

Mushroom Expert Makes His Mark in Yunnan

Dialogue

By LONG Yun & BI Weizi

Yunnan, a beautiful province in southwest China, is not only famous for its multi-ethnic culture but also for its diverse array of mushroom species, which thrive in the unique mountainous environment that characterizes the region. This exceptional diversity served as a magnet for Dr. Samantha C. Karunarathna, which drew him to move from his homeland of Sri Lanka to achieve his dream of becoming a mushroom expert.

"It was estimated that there are approximately 900 edible mushrooms in Yunnan, and as far as I know, there is no [other] place on the planet with this high mushroom diversity," Karunarathna, a professor at Qujing Normal University specializing in taxonomy, phylogeny, and domestication of mushrooms, told *Science and Technology Daily*.

Fondly dubbing himself "a mushroom born in Sri Lanka and grown in Yunnan," he said that the colors and different shapes of mushrooms attracted him to gain more knowledge about "this interesting group."

A solid foundation

Karunarathna's journey to Yunnan began during his PhD project at Mae Fah Luang University in Thailand, closely cooperating with the Kunming Institute of Botany (KIB), Chinese Academy of Sciences. His fieldwork, mainly focusing on studying mushroom diversity in Yunnan, led him to frequently travel to Kunming, the capital city of Yunnan. Following the completion of his PhD, he was offered a researcher position at KIB, paving the



Samantha C. Karunarathna (left) talks with Steve Axford, a world-renowned fungi photographer. (COURTESY PHOTO)

way for further academic pursuits.

KIB provided Karunarathna with ample freedom to focus on his research while engaging in various projects and collaborating with colleagues on diverse topics. During this period, he enhanced his research skills and the quality of his scientific work.

He lauded the "research-friendly environment" in China, saying, "Compared with other countries, China offers a greater variety of opportunities."

Karunarathna has been involved in research projects aimed at improving the sustainability of agricultural systems and rural livelihoods for several years. "From this experience, I learned and am still learning how rewarding it can be to see scientific knowledge being implemented in practice and benefit or im-

prove existing systems," he said.

Disseminating knowledge

Karunarathna's goal is to discover new edible mushrooms in Yunnan, benefiting those who like eating mushrooms. "I would also like to invest my energy and research to support the local farmers in Yunnan through mushroom cultivation and domestication," he said.

In 2022, Karunarathna joined the Center for Yunnan Plateau Biological Resources Protection and Utilization, College of Biological Resource and Food Engineering at Qujing Normal University. "My students are highly diligent in their studies and often work hard day and night," he said. The dedicated spirit of his Chinese students constantly surprises him. He hopes in the future, they will not merely view their studies as a means

to secure jobs but genuinely have a passion for the study of wild mushrooms.

Karunarathna firmly believes that passion is the best teacher because true happiness stems from the love of learning itself, enabling people to persevere in their scientific research, regardless of the difficulties they may face.

In addition to his teaching tasks, he is dedicated to academia, which has resulted in more targeted and informative scientific papers and books about mushrooms for the people of Yunnan. He aims to promote a rational and scientific approach to understanding and utilizing wild mushrooms while also using wild mushroom cultivation to increase the incomes of local farmers.

A bright future

As a foreign researcher in China, Karunarathna is deeply impressed by China's substantial investment in research and development, particularly in conserving endangered fauna and flora. From his perspective, the country has also strongly committed to restoring degraded land and repurposing it for agriculture. Witnessing Yunnan's initiatives promoting green energy, green food, and a healthy living environment, he believes there will be a bright future for his research endeavors in the region.

When asked about his advice for tourists to Yunnan, he had a mouthwatering suggestion. "I strongly recommend anyone who visits Yunnan to try the [culinary] specialty of the province—Wild Mushroom Hot Pot. It is a unique experience you can only get in Yunnan," he said.

KONG Youqiong from the Yunnan provincial Science and Technology Department also contributed to this article.

China Impression

Most Attractive Chinese Cities Named: Beijing, Shanghai, Guangzhou in Top 3

By Staff Reporters

The "Charming China—the Most Attractive Chinese Cities for Expats 2022" was released in Hangzhou, the capital city of Zhejiang province, on November 12.

