new insights. The author Krishna Murthy must be commended for his article on new public management practice. He stresses upon an important agenda that is complicated to solve and yet absolutely essential to address if India must move into a robust knowledge economy. It is clear that transitions into the knowledge economy will bring new information systems, better processes and structure; however all these will fail if good governance does not condition attitudes and values of citizens in India into transparent honesty.

The Part 5, on networking of knowledge institutions, is proactive, interesting and pertinent in the context of the book. It addresses various aspects of international networking and the knowledge network system. An article by Mathew and Rajagopalan describes some interesting experiments on collaborations at the level of 'university to university'. This is yet another important area to address when a country transits into a knowledge economy. The authors describe the reuse culture at Honeywell as a useful role model. The Knowledge Centre at Weimer that collaborates with USA, South Africa, Switzerland and UK is described and plans for networking of knowledge institutions in India are briefly described. The areas of earthquake, disaster management and sustainable development appear to be their focus during collaborations. Another article describes the Indian Institute of Foreign Trade's initiative in bringing together international universities for the development of modules related to innovation management, which is yet another important area of education for a knowledge economy to address. The last part, Part 6, on social objectives stresses the importance of KM for the larger good of society. The article by Batra highlights the 'development' context and knowledge management initiatives at the World Bank and other developmental agencies. The case studies mentioned by Sarkar and Mahajan are worthy of re-mention; they are the KM system of World Bank, OneWorld Online, Solutions Exchange at United Nations and the Honey Bee Network of Anil Gupta. Sarkar and Chatterjee describe the role of information and communications technologies (ICT) in agriculture based knowledge communities in projects on 'digital ecosystem for agriculture and rural livelihood' (DEAL) and the Digital Mandi Project, using insights gained from Krishi Vigyan Kendra (KVK) initiatives.

The articles in this book vary in writing style, ranging from few that are research papers, to others that are just informative, bulleted, non-academic articles, even describing project proposals and project details. The ones that can be classified as poor are the ones that are brief, vague, poorly structured and lacking insight. Overall, the entire book touches upon important areas that India must consider while transiting into a knowledge economy; it also touched upon some KM concepts.

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Rethinking Agriculture: Archaeological and Ethno-archaeological Perspectives. Tim Denham, José Iriarte and Luc Vrydaghs (eds). Left Coast Press Inc., Walnut Creek, CA, USA. 2007. 468 pp. Price: US$ 99.00.

One World Archaeology volumes 'contain carefully edited selections of the exemplary papers presented at the World Archaeology Congress (WAC) held every four years...'. The series is published by Left Coast Press, Inc. beginning volume 48. Previous volumes in this series were published by Routledge, London.

The book under review developed from a session entitled 'Inherited models and the denial of prehistory: challenging existing concepts of agriculture' at the Fifth World Archaeology Congress (WAC 5) held in Washington DC, in June 2003. The purpose of the session was to bring together researchers who work on agriculture, especially early agriculture, in non-Eurasian parts of the world and 'to assess the relevance of concepts and methods inherited from studies in Eurasia to their work'. The contributors have come from three broad geographical regions: Island southeast Asia and the Pacific, the Americas and Africa.

Most contributions to this volume were written in 2004. But, possibly because of the delay in publication (which was beyond the control of the editors), it appears that original contributions of 11 original participants could not be included, and instead, contributions of seven others were solicited. The present volume has 21 chapters that includes two overviews, six each dealing with Island southeast Asia and the New World, and seven with Africa. The editors of the volume, Tim Denham, José Iriarte and Luc Vrydaghs, possess field experience in one of the above three regions.

The editors had asked each contributor was asked 'to rethink agriculture in terms of the existing regional chronologies, or techniques employed, or of the concepts that frame the interpretations'; this, because of the lingering tendencies to evaluate agricultural origins all over the world using concepts and methods derived from Eurasian research.

