Honorary Fellow
A Citation

Professor Chang Shu Ting, OBE, BSc, MSc, PhD

In 1960, the American poet Sylvia Plath published her first book of poems, titled *The Colossus*. Among the works in this collection there is an interesting short poem which speaks of something that occurs in multitudes:

> *Bland-mannered, asking little or nothing,*
> *So many of us! ...*
> *We are meek, we are edible, …*
> *Our kind multiplies: We shall by morning*
> *Inherit the earth.*
> *Our foot's in the door.*

The poet is, of course, referring to mushrooms, which also provide the poem with its title. Critics have held diverse opinions as to the use of mushrooms as a metaphor here and, given the age in which the poem was written, many are inclined to read it as a piece advancing the cause of feminism, or advocating the liberation of women. At about the same time, very serious research on mushrooms, not metaphorically but actually on fungi of the order *Agaricales*, was being pursued in earnest by a young Chinese scientist at the University of Wisconsin. He completed his PhD in the same year Ms Plath's book came out in London, and from that time on he has been engaged in a lifelong academic career dedicated to the realization of a vision no less prophetic than the poet's, bringing immense benefits to human life in more ways than one.

Professor Chang Shu Ting, Emeritus Professor of Biology at The Chinese University of Hong Kong, was born in 1930. He graduated with a BSc degree from Taiwan University in 1953, and in 1956 he proceeded to postgraduate studies at the University of Wisconsin, obtaining his MSc in 1958 and the PhD in 1960. His association with the Chinese University, which to date has lasted over half a century, began immediately afterwards when he took up an assistant lectureship in the Biology Department. He retired from the Chair of Biology in 1995, and was appointed Emeritus Professor upon cessation of active teaching service.

The main research interests of Professor Chang have always been mushroom biology, mushroom technology for cultivation, and mushroom biotechnology for tonic and medicinal products. Mushrooms, in its many varieties, has been part of the human diet as early as the days of the ancient Egyptians, except that these clever people of antiquity associated it with immortality and confined its consumption to the court and the nobility. Originally eaten as they were picked in the field, mushrooms came to be cultivated extensively both in Asia and the West, and became delicacies that adorned the most exalted tables in many countries. While the haute cuisine of France would lose its spirit without its *champignons and truffes*; Chinese cooks, Northern and Southern, cannot dispense with their dried shiitakes and straw mushrooms. The ground-breaking research efforts of Professor Chang first took the international mycological

community by storm when, in 1969, he successfully demonstrated the growing of straw mushrooms by using cotton waste from the textile industry in Hong Kong. This innovation was followed by the introduction of the use of protoplast techniques to breed high temperature strains of shiitake mushrooms. He laid the foundation for mushroom biology and mushroom biotechnology to be established as academic disciplines, and introduced the term and concept of "mushroom nutriceuticals", together with Professor J A Buswell, in 1996. Further breakthrough came in 1998, when the cultivation of edible and medicinal mushrooms was recognized, for the first time, as the "Non-green Revolution," on account of the value of mushrooms as food, health tonic, medicine, animal feed, and fertilizer, the protection and regeneration of the environment that the cultivation process would entail, and the equitable economic benefits that it could generate. He has authored or co-authored over 200 articles in scientific journals, and 21 books and booklets, which cover the fields of fungal genetics, mushroom biology, mushroom cultivation, medicinal mushroom products, and lignocellulosic biomass wastes management and utilization.