According to sponsoring organization, Foreign Talent Research Center, Beijing, Shanghai, Guangzhou, Hangzhou, Shenzhen, Suzhou, Qingdao, Nanjing, Chengdu and Chongqing were the top 10 taking into account the foreign talents attraction index of Chinese cities.

On the whole, the foreign talent attraction index of a city is positively correlated with its economic development level, and innovation and entrepreneurship environment. In terms of living convenience, foreign talents think that transportation matters most, and they also have strong demands for education and medical services.

When talking about this year's list, Swedish scientist and fellow of European Academy of Sciences, Henry Radamson, said that as for the top 10 cities, they have their own features and merits.

As the capital of the country, Beijing's comprehensive strength is more prominent, especially the quantity and quality of universities. "One of them which I work a lot with is Tsinghua University. Tsinghua University and Peking

University are ranked in the world at [the] very top level. So for all the talented people, they want to come to Beijing and have a collaboration with these universities," said Radamson.

When recalling his time living in Chengdu, Radamson said that the city is definitely one of great importance. "When I was there, I [always spoke] very good things about Chengdu," he said.

Asad Khalil from Syria, professor of Southwest University of Political Science and Law, when talking about his second visit to Nanjing this October, said that Nanjing's well-connected transportation infrastructure and its active government support add to its appeal. A city that is easily accessible and where the government actively supports research and development efforts is primed for success in the sci-tech realm.

"Nanjing's future in the sphere of science and technology is exciting," he said, adding that, "It will continue to attract diverse talent, nurture innovation, and make substantial contributions to the advancement of science and technology on a global scale."

According to the organizer, the indexes of salary, welfare and labor rights protection are important indicators for the attraction of foreign talents. The convenience of life and the friendliness of the environment cannot be ignored either.



The west gate of Tsinghua University in Beijing. (PHOTO: VCG)

Traditional Eastern Wisdom

Wang Mang Caliper: A Mysterious Ancient Invention

By BI Weizi

One of the priceless exhibits at the National Museum of China in Beijing is a 2,000-year-old caliper unearthed in an Eastern Han tomb in Hanjiang, a county in Jiangsu province, east China. Almost identical to the calipers used today, it was named the Wang Mang caliper after its inventor Wang Mang (45 BC-23 AD), who was the emperor of the new Han dynasty, as well as a reformer and statesman.

The Wang Mang caliper scotched the erroneous claim by some Western scholars that French mathematician Pierre Vernier was the first person to invent the caliper in 1631, which was called the Vernier caliper after him. It caused the Encyclopedia Britannica to amend its entry on the Vernier caliper in 1973.

Though how it was invented remains a mystery, the Wang Mang caliper is one of the most advanced measuring instruments in the history of science and technology and very similar to the

Vernier caliper people use today.

The caliper consists of two rulers, a fixed and a movable one. The fixed ruler is 13.3 cm long and has a fish-shaped handle on its upper end. The handle has a groove in the middle with a rotating and adjustable pin and can be moved left or right along the groove. The small, movable ruler is attached to the main ruler with a movable grip called a jaw. It can be moved along the main ruler by opening the jaw. The movable ruler has a thumb screw which provides a grip for moving it.

An object is measured by placing it between the caliper's jaws and moving the sliding jaw until the object is firmly gripped between two jaws. The measurement is then obtained from the readings on the two rulers.

The reign of Wang Mang saw extensive research on weights and measures, which led to the formation of China's traditional theory of weights and measures and had a profound influence on later generations.



A 2,000-year-old Wang Mang caliper unearthed in an Eastern Han tomb in Hanjiang county, Jiangsu province, is exhibited at the National Museum of China. (PHOTO: VCG)

Russian Scientists Explore Innovation Hub

Expats Activity

By ZHAO Xiaojing & CHEN Dan

Hubei province in central China is positioning itself as a key player in science and technology, making substantial strides toward becoming an innovation hub of the region.