The editors appear to have broadly succeeded in their efforts as seen from the contents of the present volume. However, certain problems continue to fester: for instance, the persistent problems with domestication-based definitions of agriculture, the diffuseness of early agricultural practice, and so on. It may be possible to resolve these problems only if more extensive and intensive archaeological excavations are carried out in the largely unexplored/under-explored regions of the tropical and subtropical central and south America, Island southeast Asia and Africa.

This volume highlights the prominent features of the Eurasian template, as propounded by the early archaeologists, Childe and Piggot: (a) clear morphological changes are brought out in plants and animals and are termed domestication; (b) large-scale environmental transformations have been brought about from forest clearance for agriculture; and (c) the above changes have resulted in trans-

forming cultural, political and social behaviour of the human society. From the biological angle, these conceptual processes have been greatly influenced by the writings of Charles Darwin and NI Vavilov, and in recent times, by the centres and non-centres concept of Jack Harlan.

Several contributions in the present volume show that their findings are at conceptual and technical variance with the unimodel Eurasian concepts of early agriculture and domestication. For instance, instead of relying on macrofossils, as was being done earlier, several authors have used microfossil (phytolith, pollen, starch grains, etc.) and molecular (DNA) techniques for interpreting past human uses of plants and animals. Another highlight of the volume is the differing approaches taken in contextualizing agriculture from the traditional single-region approach to panregional comparative studies within their respective environmental and socio-economic contexts. Several contributions have also brought out the diffuseness – in contrast to the traditional view of diffusions – of agriculture in different regions of the world.

The neotropics have been covered in six chapters, chapters 9–14. In the first of these chapters, Iriarte (chapter 9, pp. 167–188) gives an overview of the work done in the Americas till date. He begins by pointing out that plant domestication in the neotropics was characterized by a diffuse spatial pattern with independent origins in central and South America, and possible multiple origins in lowland South America. For instance, there is evidence that crop plants of even the same genus – such as squashes and gourds of *Cucurbita* – were domesticated early in several different regions such as Mexico (highland, tropical south) and Ecuador (southeast). In Andean mountains a diversity of tubers were domesticated including the potato (*Solanum tuberosum*), oca (*Oxalis tuberosa*), ullucu (*Ullucus tuberosus*) as well as psuedocereals like quinoa (*Chenopodium quinoa*) and amaranthus. Current archaeological, botanical and molecular evidences suggest independent cultivation and domestication in America in at least five areas, viz. southwest Ecuador, north Peru, southwest Amazonia, northern South America and southwestern Mexico. Maize, manioc, yams, sweet potato and arrowroot may have had multiple origins. The available data is still scanty for providing a clearer picture than this. These domestication processes occurred as early as in other parts of the world, i.e. shortly after Pleistocene ended.

The other chapters in the section deals, with (1) the levees of Louisiana, USA, from where the first evidences of crop production have been obtained from only 1000 CE, and the local populace appears to have been relying on the adequate supplies of fruits and nuts (Fritz, chapter 10, pp. 189–209); (2) some methodological studies on prehistoric agriculture of northwest Ecuador (Pearsall, chapter 11, pp. 210–230); (3) using oral traditions of four Indian tribes (Sayre, chapter 12, pp. 231–240); (4) studying the plant economy of a southern highland Peru site using starch remains, taking back the age of maize, *Maranta* and potato economy to 3600–4000 BP (Perry, chapter 13, pp. 241–255); and (5) studies on the food-producing systems in La Plata basin (lower Uruguay, Atlantic littoral). They are characterized by very few macrobotanical remains and mixed economy based on maize, squash, etc. dated to 4190 BP using starch grains (Iriarte, chapter 14, pp. 256–272). What stands out in these studies is the routine and extensive use of microfossils – mainly, phytoliths and starch grains.

