Preface

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As anyone who follows Chinese archaeology is aware the past quarter century has witnessed massive growth in the field, with more excavations, more data and major methodological advances. Archaeological sciences have had particular expansion and that has included archaeobotany – the systematic sampling, sorting, identification and interpretation of preserved plant remains from archaeological excavations. The history of the growth of this field in China and its impact on understanding processes of early agricultural evolution is just one of the topics covered in this book. While there are a few books in the Chinese language that offer overviews of this methodology the present volume takes this method as its central vantage point for viewing the cultural history of the prehistory of Southwest China, Yunnan. This offers a refreshing alternative to histories focused on pottery typologies and grave goods assemblages. There is no holistic cultural history without a history of resources and subsistence!

The transition to agriculture was a fundamentally transformative episode in cultural and environmental history. While foraging societies that had peopled the world for hundreds of thousands of years may have sometimes impacted the population of large game mammals or altered vegetation succession by intentional burning, it was with the advent of agriculture that systematic long-term environmental modifications were set in place. Agricultural systems are fundamentally early successional vegetation, a local environmental reset, and the dominant species – those planted by people – are very often non-native, introduced from somewhere else. The increased productivity per unit of land and the increased reliance on delayed returns and storage laid the basis for key changes to human groups – higher population densities, surplus that could be translated into wealth and influence, and less mobility for most people.

These changes set challenges to social systems and health but opportunities for innovation. Increased sedentism and population density

set the social challenge of either creating ideologies of redistribution that aimed at egalitarianism within extended families/communities or transitioning into systems of hierarchy, land ownership and hereditary status and wealth. Less mobility and higher population densities meant new epidemiological regimes, and the setting in which the diseases of herd animals could transition in the human herd, a process that continues to challenge humanity today.

Surpluses, however, also could support a minority of humans with higher mobility – trade expeditions that tied regions together and allowed for the translocation of new ideas, new crop varieties and new technologies. Processes of diversification took place in agriculture – more cropping seasons, annual and long-term perennial crops (diversification), increased labour inputs (intensification), and more commodification of crops through specialization and exchange, such as in textile production, dried and preserved fruits, oils and wines. Processes of diversification in crafts, stone working, ceramics, metallurgy, textiles, took place in parallel. Regions with different agricultural potentials and access to different mineral resources, and crafting traditions, could become linked in systems of direct and down the line exchange that might be identified as emergent 'world systems'. Some regions, like Yunnan, could be key players to such networks.

Geographically, Yunnan is a potential network hub where the development of commodification, specialization and exchange would play a long-term role in historical dynamics. The land 'south of the clouds' (or cloud topped mountains), that is *Yún-nán*, is linked by the thread of the Yangtze river, and its many tributaries, to central China. Equally it is linked to the South by four major rivers that radiate outwards to Southeast Asia (Irrawaddy, Salween, Mekong, and Red River), and the Pearl River that flows east the regions of China grouped as Lingnan. This connectivity has played a major role in theorizing macroregional archaeological patterns. In exploring the idea language-farming dispersals authors have often theorized from this fact that language families or rice farming spread via these rivers, but as Dal Martello shows in this book the growth of empirical evidence for agriculture in Yunnan, elsewhere in southern China, and in Southeast Asia, is against this simple view of a single wave of advance of rice farmers. Reality appears more complex, with migrating millet farmers, some also spreading rice, from central China up the Yangtze to Yunnan, while other flows were over the hills from the Yangtze to Guangdong and around the southeast coast of China. Crops likely came to Southeast Asia in various ways, sometimes rice and millet together, sometimes separately, later waves of migration and adoption of new crop varieties through trade took place also. To Yunnan a later wave of migration came with wheat, barley and sheep in Yunnan, while other diversifications included domestications of buckwheat and *Chenopodium* native perhaps to the surrounding Yunnan hills. Bronze working techniques also spread around this time. Even later waves of diffusion, perhaps more trade than migration, brought sticky forms of rice, moved some *Citrus* fruits (oranges southwards, pomelo northwards), and various cucurbits (winter melons, bitter melons, snake gourds). Thus, there were wave after wave that layered cultural and agricultural diversity in Yunnan.

Despite its networking role with Southeast Asia, Yunnan was also a cultural frontier, a fracture zone in bio-cultural diversity. Interestingly, in the evidence described in the book that follows there is little sign of crops that originated in India (with a possible exception to be confirmed of ancient

tamarind from Shifodong). From mungbean and pigeonpea, to sawa millet, and species like African sorghum or Lablab bean that traversed India, there are numerous important aspects of traditional agricultural diversity in Yunnan and South China that had their origins to the Southwest in India, or traversed India. While some of these species are evident in Southern Thailand just over two thousand years ago in the last centuries BCE (for example, at Khao Sam Kaeo), they are not yet evident in Yunnan through the Dian period as outlined in this book. Thus, we must look to a later period, after the Han Dynasty, for the increase in more direct diffusion between Yunnan and northeast India. In traditions of diet and cooking, western Yunnan is a frontier zone, with use of dairy products more common towards the west, increasingly so in India and high Tibet, with sticky cereals, like glutinous forms of millet, as well as rice, more frequent in the east.

Therefore, while Yunnan as a whole may play a role in the flow of cultural practices, ideas, crop species, and moving human populations. It was more of a constructed valve than an open channel: flows were not constant or continuous. It was sometimes closed, sometimes selective, and always to be understood in terms of local contexts of agricultural environments and cultural traditions that included cooking practices. Archaeobotanical details, like those elegantly analysed in this volume provide an inherently local dataset, speaking to practices in the creation of landscape, but also the macroregional implications for how people of different regions shared in wider trends in heritage that is agriculture. This book offers a new baseline from which to expand the investigation of agriculture in cultural crossroads.