

easy to read monograph, bringing the Russian Far East and its environs closer to a wider audience. This further gets achieved by the nice drawings and maps (no photos though). The four Appendices help to reach this goal further. I really appreciate the 16 pages of Notes. The presented literature is more from mainstream magazines, but it sufficiently allows the reader to get started on the topic.

The authors make clear that the Chinese tiger management policy, only focusing on captive breeding (e.g., at the breeding station in Harbin), but ignoring virtually all habitat issues, is more than dubious. The demand for tiger parts for Traditional Medicine gets widely cited for declines ('Operation Tiger' confiscated over 5000 snares in one campaign alone).

There is one flaw with this book: it does not make the direct link to the real problem in most carnivore and wildlife conservation: Traditional-style Economic Development, such as promoted in Russia, China, and most parts of the world these days, e.g., via the Asian Development Bank, will finish off the splendid tiger. For instance, the prey-base for these animals is already not sufficient, nor are the currently protected zones. Hydro-dam projects are not mentioned by the authors (a major issue in the Amur River basin), nor is

climate change. China just got granted two Russian islands in the Amur basin for their economic development, and the incredibly high Chinese demand for wood – the highly valued Korean Pine (*Pinus koraiensis*) – already widely cited for greatly contributing to habitat loss for tigers and their prey. Further problems occur through massive poaching and other development efforts. It is unclear to me why the Russian Government, one of the leading oil and gas producers in the world, and thus equally as rich as Saudi Arabia, is not able to support science-based Tiger conservation, and requires international assistance from NGOs and experts. Why does the international community let this happen?

This nice book should at least be read by every naturalist interested in Russia, Asia, wilderness, carnivores and cats. In times of globalization, it brings us one of the ten largest river systems – its ecosystem and wildlife – and with the tiger as its flagship species, closer to home.

FALK HUETTMANN

EWHALE laboratory, Institute of Arctic Biology, Biology & Wildlife Department, University of Alaska-Fairbanks, Fairbanks, Alaska 99775 USA

## BOTANY

### Woody Starch Plants in China

By Xie Bixia, Xun Chen, Donglin Zhang, Wenbin Liang, Qiuping Zhong, Sen Wang, Riqing Zhang, Anping Li, Xiaofang Pan, Yafeng Wen, Hongwen Zhuang, Tao Wu, Zhanying Gu, Xinjian Wang, Jiangfan Yu, and Manhui Hu. 2008. Science Press, Beijing, China. 360 pages, 88.00 CNY.

Starch (*amylum*) is a complex carbohydrate, a polysaccharide made up of a large number of linked glucose molecules (monosaccharides). In plants, starch is a by-product of photosynthesis, being mainly composed of two types of glucose polymer, the amylose and the amylopectin. It is an important and effective means of storing excess glucose as the form of energy for future use for the majority of plants. Starch, as an insoluble material, usually is stored in plant cells without impact on the water potential of cells, and thus may be stored in large amounts without disrupting the water potential of the cells. In plants, starch usually exists in the form of organized grains of various sizes and shapes, depending on the species of plant.

The primary production of plants forms the base of food chain or web of an ecosystem and fuels the whole ecosystem. Consumption of the primary producers by the heterotrophic organisms, and then transference of these organic molecules as well as the energy stored within them up the food chain or web, results in the energy flow of the ecosystem. In the whole process,

starch as a form of energy storage plays important roles. Starch is the major form of carbon reserve in plants, especially in the fruits, seeds, rhizomes or tubers. Some net primary production containing starch will go towards growth and reproduction of the primary producers, while some other parts will be consumed by herbivores. In some important starch plants, a category of plants containing abundant starch, it constitutes 50% or more of the dry weight of many storage organs. Starch must first be converted to a soluble form before being used by the plant itself, but if used by the heterotrophic organisms, it can be digested directly.

The lives of human beings are closely related to various types of plants, among which the starch plants are particularly important since they usually act as the source of daily food or industrial materials. Although the woody starch plants are not popularly used in the daily lives by human beings as much as some agriculturally important starch plants (most of them are graminaceous plants), some of them are frequently, or at least sometimes, consumed. Many woody starch plants still remain as wild plants, unexploited or even undiscovered, while only a few species have been exploited and used by human beings. Most of the woody starch plant species must have, or potentially have, value due to their abundant content of starch. Since the wild woody starch plants are usually pollution-free,

nutrient-rich, and at least some of them have a good taste or can be used as both food and medicinal plants, people all over the world usually like them very much. They also are saleable in the markets. In China, the use of woody starch plants have been used for a long history; however, due to the unreasonable use and immoderate picking, the resource of wild woody starch plants is becoming exhausted or endangered.

