China Resource Plants

By Zhu Taiping, Liu Liang, and Zhu Ming. 2007. The Science Press of China, 16 Xizhimen South Street, Beijing, China 100035. 1220 pages, 195 Yuan RMB Cloth.

China is a vast country extending across a number of climatic zones. Diversified ecosystem types, complex terrain, and heterogeneous natural environments allow for an abundance of plant species, among which resource plants have played important roles in the Chinese national economy and people's daily life. There are 365 families of seed plants, about 3400 genera, and 32 000 species of higher plants in China, of which about one-tenth have been used by Chinese since ancient times. Key techniques, such as breeding, cultivating, and methods of use, have been developed, and this is one of the great contributions of Chinese to human civilization. However, these resource plants have not been systematically reviewed and summarized for a long time.

Recently, a comprehensive and systematic book on the resource plants of China was written by Zhu Taiping, Liu Liang, and Zhu Ming. The book is based on the data accumulated during about 50 years of field investigations on plant resources by the authors, and it includes literature from China and elsewhere.

The development of botany in China was rather slow for thousands of years, and in-depth systematic and interdisciplinary research on resource plants was even slower. It was only about 50 years ago after the establishment of P. R. China, a resource plant research lab in the Institute of Botany, Chinese Academy of Science, was established. This heralded the beginning of research on resource plants. Gradually, other research institutes or labs for resource plants were established in various institutions of China, and the research spread across China.

Although this new book covers nearly 2800 species of resource plants, it is only a preliminary introduction compared with the total of more than 30 000 species of plants in China. Full research on and a summary of these plants obviously requires a longer time and more work by more Chinese scholars.

Because of the environmental problems caused by overuse of fossil fuels and the limits of underground non-renewable energy, as well as the sustained increase in international demand for energy and soaring oil prices, more and more countries have begun to turn their attention to the exploitation of alternative, environmentally friendly, and renewable energy sources. Biofuel has been a focus due to its advantage as a renewable and environmentally friendly resource, and it may become at least a part of future energy. For example, ethanol production from plant fibre has become commercially competitive in some countries, and it may at least reduce the emission of greenhouse gases by 50% compared to using petroleum. We believe that full exploitation of resource plants may bring a new opportunity for human society in dealing with the issues of the energy crisis and environmental protection. Of course, the protection and sustainable management of resource plants themselves must be also reinforced.

The book is composed of seven chapters. The first chapter discusses the general aspects of plant resources and their relations with the environment and humans. Then it introduces the progress of plant resource use and the main characteristics of plant resources in China. Chapter two expounds the important characteristics of resource plants and comprehensively introduces 15 major categories of resource plants worldwide, but with a focus on Chinese species, such as plants with a high fibre content, starch, protein, amino acids, vitamins and lipins, pigments, essential oils, gum and pectin, tannin, resin, rubber and gutta, medicinal materials, and those with sugar or non-sugar sweet additives, as well as decorative flowering plants, involving nearly 2800 species. Chapter three describes the distribution of some chemical compounds in plant taxa and the relationships with the geographical environment, and it also discusses the main tasks of the research on plants. Chapters four and five describe examples of research on some typical resource species. Chapter six introduces the contribution of China to the world in the use of some typical Chinese plants. This chapter gives brief histories and the present situations of some important crops, fruit trees, medicinal plants, and natural herbs bred, cultivated, and exploited by our Chinese ancestors, including plants such as rice (*Oryza sativa* L.) (going back 8000 years), Japanese barnyard millet (*Setaria italica*) (6000–7000 years), pearl or cattail millet (*Pennisetum glaucum*) (4000 years), sorghum (*Sorghum bicolor*) (5000 years), buckwheat *(Fagopyrum esculentum*) (2000 years), soybean (*Glycine max*) (4000– 5000 years), red bean (*Vigna angularis*), mung bean (*Vigna radiata*) (2000 years), Chinese cabbage (*Brassica chinensis*), cole (*Brassica campestris*), mustard (*Brassica juncea*), radish (*Raphanus sativus*), marijuana (*Cannabis sativa*), ramee (*Boehmeria nivea*), tea plant (*Camellia sinensis*), peach *(Amygdalus persica*), apricot (*Armeniaca vulgaris*), plum (*Prunus salicina*), cherry (*Cerasus pseudocerasus*), jujube (*Zizyphus jujuba*), lichee (*Litchi chinensis*), waxberry (*Myrica rubra*), Chinese white olive (*Canarium album*), persimmon (*Diospyros khaki*), Chinese gooseberry (*Actinidia chinensis*), pear tree (*Pyrus*), and orange tree (*Citrus*). Chapter seven discusses the sustainable use and protection of resource plants.