On November 8, the recipients of the "Award of the Chinese Ambassador to the Russian Federation" began a five-day themed tour of Hubei, exploring the region's scientific and technological progress, as well as its cultural marvels.

In order to forge closer sci-tech cooperation, the Russian Union of Scientific and Engineering Associations (RU-

SEA) and Hubei Provincial Association for International Exchange of Personnel formally inked a cooperation framework agreement. Wu Jun, deputy director of Hubei's Department of Science and Technology, underscored Hubei's endeavors to establish itself as an influential science and innovation center. He hoped the agreement will serve as a catalyst for substantial cooperation and lay the foundation for mutually beneficial collaborations across various fields.

The Russian experts visited universities and high-tech enterprises for talent exchange. They took part in discussions and expressed desires for further cooperation, praising Hubei's scientific innovation and state-of-the-art laboratories.

"We have witnessed the achievements of Chinese technology enterprises

and the development of Chinese universities. We hope to strengthen cooperation with Hubei in the fields of science and education," said Drukarenko Sergei, first vice president of RUSEA.

At the Technology Talent Exchange Symposium, Sergei expressed hope that the event would deepen Sino-Russian cooperation in science and technology, laying a solid foundation for Russian scientific resources and young scholars to collaborate and start businesses in Hubei.

Russian academician Lygdenov Bural D, a special-term professor at Wuhan Textile University, welcomed the Russian delegation and expressed his wish for strengthened exchanges. Bural applauded the significant sci-tech progress in China and Hubei's accommodating and friendly research environment.

Reviving Dunhuang Frescoes Through Sci-tech

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The laboratory can simulate the temperature of minus 30°C to 60°C, 10-90 percent relative humidity, as well as wind, rain, snow, sun exposure and other climatic conditions throughout the year.

"The simulation environment of 'multi-field coupling laboratory' has the advantages of controllable variables, repeatable conditions, accurate data, and the ability to conduct full-scale model tests, etc., in order to preview the changes that China's cultural heritage such as grottoes and soil sites will undergo, which can make the protection measures more accurate, and more scientific

and standardized," said Zhang Bo, researcher at the Dunhuang Academy.

Mogao Grottoes get a digital life

The "Digital Dunhuang" project, which was put forward by the Dunhuang Academy in the late 1980s, utilizes digitization technology to preserve the precious materials of Dunhuang murals and painted sculptures permanently and in high fidelity.

Ding Xiaohong works in the Dunhuang Academy and is a member of the team that gives Dunhuang "digital life." He said that in addition to the murals, they will also use laser scanning and three-dimensional reconstruction tech-

nology to collect large color sculptures and render the entire cave into three-dimensional digital cultural relics.

"Digitizing caves is tailored to local conditions. Each cave has its own characteristics and collection plan, just like people with different personalities," said Ding.

Dunhuang's experience with the world

While Dunhuang culture is inherently Chinese, the Dunhuang Academy actively shares its expertise with the world, collaborating with institutions globally, including those in UK, France, India, Afghanistan, Kyrgyzstan and other countries.

"In 2017 or even earlier, we sent different professional investigation teams to India, Afghanistan, Uzbekistan, Kyrgyzstan and other neighboring countries to carry out cultural heritage protection research. These countries are close to us in geography and have [had] frequent cultural exchanges in history. The production techniques and preservation status of many historical relics are very similar to Dunhuang. We were wondering if we can [share] the Dunhuang experience and play a more important role under the framework of the Belt and Road Initiative." Su Bomin, director of the Dunhuang Academy told *S&T Daily*.

New Ethiopia CDC Lab Enhances Sino-African Public Health Ties

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"The Africa CDC and China CDC are keen to enhance their collaboration in multiple areas, and the labora-

tory aligns with Africa CDC's strategic priorities, enhancing its capacity to respond promptly and effectively to various public health threats," said

Africa CDC director general Dr Jean Kaseya.

The new laboratory is named Dr Wu Lien-teh Laboratory in memory of

the epidemiologist Wu Lien-teh, who contributed significantly to China's quarantine and epidemic prevention endeavors.