The highlight of the seven chapters on tropical Africa (chapters 15–21) is a comprehensive review of the archaeobotanical studies carried out in the semi-arid west Africa (Kahlheber and Neumann, chapter 17, pp. 320–340). This vast area is thought to be home to several crops – pearl millet, sorghum, African rice, digitaria, finger millet, cowpea, rosette, okra, and so on. There are also evidences of the presence of several useful trees. The remains have come from 28 sites and the earliest site is dated to 1900 BC. This is a vast region stretching from the Atlantic coast in the west to central Africa and is overwhelmingly influenced by the Sahara desert that lies to the north. What is most interesting is that the people of the region had a big bouquet of plant foods to live on in addition to aquatic resources and even herding animals, and almost unique to this region, the arrival of cattle preceding crops. The discovery of banana phytoliths (2500 BP) in Cameroon has thrown a new challenge on the present chronology and pathway of the spread of banana from east Africa to west Africa. Based on this, De Langhe has presented a hypothesis on the spread of plantain cultivation in central and west Africa (chapter 19, pp. 361–370).

The other chapters deal with (1) the influence of enset and yams in prehistoric Ethiopia (Hildebrand, chapter 15, pp. 272–298); (2) evidences of mixed farming in Rwanda and Burundi (Grunderbeek and Roche, chapter 16, pp. 299–319); (3) the exploitations of the environment in the tropical forested Gabon during the Holocene (Oslisly and White, chapter 18, pp. 347–360); (4) domestication of donkey in northeast Africa (Marshall, chapter 20, pp. 371–407); and (5) use of linguistics to reconstruct African subsistence systems (Blench, chapter 21, pp. 408–438).

There are five chapters dealing with Island southeast Asia. The two most significant chapters deal with early plant exploitation in New Guinea. The multidisciplinary work reviewed by Denham (chapter 5, pp. 78–108) of early to mid-Holocene (10,220–9910 BP, 6950–6440 BP) plant exploitation in Kuk Swamp in New Guinea highlands has been widely published. It confirms an early and independent origin of indigenous agriculture in the region using indigenous crops – chiefly bananas, colocasia – as proposed first by Golson in 1977. The long-held assumption was that New Guinea agriculture was introduced by the Austronesian people who had migrated there from present-day Indonesia c. 3300–3500 cal BP. Denham has attempted also to develop a contingent interpretation of agriculture using wetland archaeological evidences. The credit should go to Golson (chapter 6, pp. 109–125) for initiating the Kuk project in 1972, which not only led to the fundamental findings on early agricultural origins in Melanesia, but also provided experimental support to Yen's hypothesis of Melanesia as a site of agricultural origin that was also parental to the oceanic subsistence systems. This region has given rise to a number of staple and subsistence crops such as banana, *Saccharum edule*, sago palm, fehi bananas, bread fruit, and so on. The chapter also brings out the divergence of opinion on the origin of agriculture in the New Guinea highlands with Yen and Golson implying a derivative origin to it.

The remaining papers on Island southeast Asia deals with (1) interpreting the significance of New Guinea findings using ethnography (Bayliss-Smith, chap-

ter 7, pp. 126–148); (2) investigating the land use system of Rapa Nui (an eastern Pacific Ocean island); and (3) subsistence systems in the tropical rain forests of Sarawak, Malaysia (Barton and Paz, chapter 4, pp. 50–77).

Two chapters deal with methodological issues: conceptual framework of early food production and molecular signals of domestication (Jones and Brown, chapter 3, pp. 36–49); and Harris (chapter 2, pp. 16–35) urging the demolition of constraints to our thinking on hunter–gatherers versus agriculturists by employing the newer techniques such as molecular biology and micromolecular techniques (phytolith, pollen, starch, parenchyma analysis). They have been reiterated by Jones and Brown also in their contribution.

The volume has been produced 'economically' with narrow margins and doing away with several of the punctuations that we are accustomed to using in even general writings. The reviewer saw just one error – the correct figure of figure 14.1B is not given; what is given is a repeat of figure 14.1A.