The book is well written with few errors. Abundant illustrations will help readers easily understand the results. One criticism of the book may be that the seven

chapters are unbalanced in terms of length and depth of information and they are sometimes not very closely or logically linked. This is especially true for chapters four to seven. Nevertheless, the book is valuable for its systematic summary and theoretical analysis of the accumulated information on Chinese resource plants. As well, it makes a significant contribution to practical guidance in research and the exploitation of resource plants for scientists both in China and in other countries. The book is suitable for professionals who engage in botany or relevant sciences and for other persons who are interested in these fields.

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Figs, Dates, Laurel, and Myrrh: Plants of the Bible and the Quran

By Lytton John Musselman. 2008. Timber Press,133 SW 2nd Avenue, Suite 450, Portland, Oregon 97204 USA. 314 pages, 21.28 USD.

As a child, I always thought that the mustard plants to which the biblical authors referred must have been a Middle Eastern plant different from the mustard which grows in this country. After all, the mustard in this country is not the smallest of all seeds, it is a smallish seed, an oil seed which can be ground up and mixed to produce the sweet mustard of hot dogs and a common condiment. If it were the smallest of all seeds, I never saw it. If it could grow into the tallest of shrubs where birds could come and nest in its branches, it had to be different from the yellow rocket mustard of eastern Ontario. There was no support for a bird's nest here, simply a weed found in the garden. So when Musselman's book arrived on my desk, mustard was one of the first plants I looked up, and I was surprised to find, after all these years, that the mustard of the Bible was not much different from the mustard of Ontario, not larger, not with a smaller seed, but a biblical plant to which Jesus made reference as a point of faith, not a wonder plant. Of course, the image Jesus used was to make a point about the wonderful action of God, far more than we could imagine and where the normal could become amazing. The usual could become wonderful.

In this book, 81 different plants are taken from all parts of the Bible and identified by a botanist who loves plants, loves the Bible, and loves the Middle East. Familiar plants like the grape, apple, thistle, wheat, and olive and many trees, vegetables, flowers, and spices are enumerated and described in detail. Sometimes different species and often different genera are substituted for the names the Bible translation uses to refer to the common fruits which we know. Some other plants like nard, wormwood, myrrh, and gall are exciting to consider. These are the biblical images which are associated with different stories in the Old and New testaments and become old friends to scripture readers with images of the Magi, the "holy waste" of people's reverence for Jesus, and some kind of bitter product which can be the fruits of souls destroyed by sin and death.

Interesting ideas borne of botanical studies are interjected into the text when the real fruit has no Middle Eastern presence in antiquity. The classic image of the apple is critiqued with reference to the Garden of Eden, where the fruit is not named but has been accepted as the fruit of the tree of good and evil. Our translations of the books of Joel and Proverbs contain the word "apple" but other fragrant and sweet fruits like the apricot may be a better translation of the Hebrew word used in the text. Musselman mentions these differences and refers to historical works which trace the development of the myth.

Some plants have no clear identity in modern botany. Gall, the ingredient in the bitter mixture which was offered to Jesus to drink on the cross, is one such reference which may have a lot of candidates but no clear definition. It could be the bodily fluid. It could be a poison. It could be one of a number of weeds like poison hemlock, wild carrot, or even poppy. All are bitter to grazing animals, but the Greek word in the text is properly translated as "bitterness" rather than any one plant.

Reading the scriptures and then referring to the descriptions in Mussleman's text was a pleasant and thoughtful exercise which deepened my understanding of the text which I was reading as well as the botany of the Middle East. I worked my way through the book for many thoughtful hours considering myths and icons and now comparing botany to biblical images. Many of us read the scriptures considering the lilies of the field in a metaphorical sense when they were presented to us. Seldom do we consider them as botanists, and as I read this book I was forced to consider the real plants instead of simply the metaphor. I found that changing my perspective of reading the Bible enriched the images which, as a believer, I have considered so long and so often in the scriptures.

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Erratum The Canadian Field-Naturalist 126(4)

In response to the review of *Contributions to the History of Herpetology*. CFN 126(3): 344-345, the book's editor Kraig Adler pointed out (personal communication to FRC 12 May 2013): "Only one small correction. Mrs. Martof used a kitchen knife, not a gun. She told the police she slipped while cutting some pizza. But Bernie was stabbed up under his rib cage several times!"

Erratum The Canadian Field-Naturalist

It has come to our attention that sections of many of the book reviews by Li Dezhi and Qin Aili were copied from sources without attribution. The journal and the authors apologize for this oversight.