

In Memory of Academician Er-Mi Zhao (1930-2016)



Professor Er-Mi Zhao, Herpetologist, 1930-2016

Academician Er-Mi Zhao, Professor of the Chengdu Institute of Biology, Chinese Academy of Sciences, and Sichuan University, passed away on 24 December, 2016, to the great loss of both Chinese and world herpetology. As one of the most internationally renowned Chinese herpetologists, Academician Zhao represented a remarkable era of Chinese herpetology and made a significant contribution to global research, both academically and spiritually. He played a significant role in our understanding of the amphibians and reptiles of Tibet, herpetofauna of the Hengduan Mountains, taxonomy of Chinese snakes, and biogeography of the East Asian islands. His distinguished studies laid a solid and substantial foundation for research by future generations of young herpetologists, and had an extensive and profound impact on the development of the field.

As a prestigious scientist, Academician Zhao won the recognition and respect of his international peers and assured

his place on the worldwide stage based on his remarkable academic achievements. "China should be so proud to have you representing her in herpetology research", Roger Conant, a senior American scientist and *Agkistrodon* expert, wrote to Academician Zhao in 1989. In 1993, *Herpetology of China* (Zhao & Adler, 1993), the first book on the herpetofauna of China, which systematically described the 661 known species at the time, was co-authored by Academician Zhao and American scholar Prof. Kraig Adler. This great work took nearly half a century of meticulous investigation and ten years of compilation to achieve. The book was highly praised by Academician Ilya Darevsky of the Russian Academy of Sciences and Academician David Wake of the American Academy of Sciences, who claimed it to be "a milestone of herpetology literature" and "an epoch-making book, [which] inaugurates a new era in exploring the fauna of amphibians and reptiles of this vast land".

As a diligent researcher, Academician Zhao devoted himself to herpetology research for 60 years. During his academic career, he published more than 140 articles, 43 books, including *Fauna Sinica* (Zhao et al., 1998), *Snakes of China* (Zhao, 2006), *Atlas of Chinese Snakes* (Hu et al., 1980), *Amphibian Zoogeographic Division of China* (Zhao, 1995), and *Herpetology of China* (Zhao & Adler, 1993) in five translations, and established four periodicals. Many of his works were compulsory study for herpetologists and students in China, America, England, and various other countries.

For herpetological classification and zoogeographic regionalization, Academician Zhao discovered a new record family of snake, *Cylindrophis ruffus* (Zhao & Adler, 1989), and 17 new record species of amphibians and reptiles in China. In addition, two new genera of amphibians, *Satobius* (*Hynobius retardatus*) (Adler & Zhao 1990) and *Liua* (*Liua shihi*) (Zhao & Hu, 1983), and 41 new species (or subspecies) were described and named by him, including *Japalura szechwanensis* (Hu & Zhao 1966), *Achalinus meiguensis* (Hu & Zhao, 1966), *Natrix optata* (Hu & Zhao, 1966), *Ranodon tsinpaensis* (Hu et al., 1966), *Megophrys nankiangensis* (Hu et al., 1966), *Hyla tsinlingensis* (Hu et al., 1966), *Rana kuangwuensis* (Hu et al., 1966), *Microhyla mixtura* (Hu et al., 1966), *Leiopisma tsinlingensis* (Hu et al., 1966), *Xenopeltis hainanensis* (Hu et al., 1975), *Dinodon rosozonatum* (Hu et al., 1975), *Achalinus hainanus* (Hu et al., 1975), *Trimeresurus medoensis* (Zhao & Jiang, 1977), *Ovophis monticola zayuensis* (Zhao & Jiang,