Obviously, effective exploitation, use and protection of the increasingly precious and exiguous woody starch plant resources is pressing. This needs to be recognized and the background information, summarized in terms of the present knowledge and further detailed research carried out. The timely publication of the book *Woody Starch Plants in China* meets this demand in at least some of these aspects. This book is the first monograph on the woody starch plant resources and their present status in China. It is divided into three major parts, the woody starch plant resources, their cultivation and their processing. In the first part, a total of 21 families and 242 species of woody starch plants are described in detail, in terms their morphological characteristics, growth habits and distributions. Illus-

trative text and figures are given in contrast, which are particularly helpful for readers to recognize and identify the species. In the second part, the theories and techniques on sowing, seedling cultivation, silviculture, stand thinning and pest control of the main woody starch plants are addressed systematically and in detail. In the third part, the physical and chemical properties and the processing methods for the starch of different woody starch plant species are addressed. The book includes authors' research data accumulated over many years, and also the major research achievements of other Chinese scientists.

The book is well-structured, and with strong readability. The book is suitable for staff who engage in forest research, education, production, cultivation, management, exploitation, utilization or other persons who are interested in these fields.

IL DEZHI<sup>1</sup> and QIN AILI<sup>2</sup>

<sup>1</sup>Laboratory of Urbanization and Ecological Restoration of Shanghai; National Field Observation and Research Station in Tiantong Forest Ecosystem of Zhejiang; Department of Environmental Science, East China Normal University, 3663, Zhongshan Road (N), Shanghai, China 200062

<sup>2</sup>Jilin Forestry Staff School, Jilin, China 130000

## ENVIRONMENT

### The Burning Season

By A. Revkin. 2004. Island Press, 1718 Connecticut Avenue, N.W., Suite 300, Washington, D.C. 20009-1148 USA. 319 pages. Not illustrated, 22.50 USD

This book is a timeless classic of environmental history. It presents the reader with the fight for the interior Amazonian rainforest, an area which represents one third of the world's rainforest. *The Burning Season* must easily be among the best biographies of the murdered main character: rubber tapper Chico Mendes. Being deeply entrenched with naturalists, he actually is in the same rank as Lech Walesa, Cesar Chavez, or Martin Luther King, applying Ghandi-style non-violence sustainability progress, approved for instance by Prince Charles, by leaders of UNEP (M. K. Tolba), as well as the Canadian, Dutch and Swedish governments of the time.

The captivating and well-investigated text is thorough, and nicely written for the naturalist, for the lay audience as well as for the science-minded environmentalist. It tells how one political lobby, the land-owning large-scale Brazilian ranchers, and organized in the UDR (Rural Democratic Union), fought a vicious war against the rainforest, and with the support of weapons and governmental subsidies to keep the land in an intensive farming scheme at all costs. If that schema failed, the UDR supporters simply burned the offices that held the records of the historic land titles or intimidated local decision-makers, judges and citizens oth-

erwise in order to get by. The UDR did not approve of the great Liberation Theology movement in the Catholic Church either, and thus serious pressure was also put on those church ministers.

The term "burning season" refers to the seasonal occurrence of cultivating forest land for agricultural purposes. Burning forest land goes back to the old-fashioned legal Brazilian concept that is based on the right of possession (where a squatter can acquire a paper title if the land is used and under harvest or similar agricultural operation; e.g., cattle, for over five years). Further, "Grilagem", a policy of grabbing false land titles, has been known for a long time as a convenient method to own land in wild Amazonia and beyond. However, the rubber tappers defend their rainforest against the ranching lobbies and their army of squatters hired to burn the land, turning it into cattle land eventually, once the soil nutrients are quickly eroded. The rubber tappers, with Chico Mendes as one of their main leads, fight this off via "Zapates": a local justice activity demanding illegal squatters to leave the rainforest in a non-violent fashion.

Revkin shows us in painful detail that Brazil has a sad track record of killings, torture and brutal regimes, including governmental censorship, dictatorship, and approved shootings of native populations. He summarizes vividly that Mendes is actually only one out of 48 rural workers and environmental union activists that got killed in Brazil during the last few decades.

***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.