provence. (with C. C. Wang and C. C. Tien) Ibid. No. 6, pp. 27-36. Dec. 1925.
- Geology of I Chang, Hsing Shan, Tze Kuei and Pa Tung districts,
 W. Hupei. (with C. Y. Hsieh) Ibid. No. 7, pp. 13-76, Dec. 1925.
- 6. The Mesozoic Stratigraphy of Yangtze gorges (with C. Y. Hsieh) Bull. Geol. Soc. China, Vol. IV, No. 1, pp. 45-51, April, 1925.
- A Study of the Silurian section at Lo Jo Ping, I Chang district,
 W. Hupei. (with C. Y. Hsieh) Ibid. Vol. IV, No. 1, pp. 39-44, April,
 1925.
- 8. On the age of the Taiyuan Series of N. China, Ibid. Vol. IV, No. 3-4, pp. 221-249. Dec. 1925.
- Succession of the marine beds in the Chang Chiu Coal Field of Shantung. Bull. Geol. Surv. China, No. 8, pp. 1-5, Dec. 1926.
- Carboniferous Stratigraphy of South Manchuria. Ibid. No. 8, pp. 6-9.
 Dec. 1926.
- Classification and correlation of Palaeozoic coal bearing formations in N. China (with J. S. Lee) Bull. Geol. Soc. China, Vol. V, No. 2, pp. 107-134, Dec. 1926.
- Geology of Western Chekiang. (with C. C. Liu) Bull. Geol. Surv. China, No. 9, pp. 11-28, Oct. 1927.
- 13. Productidae of China. Part I (pp. 244 English, 23 Chinese, 16 plates and 7 text-figures) Palaeont. Sinica, Geol. Surv. China, Series B. Vol. V, Fasc. 2, Sept. 1927.
- 14. Fauna of the Taiyuan Formation of North China, Pelecypoda. (pp. 64 English, 10 Chinese, 4 plates) Ibid. Vol. IX, Fasc. 3, Dec. 1927.

- Brachiopod Fauna of the Chihsia limestone. Bull. Geol. Soc. China, Vol. VI, No. 2, pp. 83-120, Augt. 1927.
- Productidae of China. Part II (pp. 81 English, 23 Chinese, 6 plates and 3 text-figures) Palaeont. Sinica, Geol. Surv. China, Series B, Vol. V, Fasc. 3, Oct. 1928.
- 17. The geological age of the limestone of Chihsia Shan, near Nanking. (in Chinese) Science, Science Society of China, Vol. XII. No. 9, pp. 1161-1179, 1928.
- Origin of the Hot Spring at Wen Chuan Sc, Western Hills, Peking. (in Chinese, L'Education Franco-Chinoise, No. 17, pp. 18-21, Augt. 1928.
- Carboniferous and Permian Spiriferids of China. (pp. 133 English, 6
 Chinese. 11 plates and 20 text-figures). Palaeont. Sinica, Geol. Surv. China, Series B. Vol. XI, Fasc. 3, June, 1929.
- Geological Notes in Szechuan. Bull. Geol. Soc. China, Vol. VIII, No. 2, pp. 137-150, Augt. 1929.