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1977), *Plagiopholis unipostocularis* (Zhao et al., 1978), *Opisthotropis guangxiensis* (Zhao et al., 1978), *Agkistrodon shedaoensis* (Zhao, 1979a), *Trimeresurus xiangchengensis* (Zhao, 1979b), *Phrynocephalus vlangalii hongyuanensis* (Jiang et al., 1980), *Oligodon multizonatum* (Zhao & Jiang, 1981), *Macropisthodon rudis multiprefrontalis* (Zhao & Jiang, 1981), *Scincella huanrenensis* (Zhao & Huang, 1982), *Scutiger ruginosus* (Zhao & Jiang, 1982), *Rhabdophis nuchalis pentasupralabialis* (Jiang & Zhao, 1983), *Platymantis reticulatus* (Zhao & Li, 1984a), *Staurois liangshanensis* (Wu & Zhao, 1984), *Calotes medogensis* (Zhao & Li, 1984b), *Tenuidactylus medogensis* (Zhao & Li, 1987), *Rana tenggerensis* (Zhao et al., 1988), *Eumeces liui* (Hikida & Zhao, 1989), *Trimeresurus mangshanensis* (Zhao & Chen, 1990), *Cuora zhoui* (Zhao et al., 1990), *Amphiesma metusia* (Inger et al., 1990), *Oreolalax multipunctatus* (Wu et al., 1993), *Rana robertingeri* (Wu & Zhao, 1995), *Rhabdophis adleri* (Zhao, 1997), *Laudakia wui* (Zhao, 1998a), *Laudakia papenfussi* (Zhao, 1998b), *Rana zhengi* (Zhao, 1999), *Opisthotropis cheni* (Zhao, 1999), *Rhacophorus hainanus* (Zhao et al., 2005), and *Gloydus lijianlii* (Jiang & Zhao, 2009), as well as the world-renowned Shedao Island pit viper (*Gloydus shedaoensis*) (Zhao, 1979a), Medog green pit viper (*Viridovipera medoensis*) (Zhao & Jiang, 1977), and Mt. Mang pit viper (*Protobothrops mangshanensis*) (Zhao & Chen, 1990). He also added eight new species for Tibet and 10 newly recorded species in China, and was the first to report on the king cobra in Medog (Zhao & Li, 1983) and expand its distribution northwards (Zhao et al., 1986).

Academician Zhao brought new insight and perspective on the geographical division of amphibians and reptiles in China, the amphibian and reptile fauna in the Hengduan Mountain area, the classification of snakes distributed in China, and the zoological geography of the East Asian Islands. He zoned the southern slopes of the Himalayas as a new sub-southwest region of the Indo-Chinese sub-region in the oriental realm according to the actual distribution of species in Tibet, and first proposed a new "South of the Himalayan Sub-region" based on the distribution of reptiles (Zhao et al., 1986). In addition, Academician Zhao also proposed new distribution patterns of amphibians in extra-tropical East Asia and the formation of amphibians and reptiles in the Western Pacific island chain (Zhao, 1989).

Professor Zhao also did outstanding work in scientific practice. He developed measures for the prevention and management of venomous snakes in the grasslands in western Xinjiang, and advanced the concept of medical geography of venomous snake bites in China (Qian et al., 1991) and Yunnan snake medicine to guide the practice of snake bite control. Collaborating with colleges and universities in Hainan, Professor Zhao recruited Masters and Doctoral aquaculture students to cultivate professional personnel for python breeding. He actively cooperated with Hainan python farms by providing systematic scientific knowledge.

Academician Zhao was not only a devoted scholar, but also played active roles in helping young researchers and in disseminating scientific knowledge. He served on the Executive Committee of the International Amphibian and Reptilian Society

in 1983, and as the Chairman of Chinese Herpetologists in the IUCN (1991-2001). During his tenure as an academic advisor on the Editorial Board of *Zoological Research* from 1997 to 2014, he fulfilled his duty faithfully and diligently, and provided vital and constructive promotion of the journal. *Zoological Research* is extremely grateful for his exceptional contribution and dedication, and it is with deep regret and sorrow we note his passing. His deep passion, persistence, optimism, and strict scientific attitude in chasing the truth showed his invaluable spiritual wealth, and is an inspiration to every one of us.

Editor's note: The facts and material stated here in regards to Academician Zhao's academic achievements were provided by his students, Dr. Jia-Tang Li (Chengdu Institute of Biology, CAS), Dr. Jing Che (Kunming Institute of Zoology, CAS), Dr. Song Huang (Huangshan University, China), Peng Guo (Yibin University, China) and Dr. Yue-Zhao Wang (Chengdu Institute of Biology, CAS). This essay was compiled by *Zoological Research*.

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