Altogether, most contributions in this volume chart new thoughts and approaches in our traditional thinking on agricultural origins and definitions. The volume also urges us to develop fresh thinking on our deeply embedded thoughts and concepts on centres and non-centres of crop plant origins.

This volume is strongly recommended to all scientists interested in agricultural origins and ongoing archaeological studies worldwide.

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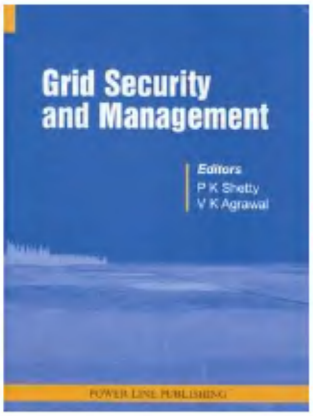

Grid Security and Management. P. K. Shetty and V. K. Agrawal (eds). Power Line Publishing, B-17, Qutab Institutional Area, New Delhi. 2009. pp. 190. Price: Rs 600.

Reading an edited volume is easy, since there are a number of chapters or sections each on a different topic, unlike, say, a mystery novel, which you cannot readily put down in between. Reviewing an edited volume is a different story. Given the breadth of coverage, with 22 sections written by eminent and experienced professionals, it is highly impossible to summarize what is covered. The authors have written about most of the aspects of a power grid, mostly in the Indian context but with some sections covering general theory or findings. My understanding of the book's interpretation of the 'grid' is one of the transmission network, even though, distribution is also part of the grid. Within transmission, the focus is much more on national transmission, given the multitude of authors with national transmission backgrounds.

One thought running continuously through my mind was who would be the audience for this work? Anyone interested in the power grid, perhaps (planners, designers, operators, policy-makers, etc.). Not uniquely, the book faces the challenge many edited volumes face, which is a different tone, style and depth of coverage different authors provide on different topics. In particular, it was unclear which sections were meant to be descriptive, and which ones prescriptive. Thus, by the time I was done reading the first time, I was waiting for the final answer or summarizing theme to come through plainly. Instead, I reread sections of the book of particular interest and took from them nuggets of information and high-level insights, which readers might want to do as well. A longer, integrating summary by the editors might help readers, especially those unable to go through the volume in its entirety.

The book provided me with a number of lessons and ideas, but how these could become operationalized is unknown. For example, transmission lines are designed for some base (assumed) temperature and windspeed. But windpower only generates power (rather, vastly more power) when windspeeds are high. Thus, transmission lines from windfarms might safely carry much more power if such dynamic calculations are taken into account. Excellent point – but who will redo current designs and operating norms?

Given grid security and management is not a purely technical issue, rather, it is an integrated design issue, I had hoped to find more coverage of the issues where technology, policy, economics and design intertwine – there was only limited coverage of such issues, e.g. only one section on congestion pricing systems and their trade-offs (in one of the most technical but important and well-written chapters, on transmission loss allocation).

The book is not split up sequentially, and there is some overlap in what the authors cover. Broadly, there are five topics covered, viz. planning, technology, market design/operation, implementation and operational challenges, and social/human concerns. Of these, the book is strongest on issues of technology and the theory of market design, but the sections on social and human concerns are very high level. In addition, there is not an operational definition of 'security', which is half the title of the book. Broader issues of security (not just supply security) are not covered much, such as resilience, terrorism or cybersecurity (increasingly important in a grid utilizing more IT and telecommunications, e.g. for phasor measurement units (PMUs)).

Overall, the book takes a rather normative view of many aspects of the power system, sometimes highlighting general (and known) issues like lack of skilled human resources. Markets are treated as a unilateral good, without discussing tradeoffs or limitations of markets, especially under conditions where supply is less in demand. In such conditions, prices would necessarily rise, perhaps too high for regulatory or government comfort. Similarly, a number of