Apart from his teaching and research activities at CUHK, Professor Chang has also contributed significantly to scientific research on the national and international levels. He holds honorary professorships and advisorships at institutions of advanced research in Guangzhou, Hebei, Hubei, Yunnan, Zhejiang, Shaanxi, and in the cities of Taiyuan, Beijing and Shanghai, and was active as an organizer, facilitator, and contributor in various conferences and training programmes organized by UNESCO, FAO, UNDP/UNOPS and other international bodies on mushroom cultivation, conservation, solid waste disposal, and microbiological research, both in Southeast Asia and various parts of the western world. Professor Chang has also been a Consultant by special invitation, on mushrooms, its cultivation and related products, to the Commonwealth Secretariat in London, and the governments of Colombia, Brazil, the United States, Kenya, Malawi, Namibia, South Africa, Tanzania, Swaziland, Zimbabwe, Kuwait, Syria, Bulgaria, Hungary, Poland, Slovenia, Bangladesh, Japan, India, Indonesia, Malaysia, Nepal, Philippines, South Korea, Thailand, Vietnam, Australia, Fiji, New Zealand. He has been referred to as the "Mushroom Missionary", travelling five continents and teaching mushroom biology.

In Hong Kong, Professor Chang's services to the community at large are particularly significant: on many occasions he headed official delegations, appointed by the Government, to international conferences, and he was also an active member of a number of influential advisory and executive committees including the earlier Committee on Science and Technology, and the Research Grants Council. Away from the corridors of power on Upper Albert Road and the ivory towers of the university campuses, Professor Chang has also been somewhat a legend among both gourmets and gourmands in Hong Kong, for the high quality of the cultivated mushrooms that he midwived, and the new varieties that he introduced to the local wet markets and restaurants. Seldom does one meet a research scientist the fruit of whose labour touches the life of the man in the street so directly, and so well.

The Chinese University of Hong Kong was the home-base for Professor Chang's long career as a researcher and discoverer, and he distinguished himself in his services to the University,

much to the praise and admiration of colleagues and students alike. He was at various stages of his CUHK career the Chairman of the Department of Biology, the Dean of Science, the Director of Student Affairs, the Director of the Institute of Science and Technology, the Chairman of the Senate Committee on the University Library System, the Director of the Chinese Medicinal Material Research Centre, and the Chairman of the Science Centre Management Committee. At a time when the University was responding to the constitutional changes proposed in the Second Fulton Report, Professor Chang showed his judicious vision and audacious foresight as an administrator, and in many ways helped build the infrastructure in readiness for the rapid developments of CUHK in the 21st century. Professor Chang, in his capacity as Director of Student Affairs, is well remembered by those who served on the Executive Committee of the Chinese University Student Union for his affable and easy-going manners, his genuine interest in listening to them in frequent meetings and dialogues, and in bringing their ideas up for consideration by the University's senior management whenever he thought the Union had a reasonable point. Among the many innovations that were introduced during his Directorship, the Benjamin Franklin Centre was thoroughly revamped to become the first hub of student activities on campus, and the Student Union and its subsidiary operations were also given a decent and spacious home for the first time.

With his illustrious contributions to learning, and to people's livelihood, at the regional, national and global levels, it is only appropriate that Professor Chang should have been honoured by governments and civic bodies all over the world. In 1994, he was made an Officer of the Most Excellent Order of the British Empire by Her Majesty Queen Elizabeth II. He was presented with the Silver Magnolia Award by the People's Municipal Government of Shanghai in 2004, elected a Fellow of the World Technology Network in 2005, received the West Lake Friendship Award of Zhejiang Province in 2008, and China's Friendship Award in 2009. He is a Fellow of the World Academy of Arts and Science, and an Honorary Life Fellow of the British Mycological Society as well as the International Society for Mushroom Science. Currently he is the Vice-President of the World Society for Mushroom Biology and Mushroom Products, Director of the Hong Kong Microbiological Resources Centre, a UNESCO-sponsored facility, the Director of the Centre for International Services to Mushroom Biotechnology under the United Nations Industrial Development Organization (UNIDO), and the Editor of *the International Journal of Medicinal Mushroom*.

Mr Chairman, Professor Chang Shu Ting has dedicated himself to a lifetime of services for science, for research, and for the betterment of life of the people of the world. We at the Chinese University are proud of his achievements, and happy to have enjoyed his loyal service and wise counsels as an academic and an administrator for many decades. It is now my privilege to present to you Professor Chang Shu Ting for the award of an Honorary Fellowship of the University.